2005

Surveys of Breeding Birds Within Bear Swamp, Wicomico and Worcester Counties, Maryland

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2005 Report

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Cover photo of American Redstart on nest by Fletcher Smith.

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The Center for Conservation Biology is an organization dedicated to discovering innovative solutions to environmental problems that are both scientifically sound and practical within today's social context. Our philosophy has been to use a general systems approach to locate critical information needs and to plot a deliberate course of action to reach what we believe are essential information endpoints.

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EXECUTIVE SUMMARY

Birds are essential components of natural ecosystems, effective indicators of environmental health, and the focus of an emerging ecotourism industry that represents a growing portion of the world's economy. An increased concern for the status of many North American bird populations has resulted in an escalation of monitoring and management efforts. Much of this concern has been focused upon the many species of forest-dwelling Neotropical migrants (species that migrate between forested breeding grounds in the temperate latitudes of North America and wintering grounds in Central and South America and the Caribbean) that have exhibited substantial population declines in recent decades. The mid-Atlantic Coastal Plain plays a significant role in the life cycle of many of the most vulnerable bird species in North America. The diversity of habitats available to birds during the breeding and winter periods, along with the strategic geographic position of the region for migrants, combine to make this one of the most diverse regions in eastern North America.

The Maryland/DC chapter of The Nature Conservancy has aquired 930 hectares (ha) of land from the E.S. Adkins Timber Company. This property is located within or near the Pocomoke Swamp, which is a disjunct fragment of the larger Great Dismal Swamp and represents the northern range limit for some Neotropical migrant bird species. Monitoring populations of these species should be a local conservation priority.

A total of 73 survey points, consisting of a combination of fixed-radius and unlimited-radius point count techniques, were used to measure bird density and frequency of occurrence within Bear Swamp in 2004 and 2005. Habitats sampled during the two years of surveys include moist hardwoods, young pine, early successional, intermediate aged pine, and mixed coniferous/deciduous forest. A total of 4,534 detections of 84 bird species were made during the 2004 and 2005 breeding bird surveys. These were comprised of 43 Neotropical migrant species, 19 temperate migrant species, and 22 non-migratory (resident) species. Playback surveys were used to target Nightjars during the 2005 season, in which 17 Nightjars were detected. An early season (19 April 2005) survey was also conducted in an effort to document presence/absence of the Black-throated Green Warbler.

The results of the two years of surveys provide an account of the abundance and distribution of bird species that occupy the varied habitat types of Bear Swamp. The majority of species observed during both years are typical of those normally found within deciduous forest, pine plantations, and early successional habitats of the mid-Atlantic region.

BACKGROUND

Context

Birds are essential components of natural ecosystems, effective indicators of environmental health, and the focus of an emerging ecotourism industry that represents a growing portion of the world's economy. During the course of the twentieth century, the living space and infrastructure required by an expanding human population has had a pervasive impact on the natural landscape, resulting in a direct change in the availability and distribution of the habitats required by many bird species. Restoring and maintaining healthy bird populations within these altered landscapes represents one of the most complex conservation challenges for the twenty-first century.

An increased concern for the status of many North American bird populations has resulted in an escalation of monitoring and management efforts. Much of this concern has been focused upon the many species of forest-dwelling Neotropical migrants (species that migrate between forested breeding grounds in the temperate latitudes of North America and wintering grounds in Central and South America and the Caribbean) that have exhibited substantial population declines in recent decades. There is increasing evidence that habitat loss and fragmentation are two of the leading causes for the observed population declines (Faaborg et al. 1995, Robinson et al. 1995).

The mid-Atlantic Coastal Plain plays a significant role in the life cycle of many of the most vulnerable bird species in North America. The diversity of habitats available to birds during the breeding and winter periods, along with the strategic geographic position of the region for migrants, combine to make this one of the most diverse regions in eastern North America. The region was also the site of the first successful European settlement in North America. The natural landscape has been altered by European culture for nearly four centuries. Currently, the urban crescent from Baltimore south to Richmond and east to Norfolk is one of the fastest growing regions in North America. Growth is projected to continue for the foreseeable future, placing increasing demands on the region's natural resources. The landscape along the Delmarva Peninsula continues to be rural in character. However, immigration of residents into the area will place increasing pressures on this landscape in the future (Watts 1999).

Vegetation within the mid-Atlantic Coastal Plain is most closely associated with that of the southeastern Coastal Plain. More than 100 plant species that are centered in the southeast reach their northern range limit in coastal New Jersey. Many more species reach their limit further south within the region. Upland forests remain an important component of the regional landscape. Forests form a natural gradient in composition from pine-dominated forests on the outer Coastal Plain to hardwood-dominated forests on the inner Coastal Plain.

The Maryland/DC chapter of The Nature Conservancy has aquired 930 hectares (ha) of land from the E.S. Adkins Timber Company. This property is located within or near the Pocomoke Swamp, which is a disjunct fragment of the larger Great Dismal Swamp and represents the northern range limit for some Neotropical migrant bird species. Monitoring populations of these species should be a local conservation priority.

Objectives

The overall objective of this project is to evaluate the breeding bird community within the Bear Swamp Unit of the Adkins Tract. The focal area is a mosaic of forest blocks within the Pocomoke drainage. Information provided through this project will provide resource staff with information important for making management decisions and establish a benchmark for future comparisons.

METHODS

Study Area

This study was conducted entirely within the Bear Swamp portion of the Adkins Tract, located within Wicomico and Worchester Counties on the coastal plain of Maryland (Figure 1). The Bear Swamp portion of the Adkins Tract consists primarily of a matrix of mature forested wetland and pine plantation and is associated with Nassawango Creek and the Pokomoke River. The composition of the forested wetland habitat is primarily Red Maple (*Acer rubrum*), Mockernut Hickory (*Carya tomentosa*) , Black Gum (*Nyssa sylvatica*), and Bald Cypress (*Taxodium distichum*), with a well developed understory of Red Maple (*A. rubrum*), American Holly (*Ilex opaca*), Sweet Pepperbush (*Clethra alnifolia),* and Sweet Bay (*Magnolia virginiana*). The composition of the pine plantation habitat is primarily densely stocked Loblolly Pine (*Pinus taeda*) of generally uniform ages. Ages of pine stands ranged from recently cut to more than 30 years old. The early successional habitat found within Bear Swamp is predominantly a mix of Red Maple and Loblolly Pine (See Appendix I for all points, coordinates, and associated habitat types).

Bird Surveys

A combination of fixed-radius and unlimited-radius point count techniques were used to measure bird density and frequency of occurrence (See Figure 1 for a map of all points conducted in both 2004 and 2005). A survey plot (point count) consisted of a 50m radius circle (used to determine density) flagged at its center. Surveys were conducted along roadways, trails, and within forest patches. Points situated along roads and trails had the plot centers positioned at the road or trail edge.

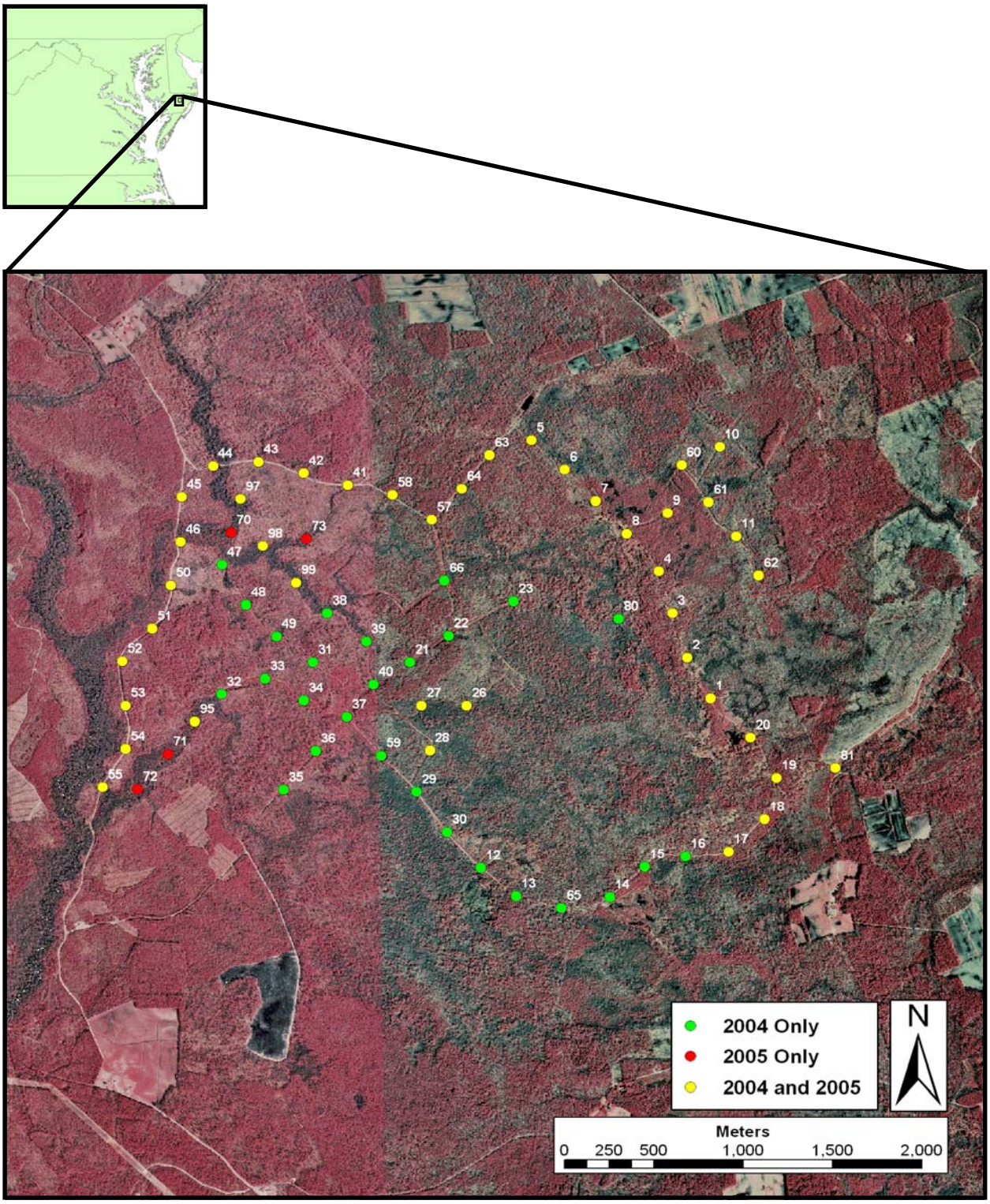

Figure 1. Map of study area within Bear Swamp of the Adkins Tract. Study points indicated by green dots (2004 only), red dots (2005 only), and yellow dots (both 2004 and 2005).

During the 2004 season, 63 points were initially established within the Bear Swamp study area. After completion of surveys on Round 1, it became evident that survey time constraints would allow an additional 6 points, resulting in a total of 69 points. Points were established along the gradient of habitat types available, with a minimum of 250m between each point. While an effort was made to associate the 50m fixed-radius point count to a single habitat type, space and habitat limitations resulted in some points occurring along the edge of two habitat types. During the 2005 season, the focus of the surveys shifted to the more mature mixed forest and forested wetland habitats. These surveys were mainly conducted on foot, and due to time constraints the total points surveyed were reduced from 69 in 2004 to 45 in 2005. Four points were added to the 2005 survey route from the forested wetland forest patches found within the Bear Swamp tract, making the total of points surveyed 73 in the two survey years.

Bird surveys were conducted by a single observer standing at the point center and counting all birds seen or heard within a 5-min period. Birds detected were stratified according to time period and location. The count period was subdivided into an initial 3-min period and a subsequent 2-min period. Birds were recorded as either within or beyond the 50m radius. Each point was surveyed 3 times between 10 June 2004 and 8 July 2004, and between 26 May 2005 and 25 June 2005 with a minimum of 7 days between survey rounds. The order in which points were surveyed was changed each round to reduce the impact of time-of-day effects. All surveys were conducted between 0.5 and 4.5 hours after sunrise on days with no precipitation and wind speeds of less than 24 km/h (15 mph).

A standard point count survey was conducted on 19 April 2005 in an effort to determine presence/absence of Black-throated Green Warblers (BTNW) within Bear Swamp (See Figure 2 for all points surveyed). A playback Nightjar survey was conducted on 25 June 2005 (See Figure 3 for points surveyed). A five minute broadcast CD was used for the Nightjar survey. The broadcast consisted of one minute of silence followed by 20 second intervals of the call of Chuck-will's-widow, Whip-poor-will, and then 20 seconds of silence. Playback techniques were only used to elicit a response and were not used if both species were detected within the one minute period of silence at the beginning of the survey (See Appendix II for a list of points surveyed during the 2004 and 2005 breeding bird surveys and the BTNW and Nightjar surveys).

Data Summary and Analysis

Bird survey data were summarized to determine overall bird abundance and species richness for individual habitat types as well as the entire study area (See Appendix III for a list of all birds detected, their migratory status, AOU code, and scientific name). Bird densities were calculated from the number of birds detected within the 50m radius point count (See Appendix IV for a list of all birds detected within 50m of point center by survey round). For each bird species, the survey visit with the greatest number of individuals

detected was used for analysis. Due to the mosaic nature of habitats within Bear Swamp, species richness values were calculated using the accumulated number of species detected within the 50m radius point count circle (See Figure 4 for species richness values within Bear Swamp).

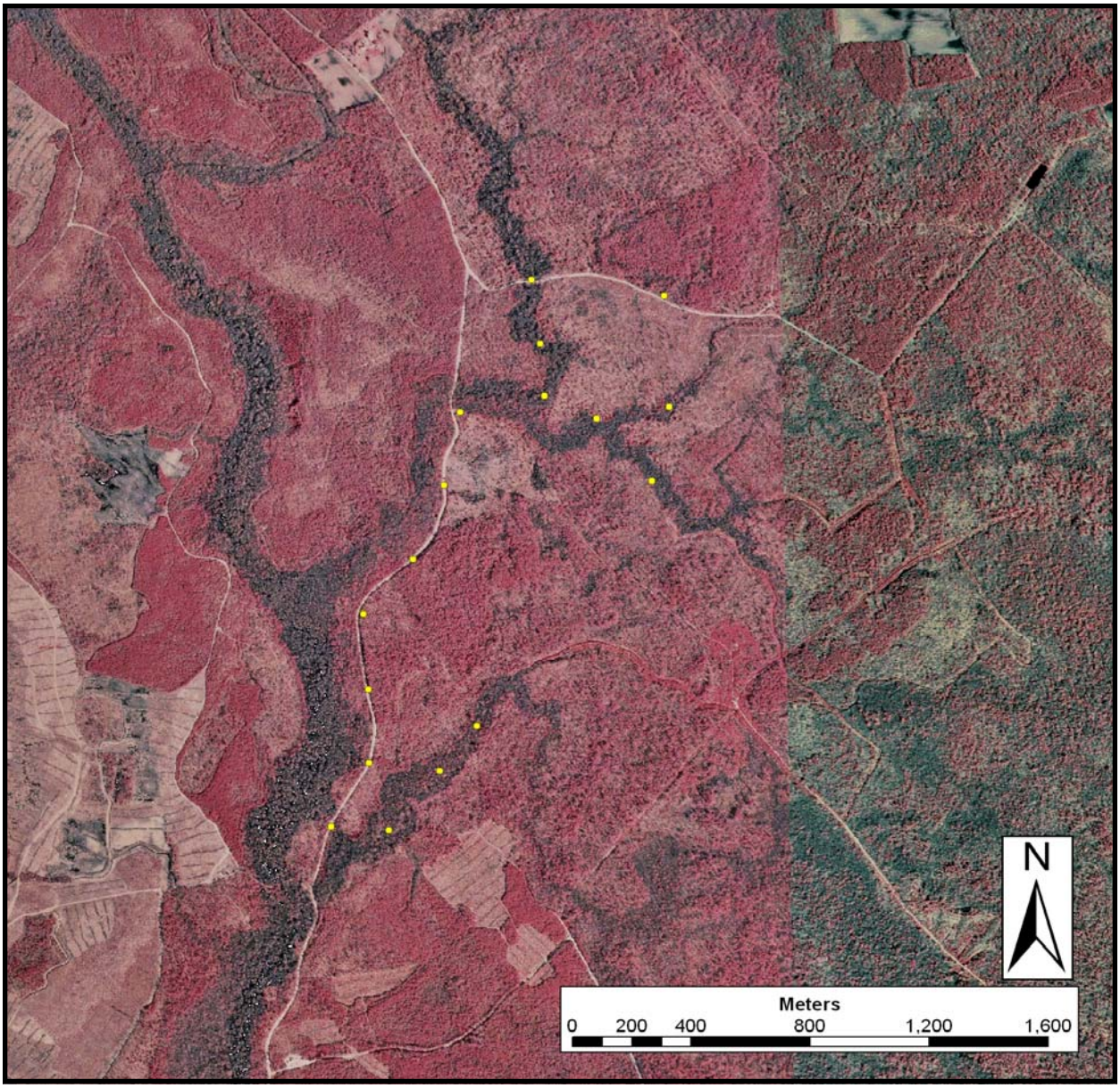

Figure 2. Map of points surveyed during the 19 April 2005 Black-throated Green Warbler Survey. Study points indicated by yellow dots.

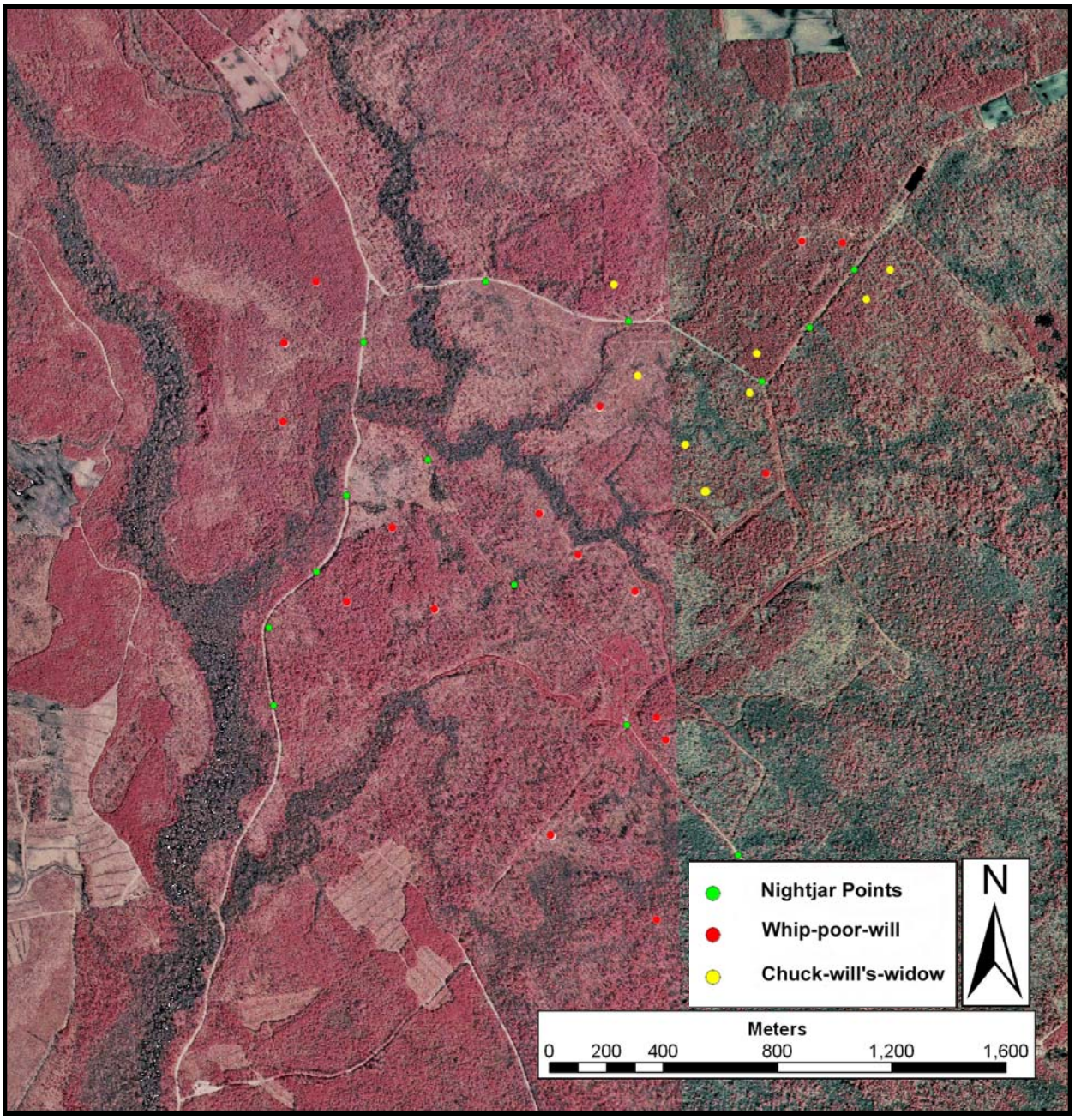

Figure 3. Map of points surveyed during the 25 June 2005 Nightjar survey. Study points indicated by green dots, and approximate locations of Nightjars detected indicated by red dots (Whip-poor-will) and by yellow dots (Chuck-will's-widow).

RESULTS

A total of 73 survey points, consisting of a combination of fixed-radius and unlimited-radius point count techniques, were used to measure bird density and frequency of occurrence within Bear Swamp in 2004 and 2005. Habitats sampled during the two years of surveys include moist hardwoods, young pine (5-20years of growth)early successional (0-5 years of growth), intermediate aged pine (20-40 years of growth), and mixed coniferous/ deciduous forest (See Figure 7). A total of 4,534 detections of 84 bird species were made during the 2004 and 2005 breeding bird surveys. These were comprised of 43 Neotropical migrant species, 19 temperate migrant species, and 22 non-migratory (resident) species.

Habitat Type	Total Number of Points in Habitat Type
Moist Hardwood	17
Young Pine	16
Early Successional	19.5
Mixed Forest	14.5
Intermediate Aged Pine	6

Figure 7. Total point counts conducted within each habitat type.

The overall number of species detected within each habitat type (only birds detected within 50 meters and associated with a single habitat type were included in analysis) ranged from 30 within the mature pine habitat to 53 within the young pine habitat (See Figure 2).

Bird densities, for all birds detected within 50 meters and associated with a single habitat type, were highest within the moist hardwood habitat (9.89 birds/ha ±2.65 SD) and lowest within the early successional habitat (7.46 birds/ha ±2.32) and within the intermediate aged pine habitat (7.79 birds/ha ±2.46 SD) (See Figure 5). Differences in densities for all birds detected among the different habitat types were not significant (one-way ANOVA $p>0.05$). Significantly greater densities of Neotropical migrants were found within the moist hardwood habitat (8.09 birds/ha ±2.45 SD, N=17) than in both the intermediate aged pine (4.39 birds/ha ±2.60 SD, N=3)(one-way ANOVA $p<.05$) and early successional habitats (4.62 birds/ha ±1.41 SD, N=15)(one-way ANOVA $p<.001$)(See Figure 6).

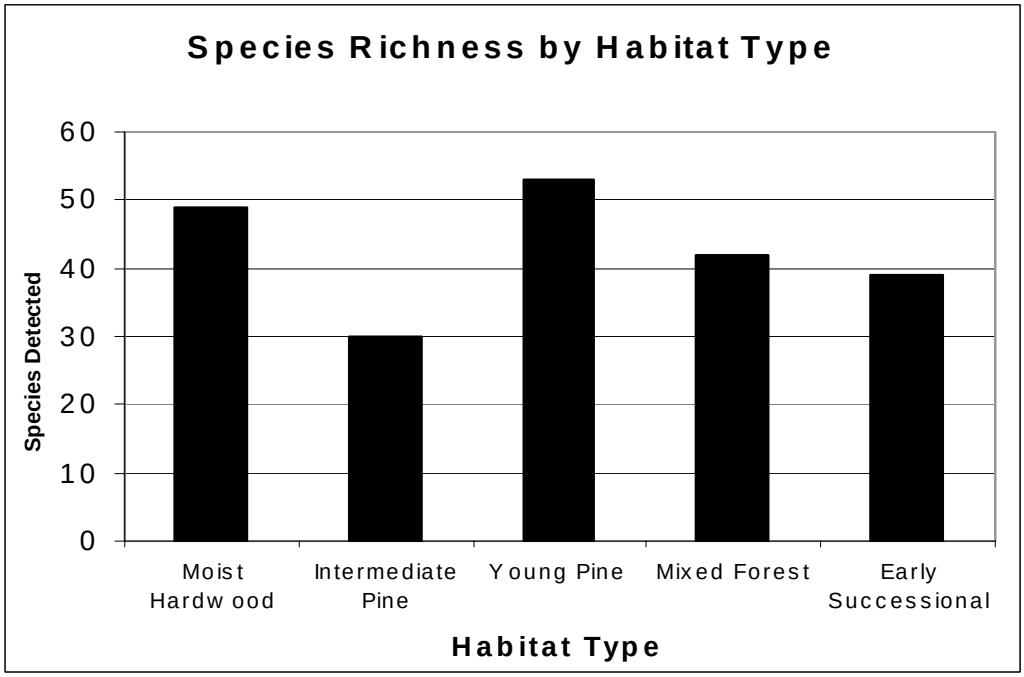

Figure 4. Species Richness values for habitat types within Bear Swamp. Values are based on the accumulated number of species associated with a single habitat type.

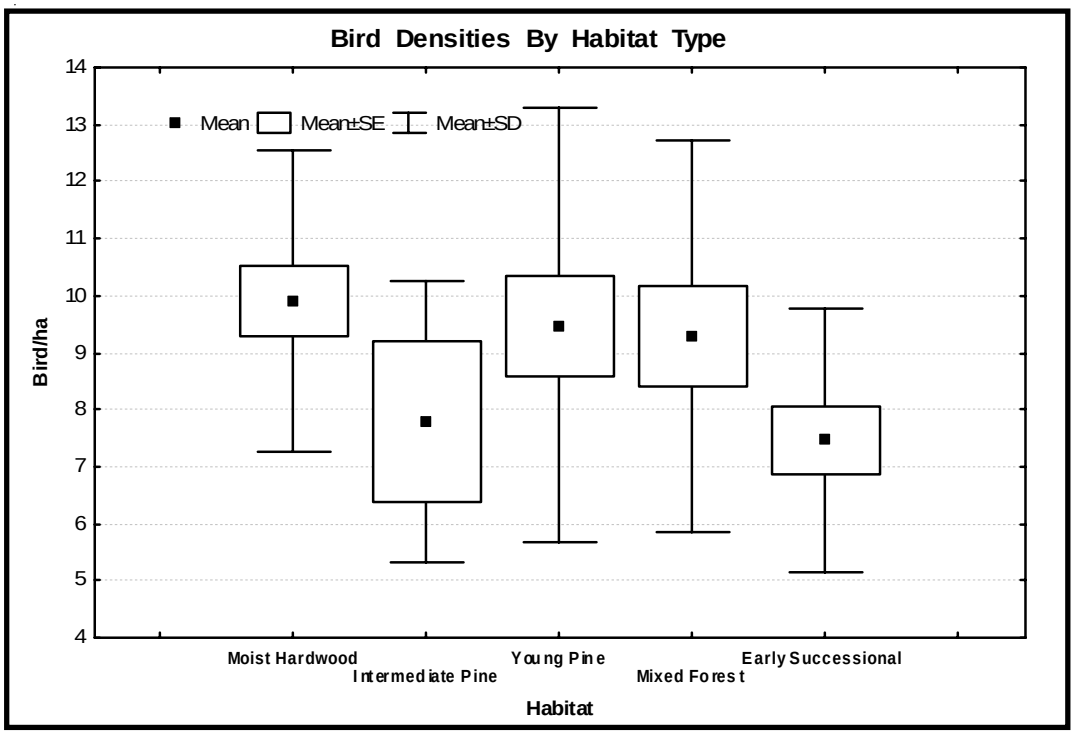

Figure 5. Species Density values for habitat types within Bear Swamp. Values are based on the mean densities for all birds detected within the 50m radius plots of points associated with a single habitat type.

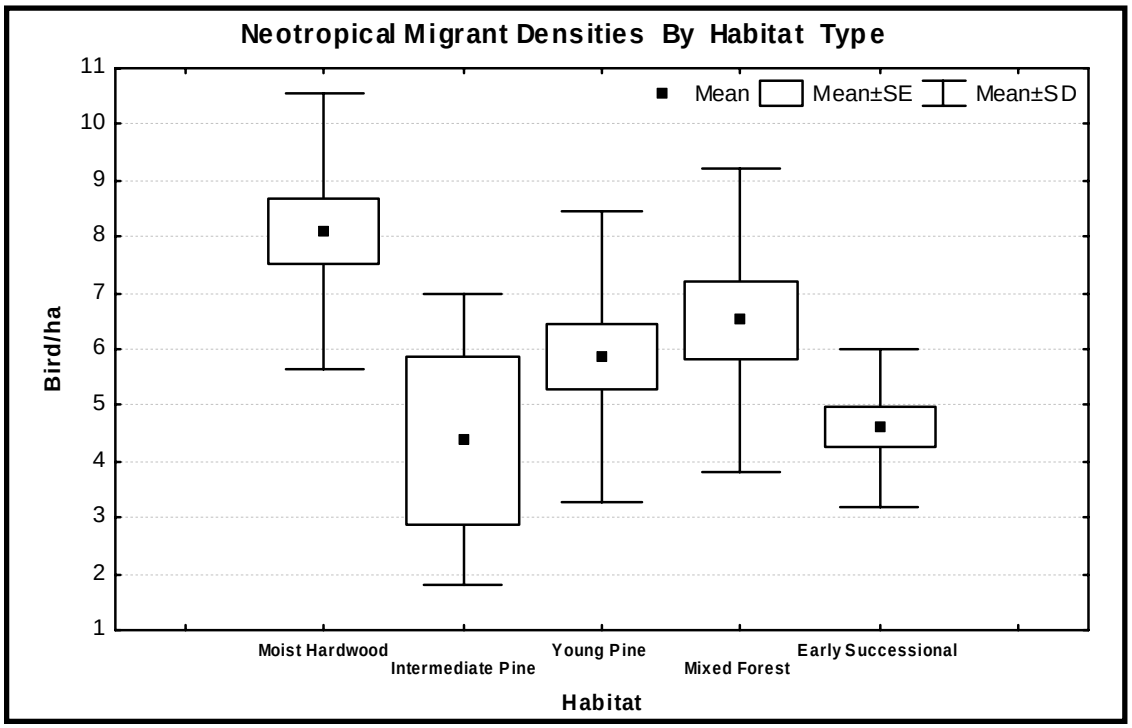

Figure 6. Neotropical Migratory Bird Density values for habitat types within Bear Swamp. Values based on Neotropical migrants detected within 50m of point center.

The Nightjar survey conducted on 25 June 2005 detected 17 Whip-poor-wills and 8 Chuck-will's-widows (See Figure 3 for a map of all Nightjars detected). The majority of the Nightjars were detected in either the early successional habitat or within the young pine stands. The majority of Chuck-will's-widows were observed to be calling from the young pine stands. Whip-poor-wills were found more frequently in the early successional habitat. No Black-throated Green Warblers were detected on the 19 April 2005 survey, although the forested wetland habitat looks suitable for the species.

DISCUSSION

The results of the two years of surveys provide an account of the abundance and distribution of bird species that occupy the varied habitat types of Bear Swamp. The majority of species observed during the two years of surveys are typical of those normally found within moist hardwood forests, pine plantations, and early successional habitats of the mid-Atlantic region.

The diversity and density of birds within the early successional habitats can be attributed to the fact than many species of Neotropical migrants will utilize the early successional habitat along with the temperate migrant and resident species that are tolerant of disturbed habitat (Johnson and Landers 1982). The most common birds detected within this habitat in Bear Swamp were Common Yellowthroat, Yellow-breasted Chat, Prairie Warbler, Gray Catbird, Eastern Towhee, and White-eyed Vireo. The Prairie Warbler, a Partners in Flight (PIF) "watch" species (Watts 1999), uses shrub-scrub and early successional habitat for breeding (Wilson and Watts 2000). The majority of Whip-poor-will detections (also a PIF "watch" species) were made in early successional habitat.

The habitats with the highest bird densities in Bear Swamp were moist hardwoods, young pine, and mixed forest. The most commonly detected migratory birds in young pine habitat were Prairie Warbler, Common Yellowthroat, Eastern Towhee, White-eyed Vireo, Yellow-breasted Chat, Pine Warbler, and Ovenbird. These species utilize the regenerating stands of pines until the habitat becomes dominated by the regenerating trees. Bird density is greatest in these stands for the first six years of growth and then tapers off until there is a significant decrease in these species after ten years of growth (Wilson and Watts 2000). In 2004, a Purple Martin was observed nesting in a large snag within young pine habitat. This may be the first record of a Purple Martin nesting in a natural cavity since the early 1970s (Robbins and Blom 1996). The cavities located in this tree were occupied by European Starlings in 2005.

The moist hardwood stands within Bear Swamp provide critical nesting habitat for numerous species of migratory birds. Many of the species that rely on this mature habitat for breeding have been found to nest at low densities within the Mid-Atlantic Coastal Plain (Robbins and Blom 1996). The most common Neotropical migratory birds found within these habitat types were Prothonotary Warbler, Ovenbird, Acadian Flycatcher, Red-eyed

Vireo, Wood Thrush, Blue-gray Gnatcatcher, and Worm-eating Warbler. Of these, Prothonotary Warbler, Acadian Flycatcher, Wood Thrush, and Worm-eating Warbler are designated as PIF "watch" species (Watts 1999). Habitat containing significant numbers of Prothonotary Warblers and Wood Thrushes has been identified as a conservation priority within the mid-Atlantic Coastal Plain (Watts 1999). The density of breeding Worm-eating Warblers is higher in the Bear Swamp area than anywhere else in the state (Robbins and Blom 1996). A singing Swainson's Warbler was detected during the first year of counts along Nassawango Creek. The bird was only heard on one occasion, and subsequent searches for the bird were fruitless.

The intermediate aged pine stands (20-40 years) located throughout Bear Swamp have lower densities of birds in general and specifically of Neotropical migrant birds. While both young (1-5 years) and old (>100 years) pine forests support large communities of Neotropical migratory birds, intermediate aged pine forests support very few species, migratory or resident (Freemark et al. 1995). Pine Warbler, Ovenbird, and Worm-eating Warblers were the most common birds detected within this habitat, but in much lower densities than the moist hardwood and mixed forest stands.

The mosaic of habitats within Bear Swamp creates an edge effect between these different habitat types. Birds nesting near the edge of two habitat types typically have higher rates of nest predation (Small and Hunter 1988) and brood parasitism (Brittingham and Temple 1983). Neotropical migratory bird nest predation was observed three times during the two year study. More study would be needed to determine if high rates of predation exist in Bear Swamp. Brown-headed Cowbirds were detected in high numbers in both the young pine and mixed forest habitat types. A Yellow-throated Warbler adult was observed feeding a juvenile cowbird within the mixed forest habitat type. There are believed to be only two other records of parasitism by cowbirds on these warblers (Robbins and Blom 1996). Cowbirds were almost non-existent within the moist hardwood, mature pine, and early successional habitat types. More study would be needed to determine whether or not cowbirds are having a negative impact on productivity of migratory birds within Bear Swamp.

ACKNOWLEDGMENTS

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Appendix I. Bird point count coordinates and habitat association.

Point Number	Latitude	Longitude	Habitat Type
1	38.28155709	-75.41428199	Medium Age Pine
2	38.28377034	-75.41573298	Mixed Forest
3	38.28612733	-75.41664066	Mixed Forest
4	38.28836345	-75.41745027	Medium Age Pine/Young Pine
5	38.29547592	-75.42546697	Mixed Forest/Young Pine
6	38.29387606	-75.42338591	Mixed Forest/Early Successional
7	38.29215584	-75.4214377	Medium Age Pine
8	38.29041325	-75.41947098	Mixed Forest/Young Pine
9	38.29146383	-75.41683671	Mixed Forest
10	38.29494442	-75.41342578	Mixed Forest
11	38.29016648	-75.41247192	Mixed Forest
12	38.27276414	-75.4292053	Medium Age Pine/Early Successional
13	38.27121751	-75.42698166	Young Pine/Early Successional
14	38.27106857	-75.4209917	Early Successional
15	38.27265769	-75.41872524	Early Successional
16	38.27318676	-75.41609743	Early Successional
17	38.27339522	-75.41331061	Young Pine
18	38.275083	-75.41097072	Young Pine
19	38.2772814	-75.41017964	Medium Age Pine/Young Pine
20	38.27945299	-75.4117934	Young Pine
21	38.28376531	-75.43349507	Mixed Forest/Early Successional
22	38.28511261	-75.43099584	Mixed Forest/Early Successional
23	38.28692193	-75.42680481	Mixed Forest/Young Pine
26	38.28139214	-75.42992564	Moist Hardwoods
27	38.28143111	-75.43280323	Moist Hardwoods
28	38.27903238	-75.4323258	Moist Hardwoods
29	38.27684722	-75.4332261	Moist Hardwoods/Young Pine
30	38.27467974	-75.4313193	Mixed Forest/Young Pine
31	38.28385307	-75.43970975	Early Successional
32	38.28222463	-75.44560835	Young Pine
33	38.2830028	-75.44278876	Young Pine
34	38.28181149	-75.44034476	Young Pine
35	38.2770892	-75.44172476	Early Successional
36	38.27909885	-75.43961579	Early Successional
37	38.28089107	-75.43761251	Medium Age Pine/Early Successional
38	38.28642732	-75.43873971	Early Successional
39	38.28488152	-75.43627845	Early Successional
40	38.28260676	-75.43584812	Young Pine/Early Successional
41	38.29323367	-75.43727028	Moist Hardwoods
42	38.29390624	-75.44008258	Early Successional/Medium Age Pine
43	38.29454376	-75.44297383	Medium Age Pine
44	38.2943685	-75.44587456	Moist Hardwoods

Appendix I (continued). Bird point count coordinates and habitat association.

Point Number	Latitude	Longitude	Habitat Type
45	38.29275238	-75.44791111	Young Pine/Early Successional
46	38.2903617	-75.44802317	Moist Hardwoods
47	38.28910827	-75.44540928	Moist Hardwoods/Early Successional
48	38.28695068	-75.44391009	Early Successional
49	38.28524144	-75.44201779	Early Successional
50	38.28806581	-75.44870412	Moist Hardwoods/Young Pine
51	38.285754	-75.44995076	Mixed Forest/Young Pine
52	38.2840606	-75.45190643	Mixed Forest
53	38.28168592	-75.45175052	Moist Hardwoods/Young Pine
54	38.27937352	-75.45178019	Mixed Forest/Young Pine
55	38.27738341	-75.45328743	Moist Hardwoods
57	38.29132268	-75.43194719	Early Successional/Young Pine
58	38.2926632	-75.43440853	Early Successional/Young Pine
59	38.27880934	-75.43545744	Young Pine
60	38.29402819	-75.41588612	Mixed Forest
61	38.29200271	-75.41420043	Mixed Forest
62	38.2880643	-75.41108781	Mixed Forest
63	38.29470629	-75.42816284	Early Successional
64	38.29295338	-75.42999169	Early Successional/Young Pine
65	38.27054822	-75.4241039	Early Successional
66	38.28808031	-75.43121461	Early Successional
70	38.29081394	-75.44477789	Moist Hardwoods
71	38.2790828	-75.44906699	Moist Hardwoods
72	38.27723833	-75.45106512	Moist Hardwoods
73	38.29042193	-75.43997856	Moist Hardwoods
80	38.2858861	-75.42009224	Mixed Forest
81	38.27776319	-75.40639646	Young Pine/Medium Age Pine
95	38.28048069	-75.44760665	Moist Hardwoods
97	38.29258483	-75.44414042	Moist Hardwoods
98	38.29006724	-75.44278038	Moist Hardwoods
99	38.28808601	-75.44069219	Moist Hardwoods

Appendix II. Overview of all points surveyed in both the 2004 and 2005 breeding bird surveys, as well as the Black-throated Green Warbler and Nightjar surveys.

Point Number	BBS 2004	BBS 2005	BTNW Survey	Nightjar Survey
1	x	x		
2	x	x		
3	x	x		
4	x	x		
5	x	x		
6	x	x		
7	x	x		
8	x	x		
9	x	x		
10	x	x		
11	x	x		
12	x			
13	x			
14	x			
15	x			
16	x			
17	x	x		
18	x	x		
19	x	x		
20	x	x		
21	x			
22	x			
23	x			
26	x	x		
27	x	x		
28	x	x		
29	x			x
30	x			
31	x			
32	x			
33	x			
34	x			
35	x			
36	x			
37	x			x
38	x			
39	x			
40	x			
41	x	x		x
42	x	x		
43	x	x		x
44	x	x	x	

Appendix II (Continued). Overview of all points surveyed in both the 2004 and 2005 breeding bird surveys, as well as the Black-throated Green Warbler and Nightjar surveys.

Point Number	BBS 2004	BBS 2005	BTNW Survey	Nightjar Survey
45	x			x
46	x	x	x	
47	x			x
48	x			
49	x			x
50	x	x	x	x
51	x	x	x	x
52	x	x	x	x
53	x	x	x	x
54	x	x	x	
55	x	x	x	
57	x	x		x
58	x	x		
59	x			
60	x	x		
61	x	x		
62	x	x		
63	x	x		x
64	x	x		x
65	x			
66	x			
70		x	x	
71		x		
72		x		
73		x		
80	x			
81	x	x		
95	x	x		
97	x	x	x	
98	x	x		
99	x	x		

Appendix III. List of all birds detected during the 2004 and 2005 breeding bird surveys with scientific name, AOU code, and migratory status.

Common name	AOU Code	Genus	Species	Migratory Status
Wood Duck	WODU	*Aix*	*sponsa*	Temperate Migrant
Wild Turkey	WITU	*Meleagris*	*gallopavo*	Resident
Northern Bobwhite	NOBO	*Colinus*	*virginianus*	Resident
Great Blue Heron	GBHE	*Ardea*	*herodias*	Resident
Great Egret	GREG	*Ardea*	*alba*	Resident
Green Heron	GRHE	*Butorides*	*virescens*	Temperate Migrant
Turkey Vulture	TUVU	*Cathartes*	*aura*	Temperate Migrant
Red-shouldered Hawk	RSHA	*Buteo*	*lineatus*	Resident
Red-tailed Hawk	RTHA	*Buteo*	*jamaicensis*	Resident
Killdeer	KILL	*Charadrius*	*vociferus*	Temperate Migrant
American Woodcock	AMWO	*Scolopax*	*minor*	Temperate Migrant
Laughing Gull	LAGU	*Larus*	*atricilla*	Neotropical Migrant
Ring-billed Gull	RBGU	*Larus*	*delawarensis*	Temperate Migrant
Mourning Dove	MODO	*Zenaida*	*macroura*	Resident
Black-billed Cuckoo	BBCU	*Coccyzus*	*erythropthalmus*	Neotropical Migrant
Yellow-billed Cuckoo	YBCU	*Coccyzus*	*americanus*	Neotropical Migrant
Barred Owl	BDOW	*Strix*	*varia*	Resident
Chuck-will's-widow	CWWI	*Caprimulgus*	*carolinensis*	Neotropical Migrant
Whip-poor-will	WPWI	*Caprimulgus*	*vociferus*	Neotropical Migrant
Chimney Swift	CHSW	*Chaetura*	*pelagica*	Neotropical Migrant
Ruby-throated Hummingbird	RTHU	*Archilochus*	*colubris*	Neotropical Migrant
Red-headed Woodpecker	RHWO	*Melanerpes*	*erythrocephalus*	Temperate Migrant
Red-bellied Woodpecker	RBWO	*Melanerpes*	*carolinus*	Resident
Downy Woodpecker	DOWO	*Picoides*	*pubescens*	Resident
Hairy Woodpecker	HAWO	*Picoides*	*villosus*	Resident
Yellow-shafted Flicker	YSFL	*Colaptes*	*auratus*	Temperate Migrant
Pileated Woodpecker	PIWO	*Dryocopus*	*pileatus*	Resident
Eastern Wood-Pewee	EAWP	*Contopus*	*virens*	Neotropical Migrant
Acadian Flycatcher	ACFL	*Empidonax*	*virescens*	Neotropical Migrant
Willow Flycatcher	WIFL	*Empidonax*	*traillii*	Neotropical Migrant
Eastern Phoebe	EAPH	*Sayornis*	*phoebe*	Temperate Migrant
Great Crested Flycatcher	GCFL	*Myiarchus*	*crinitus*	Neotropical Migrant
Eastern Kingbird	EAKI	*Tyrannus*	*tyrannus*	Neotropical Migrant
White-eyed Vireo	WEVI	*Vireo*	*griseus*	Neotropical Migrant
Yellow-throated Vireo	YTVI	*Vireo*	*flavifrons*	Neotropical Migrant
Red-eyed Vireo	REVI	*Vireo*	*olivaceus*	Neotropical Migrant
Blue Jay	BLJA	*Cyanocitta*	*cristata*	Temperate Migrant
American Crow	AMCR	*Corvus*	*brachyrhynchos*	Resident
Fish Crow	FICR	*Corvus*	*ossifragus*	Temperate Migrant
Purple Martin	PUMA	*Progne*	*subis*	Neotropical Migrant
Tree Swallow	TRES	*Tachycineta*	*bicolor*	Neotropical Migrant
Barn Swallow	BARS	*Hirundo*	*rustica*	Neotropical Migrant

Appendix III (Continued). List of all birds detected during the 2004 and 2005 breeding bird surveys with scientific name, AOU code, and migratory status.

Common name	AOU Code	Genus	Species	Migratory Status
Carolina Chickadee	CACH	*Poecile*	*carolinensis*	Resident
Tufted Titmouse	TUTI	*Baeolophus*	*bicolor*	Resident
White-breasted Nuthatch	WBNU	*Sitta*	*carolinensis*	Temperate Migrant
Brown-headed Nuthatch	BHNU	*Sitta*	*pusilla*	Resident
Carolina Wren	CARW	*Thryothorus*	*ludovicianus*	Resident
House Wren	HOWR	*Troglodytes*	*aedon*	Temperate Migrant
Blue-gray Gnatcatcher	BGGN	*Polioptila*	*caerulea*	Neotropical Migrant
Wood Thrush	WOTH	*Hylocichla*	*mustelina*	Neotropical Migrant
Gray Catbird	GRCA	*Dumetella*	*carolinensis*	Neotropical Migrant
Brown Thrasher	BRTH	*Toxostoma*	*rufum*	Temperate Migrant
European Starling	EUST	*Sturnus*	*vulgaris*	Resident
Northern Parula	NOPA	*Parula*	*americana*	Neotropical Migrant
Yellow Warbler	YWAR	*Dendroica*	*petechia*	Neotropical Migrant
Yellow-throated Warbler	YTWA	*Dendroica*	*dominica*	Neotropical Migrant
Pine Warbler	PIWA	*Dendroica*	*pinus*	Temperate Migrant
Prairie Warbler	PRAW	*Dendroica*	*discolor*	Neotropical Migrant
Blackpoll Warbler	BLPW	*Dendroica*	*striata*	Neotropical Migrant
Black-and-White Warbler	BAWW	*Mniotilta*	*varia*	Neotropical Migrant
American Redstart	AMRE	*Setophaga*	*ruticilla*	Neotropical Migrant
Prothonotary Warbler	PROW	*Protonotaria*	*citrea*	Neotropical Migrant
Worm-eating Warbler	WEWA	*Helmitheros*	*vermivorum*	Neotropical Migrant
Swainson's Warbler	SWWA	*Limnothlypis*	*swainsonii*	Neotropical Migrant
Ovenbird	OVEN	*Seiurus*	*aurocapilla*	Neotropical Migrant
Louisiana Waterthrush	LOWA	*Seiurus*	*motacilla*	Neotropical Migrant
Kentucky Warbler	KEWA	*Oporornis*	*formosus*	Neotropical Migrant
Common Yellowthroat	COYE	*Geothlypis*	*trichas*	Neotropical Migrant
Hooded Warbler	HOWA	*Wilsonia*	*citrina*	Neotropical Migrant
Yellow-breasted Chat	YBCH	*Icteria*	*virens*	Neotropical Migrant
Summer Tanager	SUTA	*Piranga*	*rubra*	Neotropical Migrant
Scarlet Tanager	SCTA	*Piranga*	*olivacea*	Neotropical Migrant
Eastern Towhee	EATO	*Pipilo*	*erythrophthalmus*	Temperate Migrant
Chipping Sparrow	CHSP	*Spizella*	*passerina*	Temperate Migrant
Field Sparrow	FISP	*Spizella*	*pusilla*	Temperate Migrant
Song Sparrow	SOSP	*Melospiza*	*melodia*	Temperate Migrant
Northern Cardinal	NOCA	*Cardinalis*	*cardinalis*	Resident
Rose-breasted Grosbeak	RBGR	*Pheucticus*	*ludovicianus*	Neotropical Migrant
Blue Grosbeak	BLGR	*Passerina*	*caerulea*	Neotropical Migrant
Indigo Bunting	INBU	*Passerina*	*cyanea*	Neotropical Migrant
Common Grackle	COGR	*Quiscalus*	*quiscula*	Resident
Brown-headed Cowbird	BHCO	*Molothrus*	*ater*	Resident
Orchard Oriole	OROR	*Icterus*	*spurius*	Neotropical Migrant
American Goldfinch	AMGO	*Carduelis*	*tristis*	Temperate Migrant

Appendix IV. Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
WITU	23	0	1	0	1
WITU	46	1	0	0	1
WITU	50	1	0	0	1
WITU	64	1	0	0	1
WITU Total		3	1	0	4
NOBO	31	0	0	3	3
NOBO Total		0	0	3	3
GBHE	18	0	1	0	1
GBHE	44	0	0	1	1
GBHE Total		0	1	1	2
GREG	44	0	0	1	1
GREG Total		0	0	1	1
GRHE	45	0	2	0	2
GRHE Total		0	2	0	2
TUVU	8	1	0	0	1
TUVU	44	1	0	0	1
TUVU Total		2	0	0	2
RSHA	19	0	1	1	2
RSHA	52	0	0	1	1
RSHA	54	0	0	1	1
RSHA	81	1	0	0	1
RSHA Total		1	1	3	5
RTHA	19	0	0	1	1
RTHA	31	0	0	1	1
RTHA Total		0	0	2	2
KILL	13	0	1	0	1
KILL Total		0	1	0	1
AMWO	98	0	1	0	1
AMWO Total		0	1	0	1
LAGU	46	0	1	0	1
LAGU Total		0	1	0	1
RBGU	18	1	0	0	1
RBGU Total		1	0	0	1
MODO	5	0	1	0	1
MODO	42	0	1	0	1
MODO	48	0	0	1	1
MODO	57	2	0	0	2
MODO	95	1	0	0	1
MODO Total		3	2	1	6
BBCU	52	1	0	0	1
BBCU Total		1	0	0	1
YBCU	2	0	1	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
YBCU	5	1	0	0	1
YBCU	20	1	0	2	3
YBCU	31	0	0	1	1
YBCU	35	1	0	0	1
YBCU	37	1	0	0	1
YBCU	42	0	1	0	1
YBCU	44	1	1	0	2
YBCU	50	2	0	0	2
YBCU	52	1	0	0	1
YBCU	55	2	0	0	2
YBCU	70	1	0	0	1
YBCU	73	1	0	0	1
YBCU	99	1	0	1	2
YBCU Total		13	3	4	20
CHSW	22	0	1	0	1
CHSW	29	0	1	0	1
CHSW Total		0	2	0	2
RTHU	13	1	0	0	1
RTHU	27	2	0	0	2
RTHU	29	1	0	0	1
RTHU	30	0	0	1	1
RTHU	40	1	0	0	1
RTHU	41	1	0	0	1
RTHU	42	1	0	0	1
RTHU	43	1	0	0	1
RTHU	47	0	0	1	1
RTHU	58	1	0	0	1
RTHU	81	0	1	0	1
RTHU	99	1	0	1	2
RTHU Total		10	1	3	14
RHWO	57	0	1	0	1
RHWO	64	2	2	0	4
RHWO Total		2	3	0	5
RBWO	7	1	0	0	1
RBWO	10	1	0	0	1
RBWO	27	1	0	0	1
RBWO	28	1	0	0	1
RBWO	42	0	1	1	2
RBWO	46	1	0	1	2
RBWO	48	0	0	1	1
RBWO	52	0	1	0	1
RBWO	53	0	0	1	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
RBWO	54	0	0	1	1
RBWO	57	0	0	1	1
RBWO	66	0	0	1	1
RBWO	72	0	0	1	1
RBWO Total		5	2	8	15
DOWO	2	0	1	0	1
DOWO	4	1	0	1	2
DOWO	21	0	0	1	1
DOWO	34	0	0	1	1
DOWO	40	2	0	1	3
DOWO	43	0	1	0	1
DOWO	50	0	0	1	1
DOWO	51	0	2	0	2
DOWO	52	0	1	0	1
DOWO	53	0	0	1	1
DOWO	55	0	1	0	1
DOWO	61	0	0	1	1
DOWO	70	1	0	0	1
DOWO	97	0	2	0	2
DOWO Total		4	8	7	19
HAWO	6	0	1	0	1
HAWO	11	1	0	0	1
HAWO	30	0	1	0	1
HAWO	43	0	3	0	3
HAWO	54	0	0	1	1
HAWO	60	0	1	0	1
HAWO Total		1	6	1	8
NOFL	14	0	1	0	1
NOFL	22	0	0	1	1
NOFL	35	2	0	0	2
NOFL	43	0	1	0	1
NOFL	44	0	1	0	1
NOFL	50	0	0	1	1
NOFL	55	0	2	0	2
NOFL	64	0	1	0	1
NOFL Total		2	6	2	10
PIWO	4	1	0	0	1
PIWO	27	1	0	0	1
PIWO	42	1	1	0	2
PIWO	46	1	0	0	1
PIWO	50	1	0	2	3
PIWO	51	1	0	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
PIWO	52	0	0	1	1
PIWO	54	0	0	1	1
PIWO	61	1	0	1	2
PIWO	97	1	0	0	1
PIWO Total		8	1	5	14
EAWP	1	0	1	0	1
EAWP	3	0	0	1	1
EAWP	20	1	0	1	2
EAWP	26	1	0	1	2
EAWP	27	1	0	0	1
EAWP	34	1	0	0	1
EAWP	47	0	0	1	1
EAWP	48	0	0	1	1
EAWP	49	0	1	0	1
EAWP	50	0	0	1	1
EAWP	52	3	1	0	4
EAWP	53	1	2	2	5
EAWP	54	0	0	2	2
EAWP	55	0	0	1	1
EAWP	58	0	1	0	1
EAWP	63	0	0	1	1
EAWP	66	0	0	1	1
EAWP	70	1	0	0	1
EAWP	81	1	0	0	1
EAWP	98	0	0	1	1
EAWP Total		10	6	14	30
ACFL	1	1	0	0	1
ACFL	4	0	1	1	2
ACFL	5	1	1	1	3
ACFL	7	1	1	0	2
ACFL	9	0	1	1	2
ACFL	10	1	1	2	4
ACFL	19	1	0	1	2
ACFL	20	2	0	1	3
ACFL	26	1	1	2	4
ACFL	27	3	0	1	4
ACFL	40	2	0	0	2
ACFL	41	0	1	0	1
ACFL	42	0	2	1	3
ACFL	43	0	1	0	1
ACFL	44	1	2	0	3
ACFL	46	2	2	2	6

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
ACFL	50	0	1	3	4
ACFL	51	0	0	1	1
ACFL	52	0	0	2	2
ACFL	53	0	0	2	2
ACFL	54	2	0	1	3
ACFL	55	2	0	0	2
ACFL	58	0	2	0	2
ACFL	61	0	3	3	6
ACFL	62	1	1	1	3
ACFL	70	1	2	1	4
ACFL	95	0	1	1	2
ACFL	98	1	2	1	4
ACFL	99	1	0	3	4
ACFL Total		24	26	32	82
GCFL	2	1	0	0	1
GCFL	4	0	1	0	1
GCFL	5	2	0	0	2
GCFL	8	1	0	0	1
GCFL	9	0	0	1	1
GCFL	10	0	0	1	1
GCFL	12	0	2	0	2
GCFL	13	0	1	0	1
GCFL	20	0	4	0	4
GCFL	28	1	0	2	3
GCFL	29	0	1	0	1
GCFL	41	2	0	1	3
GCFL	42	0	1	0	1
GCFL	43	0	1	0	1
GCFL	46	3	0	0	3
GCFL	50	2	0	1	3
GCFL	51	1	0	0	1
GCFL	53	3	0	0	3
GCFL	54	1	1	0	2
GCFL	57	1	0	1	2
GCFL	58	1	0	0	1
GCFL	59	2	0	0	2
GCFL	60	1	0	0	1
GCFL	62	0	1	0	1
GCFL	63	1	0	1	2
GCFL	64	1	0	0	1
GCFL	71	1	0	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
GCFL	99	1	0	0	1
GCFL Total		26	13	8	47
EAKI	18	0	0	1	1
EAKI	34	0	1	0	1
EAKI	36	1	2	0	3
EAKI Total		1	3	1	5
WEVI	1	0	1	2	3
WEVI	2	1	0	0	1
WEVI	3	2	0	1	3
WEVI	4	1	0	0	1
WEVI	5	1	1	1	3
WEVI	6	1	1	1	3
WEVI	7	1	2	2	5
WEVI	9	0	1	0	1
WEVI	14	1	0	0	1
WEVI	15	1	0	0	1
WEVI	16	0	2	0	2
WEVI	18	1	2	0	3
WEVI	19	0	1	1	2
WEVI	21	1	1	1	3
WEVI	22	0	1	1	2
WEVI	30	1	2	0	3
WEVI	32	1	2	2	5
WEVI	33	0	1	1	2
WEVI	34	1	0	0	1
WEVI	37	0	1	1	2
WEVI	38	1	0	0	1
WEVI	39	1	1	1	3
WEVI	40	2	1	0	3
WEVI	41	0	1	2	3
WEVI	42	0	1	2	3
WEVI	43	3	1	1	5
WEVI	44	0	1	0	1
WEVI	45	0	1	2	3
WEVI	46	0	1	0	1
WEVI	47	0	2	0	2
WEVI	48	0	0	1	1
WEVI	50	1	0	1	2
WEVI	51	0	0	4	4
WEVI	52	0	0	1	1
WEVI	53	0	1	0	1
WEVI	55	1	0	2	3

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
WEVI	57	1	0	1	2
WEVI	58	1	2	0	3
WEVI	61	1	0	0	1
WEVI	63	1	1	1	3
WEVI	64	1	1	0	2
WEVI	65	0	1	0	1
WEVI	66	1	0	1	2
WEVI	71	0	1	0	1
WEVI	72	1	0	0	1
WEVI	81	0	0	1	1
WEVI	95	0	2	0	2
WEVI	97	0	1	2	3
WEVI	98	0	0	2	2
WEVI	99	1	1	1	3
WEVI Total		31	40	40	111
YTVI	5	0	0	1	1
YTVI	9	0	1	1	2
YTVI	11	1	0	0	1
YTVI	26	1	0	3	4
YTVI	27	2	2	1	5
YTVI	43	0	1	0	1
YTVI	44	0	1	0	1
YTVI	46	0	3	2	5
YTVI	54	0	0	1	1
YTVI	55	1	1	2	4
YTVI	61	0	0	1	1
YTVI	71	0	1	1	2
YTVI Total		5	10	13	28
REVI	6	0	0	2	2
REVI	7	0	0	1	1
REVI	8	1	0	1	2
REVI	9	0	0	1	1
REVI	10	1	0	1	2
REVI	11	2	2	3	7
REVI	26	2	0	1	3
REVI	27	0	0	2	2
REVI	28	0	0	1	1
REVI	29	1	0	0	1
REVI	43	0	0	1	1
REVI	44	1	1	1	3
REVI	46	0	2	1	3
REVI	48	0	0	1	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
REVI	50	0	1	2	3
REVI	52	1	1	0	2
REVI	54	1	0	0	1
REVI	55	0	0	1	1
REVI	60	0	0	1	1
REVI	70	0	2	0	2
REVI	71	2	0	1	3
REVI	73	1	0	1	2
REVI	95	1	0	2	3
REVI	97	0	0	1	1
REVI	98	1	0	1	2
REVI	99	0	1	0	1
REVI Total		15	10	27	52
BLJA	46	0	0	1	1
BLJA	50	0	0	1	1
BLJA Total		0	0	2	2
AMCR	42	0	0	1	1
AMCR	46	0	0	1	1
AMCR	57	1	0	0	1
AMCR Total		1	0	2	3
FICR	12	0	1	0	1
FICR Total		0	1	0	1
PUMA	61	2	0	0	2
PUMA	64	0	0	3	3
PUMA Total		2	0	3	5
TRES	12	0	1	0	1
TRES Total		0	1	0	1
BARS	15	0	1	0	1
BARS Total		0	1	0	1
CACH	1	0	0	1	1
CACH	2	1	0	0	1
CACH	4	0	1	0	1
CACH	6	0	1	0	1
CACH	7	0	1	0	1
CACH	8	1	0	3	4
CACH	11	0	0	1	1
CACH	12	0	1	0	1
CACH	19	0	1	0	1
CACH	21	0	0	1	1
CACH	22	3	1	0	4
CACH	26	1	2	0	3
CACH	27	0	0	1	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
CACH	28	1	3	0	4
CACH	29	1	1	0	2
CACH	32	4	0	0	4
CACH	40	2	0	1	3
CACH	41	1	0	1	2
CACH	42	0	3	3	6
CACH	43	0	2	0	2
CACH	44	1	1	1	3
CACH	47	3	0	0	3
CACH	50	0	0	3	3
CACH	51	0	0	2	2
CACH	52	0	0	1	1
CACH	53	0	4	0	4
CACH	54	1	5	0	6
CACH	55	0	2	2	4
CACH	57	1	0	0	1
CACH	58	0	0	1	1
CACH	61	1	0	0	1
CACH	62	1	0	0	1
CACH	70	0	1	0	1
CACH	71	1	0	0	1
CACH	72	1	0	0	1
CACH	99	0	1	0	1
CACH Total		25	31	22	78
TUTI	1	1	0	0	1
TUTI	2	0	1	0	1
TUTI	5	0	2	0	2
TUTI	7	0	3	0	3
TUTI	9	0	2	0	2
TUTI	10	0	2	2	4
TUTI	11	2	0	0	2
TUTI	17	1	0	0	1
TUTI	18	1	0	0	1
TUTI	20	0	0	1	1
TUTI	26	1	1	0	2
TUTI	27	0	0	1	1
TUTI	28	0	0	1	1
TUTI	29	1	0	0	1
TUTI	30	0	1	0	1
TUTI	41	0	0	1	1
TUTI	47	0	0	1	1
TUTI	50	0	1	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
TUTI	51	0	0	1	1
TUTI	52	0	0	1	1
TUTI	53	0	1	2	3
TUTI	55	0	2	0	2
TUTI	58	1	0	1	2
TUTI	60	1	2	2	5
TUTI	61	0	1	0	1
TUTI	63	1	0	0	1
TUTI	71	3	0	1	4
TUTI	73	1	0	0	1
TUTI	95	1	2	0	3
TUTI	97	0	1	0	1
TUTI	99	0	0	1	1
TUTI Total		15	22	16	53
WBNU	10	1	0	2	3
WBNU	55	0	0	2	2
WBNU Total		1	0	4	5
BHNU	1	0	0	1	1
BHNU	2	0	2	1	3
BHNU Total		0	2	2	4
CARW	3	0	0	1	1
CARW	4	1	0	0	1
CARW	5	0	1	0	1
CARW	6	1	0	0	1
CARW	7	1	0	1	2
CARW	15	1	0	0	1
CARW	20	1	0	0	1
CARW	27	1	0	0	1
CARW	28	0	1	0	1
CARW	32	1	0	1	2
CARW	37	0	1	0	1
CARW	43	0	1	0	1
CARW	44	1	0	1	2
CARW	46	0	0	1	1
CARW	51	0	0	2	2
CARW	54	0	0	2	2
CARW	55	1	0	0	1
CARW	57	1	0	1	2
CARW	63	0	1	0	1
CARW	64	0	0	1	1
CARW	70	1	0	1	2
CARW	80	1	0	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
CARW	81	1	0	0	1
CARW	99	0	1	0	1
CARW Total		13	6	12	31
HOWR	45	0	1	0	1
HOWR Total		0	1	0	1
BGGN	2	1	0	1	2
BGGN	4	0	1	1	2
BGGN	7	1	2	1	4
BGGN	9	0	1	0	1
BGGN	12	0	2	0	2
BGGN	14	0	0	1	1
BGGN	18	0	0	2	2
BGGN	19	0	1	0	1
BGGN	21	2	0	0	2
BGGN	23	0	2	0	2
BGGN	26	1	0	0	1
BGGN	35	3	0	0	3
BGGN	38	0	1	0	1
BGGN	40	0	2	1	3
BGGN	41	1	1	0	2
BGGN	42	2	2	1	5
BGGN	43	0	2	0	2
BGGN	44	2	0	1	3
BGGN	46	1	4	1	6
BGGN	47	0	2	1	3
BGGN	48	0	2	0	2
BGGN	50	0	1	0	1
BGGN	51	2	0	2	4
BGGN	52	3	0	0	3
BGGN	53	1	0	0	1
BGGN	54	2	2	0	4
BGGN	55	1	2	1	4
BGGN	58	0	1	2	3
BGGN	60	0	2	0	2
BGGN	61	0	0	1	1
BGGN	62	1	4	3	8
BGGN	63	1	0	2	3
BGGN	70	1	2	2	5
BGGN	71	1	0	0	1
BGGN	72	1	1	2	4
BGGN	73	1	2	0	3
BGGN	98	3	0	1	4

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
BGGN	99	0	3	2	5
BGGN Total		32	45	29	106
WOTH	3	0	0	1	1
WOTH	10	0	0	1	1
WOTH	20	0	0	1	1
WOTH	22	0	0	1	1
WOTH	23	0	0	1	1
WOTH	26	1	0	1	2
WOTH	27	1	0	1	2
WOTH	28	0	0	2	2
WOTH	42	1	0	1	2
WOTH	44	0	0	1	1
WOTH	45	0	0	1	1
WOTH	46	0	0	2	2
WOTH	52	0	1	2	3
WOTH	53	0	0	1	1
WOTH	54	1	0	0	1
WOTH	60	1	0	1	2
WOTH	61	2	0	0	2
WOTH	62	3	0	1	4
WOTH	71	1	0	0	1
WOTH	72	1	0	0	1
WOTH	97	1	0	0	1
WOTH	98	1	1	1	3
WOTH Total		14	2	20	36
GRCA	9	0	0	1	1
GRCA	13	0	1	0	1
GRCA	14	1	0	0	1
GRCA	15	2	0	2	4
GRCA	16	3	1	0	4
GRCA	17	4	1	1	6
GRCA	18	1	1	0	2
GRCA	22	1	0	0	1
GRCA	31	1	0	0	1
GRCA	33	0	0	1	1
GRCA	34	0	2	2	4
GRCA	36	3	0	1	4
GRCA	37	0	2	1	3
GRCA	38	3	0	0	3
GRCA	39	2	2	2	6
GRCA	40	1	0	0	1
GRCA	45	0	1	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
GRCA	50	1	0	0	1
GRCA	51	1	1	0	2
GRCA	53	3	1	0	4
GRCA	57	0	2	0	2
GRCA	58	0	0	3	3
GRCA	59	0	1	0	1
GRCA	63	1	2	2	5
GRCA	65	0	1	0	1
GRCA Total		28	19	16	63
BRTH	16	1	0	0	1
BRTH	36	0	1	0	1
BRTH	57	0	1	2	3
BRTH	58	0	0	1	1
BRTH	64	0	1	0	1
BRTH	65	0	0	1	1
BRTH	66	0	1	0	1
BRTH Total		1	4	4	9
EUST	34	0	1	0	1
EUST	64	6	0	6	12
EUST Total		6	1	6	13
NOPA	11	1	1	0	2
NOPA	41	1	0	1	2
NOPA	44	1	0	3	4
NOPA	46	1	2	0	3
NOPA	51	0	1	1	2
NOPA	54	1	0	0	1
NOPA	55	0	0	1	1
NOPA	70	2	0	1	3
NOPA	97	1	1	0	2
NOPA Total		8	5	7	20
YTWA	2	1	1	1	3
YTWA	3	0	1	5	6
YTWA	4	0	1	1	2
YTWA	6	0	0	1	1
YTWA	7	0	0	1	1
YTWA	8	0	0	1	1
YTWA	11	0	1	1	2
YTWA	27	2	0	1	3
YTWA	28	2	1	1	4
YTWA	30	1	1	0	2
YTWA	41	0	1	0	1
YTWA	42	0	0	1	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
YTWA	43	1	1	3	5
YTWA	46	1	0	2	3
YTWA	48	0	0	2	2
YTWA	49	0	0	1	1
YTWA	50	0	2	0	2
YTWA	51	0	1	0	1
YTWA	52	0	6	0	6
YTWA	53	1	0	3	4
YTWA	54	0	1	0	1
YTWA	55	1	2	1	4
YTWA	59	1	0	0	1
YTWA	72	1	0	1	2
YTWA	80	1	0	0	1
YTWA	81	1	0	1	2
YTWA	98	0	0	1	1
YTWA Total		14	20	29	63
PIWA	1	2	3	2	7
PIWA	2	1	1	3	5
PIWA	3	1	1	1	3
PIWA	4	2	0	2	4
PIWA	5	1	2	1	4
PIWA	6	0	1	0	1
PIWA	7	0	3	1	4
PIWA	8	1	0	1	2
PIWA	9	0	0	1	1
PIWA	10	4	1	1	6
PIWA	11	1	2	1	4
PIWA	19	2	0	1	3
PIWA	20	0	3	1	4
PIWA	27	1	0	0	1
PIWA	30	2	0	0	2
PIWA	31	0	0	1	1
PIWA	32	0	0	2	2
PIWA	33	0	0	1	1
PIWA	39	0	1	0	1
PIWA	41	0	1	2	3
PIWA	42	0	1	1	2
PIWA	43	1	1	0	2
PIWA	47	1	0	1	2
PIWA	49	1	0	0	1
PIWA	50	0	1	0	1
PIWA	51	3	2	1	6

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
PIWA	52	2	2	2	6
PIWA	53	1	3	2	6
PIWA	54	2	0	1	3
PIWA	58	1	1	0	2
PIWA	61	0	0	3	3
PIWA	62	0	1	1	2
PIWA	63	1	2	2	5
PIWA	64	0	1	0	1
PIWA	65	0	0	1	1
PIWA	66	1	0	0	1
PIWA	73	1	0	0	1
PIWA	81	2	1	0	3
PIWA	97	0	0	2	2
PIWA	98	2	1	0	3
PIWA	99	0	1	0	1
PIWA Total		37	37	39	113
PRAW	4	1	0	1	2
PRAW	5	2	1	0	3
PRAW	6	2	1	1	4
PRAW	7	0	0	1	1
PRAW	8	1	1	0	2
PRAW	12	1	0	0	1
PRAW	14	1	1	0	2
PRAW	15	1	0	0	1
PRAW	16	0	1	0	1
PRAW	17	3	2	0	5
PRAW	18	4	1	2	7
PRAW	19	1	2	1	4
PRAW	20	0	2	2	4
PRAW	23	1	0	1	2
PRAW	30	1	2	0	3
PRAW	31	2	0	0	2
PRAW	33	1	1	0	2
PRAW	34	0	1	0	1
PRAW	35	2	1	0	3
PRAW	36	1	0	0	1
PRAW	41	0	0	1	1
PRAW	46	0	0	1	1
PRAW	50	0	1	1	2
PRAW	51	0	0	1	1
PRAW	57	2	2	1	5
PRAW	58	0	1	1	2

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
PRAW	59	0	1	0	1
PRAW	63	1	3	1	5
PRAW	64	1	1	1	3
PRAW	65	1	1	1	3
PRAW	73	1	0	0	1
PRAW	95	2	0	0	2
PRAW	97	1	0	0	1
PRAW Total		34	27	18	79
BLPW	44	1	0	0	1
BLPW Total		1	0	0	1
BAWW	2	0	0	1	1
BAWW	3	0	0	1	1
BAWW	6	2	1	2	5
BAWW	7	0	1	0	1
BAWW	10	0	0	2	2
BAWW	14	1	0	0	1
BAWW	18	1	0	0	1
BAWW	19	0	1	0	1
BAWW	27	1	0	0	1
BAWW	43	0	1	0	1
BAWW	44	1	2	0	3
BAWW	46	1	0	0	1
BAWW	50	0	1	0	1
BAWW	51	0	2	0	2
BAWW	52	0	2	0	2
BAWW	53	0	0	2	2
BAWW	54	1	1	0	2
BAWW	61	0	1	1	2
BAWW	62	0	1	1	2
BAWW	70	0	0	1	1
BAWW	72	2	0	1	3
BAWW	81	0	0	1	1
BAWW	98	2	0	0	2
BAWW	99	0	1	0	1
BAWW Total		12	15	13	40
AMRE	27	1	0	0	1
AMRE	30	1	1	0	2
AMRE	41	0	0	2	2
AMRE	44	0	1	0	1
AMRE	46	2	2	2	6
AMRE	55	1	2	2	5
AMRE	60	0	1	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
AMRE	62	0	1	0	1
AMRE	72	1	1	1	3
AMRE Total		6	9	7	22
PROW	6	1	0	2	3
PROW	7	2	0	0	2
PROW	10	0	0	1	1
PROW	11	2	0	0	2
PROW	20	0	0	3	3
PROW	26	3	4	3	10
PROW	27	1	1	4	6
PROW	28	1	1	2	4
PROW	38	0	1	0	1
PROW	43	0	2	0	2
PROW	44	2	1	3	6
PROW	46	3	5	3	11
PROW	50	0	4	1	5
PROW	51	2	2	1	5
PROW	52	2	2	0	4
PROW	53	0	1	2	3
PROW	54	2	2	1	5
PROW	55	0	4	2	6
PROW	60	1	0	2	3
PROW	61	1	0	1	2
PROW	62	1	0	0	1
PROW	70	1	2	0	3
PROW	72	0	1	2	3
PROW	73	0	0	1	1
PROW	81	1	0	1	2
PROW	95	0	1	1	2
PROW	97	0	0	1	1
PROW	98	1	2	2	5
PROW	99	3	1	1	5
PROW Total		30	37	40	107
WEWA	1	0	0	1	1
WEWA	2	4	2	2	8
WEWA	3	2	2	4	8
WEWA	4	2	0	1	3
WEWA	5	1	0	2	3
WEWA	6	0	1	0	1
WEWA	7	3	1	1	5
WEWA	8	0	0	1	1
WEWA	9	2	0	2	4

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
WEWA	10	1	2	2	5
WEWA	11	2	1	4	7
WEWA	19	1	1	0	2
WEWA	20	0	0	2	2
WEWA	26	2	0	0	2
WEWA	28	5	4	4	13
WEWA	37	1	0	0	1
WEWA	40	0	1	0	1
WEWA	41	0	0	1	1
WEWA	43	1	1	1	3
WEWA	50	1	2	0	3
WEWA	51	0	1	0	1
WEWA	52	3	1	0	4
WEWA	53	1	3	0	4
WEWA	54	0	0	1	1
WEWA	55	1	0	0	1
WEWA	57	1	0	1	2
WEWA	60	1	2	3	6
WEWA	61	2	2	2	6
WEWA	62	2	2	4	8
WEWA	72	0	1	0	1
WEWA	73	1	1	1	3
WEWA	80	0	0	1	1
WEWA	81	0	1	0	1
WEWA	95	0	1	2	3
WEWA	97	1	0	1	2
WEWA Total		41	33	44	118
OVEN	1	2	1	1	4
OVEN	3	2	0	2	4
OVEN	4	1	1	2	4
OVEN	5	0	1	2	3
OVEN	7	2	1	1	4
OVEN	8	1	0	3	4
OVEN	9	1	3	2	6
OVEN	10	2	1	1	4
OVEN	11	0	2	1	3
OVEN	19	1	0	1	2
OVEN	20	0	0	1	1
OVEN	21	1	0	0	1
OVEN	23	1	0	0	1
OVEN	26	1	2	0	3
OVEN	27	2	1	3	6

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
OVEN	28	1	0	1	2
OVEN	36	1	0	0	1
OVEN	40	1	0	1	2
OVEN	41	4	2	3	9
OVEN	42	5	2	3	10
OVEN	43	3	1	1	5
OVEN	46	1	0	0	1
OVEN	47	1	1	2	4
OVEN	50	1	1	1	3
OVEN	51	0	1	4	5
OVEN	52	1	0	1	2
OVEN	53	3	1	0	4
OVEN	54	2	2	0	4
OVEN	55	1	0	4	5
OVEN	58	1	1	1	3
OVEN	60	0	1	2	3
OVEN	61	1	1	3	5
OVEN	62	1	0	1	2
OVEN	63	1	0	1	2
OVEN	64	1	0	1	2
OVEN	71	1	1	1	3
OVEN	72	1	0	0	1
OVEN	73	1	1	0	2
OVEN	80	1	1	0	2
OVEN	81	1	1	1	3
OVEN	95	0	0	1	1
OVEN	97	0	2	1	3
OVEN	98	2	1	2	5
OVEN	99	1	2	0	3
OVEN Total		55	36	56	147
LOWA	42	0	1	0	1
LOWA	43	0	2	0	2
LOWA	44	0	1	1	2
LOWA	46	0	2	3	5
LOWA	53	1	0	0	1
LOWA	54	0	1	0	1
LOWA	55	1	0	0	1
LOWA	60	0	1	0	1
LOWA	61	1	0	1	2
LOWA	70	2	1	1	4
LOWA	72	0	1	1	2
LOWA	98	1	0	1	2

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
LOWA	99	0	0	1	1
LOWA Total		6	10	9	25
KEWA	27	1	1	1	3
KEWA	43	0	1	0	1
KEWA	54	0	1	0	1
KEWA	72	0	0	1	1
KEWA	97	1	0	1	2
KEWA Total		2	3	3	8
COYE	2	0	1	1	2
COYE	5	1	0	1	2
COYE	6	2	0	1	3
COYE	7	0	1	0	1
COYE	8	0	1	0	1
COYE	12	0	1	1	2
COYE	13	1	1	0	2
COYE	15	1	1	2	4
COYE	16	1	0	1	2
COYE	17	0	1	0	1
COYE	18	2	0	0	2
COYE	19	1	1	3	5
COYE	22	0	0	1	1
COYE	23	1	1	0	2
COYE	29	0	2	1	3
COYE	31	1	0	2	3
COYE	32	0	1	0	1
COYE	33	1	2	0	3
COYE	34	1	2	1	4
COYE	35	0	2	2	4
COYE	37	0	1	0	1
COYE	38	3	1	0	4
COYE	39	0	0	1	1
COYE	40	1	0	0	1
COYE	41	1	0	0	1
COYE	42	0	3	4	7
COYE	43	0	0	1	1
COYE	44	0	2	0	2
COYE	45	1	0	2	3
COYE	46	0	1	1	2
COYE	47	0	0	1	1
COYE	48	1	1	3	5
COYE	49	0	0	2	2
COYE	50	0	1	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
COYE	51	1	0	0	1
COYE	53	1	0	1	2
COYE	54	2	0	0	2
COYE	57	0	2	1	3
COYE	58	1	2	2	5
COYE	59	0	1	0	1
COYE	63	0	3	2	5
COYE	64	2	3	3	8
COYE	65	0	1	0	1
COYE	66	0	1	2	3
COYE	71	0	0	1	1
COYE	72	2	0	0	2
COYE	80	1	0	0	1
COYE	81	0	0	1	1
COYE	95	1	2	0	3
COYE	99	1	0	0	1
COYE Total		32	43	45	120
HOWA	2	0	0	1	1
HOWA	3	0	0	1	1
HOWA	6	0	0	1	1
HOWA	10	1	0	1	2
HOWA	11	1	2	2	5
HOWA	28	1	0	0	1
HOWA	43	1	0	0	1
HOWA	60	0	0	1	1
HOWA	62	0	0	1	1
HOWA	71	0	0	2	2
HOWA	98	1	1	1	3
HOWA	99	1	0	3	4
HOWA Total		6	3	14	23
YBCH	4	0	0	1	1
YBCH	14	0	0	1	1
YBCH	15	0	1	0	1
YBCH	16	0	2	0	2
YBCH	17	2	0	0	2
YBCH	18	1	0	1	2
YBCH	19	0	1	2	3
YBCH	22	1	0	0	1
YBCH	31	0	0	5	5
YBCH	35	0	1	0	1
YBCH	37	1	0	0	1
YBCH	38	1	0	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
YBCH	40	0	1	0	1
YBCH	45	0	0	1	1
YBCH	48	0	0	2	2
YBCH	49	0	1	2	3
YBCH	57	1	1	2	4
YBCH	58	1	0	3	4
YBCH	59	0	0	1	1
YBCH	63	1	0	0	1
YBCH	64	2	2	2	6
YBCH Total		11	10	23	44
SUTA	9	0	0	2	2
SUTA	19	0	1	0	1
SUTA	27	0	1	0	1
SUTA	41	0	2	0	2
SUTA	42	0	0	4	4
SUTA	43	2	0	0	2
SUTA	50	2	1	0	3
SUTA	51	0	1	1	2
SUTA	53	1	0	0	1
SUTA	54	0	0	1	1
SUTA	55	0	0	1	1
SUTA	61	1	0	0	1
SUTA	64	1	0	2	3
SUTA	71	0	1	0	1
SUTA Total		7	7	11	25
SCTA	11	0	1	0	1
SCTA	55	0	1	0	1
SCTA Total		0	2	0	2
EATO	1	2	0	1	3
EATO	2	0	0	2	2
EATO	3	1	0	1	2
EATO	5	1	0	0	1
EATO	6	0	2	1	3
EATO	7	0	2	0	2
EATO	8	0	0	1	1
EATO	12	1	1	0	2
EATO	14	1	2	1	4
EATO	15	1	2	0	3
EATO	17	2	3	1	6
EATO	18	2	2	1	5
EATO	19	1	1	2	4
EATO	20	1	1	1	3

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
EATO	21	0	1	0	1
EATO	23	1	0	0	1
EATO	29	0	2	0	2
EATO	30	0	1	0	1
EATO	31	0	2	3	5
EATO	34	0	1	0	1
EATO	36	0	1	1	2
EATO	37	2	0	1	3
EATO	39	1	0	0	1
EATO	40	0	1	0	1
EATO	47	0	1	0	1
EATO	48	0	0	3	3
EATO	49	2	0	2	4
EATO	50	1	0	2	3
EATO	51	0	2	1	3
EATO	52	0	1	1	2
EATO	53	1	0	0	1
EATO	57	2	0	1	3
EATO	58	2	1	1	4
EATO	63	2	2	2	6
EATO	64	0	0	1	1
EATO	65	2	2	1	5
EATO	81	0	1	0	1
EATO	97	1	2	0	3
EATO Total		30	37	32	99
CHSP	13	1	0	0	1
CHSP	31	0	0	1	1
CHSP	36	0	1	0	1
CHSP	37	1	0	0	1
CHSP	45	1	0	0	1
CHSP	57	0	0	1	1
CHSP	63	0	0	1	1
CHSP Total		3	1	3	7
FISP	13	0	1	0	1
FISP	15	0	1	0	1
FISP	17	2	0	0	2
FISP	31	0	1	2	3
FISP	37	0	2	0	2
FISP	45	0	0	1	1
FISP	49	0	0	1	1
FISP	59	0	0	1	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
FISP	65	0	2	0	2
FISP Total		2	7	5	14
NOCA	1	0	1	3	4
NOCA	4	0	1	1	2
NOCA	5	1	0	0	1
NOCA	6	0	0	1	1
NOCA	9	0	1	0	1
NOCA	10	0	0	1	1
NOCA	13	0	0	1	1
NOCA	19	0	2	0	2
NOCA	20	1	0	1	2
NOCA	22	2	0	0	2
NOCA	29	1	0	0	1
NOCA	42	0	3	0	3
NOCA	43	0	0	1	1
NOCA	44	0	0	1	1
NOCA	45	0	0	1	1
NOCA	47	1	0	1	2
NOCA	48	0	0	2	2
NOCA	60	1	0	0	1
NOCA	61	0	1	0	1
NOCA	62	1	0	0	1
NOCA	63	2	0	0	2
NOCA	73	1	0	1	2
NOCA	81	1	0	1	2
NOCA	97	1	0	0	1
NOCA Total		13	9	16	38
RBGR	53	1	0	0	1
RBGR Total		1	0	0	1
BLGR	5	0	0	1	1
BLGR	12	0	0	1	1
BLGR	13	1	0	0	1
BLGR	17	1	1	0	2
BLGR	33	0	0	1	1
BLGR	38	0	0	1	1
BLGR	45	0	0	1	1
BLGR	57	0	0	2	2
BLGR	64	1	0	1	2
BLGR	66	0	0	2	2
BLGR Total		3	1	10	14
INBU	12	1	0	0	1
INBU	13	0	1	0	1

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
INBU	15	0	1	0	1
INBU	16	0	1	0	1
INBU	17	1	0	1	2
INBU	34	0	0	1	1
INBU	37	0	2	0	2
INBU	38	1	2	1	4
INBU	45	1	2	0	3
INBU	46	0	1	0	1
INBU	52	0	0	1	1
INBU	54	0	1	0	1
INBU	57	0	1	0	1
INBU	58	0	0	1	1
INBU	59	1	0	0	1
INBU	66	0	1	0	1
INBU Total		5	13	5	23
COGR	3	0	1	0	1
COGR	6	1	0	0	1
COGR	17	1	1	1	3
COGR	33	0	1	0	1
COGR	34	0	1	0	1
COGR	36	1	11	0	12
COGR	37	2	0	0	2
COGR	38	0	1	0	1
COGR	53	0	2	0	2
COGR	57	0	2	1	3
COGR	58	0	2	0	2
COGR	63	1	0	0	1
COGR	99	1	0	0	1
COGR Total		7	22	2	31
BHCO	1	2	0	2	4
BHCO	2	0	2	0	2
BHCO	5	2	0	3	5
BHCO	7	0	0	1	1
BHCO	8	2	1	0	3
BHCO	9	3	0	2	5
BHCO	10	0	1	0	1
BHCO	15	0	1	0	1
BHCO	16	0	3	0	3
BHCO	17	0	4	0	4
BHCO	18	0	2	0	2
BHCO	20	3	1	1	5
BHCO	23	0	3	2	5

Appendix IV (Continued). Bird species detected within 50 meters of point center during the 2004 and 2005 breeding seasons by point and round (Round 1 was conducted between 26 May and 12 June, Round 2 between 14 June and 21 June, an Round 3 between 22 June and 8 July).

AOU Code	Point	Round 1	Round 2	Round 3	Totals
BHCO	26	0	1	1	2
BHCO	34	0	2	0	2
BHCO	36	0	2	0	2
BHCO	41	1	2	0	3
BHCO	42	0	0	3	3
BHCO	43	1	0	0	1
BHCO	45	0	3	0	3
BHCO	50	3	2	0	5
BHCO	51	1	5	3	9
BHCO	52	1	4	3	8
BHCO	53	3	3	4	10
BHCO	54	3	0	0	3
BHCO	60	0	0	1	1
BHCO	61	1	1	2	4
BHCO	64	1	0	3	4
BHCO	80	0	1	3	4
BHCO	81	2	1	1	4
BHCO Total		29	45	35	109
ORORO	30	0	3	0	3
ORORO	31	0	0	1	1
ORORO	33	1	2	2	5
ORORO	34	0	3	2	5
ORORO	38	0	0	2	2
ORORO	43	1	1	1	3
ORORO	45	0	0	1	1
ORORO	49	0	2	0	2
ORORO Total		2	11	9	22
AMGO	2	0	1	0	1
AMGO	13	5	0	0	5
AMGO	17	0	2	1	3
AMGO	19	0	1	0	1
AMGO	29	1	0	0	1
AMGO	30	2	0	0	2
AMGO	41	0	0	1	1
AMGO	42	0	1	0	1
AMGO	52	2	0	0	2
AMGO	57	0	3	1	4
AMGO	58	0	1	0	1
AMGO	59	0	0	1	1
AMGO	60	0	1	0	1
AMGO	62	0	1	0	1
AMGO	64	0	3	0	3
AMGO Total		10	14	4	28
Grand Total		713	743	793	2249