

**THE JUNE 2009 FORAY
GREENSVILLE AND SUSSEX COUNTIES
IN SEARCH OF BACHMAN'S SPARROW**

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INTRODUCTION

The 2009 VSO breeding bird foray was conducted in Greenville and Sussex Counties, with a special focus on Bachman's Sparrow. These counties were chosen for several reasons. First, they were the sites of the most recent systematic surveys for Bachman's Sparrow (Dalmas, 1992, Watts et al, 1998). Second, The Nature Conservancy has embarked on aggressive fire management at their Piney Grove Preserve in Sussex County, and has solicited the local ornithological community for help in surveying their property for the species, or habitat suitable for its restoration. The Nature Conservancy started land acquisition at Piney Grove in 1998 in order to protect the last breeding population of Red-cockaded Woodpecker in the state and is conducting prescribed burns to maintain habitat for both the woodpecker and (potentially) Bachman's Sparrow. Third, the last all-species survey of Greenville County was the June 1991 VSO foray (Dalmas, 1992).

There is considerable documentation of the status of Bachman's Sparrow in the state (Watts et al., 2000, Rottenborn and Brinkley, 2007). The species expanded northward throughout its range during the late nineteenth and early twentieth centuries, probably driven by the abandonment of farmland (Askins, 2002), and which led to a dramatic increase in the population. Changes in land use in the mid-twentieth century, however, led to an equally dramatic reversal. By 1977, when the Kerr Reservoir foray was held in Mecklenburg County, Bachman's Sparrow was no longer being detected in Southside Virginia (Scott, 1979), although a singing individual had been reported just a mile across the North Carolina border from Mecklenburg County in June 1976 (LeGrand, 1976).

The species was rediscovered in Brunswick County in 1986 during the Virginia Breeding Bird Atlas Project (Trollinger and Reay, 2001), and was confirmed as breeding there by the presence of recently fledged young (Dalmas, pers.comm). This finding, along with various reports to *American Birds* over the period of 1986-1993, stimulated considerable follow-up by the ornithological community in this region of the state (Hilton, 1990). To protect them from disturbance, the precise locations were not disclosed.

The last confirmed sighting of Bachman's Sparrow in the area was recorded in Brunswick County in 2002 (Todd Day, pers.comm.) and the last systematic survey in this area was performed in 1996 (Watts et al, 1998), with singing males being detected in Brunswick, Greensville and Sussex Counties. Military bases such as Fort Pickett and Fort A.P. Hill may also contain Bachman's Sparrow but, were not included in the foray because of enhanced security and liability issues.

The preferred habitat for Bachman's Sparrow in Virginia is considered to be regenerating clearcuts of at least 15 acres, with dense grass cover in the first three feet above ground, regenerating pine saplings no taller than ten feet and low densities of hardwood saplings. Mature pine stands which are subject to regular burning can also provide suitable habitat, and this is part of the fire management strategy at Piney Grove.

In addition to Bachman's Sparrow, a number of other species of particular interest were sought in the area. These included:

Mississippi Kite (*Ictinia mississippiensis*) -- was first detected as likely breeding in the state in Greensville County in the late 1970's; has since expanded its breeding range in a leapfrog pattern to suburban Northern Virginia (Rottenborn and Brinkley, 2007)

Red-cockaded Woodpecker (*Picoides borealis*) -- known only at The Nature Conservancy's Piney Grove Preserve in Sussex County, where active management has led to a significant increase in numbers of individuals and breeding success since a low point in 2000.

Loggerhead Shrike (*Lanius ludovicianus*) -- has declined precipitately statewide since the 1970's, particularly in this part of the state (Rottenborn and Brinkley, 2007)

Henslow's Sparrow (*Ammodramus henslowii*) -- another species that has declined significantly in recent years due to habitat changes. Detected in 1991 in Sussex County, outside the official foray period (Dalmas, 1992).

Northern Bobwhite (*Colinus virginianus*) -- reported as uncommon and declining statewide (Rottenborn and Brinkley, 2007).

Both counties are still predominantly rural, with agriculture and timberland being the major land uses. The vast majority of the land in both counties is privately owned and much of the timberland is leased to hunt clubs. The area of Greensville County is 297 square miles and being situated on the fall line, incorporates both Piedmont and Coastal Plain regions. The geography of

Greensville County is described in detail in the 1991 foray report (Dalmas, 1992). Apart from an increase in commercial development around the City of Emporia, it is likely that there has been little change in land use in Greensville County since the 1991 foray.

Sussex County is 496 square miles in area, and is all in the Coastal Plain, apart from a small portion in the southwest of the county, which is located in the Piedmont. In addition to the county seat at Sussex Courthouse, there are three small urban areas in Sussex County: Waverly, Wakefield and Stony Creek. The elevation in Sussex County ranges 50-250 feet above sea level and the drainage is provided by the Nottoway and Blackwater Rivers and by Stony Creek. Eighty percent of the county's land is used for commercial forestry. The dominant softwood species is loblolly pine while the predominant hardwoods are oak and hickory. The principal agricultural crops are peanuts, cotton, corn, flue-cured tobacco, small grains and soybeans.

Some locations in southwestern Southampton County, including Bellyache Swamp, a site on the Virginia Birding and Wildlife Trail (VBWT) were also surveyed. This was part of an effort to promote data collection at the VBWT sites as part of a partnership with Virginia Department of Game and Inland Fisheries announced in June 2009.

METHODS

The author conducted initial assessment of potential foray sites in both counties in a series of field visits during March and April 2009, and consulted with The Nature Conservancy staff to assess sites of potential interest within the Piney Grove Preserve. A list of potential foray sites was distributed among the participants in advance of the foray so that they could develop survey routes and assigned survey dates. Checklists in the form of Excel® spreadsheets were distributed electronically, along with the foray protocols. Participants were asked, whenever possible, to collect GPS coordinates for locations visited, the date, time and duration of the visit, number of observers, whether it was a stationary (point) or traveling count, and the number of miles covered if a traveling count. This data was entered into the spreadsheets in a format designed to be compatible with future entry into eBird. Participants submitted their completed checklists to the author for compilation into this report.

A checklist was completed for each location (for a point count) or for a route (for a traveling count) on each day of participation. Thus an observer or observer team typically completed multiple checklists on a given day. A point count involved moving a limited distance from a fixed point whereas a traveling count involved such activities as driving a section of road or walking on a trail or in a park.

Participants were reminded to adhere to the VSO Principles of Birding Ethics (2008). A specific protocol concerning the use of audio devices to detect Bachman's Sparrow was developed (Wilson, pers. comm.). Participants were asked to pay particular attention to areas of suitable habitat for Bachman's Sparrow.

Participants were advised to spend several minutes listening for singing Bachman's Sparrow at potential habitat locations, followed by three one-minute song playbacks with one-minute listening intervals in between. An MP3 file of the song was supplied by CCB and was used for the survey conducted at Piney Grove and Raccoon Creek Longleaf Pine Restoration site. A variety of personal sound recordings and playback devices were used at other locations.

The official foray period was June 12-17, 2009. These dates were chosen to avoid possible impact on the breeding of Red-cockaded Woodpeckers at Piney Grove (Clontz and Wilson, pers. comm.). Clontz developed and marked specific survey points at Piney Grove, and on the first day of the foray led a team of eight participants around these locations and also to locations at the Raccoon Creek Longleaf Pine Restoration Site in SW Sussex County. Other participants developed other survey routes based on personal preference and in collaboration with the compiler to ensure coverage.

The weather during the foray period was hot and dry with minimal rain and thunderstorm activity apart from local heavy rain and thunderstorms on June 15. The period immediately prior to the foray was very wet, with 4-6 inches of rain in the two weeks before the foray period. This probably contributed to the lush deciduous shrub understory growth observed at many of the sites that had been considered as potential Bachman's Sparrow habitat.

Details of the various sightings are reported in the Foray Species List. Observers are identified by last name. The following team designations were used where relevant: Clontz et al. (Bobby Clontz, Adam D'Onofrio, Wendy Ealding, Mary Elfner, Elisa Enders, Ron Giese, John Spahr, Bill Williams), Dalmases (John and Thelma Dalmas), Enders et al. (Elisa, Frank and Mary Enders), Brown et al. (Susan and Wes Brown and Tom St. Andre) and Glass et al. (Paul and Hannah Glass, Elisa Enders and Wendy Ealding). A total of 24 observers participated in the foray.

Specific location is given where provided by the observer; where it was not, the convention for dividing Greensville County as described for the 1991 foray (Dalmas, 1992) was used. These were NW (north of US 58, west of I-95), NE (north of US 58, east of I-95), SW (south of US 58, west of I-95) and SE (south of US 58 and east of I-95). A similar division was used for Sussex County as follows: NW (north of VA 40, west of VA 35), NE (north of VA 40, east of VA 35), SW (south of VA 40, west of VA 35) and SE (south of VA 40, east of VA 35).

Additional survey data was obtained from the United States Nightjar Survey Network and the U.S. Fish & Wildlife Service's Breeding Bird Survey (BBS) Branchville and Newsoms routes in Sussex and Southampton counties, which were conducted around the time of the foray.

RESULTS

The overall statistical information for the foray is provided in Table 1. Checklists were classified as either point counts or traveling counts, with the majority of counts being point type. The overall number of species detected by 24 participants during the foray period was 99, with 92 in Sussex, 90 in Greenville and 73 in Southampton (where there was only partial coverage). A summary of species with evidence of breeding is provided in Table 2, and a summary of all species recorded by county is presented in Table 3. Total counts and detection rates for each species by county are presented in Table 4.

Details of many of the sightings are available at Virginia eBird; these can be accessed by selecting the bar charts for relevant county in the View and Explore function and then selecting the desired species. Foray sightings are identified under the pseudonym "VSO Foray". Not all sightings were entered into eBird in this way; some were entered by individual observers under their own name (Atwood), some were deliberately excluded because they were on private property where disclosure of the location may not be appropriate, and some locations were not described in adequate detail by their observers.

Highlights: No evidence of Bachman's Sparrow was detected at any location, including coverage of adjoining portions of Brunswick County surveyed one week prior to the foray (Day). The implications of this finding are considered in more detail in the Discussion section.

Waterfowl species were uncommon or rare, and American Black Duck was absent.

Gallinaceous birds (Wild Turkey, Northern Bobwhite) were reported widely, however, the numbers of Bobwhite should be considered in the context of the common practice of release of the species by the many hunt clubs in the area (B. Clontz, pers. comm.)

Anhinga was reported in Sussex and Southampton Counties – see Species List for details. The species appears to have undergone a significant range expansion recently, with a report of nesting as far north as York County (Youker, 2009)

Mississippi Kite showed a continuing presence in extreme SE Greenville County, with additional sightings as far north as the Three Creek Wastewater Treatment Plant northeast of the City of Emporia.

Cooper's Hawk was reported in all three counties. The species has been reported as being an uncommon but apparently increasing summer resident in the Coastal Plain (Rottenborn and Brinkley, 2007)

Only one species of owl, namely Barred Owl, was reported during the foray. However, data provided by Flanders from the US Nightjar Survey included a report of an Eastern Screech-Owl (a species not found during the foray) on June 6 along the Branchville route in Southampton County. The nightjar surveys also produced a total of 19 Chuck-Will's-Widows on the Branchville and Newsoms survey routes in Southampton County on the same date.

Red-cockaded Woodpecker was reported by several different observers on different days. A family group of four, including a large fledgling, was reported on two separate occasions.

The one sighting of Loggerhead Shrike in Greenville County on June 15 is particularly interesting. The species was not found during the 1991 foray period although it was found about a month after the foray (Dalmas, 1992), and most sightings in the state in recent years have been well to the west or north. The most recent sighting in this region of the state was on January 1, 2009 about 40 miles due west in Mecklenburg County (P. Glass, 2009) and the nearest sighting to the south in Nash County, North Carolina on May 15, 2009 was a similar distance away (G. Armistead, 2009)

Horned Larks were reported from several locations, and also on the BBS. This is a species that is thought to be declining in much of its range (Rottenborn and Brinkley, 2007). It was not reported from the 1991 foray.

Cedar Waxwing, described as "rare, but possibly increasing, summer resident" in the Coastal Plain (Rottenborn and Brinkley, 2007) was reported during the foray in Sussex and Greenville Counties, and also on the BBS

A single report of a Swainson's Warbler from Greenville County was about 6 miles northwest of its "traditional" location at the Route 730 Low Ground Road crossing of the Meherrin River and probably represents the most westerly report of the Coastal Plain population.

Henslow's Sparrow was not found.

One of the more surprising findings was that there was only one sighting of Song Sparrow during the foray period (and none on the BBS), although two or three birds were reported a week prior to the foray in Emporia. The 1991 foray had reported the species as "uncommon in urban areas, rare elsewhere".

DISCUSSION

A total of 99 species was reported for the 2009 foray, as compared with 103 for the 1991 foray. However, it is difficult to assess the significance of this and other differences found between the two forays, because their areas of coverage and timing were not identical. There were no obvious late migrants, which may be due to the slightly later 2009 foray period. The total number of checklists in 2009 was 204, almost 5 times as many as for the 1991 foray, although total party-hours (94) was less than two-thirds that of the 1991 foray. In part, this was because of the highly detailed surveys conducted at Piney Grove and Raccoon Creek Longleaf Pine Restoration Area, where multiple point counts were conducted by multiple observer groups. A deliberate effort was also made to obtain more specifically localized data for future electronic archiving and also to pinpoint particular species-habitat associations.

The 1991 foray was not a county-based foray, but rather was a combination of Virginia Atlas Project quadrangles, which included most of Greenville, plus portions of adjacent Brunswick, Sussex and Southampton Counties. An overall comparison of the species recorded in the three counties surveyed in 2009 with the results of the 1991 foray, (which included data from outside the immediate 1991 foray period) is provided in Table 3. Because the 1991 foray results included data from outside the immediate 1991 foray period, Table 3 includes information from the 2009 season of the US Nightjar Survey and the Branchville and Newsoms USFWS BBS survey routes which consisted of portions of Sussex and Southampton Counties. These were conducted around the time of the 2009 foray.

Total counts as shown in Table 4 may include multiple sightings of the same individuals by different observers at the same locations, or on different days. This is discussed in more detail for particular species in the Foray Species List.

Detection rates for many species in 2009 were lower than in the 1991 foray. Detection rate is defined as the percentage of checklists reporting each species. The detection rates for Southampton County are based on a relatively small number of checklists (n=15) and appear high because a single detection on a single checklist equates to almost a 7% detection rate. Caution should therefore be used when comparing this data with the other two counties. Detection rates were not included in the 1991 foray report (Dalmas, 1992) but, were calculated for this report where the relevant numerical data was presented. The differences could be due to the later foray period in 2009, the different area of coverage, fewer party-hours, or differences in foray design. A more standardized and structured approach to foray design and execution, along the lines of that used for the 2008 foray (Harding, 2009) should be considered for future forays.

Despite the marked increase of breeding Canada Geese in the past 30 years in both Coastal Plain and Piedmont regions of the state (Rottenborn and Brinkley, 2007), this does not appear to be the case in this part of the state, as the results are very similar to those of the 1991 foray (Dalmas, 1992).

As with the 1991 foray (Dalmas, 1992) there was little emphasis on nighttime coverage due in this case to the fact that many observers commuted. This probably led to undercounting of owls and caprimulgids.

One heartening finding was the multiple reports of Red-cockaded Woodpeckers. These were most likely the same family group. This species was not found in 1991, although a recently active nest tree was found in Sussex County shortly afterwards (Dalmas, 1992). The species has staged a significant recovery, largely due to the management effort at The Nature Conservancy Piney Grove Preserve in Sussex County. The foray area in 1991 did not include what was later to become the Piney Grove Preserve, which The Nature Conservancy had not yet acquired. Since then, their active management for the species (including a limited translocation of some individuals from South Carolina) has resulted in a marked increase in numbers. The Center for Conservation Biology conducted a population count in April 2009 and found 43 birds – 28 adults and 15 fledglings (Wilson and Watts, 2009).

All the reports of Bachman's Sparrow in the state since their rediscovery in 1986 have been from young pine stands in regenerating clearcuts. These have been characterized by young pines with dense grassy ground cover and limited hardwood shrub cover. By its very nature, such habitat is ephemeral and not capable of sustaining populations on a long term basis. Longleaf pine savanna is the preferred habitat for Bachman's Sparrow throughout most of its range. The presence of grassy ground cover is required for both nesting and feeding habitat (Askins, 2002; Cox and Jones, 2008). However, the nature of the grassy ground cover is critical; most nesting success occurs in frequently burned areas where there is bare ground and regenerating grass that creates an umbrella effect several inches above ground level (Cox and Jones, 2008). Frequent and hot burns also create the appropriate mineral soil favorable to promoting grass regeneration in this part of the state (B. Clontz, pers. comm.). This habitat augmentation strategy is being attempted at Piney Grove, although there are no plans for reintroduction until stable, suitable habitat can be sustained.

Much of the regenerating clearcut habitat that was surveyed during the foray exhibited substantial fresh growth of the hardwood shrub component. This may have been in response to the very heavy rainfall in the period immediately prior to the foray.

The inevitable question is: if suitable habitat can be restored, will Bachman's Sparrow naturally repopulate it after a prolonged absence? The 1986 rediscovery of the species in Brunswick County came 18 years after the

last state record in Dinwiddie County (Rottenborn and Brinkley, 2007). Where did the 1986 birds come from? Where would a natural repopulation come from now? The current nearest population is in North Carolina, at least 100 miles away (eBird records for North Carolina (1990-2009); North Carolina Gap Analysis Project (2005); Fussell, 1994). There appear to be no records from the northern part of North Carolina, in particular the border counties, since the 1980's (Ricky Davis and Frank Enders, pers. comm.). Bachman's Sparrow is considered "a rare and very local spring and summer visitor" in the Coastal Plain of Virginia (Rottenborn and Brinkley, 2007), with no apparent winter records. However, they do overwinter in southern North Carolina (Fussell, 1994), although due to their secretive behavior outside the breeding season, they can easily be overlooked. They typically winter (and establish winter territories) at sites that have been burned during the previous growing season where there is thick grassy ground cover with abundant seeds.

The assumption has been that Bachman's Sparrow must be nomadic, seeking out new habitat as the existing habitat becomes unsuitable. Studies of this behavior are very difficult and, hence, incomplete and inconclusive (Cox and Jones, 2008). Nomadic species may need to move long distances to locate new resources (Askins, 2002), and, consequently, mortality is potentially high. It is not clear how far Bachman's Sparrow disperse and whether it could span the distances from the existing North Carolina population. If the small population of Bachman's Sparrow that was present in Virginia between 1986 and 2002 became an increasingly isolated "island" population, with no opportunity for replenishment from a nearby population in North Carolina, its disappearance may have been inevitable.

FORAY SPECIES LIST

CANADA GOOSE (*Branta canadensis*) Two reports from Sussex (Atwood; Williams and Giese) and three from Greensville (Sharrett and Ealding; Dalmases). A group of 10 at Squires Hill Hi Farm pond on Route 612 (Scotland Road) in NW Greensville County on June 13 included well-grown young, probably not able to fly (Sharrett and Ealding); a total of 25 including two family groups with 2 and 4 goslings were reported on June 15 from a driving route in SW Greensville (Dalmases), and a group of 10 in northern Greensville (Dalmases). One report of 15 birds at a pond on Route 653 in Southampton County on June 14 (Day). During the initial scouting trip on April 2, Ealding observed and photographed a nest with 3 eggs at Airfield 4-H Center in Sussex; Atwood reported 7 birds at this location on June 17.

WOOD DUCK (*Aix sponsa*) One report of 2 birds on June 12 on the old Game Refuge Lake on Route 602 (Cabin Point Road) in Sussex County (D'Onofrio); three reports from Southampton County – two of these were from the Bellyache Swamp vicinity on June 12 and 13 (Spahr, Ealding) and one was from a pond on Route 615 on June 16 (Elisa Enders)

MALLARD (*Anas platyrhynchos*) Two reports from Sussex County: June 12 (Williams and Giese) and June 17 (Atwood); one report from Meherrin (Emporia) Reservoir in Greenville County on June 14 (Glass et al.)

WILD TURKEY (*Meleagris gallopavo*) Reported by multiple observers in Sussex and Greenville on most days of the foray, including five juveniles in Greenville (Brown et al.)

NORTHERN BOBWHITE (*Colinus virginianus*) Reported by multiple observers in all three counties on most days of the foray.

DOUBLE-CRESTED CORMORANT (*Phalacrocorax auritus*) Two separate sightings of one bird within a couple of hours on June 17 at Spring Hill Pond in Sussex County (Atwood, Elisa Enders)

ANHINGA (*Anhinga anhinga*) One male photographed on June 12 on the old Game Refuge Lake on Route 602 (Cabin Point Road) in Sussex County (D'Onofrio); one male on a pond on Route 615 in Southampton County on June 16 (Elisa Enders)

GREAT BLUE HERON (*Ardea herodias*) Reported in all three counties with sightings by multiple observers on multiple days.

GREAT EGRET (*Ardea alba*) Reported in all three counties. Sightings by multiple observers on multiple days in Sussex and Greenville, and a report of 18 birds at Bellyache Swamp in Southampton County on June 12 (Spahr). A high count of 26 was reported in Sussex County on June 13 at the old Game Refuge Lake on Route 602 (Bose).

GREEN HERON (*Butorides virescens*) Reported by multiple observers on multiple days in Greenville and Southampton counties, and four reports at four different locations in Sussex County on June 16 and 17, including 3 birds at the Airfield 4-H Center (Atwood)

BLACK VULTURE (*Coragyps atratus*) Reported in all three counties. There was a report of a nest with eggs at Piney Grove prior to the foray (Clontz)

TURKEY VULTURE (*Cathartes aura*) Multiple reports in all three counties

MISSISSIPPI KITE (*Ictinia mississippiensis*) Several reports from five observers/observer teams in Greenville County on June 13,14,16 and 17. In addition to their established locations along Route 624 (Steel Bridge Road) and Route 730 (Low Ground Road at Meherrin River Crossing) in extreme SE Greenville County, one was seen soaring very high over the Holiday Inn Express in Emporia on June 14 (Glass et al.) and one was observed perched at

the Three Creek Wastewater Treatment Plant northeast of the City of Emporia on June 16 (Elisa Enders). The maximum number observed at any one time at any one location was two. Due to their soaring behavior it is difficult to establish how many of the multiple sightings were of the same individuals. It is possible that the bird seen soaring over the Holiday Inn Express was one of the individuals seen about 45 minutes earlier on Route 624.

COOPER'S HAWK (*Accipiter cooperii*) Two reports of a single individual within a few hours of one another at Raccoon Creek Longleaf Pine Restoration Area in Sussex County on June 12 may well have been the same bird (Taber, Clontz et al.). One bird was seen on June 16 near Claesville on Route 666 (Goose Pond Road) near the intersection with Route 730 (Low Ground Rd) in Greenville County (Elisa Enders). One bird was reported on June 13 on Route 628 (Wakefield Road) near Dory in Southampton County (Bose).

RED-SHOULDERED HAWK (*Buteo lineatus*) Reported from all three counties.

RED-TAILED HAWK (*Buteo jamaicensis*) Reported from Sussex and Greenville Counties

AMERICAN KESTREL (*Falco sparverius*) One report of a single bird on June 12 from the vicinity of Bellyache Swamp in Southampton County (Spahr)

KILLDEER (*Charadrius vociferus*) Multiple reports in all three counties

AMERICAN WOODCOCK (*Scolopax minor*) One report of a bird heard (not seen) in Greenville County on Route 730 (Low Ground Road) 2.2 miles northwest of Claesville on June 17 (Brown et al.)

ROCK PIGEON (*Columba livia*) Surprisingly few reports. Small numbers were seen at two locations in Sussex County June 13 (Spahr and Bose) and June 17 (Elisa Enders) and at two locations in Greenville County in and around Emporia June 13 (Sharrett and Ealding) and June 14 (Glass et al.)

MOURNING DOVE (*Zenaida macroura*) Multiple reports in all three counties

YELLOW-BILLED CUCKOO (*Coccyzus americanus*) Multiple reports from all three counties.

BARRED OWL (*Strix varia*) There were three reports from three separate locations in Sussex County on June 17 (Elisa Enders), one report from Route 622 (Beaver Dam Road) at Assamoosick Swamp on June 14 (Day), and one report from Route 624 (Steel Bridge Road) in Greenville County on June 13 (Enders et al.). Two birds were reported at the Route 730 (Low Ground Road) crossing of the Meherrin River at the Greenville-Southampton County line on June 14 (Day).

CHUCK-WILLS-WIDOW (*Caprimulgus carolinensis*) Two reports from Sussex County on June 12 (Williams and Giese) and June 17 (Elisa Enders).

WHIP-POOR-WILL (*Caprimulgus vociferus*) One report from Sussex County on June 12 (Williams and Giese)

CHIMNEY SWIFT (*Chaetura pelagica*) Multiple reports in all three counties

RUBY-THROATED HUMMINGBIRD (*Archilochus colubris*) Multiple reports, usually of single birds, in all three counties

BELTED KINGFISHER (*Ceryle alcyon*) Two reports from Sussex County, one at Honey Pond on June 12 (Taber) and one on Summerfield Road at Assamoosick Swamp crossing on June 17 (Elisa Enders). One report from Bellyache Swamp in Southampton County June 16 (Elisa Enders).

RED-HEADED WOODPECKER (*Melanerpes erythrocephalus*) Reported from all three counties, with several reports of birds visiting nest cavities in Sussex (Williams and Giese, Atwood) and Greenville (Dalmases).

RED-BELLIED WOODPECKER (*Melanerpes carolinus*) Multiple reports in all three counties

DOWNY WOODPECKER (*Picoides pubescens*) Multiple reports in all three counties

HAIRY WOODPECKER (*Picoides villosus*) Reported from all three counties

RED-COCKADED WOODPECKER (*Picoides borealis*) Reported from Piney Grove in Sussex County on June 12 (Taber), June 13 (Spahr and Bose) and June 16 (Atwood). Spahr and Bose reported a family group of four birds, including one female which repeatedly drilled for grubs in a dead pine branch and fed one of the fledged young birds; Atwood reported at least 4 and possibly 5 birds, one of which was a large fledgling, at essentially the same location.

NORTHERN FLICKER (*Colaptes auratus*) Multiple reports in all three counties

PILEATED WOODPECKER (*Dryocopus pileatus*) Reported from all three counties

EASTERN WOOD-PEWEE (*Contopus virens*) Multiple reports in all three counties. A bird was seen on a nest at Piney Grove (Spahr and Bose)

ACADIAN FLYCATCHER (*Empidonax virescens*) Multiple reports in all three counties

EASTERN PHOEBE (*Sayornis phoebe*) Multiple reports in all three counties. An active nest was found under a bridge at Veteran's Park in Emporia (Glass et al.) and also at Bellyache Swamp in Southampton (Spahr)

GREAT CRESTED FLYCATCHER (*Myiarchus crinitus*) Multiple reports in all three counties

EASTERN KINGBIRD (*Tyrannus tyrannus*) Multiple reports in all three counties

LOGGERHEAD SHRIKE (*Lanius ludovicianus*) One report from Greenville County on June 15 (Dalmases); the bird was observed perched on telephone wires near Garners Mill on a farm on Route 633 (Pine Log Road) between the two intersections of Route 603 (Fish Road) and Route 603 (Gaston Road).

WHITE-EYED VIREO (*Vireo griseus*) Multiple reports in all three counties

YELLOW-THROATED VIREO (*Vireo flavifrons*) Multiple reports in all three counties. Birds were observed feeding young at Raccoon Creek Longleaf Pine Restoration Site in Sussex on June 15 (Wender) and near Claesville in Greenville on June 16 (Elisa Enders)

RED-EYED VIREO (*Vireo olivaceus*) Multiple reports in all three counties

BLUE JAY (*Cyanocitta cristata*) Multiple reports in Greenville County, less common in Sussex and Southampton Counties

AMERICAN CROW (*Corvus brachyrhynchos*) Multiple reports in all three counties; the only report of confirmed breeding was an adult feeding young in Southampton County on June 14 (Day)

FISH CROW (*Corvus ossifragus*) Several reports of low numbers, typically one or two birds, from all three counties

HORNED LARK (*Eremophila alpestris*) Three reports from Sussex County: two birds on June 14 at Chub Sandhill longleaf pine restoration area (Bose); a total of 5 birds on June 17 along two driving routes in SE and NE Sussex (Elisa Enders); two singing birds were located the same day, also in NE Sussex (Atwood). Three reports, all from SE Greenville County: a single bird from driving routes 660 (Fiddlers Road) and 622 (Little Low Ground Road) on June 13 (Enders et al.); one at Bryant's Corner on June 16 (Elisa Enders); a total of six birds in a recently sown cotton field near the intersection of Route 660 (Fiddlers Road) and 625 (Taylor's Mill Road) on June 16 (Dalmases, Brown et al.). A single report from Route 626 (Berlin Dory Road) 0.4 miles east of Route 633 (Skyline Drive) in Southampton County on June 14 (Day).

PURPLE MARTIN (*Progne subis*) Reported from both Sussex and Greenville Counties with reports of nesting colonies in Greenville (Dalmases, Day), and about 24 nesting birds at a Purple Martin house at Adams Country Store on Route 460 east of Waverly on June 12 (Williams and Giese)

TREE SWALLOW (*Tachycineta bicolor*) Two reports: one bird perched on a wire along a road near the Blackwater River in Sussex County on June 17 (Atwood) and two birds at a pond on private property on Route 619 (Purdy Road) in extreme NW Greenville County on June 13 (Sharrett and Ealding)

NORTHERN ROUGH-WINGED SWALLOW (*Stelgidopteryx serripennis*) One bird on June 12 on Route 620 (Brittle Mill Road) in Sussex County (Williams and Giese); five birds at Meherrin (Emporia) Reservoir in Greenville on June 14 (Glass et al.); 17 in SW Greenville on June 15 (Dalmases); two in northern Greenville on June 16 (Dalmases); 8 in SE Greenville on June 16 (Dalmases); one at Three Creek Wastewater Treatment Plant on June 16 (Elisa Enders) and two on Route 614 near Emporia on June 16 (Elisa Enders). Nine were reported in Southampton County on Route 653 (Little Texas Road) 0.2 miles east of Route 661 (Old Church Road) on June 14 (Day)

BARN SWALLOW (*Hirundo rustica*) Reported from all three counties. A juvenile was seen at Steel Bridge Road in Greenville County (Glass et al.)

CAROLINA CHICKADEE (*Poecile carolinensis*) Multiple reports in all three counties. One bird reported at a nest cavity at Honey Pond (Taber) and fledglings were reported at Airfield 4-H Center in Sussex (Elisa Enders), and in the vicinity of Bellyache Swamp in Southampton (Spahr)

TUFTED TITMOUSE (*Baeolophus bicolor*) Multiple reports in all three counties

WHITE-BREASTED NUTHATCH (*Sitta carolinensis*) Reported from all three counties

BROWN-HEADED NUTHATCH (*Sitta pisilla*) Only reported from Sussex County, with reports from multiple observers on multiple days from Piney Grove; one bird was reported at Chub Sandhill NAP on June 14 (Bose)

CAROLINA WREN (*Thryothorus ludovicianus*) Multiple reports in all three counties

HOUSE WREN (*Troglodytes aedon*) Rare. One report of two birds from Sussex County on Route 606 (Beaver Dam Road) on June 12 (Williams and Giese). In Greenville County there were three reports, all from the urban areas of Emporia, on June 14 (Ealding, Glass et al.)

BLUE-GRAY GNATCATCHER (*Poliioptila caerulea*) Multiple reports in all three counties. Fledglings were reported from the vicinity of Bellyache Swamp in Southampton (Spahr)

EASTERN BLUEBIRD (*Sialis sialis*) Multiple reports in all three counties. Birds were seen at a nest box on Route 600 in Sussex (Elisa Enders), carrying food at Raccoon Creek Longleaf Pine Restoration Area in Sussex (Clontz et al.), and a juvenile was seen on Route 730 (Low Ground Road) (Glass et al.)

WOOD THRUSH (*Hylocichla mustelina*) Reported from Sussex and Greenville Counties

AMERICAN ROBIN (*Turdus migratorius*) Reported from Sussex and Greenville Counties; one carrying food at Adams Country Store on Route 460 east of Waverly on June 12 (Williams and Giese)

GRAY CATBIRD (*Dumetella carolinensis*) In Sussex County, at Piney Grove, two birds on June 12 (Clontz et al.) and three birds on June 13 (Spahr and Bose); on June 17, one bird at Spring Hill Pond and one near the Blackwater River (Atwood). In Greenville County, one in SW Greenville June 15 and one in SE Greenville June 16 (Dalmases). One bird reported from Southampton County in the vicinity of Bellyache Swamp on June 12 (Spahr).

NORTHERN MOCKINGBIRD (*Mimus polyglottos*) Multiple reports in all three counties. Adults were observed feeding young in NW Sussex on June 13 and 14 (Wender and Senfield)

BROWN THRASHER (*Toxostoma rufum*) Multiple reports in all three counties. A bird was seen carrying food at Piney Grove (Taber)

EUROPEAN STARLING (*Sturnus vulgaris*) Multiple reports in all three counties. Adults were reported feeding young at Raccoon Creek Longleaf Pine Restoration Site in Sussex on June 15 (Wender)

CEDAR WAXWING (*Bombycilla cedorum*) Four birds reported from Sussex County on June 17 (Atwood): single flyovers at Spring Hill Pond and near the Blackwater River, and two birds flycatching at the Airfield 4-H Center. Two birds reported from Route 600 (Beef Road) at the intersection of Route 627 (Brink Road) south of Barley in Greenville County on June 14 (Day)

NORTHERN PARULA (*Parula americana*) Reported from all three counties

YELLOW-THROATED WARBLER (*Dendroica dominica*) Reported from all three counties

PINE WARBLER (*Dendroica pinus*) Multiple reports in all three counties. An adult was seen carrying food in the vicinity of Bellyache Swamp in Southampton (Spahr)

PRAIRIE WARBLER (*Dendroica discolor*) Multiple reports in all three counties. Birds were seen carrying food at Piney Grove (Spahr and Bose) and on Route 622 in Sussex (Williams and Giese)

BLACK-AND-WHITE WARBLER (*Mniotilta varia*) Four reports from Sussex County: "2 males in separate location singing and well seen, easily pished in" along Route 622 (Cedar Sign Post Road) on June 12 (Williams and Giese); one on Route 729 (Turkey Pen Road) on June 12 (Elisa Enders); one, which was reported on two separate checklists on Route 602 (Cabin Point Road) at the Old Game Refuge Lake on June 14 was most likely the same individual (Bose, Day); two in NW Sussex on June 14 (Wender and Senfield)

AMERICAN REDSTART (*Setophaga ruticilla*) Two reports (possibly the same individual) from Greensville County at the Meherrin River Bridge on Route 730 (Low Ground Road) on June 16 (Elisa Enders) and 17 (Atwood), as well as three individuals at this location on June 14 (Day). One report from Southampton County on Route 607 (Farmers Bridge Road) at the bridge over Assamoosick Swamp on June 14 (Bose)

PROTHONOTARY WARBLER (*Protonotaria citrea*) Reported from all three counties. An adult was seen carrying food near the Blackwater River in Sussex (Atwood), and a fledgling was seen on Steel Bridge Road in Greensville (Glass et al.)

SWAINSON'S WARBLER (*Limnothlypis swainsonii*) One report from Greensville County, near Claesville, on Route 666 (Goose Pond Road) on June 16 (Elisa Enders).

OVENBIRD (*Seiurus aurocapilla*) Multiple reports in all three counties

LOUISIANA WATERTHRUSH (*Seiurus motacilla*) Five reports from Sussex County: one on Route 606 (Beaver Dam Road) on June 12 (Williams and Giese) and also on June 13 (Bose); one in NE Sussex on June 12 (D'Onofrio); one on Route 622 (Beaver Dam Road) at Assamoosick Swamp on June 14 (Day); one carrying food near the Blackwater River and one at Airfield 4-H Center on June 17 (Atwood). One report of 2 birds on Route 624 (Steel Bridge Road) in Greensville County on June 13 (Enders et al.). One report of a bird from the bridge over Raccoon Creek on Route 608 (Tower Hill Road) in Southampton County on June 14 (Bose)

KENTUCKY WARBLER (*Oporornis formosus*) Two birds in NE Sussex on June 12 (D'Onofrio); one bird at Spring Hill Pond and one at Airfield 4-H Center on

June 17 (Atwood) both in Sussex County; one on Route 602 (Cabin Point Road) south of Elm Lane on June 14 (Day). One bird on Route 624 (Steel Bridge Road) in Greenville County June 13 (Enders et al.). One in the vicinity of Bellyache Swamp on June 12 (Spahr) and one on June 14 at a swamp on Route 653 (Little Texas Road) 1 mile north of Route 662 (Ivey Tract Road) in Southampton County (Day).

COMMON YELLOWTHROAT (*Geothlypis trichas*) The most frequently reported warbler in all three counties. One bird was carrying nesting material in Greenville (Brown et al.)

HOODED WARBLER (*Wilsonia citrina*) Reported in all three counties

YELLOW-BREASTED CHAT (*Icteria virens*) Multiple reports in all three counties

SUMMER TANAGER (*Piranga rubra*) Multiple reports in all three counties

SCARLET TANAGER (*Piranga olivacea*) Most reports were from Sussex County. Only four reports in Greenville County: one report of a bird on private property on Route 611 (Dry Bread Road) on June 14 (Glass et al.); one in northern Greenville, and one in SE Greenville on June 16 (Dalmases) and June 17 (Atwood)

EASTERN TOWHEE (*Pipilo erythrophthalmus*) Multiple reports in all three counties

CHIPPING SPARROW (*Spizella passerina*) Multiple reports in all three counties. Adults seen carrying food and with fledglings in Greenville (Glass et al.), and a bird carrying food at Piney Grove (Spahr and Bose)

FIELD SPARROW (*Spizella pusilla*) Multiple reports in all three counties. Two juveniles were reported from the longleaf pine restoration site at Chub Sandhill in Sussex County on June 14 (Bose), and a bird was seen carrying food at Piney Grove (Spahr and Bose)

GRASSHOPPER SPARROW (*Ammodramus savannarum*) Multiple reports from Sussex County including one singing on territory on Route 620 (Brittle Mill Road) on June 12 (Williams and Giese) and 11 birds including two carrying food on a route near the Blackwater River on June 17 (Atwood). In Greenville County: a single bird from driving routes 660 (Fiddlers Road) and 622 (Little Low Ground Road) on June 13 (Enders et al.); three at the Route 730 (Low Ground Road)/Jones Road intersection on June 16 (Elisa Enders). In Southampton County there were two on Route 626 at Smithfield Farm on June 14 (Day).

SONG SPARROW (*Melospiza melodia*) Only one report during the foray period, at the Fairfield Inn in Emporia on June 17 (St. Andre), although two or three birds were reported in Emporia the week before the foray (Day)

NORTHERN CARDINAL (*Cardinalis cardinalis*) Multiple reports in all three counties. Adult with fledgling reported from Meherrin Reservoir in Greenville (Glass et al.)

BLUE GROSBEAK (*Passerina caerulea*) Multiple reports in all three counties

INDIGO BUNTING (*Passerina cyanea*) Multiple reports in all three counties; probably the most common and widespread passerine.

RED-WINGED BLACKBIRD (*Agelaius phoeniceus*) Present in all three counties in surprisingly low numbers – the high count was 10 at Laurel Grove Farm on Route 35 2.3 miles south of Route 634 (Old Forty Road) in Sussex County on June 14 (Day). A single bird was seen carrying food in a thistle field near Doodlum in Greenville County on June 13 (Sharrett and Ealding).

EASTERN MEADOWLARK (*Sturnella magna*) Reported in all three counties

COMMON GRACKLE (*Quiscalus quiscula*) Multiple reports in all three counties

BROWN-HEADED COWBIRD (*Molothrus ater*) Multiple reports in all three counties

ORCHARD ORIOLE (*Icterus spurius*) Reported in Sussex and Greenville Counties

HOUSE FINCH (*Carpodacus mexicanus*) Only one report from Sussex County, two birds seen on Route 628 (Courtland Road) on June 12 (Elisa Enders). Three reports from Greenville County: two birds on private property on Route 611 (Dry Bread Road) on June 14 (Glass et al.); a total of 9 birds on a 45 mile driving route in north Greenville on June 16 (Dalmases); a single bird just east of Quarter Road on Route 730 (Low Ground Road) also on June 16 (Browns).

AMERICAN GOLDFINCH (*Carduelis tristis*) Multiple reports in all three counties

HOUSE SPARROW (*Passer domesticus*) Three reports from Sussex County: six birds at Route 628 (Courtland Road) on June 12 (Elisa Enders); 15 birds on Route 620 (Brittle Mill Road) and 30 birds in downtown Wakefield (Williams and Giese) also on June 12. A single bird was seen in the Holiday Inn Express parking lot in Emporia in Greenville County on June 13 (Ealding), two birds were reported from Route 600 (Beef Road) at the intersection of Route 627 (Brink Road) south of Barley in Greenville County and one at a Purple Martin house on

Route 627 (Brink Road) 0.1 mile south of the intersection with Route 639 (Rock Bridge Road) on June 14 (Day).

REFERENCES:

Reports of Bachman's Sparrow in Virginia (1986-1993) American Birds (1986) 40(5) 1190, (1987) 41(5) 1421, (1989) 43(5) 1302, (1990) 44(5) 1123, (1991) 45(5) 1105-1106, (1992) 46(5) 1130, (1993) 47(5) 1098

Askins, R.A. (2002) Restoring North America's Birds. Second Edition. Yale University Press

Cox, J. and C. Jones (2008) Bachman's Sparrow and the Order of the Phoenix. Birding 40(3) 38-45

Dalmas, J.H. (1992). The Greensville County Foray of June 1991. The Raven 63(1) 21-33

Hilton, R. (1990). Bachman's Sparrow in Sussex County. The Raven 61(1) 10-12

LeGrand, H.E., Jr. (1976) American Birds 30 942-945

Rottenborn, S.C. and E.S. Brinkley (2007). Virginia's Birdlife: An Annotated Checklist. Fourth Edition. Virginia Avifauna No. 7

Scott, F.R. (1979). The Kerr Reservoir Foray of June 1977. The Raven 50(3) 43-53

Trollinger and Reay (2001) The Virginia Breeding Bird Atlas Project 1985-1989

Watts, B.D., M.D. Wilson and D.S. Bradshaw (1998). A Survey of the Bachman's Sparrow in Southeastern Virginia. The Raven 69 (1) 9-14

Nature Conservancy Piney Grove Preserve, Southeastern Virginia
<http://www.nature.org/wherewework/northamerica/states/virginia/preserves/art4982.html>

Virginia Society of Ornithology Principles of Birding Ethics (2008)
http://www.virginiabirds.net/VSO_PDFs/VSO_P_B_Ethcs_042009.pdf

Sussex County Government web site <http://sussexcounty.govoffice.com/>

Virginia Department of Game and Inland Fisheries Virginia Birding and Wildlife Trail partnership with eBird <http://ebird.org/content/va/news/vdgif-and-ebird-announce-partnership-between-ebird-and-the-virginia-birding-wildlife-trail>)

Youker, D. (2009) Anhinga nesting at Harwood Mills, York County, Virginia. Reported on VA-Bird list serve June 11, 2009

Ealding, W. (2009) Photographic documentation of Canada Goose nest with eggs, Sussex County, Virginia

<http://www.flickr.com/photos/37073885@N08/3408463398/in/set-72157619787409811/>

D'Onofrio, A. (2009) Photographic documentation of Anhinga in Sussex County, Virginia

<http://www.flickr.com/photos/39668089@N05/3647653432/>

Glass, P. (2009) Report of sighting of Loggerhead Shrike in Mecklenburg County, Virginia

<http://ebird.org/ebird/va/GuideMe?cmd=quickPick&speciesCode=&bMonth=01&bYear=2005&eMonth=12&eYear=2009&getLocations=states&states=US-VA&parentState=US-VA&reportType=species&speciesCodes=logshr&continue.x=35&continue.y=8>

Armistead, G. (2009) Report of sighting of Loggerhead Shrike in Nash County, North Carolina

<http://ebird.org/ebird/GuideMe?step=saveChoices&getLocations=counties&parentState=US-NC&speciesCodes=logshr&bMonth=01&bYear=2005&eMonth=12&eYear=2009&reportType=species&counties=US-NC-127&continue.x=51&continue.y=9>

North Carolina Gap Analysis Project Gap Data Tool Species Report for Bachman's Sparrow (2005)

<http://www.basic.ncsu.edu/ncgap/sppreport/abpbx91050.html>

eBird records of Bachman's Sparrow in North Carolina 1990-2009

<http://ebird.org/ebird/GuideMe?src=changeDate&speciesCodes=bacspa&getLocations=states&states=US-NC&parentState=US-NC&reportType=species&monthRadio=on&bMonth=01&eMonth=12&bYear=1990&eYear=2009&continue.x=59&continue.y=11>

Fussell, J.O. (1994) A Birder's Guide to Coastal North Carolina

Wilson, M.D., and B. D. Watts. (2009). Virginia Red-cockaded Woodpecker survey: 2009 Breeding Season. Center for Conservation Biology, College of William and Mary and Virginia Commonwealth University. Williamsburg, VA.

Harding, S.D. (2009) The 2008 VSO Foray – Breeding Birds of Riparian Areas

http://www.virginiabirds.net/VSO_PDFs/2008_VSO_Foray.pdf

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Table 1
General Foray Statistics

Foray Statistics	Sussex	Greenville	Southampton
total # checklists ¹	120	69	15
# point count checklists ¹	95	50	14
# traveling count checklists ¹	25	18	1
% of checklists that were point counts	79%	72%	93%
% of checklists that were traveling counts	21%	26%	7%
# hours	49.5	39.8	5.1
# observers	22	17	7
# species detected	92	90	73
# species with breeding evidence	17	13	5

¹The protocol for handling checklists and definitions of point and traveling counts are described under Methods

Table 2
Breeding activity

Species	Breeding evidence
Sussex	
Canada Goose	nest with 3 eggs, photographed on scouting trip prior to foray
Black Vulture	nest with eggs reported prior to foray
Red-headed Woodpecker	2 reports: pair at nest hole; one at excavated nest cavity
Red-cockaded Woodpecker*	family group of 4 feeding one young bird
Eastern Wood-Pewee	one on nest
Yellow-throated Vireo	2 adults feeding young in nest
Purple Martin	24 nesting at Purple Martin house
Carolina Chickadee	2 reports: adult at nest cavity, fledgling (1)
Eastern Bluebird	2 reports: 2 adults at nest box; one carrying food
Northern Mockingbird	adults feeding young
Brown Thrasher	adult carrying food
European Starling	adults feeding young
Prairie Warbler	3 adults carrying food
Prothonotary Warbler	one with food for young
Chipping Sparrow	one carrying food
Field Sparrow	2 reports: 1 carrying food; 2 juveniles
Grasshopper Sparrow	2 with food for young
Greensville	
Canada Goose	two families with 6 young
Wild Turkey	5 juveniles
Red-headed Woodpecker	visiting a nest cavity
Eastern Phoebe	nest under bridge
Yellow-throated Vireo	feeding young bird
Purple Martin	at houses and gourds
Barn Swallow	1 juvenile
Eastern Bluebird	1 juvenile
Prothonotary Warbler	fledgling
Common Yellowthroat	carrying nesting material
Chipping Sparrow	2 reports: one carrying food; fledgling
Northern Cardinal	fledgling
Red-winged Blackbird	one carrying food
Southampton	
Eastern Phoebe	on nest
American Crow	adult feeding young
Carolina Chickadee	fledglings
Blue-gray Gnatcatcher	fledglings
Pine Warbler	carrying food

Table 3
Comparison with 1991 foray and 2009 US Nightjar/BBS

Species reported	Sussex 2009	Greenville 2009	Southampton 2009	US Nightjar/BBS 2009	1991 foray
Canada Goose	X	X	X	X	X
Wood Duck	X		X	X	X
Mallard	X	X			X
Wild Turkey	X	X	X	X	X
Northern Bobwhite	X	X	X	X	X
Double-crested Cormorant	X				X
Anhinga	X		X		
Great Blue Heron	X	X	X	X	X
Great Egret	X	X	X	X	X
Green Heron	X	X	X	X	X
Black Vulture	X	X	X	X	X
Turkey Vulture	X	X	X	X	X
Mississippi Kite		X		X	X
Sharp-shinned Hawk					X
Cooper's Hawk	X	X			
Red-shouldered Hawk	X	X	X	X	X
Broad-winged Hawk					X
Red-tailed Hawk	X	X			X
American Kestrel			X		
Killdeer	X	X	X	X	X
American Woodcock		X			X
Rock Pigeon	X	X		X	X
Mourning Dove	X	X	X	X	X
Yellow-billed Cuckoo	X	X	X	X	X
Black-billed Cuckoo					X
Eastern Screech-Owl				X	X
Great Horned Owl					X
Barred Owl	X	X		X	X
Chuck-will's-widow	X			X	X
Whip-poor-will	X				X
Chimney Swift	X	X	X	X	X
Ruby-throated Hummingbird	X	X	X	X	X
Belted Kingfisher	X		X	X	X
Red-headed Woodpecker	X	X	X	X	X
Red-bellied Woodpecker	X	X	X	X	X
Downy Woodpecker	X	X	X	X	X
Hairy Woodpecker	X	X	X		X
Red-cockaded Woodpecker	X				X
Northern Flicker	X	X	X	X	X

Species reported	Sussex 2009	Greenville 2009	Southampton 2009	US Nightjar/BBS 2009	1991 foray
Pileated Woodpecker	X	X	X	X	X
Eastern Wood-Pewee	X	X	X	X	X
Acadian Flycatcher	X	X	X	X	X
Willow Flycatcher					X
Eastern Phoebe	X	X	X	X	X
Great Crested Flycatcher	X	X	X	X	X
Eastern Kingbird	X	X	X	X	X
Loggerhead Shrike		X			X
White-eyed Vireo	X	X	X	X	X
Yellow-throated Vireo	X	X	X	X	X
Blue-headed Vireo					X
Red-eyed Vireo	X	X	X	X	X
Blue Jay	X	X	X	X	X
American Crow	X	X	X	X	X
Fish Crow	X	X	X	X	X
Horned Lark	X	X	X	X	
Purple Martin	X	X		X	X
Tree Swallow	X	X		X	
Northern Rough-winged Swallow	X	X	X		X
Barn Swallow	X	X	X	X	X
Carolina Chickadee	X	X	X	X	X
Tufted Titmouse	X	X	X	X	X
White-breasted Nuthatch	X	X	X	X	X
Brown-headed Nuthatch	X			X	X
Carolina Wren	X	X	X	X	X
House Wren	X	X			X
Blue-gray Gnatcatcher	X	X	X	X	X
Eastern Bluebird	X	X	X	X	X
Wood Thrush	X	X		X	X
American Robin	X	X		X	X
Gray Catbird	X	X	X		X
Northern Mockingbird	X	X	X	X	X
Brown Thrasher	X	X	X	X	X
European Starling	X	X	X	X	X
Cedar Waxwing	X	X		X	
Northern Parula	X	X	X		X
Yellow Warbler					X
Yellow-throated Warbler	X	X	X	X	X
Pine Warbler	X	X	X	X	X
Prairie Warbler	X	X	X	X	X
Cerulean Warbler					X
Black-and-white Warbler	X			X	X

Species reported	Sussex 2009	Greensville 2009	Southampton 2009	US Nightjar/BBS 2009	1991 foray
American Redstart		X	X	X	X
Prothonotary Warbler	X	X	X	X	X
Worm-eating Warbler					X
Swainson's Warbler		X			X
Ovenbird	X	X	X	X	X
Louisiana Waterthrush	X	X	X	X	X
Kentucky Warbler	X	X	X		X
Common Yellowthroat	X	X	X	X	X
Hooded Warbler	X	X	X	X	X
Yellow-breasted Chat	X	X	X	X	X
Summer Tanager	X	X	X	X	X
Scarlet Tanager	X	X			X
Eastern Towhee	X	X	X	X	X
Bachman's Sparrow					X
Chipping Sparrow	X	X	X	X	X
Field Sparrow	X	X	X	X	X
Grasshopper Sparrow	X	X	X		X
Henslow's Sparrow					X
Song Sparrow		X			X
Northern Cardinal	X	X	X	X	X
Blue Grosbeak	X	X	X	X	X
Indigo Bunting	X	X	X	X	X
Red-winged Blackbird	X	X	X	X	X
Eastern Meadowlark	X	X	X	X	X
Common Grackle	X	X	X	X	X
Brown-headed Cowbird	X	X	X	X	X
Orchard Oriole	X	X		X	X
Baltimore Oriole					X
House Finch	X	X		X	X
American Goldfinch	X	X	X	X	X
House Sparrow	X	X		X	X

Table 4
Total Counts and Detection Rates by County

Species	Sussex		Greensville		Southampton	
	total #	detection rate	total #	detection rate	total #	detection rate
Canada Goose	78	3%	45	4%	15	7%
Wood Duck	2	1%			9	20%
Mallard	3	2%	1	1%		
Wild Turkey	16	8%	12	7%	3	7%
Northern Bobwhite	109	48%	72	36%	3	7%
Double-crested Cormorant	2	2%				
Anhinga	1	1%			1	7%
Great Blue Heron	19	9%	5	6%	4	13%
Great Egret	66	7%	5	6%	19	13%
Green Heron	6	3%	7	7%	5	33%
Black Vulture	31	9%	15	12%	8	13%
Turkey Vulture	108	24%	109	36%	18	13%
Mississippi Kite			11	12%		
Cooper's Hawk	2	2%	1	1%	1	
Red-shouldered Hawk	10	6%	4	6%	3	20%
Red-tailed Hawk	16	9%	8	10%		
American Kestrel					1	7%
Killdeer	28	10%	37	23%	2	7%
American Woodcock			1	1%		
Rock Pigeon	6	2%	7	3%		
Mourning Dove	200	42%	265	35%	24	7%
Yellow-billed Cuckoo	15	10%	12	13%	4	7%
Barred Owl	6	3%	4	3%		
Chuck-will's-widow	6	4%				
Whip-poor-will	3	1%				
Chimney Swift	40	15%	35	20%	9	20%
Ruby-throated Hummingbird	12	9%	8	7%	2	7%
Belted Kingfisher	2	2%			1	7%
Red-headed Woodpecker	25	16%	6	7%	3	13%
Red-bellied Woodpecker	19	13%	28	20%	3	7%
Downy Woodpecker	15	12%	10	10%	7	7%
Hairy Woodpecker	9	8%	3	4%	1	7%
Red-cockaded Woodpecker	9	3%				
Northern Flicker	26	15%	9	13%	4	13%
Pileated Woodpecker	17	13%	11	7%	2	13%
Eastern Wood-Pewee	56	28%	25	20%	4	7%

Species	Sussex		Greenville		Southampton	
	total #	detection rate	total #	detection rate	total #	detection rate
Acadian Flycatcher	45	19%	33	23%	9	13%
Eastern Phoebe	30	14%	28	26%	6	20%
Great Crested Flycatcher	36	21%	24	23%	11	20%
Eastern Kingbird	33	19%	21	23%	1	7%
Loggerhead Shrike			1	1%		
White-eyed Vireo	45	23%	51	35%	14	20%
Yellow-throated Vireo	40	20%	30	22%	4	20%
Red-eyed Vireo	115	32%	70	39%	26	60%
Blue Jay	21	9%	25	25%	1	7%
American Crow	194	50%	268	45%	43	27%
Fish Crow	12	8%	9	9%	18	13%
Horned Lark	11	5%	15	9%	1	7%
Purple Martin	62	6%	101	13%		
Tree Swallow	1	1%	2	1%		
Northern Rough-winged Swallow	1	1%	35	9%	9	7%
Barn Swallow	113	18%	90	23%	8	7%
Carolina Chickadee	40	19%	23	19%	16	13%
Tufted Titmouse	72	32%	34	17%	11	27%
White-breasted Nuthatch	14	8%	6	6%	2	13%
Brown-headed Nuthatch	22	12%				
Carolina Wren	122	41%	72	45%	9	20%
House Wren	3	2%	3	4%		
Blue-gray Gnatcatcher	77	32%	46	36%	18	27%
Eastern Bluebird	93	27%	65	23%	8	13%
Wood Thrush	20	10%	16	17%		
American Robin	57	14%	36	9%		
Gray Catbird	7	6%	2	3%	2	7%
Northern Mockingbird	60	19%	70	28%	2	7%
Brown Thrasher	44	25%	14	12%	4	7%
European Starling	127	8%	427	23%	9	7%
Cedar Waxwing	4	3%	2	1%		
Northern Parula	27	13%	26	13%	2	13%
Yellow-throated Warbler	18	11%	13	16%	3	13%
Pine Warbler	67	36%	30	14%	13	13%
Prairie Warbler	101	48%	41	29%	15	27%
Black-and-white Warbler	8	5%				
American Redstart			5	4%	1	7%
Prothonotary Warbler	42	17%	34	23%	9	20%

Species	Sussex		Greenville		Southampton	
	total #	detection rate	total #	detection rate	total #	detection rate
Swainson's Warbler			1	1%		
Ovenbird	55	24%	30	17%	4	7%
Louisiana Waterthrush	7	6%	2	1%	1	7%
Kentucky Warbler	5	3%	1	1%	2	7%
Common Yellowthroat	126	48%	77	42%	16	27%
Hooded Warbler	36	15%	28	19%	11	13%
Yellow-breasted Chat	94	38%	61	38%	8	13%
Summer Tanager	42	22%	20	19%	3	13%
Scarlet Tanager	12	9%	4	6%		
Eastern Towhee	77	44%	51	20%	2	7%
Chipping Sparrow	71	28%	55	25%	25	7%
Field Sparrow	121	50%	49	26%	11	7%
Grasshopper Sparrow	20	7%	4	3%	2	7%
Song Sparrow			1	1%		
Northern Cardinal	104	38%	75	42%	16	20%
Blue Grosbeak	85	24%	62	32%	5	13%
Indigo Bunting	183	55%	156	65%	16	27%
Red-winged Blackbird	23	6%	8	4%	2	13%
Eastern Meadowlark	30	10%	32	17%	2	7%
Common Grackle	144	18%	198	20%	1	7%
Brown-headed Cowbird	24	13%	28	10%	5	7%
Orchard Oriole	20	13%	13	14%		
House Finch	2	1%	14	7%		
American Goldfinch	37	21%	38	22%	6	13%
House Sparrow	51	3%	4	4%		

