

# *The Raven*

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

Volume 83

Number 1

2012



The Virginia Society of Ornithology, Inc. exists to encourage the systematic study of birds in Virginia, to stimulate interest in birds, and to assist the conservation of wildlife and other natural resources. All persons interested in those objectives are welcome as members. Present membership includes every level of interest, from professional scientific ornithologists to enthusiastic amateurs.

Activities undertaken by the Society include the following:

1. An annual meeting (usually in the spring), held in a different part of the state each year, featuring talks on ornithological subjects and field trips to nearby areas.
2. Other forays or field trips lasting a day or more and scheduled throughout the year so as to include all seasons and to cover the major physiographic regions of the state.
3. A journal, *The Raven*, published twice yearly, containing articles relevant to Virginia ornithology as well as news of the activities of the Society and its chapters.
4. A newsletter, the VSO Newsletter, published quarterly, containing current news items of interest to members and information about upcoming events and pertinent conservation issues.
5. Study projects (nesting studies, winter bird population surveys, etc.) aimed at making genuine contributions to ornithological knowledge.

In addition, some local chapters of the Society conduct their own programs of meetings, field trips and other projects.

Those wishing to participate in any of the above activities, or to cooperate in advancing the objectives of the Society, are cordially invited to join and should contact Thelma Dalmas, the Membership Secretary. Annual dues are \$20.00 for active members, \$35.00 for sustaining members, \$60.00 or more for contributing members, \$500.00 for life members, and \$25.00 for family members.

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Editor  
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Volume 83, No. 1

*Published by*  
THE VIRGINIA SOCIETY OF ORNITHOLOGY

2012

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ISSN 0034-0146

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## VIRGINIA CHRISTMAS BIRD COUNTS: 2011-2012 SEASON

TETA KAIN

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The 2011-12 Christmas count season was one of the warmest on record. The entire state basked in higher-than-usual temperatures and was mostly free of snow and ice. Brisk winds that often rake over the landscape during December and early January days were mostly absent. These gentler conditions brought out the second highest number of field observers and feeder watchers (1,546) on the 52 counts conducted, the most ever held in one year.

Those balmy conditions brought some unexpected species into the area, but it also decreased the normal influx of those sort-after northern species that drift into Virginia every winter. The one count on which conditions were less than ideal was Dismal Swamp NWR. A tremendous forest fire within its boundaries during late summer and fall destroyed many acres of habitat and rendered roads in many sections of the refuge impassable. The count was conducted as usual, but the much lower-than-usual numbers of many species demonstrates the devastating effects of the fire.

The only change in the count line-up was the return of the Lake Anna count after a year's absence. Donna Finnegan took over for Michael Boatwright, who had been compiler most years since 1988. Other compiler changes were at Breaks Interstate Park, where Austin Bradley replaced long-time compiler Terry Owens who headed up that count from 1998 through 2010; Kendall Smith stepped in for Don Ober at Gordonsville; Teta Kain compiled the Newport News count when Clark White resigned.

Probably the most talked about find this year was the Brewer's Sparrow (*Spizella breweri*) found on the Fort Belvoir count. Spectacular photos were obtained and many observers were lucky enough to see the bird. It is, of course, the first record for Virginia. Also, a Western Tanager (*Piranga ludoviciana*) visited a back yard feeder in Williamsburg on count day and the quick-thinking lady of the house grabbed a camera and got a good photo. It is only the second count record in the state, the other found at Back Bay in 1972.

There were quite a few other first-time occurrences. Central Loudoun had a Peregrine Falcon (*Falco peregrinus*), a Golden Eagle (*Aquila chrysaetos*), and a Greater White-fronted Goose (*Anser albifrons*). That goose, by the way, was the only White-fronted to appear on a Christmas count anywhere in the state in six years. Bristol birders found two Eurasian Collared-Doves (*Streptopelia decaocto*). An Indigo Bunting (*Passerina cyanea*) was a first for Blackford and the only one recorded on any count since 1994. The Black-throated Blue Warbler (*Setophaga caerulescens*) at Hopewell was the first found on any Virginia count since 1983. A Wilson's Warbler (*Cardellina pusilla*) was a first for

Northern Shenandoah Valley. Of the eight Virginia count records of this species, this sighting is the only one away from the Coastal Plain. A Summer Tanager (*Piranga rubra*), a Long-billed Curlew (*Numenius americanus*) and a Sandhill Crane (*Grus canadensis*) provided Wachapreague birders with some exciting moments. The tanager is probably the only winter Coastal Plain record for the state. A rarity for the Mountains and Valley region was the Black-and-white Warbler (*Mniotilta varia*) on the Shenandoah-Luray count.

Other first-time discoveries were nine Red-breasted Mergansers (*Mergus serrator*) in Giles County, a rare inland report of a Great Cormorant (*Phalacrocorax carbo*) at The Plains, a single Red Knot (*Calidris canutus*) at Newport News; a Cackling Goose (*Branta hutchinsii*) at Darlington Heights, and 10 Northern Shovelers (*Anas clypeata*) at Waynesboro.

Some firsts that were surprising, only because they haven't shown up on these particular counts previously, were a Palm Warbler (*Setophaga palmarum*) at Washington's Birthplace, a Northern Goshawk (*Accipiter gentilis*) at Calmes Neck, Red-necked Grebe (*Podiceps grisegena*), Willet (*Tringa semipalmata*), and Blue-gray Gnatcatcher (*Poliophtila caerulea*) at Nansemond River, a Green Heron (*Butorides virescens*) and a Lesser Yellowlegs (*Tringa flavipes*) at Manassas-Bull Run, an Osprey (*Pandion haliaetus*) at Mathews, and also, a Lincoln's Sparrow (*Melospiza lincolni*) on that count, accompanied by a nice photo to clinch identification. Though never common, all of those species are found occasionally in the respective count areas in the wintertime.

Other unusual sightings were two Brewer's Blackbirds (*Euphagus cyanocephalus*) at Augusta County, the second record for that count, a Palm Warbler at Blacksburg, only the 8<sup>th</sup> record in that count's 86-year history, a Common Loon (*Gavia immer*) at Gordonsville, the second occurrence of an Osprey at Calmes Neck, a Lark Sparrow (*Chondestes grammacus*) (photographed) at Waynesboro, and an adult Iceland Gull (*Larus glaucoideus*), at Little Creek was unusual because up until now, only immatures have been found along the Virginia coast during the winter months.

As would be expected in the warm conditions, Brant (*Branta bernicla*) did not come south in any appreciable numbers this year. The 1,858 recorded statewide is the 3<sup>rd</sup> lowest ever, a far cry from the 5-digit totals of the mid-20<sup>th</sup> century. In 1966, an all-time high of 35,451 was reported on three coastal counts, 32,000 of those at Chincoteague. Mute Swan (*Cygnus olor*) numbers have been steadily decreasing for the past 11 years and this year's 41 birds were the least seen since the 34 in 1998.



Quite a few compilers remarked that waterfowl numbers were low this year, blaming the warm weather for their absence. And there were, indeed, some very low tallies. The 1,038 Canvasbacks (*Aythya valisineria*) was the lowest number since 1982, when only 567 were counted; Surf Scoters (*Melanitta perspicillata*) (1,849) were the lowest since 1996; Common Mergansers (*Mergus merganser*) (369) were the lowest in five years. After last year's precipitous drop to 737 birds, Red-breasted Merganser numbers of 4,129 were back up to a normal level. Common Goldeneye (*Bucephala clangula*), however, continue their unrelenting decline with only 101 observed around the entire state.

Some ducks and geese appeared in surprising numbers. The second highest state total of Snow (blue form) Goose (*Chen caerulescens*) (3,657) was the most since 2005. The staggering state-wide total of 12,751 Gadwall (*Anas strepera*) was the highest ever. The only other times 5-digit totals had been reached for that species were 12,324 in 1974 and 11,228 in 1976. The huge increase is due, in part, to unusually high numbers at Chincoteague (939), Back Bay (2,716) and Brooke (6,675). Surprisingly, Fort Belvoir recorded a much lower number of Gadwall than usual. Another high count of ducks was that of Mallards (*Anas platyrhynchos*), with this year's total of 20,877 edging out the previous high of 20,850 set in 1987. The 2,089 Northern Shovelers were the most in 6 years. American Green-winged Teal (*Anas crecca*) number soared to an all-time high 6,575 after last year's total of 528, which was a 25-year low.

Bristol remains the stronghold for the Eared Grebe (*Podiceps nigricollis*), with two reported in 2011. The only other count to record this species in the past 11 years is Back Bay, with one bird in 2007. Between the years 1988 and 2000, Eared Grebes were reported occasionally at Nansemond River, Newport News, Little Creek and Chincoteague. One other aberrant individual was recorded on the Lynchburg count in 1987. Red-necked Grebes (*Podiceps grisegena*) were much more prevalent. After last year's total miss of this species, the 10 found statewide were the most counted since 13 were seen in 1998.

After two years of low numbers, Red-throated Loon (*Gavia stellata*) state totals shot back up to four digits. For 37 years (1964 through 2000) this species ran an average of 448 individuals/year. Suddenly, their numbers rose dramatically and the yearly average between 2001 and 2008 was 5089. Tallies in the years 2009 and 2010 slipped back to 390 and 479 respectively. It will be of interest to see if numbers will again remain in the 4-digit range or slip back to that 37-year average of less than 500.

Pied-billed Grebes (*Podilymbus podiceps*) seemed to be everywhere, as evidenced by a record high of 927, eclipsing the 860 tallied in 1975. In fact, at least 12 counts had record highs. Interestingly, last year's state total of 299 birds was the lowest since 1990. Horned Grebes (*Podiceps auritus*) also enjoyed a slight resurgence of 634 individuals, the most since 2005.

Warm weather enticed wading birds to linger in numbers not seen since the 1970s. Jacked up by Chincoteague's count of 182 Great Egrets (*Ardea alba*), the all-time high of 384 surpassed the 301 found in 1975. The Snowy Egret (*Egretta thula*) number (23) was somewhat higher than the preceding 31-year average of 16, but didn't touch the big numbers of the 1970s when the average soared to 66 over that 10-year period. The all-time high of 161 Snowys tallied in 1975 will be a very difficult number to surpass. After none were found last year, 2011 produced 17 Little Blue Herons (*Egretta caerulea*), the most since 66 were chalked up in 1986. Tricolored Herons (*Egretta tricolor*) (39) had their best showing in eight years. Two Green Herons, the one at Manassas-Bull Run mentioned above, and the other at Chincoteague, were the only ones found on Virginia counts in three years.

The White Ibis (*Eudocimus albus*) state total of 91 (all at Back Bay) was way up from the past several years. In fact, it was the second highest total for that species. The all-time high was 105 in 1997. Always erratic in occurrence, the surprise this year was that all the ibises were found at Back Bay. Most years, their favorite haunt has been Cape Charles. Never consistent or plentiful, and often absent, the eight Glossy Ibis (*Plegadis falcinellus*) found this year at Chincoteague and Back Bay were the most in 30 years. The highest count ever was 39 individuals at Chincoteague in 1971, when the Eastern Shore was much more of a watery world than it is today.

American Coot (*Fulica americana*) number took quite a jump from the low of the past two years, but this year's tally (13,186) doesn't touch the yearly totals of twenty to thirty thousand birds recorded regularly in the 1970s.

Shorebirds were another group that took advantage of balmy climes. American Avocets (*Recurvirostra americana*) and Spotted Sandpipers (*Actitis macularius*) showed up for the first time in three years; 1,681 Black-bellied Plovers (*Pluvialis squatarola*) was the most in 13 years; 779 American Oystercatchers (*Haematopus palliatus*) was the most in six years, and the second-highest number since 1988; 2,054 Sanderlings (*Calidris alba*) were the most in seven years; 727 Western Sandpipers (*Calidris mauri*) topped numbers of the previous 18 years; 1,067 individuals represented only the third time Willets (*Tringa semipalmata*) have spiked to over 1000 birds since they were first recorded on Virginia counts in 1960. Those three high tallies have all occurred within the last six years. Usual numbers for this species have been from 300 to 500. This was the fifth year in a row that Marbled Godwits (*Limosa fedoa*) have appeared in triple digit numbers (261). This increase stems from the addition of the Nassawaddox count, which has chalked up large numbers of this species every year but one since it began in 2006.

Even though the appearance of Razorbills (*Alca torda*) close to the Virginia coast has been increasing in recent years, the influx of 16 individuals on four coastal counts was unprecedented. The single birds at the Chesapeake Bay and

Little Creek counts were firsts for both. Five at Back Bay and nine at Cape Charles far exceeded previous sightings for those counts.

Two species whose state-wide numbers have remained rather steady over the years are Ring-billed Gulls (*Larus delawarensis*) and Herring Gulls (*Larus argentatus*). For the past three years, however, numbers for both species have noticeably decreased on Eastern Shore, the Southside area, and on those counts flanking the lower western shore of the Chesapeake Bay. To a lesser degree their numbers have decreased further up the bay at Brooke and Fort Belvoir. Yet, at Hopewell, many miles inland on the James River, over 5000 Herring Gulls far surpassed any previous numbers for that count.

Bald Eagle (*Haliaeetus leucocephalus*) number decreased somewhat after last year's record high, but their comeback continues to be strong. Ospreys (*Pandion haliaetus*) have shown a similar increase. Twenty-seven birds were recorded on nine counts, one of them, at Calmes Neck, and another, at Mathews, were firsts for both counts. Peregrine numbers are also climbing, with a record of 27 individuals on 11 counts around the state. Sadly, the American Kestrel (*Falco sparverius*) is experiencing a slow, but steady decline, with the populations remaining fairly steady only in the western section of the state.

Only 85 Northern Bobwhites (*Colinus virginianus*) were found statewide this year. Despite struggles to help this species, there has been no change in past five years, at least not of Christmas count numbers. In contrast, Wild Turkey (*Meleagris gallopavo*) set a new high of 981 birds, beating by three birds the old record set in 2007.

A variety of hummingbirds continues to show up during the winter months all over Virginia. This year six appeared on five counts and two others showed up during count week. The *Selasphorus* sp. individuals were firsts for both Charlottesville and Glade Spring.

Again, Common Ravens (*Corvus corax*) were sighted at Fort Belvoir, quite far east of their normal range; the 5<sup>th</sup> record there in eight years. Compiler Kurt Gaskill made this interesting comment in his summary: "The Common Raven is becoming more common in the winter near the Potomac and three separate teams saw the 3 birds. A pair was near the quarry just off I-95, so maybe Fairfax Co. breeding will be soon? Pretty amazing."

These Coastal Plains sightings of ravens brings up a point made by *Raven* editor J.J. Murray, when he published VSO's first newsletter in 1929. He named the publication "The Raven" in honor of this species that once inhabited the entire state of Virginia, but had, in the previous 50 years, receded to the western part of the state. Murray's hope was that someday the birds might once again occupy their ancient range that encompassed all of Virginia. Perhaps his wish is coming true. That trend of creeping eastward into the Coastal

Plain continues, with sightings of ravens reported on five of the last eight Ft Belvoir counts and one bird appearing on the Brooke count last year. The more easterly reaches of the Piedmont also show slight gains in population, as evidenced by the numbers coming from Central Loudoun, Lake Anna, Manassas-Bull Run, Nokesville, and The Plains. And to top it off, this year a new state high of 390 birds was reached.

A Loggerhead Shrike (*Lanius ludovicianus*) was recorded at Peaks of Otter, though compiler Barry Kinzie stresses that it was found below 1500 feet elevation. Usually, only birds found above 1500 feet are counted, but he decided to include the sighting because of its rarity, and to compare it with the only other Loggerhead sighting of an individual in 1970. That bird, also, was seen below 1500 feet. The same Loggerhead Shrike seen last year on the Back Bay count was still hanging around this year in the same area. Ned Brinkley reported that the bands on the bird indicate that it was captured in Carden, Ontario, in June 2011 as a wild second-year bird. Even with these two individuals spotted in unusual places, the species hangs on precariously, with the total around the state this year at 12, two under the average of 14 birds counted yearly over the past 16 years.

The warm winter certainly seemed to hold the Red-breasted Nuthatches (*Sitta canadensis*) back from their usual southerly drift into Virginia during the winter. Their numbers tend to fluctuate rather dramatically from year to year, but this year's drop to 31 individuals statewide, compared to 364 last year, was noteworthy, indeed. That's the lowest found since 1984, when only 20 were recorded on 13 of the 39 counts held that year.

Brown-headed Nuthatches (*Sitta pusilla*) have been showing up on four of the last five years at Blacksburg and/or Roanoke. Those two counts date all the way back to the mid-1930s and only one Brown-headed had been recorded (Roanoke, 1967) over that long span of years.

It is noteworthy just how consistent numbers for Blue Jay (*Cyanocitta cristata*) have been over the past 40 years. The yearly average is 7135, very close to this year's total of 7154. It should be taken into account, however, that over that 40-year span, the number of Virginia counts have increased from 32 to 52 and the number of observers has increased from approximately 600 to over 1600. Blue Jays are quite easy to spot, hear, and identify, even by the novice birder, so the conclusion could be drawn that though the population appears to be stable, the increased coverage by more people over a greater area indicates a decline. This is so with a number of other species. At first glance, they appear to be holding their own, but further inspection reveals that is not the case. Other resident species in that category that come to mind, when examining Xmas count data covering that same span of time, are Northern Flicker (*Colaptes auratus*), Northern Mockingbird (*Colaptes auratus*), Savannah Sparrow (*Passerculus sandwichensis*) and Song Sparrow (*Melospiza*

*melodia*).

Numbers were low (68) for Black-capped Chickadees (*Poecile atricapillus*) and also for Purple Finches (*Carpodacus purpureus*) (77), the second lowest since 1977. Yellow-rumped (*Setophaga coronata*), Pine (*Setophaga pinus*), and Palm Warbler numbers were normal, all falling into the normal yearly averages. Orange-crowned Warblers (*Oreothlypis celata*) had an exception year, with a state high of 32 individuals, 10 of those at Cape Charles. Both Williamsburg and Fort Belvoir reported one each, very rare finds for both of those counts.

Chipping Sparrows (*Spizella passerina*) reached an all-time high as 1,843 birds topped the previous record of 1,768 in 2008. This species has fared extremely well in Virginia, increasing on counts steadily since first seen in 1951. State-wide, 1,558 Field Sparrows (*Spizella pusilla*) were found. Although this total is higher than the last two years, Field Sparrows have shown a marked decline on counts since 1975. That year almost 6000 were recorded statewide. Another sparrow in sharp decline is the Vesper Sparrow (*Pooecetes gramineus*). In 1970, 141 were recorded. Granted, that was an exception year for them, but their numbers have steadily crept downward ever since. In 2008 and 2009 none were recorded. This year just one was seen, at Chincoteague. Thirty-five Seaside Sparrows (*Ammodramus maritimus*) were found in 2011, the highest number in 6 years, but this species has greatly decreased in numbers in the past 15 years. There were only 222 Fox Sparrows (*Passerella iliaca*), a big drop from last year's all-time high of 921, but more in keeping with totals of last few years. Their numbers have always seesawed up and down. The 1,649 Swamp Sparrows (*Melospiza georgiana*) were the most seen since the year 2000.

Some significant record high counts for individual counts around the state are as follows (previous high and year attained in parentheses): 4 Barn Owls (*Tyto alba*) (2, multiple years) at Augusta County; 4221 Chipping Sparrows (245 in 1996) and 5 Baltimore Orioles (*Icterus galbula*) (2 in 2003 and 2004) at Cape Charles; 1,142 Fish Crows (*Corvus ossifragus*) (968 in 2008) at Central Loudoun; 110 American Pipits (*Anthus rubescens*) (7 in 2010) at Chatham; 111 Ring-necked Ducks (*Aythya collaris*) (66 in 2009) at Fincastle; 89 Lesser Black-backed Gulls (*Larus fuscus*) (35 in 2009) at Little Creek; 18 Bald Eagles (12 in 2006) at Shenandoah NP-Luray; 187 American Woodcock (*Scolopax minor*) (24 in 2008) and 40 Great Horned Owls (*Bubo virginianus*) (25 in 2005) at Walkerton; and 427 Swamp Sparrows (112 in 2010) at Hopewell.

Data from the counts are tabulated in two Tables on the following pages. In both Tables, the counts ("Count Circles") are numbered in order from 1 to 52, beginning with the Eastern Shore counts and proceeding in a roughly east-to-west and north-to-south configuration. Eastern Shore Count Circles are numbered 1-5, Coastal Plain Count Circles 6-17, Piedmont Count Circles 18-31, and Mountains and Valleys Count Circles 32-52. Table 1 lists the number of individuals of each species seen, and Table 2 the field conditions (primarily

collection and meteorological data), compilers of counts and circle location and information for the central location of each of the 52 counts. Data from Chesapeake Bay, Darlington Heights, Chatham, Peaks of Otter, and Giles County were not submitted to the National Audubon database. Even though the circle center of Bristol is in Virginia, that count is submitted to Audubon, but under the Tennessee counts each year.

Explanation of the abbreviations used in the tables are as follows:

Bvd = Boulevard  
 CLD = Cloudy  
 CLM = Calm  
 CLR = Clear  
 Cmdr = Commander  
 Co = County  
 CW = Count week  
 Dec = December  
 E = East  
 Jan = January  
 Jct = Junction  
 LGR = Light rain  
 LIS = Light intermittent snow  
 LSN = Light snow  
 MCD = Mostly cloudy  
 mi = Mile(s)  
 mph = Miles per hour  
 Mt = Mountain  
 MWO = Moving water open  
 N = North  
 NR or nr = Not recorded  
 NRV = New River Valley  
 NW = Northwest  
 NWR = National Wildlife Refuge  
 PCD = Partly cloudy  
 PCR = Partly clear  
 Rd = Road  
 Rt(s) = Route(s)  
 S = South  
 SE = Southeast  
 SMO = Still water mostly open  
 Sp = species  
 SPF = Still water partly frozen  
 SW = Southwest  
 TN = Tennessee  
 U or UNK = Unknown  
 V or VAR = Variable  
 VA = Virginia  
 W = West  
 WMA = Wildlife Management Area  
 WOP = Water open  
 WSW = West southwest



**Table 1. Species Counts (p. 1 of 20)**

Species Count Circle	Greater White- fronted Goose	Snow Goose (white form)	Snow Goose (blue form)	Ross's Goose	Brant	Cackling Goose	Canada Goose	goose sp.	Mute Swan	Tundra Swan	Wood Duck	Gadwall	Eurasian Wigeon
1. Chincoteague	...	9,532	140	3	30	12	4,102	...	...	436	12	939	...
2. Wachapreague	...	416	3	...	670	...	248	...	...	15	2	6	...
3. Nassawaddox	...	100	...	...	90	...	705	...	...	...	15	65	...
4. Cape Charles	...	43	1	...	960	...	2,248	...	...	32	2	292	...
5. Chesapeake Bay	...	...	...	...	...	...	...	19	...	...	...	...	...
6. Little Creek	...	...	...	...	58	...	690	...	...	...	22	77	...
7. Back Bay	...	3,380	11	4	...	...	1,069	...	...	1,235	4	2,716	1
8. Nansemond River	...	...	...	...	...	...	3,436	...	1	2	2	93	...
9. Dismal Swamp	...	...	...	...	...	...	...	...	...	1	22	18	...
10. Newport News	...	...	...	...	50	...	889	...	...	17	2	128	...
11. Mathews County	...	...	...	...	...	...	1,139	...	8	303	...	...	...
12. Williamsburg	...	...	...	...	...	...	3,213	...	11	13	7	63	...
13. Hopewell	...	1,000	3,500	2	...	1	9,399	...	2	3	50	233	...
14. Walkerton	...	4	1	...	...	...	3,908	...	...	21	32	44	...
15. Washingtons Birthplace	...	...	...	...	...	...	11,524	...	2	273	11	154	...
16. Brooke	...	...	...	...	...	...	1,078	...	4	489	7	6,675	...
17. Fort Belvoir	...	1	...	...	...	1	10,888	...	...	428	69	805	...
18. Central Loudoun County	1	...	...	...	...	...	4,942	...	...	...	2	57	...
19. The Plains	...	1	...	...	...	...	4,065	...	2	12	3	191	...
20. Manassas-Bull Run	...	...	...	...	...	...	4,469	...	...	...	...	13	...
21. Nokesville	...	...	1	...	...	1	1,711	...	1	1	2	6	...
22. Chancellorsville	...	...	...	...	...	...	493	...	10	...	1	4	...
23. Lake Anna	...	...	...	...	...	...	129	...	...	...	...	...	...
24. Gordonsville	...	...	...	...	...	...	1,119	...	...	...	...	...	...
25. Charlottesville	...	...	...	...	...	...	476	...	...	...	1	10	...
26. Warren	...	...	...	...	...	...	1,183	...	...	...	...	...	...
27. Darlington Heights	...	...	...	...	...	1	277	...	...	...	...	...	...
28. Banister River	...	...	...	...	...	...	188	...	...	...	29	...	...
29. Lynchburg	...	...	...	...	...	...	527	...	...	...	...	21	...
30. Chatham	...	...	...	...	...	...	44	...	...	...	3	...	...
31. Danville	...	...	...	...	...	...	102	...	...	...	...	...	...
32. Calmes Neck	...	...	...	...	...	...	3,819	...	...	3	...	...	...
33. N. Shenandoah Valley	...	...	...	...	...	...	2,261	...	...	...	1	10	...
34. Shenandoah NP-Luray	...	1	...	...	...	...	424	...	...	...	...	8	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	...	...	...	...	...	231	...	...	...	2	4	...
37. Augusta County	...	...	...	...	...	...	680	...	...	2	1	25	...
38. Waynesboro	...	...	...	...	...	...	609	...	...	...	...	CW	...
39. Lexington	...	...	...	...	...	...	274	...	...	...	1	4	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	20	...	...	...	...	150	...	...	...	...	23	...
42. Roanoke	...	...	...	...	...	...	272	...	...	...	6	38	...
43. Blacksburg	...	...	...	...	...	...	182	...	...	...	...	CW	...
44. Giles County	...	13	...	...	...	...	76	...	...	...	...	...	...
45. Tazewell	...	...	...	...	...	...	138	...	...	...	...	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	5	...	...	...	...	...	...
47. Glade Spring	...	...	...	...	...	...	353	...	...	...	1	12	...
48. Blackford	...	...	...	...	...	...	224	...	...	...	...	...	...
49. Bristol	...	...	...	...	...	...	542	...	...	...	...	17	...
50. Buchanan County	...	...	...	...	...	...	...	...	...	...	...	...	...
51. Breaks Interstate Park	...	...	...	...	...	...	2	...	...	...	...	...	...
52. Wise County	...	...	...	...	...	...	6	...	...	...	...	...	...
Totals	1	14,511	3,657	9	1,858	16	84,509	19	41	3,286	312	12,751	1

**Table 1. Species Counts (p. 2 of 20)**

Species Count Circle	American Wigeon	American Black Duck	Mallard	black duck/ mallard sp.	Blue- winged Teal	Northern Shoveler	Northern Pintail	American Green- winged Teal	Canvas- back	Red- head	Ring- necked Duck	Greater Scaup
1. Chincoteague	781	2,079	7,073	4	...	411	632	3,987	1	2	9	6
2. Wachapreague	1	820	223	...	...	...	...	...	...	...	2	...
3. Nassawaddox	28	278	49	...	...	32	...	10	...	1	26	...
4. Cape Charles	145	432	220	...	...	18	3	115	...	5	259	7
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	255	13	375	...	...	159	6	21	...	...	90	1
7. Back Bay	478	282	290	...	7	238	339	520	2	6	184	...
8. Nansemond River	107	65	144	...	...	894	...	284	563	...	715	...
9. Dismal Swamp	...	100	6	...	...	...	...	10	...	...	152	...
10. Newport News	105	195	692	...	1	5	...	...	...	4	111	...
11. Mathews County	...	3	92	...	...	...	...	...	...	...	...	3
12. Williamsburg	13	30	280	...	...	1	3	55	115	1	187	...
13. Hopewell	43	61	912	...	...	52	2	262	1	2	335	...
14. Walkerton	8	86	416	...	...	15	857	99	...	...	230	...
15. Washingtons Birthplace	21	329	1,018	...	...	6	1	317	3	...	21	5
16. Brooke	83	19	726	...	...	...	4	5	2	6	296	...
17. Fort Belvoir	22	1,413	3,285	...	...	229	317	654	350	62	1,136	5
18. Central Loudoun County	5	48	523	...	...	8	3	41	...	...	302	...
19. The Plains	91	149	237	...	...	...	2	76	1	3	1,154	1
20. Manassas-Bull Run	...	4	329	...	...	...	...	...	...	...	12	...
21. Nokesville	...	7	525	...	...	...	...	...	...	...	29	...
22. Chancellorsville	...	...	56	...	...	...	...	...	...	3	6	...
23. Lake Anna	...	...	23	...	...	...	...	...	...	...	...	...
24. Gordonsville	...	...	9	...	...	...	...	...	...	...	5	...
25. Charlottesville	...	...	104	...	...	...	...	...	...	...	...	...
26. Warren	...	8	20	...	...	...	...	6	...	...	165	...
27. Darlington Heights	...	...	2	...	...	...	...	...	...	...	...	...
28. Banister River	...	...	6	...	...	...	...	...	...	...	1	...
29. Lynchburg	...	...	212	...	...	...	...	...	...	1	63	...
30. Chatham	...	...	...	...	...	...	...	...	...	...	...	...
31. Danville	...	...	20	...	...	...	...	...	...	...	...	...
32. Calmes Neck	6	39	152	...	...	...	...	10	...	...	132	...
33. N. Shenandoah Valley	12	28	203	...	...	...	4	37	...	...	104	...
34. Shenandoah NP-Luray	2	...	122	...	...	...	...	5	...	...	1	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	2	2	420	...	...	4	...	24	...	...	...	...
37. Augusta County	2	CW	414	...	...	5	...	9	...	...	...	...
38. Waynesboro	2	2	214	...	...	10	...	...	...	...	...	...
39. Lexington	...	12	65	...	...	...	...	...	...	...	15	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	3	99	...	...	...	...	12	...	...	111	...
42. Roanoke	...	1	146	...	...	1	...	6	...	...	1	...
43. Blacksburg	8	14	378	...	...	...	...	1	...	...	...	...
44. Giles County	...	...	14	...	...	...	...	1	...	...	...	...
45. Tazewell	...	...	26	...	...	...	...	...	...	...	...	...
46. Mount Rogers-Whitetop	...	...	9	...	...	...	...	...	...	...	...	...
47. Glade Spring	...	...	188	...	...	...	1	...	...	...	...	...
48. Blackford	2	4	172	...	...	...	...	...	...	...	7	...
49. Bristol	26	2	358	...	...	1	...	8	...	2	53	...
50. Buchanan County	...	...	2	...	...	...	...	...	...	...	...	...
51. Breaks Interstate Park	...	...	4	...	...	...	...	...	...	...	...	...
52. Wise County	...	...	24	...	...	...	...	...	...	...	...	...
Totals	2,248	6,528	20,877	4	8	2,089	2,174	6,575	1,038	98	5,914	28

Table 1. Species Counts (p. 3 of 20)

Species Count Circle	Lesser Scaup	scaup sp.	Surf Scoter	White- winged Scoter	Black Scoter	scoter sp.	Long- tailed Duck	Buffle- head	Common Golden- eye	Hooded Merganser	Common Merganser	Red- breasted Merganser
1. Chincoteague	30	...	277	11	609	350	19	1,556	9	138	48	310
2. Wachapreague	...	...	310	21	24	...	8	1,294	6	64	...	48
3. Nassawaddox	...	...	52	5	8	...	30	355	1	241	...	86
4. Cape Charles	5	4	685	...	49	181	44	3,317	8	390	...	459
5. Chesapeake Bay	4	6	385	4	32	...	1	4	...	...	...	97
6. Little Creek	2	...	4	...	94	...	6	482	...	297	...	1,870
7. Back Bay	64	...	17	...	...	...	...	40	...	87	...	701
8. Nansemond River	18	...	19	...	...	...	...	358	1	234	...	116
9. Dismal Swamp	...	...	...	...	...	...	...	...	...	4	...	...
10. Newport News	18	...	78	...	4	...	8	659	6	181	...	144
11. Mathews County	4	...	22	3	9	...	10	1,172	3	108	36	167
12. Williamsburg	14	...	...	...	...	...	...	125	5	122	...	46
13. Hopewell	34	...	...	...	...	...	...	185	2	153	...	...
14. Walkerton	1	...	...	...	...	...	...	73	1	19	...	2
15. Washingtons Birthplace	630	...	...	...	...	...	9	93	59	74	11	21
16. Brooke	286	...	...	...	...	...	...	133	...	69	9	9
17. Fort Belvoir	8,849	...	...	...	...	...	CW	566	...	232	37	40
18. Central Loudoun County	18	...	...	...	...	...	...	43	...	51	25	...
19. The Plains	7	...	...	...	...	...	...	105	...	209	21	...
20. Manassas-Bull Run	...	...	...	...	...	...	...	9	...	46	131	...
21. Nokesville	1	...	...	...	...	...	...	...	...	7	4	...
22. Chancellorsville	6	...	...	...	...	...	...	36	...	10	...	...
23. Lake Anna	...	...	...	...	...	...	2	35	...	6	3	...
24. Gordonsville	...	...	...	...	...	...	...	...	...	36	...	...
25. Charlottesville	...	...	...	...	...	...	...	...	...	6	...	...
26. Warren	...	...	...	...	...	...	...	20	...	3	...	...
27. Darlington Heights	...	...	...	...	...	...	...	...	...	5	...	...
28. Banister River	...	...	...	...	...	...	...	18	...	42	...	4
29. Lynchburg	...	...	...	...	...	...	...	4	...	22	...	...
30. Chatham	...	...	...	...	...	...	...	...	...	...	...	...
31. Danville	...	...	...	...	...	...	...	...	...	14	...	...
32. Calmes Neck	...	...	...	...	...	...	...	...	...	15	12	...
33. N. Shenandoah Valley	...	...	...	...	...	...	...	1	...	59	...	...
34. Shenandoah NP-Luray	...	...	...	...	...	...	...	3	...	...	20	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	...	...	...	...	...	...	1	...	...	...	...
37. Augusta County	...	...	...	...	...	...	...	...	...	CW	...	...
38. Waynesboro	10	...	...	...	...	...	...	1	...	...	CW	CW
39. Lexington	...	...	...	...	...	...	...	CW	...	45	12	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	...	...	...	...	...	...	3	...	7	...	...
42. Roanoke	...	...	...	...	...	...	...	3	...	16	...	...
43. Blacksburg	1	...	...	...	...	...	...	9	...	48	...	...
44. Giles County	...	...	...	...	...	...	...	...	...	46	...	9
45. Tazewell	...	...	...	...	...	...	...	...	...	...	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	1	...	...
47. Glade Spring	...	...	...	...	...	...	...	...	...	7	...	...
48. Blackford	7	...	...	...	...	...	...	7	...	9	...	...
49. Bristol	2	...	...	...	...	...	...	101	...	198	...	...
50. Buchanan County	...	...	...	...	...	...	...	...	...	...	...	...
51. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	...	...	...
52. Wise County	...	...	...	...	...	...	...	...	...	...	...	...
Totals	10,011	10	1,849	44	829	531	137	10,811	101	3,321	369	4,129

Table 1. Species Counts (p. 4 of 20)

Species Count Circle	Ruddy Duck	American black duck x mallard hybrid	duck sp.	Ruffed Grouse	Wild Turkey	Northern Bob- white	Red- throated Loon	Common Loon	loon sp.	Pied- billed Grebe	Horned Grebe	Eared Grebe	Red- necked Grebe
1. Chincoteague	91	...	...	...	9	7	430	235	...	11	99	...	2
2. Wachapreague	3	...	...	...	16	1	88	32	1	6	28	...	...
3. Nassawaddox	...	...	...	...	20	6	40	45	...	16	41	...	...
4. Cape Charles	14	2	...	...	...	9	2,100	122	...	88	120	...	...
5. Chesapeake Bay	...	...	...	...	...	...	520	16	...	...	1	...	1
6. Little Creek	55	...	...	...	...	...	277	73	...	76	15	...	1
7. Back Bay	1,139	...	...	...	...	23	3,600	59	...	197	4	...	...
8. Nansemond River	2,898	...	...	...	2	...	18	9	...	52	46	...	1
9. Dismal Swamp	3	...	14	...	5	...	...	...	...	1	...	...	...
10. Newport News	23	2	...	...	...	...	25	51	...	49	234	...	...
11. Mathews County	706	...	...	...	24	...	11	65	...	3	14	...	5
12. Williamsburg	3,480	...	...	...	...	...	1	5	...	39	5	...	...
13. Hopewell	113	...	...	...	7	...	...	...	...	17	3	...	...
14. Walkerton	17	...	...	...	21	28	...	...	...	11	...	...	...
15. Washingtons Birthplace	53	...	...	...	37	10	...	3	...	1	1	...	...
16. Brooke	391	...	...	...	1	...	...	...	...	62	1	...	...
17. Fort Belvoir	1,171	...	...	...	69	...	...	5	...	36	5	...	...
18. Central Loudoun County	1	...	...	...	111	...	...	...	...	5	...	...	...
19. The Plains	18	...	...	...	9	...	...	...	...	18	2	...	...
20. Manassas-Bull Run	...	...	...	...	...	...	...	...	...	14	...	...	...
21. Nokesville	2	...	...	...	2	...	...	...	...	11	...	...	...
22. Chancellorsville	61	...	...	...	...	...	...	1	...	15	...	...	...
23. Lake Anna	...	...	...	...	3	...	...	8	...	12	4	...	...
24. Gordonsville	...	...	...	...	...	...	...	1	...	2	...	...	...
25. Charlottesville	...	...	4	...	20	...	...	...	...	20	...	...	...
26. Warren	...	...	...	...	16	...	...	...	...	14	...	...	...
27. Darlington Heights	...	...	...	...	7	...	...	...	...	9	...	...	...
28. Banister River	...	...	8	...	3	1	...	1	...	3	...	...	...
29. Lynchburg	...	...	...	...	29	...	...	...	...	44	...	...	...
30. Chatham	...	...	...	...	5	...	...	...	...	1	...	...	...
31. Danville	...	...	...	...	15	...	...	...	...	6	...	...	...
32. Calmes Neck	...	...	...	...	100	...	...	...	...	2	...	...	...
33. N. Shenandoah Valley	1	...	...	...	74	...	...	...	...	4	...	...	...
34. Shenandoah NP-Luray	7	...	...	2	93	...	...	...	...	1	...	...	...
35. Big Flat Mountain	...	...	...	3	5	...	...	...	...	1	...	...	...
36. Rockingham County	...	...	...	...	...	...	...	...	...	1	...	...	...
37. Augusta County	...	...	...	...	8	...	...	...	...	3	...	...	...
38. Waynesboro	...	...	...	1	14	...	...	...	...	...	...	...	...
39. Lexington	1	...	...	...	10	...	...	...	...	3	...	...	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	6	...	...	...
41. Fincastle	...	...	...	...	23	...	...	...	...	2	...	...	...
42. Roanoke	...	...	...	...	...	...	...	...	...	2	...	...	...
43. Blacksburg	...	...	...	...	50	...	...	...	...	3	...	...	...
44. Giles County	...	...	...	1	3	...	...	...	...	...	...	...	...
45. Tazewell	...	...	...	...	15	...	...	...	...	7	...	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...	...	...	...
47. Glade Spring	...	...	...	1	4	...	...	...	...	1	...	...	...
48. Blackford	1	...	...	...	17	...	...	...	...	8	...	...	...
49. Bristol	1	...	...	...	23	...	...	2	...	38	11	2	...
50. Buchanan County	...	...	...	4	42	...	...	...	...	1	...	...	...
51. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	1	...	...	...
52. Wise County	...	...	...	1	6	...	...	...	...	4	...	...	...
Totals	10,250	4	26	13	918	85	7,110	733	1	927	634	2	10



Table 1. Species Counts (p. 5 of 20)

Species Count Circle	Northern Gannet	American White Pelican	Brown Pelican	Double- crested Cormorant	Great Cormorant	American Bittern	Great Blue Heron (blue form)	Great Egret	Snowy Egret	Little Blue Heron	Tri- colored Heron	Green Heron
1. Chincoteague	36	...	1	145	1	3	163	182	7	9	26	1
2. Wachapreague	6	...	1	2	...	...	41	1	...	...	...	...
3. Nassawaddox	5	...	1	41	...	...	37	...	...	...	...	...
4. Cape Charles	3,766	1	263	98	23	...	89	10	6	3	5	...
5. Chesapeake Bay	880	...	3	43	38	...	CW	...	...	...	...	...
6. Little Creek	1,200	...	125	1,500	3	2	89	84	10	...	...	...
7. Back Bay	200	1	37	194	...	3	46	52	...	5	8	...
8. Nansemond River	...	...	60	1,727	...	...	39	13	...	...	...	...
9. Dismal Swamp	...	...	...	...	...	...	...	...	...	...	...	...
10. Newport News	41	...	117	904	...	...	88	27	...	...	...	...
11. Mathews County	149	...	10	43	...	...	56	...	...	...	...	...
12. Williamsburg	...	...	16	1,719	...	...	74	...	...	...	...	...
13. Hopewell	...	...	...	869	...	...	46	...	...	...	...	...
14. Walkerton	...	...	...	32	...	...	26	9	...	...	...	...
15. Washingtons Birthplace	...	...	...	7	...	...	15	CW	...	...	...	...
16. Brooke	...	...	...	225	...	...	60	...	...	...	...	...
17. Fort Belvoir	...	...	...	88	...	...	243	6	...	...	...	...
18. Central Loudoun County	...	...	...	6	...	...	25	...	...	...	...	...
19. The Plains	...	...	...	11	1	...	13	...	...	...	...	...
20. Manassas-Bull Run	...	...	...	4	...	...	15	...	...	...	...	1
21. Nokesville	...	...	...	...	...	...	9	...	...	...	...	...
22. Chancellorsville	...	...	...	4	...	...	3	...	...	...	...	...
23. Lake Anna	...	...	...	1	...	...	8	...	...	...	...	...
24. Gordonsville	...	...	...	...	...	...	6	...	...	...	...	...
25. Charlottesville	...	...	...	...	...	...	18	...	...	...	...	...
26. Warren	...	...	...	...	...	...	1	...	...	...	...	...
27. Darlington Heights	...	...	...	...	...	...	2	...	...	...	...	...
28. Banister River	...	...	...	4	...	...	18	...	...	...	...	...
29. Lynchburg	...	...	...	...	...	...	19	...	...	...	...	...
30. Chatham	...	...	...	...	...	...	2	...	...	...	...	...
31. Danville	...	...	...	...	...	...	5	...	...	...	...	...
32. Calmes Neck	...	...	...	...	...	...	27	...	...	...	...	...
33. N. Shenandoah Valley	...	...	...	...	...	...	60	...	...	...	...	...
34. Shenandoah NP-Luray	...	...	...	...	...	...	17	...	...	...	...	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	...	...	...	...	...	8	...	...	...	...	...
37. Augusta County	...	...	...	...	...	...	14	...	...	...	...	...
38. Waynesboro	...	...	...	...	...	...	5	...	...	...	...	...
39. Lexington	...	...	...	...	...	...	18	...	...	...	...	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	...	...	...	...	...	6	...	...	...	...	...
42. Roanoke	...	...	...	...	...	...	12	...	...	...	...	...
43. Blacksburg	...	...	...	1	...	...	21	...	...	...	...	...
44. Giles County	...	...	...	...	...	...	4	...	...	...	...	...
45. Tazewell	...	...	...	...	...	...	1	...	...	...	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	1	...	...	...	...	...
47. Glade Spring	...	...	...	...	...	...	15	...	...	...	...	...
48. Blackford	...	...	...	...	...	...	12	...	...	...	...	...
49. Bristol	...	...	...	1	...	...	28	...	...	...	...	...
50. Buchanan County	...	...	...	...	...	...	2	...	...	...	...	...
51. Breaks Interstate Park	...	...	...	...	...	...	4	...	...	...	...	...
52. Wise County	...	...	...	...	...	...	3	...	...	...	...	...
Totals	6,283	2	634	7,669	66	8	1,514	384	23	17	39	2

Table 1. Species Counts (p. 6 of 20)

Species Count Circle	Black- crowned Night- Heron	White Ibis	Glossy Ibis	Black Vulture	Turkey Vulture	Osprey	Bald Eagle	Northern Harrier	Sharp- shinned Hawk	Cooper's Hawk	Northern Goshawk	Accipiter sp.	Red- should- ered Hawk
1. Chincoteague	11	...	2	39	206	...	67	27	4	5	...	...	10
2. Wachapreague	...	...	...	65	392	...	34	19	3	3	...	...	4
3. Nassawaddox	2	...	...	103	227	...	35	20	6	2	...	...	2
4. Cape Charles	3	...	...	100	215	2	40	35	11	10	...	...	9
5. Chesapeake Bay	...	...	...	...	...	...	1	...	...	...	...	...	...
6. Little Creek	4	...	...	5	67	8	9	6	7	3	...	...	...
7. Back Bay	1	91	6	95	129	...	18	31	10	7	...	...	9
8. Nansemond River	1	...	...	34	182	4	16	13	5	5	...	...	7
9. Dismal Swamp	...	...	...	131	91	1	5	...	...	...	...	...	7
10. Newport News	1	...	...	12	71	5	31	10	7	3	...	2	4
11. Mathews County	...	...	...	78	201	1	24	10	4	7	...	...	9
12. Williamsburg	...	...	...	93	347	...	55	4	5	2	...	...	18
13. Hopewell	...	...	...	101	120	4	68	11	3	5	...	...	19
14. Walkerton	...	...	...	105	649	...	52	3	5	2	...	...	24
15. Washingtons Birthplace	...	...	...	86	216	...	102	8	2	1	...	...	6
16. Brooke	...	...	...	134	289	...	153	7	3	1	...	...	16
17. Fort Belvoir	...	...	...	236	289	...	85	2	15	18	...	6	74
18. Central Loudoun County	...	...	...	521	778	...	28	4	8	14	...	3	79
19. The Plains	...	...	...	228	381	...	16	4	3	6	...	...	61
20. Manassas-Bull Run	...	...	...	199	211	...	13	6	3	11	...	3	47
21. Nokesville	...	...	...	137	95	...	20	7	3	4	...	...	23
22. Chancellorsville	...	...	...	24	59	...	5	...	CW	1	...	1	6
23. Lake Anna	...	...	...	74	118	...	12	1	...	1	...	...	5
24. Gordonsville	...	...	...	36	51	...	2	...	2	1	...	...	7
25. Charlottesville	...	...	...	214	365	...	2	...	10	6	...	...	23
26. Warren	...	...	...	52	137	...	5	4	7	2	...	...	10
27. Darlington Heights	...	...	...	36	233	...	1	10	1	3	...	...	10
28. Banister River	...	...	...	47	103	...	2	3	5	2	...	...	3
29. Lynchburg	...	...	...	246	347	...	2	...	8	2	...	...	7
30. Chatham	...	...	...	29	167	...	...	1	1	2	...	...	3
31. Danville	...	...	...	3	30	...	...	...	...	...	...	...	...
32. Calmes Neck	...	...	...	248	482	1	21	6	3	10	1	...	26
33. N. Shenandoah Valley	...	...	...	152	161	...	11	5	10	17	...	...	16
34. Shenandoah NP-Luray	5	...	...	17	17	...	18	2	4	4	...	...	13
35. Big Flat Mountain	...	...	...	1	5	...	3	...	1	...	...	...	...
36. Rockingham County	...	...	...	...	158	...	...	...	3	4	...	...	3
37. Augusta County	...	...	...	142	450	...	...	2	4	10	...	...	1
38. Waynesboro	2	...	...	93	206	...	...	2	1	5	...	...	6
39. Lexington	...	...	...	129	367	...	2	1	5	3	...	1	11
40. Peaks of Otter	...	...	...	...	1	...	...	...	...	...	...	...	...
41. Fincastle	...	...	...	95	219	...	...	2	4	4	...	...	1
42. Roanoke	...	...	...	36	80	...	2	...	3	6	...	...	3
43. Blacksburg	...	...	...	307	49	...	1	1	5	4	...	1	1
44. Giles County	...	...	...	1	...	...	...	...	1	...	...	...	...
45. Tazewell	...	...	...	3	5	...	...	...	1	2	...	...	1
46. Mount Rogers-Whitetop	...	...	...	1	50	...	...	...	1	...	...	...	1
47. Glade Spring	1	...	...	88	154	...	2	2	5	3	...	...	1
48. Blackford	...	...	...	17	12	...	3	1	4	2	...	...	3
49. Bristol	...	...	...	35	16	1	6	...	4	5	...	...	2
50. Buchanan County	...	...	...	...	1	...	...	...	...	...	...	...	1
51. Breaks Interstate Park	...	...	...	5	4	...	...	1	...	...	...	...	...
52. Wise County	...	...	...	...	...	...	...	...	1	1	...	...	5
Totals	31	91	8	4,633	9,203	27	972	271	201	209	1	17	597

Table 1. Species Counts (p. 7 of 20)

Species Count Circle	Red- tailed Hawk	Rough- legged Hawk	Buteo sp.	Golden Eagle	large hawk sp.	American Kestrel	Merlin	Peregrine Falcon	raptor sp.	Clapper Rail	King Rail	Virginia Rail	Sora
1. Chincoteague	8	...	...	...	...	9	6	2	...	2	...	...	...
2. Wachapreague	11	...	...	1	...	10	...	3	...	1	...	...	...
3. Nassawaddox	20	...	...	...	...	11	...	...	...	4	...	...	...
4. Cape Charles	49	...	1	...	...	15	3	12	...	24	...	2	1
5. Chesapeake Bay	...	...	...	...	...	...	...	CW	...	...	...	...	...
6. Little Creek	17	...	...	...	...	1	...	2	...	23	...	...	...
7. Back Bay	28	...	...	...	...	7	3	...	...	...	25	22	5
8. Nansemond River	31	...	...	...	...	5	...	1	...	35	...	1	...
9. Dismal Swamp	3	...	...	...	...	5	...	...	...	...	...	...	...
10. Newport News	31	...	1	...	...	6	1	2	1	4	...	...	...
11. Mathews County	14	...	...	...	...	2	1	1	...	12	...	...	...
12. Williamsburg	24	...	...	...	...	5	...	...	...	3	...	...	...
13. Hopewell	34	...	...	...	...	10	2	1	...	...	2	2	...
14. Walkerton	38	...	...	1	...	11	...	...	...	...	...	...	...
15. Washingtons Birthplace	18	...	...	...	...	4	...	...	...	...	...	...	...
16. Brooke	17	...	...	...	...	...	1	...	...	...	...	1	...
17. Fort Belvoir	70	...	...	...	...	4	1	1	...	...	2	2	...
18. Central Loudoun County	108	...	...	1	...	10	2	1	...	...	...	1	...
19. The Plains	87	...	...	...	...	7	1	...	...	...	...	...	...
20. Manassas-Bull Run	58	...	...	...	...	4	1	...	...	...	...	...	...
21. Nokesville	29	...	...	...	...	6	...	...	...	...	...	...	...
22. Chancellorsville	7	...	...	...	1	1	...	...	...	...	...	...	...
23. Lake Anna	9	...	...	...	...	6	...	...	...	...	...	...	...
24. Gordonsville	14	...	...	1	...	4	...	...	...	...	...	...	...
25. Charlottesville	29	...	...	...	...	2	...	...	...	...	...	...	...
26. Warren	32	...	...	...	...	8	...	...	...	...	...	...	...
27. Darlington Heights	22	...	...	...	...	11	...	...	...	...	...	...	...
28. Banister River	10	...	...	...	...	3	...	...	...	...	...	...	...
29. Lynchburg	50	...	...	...	...	...	...	...	...	...	...	...	...
30. Chatham	5	...	...	...	...	4	...	...	...	...	...	...	...
31. Danville	4	...	...	...	...	...	...	...	...	...	...	...	...
32. Calmes Neck	86	1	...	...	...	29	...	...	...	...	...	...	...
33. N. Shenandoah Valley	104	1	...	...	...	17	2	1	...	...	...	...	...
34. Shenandoah NP-Luray	49	2	...	2	...	15	1	...	...	...	...	...	...
35. Big Flat Mountain	2	...	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	53	...	...	...	...	26	1	...	...	...	...	...	...
37. Augusta County	47	...	...	...	...	19	1	CW	...	...	...	...	...
38. Waynesboro	29	1	...	...	...	7	...	...	...	...	...	...	...
39. Lexington	46	1	...	...	...	11	...	...	...	...	...	...	...
40. Peaks of Otter	9	...	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	38	...	...	...	...	15	...	...	...	...	...	...	...
42. Roanoke	10	...	...	...	...	...	...	...	...	...	...	...	...
43. Blacksburg	23	...	...	...	...	9	...	...	...	...	...	...	...
44. Giles County	5	...	...	...	...	1	...	...	...	...	...	...	...
45. Tazewell	9	1	...	...	...	10	...	...	...	...	...	...	...
46. Mount Rogers-Whitetop	5	...	...	...	...	4	...	...	...	...	...	...	...
47. Glade Spring	34	...	...	...	...	30	...	...	...	...	...	...	...
48. Blackford	21	CW	...	16	...	12	...	...	...	...	...	...	...
49. Bristol	21	...	...	...	...	16	...	...	...	...	...	...	...
50. Buchanan County	18	...	...	...	...	1	...	...	...	...	...	...	...
51. Breaks Interstate Park	4	...	...	...	...	...	...	...	...	...	...	...	...
52. Wise County	5	1	...	...	...	2	...	...	...	...	...	...	...
Totals	1,495	8	2	22	1	395	27	27	1	108	29	31	6

**Table 1. Species Counts (p. 8 of 20)**

Species Count Circle	yellow- legs sp.	Whim- brel	Long- billed Curlew	Marbled Godwit	Ruddy Turn- stone	Red Knot	Sander- ling	Western Sand- piper	Least Sand- piper	Purple Sand- piper	Dunlin	peep sp.	Short- billed Dowitcher
1. Chincoteague	...	...	...	34	12	3	625	13	...	...	2,135	600	36
2. Wachapreague	...	...	1	...	6	5	61	267	10	...	3,080	1	4
3. Nassawadox	...	...	...	215	66	...	62	122	...	...	4,719	...	94
4. Cape Charles	...	4	...	12	34	42	483	252	1	...	11,051	...	52
5. Chesapeake Bay	...	...	...	...	2	...	9	...	...	56	...	...	...
6. Little Creek	...	...	...	...	11	...	247	...	...	6	27	...	...
7. Back Bay	2	...	...	...	...	1	68	...	...	...	155	...	...
8. Nansemond River	...	...	...	...	11	...	109	...	...	...	69	...	...
9. Dismal Swamp	...	...	...	...	...	...	...	...	...	...	...	...	...
10. Newport News	...	...	...	...	22	1	168	73	...	...	1,306	...	44
11. Mathews County	...	...	...	...	...	...	222	...	...	...	552	...	...
12. Williamsburg	...	...	...	...	...	...	...	...	...	...	51	...	...
13. Hopewell	...	...	...	...	...	...	...	...	2	...	...	...	...
14. Walkerton	...	...	...	...	...	...	...	...	...	...	140	...	...
15. Washingtons Birthplace	...	...	...	...	...	...	...	...	...	...	...	...	...
16. Brooke	...	...	...	...	...	...	...	...	...	...	...	...	...
17. Fort Belvoir	...	...	...	...	...	...	...	...	...	...	...	...	...
18. Central Loudoun County	...	...	...	...	...	...	...	...	...	...	...	...	...
19. The Plains	...	...	...	...	...	...	...	...	...	...	...	...	...
20. Manassas-Bull Run	...	...	...	...	...	...	...	...	...	...	...	...	...
21. Nokesville	...	...	...	...	...	...	...	...	...	...	...	...	...
22. Chancellorsville	...	...	...	...	...	...	...	...	...	...	...	...	...
23. Lake Anna	...	...	...	...	...	...	...	...	...	...	...	...	...
24. Gordonsville	...	...	...	...	...	...	...	...	...	...	...	...	...
25. Charlottesville	...	...	...	...	...	...	...	...	...	...	...	...	...
26. Warren	...	...	...	...	...	...	...	...	...	...	...	...	...
27. Darlington Heights	...	...	...	...	...	...	...	...	...	...	...	...	...
28. Banister River	...	...	...	...	...	...	...	...	...	...	...	...	...
29. Lynchburg	...	...	...	...	...	...	...	...	...	...	...	...	...
30. Chatham	...	...	...	...	...	...	...	...	...	...	...	...	...
31. Danville	...	...	...	...	...	...	...	...	...	...	...	...	...
32. Calmes Neck	...	...	...	...	...	...	...	...	...	...	...	...	...
33. N. Shenandoah Valley	...	...	...	...	...	...	...	...	...	...	...	...	...
34. Shenandoah NP-Luray	...	...	...	...	...	...	...	...	...	...	...	...	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	...	...	...	...	...	...	...	...	...	...	...	...
37. Augusta County	...	...	...	...	...	...	...	...	...	...	...	...	...
38. Waynesboro	...	...	...	...	...	...	...	...	...	...	...	...	...
39. Lexington	...	...	...	...	...	...	...	...	...	...	...	...	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	...	...	...	...	...	...	...	...	...	...	...	...
42. Roanoke	...	...	...	...	...	...	...	...	...	...	...	...	...
43. Blacksburg	...	...	...	...	...	...	...	...	...	...	...	...	...
44. Giles County	...	...	...	...	...	...	...	...	...	...	...	...	...
45. Tazewell	...	...	...	...	...	...	...	...	...	...	...	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...	...	...	...
47. Glade Spring	...	...	...	...	...	...	...	...	...	...	...	...	...
48. Blackford	...	...	...	...	...	...	...	...	...	...	...	...	...
49. Bristol	...	...	...	...	...	...	...	...	...	...	...	...	...
50. Buchanan County	...	...	...	...	...	...	...	...	...	...	...	...	...
51. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	...	...	...	...
52. Wise County	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	2	4	1	261	164	52	2,054	727	13	62	23,285	601	230



Table 1. Species Counts (p. 9 of 20)

Species Count Circle	Long- billed Dowitcher	dowitcher sp.	Wilson's Snipe	American Wood- cock	Laughing Gull	Black- headed Gull	Bonaparte's Gull	Ring-billed Gull	Herring Gull	Iceland Gull	Lesser Black- backed Gull
1. Chincoteague	...	5	2	16	4	CW	23	231	1,525	...	8
2. Wachapreague	...	...	...	...	...	...	3	442	319	...	...
3. Nassawaddox	...	...	2	1	...	...	6	608	148	...	...
4. Cape Charles	...	...	5	26	...	CW	1,305	744	1,534	...	1
5. Chesapeake Bay	...	...	...	...	3	...	1,077	670	700	...	1
6. Little Creek	...	...	...	...	1	...	355	4,440	621	1	89
7. Back Bay	1	...	14	6	1	...	86	1,660	202	...	80
8. Nansemond River	...	...	1	10	...	...	22	1,512	560	...	1
9. Dismal Swamp	...	...	...	...	...	...	...	...	...	...	...
10. Newport News	...	...	...	1	6	...	11	1,525	160	...	...
11. Mathews County	...	...	...	12	...	...	93	913	353	...	...
12. Williamsburg	...	...	5	1	...	...	2	426	55	...	...
13. Hopewell	...	...	4	...	2,124	...	2	4,045	5,354	...	1
14. Walkerton	...	...	42	187	...	...	...	847	2	...	...
15. Washingtons Birthplace	...	...	5	...	...	...	2	2,309	13	...	...
16. Brooke	...	...	...	...	812	...	...	4,650	178	...	...
17. Fort Belvoir	...	...	4	21	1	...	1	5,399	418	...	CW
18. Central Loudoun County	...	...	...	1	...	...	...	1,996	72	...	...
19. The Plains	...	...	4	1	...	...	...	358	224	...	1
20. Manassas-Bull Run	...	...	...	...	...	...	...	542	15	...	...
21. Nokesville	...	...	...	2	19	...	...	1,017	41	...	...
22. Chancellorsville	...	...	...	...	...	...	...	91	...	...	...
23. Lake Anna	...	...	...	...	...	...	23	1,284	838	...	1
24. Gordonsville	...	...	...	...	...	...	...	...	...	...	...
25. Charlottesville	...	...	5	1	...	...	...	2	...	...	...
26. Warren	...	...	...	2	...	...	...	2	...	...	...
27. Darlington Heights	...	...	...	5	...	...	...	...	...	...	...
28. Banister River	...	...	...	17	...	...	18	146	...	...	...
29. Lynchburg	...	...	...	...	...	...	...	6	...	...	...
30. Chatham	...	...	...	...	...	...	...	...	...	...	...
31. Danville	...	...	...	...	...	...	...	7	...	...	...
32. Calmes Neck	...	...	...	...	...	...	...	1	...	...	...
33. N. Shenandoah Valley	...	...	1	...	...	...	...	...	1	...	...
34. Shenandoah NP-Luray	...	...	1	1	...	...	...	...	...	...	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	...	1	...	...	...	...	...	...	...	...
37. Augusta County	...	...	...	...	...	...	...	...	...	...	...
38. Waynesboro	...	...	...	...	...	...	...	...	...	...	...
39. Lexington	...	...	3	...	...	...	...	32	...	...	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	...	3	...	...	...	...	11	...	...	...
42. Roanoke	...	...	...	...	...	...	...	19	...	...	...
43. Blacksburg	...	...	...	...	...	...	...	16	...	...	...
44. Giles County	...	...	...	...	...	...	...	...	...	...	...
45. Tazewell	...	...	...	...	...	...	...	...	...	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...	...
47. Glade Spring	...	...	...	...	...	...	...	...	...	...	...
48. Blackford	...	...	...	...	...	...	...	...	...	...	...
49. Bristol	...	...	5	...	...	...	2	170	...	...	...
50. Buchanan County	...	...	...	...	...	...	...	...	...	...	...
51. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	...	...
52. Wise County	...	...	...	...	...	...	...	...	...	...	...
Totals	1	5	107	311	2,971	0	3,031	36,121	13,333	1	183

Table 1. Species Counts (p. 10 of 20)

Species Count Circle	Great Black- backed Gull	gull sp.	Forster's Tern	Royal Tern	tern sp.	Black Skimmer	Parasitic Jaeger	Razorbill	Rock Pigeon	Eurasian Collared- Dove	Mourning Dove	Barn Owl
1. Chincoteague	169	...	598	...	...	...	...	...	1,585	...	165	...
2. Wachapreague	29	258	67	...	1	...	...	...	68	...	161	...
3. Nassawaddox	14	19	113	...	...	...	...	...	165	...	178	...
4. Cape Charles	1,219	...	130	...	...	...	...	9	1,094	5	225	1
5. Chesapeake Bay	1,140	...	...	...	...	...	...	1	10	...	...	...
6. Little Creek	297	...	194	2	...	2	...	5	736	...	100	...
7. Back Bay	80	...	84	...	...	...	1	1	295	5	295	...
8. Nansemond River	36	500	11	...	...	...	...	...	266	...	317	3
9. Dismal Swamp	...	...	...	...	...	...	...	...	...	...	74	...
10. Newport News	89	19	30	...	...	...	...	...	599	...	407	...
11. Mathews County	116	...	55	...	...	...	...	...	11	...	190	...
12. Williamsburg	21	...	78	...	...	...	...	...	182	...	118	...
13. Hopewell	28	...	2	...	...	...	...	...	206	...	256	1
14. Walkerton	...	...	...	...	...	...	...	...	17	...	261	1
15. Washingtons Birthplace	1	...	17	...	...	...	...	...	7	...	216	CW
16. Brooke	12	...	...	...	...	...	...	...	22	...	97	...
17. Fort Belvoir	108	1,388	...	...	...	...	...	...	248	...	566	...
18. Central Loudoun County	5	...	...	...	...	...	...	...	506	...	512	...
19. The Plains	37	...	...	...	...	...	...	...	191	...	277	...
20. Manassas-Bull Run	...	18	...	...	...	...	...	...	294	...	392	...
21. Nokesville	20	...	...	...	...	...	...	...	82	...	267	...
22. Chancellorsville	...	...	...	...	...	...	...	...	10	...	27	...
23. Lake Anna	75	...	...	...	...	...	...	...	12	...	16	...
24. Gordonsville	...	...	...	...	...	...	...	...	108	...	138	...
25. Charlottesville	...	...	...	...	...	...	...	...	103	...	116	...
26. Warren	...	...	...	...	...	...	...	...	70	...	268	1
27. Darlington Heights	...	...	...	...	...	...	...	...	58	...	182	...
28. Banister River	...	...	...	...	...	...	...	...	2	...	64	...
29. Lynchburg	...	...	...	...	...	...	...	...	141	...	196	...
30. Chatham	...	...	...	...	...	...	...	...	7	...	58	...
31. Danville	...	...	...	...	...	...	...	...	57	...	75	...
32. Calmes Neck	...	...	...	...	...	...	...	...	391	...	421	...
33. N. Shenandoah Valley	...	...	...	...	...	...	...	...	426	...	1,018	...
34. Shenandoah NP-Luray	...	...	...	...	...	...	...	...	640	...	436	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	...	...	...	...	...	...	...	1,232	...	439	...
37. Augusta County	...	...	...	...	...	...	...	...	432	...	265	4
38. Waynesboro	...	...	...	...	...	...	...	...	185	...	199	1
39. Lexington	...	...	...	...	...	...	...	...	346	...	141	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	...	...	...	...	...	...	...	38	...	72	...
42. Roanoke	...	...	...	...	...	...	...	...	184	...	74	...
43. Blacksburg	...	...	...	...	...	...	...	...	382	9	534	...
44. Giles County	...	...	...	...	...	...	...	...	47	...	...	...
45. Tazewell	...	...	...	...	...	...	...	...	93	...	68	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	29	...	4	...
47. Glade Spring	...	...	...	...	...	...	...	...	472	7	217	...
48. Blackford	...	...	...	...	...	...	...	...	12	...	189	...
49. Bristol	...	...	...	...	...	...	...	...	272	2	340	...
50. Buchanan County	...	...	...	...	...	...	...	...	...	...	32	...
51. Breaks Interstate Park	...	...	...	...	...	...	...	...	61	...	42	...
52. Wise County	...	...	...	...	...	...	...	...	93	...	53	...
Totals	3,496	2,202	1,379	2	1	2	1	16	12,487	28	10,758	12

Table 1. Species Counts (p. 11 of 20)

Species Count Circle	Eastern Screech- Owl	Great Horned Owl	Barred Owl	Short- eared Owl	Northern Saw-whet Owl	Arch- loclus sp.	Rufous Humming- bird	Selas- phorus sp.	Belted Kingfisher	Red- headed Wood- pecker	Red- bellied Wood- pecker	Yellow- bellied Sap- sucker
1. Chincoteague	31	14	1	...	...	...	...	...	38	3	36	19
2. Wachapreague	...	2	...	1	...	...	...	...	16	...	6	7
3. Nassawaddox	1	1	...	...	...	...	...	...	10	1	43	13
4. Cape Charles	16	9	...	1	1	...	...	...	31	3	125	28
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	10	2	1	...	...	...	1	1	23	...	41	11
7. Back Bay	13	7	1	...	...	...	...	...	21	...	50	22
8. Nansemond River	5	6	...	...	...	CW	...	...	18	...	68	16
9. Dismal Swamp	20	7	1	...	...	...	...	...	...	...	78	43
10. Newport News	14	6	...	...	...	...	...	...	39	10	45	15
11. Mathews County	1	8	...	...	...	...	...	...	36	2	65	16
12. Williamsburg	6	8	4	...	...	...	1	...	16	20	119	42
13. Hopewell	2	9	1	...	...	...	CW	...	18	8	69	47
14. Walkerton	12	40	14	...	...	...	...	...	23	21	95	34
15. Washingtons Birthplace	5	14	3	...	...	...	...	...	15	11	76	46
16. Brooke	...	...	1	...	...	...	...	...	20	10	118	15
17. Fort Belvoir	16	26	32	...	...	...	...	...	58	47	603	47
18. Central Loudoun County	1	1	7	...	...	...	...	...	19	4	168	35
19. The Plains	26	25	4	...	1	...	...	...	8	1	140	40
20. Manassas-Bull Run	...	2	2	...	...	...	...	...	9	2	228	19
21. Nokesville	1	...	3	...	...	...	...	...	...	...	50	10
22. Chancellorsville	4	4	2	...	...	...	...	...	4	4	39	9
23. Lake Anna	1	1	...	...	...	...	...	...	5	1	13	2
24. Gordonsville	1	...	...	...	...	...	...	...	5	1	21	8
25. Charlottesville	3	3	...	...	...	...	...	1	23	1	108	67
26. Warren	2	2	2	...	...	...	...	...	9	...	58	27
27. Darlington Heights	5	7	1	...	...	...	...	...	3	3	35	8
28. Banister River	...	7	4	...	...	...	...	...	6	15	39	20
29. Lynchburg	10	5	1	...	...	...	1	...	22	6	134	29
30. Chatham	...	1	...	...	...	...	...	...	1	1	19	6
31. Danville	...	CW	...	...	...	...	...	...	2	2	16	7
32. Calmes Neck	5	...	9	...	...	...	...	...	17	10	177	32
33. N. Shenandoah Valley	21	3	1	...	...	...	...	...	45	25	139	34
34. Shenandoah NP-Luray	7	CW	CW	...	...	...	...	...	18	...	83	20
35. Big Flat Mountain	2	2	1	...	...	...	...	...	...	...	8	1
36. Rockingham County	...	7	...	...	...	...	...	...	12	9	46	8
37. Augusta County	...	2	1	...	...	...	...	...	8	2	57	12
38. Waynesboro	1	1	...	...	...	...	...	...	7	1	59	8
39. Lexington	11	1	1	...	...	...	...	...	11	...	70	23
40. Peaks of Otter	1	...	...	...	...	...	...	...	1	...	14	7
41. Fincastle	2	2	...	...	...	...	...	...	7	1	36	11
42. Roanoke	2	...	...	...	...	...	...	...	4	...	23	9
43. Blacksburg	2	1	...	...	...	...	...	...	12	12	65	13
44. Giles County	4	5	...	...	...	...	...	...	5	...	21	6
45. Tazewell	1	...	...	...	...	...	...	...	3	...	5	...
46. Mount Rogers-Whitetop	2	...	...	...	...	...	...	...	2	...	2	...
47. Glade Spring	10	2	2	...	...	...	...	1	7	...	29	2
48. Blackford	6	1	...	...	...	...	...	...	11	...	19	2
49. Bristol	12	5	1	...	...	...	...	...	12	...	37	6
50. Buchanan County	1	...	...	...	...	...	...	...	3	...	8	1
51. Breaks Interstate Park	...	...	...	...	...	...	...	...	6	...	8	1
52. Wise County	...	...	1	...	...	...	...	...	3	...	8	1
Totals	296	249	102	2	2	CW	3	3	692	237	3,619	905

Table 1. Species Counts (p. 12 of 20)

Species Count Circle	Downy Wood- pecker	Hairy Wood- pecker	Northern (Yellow- shafted) Flicker	Pileated Wood- pecker	Eastern Phoebe	Logger- head Shrike	White- eyed Vireo	Blue- headed Vireo	Blue Jay	American Crow	Fish Crow	crow sp.
1. Chincoteague	39	13	78	11	7	...	...	...	52	224	4	12
2. Wachapreague	6	2	24	4	3	...	...	...	13	509	8	3
3. Nassawadox	13	11	92	6	5	...	...	...	16	411	10	81
4. Cape Charles	51	25	138	12	21	...	...	...	62	321	149	25
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	26	3	29	14	...	...	1	CW	52	572	1,485	329
7. Back Bay	37	2	52	21	5	1	...	1	54	196	90	...
8. Nansemond River	42	4	54	8	7	...	...	2	65	393	386	115
9. Dismal Swamp	44	7	46	19	3	...	3	6	5	4	...	...
10. Newport News	32	4	51	3	1	...	...	...	122	263	5	...
11. Mathews County	16	4	60	14	3	...	...	...	85	444	...	...
12. Williamsburg	50	15	47	21	6	...	...	...	72	184	2	20
13. Hopewell	43	10	86	23	20	...	...	...	50	202	...	11
14. Walkerton	57	21	124	59	29	...	...	...	114	820	...	...
15. Washingtons Birthplace	29	9	17	10	8	...	...	...	47	468	...	...
16. Brooke	44	16	39	17	3	...	...	...	105	491	69	...
17. Fort Belvoir	396	85	233	95	8	...	...	...	727	2,436	1,388	1,426
18. Central Loudoun County	147	24	101	43	1	1	...	...	201	1,664	1,142	691
19. The Plains	129	18	92	26	4	...	...	...	295	913	109	...
20. Manassas-Bull Run	194	24	162	41	...	...	...	...	490	2,072	394	233
21. Nokesville	26	4	55	7	...	...	...	...	76	328	2	40
22. Chancellorsville	28	3	12	14	1	...	...	...	70	122	...	...
23. Lake Anna	7	1	14	7	3	...	...	...	55	178	...	...
24. Gordonsville	10	4	9	7	3	...	...	...	63	221	...	...
25. Charlottesville	91	18	113	56	19	...	...	...	348	1,073	31	...
26. Warren	36	7	66	39	5	...	...	...	321	693	...	...
27. Darlington Heights	35	2	45	13	15	...	...	...	102	584	...	...
28. Banister River	26	4	56	13	9	...	...	1	60	159	...	...
29. Lynchburg	93	18	77	47	15	...	...	...	433	790	9	...
30. Chatham	13	...	10	6	1	...	...	...	45	129	...	...
31. Danville	7	2	3	1	1	...	...	...	33	34	...	...
32. Calmes Neck	134	20	102	37	3	...	...	...	193	937	3	1
33. N. Shenandoah Valley	140	27	67	44	2	1	...	...	526	1,860	1	...
34. Shenandoah NP-Luray	73	6	57	37	6	...	...	...	221	715	89	...
35. Big Flat Mountain	9	4	...	5	...	...	...	...	3	11	...	...
36. Rockingham County	45	4	27	5	2	...	...	...	211	216	...	...
37. Augusta County	43	5	12	10	2	...	...	...	322	684	60	...
38. Waynesboro	48	3	40	21	4	...	...	...	174	526	8	...
39. Lexington	61	9	20	20	8	...	...	...	228	1,178	25	...
40. Peaks of Otter	17	7	2	13	3	1	...	...	12	96	...	...
41. Fincastle	33	11	26	15	3	...	...	...	256	1,177	...	...
42. Roanoke	33	4	7	8	1	...	...	...	51	173	2	...
43. Blacksburg	101	17	37	31	3	...	...	...	215	986	...	...
44. Giles County	38	10	10	11	1	...	...	...	88	188	...	...
45. Tazewell	11	2	1	3	...	...	...	...	25	204	...	...
46. Mount Rogers-Whitetop	5	...	3	3	...	1	...	...	25	580	...	...
47. Glade Spring	30	1	20	3	2	2	...	...	100	622	...	...
48. Blackford	19	2	11	6	5	3	...	...	31	622	...	...
49. Bristol	37	9	37	31	9	2	...	...	173	975	...	...
50. Buchanan County	15	1	5	7	4	...	...	...	19	172	...	...
51. Breaks Interstate Park	12	3	15	14	1	...	...	...	24	74	...	...
52. Wise County	24	4	6	10	1	...	...	...	24	840	...	...
Totals	2,695	509	2,490	991	266	12	4	10	7,154	29,734	5,471	2,987



Table 1. Species Counts (p. 13 of 20)

Species Count Circle	Common Raven	Horned Lark	Tree Swallow	Carolina Chickadee	Black- capped Chickadee	chickadee sp.	Tufted Titmouse	Red- breasted Nuthatch	White- breasted Nuthatch	Brown- headed Nuthatch
1. Chincoteague	...	2	5	153	...	...	38	4	2	59
2. Wachapreague	...	...	...	63	...	...	18	...	...	11
3. Nassawaddox	...	1	3	59	...	...	31	1	3	15
4. Cape Charles	...	143	4	167	...	...	68	...	2	18
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
6. Little Creek	...	...	...	116	...	...	42	...	12	53
7. Back Bay	...	...	3,200	118	...	...	35	1	15	26
8. Nansemond River	...	7	...	159	...	...	106	1	15	15
9. Dismal Swamp	...	...	69	126	...	...	10	...	25	...
10. Newport News	...	...	13	197	...	...	62	...	10	16
11. Mathews County	...	...	...	158	...	...	101	...	1	47
12. Williamsburg	...	...	...	246	...	...	172	...	83	38
13. Hopewell	...	136	...	191	...	...	98	1	20	...
14. Walkerton	...	55	...	165	...	...	150	1	55	...
15. Washingtons Birthplace	...	...	...	71	...	...	70	1	12	...
16. Brooke	...	...	...	154	...	...	128	1	45	...
17. Fort Belvoir	3	...	...	1,290	...	...	1,160	8	535	...
18. Central Loudoun County	17	35	...	442	...	...	337	1	155	...
19. The Plains	6	...	...	480	...	...	352	...	149	...
20. Manassas-Bull Run	7	...	...	772	...	...	576	...	268	...
21. Nokesville	4	...	...	100	...	...	79	...	23	...
22. Chancellorsville	...	...	...	76	...	...	89	...	28	...
23. Lake Anna	1	...	...	57	...	...	31	...	13	...
24. Gordonsville	...	...	...	35	...	...	30	...	24	...
25. Charlottesville	18	...	...	303	...	...	267	...	122	...
26. Warren	6	...	...	152	...	...	120	...	44	...
27. Darlington Heights	2	2	...	72	...	...	51	1	24	...
28. Banister River	...	...	...	59	...	...	47	...	10	8
29. Lynchburg	15	...	...	374	...	...	420	2	120	...
30. Chatham	...	...	...	40	...	...	66	...	14	...
31. Danville	...	...	...	32	...	...	19	...	11	1
32. Calmes Neck	24	...	...	399	...	...	332	...	171	...
33. N. Shenandoah Valley	22	...	...	590	...	...	340	3	206	...
34. Shenandoah NP-Luray	111	...	...	297	...	...	262	...	105	...
35. Big Flat Mountain	2	...	...	64	...	...	18	...	18	...
36. Rockingham County	13	201	...	71	...	4	85	...	22	...
37. Augusta County	4	4	...	166	2	...	158	1	56	...
38. Waynesboro	4	9	...	136	...	...	139	1	53	...
39. Lexington	24	...	...	98	33	46	134	...	75	...
40. Peaks of Otter	9	...	...	68	7	...	62	...	24	...
41. Fincastle	12	1	...	60	1	3	62	...	15	...
42. Roanoke	3	...	...	77	...	10	69	...	33	...
43. Blacksburg	13	45	...	226	3	35	256	...	102	1
44. Giles County	5	...	...	36	19	22	73	...	35	...
45. Tazewell	10	...	...	65	...	...	38	...	26	...
46. Mount Rogers-Whitetop	4	...	...	11	2	...	25	2	8	...
47. Glade Spring	4	25	...	82	1	...	65	1	54	...
48. Blackford	28	...	...	46	...	...	48	...	23	...
49. Bristol	4	...	...	145	...	...	109	...	40	1
50. Buchanan County	3	...	...	70	...	...	59	...	22	...
51. Breaks Interstate Park	1	5	...	43	...	...	39	...	16	...
52. Wise County	11	...	...	71	...	...	54	...	29	...
Totals	390	671	3,294	9,248	68	120	7,200	31	2,973	309

Table 1. Species Counts (p. 14 of 20)

Species Count Circle	Brown Creepers	Carolina Wren	House Wren	Winter Wren	Sedge Wren	Marsh Wren	Golden- crowned Kinglet	Ruby- crowned Kinglet	kinglet sp.	Blue- gray Gnat- catcher	Eastern Bluebird	Hermit Thrush
1. Chincoteague	3	95	3	17	...	...	27	19	...	...	142	51
2. Wachapreague	3	18	1	...	...	...	10	1	...	...	255	...
3. Nassawaddox	4	50	2	9	1	2	15	9	...	...	237	23
4. Cape Charles	30	271	21	20	1	2	80	47	...	CW	355	46
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	12	68	1	11	...	2	20	8	...	...	108	7
7. Back Bay	4	96	3	9	30	18	14	8	...	...	83	8
8. Nansemond River	10	84	1	3	...	3	20	19	...	1	179	27
9. Dismal Swamp	12	62	...	14	...	...	7	40	...	...	8	85
10. Newport News	7	88	1	2	1	2	13	8	...	...	127	6
11. Mathews County	1	113	1	CW	...	...	4	5	...	...	525	9
12. Williamsburg	18	89	3	12	...	1	42	38	...	1	192	39
13. Hopewell	20	141	10	14	...	...	55	61	...	3	177	30
14. Walkerton	9	143	2	34	...	...	68	31	...	...	253	35
15. Washingtons Birthplace	4	71	...	7	...	...	22	21	...	...	138	78
16. Brooke	1	66	...	1	...	...	4	8	...	...	231	10
17. Fort Belvoir	26	686	1	36	...	...	44	25	...	...	412	121
18. Central Loudoun County	25	172	...	2	...	...	34	14	...	...	465	10
19. The Plains	5	154	...	3	...	...	16	15	...	...	445	16
20. Manassas-Bull Run	11	278	...	22	...	...	28	3	...	...	416	17
21. Nokesville	6	40	...	...	...	...	20	1	...	...	226	16
22. Chancellorsville	5	26	...	3	...	...	14	1	...	...	77	8
23. Lake Anna	3	1	...	...	...	...	11	...	...	...	92	1
24. Gordonsville	...	12	...	...	...	...	1	2	...	...	9	...
25. Charlottesville	6	258	...	21	...	...	80	25	...	...	387	78
26. Warren	4	104	...	4	...	...	33	11	...	...	198	19
27. Darlington Heights	...	52	...	2	...	...	7	4	...	...	181	12
28. Banister River	1	31	...	7	...	...	6	12	...	...	110	8
29. Lynchburg	9	252	...	6	...	...	49	16	...	...	288	29
30. Chatham	...	22	...	2	...	...	3	4	...	...	80	5
31. Danville	...	20	...	1	...	...	3	1	...	...	33	2
32. Calmes Neck	18	89	...	5	...	...	28	3	...	...	464	6
33. N. Shenandoah Valley	31	113	...	25	...	...	94	18	...	...	697	27
34. Shenandoah NP-Luray	17	94	...	12	...	...	29	5	...	...	224	17
35. Big Flat Mountain	8	3	...	3	...	...	20	...	...	...	1	...
36. Rockingham County	7	27	...	2	...	...	12	1	...	...	110	...
37. Augusta County	2	46	...	3	...	...	12	3	...	...	216	4
38. Waynesboro	2	49	...	2	...	...	26	6	...	...	252	5
39. Lexington	1	90	...	6	...	...	39	6	...	...	279	29
40. Peaks of Otter	1	17	...	2	...	...	...	...	...	...	8	5
41. Fincastle	1	45	...	1	...	...	3	2	...	...	210	5
42. Roanoke	3	64	...	...	...	...	7	3	...	...	55	3
43. Blacksburg	12	113	...	15	...	...	38	2	3	...	166	7
44. Giles County	8	20	...	...	...	...	9	...	...	...	22	...
45. Tazewell	1	14	...	...	...	...	...	...	...	...	24	...
46. Mount Rogers-Whitetop	...	8	...	...	...	...	3	...	...	...	25	...
47. Glade Spring	...	55	...	...	...	...	16	...	...	...	80	2
48. Blackford	3	20	...	2	...	...	1	...	...	...	48	3
49. Bristol	1	100	1	5	...	...	37	3	...	...	137	7
50. Buchanan County	2	18	...	2	...	...	6	...	...	...	30	2
51. Breaks Interstate Park	...	19	...	3	...	...	8	3	...	...	31	4
52. Wise County	5	37	...	3	...	...	6	...	...	...	33	2
Totals	362	4,604	51	353	33	30	1,144	512	3	5	9,541	924

Table 1. Species Counts (p. 15 of 20)

Species Count Circle	American Robin	Gray Catbird	Northern Mocking- bird	Brown Thrasher	European Starling	American Pipit	Cedar Waxwing	Orange- crowned Warbler	Nashville Warbler	Black- throated Blue Warbler	Yellow- rumped (Myrtle) Warbler
1. Chincoteague	1,608	21	49	26	1,280	...	58	...	...	...	1,526
2. Wachapreague	270	1	54	2	1,998	...	53	...	...	...	820
3. Nassawaddox	230	5	82	1	1,632	20	93	...	...	...	1,292
4. Cape Charles	251	28	138	16	2,864	55	139	10	...	...	2,304
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	748	4	40	5	1,560	1	69	5	...	...	312
7. Back Bay	434	17	75	9	1,216	6	2	4	...	...	1,740
8. Nansemond River	975	6	93	21	1,403	57	130	1	...	...	961
9. Dismal Swamp	621	123	7	11	115	...	23	3	...	...	182
10. Newport News	676	4	119	19	2,284	...	65	3	...	...	500
11. Mathews County	734	2	86	15	967	...	376	...	...	...	862
12. Williamsburg	1,130	2	70	19	566	...	410	1	...	...	800
13. Hopewell	162	1	98	11	560	57	1,222	4	1	1	202
14. Walkerton	307	6	53	23	565	74	235	...	...	...	156
15. Washingtons Birthplace	742	13	51	17	162	77	547	...	...	...	341
16. Brooke	314	...	39	1	6,400	60	497	...	...	...	115
17. Fort Belvoir	4,133	2	141	6	3,734	...	1,116	1	...	...	61
18. Central Loudoun County	284	1	190	...	6,229	36	355	...	...	...	99
19. The Plains	304	2	151	...	4,650	...	377	...	...	...	176
20. Manassas-Bull Run	1,274	...	137	1	2,011	...	1,142	...	...	...	159
21. Nokesville	200	...	43	3	2,083	...	115	...	...	...	65
22. Chancellorsville	332	...	32	...	46	...	202	...	...	...	75
23. Lake Anna	97	...	18	...	207	...	201	...	...	...	100
24. Gordonsville	377	...	19	...	654	...	104	...	...	...	21
25. Charlottesville	524	2	100	1	757	...	496	...	...	...	425
26. Warren	2,146	...	67	...	396	35	529	...	...	...	196
27. Darlington Heights	466	...	51	1	1,388	6	41	...	...	...	91
28. Banister River	352	1	29	4	45	...	197	...	...	...	72
29. Lynchburg	477	...	146	1	1,048	...	612	...	...	...	144
30. Chatham	190	...	14	...	114	110	21	...	...	...	38
31. Danville	164	...	22	...	236	...	12	...	...	...	9
32. Calmes Neck	49	1	108	...	5,038	...	91	...	...	...	62
33. N. Shenandoah Valley	2,615	1	151	...	14,560	...	415	...	...	...	412
34. Shenandoah NP-Luray	1,755	1	82	...	4,921	...	137	...	...	...	183
35. Big Flat Mountain	...	...	...	...	...	...	34	...	...	...	...
36. Rockingham County	712	...	54	...	2,978	...	149	...	...	...	78
37. Augusta County	1,949	...	123	...	4,710	20	224	...	...	...	181
38. Waynesboro	239	...	60	...	2,330	CW	215	...	...	...	53
39. Lexington	8,405	...	67	...	5,385	...	240	...	...	...	360
40. Peaks of Otter	19	...	3	...	1	...	...	...	...	...	1
41. Fincastle	1,143	...	61	...	1,710	...	345	...	...	...	184
42. Roanoke	116	...	35	...	...	...	23	...	...	...	1
43. Blacksburg	170	...	109	3	6,356	3	204	...	...	...	42
44. Giles County	152	...	17	...	189	...	15	...	...	...	44
45. Tazewell	6	...	8	1	1,321	...	14	...	...	...	...
46. Mount Rogers-Whitetop	9	...	10	...	206	...	...	...	...	...	1
47. Glade Spring	45	...	41	...	2,444	...	...	...	...	...	15
48. Blackford	103	...	39	1	728	...	17	...	...	...	26
49. Bristol	304	...	136	...	4,509	...	154	...	...	...	76
50. Buchanan County	1	...	1	1	182	...	...	...	...	...	...
51. Breaks Interstate Park	20	...	3	1	76	...	4	...	...	...	1
52. Wise County	8	1	16	1	308	...	7	...	...	...	3
Totals	38,342	245	3,338	221	105,122	617	11,727	32	1	1	15,567

Table 1. Species Counts (p. 16 of 20)

Species Count Circle	Pine Warbler	Palm Warbler	Black- and- white Warbler	Common Yellow- throat	Wilson's Warbler	Yellow- breasted Chat	Summer Tanager	Western Tanager	Eastern Towhee	American Tree Sparrow	Chipping Sparrow
1. Chincoteague	9	1	...	...	...	...	...	...	12	1	50
2. Wachapreague	2	5	...	...	...	...	1	...	...	...	59
3. Nassawaddox	1	19	...	...	...	...	...	...	7	...	49
4. Cape Charles	21	12	...	2	...	1	...	...	34	...	421
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	8	...	1	...	...	...	...	...	23	...	22
7. Back Bay	10	2	...	4	...	...	...	...	12	...	134
8. Nansemond River	12	1	...	...	...	...	...	...	19	...	630
9. Dismal Swamp	1	1	...	...	...	...	...	...	42	...	...
10. Newport News	6	...	...	...	...	...	...	...	25	...	5
11. Mathews County	11	...	...	1	...	...	...	...	10	...	93
12. Williamsburg	6	...	...	1	...	...	...	1	48	...	120
13. Hopewell	6	5	...	...	...	...	...	...	18	...	59
14. Walkerton	2	1	...	...	...	...	...	...	54	...	55
15. Washingtons Birthplace	3	...	...	...	...	...	...	...	40	...	3
16. Brooke	...	...	...	...	...	...	...	...	37	...	6
17. Fort Belvoir	...	...	...	5	...	...	...	...	101	4	18
18. Central Loudoun County	...	...	...	...	...	...	...	...	8	...	...
19. The Plains	1	...	...	1	...	...	...	...	3	...	...
20. Manassas-Bull Run	...	1	...	CW	...	...	...	...	24	5	17
21. Nokesville	1	...	...	...	...	...	...	...	11	2	2
22. Chancellorsville	...	...	...	...	...	...	...	...	9	...	7
23. Lake Anna	1	...	...	...	...	...	...	...	...	...	1
24. Gordonsville	...	...	...	...	...	...	...	...	...	2	1
25. Charlottesville	...	...	...	...	...	...	...	...	14	...	...
26. Warren	...	...	...	...	...	...	...	...	14	...	30
27. Darlington Heights	...	...	...	...	...	...	...	...	5	...	...
28. Banister River	5	...	...	...	...	...	...	...	12	...	23
29. Lynchburg	...	...	...	...	...	...	...	...	65	...	13
30. Chatham	...	...	...	1	...	...	...	...	7	...	2
31. Danville	...	...	...	...	...	...	...	...	1	...	...
32. Calmes Neck	...	...	...	...	...	...	...	...	2	2	1
33. N. Shenandoah Valley	...	...	...	...	1	...	...	...	...	15	1
34. Shenandoah NP-Luray	...	...	1	...	...	...	...	...	1	...	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	1	...	...	...	...	...	...	2	...	...
37. Augusta County	...	...	...	...	...	...	...	...	8	...	...
38. Waynesboro	...	...	...	...	...	...	...	...	3	...	...
39. Lexington	...	...	...	...	...	...	...	...	21	...	6
40. Peaks of Otter	...	...	...	...	...	...	...	...	1	...	...
41. Fincastle	...	...	...	...	...	...	...	...	20	...	6
42. Roanoke	...	...	...	...	...	...	...	...	6	...	...
43. Blacksburg	...	1	...	...	...	...	...	...	49	...	...
44. Giles County	...	...	...	...	...	...	...	...	10	...	...
45. Tazewell	...	...	...	...	...	...	...	...	2	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...	...
47. Glade Spring	...	...	...	...	...	...	...	...	6	...	...
48. Blackford	...	...	...	...	...	...	...	...	15	...	5
49. Bristol	1	...	...	...	...	...	...	...	35	...	4
50. Buchanan County	...	...	...	...	...	...	...	...	4	...	...
51. Breaks Interstate Park	...	...	...	...	...	...	...	...	2	...	...
52. Wise County	...	...	...	...	...	...	...	...	3	...	...
Totals	107	50	2	15	1	1	1	1	845	31	1,843



Table 1. Species Counts (p. 17 of 20)

Species Count Circle	Brewer's Sparrow	Field Sparrow	Vesper Sparrow	Lark Sparrow	Savannah Sparrow	Savannah (Ipswich) Sparrow	Le Conte's Sparrow	Nelson's Sparrow	Saltmarsh Sparrow	sharp-tailed sparrow sp.
1. Chincoteague	...	74	1	...	204	6	...	3	7	...
2. Wachapreague	...	7	...	...	3	9	...	...	...	...
3. Nassawaddox	...	8	...	...	12	...	1	1	1	3
4. Cape Charles	...	134	...	...	202	12	...	3	9	8
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
6. Little Creek	...	3	...	...	7	...	...	...	...	...
7. Back Bay	...	6	...	...	25	1	3	...	...	...
8. Nansemond River	...	17	...	...	93	...	...	...	...	...
9. Dismal Swamp	...	...	...	...	...	...	...	...	...	...
10. Newport News	...	15	...	...	27	...	...	...	...	1
11. Mathews County	...	3	...	...	...	...	...	...	...	...
12. Williamsburg	...	24	...	...	35	...	...	...	...	...
13. Hopewell	...	74	...	...	94	...	2	...	...	...
14. Walkerton	...	45	...	...	64	...	...	...	...	...
15. Washingtons Birthplace	...	31	...	...	33	...	...	...	...	...
16. Brooke	...	13	...	...	1	...	...	...	...	...
17. Fort Belvoir	1	83	...	...	23	...	...	...	...	...
18. Central Loudoun County	...	95	...	...	1	...	...	...	...	...
19. The Plains	...	76	...	...	3	...	...	...	...	...
20. Manassas-Bull Run	...	60	...	...	5	...	...	...	...	...
21. Nokesville	...	29	...	...	3	...	...	...	...	...
22. Chancellorsville	...	21	...	...	9	...	...	...	...	...
23. Lake Anna	...	4	...	...	...	...	...	...	...	...
24. Gordonsville	...	13	...	...	...	...	...	...	...	...
25. Charlottesville	...	124	...	...	2	...	...	...	...	...
26. Warren	...	44	...	...	11	...	...	...	...	...
27. Darlington Heights	...	6	...	...	24	...	...	...	...	...
28. Banister River	...	17	...	...	15	...	...	...	...	...
29. Lynchburg	...	28	...	...	6	...	...	...	...	...
30. Chatham	...	5	...	...	3	...	...	...	...	...
31. Danville	...	1	...	...	...	...	...	...	...	...
32. Calmes Neck	...	24	...	...	...	...	...	...	...	...
33. N. Shenandoah Valley	...	58	...	...	4	...	...	...	...	...
34. Shenandoah NP-Luray	...	13	...	...	3	...	...	...	...	...
35. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	...	7	...	...	...	...	...	...	...	...
37. Augusta County	...	35	...	...	1	...	...	...	...	...
38. Waynesboro	...	45	...	1	1	...	...	...	...	...
39. Lexington	...	62	...	...	...	...	...	...	...	...
40. Peaks of Otter	...	...	...	...	...	...	...	...	...	...
41. Fincastle	...	29	...	...	1	...	...	...	...	...
42. Roanoke	...	1	...	...	...	...	...	...	...	...
43. Blacksburg	...	27	...	...	2	...	...	...	...	...
44. Giles County	...	3	...	...	...	...	...	...	...	...
45. Tazewell	...	14	...	...	...	...	...	...	...	...
46. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...
47. Glade Spring	...	25	...	...	...	...	...	...	...	...
48. Blackford	...	16	...	...	...	...	...	...	...	...
49. Bristol	...	123	...	...	...	...	...	...	...	...
50. Buchanan County	...	5	...	...	...	...	...	...	...	...
51. Breaks Interstate Park	...	2	...	...	...	...	...	...	...	...
52. Wise County	...	9	...	...	...	...	...	...	...	...
Totals	1	1,558	1	1	917	28	6	7	17	12

Table 1. Species Counts (p. 18 of 20)

Species Count Circle	Seaside Sparrow	Fox Sparrow	Song Sparrow	Lincoln's Sparrow	Swamp Sparrow	White- throated Sparrow	White- crowned Sparrow	sparrow sp.	Dark-eyed (Slate- colored) Junco	Lapland Longspur	Snow Bunting
1. Chincoteague	9	19	426	1	43	143	...	...	188	...	12
2. Wachapreague	...	3	43	...	6	123	...	...	151	...	...
3. Nassawaddox	...	10	72	...	7	298	...	...	223	...	...
4. Cape Charles	23	27	532	...	165	516	...	1	83	...	4
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	...	3	115	...	21	120	...	...	38	...	...
7. Back Bay	...	4	171	...	237	177	...	...	94	...	...
8. Nansemond River	1	6	183	...	61	330	1	...	529	...	17
9. Dismal Swamp	...	5	14	...	17	237	...	...	40	...	...
10. Newport News	2	7	80	1	10	310	...	...	169	...	...
11. Mathews County	...	2	106	1	1	215	...	8	451	...	...
12. Williamsburg	...	6	114	...	28	650	...	...	456	...	...
13. Hopewell	...	9	440	1	427	849	12	...	312	1	...
14. Walkerton	...	8	466	...	85	1,261	2	...	457	...	...
15. Washingtons Birthplace	...	2	341	...	132	620	5	...	196	...	...
16. Brooke	...	...	132	...	5	517	...	...	454	...	...
17. Fort Belvoir	...	16	953	...	196	3,108	4	...	1,750	...	...
18. Central Loudoun County	...	10	272	...	18	824	42	...	1,207	...	1
19. The Plains	...	...	319	...	14	793	49	...	1,685	...	...
20. Manassas-Bull Run	...	3	267	...	3	441	1	...	1,071	...	...
21. Nokesville	...	1	237	...	77	428	47	...	475	...	...
22. Chancellorsville	...	4	64	...	1	182	9	...	208	...	...
23. Lake Anna	...	...	51	...	4	81	...	...	201	...	...
24. Gordonsville	...	2	33	...	5	46	7	...	160	...	...
25. Charlottesville	...	12	389	...	15	960	42	...	571	...	...
26. Warren	...	6	229	...	8	459	32	...	618	...	...
27. Darlington Heights	...	16	66	...	4	217	16	...	255	...	...
28. Banister River	...	5	55	...	7	122	...	...	219	...	...
29. Lynchburg	...	...	176	...	5	558	...	...	653	...	...
30. Chatham	...	2	16	...	...	72	7	...	96	...	...
31. Danville	...	2	39	...	2	41	...	...	219	...	...
32. Calmes Neck	...	2	156	...	11	361	139	...	1,026	...	...
33. N. Shenandoah Valley	...	4	145	...	6	555	57	...	1,291	...	...
34. Shenandoah NP-Luray	...	5	158	...	...	382	51	...	610	...	...
35. Big Flat Mountain	...	...	...	...	...	9	...	...	61	...	...
36. Rockingham County	...	...	45	...	2	110	118	...	250	...	...
37. Augusta County	...	...	146	...	1	209	172	...	464	...	...
38. Waynesboro	...	...	121	1	2	248	85	...	793	...	...
39. Lexington	...	3	89	...	5	526	40	...	468	...	...
40. Peaks of Otter	...	...	15	...	1	48	...	...	79	...	...
41. Fincastle	...	5	53	...	1	114	42	...	308	...	...
42. Roanoke	...	...	55	...	1	84	...	...	99	...	...
43. Blacksburg	...	5	171	...	2	372	79	...	279	...	...
44. Giles County	...	3	54	...	...	79	...	...	110	...	...
45. Tazewell	...	1	47	...	...	14	6	...	63	...	...
46. Mount Rogers-Whitetop	...	...	49	...	1	4	15	...	53	...	...
47. Glade Spring	...	...	118	...	...	34	111	...	115	...	...
48. Blackford	...	2	92	...	1	40	158	...	34	...	...
49. Bristol	...	1	180	...	8	210	45	...	64	...	...
50. Buchanan County	...	...	55	...	...	15	...	...	149	...	...
51. Breaks Interstate Park	...	...	25	...	1	47	22	...	24	...	...
52. Wise County	...	1	65	...	2	21	...	...	28	...	...
Totals	35	222	8,240	5	1,649	18,180	1,416	9	19,597	1	34

Table 1. Species Counts (p. 19 of 20)

Species Count Circle	Northern Cardinal	Indigo Bunting	Dick- cissel	Red-winged Black-bird	Eastern Meadow- lark	Rusty Black- bird	Brewer's Black- bird	Common Grackle	Boat- tailed Grackle	Brown- headed Cowbird	blackbird sp.
1. Chincoteague	92	...	...	67,205	50	...	...	50,895	43	27	...
2. Wachapreague	107	...	...	245	44	...	...	41	235	152	60
3. Nassawaddox	100	...	...	592	65	...	...	40	1	132	...
4. Cape Charles	276	...	...	485	231	2	...	4	20	242	1,000
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...
6. Little Creek	81	...	...	410	...	...	...	1,023	4	1,067	...
7. Back Bay	117	...	...	1,213	45	3	...	3,180	677	793	...
8. Nansemond River	126	...	...	2,318	115	15	...	1,105	15	20	85
9. Dismal Swamp	79	...	...	310	...	5	...	...	...	50	...
10. Newport News	175	...	...	1,063	47	20	...	195	67	71	...
11. Mathews County	298	...	...	271	106	...	...	20	16	27	...
12. Williamsburg	217	...	...	1,128	24	6	...	6,393	...	26	...
13. Hopewell	237	...	...	458	92	200	...	3	...	15	...
14. Walkerton	244	...	...	92,000	26	4	...	12,491	...	4,562	...
15. Washingtons Birthplace	119	...	...	832	13	2	...	174	...	...	...
16. Brooke	148	...	...	7,960	13	...	...	4,920	...	2	...
17. Fort Belvoir	1,148	...	...	1,442	1	24	...	801	...	20	5,000
18. Central Loudoun County	567	...	...	467	...	5	...	...	...	33	...
19. The Plains	442	...	...	152	3	...	...	...	...	...	...
20. Manassas-Bull Run	530	...	...	255	18	...	...	1	...	...	...
21. Nokesville	140	...	...	147	8	2	...	...	...	31	312
22. Chancellorsville	79	...	...	30	6	...	...	40	...	...	...
23. Lake Anna	77	...	...	...	14	...	...	...	...	...	...
24. Gordonsville	54	...	...	...	4	...	...	10	...	...	...
25. Charlottesville	352	...	...	60	10	...	...	19	...	16	...
26. Warren	168	...	...	134	43	...	...	54	...	208	...
27. Darlington Heights	91	...	...	6	69	...	...	1	...	33	...
28. Banister River	60	...	...	74	9	24	...	225	...	...	...
29. Lynchburg	499	...	...	...	1	...	...	1	...	...	1
30. Chatham	63	...	...	...	1	...	...	...	...	...	...
31. Danville	32	...	...	...	9	...	...	...	...	...	...
32. Calmes Neck	382	...	...	149	1	...	...	749	...	13	...
33. N. Shenandoah Valley	385	...	...	7,057	1	8	...	10,328	...	532	...
34. Shenandoah NP-Luray	218	...	...	1,523	3	1	...	3,418	...	510	...
35. Big Flat Mountain	12	...	...	...	...	...	...	...	...	...	...
36. Rockingham County	97	...	...	1	8	...	...	101	...	205	...
37. Augusta County	213	...	...	131	15	145	5	7	...	53	...
38. Waynesboro	139	...	1	1	17	...	...	1	...	...	...
39. Lexington	178	...	...	...	38	...	...	CW	...	21	...
40. Peaks of Otter	28	...	...	...	...	...	...	...	...	...	...
41. Fincastle	135	...	...	...	15	...	...	1	...	...	...
42. Roanoke	83	...	...	...	...	...	...	1	...	...	...
43. Blacksburg	243	...	...	5	38	CW	...	10,050	...	7	...
44. Giles County	65	...	...	...	...	...	...	...	...	...	...
45. Tazewell	27	...	...	...	...	...	...	...	...	203	...
46. Mount Rogers-Whitetop	25	...	...	...	...	...	...	...	...	...	...
47. Glade Spring	81	...	...	...	21	...	...	CW	...	26	...
48. Blackford	62	1	...	...	4	...	...	...	...	...	...
49. Bristol	204	...	...	...	...	...	...	541	...	1	...
50. Buchanan County	73	...	...	...	...	...	...	...	...	...	...
51. Breaks Interstate Park	44	...	...	...	1	...	...	...	...	...	...
52. Wise County	53	...	...	12	...	...	...	...	...	...	...
Totals	9,465	1	1	188,136	1,229	466	5	106,833	1,078	9,098	6,458

Table 1. Species Counts (p. 20 of 20)

Species Count Circle	Baltimore Oriole	Purple Finch	House Finch	Red Crossbill	Common Redpoll	Pine Siskin	American Goldfinch	House Sparrow	Total species	Total individuals
1. Chincoteague	...	2	32	...	...	...	24	80	152	169,277
2. Wachapreague	...	...	28	...	...	...	47	4	115	15,945
3. Nassawaddox	1	...	64	...	...	...	29	8	126	16,536
4. Cape Charles	5	...	107	...	...	...	128	60	154	50,419
5. Chesapeake Bay	...	...	...	...	...	...	...	...	28	5,724
6. Little Creek	...	1	60	...	...	11	108	3	124	24,403
7. Back Bay	...	...	44	...	...	...	22	5	139	41,298
8. Nansemond River	1	...	73	...	...	...	70	8	127	27,072
9. Dismal Swamp	...	...	1	...	...	...	27	...	68	3,314
10. Newport News	...	...	144	...	...	...	117	105	123	17,287
11. Mathews County	...	...	90	...	...	...	25	16	104	13,610
12. Williamsburg	...	...	130	...	...	...	74	13	109	25,311
13. Hopewell	3	...	42	...	...	...	55	8	119	37,449
14. Walkerton	...	...	29	...	...	...	101	7	101	124,417
15. Washingtons Birthplace	1	...	9	...	...	...	121	8	101	23,723
16. Brooke	...	...	27	...	...	...	97	8	89	44,764
17. Fort Belvoir	...	1	231	...	...	...	484	422	114	79,244
18. Central Loudoun County	...	...	181	...	...	...	228	147	94	28,148
19. The Plains	...	...	133	...	...	...	207	173	95	21,506
20. Manassas-Bull Run	...	...	189	...	...	...	208	191	78	21,177
21. Nokesville	...	...	36	...	...	...	100	9	81	9,825
22. Chancellorsville	...	...	8	...	...	3	14	30	72	2,996
23. Lake Anna	...	...	13	...	...	...	31	17	69	43,330
24. Gordonsville	...	9	45	...	...	...	7	3	58	3,584
25. Charlottesville	...	2	180	...	...	4	206	46	74	10,391
26. Warren	...	7	93	...	...	...	116	11	74	9,658
27. Darlington Heights	...	1	25	...	...	...	47	39	71	5,136
28. Banister River	1	...	50	...	...	...	32	5	80	3,156
29. Lynchburg	...	1	222	...	...	3	156	68	72	10,129
30. Chatham	...	...	9	...	...	...	11	1	56	1,583
31. Danville	...	10	42	...	...	...	15	...	51	1,426
32. Calmes Neck	...	...	48	...	...	...	145	199	78	18,051
33. N. Shenandoah Valley	...	10	365	...	...	...	389	77	88	49,349
34. Shenandoah NP-Luray	...	...	106	...	...	...	94	53	80	18,722
35. Big Flat Mountain	...	...	...	...	...	...	21	...	32	341
36. Rockingham County	...	4	104	...	...	...	165	220	68	9,252
37. Augusta County	...	...	121	...	...	...	136	225	76	13,732
38. Waynesboro	...	1	106	...	CW	...	123	48	76	7,866
39. Lexington	...	21	128	...	...	1	150	25	74	20,324
40. Peaks of Otter	...	...	...	...	...	...	15	...	36	604
41. Fincastle	...	1	62	...	...	...	88	14	74	7,307
42. Roanoke	1	...	109	...	...	...	39	19	62	2,260
43. Blacksburg	...	...	129	...	...	...	234	63	78	23,236
44. Giles County	...	1	10	...	...	...	39	...	51	1,649
45. Tazewell	...	2	4	...	...	...	27	66	50	2,642
46. Mount Rogers-Whitetop	...	...	37	1	...	...	2	10	45	1,247
47. Glade Spring	...	CW	9	...	...	...	47	79	67	6,065
48. Blackford	...	...	14	...	...	...	93	48	70	3,229
49. Bristol	...	2	131	...	...	...	153	35	86	11,223
50. Buchanan County	...	1	3	...	...	...	44	24	46	1,115
51. Breaks Interstate Park	...	...	...	...	...	...	44	1	48	776
52. Wise County	...	...	3	...	...	...	35	22	54	1,976
Totals	13	77	3,826	1	CW	22	4,990	2,723	219	1,053,804

Table 2. Field Data (page 1 of 5)

COUNT CIRCLE	Number observers	Minimum # parties	Max. # of parties	# feeder observers	Hours at feeders	Hours owling	Miles owling	Hours on foot	Hours by car	Hours by motor boat	Hours, non-motor boat
1. Chincoteague	34	18	18	...	...	4.00	10.50	62.00	57.00	...	...
2. Wachapreague	19	9	13	...	...	2.00	2.00	40.00	81.00	11.00	...
3. Nassawaddox	34	9	15	...	...	...	...	45.00	40.00	5.00	...
4. Cape Charles	54	9	22	...	...	5.00	18.00	119.00	33.00	3.00	...
5. Chesapeake Bay	3	1	1	...	...	...	...	0.50	8.00	...	...
6. Little Creek	21	9	15	...	...	3.00	7.00	83.00	13.00	...	...
7. Back Bay	25	9	16	...	...	3.00	19.00	80.00	13.00	8.00	...
8. Nansemond River	26	10	10	...	...	2.50	5.00	62.00	32.50	...	...
9. Dismal Swamp	13	6	7	...	...	...	...	15.50	38.50	...	...
10. Newport News	41	13	13	...	...	1.50	7.00	62.50	50.25	...	...
11. Mathews County	41	12	12	...	...	3.25	14.50	47.25	71.00	...	...
12. Williamsburg	55	13	13	13	30.00	2.00	10.50	75.25	31.25	0.50	...
13. Hopewell	46	15	18	1	1.00	3.00	10.00	70.75	24.50	3.50	...
14. Walkerton	29	3	9	...	...	10.75	62.00	34.75	44.75	...	...
15. Washingtons Birthplace	11	7	8	...	...	1.75	15.00	30.25	41.50	...	...
16. Brooke	29	11	14	...	...	...	...	54.75	49.75	...	...
17. Fort Belvoir	139	55	57	8	8.50	23.00	52.00	283.50	57.50	...	...
18. Central Loudoun County	117	20	32	4	5.00	3.25	15.00	142.75	57.50	...	...
19. The Plains	45	13	17	...	...	7.00	54.00	43.25	57.75	...	...
20. Manassas-Bull Run	97	29	34	2	7.00	1.50	0.25	145.25	25.75	...	...
21. Nokesville	31	9	9	...	...	...	...	37.50	18.00	...	...
22. Chancellorsville	11	5	5	...	...	2.25	18.00	33.75	8.75	...	...
23. Lake Anna	15	6	6	...	...	1.00	2.00	16.00	54.00	...	...
24. Gordonsville	11	1	5	...	...	...	...	10.25	24.00	...	...
25. Charlottesville	43	19	21	1	8.00	1.00	0.00	29.00	115.00	...	4.00
26. Warren	17	2	9	...	...	1.00	10.00	43.00	23.00	...	...
27. Darlington Heights	19	4	4	...	...	2.00	25.00	17.00	18.50	...	...
28. Banister River	10	5	5	2	15.00	3.00	6.25	22.50	14.50	...	2.50
29. Lynchburg	38	8	15	14	22.00	4.50	22.50	67.00	47.00	...	...
30. Chatham	12	7	7	...	...	...	...	14.00	16.00	...	...
31. Danville	8	4	4	1	0.50	...	...	5.00	11.00	...	...
32. Calmes Neck	50	21	23	3	8.00	7.25	28.25	44.25	88.75	...	...
33. N. Shenandoah Valley	49	1	20	...	...	8.50	58.00	48.75	92.75	...	14.75
34. Shenandoah NP-Luray	35	10	13	4	16.00	0.50	0.50	42.25	35.50	...	6.00
35. Big Flat Mountain	2	2	2	...	...	1.75	5.00	17.50	...	...	...
36. Rockingham County	33	2	10	3	7.25	2.75	3.75	10.00	47.00	...	...
37. Augusta County	28	10	10	2	2.00	2.50	60.00	9.25	46.25	...	...
38. Waynesboro	28	12	12	...	...	1.50	8.00	22.50	46.50	...	...
39. Lexington	24	13	13	2	4.50	4.00	15.00	29.00	44.25	...	...
40. Peaks of Otter	16	6	6	...	...	1.00	5.00	25.00	12.00	...	...
41. Fincastle	30	14	14	...	...	1.00	2.00	12.00	59.00	...	...
42. Roanoke	22	1	9	...	...	...	...	19.00	21.00	...	...
43. Blacksburg	43	16	19	9	16.00	4.75	18.50	63.50	27.00	...	...
44. Giles County	12	4	4	...	...	2.00	1.00	15.00	21.00	...	...
45. Tazewell	5	3	3	2	6.00	...	...	2.00	23.00	...	...
46. Mount Rogers-Whitetop	4	2	2	...	...	...	...	0.00	15.25	...	...
47. Glade Spring	17	7	7	2	1.00	1.75	12.00	20.00	34.00	...	...
48. Blackford	11	5	5	...	...	4.00	27.00	3.00	46.50	...	...
49. Bristol	21	6	6	1	4.00	4.25	10.00	29.50	33.00	...	...
50. Buchanan County	7	3	4	3	8.00	1.50	8.00	0.00	33.00	...	...
51. Breaks Interstate Park	5	2	3	2	2.00	0.50	0.50	9.00	30.50	...	...
52. Wise County	10	7	7	...	...	1.00	0.00	20.00	26.50	...	...
	1,546	488	626	79	171.75	141.75	648.00	2,233.75	1,960.00	31.00	27.25

Table 2. Field Data (page 2 of 5)

COUNT CIRCLE	Hours by golf cart	Total partyhours	Miles on foot	Miles by car	Miles by motor boat	Miles, nonmotor boat	Miles by golf cart	Total partymiles	Count Date
1. Chincoteague	..	119.00	44.00	227.00	..	..	..	271.00	Dec 29
2. Wachapreague	..	132.00	15.00	230.00	10.00	..	..	255.00	Dec 17
3. Nassawaddox	..	90.00	26.00	218.00	35.00	..	..	279.00	Dec 18
4. Cape Charles	..	155.00	93.00	292.00	15.00	..	..	400.00	Dec 30
5. Chesapeake Bay	..	8.50	0.50	2.00	..	..	..	2.50	Dec 26
6. Little Creek	..	96.00	27.00	231.00	..	..	..	258.00	Dec 31
7. Back Bay	..	101.00	40.00	470.00	10.00	..	..	520.00	Dec 29
8. Nansemond River	..	94.50	265.00	407.00	..	..	..	672.00	Jan 2
9. Dismal Swamp	..	54.00	10.50	66.00	..	..	..	76.50	Dec 19
10. Newport News	..	112.75	36.00	427.50	..	..	..	463.50	Dec 17
11. Mathews County	..	118.25	36.75	436.50	..	..	..	473.25	Jan 1
12. Williamsburg	..	107.00	53.50	215.50	2.00	..	..	271.00	Dec 18
13. Hopewell	..	98.75	36.50	85.00	10.00	..	..	131.50	Dec 18
14. Walkerton	..	79.50	18.50	304.50	..	..	..	323.00	Jan 1
15. Washingtons Birthplace	..	71.75	17.00	236.00	..	..	..	253.00	Dec 18
16. Brooke	..	104.50	36.75	194.75	..	..	..	231.50	Dec 15
17. Fort Belvoir	..	341.00	198.00	281.50	..	..	..	479.50	Jan 1
18. Central Loudoun County	1.50	200.25	115.00	538.25	..	..	7.00	660.25	Dec 28
19. The Plains	..	101.00	28.50	488.00	..	..	..	516.50	Dec 18
20. Manassas-Bull Run	..	171.00	121.00	292.25	..	..	..	413.25	Dec 18
21. Nokesville	..	55.50	21.50	190.00	..	..	..	211.50	Dec 26
22. Chancellorsville	..	42.50	13.75	184.00	..	..	..	197.75	Dec 18
23. Lake Anna	..	70.00	12.00	200.00	..	..	..	212.00	Jan 2
24. Gordonsville	..	34.25	7.50	289.00	..	..	..	296.50	Dec 18
25. Charlottesville	..	148.00	85.00	243.00	..	4.00	..	332.00	Dec 18
26. Warren	..	66.00	37.00	210.00	..	..	..	247.00	Jan 1
27. Darlington Heights	..	35.50	10.00	205.00	..	..	..	215.00	Jan 8
28. Banister River	..	39.50	9.00	128.00	..	4.00	..	141.00	Dec 18
29. Lynchburg	..	114.00	54.00	358.00	..	..	..	412.00	Dec 17
30. Chatham	..	30.00	14.00	144.00	..	..	..	158.00	Dec 18
31. Danville	..	16.00	8.50	201.50	..	..	..	210.00	Dec 17
32. Calmes Neck	..	133.00	46.50	562.25	..	..	..	608.75	Jan 2
33. N. Shenandoah Valley	..	156.25	45.75	824.00	23.00	..	..	892.75	Dec 17
34. Shenandoah NP-Luray	..	83.75	38.25	290.00	17.50	..	..	345.75	Dec 18
35. Big Flat Mountain	..	17.50	31.00	0.00	..	..	..	31.00	Dec 28
36. Rockingham County	..	57.00	5.75	388.50	..	..	..	394.25	Dec 17
37. Augusta County	..	55.50	10.50	407.00	..	..	..	417.50	Dec 18
38. Waynesboro	..	69.00	26.50	422.00	..	..	..	448.50	Jan 2
39. Lexington	..	73.25	40.75	204.00	..	..	..	244.75	Dec 26
40. Peaks of Otter	..	37.00	7.00	44.00	..	..	..	51.00	Dec 20
41. Fincastle	..	71.00	8.00	168.00	..	..	..	176.00	Dec 18
42. Roanoke	..	40.00	23.00	65.00	..	..	..	88.00	Dec 17
43. Blacksburg	..	90.50	52.00	229.00	..	..	..	281.00	Dec 17
44. Giles County	..	36.00	18.00	119.00	..	..	..	137.00	Jan 1
45. Tazewell	..	25.00	11.00	12.00	..	..	..	23.00	Dec 30
46. Mount Rogers-Whitetop	..	15.25	0.00	115.50	..	..	..	115.50	Dec 18
47. Glade Spring	..	54.00	18.50	366.00	..	..	..	384.50	Dec 17
48. Blackford	..	49.50	7.00	303.00	..	..	..	310.00	Dec 31
49. Bristol	..	62.50	16.50	472.00	..	..	..	488.50	Jan 1
50. Buchanan County	..	33.00	0.00	309.00	..	..	..	309.00	Dec 18
51. Breaks Interstate Park	..	39.50	10.00	167.00	..	..	..	177.00	Dec 17
52. Wise County	..	46.50	42.50	203.25	..	..	..	245.75	Dec 17
	1.50	4,252.00	1,949.25	13,665.75	122.50	8.00	7.00	15,752.50	



COUNT CIRCLE

COUNT CIRCLE	Time count started	Time count ended	Low temp (°F)	High temp (°F)	Wind direction	Wind speed (mph)	Water condition	a.m skies	p.m skies
1. Chincoteague	0600	1900	39	51	UNK	6-12	WOP	PCD	PCD
2. Wachapreague	0600	1700	39	46	S	0-10	WOP	CLR	PCD
3. Nassawaddox	0700	1715	34	43	NW	3-20	WOP	PCD	PCR
4. Cape Charles	0500	1800	43	55	SW	5-15	WOP	CLR	PCD
5. Chesapeake Bay	0715	1545	41	51	NW	22	WOP	CLR	CLR
6. Little Creek	0500	1745	49	65	W	0-15	WOP	PCD	PCD
7. Back Bay	0530	1730	28	58	SW	0-12	WOP	CLR	CLR
8. Nansemond River	0530	1800	41	49	W	10-16	WOP	CLR	CLR
9. Dismal Swamp	0400	1800	38	49	CLM	...	WOP	PCD	CLD
10. Newport News	0600	1830	31	44	UNK	10-21	WOP	CLR	CLD
11. Mathews County	0530	1730	33	64	S	1-16	WOP	CLR	CLR
12. Williamsburg	0500	1630	32	43	UNK	0-15	WOP	CLD	PCD
13. Hopewell	0530	1800	30	46	NW	3-12	WOP	PCD	PCD
14. Walkerton	0430	1815	32	64	S	3-20	WOP	CLR	PCD, LGR
15. Washingtons Birthplace	0530	1715	29	43	N	0-15	WOP	PCD	PCR
16. Brooke	0645	515	42	68	SW	5-19	WOP	CLR	PCR
17. Fort Belvoir	0400	1900	30	61	NW	0-5	WOP	PCR	PCD
18. Central Loudoun County	0500	1730	33	44	NW	6-21	WOP	CLD	PCD
19. The Plains	0330	1800	29	47	V	0-12	WOP	CLD	CLD
20. Manassas-Bull Run	0515	1700	26	43	NW	5-15	WOP	PCR	CLR
21. Nokesville	0600	1730	30	47	UNK	10-20	WOP	PCD	PCD
22. Chancellorsville	0700	1700	30	37	CLM	0-6	WOP	CLD	CLR
23. Lake Anna	0600	1700	28	47	NW	5-10	WOP	PCD	PCD
24. Gordonsville	0700	1800	27	40	CLM	...	WOP	PCD	PCR
25. Charlottesville	0615	1715	30	48	NW	8-15	WOP	PCD	PCD
26. Warren	0600	1700	28	60	UNK	...	WOP	PCD	PCD
27. Darlington Heights	0500	1700	35	51	WSW	4-10	WOP	CLR	CLR
28. Banister River	0700	1800	32	48	NW	5-10	WOP	CLD	PCD
29. Lynchburg	0600	1700	26	44	NW	9	WOP	PCR	CLR
30. Chatham	0645	1730	25	48	WSW	2	WMO	PCD	CLR
31. Danville	0600	1900	40	46	UNK	NR	WOP	PCD	PCD
32. Calmes Neck	0545	1745	29	40	V	0-25	WOP	CLD, LSN	PCD
33. N. Shenandoah Valley	0500	1730	30	41	NW	0-10	WOP	PCD	PCD
34. Shenandoah NP-Luray	0600	1800	27	45	NW	0-10	WOP	CLD, LGR	PCD
35. Big Flat Mountain	0615	1730	32	48	NW	7-15	WOP	CLD	CLR
36. Rockingham County	0500	1700	28	40	NW	2-10	SPF, MWO	PCD	PCR
37. Augusta County	0430	1730	28	44	UNK	0-3	WOP	CLD	PCD
38. Waynesboro	0530	1630	25	47	W	5-30	SPF, MWO	CLR	PCR, LIS
39. Lexington	0600	1730	31	52	SW	0-30	WOP	CLR	CLR
40. Peaks of Otter	0600	1430	35	46	V	2-6	WOP	CLD	MCD
41. Fincastle	0530	1630	32	42	NW	5-10	WOP	PCR	PCD
42. Roanoke	0530	1700	36	47	NW	0-15	WOP	PCR	PCR
43. Blacksburg	0530	1715	26	36	NW	9-14	WOP	CLR	CLR
44. Giles County	0530	1530	34	47	CLM	...	SMO, MWO	CLD	CLD, LGR
45. Tazewell	0800	1730	39	54	SE	5-12	WOP	PCR	PCR
46. Mount Rogers-Whitetop	0830	1645	26	32	UNK	5-20	WOP	PCD	CLR
47. Glade Spring	0600	1745	29	40	W	8-20	WOP	PCR	CLR
48. Blackford	0400	1800	23	44	CLM	...	WOP	CLR	CLR
49. Bristol	0700	1800	31	54	UNK	5-15	WOP	CLD	CLD, LGR
50. Buchanan County	0630	1730	28	42	UNK	NR	WOP	CLD	CLD
51. Breaks Interstate Park	0600	1830	35	50	CLM	...	WOP	CLD, LGR	PCR
52. Wise County	0730	1730	34	45	UNK	0-5	WOP	CLD	CLR
	...	...	...	...	...	...	...	...	...

Table 2. Field data (page 4 of 5)			
COUNT CIRCLE	CIRCLE CENTER DESCRIPTIONS	LONGITUDE-LATITUDE COORDINATES	PRIMARY COMPILER
1. Chincoteague	2 mi. north of center of Chinoteague in Accomack Co..	37°58'N 75°22'W	Richard Roberts
2. Wachapreague	Jct. of Rts. 789 & 715 in Accomack Co..	37°40'N 75°42'W	Marilyn Ailes
3. Nassawaddox	Rt. 13 half way between Nassawaddox & Birdsnest, Northampton Co..	37°43'N 75°86'W	Henry Armistead
4. Cape Charles	1.5 mi. southeast of Capeville Post Office in Northampton Co..	37°12'N 75°56'W	Henry Armistead
5. Chesapeake Bay	Northern 3 bridge-tunnel islands & adjacent waters out to 1 mile.	37°05'N 76°08'W	Ned Brinkley
6. Little Creek	3.8 mi. northeast of Kempsville in Virginia Beach.	36°51'N 76°06'W	Paul sykes
7. Back Bay	1.5 mi. east of Back Bay.	36°39'N 76°00'W	Paul sykes
8. Nansemond River	Jct. of Rts.17 & 626 in Pughsville, Suffolk.	36°52'N 76°26'W	Robert Ake
9. Dismal Swamp	Intersection of Middle & Jericho ditches in Dismal Swamp NWR, Suffolk.	36°40'N 76°29'W	Donald Schwab
10. Newport News	Northern corner of Magruder & Cmdr. Shepard blvds. in Hampton.	37°05'N 76°25'W	Teta Kain
11. Mathews Co.	0.5 mile east of Beaverlett Post Office in Mathews Co..	37°25'N 76°18'W	Cindy Kane
12. Williamsburg	Colonial Williamsburg Information Center in Williamsburg.	37°17'N 76°42'W	Bill Williams
13. Hopewell	Curles Neck in Henrico Co..	37°23'N 77°17'W	Arun Bose
14. Walkerton	1.5 mi. SW of Walkerton Bridge, just W of Whitebank in King William Co..	37°46'N 77°02'W	Frederick Atwood
15. Washingtons Birthplace	Horners in Westmoreland Co..	37°46'N 77°02'W	William Portlock
16. Brooke	Center Road, 3 mi. east southeast of Brooke in Stafford Co..	38°22'N 77°20'W	Odette James
17. Fort Belvoir	Pohick Episcopal Church, Fort Belvoir, in eastern Fairfax Co..	38°41'N 77°12'W	Kurt Gaskill
18. Central Loudoun Co.	Near Jct. of Rts. 704 & 769 in Loudoun Co..	39°06'N 77°38'W	Joseph Coleman
19. The Plains	7 mi. NW of Warrenton on west side of Watery Mt. in Fauquier Co..	38°48'N 77°52'W	Todd Day
20. Manassas-Bull Run	Centreville in western Fairfax Co..	38°50'N 77°26'W	Robert Shipman
21. Nokesville	Fleetwood Dr. (Rt. 611) at Cedar Run in Prince William Co..	38°37'N 77°33'W	Kim Hosen
22. Chancellorsville	Chancellorsville Battlefield, 10 mi. west of Fredericksburg.	38°16'N 77°40'W	Beverly Smith
23. Lake Anna	Center of bridge over Lake Anna on Rt. 208.	38°05'N 77°49'W	Donna Finnegan
24. Gordonsville	Jct. of Rts.15 and 33 north of the town of Gordonsville in Orange Co..	38°09'N 78°12'W	Donald Ober
25. Charlottesville	Near Ivy in Albemarle Co..	38°04'N 78°34'W	Jennifer Gaden
26. Warren	Keene in Albemarle Co..	37°51'N 78°33'W	Allen Hale
27. Darlington Heights	Jct. of Rts. 665 & 660 in Darlington Heights in Prince Edward Co..	37°12'N 78°36'W	Carolyn Wells
28. Banister River	Banister River Wildlife Management Areas in Halifax Co..	36°43'N 78°48'W	Jeffrey C. Blalock
29. Lynchburg	Lynchburg College in Lynchburg.	37°24'N 79°11'W	Rexanne Bruno
30. Chatham	At front of the courthouse in Chatham Courthouse, Pittsylvania Co..	36°49'N 79°23'W	Mary Foster
31. Danville	Ballou Park in Danville.	36°34'N 79°25'W	Laura Meder
32. Calmes Neck	Castlemans Ferry Bridge on Rt. 7 over Shenandoah River in Clarke Co..	39°07'N 77°54'W	Margaret Wester
33. N. Shenandoah Valley	Jct. of Crooked Run & Rt. 606 in Frederick Co..	39°03'N 78°10'W	Charles Turner
34. Shenandoah NP-Luray	Hershberger Hill near Stanley in Page Co..	38°35'N 78°28'W	Alan Williams
35. Big Flat Mountain	On Pasture Fence Mountain in Albemarle Co..	38°11'N 78°43'W	Tom Wieboldt
36. Rockingham Co.	Ottobine in Rockingham Co..	38°26'N 79°02'W	William Benish
37. Augusta Co.	Jct. of Rts. 780 & 781 in Augusta Co..	38°12'N 78°59'W	Allen Lerner
38. Waynesboro	Sherando at Jct. of Rts. 610 & 664 in Augusta Co..	37°59'N 78°57'W	Crista Cabe
39. Lexington	Big Spring Pond in Rockbridge Co..	37°59'N 78°57'W	Dick Rowe
40. Peaks of Otter	Peaks of Otter Visitor Center in Bedford Co..	37°27'N 79°36'W	Barry Kinzie
41. Fincastle	North of Fincastle near Jct. of Rts. 220 & 679 in Botetourt Co..	37°31'N 79°52'W	Barry Kinzie
42. Roanoke	Oakland Blvd. & Williamson Rd. in Roanoke.	37°18'N 79°56'W	William Hunley
43. Blacksburg	Jct. Rt. 657 & Rt. 685 in Montgomery Co..	37°12'N 80°28'W	Patricia Polentz
44. Giles Co.	Pembroke in Giles Co..	37°19'N 80°38'W	Bill Opengari
45. Tazewell	Fourway in Tazewell Co..	37°08'N 81°30'W	Sarah Cromer
46. Mount Rogers-Whitetop	Jct. of Rts. 600 & 603 in Smyth Co..	36°39'N 81°35'W	Allen Boynton
47. Glade Spring	Jct. of Rts.750 & 609 in Glade Spring.	36°47'N 81°47'W	Ronald Harrington
48. Blackford	Confluence of the Clinch & Little rivers in Russell Co..	37°00'N 81°55'W	Robert Riggs
49. Bristol	Jct. of Rts. 647 & 654, east of Bristol, TN in Washington Co., VA.	36°35'N 82°06'W	Richard Lewis
50. Buchanan Co.	Jct. of Rts. 680 & 638 at Pilgrims Knob in Buchanan Co..	37°15'N 82°13'W	Tom Hunter
51. Breaks Interstate Park	4.5 mi. northeast of Haysi in Buchanan Co..	37°15'N 82°13'W	Austin Bradley
52. Wise Co.	Dorchester in Norton City.	36°57'N 82°39'W	Randy Stanley
...	...	...	...

Table 2. Field Data (page 5 of 5)

COUNT CIRCLE	PRIMARY COMPILER'S E-MAIL	SECONDARY COMPILER	TERTIARY COMPILER	SPONSORS & ORGANIZATIONS
1. Chincoteague	bandbird@verizon.net			
2. Wachapreague	imailes@verizon.net	Irvin Ailes		
3. Nassawaddox	harryarmistead@hotmail.com			Coastal Virginia Wildlife Observatory
4. Cape Charles	harryarmistead@hotmail.com			Coastal Virginia Wildlife Observatory
5. Chesapeake Bay	23cahow@gmail.com			
6. Little Creek	jjsykes@charter.net	Steve Holzman		Cape Henry Audubon Society
7. Back Bay	jjsykes@charter.net	Steve Holzman		Cape Henry Audubon Society
8. Nansemond River	rake@cox.net			Cape Henry Audubon Society
9. Dismal Swamp	vacanebrake@yahoo.com			Great Dismal Swamp Coalition
10. Newport News	tkdragonrun7@gmail.com			Hampton Roads Bird Club
11. Mathews Co.	Cindy-Kane@fws.gov	John Bazuin Jr.	Joyce McKelvey	
12. Williamsburg	jwwi12@wm.edu			Williamsburg Bird Club
13. Hopewell	arun1bose@gmail.com			Richmond Audubon Society
14. Walkerton	fredatwood@yahoo.com			
15. Washingtons Birthplace	portlock@bealenet.com			
16. Brooke	o.b.james@verizon.net			
17. Fort Belvoir	kurtcapt87@verizon.net			One Good Tern
18. Central Loudoun Co.	joecoleman@rstarmail.com			Loudoun Wildlife Conservancy
19. The Plains	blkvulture@aol.com			
20. Manassas-Bull Run	ships333@yahoo.com			Audubon Society of Northern Virginia
21. Nokesville	khosen@pwconserve.org			Prince William Conservation Alliance
22. Chancellorsville	catbirds@verizon.net			Fredericksburg Bird Club
23. Lake Anna	toadrana@earthlink.net	Michael Boatwright		
24. Gordonsville	dober@wildblue.net	Kendall Smith		
25. Charlottesville	jengaden@gmail.com			Monticello Bird Club
26. Warren	super@buteobooks.com			Monticello Bird Club
27. Darlington Heights	cwells@kinex.net			
28. Banister River	jcbabirder@gcronline.com			
29. Lynchburg	bruno@lynchburg.edu			Lynchburg Bird Club
30. Chatham	chathambirds08@hotmail.com			
31. Danville	laura.meder@averett.edu			
32. Calmes Neck	margaretwester@hotmail.com			Shenandoah Audubon
33. N. Shenandoah Valley	chts8s@gmail.com	Rob Simpson	Charlie Hagan	Lord Fairfax Community College
34. Shenandoah NP-Luray	alan_williams@nps.gov			
35. Big Flat Mountain	awieboldt@gmail.com			
36. Rockingham Co.	wcbenish@comcast.net			Rockingham Co. Bird Club
37. Augusta Co.	larnersky@mindspring.com			Augusta Bird Club
38. Waynesboro	ccabe@mbc.edu			Augusta Bird Club
39. Lexington	rowera@vmi.edu			
40. Peaks of Otter	peckerrigdge@ntelos.net			Woodpecker Nature Nature, NRV Bird Club
41. Fincastle	peckerrigdge@ntelos.net	Eunice Hudgins		Woodpecker Nature Nature, NRV Bird Club
42. Roanoke	whunley@mbc.edu			
43. Blacksburg	polentz@va.net	Bruce Grimes		New River Valley Bird Club
44. Giles Co.	gramby@pemtel.net			
45. Tazewell	scromer@netscope.net			
46. Mount Rogers-Whitetop	allenboynton@hughes.net			Blue Ridge Birders
47. Glade Spring	roneharrin@bvunet.net			
48. Blackford	bob26@insight.rr.com			
49. Bristol	mountainbirds@email.com			
50. Buchanan Co.	opiehunter@yahoo.com			Buchanan Co. Bird Club
51. Breaks Interstate Park	abradley@breakspark.com	Terry Owens		
52. Wise Co.	randy-stanley@comcast.net			
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## ANNUAL REPORT OF THE VIRGINIA AVIAN RECORDS COMMITTEE

WENDY EALDING, VARCOM Secretary  
1384 Palmore Road, Powhatan, VA 23139

The 2011 Virginia Avian Records Committee (VARCOM) included Robert Ake (Chair), Adam D'Onofrio, Tom Saunders, Alan Schreck, Bill Williams, Arun Bose, John Spahr and Andrew Baldelli.

In February 2011, Amy Gilmer stepped down as VARCOM Secretary and Wendy Ealding took over the position. In August 2011, Arun Bose agreed to start work on a major revamping of the VARCOM web site.

In August 2011, the Committee voted to make a number of changes to the Review List. These were as follows:

- Revise Eurasian Collared-Dove for the Piedmont to exclude Halifax County
- Revise Eurasian Collared-Dove for the Coastal Plain to exclude the Eastern Shore and Virginia Beach – formerly only Northampton County was excluded
- Remove Ross's Goose for the Mountains and Valleys and the Coastal Plain
- Revise Lesser Black-backed Gull for the Piedmont south of I-64 to exclude Kerr Reservoir, City of Richmond and Henrico County – formerly any sighting south of I-64 was reviewable
- Revise Sandhill Crane for the Coastal Plain to exclude the Eastern Shore - formerly only Northampton County was excluded
- Remove White Ibis for the Piedmont
- Remove White-winged Dove for the Coastal Plain
- Revise Red-throated Loon for the Piedmont to exclude Kerr Reservoir
- Remove Cackling Goose for the Coastal Plain
- Add Alder Flycatcher for the Coastal Plain and Piedmont

These changes will be incorporated into the 2012 edition of the Review List which will be posted on the revamped version of the VARCOM web site, along with the species that have been added to the updated version of the Virginia Official List since the last revision.

In October 2011, the Committee voted to amend the ByLaws to allow electronic meetings at the discretion of the Chair and this change was approved by the VSO Board at the October 29, 2011 Board Meeting.

The following decisions were made by the Virginia Avian Records Committee during calendar year 2011. Accepted records fall into one of the following Categories, as specified in VSO bylaws:

**Category 1.** Any bird that has occurred in Virginia and has been accepted by VARCOM as a wild bird on the basis of an observation accompanied by a photograph, specimen, audio or video recording, or band (for bands, only in cases where proof of identification is extant and compelling).

**Category 2.** Sight records without physical evidence, but for which there is written documentation from one or more observers accepted by VARCOM. This Category currently includes the following species: Garganey, Barrow's Goldeneye, Yellow-nosed Albatross, Fea's Petrel, Bulwer's Petrel, Short-tailed Shearwater, Red-billed Tropicbird, Neotropic Cormorant, Greater Flamingo, White-tailed Kite, Western Marsh Harrier, Red-necked Stint, Eurasian Woodcock, Brown Noddy, Black Guillemot, Black-billed Magpie, Boreal Chickadee, Sprague's Pipit, Bohemian Waxwing, Sage Thrasher, Townsend's Warbler, Spotted Towhee, Black-throated Sparrow, and Shiny Cowbird. **Several of these species have reportedly been photographed in Virginia; VARCOM would very much appreciate help in locating photographs or specimens of Category 2 species.**

**Category 3.** Identity accepted by VARCOM but provenance of the individual bird is uncertain. **Category 3a** shall be comprised of such species with physical evidence in Virginia. **Category 3b** shall be comprised of such species lacking physical evidence. Category 3 shall not include individuals or species deemed by VARCOM to be most likely escaped/released former captives, whether from inside Virginia or otherwise. Species for which there are no Virginia records *except* Category 3 currently include: West Indian Whistling-Duck, Barnacle Goose, and European Goldfinch.

**Category 4.** Records that are judged to be acceptable by historical standards but that may not meet current standards of acceptance, including extinct species that once occurred in Virginia, for which there is no clear written or physical evidence. In this Category, VARCOM currently includes Trumpeter Swan, Eskimo Curlew, Carolina Parakeet and Bachman's Warbler. No status or Category is given to Labrador Duck, Greater Prairie-Chicken, Whooping Crane, Great Auk, or Ivory-billed Woodpecker, which may have occurred in Virginia in centuries past but for which no extant conclusive documentation is known.

**Category 5.** Species introduced into the Commonwealth of Virginia or into other parts of North America that are currently maintaining self-sustaining wild populations within Virginia. These currently include seven species: Mute Swan, Rock Pigeon, Eurasian Collared-Dove, Monk Parakeet, European Starling, House Finch, and House Sparrow.



**Category 6.** Species that were introduced into Virginia and that appeared for a time to be sustaining wild populations within the state but that have since been extirpated. This Category currently includes Ring-necked Pheasant.

The Committee disposed of 67 records during 2011; of these 64 were accepted and 3 were not accepted.

First Virginia records were accepted as follows: Lesser/Greater Sand Plover, Violet-Green Swallow

The following codes are used in the accounts:

† = written documentation

ph. = photograph

vr. = voice recording

vt. = videotape

\* = specimen (i.e., labeled and preserved, not simply a dead bird)

## ACCEPTED RECORDS

**Black-bellied Whistling-Duck** (*Dendrocygna autumnalis*) 1 individual, Fairfax County, August 25, 2010, [James Phelps], Category 3a (ph.), 2<sup>nd</sup> Piedmont record

**Greater White-fronted Goose** (*Anser albifrons*) 2 adults, Halifax County, January 16 – February 11, 2011, [Paul Glass], Category 1 (†, ph.), 1<sup>st</sup> Piedmont record since 2004 review list

**Ross's Goose** (*Chen rossii*) 1 individual, Rockbridge County, November 23, 2010, [Dick Rowe], Category 1 (†, ph.), 8<sup>th</sup> Mountains and Valleys record

**Ross's Goose** (*Chen rossii*) 1 individual, Rockbridge County, March 27-28, 2011, [Dick Rowe], Category 1 (†, ph.), 9<sup>th</sup> Mountains and Valleys record

**Eurasian Wigeon** (*Anas Penelope*) 1 adult male, Botetourt County, March 17, 2011, [Anne and Bill Tucker], Category 1 (†, ph.), 1<sup>st</sup> Mountains and Valleys record since the 2004 Review List

**White-cheeked Pintail** (*Anas bahamensis*) 1 adult male, Chincoteague NWR, Accomack County, September 4-10, 2010, [Jennifer Elmer, Elton Morel and Larry Lynch], Category 1 (†, ph.), 4<sup>th</sup> Coastal Plain record and 1<sup>st</sup> accepted Category 1 record of a live wild bird. Previous Category 1 records were specimens from hunting, the most recent of these being in 1966.

**Garganey** (*Anas querquedula*) 1 individual, Chincoteague NWR, Accomack County, September 6, 2010, [Ned Brinkley], Category 2 (†), 2<sup>nd</sup> state and Coastal Plain Category 2 record.

**White-winged Scoter** (*Melanitta fusca*) 4 individuals, Amherst County, February 13, 2011, [Candi Harris and Joe Kormann], Category 1 (†, ph.), 4<sup>th</sup> Piedmont record since the 2004 Review List

**White-winged Scoter** (*Melanitta fusca*) 1 individual, Kerr Reservoir, Mecklenburg County, February 13, 2011, [Paul Glass], Category 2 (†), 5<sup>th</sup> Piedmont record since the 2004 Review List

**Red-throated Loon** (*Gavia stellata*), 1 adult, Kerr Reservoir, Mecklenburg County, January 15 – February 13, 2011, [Paul Glass], Category 1 (†, ph.), 6<sup>th</sup> Piedmont record since the 2004 Review List

**Eared Grebe** (*Podiceps nigricollis*) 1 adult, Roanoke City, April 20-26, 2009, [Kent Davis, Jr., Mike Smith, Barry Kinzie, Alyce Quinn], Category 1 (†, ph.), 2<sup>nd</sup> Mountains and Valleys record since the 2004 Review List

**Western Grebe** (*Aechmophorus occidentalis*) 1 individual, Louisa County, February 8, 2011, [Richard Cox], Category 1 (ph.), 3<sup>rd</sup> Piedmont record since species split from Clark's Grebe in 1985

**Herald Petrel** (*Pterodroma arminjoniana*) 1 individual, Accomack County waters, July 7, 2011, [Tom Johnson], Category 1 (†, ph.), 5<sup>th</sup> state and 3<sup>rd</sup> Coastal Plain record, first state record since September 2003

**Black-capped Petrel** (*Pterodroma hasitata*) 1 individual, Accomack County waters, July 7, 2011, [Tom Johnson], Category 2 (†), first state and Coastal Plain record since 2004 Review List

**White-tailed Tropicbird** (*Phaethon lepturus*) 1 individual, Accomack County waters, July 7, 2011, [Tom Johnson], Category 1 (†, ph.), 4<sup>th</sup> state and 3<sup>rd</sup> Coastal Plain record, first state record since September 2003

**Brown Booby** (*Sula leucogaster*) 1 individual, Pulaski County, October 26, 2008, [William Leigh, Mark Johnson, Larry Lynch, Stan Bentley], Category 1 (†, ph.), 2<sup>nd</sup> state record since 1999 and first Mountains and Valleys record

**Anhinga** (*Anhinga anhinga*) 1 individual, Hanover County, May 31, 2011, [Leigh Surdukowski], Category 2 (†), 3<sup>rd</sup> record for the Coastal Plain north of the James and west of the Bay since the 2004 Review List

**Tricolored Heron** (*Egretta tricolor*) 1 juvenile, Charlotte County, August 14, 2011, [Adam D'Onofrio, Fenton Day, Paul Glass, Bruce Richardson], Category 2 (†), 3<sup>rd</sup> Piedmont record since 2004 Review List

**White Ibis** (*Eudocimus alba*) 1 juvenile, Rockbridge County, July 13, 2011, [Dick Rowe], Category 1 (†, ph.), 3<sup>rd</sup> Mountains and Valleys record since 2004 Review List

**White Ibis** (*Eudocimus alba*) 2 juveniles, Augusta County, July 16, 2011, [Allen Lerner], Category 2 (†), 4<sup>th</sup> Mountains and Valleys record since 2004 Review List

**White Ibis** (*Eudocimus alba*) 3 juveniles, Rockbridge County, July 26, 2011, [Dick Rowe], Category 1 (†, ph.), 5<sup>th</sup> Mountains and Valleys record since 2004 Review List

**White Ibis** (*Eudocimus alba*) 3 juveniles, Buckingham County, August 1, 2011, [Evan Spears], Category 1 (†, ph.), 8<sup>th</sup> Piedmont record since 2004 Review List

**White-faced Ibis** (*Plegadis chihi*) 1 adult, Chincoteague NWR, Accomack County, May 6-9, 2011, [Jennifer Elmer, Wendy Ealding, Cliff Hupp], Category 1 (†, ph.), 7<sup>th</sup> Coastal Plain record

**Swallow-tailed Kite** (*Elanoides forficatus*) 1 adult, Fairfax County, May 9, 2009, [Scott Baron], Category 2 (+), 3<sup>rd</sup> Piedmont record, second since 2004 Review List

**Swallow-tailed Kite** (*Elanoides forficatus*) 2 adults, Campbell County, August 13-September 4, 2011 [Dave Dawson, Cole Poindexter], Category 1 (+, ph.), 4<sup>th</sup> Piedmont record, third since 2004 Review List

**Mississippi Kite** (*Ictinia mississippiensis*) 1 individual, Grayson County, May 31, 2010 [John Gerwin], Category 2 (+), 4<sup>th</sup> Mountains and Valleys record since 2004 Review List

**Sandhill Crane** (*Grus canadensis*) 40-50 individuals, Highland County, November 15, 2010, [David Steffen], Category 2 (+), 7<sup>th</sup> Mountains and Valleys record since 2004 Review List

**Sandhill Crane** (*Grus canadensis*) 1 individual, Richmond County, April 30, 2011, [Alexandra Minarik], Category 3a (ph.), 5<sup>th</sup> Coastal Plain record since 2004 Review List

**Lesser/Greater Sand Plover** (*Charadrius mongolus/leschenaultii*) 1 individual, Augusta County, September 6-9, 2010 [Allen Lerner, Ed and Nancy Lawler, Patrick Toomey], Category 1 as Sand Plover sp., (+, ph.), first state and Mountains and Valleys record.

**Piping Plover** (*Charadrius melodus*) 1 adult, Hampton, July 27-28, 2011, [Diana Doyle], Category 1, (+, ph.), first record for the Coastal Plain west of the Bay since 2004 Review List

**American Avocet** (*Recurvirostra americana*) 1 adult, Alexandria, July 21, 2011, [Stephen Hersey], Category 2 (+), 4<sup>th</sup> record for the Coastal Plain west of the Bay since 2004 Review List

**Long-billed Curlew** (*Numenius arquata*) 2 individuals, Accomack County, October 8-9, 2011, [Rick Kellam, Paul McCroskey], Category 1 (ph.), 4<sup>th</sup> State and 3<sup>rd</sup> Coastal Plain record since 1991

**Stilt Sandpiper** (*Calidris himantopus*) 2 juveniles, Mecklenburg and Charlotte Counties, August 28, 2011, [Adam D'Onofrio, Paul Glass], Category 2 (+), 3<sup>rd</sup> Piedmont record since 2004 Review List

**Buff-breasted Sandpiper** (*Tryngites subruficollis*) 3 individuals, Halifax County, August 29-September 5, 2011, [Bruce Richardson, Ryan Kelley], Category 1, (+, ph.), 3<sup>rd</sup> Piedmont record

**Red-necked Phalarope** (*Phalaropus lobatus*) 1 adult, Fairfax County, August 28, 2011, [Larry Cartwright, Kurt Gaskill, Bob Abrams, Joan Boudreau], Category 1 (+, ph.), 2<sup>nd</sup> record for the Coastal Plain west of the Bay since 2004 Review List

**Red-necked Phalarope** (*Phalaropus lobatus*) 1 juvenile, Albemarle County, September 7, 2011, [Stauffer Miller, Pete Myers], Category 1 (+, ph.), 1<sup>st</sup> Piedmont record since 2004 Review List

**Red-necked Phalarope** (*Phalaropus lobatus*) 1 juvenile, Rockingham County, September 10, 2011, [William Leigh], Category 1 (+, ph.), 2<sup>nd</sup> Mountains and Valleys record since 2004 Review List

**Red-necked Phalarope** (*Phalaropus lobatus*) 1 individual, Fairfax County, October 3, 2011, [Paul Baicich, Melina Tye, Harry Glasgow, Caroline Kennedy, Kathy McNeil]. Category 2 (+), 3<sup>rd</sup> record for the Coastal Plain west of the Bay since 2004 Review List

**Lesser Black-backed Gull** (*Larus fuscus graellsii*) 1 adult, Prince Edward County, February 25, 2011, [C. Michael Stinson, Fenton Day], Category 2 (+), 4<sup>th</sup> record for the Piedmont south of I-64 since the 2004 Review List

**Sooty Tern** (*Onychoprion fuscatus*) 1 adult found dead, Accomack County, August 28, 2011, [Joelle Buffa and Clyde Morris], Category 1 (+, ph., \*), 4<sup>th</sup> non-pelagic Coastal Plain record since the 2004 Review List. Specimen to be housed at the Virginia Museum of Natural History.

**Sooty Tern** (*Onychoprion fuscatus*) 2 adults and 2 juveniles, Chesapeake Bay Bridge Tunnel Island #1, Virginia Beach, August 28, 2011, [David Shoch, Bob Anderson, Ned Brinkley], Category 1 (ph.), 5<sup>th</sup> non-pelagic Coastal Plain record since the 2004 Review List.

**Royal Tern** (*Thalasseus maximus*) 2 adults and 1 juvenile, Kerr Reservoir, Mecklenburg County, August 28, 2011, [Adam D'Onofrio, Paul Glass], Category 2 (+), 1<sup>st</sup> Piedmont record since the 2004 Review List

**White-winged Dove** (*Zenaida asiatica*) 1 male, Northampton County, May 31, 2011, [Ned Brinkley], Category 1 (+, ph.) 6<sup>th</sup> record for the Coastal Plain since the 2004 Review List

**Long-eared Owl** (*Asio otus*) 1 adult, Highland County, June 5, 2011, [John Rowlett, Jesse Fagan], Category 1 (ph.). While the species is not on the Review List, the record is of interest because it provided good photographic documentation of a species that has very few spring/summer reports in the Mountains and Valleys.

**Black-chinned Hummingbird** (*Archilochus alexandri*) 1 adult male, Pulaski County, November 8-11, 2010, [Mark Mullins, Stan Bentley], Category 1 (+, ph.), 5<sup>th</sup> state and first Mountains and Valleys record.

**Rufous Hummingbird** (*Selasphorus rufus*) 1 adult female, Augusta County, November 14-24, 2008, [Frances Slemmer], Category 2 as *Selasphorus* sp. (+)

**Rufous Hummingbird** (*Selasphorus rufus*) 1 individual, Augusta County, November 21, 2008, [Danette Wilson], Category 2 as *Selasphorus* sp. (+, ph.)

**Rufous Hummingbird** (*Selasphorus rufus*) 1 hatch year male, Pulaski County, October 12-24, 2010, [Mark Mullins, Bruce Peterjohn], Category 1 (+, ph., banded), 4<sup>th</sup> Mountains and Valleys record



**Allen's Hummingbird** (*Selasphorus sasin*) 1 hatch year female, Chesterfield County, November 20, 2010-April 1, 2011, [Julie and Mike Kacmarcik, Bruce Peterjohn, David Holmes], Category 1 (†, ph., banded), 3<sup>rd</sup> state and 2<sup>nd</sup> Coastal Plain record

**Scissor-tailed Flycatcher** (*Tyrannus forficatus*) 1 individual, Campbell County, May 23, 2011, [Mark Johnson, Peggy Lyons, Thelma Dalmás], Category 1 (†, ph.) 2<sup>nd</sup> Piedmont record since 2004 Review List

**Scissor-tailed Flycatcher** (*Tyrannus forficatus*) 1 individual, Loudoun County, June 27, 2011, [Gerco Hoogeweg, m.obs.], Category 1 (†, ph.) 3<sup>rd</sup> Piedmont record since 2004 Review List

**Fork-tailed Flycatcher** (*Tyrannus savanna*) 1 individual, Chesapeake, June 18, 2011, [Elisa Enders, m.obs.], Category 1 (†, ph.) 6<sup>th</sup> state and 4<sup>th</sup> Coastal Plain record

**Loggerhead Shrike** (*Lanius ludovicianus*) 1 individual, Virginia Beach, January 1, 2011, [Elisa Enders] Category 1 (†, ph.), first Coastal Plain record since the species was added to the Review List in 2004 and first Coastal Plain record since 1978

**Bell's Vireo** (*Vireo bellii*) 1 hatch year individual, Eastern Shore of Virginia National Wildlife Refuge, Northampton County, September 19, 2010, [Caroline Poli, Nathan Banfield, Todd Jones], Category 1 (†, ph., banded), first state and Coastal Plain Category 1 record

**Violet-green Swallow** (*Tachycineta thalassina*) 1 adult male, Albemarle County, March 26, 2011, [Pete Myers, Brenda Tekin, David Shoch], Category 1 (†, ph.), first state and Piedmont record

**Boreal Chickadee** (*Poecile hudsonicus*) 1 individual, Clarke County, January 2, 2011, [Margaret Wester], Category 2 (†), 4<sup>th</sup> state and first Mountains and Valleys record, first state record since 1978

**Mountain Bluebird** (*Sialia currucoides*) 1 adult female, Northampton County, December 30, 2010-January 16, 2011, [Ned Brinkley, George Armistead] Category 1 (†, ph.) second state and Coastal Plain record

**Northern Parula** (*Setophaga americana*) 1 adult male, Virginia Beach, January 1 – February 23, 2010, [Harry and Kathleen Ramsey], Category 1 (†, ph.), first February Coastal Plain record

**Clay-colored Sparrow** (*Spizella pallida*) 1 individual, Danville, February 23, 2011, [Paul Glass, Bruce Richardson, Mary Foster], Category 1 (†, ph.), 2<sup>nd</sup> Piedmont record since 2004 Review List

**Clay-colored Sparrow** (*Spizella pallida*) 1 individual, Rockbridge County, April 28-May 1, 2011, [Dick Rowe], Category 1 (†, ph.), first Mountains and Valleys record since 2004 Review List

**Lark Sparrow** (*Chondestes grammacus*) 1 adult, Grayson

County, August 1, 2010, [Allen Boynton], Category 1 (†, ph.), first Mountains and Valleys record since 2004 Review List

**Lark Bunting** (*Calamospiza melanocorys*) 1 adult male, Westmoreland County, June 23-24, 2011, [Woody and Leslie Barden], Category 1 (ph.), second state and first Category 1 Coastal Plain record

**Western Tanager** (*Piranga ludoviciana*), 1 male, Roanoke County, March 1-6, 2011, [Katie and Bill James], Category 1 (†, ph.), second Mountains and Valleys record since 2004 Review List

**White-winged Crossbill** (*Loxia leucoptera*) 5-7 females/immatures, Clarke County, February 1, 2009, [Scott Baron], Category 2 (†), second Mountains and Valleys record since 2004 Review List

#### SUBMISSIONS NOT ACCEPTED

**Rufous Hummingbird** (*Selasphorus rufus*) 1 female, Augusta County, November 21, 2008

**Red-throated Loon** (*Gavia stellata*) 1 adult, Pulaski County, October 23, 2010

**Western/Clark's Grebe** (*Aechmophorus occidentalis/clarkia*) 1 adult, Pulaski County, November 17, 2010

# **ABSTRACTS OF PAPERS PRESENTED** **TOA/VSO JOINT ANNUAL MEETING SCIENTIFIC PAPER SESSION**

Saturday, May 19, 2012 Johnson City, TN

An asterisk (\*) denotes the presenting author.

## **Birding at a random spot on the side of the road**

*C. Michael Stinson\**

*Southside Virginia Community College*  
 myrmecocichla@gmail.com

Since December 2010 I have been studying the bird use of a site in northern Charlotte County, Virginia that is identified in the Virginia Birding and Wildlife Trail guide as the "Roanoke-Meherrin Summit." This presentation is an interim report of my results and a brief discussion of what I'm learning from my surveys. The site features a strip of land lying between US 360 (a busy four-lane highway) and open farmland; it includes what might be described as marginal or waste habitat created when US 360 was rerouted. Abandoned pavement and various other manmade debris are obvious characteristics of the site. I will discuss the value of birding at sites such as this one, those which might appear less attractive to birders than typical hotspots. I will also discuss the value of eBird in identifying such sites and in recording and analyzing the data gathered there, and briefly consider the evolutionary significance of such habitats for birds.

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## **Stimulus color influences neophobic behavior in house sparrows (*Passer domesticus*)**

*Laken Cooper\* and Jason Davis*

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Animals must evaluate novel stimuli in order to determine if the benefits of approaching outweigh the risks taken, however there is a fine line between being curious and being cautious. The color of objects is a strong cue as to its safeness, as it may relate to sexual features, food sources and alarming situations. Here we describe two experiments developed to test the exact effects of differently colored stimuli on food approach behavior in captive housed wild house sparrows (*Passer domesticus*). Knowing that the color red often has an important role in wild environments, we predicted that subjects would show a delay in approaching red items when compared to other colors. Previous studies have suggested that male songbirds may be more aggressive when it comes to foraging behaviors, leading to our second assumption that they may approach food items faster than females. As predicted, our results show that house sparrows exhibit a decreased preference for red

items, and that while males and females both avoid the color red; males approach food almost twice as fast as do females, regardless of the color. We discuss the possible evolutionary and physiological underpinnings of these findings, and their relevance to wild environments.

\*\*\*\*\*

## **Corticosterone and parental behavior in eastern bluebirds (*Sialia sialis*)**

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Studies have demonstrated strong correlations between stress and an organism's health. We were interested in observing the relationship between stress and parental care. Using eastern bluebirds (*Sialia sialis*) as our model, we examined the relationship between the levels of corticosterone (the hormone primarily associated with the stress response) in birds' blood and their parental behavior. We observed male-female social and feeding behaviors during incubation and nestling stages. We determined corticosterone levels from blood samples collected from males, females, and nestlings. We found female corticosterone levels to be positively correlated with male corticosterone levels. Male corticosterone levels correlated positively with the number of times the female left the nest to forage while incubating, rather than being fed by the male. Female corticosterone levels also correlated positively with male feeding of the nestlings. However, the corticosterone levels of an individual did not correlate with its own rate of foraging or nestling care. Our findings indicate that stress levels within an individual can affect the parental care of its mate.

\*\*\*\*\*

**Conspecific aggression in relation to neighbor distribution in urban and rural populations of Song Sparrows (*Melospiza melodia*)**

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Territorial aggression can be influenced by a variety of ecological factors including population density, resource availability, and degree of urbanization. It follows that the number and proximity of neighbors, which may be a measure of density more relevant to the individual, could influence territorial aggression. This study addressed the following question: does the distribution of neighboring birds' territories influence same-species territorial aggression? We predicted that birds with many neighbors in close proximity would be most aggressive. Our focal species was the song sparrow (*Melospiza melodia*), a territorial bird native to southwestern Virginia. We studied territorial males during the early breeding season at three urban and three rural sites. Two measures of neighbor distribution were used: 1) distance from the focal sparrow to its nearest neighbor and 2) number of neighbors within a radius of 75m. Territorial aggression was quantified in response to a simulated territorial intrusion in which pre-recorded song was played on the territory and four types of aggressive behavior were recorded. Preliminary analyses show a possible relationship between one of these measures, the number of songs sung by the focal bird, and both neighbor distribution measures. This suggests that neighbor distribution can impact territorial behavior.

\*\*\*\*\*

**Effect of handling time on corticosterone and heat shock protein 60 levels in Tufted Titmouse (*Baeolophus bicolor*)**

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Unexpected challenges such as adverse weather, food restriction, and attacks by pathogens and predators activate a protective physiological stress response. This response includes both release of stress hormones, such as corticosterone (CORT), and intracellular production of heat shock proteins (HSPs). While adaptive in the short term, prolonged activation of the stress response reserves toward critical survival processes and away from growth and reproduction. CORT has been applied

for more heavily than HSPs in avian stress research, but HSPs have been receiving increasing attention. Although HSP levels are assumed to be more resistant than CORT to acute distress caused by subject handling, this assumption has not been systematically examined. We compared CORT and HSP60 in Tufted Titmouse (*B. bicolor*) blood samples taken at different time intervals after subjects were captured. The average time elapsed between capture and blood collections was approximately 14 min (range = 4-31min). CORT was positively and significantly correlated with elapsed time for samples taken within 15 min. For samples obtained longer than 15min after capture, CORT was not correlated with time, and variability increased. HSP60 levels measured in the same blood samples were not correlated with each other. Neither CORT nor HSP60 was correlated with body condition.

\*\*\*\*\*









## INFORMATION FOR CONTRIBUTORS

*The Raven*, the official journal of the Virginia Society of Ornithology (VSO), functions to publish original contributions and original review articles in ornithology relating to Virginia Birdlife. Electronic files are the required form for manuscript submission. Text files, prepared using a Mac OS-compatible word processing program or Microsoft® Word, should contain minimal formatting. Graphics (photos, maps, graphs, charts) should be sent as high quality EPS or JPEG files. An accompanying “cover letter” file should be emailed to the editor stating (1) article title, (2) author(s) full name(s) and email and home or institutional address(es) and, for multi-authored manuscripts, (3) the name of one author designated to carry out correspondence with the editor. If the manuscript or report is technical, a list of persons who would be appropriate reviewers should also be included in the “cover letter” file. Authors are encouraged to consult with the editor on additional matters of content, format, or style.

Most Manuscripts published in *The Raven* concern the distribution, abundance and migration of birds in Virginia. Manuscripts on other ornithological topics, including Virginia-based historical reviews, bibliographical reviews, life histories, and behavioral observations, are also welcomed. In addition, the journal serves to publish the official proceedings of the VSO and other formal items pertaining to all aspects of the Society’s activities. *The Raven* may also publish articles pertaining to the activities of various public and private organizations engaged in biological and conservation work in Virginia. *The Raven* is a peer-reviewed journal; all feature articles and short communications are reviewed before a decision about acceptance for publication is made.

Format of *The Raven* generally follows guidelines set by the Council for Biology editors as outlined in the CBE style manual, 6th edition, 1994 (Council of Biology Editors, Inc., 11250 Roger Bacon Dr., Reston, VA 20190). Recent volumes of *The Raven* should be inspected for style. Vernacular and scientific names of birds should be those in the most recent edition (and supplement) of the A.O.U.’s Check-list of North American Birds ([www.aou.org/checklist/north](http://www.aou.org/checklist/north)). Scientific names should be italicized. All size, temperature and other measurements should be in metric units.



# *The Raven*

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

Volume 83

Number 2

2012



The Virginia Society of Ornithology, Inc. exists to encourage the systematic study of birds in Virginia, to stimulate interest in birds, and to assist the conservation of wildlife and other natural resources. All persons interested in those objectives are welcome as members. Present membership includes every level of interest, from professional scientific ornithologists to enthusiastic amateurs.

Activities undertaken by the Society include the following:

1. An annual meeting (usually in the spring), held in a different part of the state each year, featuring talks on ornithological subjects and field trips to nearby areas.
2. Other forays or field trips lasting a day or more and scheduled throughout the year so as to include all seasons and to cover the major physiographic regions of the state.
3. A journal, *The Raven*, published twice yearly, containing articles relevant to Virginia ornithology as well as news of the activities of the Society and its chapters.
4. A newsletter, the VSO Newsletter, published quarterly, containing current news items of interest to members and information about upcoming events and pertinent conservation issues.
5. Study projects (nesting studies, winter bird population surveys, etc.) aimed at making genuine contributions to ornithological knowledge.

In addition, some local chapters of the Society conduct their own programs of meetings, field trips and other projects.

Those wishing to participate in any of the above activities, or to cooperate in advancing the objectives of the Society, are cordially invited to join and should contact Thelma Dalmas, the Membership Secretary. Annual dues are \$20.00 for active members, \$35.00 for sustaining members, \$60.00 or more for contributing members, \$500.00 for life members, and \$25.00 for family members.

Additional Information can be found on the Internet, at [www.virginiabirds.net](http://www.virginiabirds.net)

Queries and comments about *The Raven* or the VSO Newsletter should be directed to the respective editors.

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# *The Raven*

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

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Wesley M. Brown



Volume 83, No. 2

*Published by*  
THE VIRGINIA SOCIETY OF ORNITHOLOGY

2012

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ISSN 0034-0146

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## WINTERING WATERFOWL ON THE NORTHERN VIRGINIA PIEDMONT

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### INTRODUCTION

The Coastal Plain of Virginia and in particular, the Chesapeake Bay, have traditionally served as a winter home for millions of waterfowl, but these populations have experienced several major population declines. In the late nineteenth century, market hunting severely depleted waterfowl populations until Federal regulation allowed populations to recover (Perry, 1987). In the 1930s, severe drought and the drainage of northern breeding areas again caused population declines until live decoys and bait were outlawed as hunting tools and the duck stamp program was initiated to raise funds for additional wildlife refuges (Perry, 1987). Finally beginning in the 1960s, pollution levels in the Chesapeake Bay caused major die-offs of submerged aquatic vegetation (SAV) that supported waterfowl populations (Perry, 1987). Now, as we enter the twenty-first century, the Chesapeake Bay Program reports some SAV restoration progress (Herbst, 2002).

Some waterfowl species have been able to adapt to these changes in their environment. Several species including Canada Goose (*Branta canadensis*), Mallard (*Anas platyrhynchos*), and American Wigeon (*Anas americana*) have shifted to alternate food sources such as waste corn or lawn grasses. Tundra Swan (*Cygnus columbianus*) changed from feeding almost exclusively on SAV to agricultural waste and mollusks (Munro, 1981; Fenwick, 1983). Many species began short-stopping, a phenomenon in which waterfowl minimize their southward migration and stop in areas not previously utilized as wintering grounds due to changes in habitat or hunting pressures (Perry, 1987; Hestbeck, et al., 1991). Short-stopping resulted in a rapidly growing Chesapeake Bay population of wintering Canada Goose during the 1970s, with a corresponding reduction in traditional North Carolina and southeastern U.S. wintering populations (Perry, 1987). In addition, during this time period, the local resident population of geese began to grow substantially, presumably with expansion into previously unpopulated areas including the Piedmont. Prior to 1970, the Canada Goose was exceedingly rare on the Piedmont in winter (Heath, 2002).

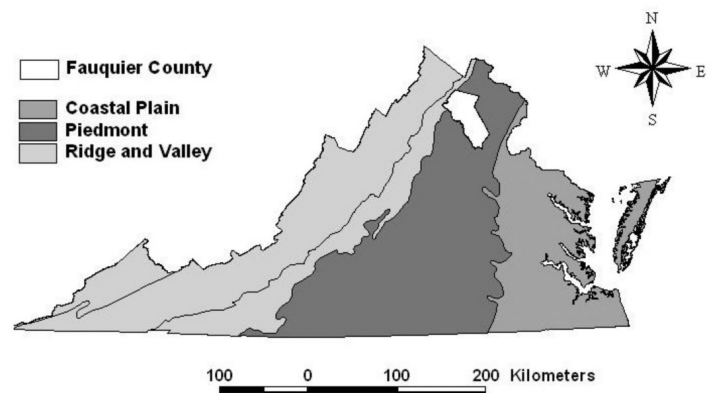
The Virginia Piedmont extends westward from the edge of the Coastal Plain to the escarpment of the Blue Ridge (Woodward and Hoffman, 1992). The northern part of the Virginia Piedmont is only about 80 kilometers wide but the southern portion broadens to a width of approximately 241 kilometers. It contains drainage from seven river systems and covers approximately 40,633 square kilometers. Large numbers of waterfowl are now present on the northern Virginia Piedmont each winter (Sladen, 1999), but no study

of this community has yet been published. Because of the habitat degradation in the Chesapeake Bay and inland habitat improvement, including the spread of SAVs such as *Hydrilla verticillata* and the ongoing creation of man-made lakes on the Piedmont, we initiated this study to document the wintering waterfowl populations on the Piedmont. Specifically, we wanted to determine: 1) whether the Piedmont supports its own waterfowl population or is merely a migration stopover; and 2) whether the Piedmont Canada Goose population contains true migrants according to the Atlantic Flyway Council definition (Canada Goose Committee 1999).

### STUDY AREA

The study area consisted of 25 lakes and a wetland mitigation area in Fauquier County (Figure 1) and one adjacent lake in Prince William County. This area is on the northern Virginia Piedmont and is bordered on the east by suburban Washington D.C. and on the west by the Blue Ridge Mountains. It consists mostly of a mosaic of forest fragments and mixed agricultural and pasture lands. According to Geospatial and Statistical Data (2004), Fauquier County consists of 42.9% pastureland, 1.9% row crops, 33.7% deciduous forest, 13.8% mixed forest, and 4.0% evergreen forest. The remaining land is urban and residential development. However, suburban development is rapidly moving westward from Washington D.C.

**Figure 1.** The physiographic provinces of Virginia as they pertain to this study with the study area shown in white.



## METHODS

One of us (SH) conducted roadside weekly surveys September through April from fall 1999 through spring 2003 by dividing the survey area into five sectors and counting waterfowl in randomized order once a week between the hours of 0800 and 1600. The following data were recorded for each lake: (1) time, (2) frozen or not, (3) # of waterfowl by species and sex, (4) # of dyed ducks (see below). SH used a 20x20-60 zoom telescope for all counts. The first winter of surveys (1999-2000) was used to finalize techniques and add lakes as appropriate, so these data were not included in the statistical analysis. Therefore, all statistical analysis was confined to the three survey winters from fall of 2000 through spring of 2003.

The accuracy of winter surveys for Canada goose is confounded by the presence of non-migratory resident populations. In the Atlantic Flyway, a resident Canada Goose is defined as one that was hatched or nests in any Atlantic Flyway state or Canada, at or below 48° N and east of 80° W, excluding Newfoundland (Canada Goose Committee, 1999). On the Virginia Piedmont, there are two types of resident goose: foreign residents and local residents. Foreign residents breed north of Virginia, but are forced south by weather, whereas local residents spend their entire lives on the Virginia Piedmont. SH recorded Canada Goose neckbands and provided them to the Bird Banding Lab except for local residents which were identified by neckband color. Geese in agricultural fields along the regular survey route were counted and included in the total Canada Goose count for the survey. These fields were included in the route randomization procedure to ensure the same fields were covered on every survey and every year. SH selected nine focal species for in-depth analysis based on a peak population of at least 100 birds.

SH trapped ducks each winter from November through February at Clifton Farm near Warrenton, Virginia using one of two trap designs: funnel trap or corral trap (Haramis, et al., 1987). All birds were banded on the right tarsometatarsus with the band placed upside down (i.e., band number on top) to reduce wearing of the band number. Birds were weighed with a Pesola 2500 gram scale, sexed by plumage or cloacal examination, and aged according to the criteria specified in North American Bird Banding Techniques, Volume II (Canadian Wildlife Service and U.S. Fish and Wildlife Service, 1980). Birds were released on the same lake where they were trapped after banding.

To determine whether the birds were staying in the area without having to retrap them, American Black Ducks (hereafter, simply Black Duck), Ring-necked Ducks, and Bufflehead were dyed pink during the banding process using ten drops of liquid Rhodamine B dye mixed with 16 ounces of isopropyl alcohol. The dye was applied with a sponge brush to the white or gray parts of the bird except Black Ducks, which were dyed underneath the wings and over the head, neck and chest. Dyed birds were left for at least four hours to dry in a sheltered place and SH then

released them into the water where they had been trapped. Requests were posted on birding listservs in Virginia, Maryland, and Delaware to report dyed ducks to the bander.

## RESULTS

Twenty-eight species of waterfowl (Appendix A, see p. 9) were identified on surveys between 1999 and 2003 of which nine were selected for in depth analysis (Table 1). The first survey year was eliminated from statistical analyses due to changes in survey technique during that winter. Therefore, statistical analyses were performed on the survey data from fall 2000 through spring 2003 resulting in three survey years.

A two-way analysis of variance by species showed no significant difference in population size between survey years except for Gadwall, which significantly differed in population size across all three winters ( $p < 0.05$ ). Because there was no significant difference in population size between years for most species, further analyses for all species were conducted on the population average of each species over all three survey years.

In order to categorize how the different species used the Piedmont, we ran a hierarchical cluster analysis using Ward's Method based on percent of total presence from September through April. The result was two overall categories: (1) species that show a single population spike, and (2) species that show two population spikes. Canada Goose, Mallard, and Black Duck all showed a population spike in mid-winter. Common Merganser showed a population spike during late winter. Bufflehead

**Table 1.** Focal species average survey population peaks by season with identified usage category, 1999-2003, except Canada Geese and Mallard which are 2000-2003. For Use information see below.

Species	Average Fall Peak (Sep–Nov)	Average Winter Peak (Dec–Feb)	Average Spring Peak (Mar–Apr)	Use
Canada Goose	3946	8440	1575	1
Gadwall	166	174	112	3
American Wigeon	117	94	75	3
Black Duck	64	165	28	2
Mallard	189	768	119	1
Ring-necked Duck	889	674	645	3
Bufflehead	126	157	67	3
Common Merganser	10	442	273	2
Hooded Merganser	52	141	50	3

and Hooded Merganser populations spiked during fall migration and Gadwall, Ring-necked Duck, and American Wigeon all showed two population spikes, one during fall migration and another during spring migration. Based on these data, we categorized use of the Piedmont in the following three ways:

1. Breeding populations that are augmented by larger wintering populations. This category is for species that have two separate populations: a) year round residents, b) populations that spend the winter on the Piedmont but migrate north to breed during the spring and summer (Canada Goose and Mallard).
2. Wintering only. These are species that spend the winter on the Piedmont rather than using it as a migratory path and are absent from the Piedmont during the breeding season (Black Duck and Common Merganser).
3. Migratory populations which may have a smaller subpopulation throughout the winter. This final group consists of species that use the Piedmont mostly during migration, but, depending on the weather, have a subpopulation that may spend the entire winter on this portion of the Virginia Piedmont (Gadwall, American Wigeon, Ring-necked Duck, Bufflehead, and Hooded Merganser).

Canada Goose (CAGO), Black Duck (ABDU), and Mallard (MALL) all showed a single population spike during mid-winter with no corresponding spikes during migration (Figure 2). These mid-winter population spikes correspond with the period when the majority of smaller ponds were frozen, indicating that the birds were concentrated on the larger bodies of water during this time. On average, 8500 Canada geese wintered in the survey area while summer counts showed a maximum of only 650 resident birds in the same area (S. Heath, Gulf Coast Bird Observatory, unpublished data). Common Merganser showed a similar population spike later in winter, usually in February (Figure 3).

American Wigeon, Gadwall, and Ring-necked Duck showed clear fall and spring migration peaks with smaller wintering populations (Figure 4). Finally, Bufflehead and Hooded Mergansers showed a clear fall migration peak without a matching spring migration peak (Figure 5).

Sixteen different Canada Goose neckbands were sighted during this study. Eight of these were true migrants, six were foreign residents, and two were banded in Maryland during the winter so their status could not be determined. The foreign residents were from Pennsylvania, Tennessee, North Carolina, Maryland, Michigan and Ontario.

Five of the true migrants were banded as breeding females with brood patches (J. Hughes, Canadian Wildlife Service, personal communication) in Inukjuak, Quebec which is located at 59.31° N and 77.36° W. The other three were males, two of which were banded at Akimiski Island, Nunavut located at 53.00° N, 81.27° E (J. Leafloor, Ontario Ministry of Natural Resources, personal communication) and one of which was banded at Moosonee, Ontario located at 51.31° N, 80.71° E.

Of the true migrants, four were sighted multiple times within a single season, one of these was sighted for three consecutive winters and another was sighted for two consecutive winters. Further, both these geese were sighted re-nesting at or near their original banding location during the summers in between these winter sightings (J. Hughes, Canadian Wildlife Service, personal communication).

Forty-five Black Duck, 66 Ring-necked Duck, and five Bufflehead were banded during this study. SH trapped only one foreign banded bird - a male Ring-necked Duck caught in February 2000, originally banded as an adult in August 1995 near Wadena, Saskatchewan. During the 2000-2001 winter, two Ring-necked Ducks were shot near Warrenton two to three weeks after banding. During the 2001-2002 winter, one Black Duck was shot two weeks after banding, also near Warrenton. In the winters following this project, eight Black Ducks, one Mallard-Black Duck hybrid, two Ring-necked Ducks, and a Bufflehead were recaptured during trapping on the same lake. A male Bufflehead banded in December 2002 was reported shot in October 2003 near Scaup Rapids, Minnesota. These are the only band returns for ducks banded as part of this project.

Seven Black Duck, 33 Ring-necked Duck, and one Bufflehead were dyed pink during the 2000-2001 winter. All re-sightings of dyed ducks were within a four-mile radius of the dyeing location except one sighting of a male Ring-necked Duck in Crownsville, Maryland approximately 113 kilometers from the dyeing location on the Coastal Plain. The number of re-sightings for ducks dropped so dramatically within the first two weeks after dyeing, that a statistical analysis was not appropriate. There were no re-sightings of male Ring-necked Ducks more than one month post dyeing, but one female Ring-necked Duck stayed in the survey area for the winter. None of the other species were re-sighted more than two weeks post dyeing.

Thirty-five Black Ducks, six Ring-necked Ducks and two Bufflehead were dyed pink during the 2001-2002 season. All re-sightings of dyed Black Ducks were within a five-mile radius of the dyeing location. For the time period November 16, 2001 through December 27, 2001, an average of 72 percent of the dyed Black Ducks were re-sighted. From January 9, 2002 through the end of February when spring migration began, an average of 26 percent of the dyed Black Ducks were re-sighted. One male Ring-necked Duck remained in the area for the winter and was often seen with the only female dyed Ring-necked Duck. Both Bufflehead remained in the area for the winter.

## DISCUSSION

These data show that Canada geese are utilizing the Piedmont as a wintering area rather than a migration pathway or staging area. Neckband data show the population to consist of a mixture of local residents, foreign residents, and true migrants with the foreign residents wandering during winter and the true migrants returning to the Piedmont winter after winter. According to the Canada Goose Committee (1999), resident Canada Goose



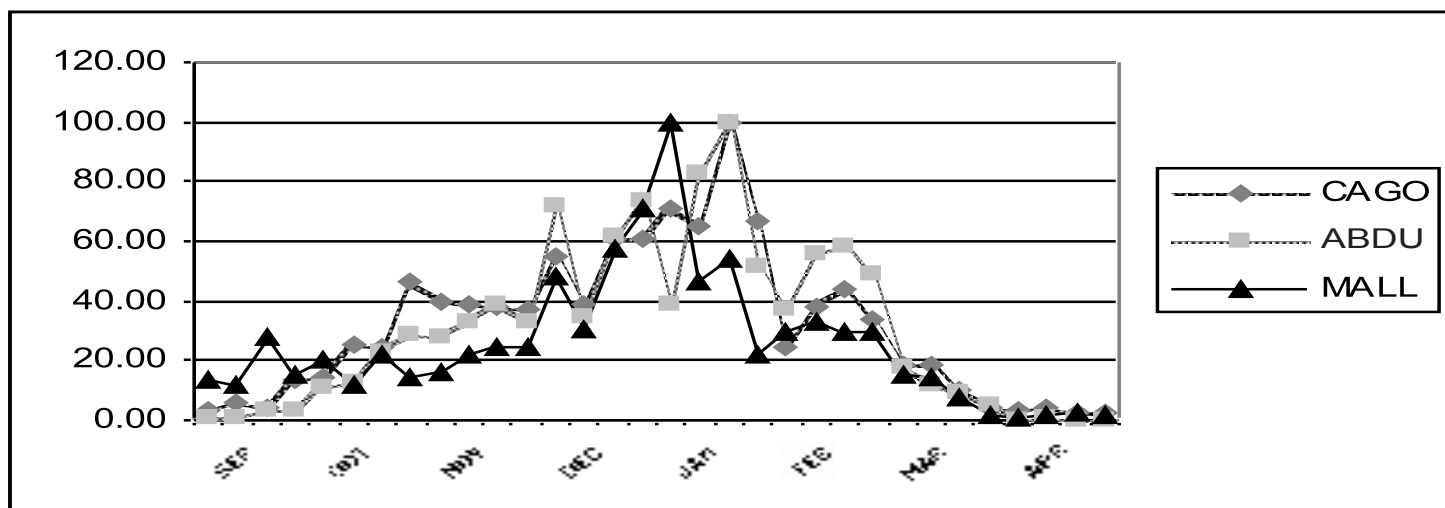


Figure 2. Percent of total population averaged over three survey years for Canada Goose (CAGO), Black Duck (ABDU) and Mallard (MALL).

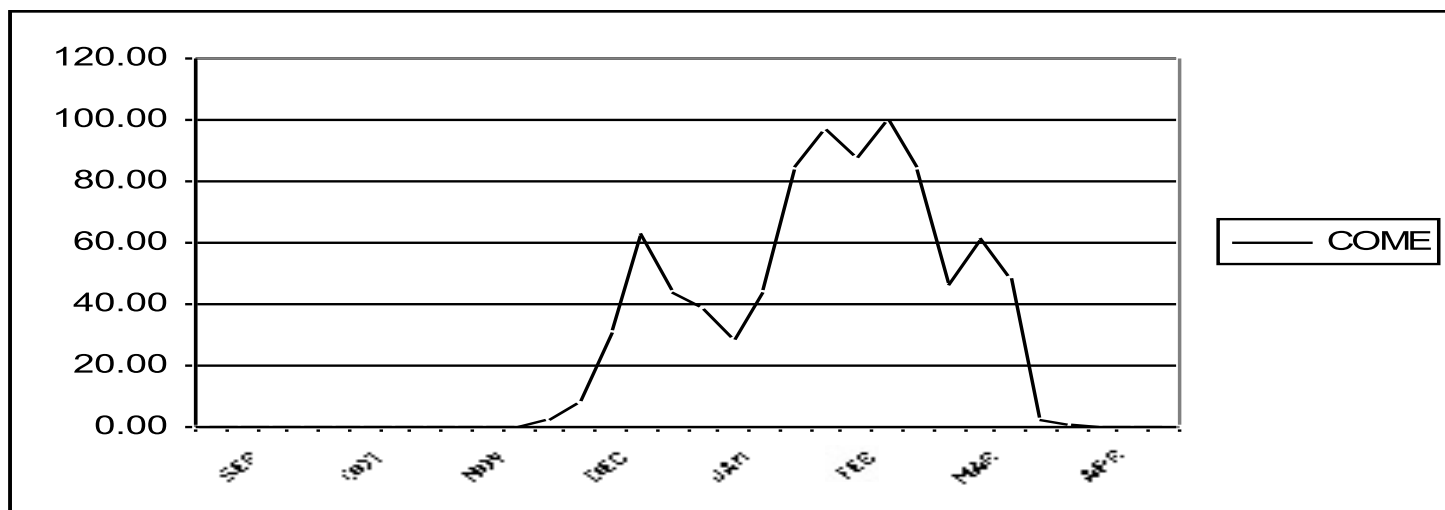


Figure 3. Percent of total population averaged over three survey years for Common Merganser (COME).

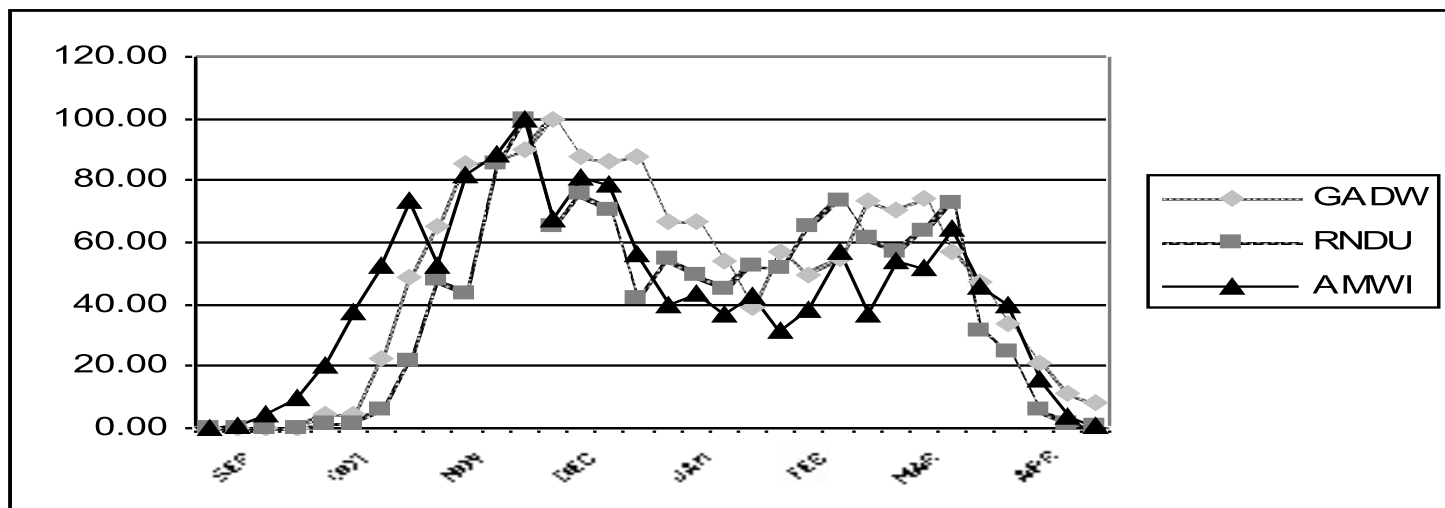


Figure 4. Percent of total population averaged over three survey years for Gadwall (GADW), Ring-necked Duck (RNDU), and American Wigeon (AMWI).

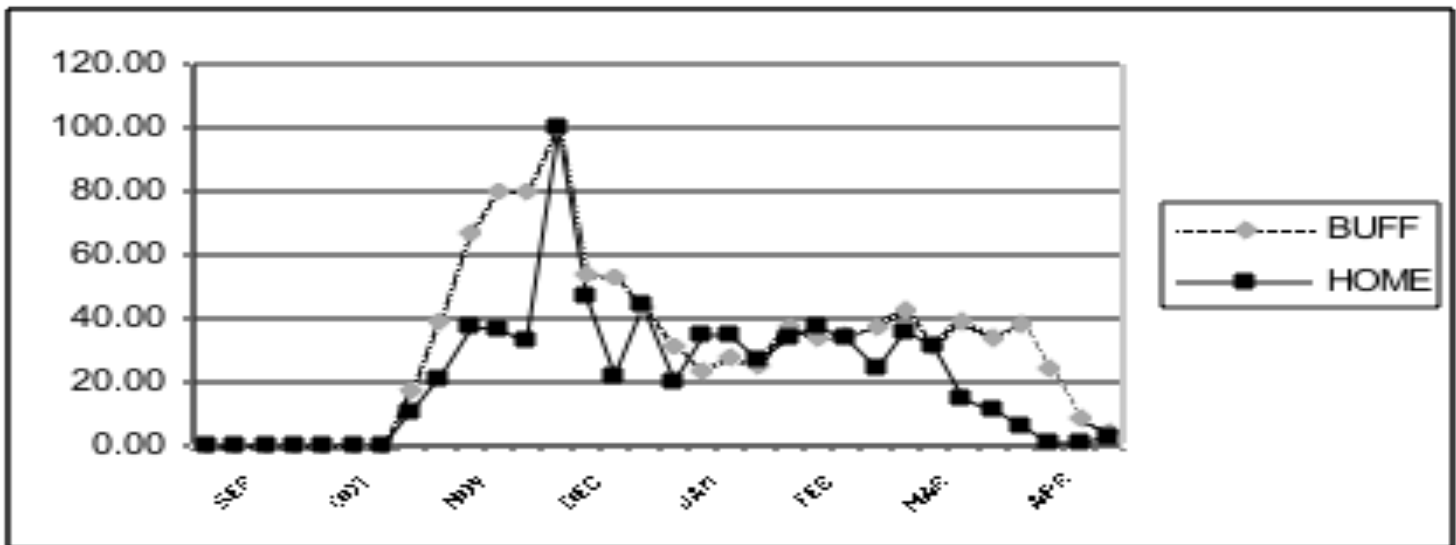


Figure 5. Percent of total population averaged over three survey years for Bufflehead (BUFF) and Hooded Merganser (HOME).

comprise the largest proportion of geese wintering in the mid-Atlantic and New England Coastal Plain regions. The northern Virginia Piedmont winter population averages 8500 birds with only 650 of those likely to be local residents. Fifty percent of the neck-banded geese recorded are considered migratory by the USFWS definition. The small number of neck bands recorded relative to the size of the winter Canada Goose population was not sufficient to produce an estimate of the size of the Piedmont migratory population. Analysis of Canada Goose Christmas Bird Count data over the last 30 years shows exponential growth on the Piedmont (Heath, Gulf Coast Bird Observatory, unpublished data) and the population increase from zero to 8500 birds within the survey area in 30 years represents extraordinary growth. It seems likely that initial Piedmont populations were the result of resident geese population expansion which in turn resulted in the decoying of migratory birds to the Piedmont. Coastal Plain habitat degradation and recent short-stopping trends may also have played a role.

The data support the further conclusion that Black Duck, Mallard, and Common Merganser are wintering on the Piedmont. All of these species show winter spike population trends rather than fall and/or spring migration peaks. Wintering data for Mallards is confounded by the resident population and no summer surveys were performed for that species. However, the data show a large wintering population of 768 on average. Although there are a few Piedmont breeding records for Black Ducks (Clapp, 1997), data from a satellite transmitter study initiated after the completion of this project indicate that Black Ducks wintering on the Piedmont breed in Canada (Shaffer, 2006).

The banding and dyeing data suggest that Black Duck spend the entire winter on the Piedmont and return each year. The Piedmont Black Duck population may be important from a conservation perspective. The Partners

in Flight Landbird Conservation Plan for the Mid-Atlantic Piedmont (Kearney, 2002), lists the Black Duck as a species of continental priority and includes the Piedmont region among the areas that contribute to the global conservation of this species. Black Duck was the first species to merit their own Joint Venture under the North American Waterfowl Management Plan (U.S. Fish and Wildlife Service, 1986), but despite many years of effort, Black Duck populations have yet to reach conservation goals. Jorde and Stotts (2002) found that the distribution of Black Duck in the Bay has shifted from upper Bay areas to mid-Bay eastern shore sites and the Potomac River and that these changes were associated with changes in water quality and the decline of SAV. The invasion of Piedmont lakes by *Hydrilla verticillata* and its attractiveness to waterfowl (Hench, et al., 1994) may make these lakes more attractive to Black Duck than areas of the Chesapeake Bay with their associated water quality issues and loss of SAV.

This study showed that Gadwall, American Wigeon, and Ring-necked Duck use the Piedmont mostly as a fall and spring migration corridor, but also have over-wintering populations. The fact that Gadwall was the only species that showed a significant difference in population between all three winters remains unexplained but was likely related to Gadwall sensitivity to weather effects. The wintering population of Gadwall stays on the Piedmont unless driven out by freezing temperatures or winter storms, but returns when weather permits, while the American Wigeon population is less likely to return until spring migration after a single significant winter weather event. Ring-necked ducks appear to return to the Piedmont winter after winter, but may wander substantially during the non-migratory period based on the sighting of a dyed duck in Crownsville, Maryland. Bufflehead and Hooded Mergansers show strong use of the Piedmont during fall migration and have smaller over-wintering populations

but they show no spring migration peak as seen in the other migrant species. The banding data show that overwintering Bufflehead return to the Piedmont winter after winter which is consistent with Limpert's (1980) findings on the Coastal Plain. Although the published breeding range of the Hooded Merganser includes Virginia, summer surveys located only one breeding pair of Hooded Mergansers in the survey area (S. Heath, Gulf Coast Bird Observatory, unpublished data).

Overall, this study illustrates the importance of the northern Virginia Piedmont for migrating and wintering waterfowl. It is unclear whether Fauquier County is representative of the Piedmont as a whole or is a unique environment which attracts wintering waterfowl. It is possible that the geography of the Piedmont acts as a funnel which concentrates the birds in the northern Virginia area. However, our survey area represents less than 4% of the total Virginia Piedmont land area and since no surveys are conducted on the Piedmont, it is not clear how or if the rest of the Piedmont is used by wintering waterfowl. Coastal Plain midwinter survey results in the same timeframe showed approximately 80,000 Canada geese in Virginia. Our land-based survey showed an average of 10% of this number on only a small fraction of the Piedmont. For Mallard our data showed 3% of the number found on the Virginia Coastal Plain during the same time period. Thus, a significant percentage of the population of both of these species is not being surveyed during the winter. Lack of Piedmont surveys may be resulting in incorrect assessments of the distribution of waterfowl on their wintering grounds, incorrect assessment of habitat usage by these species, and incorrect population trend estimates for some species which by necessity depend on wintering data rather than breeding data.

Given the lack of recovery of Black Duck populations in coastal areas and the fact that they have shifted their locations in response to habitat quality factors, the Piedmont population should not be ignored as it may be providing a stronghold for this species. Further study of the Piedmont Black Duck population is warranted to determine whether this population is growing and what its response is to the larger Mallard population. Encroachment of commercial and residential developments from the heavily populated Washington, D.C. area is currently threatening the open spaces of the Piedmont. The importance of these Piedmont waterfowl populations should not be overlooked so that conservation initiatives can be put into place if necessary.

#### ACKNOWLEDGMENTS

We are grateful for support provided by M.C. Perry, R.B. Clapp, and D. Forsell and funding provided by the Virginia Society of Ornithology and the National Aeronautics and Space Administration (NASA). Specifically this study was supported by NASA grant 5-26066 to George Mason University. We thank Odean Serrano Roper and Joel Mitchell of NASA for their inspiration and patience. This

study was made possible by the staff from Environmental Studies at Airlie (Donielle Rininger, H.T. Anderson) to whom we are greatly indebted.

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**Appendix A.** Complete list of waterfowl observed on surveys 1999-2003

Common Name	Scientific Name
Greater White-fronted Goose	<i>Anser albifrons</i>
Canada Goose	<i>Branta Canadensis</i>
Snow Goose	<i>Chen caerulescens</i>
Brant	<i>Branta bernicla</i>
Tundra Swan	<i>Cygnus columbianus</i>
Mute Swan	<i>Cygnus olor</i>
Wood Duck	<i>Aix sponsa</i>
Gadwall	<i>Anas strepera</i>
Eurasian Wigeon	<i>Anas Penelope</i>
American Wigeon	<i>Anas Americana</i>
American Black Duck	<i>Anas rubripes</i>
Mallard	<i>Anas platyrhynchos</i>
Blue-winged Teal	<i>Anas discors</i>
Northern Shoveler	<i>Anas clypeata</i>
Northern Pintail	<i>Anas acuta</i>
American Green-winged Teal	<i>Anas crecca</i>
Canvasback	<i>Aythya valisineria</i>
Redhead	<i>Aythya Americana</i>
Ring-necked Duck	<i>Aythya collaris</i>
Lesser Scaup	<i>Aythya affinis</i>
Greater Scaup	<i>Aythya marila</i>
Long-tailed Duck	<i>Clangula hyemalis</i>
Bufflehead	<i>Bucephala albeola</i>
Common Goldeneye	<i>Bucephala clangula</i>
Red-breasted Merganser	<i>Mergus serrator</i>
Common Merganser	<i>Mergus merganser</i>
Hooded Merganser	<i>Lophodytes cucullatus</i>
Ruddy Duck	<i>Oxyura jamaicensis</i>

## THE LOUDOUN COUNTY VSO FORAY OF JUNE 2012

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### INTRODUCTION

The 2012 Virginia Society of Ornithology (VSO) Foray was held on June 9 through June 17 in Loudoun County, in support of the Loudoun Wildlife Conservancy's (LWC) five year breeding bird atlas (2009-2013). Many VSO members from across Virginia and many LWC members took part. A total of 27 individuals took part in the foray, including many VSO members from across Virginia, many LWC members, and a group from the Northern Virginia Teen Bird Club, who spent a total of 58 hours in the field. Efforts were focused on the southern portion of the county, but areas to the north, mainly by the Potomac River and the town of Lucketts, were also included. This was done to provide coverage of areas that had not yet been thoroughly covered during the county atlas. Weather for the foray was generally good, with a temperature range of 53 to 91 degrees Fahrenheit; the highest temperatures occurred early in the foray period. On June 12 and 13, scattered rain showers moved through the county, with cooler temperatures following. The moon, in a waning period, was approximately half full on June 9th and had become a thin crescent by June 17th. The predominant habitats in the areas of Loudoun County covered included pastureland and residential/commercial properties.

### METHODS AND RESULTS

Foray volunteers were split into groups and assigned to blocks of territory that were in need of further surveying for the Loudoun County Breeding Bird Atlas. Numbers of individual birds seen were not recorded, but behaviors indicative of breeding for each species observed within a block were noted. Behaviors were categorized as follows: Observed Breeding (OB); Possible Breeder (PO); Probable Breeder (PR); or Confirmed Breeder (CO). Within each of these categories there are evidence codes based upon the specific behavior noted. Categories are hierarchal: evidence of a confirmed breeder is recorded over evidence of a possible breeder, but a possible breeder is recorded over a bird that was only observed (gave no evidence of breeding). Table 1 shows examples of breeding behaviors and the associated codes. Also, see the handbook, published by the LWC and listed in the references, for specific methodology.

Loudoun County is split into 75 atlas blocks, of which 36 were surveyed during the foray. Figure 1 (following page) shows the locations of atlas blocks in Loudoun County and of the blocks covered during the 2012 foray. Breeding evidence was upgraded in 29 of the blocks and

**Table 1. Behavioral evidence used to infer breeding, with a list of the codes used in the foray**

Category	Code	Observed Behavior
Observed	E	Observed outside of safe dates, not exhibiting breeding behavior (includes winter birds and migrants)
Observed	O	Observed within safe dates, not in breeding habitat
Possible	X	Heard or seen in breeding habitat within safe dates
Probable	A	Agitated behavior or anxiety calls
Probable	P	Pair seen within safe dates
Probable	T	Bird holding territory (counter-singing, chasing, etc.)
Probable	C	Courtship or copulation
Probable	N	Bird visiting a probable nest site
Probable	B	Adult wren or woodpecker carrying nesting material or nest building
Confirmed	NB	Adult carrying nesting material or nest building (except wrens and woodpeckers)
Confirmed	DD	Distraction display
Confirmed	UN	Used nest or eggshells found
Confirmed	FL	Recently fledged young
Confirmed	CF	Parent carrying food, feeding young, or removing fecal sac
Confirmed	RC	Raptor performing a courting display or repeatedly carrying food to a specific area
Confirmed	ON	Parent leaving/entering nest site or on nest
Confirmed	NE	Nest with eggs
Confirmed	NY	Nest with young

species additions were made to 26; these are listed in Table 2 (see p. 14). Table 3 (see pp.15 & 16) lists all of the species recorded during the foray and the number of blocks within which the species were found (NumBlocks). Table 3 also lists how many times the species were confirmed as breeding (NumCO), how many were probable breeders (NumPR), how many were possible breeders (NumPO), and how many were observed that did not exhibit breeding behavior (NumOB). Multiple parties visited several atlas blocks and multiple visits to the same area were made by a few observers to provide repeat confirmation of some species observed.

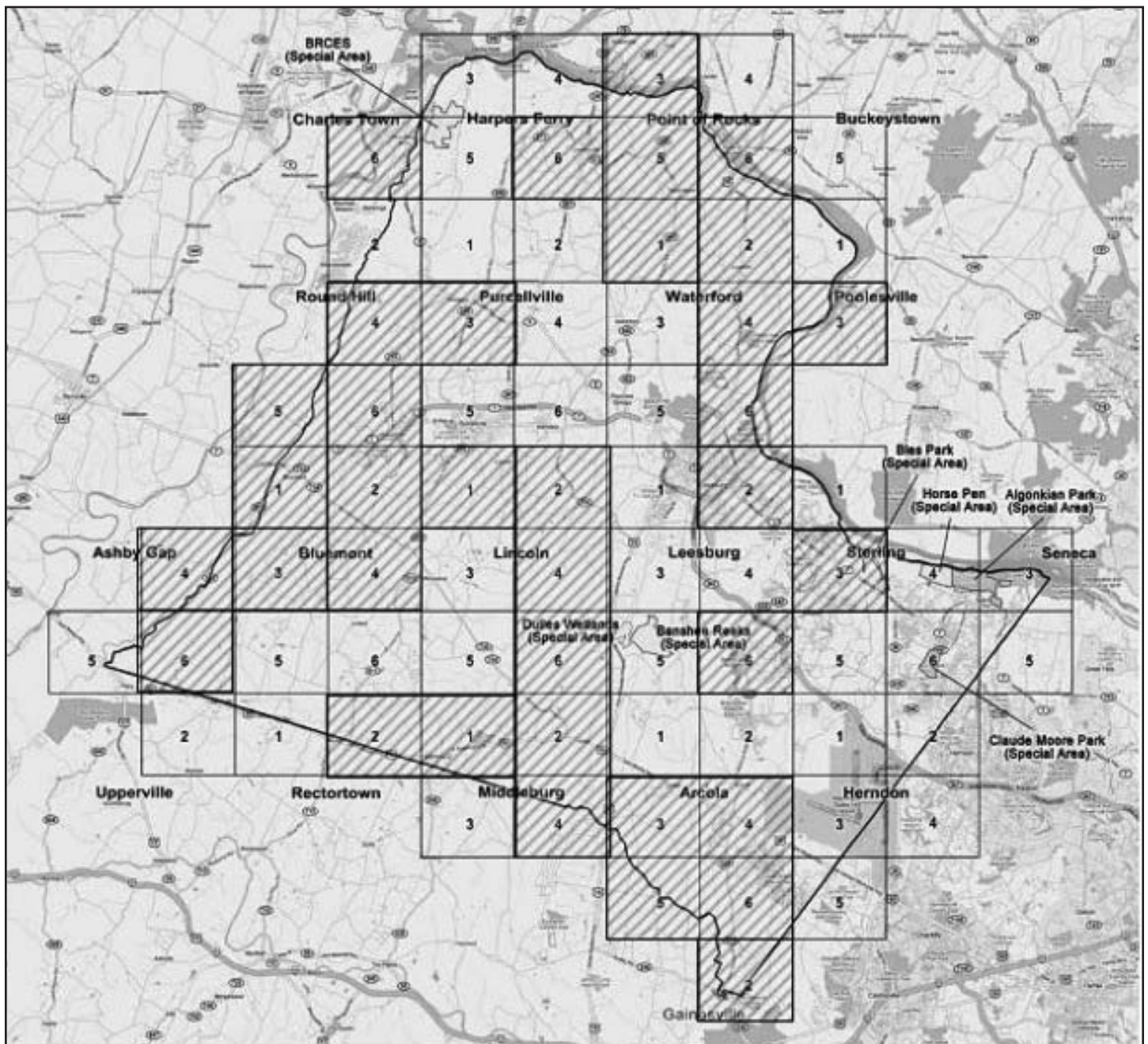


Figure 1. Loudoun County map, showing Atlas blocks. Blocks surveyed in the VSO 2012 Foray are cross-hatched (This map was created with ©2011 Google Maps, by USGS Patuxent Wildlife Research Center)



### Selected Species Accounts

The following is a list of selected species and notes on them (selected because these species are either unusual to the county or were found in unexpected locations during the foray):

**WOOD DUCK:** Fledglings were observed, confirming nesting, in atlas blocks Bluemont 1 and Arcola 6. Interesting was that, in both cases, WOOD DUCK was a new species in these two blocks for the atlas, but these two atlas blocks have had little coverage to date.

**WILD TURKEY:** Fledglings were observed in Harpers Ferry 6, a nest with eggs was found in Poolesville 3, and territorial behavior was observed in Point of Rocks 3.

**HORNED GREBE:** This was a very unusual find, by Rexanne Bruno, at Sleeter Lake. The bird was seen swimming, diving, and feeding, appearing to be healthy. No other waterfowl were seen on the lake. This area is in the Bluemont 2 and Round Hill 6 blocks.

**OSPREY:** One was observed, not exhibiting breeding behavior, by Gerco Hoogeweg, in block Point of Rocks 3. While this species has been observed across the county, breeding has only been documented in block Seneca 3, along the Potomac River, in Maryland. Given the open breeding behavior and population increase of Ospreys, this is an interesting result.

**BROAD-WINGED HAWK:** Observed in Charles Town 6 and Waterford 2, this species is periodically observed in the county, but not frequently. Therefore, any records are interesting.

**WILLOW FLYCATCHER:** These were first time reports for four blocks (Waterford 6, Bluemont 1, Bluemont 2, and Harpers Ferry 6) in the northern and western parts of the county. In three of these locations, individuals exhibited territorial behavior on multiple visits.

**ALDER FLYCATCHER:** Also reported for the first time from the associated atlas block, was observed singing, near Lucketts, VA in block Waterford 2, by Gerco Hoogeweg. The only other atlas records of observed ALDER FLYCATCHER come from Waterford 1 and Sterling 3, so all records are from the eastern portion of the county. This species is not yet a confirmed breeder in Loudoun County. ALDER FLYCATCHER was added to Virginia Avian Records Committee's (VARCOM) Review List for the Coastal Plain and Piedmont in 2011 (Ealding, 2011; see p. 32) as there is little information about the exact status of this species. VARCOM has reviewed and accepted Gerco Hoogeweg's record as Category 1 based on physical evidence in the form of video and audio recordings (Ealding, 2011, 2012). Rottenborn & Brinkley (2007; pp. 187-188) list nine past records from several Piedmont locations, including Loudoun County, during the period May 6 to June 6.

**SCISSOR-TAILED FLYCATCHER:** An adult was seen briefly by Elisa Enders in the Waterford 4 atlas block, and

unfortunately, was not seen again during searches for it. This record has been accepted by the VARCOM as a Category 2 record based on written documentation provided by the observer (Ealding, 2012). However, a SCISSOR-TAILED FLYCATCHER was found in the same area, almost exactly a year before and was accepted by VARCOM as a Category 1 record based on photographs submitted by the observer (Ealding, 2011, 2012).

**HORNED LARK:** Observed twice during the foray this year, both sightings were of territorial birds in the Waterford 4 block. At Temple Hall Farm Regional Park, two larks were observed together, behaving like a mated pair. This is only the second documentation of probable breeding for this species for the entire atlas period (there are no confirmations of breeding to date). HORNED LARK is a species of special interest for the atlas.

**WARBLING VIREO:** singing birds were observed in three different blocks. In each case, single birds were encountered. Linda Millington observed one in Lincoln 2 and individuals were observed in Round Hill 6 and Waterford 4.

**YELLOW-THROATED VIREO:** One was observed in the western and southern portions of Loudoun County. Nesting was not confirmed during the foray.

**WOOD THRUSH:** An interesting species for this foray because there were twenty reports from across Loudoun County. Several birds were confirmed to be on territory. This was unexpected, given the overall population decrease across its breeding range. At least in Loudoun County, WOOD THRUSH is surviving.

**YELLOW WARBLER:** Observed in Bluemont 1 on two different occasions by Joe Coleman. one observation was of a pair of birds. Another YELLOW WARBLER was observed in Round Hill 6.

**HOODED WARBLER:** These were observed at five different locations in southwestern and west-central Loudoun County. While these birds were found in suitable nesting areas, breeding was not confirmed. The lack of reports of this species from the eastern portion of Loudoun County may be partly due to the development occurring there.

**NORTHERN PARULA:** Newly documented in four atlas blocks (Charles Town 6, Point of Rocks 3, Round Hill 5, and Lincoln 6), documentation was also up-graded in three blocks (Point of Rocks 5, Bluemont 3, and Middleburg 1). This species is found nesting across the county, mainly in the northern and southern areas.

**CERULEAN WARBLER:** Newly found in the Bluemont, VA area and near Middleburg VA by Joe Coleman, the sightings confirm the presence of this species, but evidence of nesting in these locations has not yet been made.

**KENTUCKY WARBLER:** A sighting in the south central portion of the county in Lincoln 6, by Mary Ann Good and her group, was new to the atlas block and away from the west side of the county, where they are seen more frequently.

This species can also be regularly found in northern Loudoun at the Blue Ridge Center for Environmental Stewardship.

**WORM-EATING WARBLER:** Individuals were observed in two blocks (Charles Town 6 by Joe Coleman and Ashby Gap 6 by Lee Adams, Wendy Ealding, and Mary Foster). However, the warblers did not show behavior confirming breeding.

**WHITE-THROATED SPARROW:** Not known to nest in Loudoun County, one individual was heard singing in the Waterford 4 block. This year, prior to the start of the foray, another late WHITE-THROATED SPARROW was seen in Loudoun County. This species is known to linger late in the spring, but these records are notable.

**DICKCISSEL:** Also new to the Waterford 4 block, a singing bird was heard from the north fence line of Temple Hall Farm Regional Park. DICKCISSEL is a species of interest for the Loudoun County five-year atlas, due to its preference for field habitats. This species is reported from six blocks in the current atlas.

## DISCUSSION

Most of the bird species observed were not unusual or unexpected. Though no blocks were completed, the foray provided over 510 new or upgraded sightings for the Loudoun County Bird Atlas, bringing LWC closer to establishing a comprehensive list of birds and identifying important bird areas in the county. So far in the course of Loudoun County Bird Atlas surveys (2009 to 2012), 243 species have been observed and 103 species confirmed as breeders in the county.

Comparisons can be made to other surveys of Loudoun County, including data recorded in the Virginia Breeding Bird Atlas (USGS website) and a 1978 Virginia Society of Ornithology Foray of Loudoun County (Scott, 1980).

In 1978, a VSO foray was held in Loudoun County (Scott, 1980). However, a comparison between the present foray and that of 1978 is difficult for several reasons. Quantitative comparisons cannot be made, because the numbers of individuals observed were not recorded in 2012, in order to prevent increasing protocol complexity. Also, the 2012 foray did not cover all of Loudoun County and, instead, focused on areas that had not received much coverage during surveys conducted for the Loudoun County Breeding Bird Atlas. In contrast, the 1978 foray report focused on productive areas within the county. However, the number of species observed can be compared: 120 species were observed in the 1978 foray, versus 101 for the 2012 foray.

If comparison is made, instead, with all of the Loudoun County atlas data available so far, it can be seen that 13 of the nineteen species missed between the 1978 and 2012 forays have been seen at other times during the

Loudoun County Atlas surveys. However, six of the species remain unreported: RUFFED GROUSE, RING-NECKED PHEASANT, UPLAND SANDPIPER, LEAST TERN, MARSH WREN, and HENSLOW'S SPARROW. The population of RUFFED GROUSE has undergone substantial declines in Virginia (Rottenborn & Brinkley, 2007; see p. 34). RING-NECKED PHEASANT was introduced to Virginia in the 20th century and became a common permanent resident of northeastern Loudoun County, but numbers of this species have declined rapidly since the late 1970s (Virginia Birdlife, pages 32-33), but small numbers have been recorded from Loudoun County (Purcellville north) as recently as 2002. It is unknown whether these are from further introductions or are from a breeding population. Due to the lack of evidence of self-sustaining populations within Virginia, VARCOM revised the status of RING-NECKED PHEASANT to Category 6 (introduced species currently extirpated) in 2005 (Virginia Birdlife, page 32). UPLAND SANDPIPER was a rare and very local summer resident from Loudoun County (multiple family groups and territorial pairs between the late 1970s and 1989), but there have been no summer records from the Lucketts area of Loudoun County since 1989 (Virginia Birdlife, page 115). The 1978 foray is listed as the only summer record of Least Tern from Loudoun County (Virginia Birdlife, pages 146-147). MARSH WREN is considered a uncommon transient and rare summer resident (Virginia Birdlife, pages 224). During the late 1970s and 1980s, in the Piedmont region of Virginia, Loudoun County was the only regular summering grounds for HENSLOW'S SPARROW and numbers have declined to the point where this species is has not been found in Loudoun County regularly, but has been reported from the Manassas area more recently (Virginia Birdlife, page 279). Additionally, during the Virginia Breeding Bird Atlas, completed in the 1980s, of these six species, only LEAST TERN and MARSH WREN were missed.

On the other hand, while the species mentioned above have not been reported, many have been observed during the current atlas that were not observed during the 1978 foray or the 1985 – 1989 Virginia Breeding Bird Atlas surveys. This is most likely due to the greater time (atlas covers the entire period from 2009 to 2013) and effort spent on the current atlas. However, the Virginia Breeding Bird Atlas covered the entire state (whereas the current atlas focuses on Loudoun County) and the 1978 foray lasted 9 days (in comparison to the current atlas being in its fourth year). We look forward to analysis of the entire atlas data once the Loudoun County Bird Atlas has been completed.

The following volunteers helped with the foray: Lee Adams, Bob Ake, Fred Atwood (and his class), Joanne Bradbury, Susan Brown, Wes Brown, Rexanne Bruno, Joe Coleman, Wendy Ealding, Elisa Enders, Mary Foster, Linda Fields, Mary Ann Good, Nicole Hamilton, Teri Holland, Gerco Hoogeweg, Stephen Johnson, Sharon Kearns, Catherine Kubo, Spring Ligi, Larry Meade, Linda Millington, Erika Olimpiew, Donna Quinn, Alan Schreck,

James Shelton, Jane Yocom. Also, the time and effort of Allison Sussman, of the U.S. Geological Survey at the Patuxent Wildlife Research Center, is appreciated. She compiled the data into a user-friendly format and helped create a data set that was easier to analyze. Susan Brown and Spring Ligi also helped by reviewing this summary of the 2012 VSO foray. All the data recorded on species seen and breeding evidence will be very helpful in completing the Loudoun County Breeding Bird Atlas. Thank you to all the participants, the Loudoun Wildlife Conservancy, and the Patuxent Wildlife Research Center.

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Table 2. Species additions and breeding status upgrades to Loudoun County Atlas blocks

Atlas Block	Number of Species Added	Number of Species Upgraded
Arcola-3	42	NONE
Arcola-4	1	4
Arcola-5	7	8
Arcola-6	6	12
Ashby Gap-4	2	NONE
Ashby Gap-6	1	2
Bluemont-1	11	35
Bluemont-2	17	31
Bluemont-3	1	1
Bluemont-4	NONE	NONE
Charles Town-6	30	NONE
Gainesville-2	16	NONE
Harpers Ferry-6	2	7
Leesburg-2	NONE	1
Leesburg-6	NONE	9
Lincoln-1	NONE	1
Lincoln-2	4	30
Lincoln-4	NONE	NONE
Lincoln-6	2	10
Middleburg-1	4	14
Middleburg-2	NONE	3
Middleburg-4	22	1
Point of Rocks-3	5	11
Point of Rocks-5	NONE	6
Point of Rocks-6	3	18
Poolesville-3	1	9
Purcellville-3	NONE	4
Rectortown-2	6	8
Round Hill-2	16	NONE
Round Hill-5	16	3
Round Hill-6	14	23
Sterling-3	NONE	8
Waterford-1	NONE	10
Waterford-2	10	37
Waterford-4	2	8
Waterford-6	3	5



Table 3. Bird Species Found During 2012 Foray of Loudoun County [NumBlocks = number of blocks within which each species was found, NumCO = number conformed as breeding, NumPR = number determined to be probable breeders, NumPO = number determined to be possible breeders, NumOB = number observed without exhibiting breeding behavior]

CommonName	NumBlocks	NumCO	NumPR	NumPO	NumOB
Canada Goose	13	8	1	9	2
Wood Duck	3	2	0	2	0
Mallard	7	4	1	2	0
Wild Turkey	6	3	1	3	0
Horned Grebe	2	0	0	0	2
Double-crested Cormorant	1	0	0	0	1
Great Blue Heron	13	1	0	0	15
Great Egret	4	0	0	0	4
Green Heron	13	0	3	9	4
Black Vulture	19	0	1	21	8
Turkey Vulture	24	0	2	23	12
Osprey	1	0	0	0	1
Bald Eagle	2	0	0	0	2
Cooper's Hawk	3	0	0	2	1
Red-shouldered Hawk	18	3	2	13	2
Broad-winged Hawk	3	0	0	2	1
Red-tailed Hawk	12	0	3	13	3
American Kestrel	5	3	0	2	0
Killdeer	11	2	1	9	0
Rock Pigeon	13	0	1	14	1
Mourning Dove	26	2	2	33	1
Yellow-billed Cuckoo	6	0	1	4	3
Great Horned Owl	1	0	0	0	1
Barred Owl	4	3	1	2	0
Chimney Swift	19	1	0	23	2
Ruby-throated Hummingbird	10	1	0	11	0
Belted Kingfisher	3	0	1	1	1
Red-headed Woodpecker	10	4	3	6	0
Red-bellied Woodpecker	25	8	10	19	1
Downy Woodpecker	23	2	4	23	0
Hairy Woodpecker	9	0	0	11	0
Northern Flicker	15	0	2	16	1
Pileated Woodpecker	11	0	6	9	0
Eastern Wood-Pewee	26	2	10	24	0
Acadian Flycatcher	15	0	8	12	0
Alder Flycatcher	1	0	0	0	2
Willow Flycatcher	6	0	4	5	0
Eastern Phoebe	25	7	6	25	0
Great Crested Flycatcher	24	1	12	19	0
Eastern Kingbird	23	5	13	16	0
Scissor-tailed Flycatcher	1	0	0	0	1
White-eyed Vireo	7	1	1	6	0
Yellow-throated Vireo	5	0	0	7	0
Warbling Vireo	3	0	0	2	1
Red-eyed Vireo	18	0	6	18	0
Blue Jay	21	1	2	24	5
American Crow	29	4	5	33	5
Fish Crow	14	0	0	10	6
Common Raven	6	0	0	5	1
Horned Lark	1	0	2	0	0
Purple Martin	7	3	0	5	1
Tree Swallow	17	9	1	16	0
Northern Rough-winged Swallow	7	2	0	6	1
Barn Swallow	26	7	3	22	1

Carolina Chickadee	28	9	3	28	1
Tufted Titmouse	24	12	4	22	0
White-breasted Nuthatch	21	1	4	21	0
Carolina Wren	27	3	7	26	0
House Wren	15	2	3	14	0
Blue-gray Gnatcatcher	17	3	3	14	0
Eastern Bluebird	25	20	6	12	0
Wood Thrush	20	0	6	19	0
American Robin	27	12	5	22	0
Gray Catbird	27	8	8	25	0
Northern Mockingbird	26	6	12	23	0
Brown Thrasher	19	10	4	15	0
European Starling	26	12	2	19	1
Cedar Waxwing	17	1	2	6	12
Northern Parula	8	0	3	5	0
Yellow Warbler	2	0	1	2	0
Prairie Warbler	8	0	3	5	0
Cerulean Warbler	2	0	0	2	0
American Redstart	3	1	0	2	0
Prothonotary Warbler	1	0	1	0	0
Worm-eating Warbler	2	0	0	2	0
Ovenbird	8	1	2	6	0
Louisiana Waterthrush	3	0	0	3	0
Kentucky Warbler	1	0	0	1	0
Common Yellowthroat	19	1	9	13	0
Hooded Warbler	5	0	0	5	0
Yellow-breasted Chat	7	0	6	4	0
Scarlet Tanager	14	0	4	10	0
Eastern Towhee	23	1	9	21	0
Chipping Sparrow	30	10	17	18	0
Field Sparrow	20	3	17	14	0
Grasshopper Sparrow	10	1	5	7	0
Song Sparrow	22	4	6	19	0
White-throated Sparrow	1	0	0	0	1
Northern Cardinal	29	10	15	23	0
Blue Grosbeak	9	2	0	7	0
Indigo Bunting	27	2	21	21	0
Dickcissel	3	0	2	1	0
Red-winged Blackbird	23	10	12	16	0
Eastern Meadowlark	14	2	7	12	0
Common Grackle	21	12	0	19	1
Brown-headed Cowbird	21	6	3	19	0
Orchard Oriole	15	5	6	8	0
Baltimore Oriole	11	2	5	6	0
House Finch	17	7	3	13	0
American Goldfinch	29	3	10	26	6
House Sparrow	18	7	8	10	0

**Review of "PETRELS, ALBATROSSES & STORM-PETRELS OF NORTH AMERICA:  
A PHOTOGRAPHIC GUIDE" by Steve N. G. Howell; 2012  
Princeton University Press, 483pp.; list price \$45**

Pelagic birding, the observation of the birds of open oceanic waters, has been among the last frontiers to be visited by birders, a result of a variety of reasons – the difficulty of reaching the area where the birds are found; the instability of a boat as an observation platform; and the lack of a field guide that covers all of the expected species, giving intrepid ocean-going birders the resource needed to make quality identification. The first two reasons are still valid. But with the publication of Steve Howell's guide to tubenoses the last is thankfully a thing of the past. This is the finest guide for North American pelagic birders I have had the chance to use. Having led pelagic trips off Virginia and North Carolina for two decades, I can only say I wish it had been available to help pelagic birders during those years.

Steve Howell is a prolific writer and produces carefully researched guides for various areas. He has written a thorough guide to the birds of Mexico with a site guide to accompany it, a guide to the identification of the American gulls, a guide to hummingbirds, and a guide to understanding feather molt. But with this guide to pelagic birds he reaches his highest level of achievement.

The book is a photographic guide of the pelagic birds recorded in North American waters: the Pacific, the Atlantic, the Gulf of Mexico, and the Caribbean Sea. The book opens with an introduction telling how to use the book and contains an outline of the subsections to be found in each species account. This section is followed by a highly informative introduction to pelagic birding itself including a discussion of ocean habitats, taxonomic classifications, guidelines of field identification, and bird conservation. The introduction goes a long way toward giving any pelagic birder quality assistance even before a pelagic trip is taken.

Each species section begins with an identification summary. Brief sections on taxonomy and naming follow and a larger section on status and distribution supplements the excellent maps. Where there is disagreement about the current taxonomic classification, the author explains the basis of that disagreement. A large set of published papers covering the topics discussed (e.g., taxonomy, behavior, molt) is referenced and cited throughout the book.

Being a photographic guide, the species accounts are filled with a collection of great photos, many taken by Howell. The variety of photos is designed to show:

differences of plumage sequences, the effects of molt patterns, sunlight, and other environmental conditions; aspects of the bird in flight and on the water; comparison of similar species. These objectives are met and all the associated photo captions are excellent and helpful.

The maps accompanying each species description are clear and sufficiently large to incorporate many details and still be easily read. Different colors are used to depict breeding range (both former and current), molting area, and at sea range. Arrows indicate the directions of migration. Main patterns of seasonal occurrence are given by a range of months (by number). Thus at a glance the reader can see where the species is likely to be found during any month of the year. Rare and accidental occurrences are mentioned in the caption to the map.

The text contains an invaluable section comparing the species under discussion with other similar species including some species yet to be verified in North American waters. If the species is found in both the Atlantic and the Pacific, the comparison is made relevant for each location. Detailed descriptions are given of the possible plumages that might be encountered with an ample discussion of molt sequences interspersed. A discussion of possible identification pitfalls due to having too brief of a view, bad lighting, or a variety of weather conditions is included. There is a text description of the distribution of the species with a concise, complete summary including vagrancy. All of the writing is of high quality and the tone is one that teaches rather than states a series of facts.

This book is the product of a lifetime of fieldwork by the principal author and his collaborators. Howell's love for pelagic birding is apparent and he communicates that enthusiasm with clearly written sections describing plumages and behavior and accompanied by photographs illustrating all the important field marks and many of their variations. The book is a real tour de force and will be the standard of the realm for a great many years. I strongly recommend its inclusion in the library of any serious student of birds. Although listed at \$45, the book is available from online sellers for under \$30.

ROBERT AKE  
*Chairman, Virginia Avian Records Committee (VARCOM),  
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**Review of "OWLET CATERPILLARS OF EASTERN NORTH AMERICA" by  
David L. Wagner, Dale F. Schweitzer, J. Bolling Sullivan, and Richard C. Reardon;  
list price \$35.00; published by Princeton University Press.**

You might wonder why a book on caterpillar identification is being reviewed in a bird journal, but if you think about it, those wriggly little fellows compose a major component of birds' menus. Some estimate they make up 60% of the diet of songbird nestlings. One aficionado of tropical caterpillars refers them as the "hamburger of forested ecosystems." From another standpoint, owlet moths represent one of the most successful branches on the tree of life, whether measured in terms of species numbers, mass, or ecological importance.

Unlike bird, butterfly, and dragonfly field guides, which have a manageable number of identifiable species within a given area, the realm of moths encompasses such a vast number of animals that it is not feasible to present all of them in one book. To compound the matter, the instars of moth caterpillars vary so much that it is not possible to include them all under one cover. Too, many moth species are unnamed or have yet to be discovered. In spite of these daunting obstacles, the authors have amassed a cornucopia of photographs and text that go a long way in helping us identify these creatures and understand their roles in nature.

In the last few years, quantum leaps have been made in methods and tools to study these small, intricate animals. Digital photography has elevated field guides to works of art, with highly colorful, crystal-clear photos that reveal minute details. This book epitomizes those advances. As an example, the exquisite detail of 90 *Catocala* caterpillar faces is a revelation of what is now possible with today's photography.

It should be noted that the term "owlet" has essentially replaced "noctuid," in the world of moths, hence the title of the book. The owlets are so complex and the variations in appearance so diverse that the uninitiated may, at first, find the massive amount of material a little daunting and difficult to sort out, but the seven color-coded sections help to readily locate the four families of species accounts, the glossary and cited literature, along with the food plant, species and subject indices. The geographical area covered is all of Eastern North America (everything east of the hundredth meridian).

The opening chapters are must-reading, especially for those not familiar with caterpillar nomenclature and anatomy. Concise line-drawings and electron micrographs

illustrate every aspect of external caterpillar anatomy needed for correct identification. The introduction is extensive and indicates the depth of information presented. Morphology, classification and nomenclature, larval diets, natural enemies, baiting and sweeping strategies, feeding caterpillars and adults in captivity are just a few of the topics discussed in depth. Interspersed in the text are highlighted boxes discussing special subjects, such as baiting recipes and exotic biological controls. There is also a paragraph directing the reader to a website which expands the treatment of abbreviated accounts and includes information on a few species not included in the book.

The species accounts follow the introduction. There are over 800 species described and more than 2500 photographs showing instars and adult moths. These are presented in one of two forms - full species accounts and abbreviated species accounts. Also interspersed in this section are occasional tables, keys, life histories, and essays.

Full species accounts include four sections: 1) recognition; 2) occurrence; 3) common food plants; and 4) remarks. A large photo of the caterpillar dominates the page. Often two or three instars are shown. All are shown in natural settings. Two adult images are provided, a pinned, spread-winged, museum specimen, and a live adult in a natural pose. This allows the book to be used to some extent for adult moth identification as well as caterpillar identification. Each account is meticulously crafted and essential field marks are succinctly described. Important features are often in italics. In their aim to reach all levels of expertise, the authors do not belabor obscure points of identification or those features which cannot readily be observed without powerful magnification or special equipment. Common food plants are listed. Occasionally erroneous food-plant records, some of long-standing, are corrected. Range of the animal is described and habitat preference is included. The remarks section addresses behavior, life history, taxonomy, and a variety of other general interest topics. Here and there, the authors apply a unique turn of phrase which helps tweak the observer's memory when trying to recall certain identifying features.

The abbreviated species accounts, as one would expect, list only the bare essentials and show only the last instar. Field marks, range, habitat, feeding habitats and preferred food plants are listed, usually in one paragraph. Photos of adult moths are not included in these shorter accounts.

This book incorporates the many changes and advances occurring the Lepidoptera world, making it the most up-to-date reference available. It certainly does not render the original Peterson guide "Moths of Eastern North America" by Charles Covell obsolete. In fact, it is wise to keep both tomes handy to compare changes in taxonomy and common names. The authors have, in some instances crafted new common names that better fit the animals. This nicely caters to the amateurs and pulls in those less-scientifically minded individuals who wish to present or discuss these animals with the general public. Another companion guide that would augment the usefulness of this work is Wagner's Caterpillars of Eastern North America, which covers quite a few species not found in the Owlet guide, and it also includes caterpillars of butterflies.

I like this book so much that it is difficult to find any faults, but there is one aspect which I will point out. As with all books of fine quality, this book is made to last. Because of its very tight binding and top quality paper, it is difficult to keep the book open to refer to a selected page while trying to compare the descriptions and pictures with a specimens or photographs in hand. I believe the inner margins are set far enough out so that ring-binding would not violate the integrity of photos or text, but that process should be approached with great care to make sure none of the contents are rendered unreadable. If it is possible to perform this alternate binding process, however, the book would be much easier to use.

This book can't exactly be classified as a field guide. Weighing in at a close to five pounds, and sporting overall measurements of 10 x 8 inches, it a lot more than most of us would want to tote on a field trip. But the contents within make it more than worthwhile to consider this book as a superb reference in your library. It is available at a significantly discounted price online and also in electronic (Kindle) form.

**Teta Kain**  
**Gloucester, VA**



**Two Reviews of "HOW TO BE A BETTER BIRDER" by Derek Lovitch  
2012; Princeton University Press; list price \$19.95**

REVIEW #1:

"No matter what level of birder you are, or think you are, there is always more to learn". That quote from the introduction to Derek Lovitch's *How to Be a Better Birder* sums up the intent of the book, and by the end of the book, I found that I had learned a lot. Some of the maxims are familiar – there is "no substitute for time in the field" – which is one I often use to motivate myself to go out in less than ideal weather or to less obviously attractive locations. On the other hand, his art analogy for describing sparrows in terms of Song Sparrows as oil paintings, Lincoln's as pen-and-ink drawings, and Swamp Sparrows as watercolor was novel. More than once (in the initial chapter on Advanced Field Identification, and again in the chapter on Vagrants), he makes the case for "the seemingly lost art of note-taking", something that I heartily endorse. As Secretary of our State Records Committee (VARCOM), I see many submissions that rely heavily on accompanying photographs. When they are of high quality (as many are) – that's fine. But there are always those that are pushing the limits of the optical equipment, or have no photographs for whatever reason – and that's where a well written description makes all the difference between speedy acceptance and a long drawn out review process or even outright rejection.

In chapters entitled *Birding by Habitat* and *Birding with Geography*, Lovitch describes strategies to help the reader find more species on both a local and national scale. While he admits to a northeastern bias (he currently lives and works in Maine and retains a marked fondness for New Jersey, where he was born and raised) and many of his examples are related to the northeastern US, he also provides many other examples that will serve readers in other parts of the country.

In the chapter on *Birding and Weather*, the author explains how the various weather systems can bring rarities out of their expected ranges, and how an understanding of such systems can help predict where and what these might be. It also explains how the folks who write the *Changing Seasons* articles featured in *North American Birds* are able to put the notable sightings and reports into context. I was reading this

chapter around the time that SuperStorm Sandy was heading our way, and was able to (correctly) predict that we would not see the displaced Sooty Terns in the Western Piedmont of Virginia, unlike what happened with Hurricane Irene.

The chapter entitled 'Birding at Night' could well be called *Birding by Radar*. For me, this was the hardest chapter to follow and one that I will have to work hard at to put into practice. A project for next migration season!

The final chapter is devoted to Patch Listing, a relatively new concept made more accessible by a dedicated Patch feature in eBird. For those unfamiliar with the topic, a patch list has the goal of "seeing as many species (or a target number) within the confines of a specific area" – it doesn't matter where this is as long as it is somewhere that the observer can visit regularly. For most people that will mean somewhere close to home; this has the merit of being less wasteful in terms of the fossil fuel consumption required to make regular visits. As someone who lives in what is politely described as an "underbirded" region of our state, this concept is appealing in that it can make a useful contribution to the knowledge of local bird populations.

I can highly recommend this book for anyone wishing to enhance their birding knowledge, wherever they live, and whatever their level of expertise.

WENDY EALDING

*Secretary, Virginia Avian Records Committee  
(VARCOM),  
South-Central Regional Editor, Virginia Birds  
Powhatan VA*

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REVIEW #2:

If I were to name one reason why an individual would purchase this book I'd say unequivocally it is an invaluable reference source to those wishing to advance in their birding passion. Whether it be publications, websites or articles, Derek Lovitch does an outstanding job of supplying the reader with an exhaustive list of additional reading resources.



If I were to summarize this book in three words they'd be: humorous, hopeful, humbling.

Lovitch starts the book by putting the reader at ease in the first chapter, *Advanced Field Instruction*, with such comments as "no one can identify every bird all of the time." Then immediately teases by suggesting the reader will obtain the ability of identifying a flitting warbler in a tangle or the sparrow flushing from the grass, and even that soaring raptor spotted out of the corner of your eye. Sounds like a reasonable goal, so most will be hooked from the start especially when they read his comment "yes, it can be done, and yes, you can do it!" He builds the reader's confidence with simple quips such as practice, practice, practice sprinkled with good old fashion studying. For the novice who has been studying just a few years and the sparrows, gulls, raptors, and perhaps more evade the quick recognition, then *How to Be a Better Birder* is a logical investment of time and money.

Identification by "field marks" is a beginner's natural approach to identification and Lovitch steers the reader in a different direction. He emphasizes the importance of wingbars, eye rings, etc...especially when identifying rarities or unfamiliar birds, but says we're spending too much time looking too hard at birds when a more holistic approach yields a higher percentage of bird IDs. The key is to not only look at birds but watch birds. Look at them as a whole and move beyond the gestalt, progressing onto the how, what, where and when's. Lovitch does a great job of backing up his holistic approach by giving real life examples such as how those at a hawk watch are able to quickly ID between accipiters, buteos, or falcons.

The most challenging chapter for most will probably be *Birding and Weather*. Lovitch provides a very thorough, step by step, outline on how to track bird movement using weather patterns. It comes across a bit daunting, but feasible, particularly if the reader follows his suggestion of starting with the National Weather Service's free introductory meteorology course titled "JetStream-Online School for Weather." Weaving together weather and migration movement and why birds become grounded or experience fallouts or even overshoots is a study in and of itself, yet a myriad of resources are provided in *How to Be a Better Birder*.

The book also reveals a few secrets such as "know when and where to look for what!" In other words, know your habitats and who might be lurking there. Some of the secrets and tips are just common sense

but putting them in black and white can be helpful. One such example is shorebirds roost in high tide and forage in low tide. More specifically, he tells you where the long-legged shorebirds and rock-pipers roost and feed, and where you can expect to see peeps and species such as Sanderlings and Red Knots. Additionally, the fact that habitat and geography are intrinsically linked is fully explained and nicely illustrated with maps of several east and west coast peninsulas and islands where birding is significant.

The book is aptly titled with the author carrying the reader into thoughts, ideas, and research they probably never imagined the first time they embraced the sport of birding. No matter how enthusiastic or how casual a birder, Derek Lovitch emphasizes paying attention to weather, geography and habitat. He is a good story teller to boot! His gripping story of the migrating Northern Parula is a page turner. As a bonus, the reader learns several new birding phrases such as the "Patagonia picnic table effect." The realization that birding is a life-long education is quite humbling but this book equips the reader with the tools to locate other methodologies and other disciplines that can enhance one's ability to grow and learn. A highlighter and notebook would make a nice accompaniment if giving this book as a Christmas gift.

PATTY ELTON

*Certified Virginia Master Naturalist*

## IN MEMORIAM YuLee Larner (1923-2013)

YuLee Larner of Staunton, VA, died April 9, 2013. She joined the VSO in 1966, the same year she helped start the Augusta Bird Club. She contributed significantly to both organizations over the decades. One of her major contributions to the VSO was taking charge of the checklist committee and shepherding the completion of the 2<sup>nd</sup> edition of *Virginia's Birdlife: An Annotated Checklist* in 1979. This was affectionately termed the "red book," a precursor of our present "gold book." Her enthusiasm for birds, birding and avian records kept her very active in the VSO. She participated in many of the spring forays and contributed over 30 articles, mostly avian records, to *The Raven*. She served as the organization's Vice-President from 1979-1982 and as president from 1982-1984. During her tenure as president, Myriam Moore stated that "...the society experienced a renaissance of spirit and energy and a significant expansion of its goals." Her many contributions and tireless productivity earned her the James W. Eike Service Award in 1985.

Not only did she distinguish herself with her VSO peers, but also at home with members of the Augusta Bird Club. She served in multiple leadership positions, including the presidency. Up until only a few years ago she was the keeper of the avian records for the county, which she did with the highest degree of accuracy and enthusiasm, and which resulted in her editing all three editions of the Birds of Augusta County, the most recent one in 2008. She also led local bird walks, gave programs, and taught birding classes. She wrote a popular weekly column for the Staunton News Leader for over 30 years. She always included her phone number (and later her email address) with her name at the bottom of each article, effectively inviting people to inquire and consult her about birds, which they did -- by the hundreds over the years -- and she loved to recount anecdotally some of the more memorable queries and comments from her many dedicated readers. Her bird club activities and especially her weekly columns resulted in her attaining the unofficial title of the "Bird Lady of Staunton."

One of my favorite YuLee quotes...*"I'm glad to live in this time and place, where women, even grandmas in tennis shoes, are accepted as having responsible accountability. I can, without hesitation, admit to being a birdwatcher."* (From a 1991 **Staunton News Leader** column, *The Average Birdwatcher*, by YuLee Larner.)

Those of us who were fortunate enough to have known YuLee will agree that her love of birds and all things outdoors, together with her smile and ebullient personality made her a very special person. She will be fondly remembered.

John Spahr  
Staunton, VA.







## INFORMATION FOR CONTRIBUTORS

*The Raven*, the official journal of the Virginia Society of Ornithology (VSO), functions to publish original contributions and original review articles in ornithology relating to Virginia Birdlife. Electronic files are the required form for manuscript submission. Text files, prepared using a Mac OS-compatible word processing program or Microsoft® Word, should contain minimal formatting. Graphics (photos, maps, graphs, charts) should be sent as high quality EPS or JPEG files. An accompanying “cover letter” file should be emailed to the editor stating (1) article title, (3) the name of one author designated to carry out correspondence with the editor. Authors are encouraged to consult with the editor on additional matters of content, format, or style.

Most Manuscripts published in *The Raven* concern the distribution, abundance and migration of birds in Virginia. Manuscripts on other ornithological topics, including Virginia-based historical reviews, bibliographical reviews, life histories, and behavioral observations, are also welcomed. In addition, the journal serves to publish the official proceedings of the VSO and other formal items pertaining to all aspects of the Society’s activities. *The Raven* may also publish articles pertaining to the activities of various public and private organizations engaged in biological and conservation work in Virginia. *The Raven* is a peer-reviewed journal; all feature articles and short communications are reviewed before a decision about acceptance for publication is made.

Format of *The Raven* generally follows guidelines set by the Council for Biology editors as outlined in the CBE style manual, 6th edition, 1994 (Council of Biology Editors, Inc., 11250 Roger Bacon Dr., Reston, VA 20190). Recent volumes of *The Raven* should be inspected for style. Vernacular and scientific names of birds should be those in the most recent edition (and supplement) of the A.O.U.’s Check-list of North American Birds ([www.aou.org/checklist/north](http://www.aou.org/checklist/north)). Scientific names should be italicized. All size, temperature and other measurements should be in metric units.

