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## Frequency and Distribution of Birds within Forested Wetlands – Breeding and Wintering Seasons

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# **Frequency and Distribution of Birds within Forested Wetlands – Breeding and Wintering Seasons**

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## **Project Partners:**

**Virginia Institute for Marine Science Center for Coastal Resource Management**

**The Center for Conservation Biology**



**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.**

# Table of Contents

## Contents

EXECUTIVE SUMMARY _____	1
BACKGROUND _____	1
OBJECTIVES _____	2
METHODS _____	2
Breeding and Wintering Surveys _____	2
RESULTS _____	3
Bird Surveys _____	3
DISCUSSION _____	5
ACKNOWLEDGMENTS _____	6
LITERATURE CITED _____	7
APPENDICES _____	11

## EXECUTIVE SUMMARY

The life histories of approximately 350 bird species bring them to the Virginia portion of the Mid-Atlantic Coastal Plain, with nearly 180 species breeding within this region. The Mid-Atlantic Coastal Plain is the northern limit for many “southern” species, and the southern range limit for many “northern” species (Watts 1999). Many species of high conservation concern occupy Coastal Plain forested wetlands and adjacent marsh habitats (Watts 1999, Virginia Dept. of Game and Inland Fisheries 2005, North American Bird Conservation Initiative 2016). Recent declines in songbird populations have led to an increase in management and conservation efforts (Robinson et al. 1987, Suarez et al. 1997, Hunter et al. 2001, Lanham et al 2002, Sauer et al. 2013).

The Center for Conservation Biology surveyed a total of 10 study sites three times during the summer of 2016 and the winter season of 2016-2017. These counts, consisting of area search and unlimited radius point count techniques, were used to measure frequency, occurrence, and species richness within select habitat patches in breeding and wintering habitats. . Habitats sampled during the two seasons include forested wetlands (from the headwaters of the wetland to the transition zone, characterized in general by mature hardwood forest), transition zone wetlands (from forested wetland edge to the edge of open marsh habitat, characterized by dense shrubby fringing habitat and an understory of freshwater marsh plants), and upland edge habitats along both headwater and transition wetlands (characterized by drier habitat dominated by pine and oak species). Aerial insectivores were recorded as utilizing the habitat that they were foraging over, while flyover species were simply recorded for presence/absence and not associated with habitat type.

A total of 1,036 detections of 72 bird species were made during the breeding and wintering surveys, comprised of 29 neotropical migrant species, 24 temperate migrant species, and 18 non-migratory (resident) species. During the breeding season, a total of 626 birds of 49 species were detected, comprised of 25 neotropical species, 15 resident species, and 9 temperate migrant species. During the winter season, a total of 410 birds of 45 species were detected, comprised of 23 resident species, 17 temperate migrants, and 4 neotropical migrants. Three rounds of playback surveys were used to target the presence or absence of clapper rails during the 2016 breeding season. No clapper rails were detected within the study sites. The species observed during both seasons are typical of those found within the forested wetland habitats of coastal Virginia in the Mid-Atlantic region in both breeding and wintering seasons.

## BACKGROUND

The life histories of approximately 350 bird species bring them to the Virginia portion of the Mid-Atlantic Coastal Plain, with nearly 180 species breeding within this region. The Mid-Atlantic Coastal Plain is the northern limit for many “southern” species, and the southern range limit for many “northern” species (Watts 1999). Many species of high conservation concern occupy Coastal Plain forested wetlands and adjacent marsh habitats (Watts 1999, Virginia Dept. of Game and Inland Fisheries 2005, North American Bird Conservation Initiative 2016). Recent declines in songbird populations have led to an increase in

management and conservation efforts (Robinson et al. 1987, Suarez et al. 1997, Hunter et al. 2001, Lanham et al 2002, Sauer et al. 2013).

## OBJECTIVES

The objectives of this project were to:

- 1) Characterize forested wetland bird communities within the study areas during the breeding and wintering seasons.
- 2) Determine if any habitat sensitive species occupy forested wetlands and their adjacent habitats during their breeding and wintering seasons.

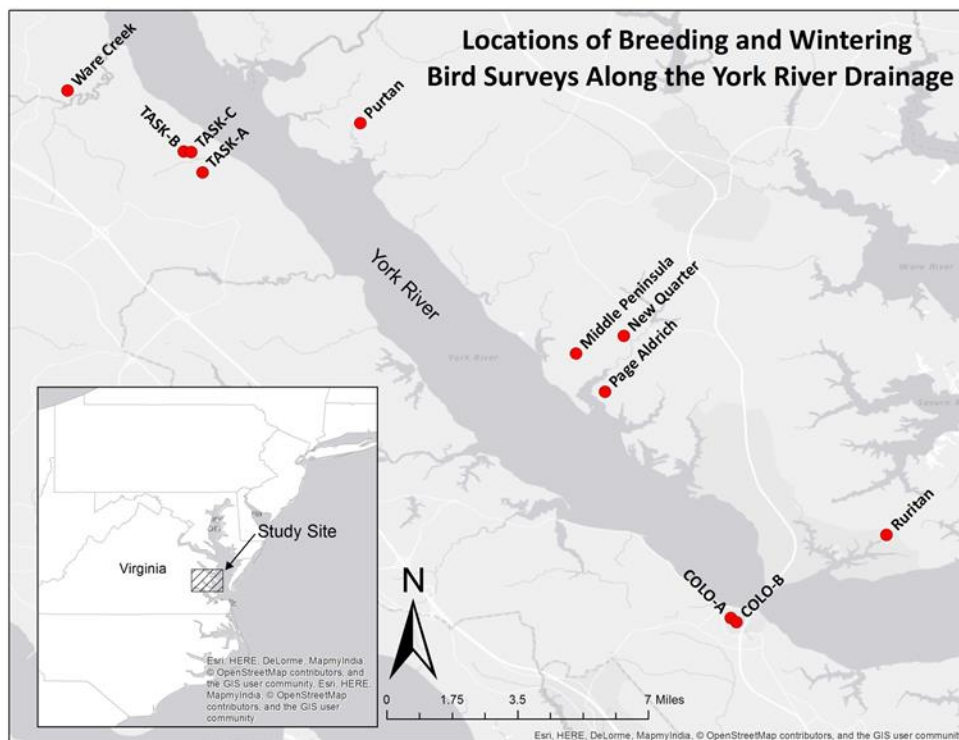
## METHODS

### Breeding and Wintering Bird Surveys

Bird surveys were conducted at ten study sites (see Figure 1 for map of study site locations) to estimate frequency, occurrence, and species richness within select habitat patches during the breeding season of 2016 and winter season of 2016-2017. Breeding bird surveys were conducted between 15 June and 10 July 2016, while winter bird surveys were conducted between 22 February and 18 March 2017. Each survey was repeated three times during each season. These survey boundary dates eliminate the possibility of detection for most transient migrants during both the breeding and wintering surveys. Surveys were conducted by using area search techniques, where the observer slowly walked through the habitat and recorded all species detected and the frequency of each species detected. The observer recorded the time the survey started, time the survey finished, species name, habitat type, total number detected, and whether the detection was visual or aural. Clapper rail playback surveys were conducted at the transition zone from freshwater to brackish marsh habitat. Methods for the clapper rail playback surveys followed Conway (2009).

Bird detections were stratified by habitat type and recorded as within focal habitat types, within adjacent upland edge habitat, or as flying over the habitat. The order in which points were surveyed was changed each round to reduce the impact of time-of-day effects. All breeding bird surveys were conducted between 0.5 and 4.5 hours after sunrise on days with no precipitation and wind speeds of less than 19km/h (12mph). Winter bird surveys were conducted during daylight hours on days with no precipitation and with wind speeds less than 19km/h (12mph). Habitats sampled during the two seasons of surveys include forested wetlands (from headwaters of the wetland to the transition zone, characterized in general by mature hardwood forest with a wide upland forest buffer), transition zone wetlands (from forested wetland edge to the edge of open marsh habitat, characterized by dense shrubby fringing habitat and an understory of freshwater marsh plants), and upland edge habitats along along both headwater and transition wetlands (characterized by drier habitat dominated by pine and oak

species). Aerial insectivores were recorded as utilizing the habitat that they were foraging over, while flyover species were simply recorded for presence/absence and not associated with habitat type.



**Figure 1.** Map of survey locations during breeding and wintering bird surveys within study sites on the Virginia Coastal Plain.

## RESULTS

### Bird Surveys

A total of 1,036 detections of 72 bird species were made during the breeding and wintering surveys. These were comprised of 29 neotropical migrant species, 24 temperate migrant species, and 18 non-migratory (resident) species. During the breeding season (15 June to 10 July), a total of 626 birds of 49 species (see Figure 2 for species richness by habitat type) were detected, comprised of 25 neotropical species, 15 resident species, and 9 temperate migrant species. During the winter season, a total of 410 birds of 45 species (see Figure 3 for species richness by habitat type) were detected, comprised of 23 resident species, 17 temperate migrants, and 4 neotropical migrants. A total of 14 species of concern were detected during the breeding season, comprised of 12 neotropical migrants, 1 temperate migrant, and 1 resident species (Table 1). A total of 5 species of concern were detected during the winter surveys, comprised of 3 resident and 2 temperate migrant species (Table 2). Three rounds of playback surveys were used to target clapper

rails during the 2016 breeding season, with no detections of rails within transitional or open marsh habitats.

**Table 1. Species of conservation concern (in alphabetic order), migratory status, total number detected, and habitat association during breeding surveys (15 June to 10 July 2016).**

COMMON NAME	Migratory Status	HEADWATER	TRANSITION	UPLAND EDGE	WATCH SPECIES LIST
Acadian Flycatcher	Neotropical Migrant	12	0	28	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Brown Thrasher	Temperate Migrant	0	0	6	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Carolina Chickadee	Resident	1	2	10	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Chimney Swift	Neotropical Migrant	3	0	0	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Eastern Wood-Pewee	Neotropical Migrant	0	1	14	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Great Crested Flycatcher	Neotropical Migrant	0	0	18	PIF <sup>1</sup> , NABCI <sup>2</sup>
Hooded Warbler	Neotropical Migrant	5	0	7	PIF <sup>1</sup> , NABCI <sup>2</sup>
Louisiana Waterthrush	Neotropical Migrant	20	5	0	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Prothonotary Warbler	Neotropical Migrant	4	6	2	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
White-eyed Vireo	Neotropical Migrant	0	15	4	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Wood Thrush	Neotropical Migrant	1	0	21	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Worm-eating Warbler	Neotropical Migrant	0	0	1	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Yellow-throated Vireo	Neotropical Migrant	3	0	25	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Yellow-throated Warbler	Neotropical Migrant	0	0	1	PIF <sup>1</sup> , NABCI <sup>2</sup>

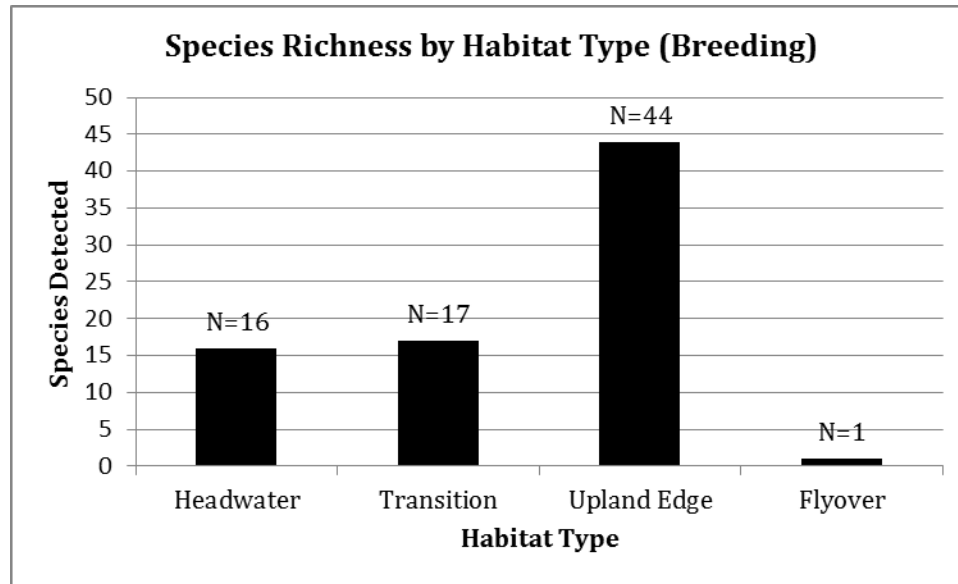
Watch list species from: <sup>1</sup>(Watts 1999) <sup>2</sup>(NABCI 2016) <sup>3</sup>(VDGIF 2005)

**Table 2. Species of conservation concern (in alphabetic order), migratory status, total number detected, and habitat association during winter surveys (22 February to 18 March 2017).**

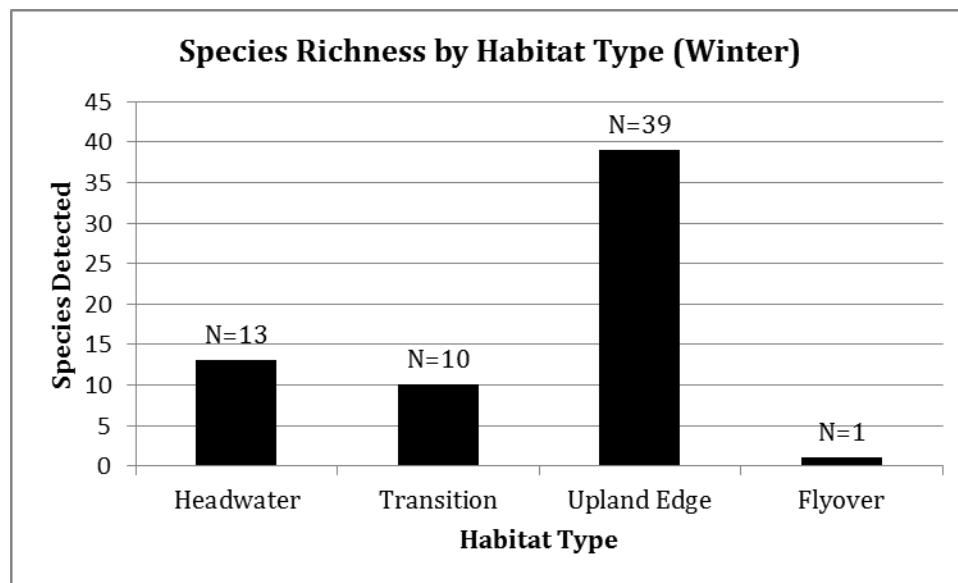
COMMON NAME	Migratory Status	HEADWATER	TRANSITION	UPLAND EDGE	WATCH SPECIES LIST
Bald Eagle	Resident	0	0	3	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Brown Thrasher	Temperate Migrant	0	0	2	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Brown-headed Nuthatch	Resident	0	0	1	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Carolina Chickadee	Resident	5	2	28	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>
Eastern Towhee	Temperate Migrant	0	0	2	PIF <sup>1</sup> , NABCI <sup>2</sup> ,VDGIF <sup>3</sup>

Watch list species from: <sup>1</sup>(Watts 1999) <sup>2</sup>(NABCI 2016) <sup>3</sup>(VDGIF 2005)

Habitats were variable, with the majority of study sites having mature forested wetland habitat (see Appendix X. for approximate survey area in each habitat type). Two survey sites (Ruritan and New Quarter) had early successional forested wetland habitat in the “headwater” portion of the survey area.



**Figure 2.** Species richness values for habitat types within study areas. Values are based on the accumulated number of species associated with a single habitat type during the breeding season surveys.



**Figure 3.** Species richness values for habitat types within study areas. Values are based on the accumulated number of species associated with a single habitat type during the breeding season surveys.

## DISCUSSION



Mature riparian forest habitats with wide buffer zones of forest are necessary to achieve high breeding density (Dickson et al. 1995, Robbins et al. 1989, Tassone 1981, Tappe et al. 1994), high reproductive success (Vance 2003), and increased foraging rates and nesting success of breeding passerines (Lyons 2005). We detected several species of high conservation concern within the forested wetland community including the Acadian flycatcher, Louisiana waterthrush, and prothonotary warbler (Watts 1999, Carter et al. 2000, Virginia Dept. of Game and Inland Fisheries 2005, North American Bird Conservation Initiative 2016). Though these species are of high conservation interest rangewide, they are common breeding species within the Virginia Coastal Plain (Petit 1999, Rottenborn and Brinkley 2007) and achieve their highest densities in or adjacent to forested wetland habitats (Robinson 1995, Petit 1999, Whitehead and Taylor 2002, Lyons 2005). The ecotones between the forested wetland/upland edge and transitional marsh/upland edge are of high value to migrant birds (Rodewald 2005, Terraube 2016).

In the Virginia Coastal Plain, fringes of freshwater/brackish marsh habitat with a shrub component (e.g. transitional marsh) are used by several species of the highest conservation concern, including the Henslow's sparrow, sedge wren, black rail, and Coastal Plain swamp sparrow; all of which are at critically low population numbers or extirpated from the state (Paxton 2007a, Watts et al. 2005, Watts 1992, Wilson et al. 2009a, Wilson et al. 2009b, Watts 2015, Wilson et al. 2015). We detected two species of high conservation concern that are likely using this habitat to nest (white-eyed vireo and prothonotary warbler) and one species that is likely foraging in the habitat but nesting in forested wetlands (Louisiana waterthrush). We detected swamp sparrows during the winter bird surveys, though the origin was likely from populations other than the Coastal Plain (Beadell 2003, Greenberg et al. 2007, Greenberg et al. 2010). The shrub-scrub breeding bird community also utilizes this fringing habitat, characterized by species of concern such as the aforementioned white-eyed vireo, yellow-breasted chat, prairie warbler, indigo bunting, and blue grosbeak during the breeding season (Paxton 2007a). The winter community in the freshwater/brackish marsh fringe is characterized by species such as the aforementioned swamp sparrow, yellow-rumped warbler, and marsh wren (Paxton 2007b).

Several species of marsh birds utilize the open marsh adjacent to the transitional zone, including clapper and king rails, least bittern, and Virginia rail. No detections of any of these marsh obligate species were made in the study sites. Many of these species are patch size-dependent (Watts 1992, Watts 1993), and suitable large, open marshes were not found adjacent to the study site wetlands. Marsh bird population declines within the Chesapeake Bay watershed (and along the Atlantic Coast) are attributed to habitat alteration, increased predation risk, exotic plant invasion, and sea-level rise (Watts 1999, Haramis and Colona 1999, Rice et al. 2000, Wilson et al. 2009a, Nuse 2015, Wilson and Watts 2014, Watts 2015, Correll et al. 2017).

One study site (Ruritan) was narrow in width (<20m) and lacked a mature forest component. Another study site (New Quarter) is in early succession compared to the remaining patches surveyed. The transitional bird component of those sites is comparable to the transitional habitat adjacent to the mature riparian sites, though the headwater forested wetland component was not.

## **ACKNOWLEDGMENTS**

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## APPENDICES

### Appendix I. Location code, habitat type, and total estimated search area of each location and habitat type.

Location Code	Habitat Type	Search Area (ha)
COLO-A	Headwater	0.44
	Transition	1.1
COLO-B	Headwater	0.22
	Transition	0.67
Middle Neck	Headwater	0.39
	Transition	1.18
New Quarter	Headwater	0.78
	Transition	0.53
Page Aldrich	Headwater	0.22
	Transition	0.24
Purtan	Headwater	1.32
	Transition	1.26
Ruritan	Headwater	0.05
	Transition	0.1
Taskinas-A	Headwater	0.8
	Transition	0.35
Taskinas-B	Headwater	0.79
	Transition	1.37
	Headwater	0.98

Location Code	Habitat Type	Search Area (ha)
Taskinas-C	Transition	1.46
Ware Creek	Headwater	0.17
	Transition	0.43

## Appendix II. Species frequency and habitat type during breeding season surveys (15 June to 10 July 2016).

COMMON NAME	HEADWATER	TRANSITION	UPLAND EDGE	FLYOVER
Wild Turkey	0	0	4	0
Mourning Dove	1	0	8	0
Yellow-billed Cuckoo	0	0	13	0
Chimney Swift	3	0	0	0
Ruby-throated Hummingbird	4	2	1	0
Green Heron	0	0	1	0
Red-shouldered Hawk	0	2	1	0
Red-bellied Woodpecker	0	0	1	0
Downy Woodpecker	0	0	7	0
Hairy Woodpecker	0	0	2	0
Pileated Woodpecker	0	0	1	0
Eastern Wood-Pewee	0	1	14	0
Acadian Flycatcher	12	0	28	0
Great Crested Flycatcher	0	0	18	0
White-eyed Vireo	0	15	4	0
Yellow-throated Vireo	3	0	25	0
Red-eyed Vireo	1	1	49	0
Blue Jay	1	0	5	0
American Crow	0	0	13	0
Barn Swallow	4	0	0	0
Carolina Chickadee	1	2	10	0
Tufted Titmouse	2	2	19	0
White-breasted Nuthatch	0	0	2	0
Carolina Wren	4	2	37	0
Blue-gray Gnatcatcher	0	0	5	0
Eastern Bluebird	0	0	2	0
Wood Thrush	1	0	21	0

COMMON NAME	HEADWATER	TRANSITION	UPLAND EDGE	FLYOVER
Brown Thrasher	0	0	6	0
Northern Mockingbird	0	0	1	0
American Goldfinch	0	0	1	9
Chipping Sparrow	0	0	2	0
Orchard Oriole	0	0	1	0
Red-winged Blackbird	0	4	0	0
Brown-headed Cowbird	0	0	3	0
Common Grackle	0	1	2	0
Ovenbird	0	0	7	0
Worm-eating Warbler	0	0	1	0
Louisiana Waterthrush	20	5	0	0
Black-and-white Warbler	0	0	1	0
Prothonotary Warbler	4	6	2	0
Common Yellowthroat	0	26	0	0
Hooded Warbler	5	0	7	0
American Redstart	0	0	1	0
Northern Parula	1	0	22	0
Pine Warbler	0	0	5	0
Yellow-throated Warbler	0	0	1	0
Summer Tanager	0	2	25	0
Northern Cardinal	10	7	44	0
Indigo Bunting	0	15	24	0
<b>Breeding Season Totals</b>	<b>74</b>	<b>96</b>	<b>447</b>	<b>12</b>

**Appendix III. Species frequency and associated habitat type during wintering season surveys (22 February to 18 March 2017).**

COMMON NAME	HEADWATER	TRANSITION	UPLAND EDGE	FLYOVER
Wild Turkey	0	0	2	0
Turkey Vulture	0	0	1	0
Osprey	0	0	2	0
Bald Eagle	0	0	3	0
Sharp-shinned Hawk	0	0	1	0
Cooper's Hawk	0	0	1	0
Red-shouldered Hawk	1	0	0	0



COMMON NAME	HEADWATER	TRANSITION	UPLAND EDGE	FLYOVER
Red-tailed Hawk	0	0	1	0
Red-bellied Woodpecker	2	0	20	0
Yellow-bellied Sapsucker	2	0	4	0
Downy Woodpecker	0	0	5	0
Hairy Woodpecker	0	0	5	0
Northern Flicker	0	1	5	0
Pileated Woodpecker	2	0	12	0
Eastern Phoebe	0	0	2	0
Blue Jay	2	1	6	0
American Crow	0	0	15	0
Fish Crow	0	0	2	3
Carolina Chickadee	5	2	28	0
Tufted Titmouse	4	2	20	0
White-breasted Nuthatch	0	0	11	0
Brown-headed Nuthatch	0	0	1	0
Brown Creeper	2	0	1	0
Winter Wren	0	0	1	0
Marsh Wren	0	1	0	0
Carolina Wren	1	2	14	0
Golden-crowned Kinglet	0	0	12	0
Ruby-crowned Kinglet	0	0	6	0
Eastern Bluebird	0	0	4	0
Hermit Thrush	2	0	2	0
Brown Thrasher	0	0	2	0
Northern Mockingbird	0	0	1	0
Eastern Towhee	0	0	2	0
Chipping Sparrow	0	0	9	0
Fox Sparrow	0	0	1	0
Swamp Sparrow	0	9	0	0
White-throated Sparrow	0	0	1	0
Red-winged Blackbird	0	2	0	0
Brown-headed Cowbird	0	0	2	0
Rusty Blackbird	0	2	0	0
Common Grackle	1	0	49	0
Pine Warbler	0	0	44	0
Yellow-rumped Warbler	10	1	16	0
Northern Cardinal	6	0	30	0
<b>Wintering Season</b>	<b>40</b>	<b>23</b>	<b>344</b>	<b>3</b>

COMMON NAME	HEADWATER	TRANSITION	UPLAND EDGE	FLYOVER
<b>Totals</b>				

**Appendix IV. Common and Latin names of all species detected during breeding and wintering surveys, and migratory status of each species.**

COMMON NAME	GENUS	SPECIES	MIGRATORY STATUS
Wild Turkey	<i>Meleagris</i>	<i>gallopavo</i>	Resident
Mourning Dove	<i>Zenaida</i>	<i>macroura</i>	Resident
Yellow-billed Cuckoo	<i>Coccyzus</i>	<i>americanus</i>	Neotropical Migrant
Chimney Swift	<i>Chaetura</i>	<i>pelagica</i>	Neotropical Migrant
Ruby-throated Hummingbird	<i>Archilochus</i>	<i>colubris</i>	Neotropical Migrant
Green Heron	<i>Butorides</i>	<i>virescens</i>	Temperate Migrant
Turkey Vulture	<i>Cathartes</i>	<i>aura</i>	Temperate Migrant
Osprey	<i>Pandion</i>	<i>haliaetus</i>	Neotropical Migrant
Bald Eagle	<i>Haliaeetus</i>	<i>leucocephalus</i>	Resident
Sharp-shinned Hawk	<i>Accipiter</i>	<i>striatus</i>	Neotropical Migrant
Cooper's Hawk	<i>Accipiter</i>	<i>cooperii</i>	Neotropical Migrant
Red-shouldered Hawk	<i>Buteo</i>	<i>lineatus</i>	Resident
Red-tailed Hawk	<i>Buteo</i>	<i>jamaicensis</i>	Resident
Red-bellied Woodpecker	<i>Melanerpes</i>	<i>carolinus</i>	Resident
Yellow-bellied Sapsucker	<i>Sphyrapicus</i>	<i>varius</i>	Temperate Migrant
Downy Woodpecker	<i>Picoides</i>	<i>pubescens</i>	Resident
Hairy Woodpecker	<i>Picoides</i>	<i>villosus</i>	Resident
Northern Flicker	<i>Colaptes</i>	<i>auratus</i>	Temperate Migrant
Pileated Woodpecker	<i>Dryocopus</i>	<i>pileatus</i>	Resident
Eastern Wood-Pewee	<i>Contopus</i>	<i>virens</i>	Neotropical Migrant
Acadian Flycatcher	<i>Empidonax</i>	<i>virescens</i>	Neotropical Migrant
Eastern Phoebe	<i>Sayornis</i>	<i>phoebe</i>	Temperate Migrant
Great Crested Flycatcher	<i>Myiarchus</i>	<i>crinitus</i>	Neotropical Migrant
White-eyed Vireo	<i>Vireo</i>	<i>griseus</i>	Neotropical Migrant
Yellow-throated Vireo	<i>Vireo</i>	<i>flavifrons</i>	Neotropical Migrant
Red-eyed Vireo	<i>Vireo</i>	<i>olivaceus</i>	Neotropical Migrant
Blue Jay	<i>Cyanocitta</i>	<i>cristata</i>	Temperate Migrant
American Crow	<i>Corvus</i>	<i>brachyrhynchos</i>	Resident
Fish Crow	<i>Corvus</i>	<i>ossifragus</i>	Temperate Migrant
Barn Swallow	<i>Hirundo</i>	<i>rustica</i>	Neotropical Migrant
Carolina Chickadee	<i>Poecile</i>	<i>carolinensis</i>	Resident
Tufted Titmouse	<i>Baeolophus</i>	<i>bicolor</i>	Resident
White-breasted Nuthatch	<i>Sitta</i>	<i>carolinensis</i>	Temperate Migrant

<b>COMMON NAME</b>	<b>GENUS</b>	<b>SPECIES</b>	<b>MIGRATORY STATUS</b>
Brown-headed Nuthatch	<i>Sitta</i>	<i>pusilla</i>	Resident
Brown Creeper	<i>Certhia</i>	<i>americana</i>	Temperate Migrant
Winter Wren	<i>Troglodytes</i>	<i>hiemalis</i>	Temperate Migrant
Marsh Wren	<i>Cistothorus</i>	<i>palustris</i>	Neotropical Migrant
Carolina Wren	<i>Thryothorus</i>	<i>ludovicianus</i>	Resident
Blue-gray Gnatcatcher	<i>Polioptila</i>	<i>caerulea</i>	Neotropical Migrant
Golden-crowned Kinglet	<i>Regulus</i>	<i>satrapa</i>	Temperate Migrant
Ruby-crowned Kinglet	<i>Regulus</i>	<i>calendula</i>	Temperate Migrant
Eastern Bluebird	<i>Sialia</i>	<i>sialis</i>	Temperate Migrant
Hermit Thrush	<i>Catharus</i>	<i>guttatus</i>	Temperate Migrant
Wood Thrush	<i>Hylocichla</i>	<i>mustelina</i>	Neotropical Migrant
Brown Thrasher	<i>Toxostoma</i>	<i>rufum</i>	Temperate Migrant
Northern Mockingbird	<i>Mimus</i>	<i>polyglottos</i>	Resident
American Goldfinch	<i>Spinus</i>	<i>tristis</i>	Temperate Migrant
Eastern Towhee	<i>Pipilo</i>	<i>erythrophthalmus</i>	Temperate Migrant
Chipping Sparrow	<i>Spizella</i>	<i>passerina</i>	Temperate Migrant
Fox Sparrow	<i>Passerella</i>	<i>iliaca</i>	Temperate Migrant
Swamp Sparrow	<i>Melospiza</i>	<i>georgiana</i>	Temperate Migrant
White-throated Sparrow	<i>Zonotrichia</i>	<i>albicollis</i>	Temperate Migrant
Orchard Oriole	<i>Icterus</i>	<i>spurius</i>	Neotropical Migrant
Red-winged Blackbird	<i>Agelaius</i>	<i>phoeniceus</i>	Temperate Migrant
Brown-headed Cowbird	<i>Molothrus</i>	<i>ater</i>	Resident
Rusty Blackbird	<i>Euphagus</i>	<i>carolinus</i>	Temperate Migrant
Common Grackle	<i>Quiscalus</i>	<i>quiscula</i>	Resident
Ovenbird	<i>Seiurus</i>	<i>aurocapilla</i>	Neotropical Migrant
Worm-eating Warbler	<i>Helmitheros</i>	<i>vermivorum</i>	Neotropical Migrant
Louisiana Waterthrush	<i>Parkesia</i>	<i>motacilla</i>	Neotropical Migrant
Black-and-white Warbler	<i>Mniotilta</i>	<i>varia</i>	Neotropical Migrant
Prothonotary Warbler	<i>Protonotaria</i>	<i>citrea</i>	Neotropical Migrant
Common Yellowthroat	<i>Geothlypis</i>	<i>trichas</i>	Neotropical Migrant
Hooded Warbler	<i>Setophaga</i>	<i>citrina</i>	Neotropical Migrant
American Redstart	<i>Setophaga</i>	<i>ruticilla</i>	Neotropical Migrant
Northern Parula	<i>Setophaga</i>	<i>americana</i>	Neotropical Migrant
Pine Warbler	<i>Setophaga</i>	<i>pinus</i>	Temperate Migrant
Yellow-throated Warbler	<i>Setophaga</i>	<i>dominica</i>	Neotropical Migrant
Summer Tanager	<i>Piranga</i>	<i>rubra</i>	Neotropical Migrant
Northern Cardinal	<i>Cardinalis</i>	<i>cardinalis</i>	Resident
Indigo Bunting	<i>Passerina</i>	<i>cyanea</i>	Neotropical Migrant