Bird Populations 9:86-169

THE MONITORING AVIAN PRODUCTIVITY AND SURVIVORSHIP (MAPS) PROGRAM 2004, 2005, AND 2006 REPORT[1]

DAVID F. DESANTE AND DANIELLE R. KASCHUBE
The Institute for Bird Population
P.O. Box 1346
Point Reyes Station, CA 94956

Abstract. This report summarizes regional and program-wide results of the Monitoring Avian Productivity and Survivorship (MAPS) Program during 2004, 2005, and 2006 using data from 452, 422, and 422 MAPS stations, respectively. Changes in adult population size and productivity (i.e., reproductive index, defined as young/adult) from 2003 to 2004, 2004 to 2005, and 2005 to 2006 were derived from data from 343, 352, and 357 stations, respectively, operated in a constant-effort manner during each pair of years. The generally alternating, out-of-phase patterns of annual changes in productivity and adult population size that have characterized MAPS data for the previous 12 years were much less evident during 2004 to 2006, presumably because the annual changes in productivity and adult population size during these latter years were generally small and non-significant. Notable exceptions were as follows: significant decreases in adult population size in the Northwest and South-central regions as well as program-wide in 2005, and in the South-central Region in 2006; significant increases in adult population size in the North-central and Northeast regions in 2006; significant increases in productivity in the Northeast and Southeast regions in 2004 followed by significant decreases in both regions in 2005; and a near-significant increase in productivity in the Southwest in 2005 followed by a significant decrease there in 2006. Patterns of annual changes in both adult population size and productivity over the entire 15 years have generally been similar in the Northeast, Southeast, and North-central regions, and often opposite to those in the Northwest, Southwest, and South-central regions, which generally tended to be similar to each other. In addition, patterns in the Alaska/Boreal Canada Region generally tended to be different from those in all of the other more northerly regions. We used modified Cormack-Jolly-Seber (CJS) mark-recapture analyses, with ad-hoc between- and within-year transient models, on 15 years (1992-2006) of data pooled from 653 stations, each operated for at least four consecutive years, to estimate regional and program-wide annual adult apparent survival (φ) and recapture probabilities and proportions of residents among newly captured adults for 192 species. The mean number of stations per region contributing data (93 stations) and the mean number of species per region for which survival could be estimated (65 species) were 17.7% and 4.9% greater, respectively, than the analogous means (79 stations and 62 species) based on analyses of 12 years (1992-2003) of data. The increased number of stations and years of data resulted in continued increases in the precision of survival estimates: the mean number of species per region with CV(φ) < 30%, < 20%, and < 10% increased by 10%, 13%, and 19%, respectively, using 15 years of data, rather than 12. As in previous years, a pattern was detected in which mean regional adult survival rates

[1]Received: 20 December 2008. Accepted: 25 February 2009.

tended to be lower at more northerly regions. Mean regional survival rates also tended to be lower in each of the seven regions for the 15-yr (1992-2006) compared to the 12-yr (1992-2003) data set, continuing the pattern noted in previous reports and suggesting that survival has been decreasing in each region. For all species pooled at the program-wide scale, we used (a) chain indices to estimate a highly significant 15-yr (1992-2006) decline in adult population size of -1.77% yr^{-1}, and a widely fluctuating temporal pattern in productivity with a decreasing tendency of -0.25% yr^{-1}; and (b) both time-dependent and linear trend CJS models to estimate a nearly significant 13-yr (1993-2005) decline in adult apparent survival of -0.46% yr^{-1}. These long-term declines in vital rates will likely increase the difficulty of reversing population declines in these landbird species. Finally, we found a tendency for the annual changes in survival rates to have the same sign as the subsequent annual changes in productivity, suggesting that factors that drive annual variation in survival might also drive some of the annual variation in productivity, and that these factors may act during the non-breeding season.

Key words: constant-effort mist netting and banding; landbird demographics; MAPS Program; population trends; productivity indices; survival rates.

INFORME DE 2004, 2005 Y 2006 DEL PROGRAMA MAPS (MONITOREO DE PRODUCTIVIDAD Y SOBREVIVENCIA DE AVES)

Resumen. Este informe resume los resultados regionales y globales del programa MAPS durante 2004, 2005 y 2006 utilizando datos de 452, 422 y 422 estaciones MAPS respectivamente. Los cambios en tamaño poblacional y sobrevivencia de adultos (es decir, índice reproductivo, definido como adultos/juveniles) de 2003 a 2004, 2004 a 2005 y 2005 a 2006, fueron derivados de datos provenientes de 343, 352 y 357 estaciones respectivamente, operadas de forma constante durante cada par de años. El patrón general alternante y fuera de fase de los cambios en productividad y tamaño poblacional que ha caracterizado los datos de MAPS durante los 12 años anteriores fue mucho menos evidente entre 2004 y 2006, presumiblemente porque los cambios anuales fueron generalmente leves y no significativos. Excepciones importantes son las siguientes: declives significativos en tamaño poblacional de adultos en las regiones Noroeste y Centro-sur así como globales en 2005, y en la región Centro-sur en 2006; aumentos significativos en tamaño poblacional de adultos en las regiones Centro-norte y Noreste en 2006; aumentos significativos en productividad en las regiones Noreste y Suroeste en 2004 seguidos por declives significativos en ambas regiones en 2005; y un casi significativo aumento en productividad en el Suroeste en 2005 seguido de un declive significativo en 2006. Los patrones de cambio anual en tamaño poblacional y sobrevivencia en los 15 años totales han sido generalmente similares en las regiones Noreste, Sureste y Centro-norte, y a menudo contrarios a los de las regiones Noroeste, Suroeste y Centro-sur, las cuales tendieron a ser similares entre ellas. Asimismo, los patrones en Alaska y la región boreal de Canadá fueron diferentes de los del resto de regiones norteñas. Utilizamos análisis de marcaje-recaptura Cormack-Jolly-Seber (CJS) con datos combinados de 653 estaciones, cada una operada al menos durante cuatro años consecutivos, para estimar la sobrevivencia aparente de adultos (φ) a escala regional y global así como probabilidades de recaptura y proporciones de residentes entre adultos capturados para 192 especies. El número promedio de estaciones por región que contribuyó datos (93 estaciones) y el número promedio de especies por región para las que se pudo estimar sobrevivencia (65 especies) aumentaron en un 17.7% y 4.9% respectivamente, con respecto a los promedios análogos (79 estaciones y 62 especies) basados en análisis de 12 años (1992-2003) de datos. El aumento en el

número de estaciones y años de datos resultó en un contínuo aumento de la precisión de las estimaciones de sobrevivencia: el número de especies promedio por región con CV(φ) <30%, <20% y <10% aumentó en 10%, 13% y 19% respectivamente utilizando 15 años en lugar de 12. Al igual que en años anteriores, se detectó un patrón que indica que las tasas de sobrevivencia anual de adultos tienden a ser más bajas en regiones norteñas. Las tasas de sobrevivencia promedio por región también tendieron a ser más bajas en cada una de las siete regiones para el periodo de 15 años (1992-2006) comparado con los datos de 12 años (1992-2003), continuando el patrón resaltado en informes previos que sugiere que la sobrevivencia ha estado en declive en cada región. Para todas las especies combinadas a escala global, utilizamos (a) índices de cadena para estimar un declive altamente significativo en tamaño poblacional en 15 años (1992-2006) de -1.77% por año, y un patrón temporal altamente fluctuante en productividad con una tendencia negativa de -0.25% por año; y (b) modelos CJS tanto tiempo-dependientes como de tendencia lineal para estimar un declive casi significativo de 13 años (1993-2005) en sobrevivencia aparente de adultos de -0.46% por año. Estos declives a largo plazo en parámetros vitales dificultarán seguramente la recuperación de declives poblacionales en estas especies de aves. Por último, hallamos una tendencia que consiste en que los cambios anuales de sobrevivencia tienen el mismo signo que los subsiguientes cambios anuales en productividad, lo cual sugiere que los factores responsables de la variación anual en sobrevivencia afectan también a la variación anual en productividad, y que estos factores pueden actuar durante la temporada no reproductiva.

Palabras clave: redeo y anillamiento de esfuerzo constante; demografía de aves terrestres; programa MAPS; tendencias poblacionales; índices de productividad; tasas de sobrevivencia.

INTRODUCTION

The Monitoring Avian Productivity and Survivorship (MAPS) Program is a continent-wide, cooperative network of nearly 450 constant-effort mist-netting stations operated annually during the breeding season (DeSante and Kaschube 2007). MAPS was established by The Institute for Bird Populations (IBP) in 1989 to collect long-term data on the vital rates (primary demographic parameters such as productivity and survivorship) of North American landbirds at multiple spatial scales ranging from station-specific and local-landscape to program-wide (DeSante et al. 1995). MAPS now provides productivity indices from young/adult ratios of captured birds, and estimates of adult apparent survival, recruitment, and population growth rates from Cormack-Jolly-Seber (CJS) analyses of capture-mark-recapture data on adult birds for nearly 200 landbird species.

The research goals of MAPS are to describe temporal and spatial patterns in these vital rates, as well as relationships between these patterns and (1) ecological characteristics and population trends of species, (2) station-specific and landscape-scale habitat characteristics, and (3) spatially-explicit weather variables. The management goals of MAPS are to use these patterns and relationships to (1) determine the proximate demographic cause(s) of population change, (2) formulate management actions and conservation strategies to reverse population declines and maintain stable or increasing populations, and (3) evaluate the effectiveness of the management actions and conservation strategies implemented.

Baillie (1990) was among the first to argue that monitoring vital rates must be a component of any successful integrated avian population monitoring scheme. DeSante (1995), DeSante and Rosenberg (1998), and DeSante et al. (2005) extended these ideas by arguing that effective avian management must also be based on vital rates as well as population sizes and trends. The reasons for this are many. First, abundance metrics and the trends derived from them may not accurately reflect habitat quality (Van Horne

1983) because of source-sink dynamics (Pulliam 1988, Donovan et al. 1995) and evolutionary and ecological traps (Schlaepfer et al. 2002). Second, populations of migratory species could be limited by processes acting at times other than those when abundance is measured, thus further obscuring the link between abundance and habitat quality (Marra et al. 1998). Third, vital rates provide crucial information about the stage of the life cycle at which population change is being effected (DeSante 1992, DeSante et al. 2001). This information is particularly important for migratory species because it can suggest whether management actions should be directed toward a species' breeding grounds, wintering grounds, or both. Fourth, environmental stressors and management actions affect vital rates directly and usually without the time lags that often occur with population size (Temple and Wiens 1989, DeSante and George 1994). Finally, demographic rate estimates can be incorporated into predictive population models to assess potential effects of a variety of land use or climate factors (Noon and Sauer 1992). Thus, demographic monitoring not only complements abundance monitoring, but also has the potential to provide more timely and insightful information for management and conservation applications.

In this report we present results of the MAPS Program during 2004, 2005, and 2006 using data from 452, 422, and 422 stations, respectively. For all species with adequate data (and for all species pooled), we compare, in a constant-effort manner, the regional and program-wide indices of adult population size and post-fledging productivity obtained during each of these three years to the analogous indices obtained during the immediately preceding year. Then, using data from 653 stations each operated for four or more consecutive years during the 15-yr period 1992-2006, we present regional and program-wide estimates of time-constant annual adult apparent survival probability, recapture probability, and proportion of residents among newly captured adults, along with estimates of the extent of time-dependence in these parameters. Finally, for all species pooled at the program-wide scale, we use chain indices to estimate 15-yr trends in adult population size and productivity, and use both time-dependent and linear-trend CJS models to estimate a 13-yr trend in adult survival rate.

METHODS

The overall design of the MAPS Program and the general field methods are described in DeSante et al. (1996, 1998) and discussed in DeSante et al. (2004). Detailed, standardized methods and instructions for the establishment and operation of MAPS stations are provided by DeSante et al. (2008). Briefly, MAPS stations were established in 20-ha study areas at locations where long-term mist netting was practical and permissible. In general, the locations of MAPS stations were chosen by the station operators (often according to a hypothesis-driven strategy) and not by a probability-based sampling design, although elements of a random sampling strategy were sometimes employed. Operators generally adhered to MAPS site-selection criteria (DeSante et al. 2008), but some aspects of site selection were dictated by logistical concerns.

NUMBER AND DISTRIBUTION OF STATIONS

A total of 459 MAPS stations was operated during 2004, a 0.7% increase over the 456 operated during 2003. Of these, 40 (8.7%) were new in 2004, while 390 were operated during 2003 and 29 were not operated during 2003 but were operated during one or more years prior to 2003. A total of 85.5% of the stations operated in 2003 continued to be operated in 2004. We received data useable for productivity and/or survivorship analyses in time to be included in this report from 452 of the 459 stations that were operated during 2004. A total of 440 MAPS stations was operated during 2005, 19 (4.1%) fewer than were operated during 2004. Of these, 42 (9.5%) were new in 2005, while 398 were in operation during a previous year. A total of 84.7% of the stations in operation during 2004 continued to be operated during 2005. We received data useable for productivity and/or survivorship analysis in time to be included in this report from 422 of the 440 stations that were operated during 2005. A total of 438 MAPS stations was operated during 2006, 2 (0.5%) fewer than were operated during 2005. Of these, 37 (8.4%) were new in 2006, while 401 were in operation during a previous year. A total of 88.0% of the stations in operation during 2005 continued to be operated during 2006. We

received data useable for productivity and/or survivorship analysis in time to be included in this report from 422 of the 438 stations that were operated during 2006. The principal operator, sponsoring organization, location, elevation, and habitat(s) for each station newly established in 2004, 2005, or 2006 (or that was established prior to 2004 but not previously reported) are presented in the Appendix. See previous annual reports (DeSante et al. 1993b, 1996, 1998, DeSante and Burton 1994, DeSante and Kaschube 2006, 2007, and DeSante and O'Grady 2000) for these data for stations established prior to 2004.

We divided North America north of Mexico into eight major geographic regions based on biogeographical and meteorological considerations and delineated along lines consistent with physiographic strata established in conjunction with the North American Breeding Bird Survey (BBS; Robbins et al. 1986). These eight MAPS regions are Northwest, Southwest, North-central, South-central, Northeast, Southeast, Alaska, and Boreal Canada (see maps in DeSante et al. 1993a and DeSante and Burton 1994). Because of the small number of stations in the two northernmost regions, we generally pooled data from them into a single Alaska/Boreal Canada Region for analyses.

The proportions of stations located in each of the eight MAPS regions (Fig. 1) were very similar during 2004 to analogous proportions in 2003, except for slightly higher proportions in the South-central and Southeast regions and slightly lower proportions in the Northwest and Northeast regions. The proportions during 2005 and 2006 were also very similar to those during 2004, except for a progressive decrease in proportions in the Southwest, small progressive increases in proportions in the North-central and Northeast regions, and a 2006 decrease in the Northwest coupled with the establishment of 15 new stations in Alaska. A total of 975 MAPS stations were operated for at least one year between 1992 and 2006; station operators have provided latitude and longitude coordinates for 966 of these stations. The locations of these 966 stations are mapped in Figure 2.

DATA COLLECTION

Typically, 10 permanent net sites were distributed rather uniformly throughout the central eight ha of each 20-ha study area, but were placed at specific locations where birds could be captured most efficiently. One mist net (typically 12-m length, 30-mm mesh) was erected at each net site and the type and location of all nets were kept constant for the duration of the study. Typically, nets were operated for six hours per day, beginning at local sunrise, for one day per 10-d period, and for six to 10 consecutive 10-d periods beginning between May 1 and June 10 (later at more northerly latitudes and higher altitudes) and continuing through August 8. To facilitate constant-effort comparisons of data, nets were opened, checked, and closed in the same order on all days of operation.

Each bird captured was marked with a uniquely-numbered aluminum leg band provided by the U.S. Geological Survey or the Canadian Wildlife Service. Band number, capture status, species, age, sex, ageing and sexing criteria (skull pneumatization, breeding condition, feather wear, molt, molt limits, plumage characteristics), physical condition (mass, wing chord, fat content), date, time, station, and net number were recorded for all birds captured, including recaptures. The times of opening and closing the nets and beginning each net run were recorded each day so that effort could be calculated for each 10-d period and standardized between years. The breeding (summer residency) status of each species recorded at the station was determined by the station operator using methods similar to those employed in breeding bird atlas projects.

DATA ENTRY AND VERIFICATION

Computer data entry and proofing were conducted by MAPS operators or, in those cases where operators were unable to enter their own data, by John W. Shipman of Zoological Data Processing (entry) and by IBP staff biologists (proofing). MAPS data were then run through verification routines that screened: (1) the validity and ranges of all data; (2) each banding record by comparing the species, age, and sex determinations to the ageing and sexing criteria used; (3) all banding data for inconsistent species, age, or sex determinations for all records of each band number; and (4) all banding, effort, and breeding status data for inconsistencies among them. These verification routines were conducted, for about 2/3 of the stations, by the MAPS station operators themselves through the

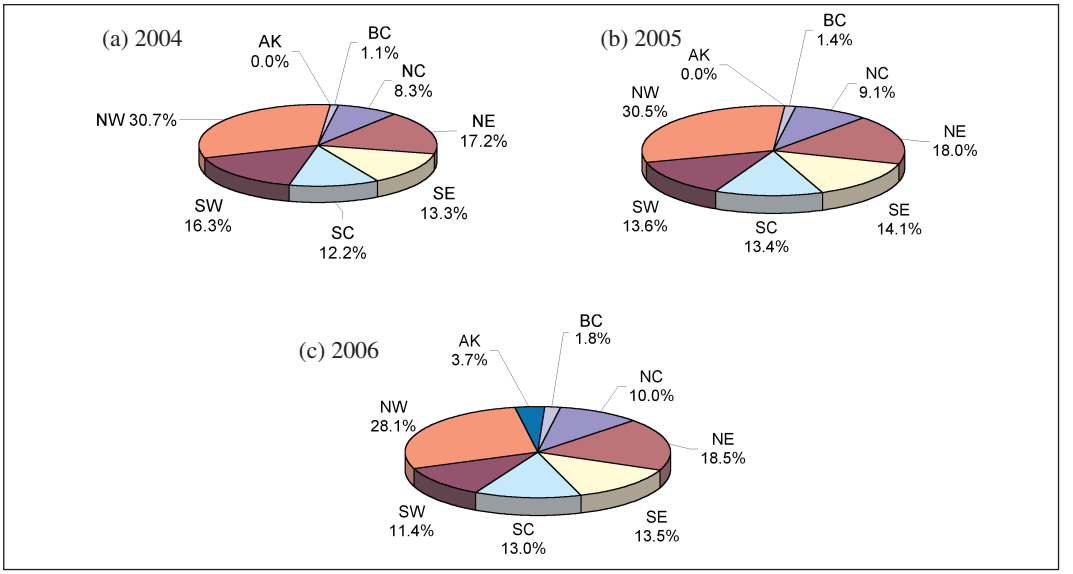

FIGURE 1. Proportions of MAPS stations in each of the eight major geographical regions (NW - Northwest; SW - Southwest; NC - North-central; SC - South-central; NE - Northeast; SE - Southeast; AK - Alaska; BC - Boreal Canada) during (a) 2004, (b) 2005, and (c) 2006.

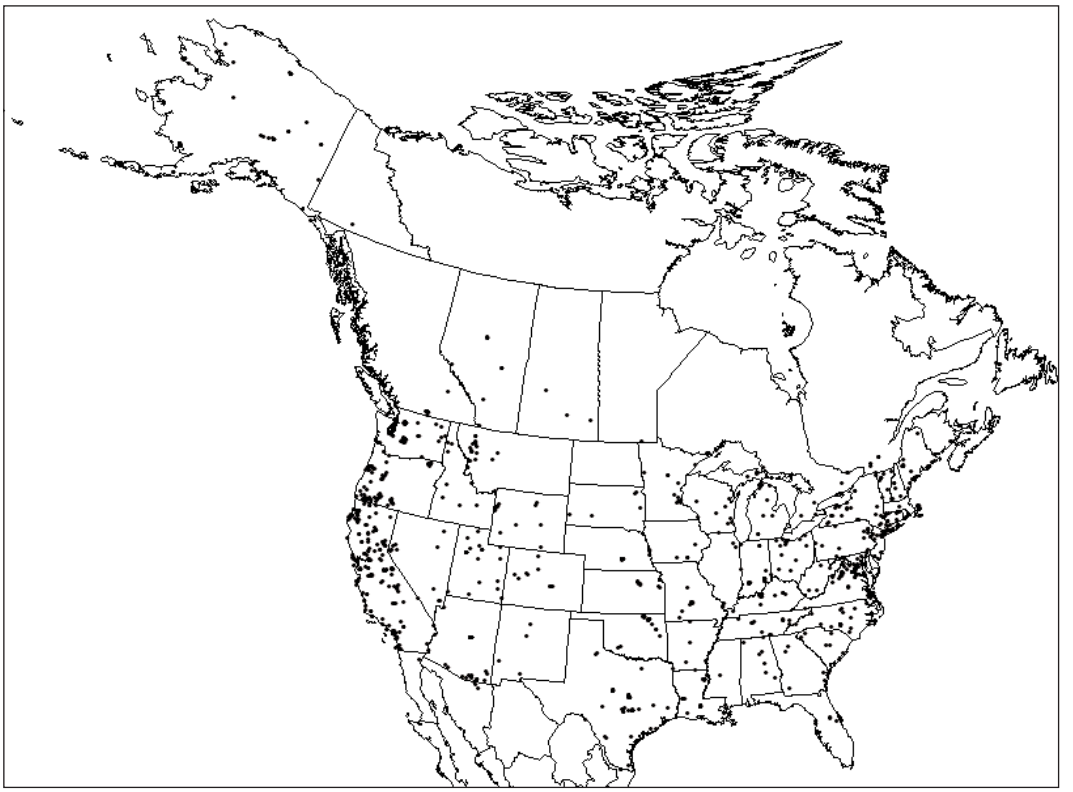

FIGURE 2. Locations of 966 MAPS stations operated during one or more years between 1992 and 2006. Some of the larger "individual" squares can represent as many as 11 stations.

use of MAPSPROG, a user-friendly Visual dBASE data entry/import, verification/editing, and error-tracking program that operates on a Windows platform (Froehlich et al. 2006); data from the remainder of stations were verified by IBP biologists.

DATA ANALYSES

Methods of data analysis have been described in DeSante and Burton (1994), DeSante et al. (1998), and DeSante and O'Grady (2000); discussed in DeSante et al. (2004); and are briefly summarized here. Throughout, we use alpha levels of $P < 0.05$ and $P < 0.01$ to indicate significant and highly significant results, respectively. In Tables 1-3 and in the text, we also identify species for which differences were nearly significant at $0.05 \leq P < 0.10$. Means throughout are presented with plus-minus the standard error (SE).

1. *Population Size and Productivity Indices* — The numbers of individual adult birds of each species captured each year, pooled over all stations within each region (and over all regions) that were located within the breeding range of the species, were used as annual regional (or program-wide) indices of adult population size for the species. Similarly, for each species in each region (and over all regions), the pooled number of individual young birds divided by the pooled number of individual adult birds ("reproductive indices"), was used as an annual regional (or program-wide) index of post-fledging productivity. Reproductive index (young/adult) is more consistent with other commonly-used measures of reproductive success than "productivity index," defined as the proportion of young in the catch [young/(young+adult)], the latter being used in earlier MAPS reports. Data from a given station in a given year were included in population size and productivity analyses if the station was operated for at least five 10-d periods that year, of which at least three periods occurred during the earlier and at least two during the later parts of the season [adult and young superperiods, respectively; see DeSante et al. (2008) for definitions].

Year-to-year changes in the numbers of adult and young birds were calculated using net-opening and -closing times and net-run times on a net-by-net and period-by-period basis to exclude captures that occurred in a given net in a given period in one year at a time when that net was not operated in that period in the other year. This allowed captures during the two years to be compared in a rigorous, constant-effort manner. The statistical significance of annual changes in the regional (or program-wide) indices of adult population size and productivity were inferred for each species from confidence intervals calculated from the standard errors of the mean percentage changes. Changes were considered significant if confidence intervals did not include zero. Formulae for these standard errors and confidence intervals were given in Peach et al. (1996) as derived from those given in Cochran (1977). We also inferred, by means of binomial tests, the statistical significance of regional (or program-wide) changes in adult population size and productivity indices from the proportion of target species that increased or decreased in each region. Significance of these proportional changes was considered relative to a 50% up or down change. We included species in these regional population size and productivity analyses for which adults were captured at two or more stations in the region and for which at least 50 aged individuals were captured at all stations pooled in at least one of the two years being compared.

We estimated 15-yr (1992-2006) trends for the indices of adult population size and productivity *for all species pooled* at the *program-wide* scale by "chaining" the 14 constant-effort (as defined above) year-to-year changes in these annual indices and calculating the slope of the regression of the "chain" indices. For the trend in adult population size, we used an arbitrary starting index of 100 in 1992 and calculated chain indices in each subsequent year by first multiplying the proportional change between the two years times the index of the previous year and then adding that amount to the index of the previous year. Trends in productivity were calculated in an analogous manner, except that we started with the actual reproductive index in 1992 (0.702) and chained the annual proportional changes in the reproductive index over the 15 years.

2. *Survival Rate Estimates* — We calculated maximum-likelihood estimates and standard errors for annual adult apparent survival probabilities (φ) and recapture probabilities (p) for all species in each region for which adequate data were obtained. These survival estimates are

called apparent survival because permanent emigration from the station is not distin guishable from actual mortality. We used Cormack-Jolly-Seber (CJS) capture-mark-recapture analyses (Clobert et al. 1987, Pollock et al. 1990, Lebreton et al. 1992) that incorporated a between-yr transient model (Pradel et al. 1997), as well as an ad-hoc length-of-stay within-yr transient model (Nott and DeSante 2002, Hines et al. 2003). These transient models also permit estimation of τ (the proportion of residents among those newly captured adults that were not recaptured seven or more days later during their first year of capture), and provide apparent survival rate estimates that are unbiased with respect to transient individuals (Pradel et al.1997, Hines et al. 2003).

Parameter estimates were calculated from the capture histories of all adult birds captured at all stations in the region at which the species was a usual breeder (i.e., attempted to breed during more than half of the years the station was operated). Data from a given station were included in survivorship analyses if the station was operated for at least four consecutive years during the 15-yr period 1992-2006, and was operated during each of those four or more years for at least three periods during the adult superperiod (see above). Stations within 1 km of each other were merged into a single "super-station" and data from those stations were pooled prior to creating capture histories of individual birds. This prevented individuals whose home range encompassed parts of both stations from being treated as two different individuals. We included species in these survivorship analyses for which an average of at least 2.5 individual adult birds were captured during each of the 15 years 1992-2006 (at least 38 year-unique adult individuals) from all stations pooled, and for which there were at least two returns (between-year recaptures) from all stations pooled. We considered survival probability to be "better estimated" for species for which: (1) φ was based on at least five returns over the 15 years; (2) τ (the estimate of the proportion of residents among those newly captured adults that were not recaptured seven or more days later during their first year of capture) was < 1.00; (3) SE(φ) < 0.20; and (4) CV(φ) < 50%.

We modeled all eight combinations of time-dependence (and -independence) for each of the three parameters, φ (survival probability), p (recapture probability), and τ (proportion of residents), contained in the transient model using TMSURVIV (Hines et al. 2003), a version of the computer program SURVIV (White 1983) modified by J. E. Hines. We used the Akaike Information Criterion (QAIC$_C$) to select appropriate models for each species such that the selected model was the one with the lowest QAIC$_C$ (Burnham and Anderson 1992). We considered models having QAIC$_C$ values within two QAIC$_C$ units of each other to be equivalent models.

We further estimated the relative likelihood of each of the eight models using QAIC$_C$ weights (w_i; Burnham and Anderson 1998). Statistical support for time-dependence in survival and recapture probabilities and in proportion of residents was assessed by summing the w_i for all models in which time-dependence in the parameter of interest occurred. This method of multi-model inference enabled us to use the entire set of eight models to judge the importance of time-dependence, rather than basing conclusions on a single best-fit model. A w_i value > 0.5 indicates strong support for time-dependence in the given parameter, while $0.50 \geq w_i > 0.25$ suggests some support for time-dependence in that parameter.

Finally, in order to gain additional insight into the issues of time-dependence and temporal trend in survival, we used the ad-hoc transient model in Program MARK (White and Burnham 1999) to model *program-wide* survival (φ) and recapture (p) probabilities for *all species pooled* as (1) time-constant, (2) time-dependent, and (3) a linear function of time. We again used QAIC$_C$ (Burnham and Anderson 1992) and QAIC$_C$ weights (w_i; Burnham and Anderson 1998) to select among the nine possible models.

RESULTS

ADULT POPULATION SIZE AND PRODUCTIVITY

1. *Changes between 2003 and 2004* — Constant-effort data were obtained for 2003 and 2004 from 343 MAPS stations operated comparably in both years. The changes between years in the numbers of adult and young birds captured and the reproductive index (young/adult) are

presented for the entire continent (program-wide) and for each MAPS region in Table 1 for those species that met the productivity selection criteria (see Methods – Data Analysis) and for all species pooled. These included 130 species program-wide, 65 species in the Northwest, 34 in the Southwest, 23 in the North-central, 26 in the South-central, 36 in the Northeast, 24 in the Southeast, and 4 in the combined Alaska/Boreal Canada Region.

(a) *Changes in adult population size* — The index of adult population size for all species pooled (number of adults captured) showed decreases ranging from -1.6% to -7.9% between years in the four more easterly regions and increases of 2.6% and 4.8% in the Northwest and Southwest regions, respectively, but none of these six changes was significant or nearly significant (Table 1). Adults of all species pooled decreased by a highly significant -32.0% in the Alaska/Boreal Canada Region (where, however, only four stations where operated in both years and all were near Lesser Slave Lake). The proportion of increasing species was nearly significant in the Alaska/Boreal Canada (100%) and Southwest (65%) regions and non-significant in each of the other five regions. Summing over the five regions where adult populations tended to decrease between years, 20 species had significant or nearly significant decreases in number of adults, while only six species showed significant or nearly significant increases. Summing over the Northwest and Southwest regions, where adult populations tended to increase, 11 species had significant or nearly significant increases in number of adults and 10 species had significant or nearly significant decreases.

Program-wide, the index for adult population size for all species pooled decreased by a non-significant -0.3% (Table 1). The program-wide proportion of decreasing species (49%) was also non-significant. Program-wide, 21 species had significant or nearly significant decreases in number of adults while 13 species had significant or nearly significant increases.

(b) *Changes in productivity* — Productivity increased significantly and dramatically between 2003 and 2004 in both the Northeast and Southeast regions (Table 1). The number of young birds of all species pooled showed highly significant increases of 31.3% and 36.3% in these two regions, respectively, while the reproductive index (young/adult) of all species pooled showed highly significant and significant increases of 36.4% and 48.0%, respectively. The proportions of species with increasing number of young and increasing reproductive index for these two regions ranged from 63% to 78% and were significant for all but number of young in the Southeast. Summing over these two regions, a total of seven and 10 species had significant or nearly significant increases between years in number of young birds captured and reproductive index, respectively, while no species had significant or nearly significant decreases in either of these two parameters. The number of young and reproductive index of all species pooled also tended to increase in the Northwest Region by 4.6% and 1.9%, respectively, but neither of these increases was even nearly significant. Similarly, the proportions of increasing species for these two parameters in the Northwest were 58% and 60%, respectively, but only the proportion of species with an increasing reproductive index was even nearly significant. A total of seven and three species had significant or nearly significant increases in number of young birds captured and reproductive index, respectively, in the Northwest Region, while six and two species had significant or nearly significant decreases in these two parameters, respectively. In contrast, the number of young and reproductive index of all species pooled tended to decrease in each of the other four regions, but only the decrease in young in the Alaska/Boreal Canada Region (-66.8%) was significant, and only the proportions of species with decreasing numbers of young and decreasing reproductive indices in the Alaska/Boreal Canada Region (100% in each case) were nearly significant. Summing over these four regions, a total of 17 and five species had significant or nearly significant decreases in number of young birds captured and reproductive index, respectively, while only three species each had significant or nearly significant increases in these two parameters.

Program-wide, the number of young for all species pooled increased by a non-significant 4.2% while the reproductive index for all species pooled increased by a non-significant 4.6% from 0.467 in 2003 to 0.488 in 2004 (Table 1). The program-wide proportions of species with increasing number of young and increasing

TABLE 1. Program-wide and regional changes between 2003 and 2004 in the numbers of adult and young individuals captured and in the reproductive index (young /adult) for 130 species and all species pooled (excluding gallinaceous birds and hummingbirds) at the 343 MAPS stations run comparably during both years. For each species, data were included only from stations within the breeding range of the species. Only species for which adults were captured at two or more stations and for which 50 or more aged individuals were captured in either year are included.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
PROGRAM-WIDE																
Common Ground-Dove	10	48	33	-31.3	8.5 ***	3	8	2	-75.0	28.6	10	0.167	0.061	-0.106	0.063	-63.6
Red-bellied Woodpecker	41	38	41	7.9	21.8	20	8	17	112.5	103.5	48	0.211	0.415	0.204	0.145	97.0
Red-naped Sapsucker	32	64	81	26.6	18.0	27	39	34	-12.8	21.3	36	0.609	0.420	-0.190	0.156	-31.1
Red-breasted Sapsucker	54	133	149	12.0	14.2	37	45	68	51.1	32.3 **	56	0.338	0.456	0.118	0.094	34.9
Nuttall's Woodpecker	19	33	38	15.2	39.7	21	34	48	41.2	52.9	22	1.030	1.263	0.233	0.487	22.6
Downy Woodpecker	180	251	261	4.0	9.4	153	247	261	5.7	10.7	206	0.984	1.000	0.016	0.150	1.6
Hairy Woodpecker	110	84	102	21.4	18.3	57	33	48	45.5	38.4	135	0.393	0.471	0.078	0.130	19.8
Northern Flicker	99	88	75	-14.8	14.4	48	38	36	-5.3	26.2	114	0.432	0.480	0.048	0.147	11.2
Western Wood-Pewee	90	269	261	-3.0	10.0	42	49	37	-24.5	19.0	94	0.182	0.142	-0.040	0.048	-22.2
Eastern Wood-Pewee	55	81	78	-3.7	23.5	20	19	19	0.8	42.5	61	0.235	0.244	0.009	0.149	3.8
Acadian Flycatcher	54	274	252	-8.0	8.3	25	26	37	42.3	37.8	57	0.095	0.147	0.052	0.036	54.7
Traill's Flycatcher	115	413	431	4.4	10.7	41	43	57	32.6	39.8	118	0.104	0.132	0.028	0.035	27.0
Least Flycatcher	33	61	65	6.6	15.0	14	19	7	-63.2	16.0 **	36	0.312	0.108	-0.204	0.116 *	-65.4
Hammond's Flycatcher	58	121	130	7.4	11.2	28	43	30	-30.2	25.6	63	0.355	0.231	-0.125	0.141	-35.1
Dusky Flycatcher	77	305	328	7.5	12.5	33	48	45	-6.3	33.2	81	0.157	0.137	-0.020	0.044	-12.8
Western Flycatcher	95	228	276	21.1	12.3 *	66	117	176	50.4	25.3 **	103	0.513	0.638	0.125	0.129	24.3
Black Phoebe	32	50	42	-16.0	15.9	37	81	84	3.7	18.9	42	1.620	2.000	0.380	0.653	23.5
Eastern Phoebe	44	45	34	-24.4	19.7	31	33	38	15.2	35.4	54	0.733	1.118	0.384	0.407	52.4
Ash-throated Flycatcher	37	134	140	4.5	15.0	19	23	25	8.7	41.4	38	0.172	0.179	0.007	0.071	4.0
Great Crested Flycatcher	54	47	68	44.7	30.3 *	4	3	3	0.8	77.0	55	0.064	0.044	-0.020	0.055	-30.9
White-eyed Vireo	66	347	396	14.1	9.0	48	112	110	-1.8	15.9	70	0.323	0.278	-0.045	0.066	-13.9
Bell's Vireo	11	43	55	27.9	26.6	9	18	20	11.1	54.8	12	0.419	0.364	-0.055	0.149	-13.1
Cassin's Vireo	42	89	78	-12.4	14.1	30	34	37	8.8	26.9	54	0.382	0.474	0.092	0.132	24.2
Warbling Vireo	133	577	549	-4.9	7.0	53	90	60	-33.3	17.0 *	140	0.156	0.109	-0.047	0.037	-29.9
Red-eyed Vireo	125	364	324	-11.0	9.6	33	18	52	188.9	87.2 ***	128	0.050	0.161	0.111	0.034 ***	224.6
Blue Jay	63	98	51	-48.0	10.4 ***	23	29	22	-24.1	27.8	69	0.296	0.431	0.136	0.170	45.8
Western Scrub-Jay	25	33	23	-30.3	19.6	18	17	12	-29.4	30.4	30	0.515	0.522	0.007	0.259	1.3
Tree Swallow	32	51	41	-19.6	20.8	8	8	1	-87.5	12.5 ***	35	0.157	0.024	-0.133	0.059 **	-84.5
Carolina Chickadee	66	132	172	30.3	18.5 *	57	75	113	50.7	31.6 *	74	0.568	0.657	0.089	0.162	15.6
Black-capped Chickadee	109	467	378	-19.1	6.6 ***	97	408	419	2.7	10.8	118	0.874	1.109	0.235	0.169	26.9
Mountain Chickadee	53	177	151	-14.7	11.1	43	109	113	3.7	22.5	58	0.616	0.748	0.133	0.190	21.5
Chestnut-backed Chick.	51	170	116	-31.8	10.4 ***	42	175	239	36.6	26.5	54	1.029	2.060	1.031	0.521 **	100.1

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Oak Titmouse	12	29	30	3.4	33.5	12	44	29	-34.1	27.8	13	1.517	0.967	-0.551	0.612	-36.3
Tufted Titmouse	93	254	179	-29.5	8.0 ***	89	209	243	16.3	16.5	106	0.823	1.358	0.535	0.178 ***	65.0
Black-crested Titmouse	7	23	22	-4.3	31.4	7	27	21	-22.2	23.1	8	1.174	0.955	-0.219	0.422	-18.7
Bushtit	55	199	243	22.1	19.7	50	181	222	22.7	24.0	61	0.909	0.914	0.004	0.210	0.4
Red-breasted Nuthatch	62	67	88	31.3	19.7 *	50	98	100	2.0	32.8	80	1.463	1.136	-0.326	0.528	-22.3
White-breasted Nuthatch	47	55	52	-5.5	20.4	25	18	17	-5.6	40.2	57	0.327	0.327	0.000	0.152	-0.1
Brown Creeper	66	90	77	-14.4	14.4	67	101	81	-19.8	16.4	87	1.122	1.052	-0.070	0.285	-6.3
Carolina Wren	84	416	450	8.2	7.7	84	344	520	51.2	15.3 ***	95	0.827	1.156	0.329	0.145 **	39.7
Bewick's Wren	74	334	355	6.3	8.1	76	506	532	5.1	11.1	83	1.515	1.499	-0.016	0.267	-1.1
House Wren	90	475	419	-11.8	6.7	91	359	370	3.1	9.9	102	0.756	0.883	0.127	0.150	16.8
Winter Wren	34	68	78	14.7	18.4	31	65	53	-18.5	24.6	44	0.956	0.680	-0.276	0.286	-28.9
Golden-crowned Kinglet	42	110	57	-48.2	9.6 **	38	289	139	-51.9	20.8 **	57	2.627	2.439	-0.189	1.165	-7.2
Ruby-crowned Kinglet	28	145	57	-60.7	10.9 ***	17	55	55	0.8	26.6	30	0.379	0.965	0.586	0.482	154.4
Blue-gray Gnatcatcher	42	69	77	11.6	20.9	32	51	59	15.7	25.2	55	0.739	0.766	0.027	0.349	3.7
Eastern Bluebird	22	28	27	-3.6	29.0	18	19	58	205.3	82.6 ***	27	0.679	2.148	1.470	0.730 **	216.6
Veery	47	221	255	15.4	9.1	29	37	48	29.7	22.6	48	0.167	0.188	0.021	0.041	12.4
Swainson's Thrush	117	1096	1247	13.8	7.1 **	69	212	182	-14.2	11.3	119	0.193	0.146	-0.048	0.035	-24.5
Hermit Thrush	59	126	135	7.1	12.5	45	51	60	17.6	27.4	77	0.405	0.444	0.040	0.121	9.8
Wood Thrush	83	358	315	-12.0	6.9	63	111	131	18.0	19.4	93	0.310	0.416	0.106	0.074	34.1
American Robin	208	993	855	-13.9	5.4 **	142	410	348	-15.1	11.2	219	0.413	0.407	-0.006	0.070	-1.4
Wrentit	37	217	179	-17.5	7.4 **	37	200	248	24.0	19.4	41	0.922	1.386	0.464	0.310	50.3
Gray Catbird	119	1277	1431	12.1	4.6 ***	81	604	635	5.1	11.8	125	0.473	0.444	-0.029	0.076	-6.2
Northern Mockingbird	19	18	38	111.1	78.8	11	9	15	66.7	84.2	23	0.500	0.395	-0.105	0.250	-21.1
Brown Thrasher	51	75	77	2.7	16.2	27	32	20	-37.5	19.2	53	0.427	0.260	-0.167	0.125	-39.1
European Starling	18	59	26	-55.9	11.9 ***	8	22	8	-63.6	20.4	21	0.373	0.308	-0.065	0.212	-17.5
Cedar Waxwing	87	383	429	12.0	13.1	15	26	19	-26.9	41.6	88	0.068	0.044	-0.024	0.029	-34.8
Blue-winged Warbler	26	108	101	-6.5	15.4	14	25	32	28.0	67.0	27	0.232	0.317	0.085	0.150	36.9
Tennessee Warbler	11	61	28	-54.1	7.3 ***	7	68	40	-41.2	23.6	13	1.115	1.429	0.314	1.779	28.2
Orange-crowned Warbler	65	231	192	-16.9	10.9	56	162	188	16.0	21.5	77	0.701	0.979	0.278	0.260	39.6
Nashville Warbler	47	125	135	8.0	23.1	40	55	96	74.5	74.1	53	0.440	0.711	0.271	0.215	61.6
Virginia's Warbler	11	70	54	-22.9	30.4	6	32	13	-59.4	9.3 ***	11	0.457	0.241	-0.216	0.239	-47.3
Lucy's Warbler	11	114	126	10.5	10.4	10	52	47	-9.6	37.2	11	0.456	0.373	-0.083	0.173	-18.2
Northern Parula	30	57	36	-36.8	14.1 *	14	16	22	37.5	68.6	33	0.281	0.611	0.330	0.292	117.7
Yellow Warbler	143	1507	1536	1.9	5.6	104	647	572	-11.6	11.3	150	0.429	0.372	-0.057	0.071	-13.3
Chestnut-sided Warbler	21	83	83	0.8	9.7	10	38	46	21.1	47.0	22	0.458	0.554	0.096	0.283	21.1
Magnolia Warbler	17	55	58	5.5	20.9	10	15	13	-13.3	31.9	18	0.273	0.224	-0.049	0.144	-17.8

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Black-thrtd. Blue Warbler	12	19	38	100.0	39.6 ***	9	27	35	29.6	28.0	14	1.421	0.921	-0.500	1.129	-35.2
Yellow-rumped Warbler	94	422	400	-5.2	8.5	56	299	289	-3.3	41.5	98	0.709	0.723	0.014	0.331	2.0
Black-thrtd. Green Warb.	17	31	49	58.1	37.1	8	13	15	15.4	38.4	22	0.419	0.306	-0.113	0.279	-27.0
Townsend's Warbler	17	89	108	21.3	13.1 *	12	143	50	-65.0	6.8 **	19	1.607	0.463	-1.144	0.651 *	-71.2
Hermit Warbler	35	132	108	-18.2	12.1	23	33	111	236.4	195.2	38	0.250	1.028	0.778	0.436 *	311.1
Pine Warbler	14	14	17	21.4	44.0	8	2	110	5400.0	6466.6	18	0.143	6.471	6.328	4.621	4429.4
Prairie Warbler	20	93	82	-11.8	21.4	14	37	30	-18.9	25.7	20	0.398	0.366	-0.032	0.136	-8.0
Black-and-white Warbler	63	102	99	-2.9	14.8	39	44	42	-4.5	28.5	73	0.431	0.424	-0.007	0.140	-1.7
American Redstart	71	259	250	-3.5	10.0	30	70	80	14.3	40.8	77	0.270	0.320	0.050	0.116	18.4
Prothonotary Warbler	28	131	93	-29.0	9.0 **	15	25	13	-48.0	27.6	28	0.191	0.140	-0.051	0.081	-26.8
Worm-eating Warbler	42	96	65	-32.3	10.2 **	19	46	50	8.7	20.1	46	0.479	0.769	0.290	0.455	60.5
Ovenbird	98	273	334	22.3	12.1 **	58	138	118	-14.5	13.5	100	0.506	0.353	-0.152	0.098	-30.1
Northern Waterthrush	28	36	41	13.9	23.4	14	14	7	-50.0	27.2	35	0.389	0.171	-0.218	0.167	-56.1
Louisiana Waterthrush	42	79	86	8.9	16.2	29	41	58	41.5	31.8	47	0.519	0.674	0.155	0.284	29.9
Kentucky Warbler	37	197	174	-11.7	10.6	29	71	82	15.5	22.3	41	0.360	0.471	0.111	0.114	30.8
MacGillivray's Warbler	108	759	844	11.2	5.2 **	86	350	336	-4.0	11.1	117	0.461	0.398	-0.063	0.067	-13.7
Common Yellowthroat	175	1151	1245	8.2	5.6	114	479	453	-5.4	15.3	184	0.416	0.364	-0.052	0.073	-12.6
Hooded Warbler	39	129	136	5.4	15.6	29	39	56	43.6	39.9	46	0.302	0.412	0.109	0.109	36.2
Wilson's Warbler	96	697	896	28.6	12.6 **	64	335	363	8.4	14.1	107	0.481	0.405	-0.075	0.127	-15.7
Canada Warbler	19	65	46	-29.2	13.7	12	29	14	-51.7	22.5	22	0.446	0.304	-0.142	0.168	-31.8
Yellow-breasted Chat	76	512	531	3.7	7.6	44	109	112	2.8	18.5	79	0.213	0.211	-0.002	0.048	-0.9
Summer Tanager	58	184	146	-20.7	7.6 **	18	18	10	-44.4	22.4	59	0.098	0.068	-0.029	0.035	-30.0
Scarlet Tanager	39	45	46	2.2	25.5	17	10	19	90.0	105.4	46	0.222	0.413	0.191	0.203	85.9
Western Tanager	106	271	297	9.6	11.7	45	145	104	-28.3	20.0	108	0.535	0.350	-0.185	0.160	-34.6
Green-tailed Towhee	23	60	55	-8.3	14.0	21	28	29	3.6	38.3	29	0.467	0.527	0.061	0.211	13.0
Spotted Towhee	78	387	333	-14.0	7.7	72	241	307	27.4	18.0	89	0.623	0.922	0.299	0.174 *	48.0
Eastern Towhee	60	96	74	-22.9	12.5	32	32	28	-12.5	27.3	68	0.333	0.378	0.045	0.127	13.5
California Towhee	17	42	49	16.7	34.5	14	20	10	-50.0	27.0 *	20	0.476	0.204	-0.272	0.183	-57.1
Chipping Sparrow	92	215	203	-5.6	12.8	50	116	74	-36.2	14.1 *	96	0.540	0.365	-0.175	0.128	-32.4
Clay-colored Sparrow	6	59	104	76.3	61.5	3	43	17	-60.5	7.5 **	6	0.729	0.164	-0.565	0.255 *	-77.6
Brewer's Sparrow	15	41	22	-46.3	18.1 *	17	29	37	27.6	55.3	20	0.707	1.682	0.975	0.572	137.8
Field Sparrow	43	193	177	-8.3	10.4	32	73	51	-30.1	18.1	47	0.378	0.288	-0.090	0.091	-23.8
Savannah Sparrow	16	65	47	-27.7	13.1 *	6	11	21	90.9	74.1	16	0.169	0.447	0.278	0.393	164.0
Grasshopper Sparrow	8	81	73	-9.9	18.3	6	47	24	-48.9	20.5	8	0.580	0.329	-0.252	0.258	-43.3
Fox Sparrow	27	77	72	-6.5	17.2	16	17	27	58.8	89.7	34	0.221	0.375	0.154	0.139	69.9
Song Sparrow	186	1784	1633	-8.5	3.5 **	191	1590	1583	-0.4	6.9	204	0.891	0.969	0.078	0.089	8.8

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Lincoln's Sparrow	50	243	248	2.1	12.3	40	106	137	29.2	18.1	57	0.436	0.552	0.116	0.121	26.6
Swamp Sparrow	16	32	40	25.0	40.4	11	49	38	-22.4	24.9	18	1.531	0.950	-0.581	0.466	-38.0
White-throated Sparrow	17	92	88	-4.3	12.4	18	31	38	22.6	50.2	20	0.337	0.432	0.095	0.157	28.2
White-crowned Sparrow	18	76	79	3.9	9.5	15	75	59	-21.3	16.0	21	0.987	0.747	-0.240	0.383	-24.3
Dark-eyed Junco	85	554	805	45.3	9.1 ***	88	494	646	30.8	19.4 *	97	0.892	0.803	-0.089	0.175	-10.0
Northern Cardinal	129	942	735	-22.0	4.8 ***	112	359	388	8.1	13.7	132	0.381	0.528	0.147	0.065 **	38.5
Rose-breasted Grosbeak	30	66	69	4.5	18.7	17	18	15	-16.7	37.6	35	0.273	0.217	-0.055	0.138	-20.3
Black-headed Grosbeak	118	440	503	14.3	10.3	68	168	179	6.5	18.1	123	0.382	0.356	-0.026	0.122	-6.8
Blue Grosbeak	30	143	143	0.8	11.1	9	13	4	-69.2	24.3	30	0.091	0.028	-0.063	0.033 *	-69.2
Lazuli Bunting	73	221	202	-8.6	15.8	34	56	55	-1.8	33.0	78	0.253	0.272	0.019	0.094	7.5
Indigo Bunting	90	569	516	-9.3	7.8	43	55	49	-10.9	24.2	91	0.097	0.095	-0.002	0.029	-1.8
Painted Bunting	19	166	164	-1.2	17.1	15	41	38	-7.3	31.5	20	0.247	0.232	-0.015	0.079	-6.2
Dickcissel	9	87	70	-19.5	11.1	3	5	0	-100.0	0.8	9	0.058	0.000	-0.058	0.024 **	-100.0
Red-winged Blackbird	72	326	326	0.8	12.0	22	32	43	34.4	44.7	73	0.098	0.132	0.034	0.050	34.4
Common Grackle	46	79	103	30.4	28.9	18	21	37	76.2	78.8	48	0.266	0.359	0.093	0.155	35.1
Brown-headed Cowbird	166	326	277	-15.0	7.4 *	56	49	38	-22.4	21.7	172	0.150	0.137	-0.013	0.041	-8.7
Orchard Oriole	23	63	73	15.9	25.2	10	11	6	-45.5	30.3	25	0.175	0.082	-0.092	0.112	-52.9
Bullock's Oriole	64	174	192	10.3	11.6	34	58	55	-5.2	26.0	68	0.333	0.287	-0.047	0.099	-14.1
Baltimore Oriole	38	71	61	-14.1	19.6	19	31	26	-16.1	60.0	43	0.437	0.426	-0.010	0.338	-2.4
Purple Finch	48	246	261	6.1	14.4	36	56	128	128.6	63.9 **	53	0.228	0.490	0.263	0.165	115.4
Cassin's Finch	33	80	80	0.8	25.3	16	13	16	23.1	44.1	35	0.163	0.200	0.038	0.085	23.1
House Finch	47	174	209	20.1	21.3	43	185	227	22.7	34.5	57	1.063	1.086	0.023	0.435	2.2
Pine Siskin	51	176	175	-0.6	20.9	24	171	100	-41.5	19.6 **	55	0.972	0.571	-0.400	0.342	-41.2
Lesser Goldfinch	44	141	196	39.0	28.6 *	31	73	144	97.3	58.7 **	49	0.518	0.735	0.217	0.266	41.9
American Goldfinch	130	771	724	-6.1	6.3	20	23	18	-21.7	24.3	130	0.030	0.025	-0.005	0.014	-16.7
Evening Grosbeak	16	185	107	-42.2	9.2 ***	7	12	8	-33.3	73.6	16	0.065	0.075	0.010	0.076	15.3
All species pooled	**343**	**31345**	**31240**	**-0.3**	**1.6**	**341**	**14622**	**15239**	**4.2**	**4.3**	**343**	**0.467**	**0.488**	**0.021**	**0.028**	**4.6**
	Number decreasing: 64/130 (49%)					Number increasing: 65/130 (50%)					Number increasing: 65/130 (50%)					
NORTHWEST MAPS REGION																
Red-naped Sapsucker	32	64	81	26.6	18.0	27	39	34	-12.8	21.3	36	0.609	0.420	-0.190	0.156	-31.1
Red-breasted Sapsucker	54	133	149	12.0	14.2	37	45	68	51.1	32.3 **	56	0.338	0.456	0.118	0.094	34.9
Downy Woodpecker	54	75	67	-10.7	16.2	36	41	41	0.8	22.1	57	0.547	0.612	0.065	0.178	11.9
Hairy Woodpecker	50	37	49	32.4	27.5	26	11	24	118.2	78.1 **	59	0.297	0.490	0.193	0.158	64.8
Northern Flicker	45	48	43	-10.4	20.7	26	21	19	-9.5	34.5	52	0.438	0.442	0.004	0.183	1.0

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Western Wood-Pewee	67	224	206	-8.0	10.0	34	45	29	-35.6	18.4 *	70	0.201	0.141	-0.060	0.056	-29.9
Traill's Flycatcher	63	255	294	15.3	14.3	22	23	35	52.2	60.1	65	0.090	0.119	0.029	0.041	32.0
Hammond's Flycatcher	57	121	129	6.6	11.1	28	43	30	-30.2	25.6	62	0.355	0.233	-0.123	0.142	-34.6
Dusky Flycatcher	70	279	308	10.4	13.4	31	46	45	-2.2	35.1	74	0.165	0.146	-0.019	0.046	-11.4
Western Flycatcher	66	145	163	12.4	14.8	46	68	89	30.9	33.0	74	0.469	0.546	0.077	0.152	16.4
Cassin's Vireo	42	89	78	-12.4	14.1	29	34	36	5.9	26.4	53	0.382	0.462	0.079	0.131	20.8
Warbling Vireo	91	468	444	-5.1	7.3	31	51	41	-19.6	23.5	92	0.109	0.092	-0.017	0.035	-15.3
Black-capped Chickadee	39	187	175	-6.4	9.8	40	212	210	-0.9	12.8	43	1.134	1.200	0.066	0.237	5.8
Mountain Chickadee	50	176	148	-15.9	11.0	43	109	113	3.7	22.5	55	0.619	0.764	0.144	0.192	23.3
Chestnut-backed Chick.	40	117	88	-24.8	12.7 *	30	91	140	53.8	46.9	42	0.778	1.591	0.813	0.581	104.5
Bushtit	24	75	69	-8.0	29.2	20	52	73	40.4	64.6	26	0.693	1.058	0.365	0.414	52.6
Red-breasted Nuthatch	53	63	80	27.0	19.7	46	95	96	1.1	33.4	67	1.508	1.200	-0.308	0.564	-20.4
Brown Creeper	56	81	73	-9.9	16.0	58	95	74	-22.1	17.1	70	1.173	1.014	-0.159	0.303	-13.6
Bewick's Wren	25	61	80	31.1	19.5 *	26	103	157	52.4	29.7 **	30	1.689	1.963	0.274	0.611	16.2
House Wren	34	181	176	-2.8	8.4	36	155	133	-14.2	10.7	41	0.856	0.756	-0.101	0.206	-11.8
Winter Wren	28	65	73	12.3	18.1	26	60	53	-11.7	27.5	35	0.923	0.726	-0.197	0.297	-21.3
Golden-crowned Kinglet	37	104	51	-51.0	9.5 ***	32	287	130	-54.7	19.6 ***	48	2.760	2.549	-0.211	1.230	-7.6
Ruby-crowned Kinglet	24	141	54	-61.7	11.0 ***	15	52	54	3.8	27.4	25	0.369	1.000	0.631	0.505	171.2
Swainson's Thrush	79	783	933	19.2	8.2 ***	48	128	133	3.9	16.6	80	0.164	0.143	-0.021	0.041	-12.8
Hermit Thrush	30	61	60	-1.6	18.7	27	29	34	17.2	32.3	42	0.475	0.567	0.091	0.193	19.2
American Robin	108	599	547	-8.7	6.5	69	202	152	-24.8	16.6	110	0.337	0.278	-0.059	0.072	-17.6
Wrentit	16	62	66	6.5	9.8	18	60	110	83.3	34.5 *	20	0.968	1.667	0.699	0.346 *	72.2
Gray Catbird	24	256	307	19.9	11.8 **	14	90	53	-41.1	14.9	24	0.352	0.173	-0.179	0.092 *	-50.9
European Starling	10	54	22	-59.3	11.3 ***	5	15	5	-66.7	28.1 *	11	0.278	0.227	-0.051	0.179	-18.2
Cedar Waxwing	39	191	227	18.8	18.1	12	20	18	-10.0	57.7	40	0.105	0.079	-0.025	0.049	-24.3
Orange-crowned Warbler	42	155	130	-16.1	13.6	35	104	126	21.2	27.8	50	0.671	0.969	0.298	0.341	44.5
Nashville Warbler	29	74	95	28.4	29.5	29	26	80	207.7	114.5 ***	35	0.351	0.842	0.491	0.266 *	139.7
Virginia's Warbler	4	47	25	-46.8	27.6	2	26	9	-65.4	2.1	4	0.553	0.360	-0.193	0.348	-34.9
Yellow Warbler	74	1000	1089	8.9	7.7	63	476	407	-14.5	13.0	79	0.476	0.374	-0.102	0.094	-21.5
Yellow-rumped Warbler	70	379	355	-6.3	9.0	46	214	276	29.0	51.4	73	0.565	0.777	0.213	0.331	37.7
Townsend's Warbler	17	89	108	21.3	13.1 *	12	143	50	-65.0	6.8 **	19	1.607	0.463	-1.144	0.651 *	-71.2
Hermit Warbler	35	132	108	-18.2	12.1	23	33	111	236.4	195.2	38	0.250	1.028	0.778	0.436 *	311.1
American Redstart	12	42	60	42.9	36.6	3	7	14	100.0	113.4	13	0.167	0.233	0.067	0.120	40.0
MacGillivray's Warbler	93	734	813	10.8	5.3 **	83	345	335	-2.9	11.2	102	0.470	0.412	-0.058	0.070	-12.3
Common Yellowthroat	40	167	189	13.2	12.7	21	84	111	32.1	34.7	44	0.503	0.587	0.084	0.246	16.8
Wilson's Warbler	76	542	731	34.9	15.2 **	52	143	185	29.4	25.3	87	0.264	0.253	-0.011	0.089	-4.1

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Yellow-breasted Chat	21	105	114	8.6	10.2	12	26	39	50.0	61.3	22	0.248	0.342	0.094	0.119	38.2
Western Tanager	86	236	253	7.2	12.5	39	107	88	-17.8	25.0	87	0.453	0.348	-0.106	0.126	-23.3
Green-tailed Towhee	21	59	52	-11.9	13.6	20	23	29	26.1	45.4	27	0.390	0.558	0.168	0.204	43.1
Spotted Towhee	47	197	173	-12.2	10.9	40	146	188	28.8	19.5	53	0.741	1.087	0.346	0.267	46.6
Chipping Sparrow	51	154	140	-9.1	11.8	28	90	55	-38.9	14.7 *	53	0.584	0.393	-0.192	0.158	-32.8
Brewer's Sparrow	13	39	22	-43.6	19.4	16	28	37	32.1	58.1	17	0.718	1.682	0.964	0.579	134.3
Savannah Sparrow	12	60	42	-30.0	12.7	5	11	20	81.8	72.9	12	0.183	0.476	0.293	0.457	159.7
Fox Sparrow	26	76	72	-5.3	17.4	16	17	27	58.8	89.7	33	0.224	0.375	0.151	0.139	67.6
Song Sparrow	97	958	818	-14.6	4.2 ***	102	865	876	1.3	9.8	105	0.903	1.071	0.168	0.126	18.6
Lincoln's Sparrow	42	234	242	3.4	12.7	36	101	136	34.7	18.7 *	48	0.432	0.562	0.130	0.124	30.2
White-crowned Sparrow	16	76	77	1.3	8.9	14	74	59	-20.3	16.4	18	0.974	0.766	-0.208	0.388	-21.3
Dark-eyed Junco	72	529	783	48.0	9.4 ***	72	428	567	32.5	22.3	78	0.809	0.724	-0.085	0.158	-10.5
Black-headed Grosbeak	83	281	319	13.5	12.6	47	108	129	19.4	27.3	87	0.384	0.404	0.020	0.169	5.2
Lazuli Bunting	58	192	181	-5.7	17.6	30	45	55	22.2	43.7	62	0.234	0.304	0.069	0.101	29.7
Red-winged Blackbird	28	112	115	2.7	12.5	10	11	15	36.4	71.1	29	0.098	0.130	0.032	0.092	32.8
Brown-headed Cowbird	64	141	117	-17.0	10.0	28	29	26	-10.3	34.1	67	0.206	0.222	0.017	0.086	8.0
Bullock's Oriole	34	78	92	17.9	15.4	18	32	30	-6.3	33.2	35	0.410	0.326	-0.084	0.189	-20.5
Purple Finch	32	213	229	7.5	15.9	26	47	113	140.4	76.3 *	34	0.221	0.493	0.273	0.187	123.6
Cassin's Finch	33	80	80	0.8	25.3	16	13	16	23.1	44.1	35	0.163	0.200	0.038	0.085	23.1
House Finch	13	48	43	-10.4	13.1	17	49	64	30.6	41.2	18	1.021	1.488	0.468	0.351	45.8
Pine Siskin	49	175	174	-0.6	21.0	23	170	100	-41.2	19.9 **	53	0.971	0.575	-0.397	0.344	-40.8
Lesser Goldfinch	17	87	75	-13.8	15.1	16	53	76	43.4	41.5	21	0.609	1.013	0.404	0.428	66.3
American Goldfinch	32	243	204	-16.0	9.7	11	14	15	7.1	34.0	32	0.058	0.073	0.016	0.043	27.6
Evening Grosbeak	16	185	107	-42.2	9.2 ***	7	12	8	-33.3	73.6	16	0.065	0.075	0.010	0.076	15.3
All species pooled	**122**	**13568**	**13922**	**2.6**	**2.2**	**122**	**6578**	**6881**	**4.6**	**7.9**	**122**	**0.485**	**0.494**	**0.009**	**0.047**	**1.9**
	Number increasing: 30/65 (46%)					Number increasing: 38/65 (58%)					Number increasing: 39/65 (60%)*					
SOUTHWEST MAPS REGION																
Nuttall's Woodpecker	19	33	38	15.2	39.7	21	34	48	41.2	52.9	22	1.030	1.263	0.233	0.487	22.6
Downy Woodpecker	23	35	31	-11.4	22.5	20	36	17	-52.8	18.4 **	25	1.029	0.548	-0.480	0.250 *	-46.7
Western Flycatcher	29	83	113	36.1	21.2 *	20	49	87	77.6	37.2 *	29	0.590	0.770	0.180	0.238	30.4
Black Phoebe	24	37	31	-16.2	16.7	29	67	65	-3.0	20.6	30	1.811	2.097	0.286	0.789	15.8
Ash-throated Flycatcher	32	121	138	14.1	16.5	17	20	25	25.0	48.2	33	0.165	0.181	0.016	0.072	9.6
Bell's Vireo	7	32	41	28.1	33.7	7	11	16	45.5	75.6	8	0.344	0.390	0.047	0.140	13.5
Warbling Vireo	25	94	87	-7.4	23.1	13	27	17	-37.0	33.2	27	0.287	0.195	-0.092	0.136	-32.0
Chestnut-backed Chick.	11	53	28	-47.2	15.9 *	12	84	99	17.9	22.4	12	1.585	3.536	1.951	1.051 *	123.1

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Oak Titmouse	12	29	30	3.4	33.5	12	44	29	-34.1	27.8	13	1.517	0.967	-0.551	0.612	-36.3
Bushtit	29	121	173	43.0	25.0 *	30	129	149	15.5	23.6	33	1.066	0.861	-0.205	0.258	-19.2
Bewick's Wren	40	223	220	-1.3	10.0	42	323	352	9.0	13.0	43	1.448	1.600	0.152	0.324	10.5
House Wren	22	131	91	-30.5	11.5 **	21	97	108	11.3	20.9	23	0.740	1.187	0.446	0.289	60.3
Swainson's Thrush	20	244	254	4.1	18.9	11	56	35	-37.5	11.2 **	20	0.230	0.138	-0.092	0.063	-40.0
American Robin	24	65	46	-29.2	21.2	14	29	8	-72.4	10.0 ***	24	0.446	0.174	-0.272	0.172	-61.0
Wrentit	21	155	113	-27.1	8.3 **	19	140	138	-1.4	18.4	21	0.903	1.221	0.318	0.417	35.2
Orange-crowned Warbler	22	72	58	-19.4	19.4	18	57	60	5.3	33.8	24	0.792	1.035	0.243	0.403	30.7
Lucy's Warbler	11	114	126	10.5	10.4	10	52	47	-9.6	37.2	11	0.456	0.373	-0.083	0.173	-18.2
Yellow Warbler	27	123	149	21.1	17.8	13	46	47	2.2	53.0	27	0.374	0.315	-0.059	0.172	-15.7
Common Yellowthroat	28	315	336	6.7	12.2	21	128	93	-27.3	16.0 *	29	0.406	0.277	-0.130	0.121	-31.9
Wilson's Warbler	17	153	163	6.5	14.9	12	192	178	-7.3	15.7	17	1.255	1.092	-0.163	0.299	-13.0
Yellow-breasted Chat	18	162	174	7.4	9.0	10	19	22	15.8	45.4	18	0.117	0.126	0.009	0.065	7.8
Summer Tanager	8	69	46	-33.3	11.5 **	5	7	2	-71.4	17.4 **	8	0.101	0.044	-0.058	0.051	-57.1
Western Tanager	18	35	42	20.0	35.7	5	36	16	-55.6	13.5 **	18	1.029	0.381	-0.648	0.781	-63.0
Spotted Towhee	30	188	156	-17.0	11.1	32	95	119	25.3	34.7	35	0.505	0.763	0.258	0.221	51.0
California Towhee	17	42	49	16.7	34.5	14	20	10	-50.0	27.0 *	20	0.476	0.204	-0.272	0.183	-57.1
Song Sparrow	37	439	469	6.8	5.9	37	455	383	-15.8	12.5	38	1.036	0.817	-0.220	0.179	-21.2
Black-headed Grosbeak	34	149	175	17.5	19.1	20	52	50	-3.8	21.7	35	0.349	0.286	-0.063	0.159	-18.1
Blue Grosbeak	19	132	133	0.8	11.9	7	12	3	-75.0	23.4	19	0.091	0.023	-0.068	0.034 *	-75.2
Red-winged Blackbird	9	44	58	31.8	11.2 **	3	9	2	-77.8	14.8 **	9	0.205	0.035	-0.170	0.048 ***	-83.1
Brown-headed Cowbird	34	54	60	11.1	22.0	5	4	1	-75.0	31.3	34	0.074	0.017	-0.057	0.043	-77.5
Bullock's Oriole	26	82	90	9.8	16.9	13	16	20	25.0	48.4	29	0.195	0.222	0.027	0.071	13.9
House Finch	28	118	162	37.3	31.2	22	131	157	19.8	46.0	30	1.110	0.969	-0.141	0.601	-12.7
Lesser Goldfinch	26	52	121	132.7	56.8 ***	15	20	68	240.0	177.4 *	27	0.385	0.562	0.177	0.247	46.1
American Goldfinch	16	60	59	-1.7	19.3	5	6	2	-66.7	34.0	16	0.100	0.034	-0.066	0.057	-66.1
All species pooled	**48**	**4572**	**4793**	**4.8**	**4.0**	**48**	**2838**	**2751**	**-3.1**	**7.3**	**48**	**0.621**	**0.574**	**-0.047**	**0.076**	**-7.5**
	Number increasing: 22/34 (65%)*					Number decreasing: 19/34 (56%)					Number decreasing: 20/34 (59%)					
NORTH-CENTRAL MAPS REGION																
Downy Woodpecker	19	32	33	3.1	18.7	16	34	38	11.8	29.9	19	1.063	1.152	0.089	0.488	8.4
Traill's Flycatcher	16	67	49	-26.9	27.5	7	11	10	-9.1	66.0	17	0.164	0.204	0.040	0.126	24.3
Black-capped Chickadee	18	95	68	-28.4	16.4	16	84	55	-34.5	19.6	19	0.884	0.809	-0.075	0.375	-8.5
House Wren	16	120	112	-6.7	17.6	17	75	85	13.3	26.1	18	0.625	0.759	0.134	0.332	21.4
American Robin	19	91	94	3.3	22.3	16	75	74	-1.3	33.7	19	0.824	0.787	-0.037	0.358	-4.5
Gray Catbird	20	336	354	5.4	9.2	20	170	168	-1.2	22.3	20	0.506	0.475	-0.031	0.176	-6.2

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Cedar Waxwing	16	54	70	29.6	59.9	1	2	0	-100.0		16	0.037	0.000	-0.037	0.041	-100.0
Tennessee Warbler	2	48	21	-56.3	4.9	4	6	6	0.8	112.2	4	0.125	0.286	0.161	0.465	128.6
Yellow Warbler	16	195	166	-14.9	11.8	13	76	40	-47.4	14.7 *	16	0.390	0.241	-0.149	0.123	-38.2
American Redstart	10	69	51	-26.1	11.0 *	6	3	7	133.3	200.0	12	0.044	0.137	0.094	0.064	215.7
Ovenbird	10	39	44	12.8	27.6	5	6	8	33.3	100.9	10	0.154	0.182	0.028	0.101	18.2
Common Yellowthroat	22	244	280	14.8	12.3	18	127	56	-55.9	18.6 ***	23	0.521	0.200	-0.321	0.195 *	-61.6
Clay-colored Sparrow	3	59	101	71.2	67.5	3	43	17	-60.5	7.5 **	3	0.729	0.168	-0.561	0.285	-76.9
Field Sparrow	14	70	59	-15.7	11.2	10	19	15	-21.1	26.2	15	0.271	0.254	-0.017	0.108	-6.3
Grasshopper Sparrow	6	58	42	-27.6	10.1	4	17	13	-23.5	63.2	6	0.293	0.310	0.016	0.192	5.6
Song Sparrow	17	189	143	-24.3	10.1 *	18	107	94	-12.2	12.3	19	0.566	0.657	0.091	0.171	16.1
Northern Cardinal	14	77	53	-31.2	8.3 **	10	22	18	-18.2	41.2	14	0.286	0.340	0.054	0.128	18.9
Rose-breasted Grosbeak	13	43	49	14.0	20.3	4	4	2	-50.0	61.2	14	0.093	0.041	-0.052	0.088	-56.1
Indigo Bunting	14	74	60	-18.9	13.8	6	4	7	75.0	185.0	14	0.054	0.117	0.063	0.069	115.8
Red-winged Blackbird	12	91	100	9.9	34.3	5	6	13	116.7	209.2	12	0.066	0.130	0.064	0.074	97.2
Brown-headed Cowbird	17	49	33	-32.7	16.8	9	2	7	250.0	297.6	17	0.041	0.212	0.171	0.083 *	419.7
Baltimore Oriole	16	40	38	-5.0	31.0	7	27	2	-92.6	8.1 ***	16	0.675	0.053	-0.622	0.561	-92.2
American Goldfinch	24	180	221	22.8	15.0	2	1	1	0.8	200.0	24	0.006	0.005	-0.001	0.007	-18.6
All species pooled	**27**	**2946**	**2900**	**-1.6**	**6.5**	**26**	**1086**	**924**	**-14.9**	**13.2**	**27**	**0.369**	**0.319**	**-0.050**	**0.063**	**-13.6**
	Number decreasing: 13/23 (57%)					Number decreasing: 14/23 (61%)					Number decreasing: 11/23 (48%)					
SOUTH-CENTRAL MAPS REGION																
Downy Woodpecker	21	32	51	59.4	35.6 **	18	48	43	-10.4	23.3	23	1.500	0.843	-0.657	0.457	-43.8
Acadian Flycatcher	19	137	137	0.8	11.0	12	18	25	38.9	46.8	20	0.131	0.183	0.051	0.060	38.9
White-eyed Vireo	31	234	288	23.1	11.0 **	24	65	67	3.1	21.8	31	0.278	0.233	-0.045	0.079	-16.3
Red-eyed Vireo	20	39	47	20.5	36.2	5	1	5	400.0	632.5	20	0.026	0.106	0.081	0.053	314.9
Carolina Chickadee	32	79	106	34.2	21.5	24	34	42	23.5	37.5	34	0.430	0.396	-0.034	0.147	-7.9
Tufted Titmouse	28	95	78	-17.9	16.4	27	103	89	-13.6	14.6	30	1.084	1.141	0.057	0.215	5.2
Black-crested Titmouse	7	23	22	-4.3	31.4	7	27	21	-22.2	23.1	8	1.174	0.955	-0.219	0.422	-18.7
Carolina Wren	31	225	198	-12.0	8.5	29	194	240	23.7	16.9 *	32	0.862	1.212	0.350	0.181 *	40.6
Bewick's Wren	9	50	55	10.0	10.2	8	80	23	-71.3	7.7 ***	10	1.600	0.418	-1.182	0.558 *	-73.9
Blue-gray Gnatcatcher	16	30	35	16.7	35.4	10	27	27	0.8	37.9	18	0.900	0.771	-0.129	0.688	-14.3
Wood Thrush	13	54	41	-24.1	17.1	5	4	13	225.0	160.3	14	0.074	0.317	0.243	0.153	328.0
Blue-winged Warbler	6	66	51	-22.7	17.9	6	11	20	81.8	163.9	6	0.167	0.392	0.226	0.294	135.3
Prairie Warbler	5	36	41	13.9	50.5	4	9	13	44.4	62.4	5	0.250	0.317	0.067	0.222	26.8
Black-and-white Warbler	15	40	27	-32.5	19.8	10	11	12	9.1	39.8	16	0.275	0.444	0.169	0.191	61.6
Prothonotary Warbler	14	113	76	-32.7	7.9 **	12	25	9	-64.0	20.4 ***	14	0.221	0.118	-0.103	0.091	-46.5

TABLE 1. Continued.

Species	ADULTS n[a]	2003	2004	%chg.	SE[b]	YOUNG n[c]	2003	2004	%chg.	SE[d]	REPRODUCTIVE INDEX n[e]	2003	2004	change	SE[f]	%chg.
Kentucky Warbler	18	122	90	-26.2	9.4 **	18	55	57	3.6	24.7	20	0.451	0.633	0.183	0.176	40.5
Common Yellowthroat	12	47	52	10.6	39.5	8	12	15	25.0	33.8	13	0.255	0.289	0.033	0.154	13.0
Hooded Warbler	11	37	56	51.4	31.2	7	15	17	13.3	18.4	13	0.405	0.304	-0.102	0.169	-25.1
Yellow-breasted Chat	14	173	169	-2.3	15.9	11	39	29	-25.6	25.3	15	0.225	0.172	-0.054	0.070	-23.9
Summer Tanager	27	80	63	-21.3	12.1	4	5	1	-80.0	21.7 **	27	0.063	0.016	-0.047	0.032	-74.6
Field Sparrow	11	80	65	-18.8	13.4	8	35	17	-51.4	21.5	11	0.438	0.262	-0.176	0.158	-40.2
Grasshopper Sparrow	2	23	31	34.8	20.8	2	30	11	-63.3	12.2	2	1.304	0.355	-0.949	0.071	-72.8
Northern Cardinal	37	383	281	-26.6	7.8 **	35	172	128	-25.6	13.2	37	0.449	0.456	0.006	0.102	1.4
Indigo Bunting	22	297	263	-11.4	10.0	17	18	14	-22.2	28.9	22	0.061	0.053	-0.007	0.021	-12.2
Painted Bunting	18	158	153	-3.2	17.8	14	41	28	-31.7	15.0 *	19	0.260	0.183	-0.077	0.063	-29.5
Brown-headed Cowbird	27	54	45	-16.7	20.4	3	1	3	200.0	458.3	27	0.019	0.067	0.048	0.046	260.0
All species pooled	**39**	**3243**	**3045**	**-6.1**	**5.1**	**39**	**1223**	**1089**	**-11.0**	**6.4**	**39**	**0.377**	**0.358**	**-0.020**	**0.043**	**-5.2**
	Number decreasing: 15/26 (58%)					Number decreasing: 12/26 (46%)					Number decreasing: 14/26 (54%)					
NORTHEAST MAPS REGION																
Downy Woodpecker	38	45	46	2.2	22.6	43	53	80	50.9	30.9 **	51	1.178	1.739	0.561	0.422	47.7
Traill's Flycatcher	24	69	63	-8.7	19.2	10	4	12	200.0	166.7	24	0.058	0.191	0.133	0.059 **	228.6
Red-eyed Vireo	52	121	123	1.7	17.4	11	8	20	150.0	129.8 *	52	0.066	0.163	0.097	0.063	145.9
Blue Jay	27	45	16	-64.4	10.3 ***	7	13	11	-15.4	49.0	28	0.289	0.688	0.399	0.415	138.0
Black-capped Chickadee	48	178	132	-25.8	9.7 **	36	101	148	46.5	27.8 *	50	0.567	1.121	0.554	0.305 *	97.6
Tufted Titmouse	29	49	33	-32.7	16.0 *	28	42	69	64.3	47.7	34	0.857	2.091	1.234	0.603 **	143.9
Carolina Wren	17	43	43	0.8	20.9	17	30	57	90.0	57.7	21	0.698	1.326	0.628	0.351 *	90.0
House Wren	15	36	34	-5.6	20.2	16	27	33	22.2	41.8	17	0.750	0.971	0.221	0.316	29.4
Veery	33	164	190	15.9	11.1	23	33	36	9.1	19.8	33	0.201	0.190	-0.012	0.049	-5.8
Swainson's Thrush	8	43	31	-27.9	14.4 *	7	15	10	-33.3	21.5	9	0.349	0.323	-0.026	0.122	-7.5
Hermit Thrush	16	37	48	29.7	25.1	14	16	20	25.0	67.3	22	0.432	0.417	-0.016	0.266	-3.6
Wood Thrush	36	141	124	-12.1	13.0	29	57	60	5.3	24.0	39	0.404	0.484	0.080	0.126	19.7
American Robin	46	213	148	-30.5	11.0 *	33	74	89	20.3	22.6	51	0.347	0.601	0.254	0.152 *	73.1
Gray Catbird	48	645	724	12.2	6.0 **	39	304	370	21.7	18.4	51	0.471	0.511	0.040	0.095	8.4
Cedar Waxwing	29	133	131	-1.5	15.0	2	4	1	-75.0	50.0	29	0.030	0.008	-0.022	0.024	-74.6
Yellow Warbler	20	172	125	-27.3	8.7 **	14	47	78	66.0	50.6	22	0.273	0.624	0.351	0.246	128.4
Chestnut-sided Warbler	19	65	64	-1.5	12.2	8	35	45	28.6	50.9	20	0.539	0.703	0.165	0.299	30.6
Magnolia Warbler	14	45	55	22.2	23.4	7	8	11	37.5	60.8	15	0.178	0.200	0.022	0.133	12.5
Black-thrtd. Blue Warbler	12	19	38	100.0	39.6 ***	9	27	35	29.6	28.0	14	1.421	0.921	-0.500	1.129	-35.2
Black-thrtd. Green Warb.	16	30	48	60.0	38.8	6	12	13	8.3	37.1	19	0.400	0.271	-0.129	0.276	-32.3
Black-and-white Warbler	24	28	37	32.1	29.6	17	15	19	26.7	55.6	29	0.536	0.514	-0.022	0.235	-4.1

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
American Redstart	32	79	87	10.1	20.1	16	37	50	35.1	62.5	35	0.468	0.575	0.106	0.260	22.7
Worm-eating Warbler	16	43	28	-34.9	14.9	6	38	32	-15.8	13.1	18	0.884	1.143	0.259	0.888	29.3
Ovenbird	54	138	174	26.1	19.5	32	75	73	-2.7	19.1	54	0.544	0.420	-0.124	0.142	-22.8
Louisiana Waterthrush	17	25	29	16.0	30.6	12	21	37	76.2	43.1	19	0.840	1.276	0.436	0.717	51.9
Common Yellowthroat	47	278	276	-0.7	8.1	32	77	129	67.5	40.0 **	48	0.277	0.467	0.190	0.094 **	68.7
Field Sparrow	12	20	35	75.0	72.4	11	13	19	46.2	77.0	15	0.650	0.543	-0.107	0.336	-16.5
Song Sparrow	34	195	192	-1.5	9.3	31	154	224	45.5	19.3 **	39	0.790	1.167	0.377	0.188 **	47.7
Swamp Sparrow	11	22	16	-27.3	23.2	8	37	24	-35.1	29.1	13	1.682	1.500	-0.182	0.741	-10.8
White-throated Sparrow	11	46	53	15.2	21.6	11	20	33	65.0	85.9	13	0.435	0.623	0.188	0.260	43.2
Dark-eyed Junco	8	21	13	-38.1	13.5	8	43	65	51.2	19.3	11	2.048	5.000	2.952	2.534	144.2
Northern Cardinal	38	145	132	-9.0	14.4	31	50	88	76.0	41.3 *	40	0.345	0.667	0.322	0.160 **	93.3
Indigo Bunting	23	66	41	-37.9	20.1	9	17	9	-47.1	27.9	24	0.258	0.220	-0.038	0.127	-14.8
Red-winged Blackbird	19	70	52	-25.7	19.5	4	6	13	116.7	90.3	19	0.086	0.250	0.164	0.174	191.7
Common Grackle	20	40	49	22.5	18.9	7	6	20	233.3	273.0	21	0.150	0.408	0.258	0.268	172.1
American Goldfinch	35	213	171	-19.7	8.3 **	0	0	0			35	0.000	0.000	0.000		
All species pooled	**65**	**4401**	**4234**	**-3.8**	**3.8**	**64**	**1737**	**2280**	**31.3**	**8.0** ***	**65**	**0.395**	**0.539**	**0.144**	**0.055** ***	**36.4**
	Number decreasing: 20/36 (56%)					Number increasing: 28/36 (78%)***					Number increasing: 25/36 (69%)**					
SOUTHEAST MAPS REGION																
Downy Woodpecker	24	31	33	6.5	30.0	20	35	42	20.0	31.4	30	1.129	1.273	0.144	0.560	12.7
Acadian Flycatcher	22	124	99	-20.2	12.9	12	8	11	37.5	63.9	24	0.064	0.111	0.047	0.041	72.2
White-eyed Vireo	27	86	84	-2.3	20.5	17	40	35	-12.5	25.5	27	0.465	0.417	-0.048	0.150	-10.4
Red-eyed Vireo	29	140	87	-37.9	9.4 ***	13	9	21	133.3	91.2	31	0.064	0.241	0.177	0.067 ***	275.5
Carolina Chickadee	26	37	58	56.8	45.3 *	27	38	63	65.8	50.6	32	1.027	1.086	0.059	0.410	5.8
Tufted Titmouse	30	99	63	-36.4	12.1 **	29	62	72	16.1	31.6	34	0.626	1.143	0.517	0.248 **	82.5
Carolina Wren	33	142	198	39.4	12.9 ***	33	119	209	75.6	24.2 ***	36	0.838	1.056	0.218	0.276	26.0
Blue-gray Gnatcatcher	15	32	31	-3.1	26.3	12	15	22	46.7	59.1	19	0.469	0.710	0.241	0.322	51.4
Wood Thrush	25	141	121	-14.2	8.1 *	22	40	46	15.0	32.2	30	0.284	0.380	0.097	0.115	34.0
American Robin	9	23	18	-21.7	30.4	9	30	24	-20.0	26.6	12	1.304	1.333	0.029	0.607	2.2
Gray Catbird	17	32	27	-15.6	14.3	8	40	44	10.0	12.0	20	1.250	1.630	0.380	0.746	30.4
Brown Thrasher	19	36	31	-13.9	13.3	11	19	10	-47.4	22.8	20	0.528	0.323	-0.205	0.211	-38.9
Pine Warbler	10	11	12	9.1	51.3	7	2	109	5350.0	6509.6	13	0.182	9.083	8.902	5.941	4895.8
Prairie Warbler	12	55	40	-27.3	18.0	9	27	17	-37.0	29.0	12	0.491	0.425	-0.066	0.180	-13.4
Ovenbird	24	69	79	14.5	21.7	14	37	30	-18.9	24.2	26	0.536	0.380	-0.157	0.220	-29.2
Louisiana Waterthrush	16	42	40	-4.8	22.3	12	12	18	50.0	58.4	18	0.286	0.450	0.164	0.197	57.5
Kentucky Warbler	14	69	76	10.1	24.6	11	16	25	56.3	48.5	16	0.232	0.329	0.097	0.141	41.9

TABLE 1. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2003	2004	%chg.	SE[b]	n[c]	2003	2004	%chg.	SE[d]	n[e]	2003	2004	change	SE[f]	%chg.
Common Yellowthroat	25	100	111	11.0	24.1	14	51	49	-3.9	13.7	26	0.510	0.441	-0.069	0.133	-13.4
Hooded Warbler	16	63	54	-14.3	14.9	15	18	29	61.1	77.4	20	0.286	0.537	0.251	0.166	88.0
Yellow-breasted Chat	14	55	69	25.5	40.9	9	24	21	-12.5	16.3	15	0.436	0.304	-0.132	0.148	-30.3
Eastern Towhee	24	43	29	-32.6	17.1	11	11	10	-9.1	48.7	26	0.256	0.345	0.089	0.166	34.8
Northern Cardinal	35	321	252	-21.5	8.1 **	33	113	147	30.1	27.0	36	0.352	0.583	0.231	0.117 **	65.7
Indigo Bunting	27	125	144	15.2	21.2	10	14	19	35.7	80.1	27	0.112	0.132	0.020	0.077	17.8
American Goldfinch	16	58	44	-24.1	25.2	1	1	0	-100.0		16	0.017	0.000	-0.017	0.019	-100.0
All species pooled	**38**	**2356**	**2170**	**-7.9**	**5.4**	**38**	**901**	**1228**	**36.3**	**15.3** ***	**38**	**0.382**	**0.566**	**0.184**	**0.089** **	**48.0**
	Number decreasing: 15/24 (63%)					Number increasing: 15/24 (63%)					Number increasing: 17/24 (71%)**					
ALASKA AND BOREAL CANADA MAPS REGIONS																
Tennessee Warbler	4	8	7	-12.5	44.6	3	62	34	-45.2	28.6	4	7.750	4.857	-2.893	3.785	-37.3
Yellow-rumped Warbler	4	14	9	-35.7	11.5 *	4	81	7	-91.4	2.7 ***	4	5.786	0.778	-5.008	2.999	-86.6
American Redstart	4	52	34	-34.6	6.1 **	3	22	8	-63.6	47.6	4	0.423	0.235	-0.188	0.278	-44.4
Canada Warbler	4	42	24	-42.9	12.9 **	4	18	8	-55.6	37.1	4	0.429	0.333	-0.095	0.296	-22.2
All species pooled	**4**	**259**	**176**	**-32.0**	**2.7** ***	**4**	**259**	**86**	**-66.8**	**14.4** **	**4**	**1.000**	**0.489**	**-0.511**	**0.482**	**-51.1**
	Number decreasing: 4/4 (100%)*					Number decreasing: 4/4 (100%)*					Number decreasing: 4/4 (100%)*					

[a] Number of stations at which at least one individual adult bird of the species was captured in either year.
[b] Standard error of the percent change in the number of adult birds captured.
[c] Number of stations at which at least one individual young bird of the species was captured in either year.
[d] Standard error of the percent change in the number of young birds captured.
[e] Number of stations at which at least one individual aged bird of the species was captured in either year.
[f] Standard error of the change in the reproductive index.
* $0.05 \leq P < 0.10$; ** $0.01 \leq P < 0.05$; *** $P < 0.01$

reproductive index were each 50%. Program-wide, only nine species had significant or nearly significant increases in number of young and only 10 species had significant or nearly significant decreases. Similarly, only eight species had significant or nearly significant increases in reproductive index and only six species had significant or nearly significant decreases.

2. *Changes between 2004 and 2005* — Constant-effort data were obtained for 2004 and 2005 from 352 MAPS stations operated comparably in both years. The changes between years in the numbers of adult and young birds captured and the reproductive index are presented for the entire continent (program-wide) and for each region in Table 2 for individual species (inclusion criteria as in Table 1) and for all species pooled. These included 125 species program-wide, 63 species in the Northwest, 32 in the Southwest, 22 in the North-central, 23 in the South-central, 35 in the Northeast, 26 in the Southeast, and 4 in the combined Alaska/Boreal Canada Region.

(a) *Changes in adult population size* — Overall, the index of adult population size for all species pooled decreased in 2005 in the four western and central regions, where productivity tended to be reduced during 2004, and increased in the two eastern regions, where productivity significantly increased during 2004 (Table 2). Adult population size for all species pooled also tended to increase in the Alaska/Boreal Canada Region in 2005, despite the significant decrease in productivity there in 2004, but, again, data for these comparisons were received from just five stations there. The -7.8% and -7.7% decreases in the number of adults of all species pooled in the Northwest and South-central regions, respectively, were the only significant changes. Only the proportions of decreasing species from the South-central (74%) Southwest (66%) regions were significant and nearly significant, respectively. Summing over the two western and two central regions where adult populations decreased, a total of 25 species had significant or nearly significant decreases in number of adults, while only three species had significant or nearly significant increases. In contrast, summing over the remaining three regions where adult populations increased, 10 species had significant or nearly significant increases in number of adults, while only three species had significant or nearly significant decreases.

Program-wide, the index for adult population size for all species pooled decreased by a highly significant -5.0% (Table 2). The program-wide proportion of decreasing species (58%) was also nearly significant. Program-wide, 13 species had significant decreases in number of adults and another five species had nearly significant decreases, while only five species showed significant or nearly significant increases.

(b) *Changes in productivity* — Regional changes in productivity for all species pooled between 2004 and 2005 were opposite those between 2003 and 2004 for six of the seven regions (Table 2). The most pronounced and significant decreases in productivity in 2005 occurred in the two eastern regions, where the largest and most significant increases occurred in 2004. The number of young of all species pooled in the Southeast decreased in 2005 by -38.8%, while the reproductive index decreased there by -38.9% (both highly significant). These two parameters decreased in 2005 in the Northeast by -14.2% and -18.8%, respectively (both nearly significant). The proportions of decreasing species for these two parameters in these two regions ranged from 60% to 85% and were highly significant for all but the number of young in the Northeast (60%) which was not significant. Summing over these two regions, 25 species had significant or nearly significant decreases in the number of young captured in 2005, while not a single species had even a nearly significant increase. Similarly, 12 species had significant or nearly significant decreases in reproductive index, while only two species had significant or nearly significant increases. Smaller decreases in productivity (a nearly significant -9.1% decrease in number of young of all species pooled and a non-significant -1.4% decrease in reproductive index) occurred in 2005 in the Northwest Region following non-significant increases in productivity there in 2004. The proportion of species (71%) with decreases in the number of young captured in the Northwest in 2005 was highly significant. Fourteen species in the Northwest showed significant or nearly significant decreases in number of young captured compared to only one species with a nearly significant increase; similarly, six species showed significant or nearly significant decreases in reproductive index compared to only one species with a significant increase. Productivity in the Southwest, North-

TABLE 2. Program-wide and regional changes between 2004 and 2005 in the numbers of adult and young individuals captured and in the reproductive index (young/adult) for 125 species and all species pooled (excluding gallinaceous birds and hummingbirds) at the 352 MAPS stations run comparably during both years. For each species, data were included only from stations within the breeding range of the species. Only species for which adults were captured at two or more stations and for which 50 or more aged individuals were captured in either year are included.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
PROGRAM-WIDE																
Red-bellied Woodpecker	39	48	31	-35.4	14.0 *	19	16	13	-18.8	31.5	47	0.333	0.419	0.086	0.186	25.8
Red-naped Sapsucker	34	93	88	-5.4	12.3	22	36	28	-22.2	23.5	36	0.387	0.318	-0.069	0.109	-17.8
Red-breasted Sapsucker	42	108	70	-35.2	10.2 **	30	56	28	-50.0	10.2 ***	45	0.519	0.400	-0.119	0.109	-22.9
Nuttall's Woodpecker	18	46	26	-43.5	15.6 **	16	40	36	-10.0	33.2	20	0.870	1.385	0.515	0.485	59.2
Downy Woodpecker	187	276	258	-6.5	9.1	160	280	249	-11.1	8.1	225	1.015	0.965	-0.049	0.150	-4.9
Hairy Woodpecker	112	98	77	-21.4	12.2	55	45	32	-28.9	16.8	131	0.459	0.416	-0.044	0.123	-9.5
Northern Flicker	84	76	84	10.5	20.8	44	38	30	-21.1	20.3	99	0.500	0.357	-0.143	0.146	-28.6
Western Wood-Pewee	84	216	200	-7.4	10.7	34	32	20	-37.5	18.8	87	0.148	0.100	-0.048	0.041	-32.5
Eastern Wood-Pewee	58	83	85	2.4	24.7	15	25	4	-84.0	13.0 ***	64	0.301	0.047	-0.254	0.095 ***	-84.4
Acadian Flycatcher	68	370	306	-17.3	7.6 *	36	50	31	-38.0	18.3 *	69	0.135	0.101	-0.034	0.033	-25.0
Traill's Flycatcher	110	461	452	-2.0	8.3	33	51	34	-33.3	24.0	111	0.111	0.075	-0.035	0.031	-32.0
Least Flycatcher	30	64	68	6.3	17.8	15	13	16	23.1	50.5	33	0.203	0.235	0.032	0.109	15.8
Hammond's Flycatcher	48	110	70	-36.4	9.2 ***	24	26	25	-3.8	22.0	54	0.236	0.357	0.121	0.124	51.1
Dusky Flycatcher	66	288	312	8.3	13.3	28	47	46	-2.1	42.6	70	0.163	0.147	-0.016	0.065	-9.7
Western Flycatcher	92	256	228	-10.9	8.6	67	176	105	-40.3	9.1 ***	100	0.688	0.461	-0.227	0.140	-33.0
Black Phoebe	32	46	45	-2.2	22.7	32	76	60	-21.1	20.4	43	1.652	1.333	-0.319	0.521	-19.3
Eastern Phoebe	46	38	51	34.2	29.1	41	38	59	55.3	37.0 *	65	1.000	1.157	0.157	0.403	15.7
Ash-throated Flycatcher	34	104	98	-5.8	18.6	17	15	32	113.3	88.7	34	0.144	0.327	0.182	0.181	126.4
Great Crested Flycatcher	57	79	71	-10.1	19.2	7	2	11	450.0	549.4	59	0.025	0.155	0.130	0.088	512.0
White-eyed Vireo	82	645	625	-3.1	9.5	63	285	228	-20.0	15.1	87	0.442	0.365	-0.077	0.085	-17.4
Bell's Vireo	11	46	77	67.4	18.3 *	7	15	23	53.3	52.7	11	0.326	0.299	-0.027	0.108	-8.4
Cassin's Vireo	44	69	69	0.8	18.9	23	27	27	0.8	33.0	52	0.391	0.391	0.000	0.142	0.8
Hutton's Vireo	19	20	27	35.0	43.0	21	24	37	54.2	35.5 *	28	1.200	1.370	0.170	0.674	14.2
Warbling Vireo	128	490	498	1.6	7.7	50	69	63	-8.7	20.6	133	0.141	0.127	-0.014	0.041	-10.2
Red-eyed Vireo	145	412	453	10.0	8.4	45	60	33	-45.0	14.1 ***	152	0.146	0.073	-0.073	0.033 **	-50.0
Blue Jay	62	56	62	10.7	23.9	17	21	11	-47.6	19.3	69	0.375	0.177	-0.198	0.141	-52.7
Carolina Chickadee	76	203	124	-38.9	10.1 ***	68	150	147	-2.0	16.1	89	0.739	1.186	0.447	0.244 *	60.4
Black-capped Chickadee	118	401	432	7.7	9.0	102	472	548	16.1	10.6 *	128	1.177	1.269	0.092	0.196	7.8
Mountain Chickadee	39	102	101	-1.0	15.4	32	65	76	16.9	31.6	45	0.637	0.753	0.115	0.212	18.1
Chestnut-backed Chick.	50	103	113	9.7	19.8	47	232	215	-7.3	15.4	60	2.252	1.903	-0.350	0.688	-15.5
Oak Titmouse	11	44	28	-36.4	17.9	13	35	45	28.6	45.5	13	0.796	1.607	0.812	0.515	102.0
Tufted Titmouse	107	230	186	-19.1	10.5	108	263	203	-22.8	10.1 **	123	1.144	1.091	-0.052	0.202	-4.6

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Black-crested Titmouse	14	27	26	-3.7	26.5	12	27	22	-18.5	17.7	15	1.000	0.846	-0.154	0.386	-15.4
Bushtit	51	199	147	-26.1	16.2	52	225	156	-30.7	10.2 **	60	1.131	1.061	-0.069	0.284	-6.1
Red-breasted Nuthatch	62	70	60	-14.3	16.2	44	78	47	-39.7	15.6	75	1.114	0.783	-0.331	0.354	-29.7
White-breasted Nuthatch	42	44	49	11.4	22.1	30	25	32	28.0	37.6	59	0.568	0.653	0.085	0.263	14.9
Brown Creeper	48	65	45	-30.8	12.7 **	53	84	65	-22.6	18.2	71	1.292	1.444	0.152	0.444	11.8
Carolina Wren	107	627	544	-13.2	6.3 *	112	599	495	-17.4	9.3 *	122	0.955	0.910	-0.045	0.181	-4.8
Bewick's Wren	73	326	295	-9.5	8.1	78	546	570	4.4	12.4	83	1.675	1.932	0.257	0.299	15.4
House Wren	86	394	456	15.7	8.8 *	91	348	513	47.4	19.7 **	103	0.883	1.125	0.242	0.212	27.4
Winter Wren	39	75	71	-5.3	12.6	36	53	72	35.8	31.7	51	0.707	1.014	0.307	0.244	43.5
Golden-crowned Kinglet	36	58	81	39.7	24.9	39	136	331	143.4	83.5 *	50	2.345	4.086	1.742	1.172	74.3
Ruby-crowned Kinglet	27	61	108	77.0	29.8 ***	17	58	62	6.9	46.4	30	0.951	0.574	-0.377	0.499	-39.6
Blue-gray Gnatcatcher	54	108	80	-25.9	9.5 **	40	92	33	-64.1	11.6 **	66	0.852	0.413	-0.439	0.235 *	-51.6
Eastern Bluebird	22	28	21	-25.0	23.0	21	59	35	-40.7	25.6	29	2.107	1.667	-0.441	0.918	-20.9
Veery	55	310	268	-13.5	6.5 *	33	60	59	-1.7	21.3	56	0.194	0.220	0.027	0.049	13.7
Swainson's Thrush	118	1227	1055	-14.0	3.8 ***	72	211	199	-5.7	12.8	121	0.172	0.189	0.017	0.038	9.7
Hermit Thrush	64	129	141	9.3	13.6	51	54	70	29.6	28.3	83	0.419	0.497	0.078	0.140	18.6
Wood Thrush	101	456	427	-6.4	7.5	73	207	128	-38.2	9.9 ***	110	0.454	0.300	-0.154	0.070 **	-34.0
American Robin	198	794	826	4.0	6.5	136	366	347	-5.2	11.4	209	0.461	0.420	-0.041	0.084	-8.9
Wrentit	34	159	146	-8.2	13.9	34	252	206	-18.3	19.8	38	1.585	1.411	-0.174	0.406	-11.0
Gray Catbird	133	1567	1237	-21.1	4.6 ***	90	727	475	-34.7	6.5 ***	137	0.464	0.384	-0.080	0.070	-17.2
Northern Mockingbird	15	26	30	15.4	43.2	12	20	35	75.0	51.3	20	0.769	1.167	0.397	0.471	51.7
Brown Thrasher	52	71	61	-14.1	19.5	21	22	23	4.5	38.7	56	0.310	0.377	0.067	0.160	21.7
Cedar Waxwing	91	406	372	-8.4	12.2	14	24	12	-50.0	36.2	92	0.059	0.032	-0.027	0.027	-45.4
Blue-winged Warbler	35	119	126	5.9	18.2	20	36	25	-30.6	26.9	38	0.303	0.198	-0.104	0.113	-34.4
Tennessee Warbler	9	31	50	61.3	18.8 **	7	34	78	129.4	288.6	9	1.097	1.560	0.463	1.782	42.2
Orange-crowned Warbler	68	199	235	18.1	13.9	63	189	181	-4.2	14.6	80	0.950	0.770	-0.180	0.217	-18.9
Nashville Warbler	49	151	118	-21.9	16.7	44	104	185	77.9	61.2	55	0.689	1.568	0.879	0.572	127.6
Virginia's Warbler	9	49	57	16.3	19.4	8	14	20	42.9	45.4	10	0.286	0.351	0.065	0.128	22.8
Lucy's Warbler	9	104	73	-29.8	21.2	9	37	41	10.8	52.9	9	0.356	0.562	0.206	0.277	57.9
Northern Parula	30	38	39	2.6	25.3	18	25	13	-48.0	18.5	40	0.658	0.333	-0.325	0.308	-49.3
Yellow Warbler	138	1285	1133	-11.8	6.1 *	88	482	503	4.4	13.9	141	0.375	0.444	0.069	0.078	18.4
Chestnut-sided Warbler	22	83	92	10.8	12.0	12	32	39	21.9	84.6	26	0.386	0.424	0.038	0.226	10.0
Magnolia Warbler	19	67	78	16.4	17.9	11	16	27	68.8	72.1	20	0.239	0.346	0.107	0.124	45.0
Black-thrtd. Blue Warbler	14	41	25	-39.0	12.1 **	12	32	13	-59.4	16.6 ***	16	0.780	0.520	-0.261	0.473	-33.4
Yellow-rumped Warbler	80	333	328	-1.5	11.0	48	284	304	7.0	20.4	84	0.853	0.927	0.074	0.476	8.7
Black-thrtd. Green Warb.	23	49	41	-16.3	14.6	8	20	5	-75.0	13.8 **	24	0.408	0.122	-0.286	0.204	-70.1

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Townsend's Warbler	15	91	72	-20.9	13.9	16	19	49	157.9	102.6	22	0.209	0.681	0.472	0.212 **	226.0
Hermit Warbler	28	90	85	-5.6	14.3	18	105	86	-18.1	27.2	29	1.167	1.012	-0.155	0.562	-13.3
Pine Warbler	11	18	20	11.1	68.9	10	115	11	-90.4	6.4 **	16	6.389	0.550	-5.839	4.165	-91.4
Prairie Warbler	22	115	93	-19.1	13.9	15	38	26	-31.6	22.3	23	0.330	0.280	-0.051	0.091	-15.4
Black-and-white Warbler	73	111	109	-1.8	12.3	44	51	42	-17.6	25.8	84	0.460	0.385	-0.074	0.143	-16.1
American Redstart	77	282	304	7.8	10.8	42	81	72	-11.1	26.6	84	0.287	0.237	-0.050	0.089	-17.5
Prothonotary Warbler	31	172	170	-1.2	16.0	20	18	88	388.9	214.7 **	31	0.105	0.518	0.413	0.151 ***	394.6
Worm-eating Warbler	44	81	90	11.1	21.8	26	72	41	-43.1	8.3 **	51	0.889	0.456	-0.433	0.336	-48.8
Ovenbird	112	392	390	-0.5	8.1	79	161	181	12.4	18.3	114	0.411	0.464	0.053	0.079	13.0
Northern Waterthrush	28	52	62	19.2	17.3	10	8	21	162.5	190.5	33	0.154	0.339	0.185	0.174	120.2
Louisiana Waterthrush	55	110	109	-0.9	15.2	35	89	89	0.8	13.2	61	0.809	0.816	0.007	0.270	0.9
Kentucky Warbler	55	343	337	-1.7	7.9	46	116	98	-15.5	17.6	57	0.338	0.291	-0.047	0.075	-14.0
MacGillivray's Warbler	96	725	652	-10.1	5.0 **	78	335	327	-2.4	11.4	105	0.462	0.502	0.040	0.080	8.5
Common Yellowthroat	187	1174	1116	-4.9	5.6	118	462	601	30.1	24.4	193	0.394	0.539	0.145	0.118	36.8
Hooded Warbler	49	179	190	6.1	16.2	31	62	44	-29.0	31.5	53	0.346	0.232	-0.115	0.102	-33.1
Wilson's Warbler	99	868	805	-7.3	10.6	68	346	391	13.0	21.9	106	0.399	0.486	0.087	0.159	21.9
Canada Warbler	21	48	80	66.7	35.1 **	12	20	50	150.0	115.8	25	0.417	0.625	0.208	0.284	50.0
Yellow-breasted Chat	83	597	612	2.5	10.2	44	112	179	59.8	47.0	85	0.188	0.293	0.105	0.057 *	55.9
Summer Tanager	65	168	161	-4.2	12.3	15	7	13	85.7	87.7	67	0.042	0.081	0.039	0.031	93.8
Scarlet Tanager	54	58	76	31.0	27.5	18	13	13	0.8	56.0	62	0.224	0.171	-0.053	0.112	-23.7
Western Tanager	92	271	445	64.2	54.8	33	93	62	-33.3	18.8	96	0.343	0.139	-0.204	0.103 **	-59.4
Green-tailed Towhee	17	37	34	-8.1	24.6	13	19	20	5.3	43.3	19	0.514	0.588	0.075	0.264	14.6
Spotted Towhee	82	355	354	-0.3	8.5	72	355	241	-32.1	9.1 **	87	1.000	0.681	-0.319	0.215	-31.9
Eastern Towhee	72	93	116	24.7	17.7	39	38	22	-42.1	14.7 **	80	0.409	0.190	-0.219	0.094 **	-53.6
California Towhee	14	52	40	-23.1	17.3	9	10	11	10.0	71.7	16	0.192	0.275	0.083	0.147	43.0
Chipping Sparrow	74	204	225	10.3	11.0	38	79	102	29.1	52.1	82	0.387	0.453	0.066	0.221	17.1
Brewer's Sparrow	12	20	22	10.0	54.5	14	30	19	-36.7	29.4	16	1.500	0.864	-0.636	0.685	-42.4
Field Sparrow	48	175	176	0.6	10.8	33	59	44	-25.4	19.4	52	0.337	0.250	-0.087	0.087	-25.8
Grasshopper Sparrow	8	108	87	-19.4	14.6	4	47	47	0.8	20.3	8	0.435	0.540	0.105	0.158	24.1
Fox Sparrow	20	63	73	15.9	12.9	14	28	17	-39.3	20.8 *	28	0.444	0.233	-0.212	0.132	-47.6
Song Sparrow	176	1546	1463	-5.4	4.7	179	1547	1788	15.6	12.1	194	1.001	1.222	0.222	0.143	22.1
Lincoln's Sparrow	36	198	211	6.6	14.5	34	99	117	18.2	29.5	44	0.500	0.555	0.055	0.139	10.9
Swamp Sparrow	8	36	28	-22.2	10.4	10	27	33	22.2	58.5	12	0.750	1.179	0.429	0.453	57.1
White-throated Sparrow	19	94	94	0.8	12.3	19	41	34	-17.1	39.7	22	0.436	0.362	-0.074	0.177	-17.1
White-crowned Sparrow	17	50	51	2.0	17.0	13	61	54	-11.5	20.3	20	1.220	1.059	-0.161	0.705	-13.2
Dark-eyed Junco	79	628	443	-29.5	5.7 ***	85	572	490	-14.3	15.8	94	0.911	1.106	0.195	0.263	21.4

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Northern Cardinal	153	918	974	6.1	5.2	127	538	342	-36.4	9.0 ***	156	0.586	0.351	-0.235	0.070 ***	-40.1
Rose-breasted Grosbeak	28	55	74	34.5	28.0	17	12	22	83.3	84.8	32	0.218	0.297	0.079	0.132	36.3
Black-headed Grosbeak	119	485	469	-3.3	7.6	61	185	149	-19.5	16.4	124	0.381	0.318	-0.064	0.121	-16.7
Blue Grosbeak	24	115	110	-4.3	10.8	5	2	7	250.0	220.1	24	0.017	0.064	0.046	0.047	265.9
Lazuli Bunting	66	220	159	-27.7	10.0 **	31	71	41	-42.3	15.9 **	68	0.323	0.258	-0.065	0.101	-20.1
Indigo Bunting	110	766	598	-21.9	4.5 ***	49	67	56	-16.4	18.8	112	0.088	0.094	0.006	0.023	7.1
Painted Bunting	30	286	309	8.0	12.8	23	68	58	-14.7	29.0	30	0.238	0.188	-0.050	0.072	-21.1
Dickcissel	8	82	61	-25.6	28.1	1	0	1	++++		8	0.000	0.016	0.016	0.015	++++
Bobolink	5	43	81	88.4	80.5	5	3	3	0.8	105.4	5	0.070	0.037	-0.033	0.034	-46.9
Red-winged Blackbird	67	289	241	-16.6	14.1	25	43	44	2.3	44.4	68	0.149	0.183	0.034	0.065	22.7
Common Grackle	48	88	105	19.3	33.5	20	40	13	-67.5	14.6 **	50	0.455	0.124	-0.331	0.145 **	-72.8
Brown-headed Cowbird	158	264	240	-9.1	8.2	42	40	34	-15.0	22.2	167	0.152	0.142	-0.010	0.046	-6.5
Orchard Oriole	23	58	63	8.6	23.6	9	6	12	100.0	132.3	27	0.103	0.191	0.087	0.095	84.1
Bullock's Oriole	59	180	191	6.1	14.8	39	75	98	30.7	65.3	62	0.417	0.513	0.096	0.237	23.1
Baltimore Oriole	32	47	50	6.4	25.0	18	24	66	175.0	164.8	41	0.511	1.320	0.809	0.703	158.5
Purple Finch	52	314	299	-4.8	8.0	35	160	127	-20.6	12.6	56	0.510	0.425	-0.085	0.188	-16.6
Cassin's Finch	25	49	43	-12.2	19.6	12	11	12	9.1	57.7	26	0.225	0.279	0.055	0.138	24.3
House Finch	41	187	134	-28.3	13.3	41	205	122	-40.5	18.9 *	53	1.096	0.910	-0.186	0.463	-16.9
Pine Siskin	50	147	209	42.2	37.7	22	76	22	-71.1	14.3 ***	53	0.517	0.105	-0.412	0.100 ***	-79.6
Lesser Goldfinch	37	143	135	-5.6	17.5	26	132	76	-42.4	16.6	39	0.923	0.563	-0.360	0.348	-39.0
American Goldfinch	125	711	706	-0.7	6.9	20	32	14	-56.3	19.9 **	127	0.045	0.020	-0.025	0.016	-55.9
All species pooled	**352**	**31749**	**30158**	**-5.0**	**1.4 *** **	**352**	**15886**	**15260**	**-3.9**	**4.3**	**352**	**0.500**	**0.506**	**0.006**	**0.033**	**1.1**
	Number decreasing: 72/125 (58%)*					Number decreasing: 71/125 (57%)*					Number increasing: 59/125 (47%)					
NORTHWEST MAPS REGION																
Red-naped Sapsucker	33	93	87	-6.5	12.2	22	36	28	-22.2	23.5	35	0.387	0.322	-0.065	0.109	-16.9
Red-breasted Sapsucker	42	108	70	-35.2	10.2 **	30	56	28	-50.0	10.2 ***	45	0.519	0.400	-0.119	0.109	-22.9
Downy Woodpecker	56	71	61	-14.1	15.1	39	50	40	-20.0	15.5	64	0.704	0.656	-0.049	0.210	-6.9
Hairy Woodpecker	45	40	28	-30.0	19.2	21	19	12	-36.8	21.2	52	0.475	0.429	-0.046	0.195	-9.8
Northern Flicker	41	42	46	9.5	25.1	22	18	13	-27.8	31.0	46	0.429	0.283	-0.146	0.172	-34.1
Western Wood-Pewee	65	172	173	0.6	12.6	27	24	14	-41.7	19.6	67	0.140	0.081	-0.059	0.039	-42.0
Traill's Flycatcher	64	348	290	-16.7	7.7 **	17	32	21	-34.4	34.2	65	0.092	0.072	-0.020	0.040	-21.3
Hammond's Flycatcher	46	109	69	-36.7	9.2 ***	24	26	25	-3.8	22.0	52	0.239	0.362	0.124	0.126	51.9
Dusky Flycatcher	61	273	297	8.8	14.0	26	47	43	-8.5	41.3	65	0.172	0.145	-0.027	0.068	-15.9
Western Flycatcher	63	164	165	0.6	10.6	46	100	70	-30.0	13.3 *	71	0.610	0.424	-0.186	0.157	-30.4
Cassin's Vireo	43	69	68	-1.4	18.6	22	26	27	3.8	34.9	50	0.377	0.397	0.020	0.143	5.4

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Warbling Vireo	93	407	414	1.7	8.3	35	52	41	-21.2	19.7	95	0.128	0.099	-0.029	0.042	-22.5
Black-capped Chickadee	49	210	190	-9.5	10.3	48	281	293	4.3	13.0	52	1.338	1.542	0.204	0.276	15.2
Mountain Chickadee	37	99	97	-2.0	15.7	32	65	76	16.9	31.6	43	0.657	0.783	0.127	0.220	19.3
Chestnut-backed Chick.	40	80	92	15.0	24.7	37	163	148	-9.2	20.6	49	2.038	1.609	-0.429	0.802	-21.0
Bushtit	21	83	64	-22.9	32.8	25	108	56	-48.1	10.2 ***	27	1.301	0.875	-0.426	0.515	-32.8
Red-breasted Nuthatch	52	64	53	-17.2	16.1	39	72	41	-43.1	14.3 *	62	1.125	0.774	-0.351	0.372	-31.2
Brown Creeper	39	62	39	-37.1	12.1 **	38	77	52	-32.5	17.8	51	1.242	1.333	0.091	0.471	7.4
Bewick's Wren	24	78	71	-9.0	10.8	29	194	115	-40.7	11.3 **	30	2.487	1.620	-0.867	0.585	-34.9
House Wren	36	161	176	9.3	11.2	39	129	228	76.7	32.0	44	0.801	1.296	0.494	0.423	61.7
Winter Wren	30	70	63	-10.0	11.9	32	53	67	26.4	29.7	39	0.757	1.064	0.306	0.266	40.5
Golden-crowned Kinglet	30	52	77	48.1	26.5	32	127	325	155.9	90.3 *	39	2.442	4.221	1.779	1.243	72.8
Ruby-crowned Kinglet	24	59	107	81.4	31.1 ***	15	57	60	5.3	46.7	26	0.966	0.561	-0.405	0.513	-42.0
Veery	10	87	72	-17.2	11.3	7	17	4	-76.5	15.5 **	10	0.195	0.056	-0.140	0.062 *	-71.6
Swainson's Thrush	87	933	762	-18.3	3.7 ***	49	148	132	-10.8	16.1	88	0.159	0.173	0.015	0.046	9.2
Hermit Thrush	34	58	64	10.3	21.1	30	28	42	50.0	39.5	45	0.483	0.656	0.174	0.224	35.9
American Robin	103	507	462	-8.9	6.5	65	160	149	-6.9	16.7	105	0.316	0.323	0.007	0.074	2.2
Wrentit	14	62	58	-6.5	23.9	16	113	57	-49.6	9.0 **	18	1.823	0.983	-0.840	0.273 ***	-46.1
Gray Catbird	29	460	262	-43.0	4.5 ***	18	107	70	-34.6	22.7	29	0.233	0.267	0.035	0.093	14.9
Cedar Waxwing	45	259	260	0.4	17.8	10	24	8	-66.7	32.7	45	0.093	0.031	-0.062	0.040	-66.8
Orange-crowned Warbler	49	149	169	13.4	14.1	47	142	141	-0.7	18.7	59	0.953	0.834	-0.119	0.265	-12.5
Nashville Warbler	31	107	81	-24.3	22.1	32	87	114	31.0	31.3	36	0.813	1.407	0.594	0.402	73.1
Yellow Warbler	76	925	770	-16.8	7.2 *	57	347	360	3.7	16.5	78	0.375	0.468	0.092	0.104	24.6
Yellow-rumped Warbler	57	292	268	-8.2	10.4	34	272	290	6.6	21.0	60	0.932	1.082	0.151	0.553	16.2
Townsend's Warbler	15	91	72	-20.9	13.9	16	19	49	157.9	102.6	22	0.209	0.681	0.472	0.212 **	226.0
Hermit Warbler	28	90	85	-5.6	14.3	18	105	86	-18.1	27.2	29	1.167	1.012	-0.155	0.562	-13.3
American Redstart	14	84	76	-9.5	10.5	7	15	14	-6.7	23.1	15	0.179	0.184	0.006	0.054	3.2
Northern Waterthrush	10	28	39	39.3	34.8	5	4	16	300.0	487.3	12	0.143	0.410	0.267	0.284	187.2
MacGillivray's Warbler	85	700	637	-9.0	5.1 *	77	334	327	-2.1	11.5	94	0.477	0.513	0.036	0.082	7.6
Common Yellowthroat	41	201	219	9.0	11.6	22	126	94	-25.4	21.8	44	0.627	0.429	-0.198	0.229	-31.5
Wilson's Warbler	82	652	555	-14.9	11.6	58	164	148	-9.8	11.7	89	0.252	0.267	0.015	0.092	6.0
Yellow-breasted Chat	24	106	114	7.5	14.5	9	28	38	35.7	26.3	24	0.264	0.333	0.069	0.139	26.2
Western Tanager	75	237	320	35.0	46.4	30	78	59	-24.4	22.2	79	0.329	0.184	-0.145	0.120	-44.0
Green-tailed Towhee	14	34	32	-5.9	26.3	13	19	20	5.3	43.3	16	0.559	0.625	0.066	0.292	11.8
Spotted Towhee	51	192	180	-6.3	10.1	44	255	173	-32.2	7.1 ***	54	1.328	0.961	-0.367	0.304	-27.6
Chipping Sparrow	40	139	144	3.6	13.8	25	57	91	59.6	71.7	44	0.410	0.632	0.222	0.312	54.1
Brewer's Sparrow	11	20	21	5.0	53.8	13	30	18	-40.0	28.5	14	1.500	0.857	-0.643	0.698	-42.9

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Fox Sparrow	19	63	72	14.3	12.8	14	28	17	-39.3	20.8 *	27	0.444	0.236	-0.208	0.133	-46.9
Song Sparrow	93	743	816	9.8	5.6 *	95	895	788	-12.0	6.6	99	1.205	0.966	-0.239	0.133 *	-19.8
Lincoln's Sparrow	31	192	209	8.9	15.2	33	99	116	17.2	29.3	38	0.516	0.555	0.039	0.141	7.6
White-crowned Sparrow	16	49	51	4.1	17.1	12	61	51	-16.4	18.7	18	1.245	1.000	-0.245	0.711	-19.7
Dark-eyed Junco	65	607	405	-33.3	5.4 ***	69	504	454	-9.9	16.5	74	0.830	1.121	0.291	0.269	35.0
Black-headed Grosbeak	84	335	337	0.6	9.3	45	138	112	-18.8	19.7	89	0.412	0.332	-0.080	0.157	-19.3
Lazuli Bunting	52	197	140	-28.9	10.3 **	29	70	40	-42.9	16.0 **	54	0.355	0.286	-0.070	0.115	-19.6
Red-winged Blackbird	27	92	92	0.8	20.4	11	22	18	-18.2	49.2	27	0.239	0.196	-0.044	0.114	-18.2
Brown-headed Cowbird	58	97	91	-6.2	11.2	14	25	8	-68.0	15.9 ***	59	0.258	0.088	-0.170	0.098 *	-65.9
Bullock's Oriole	37	101	106	5.0	17.5	24	46	27	-41.3	27.6	38	0.455	0.255	-0.201	0.162	-44.1
Purple Finch	32	279	252	-9.7	7.6	22	147	110	-25.2	12.1	34	0.527	0.437	-0.090	0.221	-17.2
Cassin's Finch	25	49	43	-12.2	19.6	12	11	12	9.1	57.7	26	0.225	0.279	0.055	0.138	24.3
House Finch	10	49	18	-63.3	10.8 ***	12	74	40	-45.9	27.8	15	1.510	2.222	0.712	0.809	47.1
Pine Siskin	46	146	199	36.3	37.2	22	76	22	-71.1	14.3 ***	49	0.521	0.111	-0.410	0.101 ***	-78.8
Lesser Goldfinch	16	64	74	15.6	27.1	13	107	58	-45.8	19.1 **	18	1.672	0.784	-0.888	0.639	-53.1
American Goldfinch	31	234	250	6.8	8.9	15	30	8	-73.3	17.3 ***	33	0.128	0.032	-0.096	0.042 **	-75.0
All species pooled	**117**	**13143**	**12112**	**-7.8**	**2.0 *** **	**117**	**7044**	**6400**	**-9.1**	**4.9 ***	**117**	**0.536**	**0.528**	**-0.008**	**0.057**	**-1.4**
	Number decreasing: 35/63 (56%)					Number decreasing: 45/63 (71%)***					Number decreasing: 36/63 (57%)					
SOUTHWEST MAPS REGION																
Nuttall's Woodpecker	18	46	26	-43.5	15.6 **	16	40	36	-10.0	33.2	20	0.870	1.385	0.515	0.485	59.2
Western Flycatcher	29	92	63	-31.5	13.1 **	21	76	35	-53.9	10.7 ***	29	0.826	0.556	-0.271	0.280	-32.7
Black Phoebe	21	30	31	3.3	27.1	20	51	43	-15.7	27.4	26	1.700	1.387	-0.313	0.700	-18.4
Ash-throated Flycatcher	29	100	93	-7.0	19.0	16	12	29	141.7	105.1	29	0.120	0.312	0.192	0.186	159.9
Bell's Vireo	6	39	64	64.1	20.9	6	14	23	64.3	61.7	6	0.359	0.359	0.000	0.129	0.1
Warbling Vireo	20	68	66	-2.9	23.2	10	15	16	6.7	56.4	22	0.221	0.242	0.022	0.157	9.9
Chestnut-backed Chick.	10	23	21	-8.7	25.1	10	69	67	-2.9	16.8	11	3.000	3.191	0.191	1.158	6.3
Oak Titmouse	10	43	22	-48.8	10.2 **	11	32	40	25.0	48.9	11	0.744	1.818	1.074	0.562 *	144.3
Bushtit	29	115	83	-27.8	15.8	27	117	100	-14.5	17.7	32	1.017	1.205	0.187	0.309	18.4
Bewick's Wren	35	189	173	-8.5	11.8	37	316	408	29.1	17.1 *	38	1.672	2.358	0.686	0.391 *	41.1
House Wren	21	94	121	28.7	22.9	19	100	148	48.0	35.3	22	1.064	1.223	0.159	0.370	15.0
Swainson's Thrush	14	224	212	-5.4	13.4	12	47	35	-25.5	10.2 **	15	0.210	0.165	-0.045	0.078	-21.3
American Robin	19	39	59	51.3	47.8	8	10	20	100.0	143.4	21	0.256	0.339	0.083	0.231	32.2
Wrentit	20	97	88	-9.3	17.4	18	139	149	7.2	35.0	20	1.433	1.693	0.260	0.606	18.2
Orange-crowned Warbler	18	46	61	32.6	41.7	15	46	40	-13.0	20.5	19	1.000	0.656	-0.344	0.413	-34.4
Lucy's Warbler	9	104	73	-29.8	21.2	9	37	41	10.8	52.9	9	0.356	0.562	0.206	0.277	57.9

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Yellow Warbler	24	121	91	-24.8	17.6	10	41	41	0.8	21.2	24	0.339	0.451	0.112	0.206	33.0
Common Yellowthroat	23	234	158	-32.5	8.7 **	16	87	249	186.2	68.2 *	23	0.372	1.576	1.204	0.543 **	323.9
Wilson's Warbler	15	215	249	15.8	18.8	10	182	243	33.5	37.8	15	0.847	0.976	0.129	0.314	15.3
Yellow-breasted Chat	15	143	123	-14.0	8.3	10	23	39	69.6	51.4	16	0.161	0.317	0.156	0.138	97.1
Summer Tanager	7	44	52	18.2	11.1	4	2	6	200.0	141.4	7	0.046	0.115	0.070	0.075	153.8
Western Tanager	15	33	124	275.8	320.9	3	15	3	-80.0	6.1 *	15	0.455	0.024	-0.430	0.366	-94.7
Spotted Towhee	30	159	169	6.3	15.2	27	100	65	-35.0	26.1	32	0.629	0.385	-0.244	0.242	-38.8
California Towhee	13	47	34	-27.7	17.3	8	6	11	83.3	119.2	15	0.128	0.324	0.196	0.129	153.4
Song Sparrow	31	456	317	-30.5	6.2 **	29	313	615	96.5	47.3 *	31	0.686	1.940	1.254	0.398 ***	182.6
Black-headed Grosbeak	34	141	125	-11.3	13.8	16	47	37	-21.3	29.0	34	0.333	0.296	-0.037	0.171	-11.2
Blue Grosbeak	13	102	94	-7.8	11.6	4	1	7	600.0	400.0	13	0.010	0.074	0.065	0.056	659.6
Red-winged Blackbird	6	50	9	-82.0	7.0 **	2	2	2	0.8	100.0	7	0.040	0.222	0.182	0.171	455.6
Bullock's Oriole	19	70	77	10.0	28.4	12	23	66	187.0	200.8	21	0.329	0.857	0.529	0.561	160.9
House Finch	21	131	100	-23.7	17.8	21	124	74	-40.3	27.1	25	0.947	0.740	-0.207	0.558	-21.8
Lesser Goldfinch	21	79	61	-22.8	18.2	13	25	18	-28.0	28.7	21	0.317	0.295	-0.021	0.164	-6.8
American Goldfinch	14	44	49	11.4	26.4	3	1	5	400.0	600.0	14	0.023	0.102	0.079	0.068	349.0
All species pooled	**42**	**4069**	**3740**	**-8.1**	**5.8**	**42**	**2345**	**3102**	**32.3**	**16.9 ***	**42**	**0.576**	**0.829**	**0.253**	**0.131 ***	**43.9**
	Number decreasing: 21/32 (66%)*					Number increasing: 18/32 (56%)					Number increasing: 22/32 (69%)**					
NORTH-CENTRAL MAPS REGION																
Downy Woodpecker	15	25	27	8.0	31.5	14	32	33	3.1	18.5	16	1.280	1.222	-0.058	0.549	-4.5
Traill's Flycatcher	17	42	59	40.5	39.5	6	9	4	-55.6	35.8	17	0.214	0.068	-0.147	0.102	-68.4
Black-capped Chickadee	16	51	55	7.8	31.0	14	45	79	75.6	49.6	18	0.882	1.436	0.554	0.557	62.8
House Wren	13	97	101	4.1	16.3	16	74	97	31.1	41.7	16	0.763	0.960	0.198	0.295	25.9
American Robin	16	75	89	18.7	34.7	13	66	76	15.2	35.3	16	0.880	0.854	-0.026	0.581	-3.0
Gray Catbird	17	332	271	-18.4	8.3 *	16	177	140	-20.9	20.1	17	0.533	0.517	-0.017	0.192	-3.1
Nashville Warbler	5	19	11	-42.1	22.2	3	4	62	1450.0	75.0 ***	5	0.211	5.636	5.426	5.318	2577.3
Yellow Warbler	14	134	154	14.9	9.7	10	38	61	60.5	74.9	14	0.284	0.396	0.113	0.156	39.7
American Redstart	8	45	55	22.2	13.1	7	8	13	62.5	58.4	9	0.178	0.236	0.059	0.096	33.0
Ovenbird	8	45	31	-31.1	27.0	5	8	12	50.0	93.8	8	0.178	0.387	0.209	0.125	117.7
Common Yellowthroat	18	222	192	-13.5	9.6	15	47	70	48.9	76.9	19	0.212	0.365	0.153	0.157	72.2
Field Sparrow	11	52	53	1.9	23.2	7	14	15	7.1	36.9	11	0.269	0.283	0.014	0.143	5.1
Grasshopper Sparrow	5	77	64	-16.9	21.3	3	36	43	19.4	12.4	5	0.468	0.672	0.204	0.156	43.7
Song Sparrow	18	138	124	-10.1	9.8	17	92	112	21.7	33.2	20	0.667	0.903	0.237	0.268	35.5
Northern Cardinal	14	71	45	-36.6	8.8 ***	11	19	15	-21.1	29.9	14	0.268	0.333	0.066	0.139	24.6

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Rose-breasted Grosbeak	12	44	48	9.1	25.5	8	2	13	550.0	594.0	13	0.046	0.271	0.225	0.126 *	495.8
Indigo Bunting	15	66	61	-7.6	16.8	5	7	5	-28.6	28.7	15	0.106	0.082	-0.024	0.059	-22.7
Bobolink	5	43	81	88.4	80.5	5	3	3	0.8	105.4	5	0.070	0.037	-0.033	0.034	-46.9
Red-winged Blackbird	14	104	89	-14.4	23.6	5	12	16	33.3	142.8	14	0.115	0.180	0.064	0.133	55.8
Brown-headed Cowbird	16	52	52	0.8	25.0	11	7	12	71.4	70.3	17	0.135	0.231	0.096	0.090	71.4
Baltimore Oriole	12	26	24	-7.7	25.1	6	1	42	4100.0	5034.3	13	0.039	1.750	1.712	1.243	4450.0
American Goldfinch	21	198	164	-17.2	11.0	1	1	0	-100.0		21	0.005	0.000	-0.005	0.005	-100.
All species pooled	**23**	**2655**	**2510**	**-5.5**	**5.0**	**23**	**894**	**1156**	**29.3**	**23.5**	**23**	**0.337**	**0.461**	**0.124**	**0.070 ***	**36.8**
	Number decreasing: 11/22 (50%)					Number increasing: 16/22 (73%)**					Number increasing: 15/22 (68%)*					
SOUTH-CENTRAL MAPS REGION																
Downy Woodpecker	22	55	27	-50.9	15.0 **	18	38	25	-34.2	22.1	26	0.691	0.926	0.235	0.373	34.0
Acadian Flycatcher	17	164	122	-25.6	8.0 **	13	22	20	-9.1	42.6	18	0.134	0.164	0.030	0.060	22.2
White-eyed Vireo	39	474	469	-1.1	12.3	32	226	196	-13.3	19.5	39	0.477	0.418	-0.059	0.108	-12.4
Red-eyed Vireo	23	61	75	23.0	22.9	9	8	6	-25.0	54.1	23	0.131	0.080	-0.051	0.069	-39.0
Carolina Chickadee	36	134	53	-60.4	9.2 ***	34	67	82	22.4	28.0	39	0.500	1.547	1.047	0.401 ***	209.4
Tufted Titmouse	30	107	71	-33.6	15.2	32	87	81	-6.9	19.2	34	0.813	1.141	0.328	0.261	40.3
Black-crested Titmouse	14	27	26	-3.7	26.5	12	27	22	-18.5	17.7	15	1.000	0.846	-0.154	0.386	-15.4
Carolina Wren	39	356	294	-17.4	8.5	38	298	244	-18.1	15.8	41	0.837	0.830	-0.007	0.257	-0.9
Bewick's Wren	14	59	51	-13.6	20.5	12	36	47	30.6	25.6	15	0.610	0.922	0.311	0.361	51.0
Blue-gray Gnatcatcher	21	61	45	-26.2	12.1 *	13	59	11	-81.4	9.8 **	23	0.967	0.244	-0.723	0.368 **	-74.7
Blue-winged Warbler	5	54	50	-7.4	26.1	6	21	10	-52.4	27.4	6	0.389	0.200	-0.189	0.253	-48.6
Prairie Warbler	5	37	30	-18.9	13.5	4	14	4	-71.4	16.0 **	5	0.378	0.133	-0.245	0.105 *	-64.8
Prothonotary Warbler	15	146	142	-2.7	17.7	12	10	75	650.0	429.0	15	0.068	0.528	0.460	0.177 **	671.1
Kentucky Warbler	18	141	114	-19.1	12.6	19	47	35	-25.5	34.5	19	0.333	0.307	-0.026	0.143	-7.9
Common Yellowthroat	15	79	110	39.2	30.0	9	24	37	54.2	65.7	16	0.304	0.336	0.033	0.172	10.7
Hooded Warbler	11	87	76	-12.6	20.6	7	16	24	50.0	150.0	12	0.184	0.316	0.132	0.178	71.7
Yellow-breasted Chat	18	254	287	13.0	20.8	12	36	95	163.9	150.1	19	0.142	0.331	0.189	0.077 **	133.5
Summer Tanager	32	90	66	-26.7	14.7	5	1	4	300.0	500.0	33	0.011	0.061	0.050	0.033	445.5
Field Sparrow	13	55	63	14.5	17.6	8	18	12	-33.3	30.5	13	0.327	0.191	-0.137	0.127	-41.8
Northern Cardinal	45	420	481	14.5	8.8 *	42	263	206	-21.7	18.1	45	0.626	0.428	-0.198	0.123	-31.6
Indigo Bunting	26	367	282	-23.2	6.9 ***	17	21	26	23.8	45.2	26	0.057	0.092	0.035	0.030	61.1
Painted Bunting	29	274	303	10.6	13.2	22	59	56	-5.1	33.0	29	0.215	0.185	-0.031	0.070	-14.2
Brown-headed Cowbird	27	52	28	-46.2	12.4 **	4	4	2	-50.0	45.6	28	0.077	0.071	-0.006	0.067	-7.1
All species pooled	**46**	**4270**	**3942**	**-7.7**	**3.5 ** **	**46**	**1603**	**1467**	**-8.5**	**15.8**	**46**	**0.375**	**0.372**	**-0.003**	**0.058**	**-0.9**
	Number decreasing: 17/23 (74%)**					Number decreasing: 15/23 (65%)					Number decreasing: 12/23 (52%)					

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
NORTHEAST MAPS REGION																
Downy Woodpecker	40	49	69	40.8	25.7 *	43	77	81	5.2	15.9	54	1.571	1.174	-0.398	0.380	-25.3
Traill's Flycatcher	15	51	77	51.0	22.0 ***	8	10	7	-30.0	43.1	15	0.196	0.091	-0.105	0.076	-53.6
Eastern Phoebe	26	22	36	63.6	41.9 *	23	24	27	12.5	23.8	33	1.091	0.750	-0.341	0.347	-31.3
Red-eyed Vireo	49	111	146	31.5	20.5 *	11	16	10	-37.5	29.5	50	0.144	0.068	-0.076	0.062	-52.5
Black-capped Chickadee	49	137	185	35.0	16.8 **	36	140	174	24.3	19.5	51	1.022	0.940	-0.081	0.333	-8.0
Tufted Titmouse	25	34	33	-2.9	19.9	25	68	55	-19.1	21.9	31	2.000	1.667	-0.333	0.656	-16.7
Carolina Wren	18	39	49	25.6	24.0	19	51	68	33.3	29.0	22	1.308	1.388	0.080	0.408	6.1
House Wren	13	36	52	44.4	23.7 *	15	33	34	3.0	22.9	17	0.917	0.654	-0.263	0.337	-28.7
Veery	37	198	170	-14.1	8.3	22	37	49	32.4	28.8	37	0.187	0.288	0.101	0.058 *	54.2
Swainson's Thrush	9	29	51	75.9	31.1 **	6	11	15	36.4	56.0	10	0.379	0.294	-0.085	0.146	-22.5
Hermit Thrush	22	55	56	1.8	21.9	14	21	16	-23.8	29.0	26	0.382	0.286	-0.096	0.198	-25.2
Wood Thrush	39	124	123	-0.8	13.7	26	59	49	-16.9	24.6	42	0.476	0.398	-0.077	0.144	-16.3
American Robin	46	147	178	21.1	16.9	37	108	78	-27.8	16.1 *	48	0.735	0.438	-0.297	0.191	-40.4
Gray Catbird	48	641	561	-12.5	8.5	37	349	212	-39.3	6.6 ***	48	0.545	0.378	-0.167	0.098 *	-30.6
Cedar Waxwing	28	106	88	-17.0	16.0	3	0	3	++++		28	0.000	0.034	0.034	0.015 **	++++
Yellow Warbler	20	98	115	17.3	29.9	10	56	38	-32.1	20.0	21	0.571	0.330	-0.241	0.136 *	-42.2
Chestnut-sided Warbler	19	62	71	14.5	15.3	9	31	25	-19.4	51.5	22	0.500	0.352	-0.148	0.245	-29.6
Magnolia Warbler	13	63	70	11.1	17.5	9	14	25	78.6	83.2	14	0.222	0.357	0.135	0.129	60.7
Black-thrtd. Blue Warbler	13	40	25	-37.5	12.4 **	12	32	13	-59.4	16.6 ***	15	0.800	0.520	-0.280	0.486	-35.0
Black-thrtd. Green Warb.	20	44	36	-18.2	15.7	6	18	4	-77.8	13.5 **	20	0.409	0.111	-0.298	0.218	-72.8
Black-and-white Warbler	25	41	45	9.8	21.7	16	21	6	-71.4	16.1 **	29	0.512	0.133	-0.379	0.177 **	-74.0
American Redstart	30	81	77	-4.9	25.0	19	44	35	-20.5	38.2	34	0.543	0.455	-0.089	0.216	-16.3
Worm-eating Warbler	13	29	26	-10.3	22.6	4	32	21	-34.4	20.5	13	1.103	0.808	-0.296	0.796	-26.8
Ovenbird	53	173	175	1.2	11.5	39	74	71	-4.1	22.0	54	0.428	0.406	-0.022	0.115	-5.2
Louisiana Waterthrush	18	25	44	76.0	44.7	9	36	39	8.3	21.4	18	1.440	0.886	-0.554	0.796	-38.4
Common Yellowthroat	47	252	253	0.4	11.8	29	122	96	-21.3	14.3	47	0.484	0.379	-0.105	0.110	-21.6
Scarlet Tanager	24	21	44	109.5	72.3 **	9	7	10	42.9	101.5	28	0.333	0.227	-0.106	0.207	-31.8
Field Sparrow	12	33	20	-39.4	20.8	12	22	12	-45.5	27.4	14	0.667	0.600	-0.067	0.323	-10.0
Song Sparrow	32	198	195	-1.5	7.3	34	240	269	12.1	16.3	40	1.212	1.380	0.167	0.276	13.8
White-throated Sparrow	12	61	60	-1.6	17.8	12	37	10	-73.0	9.3 ***	14	0.607	0.167	-0.440	0.178 **	-72.5
Dark-eyed Junco	7	13	28	115.4	54.0 *	8	56	24	-57.1	28.3 *	10	4.308	0.857	-3.451	2.382	-80.1
Northern Cardinal	38	125	125	0.8	12.7	29	87	45	-48.3	10.3 ***	40	0.696	0.360	-0.336	0.149 **	-48.3
Indigo Bunting	22	40	39	-2.5	28.7	11	12	13	8.3	58.7	23	0.300	0.333	0.033	0.195	11.1

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
Common Grackle	20	32	34	6.3	30.9	9	19	6	-68.4	22.1 **	21	0.594	0.177	-0.417	0.337	-70.3
American Goldfinch	33	165	170	3.0	19.4	1	0	1	++++		33	0.000	0.006	0.006	0.005	++++
All species pooled	**64**	**4012**	**4236**	**5.6**	**3.6**	**64**	**2207**	**1893**	**-14.2**	**6.7 ***	**64**	**0.550**	**0.447**	**-0.103**	**0.054 ***	**-18.8**
	Number increasing: 21/35 (60%)					Number decreasing: 21/35 (60%)					Number decreasing: 28/35 (80%)***					
SOUTHEAST MAPS REGION																
Downy Woodpecker	35	48	51	6.3	21.8	33	70	48	-31.4	15.4 *	45	1.458	0.941	-0.517	0.436	-35.5
Acadian Flycatcher	40	189	170	-10.1	12.8	21	24	11	-54.2	19.1 **	40	0.127	0.065	-0.062	0.038	-49.0
White-eyed Vireo	37	145	142	-2.1	13.8	26	51	29	-43.1	12.9 **	39	0.352	0.204	-0.148	0.076 *	-41.9
Red-eyed Vireo	42	166	171	3.0	12.4	20	29	13	-55.2	19.1 **	46	0.175	0.076	-0.099	0.061	-56.5
Carolina Chickadee	34	62	55	-11.3	20.8	28	75	52	-30.7	18.9	42	1.210	0.945	-0.264	0.426	-21.8
Tufted Titmouse	44	83	76	-8.4	17.0	42	91	56	-38.5	15.3 **	49	1.096	0.737	-0.360	0.256	-32.8
Carolina Wren	46	220	194	-11.8	9.1	49	235	173	-26.4	10.6 **	52	1.068	0.892	-0.176	0.242	-16.5
Blue-gray Gnatcatcher	19	35	22	-37.1	15.9 *	14	23	13	-43.5	24.1	22	0.657	0.591	-0.066	0.319	-10.1
Wood Thrush	41	261	256	-1.9	11.0	35	126	53	-57.9	8.5 ***	45	0.483	0.207	-0.276	0.087 ***	-57.1
American Robin	13	24	38	58.3	34.1	10	21	22	4.8	26.1	15	0.875	0.579	-0.296	0.475	-33.8
Gray Catbird	29	115	126	9.6	16.8	18	94	52	-44.7	10.1 ***	33	0.817	0.413	-0.405	0.338	-49.5
Brown Thrasher	22	35	22	-37.1	24.6	12	15	15	0.8	47.2	24	0.429	0.682	0.253	0.379	59.1
Pine Warbler	8	14	18	28.6	92.7	6	114	6	-94.7	2.4 ***	9	8.143	0.333	-7.810	4.823	-95.9
Prairie Warbler	14	77	58	-24.7	18.9	10	24	20	-16.7	32.5	15	0.312	0.345	0.033	0.116	10.6
Worm-eating Warbler	24	46	56	21.7	36.2	19	35	20	-42.9	10.5 ***	30	0.761	0.357	-0.404	0.247	-53.1
Ovenbird	40	138	121	-12.3	9.9	27	71	68	-4.2	18.4	41	0.515	0.562	0.048	0.127	9.2
Louisiana Waterthrush	27	64	54	-15.6	14.0	23	46	46	0.8	20.6	32	0.719	0.852	0.133	0.254	18.5
Kentucky Warbler	34	195	213	9.2	9.1	26	69	62	-10.1	17.3	35	0.354	0.291	-0.063	0.088	-17.7
Common Yellowthroat	43	186	184	-1.1	14.6	27	56	55	-1.8	21.2	44	0.301	0.299	-0.002	0.099	-0.7
Hooded Warbler	28	68	90	32.4	26.1	18	39	17	-56.4	14.8 **	30	0.573	0.189	-0.385	0.124 ***	-67.1
Yellow-breasted Chat	20	90	81	-10.0	11.9	12	24	6	-75.0	8.3 ***	20	0.267	0.074	-0.193	0.068 **	-72.2
Eastern Towhee	33	40	55	37.5	23.7 *	15	18	8	-55.6	15.8 ***	34	0.450	0.146	-0.305	0.124 **	-67.7
Northern Cardinal	51	289	307	6.2	8.4	42	162	72	-55.6	9.4 ***	52	0.561	0.235	-0.326	0.103 ***	-58.2
Indigo Bunting	44	286	215	-24.8	6.1 ***	16	27	12	-55.6	16.9 **	45	0.094	0.056	-0.039	0.034	-40.9
Common Grackle	17	35	29	-17.1	23.1	6	15	3	-80.0	13.1 ***	18	0.429	0.103	-0.325	0.161 *	-75.9
American Goldfinch	19	52	60	15.4	19.5	0	0	0			19	0.000	0.000	0.000		
All species pooled	**55**	**3380**	**3386**	**0.2**	**2.9**	**55**	**1700**	**1040**	**-38.8**	**5.4 ***	**55**	**0.503**	**0.307**	**-0.196**	**0.057 ***	**-38.9**
	Number increasing: 11/26 (42%)					Number decreasing: 22/26 (85%)***					Number decreasing: 21/26 (81%)***					

TABLE 2. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2004	2005	%chg.	SE[b]	n[c]	2004	2005	%chg.	SE[d]	n[e]	2004	2005	change	SE[f]	%chg.
ALASKA AND BOREAL CANADA MAPS REGIONS																
Tennessee Warbler	4	7	11	57.1	54.5	4	34	68	100.0	280.7	4	4.857	6.182	1.325	5.954	27.3
American Redstart	5	45	45	0.8	21.4	4	11	8	-27.3	84.6	5	0.244	0.178	-0.067	0.227	-27.3
Ovenbird	5	21	39	85.7	71.2	4	1	26	2500.0	2766.5	5	0.048	0.667	0.619	0.341	1300.0
Canada Warbler	5	24	32	33.3	37.5	4	8	31	287.5	329.2	5	0.333	0.969	0.635	0.426	190.6
All species pooled	**5**	**220**	**232**	**5.5**	**9.2**	**5**	**93**	**202**	**117.2**	**192.9**	**5**	**0.423**	**0.871**	**0.448**	**0.444**	**106.0**
	Number increasing: 3/4 (75%)					Number increasing: 3/4 (75%)					Number increasing: 3/4 (75%)					

[a] Number of stations at which at least one individual adult bird of the species was captured in either year.
[b] Standard error of the percent change in the number of adult birds captured.
[c] Number of stations at which at least one individual young bird of the species was captured in either year.
[d] Standard error of the percent change in the number of young birds captured.
[e] Number of stations at which at least one individual aged bird of the species was captured in either year.
[f] Standard error of the change in the reproductive index.
* $0.05 \leq P < 0.10$; ** $0.01 \leq P < 0.05$; *** $P < 0.01$

Central and Alaska/Boreal Canada regions increased in 2005 following generally non-significant decreases in 2004. The 32.3% increase in number of young for all species pooled in the Southwest and 43.9% and 36.8% increases in reproductive index for all species pooled in the Southwest and North-Central regions, respectively, were each nearly significant. The proportions of increasing species for these two parameters ranged between 56% and 75% in these three regions, and were significant or nearly significant for number of young in the North-central Region and reproductive index in both the Southwest and North-central regions. Summing over these three regions, four species had significant or nearly significant increases in number of young captured, compared to three species with nearly significant decreases; similarly, five species showed significant or nearly significant decreases in reproductive index, while no species showed even a nearly significant decrease. In contrast to the other six regions, decreases (non-significant) from the previous year occurred in both 2005 and 2004 in both number of young and reproductive index for all species pooled in the South-Central Region; the proportions of decreasing species in these two parameters were not significant in either year. Two species had significant decreases in 2005 in number of young, while no species had even a nearly significant increase; two species also had significant or nearly significant decreases in reproductive index in 2005 while three species had significant increases.

Program-wide, the number of young for all species pooled decreased by a non-significant -3.9%, while the reproductive index for all species pooled increased by a non-significant 1.1% from 0.500 in 2004 to 0.506 in 2005 (Table 2). The program-wide proportion of species with a decreasing number of young (57%) was nearly significant, while the proportion of species with an increasing reproductive index (47%) was not. Program-wide, 24 species had significant or nearly significant decreases in number of young, while only six species had significant or nearly significant increases. Similarly, nine species had significant or nearly significant decreases in reproductive index, while only four showed significant or nearly significant increases.

3. *Changes between 2005 and 2006* — Constant-effort data were obtained for 2005 and 2006 from 357 MAPS stations operated comparably in both years. The changes between years in the numbers of adult and young birds captured and the reproductive index are presented for the entire continent (program-wide) and for each region in Table 3 for individual species (inclusion criteria as in Table 1) and for all species pooled. These included 135 species program-wide, 59 species in the Northwest, 32 in the Southwest, 23 in the North-central, 25 in the South-central, 37 in the Northeast, 27 in the Southeast, and 6 in the combined Alaska/Boreal Canada Region.

(a) *Changes in adult population size* — The index of adult population size for all species pooled increased in 2006 in the North-central, Northeast, and Southeast regions and decreased in the Northwest, Southwest, South-central, and Alaska/Boreal Canada regions (Table 3). The increases in the North-central (11.2%) and Northeast (10.1%) were significant and highly significant, respectively, while the proportion of increasing species in Northeast (65%) was also significant. The decrease in adult population size for all species pooled in the South-central Region (-14.3%) and proportion of decreasing species there (72%) were also highly significant and significant, respectively. Summing over the three regions with increases in adult population size for all species pooled, 18 species had significant or nearly significant increases in number of adults, while 8 species showed significant or nearly significant decreases. In contrast, summing over the four regions with decreases in adult population size, 12 species had significant or nearly significant increases in number of adults, while 23 species showed significant or nearly significant decreases.

Program-wide, the index of adult population size for all species pooled remained fairly constant between 2005 and 2006 with a non-significant decrease of -0.8% (Table 3). The program-wide proportion of decreasing species (49%) was not significant. Program-wide, 20 species had significant or nearly significant decreases in number of adults, while 20 other species showed significant or nearly significant increases.

(b) *Changes in productivity* — Regional changes in productivity for all species pooled between 2005 and 2006 were in the same direction as regional changes in adults for each of the seven regions, a situation that has never before been

TABLE 3. Program-wide and regional changes between 2005 and 2006 in the numbers of adult and young individuals captured and in the reproductive index (young/adult) for 135 species and all species pooled (excluding gallinaceous birds and hummingbirds) at the 357 MAPS stations run comparably during both years. For each species, data were included only from stations within the breeding range of the species. Only species for which adults were captured at two or more stations and for which 50 or more aged individuals were captured in either year are included.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
PROGRAM-WIDE																
Common Ground-Dove	7	52	52	0.0	41.2	6	5	26	420.0	335.0	8	0.096	0.500	0.404	0.213	420.0
Yellow-billed Cuckoo	49	54	33	-38.9	11.3 ***	1	0	1	++++		49	0.000	0.030	0.030	0.031	++++
Red-bellied Woodpecker	42	33	46	39.4	28.1 *	21	18	12	-33.3	25.3	49	0.546	0.261	-0.285	0.207	-52.2
Red-naped Sapsucker	28	77	45	-41.6	8.7 ***	17	25	28	12.0	31.3	30	0.325	0.622	0.298	0.219	91.6
Red-breasted Sapsucker	40	61	92	50.8	19.3 ***	23	29	37	27.6	34.5	41	0.475	0.402	-0.073	0.120	-15.4
Nuttall's Woodpecker	19	29	49	69.0	39.1 **	15	45	28	-37.8	20.9	19	1.552	0.571	-0.980	0.435 **	-63.2
Downy Woodpecker	185	250	286	14.4	11.9	157	241	269	11.6	9.8	221	0.964	0.941	-0.023	0.147	-2.4
Hairy Woodpecker	118	79	93	17.7	19.8	58	37	36	-2.7	25.3	140	0.468	0.387	-0.081	0.123	-17.4
Northern Flicker	83	78	68	-12.8	15.8	40	28	23	-17.9	20.4	100	0.359	0.338	-0.021	0.111	-5.8
Western Wood-Pewee	71	177	189	6.8	12.0	22	16	19	18.8	45.7	74	0.090	0.101	0.010	0.038	11.2
Eastern Wood-Pewee	64	89	89	0.0	16.7	12	5	17	240.0	291.9	67	0.056	0.191	0.135	0.083	240.0
Acadian Flycatcher	75	369	450	22.0	11.5 **	42	34	55	61.8	44.0 *	81	0.092	0.122	0.030	0.030	32.6
Traill's Flycatcher	104	401	377	-6.0	8.1	31	34	36	5.9	38.1	108	0.085	0.095	0.011	0.033	12.6
Least Flycatcher	28	93	91	-2.2	15.0	19	15	34	126.7	82.9 *	33	0.161	0.374	0.212	0.143	131.6
Hammond's Flycatcher	42	71	70	-1.4	18.4	23	26	48	84.6	38.1 **	49	0.366	0.686	0.320	0.235	87.3
Dusky Flycatcher	54	257	169	-34.2	7.3 ***	28	44	34	-22.7	24.8	57	0.171	0.201	0.030	0.068	17.5
Western Flycatcher	88	210	252	20.0	16.1	55	87	72	-17.2	14.1	94	0.414	0.286	-0.129	0.102	-31.0
Black Phoebe	30	64	42	-34.4	12.1 **	29	74	46	-37.8	14.4 **	38	1.156	1.095	-0.061	0.373	-5.3
Eastern Phoebe	41	50	46	-8.0	22.2	42	82	80	-2.4	27.7	62	1.640	1.739	0.099	0.672	6.0
Ash-throated Flycatcher	33	108	92	-14.8	17.7	14	29	26	-10.3	21.1	33	0.269	0.283	0.014	0.158	5.2
Great Crested Flycatcher	58	64	61	-4.7	17.6	6	11	1	-90.9	11.6 ***	60	0.172	0.016	-0.156	0.094 *	-90.5
Brown-crested Flycatcher	10	46	54	17.4	32.1	6	2	7	250.0	302.5	10	0.044	0.130	0.086	0.050	198.1
White-eyed Vireo	84	775	777	0.3	5.1	62	257	271	5.4	14.9	88	0.332	0.349	0.017	0.054	5.2
Bell's Vireo	11	88	49	-44.3	13.0 ***	7	42	12	-71.4	18.1 ***	12	0.477	0.245	-0.232	0.207	-48.7
Cassin's Vireo	35	64	60	-6.3	15.2	21	27	21	-22.2	29.4	41	0.422	0.350	-0.072	0.174	-17.0
Warbling Vireo	115	483	453	-6.2	9.5	49	63	59	-6.3	26.9	119	0.130	0.130	0.000	0.037	-0.1
Red-eyed Vireo	145	475	493	3.8	8.0	32	32	25	-21.9	25.7	148	0.067	0.051	-0.017	0.022	-24.7
Blue Jay	73	63	81	28.6	24.6	26	12	30	150.0	100.4 **	81	0.191	0.370	0.180	0.123	94.4
Tree Swallow	34	37	51	37.8	51.5	13	9	13	44.4	85.4	40	0.243	0.255	0.012	0.177	4.8
Barn Swallow	11	26	13	-50.0	30.1	10	24	5	-79.2	11.4 ***	15	0.923	0.385	-0.539	0.315	-58.3
Carolina Chickadee	87	128	182	42.2	20.7 **	76	137	138	0.7	16.8	98	1.070	0.758	-0.312	0.224	-29.2
Black-capped Chickadee	117	384	348	-9.4	7.4	110	450	432	-4.0	8.8	127	1.172	1.241	0.069	0.214	5.9

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
Mountain Chickadee	33	90	63	-30.0	8.7 ***	31	68	48	-29.4	19.4	42	0.756	0.762	0.006	0.247	0.8
Chestnut-backed Chick.	46	110	94	-14.5	17.8	45	182	147	-19.2	16.3	54	1.655	1.564	-0.091	0.523	-5.5
Oak Titmouse	13	32	35	9.4	31.4	14	56	32	-42.9	10.4 ***	14	1.750	0.914	-0.836	0.470 *	-47.8
Tufted Titmouse	118	200	250	25.0	13.1 **	113	228	296	29.8	16.0 **	136	1.140	1.184	0.044	0.171	3.9
Black-crested Titmouse	16	30	27	-10.0	18.2	10	23	17	-26.1	21.1	17	0.767	0.630	-0.137	0.438	-17.9
Bushtit	48	117	167	42.7	34.2 *	43	140	175	25.0	24.0	53	1.197	1.048	-0.149	0.316	-12.4
Red-breasted Nuthatch	47	63	48	-23.8	13.2	34	46	54	17.4	29.6	56	0.730	1.125	0.395	0.344	54.1
White-breasted Nuthatch	61	49	71	44.9	35.4	32	32	35	9.4	28.7	71	0.653	0.493	-0.160	0.213	-24.5
Brown Creeper	46	45	72	60.0	28.9 **	53	60	86	43.3	32.3	68	1.333	1.194	-0.139	0.439	-10.4
Carolina Wren	124	717	656	-8.5	6.5	115	562	545	-3.0	8.6	132	0.784	0.831	0.047	0.100	6.0
Bewick's Wren	62	267	274	2.6	11.7	69	518	384	-25.9	8.4 **	74	1.940	1.402	-0.539	0.293 *	-27.8
House Wren	78	494	434	-12.1	7.9	78	503	353	-29.8	8.8 **	93	1.018	0.813	-0.205	0.227	-20.1
Winter Wren	42	76	72	-5.3	16.0	35	75	55	-26.7	21.2	52	0.987	0.764	-0.223	0.300	-22.6
Golden-crowned Kinglet	38	82	81	-1.2	17.3	39	325	155	-52.3	14.4 *	47	3.963	1.914	-2.050	1.005 **	-51.7
Ruby-crowned Kinglet	22	77	61	-20.8	14.0	19	42	39	-7.1	24.3	27	0.546	0.639	0.094	0.478	17.2
Blue-gray Gnatcatcher	56	80	83	3.8	20.5	31	27	31	14.8	34.2	65	0.338	0.374	0.036	0.104	10.7
Eastern Bluebird	26	20	36	80.0	43.0 ***	26	58	52	-10.3	33.9	37	2.900	1.444	-1.456	0.968	-50.2
Veery	55	255	281	10.2	7.9	30	58	38	-34.5	20.9	55	0.228	0.135	-0.092	0.055 *	-40.5
Swainson's Thrush	106	944	917	-2.9	5.8	69	154	274	77.9	25.5 ***	108	0.163	0.299	0.136	0.059 **	83.2
Hermit Thrush	55	115	116	0.9	14.4	51	56	49	-12.5	18.7	73	0.487	0.422	-0.064	0.134	-13.3
Wood Thrush	107	469	524	11.7	8.3	76	137	189	38.0	22.4 *	115	0.292	0.361	0.069	0.063	23.5
American Robin	197	784	826	5.4	5.5	134	325	347	6.8	15.9	207	0.415	0.420	0.006	0.079	1.3
Wrentit	26	106	100	-5.7	10.8	28	168	101	-39.9	9.1 **	29	1.585	1.010	-0.575	0.335 *	-36.3
Gray Catbird	126	1261	1415	12.2	4.5 **	78	483	660	36.6	14.0 ***	130	0.383	0.466	0.083	0.074	21.8
Northern Mockingbird	15	33	27	-18.2	32.8	9	37	17	-54.1	31.6	17	1.121	0.630	-0.492	0.722	-43.8
Brown Thrasher	47	68	40	-41.2	13.9 **	25	24	22	-8.3	30.5	55	0.353	0.550	0.197	0.207	55.8
European Starling	18	23	31	34.8	54.1	16	19	19	0.0	66.6	24	0.826	0.613	-0.213	0.578	-25.8
Cedar Waxwing	76	392	324	-17.3	9.8	12	21	17	-19.0	28.5	78	0.054	0.053	-0.001	0.032	-2.1
Blue-winged Warbler	36	119	123	3.4	19.6	22	24	22	-8.3	30.4	38	0.202	0.179	-0.023	0.068	-11.3
Tennessee Warbler	11	29	29	0.0	25.1	5	74	10	-86.5	12.1 ***	11	2.552	0.345	-2.207	1.902	-86.5
Orange-crowned Warbler	53	200	123	-38.5	7.0 ***	47	161	75	-53.4	12.2 ***	59	0.805	0.610	-0.195	0.220	-24.3
Nashville Warbler	33	85	109	28.2	33.5	35	139	130	-6.5	24.3	42	1.635	1.193	-0.443	0.596	-27.1
Virginia's Warbler	5	49	27	-44.9	2.1 ***	5	16	19	18.8	93.9	5	0.327	0.704	0.377	0.596	115.5
Lucy's Warbler	9	99	112	13.1	19.9	8	59	12	-79.7	9.3 ***	9	0.596	0.107	-0.489	0.207 **	-82.0
Northern Parula	37	43	44	2.3	21.2	19	13	22	69.2	76.3	45	0.302	0.500	0.198	0.207	65.4

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
Yellow Warbler	124	953	1002	5.1	5.8	80	447	463	3.6	17.6	132	0.469	0.462	-0.007	0.091	-1.5
Chestnut-sided Warbler	25	92	103	12.0	18.9	18	36	47	30.6	34.4	31	0.391	0.456	0.065	0.140	16.6
Magnolia Warbler	23	85	80	-5.9	12.7	15	28	36	28.6	40.8	23	0.329	0.450	0.121	0.159	36.6
Black-thrtd. Blue Warbler	11	29	32	10.3	24.8	10	13	40	207.7	143.3	13	0.448	1.250	0.802	0.471	178.8
Yellow-rumped Warbler	79	337	313	-7.1	9.8	50	305	208	-31.8	9.8 ***	81	0.905	0.665	-0.241	0.405	-26.6
Black-thrtd Green Warb.	25	44	63	43.2	19.3 **	10	4	21	425.0	438.1	25	0.091	0.333	0.242	0.156	266.7
Townsend's Warbler	17	77	76	-1.3	21.1	18	47	30	-36.2	28.7	22	0.610	0.395	-0.216	0.223	-35.3
Hermit Warbler	22	89	95	6.7	18.8	19	89	71	-20.2	17.2	23	1.000	0.747	-0.253	0.363	-25.3
Pine Warbler	19	18	25	38.9	48.1	11	10	37	270.0	204.4	24	0.556	1.480	0.924	1.072	166.4
Prairie Warbler	20	100	122	22.0	17.8	14	30	23	-23.3	20.2	23	0.300	0.189	-0.112	0.076	-37.2
Black-and-white Warbler	79	108	135	25.0	15.7 *	42	37	63	70.3	43.0 **	86	0.343	0.467	0.124	0.123	36.2
American Redstart	80	258	307	19.0	9.8 **	39	66	90	36.4	30.0	82	0.256	0.293	0.037	0.072	14.6
Prothonotary Warbler	35	257	204	-20.6	9.1 *	26	148	78	-47.3	13.2 **	39	0.576	0.382	-0.194	0.146	-33.6
Worm-eating Warbler	45	108	122	13.0	14.4	28	50	64	28.0	24.7	48	0.463	0.525	0.062	0.165	13.3
Swainson's Warbler	19	113	90	-20.4	8.3 *	13	13	15	15.4	54.1	19	0.115	0.167	0.052	0.062	44.9
Ovenbird	111	369	398	7.9	8.4	81	163	198	21.5	17.0	118	0.442	0.498	0.056	0.086	12.6
Northern Waterthrush	21	48	41	-14.6	13.2	14	28	21	-25.0	31.2	27	0.583	0.512	-0.071	0.284	-12.2
Louisiana Waterthrush	54	112	128	14.3	16.2	40	93	98	5.4	14.5	62	0.830	0.766	-0.065	0.188	-7.8
Kentucky Warbler	68	441	432	-2.0	7.1	55	185	193	4.3	18.8	70	0.420	0.447	0.027	0.085	6.5
MacGillivray's Warbler	88	629	613	-2.5	6.1	69	321	279	-13.1	9.7	94	0.510	0.455	-0.055	0.076	-10.8
Common Yellowthroat	182	1069	1005	-6.0	5.7	118	432	383	-11.3	13.6	190	0.404	0.381	-0.023	0.076	-5.7
Hooded Warbler	62	372	360	-3.2	6.2	43	69	83	20.3	28.0	67	0.186	0.231	0.045	0.052	24.3
Wilson's Warbler	83	516	440	-14.7	9.9	65	246	214	-13.0	11.7	88	0.477	0.486	0.010	0.107	2.0
Canada Warbler	18	77	47	-39.0	12.9 **	12	49	37	-24.5	30.3	21	0.636	0.787	0.151	0.280	23.7
Yellow-breasted Chat	92	744	707	-5.0	5.7	49	201	168	-16.4	8.6	94	0.270	0.238	-0.033	0.061	-12.0
Summer Tanager	80	196	199	1.5	11.0	23	17	19	11.8	31.2	81	0.087	0.095	0.009	0.035	10.1
Scarlet Tanager	59	82	71	-13.4	15.9	7	12	2	-83.3	16.2 ***	59	0.146	0.028	-0.118	0.083	-80.8
Western Tanager	80	414	240	-42.0	19.3	33	58	63	8.6	32.2	84	0.140	0.263	0.122	0.087	87.4
Spotted Towhee	65	255	255	0.0	8.0	57	180	165	-8.3	10.7	73	0.706	0.647	-0.059	0.173	-8.3
Eastern Towhee	77	124	109	-12.1	11.5	39	25	50	100.0	45.8 ***	82	0.202	0.459	0.257	0.111 **	127.5
California Towhee	12	26	39	50.0	37.7 *	10	10	12	20.0	58.7	15	0.385	0.308	-0.077	0.183	-20.0
Abert's Towhee	4	15	25	66.7	71.0	5	55	8	-85.5	4.7 **	5	3.667	0.320	-3.347	1.862	-91.3
Chipping Sparrow	80	232	261	12.5	11.5	37	102	108	5.9	45.8	86	0.440	0.414	-0.026	0.220	-5.9
Brewer's Sparrow	9	5	29	480.0	353.7	9	9	34	277.8	273.2	12	1.800	1.172	-0.628	1.606	-34.9
Field Sparrow	52	213	205	-3.8	11.2	29	55	72	30.9	49.8	60	0.258	0.351	0.093	0.214	36.0

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
Black-throated Sparrow	6	13	46	253.8	245.3	3	30	6	-80.0	19.6 *	6	2.308	0.130	-2.177	1.537	-94.3
Grasshopper Sparrow	13	158	230	45.6	20.4 **	12	58	65	12.1	42.6	13	0.367	0.283	-0.084	0.130	-23.0
Fox Sparrow	20	49	50	2.0	20.1	13	10	19	90.0	91.8	25	0.204	0.380	0.176	0.156	86.2
Song Sparrow	166	1204	1351	12.2	5.9 **	163	1502	1287	-14.3	6.2 **	180	1.248	0.953	-0.295	0.134 **	-23.6
Lincoln's Sparrow	35	241	195	-19.1	9.4 *	32	123	111	-9.8	25.1	42	0.510	0.569	0.059	0.163	11.5
Swamp Sparrow	17	28	41	46.4	34.1 *	14	33	28	-15.2	40.3	20	1.179	0.683	-0.496	0.439	-42.1
White-throated Sparrow	20	93	103	10.8	21.5	18	38	50	31.6	25.2	22	0.409	0.485	0.077	0.165	18.8
White-crowned Sparrow	17	46	64	39.1	30.2	12	49	50	2.0	9.5	20	1.065	0.781	-0.284	0.588	-26.7
Dark-eyed Junco	79	456	524	14.9	8.7 *	76	502	535	6.6	17.7	89	1.101	1.021	-0.080	0.259	-7.3
Northern Cardinal	169	1134	1026	-9.5	4.9 *	127	413	427	3.4	10.0	170	0.364	0.416	0.052	0.052	14.3
Rose-breasted Grosbeak	30	68	64	-5.9	20.0	20	18	20	11.1	35.6	33	0.265	0.313	0.048	0.121	18.1
Black-headed Grosbeak	101	384	365	-4.9	9.0	49	123	121	-1.6	22.7	106	0.320	0.332	0.011	0.115	3.5
Blue Grosbeak	28	159	95	-40.3	7.9 **	3	5	0	-100.0	0.0	28	0.031	0.000	-0.031	0.021	-100.0
Lazuli Bunting	56	115	162	40.9	22.1 **	27	36	64	77.8	38.7 **	61	0.313	0.395	0.082	0.126	26.2
Indigo Bunting	128	760	662	-12.9	5.2 **	45	82	69	-15.9	17.8	128	0.108	0.104	-0.004	0.031	-3.4
Varied Bunting	4	60	22	-63.3	16.8 **	0	0	0			4	0.000	0.000	0.000		
Painted Bunting	35	377	344	-8.8	13.9	25	91	72	-20.9	30.0	35	0.241	0.209	-0.032	0.063	-13.3
Dickcissel	14	82	167	103.7	47.3 ***	6	1	11	1000.0	1368.2	15	0.012	0.066	0.054	0.023 **	440.1
Bobolink	11	150	110	-26.7	14.4 *	8	8	63	687.5	613.8	11	0.053	0.573	0.519	0.139 ***	973.9
Red-winged Blackbird	67	288	271	-5.9	13.0	24	53	39	-26.4	41.7	69	0.184	0.144	-0.040	0.087	-21.8
Western Meadowlark	10	29	42	44.8	39.6	8	5	25	400.0	406.8	10	0.172	0.595	0.423	0.242	245.2
Common Grackle	44	103	65	-36.9	15.1 *	16	12	22	83.3	98.2	44	0.117	0.339	0.222	0.129 *	190.5
Brown-headed Cowbird	153	298	317	6.4	10.9	53	43	44	2.3	22.9	166	0.144	0.139	-0.006	0.038	-3.8
Orchard Oriole	30	76	62	-18.4	17.7	11	18	23	27.8	62.9	35	0.237	0.371	0.134	0.193	56.6
Bullock's Oriole	49	185	158	-14.6	16.1	34	98	78	-20.4	35.9	53	0.530	0.494	-0.036	0.246	-6.8
Baltimore Oriole	33	50	49	-2.0	20.7	14	40	12	-70.0	14.4 ***	39	0.800	0.245	-0.555	0.340	-69.4
Purple Finch	58	289	259	-10.4	16.0	36	119	75	-37.0	12.2 *	63	0.412	0.290	-0.122	0.138	-29.7
Cassin's Finch	24	40	52	30.0	41.9	8	11	8	-27.3	55.0	25	0.275	0.154	-0.121	0.134	-44.1
House Finch	45	156	185	18.6	20.8	39	131	106	-19.1	22.8	52	0.840	0.573	-0.267	0.332	-31.8
Pine Siskin	42	214	60	-72.0	10.5 ***	15	24	24	0.0	64.5	44	0.112	0.400	0.288	0.173 *	256.7
Lesser Goldfinch	32	162	127	-21.6	22.2	19	88	41	-53.4	12.2 ***	32	0.543	0.323	-0.220	0.181	-40.6
American Goldfinch	129	702	748	6.6	6.5	11	11	22	100.0	55.6	130	0.016	0.029	0.014	0.020	87.7
Evening Grosbeak	16	25	54	116.0	86.3	2	0	5	++++		16	0.000	0.093	0.093	0.073	++++
All species pooled	**357**	**30539**	**30290**	**-0.8**	**1.6**	**355**	**14643**	**13750**	**-6.1**	**3.3 ***	**357**	**0.480**	**0.454**	**-0.026**	**0.027**	**-5.3**
	Number decreasing: 66/135 (49%)					Number decreasing: 67/135 (50%)					Number decreasing: 70/135 (52%)					

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
NORTHWEST MAPS REGION																
Red-naped Sapsucker	27	77	44	-42.9	8.5 ***	17	25	28	12.0	31.3	29	0.325	0.636	0.312	0.224	96.0
Red-breasted Sapsucker	40	61	92	50.8	19.3 ***	23	29	37	27.6	34.5	41	0.475	0.402	-0.073	0.120	-15.4
Downy Woodpecker	41	50	53	6.0	28.7	34	37	39	5.4	24.2	51	0.740	0.736	-0.004	0.245	-0.6
Western Wood-Pewee	53	146	150	2.7	12.7	18	10	18	80.0	68.0	56	0.068	0.120	0.052	0.040	75.2
Traill's Flycatcher	54	231	247	6.9	10.0	17	20	20	0.0	53.6	56	0.087	0.081	-0.006	0.047	-6.5
Hammond's Flycatcher	41	70	70	0.0	18.9	23	26	48	84.6	38.1 **	48	0.371	0.686	0.314	0.236	84.6
Dusky Flycatcher	52	246	163	-33.7	7.5 ***	27	42	34	-19.0	26.6	55	0.171	0.209	0.038	0.071	22.2
Western Flycatcher	69	157	166	5.7	12.8	39	67	48	-28.4	14.2 *	73	0.427	0.289	-0.138	0.119	-32.2
Cassin's Vireo	35	64	60	-6.3	15.2	21	27	21	-22.2	29.4	41	0.422	0.350	-0.072	0.174	-17.0
Warbling Vireo	84	406	399	-1.7	10.5	32	43	42	-2.3	32.6	86	0.106	0.105	0.001	0.036	-0.6
Black-capped Chickadee	42	142	133	-6.3	8.6	43	194	203	4.6	16.2	46	1.366	1.526	0.160	0.395	11.7
Mountain Chickadee	31	86	60	-30.2	9.0 ***	31	68	48	-29.4	19.4	40	0.791	0.800	0.009	0.261	1.2
Chestnut-backed Chick.	37	93	76	-18.3	20.2	36	134	100	-25.4	20.8	45	1.441	1.316	-0.125	0.570	-8.7
Bushtit	18	61	64	4.9	38.2	20	56	91	62.5	31.3	22	0.918	1.422	0.504	0.473	54.9
Red-breasted Nuthatch	40	56	40	-28.6	13.7 *	30	40	51	27.5	31.0	47	0.714	1.275	0.561	0.394	78.5
Brown Creeper	35	41	61	48.8	28.1 **	36	47	72	53.2	41.7	48	1.146	1.180	0.034	0.460	3.0
Bewick's Wren	16	51	45	-11.8	18.0	24	90	124	37.8	32.0	25	1.765	2.756	0.991	0.673	56.1
House Wren	29	182	119	-34.6	8.4 **	30	220	157	-28.6	11.1	33	1.209	1.319	0.111	0.574	9.1
Winter Wren	28	67	65	-3.0	17.4	29	71	51	-28.2	22.0	35	1.060	0.785	-0.275	0.335	-26.0
Golden-crowned Kinglet	32	78	75	-3.8	17.2	31	319	142	-55.5	13.8 *	37	4.090	1.893	-2.196	1.054 **	-53.7
Ruby-crowned Kinglet	18	70	58	-17.1	14.5	15	40	37	-7.5	25.1	21	0.571	0.638	0.067	0.512	11.6
Veery	10	52	56	7.7	13.3	4	2	7	250.0	422.3	10	0.039	0.125	0.087	0.069	225.0
Swainson's Thrush	77	678	696	2.7	5.8	47	98	178	81.6	36.1 **	77	0.145	0.256	0.111	0.071	76.9
Hermit Thrush	26	52	46	-11.5	18.6	30	35	24	-31.4	20.6	38	0.673	0.522	-0.151	0.227	-22.5
American Robin	97	415	430	3.6	8.4	59	132	141	6.8	22.2	97	0.318	0.328	0.010	0.075	3.1
Wrentit	11	54	42	-22.2	11.0	12	55	40	-27.3	15.9	13	1.019	0.952	-0.066	0.329	-6.5
Gray Catbird	20	198	250	26.3	12.2 **	11	69	67	-2.9	32.2	20	0.349	0.268	-0.080	0.121	-23.1
Cedar Waxwing	38	281	206	-26.7	11.0 *	6	16	12	-25.0	30.7	38	0.057	0.058	0.001	0.045	2.3
Orange-crowned Warbler	37	138	81	-41.3	8.1 ***	35	117	68	-41.9	16.7 **	42	0.848	0.840	-0.008	0.310	-1.0
Nashville Warbler	20	60	75	25.0	43.7	24	100	77	-23.0	31.1	27	1.667	1.027	-0.640	0.560	-38.4
Yellow Warbler	65	595	618	3.9	8.1	48	321	286	-10.9	19.1	69	0.540	0.463	-0.077	0.125	-14.2
Yellow-rumped Warbler	56	276	269	-2.5	10.7	38	288	196	-31.9	10.3 ***	58	1.044	0.729	-0.315	0.480	-30.2
Townsend's Warbler	17	77	76	-1.3	21.1	18	47	30	-36.2	28.7	22	0.610	0.395	-0.216	0.223	-35.3
Hermit Warbler	22	89	95	6.7	18.8	19	89	71	-20.2	17.2	23	1.000	0.747	-0.253	0.363	-25.3

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
MacGillivray's Warbler	82	620	605	-2.4	6.2	67	321	277	-13.7	9.6	87	0.518	0.458	-0.060	0.077	-11.6
Common Yellowthroat	26	178	153	-14.0	11.7	17	86	118	37.2	52.0	28	0.483	0.771	0.288	0.364	59.6
Wilson's Warbler	67	349	333	-4.6	10.3	55	146	110	-24.7	10.7 **	72	0.418	0.330	-0.088	0.095	-21.0
Yellow-breasted Chat	18	89	90	1.1	18.3	8	28	31	10.7	22.5	18	0.315	0.344	0.030	0.182	9.5
Western Tanager	69	283	209	-26.1	22.7	31	55	63	14.5	34.7	73	0.194	0.301	0.107	0.109	55.1
Spotted Towhee	39	117	131	12.0	11.7	36	123	126	2.4	14.1	46	1.051	0.962	-0.089	0.269	-8.5
Chipping Sparrow	40	153	158	3.3	10.9	23	95	83	-12.6	40.1	44	0.621	0.525	-0.096	0.320	-15.4
Brewer's Sparrow	9	5	29	480.0	353.7	7	8	33	312.5	321.9	10	1.600	1.138	-0.462	1.540	-28.9
Fox Sparrow	19	49	49	0.0	19.7	12	10	18	80.0	89.9	23	0.204	0.367	0.163	0.159	80.0
Song Sparrow	84	671	681	1.5	6.3	86	690	685	-0.7	8.6	90	1.028	1.006	-0.022	0.138	-2.2
Lincoln's Sparrow	31	236	184	-22.0	9.1 **	30	120	108	-10.0	25.8	37	0.509	0.587	0.078	0.169	15.4
White-crowned Sparrow	15	46	62	34.8	29.5	11	46	47	2.2	10.1	17	1.000	0.758	-0.242	0.588	-24.2
Dark-eyed Junco	62	418	496	18.7	9.4 **	61	455	499	9.7	19.5	68	1.089	1.006	-0.083	0.276	-7.6
Black-headed Grosbeak	71	288	264	-8.3	10.1	38	87	107	23.0	30.8	75	0.302	0.405	0.103	0.144	34.2
Lazuli Bunting	47	108	155	43.5	23.5 **	24	36	60	66.7	37.3 *	51	0.333	0.387	0.054	0.133	16.1
Red-winged Blackbird	18	88	83	-5.7	17.8	8	18	7	-61.1	25.1	18	0.205	0.084	-0.120	0.074	-58.8
Brown-headed Cowbird	45	73	94	28.8	19.8	17	10	16	60.0	84.6	49	0.137	0.170	0.033	0.082	24.3
Bullock's Oriole	26	90	104	15.6	21.8	20	25	48	92.0	47.3 **	28	0.278	0.462	0.184	0.148	66.2
Purple Finch	36	247	215	-13.0	17.4	24	109	68	-37.6	12.9 *	39	0.441	0.316	-0.125	0.169	-28.3
Cassin's Finch	24	40	52	30.0	41.9	8	11	8	-27.3	55.0	25	0.275	0.154	-0.121	0.134	-44.1
House Finch	10	18	32	77.8	109.5	13	44	26	-40.9	35.9	14	2.444	0.813	-1.632	0.717 **	-66.8
Pine Siskin	38	209	58	-72.2	10.6 **	14	24	23	-4.2	63.1	39	0.115	0.397	0.282	0.177	245.3
Lesser Goldfinch	13	63	51	-19.0	19.1	10	54	34	-37.0	12.9 **	13	0.857	0.667	-0.191	0.382	-22.2
American Goldfinch	29	219	203	-7.3	9.0	6	9	19	111.1	57.9	29	0.041	0.094	0.053	0.064	127.8
Evening Grosbeak	16	25	54	116.0	86.3	2	0	5	++++		16	0.000	0.093	0.093	0.073	++++
All species pooled	**107**	**10573**	**10195**	**-3.6**	**2.5**	**107**	**5804**	**5429**	**-6.5**	**5.5**	**107**	**0.549**	**0.532**	**-0.016**	**0.057**	**-3.0**
	Number decreasing: 30/59 (51%)					Number decreasing: 31/59 (53%)					Number decreasing: 30/59 (51%)					
SOUTHWEST MAPS REGION																
Nuttall's Woodpecker	19	29	49	69.0	39.1 **	15	45	28	-37.8	20.9	19	1.552	0.571	-0.980	0.435 **	-63.2
Western Flycatcher	19	53	86	62.3	50.9	16	20	24	20.0	38.6	21	0.377	0.279	-0.098	0.186	-26.0
Black Phoebe	24	52	34	-34.6	13.5 **	20	61	40	-34.4	17.1	27	1.173	1.177	0.003	0.449	0.3
Ash-throated Flycatcher	27	100	87	-13.0	19.2	12	26	24	-7.7	19.6	27	0.260	0.276	0.016	0.166	6.1
Bell's Vireo	6	77	36	-53.2	8.8 ***	6	42	10	-76.2	16.6 ***	7	0.546	0.278	-0.268	0.258	-49.1
Warbling Vireo	19	59	35	-40.7	14.8 **	12	14	14	0.0	70.8	20	0.237	0.400	0.163	0.240	68.6

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
Chestnut-backed Chick.	9	17	18	5.9	25.7	9	48	47	-2.1	24.1	9	2.824	2.611	-0.212	1.294	-7.5
Oak Titmouse	11	26	34	30.8	29.2	12	51	27	-47.1	10.8 ***	12	1.962	0.794	-1.167	0.482 **	-59.5
Bushtit	29	56	102	82.1	50.9 **	22	84	83	-1.2	28.9	30	1.500	0.814	-0.686	0.341 **	-45.8
Bewick's Wren	33	162	189	16.7	17.5	32	388	247	-36.3	7.1 ***	35	2.395	1.307	-1.088	0.366 ***	-45.4
House Wren	18	154	121	-21.4	9.9 *	17	157	72	-54.1	8.7 ***	20	1.020	0.595	-0.424	0.236 *	-41.6
Swainson's Thrush	12	177	112	-36.7	12.4 *	9	21	56	166.7	53.8 **	12	0.119	0.500	0.381	0.105 ***	321.4
American Robin	20	48	66	37.5	28.3	7	17	7	-58.8	38.2	21	0.354	0.106	-0.248	0.269	-70.1
Wrentit	15	52	58	11.5	16.6	16	113	61	-46.0	8.6 ***	16	2.173	1.052	-1.121	0.451 **	-51.6
Orange-crowned Warbler	16	62	42	-32.3	13.4 *	12	44	7	-84.1	4.5 ***	17	0.710	0.167	-0.543	0.184 ***	-76.5
Lucy's Warbler	9	99	112	13.1	19.9	8	59	12	-79.7	9.3 ***	9	0.596	0.107	-0.489	0.207 **	-82.0
Yellow Warbler	18	81	87	7.4	20.1	9	42	30	-28.6	35.6	18	0.519	0.345	-0.174	0.224	-33.5
Common Yellowthroat	22	130	141	8.5	21.2	15	79	44	-44.3	18.6	23	0.608	0.312	-0.296	0.226	-48.6
Wilson's Warbler	12	165	105	-36.4	17.8	9	100	103	3.0	26.4	12	0.606	0.981	0.375	0.205 *	61.9
Yellow-breasted Chat	18	174	174	0.0	7.4	8	43	16	-62.8	8.2 ***	18	0.247	0.092	-0.155	0.088 *	-62.8
Summer Tanager	10	74	75	1.4	22.1	6	8	3	-62.5	15.1 ***	10	0.108	0.040	-0.068	0.063	-63.0
Western Tanager	10	130	31	-76.2	23.7 **	2	3	0	-100.0	0.0	10	0.023	0.000	-0.023	0.025	-100.0
Spotted Towhee	25	131	118	-9.9	10.5	20	57	38	-33.3	14.5 *	26	0.435	0.322	-0.113	0.152	-26.0
Abert's Towhee	4	15	25	66.7	71.0	5	55	8	-85.5	4.7 **	5	3.667	0.320	-3.347	1.862	-91.3
Song Sparrow	31	228	330	44.7	19.3 **	28	435	280	-35.6	9.3 **	32	1.908	0.849	-1.059	0.472 **	-55.5
Black-headed Grosbeak	29	89	91	2.2	20.3	11	36	14	-61.1	19.6 **	30	0.405	0.154	-0.251	0.164	-62.0
Blue Grosbeak	10	141	76	-46.1	7.8 ***	2	3	0	-100.0	0.0	10	0.021	0.000	-0.021	0.018	-100.0
Varied Bunting	4	60	22	-63.3	16.8 **	0	0	0			4	0.000	0.000	0.000		
Brown-headed Cowbird	23	41	70	70.7	36.8 **	2	1	1	0.0	200.0	23	0.024	0.014	-0.010	0.029	-41.4
Bullock's Oriole	19	85	47	-44.7	16.1	10	61	19	-68.9	20.3 ***	21	0.718	0.404	-0.313	0.495	-43.7
House Finch	23	117	144	23.1	24.4	16	66	48	-27.3	26.7	23	0.564	0.333	-0.231	0.299	-40.9
Lesser Goldfinch	19	99	76	-23.2	34.3	9	34	7	-79.4	12.4 **	19	0.343	0.092	-0.251	0.104 **	-73.2
All species pooled	**39**	**3596**	**3568**	**-0.8**	**6.8**	**39**	**2543**	**1533**	**-39.7**	**5.7 *** **	**39**	**0.707**	**0.430**	**-0.278**	**0.110 ** **	**-39.2**
	Number decreasing: 14/32 (44%)					Number decreasing: 26/32 (81%)***					Number decreasing: 26/32 (81%)***					
NORTH-CENTRAL MAPS REGION																
Downy Woodpecker	13	24	24	0.0	41.1	16	30	44	46.7	32.6 *	17	1.250	1.833	0.583	0.647	46.7
Traill's Flycatcher	17	65	38	-41.5	12.5 *	3	3	7	133.3	134.7	18	0.046	0.184	0.138	0.099	299.1
Least Flycatcher	6	43	43	0.0	25.5	4	2	8	300.0	200.0	7	0.047	0.186	0.140	0.056 **	300.0
Black-capped Chickadee	14	48	48	0.0	27.2	14	63	71	12.7	17.6	16	1.313	1.479	0.167	0.651	12.7
House Wren	13	103	124	20.4	18.3	12	82	66	-19.5	25.9	14	0.796	0.532	-0.264	0.263	-33.1

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
American Robin	15	82	88	7.3	13.6	11	68	55	-19.1	42.3	16	0.829	0.625	-0.204	0.461	-24.6
Gray Catbird	17	238	312	31.1	11.4 ***	15	120	134	11.7	19.3	17	0.504	0.430	-0.075	0.171	-14.8
Nashville Warbler	2	4	10	150.0	75.0	1	32	41	28.1		2	8.000	4.100	-3.900	4.083	-48.8
Yellow Warbler	14	148	161	8.8	7.7	10	44	105	138.6	56.6 *	16	0.297	0.652	0.355	0.214	119.4
American Redstart	7	35	44	25.7	20.0	4	5	22	340.0	91.0	7	0.143	0.500	0.357	0.087 ***	250.0
Common Yellowthroat	21	162	174	7.4	17.9	15	58	47	-19.0	25.5	21	0.358	0.270	-0.088	0.182	-24.6
Field Sparrow	10	49	52	6.1	32.6	5	12	7	-41.7	33.8	10	0.245	0.135	-0.110	0.127	-45.0
Grasshopper Sparrow	9	136	223	64.0	18.3 ***	9	55	51	-7.3	34.4	9	0.404	0.229	-0.176	0.129	-43.4
Song Sparrow	17	101	126	24.8	16.6	15	97	89	-8.2	17.7	18	0.960	0.706	-0.254	0.328	-26.5
Northern Cardinal	12	36	69	91.7	34.5 ***	11	11	30	172.7	109.0	12	0.306	0.435	0.129	0.156	42.3
Rose-breasted Grosbeak	10	43	37	-14.0	26.3	8	9	10	11.1	38.7	10	0.209	0.270	0.061	0.149	29.1
Indigo Bunting	14	54	54	0.0	18.8	3	3	1	-66.7	33.3	14	0.056	0.019	-0.037	0.032	-66.7
Dickcissel	10	61	142	132.8	60.9 *	3	0	9	++++		10	0.000	0.063	0.063	0.022 **	++++
Bobolink	11	150	110	-26.7	14.4 *	8	8	63	687.5	613.8	11	0.053	0.573	0.519	0.139 ***	973.9
Red-winged Blackbird	18	124	92	-25.8	14.4 *	10	22	10	-54.5	33.4	19	0.177	0.109	-0.069	0.100	-38.7
Western Meadowlark	9	29	41	41.4	39.2	7	5	24	380.0	395.1	9	0.172	0.585	0.413	0.247	239.5
Brown-headed Cowbird	19	110	76	-30.9	13.9 *	13	18	10	-44.4	18.4 *	20	0.164	0.132	-0.032	0.062	-19.6
American Goldfinch	22	177	164	-7.3	13.8	0	0	0			22	0.000	0.000	0.000		
All species pooled	27	2537	2821	11.2	5.6 **	26	940	1130	20.2	13.3 *	27	0.371	0.401	0.030	0.066	8.1
	Number increasing: 13/23 (57%)					Number increasing: 13/23 (57%)					Number increasing: 12/23 (52%)					
SOUTH-CENTRAL MAPS REGION																
Common Ground-Dove	3	42	38	-9.5	54.9	3	5	23	360.0	372.0	3	0.119	0.605	0.486	0.266	408.4
Downy Woodpecker	25	36	51	41.7	30.6 *	19	35	18	-48.6	13.6 **	28	0.972	0.353	-0.619	0.262 **	-63.7
Acadian Flycatcher	27	199	210	5.5	11.3	18	22	17	-22.7	22.5	28	0.111	0.081	-0.030	0.037	-26.8
White-eyed Vireo	43	596	598	0.3	5.4	40	225	207	-8.0	12.1	43	0.378	0.346	-0.031	0.065	-8.3
Red-eyed Vireo	29	107	93	-13.1	14.2	9	6	8	33.3	96.1	29	0.056	0.086	0.030	0.045	53.4
Carolina Chickadee	38	61	87	42.6	29.7 *	37	73	49	-32.9	16.4	43	1.197	0.563	-0.634	0.306 **	-52.9
Tufted Titmouse	30	92	76	-17.4	14.9	33	106	83	-21.7	13.9	37	1.152	1.092	-0.060	0.275	-5.2
Black-crested Titmouse	16	30	27	-10.0	18.2	10	23	17	-26.1	21.1	17	0.767	0.630	-0.137	0.438	-17.9
Carolina Wren	43	436	302	-30.7	5.8 ***	42	321	239	-25.5	9.1 **	44	0.736	0.791	0.055	0.124	7.5
Bewick's Wren	13	54	40	-25.9	19.4	13	40	13	-67.5	11.1 ***	14	0.741	0.325	-0.416	0.271	-56.1
Blue-gray Gnatcatcher	26	47	52	10.6	29.5	12	11	20	81.8	84.4	27	0.234	0.385	0.151	0.129	64.3
Blue-winged Warbler	6	47	40	-14.9	27.4	5	10	8	-20.0	32.6	6	0.213	0.200	-0.013	0.132	-6.0
Black-and-white Warbler	21	24	40	66.7	47.2 **	12	17	13	-23.5	33.7	22	0.708	0.325	-0.383	0.336	-54.1

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
American Redstart	9	41	52	26.8	25.9	4	3	9	200.0	210.8	9	0.073	0.173	0.100	0.087	136.5
Prothonotary Warbler	20	214	176	-17.8	10.8	16	111	67	-39.6	16.3 *	20	0.519	0.381	-0.138	0.148	-26.6
Swainson's Warbler	15	66	55	-16.7	14.1	10	12	8	-33.3	30.1	15	0.182	0.146	-0.036	0.088	-20.0
Kentucky Warbler	26	202	173	-14.4	12.1	22	107	73	-31.8	15.1	26	0.530	0.422	-0.108	0.125	-20.3
Common Yellowthroat	16	112	70	-37.5	10.9 **	10	41	23	-43.9	13.0 ***	18	0.366	0.329	-0.038	0.155	-10.2
Hooded Warbler	18	203	181	-10.8	6.2	11	34	28	-17.6	36.1	18	0.168	0.155	-0.013	0.075	-7.6
Yellow-breasted Chat	24	360	280	-22.2	5.0 **	18	115	95	-17.4	9.5 *	25	0.319	0.339	0.020	0.090	6.2
Summer Tanager	36	82	78	-4.9	14.8	12	6	12	100.0	77.9 *	37	0.073	0.154	0.081	0.051	110.3
Field Sparrow	14	78	65	-16.7	13.3	8	12	7	-41.7	21.9	16	0.154	0.108	-0.046	0.072	-30.0
Northern Cardinal	52	585	420	-28.2	5.8 ***	43	261	234	-10.3	12.8	52	0.446	0.557	0.111	0.099	24.9
Indigo Bunting	32	341	287	-15.8	8.2 *	21	27	39	44.4	56.3	32	0.079	0.136	0.057	0.040	71.6
Painted Bunting	34	371	336	-9.4	14.0	24	89	66	-25.8	28.5	34	0.240	0.196	-0.044	0.063	-18.1
All species pooled	**53**	**5150**	**4412**	**-14.3**	**3.3 *****	**53**	**1862**	**1539**	**-17.3**	**5.7 ****	**53**	**0.362**	**0.349**	**-0.013**	**0.036**	**-3.5**
	Number decreasing: 18/25 (72%)**					Number decreasing: 19/25 (76%)***					Number decreasing: 16/25 (64%)					
NORTHEAST MAPS REGION																
Downy Woodpecker	47	62	72	16.1	23.5	44	75	91	21.3	19.5	56	1.210	1.264	0.054	0.374	4.5
Traill's Flycatcher	15	64	63	-1.6	20.0	7	6	7	16.7	93.3	16	0.094	0.111	0.017	0.076	18.5
Eastern Phoebe	21	34	24	-29.4	24.0	21	27	48	77.8	47.3 *	29	0.794	2.000	1.206	0.586 **	151.9
Red-eyed Vireo	54	145	179	23.4	15.3 *	8	9	5	-44.4	41.8	54	0.062	0.028	-0.034	0.032	-55.0
Blue Jay	35	33	40	21.2	33.7	9	5	10	100.0	130.8	36	0.152	0.250	0.099	0.148	65.0
Black-capped Chickadee	55	187	161	-13.9	11.8	48	183	144	-21.3	9.5 *	57	0.979	0.894	-0.084	0.266	-8.6
Tufted Titmouse	39	38	79	107.9	39.9 ***	33	55	107	94.5	45.2 ***	44	1.447	1.354	-0.093	0.406	-6.4
Carolina Wren	23	45	75	66.7	32.6 **	21	55	70	27.3	31.1	27	1.222	0.933	-0.289	0.340	-23.6
House Wren	16	49	60	22.4	25.6	16	39	49	25.6	67.3	22	0.796	0.817	0.021	0.418	2.6
Veery	38	179	195	8.9	9.3	22	53	24	-54.7	17.0 **	38	0.296	0.123	-0.173	0.066 ***	-58.4
Swainson's Thrush	9	49	56	14.3	21.4	6	14	25	78.6	37.8 *	10	0.286	0.446	0.161	0.144	56.3
Hermit Thrush	22	49	48	-2.0	24.7	17	16	19	18.8	47.0	26	0.327	0.396	0.069	0.172	21.2
Wood Thrush	41	134	185	38.1	17.6 **	30	55	86	56.4	48.0	46	0.410	0.465	0.054	0.146	13.3
American Robin	48	184	182	-1.1	8.9	39	78	97	24.4	26.5	49	0.424	0.533	0.109	0.155	25.7
Gray Catbird	47	633	712	12.5	5.5 **	38	218	370	69.7	21.6 ***	49	0.344	0.520	0.175	0.105 *	50.9
Cedar Waxwing	23	82	87	6.1	20.2	3	3	3	0.0	57.7	23	0.037	0.035	-0.002	0.023	-5.7
Yellow Warbler	21	109	109	0.0	14.9	10	36	38	5.6	18.5	23	0.330	0.349	0.018	0.128	5.6
Chestnut-sided Warbler	23	74	73	-1.4	18.5	15	26	31	19.2	40.8	28	0.351	0.425	0.073	0.164	20.9
Magnolia Warbler	18	75	69	-8.0	14.2	11	25	31	24.0	43.8	18	0.333	0.449	0.116	0.176	34.8

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
Black-thrtd. Blue Warbler	11	29	32	10.3	24.8	9	13	39	200.0	142.7	12	0.448	1.219	0.771	0.471	171.9
Black-thrtd. Green Warb.	21	38	57	50.0	21.7 **	9	4	19	375.0	412.8	21	0.105	0.333	0.228	0.168	216.7
Black-and-white Warbler	32	49	47	-4.1	18.1	16	4	29	625.0	412.5	34	0.082	0.617	0.535	0.216 **	655.9
American Redstart	32	91	106	16.5	17.4	17	36	38	5.6	24.1	34	0.396	0.359	-0.037	0.143	-9.4
Worm-eating Warbler	16	34	50	47.1	19.0 ***	8	24	30	25.0	22.0	17	0.706	0.600	-0.106	0.307	-15.0
Ovenbird	54	179	203	13.4	12.2	38	72	100	38.9	30.3	56	0.402	0.493	0.090	0.117	22.5
Louisiana Waterthrush	18	45	48	6.7	32.6	14	39	39	0.0	23.2	21	0.867	0.813	-0.054	0.353	-6.3
Common Yellowthroat	51	255	239	-6.3	10.7	28	94	73	-22.3	19.5	52	0.369	0.305	-0.063	0.090	-17.1
Scarlet Tanager	25	48	26	-45.8	13.8 **	4	10	1	-90.0	13.8 ***	25	0.208	0.039	-0.170	0.143	-81.5
Eastern Towhee	23	28	35	25.0	28.3	12	10	15	50.0	63.5	24	0.357	0.429	0.071	0.207	20.0
Chipping Sparrow	20	21	41	95.2	69.9 *	8	4	17	325.0	350.9	21	0.191	0.415	0.224	0.243	117.7
Song Sparrow	30	184	201	9.2	10.6	30	250	200	-20.0	17.7	35	1.359	0.995	-0.364	0.278	-26.8
White-throated Sparrow	12	47	50	6.4	23.3	10	9	18	100.0	90.7	14	0.192	0.360	0.169	0.120	88.0
Dark-eyed Junco	9	27	23	-14.8	21.5	9	29	31	6.9	56.0	11	1.074	1.348	0.274	0.751	25.5
Northern Cardinal	43	140	141	0.7	12.9	27	42	43	2.4	22.5	44	0.300	0.305	0.005	0.084	1.7
Indigo Bunting	27	51	57	11.8	18.1	8	17	3	-82.4	9.6 ***	27	0.333	0.053	-0.281	0.098 ***	-84.2
Red-winged Blackbird	13	46	28	-39.1	13.5 *	4	7	0	-100.0	0.0	14	0.152	0.000	-0.152	0.077 *	-100.0
American Goldfinch	36	166	215	29.5	16.3 **	1	1	0	-100.0		36	0.006	0.000	-0.006	0.005	-100.0
All species pooled	**67**	**4301**	**4735**	**10.1**	**3.3 *****	**66**	**1887**	**2221**	**17.7**	**9.2 ****	**67**	**0.439**	**0.469**	**0.030**	**0.049**	**6.9**
	Number increasing: 24/37 (65%)**					Number increasing: 26/37 (70%)**					Number increasing: 22/37 (59%)					
SOUTHEAST MAPS REGION																
Downy Woodpecker	40	53	49	-7.5	22.9	34	52	64	23.1	19.0	49	0.981	1.306	0.325	0.406	33.1
Acadian Flycatcher	39	161	228	41.6	21.5 **	19	12	32	166.7	123.2	41	0.074	0.140	0.066	0.045	88.3
Eastern Phoebe	12	12	14	16.7	39.1	11	40	20	-50.0	24.6 *	16	3.333	1.429	-1.905	1.928	-57.1
White-eyed Vireo	35	171	164	-4.1	14.6	21	31	62	100.0	68.5	39	0.181	0.378	0.197	0.078 **	108.5
Red-eyed Vireo	46	175	189	8.0	15.0	10	12	10	-16.7	44.7	46	0.069	0.053	-0.016	0.042	-22.8
Carolina Chickadee	42	57	87	52.6	34.1 *	35	58	76	31.0	29.6	47	1.018	0.874	-0.144	0.347	-14.2
Tufted Titmouse	44	66	93	40.9	25.0 *	41	60	94	56.7	39.2 *	48	0.909	1.011	0.102	0.261	11.2
Carolina Wren	55	231	274	18.6	9.9 **	49	178	229	28.7	17.2 *	57	0.771	0.836	0.065	0.178	8.5
Wood Thrush	42	285	289	1.4	9.7	33	65	90	38.5	23.6 *	45	0.228	0.311	0.083	0.061	36.5
American Robin	15	50	50	0.0	21.3	13	23	40	73.9	63.1	19	0.460	0.800	0.340	0.480	73.9
Gray Catbird	30	171	127	-25.7	10.5 **	13	75	89	18.7	20.8	32	0.439	0.701	0.262	0.319	59.8
Prairie Warbler	13	63	88	39.7	23.9	10	24	15	-37.5	17.7	16	0.381	0.171	-0.211	0.077 **	-55.3
Prothonotary Warbler	13	39	25	-35.9	12.9	8	37	9	-75.7	6.7 *	17	0.949	0.360	-0.589	0.449	-62.1

TABLE 3. Continued.

	ADULTS					YOUNG					REPRODUCTIVE INDEX					
Species	n[a]	2005	2006	%chg.	SE[b]	n[c]	2005	2006	%chg.	SE[d]	n[e]	2005	2006	change	SE[f]	%chg.
Worm-eating Warbler	22	65	62	-4.6	18.8	18	26	28	7.7	36.2	24	0.400	0.452	0.052	0.177	12.9
Ovenbird	38	113	128	13.3	16.7	30	57	69	21.1	23.7	43	0.504	0.539	0.035	0.144	6.9
Louisiana Waterthrush	26	56	63	12.5	16.4	22	50	55	10.0	18.3	30	0.893	0.873	-0.020	0.243	-2.2
Kentucky Warbler	39	234	253	8.1	6.6	33	78	120	53.8	32.4 *	41	0.333	0.474	0.141	0.109	42.3
Common Yellowthroat	46	232	228	-1.7	11.1	31	74	76	2.7	16.3	46	0.319	0.333	0.014	0.100	4.5
Hooded Warbler	30	149	151	1.3	10.8	21	28	50	78.6	34.5 **	32	0.188	0.331	0.143	0.051 ***	76.2
Yellow-breasted Chat	24	117	159	35.9	11.4 ***	14	15	25	66.7	49.0 *	24	0.128	0.157	0.029	0.055	22.6
Eastern Towhee	36	59	49	-16.9	14.6	19	9	24	166.7	95.1 **	38	0.153	0.490	0.337	0.173 *	221.1
Field Sparrow	18	67	59	-11.9	17.4	6	19	50	163.2	50.2 **	20	0.284	0.848	0.564	0.689	198.8
Song Sparrow	4	20	13	-35.0	20.4	4	30	33	10.0	30.9	5	1.500	2.539	1.039	1.724	69.2
Northern Cardinal	56	349	364	4.3	9.8	42	91	115	26.4	19.8	56	0.261	0.316	0.055	0.062	21.2
Indigo Bunting	52	313	262	-16.3	7.5 *	13	35	26	-25.7	21.6	52	0.112	0.099	-0.013	0.060	-11.3
Red-winged Blackbird	5	18	30	66.7	115.5	1	5	22	340.0		5	0.278	0.733	0.456	0.383	164.0
American Goldfinch	21	91	109	19.8	17.6	1	0	1	++++		21	0.000	0.009	0.009	0.010	++++
All species pooled	**58**	**4024**	**4204**	**4.5**	**3.0**	**58**	**1349**	**1743**	**29.2**	**6.6 *****	**58**	**0.335**	**0.415**	**0.079**	**0.053**	**23.7**
	Number increasing: 16/27 (59%)					Number increasing: 22/27 (81%)***					Number increasing: 20/27 (74%)***					
ALASKA AND BOREAL CANADA MAPS REGIONS																
Swainson's Thrush	6	35	40	14.3	23.3	6	21	13	-38.1	19.2	6	0.600	0.325	-0.275	0.293	-45.8
Tennessee Warbler	5	14	12	-14.3	36.6	3	69	3	-95.7	3.2 **	5	4.929	0.250	-4.679	4.179	-94.9
American Redstart	6	58	58	0.0	10.7	4	15	10	-33.3	37.2	6	0.259	0.172	-0.086	0.167	-33.3
Ovenbird	5	39	37	-5.1	12.4	4	26	15	-42.3	11.7 *	5	0.667	0.405	-0.261	0.407	-39.2
Canada Warbler	5	32	19	-40.6	23.6	4	31	11	-64.5	15.3 **	5	0.969	0.579	-0.390	0.443	-40.2
White-throated Sparrow	6	31	33	6.5	35.5	6	25	27	8.0	9.1	6	0.807	0.818	0.012	0.406	1.5
All species pooled	**6**	**358**	**355**	**-0.8**	**5.5**	**6**	**258**	**155**	**-39.9**	**20.9**	**6**	**0.721**	**0.437**	**-0.284**	**0.249**	**-39.4**
	Number decreasing: 3/6 (50%)					Number decreasing: 5/6 (83%)					Number decreasing: 5/6 (83%)					

[a] Number of stations at which at least one individual adult bird of the species was captured in either year.
[b] Standard error of the percent change in the number of adult birds captured.
[c] Number of stations at which at least one individual young bird of the species was captured in either year.
[d] Standard error of the percent change in the number of young birds captured.
[e] Number of stations at which at least one individual aged bird of the species was captured in either year.
[f] Standard error of the change in the reproductive index.
* $0.05 \leq P < 0.10$; ** $0.01 \leq P < 0.05$; *** $P < 0.01$

recorded in the 15-yr MAPS data set (Table 3). Regional changes in productivity for all species pooled between 2005 and 2006 were opposite the changes in productivity between 2004 and 2005 for four of the seven regions, but were in the same direction for three regions. The substantial and generally significant decreases in productivity between 2004 and 2005 in the Northeast and Southeast regions were followed by significant and highly significant increases between 2005 and 2006 in the number of young birds of all species pooled in these two regions (17.7% and 29.2% respectively). In addition, the proportions of species with increases in number of young in these two regions (70% and 81%, respectively) were also significant and highly significant, respectively. Non-significant increases between 2005 and 2006 in the reproductive index of all species pooled also occurred in these two regions, while the proportion of species that showed increases in reproductive index (74%) was significant in the Southeast Region. A highly significant decrease in the number of young of all species pooled (-39.7%) and a significant decrease in reproductive index (-39.2%) occurred in the Southwest Region between 2005 and 2006, following nearly significant increases in productivity there between 2004 and 2005. The proportions of species with decreasing number of young and reproductive index between 2005 and 2006 in the Southwest (both 81%) were highly significant. Non-significant decreases in productivity between 2005 and 2006 also occurred in the Alaska/Boreal Canada Region, following non-significant increases in productivity there between 2004 and 2005. Changes in productivity of all species pooled between 2005 and 2006 were in the same direction as those between 2004 and 2005 for the Northwest and South-central regions, where decreases occurred, and for the North-central Region, where increases occurred. All of these changes in reproductive index were non-significant, but the decrease in the number of young in the South-central region (-17.3%) and proportion of decreasing species there (76%) were both significant, while the increase in number of young in the North-central region (20.2%) was nearly significant. Summing over the three regions where productivity increased (North-central, Northeast and Southeast), 14 species had significant or nearly significant increases in number of young, compared to seven species with significant or nearly significant decreases; and 10 species had significant or nearly significant increases in reproductive index, compared to four species with significant or nearly significant decreases. Similarly, summing over the four regions where productivity decreased (Northwest, Southwest, South-central, and Alaska/Boreal Canada), 31 species had significant or nearly significant decreases in number of young, compared to only six species with significant or nearly significant increases; and 15 species had significant or nearly significant decreases in reproductive index, compared to only two species with significant or nearly significant increases.

Program-wide, the number of young for all species pooled decreased by a nearly significant -6.1% while the reproductive index for all species pooled decreased by a non- significant -5.3% from 0.480 in 2005 to 0.454 in 2006 (Table 3). The program-wide proportions of species with decreasing number of young (50%) and decreasing reproductive index (52%) were each non-significant. Program-wide, 21 species had significant or nearly significant decreases in number of young, and 11 species had significant or nearly significant increases. Similarly, nine species had significant or nearly significant decreases in reproductive index, and six had significant or nearly significant increases.

4. *Fifteen-year (1992-2006) program-wide trends* — Chained indices of adult population size (Fig. 3a) and productivity (Fig. 3b) for all species pooled at the program-wide scale showed a highly significant decreasing trend in adult population size of -1.77% yr^{-1}, and a widely fluctuating temporal pattern in reproductive index with a slight and non-significant decreasing tendency of -0.25% yr-1. Interestingly, all five decreases in productivity were followed by decreases in adult population size the next year, but only three of the eight increases in productivity were followed by increases in adult population size the next year. Nevertheless, seven of the nine significant or nearly significant changes in productivity were followed the next year by changes of adult population size of the same sign (P = 0.070; binomial test), while only one of four non-significant changes in productivity was followed by a change of adult population size of the same sign.

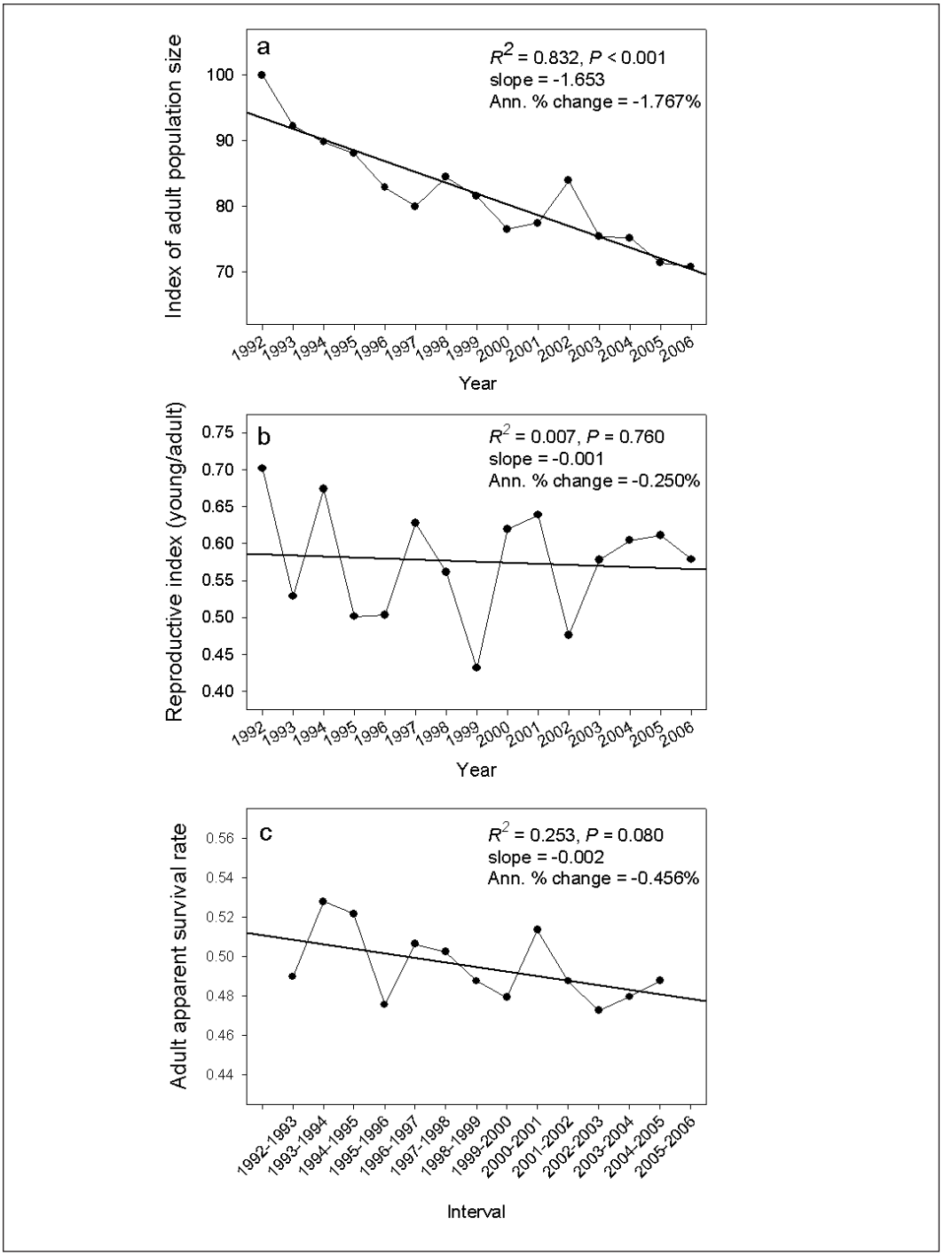

FIGURE 3. Program-wide 15-yr (1992-2006) trends for all species pooled for (a) adult population size and (b) productivity (reproductive index: young/adult) from chain indices of constant-effort year-to-year changes derived from the analysis of > 849,000 captures of > 662,000 aged individuals; and (c) the program-wide 13-yr trend for all species pooled for adult annual apparent survival rate from the fully time-dependent CJS mark-recapture model applied to > 406,000 capture histories of individual adult birds.

SURVIVAL-RATE ESTIMATES

Regional and program-wide maximum-likelihood estimates of time-constant annual adult apparent survival rates, recapture probabilities, and proportions of residents among the newly captured adults that were not recaptured seven or more days later during their first year of capture are presented in Table 4 for species that met survivorship selection criteria (see Methods - Data Analysis), along with the total number of individual adult birds captured and the total number of captures and returns of those individuals. These estimates were derived from 15 years (1992-2006) of mark-recapture data pooled over all stations in each region (or program-wide) that were operated for four or more consecutive years during this period. Data were pooled from 174 stations in the Northwest, 98 in the Southwest, 58 in the North-central, 84 in the South- central, 119 in the Northeast, 89 in the Southeast, and 31 in the Alaska/Boreal Canada Region (a total of 653 stations program-wide), for an average of 93 stations per region (Table 5). The regional increases for the 15-yr period (1992-2006) over the 12-yr period (1992-2003) in the number of stations contributing data to survivorship analyses ranged from 0.0% in the Alaska/Boreal Canada Region to 30.8% and 31.8% in the Northeast and North-central regions, respectively, and averaged 17.7%, which was very near the program-wide increase of 18.7%.

A total of 192 species fulfilled selection criteria for survivorship analyses program-wide, with 85 species fulfilling these criteria in the Northwest, 91 in the Southwest, 62 in the North-central, 63 in the South-central, 76 in the Northeast, 47 in the Southeast, and 34 in the Alaska/Boreal Canada Region, for an average of 65 species per region (Tables 4 and 5). Increases in the number of species per region that fulfilled selection criteria for survivorship analyses ranged from 0.0% in the Alaska/Boreal Canada Region to 14.8% in the North-central Region and averaged 4.9%; the program-wide change was also an increase of 4.9%.

The mean number of individual adult birds captured per station per species during the 15 years was lowest for the Northeast (22.3) and Southeast (24.4), higher for the Southwest (36.7) and South-central (37.0), higher still for the Northwest (39.6) and North-central (41.9) regions; it was highest for the Alaska/Boreal Canada Region (53.4; Table 4). Altogether, the 653 stations included in these survivorship analyses were operated for an average of 8.24 years each (87 stations for four, 133 for five, 57 for six, 43 for seven, 45 for eight, 57 for nine, 59 for 10, 34 for 11, 21 for 12, 48 for 13, 23 for 14, and 46 for 15 years) and produced an average capture rate of 4.18 adult individuals per station per species yr^{-1}.

As in past years, the average total number of adult captures per individual per species (for species that met survivorship selection criteria) was remarkably constant over the seven regions, ranging from 1.33±0.21 in the South-central Region to 1.54±0.25 in the Alaska/Boreal Canada Region, and averaging 1.37±0.25 overall. Similarly, the average total number of returns per individual per species also remained remarkably constant over the seven regions, ranging from 0.132±0.072 in the South-central Region to 0.157±0.074 in the Alaska/Boreal Canada Region, and averaging 0.135±0.078 overall.

The precision of the estimates of annual adult survival rate from 653 stations in the 15-yr period (1992-2006) increased over that obtained from 550 stations in the 12-yr period (1992-2003; Table 5). The mean coefficient of variation in survival probability, CV(φ), for all species in each region ranged from 13.5% in the Northwest to 21.3% in the Southwest and averaged 17.7±2.9% over all regions; the mean program-wide CV(φ) was 13.8%. These figures compare to a range from 15.3% in the Northwest to 23.7% in the South-central, an average of 19.5±2.9% over all regions, and 15.0% program-wide for 1992-2003 data. This represents a 9% average improvement going from 12 to 15 years (Table 5), and can be compared to a 6% improvement going from 10 to 12 years, 8% from 7 to 10 years, and 28% from 5 to 7 years. Another measure of the increased precision provided by 15, rather than 12, years is the mean number of species over the seven regions having CV(φ) < 30%, which increased by 10% from 51 species with 12 years to 56 species with 15 years. Similarly, the mean number of species per region having CV(φ) < 20% increased by 13% from 40 to 46 species; and the mean number having CV(φ) < 10% increased by 19% from 21 to 25 species (Table 5). The analogous program-wide increases in the numbers of species were 5%, 8%, and 14%. The mean

TABLE 4. Program-wide and regional time-constant estimates of annual adult apparent survival probability, recapture probability, and proportion of residents from modified Cormack-Jolly-Seber mark-recapture analyses[a] (using transient models[b]), and selected and equivalent time-dependent models from 15 years (1992-2006) of MAPS data.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
PROGRAM-WIDE																				
Common Ground-Dove	12	577	645	18	0.385	0.099	25.8	0.000	0.061	0.046	76.0	0.000	0.987	0.728	73.7	0.000	...			
Yellow-billed Cuckoo	110	711	765	20	0.480	0.088	18.3	0.029	0.211	0.089	42.0	0.184	0.148	0.068	45.8	0.002	...			
Belted Kingfisher *†	12	35	51	6	0.275	0.157	57.3	0.000	0.468	0.340	72.7	0.000	1.000	0.939	93.9	0.000	...			
Acorn Woodpecker	12	81	96	9	0.439	0.165	37.7	0.000	0.768	0.206	26.9	0.000	0.229	0.138	60.1	0.000	...			
Gila Woodpecker	5	30	47	9	0.694	0.139	20.1	0.000	0.830	0.150	18.1	0.000	0.147	0.105	71.1	0.000	...			
Golden-fronted Woodpecker†	7	171	213	11	0.343	0.122	35.6	0.005	0.153	0.115	75.3	0.001	1.000	0.746	74.6	0.000	...			
Red-bellied Woodpecker	122	561	645	49	0.444	0.060	13.5	0.007	0.160	0.058	36.2	0.018	0.812	0.313	38.6	0.002	...			
Williamson's Sapsucker	14	210	274	19	0.473	0.085	18.1	0.002	0.197	0.082	41.8	0.598	0.507	0.226	44.5	0.000	.t.	...		
Yellow-bellied Sapsucker	19	200	277	26	0.412	0.081	19.6	0.029	0.263	0.098	37.3	0.011	0.809	0.330	40.8	0.001	...			
Red-naped Sapsucker	40	826	1469	212	0.482	0.027	5.6	0.007	0.523	0.042	8.0	0.018	0.522	0.063	12.0	0.002	...			
Red-breasted Sapsucker	54	1139	1875	229	0.445	0.026	5.9	0.000	0.457	0.041	8.9	0.018	0.577	0.068	11.8	0.001	...			
Ladder-backed Woodpecker	26	192	255	39	0.536	0.069	12.8	0.000	0.371	0.086	23.2	0.001	0.566	0.164	29.0	0.000	...			
Nuttall's Woodpecker	30	425	664	101	0.580	0.038	6.6	0.002	0.363	0.048	13.3	0.001	0.526	0.091	17.2	0.004	...			
Downy Woodpecker	322	3266	4190	423	0.516	0.020	3.8	0.000	0.330	0.024	7.4	0.000	0.400	0.036	9.0	0.000	...			
Hairy Woodpecker	189	950	1191	155	0.650	0.030	4.5	0.018	0.196	0.027	13.9	0.007	0.538	0.083	15.4	0.018	...			
White-headed Woodpecker *†	9	56	59	2	0.591	0.303	51.3	0.000	0.035	0.155	447.5	0.000	1.000	4.528	452.8	0.000	...			
Northern Flicker	200	894	1032	60	0.445	0.053	12.0	0.000	0.206	0.055	26.8	0.003	0.448	0.129	28.8	0.002	...			
Pileated Woodpecker	27	44	50	5	0.946	0.120	12.7	0.000	0.063	0.055	87.5	0.000	0.380	0.346	91.0	0.000	...			
Olive-sided Flycatcher	19	128	170	20	0.671	0.075	11.1	0.000	0.421	0.102	24.2	0.000	0.124	0.055	44.3	0.000	...			
Western Wood-Pewee	105	2490	3387	403	0.517	0.020	3.9	0.042	0.365	0.026	7.2	0.253	0.449	0.040	9.0	0.876	..t	.tt		
Eastern Wood-Pewee	138	1085	1351	111	0.519	0.038	7.4	0.000	0.288	0.044	15.4	0.001	0.362	0.065	18.0	0.000	...			
Yellow-bellied Flycatcher*	4	106	129	2	0.824	0.264	32.1	0.000	0.032	0.044	137.7	0.000	0.149	0.206	138.5	0.000	...			
Acadian Flycatcher	93	3918	5672	717	0.486	0.015	3.1	0.004	0.542	0.023	4.2	0.007	0.362	0.024	6.6	0.030	...			
Traill's Flycatcher	105	4676	6700	623	0.475	0.016	3.3	0.000	0.499	0.024	4.9	0.000	0.274	0.020	7.2	0.001	...			
Least Flycatcher	35	1785	2414	200	0.450	0.028	6.3	0.020	0.356	0.038	10.8	0.020	0.366	0.048	13.1	0.001	...			
Hammond's Flycatcher	61	1572	2273	273	0.467	0.024	5.1	0.207	0.385	0.034	8.7	0.075	0.507	0.056	11.0	0.000	...			
Gray Flycatcher *†	4	119	125	2	0.365	0.298	81.7	0.000	0.033	0.123	377.1	0.000	1.000	3.758	375.8	0.000	...			
Dusky Flycatcher	56	3284	4917	485	0.493	0.018	3.6	0.999	0.421	0.025	6.0	0.030	0.307	0.025	8.3	0.004	t..			
Western Flycatcher	89	4006	5037	384	0.490	0.020	4.1	0.486	0.332	0.026	7.8	0.090	0.294	0.028	9.5	0.098	...	t..		
Black Phoebe	34	397	492	45	0.531	0.062	11.7	0.007	0.360	0.078	21.7	0.018	0.297	0.081	27.1	0.001	...			
Eastern Phoebe	63	521	666	41	0.407	0.062	15.1	0.237	0.479	0.101	21.2	0.091	0.220	0.064	28.9	0.109	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Vermilion Flycatcher†	6	114	135	11	0.439	0.124	28.3	0.000	0.162	0.125	77.1	0.000	1.000	0.814	81.4	0.000	...			
Dusky-capped Flycatcher *†	4	36	46	2	0.979	0.286	29.2	0.000	0.014	0.028	195.6	0.000	1.000	1.790	179.0	0.000	...			
Ash-throated Flycatcher	65	1538	1795	155	0.602	0.033	5.5	0.001	0.222	0.033	14.7	0.005	0.382	0.063	16.6	0.732	..t	...		
Great Crested Flycatcher	136	878	991	77	0.633	0.042	6.7	0.253	0.167	0.037	22.2	0.057	0.368	0.089	24.3	0.008	...	t..		
Brown-crested Flycatcher	9	369	464	53	0.533	0.060	11.2	0.000	0.351	0.076	21.6	0.001	0.484	0.132	27.2	0.119	...			
Eastern Kingbird	49	353	404	23	0.505	0.089	17.7	0.231	0.324	0.108	33.4	0.003	0.225	0.092	40.9	0.140	...	t..		
White-eyed Vireo	105	4592	8131	1058	0.501	0.012	2.4	0.503	0.514	0.018	3.6	0.658	0.436	0.024	5.5	0.005	tt.	...	.t.	
Bell's Vireo	21	819	1279	171	0.529	0.030	5.7	0.005	0.447	0.042	9.5	0.003	0.443	0.059	13.4	0.003	...			
Yellow-throated Vireo	24	79	95	11	0.595	0.134	22.6	0.000	0.241	0.143	59.4	0.000	0.512	0.360	70.3	0.000	...			
Plumbeous Vireo	11	115	153	21	0.540	0.087	16.2	0.001	0.343	0.108	31.6	0.001	0.463	0.181	39.0	0.000	...			
Cassin's Vireo	35	774	910	52	0.547	0.054	9.9	0.001	0.133	0.039	29.6	0.001	0.470	0.145	30.9	0.000	...			
Blue-headed Vireo	22	183	222	14	0.441	0.104	23.5	0.000	0.199	0.105	53.0	0.001	0.517	0.288	55.6	0.000	...			
Hutton's Vireo	27	199	276	27	0.579	0.074	12.8	0.007	0.242	0.075	30.9	0.007	0.466	0.164	35.3	0.004	...			
Warbling Vireo	155	7822	10957	1074	0.506	0.012	2.4	0.040	0.362	0.016	4.4	0.499	0.354	0.020	5.5	0.792	..t	.tt	.t.	
Red-eyed Vireo	218	6836	8884	985	0.558	0.012	2.2	0.996	0.262	0.014	5.2	0.925	0.490	0.030	6.0	0.029	tt.			
Gray Jay†	23	116	165	36	0.586	0.061	10.4	0.047	0.264	0.070	26.4	0.001	1.000	0.301	30.1	0.000	...			
Steller's Jay	75	471	559	58	0.687	0.047	6.8	0.000	0.180	0.042	23.1	0.018	0.390	0.100	25.5	0.002	...			
Blue Jay	199	1324	1454	86	0.607	0.041	6.8	0.004	0.113	0.029	26.0	0.010	0.441	0.120	27.3	0.118	...			
Western Scrub-Jay	43	245	281	26	0.564	0.079	13.9	0.001	0.244	0.085	35.0	0.000	0.380	0.151	39.8	0.377	...	..t		
Mexican Jay*	4	39	47	3	0.359	0.212	59.1	0.000	0.298	0.311	104.3	0.000	0.468	0.538	115.1	0.000	...			
Tree Swallow	61	931	1192	76	0.447	0.045	10.0	0.000	0.214	0.048	22.3	0.000	0.524	0.126	24.0	0.000	...			
Violet-green Swallow	14	245	299	19	0.449	0.089	19.7	0.005	0.246	0.104	42.0	0.363	0.383	0.176	46.0	0.011	...	.t.		
Northern Rough-winged Swallow	22	163	183	12	0.341	0.126	36.8	0.000	0.548	0.225	41.1	0.000	0.309	0.186	60.3	0.000	...			
Barn Swallow	21	477	566	39	0.483	0.060	12.5	0.268	0.177	0.058	32.5	0.442	0.508	0.174	34.3	0.022	.t.	...	t..	
Carolina Chickadee	157	2146	2523	189	0.487	0.030	6.1	0.001	0.203	0.030	14.9	0.001	0.522	0.084	16.1	0.000	...			
Black-capped Chickadee	209	5236	7381	829	0.455	0.014	3.1	0.047	0.378	0.020	5.2	0.001	0.556	0.036	6.4	0.011	...			
Mountain Chickadee	61	1803	2284	212	0.456	0.028	6.1	0.008	0.285	0.034	12.0	0.019	0.514	0.069	13.5	0.002	...			
Chestnut-backed Chickadee	60	1749	2295	232	0.419	0.027	6.4	0.001	0.377	0.039	10.4	0.007	0.503	0.063	12.5	0.621	..t	...		
Boreal Chickadee	12	148	219	30	0.435	0.070	16.1	0.029	0.367	0.103	28.1	0.018	0.772	0.261	33.9	0.001	...			
Bridled Titmouse	7	54	72	10	0.556	0.128	23.0	0.000	0.243	0.134	54.9	0.000	0.806	0.492	61.0	0.000	...			
Oak Titmouse	23	375	568	76	0.582	0.044	7.5	0.000	0.352	0.054	15.2	0.000	0.400	0.082	20.6	0.000	...			
Juniper Titmouse	5	59	110	21	0.553	0.083	15.0	0.000	0.530	0.122	23.0	0.000	0.589	0.223	37.8	0.000	...			
Tufted Titmouse	195	3225	4356	531	0.452	0.017	3.9	0.981	0.390	0.025	6.5	0.091	0.572	0.046	8.1	0.003	t..			
Black-crested Titmouse	21	378	497	57	0.479	0.053	11.1	0.000	0.192	0.053	27.4	0.000	0.994	0.289	29.1	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Verdin†	7	89	109	6	0.406	0.167	41.2	0.000	0.119	0.125	104.8	0.000	1.000	1.045	104.5	0.000	...			
Bushtit	70	2569	3057	158	0.331	0.032	9.6	0.970	0.215	0.040	18.7	0.019	0.681	0.132	19.4	0.036	t..			
Red-breasted Nuthatch	102	929	1034	40	0.336	0.065	19.4	0.000	0.122	0.061	50.4	0.000	0.778	0.398	51.2	0.000	...			
White-breasted Nuthatch	128	655	796	59	0.492	0.053	10.7	0.002	0.264	0.060	22.9	0.000	0.390	0.101	25.9	0.001	...			
Brown Creeper	77	1036	1295	81	0.347	0.044	12.8	0.002	0.232	0.056	24.3	0.007	0.718	0.182	25.3	0.000	...			
Carolina Wren	164	5068	8418	958	0.379	0.012	3.2	1.000	0.631	0.023	3.6	0.007	0.476	0.028	5.8	0.002	t..			
Bewick's Wren	115	3436	5709	720	0.432	0.015	3.4	0.119	0.546	0.024	4.5	0.001	0.529	0.035	6.6	0.010	...			
House Wren	146	5550	8142	587	0.355	0.016	4.4	0.018	0.411	0.027	6.5	0.018	0.460	0.036	7.7	0.000	...			
Winter Wren	52	1311	2120	176	0.364	0.027	7.4	0.047	0.530	0.052	9.7	0.017	0.359	0.050	14.1	0.007	...			
Golden-crowned Kinglet	73	1427	1778	24	0.114	0.055	48.2	0.028	0.282	0.165	58.4	0.002	0.411	0.175	42.7	0.009	...			
Ruby-crowned Kinglet	39	1365	1705	65	0.319	0.047	14.8	0.624	0.245	0.062	25.5	0.142	0.422	0.108	25.7	0.016	t..	...		
Arctic Warbler	2	259	481	52	0.323	0.050	15.5	0.001	0.632	0.103	16.3	0.000	0.648	0.163	25.2	0.000	...			
Blue-gray Gnatcatcher	114	980	1080	30	0.399	0.075	18.8	0.001	0.135	0.063	46.7	0.360	0.384	0.181	47.2	0.050	...	.t.		
Eastern Bluebird	51	334	448	23	0.387	0.079	20.5	0.009	0.292	0.105	36.0	0.181	0.339	0.135	39.7	0.002	...			
Western Bluebird	17	184	248	16	0.360	0.093	26.0	0.000	0.396	0.154	38.9	0.001	0.328	0.154	46.9	0.003	...			
Veery	78	3346	6518	1292	0.589	0.011	1.9	0.007	0.572	0.016	2.7	0.004	0.498	0.023	4.7	0.000	...			
Gray-cheeked Thrush	6	253	539	74	0.441	0.044	10.0	0.000	0.706	0.072	10.1	0.000	0.527	0.108	20.4	0.000	...			
Bicknell's Thrush	1	28	45	10	0.608	0.122	20.1	0.000	0.322	0.149	46.3	0.000	0.840	0.479	57.0	0.000	...			
Swainson's Thrush	133	15147	32752	5494	0.589	0.005	0.9	0.000	0.618	0.008	1.2	0.000	0.362	0.009	2.5	1.000	..t			
Hermit Thrush	93	2893	5032	711	0.473	0.015	3.1	0.148	0.590	0.023	3.9	0.123	0.455	0.030	6.6	0.225	...	..t		
Wood Thrush	160	7040	11700	1155	0.419	0.011	2.6	0.999	0.510	0.019	3.7	0.970	0.411	0.022	5.3	0.000	tt.			
American Robin	364	12980	16653	1577	0.491	0.010	2.1	1.000	0.265	0.012	4.4	0.001	0.535	0.027	5.0	0.000	t..			
Varied Thrush	41	596	772	59	0.406	0.049	12.0	0.307	0.388	0.076	19.7	0.186	0.367	0.089	24.4	0.000	...	t..	.t.	
Wrentit	52	2800	5565	896	0.570	0.013	2.2	0.999	0.537	0.019	3.5	0.716	0.400	0.024	6.1	0.318	tt.	t.t		
Gray Catbird	167	16370	26192	3385	0.507	0.007	1.4	0.018	0.455	0.010	2.2	0.004	0.459	0.014	3.0	0.029	...			
Northern Mockingbird	39	612	740	22	0.340	0.081	23.9	0.006	0.181	0.085	46.8	0.015	0.378	0.175	46.2	0.013	...			
Brown Thrasher	74	907	1159	115	0.552	0.036	6.5	0.000	0.234	0.037	16.0	0.004	0.485	0.088	18.0	0.000	...			
Long-billed Thrasher	4	220	296	44	0.550	0.069	12.6	0.001	0.429	0.088	20.5	0.018	0.541	0.149	27.5	0.000	...			
California Thrasher	15	156	205	25	0.608	0.082	13.4	0.004	0.174	0.070	40.3	0.000	0.750	0.320	42.6	0.000	...			
European Starling	38	382	409	15	0.399	0.115	28.8	0.002	0.214	0.139	64.7	0.002	0.373	0.267	71.6	0.000	...			
Cedar Waxwing	115	5473	5999	32	0.437	0.074	17.0	0.000	0.032	0.015	45.8	0.004	0.237	0.101	42.3	0.000	...			
Blue-winged Warbler	41	1447	2111	247	0.529	0.025	4.8	0.000	0.372	0.033	8.8	0.000	0.421	0.048	11.4	0.000	...			
Golden-winged Warbler	4	43	59	8	0.664	0.127	19.2	0.000	0.222	0.124	55.7	0.000	0.540	0.344	63.7	0.000	...			
Orange-crowned Warbler	84	5266	7277	630	0.418	0.015	3.7	0.602	0.445	0.025	5.6	0.366	0.361	0.026	7.3	0.003	t..	.t.		

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Nashville Warbler	39	1553	1870	81	0.320	0.042	13.0	0.091	0.367	0.072	19.6	0.413	0.291	0.064	22.0	0.098	...	.t.		
Virginia's Warbler	14	770	940	66	0.414	0.050	12.2	0.003	0.341	0.071	20.8	0.377	0.365	0.089	24.4	0.000	...	.t.		
Lucy's Warbler	13	803	970	78	0.525	0.048	9.2	0.003	0.350	0.060	17.2	0.001	0.289	0.060	20.7	0.498	...	..t		
Northern Parula	55	587	667	40	0.455	0.064	14.1	0.000	0.267	0.078	29.1	0.001	0.326	0.106	32.7	0.001	...			
Yellow Warbler	184	15468	24826	3300	0.540	0.007	1.3	0.000	0.462	0.010	2.1	0.002	0.402	0.012	3.0	0.048	...			
Chestnut-sided Warbler	27	1258	2187	262	0.454	0.025	5.4	0.011	0.512	0.039	7.5	0.002	0.523	0.057	10.9	0.003	...			
Magnolia Warbler	21	836	1332	132	0.395	0.033	8.4	0.989	0.684	0.059	8.7	0.006	0.310	0.049	15.8	0.000	t..			
Black-throated Blue Warbler	13	213	303	36	0.511	0.071	13.9	0.000	0.467	0.099	21.2	0.000	0.387	0.114	29.4	0.001	...			
Yellow-rumped Warbler	114	6332	7786	588	0.439	0.017	3.8	0.001	0.269	0.020	7.6	0.004	0.467	0.039	8.5	0.001	...			
Black-throated Gray Warbler	24	212	242	7	0.406	0.151	37.2	0.001	0.064	0.071	109.6	0.001	0.851	0.900	105.8	0.000	...			
Black-throated Green Warbler	31	621	909	97	0.388	0.040	10.2	0.000	0.548	0.070	12.9	0.002	0.467	0.086	18.4	0.076	...			
Townsend's Warbler	30	1464	1830	134	0.420	0.035	8.3	0.000	0.244	0.041	16.8	0.000	0.558	0.103	18.4	0.002	...			
Hermit Warbler	34	1545	1703	61	0.649	0.047	7.3	0.002	0.076	0.022	29.3	0.000	0.316	0.094	29.8	0.000	...			
Blackburnian Warbler	7	69	83	6	0.511	0.166	32.6	0.000	0.110	0.114	103.5	0.000	0.884	0.919	104.0	0.000	...			
Pine Warbler	44	308	358	16	0.285	0.096	33.6	0.000	0.399	0.187	46.8	0.001	0.364	0.198	54.3	0.000	...			
Prairie Warbler	33	930	1305	143	0.500	0.035	6.9	0.039	0.331	0.042	12.8	0.175	0.499	0.077	15.4	0.002	...			
Blackpoll Warbler	10	233	350	30	0.316	0.063	20.0	0.004	0.690	0.136	19.8	0.000	0.348	0.117	33.6	0.005	...			
Black-and-white Warbler	98	1612	2076	198	0.505	0.028	5.6	0.186	0.315	0.036	11.3	0.524	0.420	0.056	13.4	0.136	.t.	...	t..	
American Redstart	83	4713	6847	722	0.492	0.015	3.0	0.183	0.385	0.020	5.2	0.314	0.423	0.028	6.7	0.398	...	..t	.t.	.tt
Prothonotary Warbler	30	1144	1528	135	0.471	0.036	7.6	0.017	0.296	0.044	14.8	0.046	0.544	0.092	16.9	0.017	...			
Worm-eating Warbler	38	1163	1634	185	0.554	0.029	5.3	0.001	0.399	0.039	9.7	0.003	0.345	0.045	13.0	0.001	...			
Swainson's Warbler	10	220	394	44	0.505	0.064	12.7	0.002	0.418	0.085	20.3	0.617	0.511	0.137	26.8	0.007	.t.	...		
Ovenbird	151	5663	8162	983	0.536	0.012	2.3	0.509	0.430	0.017	4.0	0.309	0.361	0.020	5.6	0.069	t..	.t.		
Northern Waterthrush	29	748	1148	133	0.500	0.034	6.8	0.022	0.563	0.052	9.3	0.263	0.313	0.048	15.3	0.001	...	.t.		
Louisiana Waterthrush	46	908	1524	185	0.513	0.029	5.7	0.000	0.578	0.044	7.7	0.011	0.328	0.043	13.0	0.002	...			
Kentucky Warbler	73	2787	4890	744	0.530	0.014	2.7	0.001	0.563	0.021	3.8	0.000	0.416	0.027	6.4	0.001	...			
Mourning Warbler	9	345	586	79	0.463	0.045	9.7	0.004	0.489	0.069	14.2	0.003	0.575	0.113	19.7	0.002	...			
MacGillivray's Warbler	104	9259	18168	2332	0.490	0.008	1.7	0.379	0.596	0.013	2.1	0.002	0.387	0.015	3.7	0.622	..t	t..		
Common Yellowthroat	256	14713	24806	2797	0.476	0.007	1.5	0.258	0.498	0.011	2.3	0.008	0.402	0.014	3.4	0.035	...	t..		
Hooded Warbler	58	1883	3158	350	0.456	0.020	4.5	0.047	0.519	0.033	6.4	0.002	0.405	0.039	9.5	0.006	...			
Wilson's Warbler	93	12587	19216	1615	0.428	0.009	2.2	0.031	0.510	0.016	3.1	0.967	0.281	0.013	4.6	1.000	.tt			
Canada Warbler	13	498	765	83	0.456	0.044	9.7	0.075	0.505	0.069	13.7	0.001	0.377	0.074	19.6	0.027	...			
Red-faced Warbler *†	3	54	57	2	0.372	0.301	80.9	0.000	0.064	0.235	364.0	0.000	1.000	3.771	377.1	0.000	...			
Yellow-breasted Chat	97	5375	9017	1234	0.502	0.011	2.2	0.979	0.462	0.016	3.5	0.013	0.499	0.025	5.0	0.008	t..			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Summer Tanager	91	1360	1880	260	0.569	0.027	4.7	0.425	0.376	0.032	8.6	0.059	0.469	0.052	11.0	0.095	...	t..		
Scarlet Tanager	116	905	1031	57	0.524	0.052	9.9	0.001	0.123	0.039	31.7	0.001	0.535	0.177	33.0	0.018	...			
Western Tanager	98	3118	3422	180	0.514	0.031	6.1	0.016	0.116	0.024	20.4	0.117	0.569	0.121	21.2	0.002	...			
Olive Sparrow	4	269	517	88	0.542	0.043	8.0	0.001	0.697	0.061	8.8	0.003	0.467	0.086	18.4	0.007	...			
Green-tailed Towhee	18	506	753	106	0.592	0.038	6.4	0.045	0.320	0.045	13.9	0.045	0.474	0.081	17.1	0.001	...			
Spotted Towhee	118	4525	6739	946	0.498	0.013	2.6	0.042	0.428	0.019	4.3	0.114	0.536	0.031	5.7	0.002	...			
Eastern Towhee	141	1441	2062	260	0.471	0.025	5.3	0.000	0.387	0.035	9.0	0.001	0.580	0.066	11.3	0.000	...			
Canyon Towhee†	6	92	122	11	0.626	0.140	22.3	0.000	0.111	0.074	66.3	0.000	1.000	0.666	66.6	0.000	...			
California Towhee	38	889	1266	200	0.555	0.029	5.1	0.001	0.362	0.036	10.0	0.001	0.588	0.074	12.5	0.500	...	..t		
Abert's Towhee	6	171	232	21	0.462	0.092	19.8	0.000	0.297	0.113	38.2	0.000	0.563	0.247	43.9	0.000	...			
Bachman's Sparrow	8	90	152	14	0.443	0.118	26.7	0.000	0.508	0.178	35.0	0.000	0.420	0.202	48.1	0.000	...			
Rufous-crowned Sparrow	22	339	509	61	0.488	0.052	10.6	0.119	0.375	0.070	18.6	0.000	0.539	0.125	23.1	0.000	...			
American Tree Sparrow	7	203	338	35	0.457	0.062	13.7	0.000	0.552	0.103	18.7	0.000	0.335	0.103	30.6	0.000	...			
Chipping Sparrow	112	2421	3012	208	0.429	0.028	6.6	0.046	0.249	0.033	13.4	0.017	0.513	0.074	14.5	0.011	...			
Clay-colored Sparrow	11	587	720	35	0.378	0.067	17.6	0.022	0.425	0.111	26.2	0.263	0.254	0.082	32.3	0.001	...	.t.		
Field Sparrow	88	2932	4217	475	0.421	0.018	4.3	0.048	0.366	0.026	7.2	0.012	0.654	0.056	8.6	0.000	...			
Vesper Sparrow	7	83	103	13	0.694	0.094	13.5	0.002	0.252	0.101	39.9	0.002	0.277	0.135	48.6	0.000	...			
Lark Sparrow	21	520	566	25	0.397	0.080	20.2	0.000	0.305	0.115	37.6	0.001	0.252	0.110	43.5	0.001	...			
Black-throated Sparrow	12	226	250	10	0.606	0.126	20.9	0.000	0.187	0.108	57.7	0.016	0.182	0.116	64.0	0.010	...			
Sage Sparrow *†	2	99	104	3	0.426	0.228	53.5	0.000	0.045	0.112	252.0	0.000	1.000	2.530	253.0	0.000	...			
Savannah Sparrow	17	675	932	137	0.516	0.034	6.7	0.154	0.357	0.045	12.6	0.154	0.571	0.089	15.6	0.000	...			
Grasshopper Sparrow	10	620	859	68	0.395	0.051	12.9	0.033	0.414	0.079	19.1	0.954	0.448	0.101	22.5	0.000	.t.			
Fox Sparrow	45	1368	2354	297	0.501	0.022	4.4	0.486	0.514	0.034	6.6	0.056	0.399	0.041	10.3	0.589	..t	t.t	...	t..
Song Sparrow	267	18568	35119	4612	0.480	0.006	1.2	0.193	0.531	0.009	1.7	0.131	0.488	0.013	2.6	0.002	...			
Lincoln's Sparrow	56	3537	8364	1031	0.434	0.012	2.7	0.182	0.623	0.020	3.2	0.881	0.563	0.032	5.6	0.001	.t.			
Swamp Sparrow	17	530	952	105	0.426	0.037	8.6	0.938	0.678	0.063	9.3	0.006	0.332	0.060	18.0	0.062	t..			
White-throated Sparrow	28	1434	2380	207	0.353	0.025	7.2	0.011	0.516	0.048	9.4	0.029	0.504	0.064	12.7	0.017	...			
White-crowned Sparrow	36	1666	2873	371	0.459	0.020	4.3	0.002	0.472	0.031	6.6	0.377	0.574	0.053	9.2	0.000	...	.t.		
Golden-crowned Sparrow	5	281	539	76	0.494	0.042	8.5	0.000	0.529	0.066	12.5	0.007	0.521	0.106	20.4	0.000	...			
Dark-eyed Junco	142	9455	15941	2030	0.443	0.009	1.9	0.032	0.494	0.014	2.8	0.998	0.538	0.021	3.9	0.000	.t.			
Northern Cardinal	246	10430	15493	2294	0.537	0.008	1.6	0.881	0.394	0.011	2.8	0.011	0.542	0.020	3.7	0.002	t..			
Pyrrhuloxia*	2	149	155	4	0.701	0.203	29.0	0.000	0.267	0.189	70.7	0.000	0.039	0.036	90.4	0.000	...			
Rose-breasted Grosbeak	64	1102	1328	96	0.475	0.042	8.9	0.007	0.244	0.047	19.3	0.623	0.452	0.098	21.7	0.003	.t.	...		
Black-headed Grosbeak	141	6351	8223	887	0.551	0.013	2.4	0.715	0.279	0.015	5.4	0.022	0.448	0.028	6.3	0.001	t..	...		

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Blue Grosbeak	40	822	1001	89	0.566	0.049	8.7	0.499	0.290	0.051	17.7	0.001	0.368	0.076	20.5	0.001	...	t..		
Lazuli Bunting	55	2532	3157	214	0.495	0.026	5.3	0.001	0.274	0.031	11.1	0.017	0.295	0.038	12.9	0.047	...			
Indigo Bunting	161	6555	9279	1052	0.467	0.012	2.6	0.817	0.398	0.018	4.4	0.003	0.489	0.027	5.6	0.001	t..			
Varied Bunting	4	163	210	23	0.514	0.113	21.9	0.000	0.302	0.114	37.8	0.000	0.605	0.259	42.8	0.000	...			
Painted Bunting	36	2496	3450	441	0.544	0.020	3.6	0.076	0.485	0.027	5.6	0.012	0.319	0.027	8.3	0.016	...			
Dickcissel	17	1087	1213	41	0.465	0.064	13.9	0.001	0.194	0.063	32.3	0.002	0.276	0.094	34.3	0.002	...			
Bobolink	5	329	371	15	0.724	0.162	22.3	0.000	0.145	0.075	51.6	0.000	0.299	0.161	53.6	0.000	...			
Red-winged Blackbird	114	3698	4135	240	0.616	0.026	4.3	0.032	0.142	0.020	13.8	0.944	0.351	0.051	14.6	0.021	.t.			
Eastern Meadowlark	12	59	69	5	0.589	0.167	28.3	0.000	0.349	0.213	61.1	0.000	0.195	0.157	80.3	0.000	...			
Brewer's Blackbird *†	18	165	171	3	0.484	0.261	54.0	0.000	0.026	0.105	402.2	0.000	1.000	4.062	406.2	0.000	...			
Common Grackle	68	1394	1446	28	0.450	0.077	17.1	0.001	0.075	0.052	69.5	0.001	0.377	0.269	71.3	0.011	...			
Bronzed Cowbird	5	91	111	10	0.432	0.134	31.0	0.000	0.329	0.192	58.4	0.000	0.549	0.393	71.5	0.000	...			
Brown-headed Cowbird	298	3656	5113	614	0.476	0.016	3.4	0.001	0.423	0.024	5.6	0.002	0.479	0.035	7.3	0.001	...			
Orchard Oriole	27	520	633	52	0.515	0.058	11.3	0.029	0.291	0.067	23.0	0.001	0.389	0.104	26.8	0.011	...			
Hooded Oriole *†	3	40	49	4	0.590	0.232	39.3	0.000	0.118	0.126	107.2	0.000	1.000	1.069	106.9	0.000	...			
Bullock's Oriole	66	2175	2745	211	0.477	0.028	5.9	0.001	0.308	0.035	11.3	0.007	0.367	0.048	13.2	0.000	...			
Baltimore Oriole	68	1072	1322	107	0.508	0.039	7.6	0.002	0.319	0.049	15.3	0.047	0.325	0.060	18.4	0.001	...			
Pine Grosbeak	11	143	170	12	0.398	0.117	29.5	0.000	0.252	0.160	63.3	0.002	0.598	0.431	72.1	0.000	...			
Purple Finch	61	5062	6347	573	0.486	0.017	3.5	0.028	0.284	0.020	7.1	0.047	0.443	0.036	8.2	0.001	...			
Cassin's Finch	21	723	774	20	0.495	0.087	17.6	0.002	0.078	0.047	60.4	0.043	0.386	0.234	60.7	0.010	...			
House Finch	80	2260	2381	54	0.496	0.058	11.7	0.001	0.059	0.029	50.1	0.003	0.525	0.266	50.6	0.000	...			
Common Redpoll	14	1631	2035	18	0.369	0.090	24.5	0.000	0.027	0.019	67.8	0.000	0.780	0.489	62.8	0.000	...			
Pine Siskin	56	3205	3442	30	0.382	0.075	19.6	0.018	0.024	0.018	75.0	0.004	0.683	0.497	72.8	0.000	...			
Lesser Goldfinch	52	2130	2296	62	0.366	0.052	14.3	0.001	0.107	0.042	38.9	0.000	0.547	0.213	39.0	0.076	...			
American Goldfinch	207	11566	13919	953	0.426	0.013	3.1	0.155	0.255	0.016	6.2	0.094	0.466	0.031	6.7	0.057	...			
Mean (192 species)	63	2119	3168	348	0.488	0.064	13.8	0.116	0.334	0.067	35.9	0.093	0.492	0.257	39.9	0.055				
Mean (169 better-estimated sp.)[m]	70	2385	3573	394	0.489	0.048	10.0	0.132	0.352	0.056	21.1	0.106	0.456	0.116	24.9	0.062				
NORTHWEST MAPS REGION																				
Williamson's Sapsucker	9	100	136	11	0.499	0.111	22.3	0.000	0.186	0.102	54.8	0.045	0.583	0.341	58.4	0.000	...			
Red-naped Sapsucker	36	663	1137	138	0.424	0.033	7.9	0.003	0.546	0.056	10.3	0.000	0.496	0.075	15.2	0.001	...			
Red-breasted Sapsucker	52	1109	1836	224	0.440	0.027	6.0	0.000	0.461	0.041	9.0	0.011	0.585	0.070	11.9	0.001	...			
Downy Woodpecker	57	577	740	75	0.443	0.048	10.8	0.544	0.326	0.063	19.3	0.123	0.539	0.120	22.3	0.006	t..	...		

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Hairy Woodpecker	66	381	475	67	0.603	0.048	7.9	0.067	0.230	0.049	21.2	0.009	0.593	0.142	23.9	0.110	...			
White-headed Woodpecker *†	7	49	52	2	0.601	0.310	51.6	0.000	0.036	0.156	430.7	0.000	1.000	4.348	434.8	0.000	...			
Northern Flicker	75	341	385	17	0.339	0.103	30.5	0.000	0.140	0.101	72.1	0.000	0.805	0.591	73.5	0.000	...			
Olive-sided Flycatcher†	13	59	74	5	0.680	0.146	21.4	0.000	0.048	0.051	106.2	0.000	1.000	1.054	105.4	0.000	...			
Western Wood-Pewee	78	1879	2537	305	0.529	0.024	4.4	0.044	0.380	0.030	8.0	0.156	0.404	0.041	10.2	0.258	...			
Traill's Flycatcher	38	1900	2832	319	0.510	0.022	4.4	0.009	0.487	0.033	6.7	0.001	0.310	0.031	10.0	0.495	...	..t		
Least Flycatcher	3	77	98	6	0.436	0.188	43.0	0.000	0.297	0.216	72.5	0.000	0.427	0.343	80.3	0.000	...			
Hammond's Flycatcher	60	1564	2265	273	0.467	0.024	5.1	0.207	0.385	0.034	8.7	0.075	0.509	0.056	11.0	0.000	...			
Dusky Flycatcher	49	3080	4677	469	0.494	0.018	3.6	0.999	0.418	0.025	6.1	0.011	0.318	0.027	8.4	0.004	t..			
Western Flycatcher	60	2385	3131	286	0.493	0.023	4.7	0.012	0.341	0.030	8.9	0.012	0.357	0.039	10.9	0.004	...			
Black Phoebe	4	89	122	12	0.706	0.105	14.8	0.000	0.284	0.107	37.8	0.009	0.221	0.111	50.4	0.001	...			
Eastern Kingbird	10	110	121	6	0.466	0.183	39.3	0.000	0.373	0.235	63.1	0.000	0.175	0.138	78.8	0.000	...			
Cassin's Vireo	35	774	910	52	0.547	0.054	9.9	0.001	0.133	0.039	29.6	0.001	0.470	0.145	30.9	0.000	...			
Hutton's Vireo	14	71	99	11	0.659	0.114	17.3	0.000	0.343	0.137	40.0	0.000	0.292	0.151	51.8	0.000	...			
Warbling Vireo	106	5694	8343	908	0.508	0.013	2.5	0.024	0.361	0.017	4.7	0.122	0.417	0.025	6.0	0.876	..t			
Red-eyed Vireo	9	199	309	33	0.557	0.068	12.1	0.028	0.247	0.070	28.2	0.046	0.579	0.185	32.0	0.000	...			
Gray Jay	11	62	86	20	0.664	0.077	11.6	0.002	0.227	0.080	35.4	0.003	0.766	0.304	39.7	0.000	...			
Steller's Jay	66	326	358	27	0.681	0.073	10.7	0.000	0.161	0.061	38.2	0.000	0.316	0.132	41.9	0.000	...			
Western Scrub-Jay	10	54	63	6	0.608	0.144	23.6	0.000	0.215	0.149	69.2	0.000	0.356	0.277	77.7	0.000	...			
Tree Swallow	24	532	732	57	0.467	0.052	11.1	0.000	0.232	0.056	24.2	0.001	0.614	0.162	26.3	0.002	...			
Violet-green Swallow	9	123	138	6	0.346	0.169	48.9	0.000	0.211	0.212	100.5	0.000	0.499	0.521	104.5	0.000	...			
Northern Rough-winged Swallow	13	119	134	8	0.389	0.157	40.5	0.000	0.427	0.244	57.0	0.000	0.310	0.230	74.2	0.000	...			
Barn Swallow	7	380	463	37	0.502	0.061	12.2	0.185	0.182	0.059	32.3	0.306	0.547	0.188	34.4	0.006	...	.t.	t..	
Black-capped Chickadee	58	1530	2282	305	0.463	0.024	5.1	0.004	0.429	0.034	8.0	0.051	0.615	0.063	10.3	0.002	...			
Mountain Chickadee	51	1486	1870	175	0.470	0.031	6.5	0.007	0.285	0.037	13.1	0.076	0.487	0.072	14.8	0.001	...			
Chestnut-backed Chickadee	51	1301	1540	109	0.326	0.039	12.0	0.000	0.208	0.050	24.0	0.004	0.935	0.236	25.2	0.003	...			
Bushtit†	18	403	482	21	0.335	0.095	28.3	0.002	0.132	0.082	61.8	0.069	1.000	0.599	59.9	0.001	...			
Red-breasted Nuthatch	75	793	887	37	0.356	0.068	19.1	0.000	0.124	0.063	50.3	0.000	0.750	0.385	51.3	0.000	...			
White-breasted Nuthatch	10	43	65	12	0.578	0.135	23.4	0.000	0.857	0.136	15.8	0.000	0.266	0.130	48.8	0.000	...			
Brown Creeper	56	763	973	73	0.376	0.047	12.6	0.000	0.248	0.060	24.3	0.003	0.727	0.189	26.0	0.000	...			
Bewick's Wren	27	519	880	114	0.446	0.038	8.6	0.001	0.520	0.061	11.7	0.003	0.553	0.092	16.6	0.000	...			
House Wren	40	1464	2219	162	0.353	0.031	8.8	0.448	0.381	0.050	13.1	0.272	0.548	0.081	14.8	0.008	t..	...	.t.	
Winter Wren	39	1248	2047	175	0.364	0.027	7.4	0.074	0.540	0.052	9.6	0.027	0.368	0.052	14.1	0.011	...			
Golden-crowned Kinglet*	59	1278	1582	20	0.084	0.050	59.2	0.003	0.392	0.260	66.2	0.002	0.374	0.173	46.2	0.004	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Ruby-crowned Kinglet	24	1136	1445	61	0.341	0.049	14.5	0.691	0.250	0.063	25.4	0.257	0.418	0.109	26.0	0.002	t..	.t.		
Veery	8	273	614	126	0.665	0.035	5.3	0.000	0.580	0.048	8.2	0.000	0.428	0.068	16.0	0.001	...			
Swainson's Thrush	93	10644	24739	4549	0.595	0.006	1.0	0.001	0.626	0.008	1.3	0.000	0.423	0.011	2.7	0.029	...			
Hermit Thrush	36	1041	1607	194	0.443	0.028	6.3	0.002	0.539	0.045	8.4	0.377	0.407	0.052	12.8	0.002	...	.t.		
American Robin	152	6817	9110	1022	0.518	0.013	2.4	1.000	0.263	0.014	5.3	0.003	0.609	0.037	6.0	0.007	t..			
Varied Thrush	31	481	636	54	0.425	0.051	11.9	0.506	0.399	0.078	19.7	0.307	0.356	0.089	25.1	0.001	t..	.t.	...	
Wrentit	21	728	1732	306	0.563	0.022	3.8	0.276	0.580	0.032	5.6	0.387	0.477	0.051	10.8	0.840	..t	.tt	t..	t.t
Gray Catbird	18	1466	2294	297	0.529	0.025	4.7	0.194	0.386	0.032	8.2	0.008	0.534	0.055	10.2	0.815	..t			
European Starling	13	233	253	12	0.426	0.142	33.2	0.000	0.331	0.191	57.6	0.000	0.293	0.207	70.5	0.000	...			
Cedar Waxwing	40	2673	3069	28	0.389	0.080	20.5	0.003	0.052	0.025	47.3	0.007	0.318	0.137	43.1	0.003	...			
Orange-crowned Warbler	40	1923	2680	269	0.441	0.024	5.5	0.068	0.432	0.037	8.6	0.112	0.405	0.045	11.2	0.006	...			
Nashville Warbler	20	979	1187	62	0.325	0.048	14.7	0.002	0.425	0.088	20.8	0.002	0.292	0.072	24.6	0.004	...			
Virginia's Warbler	2	329	374	25	0.412	0.086	21.0	0.011	0.168	0.084	49.7	0.592	0.724	0.375	51.8	0.001	.t.	...		
Yellow Warbler	79	8477	14268	2011	0.564	0.009	1.6	0.124	0.476	0.012	2.6	0.210	0.393	0.015	3.9	0.214	...	.t.	..t	
Yellow-rumped Warbler	70	4695	5663	408	0.456	0.020	4.4	0.007	0.227	0.022	9.7	0.018	0.488	0.051	10.5	0.001	...			
Black-throated Gray Warbler	20	175	200	5	0.425	0.176	41.6	0.001	0.076	0.087	113.5	0.000	0.563	0.614	109.1	0.000	...			
Townsend's Warbler	26	1305	1631	126	0.435	0.036	8.4	0.001	0.240	0.042	17.3	0.001	0.567	0.107	18.9	0.004	...			
Hermit Warbler	34	1545	1703	61	0.649	0.047	7.3	0.002	0.076	0.022	29.3	0.000	0.316	0.094	29.8	0.000	...			
American Redstart	10	609	1040	131	0.488	0.035	7.1	0.004	0.561	0.054	9.6	0.995	0.408	0.063	15.3	0.001	.t.			
Northern Waterthrush	9	278	428	49	0.542	0.056	10.3	0.100	0.427	0.078	18.2	0.164	0.344	0.087	25.4	0.003	...			
MacGillivray's Warbler	96	9042	17910	2321	0.491	0.008	1.7	0.622	0.598	0.013	2.1	0.001	0.394	0.015	3.8	0.378	t..	..t		
Common Yellowthroat	35	2556	4810	612	0.496	0.016	3.1	0.002	0.554	0.024	4.4	0.001	0.387	0.028	7.3	0.011	...			
Wilson's Warbler	62	5329	8742	916	0.446	0.013	2.8	0.785	0.525	0.021	3.9	0.999	0.368	0.022	6.0	0.176	tt.			
Yellow-breasted Chat	21	1374	2499	357	0.508	0.020	4.0	0.980	0.501	0.031	6.1	0.007	0.452	0.043	9.6	0.024	t..			
Western Tanager	85	2592	2835	146	0.495	0.036	7.2	0.006	0.107	0.026	24.5	0.047	0.653	0.165	25.3	0.001	...			
Green-tailed Towhee	13	419	654	102	0.615	0.039	6.3	0.018	0.322	0.045	13.9	0.029	0.502	0.086	17.2	0.000	...			
Spotted Towhee	61	1888	2799	368	0.488	0.021	4.3	0.725	0.428	0.030	7.0	0.204	0.489	0.045	9.2	0.078	t..	...	tt.	
Chipping Sparrow	44	1390	1718	117	0.457	0.038	8.3	0.017	0.236	0.041	17.5	0.028	0.459	0.087	19.0	0.046	...			
Vesper Sparrow	4	66	83	11	0.697	0.104	14.9	0.000	0.256	0.111	43.4	0.001	0.287	0.151	52.6	0.000	...			
Savannah Sparrow	5	461	659	117	0.534	0.038	7.1	0.114	0.325	0.047	14.3	0.042	0.734	0.125	17.1	0.000	...			
Fox Sparrow	30	873	1550	194	0.498	0.028	5.6	0.813	0.485	0.042	8.6	0.167	0.429	0.055	12.8	0.027	t..			
Song Sparrow	126	9800	20119	2718	0.473	0.007	1.6	0.977	0.571	0.012	2.1	0.715	0.504	0.017	3.5	0.000	tt.	t..		
Lincoln's Sparrow	39	3047	7305	955	0.438	0.012	2.8	0.124	0.624	0.021	3.3	0.974	0.607	0.035	5.8	0.016	.t.			
White-crowned Sparrow	20	952	1708	243	0.478	0.025	5.2	0.001	0.518	0.039	7.5	0.119	0.549	0.061	11.2	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h] φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	Recapture probability[j] p	SE(p)	CV(p)	$w(p_i)$[i]	Proportion of residents[k] τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	Models selected[l] 1	2	3	4
Dark-eyed Junco	98	7798	13290	1775	0.460	0.009	2.0	0.264	0.491	0.014	2.9	0.900	0.528	0.022	4.2	0.000	.t.			
Black-headed Grosbeak	89	3521	4631	527	0.571	0.017	3.1	0.011	0.249	0.018	7.2	0.007	0.517	0.043	8.2	0.001	...			
Lazuli Bunting	32	1842	2332	173	0.523	0.029	5.6	0.001	0.253	0.032	12.5	0.004	0.330	0.047	14.2	0.047	...			
Red-winged Blackbird	32	1505	1716	129	0.679	0.036	5.3	0.008	0.140	0.026	18.2	0.266	0.385	0.074	19.2	0.005	...	.t.		
Brown-headed Cowbird	88	1326	1972	264	0.452	0.025	5.5	0.007	0.480	0.039	8.0	0.018	0.534	0.058	10.9	0.000	...			
Bullock's Oriole	33	1223	1582	144	0.486	0.034	7.1	0.004	0.348	0.045	12.9	0.011	0.403	0.063	15.6	0.000	...			
Pine Grosbeak *†	5	69	76	4	0.384	0.202	52.6	0.000	0.106	0.173	163.1	0.000	1.000	1.676	167.6	0.000	...			
Purple Finch	39	3590	4453	385	0.471	0.021	4.4	0.009	0.293	0.026	8.8	0.182	0.429	0.043	10.1	0.002	...			
Cassin's Finch	19	607	647	15	0.550	0.100	18.1	0.002	0.083	0.051	61.5	0.041	0.256	0.159	62.2	0.011	...			
House Finch†	12	522	569	18	0.523	0.097	18.5	0.004	0.039	0.039	98.8	0.060	1.000	0.985	98.5	0.002	...			
Pine Siskin	49	3082	3314	30	0.383	0.075	19.6	0.011	0.024	0.018	74.8	0.002	0.685	0.498	72.7	0.007	...			
Lesser Goldfinch†	9	498	529	10	0.401	0.141	35.1	0.000	0.036	0.051	140.2	0.000	1.000	1.376	137.6	0.001	...			
American Goldfinch	31	2598	3431	322	0.475	0.023	4.8	0.057	0.322	0.029	8.9	0.970	0.452	0.047	10.5	0.003	.t.			
Mean (85 species)	39	1733	2749	322	0.486	0.061	13.5	0.132	0.327	0.064	34.5	0.126	0.508	0.239	37.7	0.054				
Mean (71 better-estimated sp.)[m]	43	2018	3225	383	0.500	0.043	8.6	0.158	0.355	0.047	18.8	0.148	0.476	0.105	22.1	0.064				
SOUTHWEST MAPS REGION																				
Common Ground-Dove *†	3	92	105	2	0.374	0.303	81.2	0.000	0.042	0.093	222.2	0.000	1.000	2.070	207.0	0.000	...			
Acorn Woodpecker	10	70	85	9	0.439	0.165	37.7	0.000	0.767	0.207	27.0	0.000	0.263	0.158	59.9	0.000	...			
Gila Woodpecker	5	30	47	9	0.694	0.139	20.1	0.000	0.830	0.150	18.1	0.000	0.147	0.105	71.1	0.000	...			
Williamson's Sapsucker	5	110	138	8	0.435	0.132	30.3	0.000	0.217	0.140	64.4	0.000	0.433	0.298	68.8	0.000	...			
Red-naped Sapsucker	4	163	332	74	0.584	0.044	7.6	0.004	0.522	0.063	12.1	0.029	0.675	0.129	19.1	0.000	...			
Ladder-backed Woodpecker†	12	76	102	14	0.407	0.121	29.8	0.000	0.361	0.175	48.4	0.000	1.000	0.569	56.9	0.000	...			
Nuttall's Woodpecker	30	425	664	101	0.580	0.038	6.6	0.002	0.363	0.048	13.3	0.001	0.526	0.091	17.2	0.004	...			
Downy Woodpecker	31	433	647	83	0.636	0.041	6.4	0.002	0.326	0.048	14.6	0.004	0.339	0.065	19.3	0.002	...			
Hairy Woodpecker	13	104	152	22	0.713	0.070	9.8	0.000	0.224	0.068	30.2	0.001	0.388	0.146	37.6	0.000	...			
Northern Flicker	29	211	252	24	0.529	0.083	15.7	0.004	0.265	0.092	34.9	0.011	0.430	0.175	40.8	0.007	...			
Olive-sided Flycatcher	3	62	89	15	0.772	0.088	11.3	0.000	0.703	0.118	16.7	0.000	0.049	0.035	71.1	0.000	...			
Western Wood-Pewee	23	421	553	55	0.517	0.052	10.1	0.005	0.242	0.056	23.3	0.725	0.575	0.148	25.8	0.003	.t.	...		
Traill's Flycatcher	4	56	68	6	0.426	0.163	38.2	0.000	0.385	0.247	64.3	0.000	0.416	0.326	78.5	0.000	...			
Gray Flycatcher *†	3	67	73	2	0.387	0.314	81.1	0.000	0.054	0.155	287.4	0.000	1.000	2.836	283.6	0.000	...			
Dusky Flycatcher	7	204	240	16	0.461	0.106	23.0	0.001	0.513	0.160	31.2	0.010	0.164	0.074	45.3	0.000	...			
Western Flycatcher	29	1621	1906	98	0.484	0.041	8.4	0.046	0.303	0.049	16.3	0.869	0.208	0.040	19.3	0.024	.t.			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Black Phoebe	30	308	370	33	0.451	0.073	16.2	0.003	0.420	0.108	25.6	0.002	0.331	0.108	32.5	0.000	...			
Vermilion Flycatcher†	4	67	80	8	0.537	0.150	27.8	0.000	0.145	0.130	89.3	0.000	1.000	0.947	94.7	0.000	...			
Dusky-capped Flycatcher *†	4	36	46	2	0.979	0.286	29.2	0.000	0.014	0.028	195.6	0.000	1.000	1.790	179.0	0.000	...			
Ash-throated Flycatcher	59	1448	1700	150	0.607	0.034	5.5	0.001	0.217	0.033	15.0	0.003	0.397	0.067	16.8	0.731	..t	...		
Brown-crested Flycatcher	5	71	86	8	0.630	0.165	26.1	0.000	0.787	0.186	23.7	0.000	0.107	0.068	63.4	0.000	...			
Bell's Vireo	9	298	485	61	0.478	0.054	11.4	0.003	0.592	0.084	14.2	0.001	0.410	0.093	22.6	0.000	...			
Plumbeous Vireo	8	73	109	20	0.511	0.089	17.4	0.001	0.406	0.123	30.3	0.000	0.703	0.273	38.7	0.000	...			
Hutton's Vireo	13	128	177	16	0.548	0.098	17.8	0.003	0.195	0.085	43.8	0.020	0.611	0.290	47.5	0.001	...			
Warbling Vireo	22	1794	2226	143	0.515	0.033	6.5	0.002	0.374	0.044	11.8	0.269	0.191	0.029	15.3	0.999	..t	.tt		
Steller's Jay	9	145	201	31	0.688	0.062	8.9	0.001	0.195	0.057	29.1	0.076	0.602	0.196	32.5	0.002	...			
Western Scrub-Jay	30	167	189	15	0.540	0.108	20.0	0.001	0.181	0.101	55.7	0.000	0.485	0.291	60.0	0.045	...			
Mexican Jay*	4	39	47	3	0.359	0.212	59.1	0.000	0.298	0.311	104.3	0.000	0.468	0.538	115.1	0.000	...			
Tree Swallow	13	120	143	7	0.560	0.137	24.5	0.001	0.210	0.130	62.0	0.000	0.191	0.135	70.9	0.001	...			
Violet-green Swallow	5	122	161	13	0.482	0.102	21.1	0.001	0.256	0.118	46.2	0.667	0.398	0.209	52.6	0.000	.t.	...		
Black-capped Chickadee	6	109	179	21	0.403	0.084	20.8	0.000	0.514	0.144	28.0	0.000	0.668	0.260	38.9	0.000	...			
Mountain Chickadee	10	317	414	37	0.397	0.063	15.9	0.307	0.287	0.086	30.0	0.506	0.653	0.218	33.3	0.002	.t.	t..	...	
Chestnut-backed Chickadee	9	448	755	123	0.503	0.036	7.1	0.090	0.481	0.053	11.0	0.664	0.548	0.086	15.7	0.003	.t.	...		
Bridled Titmouse	7	54	72	10	0.556	0.128	23.0	0.000	0.243	0.134	54.9	0.000	0.806	0.492	61.0	0.000	...			
Oak Titmouse	22	363	554	75	0.555	0.044	8.0	0.000	0.393	0.058	14.9	0.000	0.400	0.083	20.8	0.001	...			
Juniper Titmouse	5	59	110	21	0.553	0.083	15.0	0.000	0.530	0.122	23.0	0.000	0.589	0.223	37.8	0.000	...			
Verdin *†	5	59	75	3	0.319	0.237	74.1	0.000	0.137	0.204	148.6	0.000	1.000	1.408	140.8	0.000	...			
Bushtit	52	2166	2575	137	0.332	0.034	10.2	0.921	0.231	0.045	19.5	0.341	0.642	0.131	20.4	0.107	t..	tt.		
White-breasted Nuthatch	23	179	230	22	0.438	0.087	19.8	0.019	0.303	0.115	38.0	0.004	0.578	0.252	43.6	0.011	...			
Brown Creeper*	7	209	252	6	0.174	0.135	77.4	0.004	0.164	0.201	122.9	0.001	0.927	0.998	107.7	0.000	...			
Bewick's Wren	66	2227	3792	475	0.441	0.018	4.1	0.942	0.538	0.030	5.5	0.002	0.540	0.044	8.1	0.128	t..			
House Wren	39	1813	2654	204	0.358	0.026	7.4	0.000	0.433	0.046	10.6	0.000	0.474	0.062	13.0	0.000	...			
Golden-crowned Kinglet*	4	52	76	4	0.285	0.187	65.5	0.000	0.263	0.281	106.7	0.000	0.834	0.918	110.1	0.000	...			
Blue-gray Gnatcatcher	13	134	162	5	0.361	0.176	48.7	0.000	0.178	0.187	105.2	0.000	0.411	0.441	107.3	0.000	...			
Western Bluebird	12	142	194	12	0.375	0.113	30.0	0.002	0.272	0.141	51.7	0.000	0.508	0.281	55.2	0.000	...			
Swainson's Thrush	12	3243	5936	638	0.594	0.016	2.6	0.494	0.568	0.022	3.9	0.018	0.176	0.013	7.6	1.000	..t	t.t		
Hermit Thrush	8	585	928	150	0.499	0.033	6.5	0.073	0.412	0.046	11.2	0.045	0.722	0.104	14.3	0.000	...			
American Robin	35	1036	1325	136	0.479	0.035	7.2	0.380	0.249	0.040	15.9	0.233	0.654	0.115	17.6	0.378	t..	..t	.t.	
Wrentit	31	2072	3833	590	0.574	0.016	2.7	0.995	0.516	0.023	4.4	0.739	0.378	0.028	7.4	0.112	tt.			
California Thrasher	15	156	205	25	0.608	0.082	13.4	0.004	0.174	0.070	40.3	0.000	0.750	0.320	42.6	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Orange-crowned Warbler	26	1942	2449	168	0.414	0.031	7.5	0.072	0.371	0.046	12.4	0.006	0.333	0.050	15.0	0.044	...			
Virginia's Warbler	12	441	566	41	0.415	0.062	15.0	0.002	0.452	0.099	21.9	0.011	0.276	0.080	29.0	0.001	...			
Lucy's Warbler	13	803	970	78	0.525	0.048	9.2	0.003	0.350	0.060	17.2	0.001	0.289	0.060	20.7	0.498	...	..t		
Yellow Warbler	24	1267	1715	165	0.523	0.030	5.8	0.967	0.396	0.041	10.4	0.000	0.308	0.043	14.0	0.032	t..			
Yellow-rumped Warbler	6	388	448	24	0.350	0.082	23.3	0.432	0.134	0.078	58.5	0.176	0.965	0.575	59.6	0.072	t..	...	.t.	
Black-throated Gray Warbler *†	4	37	42	2	0.379	0.284	75.1	0.000	0.089	0.187	209.6	0.000	1.000	2.062	206.2	0.000	...			
MacGillivray's Warbler	8	217	258	11	0.340	0.114	33.5	0.002	0.325	0.177	54.6	0.025	0.271	0.161	59.3	0.000	...			
Common Yellowthroat	38	3250	5227	552	0.497	0.016	3.3	1.000	0.416	0.024	5.7	0.007	0.419	0.032	7.6	0.003	t..			
Wilson's Warbler	15	4337	5714	349	0.478	0.021	4.4	0.011	0.423	0.030	7.2	0.943	0.174	0.017	9.8	1.000	.tt			
Red-faced Warbler *†	3	54	57	2	0.372	0.301	80.9	0.000	0.064	0.235	364.0	0.000	1.000	3.771	377.1	0.000	...			
Yellow-breasted Chat	23	1473	2551	359	0.519	0.021	4.1	0.061	0.447	0.030	6.7	0.061	0.540	0.050	9.2	0.006	...			
Summer Tanager	12	385	688	142	0.635	0.036	5.7	0.047	0.437	0.044	10.1	0.001	0.636	0.087	13.7	0.000	...			
Western Tanager	11	519	580	34	0.578	0.066	11.4	0.011	0.143	0.053	37.1	0.011	0.381	0.150	39.3	0.000	...			
Spotted Towhee	56	2624	3924	578	0.504	0.017	3.4	0.007	0.430	0.024	5.5	0.047	0.569	0.042	7.3	0.017	...			
Canyon Towhee†	5	80	110	11	0.653	0.144	22.1	0.000	0.123	0.077	63.1	0.000	1.000	0.623	62.3	0.000	...			
California Towhee	37	872	1240	192	0.549	0.029	5.3	0.001	0.357	0.037	10.3	0.001	0.596	0.076	12.8	0.500	...	..t		
Abert's Towhee	6	171	232	21	0.462	0.092	19.8	0.000	0.297	0.113	38.2	0.000	0.563	0.247	43.9	0.000	...			
Rufous-crowned Sparrow	15	221	321	36	0.506	0.067	13.2	0.001	0.346	0.086	24.9	0.000	0.490	0.148	30.3	0.000	...			
Chipping Sparrow†	8	231	260	12	0.460	0.123	26.7	0.001	0.079	0.075	95.9	0.000	1.000	0.971	97.1	0.001	...			
Lark Sparrow	9	290	319	17	0.369	0.097	26.4	0.000	0.476	0.170	35.8	0.000	0.219	0.106	48.6	0.000	...			
Black-throated Sparrow	11	176	192	6	0.648	0.153	23.6	0.000	0.141	0.105	74.8	0.000	0.152	0.122	80.4	0.001	...			
Sage Sparrow *†	2	99	104	3	0.426	0.228	53.5	0.000	0.045	0.112	252.0	0.000	1.000	2.530	253.0	0.000	...			
Fox Sparrow	2	84	140	19	0.531	0.082	15.5	0.000	0.548	0.128	23.4	0.000	0.327	0.144	44.0	0.000	...			
Song Sparrow	44	4350	7648	1150	0.545	0.012	2.1	0.047	0.461	0.016	3.6	0.942	0.501	0.026	5.1	0.004	.t.			
Lincoln's Sparrow	2	110	380	35	0.437	0.057	13.0	0.000	0.876	0.080	9.1	0.000	0.176	0.101	57.3	0.000	...			
White-crowned Sparrow	3	65	86	9	0.673	0.105	15.6	0.000	0.187	0.096	51.4	0.000	0.385	0.231	60.1	0.000	...			
Dark-eyed Junco	10	536	815	81	0.340	0.042	12.3	0.000	0.494	0.080	16.2	0.999	0.688	0.143	20.9	0.000	.t.			
Northern Cardinal	5	107	166	28	0.470	0.089	19.0	0.000	0.597	0.130	21.7	0.000	0.722	0.232	32.2	0.000	...			
Black-headed Grosbeak	51	2739	3462	349	0.520	0.021	4.1	0.046	0.334	0.027	8.1	0.460	0.367	0.036	9.9	0.049	...	.t.		
Blue Grosbeak	26	709	874	84	0.599	0.052	8.6	0.119	0.295	0.052	17.6	0.001	0.351	0.072	20.6	0.001	...			
Lazuli Bunting	22	680	815	41	0.368	0.058	15.8	0.002	0.414	0.099	23.9	0.011	0.218	0.065	29.8	0.001	...			
Varied Bunting	4	163	210	23	0.514	0.113	21.9	0.000	0.302	0.114	37.8	0.000	0.605	0.259	42.8	0.000	...			
Red-winged Blackbird†	18	446	488	22	0.689	0.092	13.4	0.003	0.030	0.024	79.5	0.022	1.000	0.781	78.1	0.002	...			
Brown-headed Cowbird	47	614	941	135	0.520	0.034	6.6	0.003	0.458	0.049	10.7	0.004	0.485	0.073	15.0	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Hooded Oriole *†	3	40	49	4	0.590	0.232	39.3	0.000	0.118	0.126	107.2	0.000	1.000	1.069	106.9	0.000	...			
Bullock's Oriole	30	828	1016	60	0.392	0.052	13.3	0.071	0.351	0.076	21.7	0.070	0.315	0.079	25.1	0.001	...			
Purple Finch	10	1306	1686	171	0.533	0.030	5.6	0.165	0.264	0.033	12.6	0.731	0.464	0.067	14.5	0.009	.t.			
Cassin's Finch *†	2	116	127	5	0.318	0.170	53.6	0.000	0.101	0.159	157.1	0.000	1.000	1.601	160.1	0.000	...			
House Finch	49	1524	1586	33	0.510	0.077	15.2	0.184	0.080	0.046	56.9	0.303	0.343	0.200	58.4	0.015	...	.t.	t..	
Lesser Goldfinch	42	1620	1755	52	0.363	0.056	15.4	0.001	0.135	0.052	38.6	0.000	0.476	0.187	39.3	0.182	...			
American Goldfinch	21	1177	1308	61	0.499	0.052	10.5	0.001	0.155	0.044	28.1	0.003	0.368	0.109	29.5	0.001	...			
Mean (91 species)	17	676	959	98	0.496	0.095	21.3	0.083	0.328	0.097	51.2	0.111	0.536	0.398	57.3	0.066				
Mean (68 better-estimated sp.)[m]	21	867	1240	129	0.516	0.062	12.3	0.111	0.376	0.075	24.1	0.147	0.444	0.134	31.6	0.088				
NORTH-CENTRAL MAPS REGION																				
Red-bellied Woodpecker	16	84	107	13	0.467	0.121	25.8	0.000	0.260	0.137	52.6	0.000	0.895	0.537	60.0	0.000	...			
Downy Woodpecker	34	452	583	58	0.393	0.054	13.7	0.000	0.278	0.073	26.1	0.000	0.851	0.248	29.2	0.000	...			
Hairy Woodpecker	18	91	107	13	0.552	0.114	20.6	0.001	0.322	0.137	42.5	0.000	0.399	0.210	52.7	0.000	...			
Northern Flicker	22	109	134	7	0.364	0.143	39.3	0.000	0.341	0.214	62.8	0.000	0.290	0.209	71.9	0.000	...			
Western Wood-Pewee†	2	106	187	31	0.453	0.072	16.0	0.018	0.396	0.106	26.7	0.371	1.000	0.327	32.7	0.000	...	.t.		
Eastern Wood-Pewee	20	263	328	19	0.442	0.093	20.9	0.001	0.273	0.110	40.5	0.018	0.353	0.162	45.8	0.000	...			
Traill's Flycatcher	16	868	1297	122	0.461	0.036	7.7	0.142	0.507	0.056	11.0	0.141	0.321	0.052	16.2	0.086	...			
Least Flycatcher	15	1359	1924	187	0.456	0.029	6.4	0.045	0.368	0.040	10.9	0.117	0.421	0.056	13.4	0.001	...			
Great Crested Flycatcher	24	147	175	25	0.766	0.068	8.8	0.000	0.231	0.069	30.0	0.001	0.325	0.114	35.1	0.000	...			
Eastern Kingbird *†	13	104	116	5	0.486	0.210	43.1	0.000	0.069	0.118	170.1	0.000	1.000	1.763	176.3	0.000	...			
Warbling Vireo	11	172	194	11	0.502	0.123	24.6	0.000	0.146	0.102	69.7	0.066	0.493	0.362	73.5	0.001	...			
Red-eyed Vireo	29	813	1063	100	0.530	0.038	7.2	0.001	0.378	0.052	13.7	0.076	0.316	0.057	17.9	0.002	...			
Blue Jay†	31	295	328	21	0.593	0.082	13.8	0.003	0.058	0.043	73.3	0.004	1.000	0.747	74.7	0.000	...			
Tree Swallow *†	10	101	108	4	0.490	0.211	43.1	0.000	0.050	0.119	236.9	0.000	1.000	2.432	243.2	0.000	...			
Black-capped Chickadee	39	1100	1465	144	0.402	0.033	8.3	0.000	0.457	0.054	11.9	0.002	0.455	0.070	15.5	0.002	...			
Tufted Titmouse	14	224	310	48	0.507	0.057	11.2	0.002	0.427	0.081	18.9	0.001	0.513	0.131	25.5	0.002	...			
White-breasted Nuthatch	22	129	150	8	0.526	0.138	26.2	0.000	0.116	0.087	75.5	0.000	0.547	0.424	77.5	0.000	...			
Carolina Wren	7	100	159	17	0.327	0.082	25.0	0.072	0.668	0.177	26.5	0.006	0.426	0.192	45.1	0.000	...			
House Wren	28	1497	2221	155	0.343	0.030	8.7	0.174	0.406	0.052	12.7	0.009	0.468	0.070	15.0	0.040	...			
Eastern Bluebird	11	83	99	6	0.423	0.161	38.1	0.000	0.351	0.224	63.9	0.000	0.244	0.186	76.4	0.000	...			
Veery	14	529	925	174	0.604	0.031	5.1	0.001	0.556	0.042	7.5	0.002	0.481	0.060	12.4	0.001	...			
Wood Thrush	17	470	752	78	0.396	0.044	11.0	0.000	0.393	0.068	17.3	0.000	0.741	0.154	20.8	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
American Robin	37	1331	1631	100	0.414	0.040	9.7	0.004	0.390	0.060	15.3	0.029	0.274	0.052	18.9	0.004	...			
Gray Catbird	36	3940	6411	772	0.500	0.014	2.9	0.007	0.485	0.021	4.4	0.029	0.402	0.026	6.4	0.003	...			
Brown Thrasher	11	153	201	27	0.668	0.071	10.6	0.000	0.160	0.056	34.8	0.000	0.727	0.271	37.4	0.007	...			
European Starling *†	4	45	49	2	0.534	0.247	46.2	0.000	0.048	0.108	223.5	0.000	1.000	2.241	224.1	0.000	...			
Cedar Waxwing *†	21	785	841	2	0.673	0.262	38.9	0.000	0.002	0.006	351.0	0.000	1.000	3.427	342.7	0.000	...			
Blue-winged Warbler	6	205	363	43	0.619	0.058	9.4	0.000	0.342	0.069	20.1	0.003	0.351	0.095	27.1	0.003	...			
Golden-winged Warbler	2	35	48	7	0.651	0.139	21.4	0.000	0.290	0.157	54.2	0.000	0.477	0.314	65.9	0.000	...			
Nashville Warbler	4	235	268	9	0.389	0.127	32.7	0.001	0.338	0.191	56.7	0.000	0.186	0.123	66.0	0.001	...			
Yellow Warbler	22	2129	3365	459	0.542	0.019	3.4	0.001	0.396	0.025	6.2	0.000	0.494	0.040	8.2	0.003	...			
Chestnut-sided Warbler	5	462	823	107	0.424	0.038	9.0	0.620	0.584	0.064	11.0	0.004	0.640	0.108	16.8	0.001	t..	...		
Yellow-rumped Warbler *†	1	37	45	2	0.372	0.272	73.3	0.000	0.103	0.243	237.5	0.000	1.000	2.453	245.3	0.000	...			
Black-and-white Warbler	7	144	183	20	0.493	0.087	17.7	0.001	0.517	0.134	25.9	0.001	0.257	0.102	39.8	0.000	...			
American Redstart	15	847	1196	88	0.449	0.041	9.1	0.001	0.334	0.055	16.5	0.029	0.378	0.075	19.8	0.011	...			
Ovenbird	13	557	728	71	0.547	0.047	8.6	0.018	0.387	0.062	16.0	0.338	0.296	0.063	21.2	0.768	..t	.tt	...	
Northern Waterthrush	3	75	101	11	0.336	0.123	36.7	0.000	0.540	0.231	42.9	0.000	0.644	0.392	60.9	0.000	...			
Kentucky Warbler	4	119	223	47	0.568	0.059	10.4	0.000	0.595	0.082	13.8	0.000	0.604	0.143	23.6	0.001	...			
Mourning Warbler	3	169	312	52	0.505	0.059	11.6	0.003	0.627	0.086	13.7	0.003	0.547	0.128	23.3	0.000	...			
Common Yellowthroat	35	2535	4333	455	0.451	0.019	4.1	0.013	0.492	0.029	6.0	0.025	0.460	0.038	8.4	0.821	..t			
Scarlet Tanager	15	90	103	6	0.447	0.170	38.0	0.000	0.418	0.250	59.7	0.000	0.207	0.163	78.4	0.000	...			
Eastern Towhee	15	104	150	16	0.395	0.097	24.5	0.001	0.459	0.162	35.3	0.002	0.531	0.242	45.6	0.000	...			
Chipping Sparrow†	12	244	298	17	0.338	0.097	28.8	0.001	0.170	0.110	64.7	0.002	1.000	0.665	66.5	0.000	...			
Clay-colored Sparrow	9	577	710	35	0.378	0.067	17.6	0.022	0.425	0.111	26.2	0.263	0.255	0.082	32.3	0.001	...	.t.		
Field Sparrow	15	936	1376	155	0.406	0.032	7.8	0.628	0.370	0.047	12.8	0.002	0.701	0.106	15.1	0.141	t..	...		
Savannah Sparrow*	3	61	71	3	0.470	0.203	43.3	0.000	0.452	0.324	71.7	0.000	0.069	0.080	115.7	0.000	...			
Grasshopper Sparrow	2	348	441	17	0.273	0.098	35.7	0.000	0.482	0.212	43.9	0.000	0.319	0.148	46.6	0.000	...			
Song Sparrow	36	1919	3133	324	0.426	0.021	5.0	0.497	0.500	0.035	7.1	0.497	0.447	0.045	10.0	0.005	t..	.t.		
Lincoln's Sparrow	2	49	91	10	0.426	0.115	26.9	0.000	0.787	0.183	23.3	0.000	0.233	0.146	62.8	0.000	...			
Swamp Sparrow	6	281	534	53	0.439	0.051	11.6	0.000	0.723	0.085	11.8	0.000	0.259	0.069	26.7	0.000	...			
White-throated Sparrow	3	344	683	64	0.374	0.044	11.7	0.013	0.631	0.085	13.5	0.008	0.509	0.117	23.0	0.001	...			
Northern Cardinal	30	970	1303	158	0.477	0.033	6.8	0.002	0.338	0.043	12.7	0.009	0.609	0.092	15.1	0.012	...			
Rose-breasted Grosbeak	26	578	705	55	0.472	0.058	12.4	0.013	0.265	0.066	24.9	0.927	0.475	0.135	28.5	0.017	.t.			
Black-headed Grosbeak	1	91	130	11	0.581	0.119	20.5	0.000	0.250	0.118	47.1	0.000	0.357	0.196	55.1	0.000	...			
Indigo Bunting	27	1190	1599	158	0.477	0.031	6.5	0.980	0.316	0.040	12.7	0.002	0.475	0.071	14.9	0.001	t..			
Bobolink*	2	316	357	14	0.903	0.240	26.5	0.000	0.115	0.066	57.7	0.000	0.265	0.142	53.5	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Red-winged Blackbird	17	792	849	31	0.544	0.080	14.7	0.002	0.074	0.042	57.5	0.000	0.557	0.329	59.0	0.002	...			
Brown-headed Cowbird	35	534	702	69	0.549	0.050	9.1	0.001	0.375	0.062	16.6	0.001	0.306	0.066	21.6	0.001	...			
Orchard Oriole	3	174	233	28	0.593	0.087	14.7	0.006	0.335	0.094	28.0	0.000	0.413	0.139	33.6	0.000	...			
Bullock's Oriole	1	68	90	7	0.784	0.122	15.6	0.000	0.043	0.034	79.2	0.000	0.863	0.686	79.6	0.000	...			
Baltimore Oriole	20	492	618	66	0.556	0.050	9.0	0.000	0.286	0.057	19.8	0.029	0.419	0.099	23.6	0.001	...			
American Goldfinch	33	2880	3558	265	0.359	0.024	6.8	0.014	0.305	0.036	11.7	0.005	0.578	0.074	12.8	0.991	..t			
Mean (62 species)	15	580	832	82	0.488	0.090	18.9	0.053	0.352	0.098	48.2	0.049	0.518	0.364	54.9	0.047				
Mean (46 better-estimated sp.)[m]	17	715	1044	107	0.494	0.062	12.6	0.071	0.388	0.077	24.9	0.058	0.476	0.153	31.1	0.064				
SOUTH-CENTRAL MAPS REGION																				
Common Ground-Dove	8	483	538	16	0.392	0.105	26.8	0.000	0.074	0.056	75.8	0.000	0.831	0.615	74.0	0.000	...			
Yellow-billed Cuckoo	57	566	614	18	0.497	0.092	18.5	0.020	0.188	0.086	45.8	0.051	0.181	0.089	49.4	0.001	...			
Golden-fronted Woodpecker†	7	171	213	11	0.343	0.122	35.6	0.005	0.153	0.115	75.3	0.001	1.000	0.746	74.6	0.000	...			
Red-bellied Woodpecker	25	166	185	11	0.433	0.127	29.4	0.011	0.108	0.105	96.8	0.023	0.987	0.995	100.8	0.004	...			
Ladder-backed Woodpecker	14	116	153	25	0.598	0.081	13.5	0.000	0.380	0.100	26.2	0.000	0.415	0.144	34.6	0.000	...			
Downy Woodpecker	41	487	592	59	0.551	0.052	9.4	0.017	0.241	0.055	22.9	0.047	0.485	0.125	25.9	0.001	...			
Eastern Wood-Pewee	21	227	256	15	0.603	0.112	18.5	0.005	0.288	0.120	41.9	0.001	0.212	0.108	51.0	0.003	...			
Acadian Flycatcher	19	1254	1834	238	0.494	0.027	5.4	0.000	0.566	0.040	7.2	0.000	0.349	0.040	11.4	0.007	...			
Ash-throated Flycatcher*	5	70	73	3	0.547	0.286	52.3	0.000	0.473	0.345	72.9	0.000	0.084	0.090	106.9	0.000	...			
Great Crested Flycatcher	26	210	243	20	0.525	0.090	17.1	0.017	0.200	0.092	46.2	0.074	0.503	0.258	51.2	0.006	...			
Brown-crested Flycatcher	4	298	378	45	0.511	0.063	12.3	0.000	0.275	0.077	28.2	0.007	0.689	0.229	33.2	0.007	...			
Eastern Kingbird*	11	76	82	2	0.681	0.225	33.0	0.000	0.238	0.240	101.1	0.000	0.048	0.061	128.4	0.000	...			
White-eyed Vireo	38	2813	4887	646	0.530	0.016	3.0	0.039	0.504	0.023	4.5	0.096	0.411	0.029	7.0	0.077	...			
Bell's Vireo	12	521	794	110	0.542	0.036	6.6	0.017	0.395	0.049	12.4	0.960	0.464	0.077	16.7	0.001	.t.			
Red-eyed Vireo	26	591	699	70	0.517	0.049	9.5	0.003	0.211	0.051	24.3	0.007	0.637	0.170	26.7	0.002	...			
Carolina Chickadee	53	977	1116	62	0.457	0.052	11.4	0.002	0.117	0.039	33.8	0.011	0.759	0.262	34.5	0.000	...			
Black-capped Chickadee	7	138	168	12	0.397	0.110	27.7	0.008	0.254	0.143	56.5	0.001	0.522	0.325	62.3	0.003	...			
Tufted Titmouse	36	866	1120	126	0.434	0.037	8.6	0.113	0.289	0.048	16.8	0.041	0.794	0.150	18.8	0.015	...			
Black-crested Titmouse	21	378	497	57	0.479	0.053	11.1	0.000	0.192	0.053	27.4	0.000	0.994	0.289	29.1	0.000	...			
Carolina Wren	48	2033	3510	451	0.406	0.018	4.4	0.603	0.621	0.032	5.2	0.004	0.507	0.043	8.4	0.030	t..	...		
Bewick's Wren	22	690	1037	131	0.390	0.034	8.6	0.316	0.606	0.061	10.0	0.444	0.482	0.075	15.6	0.155	...	tt.		
House Wren	5	168	213	18	0.345	0.089	25.8	0.000	0.579	0.172	29.7	0.000	0.353	0.155	43.9	0.000	...			
Blue-gray Gnatcatcher	35	445	483	13	0.549	0.110	20.0	0.011	0.079	0.058	73.3	0.021	0.370	0.273	73.9	0.001	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Eastern Bluebird *†	14	87	114	2	0.378	0.289	76.6	0.000	0.045	0.090	201.2	0.000	1.000	1.867	186.7	0.000	...			
Wood Thrush	8	214	314	25	0.314	0.080	25.3	0.000	0.306	0.124	40.4	0.000	0.950	0.398	41.8	0.000	...			
Gray Catbird	8	822	1217	169	0.541	0.030	5.5	0.091	0.480	0.043	8.9	0.902	0.366	0.049	13.3	0.251	.t.	.tt		
Northern Mockingbird	19	400	500	20	0.367	0.084	22.9	0.007	0.200	0.092	45.7	0.024	0.406	0.190	46.7	0.008	...			
Brown Thrasher	17	335	418	32	0.366	0.069	18.8	0.001	0.562	0.126	22.4	0.004	0.298	0.099	33.1	0.000	...			
Long-billed Thrasher	4	220	296	44	0.550	0.069	12.6	0.001	0.429	0.088	20.5	0.018	0.541	0.149	27.5	0.000	...			
Blue-winged Warbler	5	442	665	94	0.552	0.043	7.8	0.000	0.412	0.056	13.5	0.000	0.446	0.080	18.0	0.001	...			
Northern Parula†	14	110	121	7	0.649	0.148	22.9	0.000	0.047	0.063	132.6	0.000	1.000	1.337	133.7	0.000	...			
Yellow Warbler	3	109	157	28	0.487	0.076	15.5	0.000	0.380	0.106	27.8	0.002	0.763	0.268	35.2	0.000	...			
Prairie Warbler	4	258	362	47	0.588	0.064	10.8	0.003	0.235	0.059	25.1	0.002	0.672	0.189	28.1	0.001	...			
Black-and-white Warbler	16	294	330	16	0.584	0.099	16.9	0.000	0.228	0.098	43.2	0.001	0.196	0.096	48.8	0.019	...			
American Redstart	1	109	140	19	0.640	0.091	14.2	0.000	0.288	0.100	34.5	0.000	0.458	0.189	41.3	0.000	...			
Prothonotary Warbler	13	708	969	80	0.484	0.049	10.1	0.022	0.285	0.056	19.5	0.003	0.540	0.118	21.8	0.262	...	..t		
Worm-eating Warbler	2	89	115	11	0.551	0.117	21.3	0.000	0.591	0.172	29.1	0.000	0.132	0.075	56.5	0.000	...			
Swainson's Warbler	3	123	238	29	0.436	0.078	17.9	0.001	0.522	0.123	23.6	0.010	0.639	0.209	32.7	0.000	...			
Ovenbird	6	134	185	21	0.566	0.086	15.2	0.000	0.401	0.112	27.9	0.000	0.307	0.119	38.9	0.000	...			
Louisiana Waterthrush	6	109	167	19	0.448	0.092	20.6	0.002	0.521	0.147	28.2	0.037	0.423	0.173	40.9	0.000	...			
Kentucky Warbler	23	980	1557	227	0.591	0.026	4.4	0.000	0.480	0.036	7.4	0.000	0.326	0.038	11.7	0.007	...			
Common Yellowthroat	19	659	1036	118	0.461	0.036	7.9	0.001	0.484	0.056	11.6	0.076	0.417	0.069	16.5	0.002	...			
Hooded Warbler	7	307	451	36	0.442	0.068	15.4	0.000	0.291	0.083	28.4	0.000	0.584	0.184	31.5	0.000	...			
Yellow-breasted Chat	13	1472	2384	346	0.538	0.022	4.1	0.006	0.431	0.030	6.9	0.813	0.521	0.049	9.3	0.006	.t.			
Summer Tanager	32	569	700	78	0.507	0.050	9.9	0.003	0.286	0.057	20.0	0.018	0.571	0.133	23.3	0.003	...			
Olive Sparrow	4	269	517	88	0.542	0.043	8.0	0.001	0.697	0.061	8.8	0.003	0.467	0.086	18.4	0.007	...			
Eastern Towhee	16	123	150	12	0.499	0.123	24.7	0.000	0.142	0.101	71.3	0.002	0.963	0.708	73.5	0.000	...			
Rufous-crowned Sparrow	7	118	188	25	0.460	0.082	17.7	0.029	0.423	0.118	27.8	0.000	0.639	0.229	35.8	0.000	...			
Field Sparrow	33	1399	2019	236	0.460	0.025	5.5	0.023	0.345	0.035	10.0	0.193	0.624	0.075	12.0	0.004	...			
Lark Sparrow†	8	170	183	6	0.454	0.169	37.3	0.000	0.051	0.085	168.0	0.000	1.000	1.689	168.9	0.000	...			
Black-throated Sparrow*	1	50	58	4	0.551	0.245	44.4	0.000	0.320	0.269	83.9	0.000	0.247	0.264	106.9	0.000	...			
Grasshopper Sparrow	6	269	414	51	0.421	0.056	13.3	0.003	0.433	0.087	20.1	0.950	0.579	0.147	25.4	0.000	.t.			
Northern Cardinal	65	4434	6572	980	0.534	0.013	2.4	1.000	0.393	0.017	4.3	0.500	0.548	0.031	5.6	0.000	t..	tt.		
Pyrrhuloxia*	2	149	155	4	0.701	0.203	29.0	0.000	0.267	0.189	70.7	0.000	0.039	0.036	90.4	0.000	...			
Blue Grosbeak *†	7	72	81	3	0.290	0.214	73.9	0.000	0.136	0.223	163.7	0.000	1.000	1.618	161.8	0.000	...			
Indigo Bunting	33	2640	3903	479	0.458	0.019	4.1	0.049	0.452	0.028	6.2	0.000	0.520	0.043	8.2	0.592	..t	...		
Painted Bunting	34	2406	3317	417	0.534	0.020	3.8	0.309	0.492	0.028	5.8	0.078	0.321	0.027	8.6	0.254	...	t..	..t	

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Dickcissel	15	775	873	36	0.496	0.065	13.1	0.001	0.219	0.068	31.1	0.002	0.246	0.085	34.6	0.001	...			
Eastern Meadowlark	11	58	68	5	0.589	0.167	28.3	0.000	0.349	0.213	61.1	0.000	0.199	0.160	80.3	0.000	...			
Bronzed Cowbird	3	80	99	10	0.447	0.138	30.8	0.000	0.353	0.197	55.9	0.000	0.573	0.404	70.6	0.000	...			
Brown-headed Cowbird	45	742	979	111	0.459	0.038	8.4	0.003	0.285	0.048	16.9	0.048	0.718	0.139	19.4	0.007	...			
Orchard Oriole	18	276	321	17	0.385	0.096	25.0	0.022	0.278	0.134	48.2	0.002	0.417	0.223	53.4	0.151	...			
American Goldfinch	21	610	717	45	0.364	0.058	16.0	0.029	0.224	0.074	33.0	0.018	0.620	0.219	35.3	0.002	...			
Mean (63 species)	18	586	837	98	0.491	0.088	18.6	0.044	0.330	0.096	41.9	0.087	0.529	0.280	48.0	0.030				
Mean (53 better-estimated sp.)[m]	20	677	973	115	0.488	0.066	13.9	0.053	0.353	0.080	28.6	0.104	0.516	0.179	33.9	0.036				
NORTHEAST MAPS REGION																				
Red-bellied Woodpecker†	23	92	106	10	0.547	0.130	23.7	0.000	0.108	0.099	91.3	0.000	1.000	0.947	94.7	0.000	...			
Yellow-bellied Sapsucker	15	170	234	23	0.393	0.086	21.8	0.004	0.287	0.113	39.4	0.004	0.833	0.365	43.8	0.000	...			
Downy Woodpecker	82	748	958	92	0.449	0.043	9.5	0.001	0.478	0.065	13.7	0.000	0.325	0.061	18.9	0.002	...			
Hairy Woodpecker	46	218	274	33	0.731	0.059	8.1	0.000	0.146	0.046	31.4	0.000	0.514	0.172	33.4	0.001	...			
Northern Flicker	44	163	187	12	0.470	0.120	25.6	0.000	0.147	0.103	70.3	0.000	0.654	0.479	73.2	0.001	...			
Eastern Wood-Pewee	48	266	337	28	0.510	0.072	14.2	0.000	0.235	0.077	32.6	0.119	0.449	0.162	36.2	0.001	...			
Yellow-bellied Flycatcher*	3	44	58	2	0.839	0.207	24.7	0.000	0.078	0.093	119.2	0.000	0.193	0.259	133.9	0.000	...			
Acadian Flycatcher	14	191	244	15	0.557	0.097	17.5	0.000	0.339	0.119	35.2	0.006	0.162	0.077	47.4	0.000	...			
Traill's Flycatcher	31	1138	1542	121	0.456	0.036	7.9	0.000	0.512	0.057	11.1	0.003	0.222	0.037	16.5	0.003	...			
Least Flycatcher	15	293	328	5	0.444	0.178	40.0	0.000	0.100	0.109	109.4	0.000	0.240	0.260	108.5	0.001	...			
Eastern Phoebe	38	374	499	37	0.462	0.066	14.3	0.047	0.499	0.102	20.4	0.011	0.212	0.063	29.8	0.001	...			
Great Crested Flycatcher	42	217	237	14	0.620	0.098	15.8	0.002	0.134	0.077	57.4	0.006	0.348	0.209	60.0	0.006	...			
Eastern Kingbird	13	60	82	10	0.502	0.134	26.6	0.000	0.518	0.192	37.1	0.000	0.360	0.201	55.7	0.000	...			
White-eyed Vireo	15	406	664	90	0.474	0.041	8.6	0.002	0.421	0.060	14.2	0.003	0.596	0.111	18.6	0.007	...			
Yellow-throated Vireo	5	44	56	9	0.629	0.172	27.4	0.000	0.398	0.195	49.1	0.000	0.436	0.293	67.3	0.000	...			
Blue-headed Vireo	22	183	222	14	0.441	0.104	23.5	0.000	0.199	0.105	53.0	0.001	0.517	0.288	55.6	0.000	...			
Warbling Vireo	12	123	152	10	0.348	0.118	33.8	0.000	0.506	0.222	43.9	0.001	0.298	0.177	59.4	0.000	...			
Red-eyed Vireo	84	2310	3016	308	0.544	0.022	4.1	0.057	0.247	0.024	9.8	0.690	0.531	0.059	11.0	0.000	.t.	...		
Blue Jay	76	478	524	28	0.694	0.071	10.3	0.000	0.179	0.058	32.2	0.004	0.170	0.062	36.4	0.376	...	..t		
Carolina Chickadee	22	267	311	28	0.488	0.081	16.6	0.001	0.234	0.093	39.5	0.007	0.542	0.244	45.1	0.002	...			
Black-capped Chickadee	87	2090	2873	303	0.488	0.023	4.7	0.985	0.302	0.028	9.4	0.004	0.565	0.061	10.8	0.000	t..			
Tufted Titmouse	63	735	963	94	0.383	0.041	10.8	0.029	0.332	0.062	18.6	0.011	0.725	0.154	21.2	0.000	...			
White-breasted Nuthatch	37	201	244	16	0.562	0.098	17.5	0.001	0.116	0.068	58.8	0.009	0.684	0.411	60.0	0.002	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Carolina Wren	30	689	974	77	0.336	0.042	12.4	0.029	0.566	0.084	14.9	0.002	0.359	0.075	21.0	0.000	...			
House Wren	30	526	721	42	0.397	0.059	14.9	0.002	0.428	0.095	22.3	0.018	0.234	0.068	29.1	0.001	...			
Eastern Bluebird	15	115	181	13	0.417	0.104	24.9	0.002	0.304	0.137	45.2	0.001	0.464	0.240	51.8	0.000	...			
Veery	56	2544	4979	992	0.577	0.013	2.2	0.029	0.573	0.018	3.1	0.017	0.512	0.027	5.4	0.001	...			
Bicknell's Thrush	1	28	45	10	0.608	0.122	20.1	0.000	0.322	0.149	46.3	0.000	0.840	0.479	57.0	0.000	...			
Swainson's Thrush	10	258	471	88	0.613	0.049	8.0	0.029	0.615	0.063	10.2	0.002	0.533	0.090	17.0	0.004	...			
Hermit Thrush	38	597	1079	172	0.471	0.030	6.4	0.076	0.637	0.048	7.5	0.846	0.517	0.068	13.3	0.158	.t.			
Wood Thrush	70	2824	4273	363	0.412	0.020	4.8	0.160	0.438	0.032	7.3	0.064	0.378	0.036	9.6	0.100	...			
American Robin	90	2641	3288	258	0.450	0.026	5.7	0.005	0.270	0.031	11.5	0.012	0.499	0.064	12.9	0.007	...			
Gray Catbird	81	8894	14453	1980	0.513	0.009	1.8	0.051	0.452	0.013	2.8	0.950	0.497	0.019	3.9	0.005	.t.			
Brown Thrasher	17	159	217	25	0.532	0.081	15.2	0.000	0.233	0.082	35.3	0.000	0.673	0.262	39.0	0.004	...			
Blue-winged Warbler	21	488	621	54	0.425	0.056	13.1	0.001	0.416	0.085	20.4	0.004	0.388	0.100	25.8	0.119	...			
Nashville Warbler	14	328	401	10	0.286	0.122	42.5	0.017	0.149	0.121	81.3	0.086	0.547	0.422	77.0	0.000	...			
Northern Parula	10	170	212	16	0.412	0.095	23.1	0.003	0.480	0.161	33.5	0.076	0.226	0.104	46.0	0.002	...			
Yellow Warbler	44	2235	3374	465	0.502	0.019	3.7	0.000	0.486	0.027	5.6	0.000	0.431	0.035	8.1	0.998	..t			
Chestnut-sided Warbler	22	796	1364	155	0.475	0.032	6.7	0.004	0.470	0.048	10.2	0.001	0.457	0.066	14.3	0.001	...			
Magnolia Warbler	16	691	1095	114	0.416	0.037	8.9	0.978	0.653	0.063	9.7	0.015	0.327	0.055	16.8	0.000	t..			
Black-throated Blue Warbler	12	203	291	36	0.517	0.072	13.8	0.000	0.470	0.099	21.0	0.000	0.395	0.116	29.3	0.000	...			
Yellow-rumped Warbler	19	440	629	71	0.459	0.046	10.1	0.004	0.432	0.070	16.3	0.004	0.443	0.095	21.4	0.002	...			
Black-throated Green Warbler	27	580	862	96	0.392	0.040	10.3	0.001	0.566	0.071	12.5	0.022	0.477	0.088	18.3	0.263	...	..t		
Blackburnian Warbler	7	69	83	6	0.511	0.166	32.6	0.000	0.110	0.114	103.5	0.000	0.884	0.919	104.0	0.000	...			
Pine Warbler	11	117	153	11	0.211	0.098	46.5	0.000	0.595	0.283	47.5	0.000	0.680	0.431	63.3	0.000	...			
Blackpoll Warbler	3	105	154	13	0.363	0.103	28.4	0.000	0.569	0.197	34.6	0.000	0.288	0.153	53.0	0.000	...			
Black-and-white Warbler	51	875	1198	135	0.495	0.034	6.9	0.052	0.328	0.044	13.5	0.958	0.525	0.085	16.2	0.173	.t.			
American Redstart	48	2620	3707	382	0.490	0.020	4.0	0.012	0.363	0.027	7.4	0.001	0.424	0.040	9.3	0.998	..t			
Worm-eating Warbler	16	633	874	84	0.540	0.043	8.0	0.000	0.311	0.052	16.8	0.004	0.403	0.082	20.3	0.003	...			
Ovenbird	79	2742	3938	505	0.558	0.017	3.1	0.004	0.418	0.024	5.6	0.005	0.364	0.028	7.8	0.617	..t	...		
Northern Waterthrush	7	118	156	14	0.463	0.103	22.2	0.000	0.508	0.163	32.2	0.000	0.259	0.125	48.1	0.000	...			
Louisiana Waterthrush	15	309	518	48	0.498	0.055	11.1	0.000	0.587	0.087	14.9	0.000	0.213	0.059	27.9	0.007	...			
Kentucky Warbler	5	78	113	16	0.565	0.097	17.1	0.000	0.489	0.136	27.8	0.000	0.282	0.125	44.3	0.000	...			
Mourning Warbler	3	83	132	8	0.583	0.134	23.0	0.000	0.099	0.067	67.8	0.000	0.839	0.578	68.9	0.000	...			
Common Yellowthroat	79	3730	6008	757	0.496	0.015	3.0	0.002	0.510	0.022	4.3	0.001	0.400	0.026	6.4	0.001	...			
Hooded Warbler	15	653	1094	127	0.414	0.034	8.2	0.070	0.661	0.059	8.9	0.002	0.382	0.060	15.8	0.070	...			
Canada Warbler	9	174	228	15	0.452	0.104	23.0	0.003	0.384	0.147	38.3	0.009	0.270	0.130	48.0	0.002	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Yellow-breasted Chat	6	245	345	42	0.430	0.058	13.5	0.000	0.406	0.090	22.2	0.000	0.537	0.151	28.1	0.000	...			
Scarlet Tanager	56	465	528	25	0.523	0.079	15.2	0.001	0.075	0.044	58.7	0.011	0.781	0.464	59.3	0.002	...			
Eastern Towhee	55	787	1142	147	0.474	0.033	6.9	0.000	0.376	0.045	12.1	0.000	0.606	0.091	15.0	0.000	...			
Chipping Sparrow	34	395	527	45	0.394	0.058	14.8	0.000	0.367	0.090	24.6	0.000	0.530	0.154	29.0	0.000	...			
Field Sparrow	21	285	370	27	0.164	0.054	32.6	0.246	0.758	0.196	25.8	0.016	0.647	0.258	39.9	0.001	...			
Song Sparrow	57	2269	3866	386	0.386	0.020	5.1	0.737	0.567	0.036	6.3	0.292	0.479	0.044	9.2	0.298	t..	.tt		
Swamp Sparrow	11	249	418	52	0.413	0.052	12.7	1.000	0.630	0.092	14.6	0.000	0.421	0.105	24.9	0.000	t..			
White-throated Sparrow	21	772	1205	105	0.290	0.034	11.8	0.039	0.628	0.078	12.4	0.005	0.538	0.097	18.1	0.174	...			
Dark-eyed Junco	19	467	694	61	0.379	0.049	12.8	0.000	0.419	0.080	19.2	0.007	0.524	0.124	23.7	0.007	...			
Northern Cardinal	64	1540	2223	342	0.582	0.022	3.8	0.768	0.387	0.028	7.1	0.182	0.486	0.046	9.4	0.005	t..			
Rose-breasted Grosbeak	34	498	591	38	0.468	0.063	13.5	0.000	0.232	0.071	30.8	0.029	0.404	0.138	34.1	0.000	...			
Indigo Bunting	42	823	1133	112	0.409	0.037	9.1	0.177	0.514	0.063	12.2	0.041	0.373	0.064	17.2	0.001	...			
Red-winged Blackbird	31	805	916	54	0.513	0.055	10.7	0.257	0.297	0.067	22.5	0.691	0.237	0.063	26.5	0.000	.t.	t..		
Common Grackle	33	528	555	15	0.441	0.107	24.4	0.002	0.143	0.099	69.3	0.000	0.297	0.215	72.4	0.142	...			
Brown-headed Cowbird	45	257	303	23	0.326	0.085	26.2	0.001	0.420	0.156	37.1	0.000	0.487	0.227	46.6	0.004	...			
Orchard Oriole*	2	41	47	4	0.488	0.208	42.6	0.000	0.218	0.214	98.5	0.000	0.570	0.608	106.7	0.000	...			
Baltimore Oriole	37	466	579	37	0.435	0.065	14.9	0.017	0.373	0.095	25.5	0.047	0.274	0.086	31.5	0.007	...			
Purple Finch	11	159	201	17	0.294	0.094	32.1	0.828	0.327	0.172	52.5	0.062	0.824	0.493	59.8	0.009	t..			
American Goldfinch	72	3260	3717	184	0.397	0.030	7.6	0.033	0.176	0.030	17.2	0.134	0.537	0.096	17.9	0.305	...	..t		
Mean (76 species)	32	824	1202	134	0.470	0.071	15.8	0.089	0.378	0.090	31.7	0.072	0.468	0.185	37.6	0.064				
Mean (66 better-estimated sp.)[m]	35	926	1355	153	0.478	0.061	12.9	0.086	0.390	0.079	24.7	0.081	0.449	0.140	30.5	0.074				
SOUTHEAST MAPS REGION																				
Red-bellied Woodpecker	58	219	247	15	0.391	0.104	26.6	0.000	0.236	0.131	55.6	0.008	0.492	0.299	60.6	0.001	...			
Downy Woodpecker	75	560	661	56	0.585	0.052	9.0	0.000	0.306	0.061	19.9	0.000	0.256	0.063	24.5	0.007	...			
Hairy Woodpecker†	35	134	159	18	0.624	0.087	14.0	0.000	0.099	0.058	59.1	0.000	1.000	0.616	61.6	0.000	...			
Eastern Wood-Pewee	49	329	430	49	0.538	0.058	10.9	0.000	0.339	0.071	21.0	0.001	0.412	0.108	26.1	0.000	...			
Acadian Flycatcher	56	2433	3547	460	0.479	0.019	3.9	0.001	0.534	0.029	5.4	0.001	0.391	0.032	8.2	0.047	...			
Great Crested Flycatcher	44	304	336	18	0.595	0.091	15.3	0.000	0.104	0.059	57.1	0.001	0.471	0.279	59.4	0.002	...			
White-eyed Vireo	49	1344	2526	317	0.456	0.021	4.7	0.007	0.569	0.035	6.2	0.002	0.441	0.045	10.1	0.004	...			
Red-eyed Vireo	67	2884	3752	472	0.578	0.017	3.0	0.945	0.259	0.019	7.4	0.789	0.497	0.043	8.6	0.407	tt.	ttt	t..	
Blue Jay	66	435	482	34	0.595	0.065	10.9	0.001	0.113	0.049	43.1	0.007	0.552	0.249	45.1	0.269	...	..t		
Carolina Chickadee	81	898	1092	99	0.511	0.040	7.9	0.000	0.254	0.045	17.8	0.000	0.466	0.094	20.1	0.002	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Tufted Titmouse	82	1400	1963	263	0.475	0.024	5.1	0.997	0.445	0.036	8.2	0.001	0.491	0.054	11.0	0.001	t..			
Carolina Wren	79	2246	3775	413	0.361	0.018	5.0	1.000	0.655	0.035	5.3	0.001	0.496	0.044	8.9	0.002	t..			
House Wren	4	82	114	6	0.453	0.152	33.6	0.000	0.232	0.159	68.5	0.000	0.321	0.249	77.6	0.000	...			
Blue-gray Gnatcatcher*	48	307	334	9	0.192	0.109	56.8	0.000	0.446	0.310	69.6	0.001	0.280	0.216	76.9	0.001	...			
Wood Thrush	65	3532	6361	689	0.432	0.014	3.3	0.073	0.571	0.024	4.3	0.028	0.409	0.028	6.9	0.028	...			
American Robin	21	653	704	25	0.456	0.079	17.4	0.002	0.097	0.056	58.1	0.377	0.561	0.333	59.3	0.001	...	.t.		
Gray Catbird	23	1235	1792	166	0.424	0.029	6.8	0.036	0.452	0.047	10.4	0.260	0.366	0.052	14.1	0.002	...	.t.		
Brown Thrasher	29	260	323	31	0.617	0.067	10.9	0.004	0.166	0.056	33.6	0.029	0.499	0.179	35.9	0.000	...			
Blue-winged Warbler	9	312	462	56	0.516	0.049	9.5	0.001	0.305	0.061	20.2	0.002	0.566	0.137	24.3	0.000	...			
Northern Parula	27	298	325	17	0.373	0.100	26.8	0.000	0.272	0.142	52.1	0.000	0.398	0.237	59.5	0.001	...			
Yellow Warbler	1	71	90	10	0.455	0.131	28.7	0.000	0.218	0.148	68.0	0.000	0.875	0.639	73.1	0.000	...			
Pine Warbler	30	185	199	5	0.425	0.196	46.2	0.000	0.230	0.215	93.3	0.000	0.185	0.194	104.9	0.000	...			
Prairie Warbler	24	641	908	95	0.459	0.042	9.0	0.018	0.392	0.058	14.8	0.018	0.456	0.085	18.7	0.001	...			
Black-and-white Warbler	20	228	280	23	0.554	0.086	15.4	0.000	0.188	0.075	40.1	0.000	0.543	0.237	43.8	0.000	...			
American Redstart	4	65	79	11	0.414	0.146	35.3	0.000	0.472	0.223	47.3	0.000	0.624	0.427	68.5	0.000	...			
Prothonotary Warbler	15	415	535	54	0.455	0.054	11.9	0.003	0.321	0.073	22.7	0.000	0.546	0.147	27.0	0.001	...			
Worm-eating Warbler	20	441	645	90	0.572	0.043	7.5	0.002	0.464	0.058	12.4	0.001	0.356	0.065	18.2	0.011	...			
Swainson's Warbler	7	97	156	15	0.595	0.106	17.7	0.002	0.308	0.114	37.1	0.001	0.377	0.176	46.6	0.000	...			
Ovenbird	50	2041	3053	368	0.507	0.020	3.9	0.028	0.459	0.029	6.4	0.073	0.386	0.036	9.2	0.017	...			
Louisiana Waterthrush	24	480	815	112	0.533	0.038	7.2	0.002	0.579	0.056	9.7	0.004	0.361	0.059	16.4	0.029	...			
Kentucky Warbler	41	1610	2997	454	0.494	0.019	3.7	0.000	0.616	0.028	4.6	0.004	0.467	0.038	8.2	0.003	...			
Common Yellowthroat	48	1958	3334	300	0.407	0.021	5.2	0.374	0.546	0.038	6.9	0.019	0.338	0.036	10.7	0.009	...	t..		
Hooded Warbler	36	923	1613	187	0.491	0.028	5.7	0.003	0.492	0.043	8.7	0.001	0.401	0.053	13.1	0.000	...			
Yellow-breasted Chat	31	792	1216	130	0.382	0.033	8.6	0.970	0.513	0.059	11.5	0.030	0.509	0.081	15.9	0.000	t..			
Summer Tanager	43	374	455	37	0.465	0.070	15.0	0.178	0.240	0.079	33.1	0.006	0.570	0.210	36.8	0.024	...			
Scarlet Tanager	44	346	396	26	0.542	0.075	13.8	0.000	0.133	0.059	44.5	0.000	0.534	0.249	46.7	0.000	...			
Eastern Towhee	55	427	620	85	0.475	0.044	9.3	0.000	0.443	0.065	14.6	0.007	0.543	0.105	19.4	0.000	...			
Bachman's Sparrow	6	79	140	13	0.470	0.126	26.8	0.000	0.490	0.179	36.6	0.000	0.425	0.213	50.0	0.000	...			
Chipping Sparrow*	8	75	85	4	0.600	0.215	35.8	0.000	0.181	0.171	94.5	0.000	0.260	0.275	105.7	0.000	...			
Field Sparrow	19	312	452	57	0.358	0.051	14.3	0.000	0.490	0.093	19.0	0.377	0.707	0.175	24.7	0.002	...	.t.		
Song Sparrow	3	228	350	33	0.348	0.061	17.5	0.245	0.540	0.122	22.5	0.090	0.394	0.127	32.2	0.001	...	t..		
Northern Cardinal	82	3379	5229	786	0.536	0.014	2.6	0.000	0.403	0.019	4.7	0.002	0.553	0.034	6.2	0.000	...			
Indigo Bunting	58	1891	2628	301	0.492	0.023	4.6	0.022	0.342	0.030	8.7	0.017	0.520	0.055	10.6	0.001	...			
Painted Bunting	2	90	133	24	0.688	0.078	11.4	0.000	0.390	0.096	24.7	0.000	0.329	0.116	35.3	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Common Grackle†	19	688	711	12	0.236	0.115	48.9	0.001	0.057	0.112	195.7	0.001	1.000	1.998	199.8	0.000	...			
Brown-headed Cowbird	38	183	216	12	0.366	0.112	30.5	0.006	0.436	0.194	44.5	0.021	0.335	0.188	56.3	0.000	...			
American Goldfinch	29	1041	1188	76	0.488	0.046	9.4	0.002	0.147	0.039	26.6	0.000	0.572	0.160	27.9	0.003	...			
Mean (47 species)	37	828	1232	139	0.478	0.068	15.5	0.105	0.352	0.084	33.5	0.046	0.479	0.203	38.8	0.019				
Mean (39 better-estimated sp.)[m]	39	954	1436	166	0.491	0.053	10.9	0.126	0.369	0.065	23.2	0.055	0.475	0.138	27.5	0.022				
ALASKA AND BOREAL CANADA MAPS REGIONS																				
Western Wood-Pewee	2	84	110	12	0.429	0.122	28.4	0.000	0.667	0.188	28.2	0.000	0.323	0.165	51.1	0.000	...			
Traill's Flycatcher	15	597	840	53	0.375	0.049	13.0	0.000	0.542	0.092	17.0	0.000	0.234	0.059	25.4	0.000	...			
Gray Jay†	11	53	78	16	0.515	0.096	18.6	0.000	0.408	0.135	33.1	0.000	1.000	0.424	42.4	0.000	...			
Tree Swallow *†	1	77	91	6	0.212	0.142	67.0	0.000	0.327	0.334	102.0	0.000	1.000	1.145	114.5	0.000	...			
Black-capped Chickadee	12	269	414	44	0.400	0.055	13.8	0.063	0.395	0.088	22.3	0.170	0.713	0.196	27.5	0.005	...			
Boreal Chickadee	10	133	200	29	0.427	0.071	16.5	0.003	0.354	0.104	29.3	0.005	0.903	0.315	34.9	0.000	...			
Arctic Warbler	2	259	481	52	0.323	0.050	15.5	0.001	0.632	0.103	16.3	0.000	0.648	0.163	25.2	0.000	...			
Gray-cheeked Thrush	6	253	539	74	0.441	0.044	10.0	0.000	0.706	0.072	10.1	0.000	0.527	0.108	20.4	0.000	...			
Swainson's Thrush	17	926	1526	219	0.452	0.027	5.9	0.006	0.611	0.043	7.0	0.017	0.484	0.057	11.7	0.029	...			
Hermit Thrush	10	648	1391	191	0.485	0.028	5.7	0.119	0.777	0.040	5.1	0.001	0.342	0.047	13.8	0.001	...			
American Robin†	16	395	472	29	0.296	0.070	23.7	0.002	0.196	0.097	49.5	0.000	1.000	0.520	52.0	0.000	...			
Varied Thrush *†	10	115	136	5	0.211	0.157	74.5	0.000	0.210	0.296	140.9	0.000	1.000	1.479	147.9	0.000	...			
Orange-crowned Warbler	16	1377	2123	193	0.391	0.026	6.7	0.003	0.534	0.047	8.8	0.007	0.374	0.049	13.1	0.000	...			
Yellow Warbler	11	1180	1857	162	0.409	0.029	7.1	0.011	0.505	0.050	9.9	0.001	0.383	0.054	14.2	0.001	...			
Yellow-rumped Warbler	18	772	1001	83	0.372	0.042	11.4	0.000	0.428	0.072	16.9	0.001	0.450	0.096	21.4	0.001	...			
Townsend's Warbler*	4	159	199	8	0.196	0.111	56.5	0.000	0.432	0.308	71.3	0.000	0.492	0.385	78.2	0.000	...			
Blackpoll Warbler	6	121	188	17	0.292	0.083	28.4	0.000	0.810	0.166	20.5	0.000	0.404	0.178	44.0	0.000	...			
American Redstart	4	460	679	89	0.534	0.043	8.1	0.048	0.337	0.053	15.8	0.952	0.561	0.108	19.3	0.000	.t.			
Ovenbird	3	189	258	18	0.373	0.101	27.0	0.000	0.530	0.172	32.5	0.000	0.329	0.145	44.0	0.000	...			
Northern Waterthrush	10	277	463	59	0.507	0.052	10.2	0.000	0.714	0.074	10.4	0.000	0.280	0.065	23.3	0.000	...			
Mourning Warbler	3	93	142	19	0.386	0.090	23.3	0.000	0.520	0.157	30.3	0.000	0.628	0.260	41.4	0.000	...			
Wilson's Warbler	15	2919	4758	350	0.343	0.018	5.3	0.013	0.598	0.038	6.3	0.699	0.297	0.030	10.1	0.198	.t.			
Canada Warbler	3	243	435	60	0.462	0.052	11.3	0.000	0.493	0.080	16.3	0.000	0.574	0.130	22.7	0.001	...			
American Tree Sparrow	7	203	338	35	0.457	0.062	13.7	0.000	0.552	0.103	18.7	0.000	0.335	0.103	30.6	0.000	...			
Chipping Sparrow	5	68	100	9	0.306	0.119	39.1	0.000	0.401	0.228	56.8	0.000	0.769	0.505	65.6	0.000	...			
Savannah Sparrow	6	130	166	12	0.294	0.111	37.6	0.000	0.738	0.218	29.5	0.000	0.340	0.188	55.3	0.000	...			

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_i)$[i]	p	SE(p)	CV(p)	$w(p_i)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_i)$[i]	1	2	3	4
Fox Sparrow	13	411	664	84	0.507	0.042	8.2	0.007	0.576	0.064	11.1	0.004	0.352	0.068	19.3	0.119	...			
Lincoln's Sparrow	12	323	579	30	0.396	0.064	16.1	0.000	0.320	0.091	28.3	0.000	0.383	0.133	34.7	0.000	...			
White-throated Sparrow	4	318	492	38	0.472	0.064	13.5	0.029	0.252	0.067	26.5	0.001	0.491	0.148	30.2	0.001	...			
White-crowned Sparrow	13	649	1079	119	0.405	0.034	8.3	0.010	0.425	0.055	13.0	0.118	0.679	0.113	16.6	0.000	...			
Golden-crowned Sparrow	5	281	539	76	0.494	0.042	8.5	0.000	0.529	0.066	12.5	0.007	0.521	0.106	20.4	0.000	...			
Dark-eyed Junco	15	654	1142	113	0.301	0.032	10.6	0.000	0.634	0.072	11.3	0.000	0.694	0.118	17.0	0.000	...			
Pine Grosbeak	6	74	94	8	0.455	0.150	33.0	0.000	0.400	0.219	54.8	0.000	0.414	0.300	72.4	0.000	...			
Common Redpoll	14	1631	2035	18	0.369	0.090	24.5	0.000	0.027	0.019	67.8	0.000	0.780	0.489	62.8	0.000	...			
Mean (34 species)	9	481	753	69	0.391	0.070	20.6	0.009	0.488	0.118	30.3	0.058	0.550	0.249	38.9	0.010				
Mean (26 better-estimated sp.)[m]	9	587	934	86	0.415	0.054	13.5	0.012	0.518	0.084	18.9	0.076	0.488	0.135	26.7	0.014				

[a] Using the computer program TMSURVIV (Hines et al. 2003), a modification of SURVIV (White 1983) to accommodate transient models.

[b] These models, developed by Pradel et. al (1997), modified by Nott and DeSante (2002), and fully formulated by Hines et al. (2003), include both between- and within-year information on transients and permit the estimation of three parameters: apparent survival probability (φ), recapture probability (p), and proportion of residents among those newly-banded adults that were not recaptured at least seven days later during their first year of capture (τ). In the fully time-constant model, each of these three parameters is constrained to be constant over all years.

[c] Species included are those for which (a) an average of at least 2.5 individual adult birds were captured per year over the 15 years, 1992-2006 (38 year-unique records), (b) at least two returns were recorded during the 15 years from all stations pooled, and (c) survival and recapture probabilities were neither 1.000 nor 0.000. Data for any given species were only included from stations where the species was a usual breeder and summer resident (i.e., attempted to breed during more than half of the years that the station was operated).

[d] Number of super-stations that were operated for a least four consecutive years during the 15-yr period, 1992-2006, at which (a) at least one adult individual of the species was captured and (b) the species was a usual breeder. A super-station includes all stations within one km of each other.

[e] Total number of individual adult birds captured during the 15 years, 1992-2006, at stations where the species was a usual breeder; thus the number of capture histories upon which the estimates of survival probability, recapture probability, and proportion of residents were based.

[f] Total number of captures of adults of the species during the 15 years, 1992-2006, at stations where the species was a usual breeder

[g] Total number of returns during the 15 years, 1992-2006, at stations where the species was a usual breeder. A return is defined as the first capture of an individual adult birds in any year other than the year during which it was initially banded.

[h] Defined as the probability of an adult bird surviving to and returning in a particular year (breeding season) to the area where it was present in the previous year (breeding season). The estimated probability (φ), standard error of the estimate (SE(φ)), and coefficient of variation (CV(φ)=100*SE(φ)/φ) are presented.

[i] The amount of support for time-dependence for each of the three parameters is provided by summing the w_i for all models in which time dependence of the parameter of interest occurred (w_i; Burnham and Anderson 1998). w_i={exp(-ΔQAIC$_c$/2)}/Σ{exp(-ΔQAIC$_c$/2)} where QAIC$_c$ is the Akaike Information Criterion for model i, modified for small sample sizes and overdispersion of data, and ΔQAIC$_c$ is the difference between the QAIC$_c$ of model i and the model with the lowest QAIC$_c$. Values of $w_i > 0.50$ indicate strong support for time dependence in the parameter, while $0.5>w_i>0.25$ suggest some support for time dependence in the parameter. Despite substantial support for time-dependence in one or more parameters, all parameter estimates presented in this table are for the time-constant model.

TABLE 4. Continued.

Species[c]	No. stn.[d]	No. indv.[e]	No. capt.[f]	No. btwn. year recap.[g]	Survival probability[h]				Recapture probability[j]				Proportion of residents[k]				Models selected[l]			
					φ	SE(φ)	CV(φ)	$w(\varphi_t)$[i]	p	SE(p)	CV(p)	$w(p_t)$[i]	τ	SE(τ)	CV(τ)	$w(\tau_t)$[i]	1	2	3	4

[j] Defined as the conditional probability of recapturing an adult bird at least once in a particular year (breeding season), given that it did survive and return to the area where it was present in the previous year (breeding season). The estimated probability (p), standard error of the estimate (SE(p)), and coefficient of variation (CV(p)) are presented.

[k] The estimated proportion of residents among those newly-banded adults that were not recaptured seven or more days later during their first year of capture. The estimated proportion (τ), standard error of the estimate (SE(τ)), and coefficient of variation (CV(τ)) are presented.

[l] Models involving time dependence were selected according to modified Akaike's Information Criterion ($QAIC_C$), with the selected model (Model 1) being the one with the lowest $QAIC_C$. All equivalent models (models with a $QAIC_C$ within 2.0 units of the selected model) are shown and listed in order (Models 2-4) of increasing $QAIC_C$. Despite time-dependence in one or more parameters (e.g., φ_t) being selected for a number of species, all parameter estimates presented in this summary are for the time-constant model. Models are designated as follows: ...=$\varphi p \tau$; t..=$\varphi_t p \tau$; .t.=$\varphi p_t \tau$; ..t=$\varphi p \tau_t$; tt.=$\varphi_t p_t \tau$; t.t=$\varphi_t p \tau_t$; .tt=$\varphi p_t \tau_t$; ttt=$\varphi_t p_t \tau_t$, where φ is the survival probability, p is the recapture probability, and τ is the proportion of residents among those newly-captured adults that were not recaptured seven or more days later during their first year of capture.

[m] Better-estimated species are those for which CV(φ) < 30.0% and φ is not qualified by the use of * or †.

* The estimate for survival probability should be viewed with caution because it is based on fewer than five between-year recaptures or the estimate is very imprecise (SE(φ) ≥ 0.200 or CV(φ) ≥ 50.0%)

† The estimate for survival probability, recapture probability, or both may be biased low because the estimate for τ was 1.00.

TABLE 5. Comparison of numbers of stations contributing data to survivorship analyses, numbers of species for which survivorship could be estimated, and precision of the survivorship estimates using data from 12 years, 1992-2003, and 15 years, 1992-2006.

	No. stations		No. species		Mean CV(φ)		Number (proportion) of species with CV(φ)<30%		CV(φ)<20%		CV(φ)<10%	
Region	12-YR	15-YR	12-YR	15-YR	12-YR	15-YR	12-YR	15-YR	12-YR	15-YR	12-YR	15-YR
PROGRAM-WIDE	550	653	183	192	15.0%	13.8%	162 (0.885)	174 (0.906)	140 (0.761)	151 (0.786)	86 (0.467)	98 (0.510)
NORTHWEST	151	174	80	85	15.3%	13.5%	70 (0.875)	74 (0.871)	61 (0.753)	67 (0.788)	42 (0.519)	48 (0.565)
SOUTHWEST	83	98	86	91	23.7%	21.3%	64 (0.744)	74 (0.813)	50 (0.581)	57 (0.626)	25 (0.291)	30 (0.330)
NORTH-CENTRAL	44	58	54	62	20.4%	18.9%	43 (0.796)	50 (0.806)	33 (0.611)	38 (0.613)	15 (0.278)	22 (0.355)
SOUTH-CENTRAL	71	84	62	63	20.6%	18.6%	53 (0.855)	55 (0.873)	36 (0.581)	41 (0.651)	17 (0.274)	20 (0.317)
NORTHEAST	91	119	75	76	18.3%	15.8%	62 (0.827)	68 (0.895)	48 (0.640)	52 (0.684)	20 (0.267)	26 (0.342)
SOUTHEAST	79	89	45	47	16.8%	15.5%	36 (0.800)	40 (0.851)	31 (0.689)	36 (0.766)	16 (0.356)	22 (0.468)
ALASKA/BOREAL CANADA	31	31	34	34	21.4%	20.6%	27 (0.794)	28 (0.824)	22 (0.647)	22 (0.647)	9 (0.265)	9 (0.265)
Mean of regions	79	93	62	65	19.5%	17.7%	51 (0.814)	56 (0.849)	40 (0.643)	45 (0.683)	21 (0.321)	25 (0.386)

proportions of species over the seven regions having CV(φ) < 30%, < 20%, and < 10% also increased with 15 years (by 4%, 6%, and 20%, respectively; Table 5). The analogous program-wide increases in the proportions of species were 2%, 3%, and 9%.

Mean regional survival probabilities for all species in each region (Table 4) ranged from 0.391 (Alaska/Boreal Canada) to 0.496 (Southwest) and averaged 0.471±0.036 for the seven regions; the mean program-wide survival probability was 0.488. Mean regional recapture probabilities ranged from 0.327 (Northwest) and 0.328 (Southwest) to 0.488 (Alaska/Boreal Canada) and averaged 0.365±0.057; the mean program-wide recapture probability was 0.334. Mean regional proportions of residents among newly-captured adults ranged from 0.468 (Northeast) to 0.550 (Alaska/Boreal Canada) and averaged 0.513±0.030; the mean program-wide proportion of residents was 0.492.

As in previous years, mean regional survival and recapture probabilities increased and mean regional proportions of residents decreased when consideration was limited in each region to species for which survival was "better estimated" (see Methods). This pattern held for each of the three parameters in each of the seven regions and program-wide except for mean survival in the South-central Region which was slightly higher for all species (0.491) than for better-estimated species (0.488). When consideration was limited to the better-estimated species, mean regional survival probabilities ranged from 0.415 (Alaska/Boreal Canada) to 0.516 (Southwest) and averaged 0.483±0.032 for the seven regions; the mean program-wide survival probability for better-estimated species was 0.489. Mean regional recapture probabilities ranged from 0.353 (South-central) to 0.518 (Alaska/Boreal Canada) and averaged 0.393±0.057; the mean program-wide recapture probability for better-estimated species was 0.352. Mean regional proportions of residents among newly-captured adults ranged from 0.444 (Southwest) to 0.516 (South-central) and averaged 0.475±0.024; the mean program-wide proportion of residents for better-estimated species was 0.456.

Again, as in previous years, mean regional survival rates for all species were higher in the three southern regions (Southwest: 0.496±0.095; South-central: 0.491±0.088; Southeast: 0.478±0.068) than in the three northern regions (Northwest: 0.486±0.061; North-central: 0.488±0.090; Northeast: 0.470±0.071), respectively, and were lowest in the far northern Alaska/Boreal Canada region (0.391±0.070). In addition, except for unexpectedly high mean survival in the North-central Region, mean regional survival rates for all species tended to be higher in the two western regions, lower in the two central regions, and lowest in the two eastern regions. In contrast, mean regional recapture probabilities for all species tended to show the opposite pattern with respect to both latitude and longitude, being generally lower in the three more southerly than the three more northerly regions and highest in Alaska/Boreal Canada; and higher in the two eastern regions, lower in the two central regions, and lowest in the two western regions. Mean regional proportions of residents among newly captured adults for all species showed a geographic pattern quite similar to that for survival rate (i.e., generally higher in more southerly and westerly regions), except that the highest mean proportion of residents occurred in the Alaska/Boreal Canada Region.

In general, mean regional survival probabilities from the 15-yr data set were lower than those from the 12-yr data set, both for all species (by an average of -0.004) and for better-estimated species (by an average of -0.006). The only exceptions to this pattern were the Northwest for all species (15-yr higher than 12-yr by +0.002) and, especially, the North-central Region (15-yr higher than 12-yr by +0.024 for all species and by +0.015 for better-estimated species). To control for potential differences in the species being compared, we ran matched-pairs *t*-tests between survival estimates from the 15- and 12-yr data sets for those species-region and species-program wide combinations for which survival for the species was estimated with CV(φ) < 30% for both sets of data. We found that regional survival estimates were lower for the 15- than the 12-yr data set for six of the seven regions (all but North-central; $P = 0.055$, binomial test), significantly so (by 0.013) for the Southwest ($t = 2.21$, $n = 63$, $P = 0.031$), and that the mean difference in regional survival estimates for the two time periods was a decrease of -0.006. We also found that survival estimates tended to be lower by -0.003 for 15 than for 12 years of data for the 160 species-program wide combinations,

but this difference was not significant.

For each species in each region, we also modeled all possible combinations of time dependence in the three parameters, φ, p, τ. The selected model (lowest $QAIC_c$) and up to four equivalent models ($QAIC_c$ within 2.0 $QAIC_c$ units of the selected model) are presented for each species in each region (Table 4). We detected time-dependence in at least one parameter (by having a time-dependent model that was at least an equivalent model) for 97 (21.2%) of the 458 species-region combinations and for 54 (28.1%) of the 192 species program-wide (Table 6). We found that time-dependence in at least one parameter was the selected model ($QAIC_c$ at least 2.0 $QAIC_c$ units lower than the $QAIC_c$ of the fully time-independent model) for 74 (16.2%) of the 458 species-region combinations and for 35 (18.2%) of the 192 species program-wide. Time dependence in survival rate was detected for 47 (10.3%) of the 458 species-region combinations and for 29 (15.1%) of the 192 species program-wide, and was found to be the selected model for 35 (7.6%) of the species-region combinations and for 18 (9.4%) of the 192 species program-wide (Table 6). In general, compared to the 12-yr data set in either survival or any parameter, proportions of species in the 15-yr data set for which time dependence was detected were slightly *lower*, but proportions of species for which time dependence was the selected model were somewhat *higher* (Table 6 in this report versus Table 5 in DeSante and Kaschube 2007).

Finally, we examined all nine combinations of time-constant, time-dependent, and linear trend models for program-wide survival (φ) and recapture (p) probabilities for all species pooled. The selected model, which had nearly 100% of the $QAIC_c$ weight (w_i), was the one whereby both survival and recapture probabilities varied with time (Fig. 3c; note that survival probability from 2005-2006 and recapture probability in 2006 are confounded in the fully time-dependent model, so only 13 survival estimates were available over the 15-yr period). Although we found virtually no statistical support for linear compared to the more general time-varying models, the estimated slope for the best linear trend model was significantly negative (Beta = -0.016, $P < 0.05$), with an annual decline in survival of -0.19%. A negative trend ($P = 0.080$) was also supported by a regression fit to annual survival estimates derived from the best time-varying model, indicating an annual decline in survival of -0.46%. Of further interest was that 9 of 12 ($P = 0.054$; binomial test) annual changes in survival rate (Fig.3c) were associated with annual changes in productivity of the same sign (Fig. 3b). Despite this nearly significant proportion of annual changes in adult survival and productivity being in the same direction, the positive correlation between annual survival from years t to t+1 and reproductive index in year t+1 was not significant (Fig. 4; $r = +0.31$, $P = 0.30$).

DISCUSSION

A mean of 448 MAPS stations were operated during the four years 2003-2006, a decrease of 8.9% from the mean of 492 stations operated during the preceding four years 1999-2002, while mean year-to-year continuity of station operation decreased from 91.3% during 1999-2002 to 84.4% during 2003-2006. The 13.3% decrease in total stations between the high of 505 stations in 2002 and 438 stations in 2006 was comprised of a 21.5% decrease (158 to 124) in IBP-operated stations and a 9.5% decrease (347 to 314) in independently operated stations. These decreases, which have apparently been caused by the difficulty of securing funding for the continued operation of long-term monitoring stations, are troubling, and strategies to address this problem need to be developed. Hopefully, on-going efforts to implement plans for Coordinated Bird Monitoring will help alleviate this problem. Although coverage of North America north of Mexico during 2003 through 2006 continued to be widespread, there still were gaps, most notably in the Great Plains, Great Basin, southwest deserts, Alaska, and most of Canada.

PATTERNS OF POPULATION SIZE AND PRODUCTIVITY

Changes in adult population size between 2003 and 2004 for all species pooled and for many individual species were relatively small and mixed across the continent with non-significant decreases at the program-wide scale and in the two eastern and two central regions, non-significant increases in the two western regions, and a significant decrease in the Alaska/Boreal

TABLE 6. Number (proportion) of species in each region for which time-dependence in survival rate, φ_t, or time-dependence in any parameter, φ_t, ρ_t, or τ_t was detected using modified Cormack-Jolly-Seber mark-recapture analyses from 15 years (1992-2006) of MAPS data.

	Number (proportion) of species								
Model	Program-wide	Northwest	Southwest	North-central	South-central	Northeast	Southeast	Ak/Bor.Can.	All regions
φ_t selected[a]	18 (0.094)	12 (0.141)	7 (0.077)	4 (0.065)	2 (0.032)	6 (0.079)	4 (0.085)	0 (0.000)	35 (0.076)
φ_t equivalent[b]	11 (0.057)	2 (0.024)	3 (0.033)	0 (0.000)	2 (0.032)	1 (0.013)	2 (0.043)	0 (0.000)	12 (0.026)
φ_t detected[c]	29 (0.151)	14 (0.165)	10 (0.110)	4 (0.065)	4 (0.063)	7 (0.092)	6 (0.128)	0 (0.000)	47 (0.103)
φ_t time-independent[d]	163 (0.849)	71 (0.835)	81 (0.890)	58 (0.935)	59 (0.937)	69 (0.908)	41 (0.872)	34 (1.000)	411 (0.897)
Total	192	85	91	62	63	76	47	34	458
φ_t, ρ_t, or τ_t selected[e]	35 (0.182)	20 (0.235)	19 (0.209)	8 (0.129)	7 (0.111)	14 (0.184)	4 (0.085)	2 (0.059)	74 (0.162)
φ_t, ρ_t, or τ_t equivalent[e]	19 (0.099)	5 (0.059)	4 (0.044)	2 (0.032)	3 (0.048)	3 (0.039)	6 (0.128)	0 (0.000)	23 (0.050)
φ_t, ρ_t, or τ_t detected[e]	54 (0.281)	25 (0.294)	23 (0.253)	10 (0.161)	10 (0.159)	17 (0.224)	10 (0.213)	2 (0.059)	97 (0.212)
φ, ρ, and τ each time-independent[e]	128 (0.719)	60 (0.706)	68 (0.747)	52 (0.839)	53 (0.841)	59 (0.776)	37 (0.787)	32 (0.941)	361 (0.788)
Total	192	85	91	62	63	76	47	34	458

[a] One or more models with time-dependent survival had $QAIC_C$ more than 2.0 units lower than all models with time-independent survival.

[b] One or more models with time-dependent survival had $QAIC_C$ within 2.0 units of the time-independent survival model with the lowest $QAIC_C$.

[c] All models that fulfilled either of the above two conditions.

[d] All time-dependent survival models had $QAIC_C$ more than 2.0 units higher than the model with the lowest $QAIC_C$.

[e] Same as corresponding criteria above but applied to any parameter, φ_t, ρ_t, or τ_t.

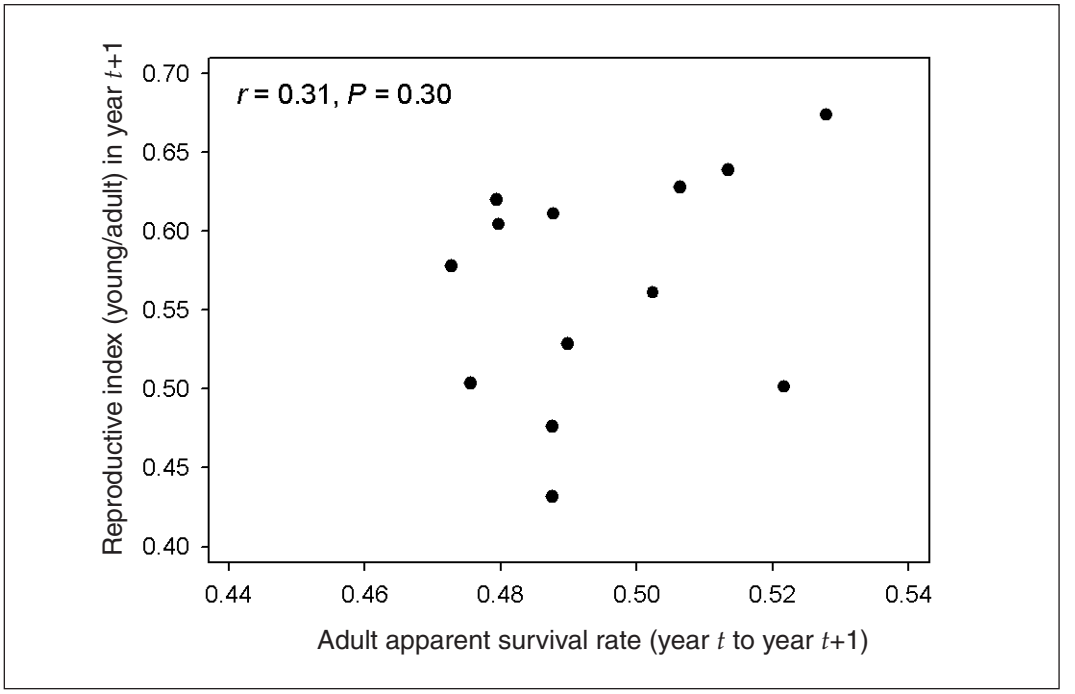

FIGURE 4. Scatterplot of the correlation between program-wide productivity in year t+1 and annual adult apparent survival rate from year t to year t+1 for all species pooled.

Canada Region. Changes in productivity between 2003 and 2004 for all species pooled and for many individual species were also generally rather small and mixed across the continent, but showed a different pattern, with substantial and significant increases in the two eastern regions, a non-significant increase program-wide and in the Northwest, and non-significant decreases in the remaining four regions.

Significant but relatively modest decreases in adult population size between 2004 and 2005 were recorded for all species pooled and for many individual species at the program-wide scale and in the Northwest and South-central regions, but were likely not driven by the small and non-significant changes in productivity in those areas the year before, because two of those three productivity changes were increases. Changes in adult population size between 2004 and 2005 for all species pooled in the remaining five regions were small, non-significant, and mixed, with increases in the two eastern regions (following significant increases in productivity the year before) and in the Alaska/Boreal Canada Region, and decreases in the Southwest and North-central regions (following small and non-significant decreases in productivity the year before). Regional changes in productivity between 2004 and 2005 were again mixed across the continent and were opposite in sign to the changes between 2003 and 2004 for all but the South-central region, where productivity declined non-significantly for the third consecutive year. The substantial decrease in productivity in the Southeast was highly significant while the decrease in the Northeast and increases in the Southwest and North-central regions were nearly significant. Program-wide, productivity showed a slight, non-significant increase.

Regional changes in adult population size between 2005 and 2006 were in the same direction as those between 2004 and 2005 for all but the North-central and Alaska/Boreal Canada regions, but generally tended to be more positive (or less negative) so that the program-wide decrease was very slight and non-significant. This makes four consecutive annual program-wide declines in adult population size for all species pooled, two of which (2002-2003 and 2004-2005)

have been significant. Regional changes in productivity between 2005 and 2006 were again mixed across the continent and were opposite in sign to the changes between 2004 and 2005 for four of the seven regions and at the program-wide scale. The changes in productivity between 2005 and 2006 were more negative (or less positive) than those between 2004 and 2005 program-wide and for all but the two eastern regions, where increases in 2006 contrasted with decreases during 2005. The only significant change in productivity between 2005 and 2006, however, was in the Southwest where a significant 39.2% decrease in 2006 contrasted with a nearly significant increase of 43.9% in 2005.

A general out-of phase pattern of changes in productivity and adult population size has been noted before in the MAPS dataset (e.g., DeSante and Kaschube 2006, DeSante and Kaschube 2007). At the program-wide scale, for example, 8 of 10 annual changes in productivity during 1992 to 2003 were followed by changes in adult population size of the same sign ($P = 0.055$, binomial test). This pattern tended to be less evident during the period 2004 to 2006, and only persisted strongly in the South-central Region, where 11 of 13 annual changes in productivity during 1992 to 2006 were followed by changes in adult population size of the same sign ($P = 0.011$, binomial test). Analogous 15-yr results for the other regions are: Northwest, 9 of 13 ($P = 0.133$); Northeast, Southeast, Alaska/Boreal Canada, and program-wide, each 8 of 13 ($P = 0.291$); and Southwest and North-central, both 7 of 13 ($P = 0.538$). We believe that the weakening in this pattern was caused, at least in part, by the fact that annual changes in both productivity and adult population size during those latter three years were relatively small. Indeed, for all species pooled, only four of the 21 regional annual changes in productivity and six of the 21 changes in adult population size recorded during those three years were significant. These results illustrate that while there is a tendency for changes in productivity to be followed the next year by changes in adult population size of the same sign, other factors in addition to productivity, presumably survival of both young and adults, also play important roles in driving annual changes in adult population size.

Finally, we note from 15 years of data that the directions of annual changes in both adult population size and productivity tended to be the same for the Northwest and Southwest regions (10 of 14 for each parameter, $P = 0.090$) and for the Northeast and Southeast regions (12 of 14 for adult population size, $P = 0.007$, and 8 of 14 for productivity), but not for the North-central and South-central regions (7 of 14 for adult population size and 4 of 14 for productivity). Instead, the direction of annual changes in both parameters for the North-central Region tended to be more similar to those in the Northeast and Southeast regions (11 of 14 for adult population size for each region, $P = 0.028$), while the direction of annual changes in both parameters for the South-central Region tended to be more similar to the Northwest (10 of 14 for adult population size, $P = 0.090$) and Southwest regions. We also note that the direction of annual changes in adult population size and productivity in the Alaska/Boreal Canada Region did not closely match those in any of the other three northern regions. In general, the similarities in directions of annual changes between regions were greater for changes in adult population size than productivity. These results suggest that annual environmental factors (presumably weather) that affect landbird populations differ substantially between the western, eastern, and far northern parts of the continent, and that those in the north-central portion are more similar to those in the East, while those in the south-central portion are more similar to those in the West.

SURVIVAL-RATE ESTIMATES

Increasing the number of years of data from 12 to 15 provided the following increases: (1) the mean number of stations per region operated for at least four consecutive years (the minimum number of years necessary to be included in survivorship analyses using a transient model) increased by an average of 17.7% (79 to 93 stations); (2) the mean number of years per region over which stations were operated increased by 7.0% (7.70 to 8.24 years); and (3) the mean number of species per region that met selection criteria for survivorship analyses increased by an average of 4.9% (62 to 65 species). In contrast, however, mean adult captures per individual per species per region in the 15-yr data set (1.37) remained virtually the same as in the 12-yr data set (1.38), as did mean

returns per individual adult per species per region (0.135 in each data set). The increase in the length of the study and in the number of stations available for survivorship analyses (thus producing an increase in the total number of capture histories and the average number of years over which they were captured) resulted in a continued increase in the precision of the time-constant parameter estimates obtained from the mark-recapture analyses. Indeed, compared to the 12-yr data set, the mean number of species per region in the 15-yr data set with CV(φ) < 30%, < 20%, and < 10% increased by 10% (from 51 to 56 species), 13% (from 40 to 46 species), and 19% (from 21 to 25 species), respectively. These results suggest that the precision of time-constant estimates of survival might continue to increase throughout the life of the program.

Again, as in previous years, a pattern of survivorship was detected in which mean regional annual adult survival probabilities tended to be lower at more northerly regions. This may be a result of the longer migration routes of more northerly nesting migratory species and the more severe winter weather faced by more northerly nesting permanent residents. Mean regional annual adult survival probabilities also tended to be lower in each of the seven regions for the 15-yr than for the 12-yr data set, thus continuing the pattern noted in previous reports in which mean regional survival rates tended to be lower for 12-yr than 10-yr, 10-yr than 7-yr, and 7-yr than 5-yr data sets. The resulting conclusion that survival rates tend to be decreasing was confirmed, at least for all species pooled at the program-wide scale, by modeling survival both as year-dependent and as a linear function of year.

PROGRAM-WIDE, ALL-SPECIES-POOLED TRENDS IN POPULATION SIZE AND VITAL RATES

Chain indices of adult population size for all species pooled at the program-wide scale (Fig. 3a) have shown a severe and highly significant decline of -1.77% yr^{-1} over the 15 years 1992-2006, resulting in a total decrease in population size of 22%. It is important to note that vital rates (productivity and survival) do not need to be declining to result in a population decline. All that is needed is for productivity to be too low to balance mortality (or, stated alternatively, for survival to be too low to maintain a stable population in the face of a given productivity rate). Program-wide results for all species pooled, however, suggest that adult survival actually declined by -0.46% yr^{-1} over the 15 years (Fig. 3c) and that productivity also tended to decline by -0.25% yr^{-1} (Fig. 3b). These decreasing vital rates may well increase the difficulty of reversing population declines in these species, and suggest an urgent need to prioritize efforts to reverse the decreases in survival rates.

It is also interesting that annual changes in survival rate (measured from breeding season to breeding season) between pairs of years (t-1 to t) and (t to t+1) tended to have the same sign as annual changes in productivity between year t and t+1, despite the fact that the positive correlation between survival from years t to t+1 and productivity in year t+1 was not significant. It seems likely that variations in annual survival may be driven by weather and habitat conditions on the wintering grounds (especially in late winter when food resources may be at a minimum), even in those situations for migratory species in which most mortality occurs during migration (Sillett and Holmes 2002). If so, then the tendency for annual changes in survival to have the same sign as the subsequent annual changes in productivity suggests that the same factors that drive annual variation in survival might also drive some of the annual variation in productivity, and that these factors may act during the non-breeding season. This is consistent with analyses of MAPS data that showed that annual variations in productivity of Nearctic-Neotropical migratory species breeding in the Pacific Northwest are driven by late-winter/early-spring weather conditions on their wintering grounds (Nott et al. 2002). These considerations further reinforce the pressing need to understand the effects of winter habitat, weather, and climate on the vital rates of landbirds, especially those wintering in the Neotropics.

We point out that the results presented in Figs. 3a and 3b derive from the analysis of > 849,000 captures of > 662,000 aged individuals, while the results presented in Fig. 3c derive from the modeling of > 406,000 individual adult capture histories. We hasten to add, however, that these results are based on pooling data from all species over all regions and, thus, likely obscure the

many important spatial and life-history-related patterns in vital rates that are suggested in the species- and region-specific results (Tables 1-4). These patterns presumably arise in response to such factors as body mass, migration strategy, nest location, and foraging behavior. Moreover the vital rates of these many different species are likely to be affected differently by various weather and habitat conditions, which in turn vary greatly over the different regions of the continent, within each of which the pool of species itself tends to differ. Considering all these sources of heterogeneity when data from all these species are pooled over the entire continent, it is remarkable that such a consistent pattern of results emerges.

RECENT RESULTS AND CURRENT DIRECTIONS RELATED TO RESEARCH AND MANAGEMENT GOALS OF MAPS

One of the major goals of MAPS is to determine the proximate demographic cause(s) of population trends, i.e., to determine whether population trends are driven by processes affecting productivity or by processes affecting survival. In our previous MAPS report (DeSante and Kaschube 2007) we described work by Saracco et al. (2008) on Yellow Warblers that showed that spatial variation in MAPS population trends in this species could largely be explained by spatial variation in adult and first-year survival, rather than by spatial variation in productivity. This inference was further supported for this species by a spatial comparison of BBS estimates of population trends for 15 BBS Physiographic Strata and MAPS productivity indices and survival-rate estimates.

Saracco and DeSante (2008) recently expanded this work and examined the importance of productivity, recruitment, and adult apparent survival in driving spatial variation at the scale of Bird Conservation Regions in 12-yr (1992-2003) MAPS population trends for 28 species of Nearctic-Neotropical migratory landbirds. They assessed MAPS population trends (*lambda*) and adult survival and recruitment rates using reverse-time and "transient" Cormack-Jolly-Seber mark-recapture models, and indexed productivity by the ratio of young to adult birds in MAPS constant-effort data. They found that productivity had strong effects on recruitment and *lambda* for only 9 species, while recruitment had strong effects on *lambda* for 25 species, thereby implicating first-year survival as the driver for at least 16 species. They also found that adult survival had a strong effect on *lambda* for 10 species. Species for which first-year survival was important in explaining spatial variation in trends tended to have declining populations, those for which adult survival was important tended to have stable populations, and those for which productivity was important tended to have stable or increasing populations. These results suggest that: (1) enhancing survival (especially of first-year birds) will be important for slowing declines and stabilizing populations, (2) enhancing productivity may be necessary to recover populations whose declines have been arrested, and (3) identifying relationships between vital rates and winter habitat and weather will likely be critical for migratory bird conservation.

We have also begun to model responses of these vital rates to weather and habitat characteristics in order to make inferences regarding ultimate causes of population trends and to inform management actions and strategies for reversing declines and maintaining stable or increasing populations (Nott et al. 2003, 2005). Our initial work in this regard suggests that recent population trends in some species appear to be driven by systematic changes in weather likely caused by climate change, and that the changes in weather that are driving these population trends may be acting variously on the breeding grounds, wintering grounds, or molt-migration grounds of particular species. These results have important implications, not only for the development of management and conservation efforts to reverse landbird population declines, but also for efforts to devise adaptation and mitigation strategies for climate change.

ACKNOWLEDGMENTS

We express our sincere appreciation to the many individuals, organizations, and agencies that have contributed data to the MAPS Program. Without their cooperation and contributions, this continent-wide avian demographic monitoring effort would not be possible. We also thank the many persons who have provided help and advice with statistical aspects of productivity and mark-recapture analyses, especially J. E.

Hines, J. D. Nichols, M. P. Nott, A. Royle, and J. F. Saracco. We thank P. Pyle, R. B. Siegel, and an anonymous reviewer for constructive comments on earlier drafts of this manuscript. Financial support for the MAPS Program during 2004, 2005, and 2006, for which we are very grateful, was provided by the U.S. Department of Agriculture: Forest Service (Regions 6 and 5); U.S. Department of Interior: Geological Survey (Biological Resources Division and National Biological Information Infrastructure), Fish and Wildlife Service (Region 7), National Park Service (Yosemite and Sequoia/Kings Canyon National Parks), Bureau of Land Management (Oregon State Office), and National Fish and Wildlife Foundation; U.S. Department of Defense: Legacy Resources Management Program, Atlantic Division of the Department of the Navy, Army Corp of Engineers, Army Garrisons Ft. Bragg and Ft. Leonard Wood, and Adjutant General's Department of Texas; National Institutes of Health; Commonwealth of Virginia; University of California at Los Angeles; and by the Confederated Salish and Kootenai Tribes, Southern California Coastal Water Research Project, Geo-Marine Incorporated, and members and friends of The Institute for Bird Populations. This is Contribution No. 358 of The Institute for Bird Populations.

LITERATURE CITED

BAILLIE, S. R. 1990. Integrated population monitoring of breeding birds in Britain and Ireland. Ibis 132:151-161.

BURNHAM, K. P., AND D. R. ANDERSON. 1992. Data-based selection of an appropriate biological model: the key to modern data analysis. Pp. 16-30 *in* McCullough, D. C. and R. H. Barrett (eds.), Wildlife 2001: Populations. Elsevier Applied Science, London, U.K.

BURNHAM, K. P., AND D. R. ANDERSON. 1998. Model Selection and Inference: a Practical Information Theoretic Approach. Springer-Verlag, New York, NY

CLOBERT, J., J. D. LEBRETON, AND D. ALLAINE. 1987. A general approach to survival rate estimation by recaptures or resightings of marked birds. Ardea 75:133-142.

COCHRAN, W. G. 1977. Sampling Techniques, Third Edition. John Wiley & Sons, New York, NY.

DeSANTE, D. F. 1992. Monitoring Avian Productivity and Survivorship (MAPS): a sharp, rather than blunt, tool for monitoring and assessing landbird populations. Pp. 511-521 *in* McCullough, D. C., and R. H. Barrett (eds.), Wildlife 2001: Populations. Elsevier Applied Science, London, U.K.

DeSANTE, D. F. 1995. Suggestions for future directions for studies of marked migratory landbirds from the perspective of a practitioner in population management and conservation. Journal of Applied Statistics 22:949-965.

DeSANTE, D. F., AND K. M. BURTON. 1994. The Monitoring Avian Productivity and Survivorship (MAPS) Program third annual report (1992). Bird Populations 2:62-89.

DeSANTE, D. F., K. M. BURTON, AND D. R. O'GRADY. 1996. The Monitoring Avian Productivity and Survivorship (MAPS) Program fourth and fifth annual report (1993 and 1994). Bird Populations 3:67-120.

DeSANTE, D. F., K. M. BURTON, J. F. SARACCO, AND B. L. WALKER. 1995. Productivity indices and survival rate estimates from MAPS, a continent-wide programme of constant-effort mist netting in North America. Journal of Applied Statistics 22:935-947.

DeSANTE, D. F., K. M. BURTON, P. VELEZ, D. FROEHLICH, AND D. KASCHUBE. 2008. MAPS Manual: 2008 Protocol. The Institute for Bird Populations, Point Reyes Station, CA. 76 pp.

DeSANTE, D. F., K. M. BURTON, AND O. E. WILLIAMS. 1993b. The Monitoring Avian Productivity and Survivorship (MAPS) Program second annual report (1990-1991). Bird Populations 1:68-97.

DeSANTE, D. F. AND T. L. GEORGE. 1994. Population trends in the landbirds of western North America. *In* J. R. Jehl, Jr. and N. K. Johnson (eds.), A Century of Avifaunal Change in Western North America. Studies in Avian Biology 15:173-190.

DeSANTE, D. F., AND D. R. KASCHUBE. 2006. The Monitoring Avian Productivity and Survivorship (MAPS) Program 1999, 2000, and 2001 report. Bird Populations 7:23-89.

DeSANTE, D. F., AND D. R. KASCHUBE. 2007. The Monitoring Avian Productivity and Survivorship (MAPS) Program 2002 and 2003 report. Bird Populations 8:46-115.

DeSANTE, D. F., M. P. NOTT, AND D. R. KASCHUBE. 2005. Monitoring, modeling, and management: why base avian management on vital rates and how should it be done? Pp. 795-804 *in* Ralph, C.J., and T.D. Rich (eds.), Bird Conservation Implementation and Integration in the Americas. USDA Forest Service Gen. Tech. Rep. PSW-191.

DeSANTE, D. F., M. P. NOTT, AND D. R. O'GRADY. 2001. Identifying the proximate demographic cause(s) of population change by modelling spatial variation in productivity, survivorship, and population trends. Ardea 89:185-207.

DeSANTE, D. F., AND D. R. O'GRADY. 2000. The

Monitoring Avian Productivity and Survivorship (MAPS) Program 1997 and 1998 report. Bird Populations 5:49-101.

DeSante, D. F., D. R. O'Grady, K. M. Burton, P. Velez, D. Froehlich, E. E. Feuss, H. Smith, and E. D. Ruhlen. 1998. The Monitoring Avian Productivity and Survivorship (MAPS) Program sixth and seventh annual report (1995 and 1996). Bird Populations 4:69-122.

DeSante, D. F., and D. K. Rosenberg. 1998. What do we need to monitor in order to manage landbirds? Pp. 93-106 *in* Marzluff, J. M. and R. Sallabanks (eds.), Avian Conservation: Research and Management. Island Press, Washington, DC.

DeSante, D. F., J. F. Saracco, D. K. O'Grady, K. M. Burton, and B. L. Walker. 2004. Methodological Considerations of the Monitoring Avian Productivity and Survivorship (MAPS) Program. Studies in Avian Biology 29:28-45.

DeSante, D. F., O. E. Williams, and K. M. Burton. 1993a. The Monitoring Avian Productivity and Survivorship (MAPS) Program: overview and progress. Pp. 208-222 *in* Finch, D. M., and P. W. Stangel (eds.), Status and Management of Migratory Birds. USDA Forest Service, Rocky Mt. Forest and Range Experimental Station, Ft. Collins, CO. General Technical Report RM-229.

Donovan, T. M., F. R. Thompson III, J. Faaborg, and J. R. Probst. 1995. Reproductive success of migratory birds in habitat sources and sinks. Conservation Biology 9:1380-1395.

Froehlich, D., N. Michel, D. F. DeSante, and P. Velez. 2006. MAPSPROG Version 4.1 User's Guide and Manual. The Institute for Bird Populations, Pt. Reyes Station, CA. 172 pp.

Hines, J. E., W. L. Kendall, and J. D. Nichols. 2003. On the use of the robust design with transient capture-recapture models. Auk 120:1151-1158

Lebreton, J. -D., K. P. Burnham, J. Clobert, and D. R. Anderson. 1992. Modeling survival and testing biological hypotheses using marked animals: a unified approach with case studies. Ecological Monographs 62:67-118.

Marra, P. P., K. A. Hobson, and R. T. Holmes. 1998. Linking winter and summer events in a migratory bird by using stable-carbon isotopes. Science 282:1884-1886.

Noon, B. R., and J. R. Sauer. 1992. Population models for passerine birds: structure, parameterization, and analysis. Pp. 441-464 *in* Wildlife 2001: Populations. D. C. McCullough and R. H. Barrett (eds.), Elsevier Applied Science, London.

Nott, M. P., and D. F. DeSante. 2002. Demographic monitoring and the identification of transients in mark-recapture models. Pp. 727-736 *in* J. M. Scott and P. Heglund (eds.), Predicting Species Occurrences: Issues of Scale and Accuracy. Island Press, New York.

Nott, M. P., D. F. DeSante, and N. Michel. 2003. Management Strategies for Reversing Declines in Landbirds of Conservation Concern on Military Installations: A Landscape-scale Analysis of MAPS Data. Unpublished report to the U.S. Department of Defense Legacy Resource Management Program. The Institute for Bird Populations, Point Reyes Station, CA. 119 pp.

Nott, M. P., D. F. DeSante, P. Pyle, and N. Michel. 2005. Managing Landbird Populations in Forests of the Pacific Northwest: Formulating Population Management Guidelines from Landscape-scale Analyses of MAPS Data from Avian Communities on Seven National Forests in the Pacific Northwest. Unpublished report to the National Fish and Wildlife Foundation and the USDA Forest Service, Northwest Region. The Institute for Bird Populations, Point Reyes Station, CA. 163 pp.

Nott, M. P., D. F. DeSante, R. B. Siegel, and P. Pyle. 2002. Influences of the El Niño/Southern Oscillation and the North Atlantic Oscillation on avian productivity in forests of the Pacific Northwest of North America. Global Ecology and Biogeography 11:333-342.

Peach, W. J., S. T. Buckland, and S. R. Baillie. 1996. The use of constant effort mist-netting to measure between-year changes in the abundance and productivity of common passerines. Bird Study 43:142-156.

Pollock, K. H., J. D. Nichols, C. Brownie, and J. E. Hines. 1990. Statistical inference for capture-recapture experiments. Wildlife Monographs No. 107.

Pradel, R., J. Hines, J.-D. Lebreton, and J. D. Nichols. 1997. Capture-recapture survival models taking account of transients. Biometrics 53:60-72.

Pulliam, H. R. 1988. Sources, sinks, and population regulation. American Naturalist 132:652-661.

Robbins, C. S., D. Bystrak, and P. H. Geissler. 1986. The Breeding Bird Survey: Its First Fifteen Years, 1965-1979. U.S. Fish and Wildl. Serv., Resource Publication 157. 196 pp.

Saracco, J. F., and D. F. DeSante. 2008. Identifying proximate causes of population trends in migratory birds. Final report for NFWF Project No. 2005-0260-000. The Institute for Bird Populations, Point Reyes Station, CA. 44 pp.

Saracco, J. F., D. F. DeSante, and D. R. Kaschube. 2008. Assessing landbird monitoring programs and demographic causes of population trends. Journal of Wildlife Management 72:1665-1673.

Schlaepfer, M. A., M. C. Runge, and P. W. Sherman. 2002. Evolutionary and ecological traps. Trends in Ecology and Evolution 17:474-480.

Sillett, T. S., and R. T. Holmes. 2002. Variation in survivorship of a migratory songbird throughout its annual cycle. Journal of Animal Ecology 71:296-308.

TEMPLE, S. A., AND J. A. WIENS. 1989. Bird populations and environmental changes: can birds be bio-indicators? American Birds 43:260-270.

VAN HORNE, B. 1983. Density as a misleading indicator of habitat quality. Journal of Wildlife Management 47:893-901.

WHITE, G. C. 1983. Numerical estimation of survival rates from band-recovery and biotelemetry data. Journal of Wildlife Management 47:716-728.

WHITE, G. C., AND K. P. BURNHAM. 1999. Program MARK: Survival Estimation for Populations of Marked Animals. Bird Study 46 (Supplement): 120-138.

APPENDIX. Summary of 39 MAPS stations newly established in 2004, 41 stations newly established in 2005, 37 stations newly established in 2006, and one station established prior to 2004 but not previously summarized in a MAPS annual report. Only stations for which data has been received from the operator are included.

Stn. no.	Station name	Operator	Sponsor	Prov./ State	Nearest town	10′ block	Elev. (m)	Habitat(s)	First Year
I. Stations established before 2004									
NORTHEAST REGION									
15680	Tuckernuck Island	R.Veit	Private	MA	Madaket	411-0701	10	?	99
II. Stations established in 2004									
NORTHWEST REGION									
11241	Cape Creek	D.DeSante	USFS-Region 6	OR	Florence	440-1240	271	thinned doug. fir stand on coastal hill	04
11242	Rose Amazon	D.Farrar	USDOD - USACOE=Army Corps	OR	Eugene	440-1231	98	oak woodlnd/riparian/wet upland prairie	04
11243	Pine Creek	K.Healy	USFWS	ID	Pinehurst	473-1161	745	willow-aspen riparian corridor	04
11244	Springston	K.Healy	USFWS	ID	Harrison	472-1164	652	deciduous-mixed wetland	04
11245	Pyramid Lake, Jasper	M.Wesbrook	Private - Friends of Jasper	AB	Jasper	525-1180	1000	wetland-meadow complex/aspen stand	04
11249	South Okanagan WMA	W.Easton	Canadian Wildlife Service	BC	Osoyoos	490-1193	280	riparian woodland	04
11250	Vaseux West	W.Easton	Canadian Wildlife Service	BC	Okanagan Falls	491-1193	363	riparian woodland	04
11251	Vaseux East	W.Easton	Canadian Wildlife Service	BC	Okanagan Falls	491-1193	330	riparian woodland and meadow	04
11252	Venner Meadows	W.Easton	Canadian Wildlife Service	BC	Okanagan Falls	491-1192	1423	high elevation rip. shrub/wet meadow	04
11253	Park Rill	W.Easton	Canadian Wildlife Service	BC	Okanagan Falls	491-1193	640	rip. woodl/grazed grassl/shrubsteppe	04
SOUTHWEST REGION									
12343	Plot E3	T.Martin	USNBS	AZ	Happy Jack	342-1111	2212	conifer dominated snow melt drainage	04
12344	Plot E4	T.Martin	USNBS	AZ	Happy Jack	342-1111	2212	conifer dominated snow melt drainage	04
12346	Barka Slough	P.Nieto	USAF - Vandenberg Air Force B	CA	Lompoc	344-1202	84	willow riparian	04
12355	Nacimiento River NG	J.Griffiths	USDOD - California Army Nat.G	CA	Bradley	354-1204	164	cottonwood- willow ripiarian corridor	04
12356	Salinas River NG	J.Griffiths	USDOD - California Army Nat.G	CA	Bradley	355-1204	150	cottonwood- willow riparian corridor	04
12357	Lost Lake Island	J.Wood	USBOR - US Bureau of Reclamation	CA	Fresno	365-1194	91	mixed-willow-cottonwood riparian	04
12358	Willow Unit	J.Wood	USBOR - US Bureau of Reclamation	CA	Fresno	365-1194	128	valley oak-black willow riparian	04
12359	Nakagawa	A.Pfeffer	CALFED	CA	Lodi	380-1211	15	cottonwood-willow rip/borders agri.	04
12360	Woodbridge Regional Park	A.Pfeffer	CALFED	CA	Woodbridge	380-1211	9	cottonwd-willow-boxelder rip in suburb	04
12381	Portal AZ Desert Scrubl.	T.Hays	Private	AZ	Portal	315-1090	1386	mixed desert scrubland	04
NORTH-CENTRAL REGION									
13374	Whitford Farm	L.Johnson	Private	WI	Harrisville	435-0892	260	deciduous woods/oldfield/wetland	04
SOUTH-CENTRAL REGION									
14509	Dropzone	D.DeSante	USDoD	TX	Bastrop	301-0971	155	mixed grassland/post oak woodland	04
14510	Shelterwood 1	N.Higginbotham	LA Dept. of Wildlife and Fisheries	LA	Krotz Springs	303-0914	9	bottomland hardwoods	04
14511	Shelterwood 2	N.Higginbotham	LA Dept. of Wildlife and Fisheries	LA	Krotz Springs	302-0914	8	bottomland hardwoods	04
14512	Norfork Chapin Point	C.Rideout	USDOD - USACOE=Army Corps	AR	Mountain Home	362-0921	200	upland hardwood/pine stand mix	04
14516	West Cache Creek	J.Kelly	USDOD - Fort Sill	OK	Lawton	343-0983	340	riparian woodland/mixed grass prairie	04
14519	Arroyo Unit	M.Conway	Private	TX	Rio Honda	261-0973	5	mixed thorn scrub w/temporary wetland	04
14525	Atchafalaya NWR	E.Baka	LA Dept. of Wildlife and Fisheries	LA	Krotz Springs	?	?	bottomland hardwood forest	04
NORTHEAST REGION									
15662	Alliance Middle School LL	A.Eibel	Private - GE Foundation	OH	Alliance	405-0810	371	mixed decid. hardwood for./grassland	04
15664	North Parcel - Tamarack	L.Doss	Marvelwood School	CT	Kent	414-0732	366	upland transitional hardwd/pine swamp	04

APPENDIX. Continued.

Stn. no.	Station name	Operator	Sponsor	Prov./ State	Nearest town	10′ block	Elev. (m)	Habitat(s)	First Year
15667	Keene State WMA	J.Atwood	Private	NH	Keene	425-0721	148	fragmented rip. corr/ag fields/suburbia	04
15669	Ruthven Park	R.Ludkin	Private	ON	Cayuga	425-0795	190	mixed wood plain	04
15672	Black Branch, Nulhegan B.	J.Chace	Villanova University/USFWS	VT	Bloomfield	444-0714	354	mixed conifer forest	04
SOUTHEAST REGION									
16712	Area 03	D.DeSante	USDoD-Legacy	IN	Nebraska	390-0852	235	riparian corridor in deciduous forest	04
16713	Cowley Cemetery	D.DeSante	USDoD-Legacy	KY	Radcliff	375-0855	163	oldfield complex/riparian cor./upl.fores	04
16715	Dennison Ferry	B.Moore	USNPS - Mammoth Cave NP	KY	Mammoth Cave	371-0860	142	temperate deciduous riparian corridor	04
16716	Long Branch	M.Whitehead	Private - Friends of the Reedy River	SC	Greenville	345-0822	306	young riparian habitat - restored 03	04
16719	Clifton Farm	C.Buck	Private	VA	Warrenton	384-0774	623	mixed deciduous for./rip. cor./meadow	04
16720	Eno River State Park	B.Strong	NC Division of Parks & Rec.	NC	Hillsborough	360-0790	143	mixed hardwoods; riparian corridor	04
III. Stations established in 2005									
NORTHWEST REGION									
11263	Mosquito Creek	D.DeSante	USFS-Region 6	OR	McKenzie Bridge	440-1220	1381	regenerating clearcut	05
11264	Little Rattlesnake	D.DeSante	USFS-Region 6	WA	Rimrock	464-1210	1280	montane meadow	05
11265	Skull Creek	D.DeSante	USFS-Region 6	WA	Silverton	480-1212	552	managed coniferous forest	05
11266	Deer Creek	D.DeSante	USFS-Region 6	OR	Bly	422-1204	1724	willow riparian meadow	05
11267	Whit's Lake Road	K.Duffy	Private	MT	West Yellowstone	444-1110	2045	aspen woodlands	05
11300	QUIC	J.Alexander	?	OR		?	?	?	05
SOUTHWEST REGION									
12361	Valenzuela Tract	M.Hunnicutt	USFWS - Buenos Aires NWR	AZ	Arivaca	313-1112	1103	cottonwd-willow-mesq.-hackberry rip.	05
12364	Kern River Preserve	A.Sutton	S.Sierra Research Station	CA	Weldon	354-1181	805	cottonwood/willow rip. corr./restoration	05
12365	Barbour	M.Truan	Calfed/Lower Putah Creek	CA	Winters	383-1215	45	Cottonwd, willow, walnut riparian cor.	05
12366	Fremont Weir	M.Truan	CA Dept of Water Resources	CA	Knights Landing	384-1213	10	Cottonwood, oak, sycamore rip. woodl	05
12367	Los Rios Farms	M.Truan	Calfed/Lower Putah Creek	CA	Davis	383-1213	16	Cottonwood, willow riparian corridor	05
12368	Russell Ranch	M.Truan	Calfed/Lower Putah Creek	CA	Davis	383-1215	18	Cottonwd, elderbrry, willow rip. corrid.	05
12369	Sutter Bypass	M.Truan	CA Dept of Water Resources	CA	Knights Landing	384-1213	10	Cottonwood, oak riparian woodland	05
12370	Havasu NWR - South Dike	J.Kahl, Jr.	USBR	AZ	Topock	344-1142	146	cottonwood/salt cedar riparian corridor	05
12376	Rancho Jamul - burned	M.Madden-Smith	CA Dept of Fish and Game	CA	Jamul	323-1165	250	burned disturbed coastal sage scrub/wetl	05
12377	Rancho Jamul - unburned	M.Madden-Smith	CA Dept of Fish and Game	CA	Jamul	324-1165	250	disturbed coastal sage scrub/wetland	05
12378	Santa Ysabel Ranch - burn	M.Madden-Smith	CA Dept of Fish and Game	CA	?	?	?	?	05
12379	Santa Ysabel Ranch - unb	M.Madden-Smith	CA Dept of Fish and Game	CA	?	?	?	?	05
NORTH-CENTRAL REGION									
13389	Craven	S.Davis	Canadian Wildlife Service	SK	Craven	504-1045	500	aspen-ash-willow riparian corridor	05
13393	Mormon Island Field Two	F.Chavez-Ramirez	Private - Platte Riv. Whooping Crane	NE	Doniphan	404-0982	579	managed mixed grass prairie	05
13394	Mormon Pasture Twelve	F.Chavez-Ramirez	Private - Platte Riv. Whooping Crane	NE	Doniphan	404-0982	579	managed mixed grass prairie	05
13395	Wild Rose Middle Pasture	F.Chavez-Ramirez	Private - Platte Riv. Whooping Crane	NE	Alda	404-0982	579	managed mixed grass prairie	05
SOUTH-CENTRAL REGION									
14496	Big Thicket National Pr.	D.Roemer	USNPS - Big Thicket Natio	TX	Kountze	302-0942	33	mixed pine/hardwood with clearcut	05
14520	Group Select 1	E.Baka	LA Dept. of Wildlife and Fisheries	LA	Krotz Springs	302-0914	8	bottomland hardwoods	05

APPENDIX. Continued.

Stn. no.	Station name	Operator	Sponsor	Prov./ State	Nearest town	10′ block	Elev. (m)	Habitat(s)	First Year
14521	Group Select 2	E.Baka	LA Dept. of Wildlife and Fisheries	LA	Krotz Springs	302-0914	8	bottomland hardwoods	05
14522	Natural Area 1	E.Baka	LA Dept. of Wildlife and Fisheries	LA	Krotz Springs	302-0914	8	bottomland hardwoods	05
14523	Natural Area 2	E.Baka	LA Dept. of Wildlife and Fisheries	LA	Krotz Springs	302-0914	6	bottomland hardwoods	05
14524	LA10	J.Johnson	USDoD-Army	LA	Leesville	310-0931	92	longleaf&loblolly/hardw&honeysuckle	05
14526	Windmill #1	M.Janis	Texas Parks and Wildlife	TX	Paducah	340-1002	553	mequite woodland	05
14528	TEWO	D.Twedt	USGS/USFWS	LA	?	?	?	?	05
14529	Two Bayou Creek WMA	C.Rideout	AR Game & Fish Commission	AR	Camden	333-0924	25	bottomland hardwood with mixed pines	05
NORTHEAST REGION									
15665	Lick Run	D.DeSante	USDoD-Navy	WV	Sugar Grove	383-0791	625	riparian corridor/coniferous forest	05
15666	Flesh Run	D.DeSante	USDoD-Navy	WV	Sugar Grove	382-0791	718	virginia pine forest on steep slope	05
15671	Montana Forest Station	T.Greg	Private	NJ	New Village	404-0750	195	mixed woodland with field edges	05
SOUTHEAST REGION									
16717	Area 46	D.DeSante	USDoD-Legacy	IN	New Marion	385-0852	273	walnut forest surrounded by grassland	05
16718	Ordinance Lake	D.DeSante	USDoD-Legacy	KY	Muldraugh	375-0855	213	?	05
16722	Seven Islands WR	C.Muise	TN Orn. Society, Knoxville	TN	Seven Islands	355-0834	266	managed native grassld/scrub-shrub/rip	05
16723	Greenburry Point N. Sev.	A.Sprenger	Private	MD	Annapolis	385-0762	5	maturing oldfield	05
16724	Forked Oaks	J.Dodson	NCSU CNR Dept of Forestry	NC	Rougemont	361-0785	128	mixed pine/hardwood for.in rip. corr.	05
16726	Walls of Jerico	Y.Wang	Alabama A&M University	AL	Scottsboro	345-0860	215	deciduous bottomland hardwood	05
16728	Honey Island Swamp	D.Henry	LA Dept. of Wildlife and Fisheries	LA	Pearl River	302-0894	4	bottomland hardwood forest	05
IV. Stations established in 2006									
NORTHWEST REGION									
11268	Teton Village Ski Area	D.Wachob	Conservation Research Center	WY	Teton Village	433-1104	1935	ski run frag. mixed aspen & conifer	06
11269	Beavertail Hill State Prk	K.Smucker	MT's Nat. Res. Damage Program	MT	Clinton	464-1133	1102	mixed cottonwd with ponderosa pine rip	06
11301	3 Creek Ranch	R.Smith	Private	WY	Jackson	432-1105	1850	cottonwood-spruce riparian	06
SOUTHWEST REGION									
12371	MBSP - Powell II	J.Isaacs	California State Parks	CA	Los Osos	351-1204	21	coastal scrub/sycamore-willow rip. corr.	06
12372	Imperial NWR	N.Bartok	State - University of Arizona	AZ	Martinez Lake	325-1142	52	managed and native riparian woodlands	06
12373	Cabrillo National Mon.	S.Kaiser	Private	CA	San Diego	324-1171	65	California coastal chaparral/sage scrub	06
NORTH-CENTRAL REGION									
13392	Rum River Central Park	J.Port	Bethel University, Anoka County	MN	Andover	451-0932	270	mixed deciduous and riparian corridor	06
13396	Eagle Bluffs	A.Forbes	Audubon Missouri	MO	Columbia	384-0922	174	cottonwood-willow riparian forest	06
13397	Beavertail Creek	F.Cuthbert	University of Michigan Bio. Stn.	MI	Pellston	453-0843	221	aspen-conifer woods adjacent to lake	06
13398	Central Maple River	F.Cuthbert	University of Michigan Bio. Stn.	MI	Pellston	453-0844	215	aspen-conifer woods adjacent to river	06
13399	Gate's Bog	F.Cuthbert	University of Michigan Bio. Stn.	MI	Pellston	453-0844	225	aspen-hardwd for. adj. to leather lf bog	06
13400	North Maple River	F.Cuthbert	University of Michigan Bio. Stn.	MI	Pellston	453-0844	217	aspen-conifer woods adjacent to river	06
13401	South Maple River	F.Cuthbert	University of Michigan Bio. Stn.	MI	Pellston	453-0844	211	trembling aspen forsest adj to river	06
13402	Burn Plots	F.Cuthbert	University of Michigan Bio. Stn.	MI	Pellston	453-0844	236	aspen/red oak/red pine adj. to burn plot	06
SOUTH-CENTRAL REGION									
14530	Grandview WMA	C.Rideout	AR Game & Fish Commission	AR	Columbus	?	80	blackland prairie/riparian woodland	06
NORTHEAST REGION									

APPENDIX. Continued.

Stn. no.	Station name	Operator	Sponsor	Prov./ State	Nearest town	10′ block	Elev. (m)	Habitat(s)	First Year
15674	California Hill	S.Dehn	Private	NY	Eddyville	421-0784	503	mixed deciduous with meadow/ scrub	06
15675	West Humber River Valley	D.Derbyshire	Toronto & Region Conservation	ON	Brampton	434-0794	179	suburban mixed woodland/meadow/rip.	06
15676	Stream	D.Speicher	PARC sponsors	PA	Skytop	411-0751	521	eastern deciduous forest/riparian zone	06
15681	Junco Nest	D.Junkin	Private	NY	Java Center	423-0781	554	mixed woodland - rural	06
SOUTHEAST REGION									
16727	Wehle ForeverWild Nat. Pr	E.Soehren	ADCNR, State Lands Division	AL	Midway	320-0852	104	hardwood bottoms adj to pine sandhills	06
16731	Congaree Swamp	B.Hulslander	State/Private	SC		?	?	?	06
ALASKA AND BOREAL CANADA									
17733	East Umiat Mountain	D.DeSante	USFWS - Region 7	AK	Umiat	692-1515	79	willow/alder riparian	06
17734	West Umiat Mountain	D.DeSante	USFWS - Region 7	AK	Umiat	692-1520	79	willow riparian with gravel pits	06
17735	River Road	D.DeSante	USFWS - Region 7	AK	Umiat	692-1520	81	willow/alder riparian with grassy fields	06
17736	South Bank	D.DeSante	USFWS - Region 7	AK	Umiat	692-1520	84	willow riparian w herb./forbe fields	06
17737	West of Landing Field	D.DeSante	USFWS - Region 7	AK	Umiat	691-1521	114	willow riparian	06
17738	Nome River A	D.DeSante	USFWS - Region 7	AK	Nome	643-1651	30	willow riparian shrublnd/grassy opening	06
17739	Nome River B	D.DeSante	USFWS - Region 7	AK	Nome	643-1651	30	willow riparian shrbland/grassy opening	06
17740	Penny River	D.DeSante	USFWS - Region 7	AK	Nome	643-1654	30	willow riparian shrubland/tundra border	06
17741	Snake River	D.DeSante	USFWS - Region 7	AK	Nome	643-1652	30	willow riparian shrbland/grassy opening	06
17742	Solomon River	D.DeSante	USFWS - Region 7	AK	Nome	643-1643	33	willow rip.shrubland/riverine gravel bar	06
17743	Snake Lake	D.DeSante	USFWS - Region 7	AK	Dillingham	591-1584	105	spruce-birch forest w alder/tundra	06
17744	Dead Woodpecker Valley	D.DeSante	USFWS - Region 7	AK	Dillingham	591-1583	55	spruce-birch for. w narrow tundra strip	06
17745	Hill 364	D.DeSante	USFWS - Region 7	AK	Dillingham	591-1584	74	open spruce-birch forest w willow/bog	06
17746	Moose Paddle Creek	D.DeSante	USFWS - Region 7	AK	Dillingham	591-1584	47	open spruce-birch for. w willow/rip.	06
17747	Two Meadows View	D.DeSante	USFWS - Region 7	AK	Dillingham	590-1583	98	spruce-birch forest/tundra meadows	06
17748	Boneyard	D.DeSante	USFWS - Region 7	AK	Nome	643-1652	17	disturbed willow/ponds/several dirt road	06
18807	Lomond	R.Thompson	Parks Canada	NL	Wiltondale	492-0574	60	mature balsam fir forest/alder riparian	06
18808	Wiltondale	R.Thompson	Parks Canada	NL	Wiltondale	492-0573	20	mature balsam fir forest	06