National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science

Breeding Landbird Monitoring in the Northeast Temperate Network

2011 Summary Report

Natural Resource Data Series NPS/NETN/NRDS—2012/352

ON THE COVER
A Song Sparrow (*Melospiza melodia*) perches with a mouthful of food.
Photograph by: Ed Sharron

Breeding Landbird Monitoring in the Northeast Temperate Network

2011 Summary Report

Natural Resource Data Series NPS/NETN/NRDS—2012/352

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

August 2012

U.S. Department of the Interior
National Park Service
Natural Resource Stewardship and Science
Fort Collins, Colorado

The National Park Service, Natural Resource Stewardship and Science office in Fort Collins, Colorado 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 Report Series is used to disseminate high-priority, current natural resource management information with managerial application. The series targets a general, diverse audience, and may contain NPS policy considerations or address sensitive issues of management applicability.

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. 2012. Breeding landbird monitoring in the Northeast Temperate Network: 2011 summary report. Natural Resource Data Series NPS/NETN/NRDS—2012/352. National Park Service, Fort Collins, Colorado.

NPS 962/116126, August 2012

Contents

Page

Figures iv

Tables vi

Appendices vii

Acknowledgments viii

Introduction 1

Methods 3

Avian Ecological Integrity Assessment 5

Results by Park 8

- Acadia National Park (Maine) 8
- Eleanor Roosevelt National Historic Site (New York) 12
- Home of Franklin D. Roosevelt National Historic Site (New York) 16
- 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 50

Figures

Page

Figure 1. Northeast Temperate Network parks where the breeding bird monitoring protocol is being implemented and their associated Bird Conservation Regions. 2

Figure 2. Example of Google Earth breedling landbird information for Marsh-Billings-Rockefeller NHP available from NETN's website. 7

Figure 3. Point count locations at Acadia National Park, Mt. Desert Island and Schoodic Peninsula.. 9

Figure 4. Witch Hole Pond point-count location. 9

Figure 5. Youngs Mountain point-count location. 9

Figure 6. Giant Slide Trail point-count location. 10

Figure 7. Seal Cove East point-count location. 10

Figure 8. Seal Cove Center point-count location. 10

Figure 9. Seal Cove West point-count location. 10

Figure 10. Schoodic Peninsula point-count location. 10

Figure 11. Relative abundance of the 10 most common species detected at Acadia National Park, 2007-2011; Mt. Desert Island and Schoodic Peninsula sites. 11

Figure 12. Point count locations at Eleanor Roosevelt National Historic Site. 13

Figure 13. Relative abundance of the 10 most common species at Eleanor Roosevelt National Historic Site, 2006-2011. 14

Figure 14. Point count locations at the Home of Franklin D. Roosevelt National Historic Site.. 16

Figure 15. Relative abundance of the 11 most common species detected at the Home of Franklin D. Roosevelt National Historic Site, 2006-2011. 17

Figure 16. Point count locations at Marsh-Billings-Rockefeller National Historical Park. 20

Figure 17. Relative abundance of the 10 most common species detected at Marsh-Billings-Rockefeller National Historical Park, 2006-2011. 21

Figure 18. Point count locations at Minute Man National Historical Park. 24

Figure 19. Relative abundance of the 10 most common species detected at Minute Man National Historical Park, 2006-2011. 25

Figures (continued)

Page

Figure 20. Point count locations at Morristown National Historical Park. 28

Figure 21. Relative abundance of the 10 most common species detected at Morristown National Historical Park, 2006-2011. 29

Figure 22. Point count locations at Saint-Gaudens National Historic Site. 32

Figure 23. Relative abundance of the 10 most common species detected at Saint-Gaudens National Historic Site, 2007-2011. 33

Figure 24. Point count locations at Saugus Iron Works National Historic Site. 36

Figure 25. Relative abundance of the 11 most common species detected at Saugus Iron Works National Historic Site, 2008-2011. 37

Figure 26. Point count locations at Saratoga National Historical Park. 40

Figure 27. Relative abundance of the 10 most common species detected at Saratoga National Historical Park, 2006-2011. 41

Figure 28. Point count locations at Vanderbilt Mansion National Historic Site. 44

Figure 29. Relative abundance of the 10 most common species detected at Vanderbilt Mansion National Historic Site, 2006-2011. 45

Figure 30. Point count locations at Weir Farm National Historic Site. 47

Figure 31. Relative abundance of the most common species detected at Weir Farm National Historic Site, 2006, 2009, and 2010. 48

Tables

Page

Table 1. Number of surveys conducted at each study site annually, 2006-2011 4

Table 2. 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). 6

Table 3. 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). 7

Table 4. Park-wide Forest Avian Ecological Integrity Assessment for Acadia National Park, 2007-2011. 11

Table 5. Park-wide Forest Avian Ecological Integrity Assessment for Eleanor Roosevelt National Historic Site, 2006-2011. 15

Table 6. Park-wide Forest Avian Ecological Integrity Assessment for the Home of Franklin D. Roosevelt National Historic Site, 2006-2011. 18

Table 7. Park-wide Forest Avian Ecological Integrity Assessment for Marsh-Billings-Rockefeller National Historical Park, 2006-2011. 22

Table 8. Park-wide Forest Avian Ecological Integrity Assessment for Minute Man National Historical Park, 2006-2011. 26

Table 9. Park-wide Forest Avian Ecological Integrity Assessment for Morristown National Historical Park, 2006-2011. 30

Table 10. Park-wide Forest Avian Ecological Integrity Assessment for Saint-Gaudens National Historic Site, 2007-2011. 34

Table 11. Park-wide Forest Avian Ecological Integrity Assessment for Saugus Iron Works National Historic Site, 2008-2011. 38

Table 12. Park-wide Forest Avian Ecological Integrity Assessment for forested study sites at Saratoga National Historical Park, 2006-2011. 42

Table 13. Park-wide Grassland Avian Ecological Integrity Assessment for grassland study sites at Saratoga National Historical Park, 2006-2011. 42

Table 14. Park-wide Forest Avian Ecological Integrity Assessment for Vanderbilt Mansion National Historic Site, 2006-2011. 46

Table 15. Forest Avian Ecological Integrity Assessment for Weir Farm National Historic Site, 2006-2010. 49

Appendices

Page

Appendix A—Park Summaries..... 51

Appendix B—Site Summaries..... 69

Appendix C—Forest Avian Ecological Integrity Assessment by Site. 96

Appendix D—Grassland Avian Ecological Integrity Assessment by Site. 106

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 32 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*
Paul Corcoran*
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
Barbara Mansell*
Liz Martens*
Kent McFarland*
Matthew Medler
Ben Olewine
Marne Onderdonk
Kelly Perkins
Jose Ramirez*
James Restivo*
Jody Schubert*
Tom Sharp*
Tim Spahr
Steve Smith*
Bob Stymeist*
Linda White*

* Indicates volunteers who conducted surveys in 2011

Introduction

The National Park Service (NPS) Northeast Temperate Network (NETN) is tasked with monitoring a suite of representative natural resource indicators, called vital signs, for 12 parks in seven northeastern states plus the Appalachian National Scenic Trail (APPA). Breeding birds were chosen as one of the NETN vital signs because they are a reliable indicator of ecological integrity and they are a high profile taxonomic group. Many bird species are 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**). Difficult logistics prevent this protocol from being feasible for the Boston Harbor Islands and APPA (Faccio et al. 2010).

NETN 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, the 11 monitored 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 2011. As we accumulate more years of data, we anticipate that the annual report will expand to incorporate more data interpretation. Readers are cautioned to treat the ecological integrity assessment results as provisional for two reasons: 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, the assessment results presented for each park were produced by combining data from all survey years at a given park (up to 6 years of data). In the future, we plan to work with park managers to produce a parallel assessment based on park management goals.

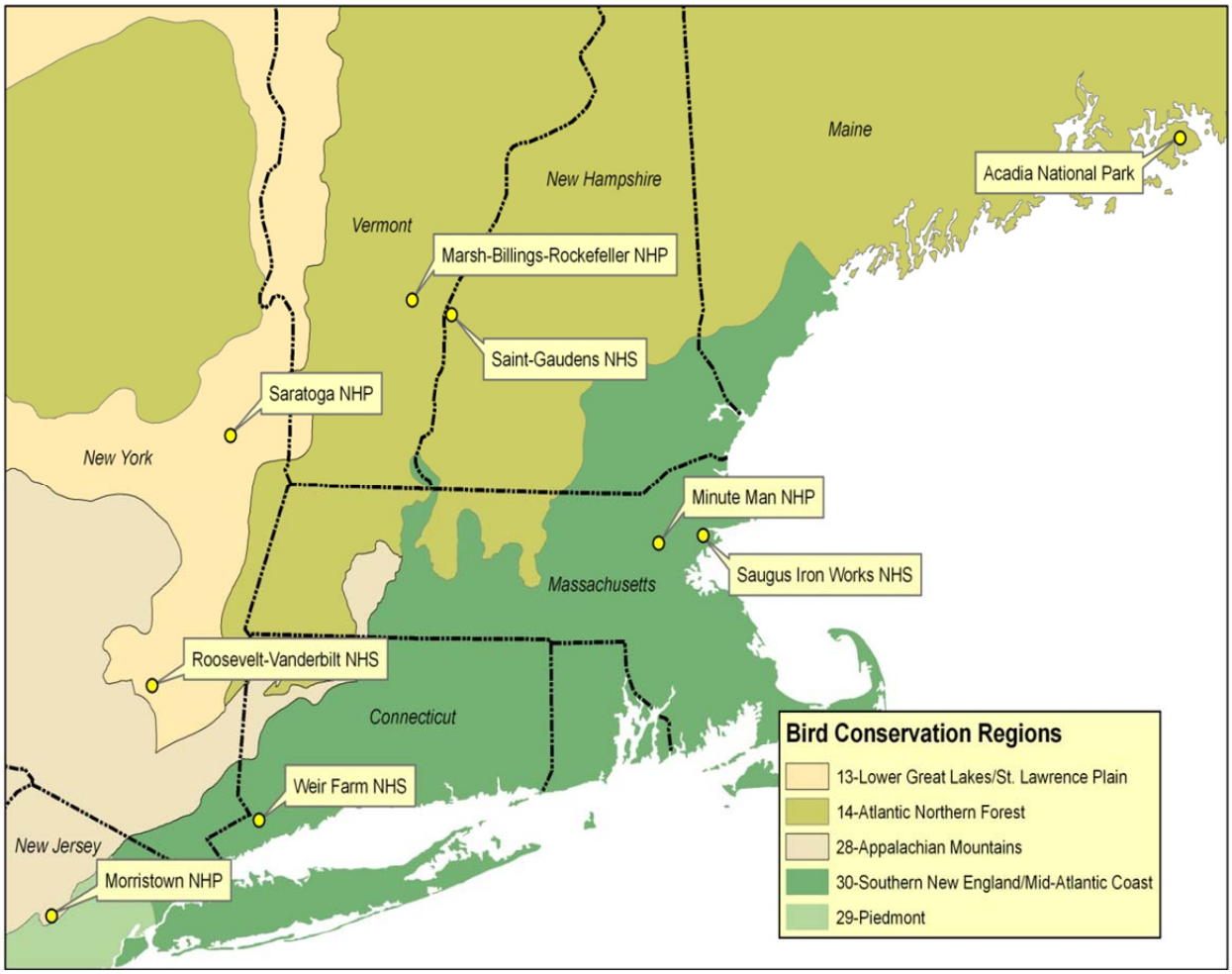

Figure 1. Northeast Temperate Network parks where the breeding bird monitoring protocol is being implemented and their associated Bird Conservation Regions. Roosevelt-Vanderbilt National Historic Sites includes Eleanor Roosevelt, Home of Franklin D. Roosevelt, and Vanderbilt Mansion National *Historic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

Methods

Depending on size and habitat, each park contains one or more study sites and each study site contains between three and 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, except that parks with fewer than 10 point count locations (Saint-Gaudens NHS, Saugus Iron Works NHS, and Weir Farm NHS) are visited at least twice. 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.

Birders are recruited through local birding groups, word of mouth, and park staff. Each volunteer takes a bird identification quiz on the Vermont Center for Ecostudies website, and is expected to spend time practicing distance estimation skills and familiarizing themselves with their route prior to conducting 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 volunteer birder. NETN is also working with partners to develop a birder certification website that provides training tools and testing in visual and auditory bird identification. Volunteer birder skill is evaluated by the project leader and, beginning with this report, data from poor observers are excluded from analyses and reporting. This change only affects one route from 2006 at Saratoga National Historical Park.

Volunteer recruitment and retention has varied widely by park. To date, an average of 75% of the 28 study sites have been surveyed (at least partially) each year network-wide, with five parks (Roosevelt-Vanderbilt NHS [ROVA], Marsh-Billings-Rockefeller NHP [MABI], Minute Man NHP [MIMA], Saint-Gaudens NHS [SAGA] and Saugus Iron Works NHS [SAIR]) achieving 83% coverage or better, and two parks (Morristown NHP [MORR] and Saratoga NHP [SARA]) achieving 72% and 74% coverage, respectively (Table 1). Acadia NP (ACAD) and Weir Farm NHS (WEFA) have had volunteer recruitment and/or retention problems, resulting in just 57% and 50% coverage, respectively. Volunteer recruitment for the 2012 season looks promising, and we are hopeful that both parks will have 100% coverage in 2012.

Data summaries were produced for each park (and each site when a park has more than one) using a database developed by the Northeast Temperate Network. The summaries include species detected and abundance for each year, as well as species richness and Shannon diversity. To facilitate comparisons across years and between parks and sites, if a site is surveyed multiple times in a year then only the data from the first survey are used for the data summaries (relative abundance figures, Appendix A, and Appendix B). Detections of additional species from later surveys are noted in the text, as is the total number of species and individuals detected through the full survey effort. The ecological integrity assessments use all species detected, regardless of whether the detection is in the first survey.

Table 1. Number of surveys conducted at each study site annually, 2006-2011. "NA" indicates sites that were not established during a given year. Total coverage is the proportion of years each site (or park) was at least partially surveyed.

Park/Study Site (no. of point counts)	2006	2007	2008	2009	2010	2011	Total Coverage (%)
Acadia NP (ACAD)							57
Schoodic (n=6)	NA	1	0	0	2	2	60
Giant Slide Trail (n=10)	NA	1[1]	1	1	0	1[1]	80
Seal Cove Center (n=6)	NA	1	2	2	2	2	100
Seal Cove East (n=7)	NA	1	2	2	2	2	100
Seal Cove West (n=6)	NA	0	0	0	0	0	0
Witch Hole Pond (n=9)	NA	0	0	1	0	1	40
Youngs Mtn (n=7)	NA	0	0	1	0	0	20
Roosevelt-Vanderbilt NHS (ROVA)							94
ELRO (n=11)	1[1]	1	1	1	1	1	100
HOFR (n=12)	1	1	1	0	1	1	83
VAMA (n=7)	1	1	1	1	1	1	100
Marsh-Billings-Rockefeller NHP (MABI)							100
East (n=10)	1	1	1	1	1	1	100
Northwest (n=10)	1	1	2[1]	1	1	1	100
South (n=5)	1	2	1	1	1	2	100
Minute Man NHP (MIMA)							94
Hartwell Tavern (n=7)	1	1	1	1	1	1	100
Miriam's Corner (n=8)	1	1	1	1	0	1	83
The Bluffs (n=8)	1	2	2	2	1	3[2]	100
Morristown NHP (MORR)							72
Mt. Kemble (n=10)	0	0	2	2	1	1	67
Primrose Brook (n=10)	1	1	2	2	1	0	83
Soldiers Huts (n=9)	1	1	0	0	1	2	67
Saint-Gaudens NHS (SAGA) (n=8)	0	1[3]	2	2	2	2	83
Saugus Iron Works NHS (SAIR) (n=3)	NA	NA	1[3]	3	2	2	100
Saratoga NHP (SARA)							74
Bemis Heights (n=6)	NA	0	1	1	1	1[1]	80
Burgoyne's Headquarters (n=5)	1	0	1	1	1	1	83
Freeman Farm (n=10)	1	1	1	1	1	1	100
Middle Ravine (n=10)	NA	1	1	0	0	0	40
Neilson Farm (n=10)	1	0	1	1	1	1	83
Wilkinson Trail (n=10)	0	0	1	1	1	0	50
Weir Farm NHS (WEFA) (n=5)	2	0	0	2	2	0	50
Total Surveys	16	20	29	32	28	31	75

[1] Partial survey. 9 points at ACAD Giant Slide Trail (2007 and 2011), 6 at ELRO (2006), 5 at MABI NW (2008), and 2 at SARA Bemis Heights (2011).
[2] Includes simultaneous quality control survey by project manager.
[3] Replicate survey was not conducted.

Avian Ecological Integrity Assessment

This report includes an assessment of the ecological integrity of the forest breeding bird community at each park as well as the grassland bird community at Saratoga National Historical Park. The assessments are 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). Over time, they will help elucidate changes in a broader, landscape context and indicate the direction that 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 three ecological integrity 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. The integrity categories are compositional (indicating species diversity), functional (highlighting ecological processes), and structural (related to the presence of important physical elements, like snags and a shrub layer).

To calculate the avian ecological integrity assessment, species detected at a site or park 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 2. "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 3).

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 6 years) for each park. Where 3 to 6 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.

This year, the avian ecological integrity assessments have been modified to more closely match the methods of O'Connell et al. (2000). Specifically, we followed O'Connell et al. (2002) by limiting both assessments to five groups of birds (perching birds or passerines, woodpeckers, cuckoos, swifts and hummingbirds, and doves). The only exceptions are American Kestrel and

Northern Harrier, two grassland-obligate raptors that are now included in the grassland obligate guild for the grassland assessment. This helps ensure that the species included in the assessments are readily detected by point count surveys and are potential breeders in forested or grassland habitat. In addition, we have limited the assessments to species that are assigned to guilds for the specific assessment type; interior forest birds detected on grassland point counts will not count in the species total for that site.

We also discovered that the Eastern Phoebe was inadvertently not assigned to any guilds; this species has now been assigned to the "Low Canopy Forager" forest guild and the "Edge Generalist" grassland guild. Finally, as part of our review of the grassland assessment, 18 additional species have been added to the "Edge Generalist" grassland guild: Alder Flycatcher, American Woodcock, Black-billed Cuckoo, Black-capped Chickadee, Glue-gray Gnatcatcher, Blue Jay, Common Grackle, Great Crested Flycatcher, Gray Catbird, Northern Bobwhite, Northern Cardinal, Red-winged Blackbird, Ruby-Throated Hummingbird, Tufted Titmouse, Willow Flycatcher, Yellow-billed Cuckoo, Yellow-shafted Flicker, and Yellow-throated Vireo. Any comparisons described in the text between the 2006-2010 and 2006-2011 assessments refer to assessments calculated with these revised procedures and guild membership, and may not match the assessments for 2006-2010 presented in the 2010 report (Faccio and Mitchell 2011). Because of the changes to both assessments, we will review the thresholds for the assessments in late 2012, and potentially implement revised thresholds beginning with the reporting of the 2012 monitoring data.

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 web page (accessible through the leftmost suite of menu choices on NETN's homepage) also contains bird point count locations, bird monitoring routes, IBI (Index of Biological Integrity) and species visit occurrences for all participating NETN park units (Figure 2).

Table 2. 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	Ratings (% Species Richness)		
		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 3. 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	Ratings (% Species Richness)		
	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%

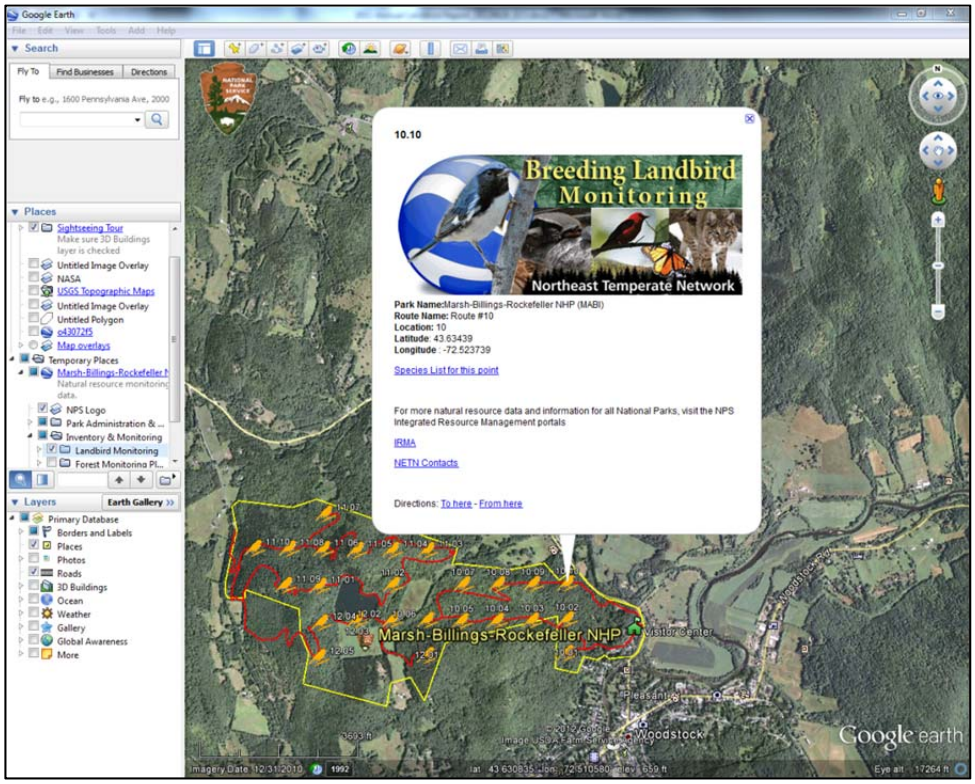

Figure 2. Example of Google Earth breedling landbird information for Marsh-Billings-Rockefeller NHP available from NETN's website.

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 (Figures 3 through 10). 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, for a park-wide coverage rate of just 57% (see Table 1 for a summary of survey coverage by year). In 2011, five of the seven study sites were surveyed, and newly recruited volunteer observers should result in 100% coverage in 2012.

During 2011, observers conducted a total of 56 point counts, detecting a total of 437 birds representing 48 species (including a Least Flycatcher and Northern Parula that were detected on repeat surveys). A total of 65 species have been recorded over the 5 years of monitoring, including a Yellow-Bellied Sapsucker which was detected only on a repeat site visit to Seal Cove East in 2008.

Average abundance during the first site visit dropped from 11.7 birds per point in 2010 to 7.3 birds per point in 2011, the lowest since point counts began at ACAD in 2007 (Appendix A). However, despite the low number of individuals in 2011, species richness was the highest in the survey's history, with 46 species detected during the first round of surveys. Two species of regional conservation concern were detected during the 2011 surveys: Ruffed Grouse and Blackpoll Warbler. 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.

Of the 10 most abundant species detected at all ACAD sites combined across all years, the relative abundances of only two (Blue-headed Vireo and Ovenbird) increased from 2010, and the relative abundances of all ten species in 2011 were equal to or below the 5-year average (Figure 11, Appendix A).

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 4). The assessment has also been calculated for each study site, and these results are in Appendix C.

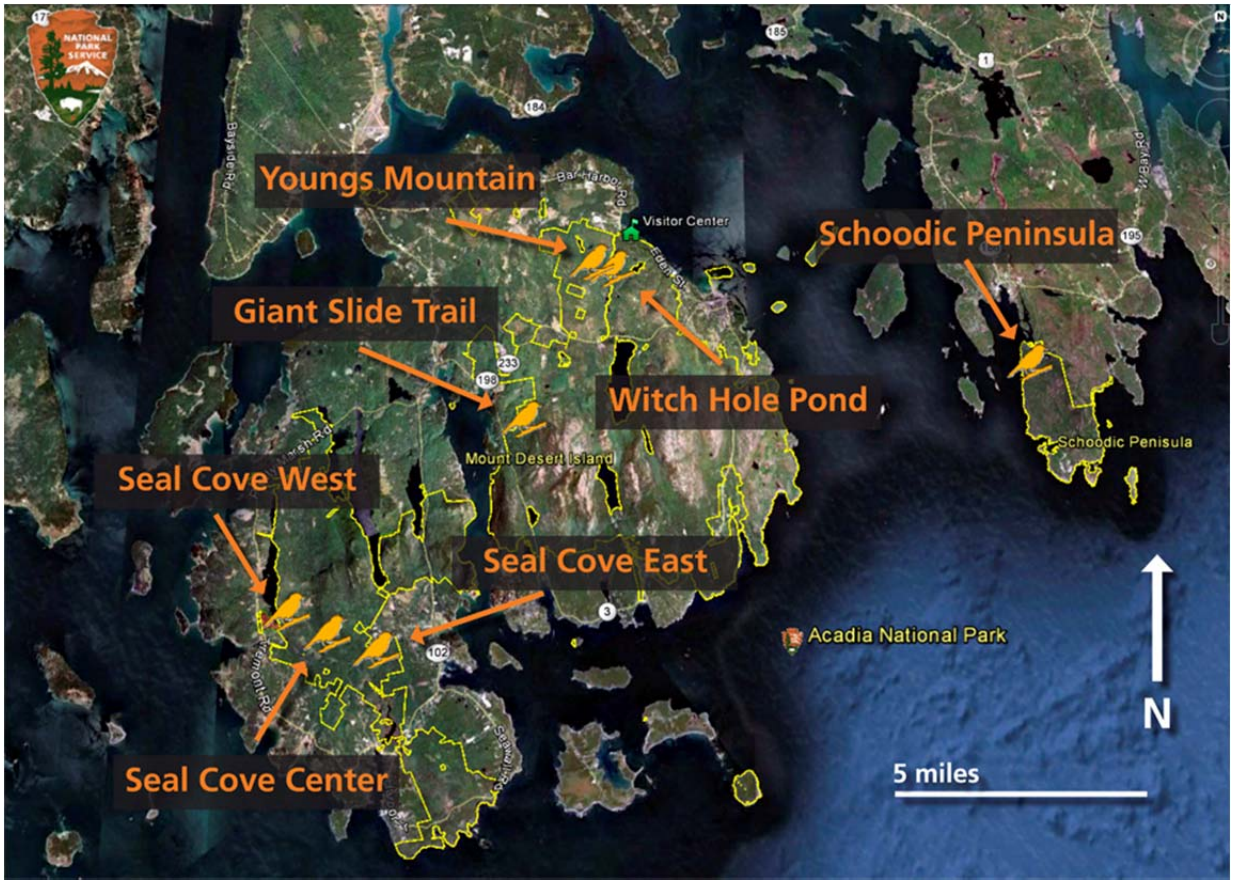

Figure 3. Point count locations at Acadia National Park, Mt. Desert Island and Schoodic Peninsula. Google Earth image.

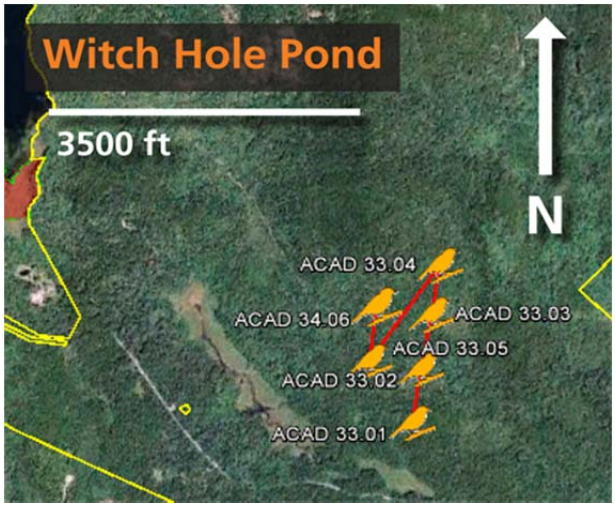

Figure 5. Witch Hole Pond point-count location. Google Earth image.

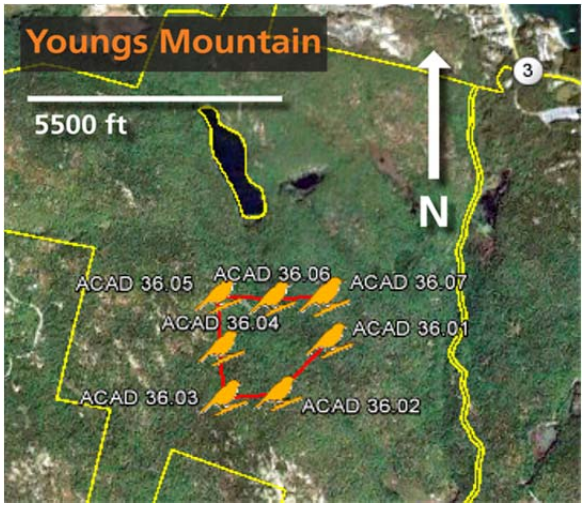

Figure 4. Youngs Mountain point-count location. Google Earth image.

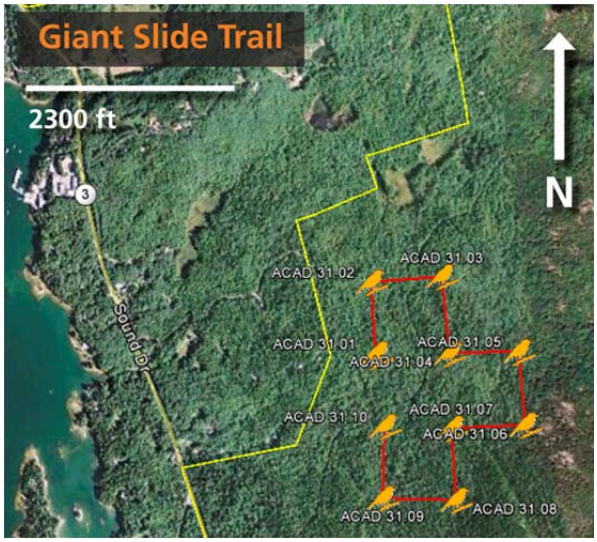

Figure 6. Giant Slide Trail point-count location. Google Earth image.

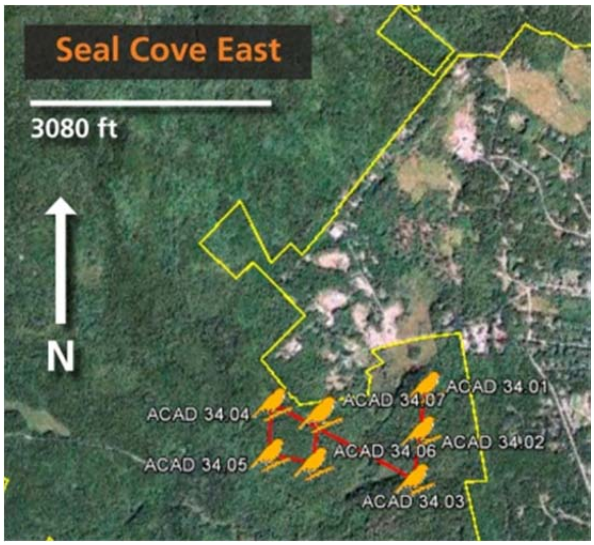

Figure 9. Seal Cove East point-count location. Google Earth image.

Figure 7. Seal Cove Center point-count location. Google Earth image.

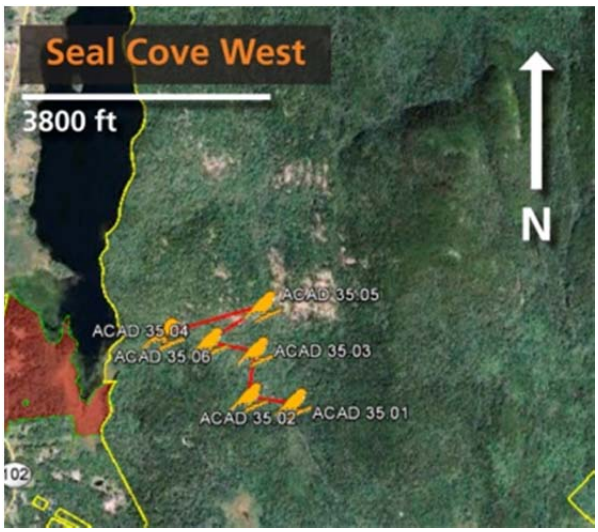

Figure 8. Seal Cove West point-count location. Google Earth image.

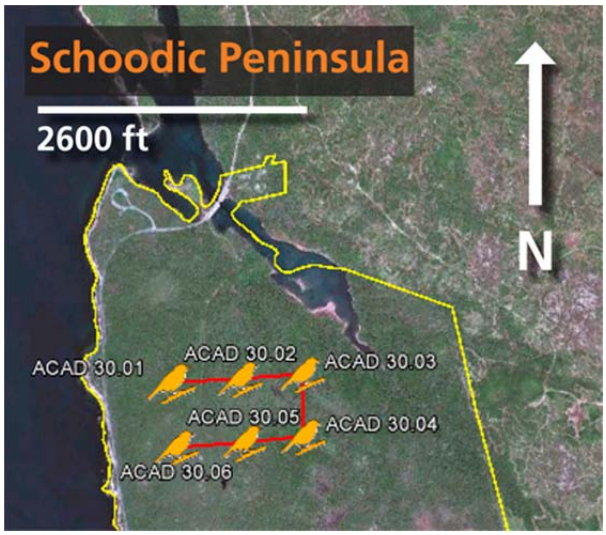

Figure 10. Schoodic Peninsula point-count location. Google Earth image.

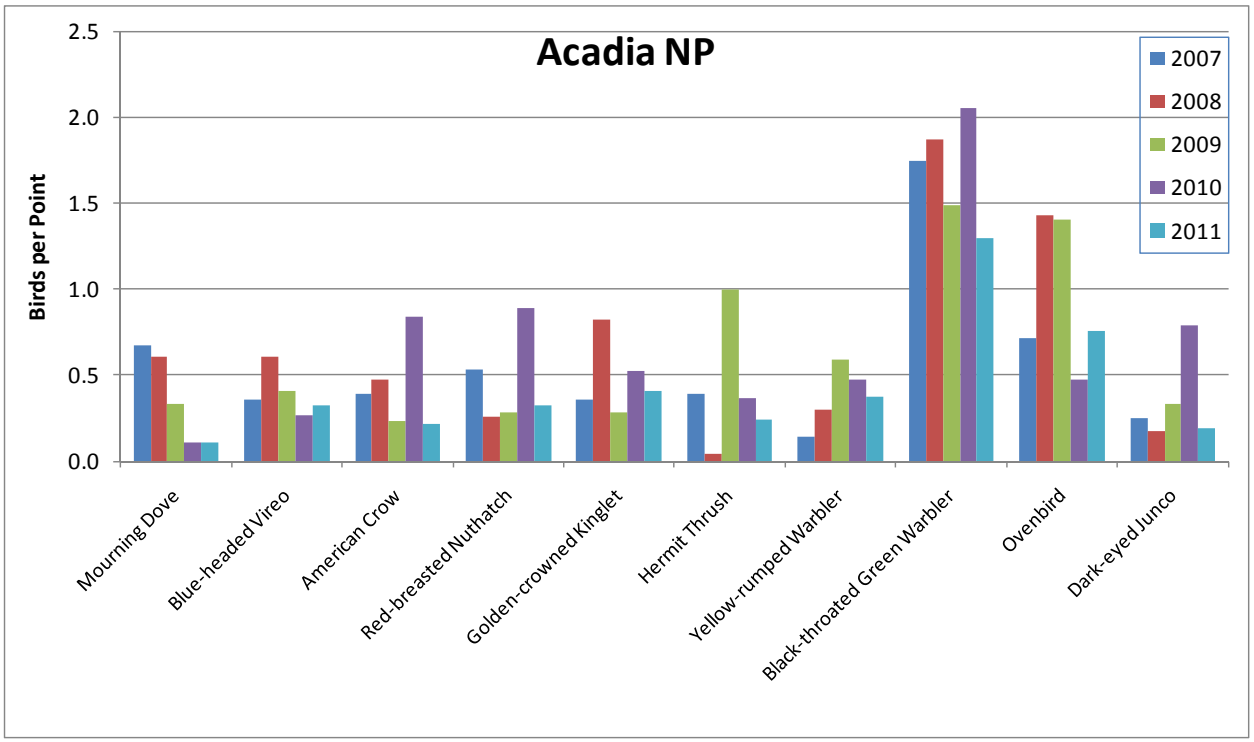

Figure 11. Relative abundance of the 10 most common species detected at Acadia National Park, 2007-2011; Mt. Desert Island and Schoodic Peninsula sites.

Table 4. Park-wide Forest Avian Ecological Integrity Assessment for Acadia National Park, 2007-2011.

Acadia NP **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	28%	Caution
Single Brooded	57%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	12%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	25%	Good
Omnivore	33%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	35%	Caution
Forest-ground Nester	15%	Caution
Interior Forest Obligate	38%	Good
Shrub Nester	23%	Caution

Eleanor Roosevelt National Historic Site (New York)

A study site was established at Eleanor Roosevelt National Historic Site (ELRO; one of the Roosevelt-Vanderbilt National Historic Sites) in 2006 and surveyed annually (Table 1). The study site at ELRO originally consisted of six point count locations, but five additional sampling points were added for the 2007 field season, increasing the total to 11 point count locations (Figure 12).

During 2011, a total of 129 individuals representing 40 species were detected, including seven species detected for the first time (Wild Turkey, Chimney Swift, Northern Mockingbird, Cedar Waxwing, Prairie Warbler, Black-and-white Warbler, and Indigo Bunting). In total, 48 species have been recorded during the 6 years, with an average abundance of 9.48 birds per point (Appendix A). In 2011, both relative abundance (11.73 birds per point) and species richness (40) were the highest in the survey's 6-year history. However, of the ten most commonly detected species across all years, the relative abundances of only three (Tufted Titmouse, White-breasted Nuthatch, and Scarlet Tanager) increased from 2010 (Figure 13), and the relative abundances of six species in 2011 were below the 6-year average (Figure 13, Appendix A). A total of five species of conservation concern were detected during 2011 surveys at ELRO: Eastern Wood-Pewee, Wood Thrush, Prairie Warbler, 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.

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" (the 2011 data did not alter the 2010 results) (Table 5). Among the categories ranked as "Significant Concern" were "canopy nester," a guild that requires a well-developed canopy layer, and "low canopy foragers," which specialize in feeding in the forest sub-canopy. A low proportion of canopy nesting 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.

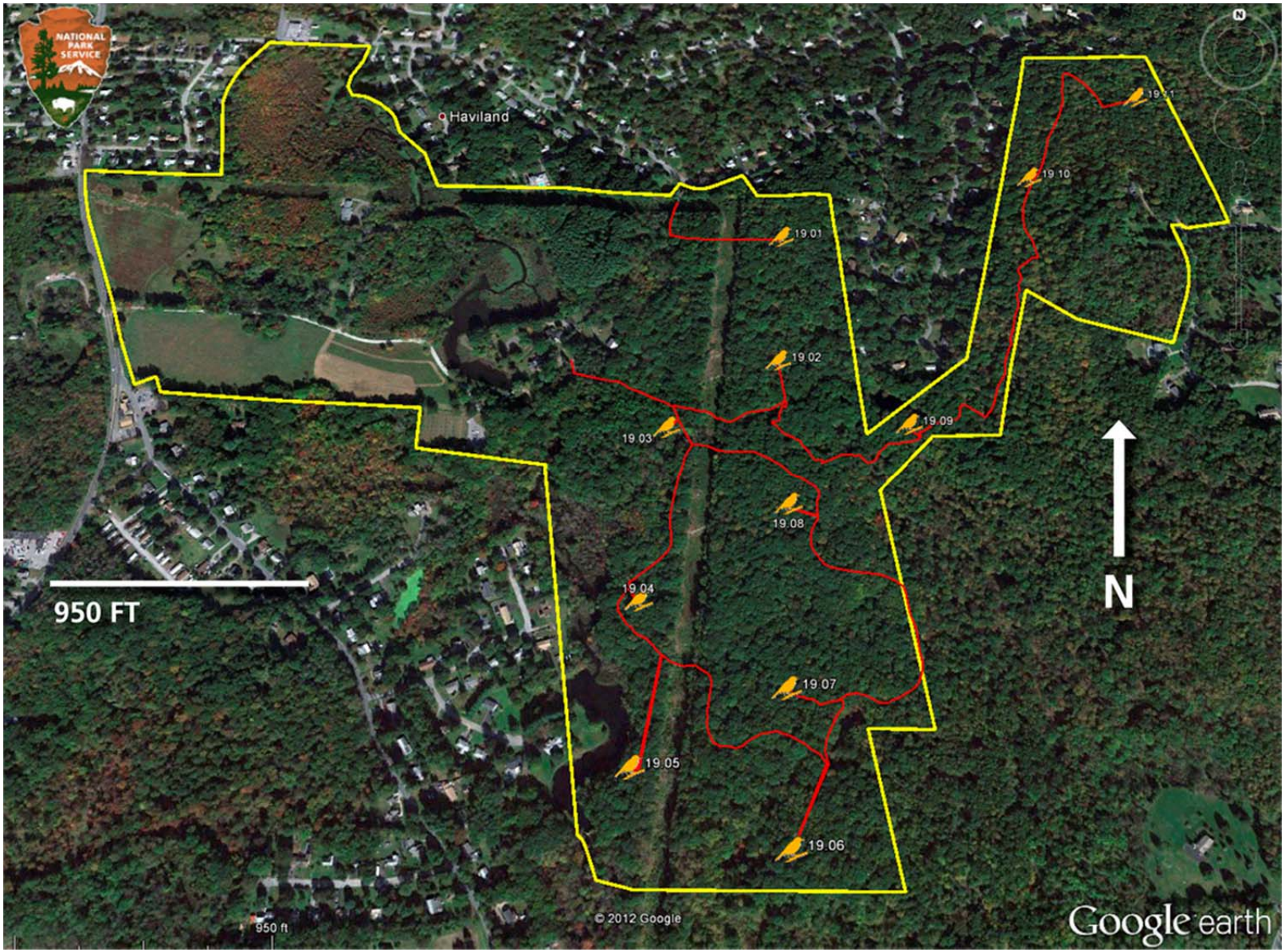

Figure 12. Point count locations at Eleanor Roosevelt National Historic Site. Google Earth image.

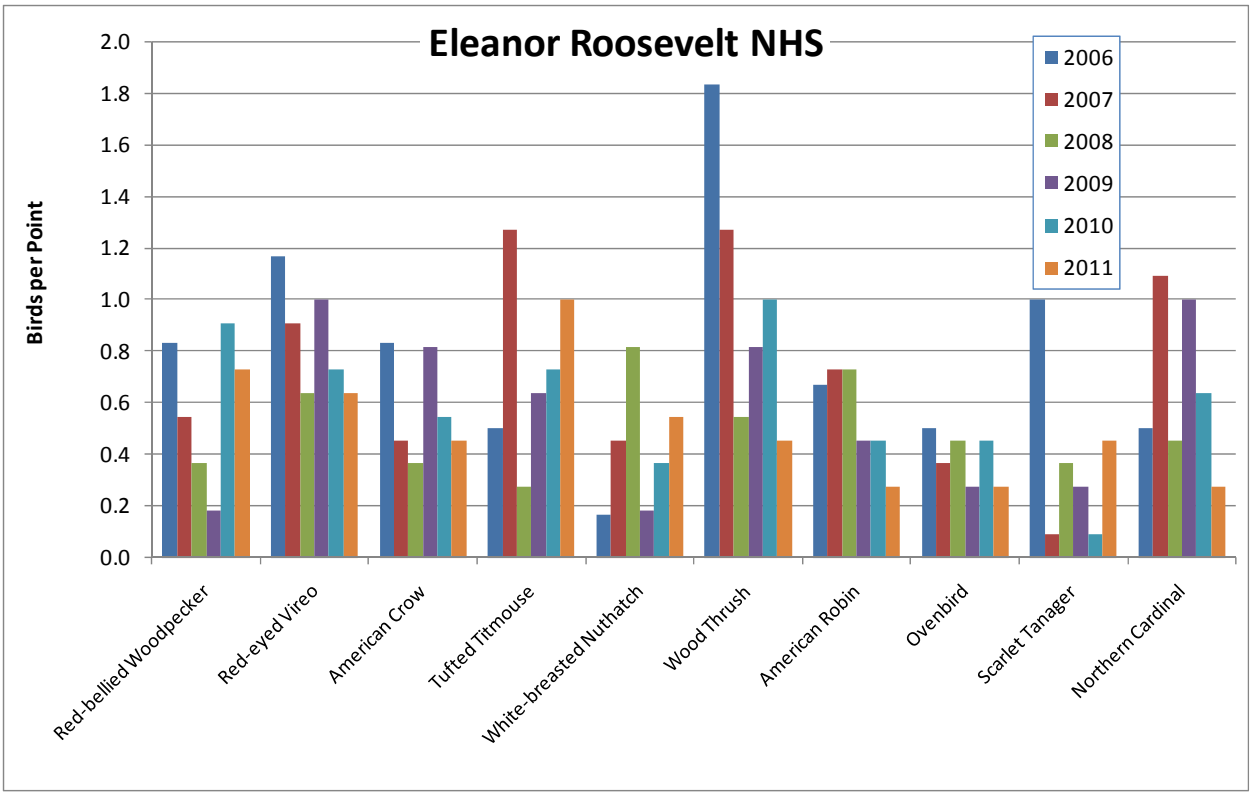

Figure 13. Relative abundance of the 10 most common species at Eleanor Roosevelt National Historic Site, 2006-2011.

Table 5. Park-wide Forest Avian Ecological Integrity Assessment for Eleanor Roosevelt National Historic Site, 2006-2011.

Eleanor Roosevelt NHS **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	39%	Caution
Single Brooded	51%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	17%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	7%	Caution
Low Canopy Forager	12%	Sig Concern
Omnivore	41%	Caution

Integrity Element: *Structural*

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

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

One study site with 12 point count locations was established at the Home of Franklin D. Roosevelt National Historic Site (HOFR; one of the Roosevelt-Vanderbilt National Historic Sites) (Figure 14) and surveyed in all years except 2009 (Table 1).

A total of 67 individual birds representing 23 species were detected in 2011, including four species new to the survey (Barred Owl, Eastern Bluebird, Veery, and Northern Mockingbird). In total, 44 species have been recorded, with an average abundance of 7.27 birds per point. Compared to 2010, relative abundance declined from 7.58 to 5.58 birds per point, the lowest in the survey's 5-year history, while species richness held steady for the third consecutive year (Appendix A). Of the eleven most commonly detected species across all years, the relative abundances of only two increased over 2010 (Figure 15), and only Mourning Dove had a relative abundance in 2011 that was above the 5-year average. Four species of conservation concern were detected during the five 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.

The park-wide forest avian ecological integrity assessment for all years combined at HOFR resulted in two categories ranked as "Good," 10 ranked as "Caution," and one ranked as "Significant Concern" (Table 5). The 2011 data did not alter the 2010 results, using the revised approach for calculating the assessment (see Methods).

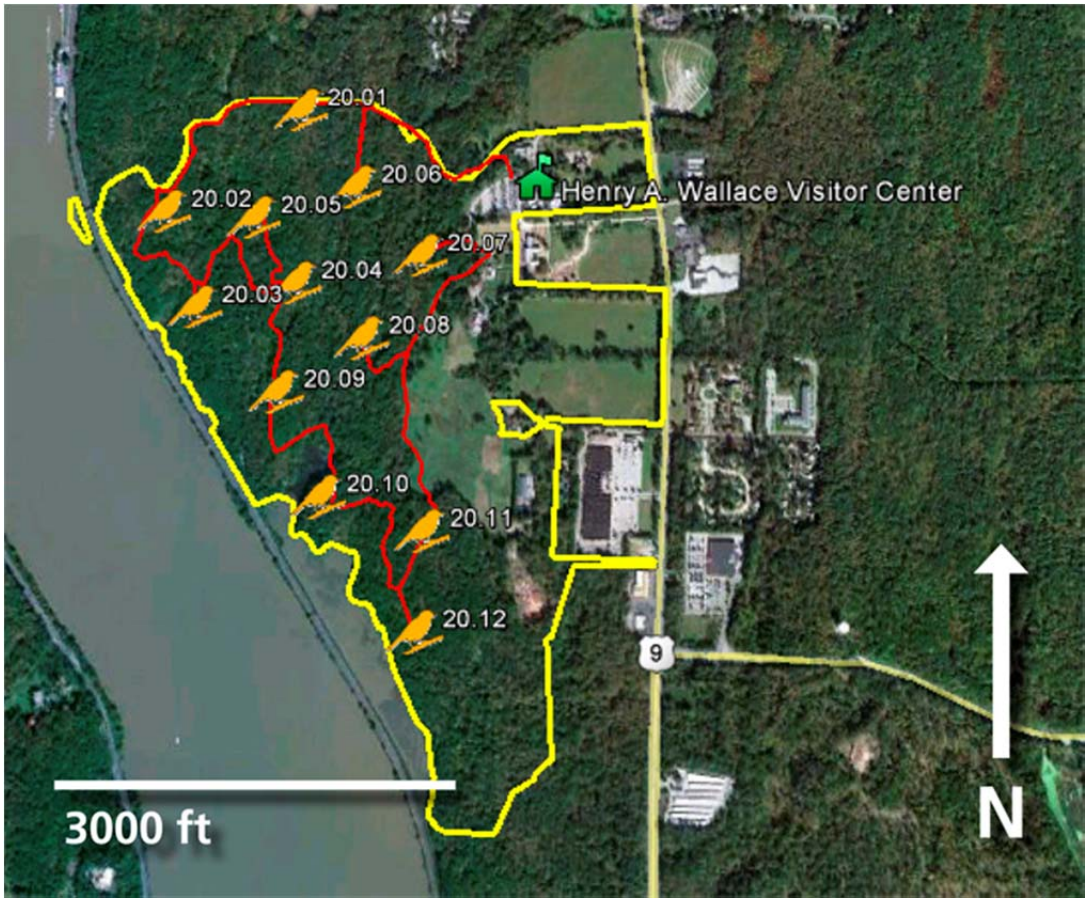

Figure 14. Point count locations at the Home of Franklin D. Roosevelt National Historic Site. Google Earth image.

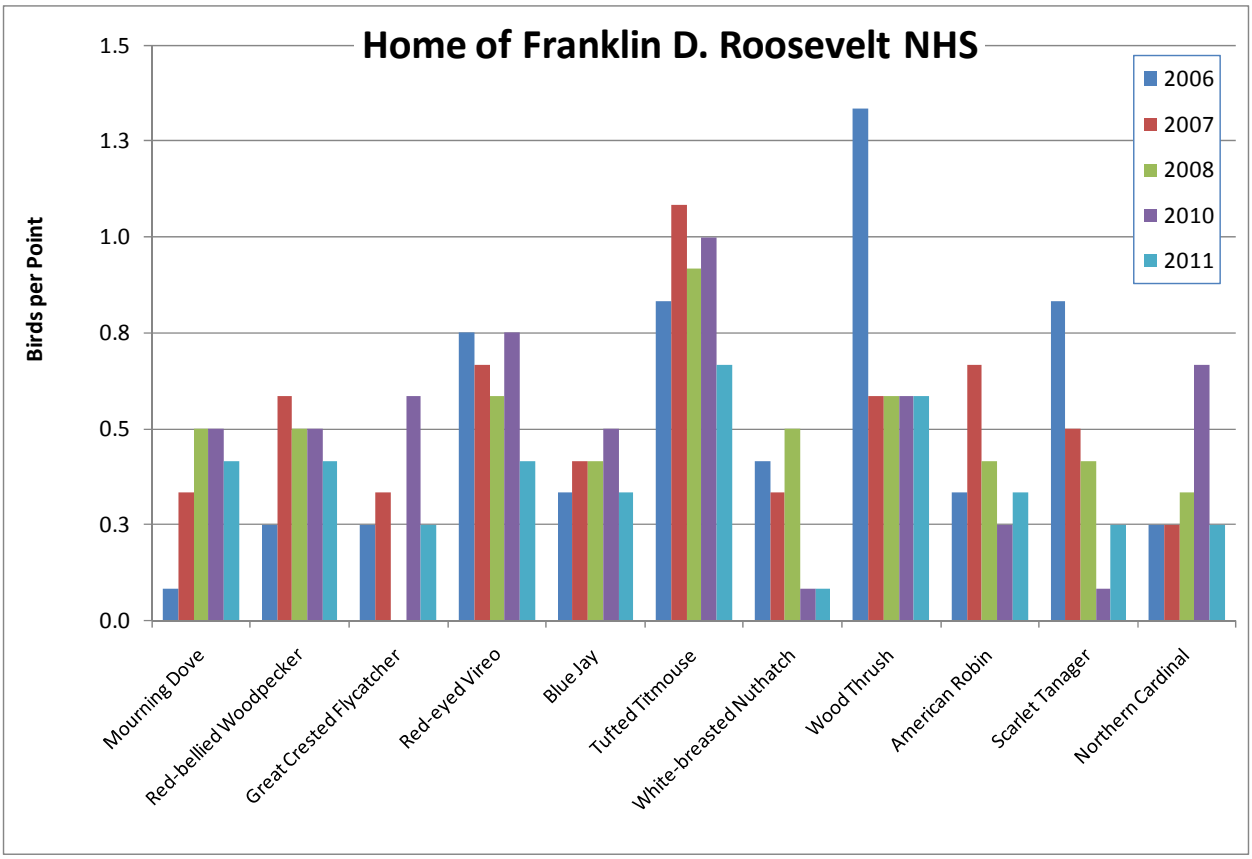

Figure 15. Relative abundance of the 11 most common species detected at the Home of Franklin D. Roosevelt National Historic Site, 2006-2011.

Table 6. Park-wide Forest Avian Ecological Integrity Assessment for the Home of Franklin D. Roosevelt National Historic Site, 2006-2011.

Home of Franklin D. Roosevelt NHS **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Caution
Resident	41%	Sig Concern
Single Brooded	54%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	15%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	15%	Caution
Omnivore	38%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	31%	Caution
Forest-ground Nester	10%	Caution
Interior Forest Obligate	26%	Caution
Shrub Nester	23%	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 (Table 1). Two of these sites (MABI Northwest and MABI East) consist of 10 point count locations each, and one site (MABI South) consists of five point count locations (Figure 16).

During 2011 surveys, observers detected a total of 407 birds representing 42 species (including a Downy Woodpecker detected on a repeat survey of MABI South). A total of 57 species have been recorded over the 6 years of monitoring. Average abundance during the first site survey across all 6 years was 13.92 birds per point (Appendix A). In 2011, relative abundance (13.4 birds per point) and species richness increased from 2010's 5-year low, and included a first-time detection of a Nashville Warbler. Of the ten most commonly detected species across all years, the relative abundances of eight species were equal to or increased over the 2010 values (Figure 17), while four species had relative abundance in 2011 that were above the 6-year average. Ovenbird and Red-eyed Vireo were the most abundant species detected. 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.

The park-wide forest avian ecological integrity assessment for all years combined at MABI resulted in seven categories ranked as "Good," six ranked as "Caution," and none ranked as "Significant Concern" (Table 7) The 2011 data minimally altered the 2010 results (based on the revised assessment methods, see Methods); the percentage of residents changed from just over 28% to just under 28%. It should be noted that four of the guilds that were ranked as "Caution" (low canopy forager, omnivore, forest-ground nester, and shrub nester) were less than 3 percentage points away from a "Good" rating, suggesting that the forest bird community is doing well at Marsh-Billings-Rockefeller National Historical Park. The assessment has also been calculated for each site, individually, and these results are provided in Appendix C.

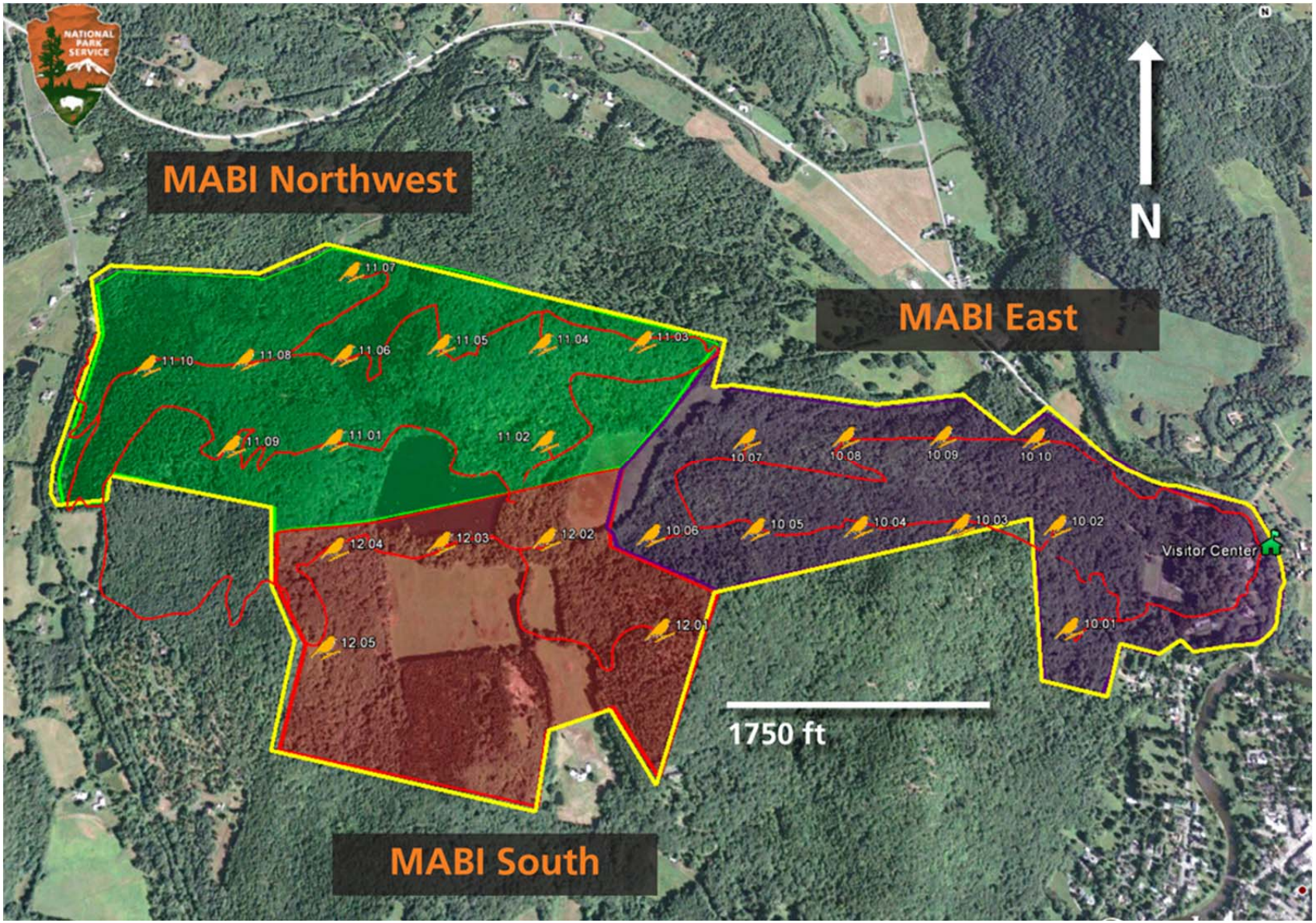

Figure 16. Point count locations at Marsh-Billings-Rockefeller National Historical Park. Google Earth image.

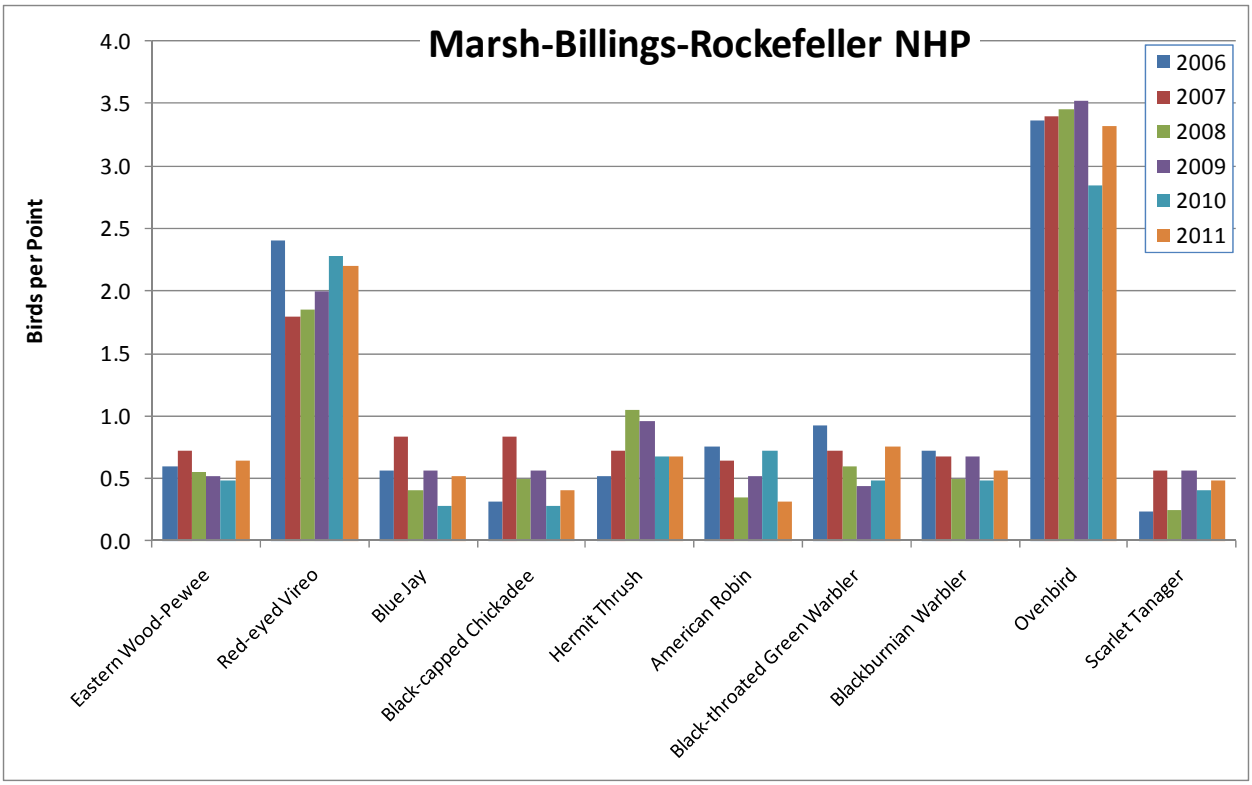

Figure 17. Relative abundance of the 10 most common species detected at Marsh-Billings-Rockefeller National Historical Park, 2006-2011.

Table 7. Park-wide Forest Avian Ecological Integrity Assessment for Marsh-Billings-Rockefeller National Historical Park, 2006-2011.

Marsh-Billings-Rockefeller NHP **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	7%	Good
Resident	28%	Good
Single Brooded	61%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	15%	Good
Ground Gleaner	9%	Good
High Canopy Forager	7%	Caution
Low Canopy Forager	19%	Caution
Omnivore	33%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	35%	Good
Forest-ground Nester	15%	Caution
Interior Forest Obligate	35%	Good
Shrub Nester	19%	Caution

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 count locations each, and one site (Hartwell Tavern) consists of seven point count locations (Figure 18). The three study sites were established in 2006 and surveyed annually, with the exception of Miriam's Corner which was not surveyed in 2010 (Table 1). The Bluff was surveyed twice in 2007, 2008, 2009, and 2011, and the project manager accompanied the volunteer observer in 2011, conducting a simultaneous, quality control survey.

During 2011 surveys, observers detected a total of 470 birds representing 41 species, including three species (Green Heron, Yellow-billed Cuckoo, and Barn Swallow) not encountered during previous surveys at MIMA. Three of the species (Green Heron, Eastern Bluebird, and House Wren) were only detected during repeat surveys of The Bluffs. A total of 60 species have been recorded over the 6 years of monitoring.

Average relative abundance during the first site survey across all 6 years was 12.97 birds per point. In 2011, relative abundance (12.35 birds per point) decreased from 2010, while species richness (38) increased (fewer points were surveyed in 2010) (Appendix A). Of the ten most commonly detected species across all years, the relative abundances of half increased over 2010 (Figure 19), while the relative abundances of only two species in 2011 were above the 6-year average. A total of 10 species of regional conservation concern have been detected during the 6-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.

The park-wide forest avian ecological integrity assessment for all years combined at MIMA resulted in one category ranked as "Good," nine ranked as "Caution," and three ranked as "Significant Concern" (Table 8). The 2011 data did not alter the 2010 results (when the revised assessment methods are used, see Methods). While the only "Good" score continued to be the nest predator/brood parasite guild, "Significant Concern" scores were found in two of the three integrity elements (and the score for "high canopy forager" is close to a "Significant Concern" rating in the third integrity element. 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.

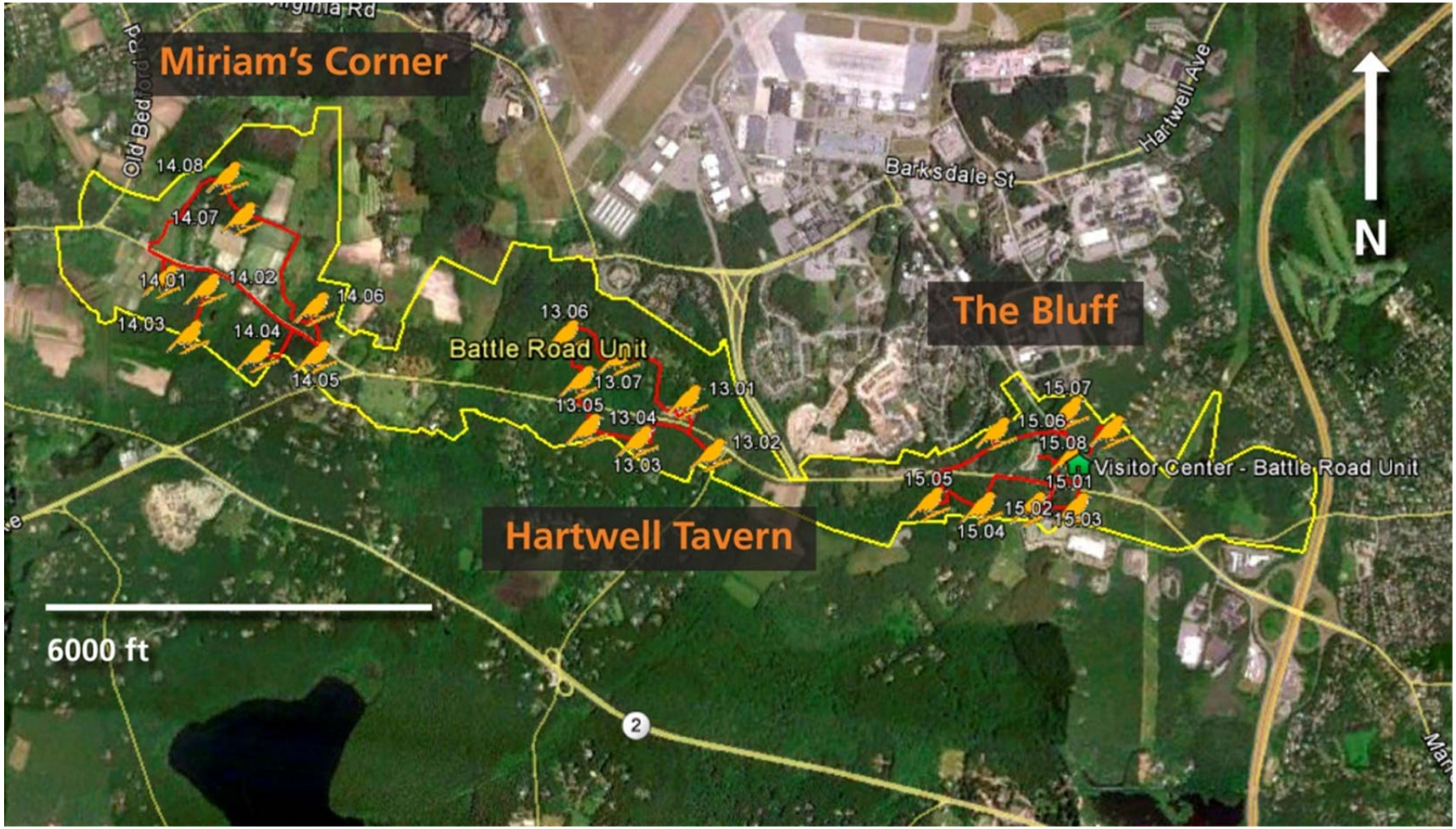

Figure 18. Point count locations at Minute Man National Historical Park. Google Earth image.

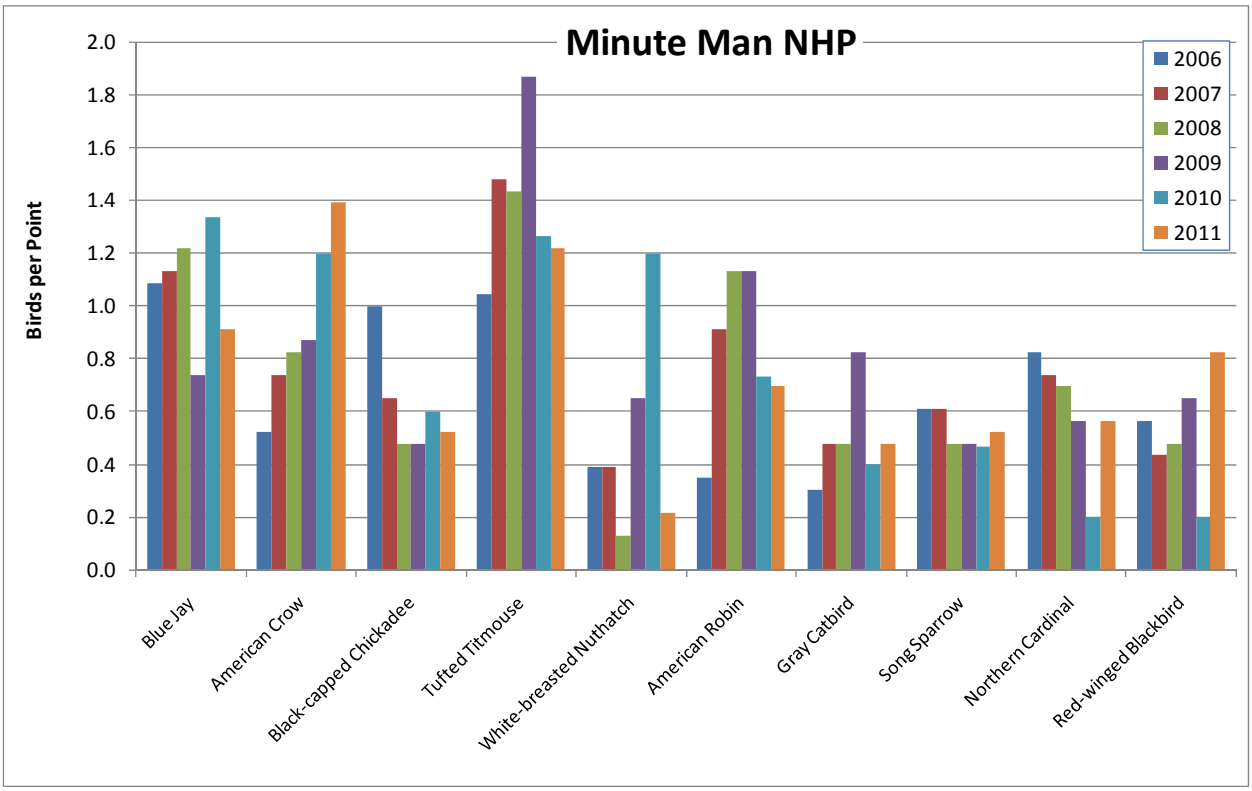

Figure 19. Relative abundance of the 10 most common species detected at Minute Man National Historical Park, 2006-2011.

Table 8. Park-wide Forest Avian Ecological Integrity Assessment for Minute Man National Historical Park, 2006-2011.

Minute Man NHP **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	4%	Caution
Nest Predator / Brood Parasite	8%	Good
Resident	32%	Caution
Single Brooded	47%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	9%	Caution
Ground Gleaner	6%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	21%	Caution
Omnivore	38%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	26%	Sig Concern
Forest-ground Nester	6%	Caution
Interior Forest Obligate	15%	Caution
Shrub Nester	28%	Sig Concern

Morristown National Historical Park (New Jersey)

A total of 29 point counts in three study sites were established in 2006 at the Morristown National Historical Park (MORR), in Morristown, New Jersey. Two of these sites (Primrose Brook and MT. Kemble) consist of 10 point count locations each, and one site (Soldiers Huts) consists of seven point count locations (Figure 20). Two of the sites have been surveyed during 4 years and one site for 5 years, for a park-wide coverage rate of 72% (Table 1). In 2011, Primrose Brook was not surveyed for the first time since 2006.

During 2011 surveys, observers detected a total of 435 birds representing 39 species, including one species (Eastern Screech Owl on the Soldiers Huts route) that has only been detected on a repeat survey, and two (Baltimore Oriole and Yellow-Billed Cuckoo) that had been previously found but in 2011 were only detected on a repeat survey. 2011 added four other species not previously detected (Barred Owl, Common Yellowthroat, Song Sparrow, and American Goldfinch). A total of 57 species have been recorded during the 6 survey years.

Average abundance during the first site visit was 12.58 birds per point, slightly above the 6-year average (Appendix A). Of the ten most commonly detected species across all years, the relative abundances of only two increased over 2010 (Figure 21), while the relative abundances of four species in 2011 were above the 6-year average. A total of eleven species of regional conservation concern have been detected during the 6 survey years, including three species (Eastern Wood-Pewee, Wood Thrush, and Eastern Towhee) that were detected in all 6 years. 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 five categories ranked as “Good,” seven ranked as “Caution,” and one ranked as “Significant Concern” (Table 9). This improvement over what was reported last year is the result of a change to the methods for calculating the ecological integrity assessment (see Methods). The 2011 data did not alter the 2010 results when the revised methods were used. While the “Significant Concern” metric was for shrub nesters (as it was in 2010), guilds within the structural and functional metrics were dominated by “Caution” ranks or “Good” ranks that are close to the threshold for “Caution”. 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.

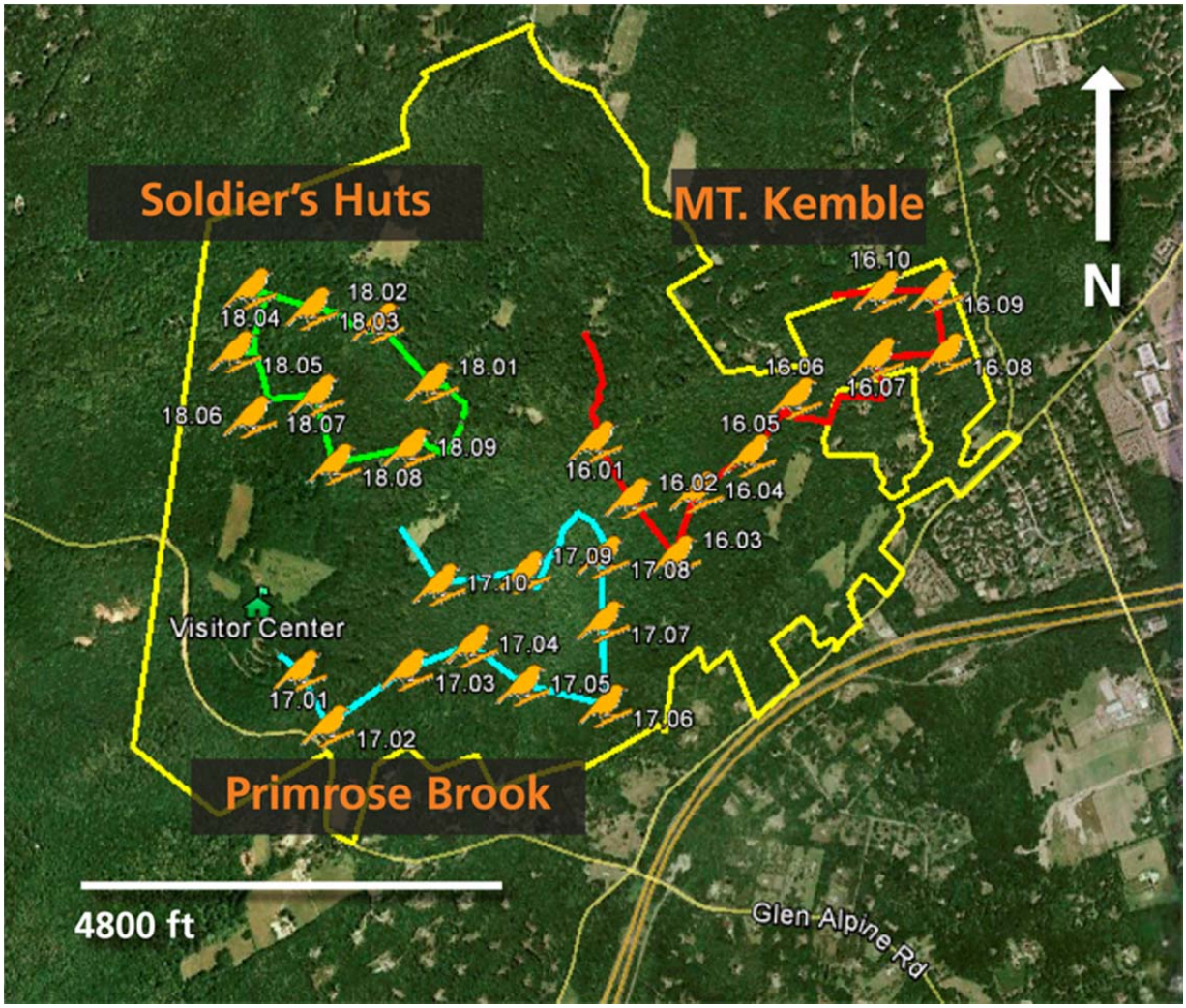

Figure 20. Point count locations at Morristown National Historical Park. Google Earth image.

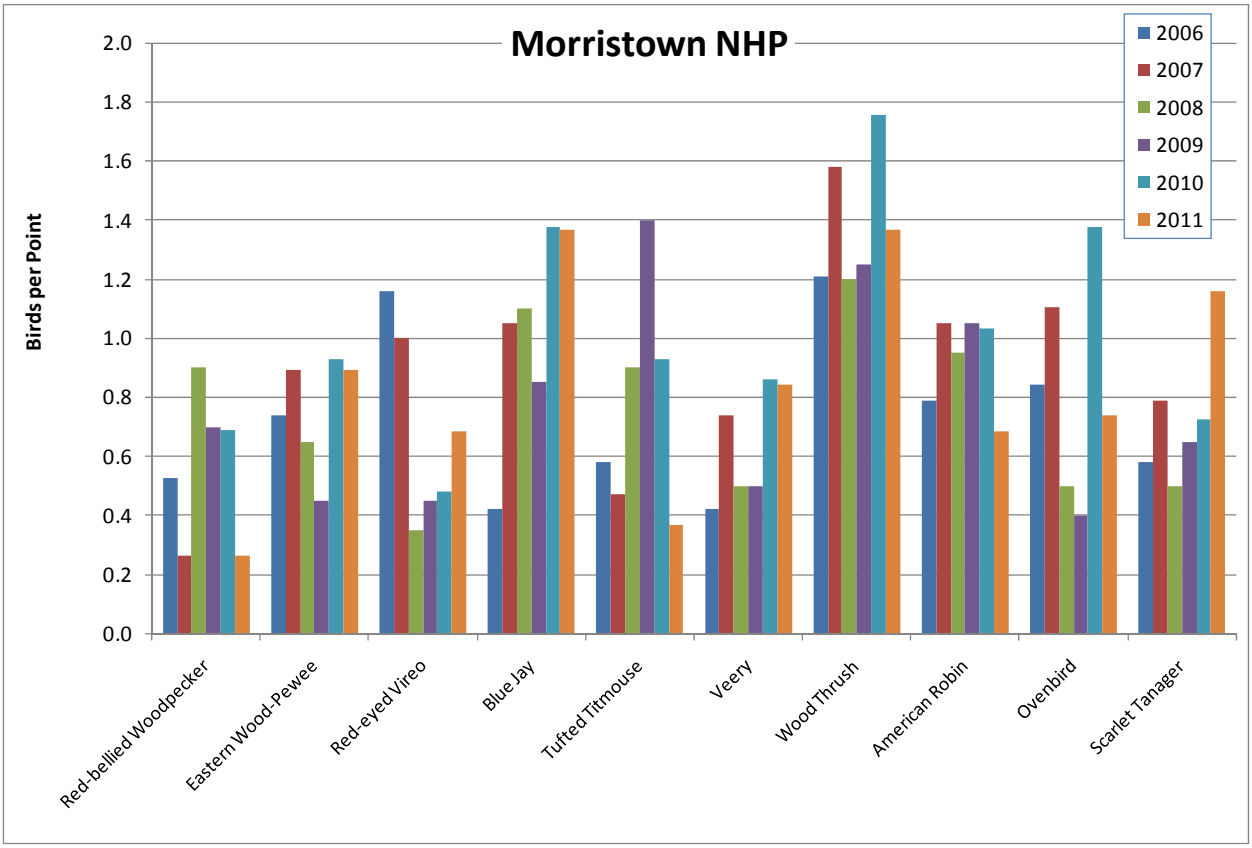

Figure 21. Relative abundance of the 10 most common species detected at Morristown National Historical Park, 2006-2011.

Table 9. Park-wide Forest Avian Ecological Integrity Assessment for Morristown National Historical Park, 2006-2011.

Morristown NHP **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	29%	Caution
Single Brooded	57%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	12%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	24%	Good
Omnivore	35%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	29%	Caution
Forest-ground Nester	16%	Caution
Interior Forest Obligate	35%	Good
Shrub Nester	25%	Sig Concern

Saint-Gaudens National Historic Site (New Hampshire)

Eight point counts (Figure 22) were established at Saint-Gaudens National Historic Site (SAGA), and surveyed annually since 2007 (Table 1). The park has been surveyed twice in all years except 2007.

During 2011 surveys, observers detected a total of 174 birds representing 33 species, including the first detection of an Alder Flycatcher and six species that were detected only on the repeat survey. A total of 56 species have been recorded during the 5 survey years, including eight species that were only detected during repeat site visits in 2008, 2009, or 2010 (Solitary Sandpiper, Downy Woodpecker, Red-bellied Woodpecker, Yellow-throated Vireo, Cedar Waxwing, Yellow-rumped Warbler, Black-throated Blue Warbler, and Swamp Sparrow).

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 2011, both relative abundance and species richness during the first survey (Appendix A) decreased from the previous year. Of the ten most commonly detected species across all years, the relative abundances of three increased from 2010 (Figure 23), while the relative abundances of only two species in 2011 were above the 5-year average. Three species of regional conservation concern have been detected during the past five years: 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 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 10). The 2011 data did not alter the 2010 results (when the revised assessment methods are used, see Methods). 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.

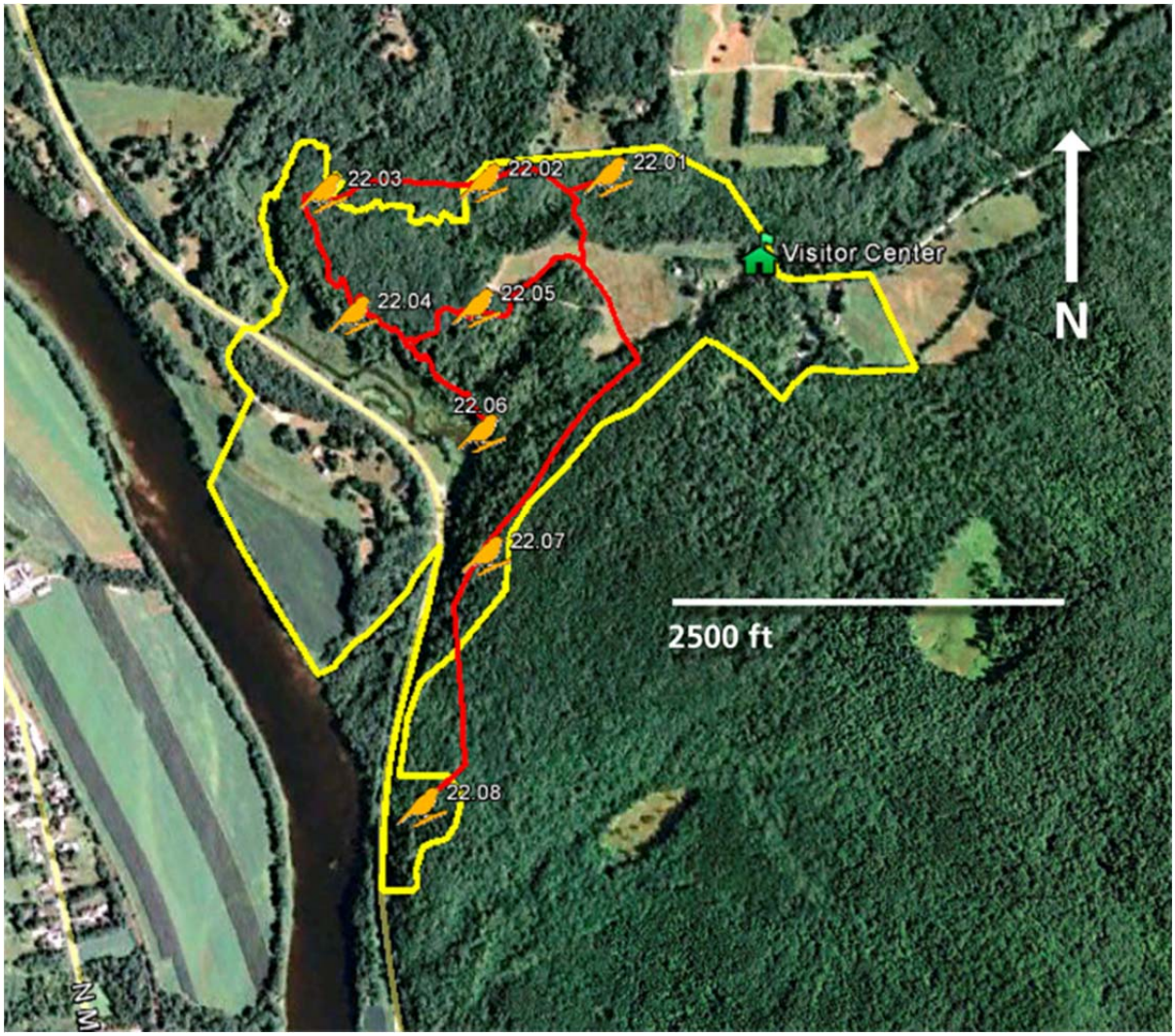

Figure 22. Point count locations at Saint-Gaudens National Historic Site. Google Earth image.

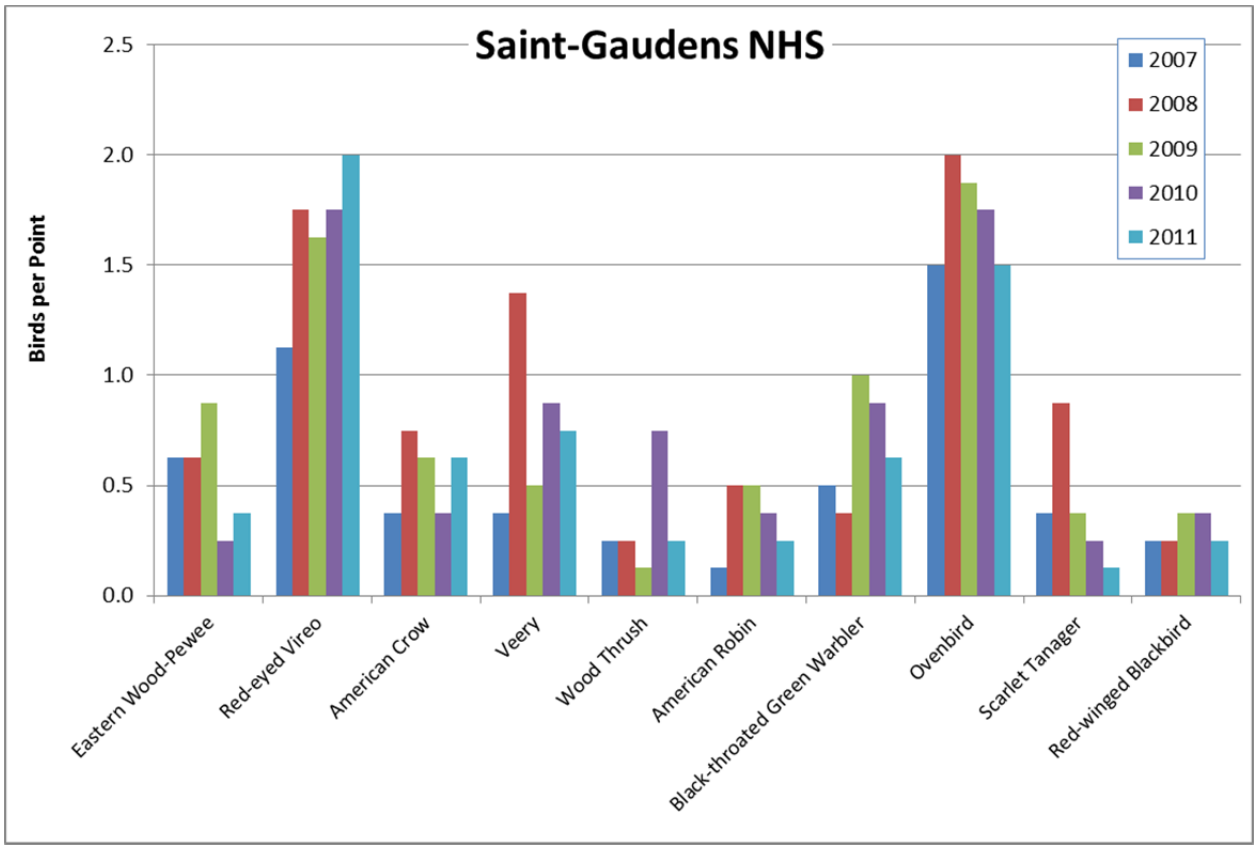

Figure 23. Relative abundance of the 10 most common species detected at Saint-Gaudens National Historic Site, 2007-2011.

Table 10. Park-wide Forest Avian Ecological Integrity Assessment for Saint-Gaudens National Historic Site, 2007-2011.

Saint-Gaudens NHS **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	4%	Good
Resident	26%	Good
Single Brooded	62%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	17%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	9%	Caution
Low Canopy Forager	21%	Caution
Omnivore	28%	Good

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	30%	Caution
Forest-ground Nester	15%	Caution
Interior Forest Obligate	38%	Good
Shrub Nester	25%	Sig Concern

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 24). A single survey of these three point counts was conducted during June 2008, while three surveys were conducted in 2009, and two in 2010 and 2011 (Table 1). Due to the limited number of point counts at SAIR, multiple visits are encouraged to increase sample size.

During 2011 surveys, a total of 79 individual birds representing 25 species were detected during the two surveys (six point counts), which may include some double-counted individuals. Seven species were detected only during the second survey in 2011, including a Black-Crowned Night Heron and Belted Kingfisher. A total of 42 species have been detected at the park during the four years of surveys, including five that were observed only during the repeat site surveys in 2009 (Great Egret, Greater Black-backed Gull, Killdeer, Brown-headed Cowbird, and Carolina Wren), and two detected during the repeat site surveys in 2011 (Double-Crested Cormorant and White-Breasted Nuthatch).

Average abundance during the first site visit was 15.5 birds per point. In 2011, relative abundance and species richness for the first survey declined to 14.7 from the previous year (18.7). Of the 11 most commonly detected species across all years, the relative abundances of five declined from 2010 (Figure 25), while the relative abundances of six species in 2011 were above the 4-year mean. Three species of conservation concern (Chimney Swift, Eastern Kingbird, and Baltimore Oriole) and three non-native species (Rock Pigeon, European Starling, and House Sparrow) have been 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 continue to be the most commonly detected species.

The park-wide forest avian ecological integrity assessment for all 3 years combined at SAIR resulted in one category ranked as “Good”, three categories ranked as “Caution” and nine ranked as “Significant Concern” (Table 11). The 2011 data slightly improved the 2010 results (when the revised assessment methods are used, see Methods), with an increase in the proportion of bark probers, moving that guild from “Significant Concern” to “Caution.” Overall, the scarcity of “Good” rankings is 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.

Figure 24. Point count locations at Saugus Iron Works National Historic Site. Google Earth image.

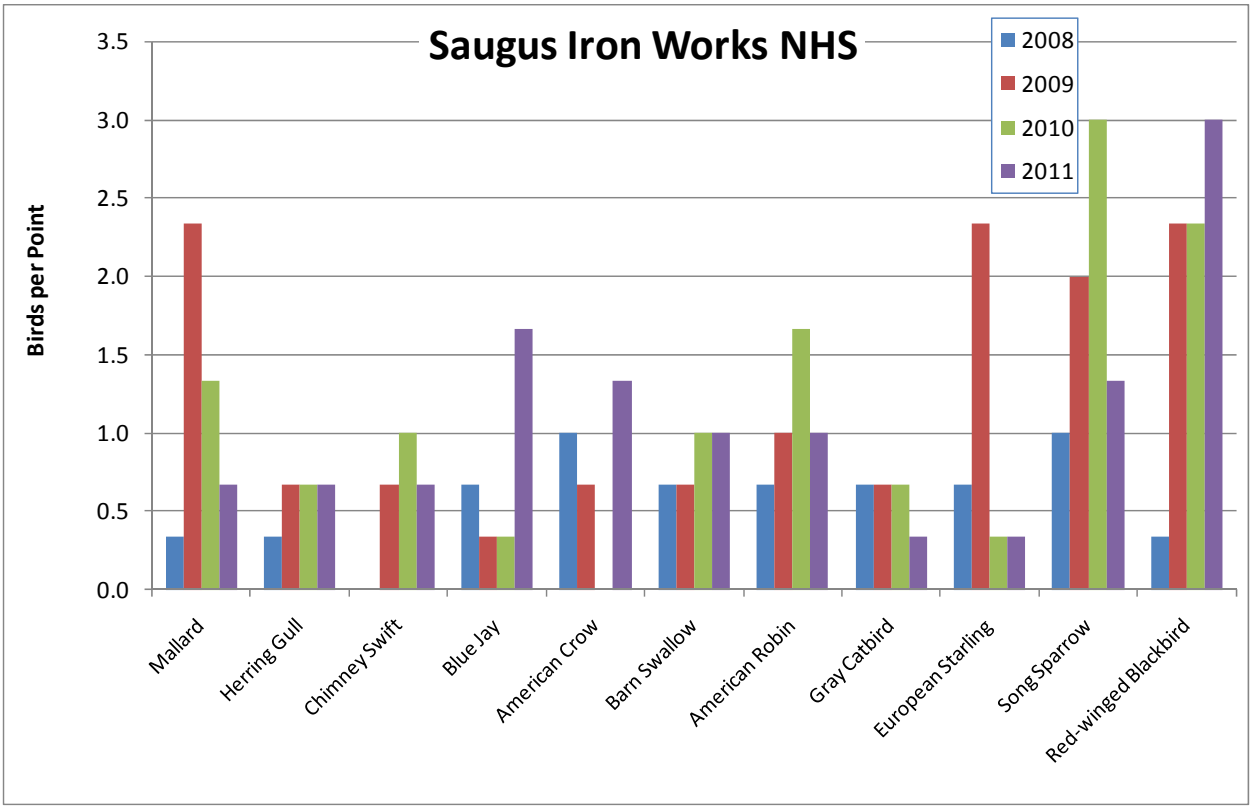

Figure 25. Relative abundance of the 11 most common species detected at Saugus Iron Works National Historic Site, 2008-2011.

Table 11. Park-wide Forest Avian Ecological Integrity Assessment for Saugus Iron Works National Historic Site, 2008-2011.

Saugus Iron Works NHS **2008 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	10%	Sig Concern
Nest Predator / Brood Parasite	13%	Caution
Resident	43%	Sig Concern
Single Brooded	40%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	7%	Caution
Ground Gleaner	3%	Sig Concern
High Canopy Forager	7%	Sig Concern
Low Canopy Forager	23%	Good
Omnivore	43%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	20%	Sig Concern
Forest-ground Nester	0%	Sig Concern
Interior Forest Obligate	3%	Sig Concern
Shrub Nester	27%	Sig Concern

Saratoga National Historical Park (New York)

A total of six study sites consisting of 51 point counts were established in 2006 and 2007 at Saratoga National Historical Park (SARA). Wilkinson Trail Forest (10 points), Burgoyne's Headquarters Grassland (five 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 26). Point count surveys were initiated in 2006 when Wilkinson Trail Forest and all three grassland sites were sampled. However, because the observer at Wilkinson Trail was unskilled at bird identification, the data from 2006 were not used (previous reports had included these data). Since 2007, the first year that all six study sites were available to be surveyed, 100 percent coverage was only achieved in 2008 (Table 1). Overall, 73% of point count locations have been surveyed each year at Saratoga. In 2011, all three grassland sites were surveyed, while the Bemis Heights Forest site was only partially completed due to extremely dense vegetation which prevented the volunteer observer from locating several point count locations. Due to the dense vegetation, along with hazards pointed out by the park Resource Manager, the Bemis Heights study site has been discontinued. A new forest site has been established in the NW corner of the park and will be surveyed in 2012.

During 2011 surveys at 27 point counts, observers detected a total of 857 individual birds representing 53 species, including a Sharp-shinned Hawk (a new detection for the park). During the 6 survey years a total of 4,139 individual birds representing 85 species have been detected at SARA, with a mean abundance of 20.59 birds per point (Appendix A). During 2011, relative abundance was the highest in the survey's history (31.7 birds per point), while species richness declined from 2010 (59 species) to 53 species. Of the 10 most commonly detected species across all years, the relative abundances of only two declined from 2010 (Figure 27), while the relative abundance of only one species (Ovenbird) in 2011 was below the 6-year mean (not surprising since only two point counts were conducted in forested habitat in 2011). Eight species of conservation concern have been 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.

The park-wide forest avian ecological integrity assessment for all years combined at SARA remained unchanged from 2010 (when the revised assessment methods are used, see Methods), with five categories ranked as "Good," five ranked as "Caution," and three ranked as "Significant Concern" (Table 12). With the exception of single brooded (which again 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 also remained unchanged from 2010 (when the revised assessment methods are used, see Methods), with one good, two "Caution", and one "Significant Concern" rating (Table 13). 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 grassland species.

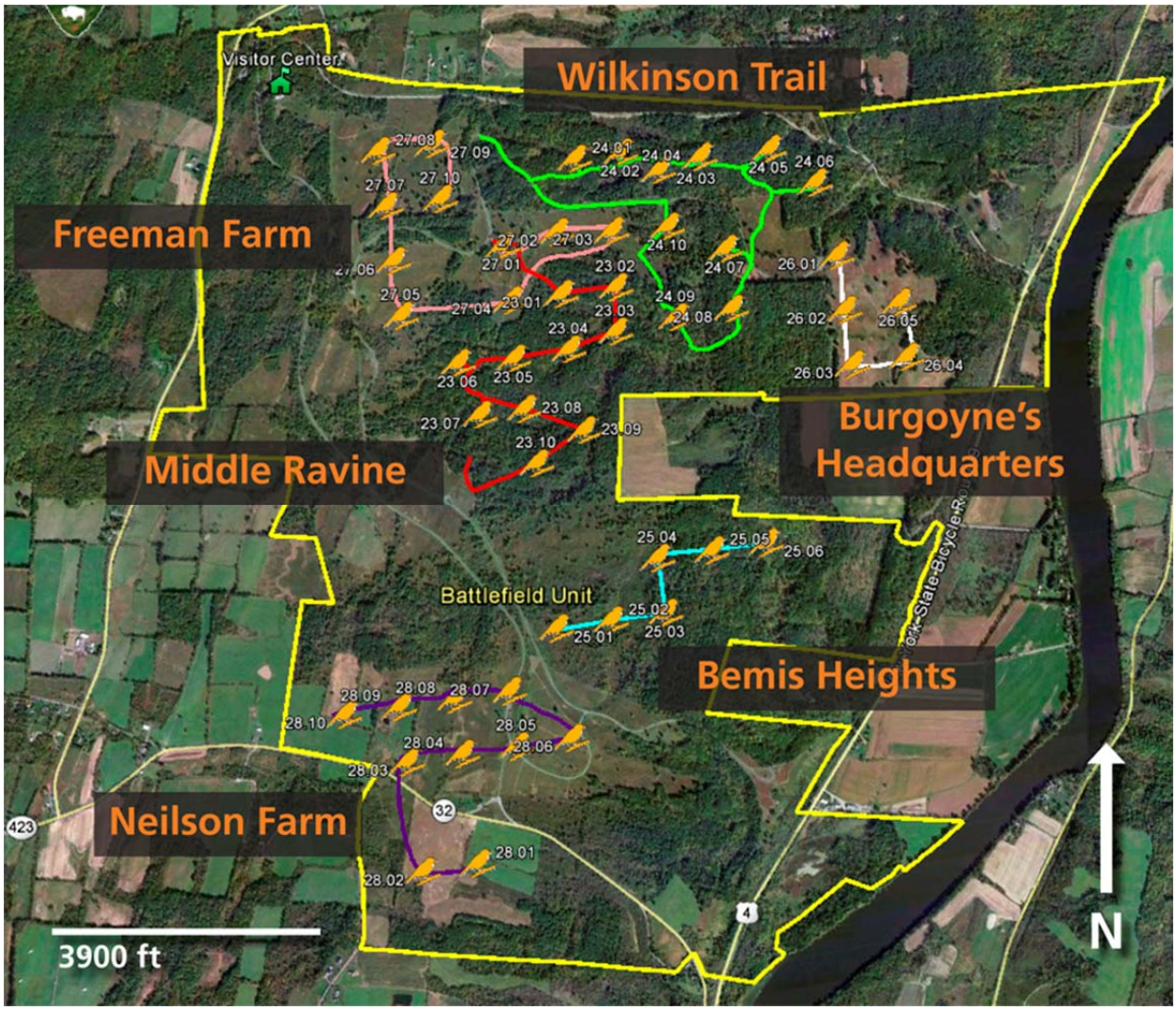

Figure 26. Point count locations at Saratoga National Historical Park. Google Earth image.

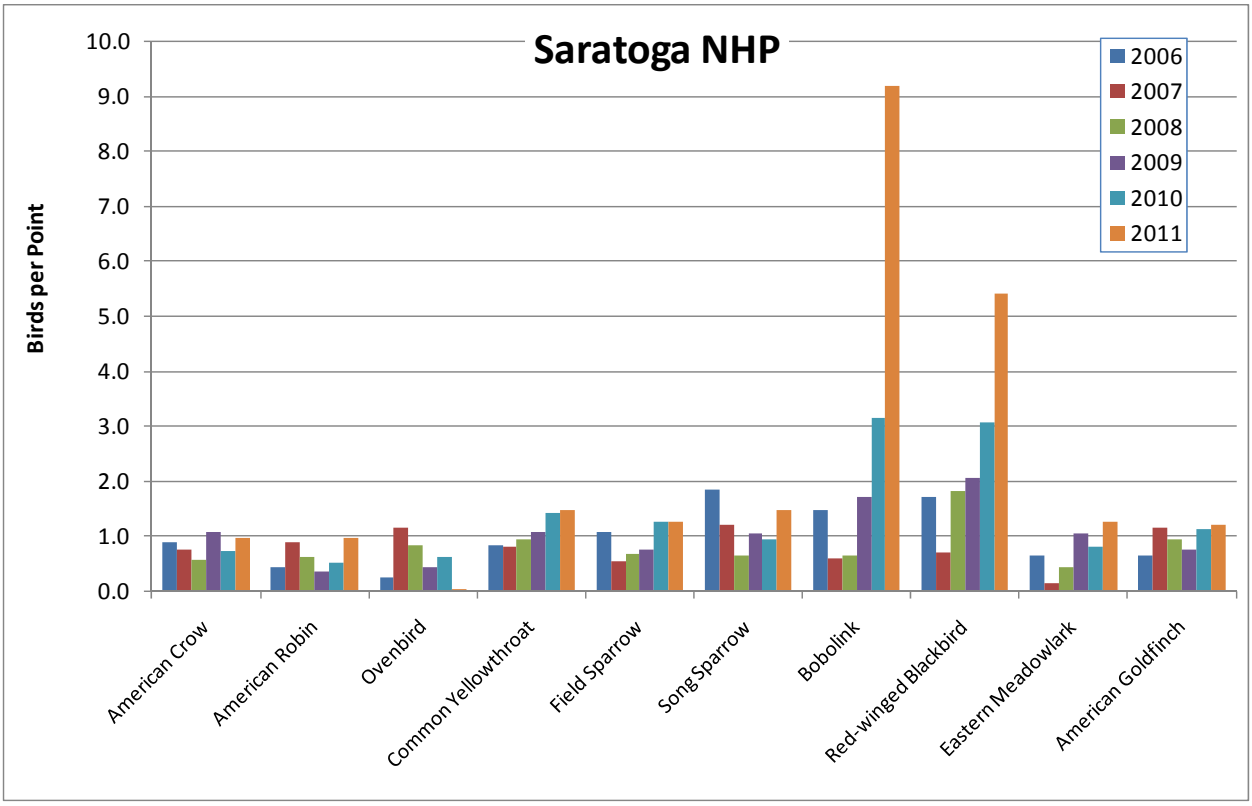

Figure 27. Relative abundance of the 10 most common species detected at Saratoga National Historical Park, 2006-2011.

Table 12. Park-wide Forest Avian Ecological Integrity Assessment for forested study sites at Saratoga National Historical Park, 2006-2011.

Saratoga NHP **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	5%	Good
Resident	26%	Good
Single Brooded	52%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	14%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	7%	Sig Concern
Low Canopy Forager	22%	Good
Omnivore	34%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	26%	Sig Concern
Forest-ground Nester	12%	Caution
Interior Forest Obligate	26%	Caution
Shrub Nester	26%	Sig Concern

Table 13. Park-wide Grassland Avian Ecological Integrity Assessment for grassland study sites at Saratoga National Historical Park, 2006-2011.

Saratoga NHP **2006 to 2011**

Guild	Proportion	Rating
Edge Generalist	71%	Sig Concern
Exotic	2%	Caution
Grassland Obligate	11%	Good
Shrub-dependent	18%	Caution

Vanderbilt Mansion National Historic Site (New York)

One study site with seven point counts was established at the Vanderbilt Mansion National Historic Site (VAMA; one of the Roosevelt-Vanderbilt National Historic Sites) and surveyed annually since 2006 (Table 1, Figure 28).

Fifty-seven individual birds of 12 species were detected in 2011, including the first detection of a Louisiana Waterthrush in the survey's 6-year history. In total, 34 species have been recorded, with an average abundance of 8.21 birds per point (Appendix A). In 2011, relative abundance decreased to 8.14 birds per point from 2010's 9.29 birds per point, and species richness dropped to the lowest yet recorded. Among the 10 most commonly detected species across all years, the relative abundances of four declined from 2010 (Figure 21), and the relative abundances of three species in 2011 were below the 6-year average. Four species of conservation concern (Black-billed Cuckoo, Eastern Wood-Pewee, Wood Thrush, and Worm-Eating Warbler) have been detected during the 6-survey years. A list of species, their relative abundances, and other summary statistics are provided in Appendix A. Great Crested Flycatcher, Red-Eyed Vireo, Tufted Titmouse, and Northern Cardinal were the most commonly detected species (Figure 29).

The park-wide forest avian ecological integrity assessment for all years combined at VAMA resulted in five categories ranked as "Good," four ranked as "Caution," and four ranked as "Significant Concern" (Table 14). Guilds within the structural category earned no "Good" rankings, while "Significant Concern" ratings for metrics measuring abundance of canopy and single brooded species are indicative of the park's location within a fragmented landscape.

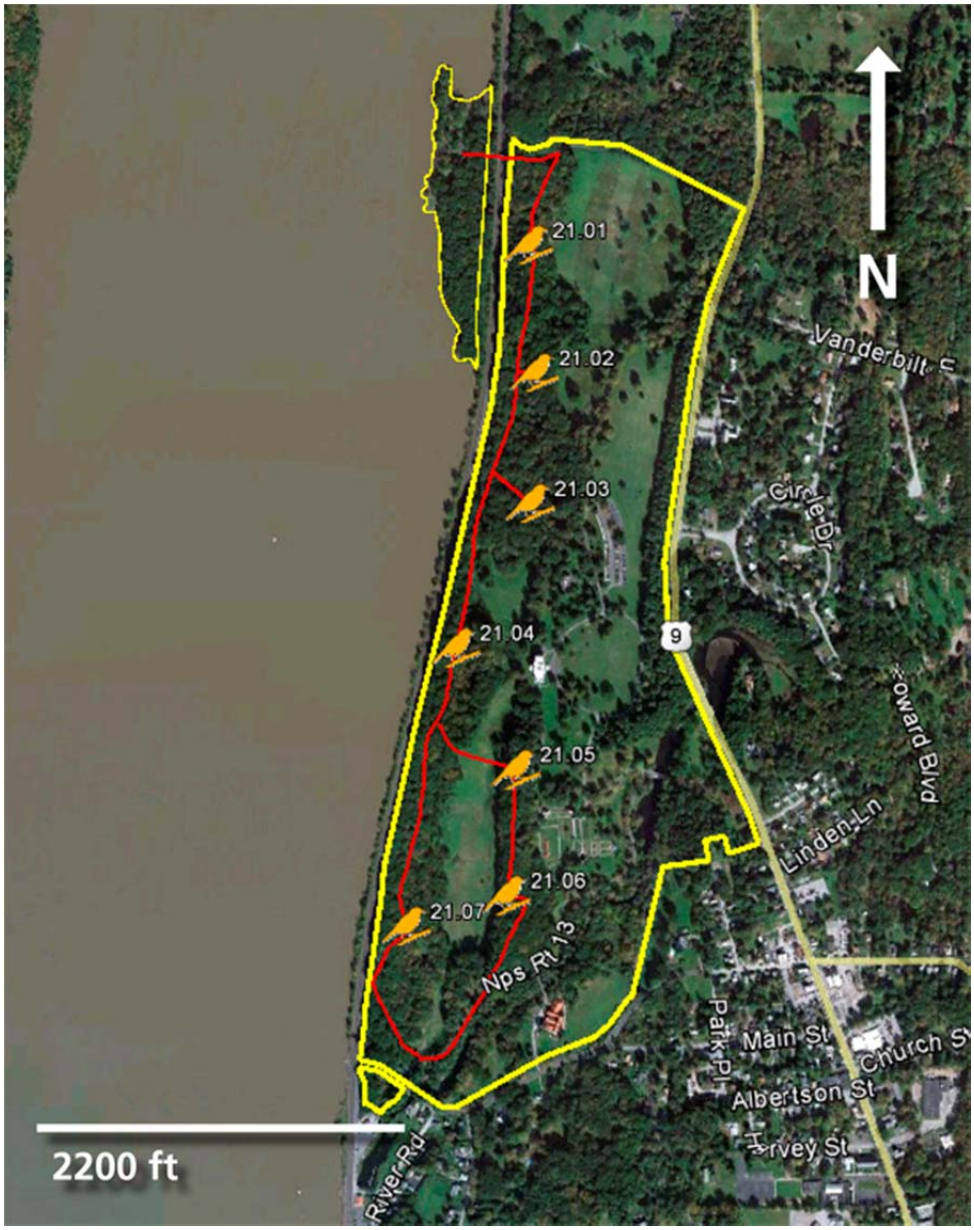

Figure 28. Point count locations at Vanderbilt Mansion National Historic Site. Google Earth image.

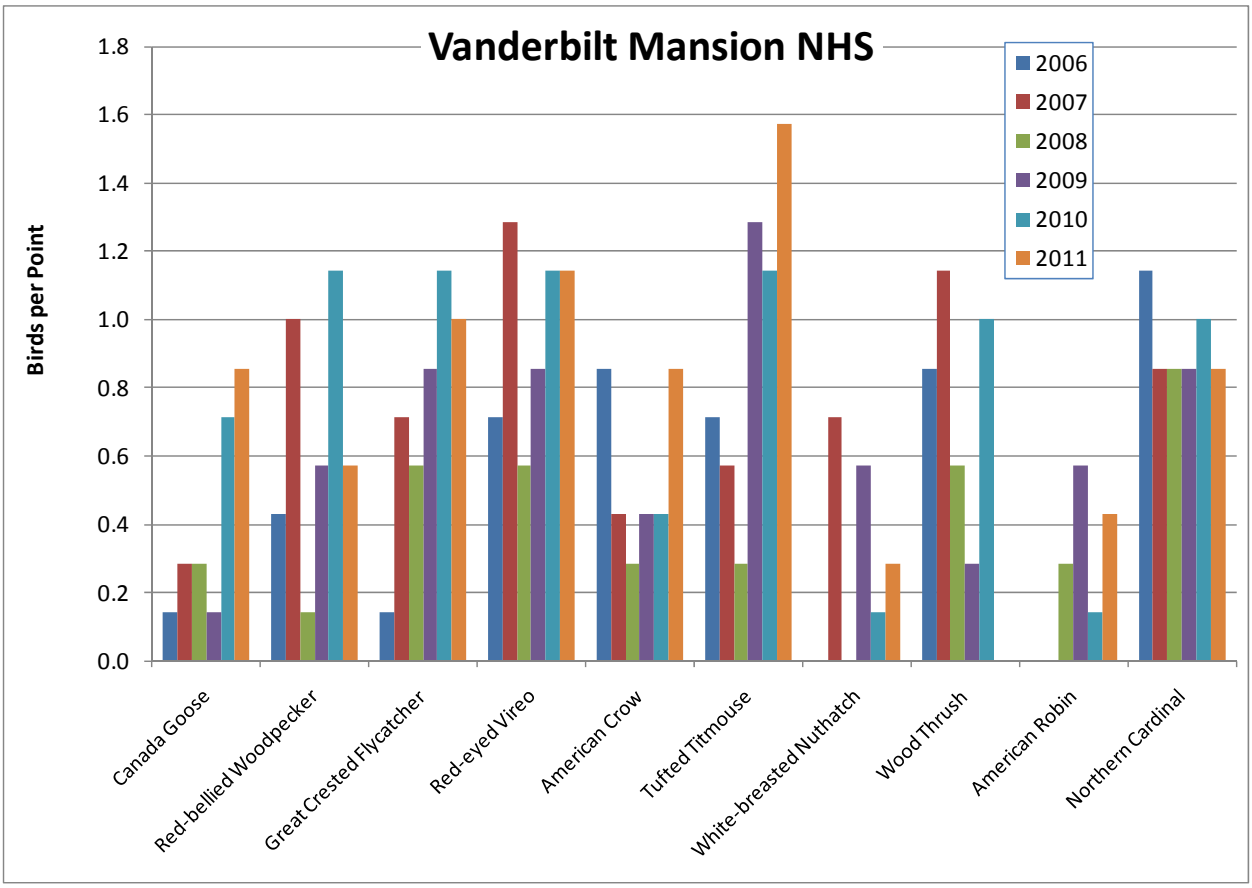

Figure 29. Relative abundance of the 10 most common species detected at Vanderbilt Mansion National Historic Site, 2006-2011.

Table 14. Park-wide Forest Avian Ecological Integrity Assessment for Vanderbilt Mansion National Historic Site, 2006-2011.

Vanderbilt Mansion NHS **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Good
Resident	39%	Caution
Single Brooded	42%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	16%	Good
Ground Gleaner	10%	Good
High Canopy Forager	6%	Sig Concern
Low Canopy Forager	23%	Good
Omnivore	32%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	26%	Sig Concern
Forest-ground Nester	10%	Caution
Interior Forest Obligate	26%	Caution
Shrub Nester	26%	Sig Concern

Weir Farm National Historic Site (Connecticut)

Five point count stations were established at Weir Farm National Historic Site in 2006 (Figure 30). Two annual surveys have been conducted in 2006, 2009, and 2010 (Table 1). In 2011, the volunteer who conducted the surveys during the previous two years was unable to continue, and neglected to notify the Program Manager in time for a replacement to be located. A new volunteer has been recruited to take over the survey at Weir Farm in 2012.

The results presented in Figure 31, and Appendix A were previously summarized in the 2010 breeding landbird annual report (Faccio and Mitchell 2011), which is available at http://science.nature.nps.gov/im/units/NETN/Reports/reports.cfm. Table 15 has been recalculated using the revised assessment approach, as described in the Methods. The revision resulted in changes to most percentages and a shift from "Caution" to "Good" for the low canopy forager category.

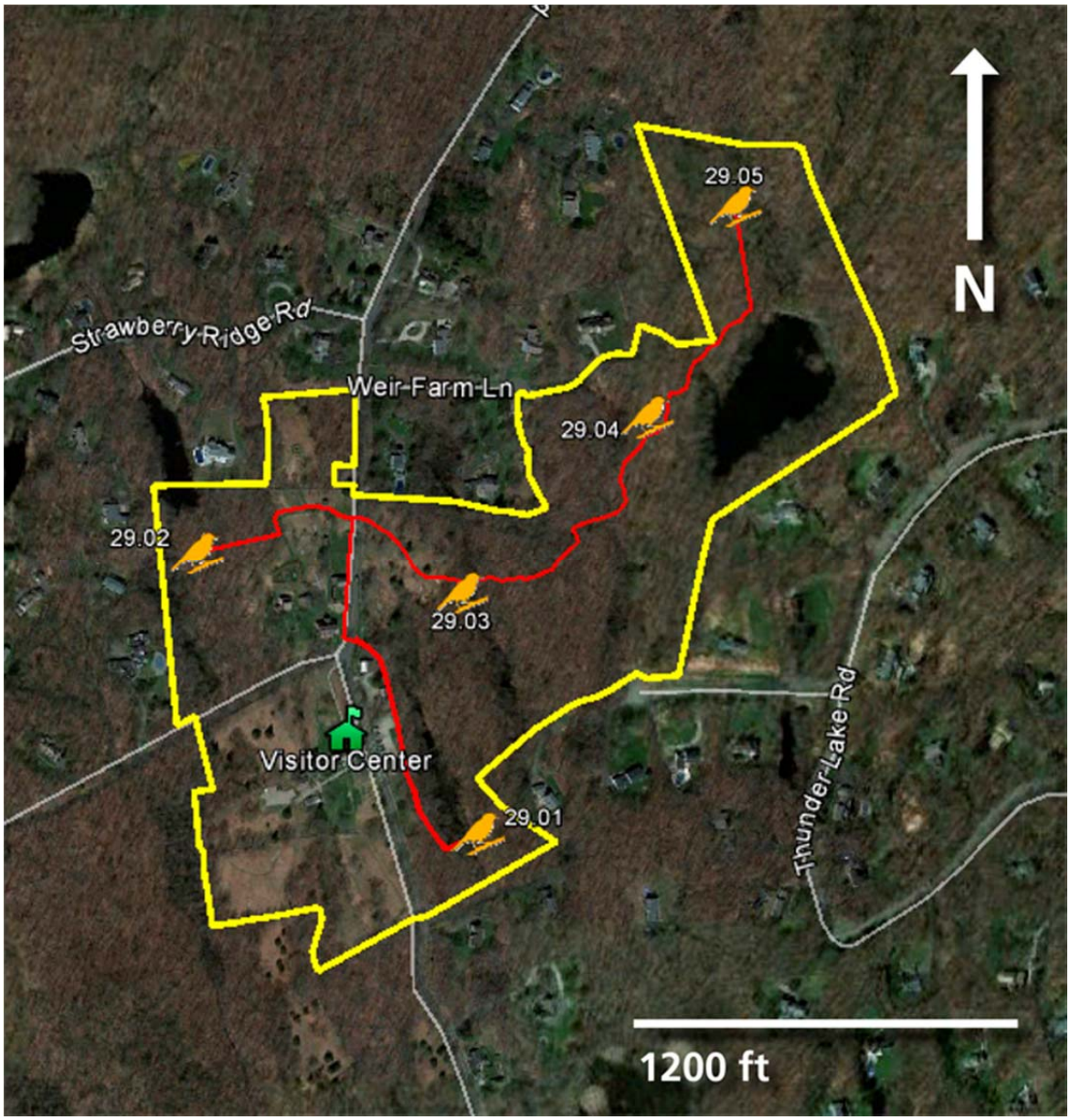

Figure 30. Point count locations at Weir Farm National Historic Site. Google Earth image.

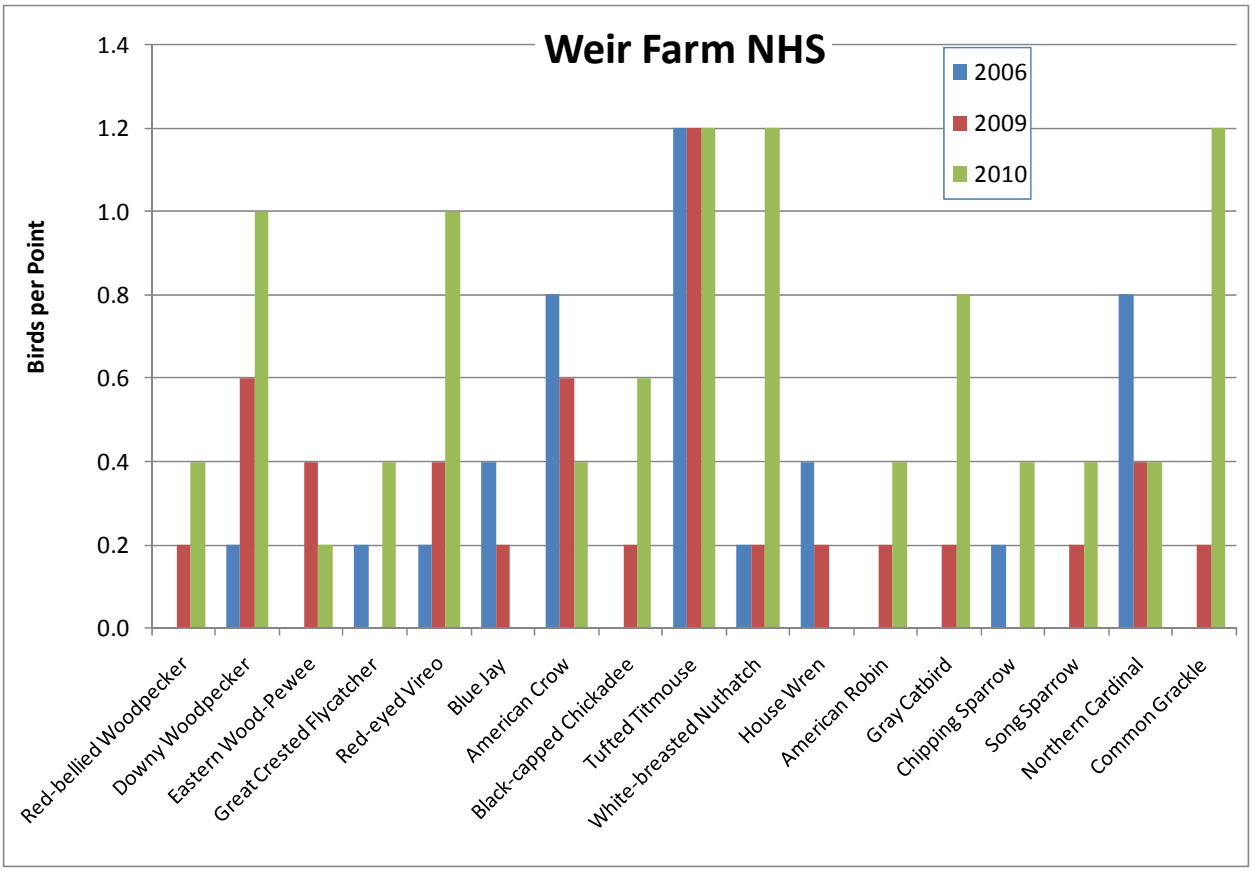

Figure 31. Relative abundance of the most common species detected at Weir Farm National Historic Site, 2006, 2009, and 2010.

Table 15. Forest Avian Ecological Integrity Assessment for Weir Farm National Historic Site, 2006-2010.

Weir Farm NHS **2006 to 2010**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	6%	Good
Resident	31%	Caution
Single Brooded	49%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	9%	Caution
Ground Gleaner	6%	Caution
High Canopy Forager	14%	Good
Low Canopy Forager	23%	Good
Omnivore	37%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	29%	Sig Concern
Forest-ground Nester	6%	Caution
Interior Forest Obligate	20%	Caution
Shrub Nester	29%	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., 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.

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.cfm, 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 ecologicalcondition 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

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Ruffed Grouse		**0.00**	**0.00**	**0.00**	**0.00**	**0.05**	**0.01**
Spruce Grouse		0.00	0.00	0.00	0.05	0.00	0.01
Common Loon		0.00	0.04	0.03	0.00	0.00	0.01
Herring Gull		0.04	0.00	0.00	0.05	0.05	0.03
Mourning Dove		*0.68*	*0.61*	*0.33*	*0.11*	*0.11*	*0.37*
Barred Owl		0.00	0.00	0.00	0.05	0.00	0.01
Ruby-throated Hummingbird		0.00	0.00	0.00	0.05	0.00	0.01
Downy Woodpecker		0.00	0.00	0.05	0.16	0.03	0.05
Hairy Woodpecker		0.21	0.00	0.10	0.37	0.05	0.15
Northern Flicker (Yellow-shafted Flicker)		0.00	0.00	0.03	0.00	0.05	0.02
Pileated Woodpecker		0.18	0.09	0.03	0.11	0.11	0.10
Eastern Wood-Pewee		0.00	0.00	0.15	0.00	0.00	0.03
Yellow-bellied Flycatcher		0.00	0.00	0.00	0.26	0.08	0.07
Alder Flycatcher		0.04	0.00	0.00	0.00	0.03	0.01
Least Flycatcher		0.14	0.09	0.15	0.16	0.00	0.11
Eastern Phoebe		0.00	0.00	0.05	0.00	0.00	0.01
Great Crested Flycatcher		0.04	0.00	0.21	0.00	0.05	0.06
Blue-headed Vireo		*0.36*	*0.61*	*0.41*	*0.26*	*0.32*	*0.39*
Warbling Vireo		0.00	0.00	0.00	0.00	0.03	0.01
Red-eyed Vireo		0.00	0.04	0.38	0.26	0.05	0.15
Blue Jay		0.18	0.17	0.44	0.11	0.05	0.19
American Crow		*0.39*	*0.48*	*0.23*	*0.84*	*0.22*	*0.43*
Common Raven		0.32	0.09	0.23	0.26	0.14	0.21
Black-capped Chickadee		0.18	0.35	0.69	0.21	0.16	0.32
Boreal Chickadee		**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**
Red-breasted Nuthatch		*0.54*	*0.26*	*0.28*	*0.89*	*0.32*	*0.46*
Brown Creeper		0.07	0.35	0.15	0.37	0.08	0.20
Winter Wren		0.25	0.22	0.03	0.68	0.38	0.31
Golden-crowned Kinglet		*0.36*	*0.83*	*0.28*	*0.53*	*0.41*	*0.48*
Ruby-crowned Kinglet		0.07	0.00	0.00	0.05	0.03	0.03
Veery		0.00	0.00	0.03	0.05	0.03	0.02
Swainson's Thrush		0.14	0.04	0.03	0.16	0.22	0.12
Hermit Thrush		*0.39*	*0.04*	*1.00*	*0.37*	*0.24*	*0.41*
Wood Thrush		**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
American Robin		0.50	0.30	0.28	0.16	0.16	0.28
Brown Thrasher		0.04	0.00	0.00	0.00	0.00	0.01
Cedar Waxwing		0.11	0.04	0.10	0.00	0.05	0.06
Nashville Warbler		0.00	0.00	0.03	0.11	0.14	0.05
Northern Parula		0.04	0.00	0.00	0.00	0.00	0.01
Chestnut-sided Warbler		0.07	0.00	0.00	0.00	0.00	0.01

Appendix A. Park Summaries (continued).

Acadia NP (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Magnolia Warbler		0.14	0.17	0.00	0.37	0.19	0.17
Black-throated Blue Warbler		0.07	0.30	0.31	0.00	0.05	0.15
Yellow-rumped Warbler (Myrtle Warbler)		*0.14*	*0.30*	*0.59*	*0.47*	*0.38*	*0.38*
Black-throated Green Warbler		*1.75*	*1.87*	*1.49*	*2.05*	*1.30*	*1.69*
Blackburnian Warbler		0.25	0.39	0.18	0.11	0.08	0.20
Pine Warbler		0.00	0.00	0.00	0.05	0.00	0.01
Palm Warbler		0.00	0.00	0.00	0.00	0.03	0.01
Blackpoll Warbler		**0.00**	**0.04**	**0.00**	**0.00**	**0.03**	**0.01**
Black-and-white Warbler		0.14	0.04	0.28	0.00	0.35	0.16
American Redstart		0.00	0.00	0.00	0.05	0.00	0.01
Ovenbird		*0.71*	*1.43*	*1.41*	*0.47*	*0.76*	*0.96*
Common Yellowthroat		0.00	0.04	0.00	0.00	0.08	0.02
Eastern Towhee		**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
Swamp Sparrow		0.00	0.00	0.05	0.00	0.00	0.01
White-throated Sparrow		0.00	0.00	0.00	0.21	0.05	0.05
Dark-eyed Junco (Slate-colored Junco)		*0.25*	*0.17*	*0.33*	*0.79*	*0.19*	*0.35*
Northern Cardinal		0.00	0.00	0.00	0.00	0.03	0.01
Red-winged Blackbird		0.04	0.09	0.03	0.00	0.03	0.04
Common Grackle		0.04	0.00	0.00	0.00	0.00	0.01
Baltimore Oriole		0.00	0.00	0.00	0.00	0.03	0.01
Purple Finch		0.18	0.13	0.13	0.21	0.03	0.13
White-winged Crossbill		0.00	0.00	0.00	0.16	0.00	0.03
Pine Siskin		0.29	0.65	0.05	0.05	0.03	0.21
American Goldfinch		0.00	0.00	0.05	0.00	0.05	0.02
Points Surveyed:		28	23	39	19	37	
Ave # Birds Per Point:		9.61	10.30	10.62	11.68	7.32	9.91
Species Richness:		39	31	38	38	46	64
Shannon Diversity:		3.18	2.89	3.07	3.16	3.23	

Appendix A. Park Summaries (continued).

Eleanor Roosevelt NHS

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.00	0.00	0.00	0.09	0.18	0.09	0.06
Wood Duck	0.00	0.00	0.00	0.09	0.00	0.00	0.02
Wild Turkey	0.00	0.00	0.00	0.00	0.00	0.09	0.02
Cooper's Hawk	0.00	0.09	0.00	0.00	0.00	0.00	0.02
Red-shouldered Hawk	0.00	0.00	0.00	0.18	0.09	0.00	0.05
Red-tailed Hawk	0.00	0.00	0.00	0.00	0.09	0.00	0.02
Mourning Dove	0.00	0.27	0.00	0.27	0.45	0.36	0.23
Yellow-billed Cuckoo	0.17	0.00	0.00	0.00	0.00	0.00	0.03
Barred Owl	0.00	0.09	0.00	0.00	0.00	0.00	0.02
Chimney Swift	0.00	0.00	0.00	0.00	0.00	0.09	0.02
Ruby-throated Hummingbird	0.00	0.00	0.09	0.00	0.00	0.09	0.03
Red-bellied Woodpecker	*0.83*	*0.55*	*0.36*	*0.18*	*0.91*	*0.73*	*0.59*
Downy Woodpecker	0.33	0.00	0.18	0.45	0.00	0.18	0.19
Hairy Woodpecker	0.33	0.18	0.36	0.00	0.00	0.27	0.19
Northern Flicker (Yellow-shafted Flicker)	0.00	0.00	0.18	0.00	0.00	0.09	0.05
Pileated Woodpecker	0.17	0.09	0.27	0.00	0.18	0.27	0.16
Eastern Wood-Pewee	**0.00**	**0.27**	**0.09**	**0.36**	**0.09**	**0.82**	**0.27**
Great Crested Flycatcher	0.00	0.09	0.09	0.27	0.55	0.36	0.23
Yellow-throated Vireo	0.17	0.00	0.00	0.00	0.00	0.18	0.06
Red-eyed Vireo	*1.17*	*0.91*	*0.64*	*1.00*	*0.73*	*0.64*	*0.85*
Blue Jay	0.33	0.27	0.27	0.27	0.36	0.64	0.36
American Crow	*0.83*	*0.45*	*0.36*	*0.82*	*0.55*	*0.45*	*0.58*
Black-capped Chickadee	0.00	0.00	0.09	0.09	0.00	0.36	0.09
Tufted Titmouse	*0.50*	*1.27*	*0.27*	*0.64*	*0.73*	*1.00*	*0.73*
White-breasted Nuthatch	*0.17*	*0.45*	*0.82*	*0.18*	*0.36*	*0.55*	*0.42*
Brown Creeper	0.00	0.09	0.00	0.00	0.00	0.00	0.02
Carolina Wren	0.00	0.00	0.00	0.00	0.09	0.18	0.05
Eastern Bluebird	0.00	0.00	0.00	0.09	0.00	0.00	0.02
Veery	0.50	0.27	0.27	0.09	0.18	0.09	0.23
Wood Thrush	***1.83***	***1.27***	***0.55***	***0.82***	***1.00***	***0.45***	***0.99***
American Robin	*0.67*	*0.73*	*0.73*	*0.45*	*0.45*	*0.27*	*0.55*
Gray Catbird	0.17	0.36	0.36	0.18	0.18	0.27	0.26
Northern Mockingbird	0.00	0.00	0.00	0.00	0.00	0.09	0.02
Cedar Waxwing	0.00	0.00	0.00	0.00	0.00	0.18	0.03
Prairie Warbler	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.27**	**0.05**
Black-and-white Warbler	0.00	0.00	0.00	0.00	0.00	0.09	0.02
Worm-eating Warbler	**0.33**	**0.09**	**0.00**	**0.18**	**0.00**	**0.09**	**0.12**
Ovenbird	*0.50*	*0.36*	*0.45*	*0.27*	*0.45*	*0.27*	*0.39*
Louisiana Waterthrush	0.00	0.00	0.00	0.09	0.00	0.09	0.03
Scarlet Tanager	*1.00*	*0.09*	*0.36*	*0.27*	*0.09*	*0.45*	*0.38*

Appendix A. Park Summaries (continued).

Eleanor Roosevelt NHS (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Song Sparrow	0.00	0.09	0.00	0.00	0.00	0.18	0.05
Northern Cardinal	*0.50*	*1.09*	*0.45*	*1.00*	*0.64*	*0.27*	*0.66*
Rose-breasted Grosbeak	0.00	0.36	0.00	0.00	0.00	0.36	0.12
Indigo Bunting	0.00	0.00	0.00	0.00	0.00	0.18	0.03
Red-winged Blackbird	0.00	0.18	0.00	0.09	0.09	0.09	0.08
Common Grackle	0.00	0.09	0.00	0.00	0.00	0.09	0.03
Baltimore Oriole	**0.00**	**0.09**	**0.09**	**0.00**	**0.00**	**0.09**	**0.05**
American Goldfinch	0.00	0.09	0.09	0.00	0.00	0.36	0.09
Points Surveyed:	6	11	11	11	11	11	
Ave # Birds Per Point:	10.50	10.27	7.45	8.45	8.45	11.73	9.48
Species Richness:	19	28	23	25	22	40	48
Shannon Diversity:	2.70	2.93	2.94	2.91	2.83	3.43	

Appendix A. Park Summaries (continued).

Home of Franklin D. Roosevelt NHS

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.00	0.08	0.00		0.17	0.00	0.05
Mute Swan	0.00	0.00	0.08		0.00	0.00	0.02
Wild Turkey	0.08	0.08	0.00		0.00	0.00	0.03
Red-tailed Hawk	0.00	0.08	0.00		0.00	0.00	0.02
Mourning Dove	*0.08*	*0.33*	*0.50*		*0.50*	*0.42*	*0.37*
Yellow-billed Cuckoo	0.00	0.08	0.00		0.00	0.00	0.02
Barred Owl	0.00	0.00	0.00		0.00	0.08	0.02
Red-bellied Woodpecker	*0.25*	*0.58*	*0.50*		*0.50*	*0.42*	*0.45*
Downy Woodpecker	0.17	0.17	0.17		0.00	0.17	0.13
Hairy Woodpecker	0.08	0.00	0.00		0.08	0.08	0.05
Northern Flicker (Yellow-shafted Flicker)	0.25	0.00	0.25		0.08	0.00	0.12
Pileated Woodpecker	0.00	0.25	0.08		0.08	0.25	0.13
Eastern Wood-Pewee	**0.17**	**0.17**	**0.17**		**0.33**	**0.17**	**0.20**
Least Flycatcher	0.00	0.08	0.00		0.00	0.00	0.02
Great Crested Flycatcher	*0.25*	*0.33*	*0.00*		*0.58*	*0.25*	*0.28*
Yellow-throated Vireo	0.00	0.00	0.08		0.00	0.00	0.02
Blue-headed Vireo	0.00	0.08	0.00		0.00	0.00	0.02
Red-eyed Vireo	*0.75*	*0.67*	*0.58*		*0.75*	*0.42*	*0.63*
Blue Jay	*0.33*	*0.42*	*0.42*		*0.50*	*0.33*	*0.40*
American Crow	0.33	0.00	0.25		0.00	0.17	0.15
Fish Crow	0.08	0.08	0.08		0.00	0.00	0.05
Black-capped Chickadee	0.25	0.33	0.17		0.00	0.00	0.15
Tufted Titmouse	*0.83*	*1.08*	*0.92*		*1.00*	*0.67*	*0.90*
White-breasted Nuthatch	*0.42*	*0.33*	*0.50*		*0.08*	*0.08*	*0.28*
Brown Creeper	0.08	0.00	0.08		0.00	0.00	0.03
Carolina Wren	0.00	0.00	0.17		0.17	0.00	0.07
Blue-gray Gnatcatcher	0.00	0.08	0.00		0.00	0.08	0.03
Eastern Bluebird	0.00	0.00	0.00		0.00	0.08	0.02
Veery	0.00	0.00	0.00		0.00	0.08	0.02
Wood Thrush	***1.33***	***0.58***	***0.58***		***0.58***	***0.58***	***0.73***
American Robin	*0.33*	*0.67*	*0.42*		*0.25*	*0.33*	*0.40*
Northern Mockingbird	0.00	0.00	0.00		0.00	0.08	0.02
Worm-eating Warbler	**0.00**	**0.00**	**0.00**		**0.08**	**0.00**	**0.02**
Ovenbird	0.08	0.00	0.08		0.00	0.08	0.05
Louisiana Waterthrush	0.25	0.25	0.08		0.17	0.00	0.15
Common Yellowthroat	0.08	0.00	0.00		0.00	0.00	0.02
Scarlet Tanager	*0.83*	*0.50*	*0.42*		*0.08*	*0.25*	*0.42*
Northern Cardinal	*0.25*	*0.25*	*0.33*		*0.67*	*0.25*	*0.35*
Rose-breasted Grosbeak	0.00	0.17	0.00		0.33	0.00	0.10
Red-winged Blackbird	0.08	0.25	0.00		0.17	0.25	0.15
Common Grackle	0.17	0.00	0.00		0.33	0.00	0.10
Brown-headed Cowbird	0.00	0.17	0.00		0.08	0.00	0.05
Baltimore Oriole	**0.00**	**0.17**	**0.00**		**0.00**	**0.00**	**0.03**
American Goldfinch	0.00	0.08	0.00		0.00	0.00	0.02
Points Surveyed:	12	12	12		12	12	
Ave # Birds Per Point:	7.83	8.42	6.92		7.58	5.58	7.27
Species Richness:	25	29	23		23	23	44
Shannon Diversity:	2.85	3.08	2.88		2.85	2.92	

Appendix A. Park Summaries (continued).

Marsh-Billings-Rockefeller NHP

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Wild Turkey	0.00	0.00	0.05	0.00	0.00	0.04	0.02
Broad-winged Hawk	0.04	0.00	0.00	0.00	0.00	0.04	0.01
Mourning Dove	0.12	0.16	0.15	0.16	0.32	0.00	0.15
Barred Owl	0.00	0.28	0.00	0.04	0.00	0.00	0.05
Chimney Swift	0.00	0.00	0.00	0.04	0.00	0.00	0.01
Yellow-bellied Sapsucker	0.12	0.32	0.20	0.20	0.28	0.40	0.25
Downy Woodpecker	0.16	0.12	0.00	0.08	0.00	0.00	0.06
Hairy Woodpecker	0.16	0.20	0.20	0.00	0.04	0.04	0.11
Northern Flicker (Yellow-shafted Flicker)	0.08	0.04	0.00	0.00	0.04	0.00	0.03
Pileated Woodpecker	0.08	0.04	0.00	0.08	0.00	0.08	0.05
Eastern Wood-Pewee	*0.60*	*0.72*	*0.55*	*0.52*	*0.48*	*0.64*	*0.59*
Least Flycatcher	0.04	0.12	0.05	0.00	0.04	0.00	0.04
Great Crested Flycatcher	0.08	0.04	0.25	0.08	0.12	0.08	0.11
Eastern Kingbird	0.00	0.04	0.00	0.00	0.00	0.00	0.01
Blue-headed Vireo	0.32	0.20	0.20	0.12	0.20	0.16	0.20
Red-eyed Vireo	*2.40*	*1.80*	*1.85*	*2.00*	*2.28*	*2.20*	*2.09*
Blue Jay	*0.56*	*0.84*	*0.40*	*0.56*	*0.28*	*0.52*	*0.53*
American Crow	0.20	0.36	0.15	0.20	0.16	0.28	0.23
Common Raven	0.08	0.00	0.05	0.00	0.04	0.04	0.04
Black-capped Chickadee	*0.32*	*0.84*	*0.50*	*0.56*	*0.28*	*0.40*	*0.48*
Tufted Titmouse	0.04	0.04	0.05	0.04	0.00	0.00	0.03
Red-breasted Nuthatch	0.04	0.08	0.00	0.04	0.20	0.08	0.07
White-breasted Nuthatch	0.32	0.32	0.10	0.36	0.12	0.16	0.23
Brown Creeper	0.52	0.52	0.40	0.36	0.28	0.08	0.36
Winter Wren	0.04	0.04	0.20	0.04	0.04	0.04	0.07
Golden-crowned Kinglet	0.04	0.04	0.05	0.00	0.00	0.04	0.03
Veery	0.12	0.12	0.10	0.00	0.00	0.08	0.07
Hermit Thrush	*0.52*	*0.72*	*1.05*	*0.96*	*0.68*	*0.68*	*0.77*
Wood Thrush	**0.40**	**0.24**	**0.35**	**0.16**	**0.48**	**0.28**	**0.32**
American Robin	*0.76*	*0.64*	*0.35*	*0.52*	*0.72*	*0.32*	*0.55*
Cedar Waxwing	0.00	0.04	0.05	0.00	0.04	0.08	0.04
Nashville Warbler	0.00	0.00	0.00	0.00	0.00	0.04	0.01
Chestnut-sided Warbler	0.00	0.00	0.05	0.00	0.00	0.04	0.02
Black-throated Blue Warbler	0.16	0.24	0.15	0.28	0.16	0.12	0.19
Yellow-rumped Warbler (Myrtle Warbler)	0.08	0.08	0.05	0.08	0.08	0.04	0.07
Black-throated Green Warbler	*0.92*	*0.72*	*0.60*	*0.44*	*0.48*	*0.76*	*0.65*
Blackburnian Warbler	*0.72*	*0.68*	*0.50*	*0.68*	*0.48*	*0.56*	*0.60*
Pine Warbler	0.00	0.04	0.10	0.16	0.20	0.16	0.11
Black-and-white Warbler	0.12	0.08	0.00	0.00	0.00	0.12	0.05
American Redstart	0.04	0.04	0.00	0.04	0.00	0.04	0.03

Appendix A. Park Summaries (continued).

Marsh-Billings-Rockefeller NHP (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Ovenbird	*3.36*	*3.40*	*3.45*	*3.52*	*2.84*	*3.32*	*3.32*
Louisiana Waterthrush	0.00	0.08	0.00	0.00	0.00	0.08	0.03
Mourning Warbler	0.00	0.00	0.00	0.04	0.08	0.00	0.02
Common Yellowthroat	0.08	0.12	0.20	0.08	0.08	0.12	0.11
Scarlet Tanager	*0.24*	*0.56*	*0.25*	*0.56*	*0.40*	*0.48*	*0.42*
Chipping Sparrow	0.12	0.04	0.00	0.04	0.00	0.04	0.04
Song Sparrow	0.00	0.00	0.00	0.00	0.04	0.04	0.01
Dark-eyed Junco (Slate-colored Junco)	0.24	0.44	0.05	0.16	0.40	0.48	0.30
Rose-breasted Grosbeak	0.32	0.12	0.05	0.20	0.16	0.16	0.17
Indigo Bunting	0.00	0.20	0.10	0.00	0.04	0.04	0.06
Bobolink	**0.04**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
Red-winged Blackbird	0.04	0.28	0.15	0.00	0.00	0.00	0.08
Common Grackle	0.00	0.04	0.00	0.00	0.00	0.00	0.01
Brown-headed Cowbird	0.04	0.08	0.05	0.04	0.04	0.00	0.04
Baltimore Oriole	0.04	0.00	0.00	0.00	0.00	0.00	0.01
Purple Finch	0.00	0.04	0.00	0.00	0.00	0.00	0.01
American Goldfinch	0.00	0.04	0.05	0.00	0.00	0.00	0.02
Points Surveyed:	25	25	20	25	25	25	
Ave # Birds Per Point:	14.72	16.28	13.10	13.44	12.60	13.40	13.92
Species Richness:	42	48	38	35	35	41	57
Shannon Diversity:	2.91	3.12	2.84	2.76	2.83	2.84	

Appendix A. Park Summaries (continued).

Minute Man NHP

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.00	0.04	0.00	0.00	0.00	0.09	0.02
Wild Turkey	0.09	0.00	0.00	0.00	0.00	0.04	0.02
Great Blue Heron	0.00	0.00	0.00	0.09	0.00	0.00	0.01
Red-tailed Hawk	0.00	0.00	0.00	0.13	0.00	0.00	0.02
Killdeer	0.04	0.00	0.00	0.00	0.00	0.00	0.01
Mourning Dove	0.09	0.00	0.09	0.00	0.27	0.13	0.10
Black-billed Cuckoo	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.01**
Yellow-billed Cuckoo	0.00	0.00	0.00	0.00	0.00	0.04	0.01
Chimney Swift	**0.00**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
Belted Kingfisher	0.00	0.00	0.00	0.00	0.07	0.00	0.01
Red-bellied Woodpecker	0.00	0.09	0.13	0.17	0.00	0.22	0.10
Downy Woodpecker	0.26	0.52	0.30	0.52	0.53	0.39	0.42
Hairy Woodpecker	0.04	0.17	0.00	0.04	0.07	0.09	0.07
Northern Flicker (Yellow-shafted Flicker)	0.09	0.00	0.13	0.09	0.13	0.09	0.09
Eastern Wood-Pewee	**0.35**	**0.26**	**0.13**	**0.30**	**0.67**	**0.22**	**0.32**
Alder Flycatcher	0.00	0.00	0.00	0.04	0.00	0.00	0.01
Eastern Phoebe	0.04	0.00	0.04	0.04	0.13	0.00	0.04
Great Crested Flycatcher	0.09	0.00	0.22	0.13	0.07	0.22	0.12
Eastern Kingbird	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.01**
Warbling Vireo	0.04	0.00	0.04	0.13	0.00	0.00	0.04
Red-eyed Vireo	0.00	0.09	0.35	0.09	0.20	0.13	0.14
Blue Jay	*1.09*	*1.13*	*1.22*	*0.74*	*1.33*	*0.91*	*1.07*
American Crow	*0.52*	*0.74*	*0.83*	*0.87*	*1.20*	*1.39*	*0.92*
Fish Crow	0.00	0.00	0.00	0.00	0.07	0.00	0.01
Barn Swallow	0.00	0.00	0.00	0.04	0.00	0.04	0.01
Black-capped Chickadee	*1.00*	*0.65*	*0.48*	*0.48*	*0.60*	*0.52*	*0.62*
Tufted Titmouse	*1.04*	*1.48*	*1.43*	*1.87*	*1.27*	*1.22*	*1.39*
White-breasted Nuthatch	*0.39*	*0.39*	*0.13*	*0.65*	*1.20*	*0.22*	*0.50*
Carolina Wren	0.13	0.17	0.00	0.04	0.00	0.00	0.06
House Wren	0.04	0.04	0.00	0.09	0.00	0.00	0.03
Blue-gray Gnatcatcher	0.00	0.00	0.00	0.04	0.00	0.00	0.01
Eastern Bluebird	0.00	0.00	0.00	0.04	0.00	0.00	0.01
Veery	**0.04**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**
Hermit Thrush	0.04	0.00	0.00	0.00	0.00	0.00	0.01
Wood Thrush	**0.30**	**0.30**	**0.35**	**0.35**	**0.27**	**0.17**	**0.29**
American Robin	*0.35*	*0.91*	*1.13*	*1.13*	*0.73*	*0.70*	*0.83*
Gray Catbird	*0.30*	*0.48*	*0.48*	*0.83*	*0.40*	*0.48*	*0.49*
Northern Mockingbird	0.00	0.09	0.00	0.09	0.00	0.04	0.04
Cedar Waxwing	0.04	0.04	0.00	0.26	0.00	0.00	0.06
Blue-winged Warbler	**0.13**	**0.00**	**0.00**	**0.09**	**0.00**	**0.00**	**0.04**

Appendix A. Park Summaries (continued).

Minute Man NHP (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Yellow Warbler	0.04	0.00	0.13	0.09	0.07	0.04	0.06
Pine Warbler	0.22	0.30	0.39	0.74	0.67	0.17	0.42
American Redstart	0.00	0.04	0.00	0.04	0.00	0.00	0.01
Ovenbird	0.39	0.52	0.30	0.48	0.27	0.39	0.39
Common Yellowthroat	0.43	0.43	0.35	0.65	0.40	0.22	0.41
Scarlet Tanager	**0.26**	**0.09**	**0.22**	**0.65**	**0.20**	**0.13**	**0.26**
Chipping Sparrow	0.04	0.00	0.17	0.13	0.13	0.22	0.12
Song Sparrow	*0.61*	*0.61*	*0.48*	*0.48*	*0.47*	*0.52*	*0.53*
Swamp Sparrow	0.00	0.00	0.04	0.04	0.00	0.00	0.01
Northern Cardinal	*0.83*	*0.74*	*0.70*	*0.57*	*0.20*	*0.57*	*0.60*
Rose-breasted Grosbeak	**0.17**	**0.17**	**0.13**	**0.39**	**0.27**	**0.26**	**0.23**
Indigo Bunting	0.04	0.13	0.13	0.04	0.20	0.00	0.09
Red-winged Blackbird	*0.57*	*0.43*	*0.48*	*0.65*	*0.20*	*0.83*	*0.53*
Common Grackle	0.35	0.13	0.09	0.52	0.20	0.57	0.31
Brown-headed Cowbird	0.17	0.48	0.13	0.30	0.00	0.30	0.23
Baltimore Oriole	**0.13**	**0.13**	**0.00**	**0.26**	**0.13**	**0.13**	**0.13**
House Finch	0.13	0.09	0.04	0.09	0.13	0.04	0.09
American Goldfinch	0.65	0.48	0.22	0.22	0.87	0.35	0.46
House Sparrow	0.04	0.13	0.04	0.04	0.07	0.22	0.09
Points Surveyed:	23	23	23	23	15	23	
Ave # Birds Per Point:	11.70	12.74	11.57	15.78	13.67	12.35	12.97
Species Richness:	42	36	35	47	34	38	59
Shannon Diversity:	3.27	3.20	3.12	3.37	3.15	3.23	

Appendix A. Park Summaries (continued).

Morristown NHP

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Wild Turkey	0.00	0.11	0.00	0.00	0.07	0.00	0.03
Turkey Vulture	0.05	0.00	0.00	0.00	0.00	0.00	0.01
Red-tailed Hawk	0.05	0.05	0.10	0.05	0.17	0.05	0.08
Mourning Dove	0.05	0.05	0.15	0.05	0.28	0.05	0.11
Yellow-billed Cuckoo	0.00	0.21	0.05	0.25	0.10	0.00	0.10
Great Horned Owl	0.00	0.00	0.10	0.15	0.10	0.16	0.09
Barred Owl	0.00	0.00	0.00	0.00	0.00	0.11	0.02
Red-bellied Woodpecker	*0.53*	*0.26*	*0.90*	*0.70*	*0.69*	*0.26*	*0.56*
Downy Woodpecker	0.11	0.11	0.30	0.35	0.28	0.21	0.22
Hairy Woodpecker	0.00	0.00	0.25	0.20	0.34	0.21	0.17
Northern Flicker (Yellow-shafted Flicker)	0.21	0.53	0.25	0.25	0.45	0.21	0.32
Pileated Woodpecker	0.11	0.11	0.10	0.20	0.24	0.32	0.18
Eastern Wood-Pewee	***0.74***	***0.89***	***0.65***	***0.45***	***0.93***	***0.89***	***0.76***
Acadian Flycatcher	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**
Eastern Phoebe	0.00	0.05	0.05	0.00	0.07	0.00	0.03
Great Crested Flycatcher	0.05	0.05	0.20	0.10	0.03	0.16	0.10
Yellow-throated Vireo	**0.05**	**0.11**	**0.05**	**0.00**	**0.00**	**0.05**	**0.04**
Blue-headed Vireo	0.00	0.00	0.00	0.00	0.03	0.00	0.01
Red-eyed Vireo	*1.16*	*1.00*	*0.35*	*0.45*	*0.48*	*0.68*	*0.69*
Blue Jay	*0.42*	*1.05*	*1.10*	*0.85*	*1.38*	*1.37*	*1.03*
American Crow	0.05	0.53	0.40	0.35	0.48	0.26	0.35
Fish Crow	0.00	0.00	0.00	0.00	0.03	0.00	0.01
Black-capped Chickadee	0.05	0.05	0.05	0.00	0.03	0.05	0.04
Tufted Titmouse	*0.58*	*0.47*	*0.90*	*1.40*	*0.93*	*0.37*	*0.78*
White-breasted Nuthatch	0.16	0.26	0.60	0.40	0.48	0.32	0.37
Carolina Wren	0.00	0.11	0.00	0.00	0.00	0.00	0.02
House Wren	0.00	0.00	0.05	0.00	0.00	0.00	0.01
Blue-gray Gnatcatcher	0.00	0.00	0.00	0.10	0.14	0.05	0.05
Eastern Bluebird	0.00	0.00	0.15	0.00	0.00	0.00	0.03
Veery	*0.42*	*0.74*	*0.50*	*0.50*	*0.86*	*0.84*	*0.64*
Swainson's Thrush	0.05	0.00	0.00	0.05	0.00	0.00	0.02
Wood Thrush	***1.21***	***1.58***	***1.20***	***1.25***	***1.76***	***1.37***	***1.39***
American Robin	*0.79*	*1.05*	*0.95*	*1.05*	*1.03*	*0.68*	*0.93*
Gray Catbird	0.05	0.11	0.10	0.10	0.17	0.32	0.14
Cedar Waxwing	0.05	0.00	0.00	0.00	0.00	0.00	0.01
Blackpoll Warbler	0.26	0.00	0.00	0.00	0.00	0.00	0.04
Cerulean Warbler	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**
Black-and-white Warbler	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
American Redstart	0.21	0.32	0.00	0.10	0.21	0.26	0.18
Worm-eating Warbler	**0.00**	**0.21**	**0.20**	**0.05**	**0.00**	**0.00**	**0.08**

Appendix A. Park Summaries (continued).

Morristown NHP (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Ovenbird	*0.84*	*1.11*	*0.50*	*0.40*	*1.38*	*0.74*	*0.83*
Louisiana Waterthrush	**0.16**	**0.11**	**0.00**	**0.00**	**0.00**	**0.21**	**0.08**
Kentucky Warbler	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
Common Yellowthroat	0.00	0.00	0.00	0.00	0.00	0.05	0.01
Hooded Warbler	0.16	0.21	0.00	0.00	0.14	0.16	0.11
Canada Warbler	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
Scarlet Tanager	*0.58*	*0.79*	*0.50*	*0.65*	*0.72*	*1.16*	*0.73*
Eastern Towhee	**0.47**	**0.58**	**0.05**	**0.30**	**0.66**	**0.42**	**0.41**
Chipping Sparrow	0.00	0.05	0.00	0.00	0.07	0.05	0.03
Song Sparrow	0.00	0.00	0.00	0.00	0.00	0.05	0.01
Northern Cardinal	0.16	0.47	0.10	0.40	0.14	0.21	0.25
Rose-breasted Grosbeak	0.05	0.21	0.10	0.05	0.10	0.05	0.09
Indigo Bunting	0.00	0.00	0.10	0.00	0.03	0.00	0.02
Brown-headed Cowbird	0.11	0.16	0.00	0.05	0.07	0.16	0.09
Baltimore Oriole	0.47	0.11	0.30	0.10	0.03	0.00	0.17
American Goldfinch	0.00	0.00	0.00	0.00	0.00	0.05	0.01
Points Surveyed:	19	19	20	20	29	19	
Ave # Birds Per Point:	10.53	13.84	11.35	11.35	15.21	12.58	12.48
Species Richness:	35	36	33	31	39	36	56
Shannon Diversity:	3.06	3.13	3.08	3.03	3.12	3.12	

Appendix A. Park Summaries (continued).

Saint-Gaudens NHS

	Relative Abundance (birds per point)					
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Wild Turkey		0.00	0.00	0.00	0.13	0.00	0.03
Mourning Dove		0.00	0.00	0.13	0.00	0.50	0.13
Belted Kingfisher		**0.00**	**0.13**	**0.00**	**0.13**	**0.00**	**0.05**
Yellow-bellied Sapsucker		0.13	0.00	0.00	0.25	0.50	0.18
Hairy Woodpecker		0.00	0.00	0.38	0.00	0.13	0.10
Northern Flicker (Yellow-shafted Flicker)		0.00	0.13	0.00	0.00	0.00	0.03
Pileated Woodpecker		0.38	0.00	0.25	0.00	0.00	0.13
Eastern Wood-Pewee		*0.63*	*0.63*	*0.88*	*0.25*	*0.38*	*0.55*
Alder Flycatcher		0.00	0.00	0.00	0.00	0.13	0.03
Willow Flycatcher		**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**
Least Flycatcher		0.13	0.25	0.00	0.00	0.00	0.08
Eastern Phoebe		0.00	0.13	0.00	0.00	0.00	0.03
Great Crested Flycatcher		0.00	0.00	0.13	0.13	0.13	0.08
Blue-headed Vireo		0.13	0.13	0.13	0.25	0.00	0.13
Red-eyed Vireo		*1.13*	*1.75*	*1.63*	*1.75*	*2.00*	*1.65*
Blue Jay		0.38	0.50	0.00	0.25	0.00	0.23
American Crow		*0.38*	*0.75*	*0.63*	*0.38*	*0.63*	*0.55*
Black-capped Chickadee		0.25	0.13	0.38	0.38	0.25	0.28
Tufted Titmouse		0.00	0.00	0.00	0.00	0.50	0.10
Red-breasted Nuthatch		0.00	0.00	0.25	0.00	0.00	0.05
White-breasted Nuthatch		0.00	0.00	0.25	0.13	0.13	0.10
Brown Creeper		0.00	0.00	0.00	0.13	0.00	0.03
Winter Wren		0.00	0.00	0.25	0.13	0.13	0.10
Veery		*0.38*	*1.38*	*0.50*	*0.88*	*0.75*	*0.78*
Hermit Thrush		0.00	0.13	0.25	0.50	0.50	0.28
Wood Thrush		***0.25***	***0.25***	***0.13***	***0.75***	***0.25***	***0.33***
American Robin		*0.13*	*0.50*	*0.50*	*0.38*	*0.25*	*0.35*
Gray Catbird		0.25	0.13	0.13	0.13	0.00	0.13
Yellow Warbler		0.13	0.00	0.25	0.25	0.13	0.15
Chestnut-sided Warbler		0.25	0.13	0.00	0.13	0.00	0.10
Magnolia Warbler		0.00	0.13	0.00	0.00	0.00	0.03
Black-throated Green Warbler		*0.50*	*0.38*	*1.00*	*0.88*	*0.63*	*0.68*
Blackburnian Warbler		0.00	0.00	0.00	0.00	0.38	0.08
Pine Warbler		0.00	0.25	0.00	0.38	0.00	0.13
Black-and-white Warbler		0.13	0.13	0.00	0.00	0.00	0.05
American Redstart		0.13	0.00	0.25	0.13	0.13	0.13
Ovenbird		*1.50*	*2.00*	*1.88*	*1.75*	*1.50*	*1.73*
Northern Waterthrush		0.00	0.00	0.13	0.00	0.00	0.03
Louisiana Waterthrush		0.25	0.13	0.00	0.13	0.00	0.10
Common Yellowthroat		0.25	0.25	0.13	0.25	0.38	0.25
Scarlet Tanager		*0.38*	*0.88*	*0.38*	*0.25*	*0.13*	*0.40*
Song Sparrow		0.00	0.13	0.25	0.00	0.13	0.10
White-throated Sparrow		0.00	0.13	0.00	0.00	0.00	0.03
Dark-eyed Junco (Slate-colored Junco)		0.00	0.00	0.00	0.38	0.38	0.15
Rose-breasted Grosbeak		0.00	0.13	0.00	0.13	0.00	0.05
Red-winged Blackbird		*0.25*	*0.25*	*0.38*	*0.38*	*0.25*	*0.30*
Baltimore Oriole		0.13	0.13	0.00	0.13	0.13	0.10
American Goldfinch		0.00	0.25	0.25	0.00	0.00	0.10
Points Surveyed:		8	8	8	8	8	
Ave # Birds Per Point:		8.50	12.13	11.63	12.00	11.25	11.10
Species Richness:		25	30	27	31	27	48
Shannon Diversity:		2.91	2.90	2.93	3.03	2.92	

Appendix A. Park Summaries (continued).

Saugus Iron Works NHS

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose			0.00	0.00	0.67	0.00	0.17
Mallard			*0.33*	*2.33*	*1.33*	*0.67*	*1.17*
Great Blue Heron			0.00	0.00	0.00	0.33	0.08
Black-crowned Night-Heron			0.00	0.33	0.67	0.00	0.25
Red-tailed Hawk			0.00	0.00	0.33	0.00	0.08
Spotted Sandpiper			0.00	0.00	0.33	0.00	0.08
Herring Gull			*0.33*	*0.67*	*0.67*	*0.67*	*0.58*
Rock Pigeon			0.33	0.33	0.67	0.00	0.33
Mourning Dove			0.33	0.00	0.00	0.00	0.08
Chimney Swift			***0.00***	***0.67***	***1.00***	***0.67***	***0.58***
Belted Kingfisher			0.33	0.00	0.00	0.00	0.08
Downy Woodpecker			0.67	0.00	0.33	0.00	0.25
Northern Flicker (Yellow-shafted Flicker)			0.33	0.00	0.33	0.00	0.17
Eastern Phoebe			0.00	0.67	0.00	0.00	0.17
Eastern Kingbird			**0.00**	**0.00**	**0.33**	**0.33**	**0.17**
Warbling Vireo			0.00	0.00	0.33	0.33	0.17
Red-eyed Vireo			0.00	0.33	0.00	0.00	0.08
Blue Jay			*0.67*	*0.33*	*0.33*	*1.67*	*0.75*
American Crow			*1.00*	*0.67*	*0.00*	*1.33*	*0.75*
Barn Swallow			*0.67*	*0.67*	*1.00*	*1.00*	*0.83*
Black-capped Chickadee			0.00	0.00	0.00	0.33	0.08
Tufted Titmouse			0.33	0.00	0.00	0.00	0.08
House Wren			0.00	0.00	0.33	0.00	0.08
American Robin			*0.67*	*1.00*	*1.67*	*1.00*	*1.08*
Gray Catbird			*0.67*	*0.67*	*0.67*	*0.33*	*0.58*
European Starling			*0.67*	*2.33*	*0.33*	*0.33*	*0.92*
Yellow Warbler			0.00	0.00	0.33	0.00	0.08
Common Yellowthroat			0.33	0.33	0.00	0.00	0.17
Song Sparrow			*1.00*	*2.00*	*3.00*	*1.33*	*1.83*
Northern Cardinal			1.00	0.33	0.33	0.00	0.42
Red-winged Blackbird			*0.33*	*2.33*	*2.33*	*3.00*	*2.00*
Common Grackle			0.33	0.33	0.67	0.67	0.50
Baltimore Oriole			**0.33**	**0.33**	**0.00**	**0.33**	**0.25**
American Goldfinch			0.00	0.33	0.33	0.33	0.25
House Sparrow			1.00	0.00	0.33	0.00	0.33
Points Surveyed:			3	3	3	3	
Ave # Birds Per Point:			11.67	17.00	18.67	14.67	15.50
Species Richness:			21	20	25	18	35
Shannon Diversity:			2.94	2.69	2.92	2.62	

Appendix A. Park Summaries (continued).

Saratoga NHP

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.16	0.05	0.08	0.00	0.02	0.04	0.06
Northern Bobwhite	0.04	0.00	0.00	0.00	0.00	0.00	0.01
Great Blue Heron	0.12	0.05	0.00	0.02	0.02	0.00	0.04
Turkey Vulture	0.00	0.00	0.00	0.02	0.02	0.07	0.02
Northern Harrier	0.04	0.00	0.00	0.00	0.00	0.00	0.01
Sharp-shinned Hawk	0.00	0.00	0.00	0.00	0.00	0.04	0.01
Cooper's Hawk	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Red-tailed Hawk	0.04	0.00	0.00	0.00	0.05	0.00	0.01
American Kestrel	0.16	0.00	0.04	0.05	0.10	0.22	0.09
American Woodcock	0.00	0.00	0.00	0.02	0.10	0.22	0.06
Mourning Dove	0.24	0.60	0.43	0.27	0.49	0.48	0.42
Black-billed Cuckoo	**0.16**	**0.00**	**0.04**	**0.02**	**0.00**	**0.00**	**0.04**
Yellow-billed Cuckoo	0.04	0.00	0.02	0.00	0.00	0.00	0.01
Ruby-throated Hummingbird	0.04	0.00	0.00	0.02	0.00	0.00	0.01
Red-bellied Woodpecker	0.28	0.00	0.04	0.05	0.07	0.00	0.07
Yellow-bellied Sapsucker	0.08	0.05	0.14	0.29	0.56	0.07	0.20
Downy Woodpecker	0.00	0.10	0.20	0.05	0.12	0.22	0.11
Hairy Woodpecker	0.00	0.00	0.00	0.00	0.10	0.07	0.03
Northern Flicker (Yellow-shafted Flicker)	0.20	0.15	0.04	0.02	0.20	0.19	0.13
Pileated Woodpecker	0.08	0.00	0.04	0.15	0.15	0.00	0.07
Eastern Wood-Pewee	**0.16**	**0.35**	**0.59**	**0.41**	**0.51**	**0.11**	**0.36**
Acadian Flycatcher	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Alder Flycatcher	0.00	0.05	0.08	0.00	0.00	0.00	0.02
Willow Flycatcher	0.08	0.00	0.16	0.00	0.02	0.04	0.05
Least Flycatcher	0.00	0.00	0.08	0.02	0.00	0.00	0.02
Eastern Phoebe	0.00	0.05	0.08	0.02	0.10	0.04	0.05
Great Crested Flycatcher	0.20	0.55	0.35	0.22	0.20	0.04	0.26
Eastern Kingbird	0.48	0.10	0.16	0.29	0.68	0.63	0.39
Yellow-throated Vireo	0.00	0.05	0.02	0.00	0.02	0.00	0.02
Warbling Vireo	0.08	0.00	0.02	0.00	0.00	0.11	0.04
Red-eyed Vireo	0.16	0.50	0.49	0.22	0.39	0.07	0.31
Blue Jay	0.32	0.40	0.37	0.34	0.29	0.37	0.35
American Crow	*0.88*	*0.75*	*0.57*	*1.07*	*0.73*	*0.96*	*0.83*
Common Raven	0.04	0.00	0.00	0.00	0.00	0.07	0.02
Tree Swallow	0.28	0.40	0.20	0.05	0.66	1.04	0.44
Barn Swallow	0.00	0.00	0.00	0.00	0.00	0.04	0.01
Black-capped Chickadee	0.40	0.70	0.47	0.49	0.37	0.30	0.45
Tufted Titmouse	0.52	0.30	0.31	0.02	0.12	0.04	0.22
Red-breasted Nuthatch	0.00	0.00	0.04	0.00	0.02	0.00	0.01
White-breasted Nuthatch	0.16	0.15	0.06	0.17	0.27	0.07	0.15
Brown Creeper	0.00	0.05	0.14	0.07	0.10	0.00	0.06
House Wren	0.32	0.00	0.02	0.05	0.20	0.00	0.10
Winter Wren	0.00	0.05	0.00	0.00	0.00	0.00	0.01
Blue-gray Gnatcatcher	0.00	0.00	0.06	0.02	0.00	0.04	0.02
Eastern Bluebird	0.32	0.00	0.02	0.00	0.24	0.41	0.17

Appendix A. Park Summaries (continued).

Saratoga NHP (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Veery	0.04	0.10	0.18	0.27	0.37	0.04	0.16
Hermit Thrush	0.00	0.10	0.10	0.20	0.12	0.00	0.09
Wood Thrush	**0.16**	**0.50**	**0.39**	**0.20**	**0.34**	**0.07**	**0.28**
American Robin	*0.44*	*0.90*	*0.63*	*0.37*	*0.51*	*0.96*	*0.63*
Gray Catbird	0.20	0.05	0.16	0.17	0.34	0.41	0.22
Northern Mockingbird	0.00	0.00	0.00	0.02	0.10	0.11	0.04
Brown Thrasher	0.08	0.00	0.00	0.00	0.00	0.00	0.01
European Starling	0.40	0.00	0.00	0.17	0.07	0.04	0.11
Cedar Waxwing	0.36	0.60	0.22	0.22	0.34	0.70	0.41
Blue-winged Warbler	**0.20**	**0.20**	**0.20**	**0.07**	**0.10**	**0.22**	**0.16**
Golden-winged Warbler	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**
Yellow Warbler	0.32	0.10	0.16	0.12	0.24	0.33	0.21
Chestnut-sided Warbler	0.08	0.10	0.20	0.02	0.17	0.00	0.10
Yellow-rumped Warbler (Myrtle Warbler)	0.00	0.00	0.04	0.00	0.00	0.00	0.01
Prairie Warbler	0.08	0.15	0.06	0.00	0.24	0.00	0.09
Black-and-white Warbler	0.00	0.00	0.04	0.02	0.02	0.00	0.01
American Redstart	0.12	0.05	0.00	0.00	0.00	0.00	0.03
Ovenbird	*0.24*	*1.15*	*0.82*	*0.44*	*0.63*	*0.04*	*0.55*
Northern Waterthrush	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Louisiana Waterthrush	0.00	0.00	0.06	0.00	0.00	0.00	0.01
Common Yellowthroat	*0.84*	*0.80*	*0.94*	*1.07*	*1.41*	*1.48*	*1.09*
Scarlet Tanager	0.20	0.20	0.29	0.17	0.22	0.07	0.19
Eastern Towhee	**0.20**	**0.30**	**0.27**	**0.22**	**0.39**	**0.56**	**0.32**
Chipping Sparrow	0.40	0.50	0.27	0.32	0.29	0.26	0.34
Field Sparrow	***1.08***	***0.55***	***0.67***	***0.76***	***1.27***	***1.26***	***0.93***
Vesper Sparrow	0.00	0.00	0.06	0.00	0.00	0.00	0.01
Savannah Sparrow	0.08	0.00	0.04	0.05	0.00	0.11	0.05
Song Sparrow	*1.84*	*1.20*	*0.65*	*1.05*	*0.95*	*1.48*	*1.19*
Northern Cardinal	0.28	0.15	0.24	0.17	0.10	0.19	0.19
Rose-breasted Grosbeak	0.08	0.05	0.12	0.07	0.00	0.04	0.06
Indigo Bunting	0.04	0.00	0.06	0.00	0.00	0.00	0.02
Bobolink	*1.48*	*0.60*	*0.65*	*1.71*	*3.15*	*9.19*	*2.79*
Red-winged Blackbird	*1.72*	*0.70*	*1.82*	*2.05*	*3.07*	*5.41*	*2.46*
Eastern Meadowlark	*0.64*	*0.15*	*0.43*	*1.05*	*0.80*	*1.26*	*0.72*
Common Grackle	0.12	0.00	0.00	0.02	0.07	0.04	0.04
Brown-headed Cowbird	0.00	0.05	0.06	0.05	0.10	0.04	0.05
Orchard Oriole	0.12	0.00	0.00	0.02	0.00	0.00	0.02
Baltimore Oriole	**0.44**	**0.25**	**0.16**	**0.17**	**0.29**	**0.22**	**0.26**
Purple Finch	0.04	0.00	0.00	0.00	0.00	0.00	0.01
American Goldfinch	*0.64*	*1.15*	*0.94*	*0.76*	*1.12*	*1.22*	*0.97*
Points Surveyed:	25	20	51	41	41	27	
Ave # Birds Per Point:	19.04	16.20	16.27	16.49	23.80	31.74	20.59
Species Richness:	60	48	64	57	59	53	85
Shannon Diversity:	3.59	3.45	3.61	3.33	3.41	2.78	

Appendix A. Park Summaries (continued).

Vanderbilt Mansion NHS

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	*0.14*	*0.29*	*0.29*	*0.14*	*0.71*	*0.86*	*0.40*
Mallard	0.00	0.00	0.00	0.00	0.14	0.00	0.02
Mourning Dove	0.00	0.00	0.14	0.14	0.00	0.00	0.05
Black-billed Cuckoo	**0.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**
Barred Owl	0.00	0.00	0.00	0.00	0.14	0.00	0.02
Red-bellied Woodpecker	*0.43*	*1.00*	*0.14*	*0.57*	*1.14*	*0.57*	*0.64*
Downy Woodpecker	0.29	0.14	0.14	0.00	0.00	0.00	0.10
Hairy Woodpecker	0.00	0.29	0.00	0.29	0.14	0.00	0.12
Northern Flicker (Yellow-shafted Flicker)	0.57	0.14	0.00	0.00	0.14	0.00	0.14
Pileated Woodpecker	0.14	0.00	0.14	0.00	0.14	0.29	0.12
Eastern Wood-Pewee	**0.29**	**0.00**	**0.00**	**0.29**	**0.00**	**0.14**	**0.12**
Eastern Phoebe	0.14	0.00	0.29	0.14	0.00	0.00	0.10
Great Crested Flycatcher	*0.14*	*0.71*	*0.57*	*0.86*	*1.14*	*1.00*	*0.74*
Red-eyed Vireo	*0.71*	*1.29*	*0.57*	*0.86*	*1.14*	*1.14*	*0.95*
Blue Jay	0.29	0.43	0.00	0.00	0.00	0.00	0.12
American Crow	*0.86*	*0.43*	*0.29*	*0.43*	*0.43*	*0.86*	*0.55*
Fish Crow	0.14	0.00	0.00	0.00	0.00	0.00	0.02
Tufted Titmouse	*0.71*	*0.57*	*0.29*	*1.29*	*1.14*	*1.57*	*0.93*
White-breasted Nuthatch	*0.00*	*0.71*	*0.00*	*0.57*	*0.14*	*0.29*	*0.29*
Carolina Wren	0.00	0.00	0.57	0.00	0.14	0.00	0.12
House Wren	0.00	0.14	0.14	0.00	0.00	0.00	0.05
Eastern Bluebird	0.00	0.00	0.00	0.00	0.14	0.00	0.02
Wood Thrush	***0.86***	***1.14***	***0.57***	***0.29***	***1.00***	***0.00***	***0.64***
American Robin	*0.00*	*0.00*	*0.29*	*0.57*	*0.14*	*0.43*	*0.24*
American Redstart	0.14	0.29	0.00	0.29	0.00	0.00	0.12
Worm-eating Warbler	**0.00**	**0.29**	**0.14**	**0.14**	**0.14**	**0.00**	**0.12**
Ovenbird	0.00	0.14	0.29	0.00	0.14	0.00	0.10
Louisiana Waterthrush	0.00	0.00	0.00	0.00	0.00	0.14	0.02
Common Yellowthroat	0.14	0.00	0.00	0.00	0.00	0.00	0.02
Scarlet Tanager	0.43	0.00	0.14	0.43	0.00	0.00	0.17
Chipping Sparrow	0.29	0.14	0.14	0.14	0.00	0.00	0.12
Northern Cardinal	*1.14*	*0.86*	*0.86*	*0.86*	*1.00*	*0.86*	*0.93*
Rose-breasted Grosbeak	0.14	0.00	0.00	0.00	0.00	0.00	0.02
Indigo Bunting	0.29	0.00	0.14	0.00	0.00	0.00	0.07
Points Surveyed:	7	7	7	7	7	7	
Ave # Birds Per Point:	8.43	9.00	6.14	8.29	9.29	8.14	8.21
Species Richness:	22	18	20	18	19	12	34
Shannon Diversity:	2.84	2.64	2.80	2.67	2.56	2.28	

Appendix A. Park Summaries (continued).

Weir Farm NHS

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
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

	Relative Abundance (birds per point)					
Common Name	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Spruce Grouse	0.00			0.17	0.00	0.06
Herring Gull	0.00			0.00	0.17	0.06
Downy Woodpecker	0.00			0.33	0.00	0.11
Hairy Woodpecker	0.67			0.17	0.00	0.28
Yellow-bellied Flycatcher	*0.00*			*0.83*	*0.50*	*0.44*
Least Flycatcher	0.17			0.00	0.00	0.06
Great Crested Flycatcher	0.17			0.00	0.00	0.06
Blue-headed Vireo	*0.00*			*0.33*	*1.00*	*0.44*
Red-eyed Vireo	0.00			0.67	0.00	0.22
American Crow	0.17			0.83	0.17	0.39
Black-capped Chickadee	0.00			0.50	0.17	0.22
Boreal Chickadee	**1.00**			**0.00**	**0.00**	**0.33**
Red-breasted Nuthatch	*0.17*			*1.50*	*0.67*	*0.78*
Brown Creeper	0.00			0.50	0.00	0.17
Winter Wren	*0.00*			*1.17*	*1.17*	*0.78*
Golden-crowned Kinglet	*0.00*			*1.50*	*0.67*	*0.72*
Ruby-crowned Kinglet	0.33			0.17	0.17	0.22
Veery	0.00			0.17	0.00	0.06
Swainson's Thrush	0.00			0.17	0.83	0.33
Hermit Thrush	*0.67*			*0.67*	*0.67*	*0.67*
Wood Thrush	**0.17**			**0.00**	**0.00**	**0.06**
American Robin	0.33			0.00	0.00	0.11
Nashville Warbler	0.00			0.33	0.50	0.28
Chestnut-sided Warbler	0.33			0.00	0.00	0.11
Magnolia Warbler	*0.00*			*1.00*	*0.50*	*0.50*
Black-throated Blue Warbler	0.33			0.00	0.00	0.11
Yellow-rumped Warbler (Myrtle Warbler)	*0.17*			*0.67*	*0.50*	*0.44*
Black-throated Green Warbler	*1.00*			*3.33*	*1.50*	*1.94*
Palm Warbler	0.00			0.00	0.17	0.06
Black-and-white Warbler	0.17			0.00	0.00	0.06
American Redstart	0.00			0.17	0.00	0.06
Common Yellowthroat	0.00			0.00	0.17	0.06
Eastern Towhee	**0.17**			**0.00**	**0.00**	**0.06**
White-throated Sparrow	0.00			0.67	0.33	0.33
Dark-eyed Junco (Slate-colored Junco)	*0.33*			*1.50*	*0.33*	*0.72*
Purple Finch	0.00			0.00	0.17	0.06
White-winged Crossbill	0.00			0.33	0.00	0.11
Points Surveyed:	6			6	6	
Ave # Birds Per Point:	6.33			17.67	10.33	11.44
Species Richness:	17			24	20	37
Shannon Diversity:	2.60			2.83	2.76	

Appendix B. Site Summaries (continued).

Acadia NP
ACAD-Giant Slide Trail

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Ruffed Grouse		**0.00**	**0.00**	**0.00**		**0.11**	**0.03**
Common Loon		0.00	0.10	0.00		0.00	0.03
Mourning Dove		0.44	0.30	0.30		0.00	0.26
Hairy Woodpecker		0.11	0.00	0.00		0.00	0.03
Pileated Woodpecker		0.11	0.10	0.10		0.22	0.13
Alder Flycatcher		0.11	0.00	0.00		0.00	0.03
Least Flycatcher		0.00	0.00	0.20		0.00	0.05
Blue-headed Vireo		*0.78*	*0.50*	*0.60*		*0.00*	*0.47*
Blue Jay		0.44	0.10	0.50		0.00	0.26
American Crow		0.33	0.50	0.30		0.00	0.28
Common Raven		0.22	0.00	0.10		0.00	0.08
Black-capped Chickadee		*0.11*	*0.60*	*0.90*		*0.33*	*0.49*
Red-breasted Nuthatch		*0.67*	*0.40*	*0.60*		*0.11*	*0.44*
Brown Creeper		0.11	0.40	0.20		0.00	0.18
Winter Wren		0.22	0.10	0.00		0.00	0.08
Golden-crowned Kinglet		*0.67*	*1.40*	*0.70*		*0.11*	*0.72*
Veery		0.00	0.00	0.00		0.11	0.03
Hermit Thrush		*0.22*	*0.10*	*1.00*		*0.11*	*0.36*
American Robin		*0.89*	*0.70*	*0.60*		*0.22*	*0.60*
Brown Thrasher		0.11	0.00	0.00		0.00	0.03
Cedar Waxwing		0.33	0.10	0.30		0.22	0.24
Black-throated Blue Warbler		0.00	0.70	0.50		0.22	0.36
Yellow-rumped Warbler (Myrtle Warbler)		0.11	0.30	0.70		0.22	0.33
Black-throated Green Warbler		*2.78*	*2.90*	*2.20*		*1.44*	*2.33*
Blackburnian Warbler		0.33	0.50	0.50		0.00	0.33
Blackpoll Warbler		**0.00**	**0.00**	**0.00**		**0.11**	**0.03**
Black-and-white Warbler		*0.33*	*0.10*	*0.20*		*1.22*	*0.46*
Ovenbird		*1.11*	*2.30*	*1.70*		*1.56*	*1.67*
Dark-eyed Junco (Slate-colored Junco)		0.11	0.10	0.50		0.00	0.18
Purple Finch		0.11	0.10	0.10		0.00	0.08
Pine Siskin		*0.56*	*1.00*	*0.10*		*0.00*	*0.41*
Points Surveyed:		9	10	10		9	
Ave # Birds Per Point:		11.33	13.40	12.90		6.33	10.99
Species Richness:		25	23	23		15	31
Shannon Diversity:		2.75	2.59	2.81		2.17	

Appendix B. Site Summaries (continued).

Acadia NP

ACAD-Witch Hole Pond

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Ruffed Grouse				**0.00**		**0.11**	**0.06**
Mourning Dove				0.89		0.33	0.61
Northern Flicker (Yellow-shafted Flicker)				0.11		0.11	0.11
Eastern Wood-Pewee				0.44		0.00	0.22
Alder Flycatcher				0.00		0.11	0.06
Eastern Phoebe				0.11		0.00	0.06
Great Crested Flycatcher				0.67		0.22	0.44
Blue-headed Vireo				0.33		0.22	0.28
Warbling Vireo				0.00		0.11	0.06
Red-eyed Vireo				1.22		0.22	0.72
Blue Jay				0.44		0.00	0.22
American Crow				0.11		0.44	0.28
Black-capped Chickadee				0.89		0.00	0.44
Red-breasted Nuthatch				0.22		0.00	0.11
Brown Creeper				0.00		0.11	0.06
Veery				0.11		0.00	0.06
Hermit Thrush				0.78		0.22	0.50
American Robin				0.33		0.22	0.28
Nashville Warbler				0.11		0.22	0.17
Magnolia Warbler				0.00		0.11	0.06
Yellow-rumped Warbler (Myrtle Warbler)				0.78		0.89	0.83
Black-throated Green Warbler				1.89		1.11	1.50
Black-and-white Warbler				0.33		0.22	0.28
Ovenbird				1.33		0.44	0.89
Common Yellowthroat				0.00		0.11	0.06
Dark-eyed Junco (Slate-colored Junco)				0.11		0.00	0.06
Baltimore Oriole				0.00		0.11	0.06
Pine Siskin				0.11		0.00	0.06
American Goldfinch				0.22		0.00	0.11
Points Surveyed:				9		9	
Ave # Birds Per Point:				11.56		5.67	8.61
Species Richness:				22		20	29
Shannon Diversity:				2.73		2.68	

Appendix B. Site Summaries (continued).

Acadia NP

ACAD-Seal Cove Center

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Common Loon		0.00	0.00	0.17	0.00	0.00	0.03
Herring Gull		0.00	0.00	0.00	0.00	0.17	0.03
Mourning Dove		*1.00*	*1.33*	*0.17*	*0.00*	*0.00*	*0.50*
Downy Woodpecker		0.00	0.00	0.00	0.17	0.17	0.07
Hairy Woodpecker		*0.17*	*0.00*	*0.17*	*0.83*	*0.33*	*0.30*
Pileated Woodpecker		0.50	0.00	0.00	0.00	0.17	0.13
Least Flycatcher		*0.50*	*0.33*	*0.50*	*0.50*	*0.00*	*0.37*
Blue-headed Vireo		*0.33*	*1.00*	*0.67*	*0.33*	*0.50*	*0.57*
Blue Jay		0.00	0.17	0.00	0.17	0.00	0.07
American Crow		0.17	0.00	0.00	0.00	0.17	0.07
Common Raven		*0.50*	*0.00*	*1.00*	*0.50*	*0.33*	*0.47*
Black-capped Chickadee		0.33	0.17	0.00	0.00	0.17	0.13
Red-breasted Nuthatch		*0.50*	*0.17*	*0.00*	*0.33*	*0.67*	*0.33*
Brown Creeper		0.17	0.00	0.00	0.33	0.17	0.13
Winter Wren		*0.33*	*0.17*	*0.00*	*0.50*	*0.67*	*0.33*
Golden-crowned Kinglet		0.17	0.50	0.00	0.00	0.50	0.23
Swainson's Thrush		0.33	0.00	0.00	0.33	0.33	0.20
Hermit Thrush		0.50	0.00	0.00	0.33	0.17	0.20
Magnolia Warbler		0.33	0.17	0.00	0.00	0.00	0.10
Yellow-rumped Warbler (Myrtle Warbler)		0.00	0.00	0.17	0.00	0.00	0.03
Black-throated Green Warbler		*1.33*	*1.00*	*1.00*	*1.17*	*1.33*	*1.17*
Blackburnian Warbler		0.17	0.33	0.17	0.00	0.17	0.17
Pine Warbler		0.00	0.00	0.00	0.17	0.00	0.03
Ovenbird		*0.33*	*0.50*	*1.83*	*0.50*	*1.17*	*0.87*
Dark-eyed Junco (Slate-colored Junco)		0.17	0.17	0.33	0.17	0.17	0.20
Purple Finch		*0.50*	*0.17*	*0.50*	*0.17*	*0.00*	*0.27*
White-winged Crossbill		0.00	0.00	0.00	0.17	0.00	0.03
Pine Siskin		0.00	0.33	0.00	0.00	0.00	0.07
Points Surveyed:		6	6	6	6	6	
Ave # Birds Per Point:		8.33	6.50	6.67	6.67	7.33	7.10
Species Richness:		20	15	12	17	18	28
Shannon Diversity:		2.80	2.41	2.15	2.64	2.60	

Appendix B. Site Summaries (continued).

Acadia NP
ACAD-Seal Cove East

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Herring Gull		0.14	0.00	0.00	0.14	0.00	0.06
Mourning Dove		*1.29*	*0.43*	*0.14*	*0.29*	*0.14*	*0.46*
Barred Owl		0.00	0.00	0.00	0.14	0.00	0.03
Ruby-throated Hummingbird		0.00	0.00	0.00	0.14	0.00	0.03
Downy Woodpecker		0.00	0.00	0.14	0.00	0.00	0.03
Hairy Woodpecker		0.00	0.00	0.43	0.14	0.00	0.11
Northern Flicker (Yellow-shafted Flicker)		0.00	0.00	0.00	0.00	0.14	0.03
Pileated Woodpecker		0.14	0.14	0.00	0.29	0.14	0.14
Least Flycatcher		0.00	0.00	0.14	0.00	0.00	0.03
Eastern Phoebe		0.00	0.00	0.14	0.00	0.00	0.03
Blue-headed Vireo		0.14	0.43	0.43	0.14	0.14	0.26
Red-eyed Vireo		0.00	0.14	0.00	0.14	0.00	0.06
Blue Jay		0.14	0.29	0.00	0.14	0.29	0.17
American Crow		*0.86*	*0.86*	*0.71*	*1.57*	*0.29*	*0.86*
Common Raven		*0.57*	*0.29*	*0.29*	*0.29*	*0.43*	*0.37*
Black-capped Chickadee		0.29	0.14	0.14	0.14	0.14	0.17
Red-breasted Nuthatch		*0.71*	*0.14*	*0.43*	*0.86*	*0.43*	*0.51*
Brown Creeper		0.00	0.57	0.43	0.29	0.14	0.29
Winter Wren		*0.43*	*0.43*	*0.14*	*0.43*	*0.43*	*0.37*
Golden-crowned Kinglet		*0.43*	*0.29*	*0.57*	*0.14*	*1.00*	*0.49*
Swainson's Thrush		0.29	0.14	0.00	0.00	0.14	0.11
Hermit Thrush		0.29	0.00	0.57	0.14	0.14	0.23
American Robin		0.57	0.00	0.29	0.43	0.29	0.31
Northern Parula		0.14	0.00	0.00	0.00	0.00	0.03
Magnolia Warbler		0.29	0.43	0.00	0.14	0.43	0.26
Black-throated Blue Warbler		0.00	0.00	0.43	0.00	0.00	0.09
Yellow-rumped Warbler (Myrtle Warbler)		*0.29*	*0.57*	*0.57*	*0.71*	*0.14*	*0.46*
Black-throated Green Warbler		*1.43*	*1.14*	*0.71*	*1.71*	*1.14*	*1.23*
Blackburnian Warbler		0.43	0.29	0.14	0.29	0.29	0.29
Blackpoll Warbler		**0.00**	**0.14**	**0.00**	**0.00**	**0.00**	**0.03**
Ovenbird		*1.14*	*1.00*	*1.00*	*0.86*	*0.43*	*0.89*
Common Yellowthroat		0.00	0.14	0.00	0.00	0.14	0.06
Swamp Sparrow		0.00	0.00	0.29	0.00	0.00	0.06
Dark-eyed Junco (Slate-colored Junco)		*0.43*	*0.29*	*0.71*	*0.71*	*0.57*	*0.54*
Northern Cardinal		0.00	0.00	0.00	0.00	0.14	0.03
Red-winged Blackbird		0.14	0.29	0.14	0.00	0.14	0.14
Common Grackle		0.14	0.00	0.00	0.00	0.00	0.03
Purple Finch		0.14	0.14	0.14	0.43	0.00	0.17
Pine Siskin		0.43	0.43	0.00	0.14	0.14	0.23
American Goldfinch		0.00	0.00	0.00	0.00	0.29	0.06
Points Surveyed:		7	7	7	7	7	
Ave # Birds Per Point:		11.29	9.14	9.14	10.86	8.14	9.71
Species Richness:		25	24	24	26	26	40
Shannon Diversity:		2.94	2.96	2.99	2.88	3.00	

Appendix B. Site Summaries (continued).

Acadia NP

ACAD - Youngs Mtn

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
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
Points Surveyed:				7			
Ave # Birds Per Point:				11.00			11.00
Species Richness:				15			15
Shannon Diversity:				2.37			

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP
MABI East

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Broad-winged Hawk	0.00	0.00	0.00	0.00	0.00	0.10	0.02
Mourning Dove	0.20	0.00	0.10	0.20	0.40	0.00	0.15
Barred Owl	0.00	0.10	0.00	0.00	0.00	0.00	0.02
Chimney Swift	0.00	0.00	0.00	0.10	0.00	0.00	0.02
Yellow-bellied Sapsucker	0.10	0.30	0.30	0.00	0.20	0.30	0.20
Downy Woodpecker	0.20	0.10	0.00	0.10	0.00	0.00	0.07
Hairy Woodpecker	0.00	0.20	0.30	0.00	0.10	0.00	0.10
Pileated Woodpecker	0.00	0.10	0.00	0.00	0.00	0.10	0.03
Eastern Wood-Pewee	0.10	0.30	0.20	0.40	0.30	0.30	0.27
Great Crested Flycatcher	0.00	0.10	0.10	0.00	0.00	0.10	0.05
Blue-headed Vireo	0.00	0.10	0.30	0.20	0.30	0.00	0.15
Red-eyed Vireo	*2.60*	*1.80*	*1.70*	*1.20*	*1.40*	*1.90*	*1.77*
Blue Jay	*0.20*	*0.80*	*0.40*	*0.50*	*0.10*	*0.40*	*0.40*
American Crow	0.40	0.40	0.20	0.20	0.20	0.40	0.30
Common Raven	0.10	0.00	0.00	0.00	0.00	0.00	0.02
Black-capped Chickadee	*0.30*	*1.10*	*0.40*	*0.60*	*0.30*	*0.70*	*0.57*
Tufted Titmouse	0.10	0.00	0.10	0.10	0.00	0.00	0.05
Red-breasted Nuthatch	0.00	0.00	0.00	0.00	0.10	0.00	0.02
White-breasted Nuthatch	0.20	0.20	0.10	0.00	0.20	0.20	0.15
Brown Creeper	*0.70*	*0.40*	*0.40*	*0.50*	*0.20*	*0.10*	*0.38*
Winter Wren	0.00	0.00	0.40	0.10	0.10	0.00	0.10
Golden-crowned Kinglet	0.10	0.00	0.00	0.00	0.00	0.00	0.02
Veery	0.20	0.10	0.00	0.00	0.00	0.10	0.07
Hermit Thrush	*0.50*	*0.70*	*1.00*	*0.50*	*0.50*	*0.50*	*0.62*
Wood Thrush	**0.00**	**0.00**	**0.30**	**0.00**	**0.50**	**0.20**	**0.17**
American Robin	*0.40*	*0.40*	*0.20*	*0.50*	*0.70*	*0.10*	*0.38*
Black-throated Blue Warbler	0.00	0.10	0.00	0.10	0.00	0.00	0.03
Black-throated Green Warbler	*0.80*	*0.70*	*0.50*	*0.40*	*0.50*	*0.80*	*0.62*
Blackburnian Warbler	*0.80*	*0.70*	*0.70*	*0.80*	*0.80*	*0.70*	*0.75*
Pine Warbler	0.00	0.10	0.20	0.10	0.30	0.30	0.17
Black-and-white Warbler	0.00	0.10	0.00	0.00	0.00	0.00	0.02
Ovenbird	*2.60*	*3.70*	*3.20*	*3.00*	*2.60*	*2.80*	*2.98*
Louisiana Waterthrush	0.00	0.20	0.00	0.00	0.00	0.20	0.07
Common Yellowthroat	0.00	0.10	0.10	0.00	0.10	0.00	0.05
Scarlet Tanager	*0.20*	*0.20*	*0.40*	*0.60*	*0.50*	*0.50*	*0.40*
Chipping Sparrow	0.00	0.00	0.00	0.00	0.00	0.10	0.02
Song Sparrow	0.00	0.00	0.00	0.00	0.10	0.10	0.03
Dark-eyed Junco (Slate-colored Junco)	0.00	0.30	0.00	0.10	0.20	0.00	0.10
Rose-breasted Grosbeak	0.10	0.00	0.00	0.00	0.00	0.10	0.03
Indigo Bunting	0.00	0.20	0.00	0.00	0.00	0.10	0.05
Brown-headed Cowbird	0.10	0.10	0.10	0.10	0.00	0.00	0.07
American Goldfinch	0.00	0.10	0.00	0.00	0.00	0.00	0.02
Points Surveyed:	10	10	10	10	10	10	
Ave # Birds Per Point:	11.00	13.80	11.70	10.40	10.70	11.20	11.47
Species Richness:	22	30	24	22	24	25	42
Shannon Diversity:	2.45	2.73	2.62	2.55	2.71	2.63	

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP
MABI Northwest

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Broad-winged Hawk	0.10	0.00	0.00	0.00	0.00	0.00	0.02
Mourning Dove	0.00	0.20	0.20	0.00	0.30	0.00	0.12
Yellow-bellied Sapsucker	0.00	0.30	0.00	0.50	0.30	0.40	0.25
Downy Woodpecker	0.00	0.10	0.00	0.10	0.00	0.00	0.03
Hairy Woodpecker	0.40	0.30	0.20	0.00	0.00	0.10	0.17
Northern Flicker (Yellow-shafted Flicker)	0.00	0.10	0.00	0.00	0.10	0.00	0.03
Pileated Woodpecker	0.20	0.00	0.00	0.10	0.00	0.00	0.05
Eastern Wood-Pewee	*0.80*	*0.80*	*1.40*	*0.60*	*0.70*	*1.00*	*0.88*
Least Flycatcher	0.00	0.00	0.00	0.00	0.10	0.00	0.02
Great Crested Flycatcher	0.20	0.00	0.80	0.20	0.30	0.10	0.27
Blue-headed Vireo	0.70	0.30	0.00	0.10	0.20	0.20	0.25
Red-eyed Vireo	*2.70*	*1.70*	*3.80*	*3.20*	*2.80*	*2.80*	*2.83*
Blue Jay	*0.80*	*0.60*	*0.60*	*0.60*	*0.50*	*0.70*	*0.63*
American Crow	0.00	0.30	0.20	0.30	0.20	0.30	0.22
Common Raven	0.10	0.00	0.20	0.00	0.00	0.00	0.05
Black-capped Chickadee	0.20	0.40	0.60	0.40	0.30	0.20	0.35
Red-breasted Nuthatch	0.00	0.20	0.00	0.10	0.30	0.10	0.12
White-breasted Nuthatch	0.40	0.20	0.00	0.40	0.10	0.10	0.20
Brown Creeper	0.30	0.50	0.20	0.30	0.30	0.10	0.28
Winter Wren	0.10	0.10	0.00	0.00	0.00	0.10	0.05
Golden-crowned Kinglet	0.00	0.10	0.00	0.00	0.00	0.10	0.03
Veery	0.10	0.10	0.40	0.00	0.00	0.00	0.10
Hermit Thrush	*0.80*	*0.40*	*0.80*	*1.40*	*1.20*	*1.10*	*0.95*
Wood Thrush	***0.70***	***0.60***	***0.60***	***0.40***	***0.50***	***0.40***	***0.53***
American Robin	*1.20*	*0.40*	*0.20*	*0.50*	*0.50*	*0.70*	*0.58*
Cedar Waxwing	0.00	0.00	0.20	0.00	0.00	0.20	0.07
Black-throated Blue Warbler	*0.40*	*0.50*	*0.60*	*0.60*	*0.40*	*0.30*	*0.47*
Yellow-rumped Warbler (Myrtle Warbler)	0.00	0.00	0.00	0.20	0.20	0.00	0.07
Black-throated Green Warbler	*1.50*	*0.60*	*1.20*	*0.60*	*0.50*	*1.00*	*0.90*
Blackburnian Warbler	0.90	0.70	0.00	0.60	0.10	0.30	0.43
Pine Warbler	0.00	0.00	0.00	0.30	0.10	0.00	0.07
Black-and-white Warbler	0.10	0.00	0.00	0.00	0.00	0.10	0.03
American Redstart	0.10	0.10	0.00	0.10	0.00	0.00	0.05
Ovenbird	*4.50*	*2.60*	*4.80*	*4.60*	*3.50*	*4.40*	*4.07*
Mourning Warbler	0.00	0.00	0.00	0.10	0.20	0.00	0.05
Common Yellowthroat	0.10	0.00	0.00	0.00	0.00	0.10	0.03
Scarlet Tanager	0.30	0.80	0.00	0.50	0.40	0.50	0.42
Dark-eyed Junco (Slate-colored Junco)	*0.60*	*0.20*	*0.00*	*0.20*	*0.80*	*1.00*	*0.47*
Rose-breasted Grosbeak	0.60	0.10	0.00	0.50	0.30	0.00	0.25
Common Grackle	0.00	0.10	0.00	0.00	0.00	0.00	0.02
Brown-headed Cowbird	0.00	0.10	0.00	0.00	0.00	0.00	0.02
Purple Finch	0.00	0.10	0.00	0.00	0.00	0.00	0.02
Points Surveyed:	10	10	5	10	10	10	
Ave # Birds Per Point:	18.90	13.60	17.00	17.50	15.20	16.40	16.43
Species Richness:	27	31	18	27	27	26	42
Shannon Diversity:	2.72	2.98	2.30	2.65	2.72	2.57	

Appendix B. Site Summaries (continued).

Marsh-Billings-Rockefeller NHP
MABI South

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Wild Turkey	0.00	0.00	0.20	0.00	0.00	0.20	0.07
Mourning Dove	0.20	0.40	0.20	0.40	0.20	0.00	0.23
Barred Owl	0.00	1.20	0.00	0.20	0.00	0.00	0.23
Yellow-bellied Sapsucker	0.40	0.40	0.20	0.00	0.40	0.60	0.33
Downy Woodpecker	0.40	0.20	0.00	0.00	0.00	0.00	0.10
Northern Flicker (Yellow-shafted Flicker)	0.40	0.00	0.00	0.00	0.00	0.00	0.07
Pileated Woodpecker	0.00	0.00	0.00	0.20	0.00	0.20	0.07
Eastern Wood-Pewee	*1.20*	*1.40*	*0.40*	*0.60*	*0.40*	*0.60*	*0.77*
Least Flycatcher	0.20	0.60	0.20	0.00	0.00	0.00	0.17
Eastern Kingbird	0.00	0.20	0.00	0.00	0.00	0.00	0.03
Blue-headed Vireo	0.20	0.20	0.20	0.00	0.00	0.40	0.17
Red-eyed Vireo	*1.40*	*2.00*	*0.20*	*1.20*	*3.00*	*1.60*	*1.57*
Blue Jay	*0.80*	*1.40*	*0.20*	*0.60*	*0.20*	*0.40*	*0.60*
American Crow	0.20	0.40	0.00	0.00	0.00	0.00	0.10
Common Raven	0.00	0.00	0.00	0.00	0.20	0.20	0.07
Black-capped Chickadee	*0.60*	*1.20*	*0.60*	*0.80*	*0.20*	*0.20*	*0.60*
Tufted Titmouse	0.00	0.20	0.00	0.00	0.00	0.00	0.03
Red-breasted Nuthatch	0.20	0.00	0.00	0.00	0.20	0.20	0.10
White-breasted Nuthatch	*0.40*	*0.80*	*0.20*	*1.00*	*0.00*	*0.20*	*0.43*
Brown Creeper	*0.60*	*0.80*	*0.60*	*0.20*	*0.40*	*0.00*	*0.43*
Golden-crowned Kinglet	0.00	0.00	0.20	0.00	0.00	0.00	0.03
Veery	0.00	0.20	0.00	0.00	0.00	0.20	0.07
Hermit Thrush	*0.00*	*1.40*	*1.40*	*1.00*	*0.00*	*0.20*	*0.67*
Wood Thrush	**0.60**	**0.00**	**0.20**	**0.00**	**0.40**	**0.20**	**0.23**
American Robin	*0.60*	*1.60*	*0.80*	*0.60*	*1.20*	*0.00*	*0.80*
Cedar Waxwing	0.00	0.20	0.00	0.00	0.20	0.00	0.07
Nashville Warbler	0.00	0.00	0.00	0.00	0.00	0.20	0.03
Chestnut-sided Warbler	0.00	0.00	0.20	0.00	0.00	0.20	0.07
Yellow-rumped Warbler (Myrtle Warbler)	0.40	0.40	0.20	0.00	0.00	0.20	0.20
Black-throated Green Warbler	0.00	1.00	0.20	0.20	0.40	0.20	0.33
Blackburnian Warbler	*0.20*	*0.60*	*0.60*	*0.60*	*0.60*	*0.80*	*0.57*
Pine Warbler	0.00	0.00	0.00	0.00	0.20	0.20	0.07
Black-and-white Warbler	0.40	0.20	0.00	0.00	0.00	0.40	0.17
American Redstart	0.00	0.00	0.00	0.00	0.00	0.20	0.03
Ovenbird	*2.60*	*4.40*	*2.60*	*2.40*	*2.00*	*2.20*	*2.70*
Common Yellowthroat	0.20	0.40	0.60	0.40	0.20	0.40	0.37
Scarlet Tanager	0.20	0.80	0.20	0.60	0.20	0.40	0.40
Chipping Sparrow	0.60	0.20	0.00	0.20	0.00	0.00	0.17
Dark-eyed Junco (Slate-colored Junco)	0.00	1.20	0.20	0.20	0.00	0.40	0.33
Rose-breasted Grosbeak	0.20	0.40	0.20	0.00	0.20	0.60	0.27
Indigo Bunting	0.00	0.60	0.40	0.00	0.20	0.00	0.20
Bobolink	**0.20**	**0.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**
Red-winged Blackbird	0.20	1.40	0.60	0.00	0.00	0.00	0.37
Brown-headed Cowbird	0.00	0.00	0.00	0.00	0.20	0.00	0.03
Baltimore Oriole	0.20	0.00	0.00	0.00	0.00	0.00	0.03
American Goldfinch	0.00	0.00	0.20	0.00	0.00	0.00	0.03
Points Surveyed:	5	5	5	5	5	5	
Ave # Birds Per Point:	13.80	26.60	12.00	11.40	11.20	11.80	14.47
Species Richness:	27	32	27	18	21	27	46
Shannon Diversity:	2.96	3.11	2.90	2.61	2.51	2.95	

Appendix B. Site Summaries (continued).

Minute Man NHP
MIMA Hartwell Tavern

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.00	0.00	0.00	0.00	0.00	0.14	0.02
Wild Turkey	0.00	0.00	0.00	0.00	0.00	0.14	0.02
Red-tailed Hawk	0.00	0.00	0.00	0.14	0.00	0.00	0.02
Black-billed Cuckoo	**0.00**	**0.00**	**0.14**	**0.00**	**0.00**	**0.00**	**0.02**
Yellow-billed Cuckoo	0.00	0.00	0.00	0.00	0.00	0.14	0.02
Red-bellied Woodpecker	0.00	0.29	0.29	0.57	0.00	0.43	0.26
Downy Woodpecker	*0.29*	*0.71*	*0.57*	*0.57*	*0.86*	*1.14*	*0.69*
Hairy Woodpecker	0.00	0.29	0.00	0.14	0.14	0.00	0.10
Northern Flicker (Yellow-shafted Flicker)	0.00	0.00	0.14	0.00	0.29	0.00	0.07
Eastern Wood-Pewee	***0.86***	***0.86***	***0.43***	***0.86***	***1.00***	***0.57***	***0.76***
Eastern Phoebe	0.14	0.00	0.14	0.00	0.14	0.00	0.07
Great Crested Flycatcher	0.29	0.00	0.43	0.14	0.14	0.57	0.26
Eastern Kingbird	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	**0.02**
Red-eyed Vireo	0.00	0.29	0.71	0.14	0.43	0.14	0.29
Blue Jay	*2.14*	*0.86*	*1.43*	*1.00*	*1.43*	*0.86*	*1.29*
American Crow	*1.00*	*1.00*	*1.29*	*0.86*	*1.29*	*1.14*	*1.10*
Barn Swallow	0.00	0.00	0.00	0.00	0.00	0.14	0.02
Black-capped Chickadee	*0.71*	*0.71*	*0.86*	*0.86*	*1.00*	*0.86*	*0.83*
Tufted Titmouse	*0.71*	*1.86*	*2.57*	*2.14*	*1.29*	*1.86*	*1.74*
White-breasted Nuthatch	*0.43*	*0.57*	*0.43*	*0.57*	*1.57*	*0.43*	*0.67*
Carolina Wren	0.14	0.14	0.00	0.00	0.00	0.00	0.05
Hermit Thrush	0.14	0.00	0.00	0.00	0.00	0.00	0.02
Wood Thrush	**0.43**	**0.14**	**0.57**	**0.43**	**0.57**	**0.29**	**0.40**
American Robin	*0.57*	*1.00*	*2.14*	*1.57*	*0.29*	*0.57*	*1.02*
Gray Catbird	0.57	0.14	0.57	0.71	0.57	0.71	0.55
Northern Mockingbird	0.00	0.00	0.00	0.14	0.00	0.00	0.02
Cedar Waxwing	0.00	0.14	0.00	0.71	0.00	0.00	0.14
Yellow Warbler	0.00	0.00	0.14	0.14	0.14	0.14	0.10
Pine Warbler	0.14	0.14	0.00	0.29	0.29	0.00	0.14
Ovenbird	*0.71*	*0.86*	*0.43*	*1.00*	*0.57*	*0.57*	*0.69*
Common Yellowthroat	0.14	0.29	0.57	0.71	0.57	0.00	0.38
Scarlet Tanager	**0.57**	**0.29**	**0.57**	**1.00**	**0.43**	**0.43**	**0.55**
Chipping Sparrow	0.14	0.00	0.43	0.29	0.29	0.57	0.29
Song Sparrow	0.14	0.14	0.14	0.14	0.43	0.14	0.19
Northern Cardinal	*1.29*	*0.57*	*1.00*	*0.71*	*0.29*	*1.29*	*0.86*
Rose-breasted Grosbeak	**0.00**	**0.14**	**0.00**	**0.43**	**0.43**	**0.29**	**0.21**
Indigo Bunting	0.14	0.00	0.29	0.00	0.43	0.00	0.14
Red-winged Blackbird	0.43	0.00	0.14	0.57	0.14	0.43	0.29
Common Grackle	0.43	0.14	0.14	0.71	0.29	0.29	0.33
Brown-headed Cowbird	0.29	0.43	0.29	0.43	0.00	0.57	0.33
Baltimore Oriole	**0.00**	**0.14**	**0.00**	**0.29**	**0.29**	**0.29**	**0.17**
House Finch	0.00	0.00	0.00	0.29	0.14	0.14	0.10
American Goldfinch	1.00	0.29	0.29	0.14	0.71	1.00	0.57
House Sparrow	0.00	0.00	0.00	0.00	0.14	0.00	0.02
Points Surveyed:	7	7	7	7	7	7	
Ave # Birds Per Point:	13.86	12.43	17.14	18.71	16.57	16.43	15.86
Species Richness:	26	26	28	32	31	31	44
Shannon Diversity:	2.96	2.95	2.97	3.21	3.17	3.17	

Appendix B. Site Summaries (continued).

Minute Man NHP
MIMA Miriam's Corner

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.00	0.13	0.00	0.00		0.13	0.05
Great Blue Heron	0.00	0.00	0.00	0.25		0.00	0.05
Red-tailed Hawk	0.00	0.00	0.00	0.13		0.00	0.03
Killdeer	0.13	0.00	0.00	0.00		0.00	0.03
Mourning Dove	0.00	0.00	0.25	0.00		0.38	0.13
Chimney Swift	**0.00**	**0.25**	**0.00**	**0.00**		**0.00**	**0.05**
Red-bellied Woodpecker	0.00	0.00	0.00	0.00		0.25	0.05
Downy Woodpecker	*0.50*	*0.88*	*0.38*	*1.00*		*0.13*	*0.58*
Hairy Woodpecker	0.13	0.25	0.00	0.00		0.25	0.13
Northern Flicker (Yellow-shafted Flicker)	0.25	0.00	0.25	0.25		0.25	0.20
Eastern Wood-Pewee	**0.13**	**0.00**	**0.00**	**0.13**		**0.13**	**0.08**
Alder Flycatcher	0.00	0.00	0.00	0.13		0.00	0.03
Eastern Phoebe	0.00	0.00	0.00	0.13		0.00	0.03
Great Crested Flycatcher	0.00	0.00	0.25	0.00		0.13	0.08
Eastern Kingbird	**0.13**	**0.00**	**0.00**	**0.00**		**0.00**	**0.03**
Warbling Vireo	0.13	0.00	0.13	0.13		0.00	0.08
Red-eyed Vireo	0.00	0.00	0.13	0.00		0.00	0.03
Blue Jay	*0.75*	*0.75*	*0.50*	*0.50*		*0.63*	*0.63*
American Crow	*0.13*	*0.63*	*0.38*	*1.13*		*0.88*	*0.63*
Barn Swallow	0.00	0.00	0.00	0.13		0.00	0.03
Black-capped Chickadee	*1.25*	*1.00*	*0.25*	*0.38*		*0.13*	*0.60*
Tufted Titmouse	*1.00*	*0.88*	*0.50*	*1.00*		*1.13*	*0.90*
White-breasted Nuthatch	0.50	0.13	0.00	0.50		0.13	0.25
Carolina Wren	0.25	0.13	0.00	0.13		0.00	0.10
House Wren	0.00	0.00	0.00	0.13		0.00	0.03
Blue-gray Gnatcatcher	0.00	0.00	0.00	0.13		0.00	0.03
Eastern Bluebird	0.00	0.00	0.00	0.13		0.00	0.03
Veery	**0.13**	**0.38**	**0.00**	**0.00**		**0.00**	**0.10**
Wood Thrush	**0.50**	**0.75**	**0.50**	**0.38**		**0.25**	**0.48**
American Robin	0.38	1.00	0.00	0.25		0.25	0.38
Gray Catbird	*0.38*	*0.88*	*0.25*	*1.13*		*0.63*	*0.65*
Northern Mockingbird	0.00	0.25	0.00	0.13		0.00	0.08
Cedar Waxwing	0.13	0.00	0.00	0.13		0.00	0.05
Blue-winged Warbler	**0.38**	**0.00**	**0.00**	**0.25**		**0.00**	**0.13**
Yellow Warbler	0.13	0.00	0.25	0.13		0.00	0.10
Pine Warbler	0.25	0.50	0.25	0.63		0.13	0.35
American Redstart	0.00	0.13	0.00	0.13		0.00	0.05
Ovenbird	*0.50*	*0.75*	*0.50*	*0.50*		*0.63*	*0.58*
Common Yellowthroat	*1.00*	*1.00*	*0.25*	*0.63*		*0.50*	*0.68*

Appendix B. Site Summaries (continued).

Minute Man NHP
MIMA Miriam's Corner, (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Scarlet Tanager	**0.25**	**0.00**	**0.13**	**0.38**		**0.00**	**0.15**
Chipping Sparrow	0.00	0.00	0.00	0.00		0.13	0.03
Song Sparrow	*1.25*	*0.88*	*0.63*	*1.13*		*0.75*	*0.93*
Swamp Sparrow	0.00	0.00	0.13	0.13		0.00	0.05
Northern Cardinal	0.38	0.63	0.50	0.75		0.38	0.53
Rose-breasted Grosbeak	**0.50**	**0.38**	**0.38**	**0.50**		**0.50**	**0.45**
Indigo Bunting	0.00	0.38	0.13	0.13		0.00	0.13
Red-winged Blackbird	*0.88*	*0.13*	*0.50*	*0.63*		*0.88*	*0.60*
Common Grackle	0.38	0.00	0.00	0.25		0.75	0.28
Brown-headed Cowbird	0.25	0.50	0.13	0.38		0.25	0.30
Baltimore Oriole	**0.25**	**0.25**	**0.00**	**0.38**		**0.00**	**0.18**
House Finch	0.25	0.00	0.13	0.00		0.00	0.08
American Goldfinch	0.38	0.63	0.25	0.38		0.00	0.33
House Sparrow	0.00	0.25	0.00	0.13		0.63	0.20
Points Surveyed:	8	8	8	8		8	
Ave # Birds Per Point:	13.75	14.63	7.88	15.63		11.13	12.60
Species Richness:	33	28	26	41		27	53
Shannon Diversity:	3.24	3.15	3.13	3.42		3.06	

Appendix B. Site Summaries (continued).

Minute Man NHP
MIMA The Bluff

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Wild Turkey	0.25	0.00	0.00	0.00	0.00	0.00	0.04
Red-tailed Hawk	0.00	0.00	0.00	0.13	0.00	0.00	0.02
Mourning Dove	0.25	0.00	0.00	0.00	0.50	0.00	0.13
Belted Kingfisher	0.00	0.00	0.00	0.00	0.13	0.00	0.02
Red-bellied Woodpecker	0.00	0.00	0.13	0.00	0.00	0.00	0.02
Downy Woodpecker	0.00	0.00	0.00	0.00	0.25	0.00	0.04
Eastern Wood-Pewee	**0.13**	**0.00**	**0.00**	**0.00**	**0.38**	**0.00**	**0.08**
Eastern Phoebe	0.00	0.00	0.00	0.00	0.13	0.00	0.02
Great Crested Flycatcher	0.00	0.00	0.00	0.25	0.00	0.00	0.04
Warbling Vireo	0.00	0.00	0.00	0.25	0.00	0.00	0.04
Red-eyed Vireo	0.00	0.00	0.25	0.13	0.00	0.25	0.10
Blue Jay	*0.50*	*1.75*	*1.75*	*0.75*	*1.25*	*1.25*	*1.21*
American Crow	*0.50*	*0.63*	*0.88*	*0.63*	*1.13*	*2.13*	*0.98*
Fish Crow	0.00	0.00	0.00	0.00	0.13	0.00	0.02
Black-capped Chickadee	*1.00*	*0.25*	*0.38*	*0.25*	*0.25*	*0.63*	*0.46*
Tufted Titmouse	*1.38*	*1.75*	*1.38*	*2.50*	*1.25*	*0.75*	*1.50*
White-breasted Nuthatch	*0.25*	*0.50*	*0.00*	*0.88*	*0.88*	*0.13*	*0.44*
Carolina Wren	0.00	0.25	0.00	0.00	0.00	0.00	0.04
House Wren	0.13	0.13	0.00	0.13	0.00	0.00	0.06
Wood Thrush	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.04**
American Robin	*0.13*	*0.75*	*1.38*	*1.63*	*1.13*	*1.25*	*1.04*
Gray Catbird	0.00	0.38	0.63	0.63	0.25	0.13	0.33
Northern Mockingbird	0.00	0.00	0.00	0.00	0.00	0.13	0.02
Pine Warbler	*0.25*	*0.25*	*0.88*	*1.25*	*1.00*	*0.38*	*0.67*
Common Yellowthroat	0.13	0.00	0.25	0.63	0.25	0.13	0.23
Scarlet Tanager	**0.00**	**0.00**	**0.00**	**0.63**	**0.00**	**0.00**	**0.10**
Chipping Sparrow	0.00	0.00	0.13	0.13	0.00	0.00	0.04
Song Sparrow	*0.38*	*0.75*	*0.63*	*0.13*	*0.50*	*0.63*	*0.50*
Northern Cardinal	*0.88*	*1.00*	*0.63*	*0.25*	*0.13*	*0.13*	*0.50*
Rose-breasted Grosbeak	**0.00**	**0.00**	**0.00**	**0.25**	**0.13**	**0.00**	**0.06**
Red-winged Blackbird	*0.38*	*1.13*	*0.75*	*0.75*	*0.25*	*1.13*	*0.73*
Common Grackle	0.25	0.25	0.13	0.63	0.13	0.63	0.33
Brown-headed Cowbird	0.00	0.50	0.00	0.13	0.00	0.13	0.13
Baltimore Oriole	**0.13**	**0.00**	**0.00**	**0.13**	**0.00**	**0.13**	**0.06**
House Finch	0.13	0.25	0.00	0.00	0.13	0.00	0.08
American Goldfinch	0.63	0.50	0.13	0.13	1.00	0.13	0.42
House Sparrow	0.13	0.13	0.13	0.00	0.00	0.00	0.06
Points Surveyed:	8	8	8	8	8	8	
Ave # Birds Per Point:	7.75	11.13	10.38	13.38	11.13	10.00	10.63
Species Richness:	20	18	17	25	22	18	37
Shannon Diversity:	2.69	2.62	2.52	2.80	2.76	2.46	

Appendix B. Site Summaries (continued).

Morristown NHP
MORR Mt. Kemble

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Red-tailed Hawk			0.20	0.10	0.30	0.10	0.18
Mourning Dove			0.30	0.00	0.20	0.10	0.15
Yellow-billed Cuckoo			0.10	0.50	0.00	0.00	0.15
Great Horned Owl			0.20	0.30	0.10	0.00	0.15
Red-bellied Woodpecker			0.60	0.20	0.90	0.10	0.45
Downy Woodpecker			0.60	0.50	0.20	0.20	0.38
Hairy Woodpecker			*0.50*	*0.40*	*0.90*	*0.20*	*0.50*
Northern Flicker (Yellow-shafted Flicker)			0.40	0.40	0.50	0.10	0.35
Pileated Woodpecker			0.20	0.20	0.10	0.30	0.20
Eastern Wood-Pewee			***1.10***	***0.80***	***1.40***	***0.80***	***1.03***
Eastern Phoebe			0.10	0.00	0.10	0.00	0.05
Great Crested Flycatcher			0.20	0.20	0.00	0.00	0.10
Blue-headed Vireo			0.00	0.00	0.10	0.00	0.03
Red-eyed Vireo			0.20	0.30	0.30	0.50	0.33
Blue Jay			*1.30*	*1.10*	*2.20*	*1.50*	*1.53*
American Crow			*0.70*	*0.60*	*0.60*	*0.40*	*0.58*
Black-capped Chickadee			0.10	0.00	0.00	0.10	0.05
Tufted Titmouse			*1.00*	*1.40*	*1.30*	*0.50*	*1.05*
White-breasted Nuthatch			*0.80*	*0.70*	*0.60*	*0.20*	*0.58*
House Wren			0.10	0.00	0.00	0.00	0.03
Blue-gray Gnatcatcher			0.00	0.20	0.00	0.00	0.05
Eastern Bluebird			0.20	0.00	0.00	0.00	0.05
Veery			0.40	0.00	0.30	0.20	0.23
Wood Thrush			***1.50***	***1.60***	***1.70***	***0.70***	***1.38***
American Robin			*0.90*	*1.10*	*1.20*	*0.70*	*0.98*
Gray Catbird			0.10	0.10	0.10	0.10	0.10
American Redstart			0.00	0.20	0.00	0.10	0.08
Worm-eating Warbler			**0.40**	**0.10**	**0.00**	**0.00**	**0.13**
Ovenbird			*0.60*	*0.10*	*1.30*	*0.60*	*0.65*
Louisiana Waterthrush			**0.00**	**0.00**	**0.00**	**0.20**	**0.05**
Scarlet Tanager			*0.50*	*1.00*	*0.80*	*1.10*	*0.85*
Eastern Towhee			**0.00**	**0.20**	**0.20**	**0.30**	**0.18**
Chipping Sparrow			0.00	0.00	0.20	0.10	0.08
Song Sparrow			0.00	0.00	0.00	0.10	0.03
Northern Cardinal			0.10	0.40	0.10	0.20	0.20
Rose-breasted Grosbeak			0.10	0.00	0.20	0.00	0.08
Indigo Bunting			0.20	0.00	0.10	0.00	0.08
Brown-headed Cowbird			0.00	0.10	0.00	0.10	0.05
American Goldfinch			0.00	0.00	0.00	0.10	0.03
Points Surveyed:			10	10	10	10	
Ave # Birds Per Point:			13.70	12.80	16.00	9.70	13.05
Species Richness:			30	26	27	28	39
Shannon Diversity:			3.09	2.93	2.87	2.94	

Appendix B. Site Summaries (continued).

Morristown NHP
MORR Primrose Brook

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
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
Red-bellied Woodpecker	*0.60*	*0.40*	*1.20*	*1.20*	*0.30*		*0.74*
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
Eastern Wood-Pewee	***0.80***	***0.80***	***0.20***	***0.10***	***0.40***		***0.46***
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
Yellow-throated Vireo	**0.10**	**0.00**	**0.10**	**0.00**	**0.00**		**0.04**
Red-eyed Vireo	*1.40*	*1.10*	*0.50*	*0.60*	*0.20*		*0.76*
Blue Jay	*0.60*	*1.70*	*0.90*	*0.60*	*1.10*		*0.98*
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
Tufted Titmouse	*0.60*	*0.50*	*0.80*	*1.40*	*0.50*		*0.76*
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
Veery	*0.40*	*0.70*	*0.60*	*1.00*	*0.50*		*0.64*
Swainson's Thrush	0.10	0.00	0.00	0.10	0.00		0.04
Wood Thrush	***1.30***	***1.90***	***0.90***	***0.90***	***1.50***		***1.30***
American Robin	*0.90*	*1.30*	*1.00*	*1.00*	*0.60*		*0.96*
Gray Catbird	0.00	0.00	0.10	0.10	0.10		0.06
Worm-eating Warbler	**0.00**	**0.40**	**0.00**	**0.00**	**0.00**		**0.08**
Ovenbird	*0.90*	*1.10*	*0.40*	*0.70*	*0.60*		*0.74*
Louisiana Waterthrush	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**		**0.02**
Hooded Warbler	0.10	0.20	0.00	0.00	0.00		0.06
Scarlet Tanager	*0.60*	*1.20*	*0.50*	*0.30*	*0.40*		*0.60*
Eastern Towhee	**0.40**	**0.50**	**0.10**	**0.40**	**0.40**		**0.36**
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
Points Surveyed:	10	10	10	10	10		
Ave # Birds Per Point:	10.70	16.60	9.00	9.90	7.90		10.82
Species Richness:	23	30	21	22	19		35
Shannon Diversity:	2.82	3.01	2.72	2.71	2.67		

Appendix B. Site Summaries (continued).

Morristown NHP
MORR Soldier's Huts

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Turkey Vulture	0.11	0.00			0.00	0.00	0.03
Red-tailed Hawk	0.00	0.00			0.22	0.00	0.06
Mourning Dove	0.00	0.00			0.67	0.00	0.17
Yellow-billed Cuckoo	0.00	0.00			0.33	0.00	0.08
Great Horned Owl	0.00	0.00			0.22	0.33	0.14
Barred Owl	0.00	0.00			0.00	0.22	0.06
Red-bellied Woodpecker	0.44	0.11			0.89	0.44	0.47
Downy Woodpecker	0.00	0.11			0.56	0.22	0.22
Hairy Woodpecker	0.00	0.00			0.11	0.22	0.08
Northern Flicker (Yellow-shafted Flicker)	0.22	0.33			0.67	0.33	0.39
Pileated Woodpecker	0.22	0.11			0.44	0.33	0.28
Eastern Wood-Pewee	***0.67***	***1.00***			***1.00***	***1.00***	***0.92***
Acadian Flycatcher	**0.00**	**0.00**			**0.11**	**0.00**	**0.03**
Eastern Phoebe	0.00	0.00			0.11	0.00	0.03
Great Crested Flycatcher	0.11	0.11			0.11	0.33	0.17
Yellow-throated Vireo	**0.00**	**0.22**			**0.00**	**0.11**	**0.08**
Red-eyed Vireo	*0.89*	*0.89*			*1.00*	*0.89*	*0.92*
Blue Jay	*0.22*	*0.33*			*0.78*	*1.22*	*0.64*
American Crow	0.00	0.11			0.67	0.11	0.22
Fish Crow	0.00	0.00			0.11	0.00	0.03
Black-capped Chickadee	0.11	0.00			0.11	0.00	0.06
Tufted Titmouse	*0.56*	*0.44*			*1.00*	*0.22*	*0.56*
White-breasted Nuthatch	0.11	0.00			0.67	0.44	0.31
Blue-gray Gnatcatcher	0.00	0.00			0.44	0.11	0.14
Veery	*0.44*	*0.78*			*1.89*	*1.56*	*1.17*
Wood Thrush	***1.11***	***1.22***			***2.11***	***2.11***	***1.64***
American Robin	*0.67*	*0.78*			*1.33*	*0.67*	*0.86*
Gray Catbird	0.11	0.22			0.33	0.56	0.31
Cedar Waxwing	0.11	0.00			0.00	0.00	0.03
Blackpoll Warbler	0.56	0.00			0.00	0.00	0.14
Cerulean Warbler	**0.00**	**0.00**			**0.11**	**0.00**	**0.03**
Black-and-white Warbler	**0.11**	**0.00**			**0.00**	**0.00**	**0.03**
American Redstart	*0.44*	*0.67*			*0.67*	*0.44*	*0.56*
Ovenbird	*0.78*	*1.11*			*2.33*	*0.89*	*1.28*
Louisiana Waterthrush	**0.33**	**0.11**			**0.00**	**0.22**	**0.17**
Kentucky Warbler	**0.00**	**0.11**			**0.00**	**0.00**	**0.03**
Common Yellowthroat	0.00	0.00			0.00	0.11	0.03
Hooded Warbler	0.22	0.22			0.44	0.33	0.31
Canada Warbler	**0.11**	**0.00**			**0.00**	**0.00**	**0.03**
Scarlet Tanager	*0.56*	*0.33*			*1.00*	*1.22*	*0.78*
Eastern Towhee	***0.56***	***0.67***			***1.44***	***0.56***	***0.81***
Chipping Sparrow	0.00	0.11			0.00	0.00	0.03
Northern Cardinal	0.00	0.00			0.11	0.22	0.08
Rose-breasted Grosbeak	0.00	0.33			0.11	0.11	0.14
Brown-headed Cowbird	0.22	0.22			0.22	0.22	0.22
Baltimore Oriole	0.33	0.11			0.11	0.00	0.14
Points Surveyed:	9	9			9	9	
Ave # Birds Per Point:	10.33	10.78			22.44	15.78	14.83
Species Richness:	27	26			35	30	46
Shannon Diversity:	3.06	2.94			3.18	3.07	

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Middle Ravine

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
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*
Points Surveyed:		10	10				
Ave # Birds Per Point:		15.50	13.80				14.65
Species Richness:		36	31				40
Shannon Diversity:		3.20	3.24				

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Wilkinson Trail

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose			0.10	0.00	0.00		0.03
Mourning Dove			0.10	0.00	0.30		0.13
Black-billed Cuckoo			**0.10**	**0.00**	**0.00**		**0.03**
Yellow-billed Cuckoo			0.10	0.00	0.00		0.03
Red-bellied Woodpecker			0.00	0.10	0.20		0.10
Yellow-bellied Sapsucker			*0.20*	*0.60*	*1.60*		*0.80*
Downy Woodpecker			0.30	0.00	0.50		0.27
Hairy Woodpecker			0.00	0.00	0.10		0.03
Northern Flicker (Yellow-shafted Flicker)			0.00	0.10	0.00		0.03
Pileated Woodpecker			0.10	0.10	0.20		0.13
Eastern Wood-Pewee			***1.20***	***1.20***	***0.90***		***1.10***
Acadian Flycatcher			0.10	0.00	0.00		0.03
Least Flycatcher			0.20	0.00	0.00		0.07
Eastern Phoebe			0.30	0.00	0.10		0.13
Great Crested Flycatcher			*0.90*	*0.60*	*0.40*		*0.63*
Yellow-throated Vireo			0.00	0.00	0.10		0.03
Red-eyed Vireo			*1.20*	*0.50*	*1.10*		*0.93*
Blue Jay			0.30	0.30	0.40		0.33
American Crow			0.50	0.40	0.60		0.50
Black-capped Chickadee			*1.20*	*0.80*	*0.70*		*0.90*
Tufted Titmouse			0.40	0.10	0.20		0.23
Red-breasted Nuthatch			0.10	0.00	0.10		0.07
White-breasted Nuthatch			0.10	0.20	0.40		0.23
Brown Creeper			0.40	0.30	0.40		0.37
House Wren			0.00	0.00	0.10		0.03
Blue-gray Gnatcatcher			0.10	0.00	0.00		0.03
Veery			*0.20*	*0.60*	*1.20*		*0.67*
Hermit Thrush			0.00	0.70	0.30		0.33
Wood Thrush			**0.60**	**0.00**	**0.40**		**0.33**
American Robin			0.60	0.20	0.20		0.33
Gray Catbird			0.40	0.20	0.30		0.30
Cedar Waxwing			0.00	0.70	0.20		0.30
Blue-winged Warbler			**0.00**	**0.00**	**0.10**		**0.03**
Yellow Warbler			0.00	0.00	0.40		0.13
Chestnut-sided Warbler			0.40	0.10	0.10		0.20
Ovenbird			*1.70*	*0.90*	*1.40*		*1.33*
Northern Waterthrush			0.10	0.00	0.00		0.03
Louisiana Waterthrush			0.20	0.00	0.00		0.07
Common Yellowthroat			*0.90*	*0.50*	*0.70*		*0.70*

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Wilkinson Trail, (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Scarlet Tanager			*0.60*	*0.40*	*0.80*		*0.60*
Eastern Towhee			**0.10**	**0.10**	**0.40**		**0.20**
Chipping Sparrow			0.20	0.10	0.20		0.17
Song Sparrow			0.10	0.00	0.30		0.13
Northern Cardinal			0.10	0.40	0.40		0.30
Rose-breasted Grosbeak			0.20	0.00	0.00		0.07
Indigo Bunting			0.20	0.00	0.00		0.07
Red-winged Blackbird			0.00	0.00	0.10		0.03
Common Grackle			0.00	0.00	0.20		0.07
Baltimore Oriole			**0.00**	**0.00**	**0.20**		**0.07**
American Goldfinch			*0.60*	*0.40*	*0.70*		*0.57*
Points Surveyed:			10	10	10		
Ave # Birds Per Point:			15.20	10.60	17.00		14.27
Species Richness:			38	26	39		50
Shannon Diversity:			3.25	3.01	3.36		

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Bemis Heights

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Mourning Dove			0.33	1.00	0.17	0.50	0.50
Ruby-throated Hummingbird			0.00	0.17	0.00	0.00	0.04
Red-bellied Woodpecker			0.00	0.17	0.17	0.00	0.08
Yellow-bellied Sapsucker			0.17	0.50	0.67	0.00	0.33
Downy Woodpecker			0.00	0.33	0.00	1.00	0.33
Pileated Woodpecker			0.17	0.33	0.33	0.00	0.21
Eastern Wood-Pewee			**0.50**	**0.67**	**0.50**	**0.00**	**0.42**
Alder Flycatcher			0.17	0.00	0.00	0.00	0.04
Eastern Phoebe			0.17	0.00	0.00	0.00	0.04
Great Crested Flycatcher			0.00	0.17	0.17	0.00	0.08
Red-eyed Vireo			0.83	0.17	0.50	0.00	0.38
Blue Jay			0.83	1.00	0.67	0.50	0.75
American Crow			0.17	0.17	0.50	1.00	0.46
Black-capped Chickadee			0.83	0.33	0.33	0.50	0.50
Tufted Titmouse			1.17	0.00	0.00	0.00	0.29
White-breasted Nuthatch			0.17	0.33	1.00	0.00	0.38
Blue-gray Gnatcatcher			0.33	0.00	0.00	0.00	0.08
Veery			0.67	0.83	0.33	0.50	0.58
Hermit Thrush			0.00	0.17	0.33	0.00	0.13
Wood Thrush			**1.83**	**1.17**	**1.67**	**0.50**	**1.29**
American Robin			0.67	0.83	1.00	1.50	1.00
Gray Catbird			0.00	0.17	0.33	1.00	0.38
Cedar Waxwing			0.33	0.00	0.00	0.00	0.08
Blue-winged Warbler			**0.17**	**0.00**	**0.00**	**0.00**	**0.04**
Yellow Warbler			0.00	0.00	0.17	0.00	0.04
Chestnut-sided Warbler			0.17	0.00	0.00	0.00	0.04
Black-and-white Warbler			0.33	0.00	0.17	0.00	0.13
Ovenbird			1.33	1.33	1.67	0.00	1.08
Louisiana Waterthrush			0.17	0.00	0.00	0.00	0.04
Common Yellowthroat			1.33	0.33	0.00	0.50	0.54
Scarlet Tanager			0.83	0.50	0.17	0.00	0.38
Eastern Towhee			**0.33**	**0.17**	**0.33**	**1.00**	**0.46**
Chipping Sparrow			0.17	0.00	0.00	0.00	0.04
Field Sparrow			**0.00**	**0.00**	**0.00**	**0.50**	**0.13**
Northern Cardinal			0.00	0.17	0.00	0.00	0.04
Rose-breasted Grosbeak			0.00	0.33	0.00	0.50	0.21
Red-winged Blackbird			0.00	0.00	0.00	1.00	0.25
Brown-headed Cowbird			0.17	0.33	0.67	0.00	0.29
Baltimore Oriole			**0.00**	**0.17**	**0.17**	**0.00**	**0.08**
American Goldfinch			0.67	0.17	0.00	0.00	0.21
Points Surveyed:			6	6	6	2	
Ave # Birds Per Point:			15.00	12.00	12.00	10.50	12.38
Species Richness:			28	27	23	14	40
Shannon Diversity:			3.03	3.03	2.85	2.56	

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Burgoyne's Headquarters

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.20		0.20	0.00	0.00	0.00	0.08
Turkey Vulture	0.00		0.00	0.20	0.00	0.20	0.08
Red-tailed Hawk	0.00		0.00	0.00	0.20	0.00	0.04
American Kestrel	0.00		0.00	0.00	0.00	0.60	0.12
Mourning Dove	0.60		0.60	0.00	0.80	0.40	0.48
Black-billed Cuckoo	0.00		0.20	0.00	0.00	0.00	0.04
Red-bellied Woodpecker	1.00		0.20	0.00	0.00	0.00	0.24
Yellow-bellied Sapsucker	0.40		0.20	0.40	0.20	0.20	0.28
Downy Woodpecker	0.00		0.20	0.00	0.00	0.00	0.04
Hairy Woodpecker	0.00		0.00	0.00	0.60	0.20	0.16
Northern Flicker (Yellow-shafted Flicker)	0.60		0.00	0.00	0.80	0.40	0.36
Pileated Woodpecker	0.20		0.00	0.00	0.00	0.00	0.04
Eastern Wood-Pewee	0.40		0.40	0.00	0.80	0.00	0.32
Alder Flycatcher	0.00		0.20	0.00	0.00	0.00	0.04
Least Flycatcher	0.00		0.40	0.00	0.00	0.00	0.08
Eastern Phoebe	0.00		0.00	0.00	0.40	0.00	0.08
Great Crested Flycatcher	0.20		0.00	0.00	0.00	0.00	0.04
Eastern Kingbird	*0.60*		*0.60*	*0.40*	*1.60*	*0.80*	*0.80*
Warbling Vireo	0.20		0.20	0.00	0.00	0.40	0.16
Red-eyed Vireo	0.00		0.00	0.40	0.00	0.20	0.12
Blue Jay	0.40		0.20	0.00	0.20	0.20	0.20
American Crow	0.20		0.20	0.20	0.00	1.00	0.32
Common Raven	0.20		0.00	0.00	0.00	0.00	0.04
Tree Swallow	*0.60*		*1.00*	*0.40*	*1.60*	*2.00*	*1.12*
Black-capped Chickadee	1.00		0.00	0.00	0.20	0.00	0.24
Tufted Titmouse	0.60		0.00	0.00	0.20	0.00	0.16
White-breasted Nuthatch	0.40		0.00	0.00	0.00	0.00	0.08
Blue-gray Gnatcatcher	0.00		0.00	0.20	0.00	0.00	0.04
Eastern Bluebird	*0.60*		*0.00*	*0.00*	*2.00*	*1.00*	*0.72*
Veery	0.20		0.00	0.00	0.20	0.00	0.08
Wood Thrush	0.80		0.00	0.20	0.00	0.20	0.24
American Robin	0.80		0.80	0.40	0.40	0.40	0.56
Gray Catbird	0.60		0.20	0.20	0.20	0.40	0.32
Cedar Waxwing	0.60		0.60	0.20	0.00	1.00	0.48
Blue-winged Warbler	0.00		0.60	0.40	0.00	0.00	0.20
Yellow Warbler	0.00		0.20	0.60	0.20	0.80	0.36
Chestnut-sided Warbler	0.00		0.00	0.00	0.40	0.00	0.08
Black-and-white Warbler	0.00		0.00	0.20	0.00	0.00	0.04
American Redstart	0.40		0.00	0.00	0.00	0.00	0.08

Appendix B. Site Summaries (continued).

Saratoga NHP

SARA Burgoyne's Headquarters, (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Ovenbird	0.20		0.00	0.00	0.40	0.20	0.16
Common Yellowthroat	*0.60*		*1.00*	*1.20*	*1.60*	*1.80*	*1.24*
Scarlet Tanager	0.00		0.00	0.00	0.00	0.20	0.04
Eastern Towhee	0.00		0.00	0.00	0.00	1.00	0.20
Chipping Sparrow	*1.20*		*0.80*	*0.80*	*0.20*	*0.40*	*0.68*
Field Sparrow	*1.40*		*2.00*	*1.80*	*2.80*	*2.40*	*2.08*
Vesper Sparrow	0.00		0.40	0.00	0.00	0.00	0.08
Savannah Sparrow	0.00		0.40	0.00	0.00	0.00	0.08
Song Sparrow	*1.40*		*1.00*	*0.20*	*0.60*	*0.80*	*0.80*
Northern Cardinal	0.20		0.00	0.00	0.00	0.60	0.16
Rose-breasted Grosbeak	0.20		0.20	0.20	0.00	0.00	0.12
Indigo Bunting	0.00		0.20	0.00	0.00	0.00	0.04
Red-winged Blackbird	*2.80*		*2.40*	*1.20*	*2.40*	*3.20*	*2.40*
Eastern Meadowlark	0.20		0.40	0.60	0.00	0.20	0.28
Common Grackle	0.40		0.00	0.00	0.00	0.20	0.12
Brown-headed Cowbird	0.00		0.00	0.00	0.00	0.20	0.04
Orchard Oriole	0.60		0.00	0.20	0.00	0.00	0.16
Baltimore Oriole	*0.20*		*0.40*	*0.40*	*1.20*	*0.60*	*0.56*
American Goldfinch	*1.40*		*1.80*	*0.60*	*0.80*	*1.20*	*1.16*
Points Surveyed:	5		5	5	5	5	
Ave # Birds Per Point:	22.60		18.20	11.60	21.00	23.40	19.36
Species Richness:	37		31	24	26	32	58
Shannon Diversity:	3.34		3.09	2.92	2.89	3.10	

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Freeman Farm

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.10	0.10	0.10	0.00	0.00	0.00	0.05
Great Blue Heron	0.30	0.10	0.00	0.00	0.00	0.00	0.07
Cooper's Hawk	0.00	0.00	0.00	0.00	0.10	0.00	0.02
Red-tailed Hawk	0.10	0.00	0.00	0.00	0.00	0.00	0.02
American Kestrel	0.30	0.00	0.00	0.10	0.10	0.20	0.12
American Woodcock	0.00	0.00	0.00	0.00	0.20	0.00	0.03
Mourning Dove	0.30	0.40	0.50	0.30	0.90	0.80	0.53
Black-billed Cuckoo	0.40	0.00	0.00	0.10	0.00	0.00	0.08
Yellow-billed Cuckoo	0.10	0.00	0.00	0.00	0.00	0.00	0.02
Ruby-throated Hummingbird	0.10	0.00	0.00	0.00	0.00	0.00	0.02
Red-bellied Woodpecker	0.10	0.00	0.10	0.00	0.00	0.00	0.03
Yellow-bellied Sapsucker	0.00	0.00	0.00	0.10	0.20	0.10	0.07
Downy Woodpecker	0.00	0.00	0.10	0.00	0.00	0.20	0.05
Hairy Woodpecker	0.00	0.00	0.00	0.00	0.00	0.10	0.02
Northern Flicker (Yellow-shafted Flicker)	0.20	0.10	0.20	0.00	0.30	0.20	0.17
Pileated Woodpecker	0.00	0.00	0.00	0.30	0.10	0.00	0.07
Eastern Wood-Pewee	0.20	0.20	0.30	0.00	0.40	0.30	0.23
Alder Flycatcher	0.00	0.10	0.10	0.00	0.00	0.00	0.03
Willow Flycatcher	0.00	0.00	0.10	0.00	0.10	0.00	0.03
Eastern Phoebe	0.00	0.00	0.00	0.10	0.00	0.00	0.02
Great Crested Flycatcher	0.40	0.60	0.40	0.10	0.10	0.10	0.28
Eastern Kingbird	0.30	0.20	0.30	0.70	0.80	1.00	0.55
Yellow-throated Vireo	0.00	0.10	0.10	0.00	0.00	0.00	0.03
Warbling Vireo	0.10	0.00	0.00	0.00	0.00	0.10	0.03
Red-eyed Vireo	0.40	0.40	0.10	0.00	0.20	0.00	0.18
Blue Jay	0.40	0.30	0.20	0.50	0.30	0.50	0.37
American Crow	*1.60*	*0.90*	*0.90*	*1.50*	*1.20*	*0.70*	*1.13*
Common Raven	0.00	0.00	0.00	0.00	0.00	0.20	0.03
Tree Swallow	0.40	0.80	0.30	0.00	1.00	0.80	0.55
Black-capped Chickadee	0.40	0.40	0.00	0.90	0.40	0.20	0.38
Tufted Titmouse	0.70	0.30	0.10	0.00	0.10	0.10	0.22
White-breasted Nuthatch	0.10	0.10	0.00	0.30	0.00	0.00	0.08
House Wren	0.30	0.00	0.10	0.20	0.20	0.00	0.13
Eastern Bluebird	0.30	0.00	0.10	0.00	0.00	0.20	0.10
Hermit Thrush	0.00	0.00	0.10	0.00	0.00	0.00	0.02
Wood Thrush	0.00	0.20	0.00	0.00	0.00	0.00	0.03
American Robin	*0.00*	*0.40*	*0.70*	*0.50*	*0.80*	*1.80*	*0.70*
Gray Catbird	0.00	0.10	0.20	0.00	0.70	0.10	0.18
Northern Mockingbird	0.00	0.00	0.00	0.10	0.00	0.00	0.02

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Freeman Farm, (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
European Starling	0.20	0.00	0.00	0.00	0.00	0.00	0.03
Cedar Waxwing	0.10	0.80	0.00	0.00	0.20	0.50	0.27
Blue-winged Warbler	0.40	0.40	0.10	0.10	0.30	0.20	0.25
Golden-winged Warbler	0.00	0.10	0.00	0.00	0.00	0.00	0.02
Yellow Warbler	0.40	0.20	0.30	0.10	0.20	0.00	0.20
Chestnut-sided Warbler	0.20	0.10	0.50	0.00	0.00	0.00	0.13
Prairie Warbler	0.00	0.30	0.30	0.00	0.90	0.00	0.25
Ovenbird	0.50	0.40	0.40	0.10	0.00	0.00	0.23
Common Yellowthroat	*1.10*	*0.80*	*0.80*	*1.60*	*3.10*	*1.90*	*1.55*
Scarlet Tanager	0.20	0.00	0.00	0.00	0.00	0.10	0.05
Eastern Towhee	0.20	0.00	0.40	0.40	1.00	0.60	0.43
Chipping Sparrow	*0.40*	*0.70*	*0.60*	*0.80*	*0.80*	*0.50*	*0.63*
Field Sparrow	*1.40*	*0.90*	*1.60*	*1.50*	*2.40*	*1.50*	*1.55*
Vesper Sparrow	0.00	0.00	0.10	0.00	0.00	0.00	0.02
Song Sparrow	*2.30*	*2.00*	*1.10*	*1.70*	*1.70*	*1.80*	*1.77*
Northern Cardinal	0.50	0.20	0.30	0.20	0.00	0.00	0.20
Indigo Bunting	0.10	0.00	0.00	0.00	0.00	0.00	0.02
Bobolink	*0.30*	*1.20*	*1.10*	*0.90*	*4.00*	*4.10*	*1.93*
Red-winged Blackbird	*0.70*	*1.20*	*2.10*	*2.60*	*4.50*	*4.50*	*2.60*
Eastern Meadowlark	*0.90*	*0.30*	*0.70*	*1.20*	*1.00*	*0.40*	*0.75*
Common Grackle	0.00	0.00	0.00	0.00	0.10	0.00	0.02
Baltimore Oriole	1.00	0.40	0.20	0.40	0.30	0.30	0.43
Purple Finch	0.10	0.00	0.00	0.00	0.00	0.00	0.02
American Goldfinch	*0.50*	*1.10*	*0.90*	*1.10*	*1.90*	*1.60*	*1.18*
Points Surveyed:	10	10	10	10	10	10	
Ave # Birds Per Point:	19.10	16.90	16.60	18.50	30.60	25.70	21.23
Species Richness:	43	36	38	29	35	32	63
Shannon Diversity:	3.39	3.24	3.22	2.93	2.98	2.84	

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Neilson Farm

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Canada Goose	0.20		0.00	0.00	0.10	0.10	0.08
Northern Bobwhite	0.10		0.00	0.00	0.00	0.00	0.02
Great Blue Heron	0.00		0.00	0.10	0.10	0.00	0.04
Turkey Vulture	0.00		0.00	0.00	0.10	0.10	0.04
Northern Harrier	0.10		0.00	0.00	0.00	0.00	0.02
Sharp-shinned Hawk	0.00		0.00	0.00	0.00	0.10	0.02
Red-tailed Hawk	0.00		0.00	0.00	0.10	0.00	0.02
American Kestrel	0.10		0.20	0.10	0.30	0.10	0.16
American Woodcock	0.00		0.00	0.10	0.20	0.60	0.18
Mourning Dove	0.00		0.50	0.20	0.30	0.20	0.24
Red-bellied Woodpecker	0.10		0.00	0.00	0.00	0.00	0.02
Downy Woodpecker	0.00		0.00	0.00	0.00	0.20	0.04
Northern Flicker (Yellow-shafted Flicker)	0.00		0.00	0.00	0.10	0.10	0.04
Pileated Woodpecker	0.10		0.00	0.00	0.10	0.00	0.04
Eastern Wood-Pewee	0.00		0.20	0.10	0.10	0.00	0.08
Alder Flycatcher	0.00		0.10	0.00	0.00	0.00	0.02
Willow Flycatcher	0.20		0.70	0.00	0.00	0.10	0.20
Least Flycatcher	0.00		0.00	0.10	0.00	0.00	0.02
Eastern Phoebe	0.00		0.00	0.00	0.10	0.10	0.04
Great Crested Flycatcher	0.00		0.00	0.10	0.20	0.00	0.06
Eastern Kingbird	*0.60*		*0.20*	*0.30*	*1.20*	*0.30*	*0.52*
Red-eyed Vireo	0.00		0.00	0.10	0.00	0.10	0.04
Blue Jay	0.20		0.20	0.00	0.00	0.30	0.14
American Crow	*0.50*		*0.90*	*2.30*	*0.90*	*1.20*	*1.16*
Tree Swallow	0.00		0.20	0.00	0.90	1.00	0.42
Barn Swallow	0.00		0.00	0.00	0.00	0.10	0.02
Black-capped Chickadee	0.10		0.00	0.10	0.10	0.50	0.16
Tufted Titmouse	0.30		0.00	0.00	0.10	0.00	0.08
White-breasted Nuthatch	0.10		0.00	0.00	0.10	0.20	0.08
House Wren	0.50		0.00	0.00	0.50	0.00	0.20
Blue-gray Gnatcatcher	0.00		0.00	0.00	0.00	0.10	0.02
Eastern Bluebird	0.20		0.00	0.00	0.00	0.40	0.12
American Robin	0.70		0.60	0.10	0.30	0.30	0.40
Gray Catbird	0.20		0.10	0.30	0.10	0.60	0.26
Northern Mockingbird	0.00		0.00	0.00	0.40	0.30	0.14
Brown Thrasher	0.20		0.00	0.00	0.00	0.00	0.04
European Starling	0.80		0.00	0.70	0.30	0.10	0.38
Cedar Waxwing	*0.50*		*0.60*	*0.10*	*1.00*	*0.90*	*0.62*
Blue-winged Warbler	0.10		0.40	0.00	0.00	0.40	0.18

Appendix B. Site Summaries (continued).

Saratoga NHP
SARA Neilson Farm, (continued)

	Relative Abundance (birds per point)						
Common Name	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***Mean***
Yellow Warbler	0.40		0.40	0.10	0.20	0.50	0.32
Chestnut-sided Warbler	0.00		0.00	0.00	0.40	0.00	0.08
Prairie Warbler	0.20		0.00	0.00	0.10	0.00	0.06
American Redstart	0.10		0.00	0.00	0.00	0.00	0.02
Common Yellowthroat	*0.70*		*1.00*	*1.50*	*1.20*	*1.10*	*1.10*
Scarlet Tanager	0.30		0.00	0.00	0.00	0.00	0.06
Eastern Towhee	0.30		0.20	0.30	0.00	0.20	0.20
Chipping Sparrow	0.00		0.10	0.00	0.10	0.00	0.04
Field Sparrow	*0.60*		*0.60*	*0.70*	*1.40*	*0.60*	*0.78*
Savannah Sparrow	0.20		0.00	0.20	0.00	0.30	0.14
Song Sparrow	*1.60*		*1.30*	*2.50*	*1.60*	*1.80*	*1.76*
Northern Cardinal	0.10		0.40	0.00	0.00	0.20	0.14
Rose-breasted Grosbeak	0.10		0.10	0.00	0.00	0.00	0.04
Bobolink	*3.40*		*2.20*	*6.10*	*8.90*	*20.70*	*8.26*
Red-winged Blackbird	*2.20*		*5.60*	*5.20*	*6.80*	*8.30*	*5.62*
Eastern Meadowlark	*0.60*		*1.30*	*2.80*	*2.30*	*2.90*	*1.98*
Common Grackle	0.10		0.00	0.10	0.00	0.00	0.04
Baltimore Oriole	0.00		0.40	0.00	0.00	0.00	0.08
American Goldfinch	*0.40*		*0.80*	*1.20*	*1.60*	*1.10*	*1.02*
Points Surveyed:	10		10	10	10	10	
Ave # Birds Per Point:	17.20		19.30	25.50	32.30	46.20	28.10
Species Richness:	37		26	26	35	37	58
Shannon Diversity:	3.03		2.65	2.36	2.55	2.18	

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 2011. Assessments for parks with only one site are excluded from this appendix since they are included in the main report. Please refer to the Introduction for some important caveats pertaining to the assessment and changes to the way it is calculated for this and all future reports.

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

Acadia NP - 30 ACAD Schoodic **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	30%	Caution
Single Brooded	60%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	13%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	33%	Good
Omnivore	25%	Good

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	35%	Caution
Forest-ground Nester	23%	Good
Interior Forest Obligate	48%	Good
Shrub Nester	20%	Caution

Acadia NP - 31 ACAD-Giant Slide Trail **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Caution
Resident	41%	Sig Concern
Single Brooded	62%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	17%	Good
Ground Gleaner	10%	Good
High Canopy Forager	7%	Sig Concern
Low Canopy Forager	21%	Caution
Omnivore	28%	Good

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	41%	Good
Forest-ground Nester	17%	Caution
Interior Forest Obligate	52%	Good
Shrub Nester	17%	Good

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

Acadia NP - 32 ACAD-Witch Hole Pond **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	7%	Good
Resident	29%	Caution
Single Brooded	68%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	11%	Caution
Ground Gleaner	11%	Good
High Canopy Forager	11%	Caution
Low Canopy Forager	25%	Good
Omnivore	29%	Good

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	32%	Caution
Forest-ground Nester	21%	Good
Interior Forest Obligate	32%	Caution
Shrub Nester	21%	Caution

Acadia NP - 33 ACAD-Seal Cove Center **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	44%	Sig Concern
Single Brooded	56%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	19%	Good
Ground Gleaner	9%	Good
High Canopy Forager	9%	Caution
Low Canopy Forager	25%	Good
Omnivore	22%	Good

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	44%	Good
Forest-ground Nester	13%	Caution
Interior Forest Obligate	53%	Good
Shrub Nester	16%	Good

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

Acadia NP - 34 ACAD-Seal Cove East **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	7%	Good
Resident	36%	Caution
Single Brooded	52%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	14%	Good
Ground Gleaner	10%	Good
High Canopy Forager	10%	Caution
Low Canopy Forager	24%	Good
Omnivore	33%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	36%	Good
Forest-ground Nester	10%	Caution
Interior Forest Obligate	40%	Good
Shrub Nester	24%	Caution

Acadia NP - 36 ACAD - Youngs Mtn **2007 to 2011**

Integrity Element: *Compositional*

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

Integrity Element: *Functional*

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

Integrity Element: *Structural*

Response Guild	Percentage	Rating
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).

Marsh-Billings-Rockefeller NHP - 10 MABI East **2006 to 2011**

Integrity Element: *Compositional*

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

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	20%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	10%	Caution
Low Canopy Forager	15%	Caution
Omnivore	35%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	30%	Caution
Forest-ground Nester	15%	Caution
Interior Forest Obligate	45%	Good
Shrub Nester	20%	Caution

Marsh-Billings-Rockefeller NHP - 11 MABI Northwest **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Good
Resident	32%	Caution
Single Brooded	59%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	20%	Good
Ground Gleaner	12%	Good
High Canopy Forager	10%	Caution
Low Canopy Forager	17%	Caution
Omnivore	27%	Good

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	41%	Good
Forest-ground Nester	15%	Caution
Interior Forest Obligate	44%	Good
Shrub Nester	12%	Good

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

Marsh-Billings-Rockefeller NHP - 12 MABI South **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	31%	Caution
Single Brooded	60%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	18%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	9%	Caution
Low Canopy Forager	20%	Caution
Omnivore	36%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	40%	Good
Forest-ground Nester	13%	Caution
Interior Forest Obligate	36%	Good
Shrub Nester	20%	Caution

Minute Man NHP - 13 MIMA Hartwell Tavern **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	5%	Caution
Nest Predator / Brood Parasite	7%	Good
Resident	37%	Caution
Single Brooded	41%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	12%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	5%	Sig Concern
Low Canopy Forager	20%	Caution
Omnivore	39%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	22%	Sig Concern
Forest-ground Nester	5%	Sig Concern
Interior Forest Obligate	15%	Caution
Shrub Nester	34%	Sig Concern

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

Minute Man NHP - 14 MIMA Miriam's Corner **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	4%	Caution
Nest Predator / Brood Parasite	6%	Good
Resident	33%	Caution
Single Brooded	49%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	10%	Caution
Ground Gleaner	4%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	18%	Caution
Omnivore	39%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	27%	Sig Concern
Forest-ground Nester	4%	Sig Concern
Interior Forest Obligate	14%	Caution
Shrub Nester	27%	Sig Concern

Minute Man NHP - 15 MIMA The Bluff **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	5%	Caution
Nest Predator / Brood Parasite	11%	Caution
Resident	41%	Caution
Single Brooded	41%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	11%	Caution
Ground Gleaner	3%	Sig Concern
High Canopy Forager	8%	Caution
Low Canopy Forager	16%	Caution
Omnivore	46%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	30%	Caution
Forest-ground Nester	0%	Sig Concern
Interior Forest Obligate	8%	Sig Concern
Shrub Nester	27%	Sig Concern

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

Morristown NHP - 16 MORR Mt. Kemble **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	33%	Caution
Single Brooded	46%	Sig Concern

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	13%	Good
Ground Gleaner	8%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	21%	Caution
Omnivore	41%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	26%	Sig Concern
Forest-ground Nester	13%	Caution
Interior Forest Obligate	26%	Caution
Shrub Nester	23%	Caution

Morristown NHP - 17 MORR Primrose Brook **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	9%	Good
Resident	33%	Caution
Single Brooded	52%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	12%	Good
Ground Gleaner	9%	Good
High Canopy Forager	9%	Caution
Low Canopy Forager	18%	Caution
Omnivore	39%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	24%	Sig Concern
Forest-ground Nester	15%	Caution
Interior Forest Obligate	27%	Caution
Shrub Nester	24%	Sig Concern

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

Morristown NHP - 18 MORR Soldier's Huts **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	10%	Good
Resident	31%	Caution
Single Brooded	60%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	14%	Good
Ground Gleaner	7%	Caution
High Canopy Forager	12%	Caution
Low Canopy Forager	21%	Caution
Omnivore	31%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	33%	Caution
Forest-ground Nester	17%	Caution
Interior Forest Obligate	36%	Good
Shrub Nester	24%	Caution

Saratoga NHP - 23 SARA Middle Ravine **2007 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	8%	Good
Resident	31%	Caution
Single Brooded	54%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	10%	Caution
Ground Gleaner	10%	Good
High Canopy Forager	5%	Sig Concern
Low Canopy Forager	23%	Good
Omnivore	41%	Caution

Integrity Element: *Structural*

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

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

Saratoga NHP - 24 SARA Wilkinson Trail **2006 to 2011**

Integrity Element: *Compositional*

Response Guild	Percentage	Rating
Exotic	0%	Good
Nest Predator / Brood Parasite	4%	Good
Resident	31%	Caution
Single Brooded	51%	Caution

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	14%	Good
Ground Gleaner	6%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	20%	Caution
Omnivore	35%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	24%	Sig Concern
Forest-ground Nester	12%	Caution
Interior Forest Obligate	24%	Caution
Shrub Nester	29%	Sig Concern

Saratoga NHP - 25 SARA Bemis Heights **2006 to 2011**

Integrity Element: *Compositional*

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

Integrity Element: *Functional*

Response Guild	Percentage	Rating
Bark Prober	13%	Good
Ground Gleaner	5%	Caution
High Canopy Forager	8%	Caution
Low Canopy Forager	18%	Caution
Omnivore	43%	Caution

Integrity Element: *Structural*

Response Guild	Percentage	Rating
Canopy Nester	25%	Sig Concern
Forest-ground Nester	15%	Caution
Interior Forest Obligate	20%	Caution
Shrub Nester	30%	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 2011. Please refer to the Introduction for some important caveats pertaining to the assessment.

Saratoga NHP - 26 SARA Burgoyne's Headquarters **2006 to 2011**

Response Guild	*Percentage*	*Rating*
Edge Generalist	73%	Sig Concern
Exotic	0%	Good
Grassland Obligate	10%	Caution
Shrub-dependent	18%	Caution

Saratoga NHP - 27 SARA Freeman Farm **2006 to 2011**

Response Guild	*Percentage*	*Rating*
Edge Generalist	72%	Sig Concern
Exotic	2%	Caution
Grassland Obligate	9%	Caution
Shrub-dependent	20%	Caution

Saratoga NHP - 28 SARA Neilson Farm **2006 to 2011**

Response Guild	*Percentage*	*Rating*
Edge Generalist	70%	Sig Concern
Exotic	2%	Caution
Grassland Obligate	11%	Good
Shrub-dependent	18%	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 962/116126, August 2012

National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science
1201 Oakridge Drive, Suite 150
Fort Collins, CO 80525

www.nature.nps.gov

EXPERIENCE YOUR AMERICA ™