



Northeast Temperate Network Breeding Landbird Monitoring

2010 Annual Report

Natural Resource Data Series NPS/NETN/NRDS—2011/161



ON THE COVER

Red-eyed Vireo (*Vireo olivaceus*). Photograph by: Ken Schneider.

Northeast Temperate Network Breeding Landbird Monitoring

2010 Annual Report

Natural Resource Data Series NPS/NETN/NRDS—2011/161

Steven D. Faccio

Vermont Center for Ecostudies
PO Box 420
Norwich, VT 05055

Brian R. Mitchell

National Park Service
Northeast Temperate Network
54 Elm St
Woodstock, VT 05091

April 2011

U.S. Department of the Interior
National Park Service
Natural Resource Program Center
Fort Collins, Colorado

The National Park Service, Natural Resource Program Center publishes a range of reports that address natural resource topics of interest and applicability to a broad audience in the National Park Service and others in natural resource management, including scientists, conservation and environmental constituencies, and the public.

The Natural Resource Data Series is intended for the timely release of basic data sets and data summaries. Care has been taken to assure accuracy of raw data values, but a thorough analysis and interpretation of the data has not been completed. Consequently, the initial analyses of data in this report are provisional and subject to change.

All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

This report received informal peer review by subject-matter experts who were not directly involved in the collection, analysis, or reporting of the data. Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

Views, statements, findings, conclusions, recommendations, and data in this report do not necessarily reflect views and policies of the National Park Service, U.S. Department of the Interior. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the U.S. Government.

This report is available from *the Northeast Temperate Network website* (<http://science.nature.nps.gov/im/units/NETN/Reports/reports.cfm>) and the Natural Resource Publications Management website (<http://www.nature.nps.gov/publications/nrpm/>).

Please cite this publication as:

Faccio, S. D. and B. R. Mitchell. 2011. Northeast Temperate Network breeding landbird monitoring: 2010 annual report. Natural Resource Data Series NPS/NETN/NRDS—2011/161. National Park Service, Fort Collins, Colorado.

Contents

	Page
Figures.....	iv
Figures (continued)	v
Tables.....	vi
Acknowledgments.....	vii
Introduction.....	1
Methods.....	3
Avian Ecological Integrity Assessment	5
Results by Park	7
Acadia National Park (Maine)	7
Eleanor Roosevelt National Historic Site (New York).....	11
Home of Franklin D. Roosevelt National Historic Site (New York).....	15
Marsh-Billings-Rockefeller National Historical Park (Vermont)	19
Minute Man National Historical Park (Massachusetts).....	23
Morristown National Historical Park (New Jersey)	27
Saint-Gaudens National Historic Site (New Hampshire)	31
Saugus Iron Works National Historic Site (Massachusetts).....	35
Saratoga National Historical Park (New York)	39
Vanderbilt Mansion National Historic Site (New York).....	43
Weir Farm National Historic Site (Connecticut)	47
Literature Cited	51
Appendix A—Park Summaries.....	53
Appendix B—Site Summaries	73
Appendix C—Forest Avian Ecological Integrity Assessment by Site.	105
Appendix D—Grassland Avian Ecological Integrity Assessment by Site.	119

Figures

	Page
Figure 1. Northeast Temperate Network parks where the breeding bird monitoring protocol is being implemented and their associated Bird Conservation Regions. Roosevelt-Vanderbilt National Historical Sites includes Eleanor Roosevelt, Home of Franklin D. Roosevelt, and Vanderbilt Mansion National Historic Sites.....	2
Figure 2. Point count locations at Acadia National Park, Mt. Desert Island and Schoodic Peninsula.	8
Figure 3. Relative abundance of the 10 most common species detected at Acadia National Park, 2007-2010; Mt. Desert Island and Schoodic Peninsula sites.....	9
Figure 4. Point count locations at Eleanor Roosevelt National Historic Site.	12
Figure 5. Relative abundance of the 10 most common species at Eleanor Roosevelt National Historic Site, 2006-2010.	13
Figure 6. Point count locations at the Home of Franklin D. Roosevelt National Historic Site.	16
Figure 7. Relative abundance of the 10 most common species detected at the Home of Franklin D. Roosevelt National Historic Site, 2006-2010.....	17
Figure 8. Point count locations at Marsh-Billings-Rockefeller National Historical Park.	20
Figure 9. Relative abundance of the 10 most common species detected at Marsh-Billings-Rockefeller National Historic Park, 2006-2010.....	21
Figure 10. Point count locations at Minute Man National Historical Park.....	24
Figure 11. Relative abundance of the 10 most common species detected at Minute Man National Historical Park, 2006-2010.	25
Figure 12. Point count locations at Morristown National Historical Park.....	28
Figure 13. Relative abundance of the 10 most common species detected at Morristown National Historical Park, 2006-2010.	29
Figure 14. Point count locations at Saint-Gaudens National Historic Site.	32
Figure 15. Relative abundance of the 10 most common species detected at Saint-Gaudens National Historic Site, 2007-2010.	33
Figure 16. Point count locations at Saugus Iron Works National Historic Site.....	36

Figures (continued)

	Page
Figure 17. Relative abundance of the 11 most common species detected at Saugus Iron Works National Historic Site, 2008-2010.....	37
Figure 18. Point count locations at Saratoga National Historical Park.....	40
Figure 19. Relative abundance of the 10 most common species detected at Saratoga National Historical Park, 2006-2010.	41
Figure 20. Point count locations at Vanderbilt Mansion National Historic Site.....	44
Figure 21. Relative abundance of the 11 most common species detected at Vanderbilt Mansion National Historic Site, 2006-2010.	45
Figure 22. Point count locations at Weir Farm National Historic Site.	48
Figure 23. Relative abundance of the most common species detected at Weir Farm National Historic Site, 2006, 2009, and 2010.....	49

Tables

	Page
Table 1. Avian Integrity Ranks for 13 response guilds and proportional species richness thresholds (based on O’Connell et al. 2000, and Glennon and Porter 2005).....	6
Table 2. Avian Integrity Ranks for four response guilds and proportional species richness thresholds (based on Browder et al. 2002, and Coppedge et al. 2006).....	6
Table 3. Index of Biotic Integrity for Acadia National Park, 2007-2010.	10
Table 4. Index of Biotic Integrity for Eleanor Roosevelt National Historic Site, 2006-2010.....	14
Table 5. Index of Biotic Integrity for the Home of Franklin D. Roosevelt National Historic Site, 2006-2010.	18
Table 6. Index of Biotic Integrity for Marsh-Billings-Rockefeller National Historic Park, 2006-2010.....	22
Table 7. Index of Biotic Integrity for Minute Man National Historic Park, 2006-2010.....	26
Table 8. Index of Biotic Integrity for Morristown National Historical Park, 2006-2010.....	30
Table 9. Index of Biotic Integrity for Saint-Gaudens National Historic Site, 2007-2010.	34
Table 10. Index of Biotic Integrity for Saugus Iron Works NHS, 2008-2010.....	38
Table 11. Index of Biotic Integrity for forested study sites at Saratoga National Historical Park, 2006-2010.	42
Table 12. Index of Biotic Integrity for grassland study sites at Saratoga National Historical Park, 2006-2010	42
Table 13. Index of Biotic Integrity for Vanderbilt Mansion National Historical Site, 2006-2010.	46
Table 14. Index of Biotic Integrity for Weir Farm National Historical Site, 2006-2010.....	50

Acknowledgments

The success of the Northeast Temperate Network (NETN) Landbird Monitoring Program depends on the generosity of project volunteers, whose data were used to produce this report. We extend our sincere thanks to the 26 volunteers listed below, who crawled out of bed at ungodly hours, endured hordes of biting mosquitoes and black flies, and contributed their time, efforts, and expert birding skills.

Peg Ackerson*
Thom Almendinger
Tom Bjorkman*
Sherrie Downing
Pat Fitzgerald
Jason Forbes*
Ted Gaine*
Leda Beth Gray*
Lora Haller
Julie Hart
Dave Hayes*
Patrick Johnson
Scott Kruitbosch*
Andy Lamy*
Randolph Little*
Richard MacDonald
Kent McFarland*
Matthew Medler
Ben Olewine
Marne Onderdonk*
Kelly Perkins
James Restivo*
Tom Sharp*
Tim Spahr
Steve Smith*
Linda White*

* Indicates volunteers who conducted surveys in 2010

Introduction

The Northeast Temperate Network (NETN) of the National Park Service is tasked with monitoring a suite of representative indicators, called vital signs, of natural resource condition for 12 parks in seven northeastern states and the Appalachian NST. Breeding birds were chosen as one of the NETN vital signs because they are a reliable indicator of ecosystem integrity and they are a high profile taxonomic group. Many bird species are also easily detected and identified, and well-established survey methods are available. This report covers breeding landbird monitoring in 11 of the NETN parks (Figure 1).

The Northeast Temperate Network and the Vermont Center for Ecostudies (VCE) began monitoring breeding landbirds in most network parks in 2006, using volunteer birders to conduct point count surveys. On a broad scale, all 11 parks are located within the temperate deciduous forest biome. At a finer scale, the parks range across four Bird Conservation Regions (BCRs) (Figure 1). Bird Conservation Regions, developed by the North American Bird Conservation Initiative (NABCI 2000), are ecologically defined units that provide a consistent spatial framework for bird conservation across North American landscapes. By employing broad scale units that are ecologically meaningful to bird populations, conservation efforts can be tailored to support groups of species throughout the heart of their ranges. Bird Conservation Regions are being used to help assign “conservation priority” scores for bird species. Each BCR has its own unique list of “priority” species ranked by conservation importance according to a standardized set of criteria.

This report summarizes data collected from 2006 through 2010. As we accumulate more years of data, we plan to expand this report to incorporate more interpretation of the results. In addition, readers should treat the ecological integrity assessment results as provisional. There are two reasons for this: 1) the assessment assumes that the bird community is completely characterized, and if a subset of species are rare and hard to detect, the results could be biased; and 2) many NETN parks have a primary mandate to manage for the historical landscape rather than biological integrity or ecosystem structure and function; thus, management action may not always be warranted when guilds are rated “significant concern.” In an attempt to better characterize the bird community at each park and reduce bias, this year the assessment results presented for each park were produced by combining data from all survey years at a given park (up to 5 years of data). In the future, we plan to work with park managers to produce a parallel assessment based on park management goals.

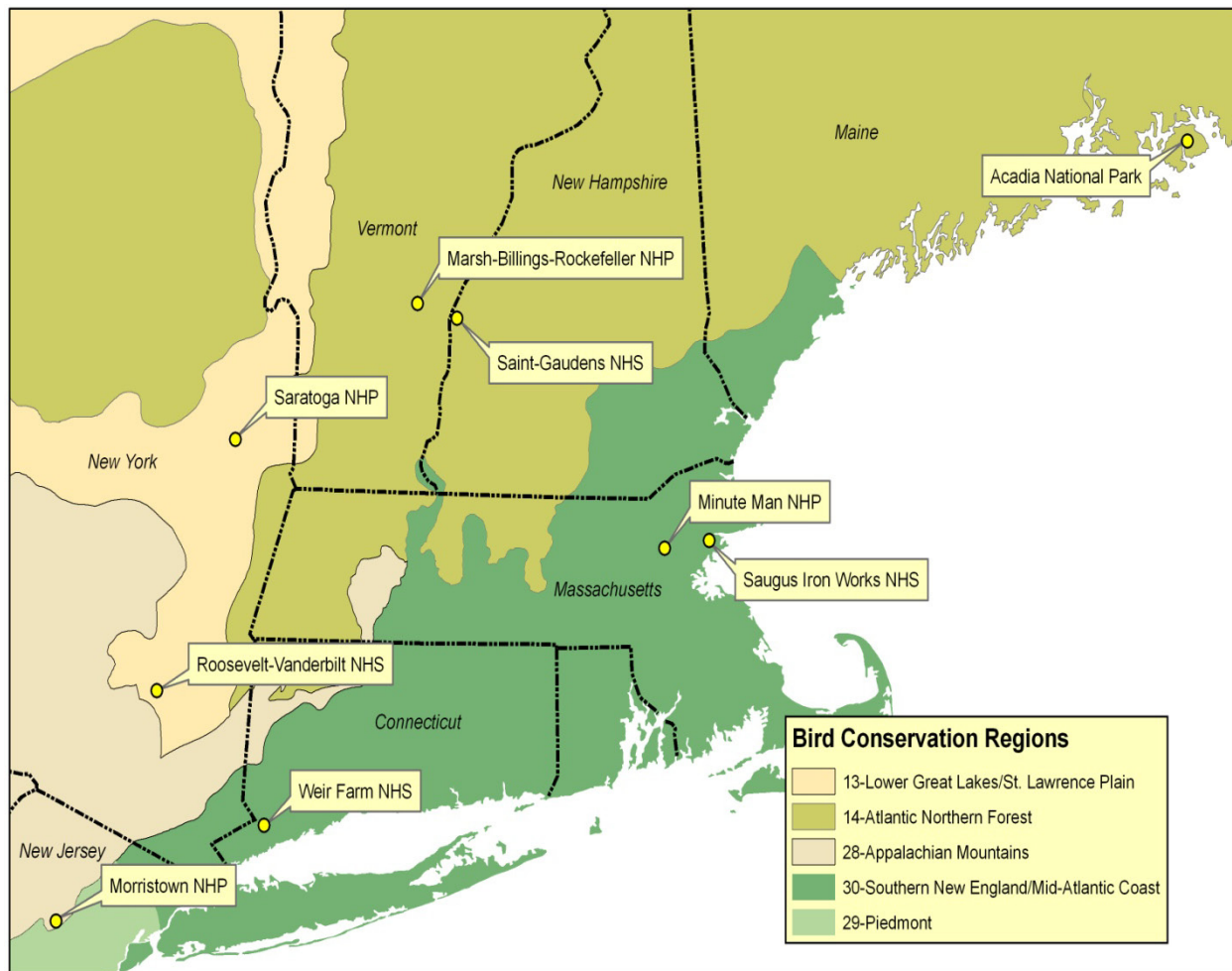


Figure 1. Northeast Temperate Network parks where the breeding bird monitoring protocol is being implemented and their associated Bird Conservation Regions. Roosevelt-Vanderbilt National Historical Sites includes Eleanor Roosevelt, Home of Franklin D. Roosevelt, and Vanderbilt Mansion National Historic Sites.

Methods

Depending on size and habitat, each park contains one or more study sites and each study site contains 3-12 point count locations, each separated by approximately 250 m. Volunteer birders visit each point at least once per year between late May and June; parks with fewer than 10 point count locations are visited multiple times. Volunteers record the species of each individual they detect, the time during the count when each individual is first detected, and the distance band within which each individual was first detected (0-10 m, 10-25 m, 25-50 m, and > 50 m). The data are recorded on field cards and input into the United States Geological Survey (USGS) Point Count Database, which was first used for archiving data in 2007. Data from 2006 surveys were incorporated into the USGS Point Count Database during 2009, and results from that year have been included in this report.

Birders are recruited through park staff, local birding groups, and word of mouth. Each volunteer takes a bird identification quiz on the Vermont Center for Ecostudies web site, and is expected to spend time practicing distance estimation and getting familiar with their route prior to their survey. For quality control and training purposes, the project manager travels to one park each year and conducts side-by-side observations with a birder. NETN is also working with partners to develop a birder certification web site that provides training tools and testing in visual and auditory bird identification.

Avian Ecological Integrity Assessment

Included in this summary is an assessment of the ecological integrity of the forest breeding bird community at each park and the grassland bird community at Saratoga National Historical Park based on an assemblage of behavioral and physiological response guilds (i.e., groups of species that require similar habitat, food, or other elements for survival). Such an assessment will help elucidate changes in a broader, landscape context and indicate in which direction breeding bird habitat at the park may be moving along a disturbance gradient from “highly disturbed” or “urban,” to “pristine” or “natural.”

The forest breeding bird guild-based avian ecological integrity assessment consists of 13 guilds in eight guild categories, with each guild being broadly categorized as “specialist” or “generalist.” A specialist is a species with a narrow range of habitat tolerances, or one that exhibits a low intrinsic rate of population growth. The presence of a variety of specialist guilds indicates a high-integrity habitat condition, while a preponderance of generalist guilds indicates a low-integrity condition.

To calculate the avian ecological integrity assessment, species are first assigned to guilds (some species may be assigned to more than one guild, depending on their life history traits). The proportional species richness of each guild is then calculated by dividing the number of guild members detected by the total number of species detected. For forest breeding birds, this value is then used to determine a rank of Good, Caution, or Significant Concern based on the proportional species richness thresholds and ranks listed in Table 1. “Good” represents acceptable or desired conditions; “Caution” indicates a problem may exist; “Significant concern” indicates undesired conditions that may be in need of management actions. For grasslands at Saratoga National Historical Park, we have also developed a grassland avian ecological integrity assessment, based on a small number of guilds relevant to grasslands (Table 2).

The thresholds and ranks for forest breeding birds are largely based on those derived by O’Connell et al. (2000) for birds in forested habitats in the central Appalachians, and from those derived by Glennon and Porter (2005) for New York’s Adirondack State Park. The thresholds and ranks for grassland birds were derived from Browder et al. (2002) and Coppedge et al. (2006). This is a first attempt at applying this assessment; threshold values may need to be adjusted by bioregion, forest type, or BCR, and may also be refined over time. In addition, within any given year some guild members are likely missed during surveys, so assessment results based on only one year of data may not be accurate. We have attempted to rectify this problem by presenting an assessment based on all available data (up to 5 years) for each park. Where 3 to 5 years of data were used, it is likely that the assessment results provide an accurate picture of the ecological health of the forest bird community. We recognize that the assessment is based on ecological criteria, and that park management goals may not seek to attain “ecological integrity.” A management assessment could be developed by park staff and NETN scientists that would reflect progress towards avian and ecological management goals for individual parks.

For more information about the Avian Ecological Integrity Assessment, as well as project methodologies, sampling scheme, etc., see the Breeding Landbird Monitoring Protocol (Faccio et al. 2010), available at the NPS Northeast Temperate Network website at http://science.nature.nps.gov/im/units/NETN/monitor/flashmo_220_nature/monitor_flash.cfm (click on “Breeding Landbirds”). The Google Earth Park Maps webpage (accessible through the

leftmost suite of menu choices on NETN's homepage) also contains bird point count locations for all participating NETN park units.

Table 1. Forest Avian Ecological Integrity Ranks for 13 response guilds and proportional species richness thresholds (based on O'Connell et al. 2000, and Glennon and Porter 2005)

Biotic Integrity Element	Response Guild Metric (Percent Species Richness)	Ratings		
		Good	Caution	Significant Concern
Compositional:	Exotic Species	0%	0.5 - 7%	> 7%
	Nest Predators/Brood Parasite	< 10%	10 - 15%	> 15%
	Residents	< 28%	28 - 41%	> 41%
	Single Brooded	> 68%	50 - 68%	< 50%
Functional:	Bark Prober	> 11%	4 - 11%	< 4%
	Ground Gleaner	> 9%	4 - 9%	< 4%
	High Canopy Forager	> 12%	7 - 12%	< 7%
	Low Canopy Forager	> 22%	14 - 22%	< 14%
	Omnivore	< 30%	30 - 50%	> 50%
Structural:	Canopy Nester	> 35%	29 - 35%	< 29%
	Forest-ground Nester	> 18%	5 - 18%	< 5%
	Interior Forest Obligate	> 35%	10 - 35%	< 10%
	Shrub Nester	< 18%	18 - 24%	> 24%

Table 2. Grassland Avian Ecological Integrity Ranks for four response guilds and proportional species richness thresholds (based on Browder et al. 2002, and Coppedge et al. 2006).

Response Guild Metric (Percent Species Richness)	Ratings		
	Good	Caution	Significant Concern
Edge generalist species	< 20%	20 - 50%	> 50%
Shrub-dependant species	< 10%	10 - 25%	> 25%
Grassland obligate species	> 10%	5 - 10%	< 5%
Exotic species	0%	> 0 - 3%	> 3%

Results by Park

Acadia National Park (Maine)

A total of 51 point count locations in seven study sites were established in 2007 at Acadia National Park (ACAD) in Maine (Figure 2). Of these, five of the six sites on Mt. Desert Island (MDI) and the one on the Schoodic Peninsula have been surveyed at least once since 2007. On MDI, point counts were conducted at two sites, Seal Cove East (n = 7 points) and Seal Cove Center (n = 6 points), during 2007-2010, at one site, Giant Slide Trail (n = 10 points), during 2007-2009, and at two sites, Witch Hole Pond (n = 9 points) and Youngs Mountain (n = 7 points), in 2009. Seal Cove West (n = 6 points) has yet to be surveyed. The Schoodic Peninsula site (n = 6 points) was surveyed in 2007 and 2010.

During 2010 surveys, observers detected a total of 507 birds of 40 species (38 point counts), compared to 522 of 41 species (52 point counts) in 2009, 333 of 33 species (36 point counts) in 2008, and 269 of 39 species (28 point counts) in 2007. The totals include detections from repeat site visits within a year and may include some double-counted individuals. Sixty total species were recorded over the 4 years of monitoring, including one (Yellow-Bellied Sapsucker) which was detected only on a repeat site visit to Seal Cove East in 2008. The number of birds detected per point on only the first site visit in a given year provides a better estimate of abundance than the total number of detections (which can vary with the number of sites and number of surveys). Average abundance during the first site survey increased from 10.6 birds per point in 2009 to 11.7 birds per point in 2010. Four species of regional conservation concern were detected during the surveys: Boreal Chickadee, Wood Thrush, Blackpoll Warbler, and Eastern Towhee.

Appendices A and B detail the species and relative abundances found throughout the park and at each site during the first survey of each year, plus additional summary statistics. Among the 10 most abundant species detected at all sites combined, four species (American Crow, Red-breasted Nuthatch, Black-throated Green Warbler, and Dark-eyed Junco) were recorded at their highest levels in 2010, while three species (Mourning Dove, Blue-headed Vireo, and Ovenbird) were recorded at their lowest levels (Figure 3).

The park-wide forest avian ecological integrity assessment for all years combined at Acadia National Park resulted in five categories ranked as “Good,” eight ranked as “Caution,” and none ranked as “Significant Concern,” indicating that the forest bird community appears to be doing well (Table 3). The assessment has also been calculated for each study site, and these results are in Appendix C.

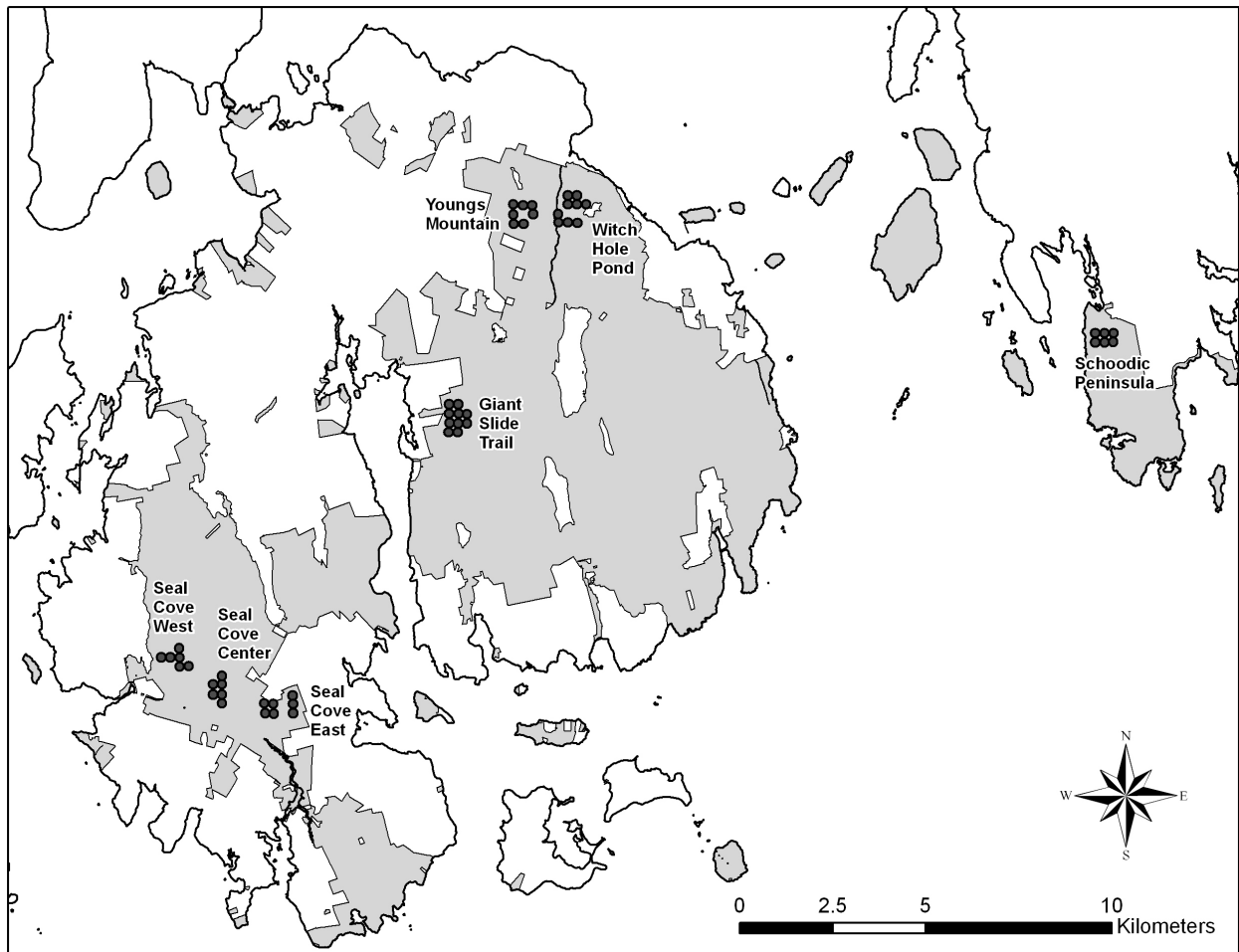


Figure 2. Point count locations at Acadia National Park, Mt. Desert Island and Schoodic Peninsula.

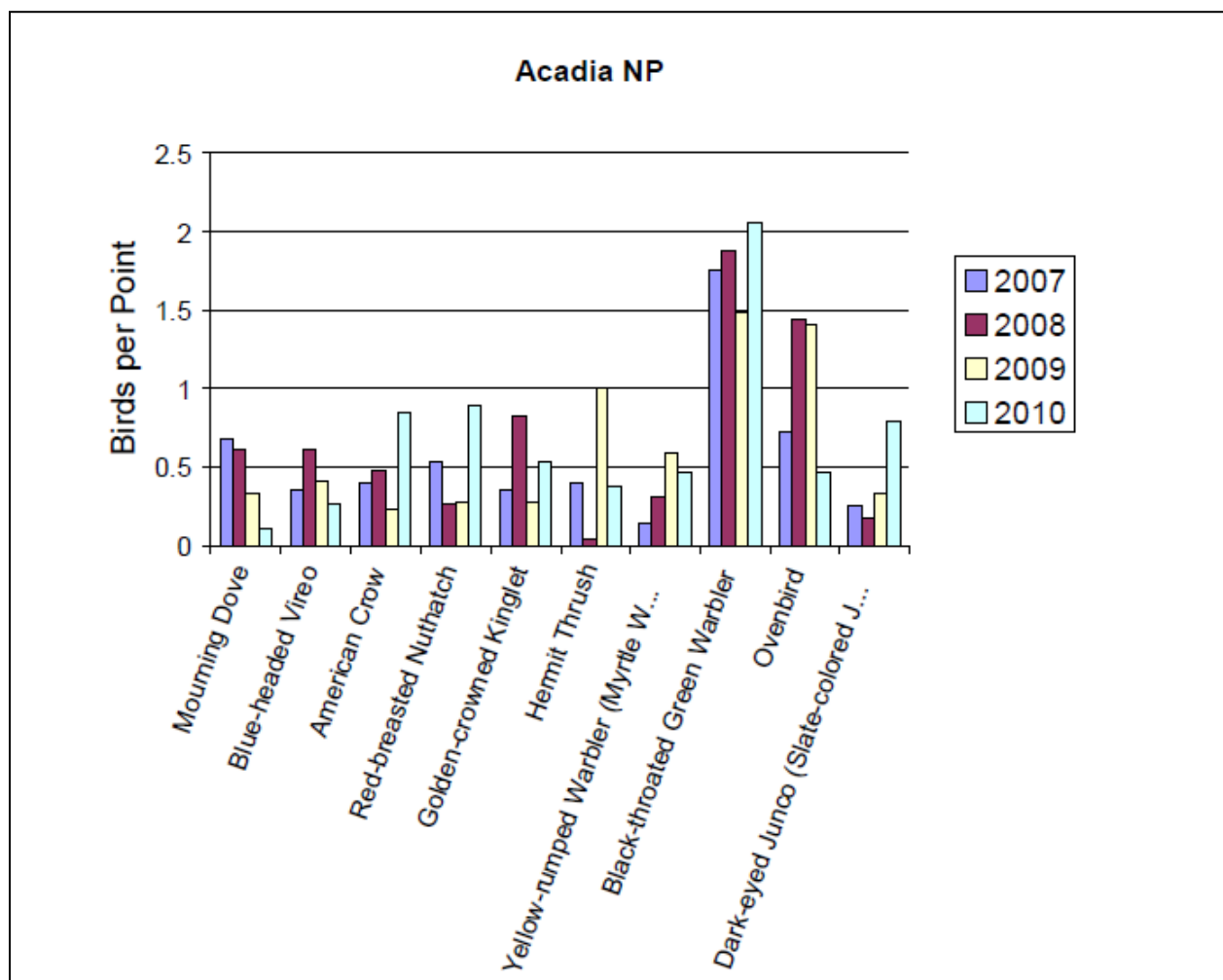


Figure 3. Relative abundance of the 10 most common species detected at Acadia National Park, 2007-2010; Mt. Desert Island and Schoodic Peninsula sites.

Table 3. Forest Avian Ecological Integrity Assessment for Acadia National Park, 2007-2010.

Acadia NP

2007 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	27%	Good
Single Brooded	52%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	12%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	22%	Caution
Omnivore	30%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	32%	Caution
Forest-ground Nester	15%	Caution
Interior Forest Obligate	38%	Good
Shrub Nester	22%	Caution

Eleanor Roosevelt National Historic Site (New York)

The Roosevelt-Vanderbilt National Historic Sites (ROVA) consist of three separate park units at which study sites were established in 2006 and surveyed annually. The one study site at Eleanor Roosevelt National Historic Site (ELRO) originally consisted of six point counts, but five additional sampling points were added for the 2007 field season, increasing the total to 11 point counts (Figure 4).

During 2010, a total of 93 individuals of 22 species were detected, compared to 93 individuals of 25 species in 2009, 82 individuals of 23 species in 2008, 113 individuals of 28 species in 2007, and 63 individuals of 19 species in 2006. Eleven point counts were conducted each year, except for 2006 when six point counts were conducted. In total, 41 species were recorded during the 5 years, and there was an average abundance of 9.0 birds per point. While relative abundance remained the same in 2010 (compared with 2009), fewer species were detected resulting in a lower Shannon Diversity Index. A total of four species of conservation concern were detected during surveys at ELRO: Eastern Wood-Pewee, Wood Thrush, Worm-eating Warbler, and Baltimore Oriole. A list of species, their relative abundances, and other summary statistics are provided in Appendix A. Red-eyed Vireo, Wood Thrush, Tufted Titmouse, and Northern Cardinal continue to be the most commonly detected species across all years (Figure 5).

The park-wide forest avian ecological integrity assessment for all years combined at ELRO resulted in three categories ranked as “Good,” seven ranked as “Caution,” and three ranked as “Significant Concern” (Table 4). Among the categories ranked as “Significant Concern” were “single brooded,” a guild that represents long-distance Neotropical migrants that only have time to raise one brood of chicks, and “low canopy foragers,” which specialize in feeding in the forest sub-canopy. A low proportion of single brooded species may be indicative of the park’s location within a fragmented landscape, while a lack of low canopy foragers may reflect poor structural diversity within the forest, perhaps due to a deer over-browse problem.

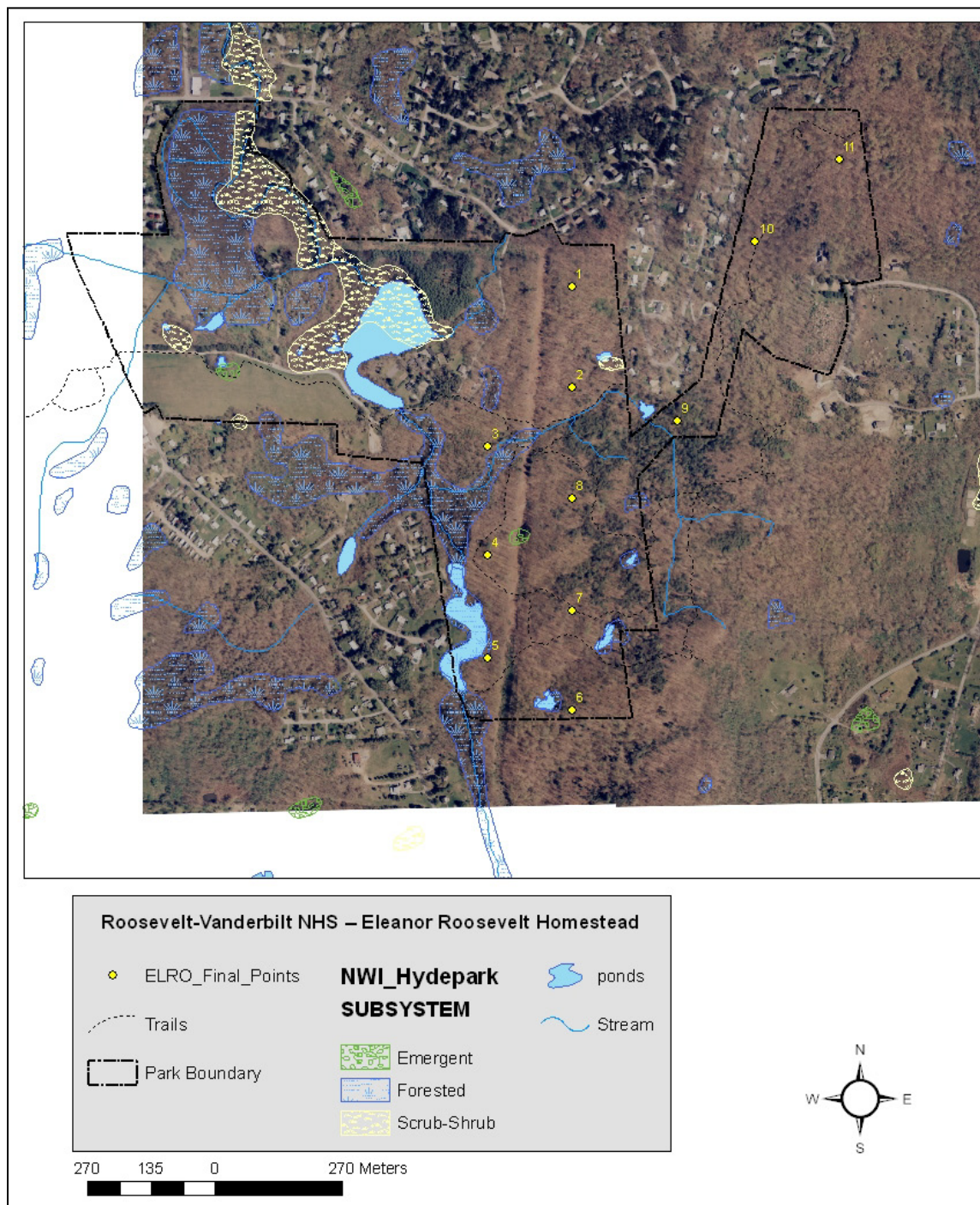


Figure 4. Point count locations at Eleanor Roosevelt National Historic Site.

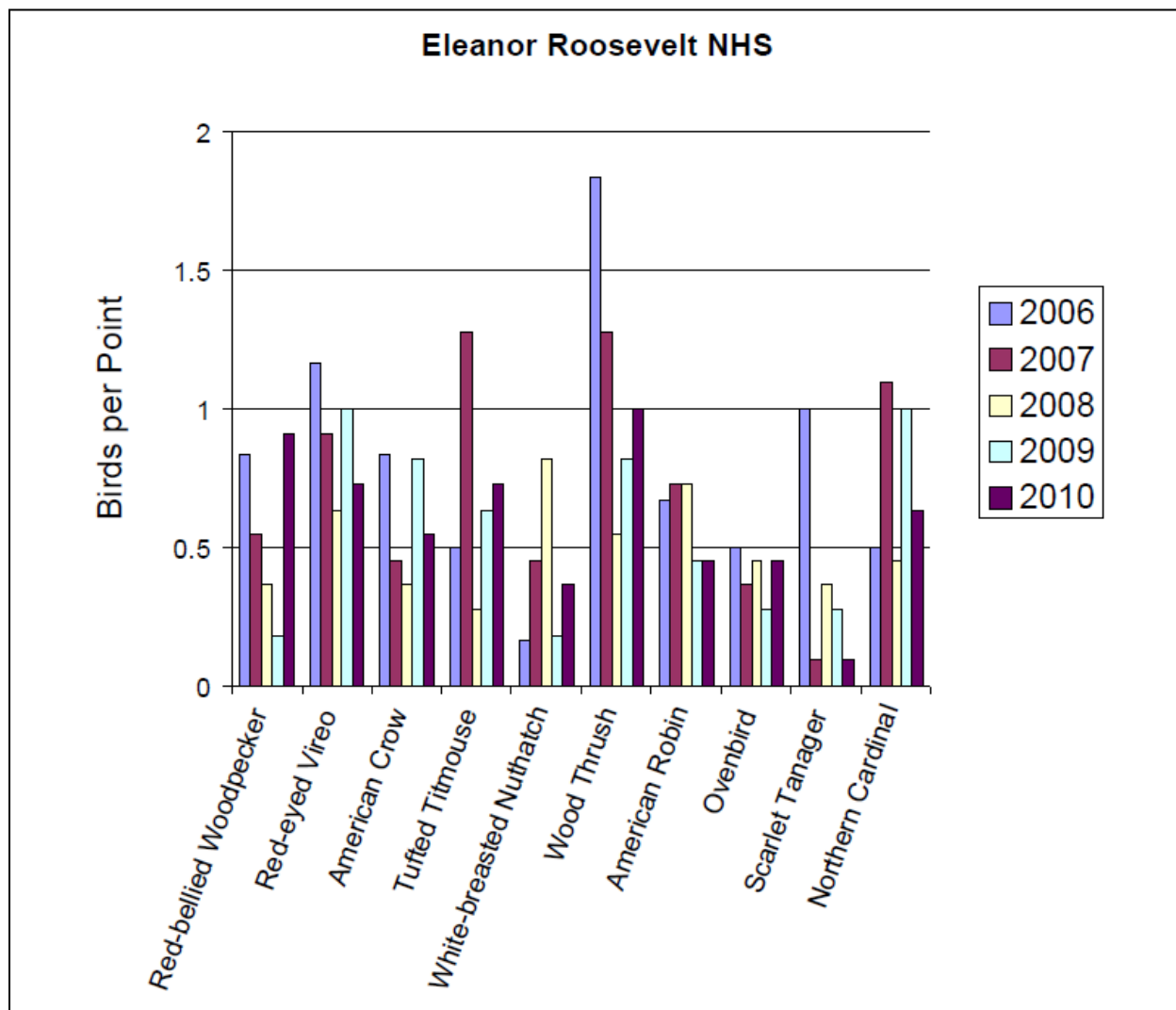


Figure 5. Relative abundance of the 10 most common species at Eleanor Roosevelt National Historic Site, 2006-2010.

Table 4. Forest Avian Ecological Integrity Assessment for Eleanor Roosevelt National Historic Site, 2006-2010.

Eleanor Roosevelt NHS

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	34%	Caution
Single Brooded	41%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	15%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	7%	Caution
Low Canopy Forager	10%	Sig Concern
Omnivore	37%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	22%	Sig Concern
Forest-ground Nester	10%	Caution
Interior Forest Obligate	22%	Caution
Shrub Nester	20%	Caution

Home of Franklin D. Roosevelt National Historic Site (New York)

The Roosevelt-Vanderbilt National Historic Sites (ROVA) consist of three separate park units at which study sites were established in 2006 and surveyed annually. One study site with 12 point count locations was established at the Home of Franklin D. Roosevelt National Historic Site (HOFR) (Figure 6) and surveyed in all years except 2009.

A total of 91 individual birds of 23 species were detected in 2010, 83 of 23 species in 2008, 101 of 29 species in 2007, and 94 of 25 species in 2006. Twelve point counts were conducted each year. In total, 40 species were recorded, and there was an average abundance of 7.7 birds per point. Compared to 2008, relative abundance increased in 2010, while species richness held steady. Four species of conservation concern were detected during the four survey years: Eastern Wood-Pewee, Wood Thrush, Worm-eating Warbler, and Baltimore Oriole. A list of species, their relative abundances, and other summary statistics are provided in Appendix A. Tufted Titmouse, Red-eyed Vireo, and Wood Thrush were the most commonly detected species (Figure 7).

The park-wide forest avian ecological integrity assessment for all years combined at HOFR resulted in two categories ranked as “Good” and 10 ranked as “Caution” (Table 5). This represents a slight improvement over 2008 results when two categories (“single brooded” and “low canopy foragers”) were ranked as “Significant Concern.”

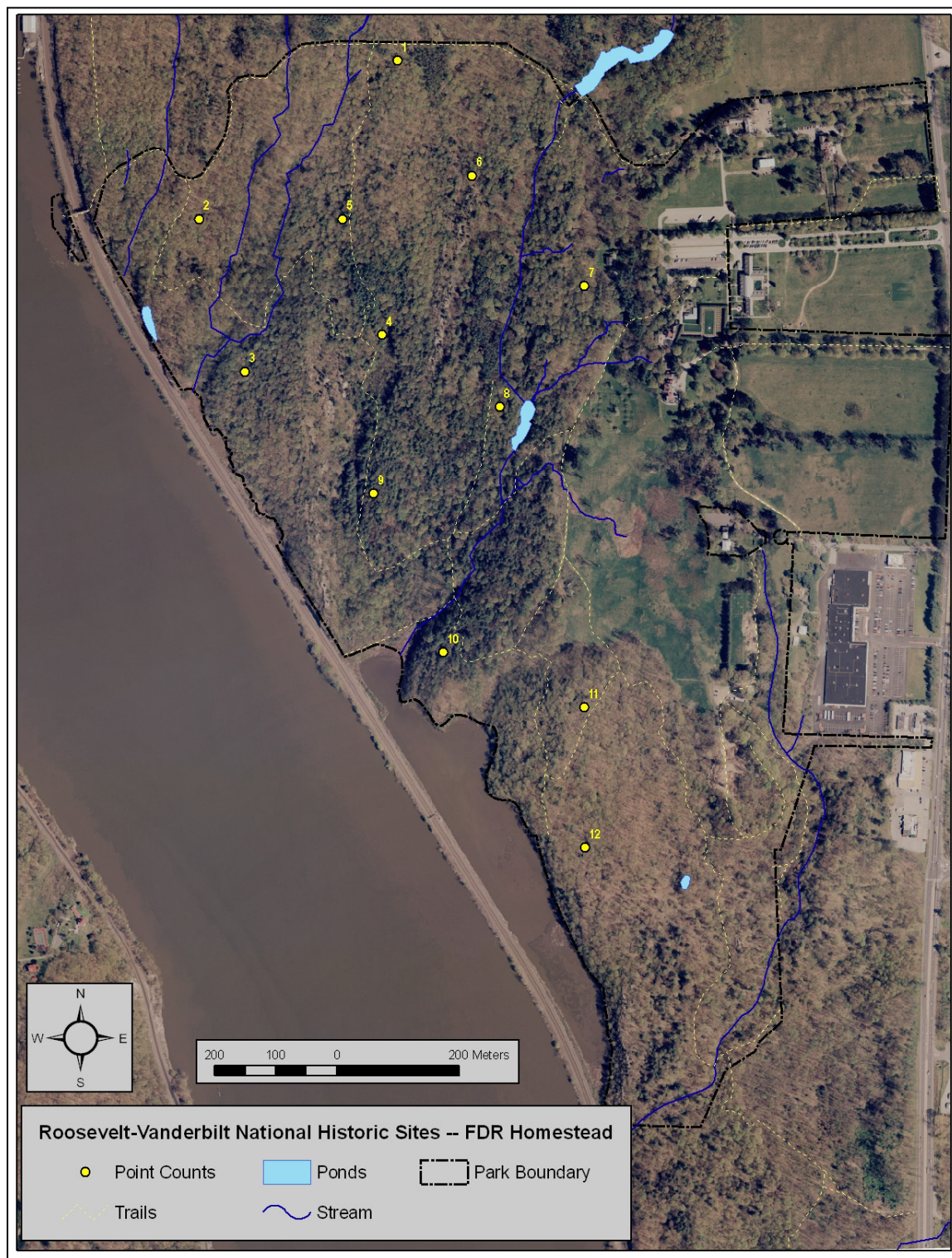


Figure 6. Point count locations at the Home of Franklin D. Roosevelt National Historic Site.

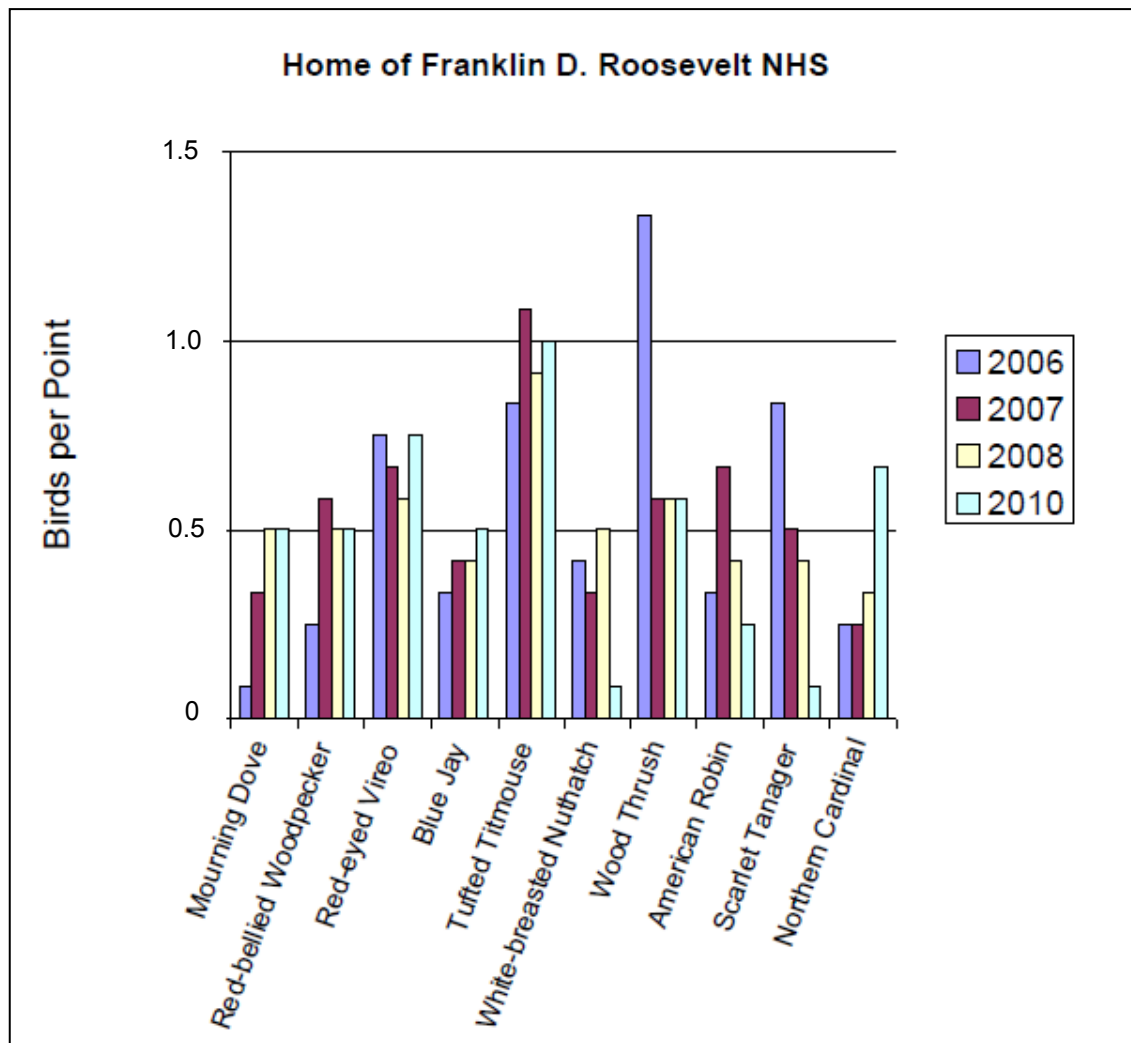


Figure 7. Relative abundance of the 10 most common species detected at the Home of Franklin D. Roosevelt National Historic Site, 2006-2010.

Table 5. Forest Avian Ecological Integrity Assessment for the Home of Franklin D. Roosevelt National Historic Site, 2006-2010.

Home of Franklin D. Roosevelt NHS

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Caution
Resident	38%	Caution
Single Brooded	50%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	15%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	15%	Caution
Omnivore	30%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	30%	Caution
Forest-ground Nester	8%	Caution
Interior Forest Obligate	23%	Caution
Shrub Nester	20%	Caution

Marsh-Billings-Rockefeller National Historical Park (Vermont)

Three forested study sites were established at the Marsh Billings-Rockefeller National Historical Park (MABI) and surveyed annually since 2006. Two of these sites (MABI Northwest and MABI East) consist of 10 point counts each, and one site (MABI South) consists of five point counts (Figure 8). In 2007, MABI South was surveyed twice, while in 2008, only five of the 10 point counts at MABI Northwest were completed due to inclement weather, although those five points were surveyed twice.

During 2010 surveys, observers detected a total of 315 birds of 35 species, compared to 336 of 35 species in 2009, 351 birds of 39 species in 2008, 407 of 48 species in 2007, and 368 birds of 42 species in 2006. Twenty-five point counts were conducted each year. The totals include detections from repeat site visits within a year and may include some double-counted individuals. Fifty-six total species were recorded over the 5 years of monitoring. The number of birds detected per point on only the first site visit in a given year provides a better estimate of abundance than the total number of detections (which can vary with the number of sites and number of surveys). Average abundance during the first site survey across all 5 years was 14.0 birds per point. In 2010, relative abundance (12.6 birds per point) and species richness was at a 5-year low. Two species of regional conservation concern have been detected during point count surveys: Wood Thrush (which have been detected every year) and Bobolink (a grassland species that was only detected in 2006 and 2007). A list of species, their relative abundances, and other summary statistics are provided in Appendices A and B. Ovenbird and Red-eyed Vireo were the most abundant species detected (Figure 9).

The park-wide forest avian ecological integrity assessment for all years combined at MABI resulted in five categories ranked as “Good,” eight ranked as “Caution,” and none ranked as “Significant Concern” (Table 6). It should be noted that 2 of the 3 Structural Response Guilds that were ranked as “Caution” (canopy nester and interior forest obligate) were less than 2 percentage points away from a “Good” rating, suggesting that the forest bird community is doing well at Marsh-Billings-Rockefeller National Historic Park. The assessment has also been calculated for each site, individually, and these results are provided in Appendix C.

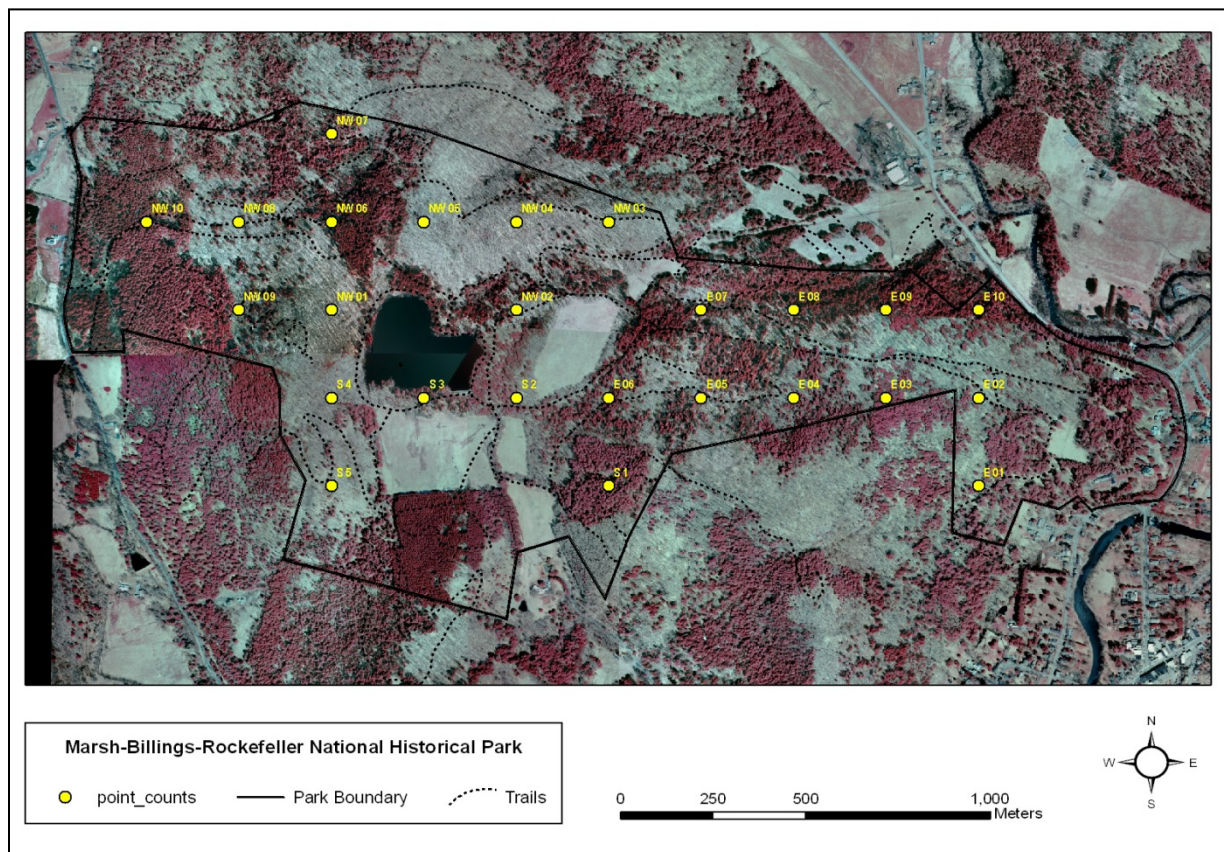


Figure 8. Point count locations at Marsh-Billings-Rockefeller National Historical Park.

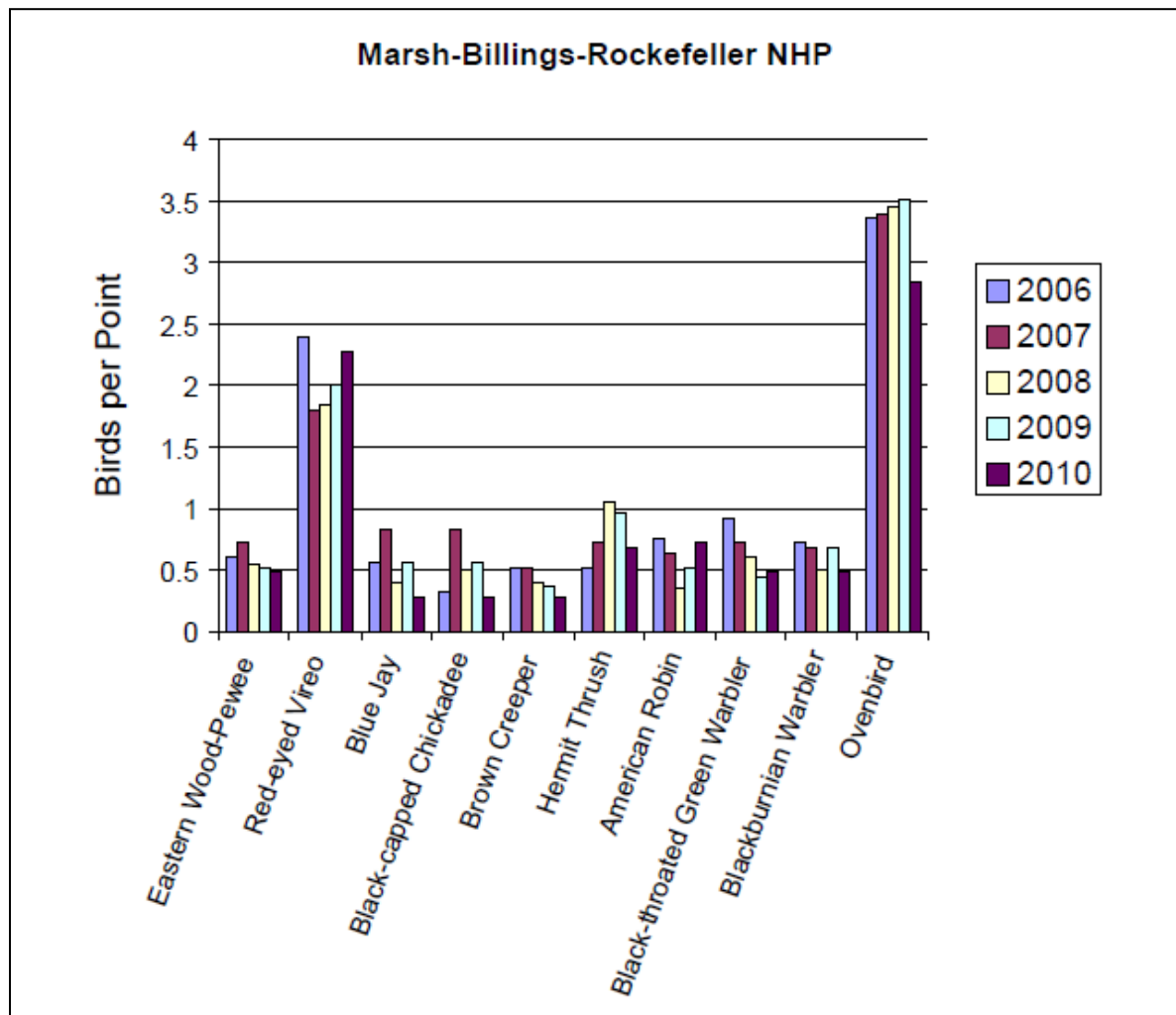


Figure 9. Relative abundance of the 10 most common species detected at Marsh-Billings-Rockefeller National Historic Park, 2006-2010.

Table 6. Forest Avian Ecological Integrity Assessment for Marsh-Billings-Rockefeller National Historic Park, 2006-2010.

Marsh-Billings-Rockefeller NHP

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	7%	Good
Resident	27%	Good
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	14%	Good
Ground Gleaner	9%	Caution
High Canopy Forager	7%	Caution
Low Canopy Forager	16%	Caution
Omnivore	32%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	34%	Caution
Forest-ground Nester	13%	Caution
Interior Forest Obligate	34%	Caution
Shrub Nester	18%	Good

Minute Man National Historical Park (Massachusetts)

Three study sites were established at the Minute Man National Historical Park (MIMA), located in Lexington and Concord, MA. Two of these sites (The Bluff and Miriam's Corner) consist of eight point counts each, and one site (Hartwell Tavern) consists of seven point counts (Figure 10). Both The Bluff and Hartwell Tavern have been surveyed annually since 2006, while Miriam's Corner has been surveyed every year except 2010. The Bluff was surveyed twice in 2007, 2008, and 2009.

During 2010 surveys, observers detected a total of 205 birds of 34 species (15 point counts), compared to 471 of 48 species (31 point counts) in 2009, 347 of 36 species (27 point counts) in 2008, 380 of 39 species (31 point counts) in 2007, and 269 of 42 species (23 point counts) in 2006. The totals include detections from repeat site visits within a year and may include some double-counted individuals. Fifty-eight total species were recorded over the 5 years of monitoring. The number of birds detected per point on only the first site visit in a given year provides a better estimate of abundance than the total number of detections (which can vary with the number of sites and number of surveys). Average abundance during the first site survey across all 5 years was 13.1 birds per point. In 2010, both total abundance (13.7 birds per point) and species richness (34) declined over 2009, but fewer points were surveyed in 2010. A total of 10 species of regional conservation concern were detected during the 5-survey years, including four species that were detected in all years (Eastern Wood-Pewee, Wood Thrush, Scarlet Tanager, and Rose-breasted Grosbeak). A list of species, their relative abundances, and other summary statistics for the first survey of each point are provided in Appendices A and B. Tufted Titmouse, American Robin, and Blue Jay were the most abundant species detected (Figure 11).

The park-wide forest avian ecological integrity assessment for all years combined at MIMA resulted in one category ranked as "Good," eight ranked as "Caution," and four ranked as "Significant Concern" (Table 7). While the only "Good" score was for the Nest Predator/Brood Parasite guild, "Significant Concern" scores were found in each of the three integrity elements. This result is not unexpected and is likely due to the urbanized and highly fragmented landscape of the park and surrounding area. The assessment has also been calculated for each site, and these results are in Appendix C.

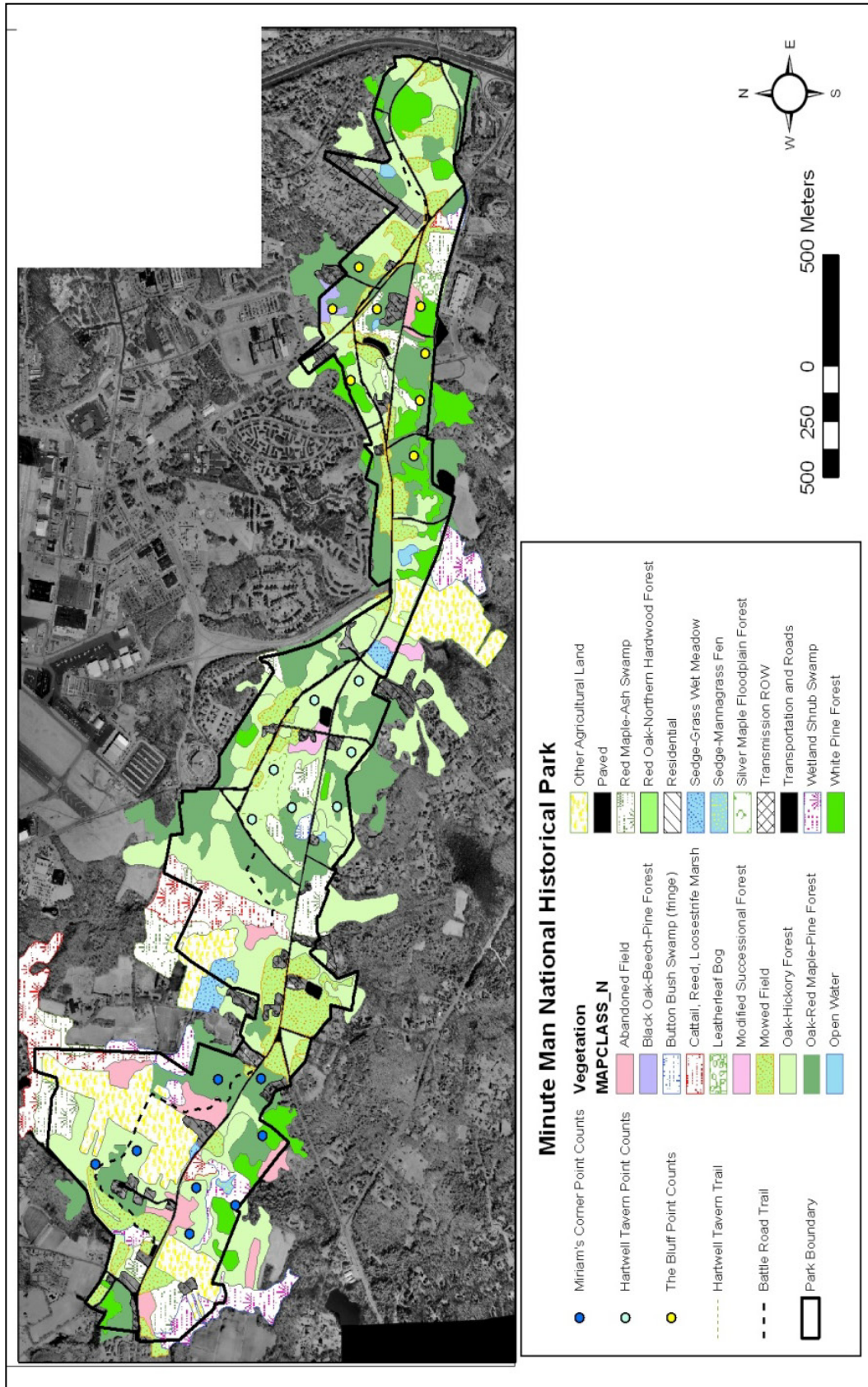


Figure 10. Point count locations at Minute Man National Historical Park.

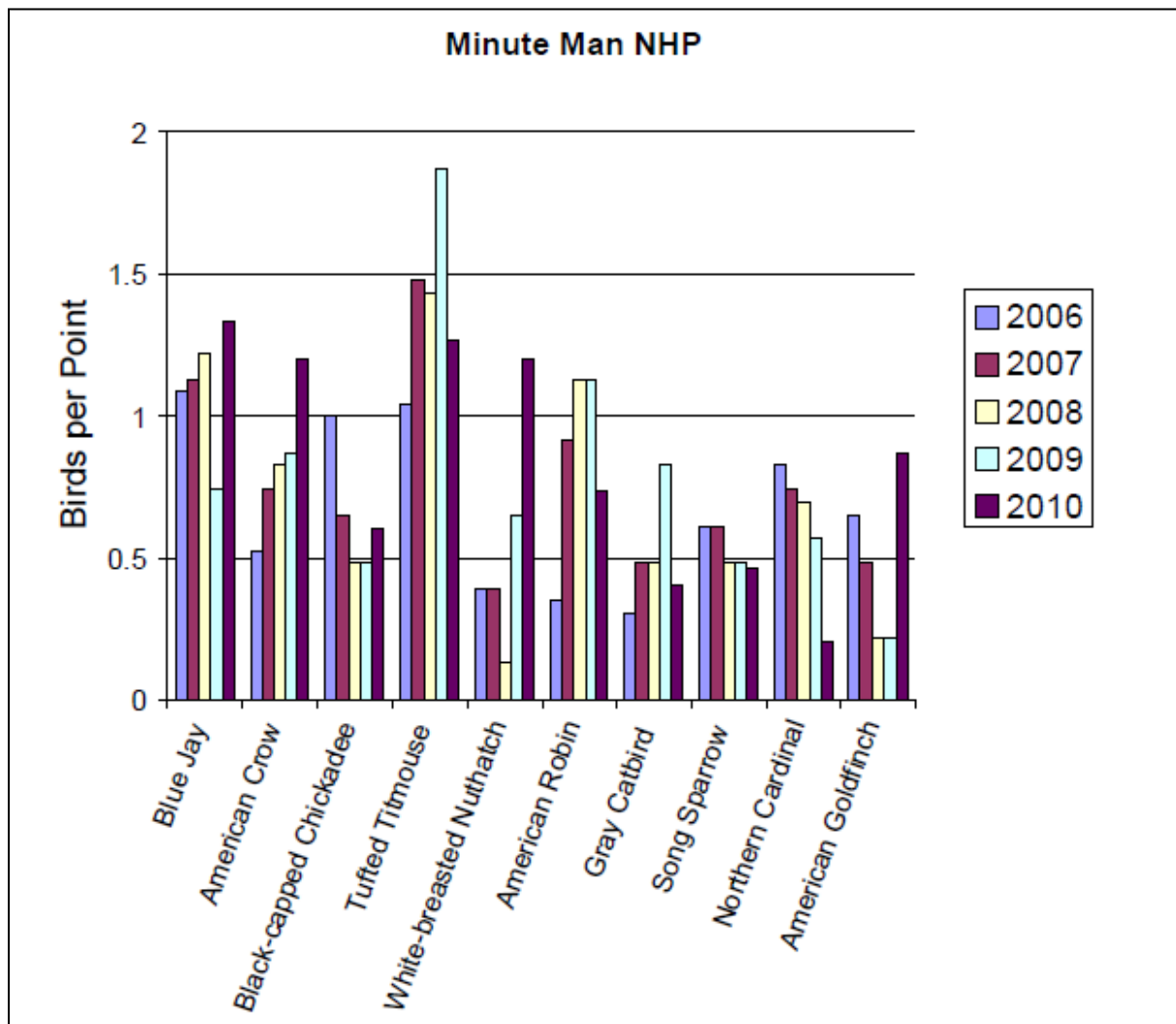


Figure 11. Relative abundance of the 10 most common species detected at Minute Man National Historical Park, 2006-2010.

Table 7. Forest Avian Ecological Integrity Assessment for Minute Man National Historical Park, 2006-2010.

Minute Man NHP

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	3%	Caution
Nest Predator / Brood Parasite	7%	Good
Resident	29%	Caution
Single Brooded	43%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	9%	Caution
Ground Gleaner	5%	Caution
High Canopy Forager	7%	Sig Concern
Low Canopy Forager	16%	Caution
Omnivore	34%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	24%	Sig Concern
Forest-ground Nester	5%	Caution
Interior Forest Obligate	14%	Caution
Shrub Nester	24%	Sig Concern

Morristown National Historical Park (New Jersey)

Three study sites were established at the Morristown National Historical Park (MORR). Two of the sites (Primrose Brook and Soldier's Huts) were surveyed in 2006 and 2007, two (Primrose Brook and Mt. Kemble) were surveyed in 2008 and 2009 and all three sites were surveyed in 2010. Primrose Brook and Mt. Kemble consist of 10 point counts each, while Soldier's Huts consists of nine point counts (Figure 12). Primrose Brook and Mt. Kemble were both surveyed twice in 2008 and 2009.

During 2010 surveys, observers detected a total of 441 birds of 39 species (29 point counts), compared to 416 of 36 species (40 point counts) in 2009, 442 of 36 species (40 point counts) in 2008, 263 of 36 species (19 point counts) in 2007, and 200 of 35 species (19 point counts) in 2006. The totals include detections from repeat site visits within a year and may include some double-counted individuals. A total of 53 species were recorded during the 4 survey years, including one (American Goldfinch) which was detected only on repeat site visits of Mt. Kemble in 2008 and 2009. The number of birds detected per point on only the first site visit in a given year provides a better estimate of abundance than the total number of detections (which can vary with the number of sites and number of surveys). Average abundance during the first site visit increased from 11.4 birds per point in 2009 to 15.2 birds per point in 2010. A total of eleven species of regional conservation concern were detected during the 5-survey years, including three species (Eastern Wood-Pewee, Wood Thrush, and Eastern Towhee) that were detected in all 5 years, and two (Acadian Flycatcher and Cerulean Warbler) which were detected for the first time in 2010. In addition, Eastern Wood-Pewee and Wood Thrush were among the 10 most abundant species detected (Figure 13). A list of species, their relative abundances, and other summary statistics from the first survey of each point are provided in Appendices A and B.

The park-wide forest avian ecological integrity assessment for all years combined at MORR resulted in three categories ranked as "Good," nine ranked as "Caution," and one ranked as "Significant Concern" (Table 8). While the "Significant Concern" metric was for canopy nesters, guilds within the structural and functional metrics were dominated by "Caution" ranks. This could be related to the low structural diversity throughout much of the park; the legacy of a high deer population which has resulted in very limited forest regeneration. The assessment has also been calculated for each site, and these results are provided in Appendix C.

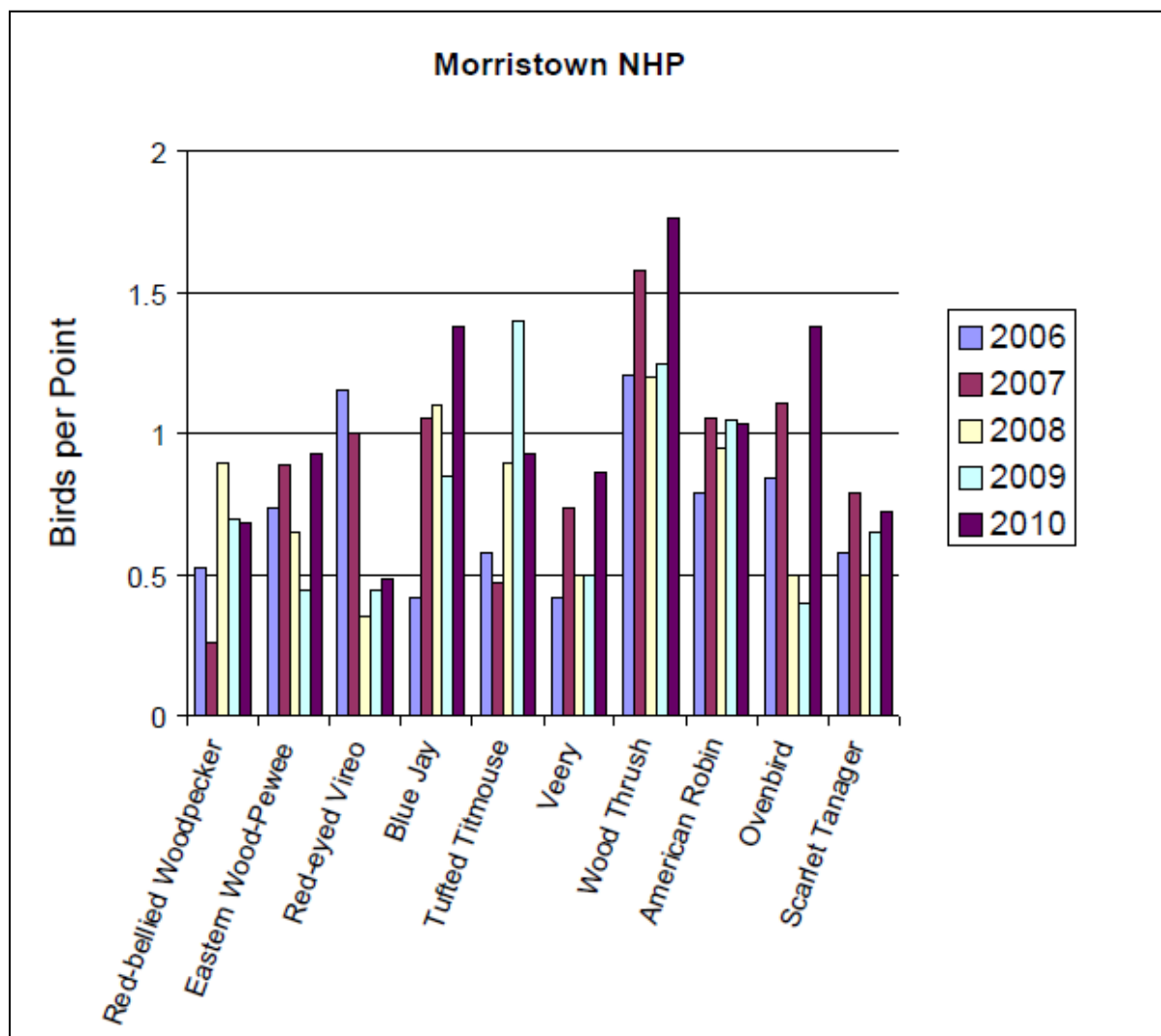


Figure 13. Relative abundance of the 10 most common species detected at Morristown National Historical Park, 2006-2010.

Table 8. Forest Avian Ecological Integrity Assessment for Morristown National Historical Park, 2006-2010.

Morristown NHP

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	28%	Caution
Single Brooded	55%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	11%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	9%	Caution
Low Canopy Forager	19%	Caution
Omnivore	32%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	28%	Sig Concern
Forest-ground Nester	15%	Caution
Interior Forest Obligate	34%	Caution
Shrub Nester	23%	Caution

Saint-Gaudens National Historic Site (New Hampshire)

Eight point counts (Figure 14) were established at Saint-Gaudens National Historic Site (SAGA), and surveyed annually since 2007. The park was surveyed twice in 2008, 2009, and 2010.

During 2010 surveys, observers detected a total of 215 birds of 39 species, compared to 211 of 33 species in 2009, 181 of 38 species in 2008, and 68 of 25 species in 2007. There were 16 point counts each year, except in 2007 when 8 point counts were conducted. The totals include detections from repeat site visits within a year and may include some double-counted individuals. A total of 53 species were recorded during the 4 survey years, including eight species that were only detected during repeat site visits in 2008, 2009, or 2010 (Solitary Sandpiper, Yellow-throated Vireo, Cedar Waxwing, Yellow-rumped Warbler, Swamp Sparrow, Downy Woodpecker, Red-bellied Woodpecker, and Black-throated Blue Warbler). The number of birds detected per point on only the first site visit in a given year provides a better estimate of abundance than the total number of detections (which can vary with the number of sites and number of surveys). Average abundance during the first site survey was 11.1 birds per point. In 2010, both relative abundance and species richness during the first survey (Appendix A) increased from the previous year, and included the detection of three new species (Wild Turkey, Brown Creeper, and Slate-colored Junco). Three species of regional conservation concern were detected during the surveys: Belted Kingfisher, Willow Flycatcher, and Wood Thrush. A list of species, their relative abundances, and other summary statistics from the first survey of each point are provided in Appendix A. The most commonly detected species were Ovenbird and Red-eyed Vireo (Figure 15).

The park-wide forest avian ecological integrity assessment for all years combined at SAGA resulted in six categories ranked as “Good,” and six ranked as “Caution,” and one “Significant Concern” (Table 9). Overall, composition metrics were generally “Good,” while function and structural guilds were largely “Caution.” The predominance of “Caution” ratings for structure and function might warrant further exploration. This pattern tends to occur at parks without much understory structure and diversity, and is often associated with ungulate (in this case most likely white-tailed deer) over-browsing.

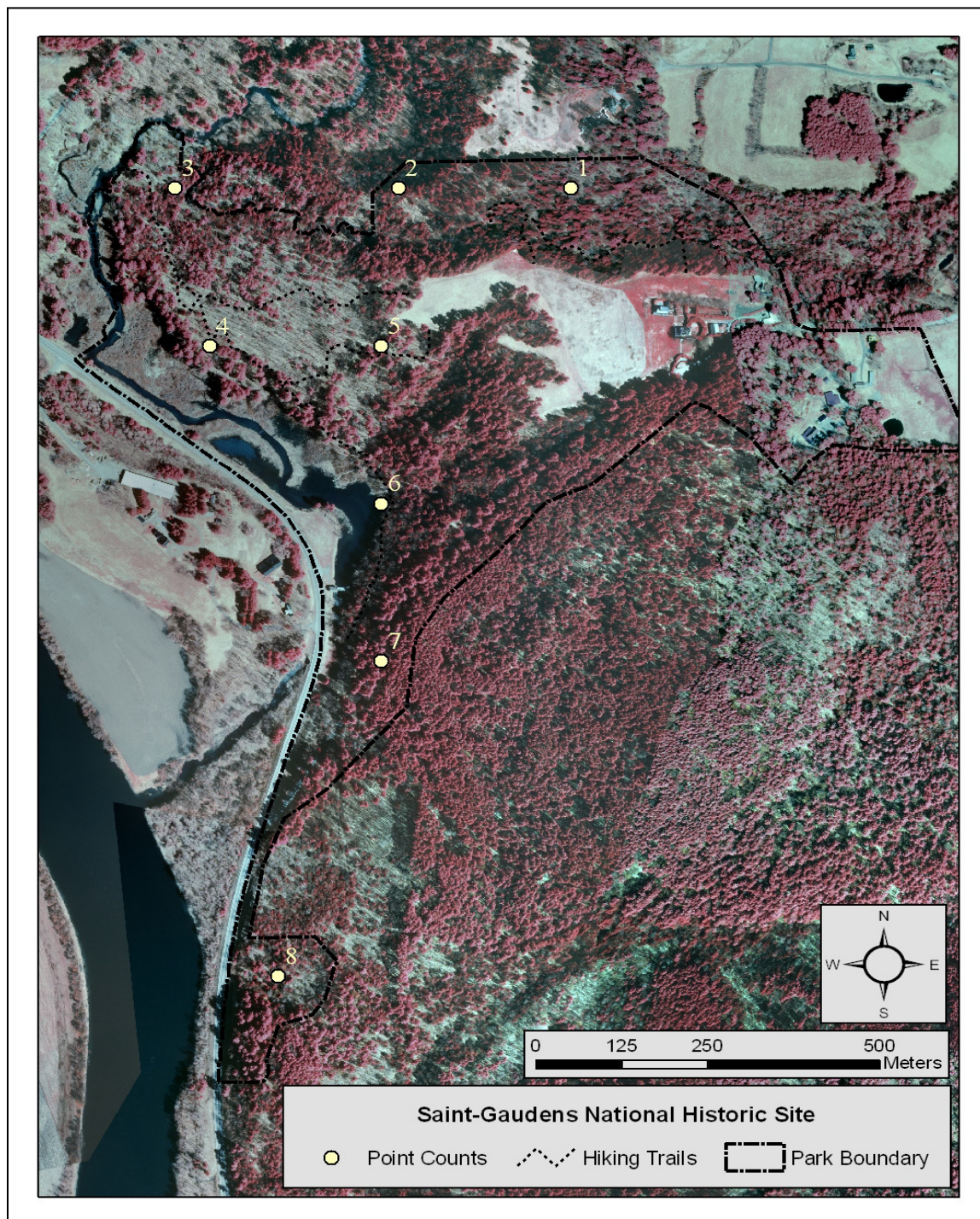


Figure 14. Point count locations at Saint-Gaudens National Historic Site.

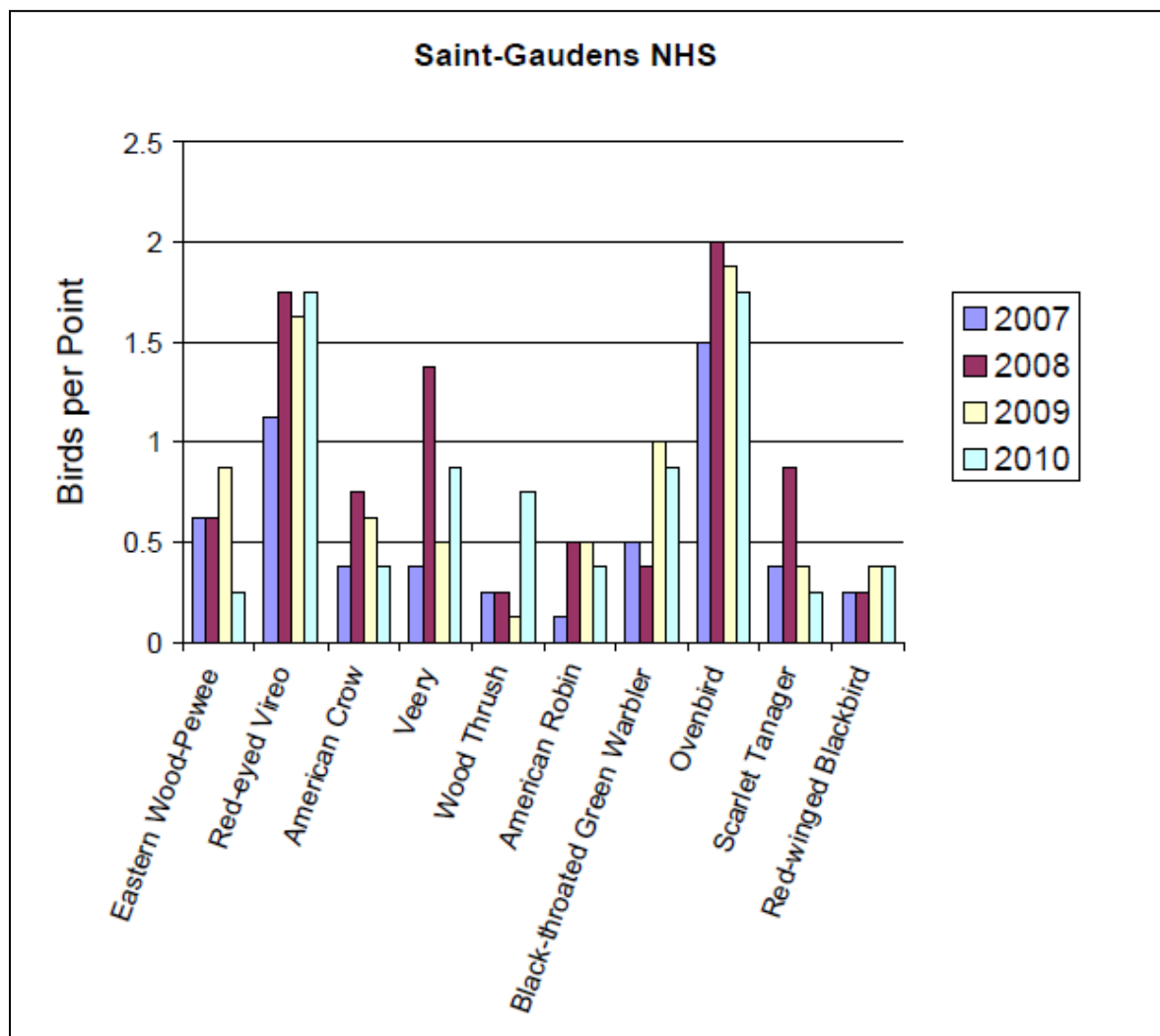


Figure 15. Relative abundance of the 10 most common species detected at Saint-Gaudens National Historic Site, 2007-2010.

Table 9. Forest Avian Ecological Integrity Assessment for Saint-Gaudens National Historic Site, 2007-2010.

Saint-Gaudens NHS

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	4%	Good
Resident	25%	Good
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	17%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	17%	Caution
Omnivore	28%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	28%	Sig Concern
Forest-ground Nester	15%	Caution
Interior Forest Obligate	36%	Good
Shrub Nester	23%	Caution

Saugus Iron Works National Historic Site (Massachusetts)

Three point counts were established in 2008 at Saugus Iron Works National Historic Site (SAIR) in Saugus, MA (Figure 16). A single survey of these three point counts was conducted during June 2008, while three surveys were conducted in 2009, and two in 2010. Due to the limited number of point counts at SAIR, multiple visits are encouraged to increase sample size.

During 2010 surveys, observers detected a total of 103 individual birds of 29 species (six point counts), compared to 151 of 33 species (nine point counts) in 2009, and just 35 individuals of 21 species (3 point counts) during the single survey in 2008. The totals include detections from repeat site visits within a year and may include some double-counted individuals. A total of 40 species have been detected at the park during the 3 years, including seven that were observed only during the repeat site surveys in 2009 (Great-Blue Heron, Great Egret, Greater Black-backed Gull, Killdeer, Brown-headed Cowbird, Black-capped Chickadee, and Carolina Wren). The number of birds detected per point on only the first site visit in a given year provides a better estimate of abundance than the total number of detections (which can vary with the number of surveys). Average abundance during the first site visit was 15.8 birds per point. In 2010, relative abundance and species richness for the first survey increased from the previous year, thanks in part to the detection of seven new species (Canada Goose, Red-tailed Hawk, Spotted Sandpiper, Eastern Kingbird, Warbling Vireo, House Wren, and Yellow Warbler). Three species of conservation concern (Chimney Swift, Eastern Kingbird, and Baltimore Oriole) and three non-native species (Rock Pigeon, European Starling, and House Sparrow) were detected. Appendix A contains a list of the species detected, relative abundance, and other summary statistics from the first survey of each point. Mallard, Song Sparrow, and Red-winged Blackbird were the most commonly detected species (Figure 17).

The park-wide forest avian ecological integrity assessment for all 3 years combined at SAIR resulted in five categories ranked as “Caution” and eight ranked as “Significant Concern” (Table 10). These results are not surprising considering the heavily urbanized location of this small park and the fact that the tool was developed to assess the breeding bird community of interior forests.



Saugus Iron Works National Historic Site

● Bird Monitoring Point Count Locations

0 125 Meters



Figure 16. Point count locations at Saugus Iron Works National Historic Site.

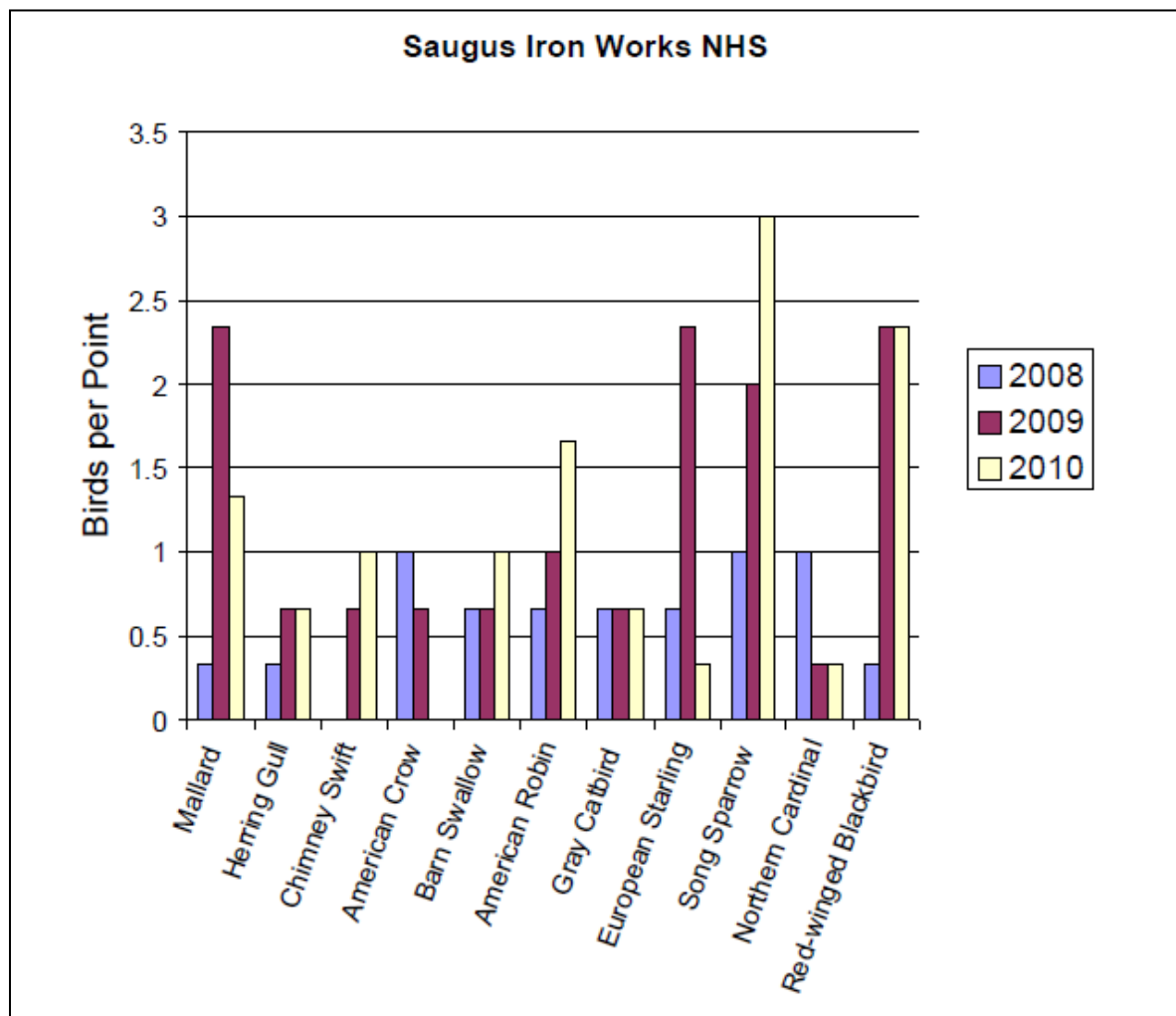


Figure 17. Relative abundance of the 11 most common species detected at Saugus Iron Works National Historic Site, 2008-2010.

Table 10. Forest Avian Ecological Integrity Assessment for Saugus Iron Works National Historic Site, 2008-2010.

Saugus Iron Works NHS

2008 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	8%	Sig Concern
Nest Predator / Brood Parasite	10%	Caution
Resident	30%	Caution
Single Brooded	28%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	3%	Sig Concern
Ground Gleaner	3%	Sig Concern
High Canopy Forager	5%	Sig Concern
Low Canopy Forager	15%	Caution
Omnivore	33%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	15%	Sig Concern
Forest-ground Nester	0%	Sig Concern
Interior Forest Obligate	0%	Sig Concern
Shrub Nester	20%	Caution

Saratoga National Historical Park (New York)

A total of six study sites consisting of 51 point counts were established in 2006 and 2007 at the Saratoga National Historical Park (SARA). Wilkinson Trail Forest (10 points), Burgoyne's Headquarters Grassland (5 points), Freeman Farm Grassland (10 points), and Neilson Farm Grassland (10 points) were established in 2006, while Middle Ravine Forest (10 points) and Bemis Heights Forest (six points) were established in 2007 (Figure 18). Point count surveys were initiated in 2006 when Wilkinson Trail Forest and all three grassland sites were sampled. In 2007, Middle Ravine Forest and Freeman Farm Grassland were surveyed; in 2008 all six sites were surveyed; and in 2009 and 2010, all sites except Middle Ravine Forest were surveyed.

During 2010 surveys, observers detected a total of 976 individual birds of 59 species (41 point counts), compared to 676 of 57 species (41 point counts) in 2009, 830 of 64 species (51 point counts) in 2008, 324 of 48 species (20 point counts) in 2007, and 495 individuals of 62 species (34 point counts; one point of Wilkinson Trail Forest was skipped) in 2006. During the 5 survey years a total of 3,301 individual birds of 83 species have been detected at SARA, with a mean abundance of 17.5 birds per point. During 2010, relative abundance and species richness increased over 2009, and a new species was detected (Cooper's Hawk). Eight species of conservation concern were recorded during the surveys (Black-Billed Cuckoo, Eastern Wood-Pewee, Wood Thrush, Blue-winged Warbler, Golden-winged Warbler, Eastern Towhee, Field Sparrow, and Baltimore Oriole). A list of species, their relative abundances, and other summary statistics are provided in Appendices A and B. Red-winged Blackbird, Song Sparrow, and Bobolink were among the most commonly detected species (Figure 19).

The park-wide forest avian ecological integrity assessment for all years combined at SARA resulted in four categories ranked as "Good," six ranked as "Caution," and three ranked as "Significant Concern" (Table 11). With the exception of single brooded (which earned a "Caution" rating), compositional metrics were rated "Good," while structural and functional metrics were dominated by "Caution" or "Significant Concern." These results indicate that the forest bird community at SARA may be affected by the generally fragmented landscape consisting of small forest blocks broken up by fields and early successional habitats, plus effects of deer on understory vegetation structure. The forest avian ecological integrity assessment has also been calculated for each forest site, and these results are in Appendix C.

The grassland avian ecological integrity assessment consisted of four "Caution" ratings (Table 12). This community is considered a high priority in the region, and it would be prudent for the park to continue its efforts to manage grassland habitat to support avian diversity.

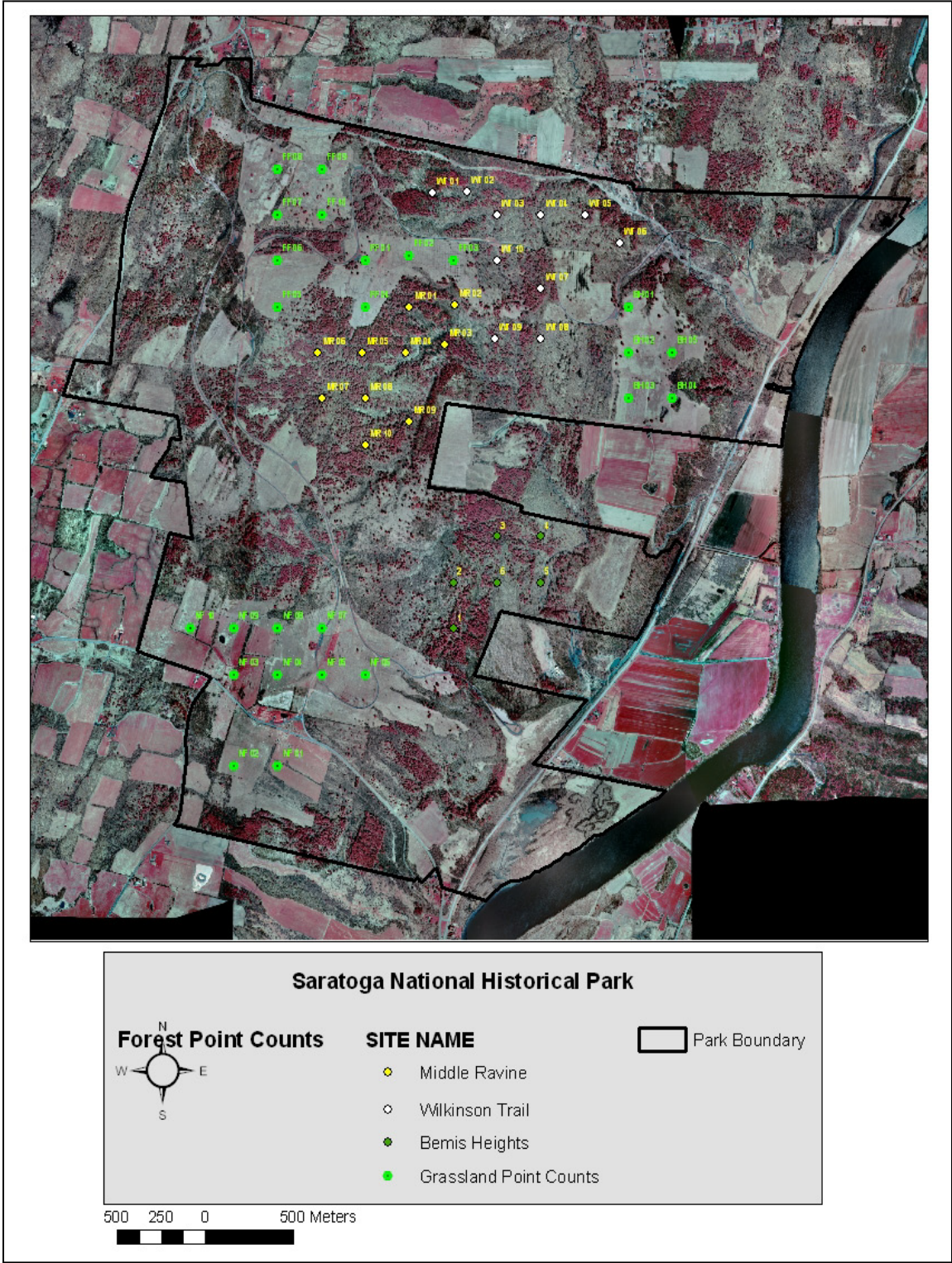


Figure 18. Point count locations at Saratoga National Historical Park.

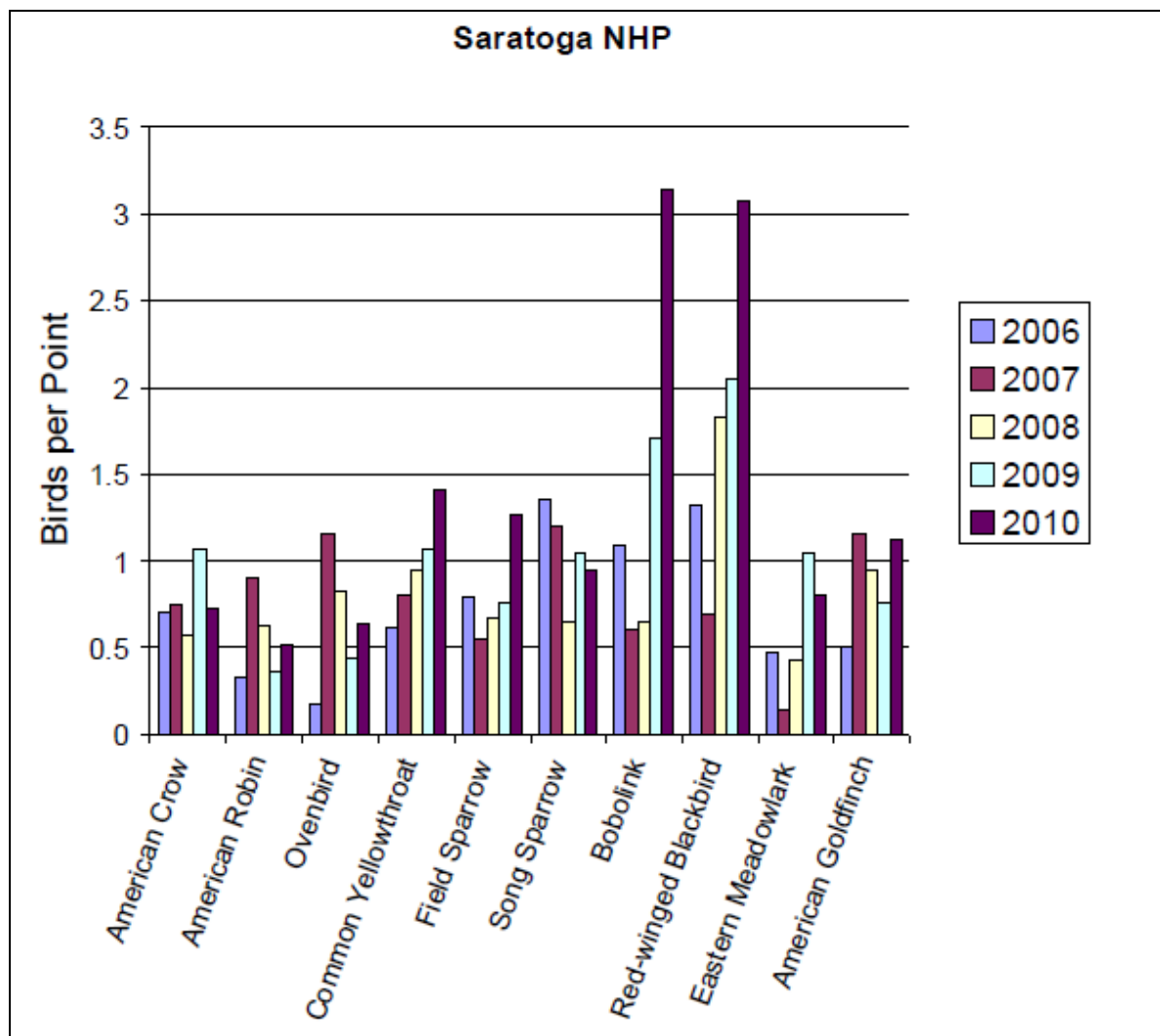


Figure 19. Relative abundance of the 10 most common species detected at Saratoga National Historical Park, 2006-2010.

Table 11. Forest Avian Ecological Integrity Assessment for forested study sites at Saratoga National Historical Park, 2006-2010.

Saratoga NHP

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	25%	Good
Single Brooded	50%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	13%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	7%	Sig Concern
Low Canopy Forager	20%	Caution
Omnivore	33%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	25%	Sig Concern
Forest-ground Nester	12%	Caution
Interior Forest Obligate	25%	Caution
Shrub Nester	25%	Sig Concern

Table 12. Grassland Avian Ecological Integrity Assessment for grassland study sites at Saratoga National Historical Park, 2006-2010.

Saratoga NHP

2006 to 2010

<i>Response Guild</i>	<i>Proportion</i>	<i>Rating</i>
Edge Generalist	24%	Caution
Exotic	1%	Caution
Grassland Obligate	5%	Caution
Shrub-dependent	13%	Caution

Vanderbilt Mansion National Historic Site (New York)

The Roosevelt-Vanderbilt National Historic Sites (ROVA) consist of three separate park units at which study sites were established and surveyed annually since 2006. One study site with 7 point counts was established at the Vanderbilt Mansion National Historic Site (VAMA) (Figure 20).

Sixty-five individual birds of 19 species were detected in 2010, compared to 58 of 18 species in 2009, 43 of 20 species in 2008, 63 of 18 species in 2007, and 59 of 22 species in 2006. Seven point counts were conducted each year. In total, 33 species were recorded, and there was an average abundance of 8.2 birds per point. In 2010, relative abundance and species richness increased over 2009, and three species were detected for the first time (Mallard, Barred Owl, and Eastern Bluebird). Four species of conservation concern (Black-billed Cuckoo, Eastern Wood-Pewee, Wood Thrush, and Worm-Eating Warbler) were detected during the 5-survey years. A list of species, their relative abundances, and other summary statistics are provided in Appendix A. Red-Eyed Vireo, Tufted Titmouse, Wood Thrush, and Northern Cardinal were the most commonly detected species (Figure 21).

The park-wide forest avian ecological integrity assessment for all years combined at VAMA resulted in four categories ranked as “Good,” five ranked as “Caution,” and four ranked as “Significant Concern” (Table 13). Guilds within the structural category earned no “Good” rankings, while “Significant Concern” ratings for metrics measuring abundance of canopy and single brooded species is indicative of the park’s location within a fragmented landscape.

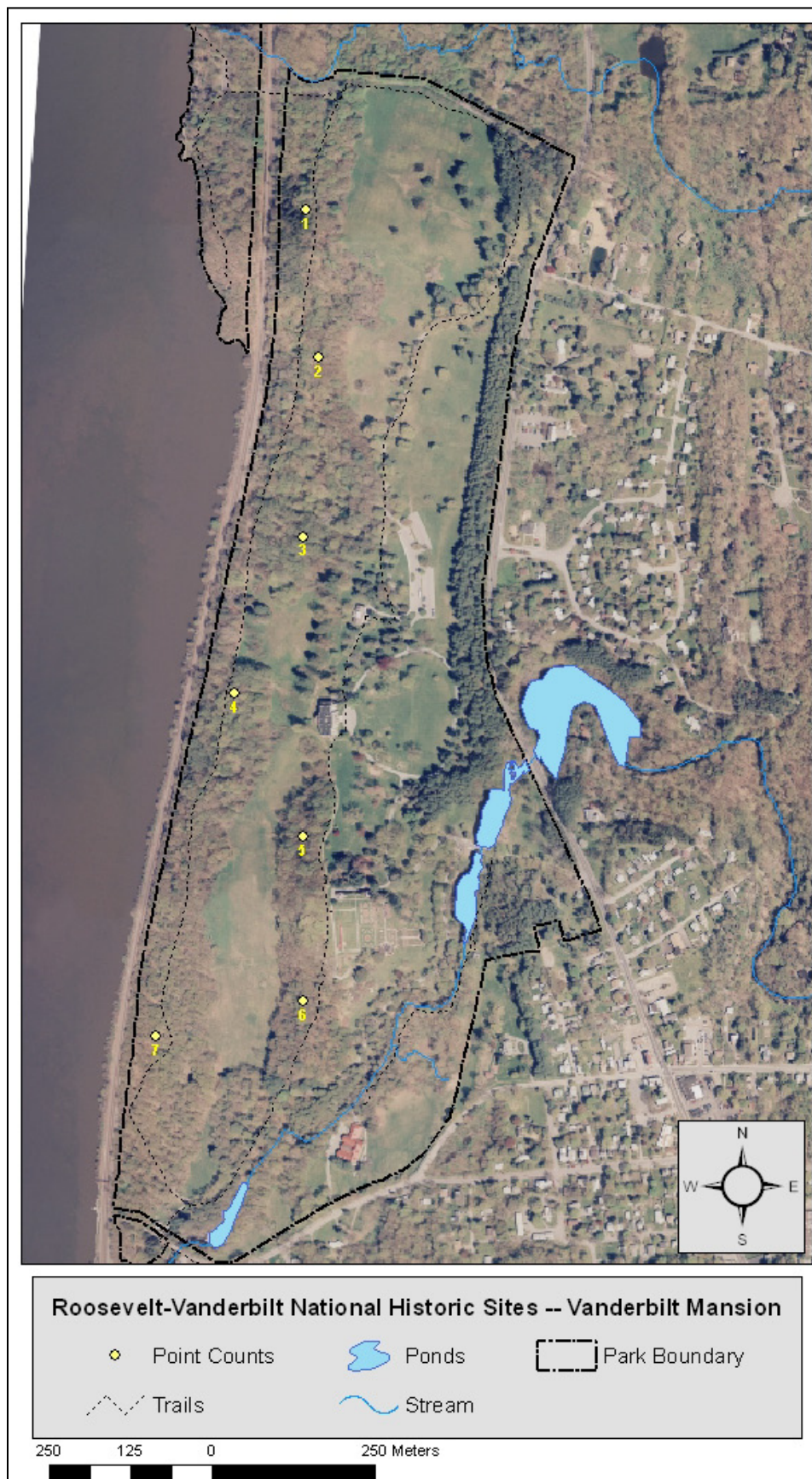


Figure 20. Point count locations at Vanderbilt Mansion National Historic Site.

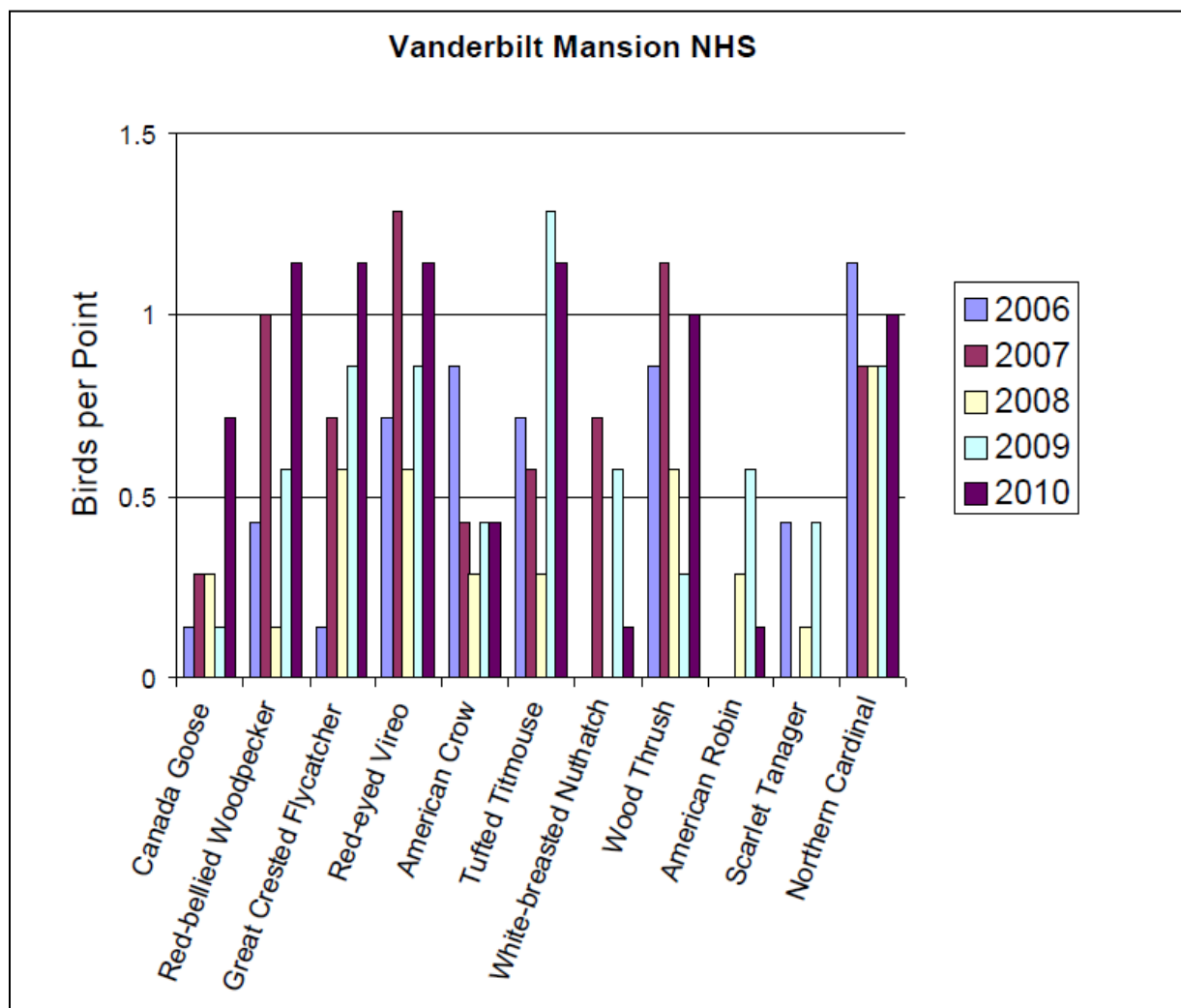


Figure 21. Relative abundance of the 11 most common species detected at Vanderbilt Mansion National Historic Site, 2006-2010.

Table 13. Forest Avian Ecological Integrity Assessment for Vanderbilt Mansion National Historic Site, 2006-2010.

Vanderbilt Mansion NHS

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	36%	Caution
Single Brooded	36%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	15%	Good
Ground Gleaner	9%	Good
High Canopy Forager	6%	Sig Concern
Low Canopy Forager	18%	Caution
Omnivore	30%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	24%	Sig Concern
Forest-ground Nester	6%	Caution
Interior Forest Obligate	21%	Caution
Shrub Nester	24%	Sig Concern

Weir Farm National Historic Site (Connecticut)

Five point count stations were established at Weir Farm National Historic Site in 2006 (Figure 22). Two annual surveys have been conducted in 2006, 2009, and 2010.

During 2010 surveys, observers detected 105 birds of 25 species, compared to 61 individuals of 22 species in 2009, and 94 individuals of 29 species in 2006. Ten point counts were conducted each year. The totals include detections from repeat site visits within a year and may include some double-counted individuals. In total, 37 species were recorded, including five that were only observed during repeat site surveys (Red-shouldered Hawk, Yellow-billed Cuckoo, Eastern Bluebird, Black-throated Green Warbler, and Louisiana Waterthrush). The number of birds detected per point on only the first site visit in a given year provides a better estimate of abundance than the total number of detections (which can vary with the number of surveys). Average abundance during the first site survey was 7.7 birds per point. In 2010, relative abundance during the first survey increased, while species richness declined by one. It should be noted that the observation of a Blackpoll Warbler during the first survey in 2009 represented a late migrant, as the species' breeding range does not extend into southern CT. Four species of conservation concern (Eastern Wood-Pewee, Wood Thrush, Scarlet Tanager, and Baltimore Oriole) were detected during the 3-survey years. A list of species, their relative abundances, and other summary statistics are provided in Appendix A. Tufted Titmouse, American Crow, and Downy Woodpecker were the most commonly detected species (Figure 23).

The park-wide forest avian ecological integrity assessment for all years combined at WEFA resulted in three categories ranked as "Good," even ranked as "Caution," and three ranked as "Significant Concern" (Table 14). Guilds within the structural category earned no "Good" rankings, while "Significant Concern" ratings reflected low abundance of canopy and single brooded species, and high abundance of shrub nesting species, indicative of the park's location within a suburban, fragmented landscape.

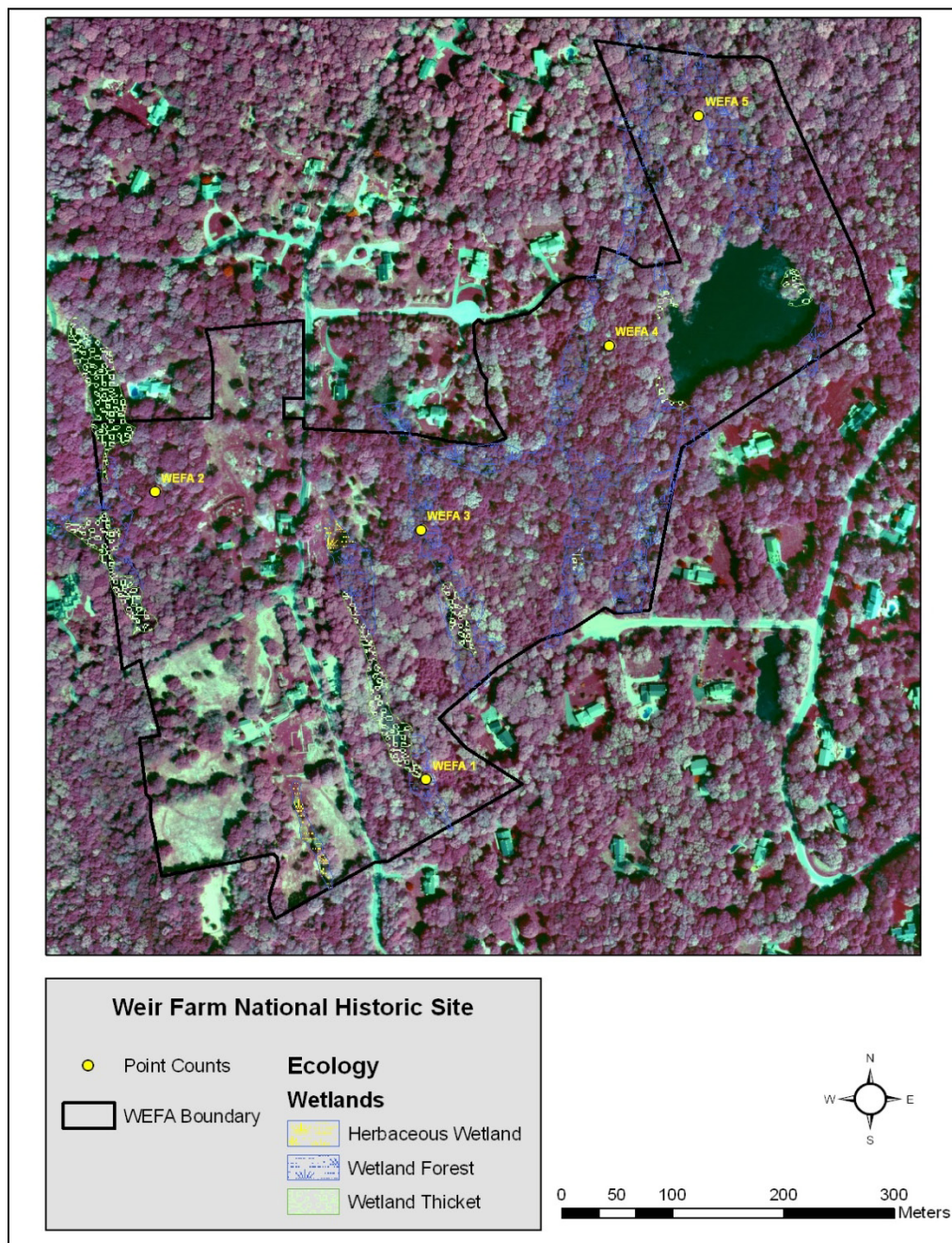


Figure 22. Point count locations at Weir Farm National Historic Site.

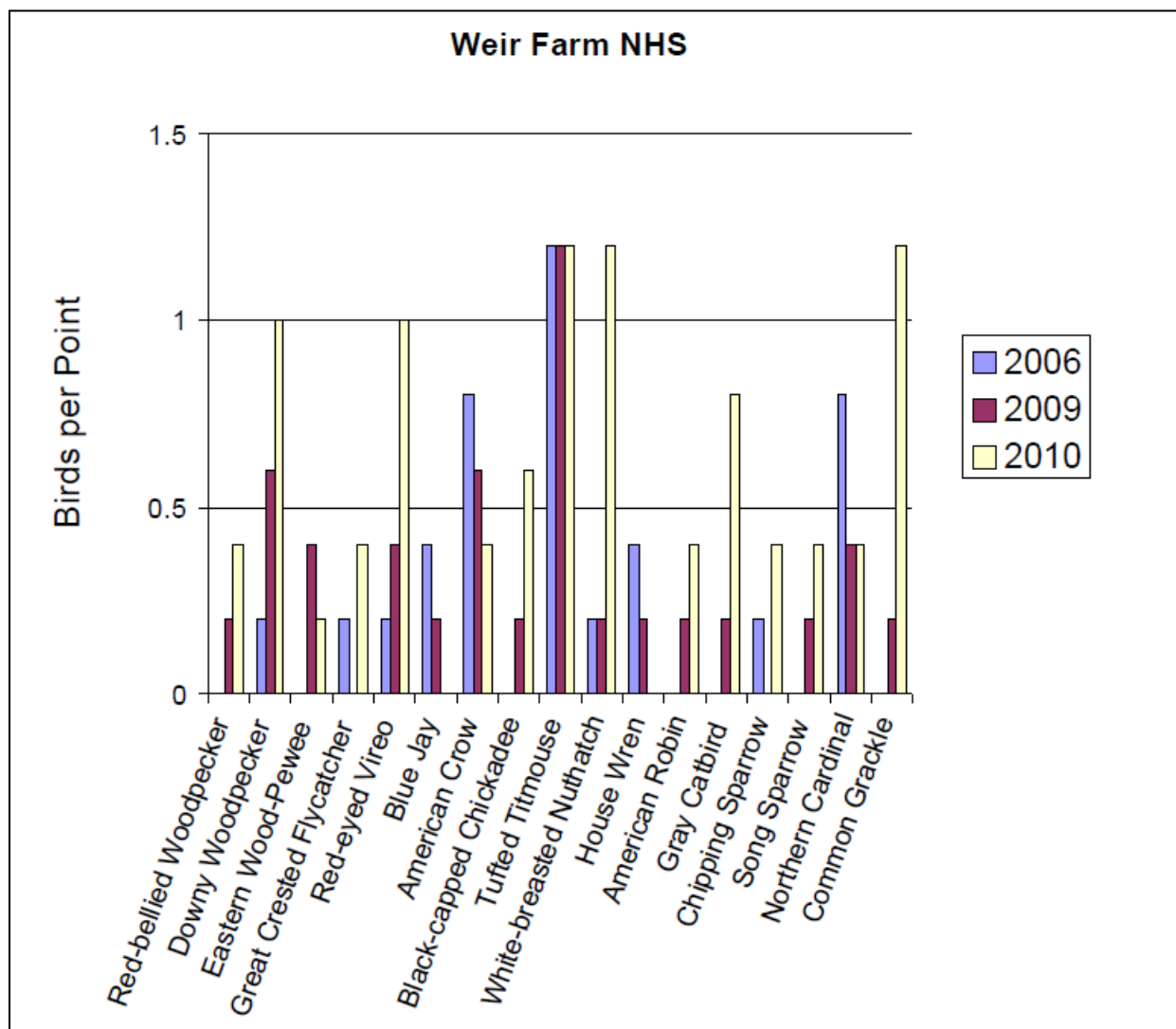


Figure 23. Relative abundance of the most common species detected at Weir Farm National Historic Site, 2006, 2009, and 2010.

Table 14. Forest Avian Ecological Integrity Assessment for Weir Farm National Historic Site, 2006-2010.

Weir Farm NHS

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	30%	Caution
Single Brooded	46%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	8%	Caution
Ground Gleaner	5%	Caution
High Canopy Forager	14%	Good
Low Canopy Forager	19%	Caution
Omnivore	35%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	27%	Sig Concern
Forest-ground Nester	5%	Caution
Interior Forest Obligate	19%	Caution
Shrub Nester	27%	Sig Concern

Literature Cited

- Browder, S. F., D. H. Johnson, and I. J. Ball. 2002. Assemblages of breeding birds as indicators of grassland condition. *Ecological Indicators* 2: 257-270.
- Coppedge, B. R., D. M. Engle, R.E. Masters, and M.S. Gregory. 2006. Development of a grassland integrity index based on breeding bird assemblages. *Environmental Monitoring and Assessment* 118: 125-145.
- Faccio, S. D., B. R. Mitchell, and P. S. Pooler. 2010. Breeding Landbird Monitoring Protocol: Northeast Temperate Network. Natural Resource Report NPS/NETN/NRR—2010/198. National Park Service, Fort Collins, Colorado.
http://science.nature.nps.gov/im/units/NETN/monitor/flashmo_220_nature/monitor_flash.cf
[m](#), link checked on 11 April 2011.
- Glennon, M. J. and W. F. Porter. 2005. Effects of land use management on biotic integrity: An investigation of bird communities. *Biological Conservation* 126: 499-511.
- North American Bird Conservation Initiative. 2000. North American Bird Conservation Initiative: Bird Conservation Region descriptions. U.S. Fish and Wildlife Service, Washington DC.
- O'Connell, T. J., L. E. Jackson and R. P. Brooks. 2000. Bird guilds as indicators of ecological condition in the central Appalachians. *Ecological Application* 10:1706-1721.

Appendix A—Park Summaries

This appendix contains a list of species detected during monitoring activities in each park, and the relative abundance (birds per point) of each species for each year. It only includes data for the first survey of each point in a given year, in order to promote more consistent comparisons between years and to avoid artificially inflating abundances due to counting the same individuals in repeat visits. Species in boldface are species of regional or continental concern, and species in italics are the 10 most common species for each park. There will occasionally be more than 10 italicized species, if multiple species have the same abundance.

This appendix also lists the number of points surveyed per park each year, the number of birds detected per point count, the species richness, and the Shannon diversity index for each park for each year.

Appendix A. Park Summaries (continued).

Acadia NP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Spruce Grouse		0.00	0.00	0.00	0.05	0.01
Common Loon		0.00	0.04	0.03	0.00	0.02
Herring Gull		0.04	0.00	0.00	0.05	0.02
<i>Mourning Dove</i>		<i>0.68</i>	<i>0.61</i>	<i>0.33</i>	<i>0.11</i>	<i>0.43</i>
Barred Owl		0.00	0.00	0.00	0.05	0.01
Ruby-throated Hummingbird		0.00	0.00	0.00	0.05	0.01
Downy Woodpecker		0.00	0.00	0.05	0.16	0.05
Hairy Woodpecker		0.21	0.00	0.10	0.37	0.17
Northern Flicker (Yellow-shafted Flicker)		0.00	0.00	0.03	0.00	0.01
Pileated Woodpecker		0.18	0.09	0.03	0.11	0.10
Eastern Wood-Pewee		0.00	0.00	0.15	0.00	0.04
Yellow-bellied Flycatcher		0.00	0.00	0.00	0.26	0.07
Alder Flycatcher		0.04	0.00	0.00	0.00	0.01
Least Flycatcher		0.14	0.09	0.15	0.16	0.14
Eastern Phoebe		0.00	0.00	0.05	0.00	0.01
Great Crested Flycatcher		0.04	0.00	0.21	0.00	0.06
<i>Blue-headed Vireo</i>		<i>0.36</i>	<i>0.61</i>	<i>0.41</i>	<i>0.26</i>	<i>0.41</i>
Red-eyed Vireo		0.00	0.04	0.38	0.26	0.17
Blue Jay		0.18	0.17	0.44	0.11	0.22
<i>American Crow</i>		<i>0.39</i>	<i>0.48</i>	<i>0.23</i>	<i>0.84</i>	<i>0.49</i>
Common Raven		0.32	0.09	0.23	0.26	0.23
Black-capped Chickadee		0.18	0.35	0.69	0.21	0.36
Boreal Chickadee		0.21	0.00	0.00	0.00	0.05
<i>Red-breasted Nuthatch</i>		<i>0.54</i>	<i>0.26</i>	<i>0.28</i>	<i>0.89</i>	<i>0.49</i>
Brown Creeper		0.07	0.35	0.15	0.37	0.24
Winter Wren		0.25	0.22	0.03	0.68	0.29
<i>Golden-crowned Kinglet</i>		<i>0.36</i>	<i>0.83</i>	<i>0.28</i>	<i>0.53</i>	<i>0.50</i>
Ruby-crowned Kinglet		0.07	0.00	0.00	0.05	0.03
Veery		0.00	0.00	0.03	0.05	0.02
Swainson's Thrush		0.14	0.04	0.03	0.16	0.09
<i>Hermit Thrush</i>		<i>0.39</i>	<i>0.04</i>	<i>1.00</i>	<i>0.37</i>	<i>0.45</i>
Wood Thrush		0.04	0.00	0.00	0.00	0.01
American Robin		0.50	0.30	0.28	0.16	0.31
Brown Thrasher		0.04	0.00	0.00	0.00	0.01
Cedar Waxwing		0.11	0.04	0.10	0.00	0.06
Nashville Warbler		0.00	0.00	0.03	0.11	0.03
Northern Parula		0.04	0.00	0.00	0.00	0.01
Chestnut-sided Warbler		0.07	0.00	0.00	0.00	0.02
Magnolia Warbler		0.14	0.17	0.00	0.37	0.17
Black-throated Blue Warbler		0.07	0.30	0.31	0.00	0.17
<i>Yellow-rumped Warbler (Myrtle Warbler)</i>		<i>0.14</i>	<i>0.30</i>	<i>0.59</i>	<i>0.47</i>	<i>0.38</i>
<i>Black-throated Green Warbler</i>		<i>1.75</i>	<i>1.87</i>	<i>1.49</i>	<i>2.05</i>	<i>1.79</i>
Blackburnian Warbler		0.25	0.39	0.18	0.11	0.23
Pine Warbler		0.00	0.00	0.00	0.05	0.01
Blackpoll Warbler		0.00	0.04	0.00	0.00	0.01
Black-and-white Warbler		0.14	0.04	0.28	0.00	0.12

Appendix A. Park Summaries (continued).

Acadia NP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
American Redstart		0.00	0.00	0.00	0.05	0.01
Ovenbird		0.71	1.43	1.41	0.47	1.01
Common Yellowthroat		0.00	0.04	0.00	0.00	0.01
Eastern Towhee		0.04	0.00	0.00	0.00	0.01
Swamp Sparrow		0.00	0.00	0.05	0.00	0.01
White-throated Sparrow		0.00	0.00	0.00	0.21	0.05
Dark-eyed Junco (Slate-colored Junco)		0.25	0.17	0.33	0.79	0.39
Red-winged Blackbird		0.04	0.09	0.03	0.00	0.04
Common Grackle		0.04	0.00	0.00	0.00	0.01
Purple Finch		0.18	0.13	0.13	0.21	0.16
White-winged Crossbill		0.00	0.00	0.00	0.16	0.04
Pine Siskin		0.29	0.65	0.05	0.05	0.26
American Goldfinch		0.00	0.00	0.05	0.00	0.01
Points Surveyed:		28	23	39	19	
Ave # Birds Per Point:		9.61	10.30	10.62	11.68	10.55
Species Richness:		39	31	38	38	59
Shannon Diversity:		3.18	2.89	3.07	3.16	

Appendix A. Park Summaries (continued).

Eleanor Roosevelt NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.00	0.00	0.00	0.09	0.18	0.05
Wood Duck	0.00	0.00	0.00	0.09	0.00	0.02
Cooper's Hawk	0.00	0.09	0.00	0.00	0.00	0.02
Red-shouldered Hawk	0.00	0.00	0.00	0.18	0.09	0.05
Red-tailed Hawk	0.00	0.00	0.00	0.00	0.09	0.02
Mourning Dove	0.00	0.27	0.00	0.27	0.45	0.20
Yellow-billed Cuckoo	0.17	0.00	0.00	0.00	0.00	0.03
Barred Owl	0.00	0.09	0.00	0.00	0.00	0.02
Ruby-throated Hummingbird	0.00	0.00	0.09	0.00	0.00	0.02
<i>Red-bellied Woodpecker</i>	<i>0.83</i>	<i>0.55</i>	<i>0.36</i>	<i>0.18</i>	<i>0.91</i>	<i>0.57</i>
Downy Woodpecker	0.33	0.00	0.18	0.45	0.00	0.19
Hairy Woodpecker	0.33	0.18	0.36	0.00	0.00	0.18
Northern Flicker (Yellow-shafted Flicker)	0.00	0.00	0.18	0.00	0.00	0.04
Pileated Woodpecker	0.17	0.09	0.27	0.00	0.18	0.14
Eastern Wood-Pewee	0.00	0.27	0.09	0.36	0.09	0.16
Great Crested Flycatcher	0.00	0.09	0.09	0.27	0.55	0.20
Yellow-throated Vireo	0.17	0.00	0.00	0.00	0.00	0.03
<i>Red-eyed Vireo</i>	<i>1.17</i>	<i>0.91</i>	<i>0.64</i>	<i>1.00</i>	<i>0.73</i>	<i>0.89</i>
Blue Jay	0.33	0.27	0.27	0.27	0.36	0.30
<i>American Crow</i>	<i>0.83</i>	<i>0.45</i>	<i>0.36</i>	<i>0.82</i>	<i>0.55</i>	<i>0.60</i>
Black-capped Chickadee	0.00	0.00	0.09	0.09	0.00	0.04
<i>Tufted Titmouse</i>	<i>0.50</i>	<i>1.27</i>	<i>0.27</i>	<i>0.64</i>	<i>0.73</i>	<i>0.68</i>
<i>White-breasted Nuthatch</i>	<i>0.17</i>	<i>0.45</i>	<i>0.82</i>	<i>0.18</i>	<i>0.36</i>	<i>0.40</i>
Brown Creeper	0.00	0.09	0.00	0.00	0.00	0.02
Carolina Wren	0.00	0.00	0.00	0.00	0.09	0.02
Eastern Bluebird	0.00	0.00	0.00	0.09	0.00	0.02
Veery	0.50	0.27	0.27	0.09	0.18	0.26
Wood Thrush	1.83	1.27	0.55	0.82	1.00	1.09
<i>American Robin</i>	<i>0.67</i>	<i>0.73</i>	<i>0.73</i>	<i>0.45</i>	<i>0.45</i>	<i>0.61</i>
Gray Catbird	0.17	0.36	0.36	0.18	0.18	0.25
Worm-eating Warbler	0.33	0.09	0.00	0.18	0.00	0.12
<i>Ovenbird</i>	<i>0.50</i>	<i>0.36</i>	<i>0.45</i>	<i>0.27</i>	<i>0.45</i>	<i>0.41</i>
Louisiana Waterthrush	0.00	0.00	0.00	0.09	0.00	0.02
<i>Scarlet Tanager</i>	<i>1.00</i>	<i>0.09</i>	<i>0.36</i>	<i>0.27</i>	<i>0.09</i>	<i>0.36</i>
Song Sparrow	0.00	0.09	0.00	0.00	0.00	0.02
<i>Northern Cardinal</i>	<i>0.50</i>	<i>1.09</i>	<i>0.45</i>	<i>1.00</i>	<i>0.64</i>	<i>0.74</i>
Rose-breasted Grosbeak	0.00	0.36	0.00	0.00	0.00	0.07
Red-winged Blackbird	0.00	0.18	0.00	0.09	0.09	0.07
Common Grackle	0.00	0.09	0.00	0.00	0.00	0.02
Baltimore Oriole	0.00	0.09	0.09	0.00	0.00	0.04
American Goldfinch	0.00	0.09	0.09	0.00	0.00	0.04

Appendix A. Park Summaries (continued).

Eleanor Roosevelt NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Points Surveyed:</i>	6	11	11	11	11	
<i>Ave # Birds Per Point:</i>	10.50	10.27	7.45	8.45	8.45	9.03
<i>Species Richness:</i>	19	28	23	25	22	41
<i>Shannon Diversity:</i>	2.70	2.93	2.94	2.91	2.83	

Appendix A. Park Summaries (continued).

Home of Franklin D. Roosevelt NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.00	0.08	0.00		0.17	0.06
Mute Swan	0.00	0.00	0.08		0.00	0.02
Wild Turkey	0.08	0.08	0.00		0.00	0.04
Red-tailed Hawk	0.00	0.08	0.00		0.00	0.02
<i>Mourning Dove</i>	<i>0.08</i>	<i>0.33</i>	<i>0.50</i>		<i>0.50</i>	<i>0.35</i>
Yellow-billed Cuckoo	0.00	0.08	0.00		0.00	0.02
<i>Red-bellied Woodpecker</i>	<i>0.25</i>	<i>0.58</i>	<i>0.50</i>		<i>0.50</i>	<i>0.46</i>
Downy Woodpecker	0.17	0.17	0.17		0.00	0.13
Hairy Woodpecker	0.08	0.00	0.00		0.08	0.04
Northern Flicker (Yellow-shafted Flicker)	0.25	0.00	0.25		0.08	0.15
Pileated Woodpecker	0.00	0.25	0.08		0.08	0.10
Eastern Wood-Pewee	0.17	0.17	0.17		0.33	0.21
Least Flycatcher	0.00	0.08	0.00		0.00	0.02
Great Crested Flycatcher	0.25	0.33	0.00		0.58	0.29
Yellow-throated Vireo	0.00	0.00	0.08		0.00	0.02
Blue-headed Vireo	0.00	0.08	0.00		0.00	0.02
<i>Red-eyed Vireo</i>	<i>0.75</i>	<i>0.67</i>	<i>0.58</i>		<i>0.75</i>	<i>0.69</i>
<i>Blue Jay</i>	<i>0.33</i>	<i>0.42</i>	<i>0.42</i>		<i>0.50</i>	<i>0.42</i>
American Crow	0.33	0.00	0.25		0.00	0.15
Fish Crow	0.08	0.08	0.08		0.00	0.06
Black-capped Chickadee	0.25	0.33	0.17		0.00	0.19
<i>Tufted Titmouse</i>	<i>0.83</i>	<i>1.08</i>	<i>0.92</i>		<i>1.00</i>	<i>0.96</i>
<i>White-breasted Nuthatch</i>	<i>0.42</i>	<i>0.33</i>	<i>0.50</i>		<i>0.08</i>	<i>0.33</i>
Brown Creeper	0.08	0.00	0.08		0.00	0.04
Carolina Wren	0.00	0.00	0.17		0.17	0.08
Blue-gray Gnatcatcher	0.00	0.08	0.00		0.00	0.02
Wood Thrush	1.33	0.58	0.58		0.58	0.77
<i>American Robin</i>	<i>0.33</i>	<i>0.67</i>	<i>0.42</i>		<i>0.25</i>	<i>0.42</i>
Worm-eating Warbler	0.00	0.00	0.00		0.08	0.02
Ovenbird	0.08	0.00	0.08		0.00	0.04
Louisiana Waterthrush	0.25	0.25	0.08		0.17	0.19
Common Yellowthroat	0.08	0.00	0.00		0.00	0.02
<i>Scarlet Tanager</i>	<i>0.83</i>	<i>0.50</i>	<i>0.42</i>		<i>0.08</i>	<i>0.46</i>
<i>Northern Cardinal</i>	<i>0.25</i>	<i>0.25</i>	<i>0.33</i>		<i>0.67</i>	<i>0.38</i>
Rose-breasted Grosbeak	0.00	0.17	0.00		0.33	0.13
Red-winged Blackbird	0.08	0.25	0.00		0.17	0.13
Common Grackle	0.17	0.00	0.00		0.33	0.13
Brown-headed Cowbird	0.00	0.17	0.00		0.08	0.06
Baltimore Oriole	0.00	0.17	0.00		0.00	0.04
American Goldfinch	0.00	0.08	0.00		0.00	0.02
Points Surveyed:	12	12	12		12	
Ave # Birds Per Point:	7.83	8.42	6.92		7.58	7.69
Species Richness:	25	29	23		23	40
Shannon Diversity:	2.85	3.08	2.88		2.85	

Appendix A. Park Summaries (continued).

Marsh-Billings-Rockefeller NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Wild Turkey	0.00	0.00	0.05	0.00	0.00	0.01
Broad-winged Hawk	0.04	0.00	0.00	0.00	0.00	0.01
Mourning Dove	0.12	0.16	0.15	0.16	0.32	0.18
Barred Owl	0.00	0.28	0.00	0.04	0.00	0.06
Chimney Swift	0.00	0.00	0.00	0.04	0.00	0.01
Yellow-bellied Sapsucker	0.12	0.32	0.20	0.20	0.28	0.22
Downy Woodpecker	0.16	0.12	0.00	0.08	0.00	0.07
Hairy Woodpecker	0.16	0.20	0.20	0.00	0.04	0.12
Northern Flicker (Yellow-shafted Flicker)	0.08	0.04	0.00	0.00	0.04	0.03
Pileated Woodpecker	0.08	0.04	0.00	0.08	0.00	0.04
<i>Eastern Wood-Pewee</i>	<i>0.60</i>	<i>0.72</i>	<i>0.55</i>	<i>0.52</i>	<i>0.48</i>	<i>0.57</i>
Least Flycatcher	0.04	0.12	0.05	0.00	0.04	0.05
Great Crested Flycatcher	0.08	0.04	0.25	0.08	0.12	0.11
Eastern Kingbird	0.00	0.04	0.00	0.00	0.00	0.01
Blue-headed Vireo	0.32	0.20	0.20	0.12	0.20	0.21
<i>Red-eyed Vireo</i>	<i>2.40</i>	<i>1.80</i>	<i>1.85</i>	<i>2.00</i>	<i>2.28</i>	<i>2.07</i>
<i>Blue Jay</i>	<i>0.56</i>	<i>0.84</i>	<i>0.40</i>	<i>0.56</i>	<i>0.28</i>	<i>0.53</i>
American Crow	0.20	0.36	0.15	0.20	0.16	0.21
Common Raven	0.08	0.00	0.05	0.00	0.04	0.03
<i>Black-capped Chickadee</i>	<i>0.32</i>	<i>0.84</i>	<i>0.50</i>	<i>0.56</i>	<i>0.28</i>	<i>0.50</i>
Tufted Titmouse	0.04	0.04	0.05	0.04	0.00	0.03
Red-breasted Nuthatch	0.04	0.08	0.00	0.04	0.20	0.07
White-breasted Nuthatch	0.32	0.32	0.10	0.36	0.12	0.24
<i>Brown Creeper</i>	<i>0.52</i>	<i>0.52</i>	<i>0.40</i>	<i>0.36</i>	<i>0.28</i>	<i>0.42</i>
Winter Wren	0.04	0.04	0.20	0.04	0.04	0.07
Golden-crowned Kinglet	0.04	0.04	0.05	0.00	0.00	0.03
Veery	0.12	0.12	0.10	0.00	0.00	0.07
<i>Hermit Thrush</i>	<i>0.52</i>	<i>0.72</i>	<i>1.05</i>	<i>0.96</i>	<i>0.68</i>	<i>0.79</i>
Wood Thrush	0.40	0.24	0.35	0.16	0.48	0.33
<i>American Robin</i>	<i>0.76</i>	<i>0.64</i>	<i>0.35</i>	<i>0.52</i>	<i>0.72</i>	<i>0.60</i>
Cedar Waxwing	0.00	0.04	0.05	0.00	0.04	0.03
Chestnut-sided Warbler	0.00	0.00	0.05	0.00	0.00	0.01
Black-throated Blue Warbler	0.16	0.24	0.15	0.28	0.16	0.20
Yellow-rumped Warbler (Myrtle Warbler)	0.08	0.08	0.05	0.08	0.08	0.07
<i>Black-throated Green Warbler</i>	<i>0.92</i>	<i>0.72</i>	<i>0.60</i>	<i>0.44</i>	<i>0.48</i>	<i>0.63</i>
<i>Blackburnian Warbler</i>	<i>0.72</i>	<i>0.68</i>	<i>0.50</i>	<i>0.68</i>	<i>0.48</i>	<i>0.61</i>
Pine Warbler	0.00	0.04	0.10	0.16	0.20	0.10
Black-and-white Warbler	0.12	0.08	0.00	0.00	0.00	0.04
American Redstart	0.04	0.04	0.00	0.04	0.00	0.02
<i>Ovenbird</i>	<i>3.36</i>	<i>3.40</i>	<i>3.45</i>	<i>3.52</i>	<i>2.84</i>	<i>3.31</i>
Louisiana Waterthrush	0.00	0.08	0.00	0.00	0.00	0.02
Mourning Warbler	0.00	0.00	0.00	0.04	0.08	0.02
Common Yellowthroat	0.08	0.12	0.20	0.08	0.08	0.11
Scarlet Tanager	0.24	0.56	0.25	0.56	0.40	0.40
Chipping Sparrow	0.12	0.04	0.00	0.04	0.00	0.04
Song Sparrow	0.00	0.00	0.00	0.00	0.04	0.01

Appendix A. Park Summaries (continued).

Marsh-Billings-Rockefeller NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Dark-eyed Junco (Slate-colored Junco)	0.24	0.44	0.05	0.16	0.40	0.26
Rose-breasted Grosbeak	0.32	0.12	0.05	0.20	0.16	0.17
Indigo Bunting	0.00	0.20	0.10	0.00	0.04	0.07
Bobolink	0.04	0.04	0.00	0.00	0.00	0.02
Red-winged Blackbird	0.04	0.28	0.15	0.00	0.00	0.09
Common Grackle	0.00	0.04	0.00	0.00	0.00	0.01
Brown-headed Cowbird	0.04	0.08	0.05	0.04	0.04	0.05
Baltimore Oriole	0.04	0.00	0.00	0.00	0.00	0.01
Purple Finch	0.00	0.04	0.00	0.00	0.00	0.01
American Goldfinch	0.00	0.04	0.05	0.00	0.00	0.02
<i>Points Surveyed:</i>	25	25	20	25	25	
<i>Ave # Birds Per Point:</i>	14.72	16.28	13.10	13.44	12.60	14.03
<i>Species Richness:</i>	42	48	38	35	35	56
<i>Shannon Diversity:</i>	2.91	3.12	2.84	2.76	2.83	

Appendix A. Park Summaries (continued).

Minute Man NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.00	0.04	0.00	0.00	0.00	0.01
Wild Turkey	0.09	0.00	0.00	0.00	0.00	0.02
Great Blue Heron	0.00	0.00	0.00	0.09	0.00	0.02
Red-tailed Hawk	0.00	0.00	0.00	0.13	0.00	0.03
Killdeer	0.04	0.00	0.00	0.00	0.00	0.01
Mourning Dove	0.09	0.00	0.09	0.00	0.27	0.09
Black-billed Cuckoo	0.00	0.00	0.04	0.00	0.00	0.01
Chimney Swift	0.00	0.09	0.00	0.00	0.00	0.02
Belted Kingfisher	0.00	0.00	0.00	0.00	0.07	0.01
Red-bellied Woodpecker	0.00	0.09	0.13	0.17	0.00	0.08
Downy Woodpecker	0.26	0.52	0.30	0.52	0.53	0.43
Hairy Woodpecker	0.04	0.17	0.00	0.04	0.07	0.07
Northern Flicker (Yellow-shafted Flicker)	0.09	0.00	0.13	0.09	0.13	0.09
Eastern Wood-Pewee	0.35	0.26	0.13	0.30	0.67	0.34
Alder Flycatcher	0.00	0.00	0.00	0.04	0.00	0.01
Eastern Phoebe	0.04	0.00	0.04	0.04	0.13	0.05
Great Crested Flycatcher	0.09	0.00	0.22	0.13	0.07	0.10
Eastern Kingbird	0.04	0.00	0.00	0.00	0.00	0.01
Warbling Vireo	0.04	0.00	0.04	0.13	0.00	0.04
Red-eyed Vireo	0.00	0.09	0.35	0.09	0.20	0.14
<i>Blue Jay</i>	<i>1.09</i>	<i>1.13</i>	<i>1.22</i>	<i>0.74</i>	<i>1.33</i>	<i>1.10</i>
<i>American Crow</i>	<i>0.52</i>	<i>0.74</i>	<i>0.83</i>	<i>0.87</i>	<i>1.20</i>	<i>0.83</i>
Fish Crow	0.00	0.00	0.00	0.00	0.07	0.01
Barn Swallow	0.00	0.00	0.00	0.04	0.00	0.01
<i>Black-capped Chickadee</i>	<i>1.00</i>	<i>0.65</i>	<i>0.48</i>	<i>0.48</i>	<i>0.60</i>	<i>0.64</i>
<i>Tufted Titmouse</i>	<i>1.04</i>	<i>1.48</i>	<i>1.43</i>	<i>1.87</i>	<i>1.27</i>	<i>1.42</i>
<i>White-breasted Nuthatch</i>	<i>0.39</i>	<i>0.39</i>	<i>0.13</i>	<i>0.65</i>	<i>1.20</i>	<i>0.55</i>
Carolina Wren	0.13	0.17	0.00	0.04	0.00	0.07
House Wren	0.04	0.04	0.00	0.09	0.00	0.03
Blue-gray Gnatcatcher	0.00	0.00	0.00	0.04	0.00	0.01
Eastern Bluebird	0.00	0.00	0.00	0.04	0.00	0.01
Veery	0.04	0.13	0.00	0.00	0.00	0.03
Hermit Thrush	0.04	0.00	0.00	0.00	0.00	0.01
Wood Thrush	0.30	0.30	0.35	0.35	0.27	0.31
<i>American Robin</i>	<i>0.35</i>	<i>0.91</i>	<i>1.13</i>	<i>1.13</i>	<i>0.73</i>	<i>0.85</i>
<i>Gray Catbird</i>	<i>0.30</i>	<i>0.48</i>	<i>0.48</i>	<i>0.83</i>	<i>0.40</i>	<i>0.50</i>
Northern Mockingbird	0.00	0.09	0.00	0.09	0.00	0.03
Cedar Waxwing	0.04	0.04	0.00	0.26	0.00	0.07
Blue-winged Warbler	0.13	0.00	0.00	0.09	0.00	0.04
Yellow Warbler	0.04	0.00	0.13	0.09	0.07	0.07
Pine Warbler	0.22	0.30	0.39	0.74	0.67	0.46
American Redstart	0.00	0.04	0.00	0.04	0.00	0.02
Ovenbird	0.39	0.52	0.30	0.48	0.27	0.39
Common Yellowthroat	0.43	0.43	0.35	0.65	0.40	0.45
Scarlet Tanager	0.26	0.09	0.22	0.65	0.20	0.28
Chipping Sparrow	0.04	0.00	0.17	0.13	0.13	0.10

Appendix A. Park Summaries (continued).

Minute Man NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Song Sparrow</i>	0.61	0.61	0.48	0.48	0.47	0.53
<i>Swamp Sparrow</i>	0.00	0.00	0.04	0.04	0.00	0.02
<i>Northern Cardinal</i>	0.83	0.74	0.70	0.57	0.20	0.61
Rose-breasted Grosbeak	0.17	0.17	0.13	0.39	0.27	0.23
<i>Indigo Bunting</i>	0.04	0.13	0.13	0.04	0.20	0.11
<i>Red-winged Blackbird</i>	0.57	0.43	0.48	0.65	0.20	0.47
<i>Common Grackle</i>	0.35	0.13	0.09	0.52	0.20	0.26
<i>Brown-headed Cowbird</i>	0.17	0.48	0.13	0.30	0.00	0.22
Baltimore Oriole	0.13	0.13	0.00	0.26	0.13	0.13
<i>House Finch</i>	0.13	0.09	0.04	0.09	0.13	0.10
<i>American Goldfinch</i>	0.65	0.48	0.22	0.22	0.87	0.49
<i>House Sparrow</i>	0.04	0.13	0.04	0.04	0.07	0.07
<i>Points Surveyed:</i>	23	23	23	23	15	
<i>Ave # Birds Per Point:</i>	11.70	12.74	11.57	15.78	13.67	13.09
<i>Species Richness:</i>	42	36	35	47	34	58
<i>Shannon Diversity:</i>	3.27	3.20	3.12	3.37	3.15	

Appendix A. Park Summaries (continued).

Morristown NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Wild Turkey	0.00	0.11	0.00	0.00	0.07	0.03
Turkey Vulture	0.05	0.00	0.00	0.00	0.00	0.01
Red-tailed Hawk	0.05	0.05	0.10	0.05	0.17	0.09
Mourning Dove	0.05	0.05	0.15	0.05	0.28	0.12
Yellow-billed Cuckoo	0.00	0.21	0.05	0.25	0.10	0.12
Great Horned Owl	0.00	0.00	0.10	0.15	0.10	0.07
<i>Red-bellied Woodpecker</i>	<i>0.53</i>	<i>0.26</i>	<i>0.90</i>	<i>0.70</i>	<i>0.69</i>	<i>0.62</i>
Downy Woodpecker	0.11	0.11	0.30	0.35	0.28	0.23
Hairy Woodpecker	0.00	0.00	0.25	0.20	0.34	0.16
Northern Flicker (Yellow-shafted Flicker)	0.21	0.53	0.25	0.25	0.45	0.34
Pileated Woodpecker	0.11	0.11	0.10	0.20	0.24	0.15
<i>Eastern Wood-Pewee</i>	<i>0.74</i>	<i>0.89</i>	<i>0.65</i>	<i>0.45</i>	<i>0.93</i>	<i>0.73</i>
<i>Acadian Flycatcher</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.03</i>	<i>0.01</i>
Eastern Phoebe	0.00	0.05	0.05	0.00	0.07	0.03
Great Crested Flycatcher	0.05	0.05	0.20	0.10	0.03	0.09
<i>Yellow-throated Vireo</i>	<i>0.05</i>	<i>0.11</i>	<i>0.05</i>	<i>0.00</i>	<i>0.00</i>	<i>0.04</i>
Blue-headed Vireo	0.00	0.00	0.00	0.00	0.03	0.01
<i>Red-eyed Vireo</i>	<i>1.16</i>	<i>1.00</i>	<i>0.35</i>	<i>0.45</i>	<i>0.48</i>	<i>0.69</i>
<i>Blue Jay</i>	<i>0.42</i>	<i>1.05</i>	<i>1.10</i>	<i>0.85</i>	<i>1.38</i>	<i>0.96</i>
American Crow	0.05	0.53	0.40	0.35	0.48	0.36
Fish Crow	0.00	0.00	0.00	0.00	0.03	0.01
Black-capped Chickadee	0.05	0.05	0.05	0.00	0.03	0.04
<i>Tufted Titmouse</i>	<i>0.58</i>	<i>0.47</i>	<i>0.90</i>	<i>1.40</i>	<i>0.93</i>	<i>0.86</i>
White-breasted Nuthatch	0.16	0.26	0.60	0.40	0.48	0.38
Carolina Wren	0.00	0.11	0.00	0.00	0.00	0.02
House Wren	0.00	0.00	0.05	0.00	0.00	0.01
Blue-gray Gnatcatcher	0.00	0.00	0.00	0.10	0.14	0.05
Eastern Bluebird	0.00	0.00	0.15	0.00	0.00	0.03
<i>Veery</i>	<i>0.42</i>	<i>0.74</i>	<i>0.50</i>	<i>0.50</i>	<i>0.86</i>	<i>0.60</i>
Swainson's Thrush	0.05	0.00	0.00	0.05	0.00	0.02
<i>Wood Thrush</i>	<i>1.21</i>	<i>1.58</i>	<i>1.20</i>	<i>1.25</i>	<i>1.76</i>	<i>1.40</i>
<i>American Robin</i>	<i>0.79</i>	<i>1.05</i>	<i>0.95</i>	<i>1.05</i>	<i>1.03</i>	<i>0.98</i>
Gray Catbird	0.05	0.11	0.10	0.10	0.17	0.11
Cedar Waxwing	0.05	0.00	0.00	0.00	0.00	0.01
Blackpoll Warbler	0.26	0.00	0.00	0.00	0.00	0.05
<i>Cerulean Warbler</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.03</i>	<i>0.01</i>
<i>Black-and-white Warbler</i>	<i>0.05</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.01</i>
American Redstart	0.21	0.32	0.00	0.10	0.21	0.17
<i>Worm-eating Warbler</i>	<i>0.00</i>	<i>0.21</i>	<i>0.20</i>	<i>0.05</i>	<i>0.00</i>	<i>0.09</i>
<i>Ovenbird</i>	<i>0.84</i>	<i>1.11</i>	<i>0.50</i>	<i>0.40</i>	<i>1.38</i>	<i>0.85</i>
<i>Louisiana Waterthrush</i>	<i>0.16</i>	<i>0.11</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.05</i>
<i>Kentucky Warbler</i>	<i>0.00</i>	<i>0.05</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.01</i>
Hooded Warbler	0.16	0.21	0.00	0.00	0.14	0.10
<i>Canada Warbler</i>	<i>0.05</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.01</i>
<i>Scarlet Tanager</i>	<i>0.58</i>	<i>0.79</i>	<i>0.50</i>	<i>0.65</i>	<i>0.72</i>	<i>0.65</i>
<i>Eastern Towhee</i>	<i>0.47</i>	<i>0.58</i>	<i>0.05</i>	<i>0.30</i>	<i>0.66</i>	<i>0.41</i>

Appendix A. Park Summaries (continued).

Morristown NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Chipping Sparrow	0.00	0.05	0.00	0.00	0.07	0.02
Northern Cardinal	0.16	0.47	0.10	0.40	0.14	0.25
Rose-breasted Grosbeak	0.05	0.21	0.10	0.05	0.10	0.10
Indigo Bunting	0.00	0.00	0.10	0.00	0.03	0.03
Brown-headed Cowbird	0.11	0.16	0.00	0.05	0.07	0.08
Baltimore Oriole	0.47	0.11	0.30	0.10	0.03	0.20
<i>Points Surveyed:</i>	19	19	20	20	29	
<i>Ave # Birds Per Point:</i>	10.53	13.84	11.35	11.35	15.21	12.46
<i>Species Richness:</i>	35	36	33	31	39	52
<i>Shannon Diversity:</i>	3.06	3.13	3.08	3.03	3.12	

Appendix A. Park Summaries (continued).

Saint-Gaudens NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Wild Turkey		0.00	0.00	0.00	0.13	0.03
Mourning Dove		0.00	0.00	0.13	0.00	0.03
Belted Kingfisher		0.00	0.13	0.00	0.13	0.06
Yellow-bellied Sapsucker		0.13	0.00	0.00	0.25	0.09
Hairy Woodpecker		0.00	0.00	0.38	0.00	0.09
Northern Flicker (Yellow-shafted Flicker)		0.00	0.13	0.00	0.00	0.03
Pileated Woodpecker		0.38	0.00	0.25	0.00	0.16
<i>Eastern Wood-Pewee</i>		<i>0.63</i>	<i>0.63</i>	<i>0.88</i>	<i>0.25</i>	<i>0.59</i>
Willow Flycatcher		0.13	0.00	0.00	0.00	0.03
Least Flycatcher		0.13	0.25	0.00	0.00	0.09
Eastern Phoebe		0.00	0.13	0.00	0.00	0.03
Great Crested Flycatcher		0.00	0.00	0.13	0.13	0.06
Blue-headed Vireo		0.13	0.13	0.13	0.25	0.16
<i>Red-eyed Vireo</i>		<i>1.13</i>	<i>1.75</i>	<i>1.63</i>	<i>1.75</i>	<i>1.56</i>
Blue Jay		0.38	0.50	0.00	0.25	0.28
<i>American Crow</i>		<i>0.38</i>	<i>0.75</i>	<i>0.63</i>	<i>0.38</i>	<i>0.53</i>
Black-capped Chickadee		0.25	0.13	0.38	0.38	0.28
Red-breasted Nuthatch		0.00	0.00	0.25	0.00	0.06
White-breasted Nuthatch		0.00	0.00	0.25	0.13	0.09
Brown Creeper		0.00	0.00	0.00	0.13	0.03
Winter Wren		0.00	0.00	0.25	0.13	0.09
<i>Veery</i>		<i>0.38</i>	<i>1.38</i>	<i>0.50</i>	<i>0.88</i>	<i>0.78</i>
Hermit Thrush		0.00	0.13	0.25	0.50	0.22
Wood Thrush		0.25	0.25	0.13	0.75	0.34
<i>American Robin</i>		<i>0.13</i>	<i>0.50</i>	<i>0.50</i>	<i>0.38</i>	<i>0.38</i>
Gray Catbird		0.25	0.13	0.13	0.13	0.16
Yellow Warbler		0.13	0.00	0.25	0.25	0.16
Chestnut-sided Warbler		0.25	0.13	0.00	0.13	0.13
Magnolia Warbler		0.00	0.13	0.00	0.00	0.03
<i>Black-throated Green Warbler</i>		<i>0.50</i>	<i>0.38</i>	<i>1.00</i>	<i>0.88</i>	<i>0.69</i>
Pine Warbler		0.00	0.25	0.00	0.38	0.16
Black-and-white Warbler		0.13	0.13	0.00	0.00	0.06
American Redstart		0.13	0.00	0.25	0.13	0.13
<i>Ovenbird</i>		<i>1.50</i>	<i>2.00</i>	<i>1.88</i>	<i>1.75</i>	<i>1.78</i>
Northern Waterthrush		0.00	0.00	0.13	0.00	0.03
Louisiana Waterthrush		0.25	0.13	0.00	0.13	0.13
Common Yellowthroat		0.25	0.25	0.13	0.25	0.22
<i>Scarlet Tanager</i>		<i>0.38</i>	<i>0.88</i>	<i>0.38</i>	<i>0.25</i>	<i>0.47</i>
Song Sparrow		0.00	0.13	0.25	0.00	0.09
White-throated Sparrow		0.00	0.13	0.00	0.00	0.03
Dark-eyed Junco (Slate-colored Junco)		0.00	0.00	0.00	0.38	0.09
Rose-breasted Grosbeak		0.00	0.13	0.00	0.13	0.06
<i>Red-winged Blackbird</i>		<i>0.25</i>	<i>0.25</i>	<i>0.38</i>	<i>0.38</i>	<i>0.31</i>
Baltimore Oriole		0.13	0.13	0.00	0.13	0.09
American Goldfinch		0.00	0.25	0.25	0.00	0.13

Appendix A. Park Summaries (continued).

Saint-Gaudens NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Points Surveyed:</i>		8	8	8	8	
<i>Ave # Birds Per Point:</i>		8.50	12.13	11.63	12.00	11.06
<i>Species Richness:</i>		25	30	27	31	45
<i>Shannon Diversity:</i>		2.91	2.90	2.93	3.03	

Appendix A. Park Summaries (continued).

Saugus Iron Works NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose			0.00	0.00	0.67	0.22
<i>Mallard</i>			0.33	2.33	1.33	1.33
Black-crowned Night-Heron			0.00	0.33	0.67	0.33
Red-tailed Hawk			0.00	0.00	0.33	0.11
Spotted Sandpiper			0.00	0.00	0.33	0.11
<i>Herring Gull</i>			0.33	0.67	0.67	0.56
Rock Pigeon			0.33	0.33	0.67	0.44
Mourning Dove			0.33	0.00	0.00	0.11
<i>Chimney Swift</i>			0.00	0.67	1.00	0.56
Belted Kingfisher			0.33	0.00	0.00	0.11
Downy Woodpecker			0.67	0.00	0.33	0.33
Northern Flicker (Yellow-shafted Flicker)			0.33	0.00	0.33	0.22
Eastern Phoebe			0.00	0.67	0.00	0.22
<i>Eastern Kingbird</i>			0.00	0.00	0.33	0.11
Warbling Vireo			0.00	0.00	0.33	0.11
Red-eyed Vireo			0.00	0.33	0.00	0.11
Blue Jay			0.67	0.33	0.33	0.44
<i>American Crow</i>			1.00	0.67	0.00	0.56
<i>Barn Swallow</i>			0.67	0.67	1.00	0.78
Tufted Titmouse			0.33	0.00	0.00	0.11
House Wren			0.00	0.00	0.33	0.11
<i>American Robin</i>			0.67	1.00	1.67	1.11
<i>Gray Catbird</i>			0.67	0.67	0.67	0.67
<i>European Starling</i>			0.67	2.33	0.33	1.11
Yellow Warbler			0.00	0.00	0.33	0.11
Common Yellowthroat			0.33	0.33	0.00	0.22
<i>Song Sparrow</i>			1.00	2.00	3.00	2.00
<i>Northern Cardinal</i>			1.00	0.33	0.33	0.56
<i>Red-winged Blackbird</i>			0.33	2.33	2.33	1.67
Common Grackle			0.33	0.33	0.67	0.44
<i>Baltimore Oriole</i>			0.33	0.33	0.00	0.22
American Goldfinch			0.00	0.33	0.33	0.22
House Sparrow			1.00	0.00	0.33	0.44
<i>Points Surveyed:</i>			3	3	3	
<i>Ave # Birds Per Point:</i>			11.67	17.00	18.67	15.78
<i>Species Richness:</i>			21	20	25	33
<i>Shannon Diversity:</i>			2.94	2.69	2.92	

Appendix A. Park Summaries (continued).

Saratoga NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.21	0.05	0.08	0.00	0.02	0.07
Northern Bobwhite	0.03	0.00	0.00	0.00	0.00	0.01
Great Blue Heron	0.09	0.05	0.00	0.02	0.02	0.04
Turkey Vulture	0.00	0.00	0.00	0.02	0.02	0.01
Northern Harrier	0.03	0.00	0.00	0.00	0.00	0.01
Cooper's Hawk	0.00	0.00	0.00	0.00	0.02	0.00
Red-tailed Hawk	0.06	0.00	0.00	0.00	0.05	0.02
American Kestrel	0.12	0.00	0.04	0.05	0.10	0.06
American Woodcock	0.00	0.00	0.00	0.02	0.10	0.02
Mourning Dove	0.21	0.60	0.43	0.27	0.49	0.40
Black-billed Cuckoo	0.12	0.00	0.04	0.02	0.00	0.04
Yellow-billed Cuckoo	0.03	0.00	0.02	0.00	0.00	0.01
Ruby-throated Hummingbird	0.03	0.00	0.00	0.02	0.00	0.01
Red-bellied Woodpecker	0.21	0.00	0.04	0.05	0.07	0.07
Yellow-bellied Sapsucker	0.06	0.05	0.14	0.29	0.56	0.22
Downy Woodpecker	0.03	0.10	0.20	0.05	0.12	0.10
Hairy Woodpecker	0.06	0.00	0.00	0.00	0.10	0.03
Northern Flicker (Yellow-shafted Flicker)	0.15	0.15	0.04	0.02	0.20	0.11
Pileated Woodpecker	0.09	0.00	0.04	0.15	0.15	0.08
Eastern Wood-Pewee	0.12	0.35	0.59	0.41	0.51	0.40
Acadian Flycatcher	0.00	0.00	0.02	0.00	0.00	0.00
Alder Flycatcher	0.00	0.05	0.08	0.00	0.00	0.03
Willow Flycatcher	0.06	0.00	0.16	0.00	0.02	0.05
Least Flycatcher	0.00	0.00	0.08	0.02	0.00	0.02
Eastern Phoebe	0.00	0.05	0.08	0.02	0.10	0.05
Great Crested Flycatcher	0.15	0.55	0.35	0.22	0.20	0.29
Eastern Kingbird	0.35	0.10	0.16	0.29	0.68	0.32
Yellow-throated Vireo	0.00	0.05	0.02	0.00	0.02	0.02
Warbling Vireo	0.06	0.00	0.02	0.00	0.00	0.02
Red-eyed Vireo	0.12	0.50	0.49	0.22	0.39	0.34
Blue Jay	0.26	0.40	0.37	0.34	0.29	0.33
<i>American Crow</i>	<i>0.71</i>	<i>0.75</i>	<i>0.57</i>	<i>1.07</i>	<i>0.73</i>	<i>0.77</i>
Common Raven	0.03	0.00	0.00	0.00	0.00	0.01
Tree Swallow	0.21	0.40	0.20	0.05	0.66	0.30
Black-capped Chickadee	0.29	0.70	0.47	0.49	0.37	0.46
Tufted Titmouse	0.41	0.30	0.31	0.02	0.12	0.23
Red-breasted Nuthatch	0.00	0.00	0.04	0.00	0.02	0.01
White-breasted Nuthatch	0.12	0.15	0.06	0.17	0.27	0.15
Brown Creeper	0.00	0.05	0.14	0.07	0.10	0.07
House Wren	0.24	0.00	0.02	0.05	0.20	0.10
Winter Wren	0.00	0.05	0.00	0.00	0.00	0.01
Blue-gray Gnatcatcher	0.00	0.00	0.06	0.02	0.00	0.02
Eastern Bluebird	0.24	0.00	0.02	0.00	0.24	0.10
Veery	0.03	0.10	0.18	0.27	0.37	0.19
Hermit Thrush	0.00	0.10	0.10	0.20	0.12	0.10
Wood Thrush	0.12	0.50	0.39	0.20	0.34	0.31

Appendix A. Park Summaries (continued).

Saratoga NHP

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>American Robin</i>	0.32	0.90	0.63	0.37	0.51	0.55
<i>Gray Catbird</i>	0.15	0.05	0.16	0.17	0.34	0.17
<i>Northern Mockingbird</i>	0.00	0.00	0.00	0.02	0.10	0.02
<i>Brown Thrasher</i>	0.06	0.00	0.00	0.00	0.00	0.01
<i>European Starling</i>	0.29	0.00	0.00	0.17	0.07	0.11
<i>Cedar Waxwing</i>	0.26	0.60	0.22	0.22	0.34	0.33
Blue-winged Warbler	0.15	0.20	0.20	0.07	0.10	0.14
Golden-winged Warbler	0.00	0.10	0.00	0.00	0.00	0.02
<i>Yellow Warbler</i>	0.24	0.10	0.16	0.12	0.24	0.17
<i>Chestnut-sided Warbler</i>	0.06	0.10	0.20	0.02	0.17	0.11
<i>Yellow-rumped Warbler (Myrtle Warbler)</i>	0.00	0.00	0.04	0.00	0.00	0.01
<i>Prairie Warbler</i>	0.06	0.15	0.06	0.00	0.24	0.10
<i>Black-and-white Warbler</i>	0.00	0.00	0.04	0.02	0.02	0.02
<i>American Redstart</i>	0.09	0.05	0.00	0.00	0.00	0.03
<i>Ovenbird</i>	0.18	1.15	0.82	0.44	0.63	0.64
<i>Northern Waterthrush</i>	0.00	0.00	0.02	0.00	0.00	0.00
<i>Louisiana Waterthrush</i>	0.00	0.00	0.06	0.00	0.00	0.01
<i>Common Yellowthroat</i>	0.62	0.80	0.94	1.07	1.41	0.97
<i>Scarlet Tanager</i>	0.15	0.20	0.29	0.17	0.22	0.21
Eastern Towhee	0.15	0.30	0.27	0.22	0.39	0.27
<i>Chipping Sparrow</i>	0.29	0.50	0.27	0.32	0.29	0.34
Field Sparrow	0.79	0.55	0.67	0.76	1.27	0.81
<i>Vesper Sparrow</i>	0.00	0.00	0.06	0.00	0.00	0.01
<i>Savannah Sparrow</i>	0.06	0.00	0.04	0.05	0.00	0.03
<i>Song Sparrow</i>	1.35	1.20	0.65	1.05	0.95	1.04
<i>Northern Cardinal</i>	0.26	0.15	0.24	0.17	0.10	0.18
<i>Rose-breasted Grosbeak</i>	0.06	0.05	0.12	0.07	0.00	0.06
<i>Indigo Bunting</i>	0.03	0.00	0.06	0.00	0.00	0.02
<i>Bobolink</i>	1.09	0.60	0.65	1.71	3.15	1.44
<i>Red-winged Blackbird</i>	1.32	0.70	1.82	2.05	3.07	1.79
<i>Eastern Meadowlark</i>	0.47	0.15	0.43	1.05	0.80	0.58
<i>Common Grackle</i>	0.12	0.00	0.00	0.02	0.07	0.04
<i>Brown-headed Cowbird</i>	0.00	0.05	0.06	0.05	0.10	0.05
<i>Orchard Oriole</i>	0.09	0.00	0.00	0.02	0.00	0.02
Baltimore Oriole	0.32	0.25	0.16	0.17	0.29	0.24
<i>Purple Finch</i>	0.03	0.00	0.00	0.00	0.00	0.01
<i>American Goldfinch</i>	0.50	1.15	0.94	0.76	1.12	0.89
Points Surveyed:	34	20	51	41	41	
Ave # Birds Per Point:	14.56	16.20	16.27	16.49	23.80	17.47
Species Richness:	62	48	64	57	59	83
Shannon Diversity:	3.62	3.45	3.61	3.33	3.41	

Appendix A. Park Summaries (continued).

Vanderbilt Mansion NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Canada Goose</i>	0.14	0.29	0.29	0.14	0.71	0.31
<i>Mallard</i>	0.00	0.00	0.00	0.00	0.14	0.03
<i>Mourning Dove</i>	0.00	0.00	0.14	0.14	0.00	0.06
Black-billed Cuckoo	0.14	0.00	0.00	0.00	0.00	0.03
<i>Barred Owl</i>	0.00	0.00	0.00	0.00	0.14	0.03
<i>Red-bellied Woodpecker</i>	0.43	1.00	0.14	0.57	1.14	0.66
<i>Downy Woodpecker</i>	0.29	0.14	0.14	0.00	0.00	0.11
<i>Hairy Woodpecker</i>	0.00	0.29	0.00	0.29	0.14	0.14
<i>Northern Flicker (Yellow-shafted Flicker)</i>	0.57	0.14	0.00	0.00	0.14	0.17
<i>Pileated Woodpecker</i>	0.14	0.00	0.14	0.00	0.14	0.09
Eastern Wood-Pewee	0.29	0.00	0.00	0.29	0.00	0.11
<i>Eastern Phoebe</i>	0.14	0.00	0.29	0.14	0.00	0.11
<i>Great Crested Flycatcher</i>	0.14	0.71	0.57	0.86	1.14	0.69
<i>Red-eyed Vireo</i>	0.71	1.29	0.57	0.86	1.14	0.91
<i>Blue Jay</i>	0.29	0.43	0.00	0.00	0.00	0.14
<i>American Crow</i>	0.86	0.43	0.29	0.43	0.43	0.49
<i>Fish Crow</i>	0.14	0.00	0.00	0.00	0.00	0.03
<i>Tufted Titmouse</i>	0.71	0.57	0.29	1.29	1.14	0.80
<i>White-breasted Nuthatch</i>	0.00	0.71	0.00	0.57	0.14	0.29
<i>Carolina Wren</i>	0.00	0.00	0.57	0.00	0.14	0.14
<i>House Wren</i>	0.00	0.14	0.14	0.00	0.00	0.06
<i>Eastern Bluebird</i>	0.00	0.00	0.00	0.00	0.14	0.03
Wood Thrush	0.86	1.14	0.57	0.29	1.00	0.77
<i>American Robin</i>	0.00	0.00	0.29	0.57	0.14	0.20
<i>American Redstart</i>	0.14	0.29	0.00	0.29	0.00	0.14
Worm-eating Warbler	0.00	0.29	0.14	0.14	0.14	0.14
<i>Ovenbird</i>	0.00	0.14	0.29	0.00	0.14	0.11
<i>Common Yellowthroat</i>	0.14	0.00	0.00	0.00	0.00	0.03
<i>Scarlet Tanager</i>	0.43	0.00	0.14	0.43	0.00	0.20
<i>Chipping Sparrow</i>	0.29	0.14	0.14	0.14	0.00	0.14
<i>Northern Cardinal</i>	1.14	0.86	0.86	0.86	1.00	0.94
<i>Rose-breasted Grosbeak</i>	0.14	0.00	0.00	0.00	0.00	0.03
<i>Indigo Bunting</i>	0.29	0.00	0.14	0.00	0.00	0.09
Points Surveyed:	7	7	7	7	7	
Ave # Birds Per Point:	8.43	9.00	6.14	8.29	9.29	8.23
Species Richness:	22	18	20	18	19	33
Shannon Diversity:	2.84	2.64	2.80	2.67	2.56	

Appendix A. Park Summaries (continued).

Weir Farm NHS

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Red-tailed Hawk	0.00			0.20	0.00	0.07
Mourning Dove	0.00			0.00	0.20	0.07
Red-bellied Woodpecker	0.00			0.20	0.40	0.20
Downy Woodpecker	0.20			0.60	1.00	0.60
Northern Flicker (Yellow-shafted Flicker)	0.20			0.00	0.20	0.13
Eastern Wood-Pewee	0.00			0.40	0.20	0.20
Eastern Phoebe	0.20			0.00	0.00	0.07
Great Crested Flycatcher	0.20			0.00	0.40	0.20
Yellow-throated Vireo	0.20			0.00	0.00	0.07
Warbling Vireo	0.20			0.00	0.00	0.07
Red-eyed Vireo	0.20			0.40	1.00	0.53
Blue Jay	0.40			0.20	0.00	0.20
American Crow	0.80			0.60	0.40	0.60
Black-capped Chickadee	0.00			0.20	0.60	0.27
Tufted Titmouse	1.20			1.20	1.20	1.20
White-breasted Nuthatch	0.20			0.20	1.20	0.53
Carolina Wren	0.20			0.00	0.00	0.07
House Wren	0.40			0.20	0.00	0.20
Wood Thrush	0.00			0.20	0.00	0.07
American Robin	0.00			0.20	0.40	0.20
Gray Catbird	0.00			0.20	0.80	0.33
Blackpoll Warbler	0.00			0.20	0.00	0.07
American Redstart	0.20			0.00	0.00	0.07
Ovenbird	0.20			0.00	0.00	0.07
Scarlet Tanager	0.00			0.20	0.00	0.07
Chipping Sparrow	0.20			0.00	0.40	0.20
Song Sparrow	0.00			0.20	0.40	0.20
Northern Cardinal	0.80			0.40	0.40	0.53
Red-winged Blackbird	0.20			0.00	0.00	0.07
Common Grackle	0.00			0.20	1.20	0.47
Baltimore Oriole	0.20			0.00	0.00	0.07
American Goldfinch	0.00			0.00	0.20	0.07
Points Surveyed:	5			5	5	
Ave # Birds Per Point:	6.40			6.20	10.60	7.73
Species Richness:	19			19	18	32
Shannon Diversity:	2.70			2.74	2.71	

Appendix B—Site Summaries

This appendix contains the species list for each study site (when more than one site was surveyed within a park), and the relative abundance (birds per point) of each species for each year. It only includes data for the first survey of each point in a given year, in order to promote more consistent comparisons between years and to avoid artificially inflating abundances due to counting the same individuals in repeat visits. Species in boldface are species of regional or continental concern, and species in italics are the 10 most common species for each park. There will occasionally be more than 10 italicized species, if multiple species have the same abundance.

This appendix also lists the number of points surveyed per site each year, the number of birds detected per point count, the species richness, and the Shannon diversity index for each site for each year.

Appendix B. Site Summaries (continued).

Acadia NP

ACAD Schoodic

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Spruce Grouse		0.00			0.17	0.08
Downy Woodpecker		0.00			0.33	0.17
Hairy Woodpecker		0.67			0.17	0.42
<i>Yellow-bellied Flycatcher</i>		0.00			0.83	0.42
Least Flycatcher		0.17			0.00	0.08
Great Crested Flycatcher		0.17			0.00	0.08
Blue-headed Vireo		0.00			0.33	0.17
Red-eyed Vireo		0.00			0.67	0.33
<i>American Crow</i>		0.17			0.83	0.50
Black-capped Chickadee		0.00			0.50	0.25
<i>Boreal Chickadee</i>		1.00			0.00	0.50
<i>Red-breasted Nuthatch</i>		0.17			1.50	0.83
Brown Creeper		0.00			0.50	0.25
<i>Winter Wren</i>		0.00			1.17	0.58
<i>Golden-crowned Kinglet</i>		0.00			1.50	0.75
Ruby-crowned Kinglet		0.33			0.17	0.25
Veery		0.00			0.17	0.08
Swainson's Thrush		0.00			0.17	0.08
<i>Hermit Thrush</i>		0.67			0.67	0.67
Wood Thrush		0.17			0.00	0.08
American Robin		0.33			0.00	0.17
Nashville Warbler		0.00			0.33	0.17
Chestnut-sided Warbler		0.33			0.00	0.17
<i>Magnolia Warbler</i>		0.00			1.00	0.50
Black-throated Blue Warbler		0.33			0.00	0.17
Yellow-rumped Warbler (Myrtle Warbler)		0.17			0.67	0.42
<i>Black-throated Green Warbler</i>		1.00			3.33	2.17
Black-and-white Warbler		0.17			0.00	0.08
American Redstart		0.00			0.17	0.08
Eastern Towhee		0.17			0.00	0.08
White-throated Sparrow		0.00			0.67	0.33
<i>Dark-eyed Junco (Slate-colored Junco)</i>		0.33			1.50	0.92
White-winged Crossbill		0.00			0.33	0.17
<i>Points Surveyed:</i>		6			6	
<i>Ave # Birds Per Point:</i>		6.33			17.67	12.00
<i>Species Richness:</i>		17			24	33
<i>Shannon Diversity:</i>		2.60			2.83	

Appendix B. Site Summaries (continued).

Acadia NP

ACAD-Giant Slide Trail

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Common Loon		0.00	0.10	0.00		0.03
Mourning Dove		0.44	0.30	0.30		0.35
Hairy Woodpecker		0.11	0.00	0.00		0.04
Pileated Woodpecker		0.11	0.10	0.10		0.10
Alder Flycatcher		0.11	0.00	0.00		0.04
Least Flycatcher		0.00	0.00	0.20		0.07
<i>Blue-headed Vireo</i>		0.78	0.50	0.60		0.63
Blue Jay		0.44	0.10	0.50		0.35
American Crow		0.33	0.50	0.30		0.38
Common Raven		0.22	0.00	0.10		0.11
<i>Black-capped Chickadee</i>		0.11	0.60	0.90		0.54
<i>Red-breasted Nuthatch</i>		0.67	0.40	0.60		0.56
Brown Creeper		0.11	0.40	0.20		0.24
Winter Wren		0.22	0.10	0.00		0.11
<i>Golden-crowned Kinglet</i>		0.67	1.40	0.70		0.92
<i>Hermit Thrush</i>		0.22	0.10	1.00		0.44
<i>American Robin</i>		0.89	0.70	0.60		0.73
Brown Thrasher		0.11	0.00	0.00		0.04
Cedar Waxwing		0.33	0.10	0.30		0.24
Black-throated Blue Warbler		0.00	0.70	0.50		0.40
Yellow-rumped Warbler (Myrtle Warbler)		0.11	0.30	0.70		0.37
<i>Black-throated Green Warbler</i>		2.78	2.90	2.20		2.63
<i>Blackburnian Warbler</i>		0.33	0.50	0.50		0.44
Black-and-white Warbler		0.33	0.10	0.20		0.21
<i>Ovenbird</i>		1.11	2.30	1.70		1.70
Dark-eyed Junco (Slate-colored Junco)		0.11	0.10	0.50		0.24
Purple Finch		0.11	0.10	0.10		0.10
<i>Pine Siskin</i>		0.56	1.00	0.10		0.55
<i>Points Surveyed:</i>		9	10	10		
<i>Ave # Birds Per Point:</i>		11.33	13.40	12.90		12.54
<i>Species Richness:</i>		25	23	23		28
<i>Shannon Diversity:</i>		2.75	2.59	2.81		

Appendix B. Site Summaries (continued).

Acadia NP

ACAD-Witch Hole Pond

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Mourning Dove				0.89		0.89
Northern Flicker (Yellow-shafted Flicker)				0.11		0.11
Eastern Wood-Pewee				0.44		0.44
Eastern Phoebe				0.11		0.11
Great Crested Flycatcher				0.67		0.67
Blue-headed Vireo				0.33		0.33
Red-eyed Vireo				1.22		1.22
Blue Jay				0.44		0.44
American Crow				0.11		0.11
Black-capped Chickadee				0.89		0.89
Red-breasted Nuthatch				0.22		0.22
Veery				0.11		0.11
Hermit Thrush				0.78		0.78
American Robin				0.33		0.33
Nashville Warbler				0.11		0.11
Yellow-rumped Warbler (Myrtle Warbler)				0.78		0.78
Black-throated Green Warbler				1.89		1.89
Black-and-white Warbler				0.33		0.33
Ovenbird				1.33		1.33
Dark-eyed Junco (Slate-colored Junco)				0.11		0.11
Pine Siskin				0.11		0.11
American Goldfinch				0.22		0.22
<i>Points Surveyed:</i>				9		
<i>Ave # Birds Per Point:</i>				11.56		11.56
<i>Species Richness:</i>				22		22
<i>Shannon Diversity:</i>				2.73		

Appendix B. Site Summaries (continued).

Acadia NP

ACAD-Seal Cove Center

	Relative Abundance (birds per point)					
Common Name	2006	2007	2008	2009	2010	Mean
Common Loon		0.00	0.00	0.17	0.00	0.04
Mourning Dove		1.00	1.33	0.17	0.00	0.63
Downy Woodpecker		0.00	0.00	0.00	0.17	0.04
Hairy Woodpecker		0.17	0.00	0.17	0.83	0.29
Pileated Woodpecker		0.50	0.00	0.00	0.00	0.13
Least Flycatcher		0.50	0.33	0.50	0.50	0.46
Blue-headed Vireo		0.33	1.00	0.67	0.33	0.58
Blue Jay		0.00	0.17	0.00	0.17	0.08
American Crow		0.17	0.00	0.00	0.00	0.04
Common Raven		0.50	0.00	1.00	0.50	0.50
Black-capped Chickadee		0.33	0.17	0.00	0.00	0.13
Red-breasted Nuthatch		0.50	0.17	0.00	0.33	0.25
Brown Creeper		0.17	0.00	0.00	0.33	0.13
Winter Wren		0.33	0.17	0.00	0.50	0.25
Golden-crowned Kinglet		0.17	0.50	0.00	0.00	0.17
Swainson's Thrush		0.33	0.00	0.00	0.33	0.17
Hermit Thrush		0.50	0.00	0.00	0.33	0.21
Magnolia Warbler		0.33	0.17	0.00	0.00	0.13
Yellow-rumped Warbler (Myrtle Warbler)		0.00	0.00	0.17	0.00	0.04
Black-throated Green Warbler		1.33	1.00	1.00	1.17	1.13
Blackburnian Warbler		0.17	0.33	0.17	0.00	0.17
Pine Warbler		0.00	0.00	0.00	0.17	0.04
Ovenbird		0.33	0.50	1.83	0.50	0.79
Dark-eyed Junco (Slate-colored Junco)		0.17	0.17	0.33	0.17	0.21
Purple Finch		0.50	0.17	0.50	0.17	0.33
White-winged Crossbill		0.00	0.00	0.00	0.17	0.04
Pine Siskin		0.00	0.33	0.00	0.00	0.08
Points Surveyed:		6	6	6	6	
Ave # Birds Per Point:		8.33	6.50	6.67	6.67	7.04
Species Richness:		20	15	12	17	27
Shannon Diversity:		2.80	2.41	2.15	2.64	

Appendix B. Site Summaries (continued).

Acadia NP

ACAD-Seal Cove East

Common Name	Relative Abundance (birds per point)					Mean
	2006	2007	2008	2009	2010	
Herring Gull		0.14	0.00	0.00	0.14	0.07
Mourning Dove		1.29	0.43	0.14	0.29	0.54
Barred Owl		0.00	0.00	0.00	0.14	0.04
Ruby-throated Hummingbird		0.00	0.00	0.00	0.14	0.04
Downy Woodpecker		0.00	0.00	0.14	0.00	0.04
Hairy Woodpecker		0.00	0.00	0.43	0.14	0.14
Pileated Woodpecker		0.14	0.14	0.00	0.29	0.14
Least Flycatcher		0.00	0.00	0.14	0.00	0.04
Eastern Phoebe		0.00	0.00	0.14	0.00	0.04
Blue-headed Vireo		0.14	0.43	0.43	0.14	0.29
Red-eyed Vireo		0.00	0.14	0.00	0.14	0.07
Blue Jay		0.14	0.29	0.00	0.14	0.14
American Crow		0.86	0.86	0.71	1.57	1.00
Common Raven		0.57	0.29	0.29	0.29	0.36
Black-capped Chickadee		0.29	0.14	0.14	0.14	0.18
Red-breasted Nuthatch		0.71	0.14	0.43	0.86	0.54
Brown Creeper		0.00	0.57	0.43	0.29	0.32
Winter Wren		0.43	0.43	0.14	0.43	0.36
Golden-crowned Kinglet		0.43	0.29	0.57	0.14	0.36
Swainson's Thrush		0.29	0.14	0.00	0.00	0.11
Hermit Thrush		0.29	0.00	0.57	0.14	0.25
American Robin		0.57	0.00	0.29	0.43	0.32
Northern Parula		0.14	0.00	0.00	0.00	0.04
Magnolia Warbler		0.29	0.43	0.00	0.14	0.21
Black-throated Blue Warbler		0.00	0.00	0.43	0.00	0.11
Yellow-rumped Warbler (Myrtle Warbler)		0.29	0.57	0.57	0.71	0.54
Black-throated Green Warbler		1.43	1.14	0.71	1.71	1.25
Blackburnian Warbler		0.43	0.29	0.14	0.29	0.29
Blackpoll Warbler		0.00	0.14	0.00	0.00	0.04
Ovenbird		1.14	1.00	1.00	0.86	1.00
Common Yellowthroat		0.00	0.14	0.00	0.00	0.04
Swamp Sparrow		0.00	0.00	0.29	0.00	0.07
Dark-eyed Junco (Slate-colored Junco)		0.43	0.29	0.71	0.71	0.54
Red-winged Blackbird		0.14	0.29	0.14	0.00	0.14
Common Grackle		0.14	0.00	0.00	0.00	0.04
Purple Finch		0.14	0.14	0.14	0.43	0.21
Pine Siskin		0.43	0.43	0.00	0.14	0.25
Points Surveyed:		7	7	7	7	
Ave # Birds Per Point:		11.29	9.14	9.14	10.86	10.11
Species Richness:		25	24	24	26	37
Shannon Diversity:		2.94	2.96	2.99	2.88	

Appendix B. Site Summaries (continued).

Acadia NP

ACAD - Youngs Mtn

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Downy Woodpecker				0.14		0.14
Eastern Wood-Pewee				0.29		0.29
Great Crested Flycatcher				0.29		0.29
Red-eyed Vireo				0.57		0.57
Blue Jay				1.14		1.14
Black-capped Chickadee				1.29		1.29
Brown Creeper				0.14		0.14
Swainson's Thrush				0.14		0.14
Hermit Thrush				2.57		2.57
Cedar Waxwing				0.14		0.14
Black-throated Blue Warbler				0.57		0.57
Yellow-rumped Warbler (Myrtle Warbler)				0.57		0.57
Black-throated Green Warbler				1.14		1.14
Black-and-white Warbler				0.86		0.86
Ovenbird				1.14		1.14
<i>Points Surveyed:</i>				7		
<i>Ave # Birds Per Point:</i>				11.00		11.00
<i>Species Richness:</i>				15		15
<i>Shannon Diversity:</i>				2.37		

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP

MABI East

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Mourning Dove	0.20	0.00	0.10	0.20	0.40	0.18
Barred Owl	0.00	0.10	0.00	0.00	0.00	0.02
Chimney Swift	0.00	0.00	0.00	0.10	0.00	0.02
Yellow-bellied Sapsucker	0.10	0.30	0.30	0.00	0.20	0.18
Downy Woodpecker	0.20	0.10	0.00	0.10	0.00	0.08
Hairy Woodpecker	0.00	0.20	0.30	0.00	0.10	0.12
Pileated Woodpecker	0.00	0.10	0.00	0.00	0.00	0.02
Eastern Wood-Pewee	0.10	0.30	0.20	0.40	0.30	0.26
Great Crested Flycatcher	0.00	0.10	0.10	0.00	0.00	0.04
Blue-headed Vireo	0.00	0.10	0.30	0.20	0.30	0.18
<i>Red-eyed Vireo</i>	<i>2.60</i>	<i>1.80</i>	<i>1.70</i>	<i>1.20</i>	<i>1.40</i>	<i>1.74</i>
<i>Blue Jay</i>	<i>0.20</i>	<i>0.80</i>	<i>0.40</i>	<i>0.50</i>	<i>0.10</i>	<i>0.40</i>
American Crow	0.40	0.40	0.20	0.20	0.20	0.28
Common Raven	0.10	0.00	0.00	0.00	0.00	0.02
<i>Black-capped Chickadee</i>	<i>0.30</i>	<i>1.10</i>	<i>0.40</i>	<i>0.60</i>	<i>0.30</i>	<i>0.54</i>
Tufted Titmouse	0.10	0.00	0.10	0.10	0.00	0.06
Red-breasted Nuthatch	0.00	0.00	0.00	0.00	0.10	0.02
White-breasted Nuthatch	0.20	0.20	0.10	0.00	0.20	0.14
<i>Brown Creeper</i>	<i>0.70</i>	<i>0.40</i>	<i>0.40</i>	<i>0.50</i>	<i>0.20</i>	<i>0.44</i>
Winter Wren	0.00	0.00	0.40	0.10	0.10	0.12
Golden-crowned Kinglet	0.10	0.00	0.00	0.00	0.00	0.02
Veery	0.20	0.10	0.00	0.00	0.00	0.06
<i>Hermit Thrush</i>	<i>0.50</i>	<i>0.70</i>	<i>1.00</i>	<i>0.50</i>	<i>0.50</i>	<i>0.64</i>
Wood Thrush	0.00	0.00	0.30	0.00	0.50	0.16
<i>American Robin</i>	<i>0.40</i>	<i>0.40</i>	<i>0.20</i>	<i>0.50</i>	<i>0.70</i>	<i>0.44</i>
Black-throated Blue Warbler	0.00	0.10	0.00	0.10	0.00	0.04
<i>Black-throated Green Warbler</i>	<i>0.80</i>	<i>0.70</i>	<i>0.50</i>	<i>0.40</i>	<i>0.50</i>	<i>0.58</i>
<i>Blackburnian Warbler</i>	<i>0.80</i>	<i>0.70</i>	<i>0.70</i>	<i>0.80</i>	<i>0.80</i>	<i>0.76</i>
Pine Warbler	0.00	0.10	0.20	0.10	0.30	0.14
Black-and-white Warbler	0.00	0.10	0.00	0.00	0.00	0.02
<i>Ovenbird</i>	<i>2.60</i>	<i>3.70</i>	<i>3.20</i>	<i>3.00</i>	<i>2.60</i>	<i>3.02</i>
Louisiana Waterthrush	0.00	0.20	0.00	0.00	0.00	0.04
Common Yellowthroat	0.00	0.10	0.10	0.00	0.10	0.06
<i>Scarlet Tanager</i>	<i>0.20</i>	<i>0.20</i>	<i>0.40</i>	<i>0.60</i>	<i>0.50</i>	<i>0.38</i>
Song Sparrow	0.00	0.00	0.00	0.00	0.10	0.02
Dark-eyed Junco (Slate-colored Junco)	0.00	0.30	0.00	0.10	0.20	0.12
Rose-breasted Grosbeak	0.10	0.00	0.00	0.00	0.00	0.02
Indigo Bunting	0.00	0.20	0.00	0.00	0.00	0.04
Brown-headed Cowbird	0.10	0.10	0.10	0.10	0.00	0.08
American Goldfinch	0.00	0.10	0.00	0.00	0.00	0.02

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP

MABI East

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Points Surveyed:</i>	10	10	10	10	10	
<i>Ave # Birds Per Point:</i>	11.00	13.80	11.70	10.40	10.70	11.52
<i>Species Richness:</i>	22	30	24	22	24	40
<i>Shannon Diversity:</i>	2.45	2.73	2.62	2.55	2.71	

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP

MABI Northwest

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Broad-winged Hawk	0.10	0.00	0.00	0.00	0.00	0.02
Mourning Dove	0.00	0.20	0.20	0.00	0.30	0.14
Yellow-bellied Sapsucker	0.00	0.30	0.00	0.50	0.30	0.22
Downy Woodpecker	0.00	0.10	0.00	0.10	0.00	0.04
Hairy Woodpecker	0.40	0.30	0.20	0.00	0.00	0.18
Northern Flicker (Yellow-shafted Flicker)	0.00	0.10	0.00	0.00	0.10	0.04
Pileated Woodpecker	0.20	0.00	0.00	0.10	0.00	0.06
<i>Eastern Wood-Pewee</i>	<i>0.80</i>	<i>0.80</i>	<i>1.40</i>	<i>0.60</i>	<i>0.70</i>	<i>0.86</i>
Least Flycatcher	0.00	0.00	0.00	0.00	0.10	0.02
Great Crested Flycatcher	0.20	0.00	0.80	0.20	0.30	0.30
Blue-headed Vireo	0.70	0.30	0.00	0.10	0.20	0.26
<i>Red-eyed Vireo</i>	<i>2.70</i>	<i>1.70</i>	<i>3.80</i>	<i>3.20</i>	<i>2.80</i>	<i>2.84</i>
<i>Blue Jay</i>	<i>0.80</i>	<i>0.60</i>	<i>0.60</i>	<i>0.60</i>	<i>0.50</i>	<i>0.62</i>
American Crow	0.00	0.30	0.20	0.30	0.20	0.20
Common Raven	0.10	0.00	0.20	0.00	0.00	0.06
Black-capped Chickadee	0.20	0.40	0.60	0.40	0.30	0.38
Red-breasted Nuthatch	0.00	0.20	0.00	0.10	0.30	0.12
White-breasted Nuthatch	0.40	0.20	0.00	0.40	0.10	0.22
Brown Creeper	0.30	0.50	0.20	0.30	0.30	0.32
Winter Wren	0.10	0.10	0.00	0.00	0.00	0.04
Golden-crowned Kinglet	0.00	0.10	0.00	0.00	0.00	0.02
Veery	0.10	0.10	0.40	0.00	0.00	0.12
<i>Hermit Thrush</i>	<i>0.80</i>	<i>0.40</i>	<i>0.80</i>	<i>1.40</i>	<i>1.20</i>	<i>0.92</i>
<i>Wood Thrush</i>	<i>0.70</i>	<i>0.60</i>	<i>0.60</i>	<i>0.40</i>	<i>0.50</i>	<i>0.56</i>
<i>American Robin</i>	<i>1.20</i>	<i>0.40</i>	<i>0.20</i>	<i>0.50</i>	<i>0.50</i>	<i>0.56</i>
Cedar Waxwing	0.00	0.00	0.20	0.00	0.00	0.04
<i>Black-throated Blue Warbler</i>	<i>0.40</i>	<i>0.50</i>	<i>0.60</i>	<i>0.60</i>	<i>0.40</i>	<i>0.50</i>
Yellow-rumped Warbler (Myrtle Warbler)	0.00	0.00	0.00	0.20	0.20	0.08
<i>Black-throated Green Warbler</i>	<i>1.50</i>	<i>0.60</i>	<i>1.20</i>	<i>0.60</i>	<i>0.50</i>	<i>0.88</i>
<i>Blackburnian Warbler</i>	<i>0.90</i>	<i>0.70</i>	<i>0.00</i>	<i>0.60</i>	<i>0.10</i>	<i>0.46</i>
Pine Warbler	0.00	0.00	0.00	0.30	0.10	0.08
Black-and-white Warbler	0.10	0.00	0.00	0.00	0.00	0.02
American Redstart	0.10	0.10	0.00	0.10	0.00	0.06
<i>Ovenbird</i>	<i>4.50</i>	<i>2.60</i>	<i>4.80</i>	<i>4.60</i>	<i>3.50</i>	<i>4.00</i>
Mourning Warbler	0.00	0.00	0.00	0.10	0.20	0.06
Common Yellowthroat	0.10	0.00	0.00	0.00	0.00	0.02
Scarlet Tanager	0.30	0.80	0.00	0.50	0.40	0.40
Dark-eyed Junco (Slate-colored Junco)	0.60	0.20	0.00	0.20	0.80	0.36
Rose-breasted Grosbeak	0.60	0.10	0.00	0.50	0.30	0.30
Common Grackle	0.00	0.10	0.00	0.00	0.00	0.02
Brown-headed Cowbird	0.00	0.10	0.00	0.00	0.00	0.02
Purple Finch	0.00	0.10	0.00	0.00	0.00	0.02

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP

MABI Northwest

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Points Surveyed:</i>	10	10	5	10	10	
<i>Ave # Birds Per Point:</i>	18.90	13.60	17.00	17.50	15.20	16.44
<i>Species Richness:</i>	27	31	18	27	27	42
<i>Shannon Diversity:</i>	2.72	2.98	2.30	2.65	2.72	

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP

MABI South

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Wild Turkey	0.00	0.00	0.20	0.00	0.00	0.04
Mourning Dove	0.20	0.40	0.20	0.40	0.20	0.28
Barred Owl	0.00	1.20	0.00	0.20	0.00	0.28
Yellow-bellied Sapsucker	0.40	0.40	0.20	0.00	0.40	0.28
Downy Woodpecker	0.40	0.20	0.00	0.00	0.00	0.12
Northern Flicker (Yellow-shafted Flicker)	0.40	0.00	0.00	0.00	0.00	0.08
Pileated Woodpecker	0.00	0.00	0.00	0.20	0.00	0.04
<i>Eastern Wood-Pewee</i>	<i>1.20</i>	<i>1.40</i>	<i>0.40</i>	<i>0.60</i>	<i>0.40</i>	<i>0.80</i>
Least Flycatcher	0.20	0.60	0.20	0.00	0.00	0.20
Eastern Kingbird	0.00	0.20	0.00	0.00	0.00	0.04
Blue-headed Vireo	0.20	0.20	0.20	0.00	0.00	0.12
<i>Red-eyed Vireo</i>	<i>1.40</i>	<i>2.00</i>	<i>0.20</i>	<i>1.20</i>	<i>3.00</i>	<i>1.56</i>
<i>Blue Jay</i>	<i>0.80</i>	<i>1.40</i>	<i>0.20</i>	<i>0.60</i>	<i>0.20</i>	<i>0.64</i>
American Crow	0.20	0.40	0.00	0.00	0.00	0.12
Common Raven	0.00	0.00	0.00	0.00	0.20	0.04
<i>Black-capped Chickadee</i>	<i>0.60</i>	<i>1.20</i>	<i>0.60</i>	<i>0.80</i>	<i>0.20</i>	<i>0.68</i>
Tufted Titmouse	0.00	0.20	0.00	0.00	0.00	0.04
Red-breasted Nuthatch	0.20	0.00	0.00	0.00	0.20	0.08
<i>White-breasted Nuthatch</i>	<i>0.40</i>	<i>0.80</i>	<i>0.20</i>	<i>1.00</i>	<i>0.00</i>	<i>0.48</i>
<i>Brown Creeper</i>	<i>0.60</i>	<i>0.80</i>	<i>0.60</i>	<i>0.20</i>	<i>0.40</i>	<i>0.52</i>
Golden-crowned Kinglet	0.00	0.00	0.20	0.00	0.00	0.04
Veery	0.00	0.20	0.00	0.00	0.00	0.04
<i>Hermit Thrush</i>	<i>0.00</i>	<i>1.40</i>	<i>1.40</i>	<i>1.00</i>	<i>0.00</i>	<i>0.76</i>
Wood Thrush	0.60	0.00	0.20	0.00	0.40	0.24
<i>American Robin</i>	<i>0.60</i>	<i>1.60</i>	<i>0.80</i>	<i>0.60</i>	<i>1.20</i>	<i>0.96</i>
Cedar Waxwing	0.00	0.20	0.00	0.00	0.20	0.08
Chestnut-sided Warbler	0.00	0.00	0.20	0.00	0.00	0.04
Yellow-rumped Warbler (Myrtle Warbler)	0.40	0.40	0.20	0.00	0.00	0.20
Black-throated Green Warbler	0.00	1.00	0.20	0.20	0.40	0.36
<i>Blackburnian Warbler</i>	<i>0.20</i>	<i>0.60</i>	<i>0.60</i>	<i>0.60</i>	<i>0.60</i>	<i>0.52</i>
Pine Warbler	0.00	0.00	0.00	0.00	0.20	0.04
Black-and-white Warbler	0.40	0.20	0.00	0.00	0.00	0.12
<i>Ovenbird</i>	<i>2.60</i>	<i>4.40</i>	<i>2.60</i>	<i>2.40</i>	<i>2.00</i>	<i>2.80</i>
Common Yellowthroat	0.20	0.40	0.60	0.40	0.20	0.36
Scarlet Tanager	0.20	0.80	0.20	0.60	0.20	0.40
Chipping Sparrow	0.60	0.20	0.00	0.20	0.00	0.20
Dark-eyed Junco (Slate-colored Junco)	0.00	1.20	0.20	0.20	0.00	0.32
Rose-breasted Grosbeak	0.20	0.40	0.20	0.00	0.20	0.20
Indigo Bunting	0.00	0.60	0.40	0.00	0.20	0.24
Bobolink	0.20	0.20	0.00	0.00	0.00	0.08
Red-winged Blackbird	0.20	1.40	0.60	0.00	0.00	0.44
Brown-headed Cowbird	0.00	0.00	0.00	0.00	0.20	0.04
Baltimore Oriole	0.20	0.00	0.00	0.00	0.00	0.04
American Goldfinch	0.00	0.00	0.20	0.00	0.00	0.04

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP

MABI South

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Points Surveyed:</i>	5	5	5	5	5	
<i>Ave # Birds Per Point:</i>	13.80	26.60	12.00	11.40	11.20	15.00
<i>Species Richness:</i>	27	32	27	18	21	44
<i>Shannon Diversity:</i>	2.96	3.11	2.90	2.61	2.51	

Appendix B. Site Summaries (continued).

Minute Man NHP

MIMA Hartwell Tavern

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Red-tailed Hawk	0.00	0.00	0.00	0.14	0.00	0.03
Black-billed Cuckoo	0.00	0.00	0.14	0.00	0.00	0.03
Red-bellied Woodpecker	0.00	0.29	0.29	0.57	0.00	0.23
<i>Downy Woodpecker</i>	<i>0.29</i>	<i>0.71</i>	<i>0.57</i>	<i>0.57</i>	<i>0.86</i>	<i>0.60</i>
Hairy Woodpecker	0.00	0.29	0.00	0.14	0.14	0.11
Northern Flicker (Yellow-shafted Flicker)	0.00	0.00	0.14	0.00	0.29	0.09
Eastern Wood-Pewee	0.86	0.86	0.43	0.86	1.00	0.80
Eastern Phoebe	0.14	0.00	0.14	0.00	0.14	0.09
Great Crested Flycatcher	0.29	0.00	0.43	0.14	0.14	0.20
Red-eyed Vireo	0.00	0.29	0.71	0.14	0.43	0.31
<i>Blue Jay</i>	<i>2.14</i>	<i>0.86</i>	<i>1.43</i>	<i>1.00</i>	<i>1.43</i>	<i>1.37</i>
<i>American Crow</i>	<i>1.00</i>	<i>1.00</i>	<i>1.29</i>	<i>0.86</i>	<i>1.29</i>	<i>1.09</i>
<i>Black-capped Chickadee</i>	<i>0.71</i>	<i>0.71</i>	<i>0.86</i>	<i>0.86</i>	<i>1.00</i>	<i>0.83</i>
<i>Tufted Titmouse</i>	<i>0.71</i>	<i>1.86</i>	<i>2.57</i>	<i>2.14</i>	<i>1.29</i>	<i>1.71</i>
<i>White-breasted Nuthatch</i>	<i>0.43</i>	<i>0.57</i>	<i>0.43</i>	<i>0.57</i>	<i>1.57</i>	<i>0.71</i>
Carolina Wren	0.14	0.14	0.00	0.00	0.00	0.06
Hermit Thrush	0.14	0.00	0.00	0.00	0.00	0.03
Wood Thrush	0.43	0.14	0.57	0.43	0.57	0.43
<i>American Robin</i>	<i>0.57</i>	<i>1.00</i>	<i>2.14</i>	<i>1.57</i>	<i>0.29</i>	<i>1.11</i>
Gray Catbird	0.57	0.14	0.57	0.71	0.57	0.51
Northern Mockingbird	0.00	0.00	0.00	0.14	0.00	0.03
Cedar Waxwing	0.00	0.14	0.00	0.71	0.00	0.17
Yellow Warbler	0.00	0.00	0.14	0.14	0.14	0.09
Pine Warbler	0.14	0.14	0.00	0.29	0.29	0.17
<i>Ovenbird</i>	<i>0.71</i>	<i>0.86</i>	<i>0.43</i>	<i>1.00</i>	<i>0.57</i>	<i>0.71</i>
Common Yellowthroat	0.14	0.29	0.57	0.71	0.57	0.46
Scarlet Tanager	0.57	0.29	0.57	1.00	0.43	0.57
Chipping Sparrow	0.14	0.00	0.43	0.29	0.29	0.23
Song Sparrow	0.14	0.14	0.14	0.14	0.43	0.20
<i>Northern Cardinal</i>	<i>1.29</i>	<i>0.57</i>	<i>1.00</i>	<i>0.71</i>	<i>0.29</i>	<i>0.77</i>
Rose-breasted Grosbeak	0.00	0.14	0.00	0.43	0.43	0.20
Indigo Bunting	0.14	0.00	0.29	0.00	0.43	0.17
Red-winged Blackbird	0.43	0.00	0.14	0.57	0.14	0.26
Common Grackle	0.43	0.14	0.14	0.71	0.29	0.34
Brown-headed Cowbird	0.29	0.43	0.29	0.43	0.00	0.29
Baltimore Oriole	0.00	0.14	0.00	0.29	0.29	0.14
House Finch	0.00	0.00	0.00	0.29	0.14	0.09
American Goldfinch	1.00	0.29	0.29	0.14	0.71	0.49
House Sparrow	0.00	0.00	0.00	0.00	0.14	0.03
Points Surveyed:	7	7	7	7	7	
Ave # Birds Per Point:	13.86	12.43	17.14	18.71	16.57	15.74
Species Richness:	26	26	28	32	31	39
Shannon Diversity:	2.96	2.95	2.97	3.21	3.17	

Appendix B. Site Summaries (continued).

Minute Man NHP

MIMA Miriam's Corner

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.00	0.13	0.00	0.00		0.03
Great Blue Heron	0.00	0.00	0.00	0.25		0.06
Red-tailed Hawk	0.00	0.00	0.00	0.13		0.03
Killdeer	0.13	0.00	0.00	0.00		0.03
Mourning Dove	0.00	0.00	0.25	0.00		0.06
Chimney Swift	0.00	0.25	0.00	0.00		0.06
<i>Downy Woodpecker</i>	<i>0.50</i>	<i>0.88</i>	<i>0.38</i>	<i>1.00</i>		<i>0.69</i>
Hairy Woodpecker	0.13	0.25	0.00	0.00		0.09
Northern Flicker (Yellow-shafted Flicker)	0.25	0.00	0.25	0.25		0.19
Eastern Wood-Pewee	0.13	0.00	0.00	0.13		0.06
Alder Flycatcher	0.00	0.00	0.00	0.13		0.03
Eastern Phoebe	0.00	0.00	0.00	0.13		0.03
Great Crested Flycatcher	0.00	0.00	0.25	0.00		0.06
Eastern Kingbird	0.13	0.00	0.00	0.00		0.03
Warbling Vireo	0.13	0.00	0.13	0.13		0.09
Red-eyed Vireo	0.00	0.00	0.13	0.00		0.03
<i>Blue Jay</i>	<i>0.75</i>	<i>0.75</i>	<i>0.50</i>	<i>0.50</i>		<i>0.63</i>
<i>American Crow</i>	<i>0.13</i>	<i>0.63</i>	<i>0.38</i>	<i>1.13</i>		<i>0.56</i>
Barn Swallow	0.00	0.00	0.00	0.13		0.03
<i>Black-capped Chickadee</i>	<i>1.25</i>	<i>1.00</i>	<i>0.25</i>	<i>0.38</i>		<i>0.72</i>
<i>Tufted Titmouse</i>	<i>1.00</i>	<i>0.88</i>	<i>0.50</i>	<i>1.00</i>		<i>0.84</i>
White-breasted Nuthatch	0.50	0.13	0.00	0.50		0.28
Carolina Wren	0.25	0.13	0.00	0.13		0.13
House Wren	0.00	0.00	0.00	0.13		0.03
Blue-gray Gnatcatcher	0.00	0.00	0.00	0.13		0.03
Eastern Bluebird	0.00	0.00	0.00	0.13		0.03
Veery	0.13	0.38	0.00	0.00		0.13
Wood Thrush	0.50	0.75	0.50	0.38		0.53
American Robin	0.38	1.00	0.00	0.25		0.41
<i>Gray Catbird</i>	<i>0.38</i>	<i>0.88</i>	<i>0.25</i>	<i>1.13</i>		<i>0.66</i>
Northern Mockingbird	0.00	0.25	0.00	0.13		0.09
Cedar Waxwing	0.13	0.00	0.00	0.13		0.06
Blue-winged Warbler	0.38	0.00	0.00	0.25		0.16
Yellow Warbler	0.13	0.00	0.25	0.13		0.13
Pine Warbler	0.25	0.50	0.25	0.63		0.41
American Redstart	0.00	0.13	0.00	0.13		0.06
<i>Ovenbird</i>	<i>0.50</i>	<i>0.75</i>	<i>0.50</i>	<i>0.50</i>		<i>0.56</i>
<i>Common Yellowthroat</i>	<i>1.00</i>	<i>1.00</i>	<i>0.25</i>	<i>0.63</i>		<i>0.72</i>
Scarlet Tanager	0.25	0.00	0.13	0.38		0.19
<i>Song Sparrow</i>	<i>1.25</i>	<i>0.88</i>	<i>0.63</i>	<i>1.13</i>		<i>0.97</i>
Swamp Sparrow	0.00	0.00	0.13	0.13		0.06
<i>Northern Cardinal</i>	<i>0.38</i>	<i>0.63</i>	<i>0.50</i>	<i>0.75</i>		<i>0.56</i>
Rose-breasted Grosbeak	0.50	0.38	0.38	0.50		0.44
Indigo Bunting	0.00	0.38	0.13	0.13		0.16

Appendix B. Site Summaries (continued).

Minute Man NHP

MIMA Miriam's Corner

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Red-winged Blackbird	0.88	0.13	0.50	0.63		0.53
Common Grackle	0.38	0.00	0.00	0.25		0.16
Brown-headed Cowbird	0.25	0.50	0.13	0.38		0.31
Baltimore Oriole	0.25	0.25	0.00	0.38		0.22
House Finch	0.25	0.00	0.13	0.00		0.09
American Goldfinch	0.38	0.63	0.25	0.38		0.41
House Sparrow	0.00	0.25	0.00	0.13		0.09
<i>Points Surveyed:</i>	8	8	8	8		
<i>Ave # Birds Per Point:</i>	13.75	14.63	7.88	15.63		12.97
<i>Species Richness:</i>	33	28	26	41		51
<i>Shannon Diversity:</i>	3.24	3.15	3.13	3.42		

Appendix B. Site Summaries (continued).

Minute Man NHP

MIMA The Bluff

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Wild Turkey	0.25	0.00	0.00	0.00	0.00	0.05
Red-tailed Hawk	0.00	0.00	0.00	0.13	0.00	0.03
Mourning Dove	0.25	0.00	0.00	0.00	0.50	0.15
Belted Kingfisher	0.00	0.00	0.00	0.00	0.13	0.03
Red-bellied Woodpecker	0.00	0.00	0.13	0.00	0.00	0.03
Downy Woodpecker	0.00	0.00	0.00	0.00	0.25	0.05
Eastern Wood-Pewee	0.13	0.00	0.00	0.00	0.38	0.10
Eastern Phoebe	0.00	0.00	0.00	0.00	0.13	0.03
Great Crested Flycatcher	0.00	0.00	0.00	0.25	0.00	0.05
Warbling Vireo	0.00	0.00	0.00	0.25	0.00	0.05
Red-eyed Vireo	0.00	0.00	0.25	0.13	0.00	0.08
<i>Blue Jay</i>	<i>0.50</i>	<i>1.75</i>	<i>1.75</i>	<i>0.75</i>	<i>1.25</i>	<i>1.20</i>
<i>American Crow</i>	<i>0.50</i>	<i>0.63</i>	<i>0.88</i>	<i>0.63</i>	<i>1.13</i>	<i>0.75</i>
Fish Crow	0.00	0.00	0.00	0.00	0.13	0.03
Black-capped Chickadee	1.00	0.25	0.38	0.25	0.25	0.43
<i>Tufted Titmouse</i>	<i>1.38</i>	<i>1.75</i>	<i>1.38</i>	<i>2.50</i>	<i>1.25</i>	<i>1.65</i>
<i>White-breasted Nuthatch</i>	<i>0.25</i>	<i>0.50</i>	<i>0.00</i>	<i>0.88</i>	<i>0.88</i>	<i>0.50</i>
Carolina Wren	0.00	0.25	0.00	0.00	0.00	0.05
House Wren	0.13	0.13	0.00	0.13	0.00	0.08
Wood Thrush	0.00	0.00	0.00	0.25	0.00	0.05
<i>American Robin</i>	<i>0.13</i>	<i>0.75</i>	<i>1.38</i>	<i>1.63</i>	<i>1.13</i>	<i>1.00</i>
Gray Catbird	0.00	0.38	0.63	0.63	0.25	0.38
<i>Pine Warbler</i>	<i>0.25</i>	<i>0.25</i>	<i>0.88</i>	<i>1.25</i>	<i>1.00</i>	<i>0.73</i>
Common Yellowthroat	0.13	0.00	0.25	0.63	0.25	0.25
Scarlet Tanager	0.00	0.00	0.00	0.63	0.00	0.13
Chipping Sparrow	0.00	0.00	0.13	0.13	0.00	0.05
<i>Song Sparrow</i>	<i>0.38</i>	<i>0.75</i>	<i>0.63</i>	<i>0.13</i>	<i>0.50</i>	<i>0.48</i>
<i>Northern Cardinal</i>	<i>0.88</i>	<i>1.00</i>	<i>0.63</i>	<i>0.25</i>	<i>0.13</i>	<i>0.58</i>
Rose-breasted Grosbeak	0.00	0.00	0.00	0.25	0.13	0.08
<i>Red-winged Blackbird</i>	<i>0.38</i>	<i>1.13</i>	<i>0.75</i>	<i>0.75</i>	<i>0.25</i>	<i>0.65</i>
Common Grackle	0.25	0.25	0.13	0.63	0.13	0.28
Brown-headed Cowbird	0.00	0.50	0.00	0.13	0.00	0.13
Baltimore Oriole	0.13	0.00	0.00	0.13	0.00	0.05
House Finch	0.13	0.25	0.00	0.00	0.13	0.10
<i>American Goldfinch</i>	<i>0.63</i>	<i>0.50</i>	<i>0.13</i>	<i>0.13</i>	<i>1.00</i>	<i>0.48</i>
House Sparrow	0.13	0.13	0.13	0.00	0.00	0.08
<i>Points Surveyed:</i>	8	8	8	8	8	
<i>Ave # Birds Per Point:</i>	7.75	11.13	10.38	13.38	11.13	10.75
<i>Species Richness:</i>	20	18	17	25	22	36
<i>Shannon Diversity:</i>	2.69	2.62	2.52	2.80	2.76	

Appendix B. Site Summaries (continued).

Morristown NHP

MORR Mt. Kemble

	Relative Abundance (birds per point)					
Common Name	2006	2007	2008	2009	2010	Mean
Red-tailed Hawk			0.20	0.10	0.30	0.20
Mourning Dove			0.30	0.00	0.20	0.17
Yellow-billed Cuckoo			0.10	0.50	0.00	0.20
Great Horned Owl			0.20	0.30	0.10	0.20
Red-bellied Woodpecker			0.60	0.20	0.90	0.57
Downy Woodpecker			0.60	0.50	0.20	0.43
Hairy Woodpecker			0.50	0.40	0.90	0.60
Northern Flicker (Yellow-shafted Flicker)			0.40	0.40	0.50	0.43
Pileated Woodpecker			0.20	0.20	0.10	0.17
Eastern Wood-Pewee			1.10	0.80	1.40	1.10
Eastern Phoebe			0.10	0.00	0.10	0.07
Great Crested Flycatcher			0.20	0.20	0.00	0.13
Blue-headed Vireo			0.00	0.00	0.10	0.03
Red-eyed Vireo			0.20	0.30	0.30	0.27
Blue Jay			1.30	1.10	2.20	1.53
American Crow			0.70	0.60	0.60	0.63
Black-capped Chickadee			0.10	0.00	0.00	0.03
Tufted Titmouse			1.00	1.40	1.30	1.23
White-breasted Nuthatch			0.80	0.70	0.60	0.70
House Wren			0.10	0.00	0.00	0.03
Blue-gray Gnatcatcher			0.00	0.20	0.00	0.07
Eastern Bluebird			0.20	0.00	0.00	0.07
Veery			0.40	0.00	0.30	0.23
Wood Thrush			1.50	1.60	1.70	1.60
American Robin			0.90	1.10	1.20	1.07
Gray Catbird			0.10	0.10	0.10	0.10
American Redstart			0.00	0.20	0.00	0.07
Worm-eating Warbler			0.40	0.10	0.00	0.17
Ovenbird			0.60	0.10	1.30	0.67
Scarlet Tanager			0.50	1.00	0.80	0.77
Eastern Towhee			0.00	0.20	0.20	0.13
Chipping Sparrow			0.00	0.00	0.20	0.07
Northern Cardinal			0.10	0.40	0.10	0.20
Rose-breasted Grosbeak			0.10	0.00	0.20	0.10
Indigo Bunting			0.20	0.00	0.10	0.10
Brown-headed Cowbird			0.00	0.10	0.00	0.03
Points Surveyed:			10	10	10	
Ave # Birds Per Point:			13.70	12.80	16.00	14.17
Species Richness:			30	26	27	36
Shannon Diversity:			3.09	2.93	2.87	

Appendix B. Site Summaries (continued).

Morristown NHP

MORR Primrose Brook

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Wild Turkey	0.00	0.20	0.00	0.00	0.20	0.08
Red-tailed Hawk	0.10	0.10	0.00	0.00	0.00	0.04
Mourning Dove	0.10	0.10	0.00	0.10	0.00	0.06
Yellow-billed Cuckoo	0.00	0.40	0.00	0.00	0.00	0.08
<i>Red-bellied Woodpecker</i>	<i>0.60</i>	<i>0.40</i>	<i>1.20</i>	<i>1.20</i>	<i>0.30</i>	<i>0.74</i>
Downy Woodpecker	0.20	0.10	0.00	0.20	0.10	0.12
Northern Flicker (Yellow-shafted Flicker)	0.20	0.70	0.10	0.10	0.20	0.26
Pileated Woodpecker	0.00	0.10	0.00	0.20	0.20	0.10
<i>Eastern Wood-Pewee</i>	<i>0.80</i>	<i>0.80</i>	<i>0.20</i>	<i>0.10</i>	<i>0.40</i>	<i>0.46</i>
Eastern Phoebe	0.00	0.10	0.00	0.00	0.00	0.02
Great Crested Flycatcher	0.00	0.00	0.20	0.00	0.00	0.04
<i>Yellow-throated Vireo</i>	<i>0.10</i>	<i>0.00</i>	<i>0.10</i>	<i>0.00</i>	<i>0.00</i>	<i>0.04</i>
<i>Red-eyed Vireo</i>	<i>1.40</i>	<i>1.10</i>	<i>0.50</i>	<i>0.60</i>	<i>0.20</i>	<i>0.76</i>
<i>Blue Jay</i>	<i>0.60</i>	<i>1.70</i>	<i>0.90</i>	<i>0.60</i>	<i>1.10</i>	<i>0.98</i>
American Crow	0.10	0.90	0.10	0.10	0.20	0.28
Black-capped Chickadee	0.00	0.10	0.00	0.00	0.00	0.02
<i>Tufted Titmouse</i>	<i>0.60</i>	<i>0.50</i>	<i>0.80</i>	<i>1.40</i>	<i>0.50</i>	<i>0.76</i>
White-breasted Nuthatch	0.20	0.50	0.40	0.10	0.20	0.28
Carolina Wren	0.00	0.20	0.00	0.00	0.00	0.04
Eastern Bluebird	0.00	0.00	0.10	0.00	0.00	0.02
<i>Veery</i>	<i>0.40</i>	<i>0.70</i>	<i>0.60</i>	<i>1.00</i>	<i>0.50</i>	<i>0.64</i>
Swainson's Thrush	0.10	0.00	0.00	0.10	0.00	0.04
<i>Wood Thrush</i>	<i>1.30</i>	<i>1.90</i>	<i>0.90</i>	<i>0.90</i>	<i>1.50</i>	<i>1.30</i>
<i>American Robin</i>	<i>0.90</i>	<i>1.30</i>	<i>1.00</i>	<i>1.00</i>	<i>0.60</i>	<i>0.96</i>
Gray Catbird	0.00	0.00	0.10	0.10	0.10	0.06
<i>Worm-eating Warbler</i>	<i>0.00</i>	<i>0.40</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.08</i>
<i>Ovenbird</i>	<i>0.90</i>	<i>1.10</i>	<i>0.40</i>	<i>0.70</i>	<i>0.60</i>	<i>0.74</i>
<i>Louisiana Waterthrush</i>	<i>0.00</i>	<i>0.10</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.02</i>
Hooded Warbler	0.10	0.20	0.00	0.00	0.00	0.06
<i>Scarlet Tanager</i>	<i>0.60</i>	<i>1.20</i>	<i>0.50</i>	<i>0.30</i>	<i>0.40</i>	<i>0.60</i>
<i>Eastern Towhee</i>	<i>0.40</i>	<i>0.50</i>	<i>0.10</i>	<i>0.40</i>	<i>0.40</i>	<i>0.36</i>
Northern Cardinal	0.30	0.90	0.10	0.40	0.20	0.38
Rose-breasted Grosbeak	0.10	0.10	0.10	0.10	0.00	0.08
Brown-headed Cowbird	0.00	0.10	0.00	0.00	0.00	0.02
Baltimore Oriole	0.60	0.10	0.60	0.20	0.00	0.30
<i>Points Surveyed:</i>	10	10	10	10	10	
<i>Ave # Birds Per Point:</i>	10.70	16.60	9.00	9.90	7.90	10.82
<i>Species Richness:</i>	23	30	21	22	19	35
<i>Shannon Diversity:</i>	2.82	3.01	2.72	2.71	2.67	

Appendix B. Site Summaries (continued).

Morristown NHP

MORR Soldier's Huts

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Turkey Vulture	0.11	0.00			0.00	0.04
Red-tailed Hawk	0.00	0.00			0.22	0.07
Mourning Dove	0.00	0.00			0.67	0.22
Yellow-billed Cuckoo	0.00	0.00			0.33	0.11
Great Horned Owl	0.00	0.00			0.22	0.07
Red-bellied Woodpecker	0.44	0.11			0.89	0.48
Downy Woodpecker	0.00	0.11			0.56	0.22
Hairy Woodpecker	0.00	0.00			0.11	0.04
Northern Flicker (Yellow-shafted Flicker)	0.22	0.33			0.67	0.41
Pileated Woodpecker	0.22	0.11			0.44	0.26
Eastern Wood-Pewee	0.67	1.00			1.00	0.89
Acadian Flycatcher	0.00	0.00			0.11	0.04
Eastern Phoebe	0.00	0.00			0.11	0.04
Great Crested Flycatcher	0.11	0.11			0.11	0.11
Yellow-throated Vireo	0.00	0.22			0.00	0.07
<i>Red-eyed Vireo</i>	<i>0.89</i>	<i>0.89</i>			<i>1.00</i>	<i>0.93</i>
Blue Jay	0.22	0.33			0.78	0.44
American Crow	0.00	0.11			0.67	0.26
Fish Crow	0.00	0.00			0.11	0.04
Black-capped Chickadee	0.11	0.00			0.11	0.07
<i>Tufted Titmouse</i>	<i>0.56</i>	<i>0.44</i>			<i>1.00</i>	<i>0.67</i>
White-breasted Nuthatch	0.11	0.00			0.67	0.26
Blue-gray Gnatcatcher	0.00	0.00			0.44	0.15
Veery	<i>0.44</i>	<i>0.78</i>			<i>1.89</i>	<i>1.04</i>
Wood Thrush	1.11	1.22			2.11	1.48
<i>American Robin</i>	<i>0.67</i>	<i>0.78</i>			<i>1.33</i>	<i>0.93</i>
Gray Catbird	0.11	0.22			0.33	0.22
Cedar Waxwing	0.11	0.00			0.00	0.04
Blackpoll Warbler	0.56	0.00			0.00	0.19
Cerulean Warbler	0.00	0.00			0.11	0.04
Black-and-white Warbler	0.11	0.00			0.00	0.04
<i>American Redstart</i>	<i>0.44</i>	<i>0.67</i>			<i>0.67</i>	<i>0.59</i>
<i>Ovenbird</i>	<i>0.78</i>	<i>1.11</i>			<i>2.33</i>	<i>1.41</i>
Louisiana Waterthrush	0.33	0.11			0.00	0.15
Kentucky Warbler	0.00	0.11			0.00	0.04
Hooded Warbler	0.22	0.22			0.44	0.30
Canada Warbler	0.11	0.00			0.00	0.04
<i>Scarlet Tanager</i>	<i>0.56</i>	<i>0.33</i>			<i>1.00</i>	<i>0.63</i>
Eastern Towhee	0.56	0.67			1.44	0.89
Chipping Sparrow	0.00	0.11			0.00	0.04
Northern Cardinal	0.00	0.00			0.11	0.04
Rose-breasted Grosbeak	0.00	0.33			0.11	0.15
Brown-headed Cowbird	0.22	0.22			0.22	0.22
Baltimore Oriole	0.33	0.11			0.11	0.19

Appendix B. Site Summaries (continued).

Morristown NHP

MORR Soldier's Huts

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Points Surveyed:</i>	9	9			9	
<i>Ave # Birds Per Point:</i>	10.33	10.78			22.44	14.52
<i>Species Richness:</i>	27	26			35	44
<i>Shannon Diversity:</i>	3.06	2.94			3.18	

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Middle Ravine

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose		0.00	0.10			0.05
Mourning Dove		0.80	0.60			0.70
Yellow-bellied Sapsucker		0.10	0.30			0.20
Downy Woodpecker		0.20	0.50			0.35
Northern Flicker (Yellow-shafted Flicker)		0.20	0.00			0.10
Eastern Wood-Pewee		0.50	0.80			0.65
Eastern Phoebe		0.10	0.00			0.05
Great Crested Flycatcher		0.50	0.50			0.50
Red-eyed Vireo		0.60	0.70			0.65
Blue Jay		0.50	0.60			0.55
American Crow		0.60	0.40			0.50
Black-capped Chickadee		1.00	0.70			0.85
Tufted Titmouse		0.30	0.40			0.35
Red-breasted Nuthatch		0.00	0.10			0.05
White-breasted Nuthatch		0.20	0.10			0.15
Brown Creeper		0.10	0.30			0.20
Winter Wren		0.10	0.00			0.05
Veery		0.20	0.30			0.25
Hermit Thrush		0.20	0.40			0.30
Wood Thrush		0.80	0.30			0.55
American Robin		1.40	0.50			0.95
Cedar Waxwing		0.40	0.00			0.20
Blue-winged Warbler		0.00	0.10			0.05
Golden-winged Warbler		0.10	0.00			0.05
Chestnut-sided Warbler		0.10	0.00			0.05
Yellow-rumped Warbler (Myrtle Warbler)		0.00	0.20			0.10
American Redstart		0.10	0.00			0.05
Ovenbird		1.90	1.30			1.60
Common Yellowthroat		0.80	0.80			0.80
Scarlet Tanager		0.40	0.40			0.40
Eastern Towhee		0.60	0.50			0.55
Chipping Sparrow		0.30	0.00			0.15
Field Sparrow		0.20	0.20			0.20
Song Sparrow		0.40	0.30			0.35
Northern Cardinal		0.10	0.40			0.25
Rose-breasted Grosbeak		0.10	0.20			0.15
Red-winged Blackbird		0.20	0.40			0.30
Brown-headed Cowbird		0.10	0.20			0.15
Baltimore Oriole		0.10	0.00			0.05
American Goldfinch		1.20	1.20			1.20

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Middle Ravine

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Points Surveyed:</i>		10	10			
<i>Ave # Birds Per Point:</i>		15.50	13.80			14.65
<i>Species Richness:</i>		36	31			40
<i>Shannon Diversity:</i>		3.20	3.24			

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Wilkinson Trail

Common Name	Relative Abundance (birds per point)					Mean
	2006	2007	2008	2009	2010	
Canada Goose	0.33		0.10	0.00	0.00	0.11
Red-tailed Hawk	0.11		0.00	0.00	0.00	0.03
Mourning Dove	0.11		0.10	0.00	0.30	0.13
Black-billed Cuckoo	0.00		0.10	0.00	0.00	0.03
Yellow-billed Cuckoo	0.00		0.10	0.00	0.00	0.03
Red-bellied Woodpecker	0.00		0.00	0.10	0.20	0.08
Yellow-bellied Sapsucker	0.00		0.20	0.60	1.60	0.60
Downy Woodpecker	0.11		0.30	0.00	0.50	0.23
Hairy Woodpecker	0.22		0.00	0.00	0.10	0.08
Northern Flicker (Yellow-shafted Flicker)	0.00		0.00	0.10	0.00	0.03
Pileated Woodpecker	0.11		0.10	0.10	0.20	0.13
Eastern Wood-Pewee	0.00		1.20	1.20	0.90	0.83
Acadian Flycatcher	0.00		0.10	0.00	0.00	0.03
Least Flycatcher	0.00		0.20	0.00	0.00	0.05
Eastern Phoebe	0.00		0.30	0.00	0.10	0.10
Great Crested Flycatcher	0.00		0.90	0.60	0.40	0.48
Yellow-throated Vireo	0.00		0.00	0.00	0.10	0.03
Red-eyed Vireo	0.00		1.20	0.50	1.10	0.70
Blue Jay	0.11		0.30	0.30	0.40	0.28
American Crow	0.22		0.50	0.40	0.60	0.43
Black-capped Chickadee	0.00		1.20	0.80	0.70	0.68
Tufted Titmouse	0.11		0.40	0.10	0.20	0.20
Red-breasted Nuthatch	0.00		0.10	0.00	0.10	0.05
White-breasted Nuthatch	0.00		0.10	0.20	0.40	0.18
Brown Creeper	0.00		0.40	0.30	0.40	0.28
House Wren	0.00		0.00	0.00	0.10	0.03
Blue-gray Gnatcatcher	0.00		0.10	0.00	0.00	0.03
Veery	0.00		0.20	0.60	1.20	0.50
Hermit Thrush	0.00		0.00	0.70	0.30	0.25
Wood Thrush	0.00		0.60	0.00	0.40	0.25
American Robin	0.00		0.60	0.20	0.20	0.25
Gray Catbird	0.00		0.40	0.20	0.30	0.23
Cedar Waxwing	0.00		0.00	0.70	0.20	0.23
Blue-winged Warbler	0.00		0.00	0.00	0.10	0.03
Yellow Warbler	0.00		0.00	0.00	0.40	0.10
Chestnut-sided Warbler	0.00		0.40	0.10	0.10	0.15
Ovenbird	0.00		1.70	0.90	1.40	1.00
Northern Waterthrush	0.00		0.10	0.00	0.00	0.03
Louisiana Waterthrush	0.00		0.20	0.00	0.00	0.05
Common Yellowthroat	0.00		0.90	0.50	0.70	0.53
Scarlet Tanager	0.00		0.60	0.40	0.80	0.45
Eastern Towhee	0.00		0.10	0.10	0.40	0.15
Chipping Sparrow	0.00		0.20	0.10	0.20	0.13
Song Sparrow	0.00		0.10	0.00	0.30	0.10

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Wilkinson Trail

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Northern Cardinal	0.22		0.10	0.40	0.40	0.28
Rose-breasted Grosbeak	0.00		0.20	0.00	0.00	0.05
Indigo Bunting	0.00		0.20	0.00	0.00	0.05
Red-winged Blackbird	0.22		0.00	0.00	0.10	0.08
Common Grackle	0.11		0.00	0.00	0.20	0.08
Baltimore Oriole	0.00		0.00	0.00	0.20	0.05
<i>American Goldfinch</i>	<i>0.11</i>		<i>0.60</i>	<i>0.40</i>	<i>0.70</i>	<i>0.45</i>
Points Surveyed:	9		10	10	10	
Ave # Birds Per Point:	2.11		15.20	10.60	17.00	11.23
Species Richness:	13		38	26	39	51
Shannon Diversity:	2.48		3.25	3.01	3.36	

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Bemis Heights

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>				
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Mourning Dove			0.33	1.00	0.17
Ruby-throated Hummingbird			0.00	0.17	0.00
Red-bellied Woodpecker			0.00	0.17	0.17
Yellow-bellied Sapsucker			0.17	0.50	0.67
Downy Woodpecker			0.00	0.33	0.00
Pileated Woodpecker			0.17	0.33	0.33
Eastern Wood-Pewee			0.50	0.67	0.50
Alder Flycatcher			0.17	0.00	0.00
Eastern Phoebe			0.17	0.00	0.00
Great Crested Flycatcher			0.00	0.17	0.17
Red-eyed Vireo			0.83	0.17	0.50
Blue Jay			0.83	1.00	0.67
American Crow			0.17	0.17	0.50
Black-capped Chickadee			0.83	0.33	0.33
Tufted Titmouse			1.17	0.00	0.00
White-breasted Nuthatch			0.17	0.33	1.00
Blue-gray Gnatcatcher			0.33	0.00	0.00
Veery			0.67	0.83	0.33
Hermit Thrush			0.00	0.17	0.33
Wood Thrush			1.83	1.17	1.67
American Robin			0.67	0.83	1.00
Gray Catbird			0.00	0.17	0.33
Cedar Waxwing			0.33	0.00	0.00
Blue-winged Warbler			0.17	0.00	0.00
Yellow Warbler			0.00	0.00	0.17
Chestnut-sided Warbler			0.17	0.00	0.00
Black-and-white Warbler			0.33	0.00	0.17
Ovenbird			1.33	1.33	1.67
Louisiana Waterthrush			0.17	0.00	0.00
Common Yellowthroat			1.33	0.33	0.00
Scarlet Tanager			0.83	0.50	0.17
Eastern Towhee			0.33	0.17	0.33
Chipping Sparrow			0.17	0.00	0.00
Northern Cardinal			0.00	0.17	0.00
Rose-breasted Grosbeak			0.00	0.33	0.00
Brown-headed Cowbird			0.17	0.33	0.67
Baltimore Oriole			0.00	0.17	0.17
American Goldfinch			0.67	0.17	0.00
Points Surveyed:			6	6	6
Ave # Birds Per Point:			15.00	12.00	12.00
Species Richness:			28	27	23
Shannon Diversity:			3.03	3.03	2.85

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Burgoyne's Headquarters

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.20		0.20	0.00	0.00	0.10
Turkey Vulture	0.00		0.00	0.20	0.00	0.05
Red-tailed Hawk	0.00		0.00	0.00	0.20	0.05
Mourning Dove	0.60		0.60	0.00	0.80	0.50
Black-billed Cuckoo	0.00		0.20	0.00	0.00	0.05
Red-bellied Woodpecker	1.00		0.20	0.00	0.00	0.30
Yellow-bellied Sapsucker	0.40		0.20	0.40	0.20	0.30
Downy Woodpecker	0.00		0.20	0.00	0.00	0.05
Hairy Woodpecker	0.00		0.00	0.00	0.60	0.15
Northern Flicker (Yellow-shafted Flicker)	0.60		0.00	0.00	0.80	0.35
Pileated Woodpecker	0.20		0.00	0.00	0.00	0.05
Eastern Wood-Pewee	0.40		0.40	0.00	0.80	0.40
Alder Flycatcher	0.00		0.20	0.00	0.00	0.05
Least Flycatcher	0.00		0.40	0.00	0.00	0.10
Eastern Phoebe	0.00		0.00	0.00	0.40	0.10
Great Crested Flycatcher	0.20		0.00	0.00	0.00	0.05
<i>Eastern Kingbird</i>	<i>0.60</i>		<i>0.60</i>	<i>0.40</i>	<i>1.60</i>	<i>0.80</i>
Warbling Vireo	0.20		0.20	0.00	0.00	0.10
Red-eyed Vireo	0.00		0.00	0.40	0.00	0.10
Blue Jay	0.40		0.20	0.00	0.20	0.20
American Crow	0.20		0.20	0.20	0.00	0.15
Common Raven	0.20		0.00	0.00	0.00	0.05
<i>Tree Swallow</i>	<i>0.60</i>		<i>1.00</i>	<i>0.40</i>	<i>1.60</i>	<i>0.90</i>
Black-capped Chickadee	1.00		0.00	0.00	0.20	0.30
Tufted Titmouse	0.60		0.00	0.00	0.20	0.20
White-breasted Nuthatch	0.40		0.00	0.00	0.00	0.10
Blue-gray Gnatcatcher	0.00		0.00	0.20	0.00	0.05
<i>Eastern Bluebird</i>	<i>0.60</i>		<i>0.00</i>	<i>0.00</i>	<i>2.00</i>	<i>0.65</i>
Veery	0.20		0.00	0.00	0.20	0.10
Wood Thrush	0.80		0.00	0.20	0.00	0.25
<i>American Robin</i>	<i>0.80</i>		<i>0.80</i>	<i>0.40</i>	<i>0.40</i>	<i>0.60</i>
Gray Catbird	0.60		0.20	0.20	0.20	0.30
Cedar Waxwing	0.60		0.60	0.20	0.00	0.35
Blue-winged Warbler	0.00		0.60	0.40	0.00	0.25
Yellow Warbler	0.00		0.20	0.60	0.20	0.25
Chestnut-sided Warbler	0.00		0.00	0.00	0.40	0.10
Black-and-white Warbler	0.00		0.00	0.20	0.00	0.05
American Redstart	0.40		0.00	0.00	0.00	0.10
Ovenbird	0.20		0.00	0.00	0.40	0.15
<i>Common Yellowthroat</i>	<i>0.60</i>		<i>1.00</i>	<i>1.20</i>	<i>1.60</i>	<i>1.10</i>
<i>Chipping Sparrow</i>	<i>1.20</i>		<i>0.80</i>	<i>0.80</i>	<i>0.20</i>	<i>0.75</i>
<i>Field Sparrow</i>	<i>1.40</i>		<i>2.00</i>	<i>1.80</i>	<i>2.80</i>	<i>2.00</i>
Vesper Sparrow	0.00		0.40	0.00	0.00	0.10
Savannah Sparrow	0.00		0.40	0.00	0.00	0.10

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Burgoyne's Headquarters

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>				
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
<i>Song Sparrow</i>	1.40		1.00	0.20	0.60
Northern Cardinal	0.20		0.00	0.00	0.00
Rose-breasted Grosbeak	0.20		0.20	0.20	0.00
Indigo Bunting	0.00		0.20	0.00	0.00
<i>Red-winged Blackbird</i>	2.80		2.40	1.20	2.40
Eastern Meadowlark	0.20		0.40	0.60	0.00
Common Grackle	0.40		0.00	0.00	0.00
Orchard Oriole	0.60		0.00	0.20	0.00
Baltimore Oriole	0.20		0.40	0.40	1.20
<i>American Goldfinch</i>	1.40		1.80	0.60	0.80
<i>Points Surveyed:</i>	5		5	5	5
<i>Ave # Birds Per Point:</i>	22.60		18.20	11.60	21.00
<i>Species Richness:</i>	37		31	24	26
<i>Shannon Diversity:</i>	3.34		3.09	2.92	2.89

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Freeman Farm

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.10	0.10	0.10	0.00	0.00	0.06
Great Blue Heron	0.30	0.10	0.00	0.00	0.00	0.08
Cooper's Hawk	0.00	0.00	0.00	0.00	0.10	0.02
Red-tailed Hawk	0.10	0.00	0.00	0.00	0.00	0.02
American Kestrel	0.30	0.00	0.00	0.10	0.10	0.10
American Woodcock	0.00	0.00	0.00	0.00	0.20	0.04
Mourning Dove	0.30	0.40	0.50	0.30	0.90	0.48
Black-billed Cuckoo	0.40	0.00	0.00	0.10	0.00	0.10
Yellow-billed Cuckoo	0.10	0.00	0.00	0.00	0.00	0.02
Ruby-throated Hummingbird	0.10	0.00	0.00	0.00	0.00	0.02
Red-bellied Woodpecker	0.10	0.00	0.10	0.00	0.00	0.04
Yellow-bellied Sapsucker	0.00	0.00	0.00	0.10	0.20	0.06
Downy Woodpecker	0.00	0.00	0.10	0.00	0.00	0.02
Northern Flicker (Yellow-shafted Flicker)	0.20	0.10	0.20	0.00	0.30	0.16
Pileated Woodpecker	0.00	0.00	0.00	0.30	0.10	0.08
Eastern Wood-Pewee	0.20	0.20	0.30	0.00	0.40	0.22
Alder Flycatcher	0.00	0.10	0.10	0.00	0.00	0.04
Willow Flycatcher	0.00	0.00	0.10	0.00	0.10	0.04
Eastern Phoebe	0.00	0.00	0.00	0.10	0.00	0.02
Great Crested Flycatcher	0.40	0.60	0.40	0.10	0.10	0.32
Eastern Kingbird	0.30	0.20	0.30	0.70	0.80	0.46
Yellow-throated Vireo	0.00	0.10	0.10	0.00	0.00	0.04
Warbling Vireo	0.10	0.00	0.00	0.00	0.00	0.02
Red-eyed Vireo	0.40	0.40	0.10	0.00	0.20	0.22
Blue Jay	0.40	0.30	0.20	0.50	0.30	0.34
<i>American Crow</i>	<i>1.60</i>	<i>0.90</i>	<i>0.90</i>	<i>1.50</i>	<i>1.20</i>	<i>1.22</i>
<i>Tree Swallow</i>	<i>0.40</i>	<i>0.80</i>	<i>0.30</i>	<i>0.00</i>	<i>1.00</i>	<i>0.50</i>
Black-capped Chickadee	0.40	0.40	0.00	0.90	0.40	0.42
Tufted Titmouse	0.70	0.30	0.10	0.00	0.10	0.24
White-breasted Nuthatch	0.10	0.10	0.00	0.30	0.00	0.10
House Wren	0.30	0.00	0.10	0.20	0.20	0.16
Eastern Bluebird	0.30	0.00	0.10	0.00	0.00	0.08
Hermit Thrush	0.00	0.00	0.10	0.00	0.00	0.02
Wood Thrush	0.00	0.20	0.00	0.00	0.00	0.04
American Robin	0.00	0.40	0.70	0.50	0.80	0.48
Gray Catbird	0.00	0.10	0.20	0.00	0.70	0.20
Northern Mockingbird	0.00	0.00	0.00	0.10	0.00	0.02
European Starling	0.20	0.00	0.00	0.00	0.00	0.04
Cedar Waxwing	0.10	0.80	0.00	0.00	0.20	0.22
Blue-winged Warbler	0.40	0.40	0.10	0.10	0.30	0.26
Golden-winged Warbler	0.00	0.10	0.00	0.00	0.00	0.02
Yellow Warbler	0.40	0.20	0.30	0.10	0.20	0.24
Chestnut-sided Warbler	0.20	0.10	0.50	0.00	0.00	0.16
Prairie Warbler	0.00	0.30	0.30	0.00	0.90	0.30

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Freeman Farm

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Ovenbird	0.50	0.40	0.40	0.10	0.00	0.28
Common Yellowthroat	1.10	0.80	0.80	1.60	3.10	1.48
Scarlet Tanager	0.20	0.00	0.00	0.00	0.00	0.04
Eastern Towhee	0.20	0.00	0.40	0.40	1.00	0.40
Chipping Sparrow	0.40	0.70	0.60	0.80	0.80	0.66
Field Sparrow	1.40	0.90	1.60	1.50	2.40	1.56
Vesper Sparrow	0.00	0.00	0.10	0.00	0.00	0.02
Song Sparrow	2.30	2.00	1.10	1.70	1.70	1.76
Northern Cardinal	0.50	0.20	0.30	0.20	0.00	0.24
Indigo Bunting	0.10	0.00	0.00	0.00	0.00	0.02
Bobolink	0.30	1.20	1.10	0.90	4.00	1.50
Red-winged Blackbird	0.70	1.20	2.10	2.60	4.50	2.22
Eastern Meadowlark	0.90	0.30	0.70	1.20	1.00	0.82
Common Grackle	0.00	0.00	0.00	0.00	0.10	0.02
Baltimore Oriole	1.00	0.40	0.20	0.40	0.30	0.46
Purple Finch	0.10	0.00	0.00	0.00	0.00	0.02
American Goldfinch	0.50	1.10	0.90	1.10	1.90	1.10
<i>Points Surveyed:</i>	10	10	10	10	10	
<i>Ave # Birds Per Point:</i>	19.10	16.90	16.60	18.50	30.60	20.34
<i>Species Richness:</i>	43	36	38	29	35	61
<i>Shannon Diversity:</i>	3.39	3.24	3.22	2.93	2.98	

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Neilson Farm

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
Canada Goose	0.20		0.00	0.00	0.10	0.08
Northern Bobwhite	0.10		0.00	0.00	0.00	0.03
Great Blue Heron	0.00		0.00	0.10	0.10	0.05
Turkey Vulture	0.00		0.00	0.00	0.10	0.03
Northern Harrier	0.10		0.00	0.00	0.00	0.03
Red-tailed Hawk	0.00		0.00	0.00	0.10	0.03
American Kestrel	0.10		0.20	0.10	0.30	0.18
American Woodcock	0.00		0.00	0.10	0.20	0.08
Mourning Dove	0.00		0.50	0.20	0.30	0.25
Red-bellied Woodpecker	0.10		0.00	0.00	0.00	0.03
Northern Flicker (Yellow-shafted Flicker)	0.00		0.00	0.00	0.10	0.03
Pileated Woodpecker	0.10		0.00	0.00	0.10	0.05
Eastern Wood-Pewee	0.00		0.20	0.10	0.10	0.10
Alder Flycatcher	0.00		0.10	0.00	0.00	0.03
Willow Flycatcher	0.20		0.70	0.00	0.00	0.23
Least Flycatcher	0.00		0.00	0.10	0.00	0.03
Eastern Phoebe	0.00		0.00	0.00	0.10	0.03
Great Crested Flycatcher	0.00		0.00	0.10	0.20	0.08
<i>Eastern Kingbird</i>	<i>0.60</i>		<i>0.20</i>	<i>0.30</i>	<i>1.20</i>	<i>0.58</i>
Red-eyed Vireo	0.00		0.00	0.10	0.00	0.03
Blue Jay	0.20		0.20	0.00	0.00	0.10
<i>American Crow</i>	<i>0.50</i>		<i>0.90</i>	<i>2.30</i>	<i>0.90</i>	<i>1.15</i>
Tree Swallow	0.00		0.20	0.00	0.90	0.28
Black-capped Chickadee	0.10		0.00	0.10	0.10	0.08
Tufted Titmouse	0.30		0.00	0.00	0.10	0.10
White-breasted Nuthatch	0.10		0.00	0.00	0.10	0.05
House Wren	0.50		0.00	0.00	0.50	0.25
Eastern Bluebird	0.20		0.00	0.00	0.00	0.05
American Robin	0.70		0.60	0.10	0.30	0.43
Gray Catbird	0.20		0.10	0.30	0.10	0.18
Northern Mockingbird	0.00		0.00	0.00	0.40	0.10
Brown Thrasher	0.20		0.00	0.00	0.00	0.05
European Starling	0.80		0.00	0.70	0.30	0.45
<i>Cedar Waxwing</i>	<i>0.50</i>		<i>0.60</i>	<i>0.10</i>	<i>1.00</i>	<i>0.55</i>
Blue-winged Warbler	0.10		0.40	0.00	0.00	0.13
Yellow Warbler	0.40		0.40	0.10	0.20	0.28
Chestnut-sided Warbler	0.00		0.00	0.00	0.40	0.10
Prairie Warbler	0.20		0.00	0.00	0.10	0.08
American Redstart	0.10		0.00	0.00	0.00	0.03
<i>Common Yellowthroat</i>	<i>0.70</i>		<i>1.00</i>	<i>1.50</i>	<i>1.20</i>	<i>1.10</i>
Scarlet Tanager	0.30		0.00	0.00	0.00	0.08
Eastern Towhee	0.30		0.20	0.30	0.00	0.20
Chipping Sparrow	0.00		0.10	0.00	0.10	0.05
<i>Field Sparrow</i>	<i>0.60</i>		<i>0.60</i>	<i>0.70</i>	<i>1.40</i>	<i>0.83</i>

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Neilson Farm

<i>Common Name</i>	<i>Relative Abundance (birds per point)</i>					<i>Mean</i>
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	
<i>Savannah Sparrow</i>	0.20		0.00	0.20	0.00	0.10
<i>Song Sparrow</i>	1.60		1.30	2.50	1.60	1.75
<i>Northern Cardinal</i>	0.10		0.40	0.00	0.00	0.13
<i>Rose-breasted Grosbeak</i>	0.10		0.10	0.00	0.00	0.05
<i>Bobolink</i>	3.40		2.20	6.10	8.90	5.15
<i>Red-winged Blackbird</i>	2.20		5.60	5.20	6.80	4.95
<i>Eastern Meadowlark</i>	0.60		1.30	2.80	2.30	1.75
<i>Common Grackle</i>	0.10		0.00	0.10	0.00	0.05
<i>Baltimore Oriole</i>	0.00		0.40	0.00	0.00	0.10
<i>American Goldfinch</i>	0.40		0.80	1.20	1.60	1.00
<i>Points Surveyed:</i>	10		10	10	10	
<i>Ave # Birds Per Point:</i>	17.20		19.30	25.50	32.30	23.58
<i>Species Richness:</i>	37		26	26	35	54
<i>Shannon Diversity:</i>	3.03		2.65	2.36	2.55	

Appendix C—Forest Avian Ecological Integrity Assessment by Site.

This appendix presents results of the Forest Avian Ecological Integrity Assessment for each forest site, combining data from 2006 through 2010. Please refer to the Introduction for some important caveats pertaining to the assessment.

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Acadia NP - 30 ACAD Schoodic

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	3%	Good
Resident	27%	Good
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	14%	Good
Ground Gleaner	5%	Caution
High Canopy Forager	11%	Caution
Low Canopy Forager	32%	Good
Omnivore	22%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	32%	Caution
Forest-ground Nester	22%	Good
Interior Forest Obligate	49%	Good
Shrub Nester	22%	Caution

Acadia NP - 31 ACAD-Giant Slide Trail

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	11%	Caution
Resident	43%	Sig Concern
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	18%	Good
Ground Gleaner	11%	Good
High Canopy Forager	7%	Caution
Low Canopy Forager	18%	Caution
Omnivore	25%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	43%	Good
Forest-ground Nester	14%	Caution
Interior Forest Obligate	46%	Good
Shrub Nester	14%	Good

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Acadia NP - 32 ACAD-Witch Hole Pond

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	32%	Caution
Single Brooded	64%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	9%	Caution
Ground Gleaner	14%	Good
High Canopy Forager	9%	Caution
Low Canopy Forager	18%	Caution
Omnivore	32%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	32%	Caution
Forest-ground Nester	27%	Good
Interior Forest Obligate	32%	Caution
Shrub Nester	14%	Good

Acadia NP - 33 ACAD-Seal Cove Center

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	42%	Sig Concern
Single Brooded	55%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	18%	Good
Ground Gleaner	9%	Good
High Canopy Forager	9%	Caution
Low Canopy Forager	21%	Caution
Omnivore	21%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	42%	Good
Forest-ground Nester	12%	Caution
Interior Forest Obligate	52%	Good
Shrub Nester	15%	Good

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Acadia NP - 34 ACAD-Seal Cove East

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	33%	Caution
Single Brooded	50%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	15%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	20%	Caution
Omnivore	30%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	38%	Good
Forest-ground Nester	8%	Caution
Interior Forest Obligate	43%	Good
Shrub Nester	20%	Caution

Acadia NP - 36 ACAD - Youngs Mtn

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	7%	Good
Resident	33%	Caution
Single Brooded	73%	Good

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	20%	Good
Ground Gleaner	13%	Good
High Canopy Forager	13%	Good
Low Canopy Forager	20%	Caution
Omnivore	13%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	33%	Caution
Forest-ground Nester	20%	Good
Interior Forest Obligate	47%	Good
Shrub Nester	20%	Caution

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Eleanor Roosevelt NHS - 19 ELRO

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	34%	Caution
Single Brooded	41%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	15%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	7%	Caution
Low Canopy Forager	10%	Sig Concern
Omnivore	37%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	22%	Sig Concern
Forest-ground Nester	10%	Caution
Interior Forest Obligate	22%	Caution
Shrub Nester	20%	Caution

Home of Franklin D. Roosevelt NHS - 20 HOFR

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Caution
Resident	38%	Caution
Single Brooded	50%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	15%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	15%	Caution
Omnivore	30%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	30%	Caution
Forest-ground Nester	8%	Caution
Interior Forest Obligate	23%	Caution
Shrub Nester	20%	Caution

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Marsh-Billings-Rockefeller NHP - 10 MABI East

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Caution
Resident	33%	Caution
Single Brooded	60%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	20%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	15%	Caution
Omnivore	33%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	30%	Caution
Forest-ground Nester	15%	Caution
Interior Forest Obligate	45%	Good
Shrub Nester	18%	Good

Marsh-Billings-Rockefeller NHP - 11 MABI Northwest

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Good
Resident	31%	Caution
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	19%	Good
Ground Gleaner	12%	Good
High Canopy Forager	10%	Caution
Low Canopy Forager	17%	Caution
Omnivore	26%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	40%	Good
Forest-ground Nester	14%	Caution
Interior Forest Obligate	43%	Good
Shrub Nester	12%	Good

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Marsh-Billings-Rockefeller NHP - 12 MABI South

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	30%	Caution
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	16%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	9%	Caution
Low Canopy Forager	16%	Caution
Omnivore	36%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	39%	Good
Forest-ground Nester	11%	Caution
Interior Forest Obligate	32%	Caution
Shrub Nester	20%	Caution

Minute Man NHP - 13 MIMA Hartwell Tavern

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	5%	Caution
Nest Predator / Brood Parasite	8%	Good
Resident	38%	Caution
Single Brooded	38%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	13%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	5%	Sig Concern
Low Canopy Forager	15%	Caution
Omnivore	41%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	21%	Sig Concern
Forest-ground Nester	5%	Caution
Interior Forest Obligate	15%	Caution
Shrub Nester	33%	Sig Concern

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Minute Man NHP - 14 MIMA Miriam's Corner

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	4%	Caution
Nest Predator / Brood Parasite	6%	Good
Resident	29%	Caution
Single Brooded	47%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	8%	Caution
Ground Gleaner	4%	Sig Concern
High Canopy Forager	8%	Caution
Low Canopy Forager	16%	Caution
Omnivore	35%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	25%	Sig Concern
Forest-ground Nester	4%	Sig Concern
Interior Forest Obligate	14%	Caution
Shrub Nester	24%	Caution

Minute Man NHP - 15 MIMA The Bluff

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	5%	Caution
Nest Predator / Brood Parasite	10%	Caution
Resident	38%	Caution
Single Brooded	38%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	10%	Caution
Ground Gleaner	3%	Sig Concern
High Canopy Forager	8%	Caution
Low Canopy Forager	13%	Sig Concern
Omnivore	41%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	28%	Sig Concern
Forest-ground Nester	0%	Sig Concern
Interior Forest Obligate	8%	Sig Concern
Shrub Nester	26%	Sig Concern

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Morristown NHP - 16 MORR Mt. Kemble

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	33%	Caution
Single Brooded	44%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	13%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	18%	Caution
Omnivore	38%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	26%	Sig Concern
Forest-ground Nester	10%	Caution
Interior Forest Obligate	23%	Caution
Shrub Nester	23%	Caution

Morristown NHP - 17 MORR Primrose Brook

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	31%	Caution
Single Brooded	49%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	11%	Good
Ground Gleaner	9%	Caution
High Canopy Forager	9%	Caution
Low Canopy Forager	14%	Caution
Omnivore	37%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	23%	Sig Concern
Forest-ground Nester	14%	Caution
Interior Forest Obligate	26%	Caution
Shrub Nester	23%	Caution

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Morristown NHP - 18 MORR Soldier's Huts

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	30%	Caution
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	14%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	11%	Caution
Low Canopy Forager	16%	Caution
Omnivore	30%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	32%	Caution
Forest-ground Nester	16%	Caution
Interior Forest Obligate	34%	Caution
Shrub Nester	20%	Caution

Saint-Gaudens NHS - 22 Saint-Gaudens

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	4%	Good
Resident	25%	Good
Single Brooded	57%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	17%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	17%	Caution
Omnivore	28%	Good

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	28%	Sig Concern
Forest-ground Nester	15%	Caution
Interior Forest Obligate	36%	Good
Shrub Nester	23%	Caution

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Saratoga NHP - 23 SARA Middle Ravine

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	30%	Caution
Single Brooded	53%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	10%	Caution
Ground Gleaner	10%	Good
High Canopy Forager	5%	Sig Concern
Low Canopy Forager	20%	Caution
Omnivore	40%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	25%	Sig Concern
Forest-ground Nester	10%	Caution
Interior Forest Obligate	23%	Caution
Shrub Nester	23%	Caution

Saratoga NHP - 24 SARA Wilkinson Trail

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	4%	Good
Resident	29%	Caution
Single Brooded	49%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	14%	Good
Ground Gleaner	6%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	18%	Caution
Omnivore	33%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	24%	Sig Concern
Forest-ground Nester	12%	Caution
Interior Forest Obligate	24%	Caution
Shrub Nester	27%	Sig Concern

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Saratoga NHP - 25 SARA Bemis Heights

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	32%	Caution
Single Brooded	55%	Caution

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	13%	Good
Ground Gleaner	5%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	16%	Caution
Omnivore	39%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	26%	Sig Concern
Forest-ground Nester	16%	Caution
Interior Forest Obligate	21%	Caution
Shrub Nester	29%	Sig Concern

Saugus Iron Works NHS - 37 Saugus Iron Works

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	8%	Sig Concern
Nest Predator / Brood Parasite	10%	Caution
Resident	30%	Caution
Single Brooded	28%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	3%	Sig Concern
Ground Gleaner	3%	Sig Concern
High Canopy Forager	5%	Sig Concern
Low Canopy Forager	15%	Caution
Omnivore	33%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	15%	Sig Concern
Forest-ground Nester	0%	Sig Concern
Interior Forest Obligate	0%	Sig Concern
Shrub Nester	20%	Caution

Appendix C. Forest Avian Ecological Integrity Assessment by Site (continued).

Vanderbilt Mansion NHS - 21 VAMA

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	36%	Caution
Single Brooded	36%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	15%	Good
Ground Gleaner	9%	Good
High Canopy Forager	6%	Sig Concern
Low Canopy Forager	18%	Caution
Omnivore	30%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	24%	Sig Concern
Forest-ground Nester	6%	Caution
Interior Forest Obligate	21%	Caution
Shrub Nester	24%	Sig Concern

Weir Farm NHS - 29 Weir Farm

2006 to 2010

Integrity Element: Compositional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	30%	Caution
Single Brooded	46%	Sig Concern

Integrity Element: Functional

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Bark Prober	8%	Caution
Ground Gleaner	5%	Caution
High Canopy Forager	14%	Good
Low Canopy Forager	19%	Caution
Omnivore	35%	Caution

Integrity Element: Structural

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Canopy Nester	27%	Sig Concern
Forest-ground Nester	5%	Caution
Interior Forest Obligate	19%	Caution
Shrub Nester	27%	Sig Concern

Appendix D—Grassland Avian Ecological Integrity Assessment by Site.

This appendix presents results of the Grassland Avian Ecological Integrity Assessment for each grassland site, combining data from 2006 through 2010. Please refer to the Introduction for some important caveats pertaining to the assessment.

Appendix D. Grassland Avian Ecological Integrity Assessment by Site (continued).

Saratoga NHP - 26 SARA Burgoyne's Headquarters

2006 to 2010

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Edge Generalist	28%	Caution
Exotic	0%	Good
Grassland Obligate	6%	Caution
Shrub-dependent	11%	Caution

Saratoga NHP - 27 SARA Freeman Farm

2006 to 2010

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Edge Generalist	25%	Caution
Exotic	2%	Caution
Grassland Obligate	5%	Sig Concern
Shrub-dependent	15%	Caution

Saratoga NHP - 28 SARA Neilson Farm

2006 to 2010

<i>Response Guild</i>	<i>Percentage</i>	<i>Rating</i>
Edge Generalist	28%	Caution
Exotic	2%	Caution
Grassland Obligate	6%	Caution
Shrub-dependent	15%	Caution

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

NPS 962/107520, April 2011

National Park Service
U.S. Department of the Interior



Natural Resource Program Center
1201 Oakridge Drive, Suite 150
Fort Collins, CO 80525

www.nature.nps.gov