

The Raven

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

Volume 73

Number 1

2002



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, 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 additions, local chapters of the Society, located in some of the larger cities and towns of Virginia, 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. Annual dues are \$15.00 for active members, \$25.00 for sustaining members, \$50.00 or more for contributing members, \$400.00 for life members, and \$20.00 for family members (limited to husband, wife and their dependent children).

Editorial queries and comments may be directed to Paul R. Cabe, Biology Department, Washington & Lee University, Lexington, VA 24450.

OFFICERS OF THE VSO

President: Larry Lynch, 9430 Tuxford Road, Richmond, Virginia 23236

Vice President: Teta Kain, 7085 Caffee Creek Lane, Gloucester, Virginia 23061

Secretary: Lauren Scott, 11838 Chase Wellesley Drive #425, Richmond, Virginia 23233

Treasurer: Barbara Thrasher, 120 Woodbine Drive, Lynchburg, Virginia 24502

Raven Editor: Paul R. Cabe, Biology Dept., Washington & Lee University, Lexington, VA 24450.

Newsletter Editor: Linda Fields and Alan Schreck, 1573 21st Ct. N., Arlington, VA 22209

The Raven

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

Editor
Paul R. Cabe



Volume 73, No. 1

Published by
THE VIRGINIA SOCIETY OF ORNITHOLOGY

Spring 2002

Copyright by the Virginia Society of Ornithology, Inc.

ISSN 0034-0146

TABLE OF CONTENTS

VIRGINIA BALD EAGLE BREEDING SURVEY: A TWENTY-FIVE YEAR SUMMARY (1977-2001)	
BRYAN D. WATTS AND MITCHELL A. BYRD	3
A SUMMARY REPORT OF THE 2001 VIRGINIA BARRIER ISLANDS BEACH-NESTING AND COLONIAL WATERBIRDS SURVEY	
BILL WILLIAMS, BILL AKERS, MICHAEL BECK, RUTH BECK, AND JERRY VIA	10
VIRGINIA CHRISTMAS BIRD COUNTS: 2001-2002 SEASON	
TETA KAIN	17
CAVE SWALLOWS (<i>PETROCHELIDON FULVA</i>) ON THE EASTERN SHORE OF VIRGINIA	
EDWARD S. BRINKLEY	55
VIRGINIA'S FIRST TOWNSEND'S WARBLER	
GEORGE L. ARMISTEAD	61
<i>SELASPHORUS</i> HUMMINGBIRDS IN VIRGINIA	
BRIAN TABER	66
MISSISSIPPI KITES IN HALIFAX COUNTY	
JEFFREY C. BLALOCK	69
GROUP WATER-CROSSING STRATEGIES IN MIGRATING TURKEY VULTURES	
BRIAN TABER	72

VIRGINIA BALD EAGLE BREEDING SURVEY: A TWENTY-FIVE YEAR SUMMARY (1977-2001)

BRYAN D. WATTS

MITCHELL A. BYRD

Center for Conservation Biology

College of William and Mary

Williamsburg, VA 23187-8795

INTRODUCTION

No specific estimates of the Virginia Bald Eagle (*Haliaeetus leucocephalus*) population are available prior to the early 1900's. The first known survey of eagles in Virginia was a ground survey conducted by Tyrell in 1936 (Tyrell 1936). His survey covered a small portion of Virginia around the Potomac River and documented 17 active nests. With the realization that Bald Eagle numbers and reproductive success had declined throughout the early 1950's, the National Audubon Society requested information from several areas throughout North America. As part of this effort, Abbott coordinated a volunteer-based survey beginning in 1956 that included portions of Virginia (Abbott 1957). This effort was greatly expanded in 1962 when several government agencies provided support toward a continent-wide investigation of breeding status and success (Sprunt 1962, Abbott 1963). That year marked the first time that Bald Eagles were surveyed from the air throughout most tidal areas of Virginia. The aerial survey was conducted by Abbott and Scott until the 1977 breeding season (Abbott 1976).

In 1977, the U. S. Fish and Wildlife Service formed the Chesapeake Bay Bald Eagle Recovery Team (Abbott 1977). This team was tasked with developing a plan for the recovery of the Bay population. As part of this process, state wildlife agencies assumed the responsibility for population monitoring. As the state agency responsible for wildlife management, The Virginia Game Commission (currently, The Virginia Department of Game & Inland Fisheries) is responsible for Bald Eagle monitoring and management in Virginia. Under contract to the state, M. A. Byrd took over responsibility for the survey in 1977. The 2001 breeding season represents the 25th year of the comprehensive Bald Eagle breeding survey. The purpose of this paper is to present a brief summary of survey results for this 25-year period.

METHODS

The primary focus area for the Virginia Bald Eagle breeding survey includes the tidal reaches of Chesapeake Bay tributaries and the lower Delmarva Peninsula. All Chesapeake Bay tributaries in Virginia are systematically surveyed to the extent of tidal influence. These drainages encompass nearly all historic records of breeding eagles in Virginia and continue to support the vast majority of the population.

Throughout the 1990's, several areas have been added to the core survey area including Back Bay / North Landing River area, Lake Drummond, Kerr Reservoir, Lake Chesdin, Swift Creek Reservoir, Diascund Reservoir, and Lake Manassas. No attempts have been made to systematically survey the piedmont and mountain regions of Virginia. With the dramatic increase in inland reservoirs over the past few decades, it seems likely that breeding pairs remain undiscovered within these physiographic provinces. Nesting pairs known to occur within these regions have generally been discovered by agency biologists and the general public.

The Virginia Bald Eagle survey measures breeding activity and productivity via a standard 2-flight approach (Fraser et al. 1983). The first flight is conducted between late February and mid-March to locate active nests. A high-wing Cessna 172 aircraft is used to systematically overfly the land surface at an altitude of approximately 100m to detect eagle nests. The aircraft is maneuvered systematically between the shoreline and a distance of approximately 1 km to cover the most probable breeding locations. All Bald Eagle nests detected are plotted on 7.5 min topographic maps and given a unique alpha-numeric code. Each nest is examined to determine its condition and activity status. A breeding territory is considered to be "occupied" if a pair of birds is observed in association with the nest and there is evidence of recent nest maintenance (e.g. well-formed cup, fresh lining, structural maintenance). Nests are considered to be "active" if a bird is observed in an incubating posture or if eggs or young are detected in the nest (Postupalsky 1974). The second survey flight is conducted from late April through mid-May to check active nests for productivity. A high-wing Cessna 172 is flown low over the nest allowing observers to examine nest contents. The number of eaglets present is recorded along with their approximate ages.

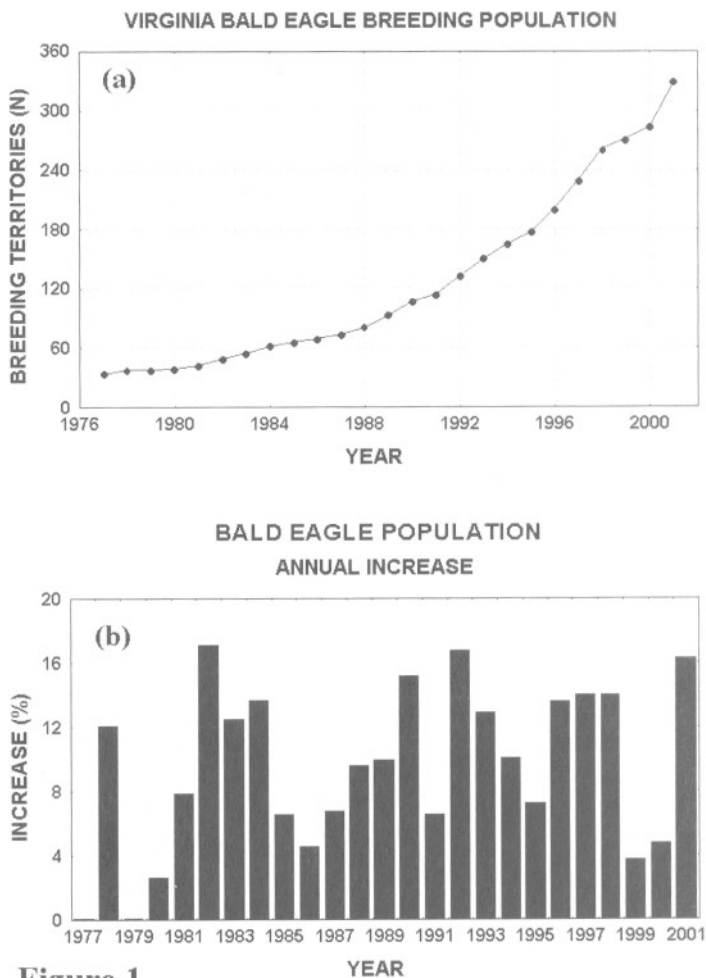
For the purpose of this paper, eagle activity and productivity were compiled for the 25-year period by geographic area. Geographic areas include Virginia counties and independent cities. Geographic designations and boundaries refer to those existing in 2001 rather than at other times during the study period. Information compiled includes the number of documented breeding attempts and chicks produced. Also reported is the number of occupied territories detected in 1977 and in 2001. Reproductive rates were calculated as the number of young produced / number of breeding attempts. It should be noted that reproductive rates reported are averages and as such mask any shifts in reproductive performance over the 25-year period.

Population growth rates were expressed for geographic areas using the average time (in years) required for the breeding population to double in size (t_{double}). Doubling time was calculated using the growth equation $N_t = N_0 e^{rt}$ where N_t is the population size in 2001, N_0 is the population size in 1977 or the year the area was first colonized, e is the base of the natural logarithm, r is the intrinsic rate of increase, and t is the time interval between population estimates. With this configuration, $t_{double} = \ln(2)/r$.

RESULTS

Between 1977 and 2001, the known Bald Eagle breeding population in Virginia increased ten fold from 33 to 330 pairs respectively (Figure 1a). During this time period, the population exhibited an average doubling time of 7.5 years. Although the number of breeding pairs expanded rapidly throughout the 1990's, there has been no apparent decline in the annual growth rate (Figure 1b). If the population continues to maintain a growth rate consistent with the past 25 years, it will approach 500 pairs in 3 years time.

Figure 1. (a) Plot of population size for the known Bald Eagle population in Virginia (1977-2001). (b) Annual increases in the Virginia Bald Eagle breeding population (1977-2001). Annual increase was calculated as $(t_1 - t_0 / t_0) \times 100$.



During the 25-year survey there were 2,918 documented breeding attempts that resulted in the production of 3,829 young. Due to the dramatic growth of the population throughout the 1990's, a disproportionate number of young were produced in the later years of the survey (Figure 2a). Fifty percent of the young documented during the entire survey were produced in the years after 1996. Seventy percent of young were produced since 1992. In addition to the number of young produced, there has been a three-fold increase in per capita reproduction between the late 1970's and the late 1990's (Figure 2b).

Figure 2. (a) Accumulation curve for productivity expressed as % of total between 1977 and 2001. Total productivity = 3,829 young. (b) Annual reproductive rate for Virginia Bald Eagles between 1977 and 2001. Reproductive rate calculated as number of chicks produced divided by number of active nests.

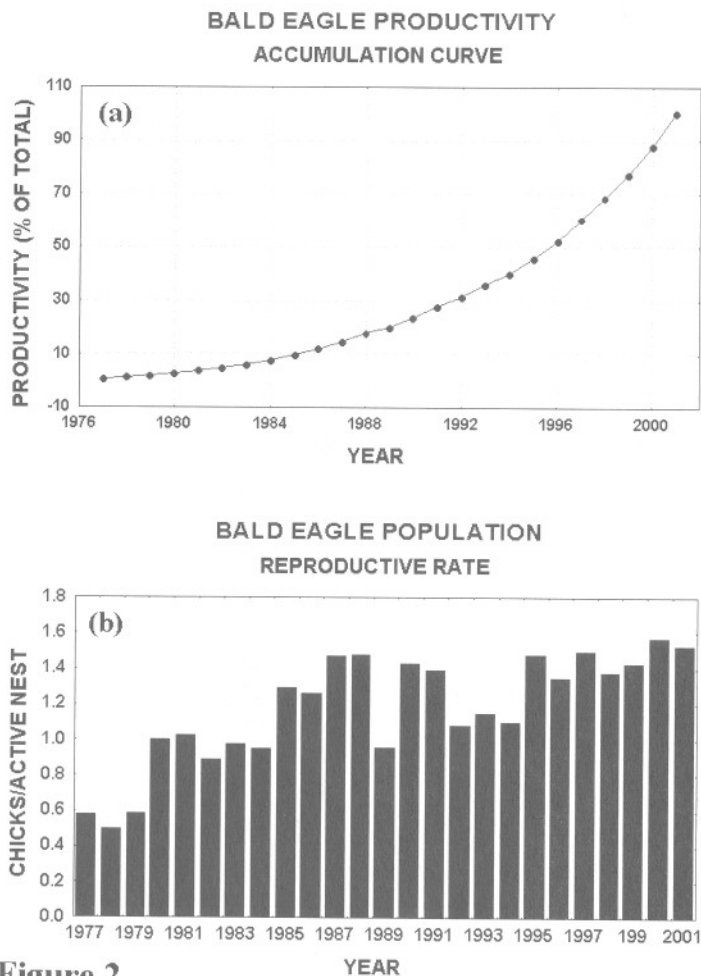


Figure 2

The distribution of documented breeding locations for Bald Eagles in Virginia has expanded from 11 counties in 1977 to 39 counties and 7 independent cities over the 25-year period (Table 1). Included on this list are 28 coastal counties, 8 piedmont counties, and 3 mountain counties. It should be stated once again that the breeding survey is focused within coastal counties. Even within the coastal plain the number of eagles supported and the number of young produced varies considerably between counties. Westmoreland, King George, Richmond, Essex, Charles City, Prince George, and James City counties have led the population recovery. These seven counties alone have accounted for 50% of the young produced in the state over the survey period.

DISCUSSION

Since the elevation of the Bald Eagle to the federal list of endangered species in 1967 (first under The Endangered Species Protection Act of 1966 and subsequently under The Endangered Species Act of 1973) and a ban on the general use of DDT and like compounds in the United States in 1972, Bald Eagles in Virginia have experienced a dramatic recovery. As illustrated by the results presented here, this recovery includes (1) an increase in the number of breeding territories, (2) an increase in reproductive rate, and (3) an expansion in geographic distribution. The population recovery observed here in Virginia is consistent with that documented throughout the conterminous United States. Bald Eagles in the lower 48 states have increased from an estimated low in 1963 of 417 pairs (Sprunt 1963) to an estimated 5,748 pairs by 1998 (Millar 1999).

Based on the annual rate of territory formation, the Virginia breeding population shows no obvious signs of slowed growth. However, the rapid rate of growth observed throughout the 1990's will clearly not be sustained indefinitely. Breeding density along selected stretches of the James, Rappahannock, and Potomac Rivers has already reached very high levels. Further research on prey delivery rates, chick growth, and fledging success may help to predict when the population may begin to reach some form of equilibrium with the available resources. Such research may help to refine estimates of how many eagles Virginia is capable of sustaining in the long term.

The annual breeding survey has played an important role in the recovery of Bald Eagles in Virginia. In addition to tracking the progress of the population, the survey has been used to guide management actions. Without information on the distribution and activity status of breeding pairs, layers of protection provided by federal laws would not be effective. The program has proven to be one of the most important elements of a successful conservation strategy (Byrd et al. 1990). As the Virginia population enters a new phase of the recovery process, maintaining the long-term monitoring program is essential.

Table 1. Summary of Bald Eagle breeding activity in Virginia by geographic area (1977-2001).

Location	1977 Pairs	2001 Pairs	Nesting Attempts	Chicks Produced	Chicks/ Attempts	t _{double} (Years)
Counties						
Accomac	1	11	114	135	1.18	7.2
Albemarle	0	1	3	3	1.00	—
Amherst	0	1	1	0	—	—
Bath	0	1	16	17	1.06	—
Caroline	0	16	97	108	1.11	5.3
Charles City	0	21	125	188	1.50	4.8
Chesterfield	0	5	29	47	1.62	10.3
Culpepper	0	1	4	3	0.75	—
Essex	1	17	145	218	1.50	6.1
Fairfax	1	8	82	110	1.34	8.3
Fauquier	0	1	7	4	0.57	—
Gloucester	0	8	52	76	1.46	6.7
Halifax	0	2	20	21	1.05	—
Hanover	0	1	8	10	1.25	—
Henrico	0	4	30	52	1.73	9.5
Isle of White	0	5	33	40	1.21	6.9
James City	0	14	113	186	1.65	6.3
King George	7	29	306	323	1.06	12.2
King & Queen	0	4	29	44	1.52	7.5
King William	0	14	118	155	1.31	8.5
Lancaster	2	5	51	48	0.94	18.9
Mathews	1	4	19	32	1.68	4.5
Mecklenburg	0	5	15	27	1.80	3.8
Middlesex	2	10	125	180	1.44	10.8
New Kent	3	13	105	119	1.13	11.8
Northampton	0	9	80	84	1.05	6.3
Northumberland	4	7	100	125	1.25	31.0
Nottoway	0	0	2	4	2.00	—
Powhatan	0	0	6	8	1.33	—
Prince Edward	0	1	5	10	2.00	—
Prince George	0	13	131	187	1.43	6.2
Prince William	0	4	40	55	1.38	10.0
Richmond	4	21	242	320	1.32	10.5
Rockbridge	0	0	1	1	1.00	—
Stafford	1	8	99	94	0.95	8.3
Surry	0	9	87	132	1.52	6.6
Sussex	0	1	5	4	0.80	—
Westmoreland	6	36	363	481	1.33	9.7
York	0	6	34	52	1.53	9.3
Independent Cities						
Hampton	0	2	6	13	2.17	—
Hopewell	0	1	1	0	—	—
Newport News	0	1	14	24	1.71	—
Portsmouth	0	2	4	8	2.00	—
Richmond	0	1	3	4	1.33	—
Suffolk	0	4	28	40	1.43	10.0
Virginia Beach	0	3	20	37	1.85	5.7
Total	33	330	2,918	3,829	1.31	7.5

ACKNOWLEDGMENTS

Many individuals and organizations have contributed to the success of the Virginia Bald Eagle survey. Several biologists of the Virginia Department of Game & Inland Fisheries have provided oversight and logistical support including Bob Duncan, Karen Terwilliger, Ray Fernald, Dana Bradshaw, Don Schwab, Keith Cline, Lisa Sausville, and Jeff Cooper. Several pilots have provided expert flying services including Sherwin Beck, Captain Fuzzzo, Carter Crabbe, and Matt Crabbe. Financial support has been provided by the Virginia Department of Game & Inland Fisheries, the U.S. Fish and Wildlife Service, the U.S. Department of Defense, and the U.S. Army Corps of Engineers. We appreciate the many private citizens, bird watchers, and government employees who have reported nest locations over the years.

LITERATURE CITED

- ABBOTT, J. M. 1957. Bald Eagle survey: First annual report. *Atlantic Naturalist* 12:118-119.
- ABBOTT, J. M. 1963. Bald Eagle survey for Chesapeake Bay, 1962. *Atlantic Naturalist* 18:22-27.
- ABBOTT, J. M. 1976. Bald Eagle nest survey 1976. *Atlantic Naturalist* 31:162-163.
- ABBOTT, J. M. 1977. Chesapeake Bay Bald Eagle Survey: 1977. Unpublished report.
- BYRD, M. A., G. D. THERRES, S. N. WIEMEYER, AND M. PARKIN. 1990. Chesapeake Bay region Bald Eagle recovery plan: First Revision. U.S. Department of the Interior, Fish and Wildlife Service. Newton Corner, MA. 49pp.
- FRASER, J. D., L. D. FRENZEL, J. E. MATHISEN, F. MARTIN, AND M. E. SHOUGH. 1983. Scheduling bald eagle reproduction surveys. *Wildlife Society Bulletin* 11:13-16.
- MILLAR, J. G. 1999. Endangered and threatened wildlife and plants; proposed rule to remove the Bald Eagle in the lower 48 states from the list of endangered and threatened wildlife. *Federal Register* 64: 36454-36464.
- POSTUPALSKY, S. 1974. Raptor reproductive success: some problems with methods, criteria and terminology. *Raptor Research Report* 2:21-31.
- SPRUNT, A., IV. 1962. Continental Bald Eagle Project: Progress report no. II. Proceedings of the National Audubon Society's Convention. Corpus Christi, TX.
- SPRUNT, A., IV. 1963. Continental Bald Eagle Project: Progress report no. III. Proceedings of the National Audubon Society's Convention. Miami, FL.
- TYRRELL, W. B. 1936. Unpublished report of bald eagle nest survey of the Chesapeake Bay region. National Audubon Society, Washington, D.C. 30 pp.

A SUMMARY REPORT OF THE 2001 VIRGINIA BARRIER ISLANDS BEACH-NESTING AND COLONIAL WATERBIRDS SURVEY

BILL WILLIAMS

154 Lakewood Drive
Williamsburg, Virginia 23185

BILL AKERS

3265 Laurel Drive
Blacksburg, Virginia 24060

MICHAEL BECK

101 Charles Street, Apt #1
Annapolis, Maryland 21401

RUTH BECK

P.O. Box 270
Barhamsville, Virginia 23011

JERRY VIA

3265 Laurel Drive
Blacksburg, Virginia 24060

The twenty-seventh consecutive annual beach-nesting and colonial waterbirds survey of the Virginia barrier islands was completed 17-20 June 2001. The survey team covered all of the Atlantic barrier islands, except Parramore Island, from Assawoman Island on the north through Fishermans Island on the south. Survey protocols adhered to those previously described (Williams et al. 1990). Table 1 provides an island-by-island summary of the survey data.

Over the course of 2000-2001 the Virginia Coast Reserve of the Nature Conservancy coordinated a series of management initiatives to enhance beach-nesting and colonial waterbird habitat on Assawoman, Metomkin, and Cedar islands, following recommendations of O'Connell (1992), the Barrier Island Avian Partnership (1996), Keiss (2001) and Erwin et al. (2001). The long-term effects of these strategies on the colonial and beach-nesting species remain to be seen. However, there were indications from follow-up productivity surveys at the end of the 2001 nesting season that the efforts had some immediate effects for Piping (*Charadrius melodus*) and Wilson's (*C. wilsonia*) plovers, American Oystercatchers (*Haematopus palliatus*), and the large mixed species tern/skimmer colony on the north end of Cedar Island (B. Truitt, pers. com).

The Fishermans Island Brown Pelican (*Pelecanus occidentalis*) count was

Table 1. Census counts of bird species on Virginia barrier islands. Islands listed in the table include Assawoman Island, Metomkin Island, Cedar Island, Dawson Shoals, Parramore Island, Sandy Island, Chimney Pole Marsh, Hog Island, Rogue Island, Cobb Island, Little Cobb Island, Wreck Island, Ship Shoal Island, Godwin Island, Mink Island, Myrtle Island, Smith Island, Fishermans Island. Species abbreviations follow standard USGS Bird Banding Laboratory codes.

Species	Assa	Metom	Cedar	Das Shl	Parra	Sandy	Chm Pol	Hog	Rogue	Cobb	L. Cobb	Wreck	Shp Shl	Gdwn	Mink	Myrtle	Smith	Fisher	Total
BRPE																		1892	1892
DCCO							16											16	
GBHE																		8	8
GREG							108			86		96							290
SNEG							36			40		12							88
LBHE							2			24		24							50
TRHE							15			83		64							162
CAEG												4						4	4
GRHE										2		2						4	4
BCNH										49		109							158
YONH												2							2
WHIB										60		16							76
GLIB							16			42		25							83
NOHA	3									2									5
WIPL	17	13	8														1		39
PIPL	35	55	35					1					2			12	2		142
AMOY	22	92	83	3		14	8	42		17	12	46	27			16	14	26	422
LAGU												1410						786	2196
HEGU		12				420	187			170	271	943						827	2830
GBBG		2				60	113			10	83	314						85	667
GBTE			74									126							200
CATE																			0
ROTE																		1790	1790
SATE																		5	5
COTE	2		314								8	257							581
FOTE																		60	60
LETE	34	235	198							14		8	38			11			538
BLSK			900								53	571							1524

consistent with the 2000 survey (Williams et al. 2001b). A total of 776 nests was counted, of which 30 were attended by birds in second/third year plumage. As in the past, the range of nesting activity throughout the colony varied considerably from large downy young to incubation. The colony site, a series of high dunes on the northeast corner of the island, was also occupied by 925 Herring Gulls (*Larus argentatus*), and 99 Great Black-backed Gulls (*L. marinus*), with 3800 Laughing Gulls (*L. atricilla*) in an adjacent dune swale marsh elder (*Iva frutescens*) thicket.

The number of nesting Double-crested Cormorants (*Phalacrocorax auritus*) declined this year from 29 in 2000 (Williams et al. 2001b) to 20. There were 10 active nests at the Chimney Pole Marsh nesting site, all with large downy young. Once again, the nests were placed at the open edge of a low growing marsh elder thicket, in close association with a Herring Gull, Great Black-backed Gull colony.

Great Blue Heron (*Ardea herodias*) numbers plummeted from 32 in 2000 (Williams et al. 2001b) to 2. Interestingly, these were observed within a large mixed species heronry on the northeast end of Fishermans Island, and not in the location where nesting had previously occurred. Since this species was first detected on our surveys in 1992 (Williams et al. 1993), they had only been found nesting among Great Egrets (*Ardea alba*) on the western side of Fishermans Island adjacent to U. S. Route 13. That colony site, in a stand of mature sassafras (*Sassafras albidum*) and black cherry (*Prunus serotina*), was unoccupied this year for the first time since the survey began in 1975 (Williams 1976, Williams et al. 1990). As recently as 1999 as many as 14 pairs of Great Blue Herons and 75 pairs of Great Egrets had nested there (Williams et al. 2001a). The abandonment of this location was also reflected in the survey's Great Egret total of 253, which was 36% below the survey mean of 397 (Williams et al. 2001a).

Unlike the two species mentioned above, the other breeding long-legged waders did not experience any changes in nesting site locations. Heronries were found on Chimney Pole Marsh, Cobb Island, Wreck Island and, as already noted, Fishermans Island. The Snowy Egret (*Egretta thula*) count was the third lowest for the survey. Little Blue Heron (*E. cearulea*) numbers were consistent with those of the last decade and their survey mean of 127 (Williams et al., in press). Tricolored Heron (*E. tricolor*), and Black-crowned Night-Heron (*Nycticorax nycticorax*) counts were consistent with those of surveys from the last three years, whereas Cattle Egrets (*Bubulcus ibis*) declined by 52% from 2000 (Williams et al. 2001b), well below the survey mean of 175 (Williams et al. 2001a).

White Ibis (*Eudocimus albus*) were found nesting on Cobb, Wreck, and Fishermans islands with 37, 44, and 46 adults respectively. The total of 127 birds was a 59% increase over the previous high count of 80 in 2000 (Williams et al. 2001b), and thus represents the highest total of nesting birds ever found for this species in Virginia. Glossy Ibis (*Plegadis facinellus*) numbers increased from their all-time low count of 95 in 2000 (Williams et al. 2001b) to 122, yet remained well below the 25-year survey mean of 499 (Williams et al. 2001a).

Of interest this season was the asynchrony of nesting stages among the four heronry sites. Experience from past surveys showed that by the third week in June mixed

species heronries consistently had a large numbers of downy to feathered young for all of the species. Such was not the case this year. In the Fishermans Island colony virtually all of the birds were incubating, whereas the Cobb and Wreck islands heronries had predominately feathered young of all species. On Chimney Pole Marsh a relatively equal number of nests with downy young and feathered young was observed.

The number of Wilson's Plovers remained essentially unchanged from the previous survey year (52), and equaled their historic survey mean of 47 (Williams et al. 2001a). Piping Plovers, on the other hand, posted their second highest total (160) in the survey's history, 41% above the long-term mean of 119 (Williams et. 2001a). All of the former species were found on the three northernmost survey islands, Assawoman (14), Metomkin (14) and Cedar (19). These islands attracted 94% of the Piping Plovers with 36, 65, and 50, respectively. The remaining 9 members of this species were found on Wreck (1), Ship Shoal (2), and Myrtle (6) islands. The tally of 439 American Oystercatchers was the lowest total for this species since a concerted effort to monitor them was initiated in 1979. Small numbers of them were found throughout the island chain, yet, like the two plover species, a significant proportion of them, 45%, was distributed among the Assawoman (19), Metomkin (85), Cedar (93) islands complex.

Laughing Gull numbers within the scope of the survey increased for the first time in four years, due in large part, to an increase in the Wreck Island breeding population. From 1975 (Williams 1976) through 1994 the single Wreck Island colony averaged 10,853 birds with a high count of 21,886 in 1986 (Williams 1990, Williams et al. 1990, 1991, 1992, 1993, 1994, 1995, unpubl. data). For undetermined reasons, the species was absent from the island as a breeder from 1995 through 1998 (Williams et al. 1996, 1997, 1998, 1999) possibly due to encroachment by nesting Herring and Great Black-backed gulls. Laughing Gulls nesting on the Virginia barrier islands consistently nest in either salt marsh cord grass (*Spartina alterniflora*) tidal marshes on the west side of an island or in heavily vegetated dune swales inland from the beach and dunes (Watts 1994). Through 1994 this type of circumstance was widely available on the southern end of Wreck Island. On the other hand, barrier island breeding Herring and Great Black-backed gulls tend to choose high dunes (Watts 1994) or berms adjacent to the beach, and unvegetated to sparsely vegetated beach for nesting, habitats that began to increase on Wreck Island through the late 1990's. Therefore, the diminution of the Laughing Gull breeding population on this island may have been the compounded result of physiographic changes to the island and the encroachment of two competitor species.

The Herring Gull count increased by 14% over 2000 (Williams et al. 2001b) to 3542, approximately 14% above the survey's long-term mean of 3164 (Williams et al. 2001a). Great Black-backed Gulls were at their second highest total ever at 545, almost at the record of 561 in 1986 (Williams et al. 1990). Of the total recorded this year 49% (267) were on Wreck Island.

Gull-billed Terns (*Sterna nilotica*) decreased to their lowest level ever at 42 birds. A mixed species colony on the southern end of Wreck Island held 67%

(28) of the breeding population found during this survey. For the fifth consecutive year the survey produced no evidence of nesting Caspian Terns (*S. caspia*). Royal Terns (*S. maxima*) increased by 8% over 2000 (Williams et al. 2001b) from 2387 to 2580. Despite diligent searching among the Royal Terns on Fishermans Island no Sandwich Terns (*S. sandvicensis*) were located. Common Terns (*S. hirundo*) increased by 104% from the all-time low of 344 in 2000 (Williams et al. 2001b) to 675. Such a significant increase, however, must be taken within the long-term context that this year's total was the third all-time lowest count and 78% below the 25-year survey mean of 3124 (Williams et al. 2001a). Encouraging too was the continued increase in the number of breeding Least Terns (*S. antillarum*) from 122 and 318 in 1999 and 2000 respectively (Williams et al. 2001a, 2001b) to this survey's count of 427. However, this total is 41% less than the longitudinal mean of 725 (Williams et al. 2001a). Just as encouraging was a 24% increase in the number of Black Skimmers (*Rynchops niger*), a recovery trend that will be watched with much anticipation. Sixty-seven percent (1116) of the nesting Black Skimmers were in one colony on the north end of Cedar Island. A 16 August nestling count at this colony site found "the most productivity in over 15 years for Black Skimmers on the barrier islands" with some 600 young-of-the-year counted (B. Truitt pers. com.).

Species of special interest seen during the survey included a Common Loon (*Gavia immer*) off Hog Island 17 June and two dead Black-capped Petrels (*Pterodroma hasitata*) found on the beach on Cobb Island 18 June. The next day a first year Northern Gannet (*Morus bassanus*) was found alive on the beach on Cedar Island. Ten Marbled Godwits (*Numenius phaeopus*) were at the Machipongo Station on Hog Island throughout the survey period. The regular occurrence of Red Knots (*Calidris canutus*) on the surveys was reflected this year by 16 observed 18 June, 3 on Ship Shoal Island and 13 on Smith Island. One of the more noteworthy experiences of this year was encountering Great Horned Owls (*Bubo virginiana*) on Fishermans, Cedar, and Sandy, islands, 17, 19, and 20 June respectively.

ACKNOWLEDGMENTS

We are, as always, ever grateful for the support of the Virginia Coast Reserve of the Nature Conservancy, and to Barry Truitt for his continued efforts on our behalf in the field and beyond. Thanks, too, to Susan Rice, Manager of the Eastern Shore of Virginia National Wildlife Refuge, for allowing us access to and transporting us on Fishermans Island. Thelma and Erika Peterson were hosts extraordinaire with great food and song at the Machipongo Station. We appreciated the assistance of Richard Ayers, Kevin Croll and Sandra Keil.

LITERATURE CITED

- BARRIER ISLAND AVIAN PARTNERSHIP. 1996. Conservation action plan for the avian communities in the Virginia barrier islands system. Technical report. VA Coast Reserve of the Nature Conser., Brownsville, Nassawadox, VA.
- ERWIN, R. M., B. TRUITT, AND J. JIMENEZ. 2001. Ground-nesting waterbirds and mam-

- malian carnivores in the Virginia barrier island region: running out of options. *J. Coastal Research* 17(2): 292-296.
- KEISS, O. 2001. Mammalian predator distribution and abundance on the Virginia barrier islands in relation to breeding habits of colonial birds. M. S. thesis, Utah State Univ., Logan, UT.
- O'CONNELL, T. J. 1992. The effects of gull predation on the colony reproductive success of terns and skimmers in Virginia. M. A. thesis, College of William and Mary, Williamsburg, VA.
- WATTS, B. D. 1994. Distribution of colonial waterbirds on the Eastern Shore of Virginia: implications for beneficial uses of dredge material.
- WILLIAMS, B. 1976. Analysis of the past and present status of the beach nesting and colonial birds of the Virginia Coast Reserve. *Virginia Coast Reserve Study: Ecosystem Description*.
- WILLIAMS, B. 1990. A summary of the 1989 survey of the colonial waterbirds of the Virginia barrier islands. *Raven* 61: 69-72.
- WILLIAMS, B., R. A. BECK, B. AKERS, AND J. VIA. 1990. Longitudinal surveys of the beach-nesting and colonial waterbirds of the Virginia barrier islands. *Va. J. Sci.* 41: 380-388.
- WILLIAMS, B., B. AKERS, R. BECK, AND J. VIA. 1991. The 1990 beach-nesting and colonial waterbird survey of the Virginia barrier islands. *Raven* 62: 49-54.
- WILLIAMS, B., B. AKERS, R. BECK, AND J. VIA, AND S. ROTTENBORN. 1992. 1991 Virginia barrier islands beach-nesting and colonial waterbird survey. *Raven* 63: 96-101.
- WILLIAMS, B., B. AKERS, R. BECK, AND J. VIA. 1993. The 1992 colonial and beach-nesting waterbird survey of the Virginia barrier islands. *Raven* 64: 24-29.
- WILLIAMS, B., B. AKERS, R. BECK, AND J. VIA. 1994. A summary of the 1993 beach-nesting and colonial waterbird survey of the Virginia barrier islands. *Raven* 65: 109-113.
- WILLIAMS, B., B. AKERS, M. BECK, R. BECK, AND J. VIA. 1995. A summary of the 1994 beach-nesting and colonial waterbird survey of the Virginia barrier islands. *Raven* 66: 40-44.
- WILLIAMS, B., B. AKERS, M. BECK, R. BECK, AND J. VIA. 1996. The 1995 Beach-nesting and colonial waterbird survey of the Virginia barrier islands. *Raven* 67: 79-83.
- WILLIAMS, B., B. AKERS, M. BECK, R. BECK, AND J. VIA. 1997. A summary of the 1996 Beach-nesting and colonial waterbird survey of the Virginia barrier islands. *Raven* 68: 105-109.
- WILLIAMS, B., B. AKERS, M. BECK, R. BECK, AND J. VIA. 1998. The 1997 colonial and beach-nesting waterbird survey of the Virginia barrier islands. *Raven* 69: 15-18.
- WILLIAMS, B., B. AKERS, M. BECK, R. BECK, AND J. VIA. 2000. The 1998 survey of colonial and beach-nesting waterbirds of the Virginia barrier islands. *Raven* 71: 42-45.

- WILLIAMS, B., B. AKERS, M. BECK, R. BECK, AND J. VIA. 2001a. A summary of the twenty-fifth annual beach-nesting and colonial waterbirds survey of the Virginia barrier islands-1999. *Raven* 72: 12-16.
- WILLIAMS, B., B. AKERS, M. BECK, R. BECK, AND J. VIA. 2001b. The 2000 beach-nesting and colonial waterbirds survey of the Virginia barrier islands. *Raven* 72: 132-136.

VIRGINIA CHRISTMAS BIRD COUNTS: 2001-2002 SEASON

TETA KAIN

7083 Caffee Creek Lane
Gloucester, VA 23061-3374

Because of severe weather conditions that rendered back roads impassable, the Dismal Swamp count was not conducted this year, dropping the total of Christmas Bird Counts held in Virginia in the 2001-02 season to 47, one less than last year. No new counts were started in 2001. The total number of species found on all counts this year was 219, up nine from last year's total.

Several very unusual sightings accounted, in part, for such a jump: a Franklin's Gull (*Larus pipixcan*) seen at Newport News, a first for Virginia Christmas counts; one Henslow's Sparrow (*Ammodramus henslowii*) at The Plains, a species which has not been recorded on a Virginia Christmas count since 1972; a Clay-colored Sparrow (*Spizella pallida*) at Manassas, first winter record for the Piedmont; a Clark's Grebe (*Aechmophorus clarkii*) at Little Creek; and a Mew Gull (*Larus canus*) at Chesapeake Bay Bridge-Tunnel.

Other rarities found around the region were a Piping Plover (*Charadrius melodus*) at Chincoteague (photographed), Black-tailed Gull (*Larus crassirostris*) back at Little Creek again, a Nashville Warbler (*Vermivora ruficapilla*) at Cape Charles, and a Northern Parula (*Parula americana*) at Little Creek. A count-week Yellow-legged Gull (*Larus cachinnans*) at the Chesapeake Bridge-Tunnel, along with most of the rarities listed above, will require review by the Virginia Avian Records Committee (VARCOM) to be accepted.

Christmas counts are often the best means of detecting winter bird population changes. Many counts are of long-standing and have changed little over the years, hence providing a good database from which to see trends developing. There have been some startling increases in the number of sightings and also of numbers of individuals for several species. One of those that seems to have solidly established itself is the Lesser Black-backed Gull (*Larus fuscus*). First seen on a count at Little Creek in 1974, this species has increased steadily over the years, with numbers mushrooming to 89 individuals found on nine counts in 2001. The previous state all-time-high total of 36 birds was recorded in 1996 and 1998. Another trend that is evident as one compares counts over the years is the number of hummingbirds wintering in the state. This year three showed up: one was photographed, banded, and identified as a Rufous (*Selasphorus rufus*) at Central Loudoun, and one each at Fort Belvoir and Williamsburg was identified as *Selasphorus*, sp.

Record high totals were chalked up for at least 29 species this year. Numbers of some species such as Double-crested Cormorant (*Phalacrocorax auritus*), Canada Goose (*Branta canadensis*), Bald Eagle (*Haliaeetus leucocephalus*), Red-tailed

Hawk (*Buteo jamaicensis*), and Peregrine Falcon (*Falco peregrinus*) have been steadily increasing for some time and setting new high counts for them is almost a yearly occurrence, but a 60% increase in the number of Northern Gannets (*Morus bassanus*) from the all-time-high set in 2000 was unexpected. Perhaps the prevailing winds from the northwest recorded on many of the coastal and bay counts had something to do with their appearance. A note-worthy single-count and all-time state high was the 184 Red-tailed Hawks at Northern Shenandoah Valley, exceeding that count's previous record of 112 by 60%. Pied-billed Grebes (*Podilymbus podiceps*) numbers broke the previous record set in 1975, the high number augmented significantly by 435 spotted at Brooke. Both Black (*Coragyps atratus*) and Turkey (*Cathartes aura*) vulture numbers have been climbing and they, too, set records.

One hundred forty-two Mute Swans (*Cygnus olor*) were found on 12 different counts. They seemed to have gained a toe-hold in Brooke, with 66 reported there. For a long time about the only place Mutes could be found was at Chincoteague, but starting around 1989, that picture began to change, until nowadays, counts all over the state report them.

Woodpeckers had a banner year. Fully one half of the counts reported record or near-record numbers of the seven species found on the counts. In all, there were 57 record high counts, and the Yellow-bellied Sapsucker (*Sphyrapicus varius*) led with 13. Fort Belvoir chalked up an astounding 396 Downys (*Picoides pubescens*), the highest number ever recorded on a Christmas count in Virginia.

Other species that fared exceptionally well were Carolina Chickadee (*Parus carolinensis*), Tufted Titmouse (*Parus bicolor*), and White-breasted Nuthatch (*Sitta carolinensis*), up 20, 31, and 22 percent respectively. Northern Mockingbird (*Mimus polyglottos*) and Northern Cardinal (*Cardinalis cardinalis*) also did well, both were found in record numbers around the state.

In view of the weather, it was not too surprising that eiders were not found, and Long-tailed Duck (*Clangula hyemalis*) numbers were the lowest since 1968. All three scoters were also scarce and no Alcids were reported. Common Moorhens (*Gallinula chloropus*) were missing for the second year in a row. Until last year they had been present on at least one count every year since 1984. One other species absent for the first time in six years was Green Heron (*Butorides virescens*).

Some species that seem to like milder winters did not take advantage of the balmy Virginia skies this year. The absence of the Dismal Swamp count accounts for some of the White-eyed Vireos (*Vireo griseus*) reports in the region, but usually one or two are found on other counts. That was not the case this year. None were recorded, breaking a ten-year streak of appearances. Other no-shows were Cape May Warbler (*Dendroica tigrina*), Ovenbird (*Seiurus aurocapillus*), and Yellow-breasted Chat (*Icteria virens*).

This year's state-wide total of the Loggerhead Shrike (*Lanius ludovicianus*) was 16 birds. For the last six years only 11 to 21 have been found each year. We cannot hope for much more until we can find a cause for the precipitous decline of this once common species. It has been just about extirpated from the Coastal Plain, numbers are falling off fast in the Piedmont, and sightings are much harder to come

by in the higher elevations of the western part of the state.

As in years past, the Christmas count table is arranged as follows: the four Eastern Shore and Chesapeake Bay counts are listed first and the rest are listed generally in an east-to-west and north-to-south configuration. Counts 1 through 15 are on the coastal Plain, counts 16 through 27 are in the Piedmont, and counts 9 through 48 are in the Mountains and Valleys region of the state. The tables follow the order and names of species as forth in the latest supplement of the American Ornithologist's Union. A description of each count circle center, along with the names and addresses of compilers, can be found in the article entitled Christmas Count Descriptions. In addition, names of observers for the Darlington Heights, Lynchburg, Danville, Peaks of Otter, Roanoke, Giles County, and Bristol counts are listed because the results of those counts do not appear in the Christmas Count book of the National Audubon Society.

Weather and wind codes:

CLD – cloudy
CLR – clear
FOG – foggy
LGR – light rain
PCD – partly cloudy
PCR – partly clear
V – variable

Water codes:

SPF – still water partly frozen
MWO – moving water open
WOP – water open
MCR – mostly clear

	Red-throated Loon	Common Loon	Pied-billed Grebe	Horned Grebe	Red-necked Grebe	Eared Grebe	Clark's Grebe	Northern Gannet	American White Pelican
1. Chincoteague	334	91	13	66	1	...	...	26	...
2. Wachapreague	6	29	1	...	1	...	...	1	...
3. Cape Charles/Kiptopeke	318	125	42	7	1	...	...	14,100	...
4. CBBT	51	23	...	...	...	...	...	13,000	...
5. Little Creek	32	23	54	15	...	...	1	251	...
6. Back Bay	216	50	14	...	1	...	...	1,290	...
7. Nansemond River	7	1	24	162	...	...	...	...	...
8. Newport News	44	31	43	9	1	...	...	67	1
9. Mathews County	107	115	1	9	1	...	...	68	...
10. Williamsburg	1	10	32	24	...	...	...	...	...
11. Hopewell	...	...	12	1	...	...	...	...	...
12. Walkerton	...	...	14	...	...	...	...	...	...
13. Washington's Birthplace	18	5	...	22	...	...	...	25	...
14. Brooke	...	4	435	8	...	...	...	...	...
15. Fort Belvoir	...	1	31	3	...	...	...	...	...
16. Central Loudoun	...	...	6	...	...	...	...	...	...
17. The Plains	...	...	14	...	...	...	...	...	...
18. Manassas-Bull Run	...	...	...	...	...	...	...	...	...
19. Chancellorsville	...	...	9	...	...	...	...	...	...
20. Lake Anna	...	2	19	5	...	...	...	...	...
21. Gordonsville	...	...	...	...	...	...	...	...	...
22. Charlottesville	...	...	6	...	...	...	...	...	...
23. Warren	...	...	9	...	...	...	...	...	...
24. Darlington Heights	...	...	...	...	...	...	...	...	...
25. Banister WMA	...	...	...	...	...	...	...	...	...
26. Lynchburg	...	...	34	2	...	...	...	...	...
27. Danville	...	...	11	...	...	...	...	...	...
28. Calmes Neck	...	...	...	...	...	...	...	...	...
29. N. Shenandoah Valley	...	...	12	2	...	...	...	...	...
30. Shenandoah NP-Luray	...	...	4	2	...	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	...	1	...	...	...	...	...	...
33. Augusta County	...	...	...	...	...	...	...	...	...
34. Waynesboro	...	...	...	...	...	...	...	...	...
35. Lexington	...	...	4	...	...	...	...	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...
37. Fincastle	...	...	...	...	...	...	...	...	...
38. Roanoke	...	1	7	...	...	...	...	...	...
39. Blacksburg	...	1	7	...	...	...	...	...	...
40. Giles County	...	...	...	...	...	...	...	...	...
41. Tazewell	...	...	6	...	...	...	...	...	...
42. Mount Rogers/Whitetop	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	...	...	...	...	...	...	...	...
44. Blackford	...	...	1	...	...	...	...	...	...
45. Bristol	...	4	34	11	...	1	...	...	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	6	...	...	...	...	...	...
Total individuals:	1,134	516	906	348	6	1	1	28,828	1

Brown Pelican	Double-crested Cormorant	Great Cormorant	American Bittern	Great Blue Heron	Great Egret	Snowy Egret	Little Blue Heron	Tricolored Heron	Black-crowned Night-Heron	Yellow-crowned Night-Heron	White Ibis
...	80	6	CW	161	95	6	9	6	2	...	...
...	29	...	...	27	3	...	...	30	...	...	...
5	220	37	1	97	22	8	1	16	5	...	1
15	3	31	...	...	...	...	...	...	...	...	...
118	3,260	6	1	150	113	...	...	...	1	...	...
70	147	1	4	41	6	...	...	1	...	...	...
29	3,405	1	...	62	3	...	...	...	...	...	...
16	1,711	3	...	84	30	...	...	...	1	...	...
28	25	...	...	73	...	...	...	...	...	...	...
3	1,017	...	...	84	6	...	...	...	...	...	...
...	1,631	...	...	243	10	...	...	...	...	...	...
...	1	...	...	16	...	...	...	...	...	...	...
...	157	...	...	14	...	...	...	...	...	...	...
...	160	...	...	67	...	...	...	...	...	...	...
...	79	...	...	223	1	...	...	...	...	...	...
...	2	...	...	14	...	...	...	...	...	...	...
...	8	...	...	18	...	...	...	...	...	...	...
...	1	...	...	31	...	...	...	...	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...
...	...	...	...	17	...	...	...	...	...	...	...
...	...	...	...	7	...	...	...	...	...	...	...
...	1	...	...	11	...	...	...	...	...	...	...
...	...	...	...	8	...	...	...	...	...	...	...
...	...	...	...	3	...	...	...	...	...	...	...
...	1	...	...	15	...	...	...	...	...	...	...
...	...	...	...	14	...	...	...	...	...	...	...
...	...	...	...	9	...	...	...	...	...	...	...
...	...	...	...	16	...	...	...	...	...	...	...
...	2	...	...	31	...	...	...	...	...	...	...
...	...	...	...	18	...	...	...	...	...	...	...
...	...	...	...	4	...	...	...	...	...	...	...
...	...	...	...	8	...	...	...	...	...	...	...
...	...	...	...	10	...	...	...	...	1	...	...
...	1	...	...	18	...	...	...	...	...	...	...
...	...	...	...	13	1	...	...	...	...	...	...
...	...	...	...	23	...	...	...	...	...	1	...
...	...	...	...	16	...	...	...	...	1	...	...
...	...	...	...	5	...	...	...	...	...	...	...
...
...	...	...	...	14	...	...	...	...	...	...	...
...	...	...	...	7	...	...	...	...	...	...	...
...	...	...	...	18	...	...	...	...	...	...	...
...	...	...	...	2	...	...	...	...	...	...	...
...	...	...	...	2	...	...	...	...	...	...	...
284	11,941	85	6	1,695	290	14	10	53	11	1	1

	Glossy Ibis	Black Vulture	Turkey Vulture	Greater White-fronted Goose	white-fronted x canada goose hybrid	Snow (Blue) Goose	Snow Goose	Ross's Goose	Canada Goose
1. Chincoteague	2	27	392	...	...	18	19,000	...	2,600
2. Wachapreague	...	110	297	...	...	...	14,863	...	1,196
3. Cape Charles/Kiptopeke	...	68	603	1	...	...	157	...	1,298
4. CBBT	CW	...	...	...	6	...	7
5. Little Creek	...	124	86	...	...	...	...	...	290
6. Back Bay	...	32	121	...	...	30	3,385	...	244
7. Nansemond River	...	12	34	...	...	...	3	...	5,141
8. Newport News	...	7	40	...	...	...	...	...	466
9. Mathews County	...	10	155	...	...	...	...	...	834
10. Williamsburg	...	55	122	...	...	...	1	...	3,922
11. Hopewell	...	218	144	...	...	1,623	193	2	10,041
12. Walkerton	...	58	173	...	...	...	...	...	2,843
13. Washington's Birthplace	...	63	237	...	...	...	1	...	9,633
14. Brooke	...	5	105	...	...	...	1	...	3,000
15. Fort Belvoir	...	75	126	...	...	...	...	...	10,189
16. Central Loudoun	...	201	435	...	...	1	...	...	5,864
17. The Plains	...	239	644	1	...	...	...	...	6,381
18. Manassas-Bull Run	...	91	199	...	...	...	2	...	3,638
19. Chancellorsville	...	20	41	...	...	...	...	...	616
20. Lake Anna	...	23	56	...	...	...	...	...	414
21. Gordonsville	...	26	90	...	...	...	...	...	4,801
22. Charlottesville	...	76	284	1	...	...	...	...	1,037
23. Warren	...	54	177	...	...	...	1	...	1,888
24. Darlington Heights	...	69	201	...	...	...	60	...	157
25. Banister WMA	...	18	62	...	...	...	...	...	76
26. Lynchburg	...	212	495	...	...	...	...	...	409
27. Danville	...	344	516	...	...	...	...	...	260
28. Calmes Neck	...	53	102	...	...	...	...	...	3,548
29. N. Shenandoah Valley	...	139	679	...	...	...	...	...	2,206
30. Shenandoah NP-Luray	...	86	218	...	1	...	...	...	465
31. Big Flat Mountain	3	...	...	...	...	...	...
32. Rockingham County	...	33	334	...	...	...	...	...	80
33. Augusta County	...	63	225	...	...	...	CW	...	697
34. Waynesboro	...	33	127	...	...	...	...	...	583
35. Lexington	...	57	114	...	...	...	...	...	73
36. Peaks of Otter	...	6	38	...	...	...	...	...	...
37. Fincastle	...	151	116	...	...	...	3	...	182
38. Roanoke	...	47	182	...	...	...	...	...	201
39. Blacksburg	...	562	126	...	...	...	...	...	1,018
40. Giles County	...	43	8	...	...	...	...	...	234
41. Tazewell	...	1	...	...	...	...	...	...	67
42. Mount Rogers/Whitetop	4	...	...	...	...	...	...
43. Glade Spring	...	73	33	...	...	...	1	...	307
44. Blackford	46
45. Bristol	...	72	66	...	...	1	...	...	882
46. Breaks Interstate Park	7	...	...	...	...	...	...
47. Wise County
Total individuals:	2	3,656	8,217	3	1	1,673	37,677	2	87,834

Brant	Mute Swan	Tundra Swan	Wood Duck	Gadwall	Eurasian Wigeon	American Wigeon	American Black Duck	mallard x black duck hybrid	Mallard	mallard/black duck sp.	Blue-winged Teal
640	...	158	15	183	...	49	1,800	...	665	50	...
2,384	...	16	4	174	...	18	445	...	524	...	...
1,748	...	22	10	784	...	649	934	...	318	...	...
28	...	...	...	...	...	...	...	...	...	...	...
28	1	34	101	294	...	390	39	...	510	...	2
...	3	650	13	148	...	47	245	...	570	...	2
...	...	...	1	357	...	136	100	...	93	...	...
50	...	...	...	62	...	356	36	...	919	...	3
...	6	481	...	25	...	6	110	...	290	...	...
22	9	...	...	12	...	16	24	...	183	...	...
...	...	262	253	...	...	98	130	...	511	...	...
...	...	26	90	...	...	...	83	...	383	...	...
...	1	79	9	72	...	297	...	...	605	...	...
...	66	1,100	320	...	...	18	71	...	650	...	...
...	6	1,069	174	466	...	83	1,696	...	3,869	...	...
...	...	CW	...	13	...	2	71	...	383	...	12
...	1	49	7	140	1	95	93	...	225	...	...
...	1	...	49	CW	...	...	3	...	485	...	...
...	10	...	...	...	...	6	16	...	161	...	...
...	...	...	8	1	...	1	5	...	159	...	...
...	...	...	...	...	...	...	24	...	5	...	...
...	3	...	5	...	...	5	...	...	88	...	...
22	...	...	...	...	...	5	26	...	215	...	...
...	...	...	...	...	...	...	2	...	3	...	...
...	...	...	...	...	...	...	...	...	30	...	...
...	...	...	5	9	...	1	32	...	298	...	...
...	...	...	2	...	...	...	...	...	114	...	...
...	...	...	2	...	...	2	40	...	267	...	...
...	...	...	15	46	...	7	61	1	769	...	...
...	...	...	8	5	...	...	1	...	208	...	...
...
...	...	...	...	...	...	5	...	...	157	...	...
...	...	...	1	34	...	6	4	...	135	...	...
...	...	4	...	...	...	...	10	...	264	...	...
...	...	1	...	...	...	...	14	...	299	...	...
...
...	...	...	1	...	...	...	2	...	91	...	...
...	...	...	8	42	...	28	3	...	540	...	...
...	...	...	...	11	...	3	45	...	444	...	...
...	...	...	...	36	...	2	...	...	63	...	...
...	...	...	...	8	...	...	...	...	50	...	...
...
...	...	...	12	...	...	4	9	1	267	...	...
...	...	...	...	...	...	...	...	...	41	...	...
...	...	...	3	92	...	77	8	...	788	...	...
...	...	...	6	...	...	...	...	...	7	...	...
...
4,850	142	3,671	736	3,689	1	2,412	6,182	2	16,646	50	19

	merganser, sp.	Ruddy Duck	Osprey	Bald Eagle	Northern Harrier	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk	Accipiter, sp.
1. Chincoteague	...	15	...	19	25	10	CW	...	...
2. Wachapreague	26	20	2	...	...	...
3. Cape Charles/Kiptopeke	...	3	...	22	42	18	7	...	...
4. CBBT
5. Little Creek	...	48	5	3	7	6	2	...	...
6. Back Bay	...	9	...	4	32	14	3	...	...
7. Nansemond River	...	2,571	5	2	7	3	4	...	...
8. Newport News	...	75	...	5	3	6	3	...	...
9. Mathews County	...	8	...	15	5	5	1	...	...
10. Williamsburg	...	5,522	2	34	5	6	2	...	...
11. Hopewell	...	58	...	90	11	11	3	...	...
12. Walkerton	...	24	...	31	9	5	2	...	...
13. Washington's Birthplace	...	218	...	115	24	5	1	...	...
14. Brooke	...	80	...	33	8	3	4	...	...
15. Fort Belvoir	...	14,095	...	118	4	29	6	2	...
16. Central Loudoun	...	6	...	7	11	15	5	...	...
17. The Plains	...	8	...	7	4	16	8	1	...
18. Manassas-Bull Run	5	10	13	3	...	...
19. Chancellorsville	...	18	...	8	...	...	...	...	...
20. Lake Anna	1	...	2	...	...
21. Gordonsville	1	1	4	3	...	...
22. Charlottesville	7	5	...	...
23. Warren	1	3	5	3	...	...
24. Darlington Heights	16	2	4	...	...
25. Banister VMA	9	5	3	...	...	...
26. Lynchburg	...	5	...	2	...	11	3	...	...
27. Danville	1	1	6	...	...
28. Calmes Neck	...	1	...	20	4	7	8	...	...
29. N. Shenandoah Valley	...	2	...	11	11	23	22	1	...
30. Shenandoah NP-Luray	1	...	9	5	...	1
31. Big Flat Mountain	1	1	...	...
32. Rockingham County	CW	...	7	3	...	...
33. Augusta County	...	4	...	...	3	4	3	...	...
34. Waynesboro	2	2	3	...	...
35. Lexington	2	1	...	...
36. Peaks of Otter	1	...	...	...
37. Fincastle	3	2	CW	...
38. Roanoke	2	...	4	6	...	...
39. Blacksburg	1	1	...	1	5	8	7	1	...
40. Giles County	1	2	...	...
41. Tazewell	1	1	...	...
42. Mount Rogers/Whitetop	2	...	...
43. Glade Spring	2	3	...	...
44. Blackford	2	1	...	...
45. Bristol	CW	...	2	8	...	...
46. Breaks Interstate Park	1	...	...
47. Wise County	1	1	...	...	...
Total individuals:	1	22,771	12	592	279	281	159	2	4

Red-shouldered Hawk	Red-tailed Hawk	Rough-legged Hawk	Buteo, sp.	Golden Eagle	eagle, sp.	American Kestrel	Merlin	Peregrine Falcon	Ring-necked Pheasant	Ruffed Grouse	Wild Turkey
6	31	...	...	...	...	24	2	2	...	...	17
...	12	...	...	...	...	41	...	3	...	...	...
2	55	...	...	...	...	28	1	5	...	...	11
...	...	...	...	...	...	...	1	...	...	...	...
1	15	...	...	...	...	17	2	...	...	...	...
8	35	...	...	...	...	25	2	...	...	...	...
1	22	...	...	1	...	12	...	1	...	...	...
...	22	...	...	...	...	4	1	...	...	...	...
3	22	...	...	...	...	3	1	...	...	...	38
11	23	...	...	...	...	6	2	...	...	...	3
19	63	...	...	...	...	24	1	4	...	...	34
7	33	...	...	...	...	14	1	...	...	...	19
10	39	...	...	...	...	10	...	...	...	...	31
19	16	...	...	...	...	2	...	...	...	...	4
40	82	1	...	...	...	6	CW	2	...	...	21
32	99	...	...	...	...	23	1	...	2	...	12
55	107	...	...	...	...	18	1	...	3	...	15
60	76	...	...	...	...	4	...	...	...	...	1
7	6	...	...	...	...	2	...	...	...	...	...
5	9	...	...	...	...	5	...	...	...	...	2
11	25	...	3	...	...	13	...	...	...	...	17
21	35	...	...	...	...	3	...	...	...	...	15
9	42	...	...	...	...	14	...	...	...	...	43
15	50	...	...	...	...	20	...	...	...	...	12
8	24	...	2	...	...	5	...	...	...	...	34
1	60	...	...	...	...	9	1	...	...	...	44
2	29	...	...	...	...	5	...	...	...	...	24
4	85	1	...	...	...	23	...	...	...	...	75
12	184	4	...	CW	1	68	1	...	1	...	...
6	71	2	...	1	...	41	...	...	...	...	7
...	3	...	...	...	...	...	...	...	...	10	8
...	27	...	...	...	...	18	...	...	...	4	...
1	70	...	...	...	...	69	...	...	...	1	CW
4	33	...	...	...	...	17	...	...	...	10	...
6	32	...	...	...	...	21	...	...	...	CW	5
...	12	...	...	...	...	...	...	...	...	...	11
3	41	...	...	...	...	15	2	...	...	2	11
...	30	...	...	...	...	7	1	...	...	...	1
2	57	...	2	1	...	23	...	...	...	3	58
...	6	...	...	...	...	3	...	...	...	...	...
1	7	...	...	...	...	7	...	...	...	...	1
...	9	1	...	...	...	3	...	...	...	2	...
...	37	...	...	...	...	34	...	...	...	1	...
...	14	...	...	6	...	13	...	...	...	3	2
...	36	...	...	...	...	37	1	...	...	1	CW
...	2	...	...	...	...	...	...	...	...	5	24
3	9	...	...	...	...	6	...	...	...	1	...
395	1,797	9	7	9	1	742	22	17	6	43	600

	Northern Bobwhite	Clapper Rail	King Rail	Virginia Rail	Sora	American Coot	Black-bellied Plover	Semipalmated Plover	Piping Plover
1. Chincoteague	36	1	...	3	...	...	151	1	1
2. Wachapreague	12	4	...	...	...	...	341	9	...
3. Cape Charles/Kiptopeke	51	12	...	3	...	18	258	24	...
4. CBBT	...	...	...	...	...	...	...	...	...
5. Little Creek	4	7	3	1	...	53	8	...	...
6. Back Bay	11	...	13	6	2	149	...	...	...
7. Nansemond River	...	7	...	...	...	2	1	...	...
8. Newport News	...	9	...	...	...	60	27	...	...
9. Mathews County	16	5	...	...	...	...	24	...	...
10. Williamsburg	5	1	...	2	...	6	...	...	...
11. Hopewell	25	...	...	1	...	471	...	...	...
12. Walkerton	20	...	...	...	...	2	...	...	...
13. Washington's Birthplace	37	...	...	1	...	...	...	...	...
14. Brooke	4	...	...	...	...	2,500	...	...	...
15. Fort Belvoir	8	...	...	...	...	898	...	...	...
16. Central Loudoun	...	...	...	...	...	1	...	...	...
17. The Plains	...	...	...	...	...	...	...	...	...
18. Manassas-Bull Run	...	...	...	...	...	...	...	...	...
19. Chancellorsville	...	...	...	...	...	52	...	...	...
20. Lake Anna	...	...	...	...	...	58	...	...	...
21. Gordonsville	2	...	...	...	...	...	...	...	...
22. Charlottesville	...	...	...	...	...	...	...	...	...
23. Warren	10	...	...	...	...	...	...	...	...
24. Darlington Heights	11	...	...	...	...	...	...	...	...
25. Banister WMA	15	...	...	...	...	...	...	...	...
26. Lynchburg	42	...	...	...	...	15	...	...	...
27. Danville	...	...	...	...	...	...	...	...	...
28. Calmes Neck	...	...	...	...	...	18	...	...	...
29. N. Shenandoah Valley	49	...	...	...	...	13	...	...	...
30. Shenandoah NP-Luray	...	...	...	...	...	16	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	...	...	...	...	...	...	...	...
33. Augusta County	...	...	...	...	...	3	...	...	...
34. Waynesboro	...	...	...	...	...	5	...	...	...
35. Lexington	4	...	...	...	...	...	...	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...
37. Fincastle	14	...	...	...	...	...	...	...	...
38. Roanoke	...	...	...	...	...	9	...	...	...
39. Blacksburg	...	...	...	...	...	2	...	...	...
40. Giles County	...	...	...	...	...	...	...	...	...
41. Tazewell	...	...	...	...	...	...	...	...	...
42. Mount Rogers/Whitetop	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	...	...	...	...	6	...	...	...
44. Blackford	1	...	...	...	...	...	...	...	...
45. Bristol	...	...	...	...	...	143	...	...	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...
Total individuals:	377	46	16	17	2	4,500	810	34	1

Killdeer	American Oystercatcher	American Avocet	Greater Yellowlegs	Lesser Yellowlegs	yellowlegs, sp.	Willet	Spotted Sandpiper	Marbled Godwit	Ruddy Turnstone	Red Knot	Sanderling
40	109	5	167	10	...	164	...	7	4	...	146
21	47	...	23	...	...	87	...	8	8	8	45
286	121	...	141	13	...	51	1	40	60	31	475
...	1	...	...	...	...	...	...	...	13	...	1
54	41	...	5	...	...	...	...	...	51	...	321
245	7	...	...	...	...	...	...	...	151
153	1
30	19	...	...	...	...	...	31	...	166
75	9	...	5	...	...	...	5	...	49
27	1	...	...	...	...	...	...	...	...
159
177	1	18	...	...	...	...	...	...	...
42	3	...	...	...	...	...	...	...	...
1
158	22	...	...	...	...	...	...	...	...
5
75
39
8
12
2
6
35
1
401
8
10
19
1
5
...
10
2	49
7
7
...
34
102
63
1
6
...
23
38
19
...
2,407	319	5	398	41	5	302	1	55	172	39	1,355

	Western Sandpiper	Least Sandpiper	Purple Sandpiper	Dunlin	peep, sp.	sandpiper, sp.	Short-billed Dowitcher	Long-billed Dowitcher	dowitcher, sp.
1. Chincoteague	2	35	...	1,751	300	300	...	5	...
2. Wachapreague	36	1	...	8,110	...	...	5	...	9
3. Cape Charles/Kiptopeke	95	8	6	7,679	...	...	22	...	...
4. CBBT	26	...	...	...	...	...	...
5. Little Creek	11	121	...	...	1	...	...
6. Back Bay	41	10	...	4	...	...
7. Nansemond River	...	104	1	...	...	...	...	...	...
8. Newport News	CW	...	...	97	...	...	CW	...	...
9. Mathews County	530	...	...	...	...	...
10. Williamsburg
11. Hopewell
12. Walkerton	50	...	...	...	...
13. Washington's Birthplace
14. Brooke
15. Fort Belvoir
16. Central Loudoun
17. The Plains
18. Manassas-Bull Run
19. Chancellorsville
20. Lake Anna
21. Gordonsville
22. Charlottesville
23. Warren
24. Darlington Heights
25. Banister WMA	...	15	...	1	...	1	...	3	...
26. Lynchburg
27. Danville
28. Calmes Neck
29. N. Shenandoah Valley
30. Shenandoah NP-Luray
31. Big Flat Mountain
32. Rockingham County
33. Augusta County
34. Waynesboro
35. Lexington
36. Peaks of Otter
37. Fincastle
38. Roanoke
39. Blacksburg
40. Giles County
41. Tazewell
42. Mount Rogers/Whitetop
43. Glade Spring
44. Blackford
45. Bristol
46. Breaks Interstate Park
47. Wise County
Total individuals:	133	163	44	18,330	360	301	32	5	12

	Common Snipe	American Woodcock	Pomarine Jaeger	Parasitic Jaeger	Laughing Gull	Franklin's Gull	Little Gull	Black-headed Gull	Bonaparte's Gull	Black-tailed Gull	Mew Gull	Ring-billed Gull
...	...	11	...	...	...	...	...	...	CW	...	...	1,185
...	...	...	...	...	...	...	...	...	70	...	...	346
...	8	41	...	...	1	...	...	...	941	...	...	3,807
...	...	...	1	1	550	...	3	CW	435	...	1	4,400
...	...	1	...	...	65	...	1	2	763	1	...	11,300
85	6	...	1	51	...	...	...	...	2,530	...	...	2,720
3	1	...	...	5	...	...	...	...	...	...	...	25,098
2	...	...	...	245	1	...	...	...	31	...	...	9,574
...	...	...	...	21	...	...	...	...	100	...	...	1,225
...	1	...	...	50	...	...	...	...	...	...	...	1,853
1	1	...	...	1,909	...	...	...	...	1	...	...	3,475
32	1	...	...	...	...	...	...	...	...	...	...	132
16	1	...	...	3	...	...	...	...	15	...	...	1,737
...	...	...	...	134	...	...	...	...	4	...	...	1,300
28	...	...	...	1	...	...	...	...	7	...	...	6,718
1	1	...	...	...	...	...	...	...	...	...	...	17
3	2	...	...	...	...	...	...	...	...	...	...	99
2	1	...	...	...	...	...	...	...	...	...	...	528
...	...	...	...	...	...	...	...	...	...	...	...	293
...	...	...	...	...	...	...	...	...	2	...	...	766
...
1	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	1
...	2	...	...	...	...	...	...	...	...	...	...	1
4	...	...	...	...	...	...	...	...	6	...	...	860
...
...	1	...	...	...	...	...	...	...	...	...	...	13
6	...	...	...	...	...	...	...	...	...	...	...	18
3	...	...	...	...	...	...	...	...	...	...	...	CW
4	...	...	...	...	...	...	...	...	...	...	...	...
...	2	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	4
2	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	57
...
7	...	...	...	...	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...	...	...	...	...	31
1	...	...	...	...	...	...	...	...	...	...	...	107
...	...	...	...	...	...	...	...	...	...	...	...	31
...
...
16	...	...	...	...	...	...	...	...	...	...	...	3
...
3	...	...	...	...	...	...	...	...	23	...	...	297
...
...
237	73	1	2	3,035	1	4	2	4,928	1	1	77,996	...

	Herring Gull	Yellow-legged Gull	Thayer's Gull	Iceland Gull	Lesser Black-backed Gull	Great Black-backed Gull	Black-legged Kittiwake	glaucous x herring gull hybrid	gull, sp.
1. Chincoteague	3,200	...	...	...	...	229	...	...	...
2. Wachapreague	2,349	...	...	1	...	34	...	...	258
3. Cape Charles/Kiptopeke	3,324	...	...	...	3	1,214	...	...	...
4. CBBT	8,900	CW	CW	1	30	1,250	CW	1	4,000
5. Little Creek	1,050	...	1	...	9	780	...	...	2,000
6. Back Bay	580	...	...	...	34	274	...	...	...
7. Nansemond River	10,640	...	...	...	10	49	...	...	...
8. Newport News	554	...	...	...	...	317	2	...	423
9. Mathews County	525	...	...	...	...	87	...	...	...
10. Williamsburg	52	...	...	...	CW	109	...	...	...
11. Hopewell	322	...	...	...	1	92	...	...	...
12. Walkerton	...	...	...	...	...	...	...	...	20
13. Washington's Birthplace	74	...	...	...	...	11	...	...	...
14. Brooke	200	...	...	...	1	64	...	...	...
15. Fort Belvoir	953	...	...	...	1	118	...	...	334
16. Central Loudoun	7	...	...	...	...	...	...	...	...
17. The Plains	184	...	...	...	CW	9	...	...	...
18. Manassas-Bull Run	3	...	...	...	...	...	...	...	10
19. Chancellorsville	...	...	...	...	...	...	...	...	...
20. Lake Anna	214	...	...	...	...	49	...	...	118
21. Gordonsville	...	...	...	...	...	...	...	...	...
22. Charlottesville	...	...	...	...	...	...	...	...	...
23. Warren	...	...	...	...	...	...	...	...	...
24. Darlington Heights	...	...	...	...	...	...	...	...	...
25. Banister WMA	...	...	...	...	...	...	...	...	...
26. Lynchburg	...	...	...	...	...	...	...	...	...
27. Danville	...	...	...	...	...	...	...	...	...
28. Calmes Neck	...	...	...	...	...	...	...	...	...
29. N. Shenandoah Valley	...	...	...	...	...	...	...	...	...
30. Shenandoah NP-Luray	...	...	...	...	...	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	...	...	...	...	...	...	...	...
33. Augusta County	...	...	...	...	...	...	...	...	...
34. Waynesboro	...	...	...	...	...	...	...	...	...
35. Lexington	...	...	...	...	...	...	...	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...
37. Fincastle	...	...	...	...	...	...	...	...	...
38. Roanoke	...	...	...	...	...	...	...	...	...
39. Blacksburg	...	...	...	...	...	...	...	...	...
40. Giles County	...	...	...	...	...	...	...	...	...
41. Tazewell	...	...	...	...	...	...	...	...	...
42. Mount Rogers/Whitetop	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	...	...	...	...	...	...	...	...
44. Blackford	...	...	...	...	...	...	...	...	...
45. Bristol	1	...	...	...	...	...	...	...	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...
Total individuals:	33,132	CW	1	2	89	4,686	2	1	7,163

	Royal Tern	Forster's Tern	Black Skimmer	Rock Dove	Mourning Dove	Barn Owl	Eastern Screech-Owl	Great Horned Owl	Barred Owl	Long-eared Owl	Short-eared Owl	Northern Saw-whet Owl
...	456	...	121	266	...	24	19	...	...	...	1	...
...	108	...	29	367	...	1	...	...	...	...	...	...
...	132	...	148	470	...	9	3	...	...	...	...	...
...	CW	...	2	...	...	...	...	...	...	...	...	...
1	204	32	970	465	...	34	8	4	5	...	...	...
...	684	...	60	415	...	10	18	5	...	...	...	...
...	1	...	374	195	...	1	2	...	...	...	...	...
...	35	...	929	555	...	1	5	...	...	...	...	...
CW	96	...	3	347	...	3	3	...	...	...	...	...
1	254	...	47	211	...	3	12	2	...	...	...	...
...	9	...	81	636	...	2	1	9	7	...	...	...
...	...	...	2	450	...	4	7	6	...	...	...	...
...	162	...	7	427	...	4	4	2	...	...	...	...
...	6	...	5	300	...	...	...	1	...	...	...	...
...	...	...	195	1,053	...	12	12	18	...	...	...	...
...	...	...	229	432	...	2	1	3	...	...	...	...
...	...	...	355	603	...	3	30	10	9	...	...	1
...	...	...	209	577	...	2	6	7	1	...	...	3
...	...	...	21	127	...	1	1	1	...	...	...	...
...	...	...	3	171	...	...	...	...	...	...	...	...
...	...	...	371	316	...	1	1	...	...	...	...	...
...	...	...	229	330	...	5	5	1	...	...	...	...
...	...	...	175	377	...	10	4	1	...	...	...	...
...	...	...	197	904	...	8	5	3	...	...	...	...
...	...	...	51	214	...	1	9	8	...	...	...	1
...	...	...	191	207	...	18	8	1	...	...	...	...
...	...	...	176	440	...	1	...	2	...	...	...	...
...	...	...	712	411	...	7	3	3	...	...	...	...
...	...	...	2,147	1,051	...	33	3	2	CW	...	...	3
...	...	...	349	735	...	13	3	5	...	...	...	...
...	...	...	...	...	...	9	...	1	...	...	...	...
...	...	...	306	686	...	5	2	...	...	...	...	...
...	...	...	898	996	...	2	2	...	...	...	...	...
...	...	...	200	296	...	3	2	...	...	...	CW	...
...	...	...	361	93	...	20	3	1	...	...	...	...
...
...	...	...	241	232	...	5	2	...	...	...	...	...
...	...	...	785	281	...	...	...	...	...	...	...	...
...	...	...	287	1,346	...	1	10	5	...	...	...	...
...	...	...	105	31	...	5	1	3	...	...	...	...
...	...	...	109	43	...	3	...	...	...	...	...	...
...	...	...	...	131	...	...	...	...	...	...	...	...
...	...	...	381	721	...	3	3	...	...	...	...	...
...	...	...	6	177	...	4	5	...	...	...	...	...
...	...	...	130	343	...	9	13	...	...	...	...	...
...	...	...	86	77	...	1	2	...	...	...	...	...
...	...	...	38	92	...	...	...	...	...	...	...	...
2	2,147	32	12,321	18,597	15	312	201	96	6	1	8	...

	owl, sp.	Rufous Hummingbird	<i>Selasphorus</i> , sp.	Belted Kingfisher	Red-head Woodpecker	Red-bellied Woodpecker	Yellow-bellied Sapsucker	Downy Woodpecker	Hairy Woodpecker
1. Chincoteague	20	...	48	9	63	17
2. Wachapreague	11	...	13	3	4	...
3. Cape Charles/Kiptopeke	1	...	...	18	...	70	16	45	6
4. CBBT
5. Little Creek	34	...	61	12	38	4
6. Back Bay	18	...	47	5	44	9
7. Nansemond River	14	...	39	8	19	5
8. Newport News	24	...	40	6	21	2
9. Mathews County	22	1	55	19	24	...
10. Williamsburg	1	23	16	69	30	56	7
11. Hopewell	29	18	203	79	116	19
12. Walkerton	14	9	57	35	36	7
13. Washington's Birthplace	12	...	45	15	36	7
14. Brooke	15	2	84	15	75	17
15. Fort Belvoir	1	51	2	464	68	396	56
16. Central Loudoun	...	1	...	24	8	265	78	236	19
17. The Plains	19	10	222	100	225	33
18. Manassas-Bull Run	13	4	211	40	152	27
19. Chancellorsville	10	...	24	8	26	6
20. Lake Anna	5	...	17	2	12	4
21. Gordonsville	9	...	23	13	29	4
22. Charlottesville	17	...	160	83	134	17
23. Warren	16	...	77	50	96	9
24. Darlington Heights	4	...	39	15	46	3
25. Banister WMA	4	9	22	8	18	...
26. Lynchburg	1	20	3	66	38	66	10
27. Danville	5	1	34	9	18	4
28. Calmes Neck	25	9	213	100	172	22
29. N. Shenandoah Valley	36	9	151	52	125	15
30. Shenandoah NP-Luray	20	...	64	29	117	23
31. Big Flat Mountain	18	13	21	5
32. Rockingham County	7	...	33	9	33	4
33. Augusta County	9	1	52	10	41	5
34. Waynesboro	CW	6	1	43	18	51	7
35. Lexington	16	...	33	15	48	9
36. Peaks of Otter	8	9	10	2
37. Fincastle	13	...	34	21	43	4
38. Roanoke	15	...	33	22	55	4
39. Blacksburg	25	1	86	38	128	43
40. Giles County	4	...	29	7	28	3
41. Tazewell	2	...	3	1	12	2
42. Mount Rogers/Whitetop	10	1	16	3
43. Glade Spring	13	1	21	9	47	4
44. Blackford	7	2	7	...	22	4
45. Bristol	...	1	...	11	1	30	10	42	9
46. Breaks Interstate Park	3	...	5	3	20	11
47. Wise County	3	2	13	6	36	7
Total individuals:	1	2	3	666	110	3,341	1,137	3,098	478

	Northern (Red-shafted) Flicker	Northern (Yellow-shafted) Flicker	Pileated Woodpecker	small woodpecker, sp.	woodpecker, sp.	Eastern Phoebe	Loggerhead Shrike	Blue-headed Vireo	Blue Jay	American Crow	Fish Crow	crow, sp.
...	139	12	...	...	...	11	...	...	83	360	1	...
...	28	...	...	...	...	...	...	...	14	480	...	...
...	184	6	...	...	...	15	...	1	146	538	10	...
...
...	63	27	...	...	...	2	...	5	122	927	1,180	300
...	70	15	...	...	...	15	...	1	102	354	31	...
...	24	8	...	...	...	3	...	1	58	222	23	...
...	60	6	...	1	...	...	...	...	109	677	11	25
...	49	9	...	...	...	8	...	...	86	525	1	...
...	89	23	...	...	...	7	...	...	116	184	...	...
...	331	35	...	...	...	31	...	...	327	629	5	45
...	97	17	...	...	...	27	...	...	112	672	...	6
...	87	16	...	...	...	10	...	...	49	664	10	...
...	74	29	...	...	...	7	...	...	136	835	3	...
...	331	86	...	...	...	19	...	...	382	2,931	366	2,775
...	144	43	...	...	...	3	...	...	317	852	3	189
...	257	59	...	...	...	17	...	...	734	1,857	52	446
...	177	35	...	...	...	4	...	...	638	1,592	73	354
...	16	13	...	...	...	3	...	...	55	303	...	...
...	21	2	...	...	...	2	...	...	112	263	1	...
...	46	11	...	...	...	1	...	...	67	795	...	...
...	156	65	...	...	...	18	1	...	674	1,403	223	...
...	65	35	...	...	...	14	...	...	236	906	2	...
...	27	16	...	...	...	15	...	...	49	732	...	...
...	28	8	...	...	...	12	...	...	53	211	...	...
...	56	28	...	...	...	20	...	...	183	781	9	...
...	29	6	...	...	...	2	...	...	97	392	...	...
...	137	67	...	...	...	1	4	...	341	840	...	...
...	1	148	71	...	...	5	3	...	319	2,172	2	...
...	53	59	...	...	...	12	...	...	243	1,951	38	...
...	4	22	...	...	...	...	...	...	1	27	...	...
...	14	17	...	...	...	4	...	...	117	616	...	...
...	21	9	...	...	...	3	...	...	303	1,658	1	...
...	40	24	...	...	...	6	1	...	147	917	8	...
...	39	35	...	...	...	3	1	...	178	972	...	...
...	10	2	...	...	...	4	...	...	5	40	...	...
...	57	29	...	...	...	9	...	...	231	825	...	...
...	25	17	...	...	...	4	...	...	72	722	...	...
...	80	55	1	...	...	8	2	...	372	1,206	...	...
...	13	6	...	...	...	6	...	...	130	169	...	...
...	1	6	...	...	...	...	...	...	25	661	...	...
...	1	8	...	...	...	2	...	...	48	180	...	...
...	27	18	...	...	...	6	4	...	226	683	...	...
...	16	5	...	...	...	3	...	...	87	642	...	...
...	23	21	...	...	...	13	...	...	291	1,672	...	...
...	9	25	...	...	...	13	...	...	17	117	...	...
...	12	20	...	...	...	2	...	...	81	697	...	...
...	1	3,378	1,124	1	1	370	16	8	8,291	36,832	2,053	4,140

	Common Raven	Horned Lark	Tree Swallow	Carolina Chickadee	Black-capped Chickadee	chickadee, sp.	Tufted Titmouse	Red-breasted Nuthatch	White-breasted Nuthatch
1. Chincoteague	...	8	4	184	...	...	36	8	7
2. Wachapreague	...	...	...	89	...	...	12	5	...
3. Cape Charles/Kiptopeke	...	55	12	258	...	...	44	16	2
4. CBBT	...	...	...	...	...	...	...	...	...
5. Little Creek	...	...	...	212	...	...	129	3	18
6. Back Bay	...	...	7	191	...	...	59	10	24
7. Nansemond River	...	7	...	95	...	...	43	3	2
8. Newport News	...	...	...	206	...	...	78	...	6
9. Mathews County	...	...	...	135	...	...	118	...	...
10. Williamsburg	...	...	...	187	...	...	129	...	194
11. Hopewell	...	20	...	441	...	...	286	1	102
12. Walkerton	...	35	...	89	...	...	86	2	30
13. Washington's Birthplace	...	22	...	70	...	...	99	6	35
14. Brooke	...	...	...	300	...	...	200	2	44
15. Fort Belvoir	...	...	...	1,728	...	...	1,198	8	383
16. Central Loudoun	1	...	...	490	...	...	386	6	195
17. The Plains	13	1	...	789	...	...	567	11	218
18. Manassas-Bull Run	1	...	...	657	...	...	542	31	151
19. Chancellorsville	...	...	...	85	...	...	81	...	38
20. Lake Anna	...	...	...	80	...	...	38	2	13
21. Gordonsville	2	...	...	71	...	...	66	...	20
22. Charlottesville	6	19	...	458	...	...	411	21	155
23. Warren	17	...	...	265	...	...	167	10	74
24. Darlington Heights	...	40	...	121	...	...	76	1	30
25. Banister WMA	...	...	...	64	...	...	42	8	19
26. Lynchburg	10	...	...	181	...	...	179	2	72
27. Danville	...	...	...	120	...	...	114	...	19
28. Calmes Neck	24	...	...	775	4	...	500	4	260
29. N. Shenandoah Valley	8	65	...	844	24	...	451	19	277
30. Shenandoah NP-Luray	62	31	...	409	45	...	255	12	121
31. Big Flat Mountain	6	...	...	47	...	...	35	1	21
32. Rockingham County	11	42	...	116	25	...	103	2	44
33. Augusta County	5	2	...	225	2	...	151	6	65
34. Waynesboro	7	50	...	185	...	...	171	2	55
35. Lexington	6	...	...	69	21	97	122	23	48
36. Peaks of Otter	5	...	...	13	5	...	8	2	17
37. Fincastle	4	...	...	192	3	...	98	9	64
38. Roanoke	2	...	...	242	2	...	124	5	50
39. Blacksburg	29	...	...	362	11	113	343	10	170
40. Giles County	4	...	...	69	32	8	113	2	53
41. Tazewell	2	...	...	48	...	...	46	2	23
42. Mount Rogers/Whitetop	9	...	...	43	4	...	34	...	27
43. Glade Spring	3	...	...	80	2	...	86	2	43
44. Blackford	11	...	...	50	1	...	42	1	16
45. Bristol	4	...	...	148	...	...	107	14	27
46. Breaks Interstate Park	4	...	...	36	3	...	71	...	39
47. Wise County	5	18	...	117	...	...	133	8	64
Total individuals:	261	415	23	11,636	184	218	8,179	280	3,335

	Brown-headed Nuthatch	Brown Creeper	Carolina Wren	House Wren	Winter Wren	Sedge Wren	Marsh Wren	Golden-crowned Kinglet	Ruby-crowned Kinglet	kinglet, sp.	Blue-gray Gnatcatcher	Eastern Bluebird
55	16	156	1	24	1	2	97	16	...	...	...	101
3	...	40	...	2	...	1	6	3	...	...	...	274
2	15	286	6	12	5	2	72	21	...	...	1	384
...
42	15	110	2	15	2	4	65	59	...	...	...	4
59	8	140	3	8	25	24	33	41	...	...	...	148
3	1	57	1	6	...	2	18	15	...	...	...	83
1	1	79	...	1	...	...	17	14	...	...	1	59
23	8	97	...	3	1	...	25	36	1	...	...	714
36	6	141	...	4	...	1	63	76	...	...	2	182
...	10	296	1	21	...	...	99	162	...	...	...	608
...	8	63	...	15	...	...	74	32	...	...	...	201
...	12	69	1	5	...	1	58	38	...	...	...	313
...	5	111	...	7	...	2	30	32	...	...	1	250
...	71	542	...	38	...	...	230	95	...	...	...	629
...	34	150	...	4	...	...	54	21	...	...	...	381
...	14	309	...	7	...	...	126	34	...	...	...	722
...	14	228	...	8	...	...	46	13	...	...	...	420
...	9	37	...	...	...	...	30	7	...	...	...	158
...	...	29	...	...	...	...	31	9	...	...	...	78
...	3	36	...	...	...	...	47	8	...	...	...	278
...	7	316	...	16	...	...	140	85	...	...	...	470
...	7	128	...	11	...	...	53	35	...	...	...	236
...	1	39	...	1	...	...	61	61	...	...	...	320
7	4	20	...	7	...	...	7	13	...	...	...	91
...	4	154	...	5	...	...	45	31	...	...	...	268
6	2	53	3	1	...	...	9	9	...	...	...	170
...	28	128	...	8	...	...	35	9	...	...	...	843
...	34	250	...	9	...	...	112	10	...	...	...	668
...	18	124	...	9	...	...	115	71	...	...	...	321
...	3	16	...	7	...	...	13	...	...	...	...	23
...	9	22	...	7	...	...	55	4	...	...	...	140
...	4	8	...	2	...	1	32	4	...	...	...	279
...	5	77	...	4	...	...	51	11	...	...	...	161
...	8	79	...	6	...	...	71	5	...	...	...	156
...	5	15	...	1	...	...	9	6	...	...	...	39
...	3	88	...	...	...	...	36	16	...	...	...	217
...	16	138	...	3	...	...	62	18	...	...	...	85
...	37	261	...	50	...	...	228	15	1	1	...	362
...	7	33	...	11	...	...	47	1	...	...	...	92
...	...	14	...	3	...	...	5	...	...	...	...	13
...	2	16	...	2	...	...	5	...	...	...	...	46
...	3	53	...	3	...	...	19	...	...	...	...	161
...	1	16	...	3	...	...	6	...	...	...	...	85
...	6	61	...	10	...	...	65	8	...	...	...	207
...	...	24	...	7	...	...	9	1	...	...	...	10
...	6	53	...	7	...	...	12	...	...	...	...	49
237	470	5,152	18	373	34	40	2,523	1,145	2	6	11,499	

	Hermit Thrush	American Robin	Gray Catbird	Northern Mockingbird	Brown Thrasher	European Starling	American Pipit	Cedar Waxwing	Orange-crowned Warbler
1. Chincoteague	81	3,200	17	52	21	1,800	126	41	1
2. Wachapreague	1	20	4	45	...	2,779	...	...	...
3. Cape Charles/Kiptopeke	81	55	24	91	13	5,750	313	56	3
4. CBBT	...	...	...	...	...	...	...	...	...
5. Little Creek	35	713	6	61	10	2,875	...	135	4
6. Back Bay	44	301	48	70	25	900	81	41	7
7. Nansemond River	15	1,321	1	40	6	829	13	112	2
8. Newport News	2	117	1	70	9	2,606	...	...	...
9. Mathews County	35	360	1	114	22	563	...	140	...
10. Williamsburg	11	191	3	73	11	1,286	9	87	...
11. Hopewell	33	407	3	150	14	1,749	136	296	...
12. Walkerton	28	3,362	...	64	10	925	70	136	...
13. Washington's Birthplace	25	105	...	50	3	604	31	87	...
14. Brooke	12	400	1	55	1	2,100	...	400	...
15. Fort Belvoir	125	1,665	1	239	4	3,370	...	542	...
16. Central Loudoun	29	364	1	290	1	6,893	CW	65	...
17. The Plains	52	1,725	5	331	1	15,397	51	365	...
18. Manassas-Bull Run	9	712	1	223	1	2,127	...	235	...
19. Chancellorsville	4	123	...	38	...	244	...	45	...
20. Lake Anna	4	270	...	46	...	545	...	35	...
21. Gordonsville	...	90	...	72	1	294	...	322	...
22. Charlottesville	44	472	...	153	2	1,402	...	462	...
23. Warren	30	194	1	128	...	1,482	...	214	...
24. Darlington Heights	12	297	...	74	...	970	...	111	...
25. Banister WMA	1	140	...	28	7	281	20	5	...
26. Lynchburg	6	22	...	126	1	1,881	...	422	...
27. Danville	...	279	...	63	6	1,023	...	190	...
28. Calmes Neck	11	323	1	243	2	6,258	...	102	...
29. N. Shenandoah Valley	9	1,433	...	264	...	54,089	...	614	...
30. Shenandoah NP-Luray	9	53	...	128	...	10,035	CW	5	...
31. Big Flat Mountain	10	1	...	...	...	...	...	...	...
32. Rockingham County	2	25	...	70	1	4,374	...	7	...
33. Augusta County	1	32	...	191	...	5,083	...	27	...
34. Waynesboro	5	70	...	145	CW	1,194	35	8	...
35. Lexington	21	543	...	67	CW	1,444	...	49	...
36. Peaks of Otter	2	15	...	2	...	43	...	16	...
37. Fincastle	14	17	...	159	...	1,204	...	48	...
38. Roanoke	6	118	...	68	...	30,880	...	242	...
39. Blacksburg	16	81	...	163	2	3,496	150	88	...
40. Giles County	2	5	...	32	...	134	125	1	...
41. Tazewell	1	2	...	2	...	431	...	10	...
42. Mount Rogers/Whitotop	2	8	...	16	...	211	...	1	...
43. Glade Spring	...	5	...	98	1	3,865	15	8	...
44. Blackford	...	3	...	36	...	458	...	...	...
45. Bristol	9	22	...	150	...	7,796	...	192	...
46. Breaks Interstate Park	7	20	...	...	1	137	...	...	...
47. Wise County	3	68	...	11	1	292	...	18	...
Total individuals:	8,449	19,749	119	4,591	177	192,099	1,178	5,980	17

	Nashville Warbler	Northern Parula	Yellow-rumped Warbler	Pine Warbler	Prairie Warbler	Palm Warbler	Black-and-white Warbler	Common Yellowthroat	warbler, sp.	Eastern Towhee	American Tree Sparrow	Chipping Sparrow
...	4,380	13	...	23	...	2	...	38	...	45
...	281	2	...	1	...	...	...	6	...	26
1	3,516	17	...	44	...	...	...	42	2	40
...
...	...	1	1,045	20	...	13	...	1	...	20	...	...
...	3,735	15	...	20	...	14	...	75	...	54
...	936	4	...	3	...	...	...	25	...	CW
...	647	11	...	...	...	...	...	28	...	8
...	935	22	...	...	...	...	...	47	...	28
...	505	7	...	1	...	...	...	34	...	115
...	366	8	...	...	...	...	...	74	...	4
...	60	1	...	...	...	...	...	24	...	...
...	119	4	1	...	...	...	...	10	...	9
...	70	...	...	...	...	...	...	6	...	...
...	117	1	...	...	...	...	...	60	11	2
...	72	...	...	...	...	...	...	21	22	1
...	149	...	...	...	...	1	...	30	18	...
...	198	1	...	...	...	...	...	45	1	...
...	4	2	...	...	...	...	...	1	...	...
...	24	1	...	...	...	...	...	1	...	...
...	8	...	...	...	...	...	...	1	...	10
...	121	...	...	2	...	...	...	23	...	10
...	128	...	...	...	...	1	...	14	7	15
...	85	14	...	...	...	...	...	4	...	4
...	31	22	...	...	...	...	...	12	...	1
...	61	...	...	...	...	...	...	36	...	18
...	52	...	...	...	...	...	...	16	...	...
...	20	...	...	...	...	...	...	2	...	...
...	238	4	...	2	...	...	...	2	25	...
...	37	7	...	...	...	1	...	...	2	...
...
...	13	...	...	1	...	...	...	1	...	...
...	7	...	...	...	...	...	...	1	4	...
...	99	...	...	...	...	...	...	4	3	1
...	193	...	...	...	...	...	...	6	...	...
...
...	64	...	...	...	...	...	...	26	...	...
...	17	1	...	...	...	...	...	6	...	1
...	38	1	...	...	1	...	2	54	...	9
...	16	...	...	...	...	...	...	14	...	...
...	3	...	...
...	3	...	...
...	6	...	...	...	...	...	...	14	...	5
...	7	...	...	...	...	...	...	12	...	19
...	30	...	...	...	...	...	...	29	...	3
...	7	...	...	...	...	...	...	5	...	...
...	5	...	...	...	...	...	...	16	4	...
1	1	18,442	177	1	110	1	20	2	891	99	428	...

	Clay-colored Sparrow	Field Sparrow	Vesper Sparrow	Savannah Sparrow	Savannah (Ipswich) Sparrow	Grasshopper Sparrow	Henslow's Sparrow	LeConte's Sparrow	Nelson's Sharp-tailed Sparrow	Saltmarsh Sharp-tailed Sparrow
1. Chincoteague	...	84	5	543	...	CW	...	...	1	1
2. Wachapreague	...	5	...	15	3	...	...	...	...	2
3. Cape Charles/Kiptopeke	...	278	3	227	11	...	...	...	28	23
4. CBBT
5. Little Creek	...	8	...	40	...	...	...	...	...	1
6. Back Bay	...	20	...	204	1	...	...	4	2	...
7. Nansemond River	...	30	...	113	...	...	...	...	...	...
8. Newport News	...	15	...	17	...	...	...	...	...	...
9. Mathews County	...	4	...	3	...	...	...	...	...	...
10. Williamsburg	...	131	...	72	...	...	...	...	...	...
11. Hopewell	...	70	...	121	...	...	...	...	...	...
12. Walkerton	...	65	...	13	...	...	...	...	...	...
13. Washington's Birthplace	...	24	...	13	...	...	...	...	...	...
14. Brooke	...	3	...	7	...	...	...	...	...	...
15. Fort Belvoir	...	134	...	1	...	...	...	...	...	...
16. Central Loudoun	...	53	...	1	...	...	...	...	...	...
17. The Plains	...	109	...	110	...	...	1	...	...	...
18. Manassas-Bull Run	1	214	...	5	...	...	...	...	...	...
19. Chancellorsville	...	13	...	...	...	...	...	...	...	...
20. Lake Anna	...	11	...	1	...	...	...	...	...	...
21. Gordonsville	...	20	...	...	...	...	...	...	...	...
22. Charlottesville	...	81	...	...	...	...	...	...	...	...
23. Warren	...	99	...	23	...	...	...	...	...	...
24. Darlington Heights	...	49	...	18	...	...	...	...	...	...
25. Banister WMA	...	1	...	17	...	...	...	...	...	...
26. Lynchburg	...	19	...	2	...	...	...	...	...	...
27. Danville	...	18	...	...	...	...	...	...	...	...
28. Calmes Neck	...	48	...	3	...	...	...	...	...	...
29. N. Shenandoah Valley	...	83	...	22	...	...	...	...	...	...
30. Shenandoah NP-Luray	...	15	...	...	...	...	...	...	...	...
31. Big Flat Mountain
32. Rockingham County	...	2	...	...	...	...	...	...	...	...
33. Augusta County	...	11	...	...	...	...	...	...	...	...
34. Waynesboro	...	19	...	11	...	...	...	...	...	...
35. Lexington	...	45	...	...	...	...	...	...	...	...
36. Peaks of Otter	...	14	...	...	...	...	...	...	...	...
37. Fincastle	...	25	...	1	...	...	...	...	...	...
38. Roanoke	...	18	...	...	...	...	...	...	...	...
39. Blacksburg	...	48	...	1	...	...	...	...	...	...
40. Giles County	...	4	...	...	...	...	...	...	...	...
41. Tazewell	...	15	...	...	...	...	...	...	...	...
42. Mount Rogers/Whitetop	...	8	...	...	...	...	...	...	...	...
43. Glade Spring	...	22	...	2	...	...	...	...	...	...
44. Blackford	...	9	...	3	...	...	...	...	...	...
45. Bristol	...	34	...	...	...	...	...	...	...	...
46. Breaks Interstate Park	...	5	...	...	...	...	...	...	...	...
47. Wise County	...	24	...	...	...	...	...	...	...	...
Total individuals:	1	2,007	8	1,609	15	CW	1	4	31	27

sharp-tailed sparrow, sp.	Seaside Sparrow	Fox Sparrow	Song Sparrow	Lincoln's Sparrow	Swamp Sparrow	White-throated Sparrow	White-crowned Sparrow	sparrow, sp.	Dark-eyed Junco	Dark-eyed (Pink-sided) Junco	Lapland Longspur
...	...	28	488	...	169	737	4	...	310	...	...
6	...	7	51	...	1	142	...	...	84	...	...
49	10	78	507	1	131	1,109	...	...	180	...	...
...	1	9	96	...	7	288	...	...	110	...	...
1	...	7	283	...	176	375	...	...	107	...	...
...	...	11	152	...	25	314	...	...	269	...	...
...	76	...	2	222	...	2	225	2	...
...	...	18	102	...	5	469	...	51	1,168	...	...
...	...	11	408	...	173	384	...	...	600	...	...
...	...	28	584	...	36	1,490	10	...	926	...	2
...	...	11	266	...	41	1,137	2	...	855	...	...
...	...	4	136	...	17	469	5	...	355	...	...
...	...	1	150	...	8	225	...	...	450	...	...
...	...	41	1,513	...	190	1,736	23	...	2,137	...	...
...	...	20	146	...	10	652	94	...	1,029	...	...
...	...	15	679	...	25	1,132	29	...	2,057	...	...
...	...	13	502	2	8	462	2	...	1,340	...	...
...	...	3	64	...	...	56	6	...	315	...	...
...	...	2	65	...	10	89	20	...	275	...	...
...	...	1	86	...	12	86	12	...	376	...	...
...	...	22	427	...	17	842	36	...	788	...	...
...	...	13	404	...	31	663	80	...	539	...	...
...	...	2	92	...	3	167	36	...	713	...	...
...	...	7	41	...	3	55	...	...	240	...	...
...	...	5	121	...	3	279	12	...	354	...	...
...	...	4	20	...	...	178	...	...	211	...	...
...	...	6	176	...	5	505	70	...	748	...	...
...	...	3	244	...	19	591	128	...	1,268	...	...
...	...	3	192	1	2	231	126	...	658	...	...
...	...	1	44	...	...	7	...	...	96	...	...
...	45	...	...	110	104	...	217	...	CW
...	...	6	69	...	...	455	146	...	523	...	...
...	...	2	137	...	22	266	266	...	487	...	CW
...	...	11	79	...	...	388	27	...	544	...	...
...	7	...	...	42	...	...	153	...	...
...	...	11	162	...	4	418	93	...	381	...	...
...	...	2	112	...	2	168	...	...	205	...	...
...	...	5	383	...	9	504	151	6	623	...	...
...	...	7	60	...	7	105	28	...	292	...	...
...	...	2	57	...	...	24	3	...	18	...	...
...	87	...	3	19	6	...	285	...	...
...	...	2	149	...	2	229	172	...	155	...	...
...	103	...	1	45	90	...	142	...	...
...	212	...	2	226	148	...	431	...	...
...	...	1	43	...	...	75	...	...	79	...	...
...	...	1	160	...	...	60	...	...	90	...	...
56	12	424	9,940	4	1,181	18,289	1,929	59	23,408	2	2

	Snow Bunting	Northern Cardinal	Dickcissel	Red-winged Blackbird	Eastern Meadowlark	Rusty Blackbird	Brewer's Blackbird	Common Grackle	Boat-tailed Grackle
1. Chincoteague	...	232	...	7,060	531	3	...	7,891	422
2. Wachapreague	...	102	...	2,559	111	...	...	1,826	92
3. Cape Charles/Kiptopeke	...	418	...	8,040	96	1	...	3,347	293
4. CBBT	CW	...	...	...	...	...
5. Little Creek	...	99	...	3,110	...	40	...	1,180	134
6. Back Bay	...	108	1	2,265	68	1	...	290	411
7. Nansemond River	...	92	...	633	48	2	...	4,408	21
8. Newport News	...	118	...	452	1	...	...	746	155
9. Mathews County	...	259	...	688	74	...	...	68	6
10. Williamsburg	...	192	...	1,148	40	...	...	1,851	...
11. Hopewell	...	500	...	1,396	125	...	...	112	...
12. Walkerton	...	215	...	6,258	132	10	...	8,006	...
13. Washington's Birthplace	...	181	...	1,544	66	...	...	1,945	...
14. Brooke	...	159	...	550	6	...	...	350	...
15. Fort Belvoir	...	1,101	...	1,512	4	35	...	1,096	...
16. Central Loudoun	...	622	...	3,101	2	61	...	6,024	...
17. The Plains	...	653	...	1,330	40	...	...	71,074	...
18. Manassas-Bull Run	...	584	...	24	1	1	...	7	...
19. Chancellorsville	...	45	...	125	...	...	...	1	...
20. Lake Anna	...	111	...	...	...	...	...	...	...
21. Gordonsville	...	122	...	...	3	...	...	...	...
22. Charlottesville	...	450	...	1	1	1	...	23	...
23. Warren	...	329	...	...	166	12	...	4	...
24. Darlington Heights	...	193	...	292	89	...	...	9	...
25. Banister WMA	...	63	...	50	7	26	...	11	...
26. Lynchburg	...	207	...	...	19	...	...	16	...
27. Danville	...	183	...	22	...	...	...	34	...
28. Calmes Neck	...	689	...	13	...	...	...	141	...
29. N. Shenandoah Valley	...	2	424	...	289	7	4	3,951	...
30. Shenandoah NP-Luray	...	142	...	1,080	28	25	3	396	...
31. Big Flat Mountain	...	19	...	...	...	...	...	...	...
32. Rockingham County	...	147	...	...	23	...	...	10	...
33. Augusta County	...	303	...	CW	10	...	...	16	...
34. Waynesboro	...	246	...	11	9	...	...	1	...
35. Lexington	...	221	...	...	...	...	...	1	...
36. Peaks of Otter	...	12	...	...	...	...	...	...	...
37. Fincastle	...	217	...	4	36	...	...	31	...
38. Roanoke	...	187	...	...	...	...	...	...	...
39. Blacksburg	...	340	...	20	82	...	...	...	...
40. Giles County	...	113	...	...	8	1	...	...	...
41. Tazewell	...	44	...	...	...	6	...	3	...
42. Mount Rogers/Whitetop	...	20	...	...	...	...	...	...	...
43. Glade Spring	...	162	...	...	70	...	...	1	...
44. Blackford	...	98	...	2	12	...	...	...	...
45. Bristol	...	187	...	...	43	...	...	2,000	...
46. Breaks Interstate Park	...	37	...	...	...	...	...	...	...
47. Wise County	...	48	...	3	...	...	...	21	...
Total individuals:	2	10,994	1	43,582	1,958	229	3	116,891	1,534

Brown-headed Cowbird	blackbird, sp.	small blackbird, sp.	Baltimore Oriole	Purple Finch	House Finch	Red Crossbill	Common Redpoll	Pine Siskin	American Goldfinch	Evening Grosbeak	House Sparrow
3	87	...	...	10	123	...	...	2	510	...	524
400	...	613	...	10	62	...	...	...	140	...	16
2,736	1,485	...	1	...	64	...	...	...	340	...	30
...
114	2	117	...	...	8	199	...	44
65	2	236	...	1	...	107	...	24
68	6	...	...	...	...	66	...	CW
102	135	...	...	...	138	...	99
2	1	175	...	1	1	291	...	60
206	CW	84	...	...	...	199	...	32
33	2	5	383	...	...	2	246	...	43
7	55	...	...	...	32	...	...	...	172	...	32
15	1	99	...	...	...	59	...	44
10	250	...	...	...	250	...	80
232	44	...	CW	9	526	...	...	1	805	...	490
3,010	40	373	...	...	2	257	...	188
928	42	491	...	...	...	541	...	95
...	6	...	...	17	349	...	...	5	299	...	273
...	5	40	...	...	3	65	...	12
...	1	33	...	...	...	82	...	45
...	1	51	...	...	...	36	...	4
...	45	149	...	...	2	557	...	82
9	53	83	...	...	...	210	...	36
1,128	8	58	...	...	...	198	...	46
...	2	18	...	...	1	26	...	15
5	23	205	...	...	...	168	...	91
...	74	45	...	17	2	99	4	35
53	95	264	...	...	...	389	...	221
229	131	819	...	...	...	809	7	259
920	3	160	...	...	...	319	1	210
...	6	...	...	...	...	10	...	...
20	16	176	3	...	10	114	...	330
3	14	354	...	...	...	196	...	283
2	31	125	...	...	...	172	...	151
...	67	138	...	...	...	165	...	12
...	21	13	...	...	...	6	...	...
5	66	189	...	...	...	129	CW	35
...	6	167	...	...	...	174	CW	105
178	69	478	...	...	...	505	...	282
...	2	...	...	17	40	...	...	...	103	...	49
...	46	...	...	...	82	...	214
...	10	...	...	21	37	56	12
...	13	54	...	...	...	354	...	258
1	2	33	...	...	...	55	...	7
5	12	134	...	...	2	202	...	52
...	1	6	...	...	...	42	1	...
...	5	43	...	...	1	124	...	182
10,489	1,679	613	3	932	7,458	3	19	63	10,047	69	5,105

	Total number of species	Total number of individuals	Dates counts held	Time in the field (a.m. to p.m.)	Temperatures (Fahrenheit)
1. Chincoteague	144	70,464	29 Dec	0500-1900	35-45
2. Wachapreague	107	43,550	15 Dec	0630-1700	45-52
3. Cape Charles/Kiptopeke	156	79,071	30 Dec	0530-1830	26-37
4. CBBT	32	40,428	26 Dec	0645-1700	36-42
5. Little Creek	144	40,856	31 Dec	0500-1730	28-46
6. Back Bay	136	28,778	29 Dec	0515-1730	37-56
7. Nansemond River	114	61,338	2 Jan	0700-1730	22-40
8. Newport News	111	25,791	15 Dec	0530-1645	54-59
9. Mathews County	107	15,279	30 Dec	0500-1730	20-38
10. Williamsburg	108	34,991	16 Dec	0700-1600	36-52
11. Hopewell	108	36,833	16 Dec	0500-1700	30-51
12. Walkerton	90	28,878	30 Dec	0500-1745	20-40
13. Washington's Birthplace	109	25,550	15 Dec	0500-1830	50-59
14. Brooke	96	28,496	14 Dec	0615-1700	56-69
15. Fort Belvoir	113	92,055	30 Dec	0400-1800	21-34
16. Central Loudoun	97	35,518	30 Dec	0645-1715	21-30
17. The Plains	105	114,946	16 Dec	0000-1800	25-55
18. Manassas-Bull Run	87	19,237	22 Dec	0400-1900	28-40
19. Chancellorsville	69	3,830	30 Dec	0500-1730	24-35
20. Lake Anna	70	4,733	5 Jan	0715-1645	27-39
21. Gordonsville	62	8,940	30 Dec	0700-1700	11-27
22. Charlottesville	78	13,463	16 Dec	0630-1800	30-48
23. Warren	80	10,642	30 Dec	0630-1730	15-37
24. Darlington Heights	71	8,121	12 Jan	0515-1915	28-51
25. Banister WMA	79	3,673	16 Dec	0700-1730	30-53
26. Lynchburg	82	8,599	15 Dec	0300-1700	34-56
27. Danville	67	5,660	29 Dec	0800-1700	31-51
28. Calmes Neck	80	20,413	30 Dec	0530-1800	17-43
29. N. Shenandoah Valley	96	79,485	15 Dec	0000-2100	40-55
30. Shenandoah NP-Luray	84	21,304	16 Dec	0645-1700	28-45
31. Big Flat Mountain	36	538	28 Dec	0630-1730	23-46
32. Rockingham County	66	8,945	22 Dec	0630-1700	17-45
33. Augusta County	74	13,881	29 Dec	0500-1700	25-36
34. Waynesboro	76	7,190	5 Jan	0600-1730	22-54
35. Lexington	69	7,346	26 Dec	0515-1645	18-38
36. Peaks of Otter	39	629	18 Dec	0800-1600	50-58
37. Fincastle	72	6,547	16 Dec	0600-1700	35-58
38. Roanoke	72	36,652	17 Dec	0600-1645	35-68
39. Blacksburg	92	16,319	15 Dec	0500-1745	36-52
40. Giles County	64	2,679	30 Dec	0500-1745	18-32
41. Tazewell	54	2,157	29 Dec	0700-1700	21-36
42. Mount Rogers/Whitetop	44	1,417	5 Jan	0830-1700	28-41
43. Glade Spring	71	9,157	5 Jan	0600-1730	16-45
44. Blackford	60	2,536	29 Dec	0500-1800	13-33
45. Bristol	84	18,390	30 Dec	0500-1900	16-34
46. Breaks Interstate Park	48	1,114	15 Dec	0730-1700	40-49
47. Wise County	54	2,690	15 Dec	0700-1715	25-45
Total individuals:	219	1,149,109	...	...	...

Hours on foot	Hours by car	Hours by boat/canoe	Hours by golf cart	Total hours (excluding owing & feeder hours)	Miles on foot	Miles by car	Miles by boat/canoe	Miles by golf cart	Total miles (excluding owing miles)
52.50	41.00	...	...	93.50	84.50	271.50	...	...	356.00
56.25	34.00	4.00	...	94.25	43.00	233.00	2.00	...	278.00
150.00	21.50	3.00	...	174.50	85.50	262.00	24.00	...	371.50
10.25	...	...	...	10.25	2.00	...	...	...	2.00
68.00	15.00	...	...	83.00	38.00	296.00	...	...	334.00
89.00	17.00	...	...	106.00	47.00	325.00	...	...	372.00
28.00	19.25	...	...	47.25	53.00	173.00	...	...	226.00
58.50	43.25	...	...	101.75	46.00	451.50	...	...	497.50
46.00	51.50	1.00	...	98.50	30.00	340.00	2.00	...	372.00
44.50	31.25	0.50	...	76.25	23.75	345.50	2.00	...	371.25
107.50	51.25	3.50	...	162.25	70.00	278.00	15.00	...	363.00
31.00	30.50	...	...	61.50	19.50	325.00	...	...	344.50
35.25	32.50	6.00	...	73.75	30.25	307.00	54.00	...	391.25
44.50	28.00	...	...	72.50	34.00	137.00	...	...	171.00
326.25	31.75	...	...	358.00	218.25	285.00	...	...	503.25
88.00	67.00	...	...	155.00	77.00	456.00	...	...	533.00
84.75	76.50	...	3.00	164.25	65.50	589.50	1.50	...	656.50
151.00	20.00	...	...	171.00	113.00	268.00	...	...	381.00
13.00	25.00	...	...	38.00	11.00	205.00	...	...	216.00
17.50	46.00	...	...	63.50	20.50	309.00	...	...	329.50
18.00	33.00	...	...	51.00	17.00	304.00	...	...	321.00
108.50	28.00	5.50	...	142.00	101.50	216.00	6.00	...	323.50
86.00	18.75	...	...	104.75	67.00	202.00	...	...	269.00
24.25	27.50	...	...	51.75	19.00	347.25	...	...	366.25
18.25	13.00	...	...	31.25	13.50	153.50	...	...	167.00
48.00	37.00	...	...	85.00	43.00	401.00	...	...	444.00
22.00	19.00	...	...	41.00	17.50	176.00	...	...	193.50
26.00	101.00	...	...	127.00	23.00	592.00	...	...	615.00
66.00	141.00	19.00	...	226.00	66.00	1,166.00	24.00	...	1,256.00
56.00	46.75	11.00	...	113.75	43.50	487.00	15.00	...	545.50
19.50	...	...	...	19.50	30.00	...	...	...	30.00
18.00	34.00	...	...	52.00	17.00	243.00	...	...	260.00
15.25	62.00	...	...	77.25	9.75	510.00	...	...	519.75
29.50	41.75	...	...	71.25	21.25	402.00	...	...	423.25
30.00	24.00	...	...	54.00	23.00	170.00	...	...	193.00
11.00	9.00	...	...	20.00	8.00	30.00	...	...	38.00
32.00	27.00	...	...	59.00	26.00	370.00	...	...	396.00
53.00	36.25	1.00	...	90.25	38.75	342.50	4.00	...	385.25
109.50	49.00	...	...	158.50	90.00	396.00	...	...	486.00
13.00	14.00	...	...	27.00	14.00	83.50	...	...	97.50
2.00	18.00	...	...	20.00	5.00	124.00	...	...	129.00
10.50	20.00	...	...	30.50	9.50	247.00	...	...	256.50
17.00	36.75	...	...	53.75	10.50	330.00	...	...	340.50
6.00	41.00	...	...	47.00	3.00	405.00	...	...	408.00
31.00	33.00	...	...	64.00	12.00	394.00	...	...	406.00
48.00	12.00	...	...	60.00	35.00	45.00	...	...	80.00
20.50	27.00	...	...	47.50	19.00	207.00	...	...	226.00
2,440.50	1,632.00	53.50	4.00	4,430.00	1,894.50	14,200.75	144.00	5.50	16,244.75

	Skies (a.m.)	Skies (p.m.)	Water conditions	Wind direction	Wind speed (miles/hour)
1. Chincoteague	PCD	PCD	WOP	NE	0-10
2. Wachapreague	PCR	PCR	WOP	NW	20-45
3. Cape Charles/Kiptopeke	CLR	CLR	WOP	NW	20
4. CBBT	CLD	CLD, LGR	WOP	N	10-35
5. Little Creek	PCD	CLD	SPF, MWO	NW	0-12
6. Back Bay	CLD	PCD	WOP	SW	0-15
7. Nansemond River	PCD	PCD	WOP	NW	0-12
8. Newport News	CLR	CLR	WOP	SW	3-10
9. Mathews County	CLR	CLR	SPF, MWO	NW	5-20
10. Williamsburg	CLR	PCD	WOP	SW	0-7
11. Hopewell	PCD	CLR	WOP	V	2-15
12. Walkerton	CLR	CLR	SPF, MWO	V	0-15
13. Washington's Birthplace	CLR	CLR	WOP	NW	5-30
14. Brooke	CLD	CLD	WOP	SW	0-15
15. Fort Belvoir	CLR	CLR	SPF, MWO	NW	0-30
16. Central Loudoun	PCR	PCR	SPF, MWO	NW	3-17
17. The Plains	PCD, NLR	CLD	WOP	N	2-7
18. Manassas-Bull Run	CLR	CLR	WOP	V	0-10
19. Chancellorsville	CLR	CLR	SWF, MPF	NW	0-10
20. Lake Anna	CLR	PCD	SPF, MWO	calm	...
21. Gordonsville	CLR	CLR	SWF, MPF	NE	0-3
22. Charlottesville	CLD	CLD	WOP	S	0-3
23. Warren	CLR	CLR	SPF, MWO	W	0-15
24. Darlington Heights	CLR	PCR	SPF, MWO	WSW to WNW	0-15
25. Banister WMA	CLR	CLR	WOP	NW	3-5
26. Lynchburg	CLR	CLR	WOP	SW	12
27. Danville	PCD	PCD	WOP	unk	gusts
28. Calmes Neck	CLR	CLR	WOP	NW	10-20
29. N. Shenandoah Valley	CLR	PCD	WOP	NW	10-20
30. Shenandoah NP-Luray	PCD	PCD	SPF, MPF	calm	...
31. Big Flat Mountain	CLR	CLR	WOP	W	0-20
32. Rockingham County	PCD	PCD	SPO, MPF	calm	...
33. Augusta County	CLR	PCD	SWF, MPF	V	4-12
34. Waynesboro	CLR	PCR	SWF, MPF	SW	0-10
35. Lexington	CLR	CLR	SPF, MWO	W	2-5
36. Peaks of Otter	PCD	PCD	WOP	W	15-40
37. Fincastle	PCR	PCR	WOP	calm	...
38. Roanoke	MCR	PCD	WOP	NR	0-22
39. Blacksburg	CLD	CLR	WOP	NW	15-28
40. Giles County	PCD	CLR	SWF, MPF	NW	5-15
41. Tazewell	PCD	CLR	SPF, MWO	NE	5-10
42. Mount Rogers/Whitetop	PCR	PCD	SWF, MPF	V	0-30
43. Glade Spring	CLR	PCD	SWF, MPF	W	5-15
44. Blackford	CLR	CLD, LGS	WOP	SW	0-10
45. Bristol	CLR	CLR	SWF, MWO	NW	0-10
46. Breaks Interstate Park	CLD	PCD	WOP	calm	...
47. Wise County	PCD	PCD	WOP	calm	...
Total individuals:	...	...	...	...	...

Inches of snow on the ground	Longitude-latitude of count circle center	Number of field observers	Number of field parties (non-owling)	Number of feeder observers	Number of hours at feeders	Hours owling	Miles owling
...	37°58'N 75°22'W	28	17	...	...	5.00	15.00
...	37°40'N 75°42'W	20	10	1	1.00	2.25	0.50
...	37°12'N 75°56'W	43	10-23	...	...	3.00	9.00
...	37°05'N 76°08'W	7	1	...	...	...	...
...	36°51'N 76°06'W	21	9-14	...	...	5.00	29.00
...	36°39'N 76°00'W	28	11-17	...	...	3.00	20.00
...	36°52'N 76°26'W	8	5	...	...	...	...
...	37°05'N 76°25'W	35	13	...	...	2.75	7.00
...	37°25'N 76°18'W	48	11	...	...	4.00	30.00
...	37°17'N 76°42'W	29	9	...	...	2.00	1.00
...	37°23'N 77°17'W	51	29	2	1.50	1.75	7.50
...	37°46'N 77°02'W	28	4-8	...	...	2.50	3.50
...	38°07'N 76°57'W	20	9-10	...	...	6.00	47.75
...	38°22'N 77°20'W	21	8-9	...	...	...	...
...	38°41'N 77°12'W	170	59-62	2	8.00	25.50	76.75
...	39°06'N 77°38'W	71	18-29	2	6.00	2.00	1.50
...	38°48'N 77°52'W	60	18-20	...	...	18.00	92.00
...	38°50'N 77°26'W	97	20-27	1	1.00	2.75	2.00
...	38°16'N 77°40'W	12	5	...	...	2.00	10.00
0-1	38°05'N 77°49'W	9	5-7	...	...	...	...
...	38°09'N 78°12'W	12	6	...	...	1.00	7.00
...	38°04'N 78°34'W	23	18-19	...	...	1.50	6.00
...	37°51'N 78°33'W	18	13	...	...	1.25	3.50
...	37°12'N 78°37'W	22	6	4	2.00	2.00	26.00
...	36°43'N 78°48'W	7	3-4	1	4.00	2.00	10.00
...	37°24'N 79°11'W	41	13-14	1	5.00	9.00	56.00
...	36°34'N 79°25'W	19	10	5	8.00	...	...
...	39°07'N 77°54'W	37	16-17	5	20.00	4.50	10.75
...	39°03'N 78°10'W	80	25	...	...	21.00	27.00
...	38°35'N 78°28'W	44	14-15	7	7.50	2.50	11.50
...	38°11'N 78°43'W	2	2	...	...	1.00	2.00
...	38°26'N 79°02'W	20	1-8	...	...	3.00	0.50
...	38°12'N 78°59'W	27	9-10	1	1.50	3.50	5.00
...	37°59'N 78°57'W	32	10-11	1	1.00	1.00	4.00
...	37°51'N 79°29'W	14	5-10	2	3.00	3.00	12.00
...	37°27'N 79°36'W	9	4	...	...	...	...
...	37°31'N 79°52'W	25	13	...	...	2.00	NR
...	37°18'N 79°56'W	31	NR	3	13.75	0.50	5.00
...	37°12'N 80°28'W	48	22-25	7	15.00	12.00	37.00
0-1	37°19'N 80°38'W	8	4	2	1.50	...	...
...	37°08'N 81°30'W	4	3	1	6.00	...	...
...	36°39'N 81°35'W	7	4	...	...	...	...
...	36°47'N 81°47'W	17	2-5	...	...	2.00	2.00
...	37°00'N 81°55'W	11	4	...	...	1.00	1.00
...	36°35'N 82°06'W	18	6	...	...	5.50	45.00
...	37°15'N 82°13'W	7	6-7	...	...	...	...
...	36°57'N 82°39'W	14	8	1	4.00	...	...
...	...	1403	208-579	49	109.75	166.75	623.75

2001-2002 CHRISTMAS COUNT DESCRIPTIONS

The number appearing before each count coincides with the numbered counts in the table. Observers are listed below for Darlington Heights, Lynchburg, Danville, Peaks of Otter, Roanoke, Giles County, and Bristol—counts which do not appear in the one-hundredth Christmas bird counts book published by The National Audubon Society.

1. CHINCOTEAGUE NATIONAL WILDLIFE REFUGE. 37°58'N 75°22'W

Center: 2 miles north of center of Chincoteague in Accomack County.

Compilers: Richard and Nancy Roberts (7212 Fiddler Bay Lane, Chincoteague, VA 23336) (nroberts@intercom.net).

2. WACHAPREAGUE. 37°40'N 75°42'W

Center: Jct. 789 and 715 in Accomack County.

Compiler: Irvin and Marilyn Ailes (6479 Myrtle Lane, Chincoteague, VA 23336-3825) (imailes@intercom.net).

3. CAPE CHARLES/KIPTOPEKE. 37°12'N 75°56'W

Center: 1.5 miles southeast of Capeville Post Office in Northampton County.

Compiler: Henry Armistead (523 E. Durham St., Philadelphia, PA 19119) (harryarmistead@hotmail.com).

4. CHESAPEAKE BAY BRIDGE-TUNNEL (CBBT). 37°05'N 76°08'W

Center: The northern three islands of the bridge-tunnel complex and adjacent waters out to one mile.

Compiler: Ned Brinkley (9 Randolph Ave., Cape Charles, VA 23310) (phoebetria@aol.com).

5. LITTLE CREEK. 36°51'N 76°06'W

Center: 3.8 miles northeast of Kempsville in Virginia Beach.

Compiler: Paul Sykes (1080 Forest Rd., Watkinsville, GA 30677) (paul_sykes@usgs.gov).

6. BACK BAY NATIONAL WILDLIFE REFUGE. 36°39'N 76°00'W

Center: 1.5 miles east of Back Bay NWR.

Compiler: Paul Sykes (1080 Forest Rd., Watkinsville, GA 30677) (paul_sykes@usgs.gov).

7. NANSEMOND RIVER. 36°52'N 76°26'W

Center: Jct. 17 and 626 in Pughsville, Suffolk.

Compiler: Les Willis (P.O. Box 6063, Suffolk, VA 23433) (leswillis@clwillis.com).

8. NEWPORT NEWS. 37°05'N 76°25'W
Center: Northern corner of Magruder & Cmdr. Shepard boulevards in Hampton.
Compiler: Hayes Williams (P.O. Box 95, White Marsh, VA 23183-0095)
(joycewms@inna.net).
9. MATHEWS COUNTY. 37°25'N 76°18'W
Center: 0.5 mile east of Beaverlett Post Office in Mathews County.
Compiler: John Bazuin, Jr. (7451 Little River Tnpk, #202, Annandale, VA 22003)
(bazuin.john@epa.gov) and Mary Pulley (HC 75, Box 2750, Hudgins, VA 23076).
10. WILLIAMSBURG. 37°17'N 76°42'W
Center: Colonial Williamsburg Information Center in Williamsburg.
Compiler: Bill Holcombe (4705 Lady Slipper Path, Williamsburg, VA 23188)
(bowljack@aol.com).
11. HOPEWELL. 37°23'N 77°17'W
Center: Curles Neck in Henrico County.
Compiler: Sherrie Siers (10313 Glen Oaks Dr., Chester, VA 23831)
(bruja95@aol.com).
12. WALKERTON. 37°46'N 77°02'W
Center: 1.5 miles southwest of Walkerton bridge, just west of Whitebank.
Compiler: Fred Atwood (Flint Hill School, 10409 Academic Dr., Oakton, VA 22124) (fredatwood@yahoo.com).
13. WASHINGTON'S BIRTHPLACE. 38°07'N 76°57'W
Center: Horners in Westmoreland County.
Compiler: William Portlock (23195 Mt. Cloud Rd., Bowling Green, VA 22427)
(portlock@bealenet.com).
14. BROOKE. 38°22'N 77°20'W
Center: At Center Road 3 miles east southeast of Brooke in Stafford County.
Compiler: David Stewart (10715 Midsummer Dr., Reston, VA 20191)
(o.b.james@worldnet.att.net).
15. FORT BELVOIR. 38°41'N 77°12'W
Center: Pohick Episcopal Church, Fort Belvoir, in eastern Fairfax County.
Compiler: Kurt Gaskill (4101 Komes Ct., Alexandria, VA 22306)
(kurtcapt87@aol.com).
16. CENTRAL LOUDOUN. 39°06'N 77°38'W
Center: Near jct. of 704 and 769 in Loudoun County.
Compiler: Joseph Coleman (19499 Yellow Schoolhouse Road, Round Hill, VA 20141) (jandkcoleman@erols.com).

17. THE PLAINS. 38°48'N 77°52'W

Center: 7 miles northwest of Warrenton on the west side of Watery Mountain along Carter Creek in Fauquier County.

Compiler: Todd Day (5118 Deaver Dam Rd., Jeffersonston, VA 22724 (blkvulture@aol.com)).

18. MANASSAS-BULL RUN. 38°50'N 77°26'W

Center: Centreville in western Fairfax County

Compiler: John Dent (6804 Langley Springs Court, McLean, VA 22101) (jdent@erols.com).

19. CHANCELLORSVILLE. 38°16'N 77°40'W

Center: Chancellorsville Battlefield, 10 miles west of Fredericksburg in Spotsylvania County.

Compiler: Joella Killian (Dept. Of Biology, Mary Washington College, Fredericksburg, VA 22401) (jkillian@mwc.edu).

20. LAKE ANNA. 38° 05'N 77° 49'W

Center: center of bridge over Lake Anna on rt. 208.

Compiler: Betty Floyd (7300 Lookout Dr., Richmond, VA 23225) (hfloyd@vcu.org)

21. GORDONSVILLE. 38°09'N 78°12' W

Center: Jct. of 15 and 33 north of the town of Gordonsville in Orange County.

Compiler: Donald Ober (P.O. Box 6, Orange, VA 22960) (ober@ns.gemlink.com).

22. CHARLOTTESVILLE. 38°04'N 78°34'W

Center: Near Ivy in Albemarle County.

Compiler: Charles Stevens (615 Preston Place, Charlottesville, VA 22903) (pringdaven@aol.com)

23. WARREN. 37°51'N 78°33'W

Center: At Keene in Albemarle County.

Compiler: Charles Stevens (615 Preston Place, Charlottesville, VA 22903) (pringdaven@aol.com).

24. DARLINGTON HEIGHTS. 37°12'N 78°36'W

Center: Jct. of 665 and 660 in Darlington Heights in Price Edward County.

Compiler: Carolyn Wells (204 Fayette St, Farmville, VA 23901) (bbsmith@hovac.com).

Observers: Vera Copple, John Dalmás, Thelma Dalmás, Damien Fehrer, Deanna Fehrer, Alix Fink, Mark Fink, Jane Holman, Ann Ingram, Dana Johnson, Judy McCann, Kathy Menold, Peter Menold, Chris Register, Katie Register, George Shorter, May Shorter, Brent Slaughter, Laura Slaughter, David Spears, Len Stirling, Randy Thrasher, Sue Thrasher, Carolyn Wells, and Lisa Wilkins.

25. BANISTER RIVER WILDLIFE MANAGEMENT AREAS. 36°43'N 78°48'W

Center: At Banister River Wildlife Management Areas in Halifax County.

Compiler: Jeffrey Blalock (103 Elizabeth Court, South Boston, VA 24592)
(jcbabirder@gcronline.com).

26. LYNCHBURG. 37°24'N 79°11'W

Center: Lynchburg College in Lynchburg.

Compilers: John and Thelma Dalmas (1230 Viewmont Dr., Evington, VA 24550-2006) (jtdalmas@juno.com).

Observers: Rexanne Bruno, John Dalmas, Thelma Dalmas, Virginia Delaney, Colm DeVan, Lora DeVan, Kathie Driscoll, Ernest Edwards, Betty Epperson, Robert Epperson, Bob Eubank, Robert Ferrell, Charles Hansrote, Melva Hansrote, Corbin Hayslett, Mike Hayslett, Cinda Hurt, Mark Johnson, Phyllis Jones, Cindy Lane, Rich Lane, Dick Miller, Ruth Ann Miller, Gene Moore, Wyatt Murphy, Claudia Puckette, Dan Puckette, Daniel Puckette, Boyd Rist, Norma Jean Rist, Gene Sattler, Barbara Shedd, Doug Shedd, Jenny Shedd, Macon Smith, Susan Stanton, Randy Thrasher, Sue Thrasher, Margaret Wenning, Susan Wingfield, and Jo Wood.

27. DANVILLE. 36°34'N 79°25'W

Center: Ballou Park in Danville.

Compiler: Laura D. Meder (Dept. of Biology, Averett College, 420 W. Main, Danville, VA 24541) (lmeder@averett.edu).

Observers: Pat Brachman, Josh Dallas, Edward Fisher, Patt Fisher, , Suzanne Fisher, Mary Foster, Sarah Foster, Ann Garbett, Gary Grant, Margaret Harden, Frank Huppert, Richard Inlow, Diane Mayberry, Laura Meder, Judy Oakes, Lee Robertson, Allen Shumate, Geoff Smith, C. B. Strange, Sue Urbanik, Frank Wickers, Sue Wickers, and Gordon Woody.

28. CALMES NECK. 39°07'N 77°54'W

Center: Casteman's Ferry Bridge, State Route 7 and the Shenandoah River in Clarke County.

Compilers: Frances Endicott (3355 Calmes Neck Lane, Boyce, VA 22620), Linda Thomas (111 Chapel Road, Middletown, VA 22654) (lthomas@crosslink.net), and Margaret Wester (181 Little River Lane, Boyce, VA 22620) (margaretwester@hotmail.com).

29. NORTHERN SHENANDOAH VALLEY. 39°03'N 78°10'W

Center: Jct. Crooked Run and Rt. 606 in Frederick County.

Compiler: Rob and Ann Simpson (1932 E. Refuge Church Rd., Stephens City, VA 22655) (snphotos@adelphia.com).

30. SHENANDOAH NATIONAL PARK—LURAY. 38°35'N 78°28'W

Center: Hershberger Hill near Stanley in Page County.

Compiler: Mara Meisel (304 Trenton Ave., Shenandoah, VA 22849).

31. BIG FLAT MOUNTAIN. 38°11'N 78°43'W
Center: On Pasture Fence Mountain in Albemarle County.
Compiler: Charles Stevens (615 Preston Pl., Charlottesville, VA 22903)
(pringdaven@aol.com).
32. ROCKINGHAM COUNTY. 38°26'N 79°02'W
Center: Ottobine in Rockingham County.
Compiler: Chuck Aukerman (222 West Bank St., Bridgewater, VA 22812) (aucker@aol.com).
33. AUGUSTA COUNTY. 38°12'N 78°59'W
Center: Jct. 780 and 781 in Augusta County.
Compiler: John Spahr (613 Locust Ave., Waynesboro, VA 22980)
(jspahr@yahoo.com)
34. WAYNESBORO. 37°59'N 78°57'W
Center: Sherando at Jct. 610 and 664 in Augusta County.
Compiler: Crista Cabe (404 DuPont Ave., Staunton, VA 24401) (ccabe@mbc.edu).
35. LEXINGTON. 37°51'N 79°29'W
Center: Big Spring Pond in Rockbridge County.
Compilers: Bob Paxton (460 Riverside Dr. #72, New York, NY 10027)
(rop1@columbia.edu); and George Tolley (494 Smokey Row Rd., Lexington, VA 24450) (gtolley@rockbridge.net).
36. PEAKS OF OTTER. 37°27'N 79°36'W
Center: Peaks of Otter Visitor Center in Bedford County.
Compiler: Barry Kinzie (P.O. Box 446, Troutville, VA 24175).
Observers: Teresa Hanley, Charles Hansrote, Melva Hansrote, Eunice Hudgins, John Hudgins, Barry Kinzie, Katrina Knight, Richard Miller, and Ruthann Miller..
37. FINCASTLE. 37°31'N 79°52'W
Center: North of Fincastle near Jct. 220 and 679 in Botetourt County.
Compiler: Barry Kinzie (P.O. Box 446, Troutville, VA 24175).
38. ROANOKE. 37°18'N 79°56'W
Center: Oakland Blvd. And Williamson Rd. In Roanoke.
Compiler: Michael Donahue (4814 Bandy Rd. SE, Apt 4, Roanoke, VA 24014).
Observers: Jjim Ayers, Mary Lou Barritt, Sid Barritt, Andy Biggs, Linda Cory, John Cutler, Marshall Daniels, Mike Donahue, Sarah Donahue, Tad Finnell, Dawn Gill, Eunice Hudgins, John Hudgins, David Holt, Joyce Holt, Bill Hunley, Katie James, Tom Johnson, Barry Kinzie, Katrina Knight, Connie Marsh, Pat McMeekin, Shaun Petersen, Mike Purdy, Alice Quinn, Tim Quinn, Curtis Reed, Taylor Renfroe, Kathy Summers, Kent Summers, and Holly Woodson.

39. BLACKSBURG. 37°12'N 80°28'W

Center: Jct. Merrimac Rd. (657) and Prices Fork Rd. (685) in Montgomery County.

Compiler: Patricia A. Polentz (915 Coal Hollow Rd., Christiansburg, VA 24073) (polentz@vt.edu) and Bruce Grimes (2306 Terra Bella St., Blacksburg, VA 24060).

40. GILES COUNTY. 37°19'N 80°38'W

Center: Pembroke in Giles County.

Compiler: Peggy Spiegel (Rt. 1, Box 329, Pearisburg, VA 4134-2424) (gramby@swva.net).

Observers: David Brady, Tom Brobson, Ray Callahan, Bruce Grimes, James Hartley, Clyde Kessler, Bill Opengari, and Peggy Speigel.

41. TAZEWEEL. 37°08'N 81°30'W

Center: Fourway in Tazewell County.

Compiler: Sarah Cromer (P.O. Box 98, North Tazewell, VA 24630) (scromer@netscope.net).

42. MOUNT ROGERS-WHITE TOP MOUNTAIN. 36° 39' N 81° 35' W

Center: Jct. 600 and 603.

Compiler: Allen Boynton (658 Rocky Hollow Rd., Trout Dale, VA 24378) (aboynton@smyth.net)

43. GLADE SPRING. 36°47'N 81°47'W

Center: Jct. 750 and 609 in Glad Spring.

Compiler: Ron Harrington (20435 Carson Ln., Bristol, VA 24202) (roneharrin@aol.com).

44. BLACKFORD. 37°00'N 81°55'W

Center: Confluence of the Clinch and Little rivers in Russell County.

Compiler: Robert Riggs (Rt. 2, Box 27B, Lebanon, VA 24266) (sheba@mounet.com).

45. BRISTOL. 36°35'N 82°06'W

Center: Jct. 647 and 654, east of Bristol TN in Washington County, VA.

Compiler: Richard Lewis (407 V.I. Ranch Rd., Bristol, TN 37620) (mountainbirds@email.com).

Observers: Rob Biller, Ron Carrico, Wallace Coffey, Glen Eller, Bert Hale, Ken Hale, Loraine Hale, Kevin Hamed, Don Holt, Tom Hunter, Andy Jones, Richard Knight, Phillip Lewis, Richard Lewis, Janice Martin, Larry McDaniel, Bob Quillen, and Dave Worley.

46. BREAKS INTERSTATE PARK. 37°15'N 82°13'W

Center: 4.5 miles n.e. of Haysi in Buchanan County.

Compiler: Terry Owens (PO Box 100, Breaks, VA 24607).

47. WISE COUNTY. 36°57'N 82°39'W

Center: At Dorchester in Norton City.

Compiler: Randy Stanley (2432 Egan Rd., Big Stone Gap, VA 24219)
(randyst@compunet.net).

CAVE SWALLOWS (*PETROCHELIDON FULVA*) ON THE EASTERN SHORE OF VIRGINIA

EDWARD S. BRINKLEY
9 Randolph Avenue
Cape Charles, VA 23310

FIELD OBSERVATIONS

On 4 November 1999, prompted by an email from Paul E. Lehman at Cape May, New Jersey, to the effect that "dozens" of Cave Swallows (ultimately at least 35) had materialized at Cape May Point and that the Cape Charles area should certainly have the species, I went with Steven Hairfield to Kiptopeke State Park and there met with Brian Sullivan. Brian had not heard about the Cave Swallow invasion but had seen a buffy-rumped *Petrochelidon* swallow that morning during his field surveys at the Eastern Shore of Virginia National Wildlife Refuge. As we had often done in the past, we decided to watch the swallows coming in to the large freshwater pond at the refuge Visitor Center for Cave Swallows. Within 35 minutes, at about 1340 EST, a Cave Swallow appeared at the pond among hundreds of Tree Swallows (*Tachycineta bicolor*). About 40-45 minutes later, we returned to the refuge with Brian Taber, who saw the bird (or another like it) almost immediately. The swallow (or multiple ones) were reported on and off here by visiting birders for about one week; Bill Williams observed one on 6 November, Sullivan one on 12 November, members of the Hampton Roads Bird Club reported three on 14 November, and I observed two on 18 November (Iliff 2000a).

Notes on these birds, taken about five minutes after the initial observation, are as follows:

"Cave Swallow at ESNWR 11/4. 1340. Tree-Swallow-sized swallow with square-ish tail, wide wings (very different in shape, for instance, than those of Barn Swallow). In general appeared at distances of 12-15 m, in great light, to be darker above, paler below, with a rich fulvous rump, about the color of a Barn Swallow's undertail coverts. On closer study: the buffy uppertail coverts contrasted strongly with dark (blackish brown) tail and deep steely back, which showed some parallel pale lines, somewhat indistinct, along the axis of the body, perhaps four such lines, which extended weakly to the lower nuchal area. The buff color of the uppertail coverts was of a more intense color than the buffy throat, which was an indistinct peachy-buff wash just below the bill, not extending far and definitely not to the sides or flanks. The nuchal area above the dark/stippled hindcrown was also buff-washed, likewise the auriculars. The crown itself was starkly dark with a bluish component at certain angles, which was set off sharply from the buff of the auriculars and hindcrown. Likewise set off was the deeper chestnut frontlet (large amount of loreal area). Otherwise the bird was gray below, fading to dirty white below midbreast or so. The wings appeared dark brown above and below; no real opportunity to study upperwing coverts in detail. Eye appeared dark. Feet could not be studied. Wind NW 10-15 kts. Glass a Zeiss 10 x 40 DIALYT."

On 1 May 2000, I noted a large flock of swallows over the house (9 Randolph Avenue, Cape Charles) at about 0900 EDST and went outside to investigate. Among a flock that included many Tree and Barn Swallows (*Hirundo rustica*), a few Northern Rough-winged (*Stelgidopteryx serripennis*), and many Purple Martins (*Progne subis*) and Chimney Swifts (*Chaetura pelagica*), I noted two *Petrochelidon* swallows that showed pale buffy throats with pale gray bellies, sides, and flanks, and buffy rumps a bit darker than the throats. The impression of the head (the birds stayed fairly high, well above treetop height) was of a dark cap surrounded by buff or intense orange of varying degree. These marks eliminate all other swallows from consideration. Later it turned out that many Cape May observers also had several Cave Swallows near Cape May Point on the same morning, first found 30 April and last seen 2 May (P. E. Lehman, pers. comm.). In both places, the wind was from the southeast at moderate speeds of 10-12 knots.

In 2002, a strong northeastward flight of Cave Swallows occurred in 9 November and later, when as many as 300-400 were observed between Ontario and Connecticut in the north and Florida and Alabama in the south (Wormington 2002, Brinkley and Lehman 2003). During this flight, there were six reports of the species from the Eastern Shore of Virginia 18-24 November, with a minimum of four birds (in view at one time) at Townsend, Northampton County and a single-day high-count of 7 birds, both 24 November; the actual number of Cave Swallows present in lower Northampton County was likely closer to 20. At least two of these birds were identifiably photographed (ESB, in VARCOM Archive). Also apparently associated with that flight was one bird reported at First Landing State Park, Virginia Beach 29 November (J. Spahr; Iliff 2003). The 2002 event was apparently caused by a powerful cold front that on 11 November extended from central Québec to Texas; the system spawned 70 confirmed tornadoes and killed at least 35 people from Pennsylvania to Mississippi (Wormington 2002).

The only other reports of the species from Virginia are also coastal: one of a single bird at Fisherman Island, 1 November 1998 (J. Cameron; Iliff 1999), and another report of three birds from Grandview Beach, Hampton, 18 December 1999 (R. Goll; Iliff 2000b).

DISCUSSION

Field identification of subspecies. - On the occasions—in November 1999, in May 2000, and November 2002—in which Cave Swallows were observed in southern Northampton County, all birds involved appeared to have been of the southwestern North American *Petrochelidon fulva pelodoma* (also known as subspecies *pallida*) by virtue of their gray or off-white sides and flanks, which showed no tinges or washes of rufous as seen in West Indian taxa.

Nevertheless, the field distinguishability of different subspecies of Cave Swallows has been called into question in recent years, both by biochemical research on the complex and by informal field studies. A recent paper by Kirchman et al. (2000), for instance, indicates that the DNA collected from two Cutler Ridge, Florida birds suggests possible gene flow with the Texas population. They also found that

the Yucatan peninsula population is more closely related genetically to the Texas population than to the Cuban population, despite morphological and plumage characters that might suggest otherwise. (Because their sample sizes are so small, the results of Kirchner et al. are open to interpretation, but evidently the situation is much less clear-cut than the simple supposition that the Florida population merely reflects expansion from Cuba.)

Studies of birds in the field in Florida also suggest a more complex relationship among named taxa than is countenanced in earlier literature, at least in terms of plumage characters. P. E. Lehman's (pers. comm.) field work in Florida in 2000 found that most Cave Swallows at Cutler Ridge had fairly dark chestnut-colored rumps but that at least two birds had rump closer in color "to those of southwestern Cave Swallows—only slightly darker than typical Cliffs—although everything else about the birds (e.g., broad, burry rusty streaking on the sides and flanks) looked like all the others there." On the Dry Tortugas, Lehman (pers. comm.) found one Cave Swallow with sides and flanks "an unmarked grayish-white" and a rump "barely darker than a typical Cliff, both characters matching southwestern Cave Swallow." The presence of apparent *pelodoma* Cave Swallows was confirmed in Florida in 2002, when at least 13 were noted in company with many other swallows (including a Mangrove Swallow) at Viera wetlands in Brevard County, 18-23 November (Sykes et al., in press). Questions regarding plumage variation in Cave Swallows nesting in southern Florida and its possible relation to gene flow among multiple taxa or populations are unresolved as yet.

The identification information in field guides such as the third edition of the *National Geographic Society Field Guide to North American Birds* (Dunn 1999) should be considered tentative in light of these recent discoveries, and it is probably not possible at this time to identify the birds to the level of subspecies without specimens.

The specimen record of extralimital Cave Swallows in the East. - In 1999, specimens of Cave Swallow were discovered in both North Carolina and Ontario. The photographs of one individual and at least one of two specimens—a bird trapped and banded at the tip of Long Point, and a moribund bird that Bob Curry picked up at Point Pelee, both in Ontario—indicate *pelodoma* Cave Swallows in pre-Basic I molt. Measurements also confirmed that both birds are *pelodoma* (B. Curry, pers. comm.).

In the field, Kevin McLaughlin studied a Cave Swallow at Point Pelee that showed a gray wash on sides of breast and belly. The specimen of this bird showed grayish-buff flanks. The gray feathers were tipped in buff and the flank feathers nearest the off-white breast were notably buffy. The pattern and shading proved to be identical in the photographs of the Long Point bird. Curry (pers. comm.) remarks: "We noticed with the in-hand specimen that these apparent colors (flank, forehead, rump) varied depending upon whether it was looked at in bright daylight or in shade or artificial light. Perhaps some of the differences observers have noticed pertain to this. Second, I wonder if HY birds could have these buffy tips to the gray flank feathers and that these are absent on AHY birds."

The specimen recovered in North Carolina in late fall 1999 is also *pelodoma* (LeGrand et al. 2001). The influx of Cave Swallows in 2002 provided one additional specimen and another bird banded and measured. The former was a moribund bird found at Island Beach State Park 29 November (Kelling et al. 2003); the latter was banded at Wassaw Island, Georgia, 15 December (P. W. Sykes, pers. comm.). Both of these birds have been confirmed as *pelodoma*.

Lehman (pers. comm.) observes that vagrant Cave Swallows in spring may have a better chance of being Caribbean birds (*fulva*, *cavicola* or *puertoricensis*). The two older Nova Scotia specimens from late spring have been identified as Caribbean birds from Cuba (subspecies *cavicola*) (Tufts 1986).

Seasonal distribution of vagrant Cave Swallows near Virginia. - Eastern reports and records of out-of-range Cave Swallows have been chiefly from the autumn (McNair and Post 2001). Neighboring states' records show a pattern consistent with that of Virginia's emerging pattern of vagrancy. Before 2002, North Carolina had two other sight reports of Cave Swallow in November and December 1999, as well as four previous sight records (one a photograph that distinguished it from Cliff), three between December and February, the other from May. Most of these sight records were thought to be of birds of the southwestern race (LeGrand et al. 2001). Maryland had no reports until 2002, when at least three were observed 19-29 November (Iliff 2003).

Farther from Virginia, Cape May, New Jersey has produced most records of Cave Swallow in the East, and the species has been recorded there annually for a over decade. Given the similarity in geography between Cape May and Cape Charles, the species' appearance in southern Northampton County cannot be considered unexpected. Cape May's autumn records span the period 29 October to 21 December, all between 1992 and 2003, and involve minimally 100 individuals (and probably many more). Elsewhere in New Jersey, another record of a single bird comes from nearby Avalon, 11 December 1999 (Paxton et al. 2000), and there were reports from Sandy Hook and Stone Harbor in November 2002 as well (Kelling et al. 2003). In contrast to the many fall records, there are only three spring records from Cape May: one from 20 April to 4 June 1990 (Sibley 1997), two birds on 25 March 1999 (Lehman, pers. comm.), and one bird on 1 May 2000. Only the last was studied adequately to offer an assessment of subspecific status; its sides and flanks were "unmarked grayish-white and the rump not especially deep colored," leading observers to call it a "probable southwestern bird."

Away from Cape May, spring records north of Florida are few. North Carolina has one 19 May 1995 record from Bodie Island Lighthouse Pond (LeGrand et al. 2001), and there is a 23 May 1990 record for Jamaica Bay, New York (Levine 1998). None of these birds could be positively identified to subspecies, although the Jamaica Bay bird was thought to be *fulva* (Guthrie and Wilson 2000).

Probable causes of vagrancy. - In all cases, documented Cave Swallows in Virginia have appeared following the passage of southwesterly winds, a pattern consistent with that of Cape May's records of the species. It is not known whether such flights constitute instances of displacement or entrainment by storm systems,

"reverse-migrations" such as are documented occasionally in New England and the Maritime Provinces, or simply explorations of new territory by an expanding population whose migrational pathways are changing (Brinkley and Lehman 2003). The appearance of Cave Swallows in the East during the last decade of the twentieth century coincides perfectly with the rapid range expansions of *pelodoma* in the American southwest through eastern Texas and barely into Louisiana on the Sabine River (West 1995, McNair and Post 2001). If the pattern of records at Cape May is any indication, Virginia ornithologists and birdwatchers might expect to see more records of the species in November and possibly December along Virginia's coasts and possibly interior.

LITERATURE CITED

- BRINKLEY, E. S., AND P. E. LEHMAN. 2003. The Changing Seasons. *North American Birds* 57: 14-21.
- CURRY, R., AND K. McLAUGHLIN. 2000. The Cave Swallow invasion of 1999. *Ontario Birds* 18: 13-26.
- DUNN, J. L., ed. 1999. The National Geographic Society Field Guide to the Birds of North America. Third edition. Washington, D. C.
- ILIFF, M. J. 2003. The fall migration: Middle Atlantic Coast region. *North American Birds* 57: 36-41.
- ILIFF, M. J. 2000a. The fall migration: Middle Atlantic Coast region. *North American Birds* 54: 36-40.
- ILIFF, M. J. 2000b. The winter season: Middle Atlantic Coast region. *North American Birds* 54: 163-166.
- ILIFF, M. J. 1999. The fall migration: Middle Atlantic coast region. *North American Birds* 53: 39-43.
- KELLING, S., J. C. BURGIEL, R. O. PAXTON, R. R. VEIT, AND D. A. CUTLER. 2003. The fall migration: Hudson—Delaware region. *North American Birds* 57: 32-35.
- KIRCHMAN, J., L. A. WHITTINGHAM, AND F. H. SHELDON. 2000. Relationships among Cave Swallow (*Petrochelidon fulva*) populations determined by comparisons of microsatellite and cytochrome-b data. *Molecular Phylogenetics and Evolution* 14: 107-121.
- GUTHRIE, A. AND A. WILSON. 2000. Cave Swallow (*Petrochelidon fulva*), second New York State record. *Kingbird* 50: 110-117.
- LEGRAND, H. E., JR., J. O. FUSSELL, III, J. S. WRIGHT, AND E. S. BRINKLEY. 2001. Status of the Cave Swallow in North Carolina. *The Chat* 63: 140-144.
- LEVINE, E., ed. 1998. *Bull's Birds of New York State*. Cornell University Press. Ithaca.
- McNAIR, D. B., AND W. POST. 2001. Review of the occurrence of vagrant Cave Swallows in the United States and Canada. *Journal of Field Ornithology* 72: 485-503.
- PAXTON, R. O., J. C. BURGIEL, AND D. A. CUTLER. 2000. The Winter Season: Hudson-Delaware Region. *North American Birds* 54: 31-35.

- SIBLEY, D. 1997. The Birds of Cape May. Second edition. New Jersey Audubon Society. Bernardsville, New Jersey.
- SYKES, P. W., JR., L. S. ATHERTON, M. GARDLER, AND J. H. HINTERMEISTER V. in press. The First Mangrove Swallow recorded in the United States. North American Birds 58 (1).
- TUFTS, R. W. 1986. The Birds of Nova Scotia. Third edition. Halifax. Nimbus Publishing and the Nova Scotia Museum.
- WEST, S. 1995. Cave Swallow (*Hirundo fulva*). No. 141 in The Birds of North America (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and the American Ornithologists' Union, Washington, D.C.
- WORMINGTON, A. 2002. Another Cave Swallow invasion: the fall of 2002. Point Pelee Natural History News 2: 53-54.

VIRGINIA'S FIRST TOWNSEND'S WARBLER

GEORGE L. ARMISTEAD

On a chilly December 30th 1999, moderate winds out of the southwest buffeted the seven of us who covered the "Ferry" territory on the Cape Charles Christmas Bird Count. This area encompasses the old ferry terminal in what is now Kiptopeke State Park and runs north to Dalby's Road and east to Route 13; coincidentally, this area is in Townsend, Virginia. Matt Sharp and I were covering the southern most portion of the territory. I dropped him off at the end of Pickett's Harbor Road and left him there to scan the bay, and to try to pull some passerines out of the woods on this blustery morning.

While poking around, my meanderings led me down an old farm road in need of a name. This dirt road ran through some agricultural fields and is just north of the northern intersection of Butler's Bluff and Arlington Road. It ends at a woodland that is right along the bluff and has a low area that runs through it called Devil's Ditch. Along this road, I noticed some Horned Larks milling about in the winter wheat fields. I continued down the road and delighted at the shelter and warmth that the woods at the end of the road provided from the wind and cold. This strip of moist woodland hugged the bayside of the peninsula; on the east side, I was leeward of the wind and warmed by the sun. Some gnats or midges began to whirl up and about as I walked the edge of these woods and the sun rose higher. Here the wood's edge formed a sort of horseshoe opening to the south. As a result of this orientation, on a clear day, there is always some sunlight hitting the edge of the woods. Bird activity is thus greater here than many nearby areas, and it makes a nice spot for birds accustomed to more temperate climates.

I began to spish and to whistle my coarse imitation of an Eastern Screech-Owl. Right away, a few chickadees pulled in and a Ruby-crowned Kinglet began to mutter and stutter disagreeably. Next were the Myrtle Warblers, and then a troupe of three or four Golden-crowned Kinglets bounced into view. After indulging in a brief study of them I lowered my binoculars to notice a closer bird. It was a startling, glowing yellow with strongly contrasting black markings. I lifted my glasses, and as I watched this bird rustling around in a short Loblolly Pine only a few meters away, it occurred to me that it was a Townsend's Warbler. It tumbled out into an adjacent cherry tree, lacking any foliage and now I had a completely unobscured view of the bird about 7-8 m away. I was in disbelief. I had seen dozens of these birds in the northwest when I worked for the state of Washington doing point counts. Realizing the degree of rarity of this bird in this location, I watched it carefully, but shortly it disappeared into a cedar further away and I raced off for another set of eyes. Within five minutes Matt had returned with me to the spot and right away we relocated the bird, still in the cedar where I had left it.

A return later that afternoon yielded more decent looks for the rest of the

crew working the Ferry territory, and in subsequent days a number of other observers were treated to views of the bird. I attempted to photograph it but failed to obtain even a recognizable photograph of the bird. I never once heard it vocalize. It seemed to be snatching at the midge/gnat type insects that were numerous there in the lee of the wind, which were particularly dense in the conifers. The bird really seemed to feel most at home in the conifers, and perhaps these were reminiscent of the areas the bird inhabits in the breeding season.

Plant and tree species noted in the area included American holly (*Ilex opaca*), mixed oaks (*Quercus* spp.), loblolly pine (*Pinus taeda*), cherry (*Prunus* sp.), red cedar (*Juniperus virginiana*), greenbriar (*Smilax glauca*), Japanese honeysuckle (*Lonicera japonica*), and wild grape (*Vitis* spp.). This area seems particularly good for warm-weather species, as evidenced by the two Blue-headed Vireos and the two Northern Parulas found right in the same area during the count week. Both of these are unusual winter visitors and Northern Parula was a new species for the Cape Charles CBC cumulative list. Perhaps the most bizarre and coincidental part of this whole event is that this bird was found not more than a mile or so from the community of Townsend, VA (though there it is actually pronounced as if it were two words Town's End).

While I have worked the Ferry territory on the count for about seven years now, I'm not sure I had ever birded this area before. Surely I will not overlook it again as it seems to be particularly hospitable to a variety of avian critters. Below lies my description of the Townsend's Warbler found at Devil's Ditch on the count that day.

DETAILED OBSERVATIONS

Head. - The face, except for the auricular patch, and throat were a bright golden yellow. The auricular area was solidly blackish save a yellow crescent below the eye. The rear edge of the black auricular mask came to a point at the rear, and nearly extended across the yellow supercilium, almost touching the dark area on the back of the head. The area directly above the bill was blackish and extended up to the crown where it began to merge into the rich, bright olive-green color that covers much of the upperparts.

Upperparts. - The nape and back were a rich olive green and the back also showed pencil thin black vertical streaks. The lesser and greater secondary coverts of the wings were tipped white, and appeared as two white wing-bars. The rest of the wings appeared dark on the upperside. The rump was not clearly seen.

Underparts. - Across the upper breast were vertical black blobs or spot-like streaks that extended down the breast a little, forming a necklace. The rest of the upper breast below the necklace was bright yellow down to the mid-breast where the white that marked the rest of the belly began. The black streaks of the necklace closest to the underwing were longest and as they extended back towards the tail broke into black spotting that became less dark and more a diffuse gray the further towards the tail they became. Below the rump on the flanks was a small beige-gray region where the blob-like spots terminated. The undertail coverts were not seen.

Tail. - The tail appeared dark above and paler below. Tail length was not scrutinized, nor was primary projection.

Bare parts. - Legs and bill were black.

I suspect the bird was an adult female based on the amount of black above the bill and because the black streaks on the back struck me as too thin for an immature male. An adult male would not have so much yellow in the throat and ought have more black on the forehead and crown, and an immature female should not be so richly colored or boldly marked as this bird was. I lack experience aging these birds and during the quick looks I had of the bird I was very much in a state of surprise, so that perhaps speculation on age/plumage is not advisable.

The flock with which the Townsend's Warbler was initially discovered, and had at least a loose affiliation with, included Carolina Chickadees, Tufted Titmice, Ruby-crowned and Golden-crowned Kinglets, Yellow-rumped Warblers, and Pine Warblers. The composition of this flock is similar to the groups with which Townsend's Warblers feed and associate in more typical areas during the winter and in migration (Dunn and Garrett 1997).

This record was accepted by the Virginia Avian Records Committee as the first state record (Category 2 - based on written description only). It seems highly probable that this species will be encountered again in Virginia in the future. Just a month or so prior to this sighting, at Kiptopeke State Park and less than a mile south of where the Devil's Ditch bird was discovered, David Clark observed a bird he strongly believed to be a Townsend's Warbler. This may well have been the same

Table 1. Documented East Coast records of Townsend's Warbler, ordered by month of occurrence.

Location	Date	end date*	plumage
Corkscrew Swamp, FL	Jan 12, 1969	thru 4/7/69	
Merritt Is. NWR, FL	Feb 19, 2000	thru 4/2/00	male
HLSP, NY	Apr 15, 1977		adult male
Sanibel Is., FL	Apr 15, 2001	thru 4/18/01	male
Monroe, NY	Apr 20, 1980		adult male
Durham, ON	Apr 20, 2000	thru 4/23/00	male
Panama City, FL	Apr 23, 1972		
Nantahala, NC	Apr 24, 1975		
Roanoke Is., NC	Apr 27, 2000		male
Princeton, NJ	Apr 28, 1988		
HLSP, NY	Apr 29, 1981		adult male
Mt. Auburn Cemetery, MA	May 4, 1978		male
Pigeon Key, FL	May 5, 1981		
Suffolk, Great Gull Is., NY	May 7, 1978		adult male
Queens, Alley Pnd Pk, NY	May 9, 1981		adult male
Queens, Alley Pnd Pk, NY	May 9, 1993		adult male
Oswego, New Haven, NY	May 11, 1978		adult male
Chester, Coatesville, PA	May 12, 1868		
Queens, Forest Park, NY	May 14, 1988		adult male

Table 1. continued on next page

Table 1. cont.

Location	Date	end date*	plumage
Acadia National Park, ME	May 15, 1994		adult male
Cape May, Higbee B., NJ	Sep 8, 1984		female
Oneida, Verona Bch., NY	Sep 8, 1991		adult male
Spittal Pond, BE	Sep 9, 1980		
Elliott Key, FL	Sep 13, 1992		
Monhegan Is., ME	Sep 13, 1993		adult male
Fort Desoto, FL	Sep 14, 1983	thru 9/15/83	
Dry Tortugas, FL	Sep 15, 1982		
Offshore found dead**, NC/VA	Sep 20, 1999		immature male
Fort Scaur, Bermuda	Sep 25, 1976	thru 9/26/76	
s. of Tallahassee, FL	Sep 26, 1984		
Jekyll Island, GA	Sep 30, 1993		immature male
Suffolk, Montauk, NY	Oct 2, 1976		adult male
Astwood's Park, Bermuda	Oct 3, 1986		
Martha's Vineyard, MA	Oct 4, 1998		adult male
Ireland Island, Bermuda	Oct 10, 1979		
Jekyll Island, GA	Oct 18, 1996	thru 10/20/96	female
Island Beach, NJ	Oct 31, 1987		
Carroll, N. Conway, NH	late Nov 1997	thru 12/25/98	
Intervale, NH	mid Nov 1997		immature male (?)
Cape Spear, NF	Nov 5, 1989		
Pea Island NWR, NC	Nov 7, 1992		adult male
St. Johns, NF	Nov 9, 1991	thru 12/4/91	
St. Johns, NF	Nov 9, 1997	thru 12/18/97	
West Cape May, NJ	Nov 11, 1988		
Renews, offshore, NF	Nov 15, 1998	thru 11/18/98	
St. Johns, NF	Nov 16, 1983	thru 12/13/83	
St. Johns, NF	Nov 20, 1988	thru 12/28/88	
St. Johns, NF	Nov 28, 1993	thru 12/23/93	
Falmouth, MA	Dec 1, 1991	thru 12/12/91	
Sandy Hook, NJ	Dec 1, 2001	thru 12/6/02	
Arboretum, Bermuda	Dec 2, 1975	thru 1/3/76	
S. Boston, MA	Dec 4, 1995	thru 12/4/95	
St. Johns, NF	Dec 5, 1993	thru 12/26/93	
Vincentown, NJ	Dec 5, 1977	thru 2/21/78	
Winter Haven, FL	Dec 8, 1985	thru 2/26/86	
Harmony, NJ	Dec 11, 1979	thru 12/14/79	
Portland, ME	Dec 15, 1993	thru 1/5/94	female
Farmingham, MA	Dec 16, 1987	thru 12/30/87	
Sandy Hook, NJ	Dec 16, 1980	thru 12/18/80	
Durham, NH	Dec 21, 1981	thru 12/24/81	immature female
Princeton, NJ	Dec 23, 1971	thru 1/15/72	
Centerville, MA	Dec 28, 2001	thru 2/3/02	
Townsend, VA	Dec 30, 1999	thru 1/12/00	adult female or immature male

*For some birds that stayed for multiple days the last known date of observation is noted. For other birds that stayed multiple days only the date of discovery is noted as no other information on the bird's stay was known. Others are presumed to have been seen only on the single date noted.

**This record refers to a bird found dead aboard a research vessel. The ship was about 10 miles south of the NC/VA border and it was unknown how long the bird had been aboard the ship (John Gerwin pers comm.).

individual bird that we observed on the Cape Charles Christmas Count. This species was predicted in Brinkley's VSO newsletter article as one of the most likely birds to be added to the Virginia state list. Its occurrence may seem somewhat overdue when considering the number of other east coast records. Table 1 summarizes east coast records to provide some context for this record. This table is a combination of information gleaned from various state records committees, personal communications with regional experts, and the journal *North American Birds*.

ACKNOWLEDGMENTS

Thanks especially to Marshall J. Iliff for his contributions to this article. David Hewitt contributed his expertise both in editing and in identifying the flora of Devil's Ditch. Thanks also to Dennis Abbott, Giff Beaton, John Gerwin, Harry LeGrand, Bruce Mactavish, Paul Sykes and Chris Witt for valuable information they contributed. Gratitude is extended to my father, Henry T. Armistead for his editing and helpful comments in drafting. Thanks also to the rest of the crew with which I worked the Ferry territory on the Cape Charles CBC for their help: Matthew F. Sharp, Kate Eldridge, Kerrie Kirkpatrick, Eric Johnson, James Johnson, and Peter Hill.

LITERATURE CITED

- AMOS, E., JR. 1991. *A Guide to the Birds of Bermuda*. Bermuda.
- BRINKLEY, E. S. ????. Next Birds to occurs in VA Virginia Society of Ornithology newsletter.
- DUNN, J. AND K. GARRETT. 1997. *A Field Guide to the Warblers of North America*. Houghton Mifflin, Boston.
- POTTER, E. F., J. F. PARNELL., AND R. P. TEULINGS. 1980. *Birds of the Carolinas*. University of North Carolina Press, Chapel Hill, NC.
- STEVENSON, H.M. AND B. H ANDERSON. 1994. *Birdlife of Florida*. University of Florida Press. Gainesville.

SELASPHORUS HUMMINGBIRDS IN VIRGINIA

BRIAN TABER

Coastal Virginia Wildlife Observatory
P.O. Box 912,
Eastville, VA 23347

Reports of hummingbirds of the genus *Selasphorus* have increased dramatically in Virginia since 1995, when an astounding 41 of 53 total reports were made. The October through December period, in 2001, widely reported by meteorologists to be perhaps the warmest ever in the mid-Atlantic region, accounted for 13 reports alone. Perhaps flowering plants were more long-lasting during that period, due to the weather and enticed the hummingbirds to remain in the area longer than usual. These reports, together with a growing number of records of many western hummingbird species occurring throughout the southeastern United States during fall and winter (there are now Virginia reports of Calliope, *Stellula calliope* and Black-chinned, *Archilochus alexandri*) have led to increased interest by eastern birders, many of whom have left hummingbird feeders out all year, which in turn, has led to additional reports.

The initial discovery of these post-breeding season migrants has primarily occurred from August to December, with no apparent difference in passage dates from the coastal plain to the mountains and valleys. Some of the birds were recorded only on one day, while others remained on winter territories for months. The longest unaided stay was that of a bird in Lynchburg in 1995-1996, which remained for 169 days. Two birds frequented the same feeder at the same time in Vienna in 1999-2000 and in James City County in 2001-2002. The Williamsburg area has had the most reports, with nine. The four birds which lingered past March 2002, three of which were in James City County, all disappeared between 1 April and 9 April. Intriguing is the one-day report of an apparent *Selasphorus* on 24 May 1993, the only report between 15 April and 4 August. A report with few details from Williamsburg on 27 February, 1992, may well have been a *Selasphorus* hummingbird. Table 1 summarizes the Virginia reports.

Based on capture and banding records from the eastern United States, the expected *Selasphorus* hummingbirds in Virginia are Rufous (*Selasphorus rufus*), Allen's (*Selasphorus sasin*) and Broad-tailed (*Selasphorus platycercus*). They are normally found west of the Great Plains. They are all highly migratory and tolerant of cold weather and possess the ability to slow their metabolisms and greatly conserve energy. I observed one of the James City County birds half-submerged and bathing at minus four degrees Celsius. The three James City County birds in 2001-2002 stayed through the nine inch snowfall in early January. These *Selasphorus* hummingbirds share rufous bases to some tail feathers and have highly variable rufous coloration on the breast, sides, rump, back and head. Adult males can often be identified in

Table 1. Virginia reports of *Selasphorus* hummingbirds. For age, A=adult, I=immature, U=unknown; for sex, M=male, F=female, U=unknown.

Identification	Age/Sex	Banded	Location	Dates	References
Selasphorus	U/U	No	Northampton Co	11-30-52	Kain, 1987
Selasphorus	U/U	No	Wachapreague	12-16-79	Kain, 1987
Rufous	U/U	No	Arlington	9-81 to 5-7-82*	Fide, E. Brinkley
Rufous	U/U	No	Williamsburg	1-4-83 to 1-28-83**	T.Blair, et. al.
Rufous	A/M	No	Melfa	8-4-86 to 9-9-86	J.Benedetti, et. al.
Rufous	U/U	No	Roanoke	10-29-87 to 12-5-87	Opengari, et.al.
Rufous	U/U	No	Salem	10-1-88 to 12-12-88	Middleton, et.al.
Selasphorus	U/U	No	"Williamsburg area"	11-3-88	Fide, Bill Sheehan
Rufous	U/U	No	Newport News	11-21-88	B.Fields
Selasphorus	U/U	No	Charlottesville	10-1-91 to 10-11-91	Shaner, et.al.
Selasphorus	U/U	No	James City Co.	5-24-93	T. Guy
Selasphorus	U/U	No	James City Co.	12-7-94 to 12-15-94	L.Jennings
Rufous	U/U	No	Chesapeake	10-16-95 to 1-11-96	V. Kitchens, et.al.
Selasphorus	U/U	No	Lynchburg	10-30-95 to 4-15-96	Fide, T.Dalmas
Rufous	I/U	No	Fairfax Co.	1995	Fide, E.Brinkley
Selasphorus	I/U	No	Madison Co.	10-12-95 to 11-16-95	B. Konat
Selasphorus	U/U	No	Virginia Beach	12-31-95 to 1-6-96	B. Anderson, et.al
Rufous	U/U	No	Caroline Co.	2-13-96	B.Portlock
Selasphorus	U/U	No	Northampton Co	9-5-96 (Kiptopeke)	B. Sullivan, et.al
Selasphorus	I/U	No	Staunton	11-9-96 to 1-3-97	Y. Larner, et.al.
Allen's	A/M	Yes	Bristol	12-22-97 to 1-6-98	W.Coffey, et.al.
Selasphorus	U/U	No	Virginia Beach	1-11-98	G. Harris, et.al.
Selasphorus	U/U	No	Northampton Co	9-8-98 (Kiptopeke)	E.Brinkley, et.al
Selasphorus	U/U	No	Lynchburg	10-6-98 to 11-24-98	M.Moore, et.al
Selasphorus	U/U	No	Pearisburg	10-12-98 to 10-16-98	P. Spiegel, et.al
Rufous	A/F	Yes ***	Vienna	10-31-99 to 2-21-00	M.Martin, et.al.
Selasphorus	I/U	No	Botetourt Co.	10-3-99 to 12-5-99	Fide, W.Grant
Selasphorus	U/U	No	Amherst Co.	11-20-99 to 4-15-00	Fide, T.Dalmas
Selasphorus	U/U	No	James City Co.	11-24-99 to 11-28-99	P. Sgrinia
Rufous	A/F	Yes	Vienna	12-6-99 to 2-20-00	M. Martin, et.al.
Prob. Selas.	U/U	No	Cheriton	12-23-99	L.Webb
Rufous	A/F	Yes	Russell Co.	9-22-00 to 11-21-00	Worley, et.al.
Selasphorus	U/U	No	Dinwiddie Co.	10-31-00 to 1-5-01	Fide M. Iliff;NAB
Rufous	A/F	Yes	Orange Co.	10-4-00 to 11-24-00	G.Harris, et.al.
					NAB 55:38
Rufous	U/U	No	Chesterfield Co.	10-16-00 to 11-7-00	Coe, et.al.
Rufous	I/F	Yes	Roanoke Co.	10-10-00 to 12-31-00	C.Whiteside, et.al
Rufous	U/U	No	Blacksburg	11-28-00	P. Spiegel, et.al.
Rufous	I/F	Yes	Portsmouth	12-16-00 to 3-20-01	D.Hughes, et.al
Selasphorus	I/U	No	York Co.	12-28-00 to 4-4-01	Fide, B. Taber
Selasphorus	U/U	No	Cape Charles	8-31-01	E. Brinkley
Selasphorus	U/U	No	Bristol	10-1-01 to 10-26-01	Fide, W.Coffey
Rufous	A/F	Yes	Loudoun Co.	10-10-01 to 1-17-02	J.Coleman
Rufous	I/F	Yes	Albemarle Co.	Mid-Oct 01to 2-20-02	Fide, B. Minor
Selasphorus	U/U	No	Virginia Beach	11-12-01	K. Beatty
Rufous	I/M	Yes	Chesterfield Co.	11-12-01 to 11-29-01	W.Ealding
Rufous	I/F	Yes	Chesterfield Co.	11-21-01 to 11-29-01	B. Siegfried
Rufous	I/F	Yes	James City Co.	12-4-01 to 4-1-02	F.Schaller, et.al.
Selasphorus	I/U	No	Springfield	End of Oct to 2-10-02	B. Plimpton
Selasphorus	U/U	No	Lynchburg	12-6-01 to 4-3-02	T.Dalmas, et.al
Selasphorus	I/U	No	Rappahannock	12-10-01 to 12-17-01	J.Garvin, et.al.
Rufous	I/F	Yes	James City Co.	12-18-01 to 4-9-02	F.Schaller, et.al
Selasphorus	U/U	No	Nelson Co.	12-25-01 to 1-3-02	K.Fischer
Rufous	I/F	Yes	James City Co.	12-31-01 to 4-3-02	T.Armour, et.al

*captured and released when weather was warmer

**neighbors reported a "brownish hummingbird" in "very late fall," (1982) and "mid-March," (1983)

***re-captured in Lorton; present there 2-29-00 to 3-9-00

the field (the only unbanded adult male reported was the Melfa bird in 1986), but females and immatures are generally unidentifiable without examination in the hand. Capture has allowed identification to the species level for 13 Rufous Hummingbirds and one Allen's. The banded birds were identified as six adults and eight immatures including only two males. I was fortunate to witness Mary Gustafson and Bruce Peterjohn as they adeptly captured and expertly examined two of the James City County Rufous Hummingbirds in January 2002.

Most of the reports are of birds seen at hummingbird feeders and in association with such late-blooming, non-native landscaping plants as Pineapple Sage (*Salvia rutilans*), Oregon Grape (*Mahonia aquifolium*) and the "Encore" variety of late-blooming azaleas. All of the five birds I observed in the Williamsburg area, were found in situations characterized by low, dense cover, with sheltered, sunny areas and blooming plants. The three others in that area that I looked for, but did not see were also in similar habitat and one was apparently associating with a plant nursery. While unusually mild weather certainly contributes to the availability of flowers, nectar and insects into December and January, these records indicate that the occurrence of *Selasphorus* hummingbirds is a regular event in Virginia over a wide range of dates.

ACKNOWLEDGMENTS

Thanks to many people who shared their data and hummingbird stories and especially to Charlotte Friend for Virginia Avian Records Committee data; Mary Gustafson for banding information, Ned Brinkley, Marshall Iliff and Bill Holcombe, of the Williamsburg Bird Club, for their extensive records.

LITERATURE CITED

- Kain, T. 1987. Virginia's birdlife: an annotated checklist. Virginia Society of Ornithology.
North American Birds, 55:158.
North American Birds, 55: 38.

MISSISSIPPI KITES IN HALIFAX COUNTY

JEFFREY C. BLALOCK
103 Elizabeth Court
South Boston, VA 24592

On 2 June 1998, I got an early start on the first day of the 1998 Virginia Society of Ornithology Breeding Bird Foray in Halifax County. Prior to this, very little formal research had been done in Halifax County. At around 1530 hrs, my wife Shirley and I decided to ride to her uncle Runt Powell's farm which is located at the crest of a hill on State Rd. 716 (Wolf Trap Road). It overlooks both the Wolf Trap Wildlife Management and the Banister River Wildlife Management Area, a site of a known Great Blue Heron rookery. At about 1600 hrs, I noticed a flock of four birds flying around, diving down and soaring back up with little flapping of their wings. They were first only about 200 m north of the barn where I stood, flying above a large pasture that is part of the Powell's farm. I thought that they were feeding on 17-year cicadas, which were out in great numbers. As I watched them, I could see flashes of white and was somewhat puzzled as to what they might be. I knew immediately they were far too small for Bald Eagles, which I had seen in the area and that they were not Ospreys because their wings were smaller and pointed at the ends and they didn't have the bend in the wing typical of the Osprey. I observed the birds with binoculars for ten to fifteen minutes, easily confirming that indeed they were Mississippi Kites.

We returned home for a spotting scope, and called Charles and Melva Hansrote and Richard and Ruth Miller, recently arrived for the foray. In fifteen minutes, we all converged on the farm. With just a few minutes of searching we soon had the kites spotted and were able to observe them for several minutes. Even though the kites were about 800 m from our location in front of the barn, the Hansrotes and the Millers were able to confirm the species identification.

Over the next couple of days I made every attempt to observe the birds as much as possible. One interesting observation was that they were not harassed by crows as are other raptors. In fact one kite was seen giving chase to a crow, the crow then turned and chased the kite for a while and then the kite turned back on the crow and chased it away. The only other chase observed was that of a Green Heron by a kite. One kite was observed diving down on a Red-tailed Hawk that was perched in a tree. See Table 1 for further notes and comments on the observations for 1998 and 1999.

The history of Mississippi Kites in Virginia spans nearly 50 years. The first record was of a bird soaring near Lexington on 21 May 1951 by Murray (Murray, personal notes). The next reported sighting was by Robert S. Merkel, who found one perched on a branch of a dead tree at his home on 20 May 1962 just two miles south of Charlottesville (Scott 1962). On 28 August 1962, Mrs. Floy C. Burford

found an adult and young in Norfolk (Scott 1964). One was seen near Kempsville, Princess Anne County on 23 July 1968 by the L. E. Buckleys (Buckley 1968, Cutler, 1969). The first confirmed record was of a near adult bird near Leesburg, Loudoun County during 5-7 June 1987 reported by E.P. Weigel, Paul Engman, Ken Howard and J.H. Meisenhelder. It was seen chasing a Chimney Swift and feeding on 17-year cicadas (Armistead 1987).

In the southern piedmont of Virginia, the first records of Mississippi Kites first along the Meherrin River date from 1988. Two, possibly three birds of which

Table 1. Mississippi Kite observations in Halifax County, Virginia. All observations were made from Runt Powell's farm on State Rd. 716 except for the sighting on 05/02/99, which was made from the farm of Ronnie Hackney on State Rd. 716.

Date	Individ.	Remarks
6/2/98	4	Species confirmed by Charles and Melva Hansrote and Richard and Ruth Miller. First record for Halifax County. From 1600 to 1745 Hrs.
6/3/98	3	1 Adult, 1 sub-adult and 1 immature. Seen from 1115 Hrs to 1145 Hrs.
6/3/98	3	Observed from 1820 to 1845 Hrs.
6/5/98	8	Counted 8 birds as they all soared around together. Observed from 1755 to 1905 Hrs.
6/5/98	1	Observed from 0725 to 0730 Hrs.
6/5/98	4	Observed from 0748 to 0752 Hrs.
6/6/98	2	
6/6/98	1	Observed from 1149 to 1150 Hrs.
6/6/98	1	Observed from 1430 to 1438 Hrs.
6/6/98	2	Observed from 1824 to 1826 Hrs.
6/7/98	6	Observed from 1512 to 1520 Hrs.
6/7/98	8	Observed from 1520 to 1600 Hrs. During this time 4 adults perched in a dead tree about 1/2 of a mile from my location. Observed from 1532 to 1545 Hrs.
6/7/98	2	Observed from 1310 to 1320 Hrs.
6/7/98	4	Observed from 1425 to 1500 Hrs. One kite was observed diving at a Green Heron.
6/7/98	1	Observed from 1410 to 1415 Hrs. Dove down on Red-tailed Hawk that was sitting in a tree.
5/2/99	2	Birds were seen from the service road through the fields just above the ditch. Adult & immature were flying around at the edge of the woods towards the east.
5/3/99	1	
5/7/99	1	Adult, seen from 1004 to 1010 Hrs.
5/9/99	1	Adult, seen from 1055 to 1100 Hrs.
5/9/99	1	Adult, seen from 1115 to 1120 Hrs.
5/23/99	1	Adult, seen from 0943 to 0944 Hrs.
5/23/99	1	Adult, seen from 1030 to 1036 Hrs.
6/13/99	1	Adult, seen from 0956 to 1000 Hrs.
6/15/99	1	Adult, seen from 1844 to 1855 Hrs.
6/27/99	1	Adult, seen from 0925 to 0926 Hrs.
7/4/99	1	Adult, seen from 1002 to 1004 Hrs.
7/4/99	1	Adult, seen from 1014 to 1015 Hrs.
7/4/99	1	Adult, seen from 1033 to 1050 Hrs. Soared around for about 8 minutes without a single wing beat.

one was reported as an adult were seen in early June near the North Carolina border (Virginia Breeding Bird Atlas, unpublished). R. P. Russell saw a kite between 2-3 July 1989 (Armistead 1989). Up to two were reported between 18 May and 8 June 1991 in Greenville County by John Dalmás, Allan Sharrett, Bill Williams, and others (Armistead 1991). Kites have been reported at the Greenville/Southhampton county sites every year since they were found except for 1998 (no reports for 1998 were included in *Field Notes* or *The Raven*).

The first confirmed nesting record was of a near-fledgling juvenile in a nest on 11 August 1996 in a backyard of an unoccupied suburban home in Woodbridge, Prince William Co. near the Potomac River (Quezon 1997). Adults returned to this site in 1997 for the third consecutive year and fledged a juvenile for the second consecutive year (Iliff 1997).

As of this writing the kites have returned to Halifax County for the third consecutive year in the same location. Two adults were seen on 30 April 2000, and they have been seen at least once every month between April and July. No attempt has been made to document nesting other than observation from Powell's farm. I suspect they are nesting on an adjoining farm or further back in Wolf Trap WMA.

Several other observers have visited the area to see the kites. This sighting became the fifth accepted record of Mississippi Kites in the Piedmont of Virginia by the Virginia Avian Records Committee.

ACKNOWLEDGMENTS

I thank Teta Kain for providing me with the historical data on the kites in Virginia and for editing and comments on this article. I also thank Calvin (Runt) Powell for allowing birders access to his farm for observing the kites.

LITERATURE CITED

- ARMISTEAD, H. T. 1987. Middle Atlantic Coast Region. *American Birds* 41(5): 1419.
- ARMISTEAD, H. T. 1989. Middle Atlantic Coast Region. *American Birds* 43(5): 1301.
- ARMISTEAD, H. T. 1991. Middle Atlantic Coast Region. *American Birds* 45(3): 426.
- BUCKLEY, F. G. AND P. A. BUCKLEY. 1968. The Current Status of Certain Birds in the Virginia Capes Area. *Raven* 39:30.
- CUTLER, D. A. AND F. R. SCOTT. 1969. Middle Atlantic Coast Region. *Audubon Field Notes* 22(5): 595.
- ILIFF, M. J. 1997. Middle Atlantic Coast. *Field Notes* 51(5): 982.
- MURRAY, J. J. 1951 Unpublished notes.
- QUEZON, A. J. 1997. First Breeding Record for Mississippi Kite in Virginia. *Raven* 68:85.
- SCOTT, F. R., Ed. 1962. News and Notes. *Raven* 33(2): 14.
- SCOTT, F. R., Ed. 1964. News and Notes. *Raven* 34:24.

GROUP WATER-CROSSING STRATEGIES IN MIGRATING TURKEY VULTURES

BRIAN TABER

103 Exeter Court

Williamsburg, VA 23185

Turkey Vultures (*Cathartes aura*) have been observed in late winter and spring, at the College Creek Hawkwatch, migrating across the James River (Taber, 1997). Record-keeping at the site tracks the time of the water-crossing, also noting whether groups are formed. Water-crossings provide benefits for migrating birds, by saving distance, but they also pose hazards (Kerlinger 1989). The birds must assess whether the water-crossing is a better use of energy than flying around it. Even the seemingly modest 2-4 kilometer crossing at College Creek can be dangerous for Turkey Vultures. I have watched single birds in strong winds flying only inches above the waves, clearly laboring to make the north shore. First-year birds may be especially vulnerable, due to their lack of experience.

OBSERVATIONS

During hawkwatch observations from March 3, 1999 to May 25, 2001, 82% (1429) of the 1736 Turkey Vultures crossed the 2-4 kilometers of water in groups. Table 1 shows the numbers of the group sizes observed.

Although Turkey Vultures at the site do cross the water singly, they clearly prefer to cross in groups. They may already be migrating as a group and stay together during the water-crossing or the birds may all be taking advantage of favorable

Table 1. Group sizes of migrating Turkey Vultures.

Group size	Number of groups observed	% of total birds
2	133	15
3	75	13
4	48	11
5	27	8
6	12	4
7	11	5
8	9	4
9	11	6
10 - 14	12	8
15 - 20	3	3
21 - 28	4	5
Total	345	82

conditions at the same time. At this season, the rapid warm-up during mid-morning causes thermal updraft formation along the south shore, which allows Turkey Vultures to gain altitude quickly for the water-crossing. The lift is important, because they lose altitude very rapidly as they cross the cold water, which typically lacks thermal updrafts. They generally circle above the south shore to a height of 50-100 meters and then, in unison, set their wings and usually cross without flapping. The birds in the groups usually stay within a few yards of one another and at the same altitude. They are often just at treetop level when they reach the north shore, where they usually circle briefly, then continue northward.

Group, or flock formation, in birds may develop for several reasons, including aerodynamic efficiency, finding thermals, finding routes, detecting predators and foraging (Kerlinger 1995). At College Creek, it appears that finding thermals and routes across the water are the primary functions of the flocks. They are not foraging while crossing the water, they have virtually no danger of attack by predators and appear to be traveling too slowly to derive any aerodynamic benefit, such as reduced wind drag, from other birds.

Thermal finding and route selection are very important functions. Flocks often appear to spread out along the south shore, as if searching for thermal updrafts. The birds then gradually merge and rise as the best areas for lift are found. There are several routes across the river, which appear to be mostly determined by wind direction, with birds allowing themselves to drift. There is often a lead bird in the flock, which appears to select the route, as positions within the flock generally remain the same during the water-crossing. It would be interesting to note if young birds, distinguished by darker head color, typically follow adults, however, distance and backlighting usually do not permit easy determination of age.

Large groups often split above the south shore, with some birds crossing together and others remaining behind, usually re-forming and crossing soon after. Groups of ten or more are rarely seen crossing (16% of total birds, see Table 1), though they are commonly seen in those numbers above the south shore.

During winds strong enough to sway large branches, groups of Turkey Vultures will still circle above the south shore, but they rarely cross the water in such conditions. They often venture part way across, apparently testing the conditions, only to turn back. Even strong southerly winds, which would seem favorable, deter the birds. Strong winds have a great effect on Turkey Vultures, as they are prone to slow soaring, rather than rapid flapping. They are easily blown off course by strong winds and the loss of control over even this modest water-crossing probably affects their decisions to cross. The helpful, energy-saving thermal updrafts are dispersed by strong winds, further discouraging a water-crossing.

During the course of a mid-morning flight across the river, the groups are usually spaced several minutes to 30 minutes apart. As an example, on a day in April 2001, over a period of 150 minutes, Turkey Vulture groups came at intervals of 16, 18, 3, 21, 4, 2, 2, 23, 14 and 2 minutes.

The rather even spacing of groups throughout the season is also interesting. In 2001, for example, during the 54 days of observation, Turkey Vulture groups

were seen almost daily, from the beginning of the count on 9 February to the end on 25 May. The protracted spacing produced no long lulls between flights of groups, nor large gatherings, though the peak numbers occurred from the third week in March to the first week in April, which is typical for the site. The average number of Turkey Vultures on days when Turkey Vulture groups were observed was 19.

LITERATURE CITED

- KERLINGER, P. 1989. Flight strategies of migrating hawks. University of Chicago Press, Chicago, IL.
- KERLINGER, P. 1995. How birds migrate. Stackpole Books, Mechanicsburg, PA.
- TABER, B. 1997. College creek hawkwatch. Raven, Vol. 68: No.2, 110-111.

INFORMATION FOR CONTRIBUTORS

The Raven, the official journal of the Virginia Society of Ornithology (VSO), functions to publish original contributions and review articles in ornithology, not published elsewhere, mostly relating to Virginia birdlife. Manuscripts should be sent to the editor, Paul R. Cabe, Biology Department, Washington & Lee University, Lexington, VA 24450 (cabep@wlu.edu).

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 history, 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 acceptance for publication.

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 published in the Seventh Edition of the A.O.U. Check-list of North American Birds and subsequent supplements. All measurements should be reported in metric units.

Preferred submission format for manuscripts is by electronic file, prepared using Microsoft® Word or WordPerfect®. Text files should contain minimal formatting. All graphics (photos, maps, graphs, charts) must be in black and white; original size should not exceed 5 x 7 inches. Files may be submitted by email attachment (preferred) or on floppy disk or CD. Authors are encouraged to consult with the editor on additional matters of content, format or style.



The Raven

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

Volume 73

Number 2

2002



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, 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 additions, local chapters of the Society, located in some of the larger cities and towns of Virginia, 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. Annual dues are \$15.00 for active members, \$25.00 for sustaining members, \$50.00 or more for contributing members, \$400.00 for life members, and \$20.00 for family members (limited to husband, wife and their dependent children).

Editorial queries and comments may be directed to Paul R. Cabe, Biology Department, Washington & Lee University, Lexington, VA 24450.

OFFICERS OF THE VSO

President: Larry Lynch, 9430 Tuxford Road, Richmond, Virginia 23236

Vice President: Teta Kain, 7085 Caffee Creek Lane, Gloucester, Virginia 23061

Secretary: Lauren Scott, 11838 Chase Wellesley Drive #425, Richmond, Virginia 23233

Treasurer: Barbara Thrasher, 120 Woodbine Drive, Lynchburg, Virginia 24502

Raven Editor: Paul R. Cabe, Biology Dept., Washington & Lee University, Lexington, VA 24450.

Newsletter Editor: Linda Fields and Alan Schreck, 1573 21st Ct. N., Arlington, VA 22209

The Raven

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

Editor
Paul R. Cabe



Volume 73, No. 2

Published by
THE VIRGINIA SOCIETY OF ORNITHOLOGY

Fall 2002

Copyright by the Virginia Society of Ornithology, Inc.

ISSN 0034-0146

TABLE OF CONTENTS

THE 2002 GOLF COURSE FORAY JOSHUA E. LeCLERC	3
INLAND SPECIMEN RECORDS OF THE CLAPPER RAIL CHARLES R. BLEM	44
SPRING BIRD MIGRATION AT THE SOUTHERN TIP OF VIRGINIA'S EASTERN SHORE, 1992-2002 BRIAN TABER.....	46
A SIX-YEAR SUMMARY OF THE COLLEGE CREEK HAWKWATCH, 1997-2002 BRIAN TABER.....	52
IN MEMORIUM: WILLIAM FRANKLIN ROUNTREY PAUL W. SYKES, JR.	55
IN MEMORIAM: CONSTANCE SIMONS DU PONT DARDEN EDWARD S. BRINKLEY	57
ANNUAL REPORT OF THE VIRGINIA AVIAN RECORDS COMMITTEE	59
ANNUAL MEETING OF THE VIRGINIA SOCIETY OF ORNITHOLOGY	63

THE 2002 GOLF COURSE FORAY

JOSHUA E. LeCLERC

Department of Biology

College of William & Mary

Williamsburg, VA 23187

INTRODUCTION

The Virginia Society of Ornithology's 2002 Breeding Bird Foray was conducted from 1 June through 16 June. Unlike previous Forays, this one was focused on a particular habitat type, rather than a geographic location. The rationale for a habitat-based Foray is that bird communities associated with particular habitats (e.g., high elevation meadows, tidal saltmarshes) may be of as much interest to birders and conservationists as those of a particular location. The justification for surveying golf courses is that there has been a tremendous increase in the number of golf courses nationwide, and Virginia, with >360 courses covering >18,000 ha, is at the forefront of this trend (Golfable Directory of Golf Courses). Contrary to popular conception, golf courses have the potential to provide habitat for birds, as only about 20% of a course is required for in-play areas (Terman 1997). The remaining areas could be providing breeding habitat for native birds, including species of conservation concern. On the other hand, Virginia's golf courses may be managed in such a way as to provide very little breeding habitat for native species. The objective of this Foray, perhaps the first survey of its kind in the world, was to sample Virginia's golf courses to estimate the number of species occurring on each course and their densities. Volunteers (see acknowledgements for all 119 names) censused 87 golf courses throughout the state.

METHODS

In an effort to sample the entire state, golf courses were selected within the Coastal Plain, Piedmont, and Mountain (Valley and Ridge, Blue Ridge, and Appalachian Plateau) physiographic provinces. Each golf course was surveyed by two observers working together, one with at least ten years of experience identifying birds. At the tee of each hole of the course, the observers conducted a 3-min point count with a radius of 50 m. Between point counts, observers recorded all new birds detected within the property boundaries of the golf course. During these fairway counts, observers walked along the fairways, not straying into unmaintained areas such as woodlots. Some golf courses required the use of golf carts, in which case observers drove along cart paths between point counts and stopped periodically to look and listen for birds. Areas maintained for play (i.e. fairways and greens) as well as unmaintained areas owned and controlled by the golf course management were considered part of the golf course. Birds detected on land obviously not owned by the golf course (i.e. private homes adjacent to fairways) were not recorded.

To be recorded, birds had to be using the golf course in some manner, such as perching, foraging, or breeding. Birds flying high over the course, and presumably not using it in any way, were not recorded. Observers recorded potential breeding units, rather than individual birds. Each breeding unit consisted of one male, one female, one breeding pair, or one family. This was done to avoid inflation of the population density estimate by recording multiple members of the same family. Efforts were made not to recount the same individual bird at multiple holes on the golf course, but some recounting certainly occurred because of the way golf courses curve back on themselves. For numbers of species present on each course (Appendix 1), all of the data from the tees and the intervening fairways were included. Because each point count circle encompassed 7854 m², densities could be calculated from these data. For density estimates (Appendix 1, numbers in parentheses), only the data from the point counts on the tees were used. If a bird species was seen on a fairway, but was never detected on a tee point count, no density value appears in Appendix 1. It must be noted again that these densities are for breeding units (i.e., unmated bird, pair or entire family), rather than individual birds, and densities should be interpreted with caution because corrections for detectability were not applied. For species that flock during the survey period (Canada Geese and Common Grackles, all scientific names given in Appendix 3), reported flock counts were reduced to the minimum number of breeding units, so densities are underestimates.

Surveys commenced at first light (approximately 0530) and were completed by 1000. To meet this requirement, some larger golf courses were surveyed on two separate mornings. Depending upon the number of holes on the golf course, each survey consisted of 9 or 18 point counts at tees and the same number of associated fairway counts.

To determine which species were of conservation concern in Virginia we used the Total Breeding Priority Scores provided in the Partners In Flight Species Assessment Database. For each species we averaged the scores for the three major physiographic areas in the state (mid-Atlantic Coastal Plain, Piedmont, and Ridge and Valley). Scores generally range from 10-30, with higher scores indicating species of the highest concern (e.g. Red-winged Blackbird = 12, Cerulean Warbler = 26.3). We classified any species with an average score for the three areas >16 as a species of conservation concern.

Prior to the Foray it seemed reasonable to expect that golf courses might be providing habitat for three groups of species of special conservation concern: (1) if courses leave large tracts of intact forest, they might provide habitat for vulnerable Neotropical forest nesting birds, and/or (2) if courses maintain ample plots of tall grass and shrub habitats, they could provide habitat for declining open habitat species, and/or (3) if courses maintain water hazards with associated wetlands, they may provide habitat for wetland-dependent species. We classified species as being forest-dependent Neotropical migrants if they require closed canopy habitats and migrate as far as the Caribbean or Central America (Ehrlich et al 1988). We classified a species as being open habitat-dependent if it was described as nesting outside of the forest canopy in two of three standard references (Harrison 1978,

Farrand 1983, Ehrlich et al. 1988). A species was classified as wetland-dependent if it relies primarily on non-forested wetland for foraging (Farrand 1983). In cases where species fit into multiple categories, we used our judgment to classify them (See Tables 1-3).

RESULTS

A total of 118 species were recorded on the 87 courses. The highest species count was Brambleton in Ashburn (61 species) and the lowest was Four Winds in Rappahannock (19 species), with the average number of species per course being 38.4 species. The most common species were American Crow, American Robin, and Northern Cardinal, reported on more than 95% of courses. Also common were Mourning Dove, Chimney Swift, Red-bellied Woodpecker, Blue Jay, Carolina Chickadee, Tufted Titmouse, Carolina Wren, Eastern Bluebird, Northern Mockingbird, European Starling, Chipping Sparrow, Common Grackle, Brown-headed Cowbird, and American Goldfinch, present on more than 75% of courses; Canada Goose, Downy Woodpecker, Northern Flicker, Eastern Wood-Pewee, Eastern Phoebe, Great Crested Flycatcher, Eastern Kingbird, Barn Swallow, White-breasted Nuthatch, Gray Catbird, Brown Thrasher, Red-eyed Vireo, Indigo Bunting, Eastern Towhee, Song Sparrow, Red-winged Blackbird, and House Finch were found on 50-75% of courses. The absence of Broad-winged Hawk, Veery, Worm-eating Warbler, and Louisiana Waterthrush from any course was a surprise. The absence of Cooper's Hawk may have been the result of being overlooked by observers, who reported Sharp-shinned Hawks from four courses. Some species were very scarce with <5 individuals seen on <3 courses: Yellow-crowned Night-heron (two at Woodlands in Hampton and one at Elizabeth Manor in Portsmouth), American Black Duck (1) at Eastern Shore Yacht and Country Club in Melfa, Least Tern (1), Forster's Tern (1) and Royal Tern (1) at Bay Creek in Cape Charles, Common Tern (1) at Kiln Creek in Newport News, Black-billed Cuckoo (1) and Willow Flycatcher (2) at Brambleton in Ashburn, Bank Swallow (one at Brambleton and four at Oak Marr in Oakton), Common Raven (1) at Stony Creek at Wintergreen, Black-capped Chickadee (1) at Needle's Eye in Monterey, Chestnut-sided Warbler (1) at Devil's Knob in Wintergreen, Black-throated Green Warbler (1) at Mountain Top in Grundy, Kentucky Warbler (2) at Kingsmill (one on each of the Plantation and Woods courses) in Williamsburg, Cerulean Warbler (one each at Willowbrook in Grundy and Mountain Top), and Rose-breasted Grosbeak (4) at Devil's Knob. Nocturnal birds were also poorly represented, but this is probably a result of our census methodology, which excluded night censusing. A lone Spotted Sandpiper at Brambleton and a Ring-billed Gull at Woodlands were eliminated from all analyses because they were presumed to be either late migrants or non-breeding individuals.

In general, forest-dependent Neotropical migrants of conservation concern were found on few courses (Table 1), with only one species (Chimney Swift) present on more than 75% of courses, only two present on 50-75% of courses (Great Crested Flycatcher and Eastern Wood-Pewee), and three present on 25-50% of courses (Blue-gray Gnatcatcher, Wood Thrush, Pine Warbler). Many more species of conservation

Table 1. Forest-nesting Neotropical migrants of conservation concern seen on golf courses during the 2002 Foray.

Species	Priority Score	Number seen	% of courses detected
Black-billed Cuckoo	19	1	1.1
Yellow-billed Cuckoo	18.3	34	21.8
Chimney Swift	19	326	75.9
Ruby-throated Hummingbird	18	18	16.1
Eastern Wood-Pewee	20.7	253	63.2
Acadian Flycatcher	21.3	70	24.1
Great Crested Flycatcher	17.7	164	59.8
Blue-gray Gnatcatcher	16.3	152	43.7
Wood Thrush	24.7	77	41.4
Yellow-throated Vireo	22	25	18.4
Warbling Vireo	17.3	8	3.4
Northern Parula	20.7	28	14.9
Black-throated Green Warbler	17.7	1	1.1
Yellow-throated Warbler	20.3	29	9.2
Pine Warbler	18	148	41.4
Cerulean Warbler	26.3	2	2.3
Black-and-White Warbler	18	16	8.0
Prothonotary Warbler	22	5	3.4
Ovenbird	17.3	91	24.1
Kentucky Warbler	24.3	2	2.3
Hooded Warbler	21	10	16.9
Scarlet Tanager	21	34	18.4
Rose-breasted Grosbeak	17.3	4	1.1

concern dependent on open habitat were found on the courses (Table 2). Chipping Sparrow was found on more than 75% of courses; Eastern Kingbird, Gray Catbird, Brown Thrasher, Indigo Bunting and Eastern Towhee were present on 50-75% of courses; White-eyed Vireo, Common Yellowthroat, Field Sparrow, Orchard Oriole, and Baltimore Oriole were present on 25-50% of courses. Wetland-dependent species of conservation concern were present on very few courses, with only one species (Eastern Phoebe) on more than 50% of courses, and one other (Green Heron) on 25-50% of courses (Table 3). Overall, Virginia's golf courses host an impressive number of bird species during the breeding season (116), but few of these are of conservation concern.

Most notable from the data was the finding that courses varied immensely. The most depauperate course had only 30% the number of species as the richest course. The factors that led to the great disparity in suitability for birds are the subject of a separate article (LeClerc and Cristol, unpubl. MS). Our conclusion from this

Table 2. Open habitat-dependent species of conservation concern found on golf courses during the 2002 Foray.

Species	Priority Score	Number seen	% of courses detected
Northern Bobwhite	20	40	16.1
Red-headed Woodpecker	18	32	13.8
Willow Flycatcher	17.7	2	1.1
Eastern Kingbird	19	152	72.4
Gray Catbird	19	168	54.0
Brown Thrasher	19.7	154	70.1
White-eyed Vireo	19.7	48	28.7
Chestnut-sided Warbler	19	1	1.1
Prairie Warbler	24	31	14.9
Common Yellowthroat	17	79	33.3
Yellow-breasted Chat	19	27	21.8
Blue Grosbeak	17	29	14.1
Indigo Bunting	17.3	261	63.2
Eastern Towhee	20	181	58.6
Chipping Sparrow	16.3	700	83.9
Field Sparrow	22.3	76	29.9
Grasshopper Sparrow	19.3	9	6.9
Eastern Meadowlark	17.7	64	20.7
Orchard Oriole	18.7	63	29.9
Baltimore Oriole	18.7	50	26.4

Table 3. Wetland-dependent species of conservation concern found on golf courses during the 2002 Foray.

Species	Priority Score	Number seen	% of courses detected
Green Heron	18	59	35.6
Yellow-crowned Night-heron	17	3	2.3
American Black Duck	21	1	1.1
Bald Eagle	16.7	3	3.4
Royal Tern	17	1	1.1
Common Tern	17	1	1.1
Forster's Tern	19	1	1.1
Least Tern	18	1	1.1
Belted Kingfisher	17.7	22	16.1
Eastern Phoebe	16.3	96	57.5

Foray is that golf courses are not currently serving an important role in the state as sources of habitat for species of conservation concern. However, they do provide habitat for many species of birds during the breeding season, including a few with high conservation priority scores such as Wood Thrush. When properly designed and maintained, golf courses have the potential to provide habitat for some forest-dependent Neotropical migrants and many birds of open habitats, both groups that are declining nationwide (Askins 2002). This Foray reports only the number of breeding units present, rather than actual reproductive success, so it remains to be determined whether golf courses can make a contribution to conservation efforts by providing habitat for successful reproduction of vulnerable species, or whether they are merely "sink" habitats where bird populations fail to maintain themselves.

An additional conclusion is that the habitat-oriented Foray was a success and should be tried again in the future. Participation was far greater than for previous Forays, presumably because participants did not have to travel far, and could make a substantial contribution with a single day's effort.

ACKNOWLEDGMENTS

We wish to thank all of the Foray participants for making this large-scale census possible: Pat Adams, Len Alfredson, Judy Allen, Kate Allen, Tom Armour, Fred Atwood, Gail Barger, Hugh Beard, Ruth Beck, Al Bippus, Jeff Boardwine, Glenda Booth, Emedio Bracalente, Ann Brooks, Laura Catterton, John Coe, Caroline Coe, Linda B.Cole, Joe Coleman, Jeremy Conkle, Ben Copeland, Mary Copeland, Linda Cory, Bill Cross, Bob Daley, Thelma Dalmás, Kent Davis, Pamela Denmon, David DesRochers, Alton Dick, Andrew Dolby, Ruth Douglas, John Drummond, Elizabeth Edwards, Beth Elkins, Bob Elliott, Betty Epperson, Bob Epperson, Robert Ferrell, Linda Fields, Mark Fink, Matt Fountain, Art Fovargue, Kathleen Fovargue, Jane Frigo, Jennifer Gaden, Kurt Gaskill, Marjorie Glarsco, Carol Goff, Charles Hansrote, Melva Hansrote, Carol Heiser, Dee Henderson, Bill Holcombe, Karl Huebner, Kit Huffman, Mark Johnson, Phyllis Jones, Jeff Keiser, Bill Keith, Joella Killian, Michael Killian, Val Kitchens, Mary Alice Koeneke, Kim Korth, Anita Kraemer, Julie Kuttruff, Yulee Larner, Suzie Leslie, Rachel Loveday, Carolyn Lowe, Mary Ann Madison, Roger Mayhorn, Carol McAllister, Paul McAllister, Tom McCary, Grace McCrowell, John McDowell, Mollie Messimer, Roger Miller, Alex Minarik, Mike Minarik, Betsy Nugent, Anne Oliver, Bill Opengari, Pat Polentz, C. Preston Poore, Bill Portlock, Alyce Quinn, Tim Quinn, David Raines, Matt Ramah, Mary Ratliff, Robert D. Riggs, Gene Sankey, Gene Sattler, Marge Schrader, Alan Schreck, Lee Schuster, Sheila Scoville, Dot Silsby, Grant Simmons, Emilie Snell-Rood, Peggy Spiegel, Kingsley Stevens, Adrienne Strandberg, Ed Talbott, Dorothy Tella, Jeff Trollington, Thyra Valade, Jennette Vireo, Jim Waggener, Marilyn Walter, Peggy Rommen Waterfield, Phil West, Clark White, Alexandra Wilke, Bill Williams, and Jo Wood. Thanks also to Dan Cristol for help and advice in analyzing the Foray data.

LITERATURE CITED

- ASKINS, R.A. 2000. Restoring North America's Birds. 2nd Edn. Yale University Press: New Haven.
- ERHLICH, PAUL R., DOBKIN, DAVID S., AND WHEYE, DARRYL. 1988. The Birder's Handbook. Simon and Schuster Inc., New York.
- FARRAND, JOHN., JR., ed. 1983. The Audubon Society Master Guide to Birding. Alfred A. Knopf, New York.
- GOLFABLE DIRECTORY OF GOLF COURSES. 2003. Golfable.com Golf Courses. 27 Oct. 2003 <<http://golfable.com>>.
- HARRISON, COLIN. 1978. A Field Guide to the Nests, Eggs, and Nestlings of North American Birds. Collins, Cleveland.
- PARTNERS IN FLIGHT SPECIES ASSESSMENT DATABASE. 2002. Rocky Mountain Bird Observatory. 13 Oct. 2003 <<http://www.rmbo.org/pif/pifdb.html>>.
- TERMAN, MAX R. 1997. Natural links: naturalistic golf courses as wildlife habitat. Landscape and Urban Planning 38:183-197.

APPENDIX 1. Birds seen on each course. Numbers in parentheses indicate densities of birds per hectare calculated at tees. Provinces include Coastal Plain (CP), Piedmont (PM), and Mountains and Valleys (MT).

Province	Golf Course	# holes	Double-crested Cormorant	Great Blue Heron	Great Egret	Green Heron	Yellow-crowned Night Heron	Mute Swan	Canada Goose
CP Aquia Harbour		9	0	0	0	0	0	0	0
CP Augustine		18	0	1 (0.07)	0	0	0	0	21 (0.92)
CP Bay Creek		18	2	2 (0.07)	2 (0.07)	2 (0.07)	0	0	6 (0.35)
CP Belle Haven		18	0	0	2	0	0	0	58 (0.71)
CP Bide-a-wee		18	0	0	0	1 (0.07)	0	0	0
CP Chesapeake		18	0	0	0	0	0	0	89 (0.35)
CP Colonial		18	0	0	0	0	0	0	0
CP Eaglewood (Blue)		18	0	0	0	0	0	0	0
CP Eaglewood (Red)		18	0	0	0	0	0	0	1
CP Eastern Shore		18	0	2	1	0	0	0	6
CP Elizabeth Manor		18	0	0	3 (0.14)	0	1 (0.07)	0	0
CP Ford's Colony		18	0	2	0	0	0	0	15
CP Four Winds		18	0	0	0	0	0	0	0
CP Fredericksburg		18	0	0	0	0	0	0	3
CP Golden Horseshoe (Green)		18	0	1 (0.07)	0	1	0	0	4 (0.28)
CP Hamptons		18	0	1	4 (0.14)	1	0	0	16 (0.71)
CP Hell's Point		18	0	2	0	0	0	0	36 (1.13)
CP Hobbs Hole		18	0	0	0	0	0	0	9 (0.64)
CP Kiln Creek (Championship)		18	1	6 (0.28)	2 (0.07)	2	0	0	121 (0.42)
CP Kiln Creek (Creek)		9	0	2	0	1	0	0	11 (0.14)
CP Kingsmill (Plantation)		18	0	1	1	0	0	0	4 (0.14)
CP Kingsmill (River)		18	0	1 (0.07)	0	0	0	2	3 (0.07)
CP Kingsmill (Woods)		18	0	0	0	0	0	1 (0.07)	1
CP Kiskiack		18	0	0	0	1	0	0	1
CP Lee's Hill		18	1	5 (0.21)	0	1 (0.07)	0	0	6
CP Newport News (Cardinal)		18	0	0	0	0	0	0	10 (0.71)
CP Newport News (Deer Run)		18	0	5 (0.28)	1	0	0	0	33 (2.05)
CP Pohick Bay		18	0	12 (0.50)	0	0	0	0	15
CP Princess Anne		18	0	1 (0.07)	0	3 (0.14)	0	0	10
CP Red Wing Lake		18	1	2 (0.07)	1	0	0	0	81 (0.42)
CP Riverfront		18	0	2 (0.07)	2	1 (0.07)	0	0	10 (0.71)
CP Royal New Kent		18	0	0	0	0	0	0	1 (0.07)
CP Stonehouse		18	0	2	0	0	0	0	0
CP Suffolk		18	0	2 (0.07)	0	1	0	0	0
CP Two Rivers		18	0	2	0	0	0	0	15
CP Williamsburg		18	1 (0.07)	2	0	1 (0.07)	0	1	5 (0.21)
CP Williamsburg National		18	0	2	0	2 (0.07)	0	0	0
CP Woodlands		18	0	2	4 (0.21)	8 (0.35)	2 (0.14)	0	91 (2.05)
CP Woodside		9	0	2	0	0	0	0	0
CP Total			6	54	23	26	3	4	682

Wood Duck	American Black Duck	Mallard	Black Vulture	Turkey Vulture	Osprey	Bald Eagle	Red-shouldered Hawk	Red-tailed Hawk	Wild Turkey	Northern Bobwhite	Killdeer
0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0	1	0	3 (0.07)	13 (0.21)
0	0	43 (0.57)	7	0	0	0	0	0	0	0	0
0	0	4 (0.14)	0	0	0	0	0	0	0	0	0
0	0	6 (0.14)	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1	0	0	1	1 (0.07)
0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	0	1	0	0	4 (0.28)
1	1	1	0	0	1 (0.07)	0	0	0	0	4 (0.07)	1
0	0	7 (0.14)	0	0	2	0	0	0	0	0	1
0	0	6	0	0	1	0	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0	2 (0.14)	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	2 (0.07)	0	0	0	0	4 (0.21)	0	0	0	0
2	0	2	0	0	0	0	0	0	0	0	8 (0.14)
0	0	0	0	1	2 (0.07)	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1 (0.07)	9 (0.07)	3 (0.07)
0	0	5 (0.28)	0	1	1 (0.07)	0	0	0	0	0	1
0	0	3	0	0	1 (0.14)	0	0	0	0	0	0
0	0	1 (0.07)	0	0	1	0	0	0	0	0	0
0	0	3	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	1 (0.07)	0	0	0
0	0	1	0	0	0	0	0	0	0	0	3 (0.07)
0	0	0	0	2	0	0	0	1	0	0	3 (0.07)
0	0	7 (0.14)	0	0	1 (0.07)	0	0	0	0	0	0
12 (.85)	0	7 (0.42)	0	0	0	0	1 (0.07)	1	0	0	1 (0.07)
1	0	0	0	0	0	0	2 (0.07)	0	0	0	0
0	0	14 (0.92)	0	0	0	0	0	0	0	7 (0.28)	0
0	0	1	0	0	0	1 (0.07)	0	1 (0.07)	0	0	0
0	0	3	0	1	1	0	0	1	0	2 (0.07)	1 (0.07)
0	0	0	0	0	0	0	0	0	2 (0.14)	0	2 (0.14)
0	0	0	0	0	0	0	1 (0.07)	0	0	2 (0.07)	2 (0.14)
0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2 (0.14)	1 (0.07)	0	0	0	0	4
0	0	1	0	0	0	0	1	1	0	1	1 (0.07)
0	0	2	0	0	0	0	0	0	0	0	1
0	0	62 (0.57)	0	1	1	0	0	0	0	0	1 (0.07)
0	0	2	0	0	2	1	0	0	0	0	0
18	1	188	7	6	17	3	11	8	3	31	52

Province	Golf Course	Laughing Gull	Ring-billed Gull	Herring Gull	Royal Tern	Common Tern	Forster's Tern	Least Tern	Rock Dove	Mourning Dove	Yellow-billed Cuckoo	Eastern Screech-Owl
CP Aquia Harbour		0	0	0	0	0	0	0	0	2	0	0
CP Augustine		0	0	0	0	0	0	0	0	9 (0.57)	0	0
CP Bay Creek	(0.92)	0	9	1	0	1	0	0	0	3 (0.14)	1	0
CP Belle Haven		0	0	0	0	0	0	0	0	10 (0.28)	0	0
CP Bide-a-wee		0	0	0	0	0	0	0	0	5 (0.07)	0	0
CP Chesapeake		0	0	0	0	0	0	0	0	10 (0.28)	0	0
CP Colonial		0	0	0	0	0	0	0	1	1	0	0
CP Eaglewood (Blue)		0	0	0	0	0	0	0	0	6	0	0
CP Eaglewood (Red)		0	0	0	0	0	0	0	0	18 (0.57)	0	0
CP Eastern Shore		0	0	0	0	0	0	0	2	17	1	0
CP Elizabeth Manor		0	0	0	0	0	0	0	2	24 (0.50)	0	0
CP Ford's Colony		0	0	0	0	0	0	0	0	2	0	0
CP Four Winds		0	0	0	0	0	0	0	0	0	0	0
CP Fredericksburg		0	0	0	0	0	0	0	0	7 (0.07)	1	0
CP Golden Horseshoe (Green)		0	0	0	0	0	0	0	0	0	1	0
CP Hamptons	(0.14)	0	0	0	0	0	1 (0.07)	0	0	8 (0.07)	0	0
CP Hell's Point		0	0	0	0	0	0	0	0	2 (0.07)	0	0
CP Hobbs Hole		0	0	0	0	0	0	0	0	0	0	0
CP Kiln Creek (Championship)		0	0	0	0	0	0	0	0	12 (0.42)	0	0
CP Kiln Creek (Creek)		1	0	0	0	1	0	0	0	7 (0.28)	0	0
CP Kingsmill (Plantation)		0	0	0	0	0	0	0	0	5 (0.14)	0	0
CP Kingsmill (River)		0	0	0	0	0	0	0	0	10 (0.28)	0	0
CP Kingsmill (Woods)		0	0	0	0	0	0	0	0	0	0	0
CP Kiskiack		0	0	0	0	0	0	0	0	0	0	0
CP Lee's Hill		0	0	0	0	0	0	0	1	2 1 (0.07)	0	0
CP Newport News (Cardinal)		0	0	0	0	0	0	0	0	1 (0.07)	0	0
CP Newport News (Deer Run)		0	0	0	0	0	0	0	0	2 (0.07)	0	0
CP Pohick Bay		0	0	0	0	0	0	0	0	7 (0.28)	3 (0.21)	1
CP Princess Anne		0	0	0	0	0	0	0	0	9 (0.35)	0	0
CP Red Wing Lake		0	0	0	0	0	0	0	0	0	0	0
CP Riverfront	(0.42)	0	0	0	0	0	0	0	0	16 (0.28)	0	0
CP Royal New Kent		0	0	0	0	0	0	0	0	1 (0.07)	0	0
CP Stonehouse		0	0	0	0	0	0	0	0	5 (0.21)	0	0
CP Suffolk		0	0	0	0	0	0	0	0	2	0	0
CP Two Rivers		0	0	0	0	0	0	0	0	8 (0.57)	1 (0.07)	0
CP Williamsburg		0	0	0	0	0	0	0	0	1	0	0
CP Williamsburg National		0	0	0	0	0	0	0	0	4 (0.21)	0	0
CP Woodlands	(0.92)	1*	0	0	0	0	0	14 (0.85)	10 (0.14)	0	0	0
CP Woodside		0	0	0	0	0	0	0	7 (0.28)	2 (0.28)	0	0
CP Total		41	9	1	1	1	1	1	20	233	11	1

Great Horned Owl	Barred Owl	Common Nighthawk	Chimney Swift	Ruby-throated Hummingbird	Belted Kingfisher	Red-headed Woodpecker	Red-bellied Woodpecker	Downy Woodpecker	Hairy Woodpecker	Northern Flicker	Pileated Woodpecker
0	0	0	0	0	0	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0	0	3 (0.14)	1 (0.07)
0	0	0	2 (0.07)	1	0	1	11 (0.14)	0	1	2 (0.14)	1
0	0	0	56 (2.19)	0	0	0	0	1	1	4 (0.07)	0
0	0	0	2 (0.07)	1 (0.07)	0	0	2	5 (0.14)	0	2	0
0	0	0	8 (0.28)	0	0	0	3 (0.14)	1	0	1	0
0	0	0	1	0	0	0	5 (0.21)	2 (0.14)	0	2	2 (0.07)
0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1 (0.07)	1 (0.07)	0	0	0
0	0	0	2 (0.07)	0	0	0	3	2 (0.07)	0	3	2
0	0	0	3	0	0	0	2 (0.07)	3 (0.07)	0	1	0
0	0	0	5 (0.14)	1	0	0	5 (0.14)	2	0	2 (0.07)	2 (0.07)
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	6 (0.28)	0	2	0	5 (0.14)	0	0	0	0
0	0	0	1 (0.07)	0	0	0	4 (0.14)	2 (0.07)	0	3	3 (0.07)
0	0	0	2 (0.14)	0	0	0	1 (0.07)	0	0	0	0
0	0	0	0	0	0	2	1 (0.07)	6 (0.21)	2 (0.14)	1	3 (0.21)
0	0	1	12 (0.35)	0	0	0	0	0	5 (0.07)	1 (0.07)	0
0	0	0	2	0	2 (0.07)	7 (0.07)	4 (0.07)	1	0	0	1
0	0	0	1	0	0	7	0	1 (0.14)	0	1	0
0	0	0	5 (0.14)	1	0	0	8 (0.21)	0	0	0	0
0	0	0	1 (0.07)	0	0	0	2 (0.07)	1 (0.07)	0	2 (0.07)	0
0	0	0	0	0	0	0	9 (0.57)	0	0	0	1
0	0	0	1 (0.07)	0	2 (0.07)	0	2	1	0	0	1
0	1 (0.07)	0	0	0	0	0	2 (0.07)	4 (0.14)	0	0	2 (0.14)
0	0	0	0	0	1 (0.07)	0	2 (0.14)	3 (0.21)	0	5 (0.14)	6 (0.28)
0	0	0	0	0	0	0	5 (0.21)	1 (0.07)	0	5 (0.21)	1 (0.07)
0	0	0	5 (0.21)	1 (0.07)	0	0	6 (0.35)	2	3	0	3 (0.07)
1	0	0	8 (0.57)	0	1	0	2 (0.07)	7 (0.21)	0	2 (0.14)	0
0	0	0	0	0	0	2	11 (0.28)	3	0	6 (0.28)	5 (0.21)
0	0	0	1 (0.07)	0	1	0	2	3	0	2	0
0	0	0	1 (0.07)	0	0	0	0	1 (0.07)	0	3 (0.14)	0
0	0	0	0	0	0	0	3 (0.14)	2 (0.07)	0	2	0
0	0	0	0	0	2 (0.14)	3	8 (0.14)	4 (0.21)	0	7 (0.07)	2
0	0	0	5 (0.21)	0	0	0	2 (0.14)	1 (0.07)	0	3	0
0	0	0	2 (0.14)	0	0	0	3 (0.07)	1	0	0	0
0	0	0	1	1	0	2	6 (0.14)	3 (0.07)	0	0	1
0	0	0	6 (0.14)	0	0	0	0	0	0	1	0
0	0	0	4 (0.14)	0	0	0	4	5 (0.14)	0	2	5
1	1	1	145	6	11	24	125	74	12	68	42

Province	Golf Course	Eastern Wood-Pewee	Acadian Flycatcher	Eastern Phoebe	Great Crested Flycatcher	Eastern Kingbird	Purple Martin	Tree Swallow
CP Aquia Harbour		0	0	2	0	0	0	0
CP Augustine		0	0	1	2 3 (0.14)	0	0	2 2
CP Bay Creek		0	0	1	8 (0.07) 6 (0.07)	1 (0.07)	0	2
CP Belle Haven		0	0	0	0	1	2	1
CP Bide-a-wee		0	0	0	3 3 (0.14)	2 (0.14)	0	0
CP Chesapeake		0	0	0	0 1 (0.07)	26 (0.35)	0	0
CP Colonial		5 (0.21) 1 (0.07)	0	0	6 (0.21)	1	0	0
CP Eaglewood (Blue)		0	0	0	3	3	0	0
CP Eaglewood (Red)		0	0	0	1 (0.07) 1 (0.07)	0	0	0
CP Eastern Shore		0	0	0	2 5 (0.21)	2 (0.07)	0	0
CP Elizabeth Manor		0	0	0	1 3 (0.07)	2 (0.07)	0	0
CP Ford's Colony		4 (0.28)	0	0	5 (0.21)	0 10 (0.71)	0	0
CP Four Winds		3 (0.07)	0 2 (0.14)	0	0	0 17 (0.42)	0	0
CP Fredericksburg		3 2 (0.07)	0	0	0 1 (0.07)	0	0	0
CP Golden Horseshoe (Green)		6 (0.21) 7 (0.28)	2	5 (0.14)	0	2 (0.14)	0	0
CP Hamptons		5	0	0	2 (0.07)	1 4 (0.14)	2 (0.07)	0
CP Hell's Point		1 (0.07) 1 (0.07)	0	2 (0.14)	1	1 (0.07)	0	1
CP Hobbs Hole		0	0	1	0	0 3 (0.14)	0	0
CP Kiln Creek (Championship)		2 (0.14)	0	0	8 (0.28) 4 (0.14)	0	0	1
CP Kiln Creek (Creek)		0	0	0	0	1	1	0
CP Kingsmill (Plantation)		0 1 (0.07) 1 (0.07)	2 (0.14)	1 (0.07)	0	0	0	1
CP Kingsmill (River)		0	0	0	2	0	0	0
CP Kingsmill (Woods)		0 1 (0.07)	0	2 (0.07)	0	0	0	0
CP Kiskiack		10 (0.14) 3 (0.07) 2 (0.07)	4	2	0	0	0	0
CP Lee's Hill		3	3 2 (0.07)	2 (0.07) 2 (0.14)	0	1 (0.07)	0	0
CP Newport News (Cardinal)		6 (0.14)	0 4 (0.21)	13 (0.42)	0	0	0	0
CP Newport News (Deer Run)		23 (0.71)	0	1 10 (0.57)	0	0	0	0
CP Pohick Bay		11 (0.50) 7 (0.28)	1	0	1	5 (0.07)	0	0
CP Princess Anne		0	0	0	4 (0.14)	1	0	0
CP Red Wing Lake		8 (0.21)	0 1 (0.07)	5 (0.28)	1	1 (0.07)	0	0
CP Riverfront		3	0	0	5 (0.07) 5 (0.07)	3 (0.07)	0	0
CP Royal New Kent		2 5 (0.21)	0	0	0	2 (0.14)	0	0
CP Stonehouse		8 (0.21) 7 (0.35)	2 (0.07)	6 (0.14)	0	0	0	0
CP Suffolk		8	1	1	3 (0.07) 4 (0.07)	0	0	0
CP Two Rivers		0	0	0	2 (0.14) 3 (0.21)	4 (0.28) 2 (0.14)	0	0
CP Williamsburg		5 (0.14)	0	1	3 (0.07) 1 (0.07)	2 (0.14)	0	0
CP Williamsburg National		11 (0.28)	1 2 (0.07)	1	1 (0.07)	0	0	0
CP Woodlands		0	0	0	2 (0.14)	0	1	0
CP Woodside		10 (0.57) 6 (0.28)	0	2	1	0	0	0
CP Total		137	46	27	116	58	91	11

Northern Rough-winged Swallow	Barn Swallow	Blue Jay	American Crow	Fish Crow	Carolina Chickadee	Tufted Titmouse	White-breasted Nuthatch	Brown-headed Nuthatch	Carolina Wren
0	0	3 (0.14)	0	0	3 (0.14)	3 (0.42)	0	0	3 (0.28)
(0.07)	0	1 (0.07)	0	1 (0.07)	3 (0.14)	1	1	0	1 (0.07)
0 10 (0.07)	0	19 (0.14) 14 (0.14)	6 (0.14)	7	6 (0.07)	0	0	0	18 (0.14)
0 17 (0.64)	11 (0.21) 26 (0.99)	6 (0.14)	6 (0.28)	0	0	0	0	0	1 (0.07)
0	1 6 (0.14)	5 (0.07) 7 (0.07)	4 (0.14)	3	0	10 (0.42)	4		
0	1 13 (0.28)	2 11 (0.21)	3 (0.07)	2 (0.07)	1	1	5 (0.14)		
0	0	2 (0.07)	3	3	5 (0.07) 5 (0.21)	0	1 (0.07)		
0 11 (0.35)	2 6 (0.21)	0	3 (0.14)	0	0	0	0	3	
0	7 8 (0.07) 14 (0.07)	2	6	0	0	0	0	2 (0.07)	
0 8 (0.14)	6 (0.14)	2 20 (0.85)	5 (0.14)	1	0	0	10 (0.14)		
0	5 4 (0.07)	4 (0.07) 13 (0.28)	4 (0.07)	3 (0.07)	0	9 (0.50)	4 (0.07)		
2 13 (0.21)	5 (0.28) 13 (0.71)	0	7 (0.28)	7 (0.28) 5 (0.14)	0	5 (0.28)			
0	0	2	0	0	1	0	0		
0	0	2	3 4 (0.14)	9 (0.35)	4 (0.28)	2	0	3 (0.07)	
0	0	5 (0.07)	5	4	4 (0.21)	9 (0.21) 1 (0.07)	0	4 (0.07)	
0	0	2 4 (0.14)	0	0	2	0	0	2	
0 17 (0.71)	1 (0.07) 9 (0.42)	6 (0.35)	6 (0.28)	1	1 (0.07)	0	10 (0.28)		
0	0	2 (0.07) 12 (0.35)	4 (0.28)	5 (0.21)	7 (0.21)	1	0	2	
(0.07)	1 (0.07) 11 (0.21)	5 (0.21) 4 (0.28)	1	2 3 (0.21)	0	8 (0.21)			
0	6 (0.28)	2 (0.14) 7 (0.42)	0	0	0 1 (0.14)	0	0		
(0.07)	1 4 (0.14)	10 (0.07) 11 (0.71)	0	9 (0.28) 1 (0.07)	0	12 (0.28)			
0	0	8 (0.28) 12 (0.28)	2 (0.14)	0	9 (0.14)	0	0	7 (0.14)	
0	0	4 (0.21) 12 (0.35)	7 (0.14)	2	8 (0.28)	2	0	6 (0.28)	
0	7 (0.14)	4	1	2	4 4 (0.07) 5 (0.07)	0	5 (0.14)		
0	1 (0.07)	3 (0.07)	3 (0.21)	0	3 (0.21)	0	0	6 (0.14)	
0	0	3 23 (0.92)	12 (0.42)	5 (0.35)	19 (0.78) 7 (0.42)	0	3 (0.21)		
0	0	15 (0.35) 40 (1.56)	9 (0.28)	3 (0.14)	17 (0.50) 5 (0.21)	0	10 (0.42)		
0	5 (0.21)	4 (0.21) 7 (0.28)	8 (0.28)	17 (0.78) 23 (0.71)	2 (0.07)	0	12 (0.57)		
0	5	9 (0.28) 13 (0.21)	13 (0.35)	16 (0.35)	16 (0.50) 2 (0.14)	6 (0.07)	14 (0.50)		
0	1	0 11 (0.42)	19 (0.57)	11 (0.42)	10 (0.50) 1 (0.07)	12 (0.64)	4 (0.14)		
1	13	3	2	3	1	1	0	5	
0	3 (0.14)	0	4 (0.14)	0	3	2 (0.07) 2 (0.07)	0	0	
0	0	7 (0.21) 11 (0.28)	0	4 (0.21)	15 (0.42) 5 (0.14)	0	4 (0.21)		
0	9 (0.14)	9 (0.14) 12 (0.28)	6 (0.07)	1	11 (0.21) 4 (0.14)	5 (0.07)	5 (0.14)		
0	59 (2.12)	1 (0.07) 7 (0.21)	0	2 (0.14)	3 (0.21)	0	1 (0.07)		
0	6 (0.07)	11 (0.42)	2	3	5 (0.14) 4 (0.21)	0	1	3	
0	1	4	7	1	9 (0.35)	3 (0.07) 7 (0.14)	0	1	
0	8 (0.14)	0	6	1	1	1	0	4	
0	0	0 16 (0.99)	0	1	6 (0.42)	0	0	6 (0.14)	
7	216	173	339	196	167	217	65	44	194

Province	Golf Course	House Wren	Blue-gray Gnatcatcher	Eastern Bluebird	Wood Thrush	American Robin	Gray Catbird	Northern Mockingbird
CP Aquia Harbour		8 (0.57)	1	1	0	10 (0.42)	9 (0.71)	2 (0.14)
CP Augustine		0	0	2 (0.07)	5 (0.07)	25 (0.64)	0	2 (0.07)
CP Bay Creek		0	0	6 (0.07)	0	5 (0.07)	0	10 (0.28)
CP Belle Haven		3	0	0	0	4 (0.14)	2 (0.14)	5 (0.07)
CP Bide-a-wee		5 (0.21)	0	4 (0.07)	0	61 (1.63)	6 (0.14)	4 (0.14)
CP Chesapeake		0	0	1 (0.07)	0	28 (0.99)	0	17 (0.42)
CP Colonial		0	12 (0.21)	11 (0.28)	0	7 (0.14)	0	2 (0.07)
CP Eaglewood (Blue)		3 (0.14)	0	17 (0.57)	0	104 (1.84)	0	3 (0.07)
CP Eaglewood (Red)		2	0	11 (0.35)	0	159 (3.25)	0	3 (0.14)
CP Eastern Shore		0	0	7 (0.14)	0	70 (0.99)	0	3 (0.07)
CP Elizabeth Manor		0	0	4 (0.21)	0	43 (1.49)	0	2
CP Ford's Colony		4 (0.14)	0	9 (0.21)	2	12 (0.21)	1	4 (0.14)
CP Four Winds		0	0	7 (0.42)	0	25 (0.92)	0	10 (0.57)
CP Fredericksburg		1	3 (0.21)	8 (0.28)	0	17 (0.71)	3 (0.21)	5 (0.07)
CP Golden Horseshoe (Green)		0	6 (0.14)	14 (0.42)	0	23 (0.14)	1 (0.07)	0
CP Hamptons		0	0	0	0	37 (0.85)	0	3 (0.07)
CP Hell's Point		0	1 (0.07)	10 (0.35)	0	63 (2.48)	1	3
CP Hobbs Hole		0	0	3	0	36 (1.13)	0	0
CP Kiln Creek (Championship)		5 (0.14)	0	3 (0.14)	0	48 (1.41)	0	10 (0.28)
CP Kiln Creek (Creek)		2 (0.14)	0	4 (0.14)	0	14 (0.71)	0	6 (0.14)
CP Kingsmill (Plantation)		4 (0.21)	0	7 (0.07)	1	26 (0.57)	0	11 (0.21)
CP Kingsmill (River)		4	1	5 (0.07)	0	50 (1.06)	1	6 (0.07)
CP Kingsmill (Woods)		0	0	1 (0.07)	3 (0.07)	18 (0.14)	0	3 (0.07)
CP Kiskiack		0	7 (0.07)	6 (0.07)	2	8 (0.21)	0	1 (0.07)
CP Lee's Hill		1 (0.07)	5 (0.14)	3 (0.14)	3 (0.07)	15 (0.28)	0	2 (0.07)
CP Newport News (Cardinal)		0	0	48 (1.70)	4	155 (4.31)	1	0
CP Newport News (Deer Run)		0	0	43 (1.34)	1	224 (5.87)	0	0
CP Pohick Bay		0	7 (0.42)	17 (0.71)	1	21 (0.92)	0	8 (0.35)
CP Princess Anne		13 (0.42)	0	0	0	99 (1.34)	0	2
CP Red Wing Lake		1	0	15 (0.21)	0	97 (4.38)	0	1 (0.07)
CP Riverfront		0	1	6 (0.14)	1	43 (1.13)	0	11 (0.28)
CP Royal New Kent		0	3 (0.14)	0	0	1 (0.07)	1	0
CP Stonehouse		0	2 (0.14)	15 (0.78)	1 (0.07)	2 (0.07)	0	3 (0.07)
CP Suffolk		0	3 (0.14)	10 (0.21)	1 (0.07)	63 (1.91)	2 (0.07)	5 (0.21)
CP Two Rivers		0	0	19 (0.78)	0	51 (1.70)	0	6 (0.35)
CP Williamsburg		1 (0.07)	1 (0.07)	10 (0.28)	0	40 (0.92)	1 (0.07)	11 (0.42)
CP Williamsburg National		0	6 (0.14)	14 (0.28)	3	12 (0.28)	0	4
CP Woodlands		0	0	0	0	31 (0.71)	6 (0.35)	3 (0.21)
CP Woodside		0	2 (0.14)	9 (0.57)	3 (0.14)	8 (0.42)	0	1
CP Total		57	61	350	31	1755	35	172

Brown Thrasher	Cedar Waxwing	European Starling	White-eyed Vireo	Blue-headed Vireo	Yellow-throated Vireo	Red-eyed Vireo	Northern Parula	Yellow Warbler	Yellow-throated Warbler	Pine Warbler
3	0	1 (0.14)	0	0	0	0	0	0	0	0
2	0	1 (0.07)	0	0	0	0	0	0	0	0
0	15 (0.50)	28 (0.35)	0	0	1	0	0	1	0	4
0	0	225 (1.77)	0	0	0	0	0	0	0	0
4 (0.14)	0	29 (1.41)	0	0	0	0	0	0	1	5
2 (0.07)	0	21 (0.57)	0	0	0	0	0	0	0	2
0	1 (0.07)	0	2	0	2 (0.07)	4 (0.14)	2 (0.07)	0	0	1 (0.07)
1 (0.07)	0	60 (0.71)	0	0	0	0	0	0	0	2
4 (0.28)	0	72 (0.78)	0	0	0	0	0	0	0	0
5 (0.14)	0	13 (0.35)	0	0	0	0	0	0	0	4 (0.21)
3 (0.07)	0	43 (0.35)	0	0	0	0	0	0	0	4
2 (0.07)	0	1	0	0	0	1 (0.07)	0	0	0	1
7 (0.35)	0	8	5 (0.35)	0	0	0	0	0	0	0
0	3 (0.07)	7	1	0	1	3 (0.07)	1 (0.07)	0	0	4 (0.07)
2 (0.14)	0	5 (0.14)	0	0	0	4 (0.14)	2	0	3 (0.14)	2 (0.14)
1	0	6 (0.21)	0	0	0	1	0	0	0	0
3 (0.07)	0	1	0	0	0	5 (0.21)	0	1	0	5 (0.21)
0	0	7 (0.50)	0	0	0	0	0	0	0	0
2 (0.07)	0	9 (0.28)	2 (0.07)	0	0	1 (0.07)	0	0	0	5 (0.07)
0	0	4 (0.28)	0	0	0	0	0	0	0	2 (0.28)
2 (0.07)	0	23 (0.57)	0	0	0	0	0	0	0	0
0	0	17 (0.28)	0	0	0	1	0	0	0	0
3 (0.07)	0	14	0	0	0	5 (0.14)	0	0	0	0
0	2 (0.07)	4	0	0	1	12 (0.21)	0	0	1	2 (0.07)
3 (0.07)	2 (0.07)	0	2 (0.14)	0	0	3 (0.14)	1 (0.07)	0	0	0
0	0	22 (0.35)	1	0	0	19 (0.78)	1 (0.07)	0	0	1 (0.07)
0	0	0	0	0	1 (0.07)	16 (0.57)	1 (0.07)	0	0	4 (0.14)
1 (0.07)	2	26 (1.56)	1 (0.07)	11 (0.35)	1 (0.07)	0	2 (0.07)	0	0	6 (0.28)
9 (0.21)	0	37 (0.99)	0	0	0	0	0	0	0	18 (0.28)
1	0	22 (0.07)	0	0	0	0	0	0	0	4 (0.14)
4 (0.07)	0	3	1	0	0	1	0	0	0	0
2 (0.14)	0	16	13 (0.50)	0	1 (0.07)	7 (0.07)	0	0	0	4 (0.21)
2 (0.07)	0	0	2 (0.07)	0	2 (0.07)	14 (0.57)	3 (0.07)	0	0	2
9 (0.21)	2 (0.14)	25 (0.64)	0	0	0	1	0	0	0	21 (0.50)
2 (0.14)	3 (0.21)	5 (0.35)	0	0	0	0	0	0	0	0
2 (0.07)	0	6 (0.21)	1	0	0	5 (0.28)	0	0	0	3
3 (0.07)	0	1	1	0	0	2	0	0	0	0
3 (0.14)	0	55 (1.34)	0	0	0	0	0	0	0	1 (0.07)
1	2 (0.28)	1	0	0	0	7 (0.28)	0	1	0	3 (0.14)
88	32	818	32	11	10	112	13	3	9	118

Province	Golf Course	Black-and-white Warbler	Prothonotary Warbler	Ovenbird	Kentucky Warbler	Common Yellowthroat	Hooded Warbler	Yellow-breasted Chat	Summer Tanager
CP Aquia Harbour		0	0	0	0	1 (0.14)	0	0	0
CP Augustine		0	1	1	0	0	0	0	4
CP Bay Creek		0	0	0	0	0	0	0	0
CP Belle Haven		0	0	0	0	0	0	0	0
CP Bide-a-wee		0	0	0	0	0	0	0	0
CP Chesapeake		0	0	2 (0.07)	0	3	0	1 (0.07)	2 (0.07)
CP Colonial		0	0	0	0	0	0	0	0
CP Eaglewood (Blue)		0	0	0	0	0	0	0	0
CP Eaglewood (Red)		0	0	2 (0.07)	0	0	0	0	1
CP Eastern Shore		0	0	0	0	0	0	0	0
CP Elizabeth Manor		0	0	1 (0.07)	0	1 (0.07)	0	0	0
CP Ford's Colony		0	0	0	0	0	0	0	0
CP Four Winds		0	0	0	0	0	0	0	0
CP Fredericksburg		0	0	1 (0.07)	0	0	1 (0.07)	0	5 (0.28)
CP Golden Horseshoe (Green)		0	0	1 (0.07)	0	8 (0.21)	0	0	1
CP Hamptons		0	0	1	0	3 (0.14)	0	0	0
CP Hell's Point		0	0	2 (0.07)	0	1 (0.07)	0	0	1
CP Hobbs Hole		0	0	0	0	2 (0.14)	0	1 (0.07)	0
CP Kiln Creek (Championship)		0	0	0	0	0	0	0	0
CP Kiln Creek (Creek)		0	0	0	1 (0.07)	0	0	0	0
CP Kingsmill (Plantation)		0	0	0	0	1 (0.07)	0	0	1
CP Kingsmill (River)		0	0	0	1	0	0	0	0
CP Kingsmill (Woods)		0	0	4 (0.14)	0	2	0	0	0
CP Kiskiack		0	0	2 (0.07)	0	0	0	2 (0.07)	0
CP Lee's Hill		0	0	0	0	0	0	0	1
CP Newport News (Cardinal)		0	3 (0.14)	0	0	0	0	0	2 (0.14)
CP Newport News (Deer Run)		3	0	0	0	0	0	0	0
CP Pohick Bay		0	0	0	0	0	0	0	0
CP Princess Anne		0	0	0	0	0	0	0	1 (0.07)
CP Red Wing Lake		0	0	0	0	3 (0.07)	0	0	1
CP Riverfront		0	0	10 (0.35)	0	3 (0.21)	0	6 (0.35)	1
CP Royal New Kent		0	0	12 (0.42)	0	4 (0.14)	0	1 (0.07)	7 (0.14)
CP Stonehouse		0	1 (0.07)	0	0	5 (0.14)	0	0	0
CP Suffolk		0	0	0	0	0	0	0	0
CP Two Rivers		0	0	0	0	3 (0.07)	0	1	0
CP Williamsburg		0	0	2	0	4	1	0	5 (0.21)
CP Williamsburg National		0	0	0	0	1	0	0	0
CP Woodlands		0	0	14 (0.71)	0	0	2 (0.14)	0	3 (0.14)
CP Woodside		3	5	55	2	45	4	12	35
CP Total									

Scarlet Tanager	Northern Cardinal	Blue Grosbeak	Indigo Bunting	Eastern Towhee	Chipping Sparrow	Field Sparrow	Grasshopper Sparrow	Song Sparrow	Red-winged Blackbird	Eastern Meadowlark
0	5	0	0	1	5 (0.28)	0	0	1	0	0
0	3 (0.14)	0	0	0	3 (0.07)	0	0	0	4 (0.07)	0
0	16 (0.14)	1	6	0	5 (0.14)	0	2 (0.07)	0	31 (0.78)	3 (0.14)
0	1	0	0	0	0	0	0	12 (0.50)	5 (0.28)	0
0	4 (0.07)	0	0	3	0	0	0	1 (0.07)	0	0
0	5 (0.14)	0	0	0	1 (0.07)	0	0	5 (0.21)	7 (0.21)	0
0	5 (0.21)	7 (0.21)	4 (0.14)	2 (0.14)	10 (0.07)	0	0	0	1	0
0	7 (0.07)	0	0	0	5 (0.28)	0	0	6 (0.28)	10	0
0	7 (0.28)	0	1	0	7 (0.14)	0	0	7 (0.35)	3 (0.07)	0
0	6 (0.07)	0	0	0	34 (0.57)	0	0	3	7	0
0	8 (0.21)	0	0	0	0	0	0	1	3 (0.14)	0
0	3 (0.07)	0	0	1 (0.07)	5 (0.14)	1 (0.07)	0	0	3	0
0	6 (0.28)	0	0	0	3 (0.14)	1 (0.07)	0	0	0	1
0	13 (0.50)	0	4 (0.14)	1	18 (0.57)	0	0	10 (0.07)	0	0
1	9 (0.14)	0	1 (0.07)	5 (0.21)	14 (0.35)	0	0	0	0	0
0	3 (0.07)	0	1	0	1 (0.07)	0	0	0	23 (0.78)	0
0	7 (0.14)	0	5 (0.14)	0	0	1	0	0	0	0
0	6 (0.14)	0	5 (0.14)	0	18 (0.64)	1	0	0	6 (0.28)	1
0	8 (0.21)	0	0	0	0	0	0	2	9 (0.28)	0
0	3 (0.14)	0	1	0	0	0	0	3	3 (0.28)	0
0	9 (0.35)	0	0	2 (0.07)	2	0	0	5 (0.07)	8 (0.21)	0
0	9 (0.28)	0	0	2	3 (0.07)	0	0	1	0	0
0	3	1	1 (0.07)	0	3 (0.07)	0	0	2 (0.07)	0	0
0	0	0	1	0	14 (0.50)	0	0	7 (0.42)	2	0
(0.07)	7 (0.21)	0	4 (0.21)	3 (0.14)	6 (0.28)	0	0	2 (0.14)	2 (0.07)	0
(0.07)	11 (0.71)	0	0	1 (0.07)	29 (1.27)	0	0	1	3 (0.21)	0
2	3 (0.21)	0	0	0	13 (0.71)	0	0	0	12 (0.14)	1 (0.07)
0	11 (0.57)	0	5 (0.21)	2 (0.07)	12 (0.50)	0	0	0	0	0
0	15 (0.21)	0	0	14 (0.35)	0	0	0	1	6 (0.07)	0
0	3 (0.07)	0	1 (0.07)	1 (0.07)	2 (0.07)	0	0	0	1	0
0	9 (0.28)	5 (0.07)	7 (0.07)	1	1 (0.07)	3	0	0	26 (0.42)	0
2	3	3	17 (0.50)	1	13 (0.21)	11 (0.42)	0	0	0	5 (0.35)
(0.07)	11 (0.50)	2 (0.14)	9 (0.21)	0	16 (0.50)	5 (0.14)	0	0	0	0
0	10 (0.14)	0	0	8 (0.28)	2 (0.14)	0	0	0	0	0
0	5 (0.35)	1 (0.07)	0	1 (0.07)	6 (0.14)	0	0	0	1 (0.07)	0
0	8 (0.21)	1	2	0	18 (0.50)	1	0	0	1	0
1	3 (0.07)	1	2 (0.14)	0	6 (0.14)	0	0	0	2	0
0	3 (0.07)	0	0	0	0	0	0	0	1	0
0	13 (0.85)	0	1	0	26 (1.84)	0	0	0	1	0
11	261	22	78	49	301	24	2	70	181	11

Province	Golf Course	Common Grackle	Brown-headed Cowbird	Orchard Oriole	Baltimore Oriole	House Finch	American Goldfinch	House Sparrow
CP Aquia Harbour		0	0	0	0	3 (0.42)	0	1 (0.14)
CP Augustine		1	0	0	0	0	0	0
CP Bay Creek		52 (1.70)	16 (0.07)	1 (0.07)	0	0	5	0
CP Belle Haven		26 (0.92)	9 (0.28)	0	0	0	7 (0.50)	40 (0.71)
CP Bide-a-wee		11 (0.28)	5 (0.28)	0	0	4 (0.21)	3 (0.07)	0
CP Chesapeake		60 (2.55)	7 (0.28)	0	0	2 (0.07)	6 (0.14)	8 (0.35)
CP Colonial		4 (0.14)	3 (0.07)	3 (0.07)	0	0	2	0
CP Eaglewood (Blue)		8 (0.07)	3	3	0	17 (0.14)	5 (0.14)	4
CP Eaglewood (Red)		32 (0.85)	5	0	0	7 (0.35)	6 (0.14)	1
CP Eastern Shore		73 (1.49)	1	2	0	4 (0.07)	5 (0.14)	2
CP Elizabeth Manor		80 (3.25)	2	0	0	2	0	0
CP Ford's Colony		9	1	0	0	5	5 (0.07)	0
CP Four Winds		7 (0.07)	8 (0.35)	0	0	0	1 (0.07)	0
CP Fredericksburg		20 (0.71)	4	2 (0.14)	0	5 (0.07)	8 (0.21)	1 (0.07)
CP Golden Horseshoe (Green)		22 (0.99)	9 (0.35)	0	0	2	9 (0.28)	0
CP Hamptons		12 (0.21)	2	0	0	0	5 (0.21)	0
CP Hell's Point		17 (0.64)	5 (0.07)	0	0	0	9 (0.42)	0
CP Hobbs Hole		167 (5.30)	0	0	0	0	7 (0.35)	0
CP Kiln Creek (Championship)		39 (1.13)	2 (0.07)	0	1	1	3	3 (0.07)
CP Kiln Creek (Creek)		15 (0.85)	1	0	0	2	2 (0.14)	1
CP Kingsmill (Plantation)		12 (0.21)	7 (0.42)	0	0	9 (0.07)	2 (0.07)	2 (0.07)
CP Kingsmill (River)		33 (0.57)	1	0	0	6 (0.14)	2 (0.14)	2 (0.07)
CP Kingsmill (Woods)		30 (0.78)	8 (0.07)	0	0	0	0	0
CP Kiskiack		4 (0.14)	4	1	0	2	6 (0.07)	0
CP Lee's Hill		10 (0.28)	3 (0.14)	0	1	2	3 (0.14)	0
CP Newport News (Cardinal)		36 (0.99)	5 (0.28)	0	0	0	8 (0.14)	0
CP Newport News (Deer Run)		42 (0.99)	5	0	0	0	18 (0.71)	2
CP Pohick Bay		30 (1.98)	7 (0.42)	0	0	1 (0.07)	4 (0.21)	8 (0.28)
CP Princess Anne		103 (2.76)	1	0	0	17 (0.28)	0	0
CP Red Wing Lake		48 (0.99)	7 (0.21)	0	0	4 (0.28)	23 (0.85)	0
CP Riverfront		109 (1.84)	6	6 (0.28)	2 (0.07)	5 (0.28)	9 (0.21)	3 (0.21)
CP Royal New Kent		1	8 (0.35)	1	0	0	3 (0.21)	1
CP Stonehouse		1	13 (0.71)	0	0	3 (0.14)	3 (0.21)	0
CP Suffolk		33 (0.99)	6	0	0	3 (0.07)	3 (0.14)	0
CP Two Rivers		37 (2.62)	2	2 (0.07)	0	6 (0.28)	2	1
CP Williamsburg		9 (0.07)	2 (0.07)	0	0	1	2 (0.07)	0
CP Williamsburg National		8	11 (0.14)	1 (0.07)	0	2	7 (0.14)	0
CP Woodlands		6 (0.42)	1	0	0	1 (0.07)	0	1 (0.07)
CP Woodside		15	3	0	0	0	2	0
CP Total		1222	183	22	4	116	185	81

Province	Golf Course	# holes	Great Blue Heron	Green Heron	Canada Goose	Mallard	Turkey Vulture	Red-shouldered Hawk	Red-tailed Hawk	Wild Turkey	Northern Bobwhite
PM Army Navy (Red)		9	0	0	0	0	0	0	0	0	0
PM Army Navy (White)		9	1	1 (0.14)	6 (0.85)	0	0	0	0	0	0
PM Birdwood		18	0	2 (0.07)	0	2 (0.14)	0	1	0	0	1
PM Birkdale		18	1 (0.07)	0	4	1	0	0	0	0	1
PM Boonsboro		18	0	0	1 (0.07)	0	2 (0.14)	0	0	0	0
PM Brambleton		18	2 (0.07)	6 (0.28)	22 (1.13)	5 (0.35)	1	3	0	0	2 (0.14)
PM Colonial Hills		18	0	0	7 (0.50)	1 (0.07)	0	0	0	0	0
PM Fairfax National		18	1 (0.07)	0	22 (0.28)	0	0	0	0	0	0
PM Falling River		18	0	0	4	0	0	0	0	0	0
PM Farmington		18	0	0	0	0	0	0	0	0	0
PM Fawn Lake		18	1	0	0	3 (0.21)	0	4 (0.21)	0	0	0
PM Glenmore		18	2 (0.07)	0	2	0	0	0	0	0	0
PM Heartland		9	1	1	36	0	0	0	0	0	1 (0.14)
PM Ivy Hill		18	0	0	9 (0.21)	3	0	0	0	0	0
PM Jefferson District		9	0	3	4 (0.14)	0	0	0	0	0	0
PM Keswick		18	0	1	11 (0.71)	0	0	1 (0.07)	0	0	0
PM Lake Chesdin		18	1	0	0	0	0	1 (0.07)	2 (0.07)	0	0
PM London Downs		18	1	2	2	2	0	0	0	0	0
PM Longwood		9	0	0	0	0	0	0	0	0	0
PM Oak Marr		9	0	0	0	0	0	0	0	0	0
PM Oakwood		18	0	0	0	0	0	0	0	0	0
PM Meadowcreek		18	0	0	0	3	0	0	1 (0.07)	0	0
PM Shenandoah Crossing		18	0	0	20	0	0	1	0	0	0
PM Tanyard		18	2	1	6 (0.21)	1	0	0	0	0	0
PM Washington		18	0	0	0	0	0	0	0	0	0
Total			13	17	156	21	3	11	2	2	5

Province	Golf Course	Killdeer	Spotted Sandpiper	Rock Dove	Mourning Dove	Black-billed Cuckoo	Yellow-billed Cuckoo	Great Horned Owl	Chimney Swift	Ruby-throated Hummingbird	Belted Kingfisher	Red-headed Woodpecker
PM Army Navy (Red)		0	0	0	6 (0.85)	0	0	0	1	0	0	0
PM Army Navy (White)		0	0	0	4 (0.57)	0	0	0	2 (0.14)	0	1	0
PM Birdwood	(0.07)	0	1 (0.07)	3 (0.14)	0	0	0	0	6 (0.42)	0	0	0
PM Birkdale		0	0	15 (0.21)	0	0	0	0	7 (0.07)	1 (0.07)	0	4 (0.07)
PM Boonsboro		0	0	5 (0.14)	0	0	0	0	6 (0.28)	0	0	0
PM Brambleton		1	1*	15 (0.21)	1	1 (0.07)	0	15 (0.57)	0	0	0	0
PM Colonial Hills		0	0	5	0	1	0	1	0	0	0	0
PM Fairfax National		0	0	12 (0.42)	0	0	0	6 (0.07)	0	0	0	0
PM Falling River	(0.07)	0	0	1 (0.07)	0	1 (0.07)	0	3 (0.21)	0	0	0	0
PM Farmington		0	0	4 (0.14)	0	0	0	8 (0.14)	0	0	0	0
PM Fawn Lake		1	0	2 (0.14)	0	0	1 (0.07)	4 (0.07)	0	0	0	0
PM Glenmore	(0.07)	0	0	3 (0.14)	0	1 (0.07)	0	8 (0.50)	1 (0.07)	0	0	0
PM Heartland		7	0	6	0	0	0	5 (0.42)	2 (0.28)	0	0	0
PM Ivy Hill		0	0	11 (0.21)	0	0	0	6 (0.28)	0	1 (0.07)	0	0
PM Jefferson District		0	0	2	0	0	0	1	0	0	0	0
PM Keswick	(0.07)	0	3 (0.14)	3 (0.14)	0	0	0	2 (0.07)	0	0	0	0
PM Lake Chesdin		1	0	10	0	4	0	1	1 (0.07)	0	0	0
PM London Downs	(0.21)	0	0	6 (0.14)	0	0	0	1	0	0	1	0
PM Longwood		0	0	2	0	0	0	4	0	0	1	0
PM Oak Marr	(0.14)	0	0	2 (0.14)	0	0	0	22 (3.11)	0	0	0	0
PM Oakwood		0	0	3 (0.14)	0	0	0	3 (0.07)	0	0	0	0
PM Meadowcreek		0	0	4 (0.07)	0	2	0	7 (0.28)	0	0	0	0
PM Shenandoah Crossing		0	0	1	0	0	0	0	0	0	0	0
PM Tanyard	(0.07)	0	0	5 (0.14)	0	0	0	11 (0.35)	1	0	0	0
PM Washington		0	0	7 (0.42)	0	0	0	5 (0.35)	0	0	0	0
Total		24	1*	7	137	1	10	1	135	6	2	6

Red-bellied Woodpecker	Downy Woodpecker	Hairy Woodpecker	Northern Flicker	Pileated Woodpecker	Eastern Wood-Pewee	Acadian Flycatcher	Willow Flycatcher	Eastern Phoebe	Great Crested Flycatcher	Eastern Kingbird	Purple Martin	Tree Swallow
2	0	0	0	2	0	0	0	0	0	0	8 (1.13)	0
2 (0.28)	0	0	2 (0.28)	0	0	0	0	1 (0.14)	0	1 (0.14)	7 (0.28)	0
4 (0.21)	0	0	1 (0.07)	0	0	0	0	0	0	2	0	3 (0.14)
10 (0.14)	2	1	6 (0.07)	1	3 (0.14)	0	0	1	2	0	1 (0.07)	0
9 (0.28)	8 (0.28)	0	3 (0.14)	1 (0.07)	7 (0.07)	0	0	2 (0.07)	0	4 (0.14)	0	2
6 (0.07)	12 (0.50)	2	6 (0.07)	0	4 (0.07)	0	2	1	9 (0.21)	4 (0.14)	0	32 (1.56)
4	2 (0.07)	0	0	0	1	0	0	0	0	3	0	0
4 (0.28)	3 (0.21)	0	1 (0.07)	1 (0.07)	1 (0.07)	0	0	1 (0.07)	1 (0.07)	4 (0.14)	0	3
3 (0.14)	0	0	2 (0.07)	1	1 (0.07)	0	0	0	0	1 (0.07)	0	0
4 (0.14)	2 (0.07)	0	2	1 (0.07)	3 (0.07)	0	0	4 (0.07)	0	3 (0.07)	3	0
2 (0.07)	1	0	6 (0.21)	0	2 (0.07)	0	0	0	0	2 (0.07)	0	0
2 (0.14)	1	1	3 (0.21)	2	1	1	0	3 (0.07)	0	1	0	3 (0.07)
1	0	0	0	0	1	0	0	1	0	3 (0.14)	0	6 (0.14)
3 (0.07)	0	0	3 (0.07)	1	7 (0.07)	0	0	2 (0.07)	1	1 (0.07)	2	3
1	0	0	1	0	0	0	0	0	0	2 (0.14)	4	0
1 (0.07)	0	1 (0.07)	2 (0.07)	0	2 (0.14)	0	0	1 (0.07)	0	4 (0.21)	0	0
7 (0.21)	3 (0.07)	0	2 (0.07)	4 (0.07)	16 (0.28)	15 (0.14)	0	1	3	3 (0.07)	0	0
2	0	0	1	1	1	0	0	0	1	6 (0.07)	0	0
3 (0.14)	1 (0.14)	0	1	1 (0.14)	5	0	0	0	1	4	0	0
1	2 (0.14)	0	2	0	3 (0.28)	0	0	1 (0.14)	0	1 (0.14)	2 (0.14)	1
2 (0.07)	2 (0.07)	0	2 (0.14)	0	0	0	0	1 (0.07)	0	1 (0.07)	0	0
0	2 (0.07)	0	1	0	0	0	0	4 (0.14)	0	2 (0.07)	0	16 (0.42)
1 (0.07)	2 (0.14)	0	1	2	5 (0.07)	0	0	1 (0.07)	3	0	0	1 (0.07)
7 (0.21)	6 (0.07)	0	1	1	3 (0.14)	0	0	3 (0.07)	1 (0.07)	0	0	5 (0.21)
5 (0.21)	0	0	2	0	0	0	0	2 (0.14)	2 (0.14)	1 (0.07)	16 (1.13)	1 (0.07)
86	49	5	51	19	66	16	2	30	24	53	43	76

Province	Golf Course	Northern Rough-winged Swallow	Bank Swallow	Barn Swallow	Blue Jay	American Crow	Fish Crow	Carolina Chickadee	Tufted Titmouse	White-breasted Nuthatch
PM Army Navy (Red)		0	0	0	2	3	0	0	7 (0.99)	0
PM Army Navy (White)		0	0	1 (0.14)	4 (0.42)	4	0	2 (0.28)	10 (0.99)	2 (0.28)
PM Birdwood		0	0	4 (0.21)	2 (0.14)	11 (0.28)	0	2 (0.07)	0	1
PM Birkdale		0	0	0	6 (0.14)	8 (0.07)	0	5 (0.07)	8 (0.14)	7 (0.14)
PM Boonsboro		0	0	0	0	2	1	7 (0.07)	4 (0.14)	4 (0.14)
PM Brambleton		1 1 (0.07)	9 (0.42)	19 (0.57)	33 (1.06)	9 (0.21)	11 (0.21)	17 (0.50)	4 (0.07)	
PM Colonial Hills		0	0	0	6 (0.07)	7 (0.14)	0	8 (0.21)	7 (0.07)	1
PM Fairfax National		0	0	3 (0.21)	9 (0.21)	17 (0.85)	0	3 (0.14)	8 (0.50)	0
PM Falling River	1 (0.07)	0	4 (0.21)	2 (0.07)	5 (0.28)	0	1 (0.07)	1	2 (0.07)	
PM Farmington		0	0	0	3 (0.07)	7 (0.28)	2 (0.14)	3 (0.21)	6 (0.21)	2 (0.07)
PM Fawn Lake		0	0	0	5 (0.21)	17 (0.64)	3 (0.07)	0	4 (0.14)	3 (0.14)
PM Glenmore		0	0	1 (0.07)	5 (0.28)	11 (0.28)	3 (0.14)	7 (0.42)	9 (0.42)	2 (0.07)
PM Heartland		0	0	3 (0.28)	0	6 (0.28)	0	0	1	1 (0.14)
PM Ivy Hill		2	0	5 (0.21)	10 (0.28)	6 (0.28)	0	1	5 (0.14)	0
PM Jefferson District		0	0	1 (0.14)	3 (0.28)	2 (0.14)	0	0	0	0
PM Keswick		1	0	3 (0.14)	2	6 (0.42)	1	5 (0.14)	5 (0.28)	1
PM Lake Chesdin		0	0	1	2	10 (0.07)	2	5 (0.07)	17 (0.21)	11 (0.28)
PM London Downs		1	0	1 (0.07)	2	4	0	1	4 (0.14)	0
PM Longwood		0	0	1	5 (0.14)	7 (0.14)	0	4	6 (0.28)	2
PM Oak Marr		0 4 (0.57)	0	0	3	3	1	2 (0.28)	2 (0.28)	0
PM Oakwood	1 (0.07)	0	0	2 (0.07)	3 (0.14)	1 (0.07)	0	1	0	0
PM Meadowcreek	7 (0.35)	0	0	2 (0.07)	13 (0.42)	0	0	1	7 (0.28)	1 (0.07)
PM Shenandoah Crossing		0	0	0	5	12 (0.28)	0	6 (0.28)	16 (0.28)	5 (0.14)
PM Tanyard		1	0	34 (0.28)	6 (0.07)	6 (0.21)	0	5 (0.07)	5 (0.07)	2
PM Washington		0	0	1 (0.07)	2 (0.14)	9 (0.42)	0	7 (0.28)	5 (0.14)	2 (0.14)
Total		15	5	72	107	212	23	87	154	53

Carolina Wren	House Wren	Blue-gray Gnatcatcher	Eastern Bluebird	Wood Thrush	American Robin	Gray Catbird	Northern Mockingbird	Brown Thrasher	Cedar Waxwing	European Starling	White-eyed Vireo
4	0	2 (0.28)	0	0	25 (1.13)	15 (1.56)	5 (0.71)	5 (0.14)	4 (0.14)	34 (4.38)	0
2	0	0	0	0	27 (1.98)	8 (0.57)	4 (0.57)	4 (0.42)	0	32 (1.27)	0
3 (0.07)	1	2 (0.07)	7 (0.42)	0	0	2 (0.07)	0	1	0	5 (0.35)	1 (0.07)
10 (0.21)	3 (0.07)	1	9 (0.35)	4 (0.07)	33 (0.71)	5 (0.14)	8	3 (0.07)	0	12 (0.07)	0
4 (0.14)	0	1	20 (0.57)	4 (0.21)	25 (0.78)	2 (0.14)	7 (0.42)	2 (0.07)	6 (0.14)	2 (0.07)	0
3 (0.14)	4 (0.14)	5	22 (0.57)	1	8 (0.07)	16 (0.78)	16 (0.42)	1 (0.07)	16	10 (0.14)	2
5 (0.14)	1 (0.07)	7 (0.21)	8 (0.07)	0	6 (0.14)	1 (0.07)	11 (0.07)	1 (0.07)	4 (0.14)	0	1
9 (0.50)	3 (0.21)	1 (0.07)	3 (0.21)	0	44 (2.33)	0	8 (0.28)	1 (0.07)	2 (0.14)	27 (1.34)	0
1	0	0	5 (0.21)	0	10 (0.35)	1 (0.07)	9 (0.35)	2 (0.07)	8 (0.28)	5 (0.28)	0
6 (0.28)	5 (0.07)	0	15 (0.35)	1 (0.07)	14 (0.35)	3 (0.07)	7 (0.14)	2 (0.07)	0	5 (0.07)	0
2 (0.14)	0	0	20 (0.78)	0	10 (0.14)	0	2 (0.14)	0	2 (0.14)	3	0
5 (0.21)	2 (0.07)	2 (0.07)	16 (0.64)	2 (0.14)	11 (0.50)	0	10 (0.50)	3 (0.14)	2 (0.14)	2	0
0	0	2 (0.14)	10 (0.42)	0	10 (0.14)	0	8 (0.57)	3 (0.14)	2	1	1
3 (0.14)	0	0	14 (0.21)	0	27 (0.42)	3 (0.07)	21 (0.78)	4 (0.07)	0	24 (0.71)	0
0	0	0	2 (0.28)	0	2 (0.28)	1 (0.14)	5 (0.42)	0	0	5 (0.71)	0
2 (0.14)	1 (0.07)	0	8 (0.14)	0	4 (0.28)	2 (0.07)	10 (0.57)	1 (0.07)	2	10	0
6 (0.07)	0	23 (0.42)	9 (0.14)	2 (0.07)	1	0	0	0	0	0	2
1 (0.07)	0	0	13 (0.35)	1	26 (0.71)	1	12 (0.07)	2	0	1	0
3 (0.14)	0	0	5 (0.14)	1	3 (0.14)	2	8 (0.14)	1	0	0	0
6 (0.28)	2 (0.14)	1 (0.14)	4 (0.28)	1 (0.14)	3 (0.42)	6 (0.42)	1 (0.14)	1	0	2 (0.28)	1 (0.14)
1 (0.07)	1	0	5 (0.35)	0	4 (0.21)	2 (0.14)	3 (0.21)	1 (0.07)	0	4 (0.14)	0
9 (0.35)	0	0	10 (0.28)	1	2 (0.07)	0	7 (0.35)	1	0	2	0
2 (0.07)	0	5 (0.14)	4 (0.14)	2	3 (0.07)	0	0	0	0	1 (0.07)	1
1 (0.07)	5	5 (0.21)	14 (0.14)	1 (0.07)	20 (0.21)	4	9 (0.28)	3	5 (0.21)	12 (0.21)	1
6 (0.21)	16 (0.64)	0	2 (0.07)	1 (0.07)	9 (0.50)	9 (0.35)	1	2	35 (2.48)	11 (0.21)	1 (0.07)
94	44	57	225	22	327	83	172	44	88	210	11

Province	Golf Course	Yellow-throated Vireo	Red-eyed Vireo	Yellow Warbler	Yellow-throated Warbler	Pine Warbler	Prairie Warbler	Black-and-white Warbler	American Redstart	Ovenbird	Common Yellowthroat
PM Army Navy (Red)		0	0	0	0	0	0	0	0	0	0
PM Army Navy (White)		0	2	0	0	0	0	0	0	0	0
PM Birdwood		0	1	0	0	0	3 (0.07)	0	0	0	2 (0.07)
PM Birkdale		0	2	0	0	0	0	0	0	3	0
PM Boonsboro		0	7 (0.14)	0	0	2	0	0	0	0	0
PM Brambleton		0	0	0	0	5 (0.21)	10 (0.14)	0	0	0	13 (0.28)
PM Colonial Hills		1	4	0	0	0	0	0	0	0	1
PM Fairfax National		2 (0.14)	2 (0.07)	0	0	3 (0.21)	0	0	0	0	0
PM Falling River		0	2 (0.07)	0	0	2	0	0	0	0	1
PM Farmington		0	1 (0.07)	0	0	0	0	0	0	0	0
PM Fawn Lake		0	4 (0.21)	0	0	0	0	0	0	1 (0.07)	0
PM Glenmore		2 (0.07)	1	0	0	0	1	0	0	0	4 (0.21)
PM Heartland		0	0	0	0	1 (0.14)	2	0	0	0	2 (0.14)
PM Ivy Hill		0	0	0	0	0	0	0	0	0	0
PM Jefferson District		0	0	0	0	0	0	0	0	0	0
PM Keswick		0	0	0	0	1 (0.07)	0	0	0	0	2 (0.07)
PM Lake Chesdin		3 (0.07)	20 (0.42)	0	9 (0.28)	9 (0.07)	0	0	1 13 (0.42)	1 (0.07)	4
PM London Downs		0	0	0	0	0	0	0	0	0	0
PM Longwood		0	4 (0.14)	1 (0.14)	0	0	0	0	0	0	1
PM Oak Marr		0	0	0	0	1 (0.14)	0	0	0	0	0
PM Oakwood		0	0	0	0	0	0	0	0	0	0
PM Meadowcreek		0	1	0	0	0	1 (0.07)	0	0	0	1
PM Shenandoah Crossing		0	10 (0.28)	0	0	0	0	2	0 12 (0.28)	2 (0.07)	2
PM Tanyard		0	3	0	0	4 (0.07)	1	0	0	0	2
PM Washington		0	0	0	0	0	0	0	0	0	0
Total		8	64	1	9	28	18	2	1	29	32

Hooded Warbler	Yellow-breasted Chat	Summer Tanager	Scarlet Tanager	Northern Cardinal	Blue Grosbeak	Indigo Bunting	Eastern Towhee	Chipping Sparrow	Field Sparrow	Grasshopper Sparrow	Song Sparrow
0	0	0	0	7 (0.71)	0	0	4 (0.57)	0	0	0	2 (0.28)
0	0	0	0	2 (0.14)	0	0	0	0	0	0	8 (0.28) 13
0 1 (0.07)	0	0	0	19 (0.99)	0	10 (0.50)	2 (0.07)	5 (0.07)	1 (0.07)	0	4 (0.14) 4
0	0	0	0	12 (0.35) 2 (0.07)	3 (0.07)	0	10 (0.28)	0	0	0	5 (0.14) 5
0	0	0	0	6 (0.21)	0	2 (0.07)	0	23 (0.64)	0	0	1 (0.07)
0	0	0	0	18 (0.35)	0	12 (0.35)	13 (0.42)	16 (0.57)	13 (0.35)	0	13 (0.35) 37
0	0	0	0	17 (0.42)	0	15 (0.35)	3 (0.07)	10 (0.28)	3 2 (0.07)	1	9
0	0	0	0	13 (0.57)	0	0	1 19 (0.92)	1 (0.07)	0	0	35
0	0	0	0	2 (0.14)	0	1 (0.07)	1	7 (0.35)	1	0	3 (0.07) 1
0	0	0	0	13 (0.42)	0	1	1 11 (0.42)	0	0	0	8 (0.28)
0	0	1	0	5 (0.21)	0	0	5 (0.21)	1 (0.07)	0	0	0 15
0	1	0	0	7 (0.28) 3 (0.21)	7 (0.42)	0	21 (0.71)	2 (0.07)	0	3 (0.07)	5
0	2	0	0	1	0	5 (0.28)	0	14 (0.71)	3	1	1 13
0	0	0	0	15 (0.57)	0	3 (0.07)	1	4	0 1 (0.07)	3 (0.14)	16
0	0	0	0	2 (0.14)	0	0	0	0	0	0	5 (0.57) 1
0	1	0	2 (0.07)	6 (0.35)	1	2 (0.07)	2	10 (0.64)	0	0	8 (0.50) 1
(0.07)	1 14 (0.07)	4 (0.14)	6 (0.21)	0	9 (0.14)	0	13 (0.14)	0	0	0	0
0	0	0	0	2	0	0	7 (0.28)	0	0	0	5 11
0	0	0	0	4 (0.28)	0	4	0	14 (0.42)	0	0	0
0	0	0	0	8 (0.28)	0	0	2	6 (0.42)	0	0	6 (0.42)
0	0	0	0	4 (0.14)	0	0	0	2 (0.07)	0	0	2 (0.14)
0	1	0	0	17 (0.71)	1	3 (0.07)	3	2 (0.07)	1 (0.07)	0	5 (0.21)
0	1	0	0	3 (0.07)	0	3 (0.07)	2 (0.14)	4 (0.14)	2 (0.14)	0	0
0	1	0	0	11 (0.14)	0	4 (0.14)	3 (0.14)	16 (0.28)	0	0	1
0	0	0	0	8 (0.28)	0	0	0	3 (0.14)	0	0	20 (0.85)
4	9	15	8	208	7	84	43	218	27	4	104

Province	Golf Course	Red-winged Blackbird	Eastern Meadowlark	Common Grackle	Brown-headed Cowbird	Orchard Oriole	Baltimore Oriole	House Finch	American Goldfinch	House Sparrow
PM Army Navy (Red)		0	0 11 (0.57)		1 3 (0.28)		2	2	5 (0.71)	15 (1.41)
PM Army Navy (White)		(0.28)	0 23 (0.71)		1 (0.14) 4 (0.14)	1 (0.14)	3 (0.42)	2 (0.28)	24 (2.12)	
PM Birdwood		(0.28)	0 14 (0.50)		8 (0.14)	0	1	0	7 (0.28)	0
PM Birkdale		(0.07)	0 16 (0.14)		2 (0.07)	0	0	9 (0.21)	8 (0.21)	0
PM Boonsboro		0	0 17 (0.35)		7 (0.28) 2 (0.14)	6 (0.28)	2 (0.14)	9 (0.07)	1 (0.07)	
PM Brambleton		(0.71)	0 23 (0.35)		10 (0.21)	0	1	3 23 (0.50)		4
PM Colonial Hills		(0.21)	2 (0.07)	4 (0.07)	8 (0.14) 5 (0.07)		1	3 18 (0.92)		0
PM Fairfax National		(1.70)	0 20 (0.57)		1 (0.07)	2	0	0 8 (0.42)		0
PM Falling River		(0.07)	4 (0.21) 10 (0.71)		0	0	0	1 1 (0.07)		5
PM Farmington		0	0 11 (0.28)		2 (0.07)	0	0	4 (0.07) 6 (0.21)		3
PM Fawn Lake		(0.64)	0 9 (0.28)		0	0 2 (0.07)		0 10 (0.14)		0
PM Glenmore		(0.21)	1 8 (0.21)		3 (0.21) 1 (0.07)	2 (0.07)	2 (0.14)	12 (0.42)	4 (0.07)	
PM Heartland		(0.71)	7 (0.28) 10 (0.57)		0	1	0	0 5 (0.28)		0
PM Ivy Hill		(0.14)	8 (0.28) 64 (1.56)		2 (0.14)	1 1 (0.07)	11 (0.21)	3 3 (0.21)		
PM Jefferson District		(0.14)	0 5 (0.28)		2 (0.14)	0	0	0 2 (0.14)	5 (0.57)	
PM Keswick		(0.07)	0 31 (0.85)		2 (0.14) 5 (0.28)	2 (0.14)		1 10 (0.42)		1
PM Lake Chesdin		0	0	1 14 (0.21)	1 (0.07)	0	0	0 9		0
PM London Downs		(0.14)	7 (0.07)	12 (0.07)	2 (0.07)	0	1	3 1 (0.07)		0
PM Longwood		0	0 3 (0.28)		3 (0.14)	0	0	0 6 (0.14)		0
PM Oak Marr		3	0 5 (0.57)		3 (0.28)	0 1 (0.14)	7 (0.71)	3 (0.28)	9 (1.13)	
PM Oakwood		0	0 2 (0.14)		0 1 (0.07)	0	1 (0.07)	1		0
PM Meadowcreek		1	0 3 (0.14)		1 1 (0.07)	0	0	3 9 (0.14)		0
PM Shenandoah Crossing		2	0	2 3 (0.14)	0	0	0	0 9 (0.21)		0
PM Tanyard		3	0 21 (0.42)		2	0	0	3 (0.14) 6 (0.28)	2 (0.07)	
PM Washington		0	0 14 (0.57)		2 (0.14)	0	1	1 8 (0.57)	11 (0.57)	
Total		175	29	339	79	27	22	59	181	87

Province	Golf Course	# holes	Green Heron	Canada Goose	Wood Duck	Mallard	Black Vulture	Turkey Vulture	Sharp-shinned Hawk	Red-tailed Hawk	Northern Bobwhite	Killdeer	Rock Dove
MT Blacksburg		18	4 (0.21)		18	0	0 0		0 0 0		0	1	0
MT Castle Rock		18	1 (0.07)		0	0	0 0		0 0 0		0	0 1 (0.07)	
MT Devil's Knob		18	0		0	0	0 0		0 0 0		0	0	0
MT Gypsy Hill		18	0		1	0 5 (0.07)	0		0 0 0		0	0	1
MT Hanging Rock		18	0		0	0 4 (0.21)	0		0 0 0		0 3 (0.07)		0
MT Heritage Oaks		18	0		0	0	0 0		0 1 0		0	1	0
MT Lake Bonaventure		9	1 (0.14)	1 (0.14)	2		0 0		0 0 0		0	0	0
MT Lakeview (Lake)		9	0		0	0	2 0		0 0 0		0	3	0
MT Lakeview (Mountain)		9	0		0	0	0 0		0 0 1		0	2	0
MT Lakeview (Peak)		9	0		0	0	0 0		0 0 0		0	0	0
MT Lexington		18	3 (0.07)	1 (0.07)	0		1 0		0 0 0		0 5 (0.21)		1
MT Lower Cascades		18	0		0	0	0 0 1 (0.07)		0 0		0	0	0
MT Mountain Top		9	0		0	0	0 0		0 0 0		0	0	0
MT Needle's Eye		9	0		0	0	0 0		0 0 0		0	0	0
MT Ole Monterey		18	0		0	0	1 0 3 (0.14)		0 0 4 (0.14)		0	0	0
MT River Course		18	1 27 (1.91)		0 4 (0.14)	0		0 1 0		0 7 (0.07)		0	
MT Round Meadows		18	1		0	0	1 0		0 0 0		0	3	0
MT Stoney Creek (Monocan)		9	1		0	0	0 1		0 0 0		0	0	0
MT Stoney Creek (Shamokin)		9	0		0	0	0 0		0 0 0		0	0	0
MT Stoney Creek (Tuckahoe)		9	2 2 (0.14)		1		0 0		0 0 0		0 1 (0.14)		0
MT Virginia Tech		18	0		0	0 13 (0.92)	0		0 0 0		0	0	0
MT Waynesboro		18	2 (0.07)	1 (0.07)	0 4 (0.14)	0		0 0 0		0	0 2 (0.07)		
MT Willowbrook		9	0		0	1	0 0		0 0 0		0	0	0
Total			16	51	4	35	1	4	2	1	4	26	5

Province	Golf Course	Mourning Dove	Yellow-billed Cuckoo	Chimney Swift	Ruby-throated Hummingbird	Belted Kingfisher	Red-headed Woodpecker	Red-bellied Woodpecker	Downy Woodpecker	Hairy Woodpecker
MT Blacksburg		1 1 (0.07)	2	0	0	0	0	1	1	0
MT Castle Rock		6 (0.21)	0 1 (0.07)	0	2	0 3 (0.14)	2 (0.07)	1 (0.07)	4	
MT Devil's Knob		0	0	0	0	0 1 (0.07)	0	0	0	
MT Gypsy Hill		1	0 4 (0.14)	0	0	0 6 (0.14)	0	0	4	
MT Hanging Rock		3	0 3 (0.21)	0	0	0 6 (0.35)	2 (0.07)	0	0	
MT Heritage Oaks		2	0 7 (0.50)	0	1	0	1	0	0	
MT Lake Bonaventure		0	0 3 (0.28)	0	0	0 3 (0.28)	0	0	0	
MT Lakeview (Lake)		0	0 6 (0.14)	0	0	0	1 1 (0.14)	0	0	
MT Lakeview (Mountain)		6 (0.14)	0	0	0	0 3 (0.14)	0	0	0	
MT Lakeview (Peak)		3	0	0	0	0 5 (0.14)	0	0	0	
MT Lexington		5 (0.21)	0 5 (0.21)	0	0	0 2 (0.07)	1 (0.07)	0	1	
MT Lower Cascades		3 (0.21)	3	2	0	0 3 (0.07)	4 (0.14)	0	2	
MT Mountain Top		5 (0.14)	2 (0.14)	0	0	0 1 (0.14)	2	2	2	
MT Needle's Eye		1	0	0	0	0	1	0	0 3	
MT Ole Monterey		8 (0.28)	0 1 (0.07)	0	0	0 2 (0.07)	0	0	0	
MT River Course		0 5 (0.14)	0	0 1 (0.07)	1 (0.07)	4 (0.28)	2 (0.07)	0 3		
MT Round Meadows		10 (0.21)	0	1	0	0 7 (0.21)	3 (0.07)	0	0	
MT Stoney Creek (Monocan)		0	0	0	0	0	0 1 (0.14)	0	0	
MT Stoney Creek (Shamokin)		2 (0.14)	2 (0.14)	0	2	0 4 (0.42)	1 (0.14)	0	0	
MT Stoney Creek (Tuckahoe)		1 (0.14)	0	0 1 (0.14)	0	0	1	0	0	
MT Virginia Tech		3	0 8 (0.42)	0	0	0 1 (0.07)	0	0 3		
MT Waynesboro		1 (0.07)	0 1 (0.07)	0	2	1 1 (0.07)	0	0 3		
MT Willowbrook		2 (0.14)	0 2 (0.14)	3	3	0	0	1	0	
Total		63	13	46	6	9	2	57	21	3

Northern Flicker	Pileated Woodpecker	Eastern Wood-Pewee	Acadian Flycatcher	Eastern Phoebe	Great Crested Flycatcher	Eastern Kingbird	Tree Swallow	Northern Rough-winged Swallow	Barn Swallow	Blue Jay	American Crow	Fish Crow
0	0	0	0 1 (0.07)	0 4 (0.07)	9 (0.28)	2 2 (0.07)	11 (0.14)	16 (0.35)	0			
(0.07)	0 8 (0.21)	1 (0.07)	1 (0.07)	1 (0.07)	2 (0.14)	2 (0.14)	0	1 3 (0.07)	4 (0.28)	0		
0	0 3 (0.14)	1	3 2 (0.07)	0	0	0	0	0 1 (0.07)	3 (0.07)	0		
(0.14)	0 2 (0.07)	0	0	3	0	0	1	0 9 (0.35)	11 (0.35)	2 (0.07)		
2 1 (0.07)	8 (0.28)	0 4 (0.07)	2 (0.07)	1 (0.07)	0 2 (0.07)	0	5 (0.28)	5 (0.28)	0			
0	1	1	0	1	3 (0.14)	4 (0.14)	0 7 (0.21)	5 (0.14)	8 (0.14)	0		
1	0 1 (0.14)	0 3 (0.14)	1	2	0	0 3 (0.28)	0	5 (0.42)	0			
0 1 (0.14)	0	0	0	1 4 (0.28)	0	0	3 (0.28)	8 (0.14)	0			
3	0 2 (0.14)	0 4 (0.28)	1 (0.14)	3 (0.14)	6	0	3 8 (0.42)	1 (0.14)	0			
2	0 5 (0.14)	0	0	1	0	4	0	1 7 (0.14)	6 (0.42)	0		
(0.07)	2	0	0 1 (0.07)	0	2 2 (0.07)	2 (0.07)	1 (0.07)	4 (0.14)	19 (0.57)	0		
(0.07)	0	4	0 6 (0.07)	6 (0.21)	1 1 (0.07)	0 6 (0.28)	1	10 (0.21)	0			
1	1	0	0	0	1	0	0	1 5 (0.14)	0			
(0.28)	0 2 (0.14)	0 2 (0.28)	1 (0.14)	0	0	0	0	3 7 (0.28)	0			
0	0	0	0	0	0 3 (0.14)	4 (0.28)	0 3 (0.14)	4 (0.21)	9 (0.42)	0		
(0.14)	1 (0.07)	5 (0.21)	3 (0.14)	3 (0.07)	0 7 (0.28)	2 (0.07)	1	6 1 (0.07)	9 (0.50)	0		
1	0 2 (0.14)	2 (0.07)	2 4 (0.21)	5 (0.21)	0 1 (0.07)	1	5 (0.14)	17 (0.28)	0			
1	0	0	0 3 (0.14)	0	1	1	0	0	2 5 (0.14)	0		
0 4 (0.28)	0	0 2 (0.14)	0	0	0	0	0	0 3 (0.28)	9 (0.57)	2		
2	0	1	0 2 (0.14)	0	0	0	0	1 4 (0.14)	11 (0.42)	0		
(0.21)	0 3 (0.14)	0 1 (0.07)	1 5 (0.07)	0	0 6 (0.28)	8 (0.50)	6 (0.28)	0				
(0.07)	0 1 (0.07)	0	0	0	0	0	0	0 18 (0.64)	13 (0.21)	3 (0.07)		
1	0	2	1	0	0	0	1 3 (0.14)	2 (0.14)	0 5 (0.42)	0		
37	11	50	8	39	24	41	40	12	43	106	192	7

Province	Golf Course	Common Raven	Black-capped Chickadee	Carolina Chickadee	Tufted Titmouse	White-breasted Nuthatch	Carolina Wren	House Wren	Blue-gray Gnatcatcher	Eastern Bluebird
MT Blacksburg		0	0	7 (0.42)	5	2 (0.14)	4 (0.07)	1	0	18 (0.21)
MT Castle Rock		0	0	2 (0.14)	3 (0.07)	4 (0.21)	1 (0.07)	1	7 (0.35)	5 (0.28)
MT Devil's Knob		0	0	0	2	2 (0.14)	2 (0.07)	0	0	0
MT Gypsy Hill		0	0	3 (0.14)	4 (0.21)	1 (0.07)	1	6 (0.35)	0	5 (0.14)
MT Hanging Rock		0	0	10 (0.35)	2 (0.07)	5 (0.35)	7 (0.35)	0	2 (0.14)	22 (0.99)
MT Heritage Oaks		0	0	7 (0.21)	9 (0.21)	2 (0.07)	3 (0.14)	0	2 (0.07)	5 (0.07)
MT Lake Bonaventure		0	0	1 (0.14)	3 (0.14)	2 (0.14)	2 (0.28)	0	3	3 (0.28)
MT Lakeview (Lake)		0	0	4	1 (0.14)	1	0	1 (0.14)	0	5 (0.28)
MT Lakeview (Mountain)		0	0	2 (0.28)	3 (0.42)	1	0	0	0	8 (0.14)
MT Lakeview (Peak)		0	0	2	3 (0.28)	4 (0.14)	1	0	0	6 (0.42)
MT Lexington		0	0	7 (0.35)	7 (0.28)	0	3 (0.07)	0	0	2 (0.07)
MT Lower Cascades		0	0	2 (0.14)	12 (0.14)	3	9 (0.21)	0	3 (0.14)	2
MT Mountain Top		0	0	4	1	2 (0.28)	6 (0.28)	0	1 (0.14)	3
MT Needle's Eye		0	1 (0.14)	0	2 (0.14)	0	0	2 (0.14)	0	7 (0.71)
MT Ole Monterey		0	0	0	4 (0.14)	0	5 (0.21)	3 (0.14)	0	2 (0.07)
MT River Course		0	0	7 (0.28)	7 (0.28)	1	14 (0.50)	1	10 (0.57)	5 (0.21)
MT Round Meadows		0	0	10 (0.21)	6 (0.07)	3 (0.21)	18 (0.42)	3 (0.14)	2	11 (0.35)
MT Stoney Creek (Monocan)		0	0	2 (0.14)	0	0	4	2 (0.28)	0	3
MT Stoney Creek (Shamokin)		1	0	6 (0.42)	6	2 (0.14)	8 (0.42)	1	0	6 (0.14)
MT Stoney Creek (Tuckahoe)		0	0	5 (0.42)	5 (0.42)	1	2	1 (0.14)	0	1
MT Virginia Tech		0	0	2 (0.07)	1	0	0	1	0	2
MT Waynesboro		0	0	10 (0.42)	11 (0.35)	0	3 (0.07)	13 (0.21)	0	3 (0.07)
MT Willowbrook		0	0	1	1 (0.14)	1	0	1	4 (0.28)	2
Total		1	1	94	98	37	93	37	34	126

Wood Thrush	American Robin	Gray Catbird	Northern Mockingbird	Brown Thrasher	Cedar Waxwing	European Starling	White-eyed Vireo	Blue-headed Vireo	Yellow-throated Vireo	Warbling Vireo	Red-eyed Vireo	Northern Parula
0	10 (0.07)	0	6 (0.07)	0	0	4	0	0	1 (0.07)	0	0	0
6 (0.28)	31 (1.41)	1	9 (0.57)	5 (0.28)	4 (0.07)	3	0	0	0	1	8 (0.35)	1
7 (0.35)	31 (0.85)	2	0	0	0	0	0	0	0	0	3 (0.07)	0
0	18 (0.78)	9 (0.42)	8 (0.21)	0	4	14 (0.57)	0	0	0	0	0	0
0	26 (0.78)	0	3	1 (0.07)	2	9 (0.28)	0	0	0	0	0	0
0	8 (0.28)	3 (0.14)	3 (0.07)	0	0	8 (0.14)	0	0	0	0	0	0
1 (0.14)	15 (0.85)	2	0	0	9 (0.85)	2	0	1	3 (0.28)	0	5 (0.42)	2
0	10 (0.42)	0	3 (0.28)	0	0	2	0	0	0	0	0	0
0	6 (0.28)	2	7 (0.28)	7 (0.14)	1	1 (0.14)	0	0	0	0	0	0
0	7 (0.42)	0	0	1	0	5	0	0	0	0	0	0
0	8 (0.50)	1	4 (0.21)	1 (0.07)	2 (0.07)	8 (0.50)	0	0	0	0	0	0
1	16 (0.28)	3 (0.14)	0	1 (0.07)	4 (0.14)	0	1 (0.07)	0	0	0	17 (0.71)	3 (0.14)
1	7 (0.28)	0	0	0	2 (0.28)	0	0	1	0	0	7	0
0	6 (0.14)	4 (0.28)	0	2 (0.14)	0	0	0	0	0	0	2	0
0	7 (0.28)	1	5 (0.28)	1	7 (0.28)	43 (0.07)	0	0	0	1 (0.07)	0	0
3 (0.14)	9 (0.07)	0	3 (0.14)	0	3 (0.21)	1	1	0	0	6 (0.28)	3 (0.14)	6 (0.21)
1	31 (0.92)	3 (0.14)	10 (0.21)	0	16 (0.99)	3	0	0	0	0	1	0
0	0	1 (0.14)	1	0	1 (0.14)	2	0	0	0	0	2 (0.28)	0
2	1	2	2 (0.14)	0	0	0	0	0	0	0	5 (0.42)	0
0	0	3 (0.14)	2 (0.14)	1	0	1	2	0	1	0	4	0
0	15 (0.57)	2 (0.07)	4 (0.14)	1	9 (0.57)	2 (0.14)	1 (0.07)	0	0	0	0	0
0	5 (0.21)	11 (0.64)	1 (0.07)	0	0	13 (0.35)	0	0	0	0	0	0
2 (0.28)	3	0	0	1 (0.14)	5	1	0	0	2	0	4 (0.14)	3 (0.28)
24	270	50	71	22	69	122	5	2	7	8	61	15

Province	Golf Course	Yellow Warbler	Chestnut-sided Warbler	Black-throated Green Warbler	Yellow-throated Warbler	Pine Warbler	Prairie Warbler	Cerulean Warbler	Black-and-white Warbler	American Redstart	Ovenbird	Common Yellowthroat
MT Blacksburg		0	0	0	0	0	0	0	0	0	0	0
MT Castle Rock		2 (0.07)	0	0	0	0	0	0	0	3 (0.14)	0	0
MT Devil's Knob		1 (0.07)	1	0	0	0	0	0	1 (0.07)	0	0	0
MT Gypsy Hill		0	0	0	0	0	0	0	0	0	0	0
MT Hanging Rock		0	0	0	0	0	0	0	0	0	0	0
MT Heritage Oaks		0	0	0	0	0	0	0	0	0	0	0
MT Lake Bonaventure		3 (0.14)	0	0	2 (0.14)	0	0	0	3	0	0	0
MT Lakeview (Lake)		0	0	0	0	0	0	0	0	0	0	0
MT Lakeview (Mountain)		0	0	0	0	0	0	0	0	0	0	0
MT Lakeview (Peak)		0	0	0	0	0	0	0	0	0	0	0
MT Lexington		0	0	0	0	0	0	0	0	0	0	0
MT Lower Cascades		0	0	0	0	0	0	0	0	0	0	0
MT Mountain Top		2	0	1 (0.14)	7 (0.14)	0	0	1 (0.14)	5 (0.42)	1	4	0
MT Needle's Eye		0	0	0	0	1 (0.14)	0	0	0	0	0	2
MT Ole Monterey		0	0	0	0	0	0	0	0	0	0	0
MT River Course		10 (0.21)	0	0	0	0	0	0	0	1	0	0
MT Round Meadows		0	0	0	0	0	0	0	1 (0.07)	0	1 (0.07)	0
MT Stoney Creek (Monocan)		0	0	0	0	0	0	0	0	0	0	0
MT Stoney Creek (Shamokin)		0	0	0	0	1	0	0	0	0	0	0
MT Stoney Creek (Tuckahoe)		0	0	0	0	0	1	0	0	0	0	0
MT Virginia Tech		0	0	0	0	0	0	0	0	0	0	0
MT Waynesboro		0	0	0	0	0	0	0	0	0	0	0
MT Willowbrook		2 (0.14)	0	0	2	0	0	1	1	0	2 (0.28)	0
Total		20	1	1	11	2	1	2	11	5	7	2

Hooded Warbler	Yellow-breasted Chat	Summer Tanager	Scarlet Tanager	Northern Cardinal	Rose-breasted Grosbeak	Indigo Bunting	Eastern Towhee	Chipping Sparrow	Field Sparrow	Grasshopper Sparrow	Song Sparrow	Dark-eyed Junco
0	0	0	0	9 (0.07)	0	0	9 (0.42)	12 (0.28)	0	0	19 (0.35)	0
0	1	0	3 (0.14)	4 (0.21)	0	3 (0.14)	3	21 (0.78)	0	0	9 (0.42)	0
0	0	0	5 (0.21)	0	4	2 (0.14)	17 (0.42)	3 (0.07)	0	0	0	14 (0.35)
0	0	0	0	16 (0.64)	0	3	0	12 (0.28)	0	0	3 (0.07)	0
0	0	0	0	4 (0.14)	0	2 (0.14)	3 (0.07)	19 (0.71)	1	0	1	0
0	0	0	0	5 (0.21)	0	8 (0.28)	4 (0.14)	1 (0.07)	5 (0.28)	0	4 (0.21)	0
0	2 (0.14)	2 (0.14)	0	6 (0.42)	0	4 (0.14)	1 (0.14)	10 (0.71)	0	0	7 (0.14)	0
0	0	0	0	3 (0.42)	0	0	1	10 (0.28)	0	0	2 (0.14)	0
0	0	0	0	2	0	5 (0.14)	0	0	0	2 (0.28)	1	0
0	0	0	0	4 (0.14)	0	0	3 (0.28)	7 (0.42)	1	0	0	0
0	0	0	0	7 (0.28)	0	1 (0.07)	2 (0.07)	0	0	0	12 (0.57)	0
0	0	0	4 (0.07)	4 (0.07)	0	5 (0.21)	1 (0.07)	15 (0.28)	0	0	12 (0.50)	6 (0.07)
1	0	0	0	1	3	0	6 (0.28)	2	14 (0.28)	0	0	2
0	0	0	0	3	0	3 (0.14)	4	3 (0.42)	5 (0.28)	0	3 (0.14)	0
0	1 (0.07)	0	0	6 (0.14)	0	4 (0.14)	5 (0.21)	8 (0.35)	3 (0.14)	1	9 (0.35)	0
0	0	0	2 (0.07)	9 (0.28)	0	18 (0.64)	6 (0.28)	4 (0.21)	0	0	15 (0.71)	0
0	0	0	0	8 (0.35)	0	13 (0.28)	15 (0.50)	19 (0.71)	3 (0.07)	0	15 (0.28)	0
0	0	0	0	4 (0.28)	0	5 (0.28)	1	3 (0.14)	3 (0.14)	0	3	0
0	0	0	0	6 (0.14)	0	7 (0.28)	6 (0.28)	4 (0.14)	1 (0.14)	0	0	0
0	1 (0.14)	0	0	7 (0.42)	0	5 (0.28)	4 (0.14)	2 (0.14)	3 (0.28)	0	2	0
0	0	0	0	2 (0.07)	0	0	0	4 (0.21)	0	0	1 (0.07)	0
0	0	0	0	16 (0.64)	0	3 (0.14)	1	0	0	0	17 (0.50)	0
1	1	0	0	0	0	2 (0.14)	1	10 (0.57)	0	0	8 (0.71)	0
2	6	2	15	128	4	99	89	181	25	3	145	20

Province	Golf Course	Hooded Warbler	Yellow-breasted Chat	Summer Tanager	Scarlet Tanager	Northern Cardinal	Rose-breasted Grosbeak	Indigo Bunting	Eastern Towhee	Chipping Sparrow	Field Sparrow
MT Blacksburg		0	0	0	0	9 (0.07)	0	0	9 (0.42)	12 (0.28)	0
MT Castle Rock		0	1	0	3 (0.14)	4 (0.21)	0	3 (0.14)		3 21 (0.78)	0
MT Devil's Knob		0	0	0	5 (0.21)		0	4 2 (0.14)	17 (0.42)	3 (0.07)	0
MT Gypsy Hill		0	0	0		0 16 (0.64)	0	3		0 12 (0.28)	0
MT Hanging Rock		0	0	0	0	4 (0.14)	0	2 (0.14)	3 (0.07)	19 (0.71)	1
MT Heritage Oaks		0	0	0	0	5 (0.21)	0	8 (0.28)	4 (0.14)	1 (0.07)	5 (0.28)
MT Lake Bonaventure		0 2 (0.14)	2 (0.14)	0	0	6 (0.42)	0	4 (0.14)	1 (0.14)	10 (0.71)	0
MT Lakeview (Lake)		0	0	0	0	3 (0.42)	0	0		1 10 (0.28)	0
MT Lakeview (Mountain)		0	0	0	0		2	5 (0.14)		0	0
MT Lakeview (Peak)		0	0	0	0	4 (0.14)	0	0	3 (0.28)	7 (0.42)	1
MT Lexington		0	0	0	0	7 (0.28)	0	1 (0.07)	2 (0.07)		0
MT Lower Cascades		0	0	0	4 (0.07)	4 (0.07)	0	5 (0.21)	1 (0.07)	15 (0.28)	0
MT Mountain Top		1	0	0	1		3	6 (0.28)		2 14 (0.28)	0
MT Needle's Eye		0	0	0	0		3	3 (0.14)		4 3 (0.42)	5 (0.28)
MT Ole Monterey		0 1 (0.07)		0	0	6 (0.14)	0	4 (0.14)	5 (0.21)	8 (0.35)	3 (0.14)
MT River Course		0	0	0	2 (0.07)	9 (0.28)	0	18 (0.64)	6 (0.28)	4 (0.21)	0
MT Round Meadows		0	0	0	0	8 (0.35)	0	13 (0.28)	15 (0.50)	19 (0.71)	3 (0.07)
MT Stoney Creek (Monocan)		0	0	0	0	4 (0.28)	0	5 (0.28)		1 3 (0.14)	3 (0.14)
MT Stoney Creek (Shamokin)		0	0	0	0	6 (0.14)	0	7 (0.28)	6 (0.28)	4 (0.14)	1 (0.14)
MT Stoney Creek (Tuckahoe)		0 1 (0.14)		0	0	7 (0.42)	0	5 (0.28)	4 (0.14)	2 (0.14)	3 (0.28)
MT Virginia Tech		0	0	0	0	2 (0.07)	0	0		0 4 (0.21)	0
MT Waynesboro		0	0	0	0	16 (0.64)	0	3 (0.14)		1	0
MT Willowbrook		1	1	0	0		0	2 (0.14)		1 10 (0.57)	0
Total		2	6	2	15	128	4	99	89	181	25

Grasshopper Sparrow	Song Sparrow	Dark-eyed Junco	Red-winged Blackbird	Eastern Meadowlark	Common Grackle	Brown-headed Cowbird	Orchard Oriole	Baltimore Oriole	House Finch	American Goldfinch	House Sparrow
0 19 (0.35)		0	2	0 24 (0.35)	1 (0.07)		0	1	0 16 (0.64)		0
0 9 (0.42)			0 6 (0.07)	4 (0.21)	3 (0.07)	3 (0.14)	2 (0.07)	2 (0.14)	2 (0.07)	10 (0.50)	1
0	0 14 (0.35)		0	0	0	6 (0.21)	0	0	0	2 (0.07)	0
0 3 (0.07)		0	0	0 7 (0.28)		0	0	0 1 (0.07)	7 (0.14)	1 (0.07)	0
0 1		0	0	0	3	5 (0.21)	0	0	3 1 (0.07)		0
0 4 (0.21)		0	0	0 52 (0.07)		2 (0.07)	0	0	1 9 (0.28)		0
0 7 (0.14)		0 7 (0.28)		0	0	2	0 1 (0.14)		0 9 (0.14)		0
0 2 (0.14)		0	0	0 15 (1.84)		1	0	0	0 2 (0.14)	7 (0.28)	0
2 (0.28)	1	0	0 3 (0.14)	23 (0.28)		0	0	0	1 2 (0.14)		0
0	0	0	0	0 4 (0.14)		2	0	0	3 6 (0.28)		0
0 12 (0.57)		0 1 (0.07)		0 19 (0.50)		1	0 5 (0.35)		1 2 (0.14)	1 (0.07)	0
0 12 (0.50)	6 (0.07)		1	0 14 (0.64)		0	0	0	0 9 (0.28)		0
0 2		0	0	0	0	1	0	0	0 17 (1.27)		0
0 3 (0.14)		0	2	1	0	1	0	0	0	2	0
1 9 (0.35)		0	0 5 (0.21)	10 (0.35)	3 (0.14)			3 3 (0.21)	3 (0.14)	4 (0.07)	0
0 15 (0.71)		0	1 4 (0.14)	6 (0.35)	1 (0.07)	6 (0.35)	9 (0.35)		0 10 (0.14)		0
0 15 (0.28)		0 2 (0.07)	5 (0.21)	22 (0.64)	19 (0.57)	2 (0.07)		0 1 (0.07)	14 (0.42)	3 (0.14)	0
0 3		0	0	2	0	1	0	0	0 8 (0.57)		0
0 0		0	1	0	0	0	0	0	1	1	0
0 2		0 3 (0.14)		0 1 (0.14)		0	0	0	0 5 (0.28)		0
0 1 (0.07)		0	0	0 16 (0.50)		0 4 (0.21)	3 (0.07)	4 (0.21)	12 (0.42)	6 (0.21)	0
0 17 (0.50)		0	1	0 14 (0.57)		2 (0.07)	0	0 4 (0.21)	4 (0.14)	7 (0.28)	0
0 8 (0.71)		0 2 (0.14)		0	0	0	0	0	0 5 (0.42)		0
3	145	20	29	24	233	51	14	24	25	156	30

APPENDIX 2. Golf course names and locations in Virginia.

Aquia Harbour Golf and Country Club, Stafford
Army Navy Country Club, Arlington
Augustine Golf Club, Stafford
Bay Creek Golf Club, Cape Charles
Belle Haven Country Club, Alexandria
Bide-a-wee Golf Club, Portsmouth
Birdwood Golf Course, Charlottesville
Birkdale Golf Club, Chesterfield
Blacksburg Country Club, Blacksburg
Boonsboro Country Club, Lynchburg
Brambleton Regional Park Golf Course, Ashburn
Castle Rock Golf Course, Pembroke
Chesapeake Golf Club, Chesapeake
Colonial Golf Course, Williamsburg
Colonial Hills Golf Course, Forest
Devil's Knob Golf Course at Wintergreen Resort, Wintergreen
Eaglewood Golf Course, Langley AFB
Eastern Shore Yacht and Country Club, Melfa
Elizabeth Manor Golf and Country Club, Portsmouth
Fairfax National Golf Club, Centreville
Falling River Country Club, Appomattox
Farmington Country Club, Charlottesville
Fawn Lake Country Club, Spotsylvania
Ford's Colony, Williamsburg
Four Winds Golf Course, Rappahannock
Fredericksburg Country Club, Fredericksburg
Glenmore Country Club, Keswick
Golden Horseshoe Golf Club, Williamsburg
Gypsy Hill Golf Club, Staunton
Hamptons Golf Course, Hampton
Hanging Rock Golf Club, Salem
Heartland Golf Club, Farmville
Hell's Point Golf Club, Virginia Beach
Heritage Oaks Golf Course, Harrisonburg
Hobbs Hole Golf Club, Tappahannock
Ivy Hill Golf Club, Forest
Jefferson District Golf Course, Falls Church
Keswick Club, Keswick
Kiln Creek Golf and Country Club, Newport News
Kingsmill Resort, Williamsburg
Kiskiack Golf Club, Williamsburg
Lake Bonaventure Country Club, Castlewood
Lake Chesdin Golf Club, Chesterfield
Lakeview Golf Course, Harrisonburg
Lee's Hill Golfers' Club, Fredericksburg

Lexington Golf and Country Club, Lexington
London Downs Golf Club, Forest
Longwood Golf Course, Farmville
Lower Cascades at the Homestead, Hot Springs
Meadowcreek Golf Course at Pen Park, Charlottesville
Mountain Top Golf Course, Grundy
Needle's Eye Golf Course, Monterey
Newport News Golf Club at Deer Run, Newport News
Oak Marr Golf Course, Oakton
Oakwood Country Club, Lynchburg
Ole Monterey Golf Club, Roanoke
Pohick Bay Regional Park Golf Course, Lorton
Princess Anne Country Club, Virginia Beach
Red Wing Lake Golf Club, Virginia Beach
River Course, Radford
Riverfront Golf Club, Suffolk
Round Meadows Country Club, Christiansburg
Royal New Kent Golf Club, Providence Forge
Shenandoah Crossing Country Club, Gordonsville
Stonehouse Golf Club, Toano
Stoney Creek Golf Course at Wintergreen Resort, Nellysford
Suffolk Golf Association, Suffolk
Tanyard Country Club, Louisa
Two Rivers Country Club, Williamsburg
Virginia Tech Golf Course, Blacksburg
Washington Golf and Country Club, Arlington
Waynesboro Country Club, Waynesboro
Williamsburg Country Club, Williamsburg
Williamsburg National Golf Club, Williamsburg
Willowbrook Country Club, Grundy
Woodlands Golf Course, Hampton
Woodside Country Club, Tappahannock

Appendix 3. Scientific names of bird species.

Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Great Blue Heron	<i>Ardea herodias</i>
Great Egret	<i>Ardea alba</i>
Green Heron	<i>Butorides virescens</i>
Yellow-crowned Night-heron	<i>Nyctanassa violacea</i>
Black Vulture	<i>Coragyps atratus</i>
Turkey Vulture	<i>Cathartes aura</i>
Canada Goose	<i>Branta canadensis</i>
Mute Swan	<i>Cygnus olor</i>
Wood Duck	<i>Aix sponsa</i>
American Black Duck	<i>Anas rubripes</i>
Mallard	<i>Anas platyrhynchos</i>
Osprey	<i>Pandion haliaetus</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Sharp-shinned Hawk	<i>Accipiter striatus</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Broad-winged Hawk	<i>Buteo platypterus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Northern Bobwhite	<i>Colinus virginianus</i>
Killdeer	<i>Charadrius vociferus</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Laughing Gull	<i>Larus atricilla</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Herring Gull	<i>Larus argentatus</i>
Royal Tern	<i>Sterna maxima</i>
Common Tern	<i>Sterna hirundo</i>
Forster's Tern	<i>Sterna forsteri</i>
Least Tern	<i>Sterna antillarum</i>

Rock Dove	<i>Columba livia</i>
Mourning Dove	<i>Zenaida macroura</i>
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>
Eastern Screech-Owl	<i>Otus asio</i>
Great Horned Owl	<i>Bubo virginianus</i>
Barred Owl	<i>Strix varia</i>
Common Nighthawk	<i>Chordeiles minor</i>
Chimney Swift	<i>Chaetura pelagica</i>
Ruby-throated Hummingbird	<i>Archilochus colubris</i>
Belted Kingfisher	<i>Ceryle alcyon</i>
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Northern Flicker	<i>Colaptes auratus</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>
Eastern Wood-Pewee	<i>Contopus virens</i>
Acadian Flycatcher	<i>Empidonax virescens</i>
Willow Flycatcher	<i>Empidonax traillii</i>
Eastern Phoebe	<i>Sayornis phoebe</i>
Great Crested Flycatcher	<i>Myiarchus crinitus</i>
Eastern Kingbird	<i>Tyrannus tyrannus</i>
White-eyed Vireo	<i>Vireo griseus</i>
Blue-headed Vireo	<i>Vireo solitarius</i>
Yellow-throated Vireo	<i>Vireo flavifrons</i>
Warbling Vireo	<i>Vireo gilvus</i>
Red-eyed Vireo	<i>Vireo olivaceus</i>
Blue Jay	<i>Cyanocitta cristata</i>
American Crow	<i>Corvus brachyrhynchos</i>
Fish Crow	<i>Corvus ossifragus</i>
Common Raven	<i>Corvus corax</i>

Purple Martin	<i>Progne subis</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Bank Swallow	<i>Riparia riparia</i>
Barn Swallow	<i>Hirundo rustica</i>
Carolina Chickadee	<i>Poecile carolinensis</i>
Black-capped Chickadee	<i>Poecile atricapillus</i>
Tufted Titmouse	<i>Baeolophus bicolor</i>
White-breasted Nuthatch	<i>Sitta carolinensis</i>
Brown-headed Nuthatch	<i>Sitta pusilla</i>
Carolina Wren	<i>Thryothorus ludovicianus</i>
House Wren	<i>Troglodytes aedon</i>
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>
Eastern Bluebird	<i>Sialia sialis</i>
Veery	<i>Catharus fuscescens</i>
Wood Thrush	<i>Catharus mustelinus</i>
American Robin	<i>Turdus migratorius</i>
Gray Catbird	<i>Dumetella carolinensis</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Brown Thrasher	<i>Toxostoma rufum</i>
European Starling	<i>Sturnus vulgaris</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Northern Parula	<i>Parula americana</i>
Yellow Warbler	<i>Dendroica petechia</i>
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>
Black-throated Green Warbler	<i>Dendroica virens</i>
Yellow-throated Warbler	<i>Dendroica dominica</i>
Pine Warbler	<i>Dendroica pinus</i>
Prairie Warbler	<i>Dendroica discolor</i>
Cerulean Warbler	<i>Dendroica cerulea</i>
Black-and-white Warbler	<i>Mniotilta varia</i>
American Redstart	<i>Setophaga ruticilla</i>
Prothonotary Warbler	<i>Protonotaria citrea</i>

Worm-eating Warbler	<i>Helmitheros vermivorus</i>
Ovenbird	<i>Seiurus aurocapillus</i>
Louisiana Waterthrush	<i>Seiurus motacilla</i>
Kentucky Warbler	<i>Oporornis formosus</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Hooded Warbler	<i>Wilsonia citrina</i>
Yellow-breasted Chat	<i>Icteria virens</i>
Summer Tanager	<i>Piranga rubra</i>
Scarlet Tanager	<i>Piranga olivacea</i>
Eastern Towhee	<i>Pipilo erythrophthalmus</i>
Chipping Sparrow	<i>Spizella passerina</i>
Field Sparrow	<i>Spizella pusilla</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Song Sparrow	<i>Melospiza melodia</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>
Blue Grosbeak	<i>Guiraca caerulea</i>
Indigo Bunting	<i>Passerina cyanea</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Eastern Meadowlark	<i>Sturnella magna</i>
Common Grackle	<i>Quiscalus quiscula</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Orchard Oriole	<i>Icterus spurius</i>
Baltimore Oriole	<i>Icterus galbula</i>
House Finch	<i>Carpodacus mexicanus</i>
American Goldfinch	<i>Carduelis tristis</i>
House Sparrow	<i>Passer domesticus</i>

INLAND SPECIMEN RECORDS OF THE CLAPPER RAIL

CHARLES R. BLEM

Department of Biology
Virginia Commonwealth University
Trani Life Sciences Center
1000 W. Cary St.
Richmond, VA 23284-2012

The Clapper Rail (*Rallus longirostris*) is almost exclusively a bird of the salt marshes of the coastal plain (Eddleman and Conway 1988). There have only been four previous published records of from the Piedmont of Virginia and one very old record from the mountain and valley province for this bird (Kain 1987). All confirmed breeding records are from marshes along Chesapeake Bay, the Atlantic Coast, or the mouths of major rivers feeding into the bay (VSO 1989). The present note documents six occurrences of Clapper Rails at or near Richmond, Virginia, two of which were mentioned briefly elsewhere (Blem 1982) and discusses the possible significance of the multiple occurrences.

All of the present specimen records were derived from birds found dead on roadways and five of them were placed in the Virginia Commonwealth University Ornithological Collection (see Blem 1982). The sixth rail was so severely damaged that the skin could not be salvaged. Four of five birds were mature males and the other was an adult female (Table 1). Other than damage probably caused by striking cars, all birds were in good shape and two had large amounts of visible fat. Due to the magnitude of the fat depots, the timing of occurrence and the distance from their breeding range, I believe the specimens all were migrants.

Table 1. Specimen records for Clapper Rails in the Richmond area.

VCU No.	Sex	Location	Date
492	male	Richmond, 15 th St.	12 Sep., 1973
919	male	Richmond, Cary St.	14 April, 1976
1305	male	Richmond, Madison St.	20 Aug., 1980
2281	male	Richmond, Hollywood Cemetery	11 April, 2002
2300	female	Chesterfield Co., Henricus Park	10 April, 2002
none	unknown	Richmond, Virginia Commonwealth Univ.	15 April, 1984

Rallus longirostris crepitans, the subspecies occurring from coastal Massachusetts, Rhode Island and Connecticut south to northeastern North Carolina (Taylor 1998) is at least partially migratory and may occur in the Bahamas in winter (Eddleman and Conway 1988). A direct line between the wintering grounds and coastal Virginia or more northern coastal areas does not pass near Richmond. It is therefore likely that all of these records represent migrants that were off course. In fact, examination of weather records suggest that easterly winds in excess of 20 km/hr occurred during the week before each bird was discovered.

The discovery of these specimens on Richmond city streets is a bit biased; birds landing in nearby wetlands likely would not have been observed, would have recovered and continued their migration. Landing in the concrete sea of a modern metropolis made them more obvious and vulnerable to injury. I suspect that Clapper Rails may regularly occur inland during the migratory period when weather conditions are favorable and that ornithologists should be alert to their occurrence.

ACKNOWLEDGMENTS

I am indebted to Ana Anderson, S. A. Anderson, Ann Miranian, C. F. Murray, and R. Varnier for helping me obtain the birds. Leann Blem read and critically revised the manuscript.

LITERATURE CITED

- BLEM, C. R. 1982. Some specimen records for Virginia. *The Raven* 51:52-54.
- EDDLEMAN, W. R. AND C. J. CONWAY. 1998. Clapper Rail. In *The birds of North America* (A. Poole and F. Gill, eds.). No. 340. Washington, D.C.
- KAIN, T. 1987. Virginia's birdlife: an annotated checklist. *Virginia Society of Ornithology. Virginia Avifauna* No. 3.
- TAYLOR, B. 1998. *Rails: a guide to the rails, crakes, gallinules and coots of the world.* Yale University Press. New Haven, Connecticut.
- VIRGINIA SOCIETY OF ORNITHOLOGY. 1989. *Virginia's breeding birds: an atlas workbook.* William Byrd Press, Richmond, Virginia.

SPRING BIRD MIGRATION AT THE SOUTHERN TIP OF VIRGINIA'S EASTERN SHORE, 1992-2002

BRIAN TABER

*Coastal Virginia Wildlife Observatory
P.O. Box 912 Eastville, VA 23347*

INTRODUCTION

Spring bird migration at the southern tip of Virginia's Eastern Shore has been studied little, in contrast to the fall migration which has been sampled through songbird banding at Kiptopeke since 1963 and a hawk watch there since 1977. Limited studies from 1992 through 1999 produced interesting records of spring migrant landbirds and waterbirds moving northward and northeastward across the mouth of the Chesapeake Bay and then up the Eastern Shore. More comprehensive studies were conducted in 2000, 2001 and 2002. These studies are summarized here, with particularly significant records emphasized.

These studies have been conducted from all four of the man-made islands of the Chesapeake Bay bridge-tunnel (CBBT), from the Eastern Shore of Virginia National Wildlife Refuge (ESVNR), from Kiptopeke State Park (KSP) and from areas up to approximately 20 kilometers north on the Eastern Shore. The habitats include open saltwater, salt marsh, mixed pine and hardwood forest, agricultural fields, weedy fields, small freshwater ponds, beach, dunes and thick understory of vines and low growth.

OBSERVATIONS BY YEAR

1992. - I spent eight hours at KSP on 29 March and nine hours there on 11 April, noting 47 hawks moving north. There were other hawks not moving north and not counted. I spent two hours at CBBT on 11 April, noting migrating shorebirds, herons, egrets and several species of songbirds, but their numbers were not recorded.

1993. - I spent one hour at CBBT and several hours from Kiptopeke to just south of the town of Cape Charles on 3 April. Noteworthy was a Swallow-tailed Kite (*Elanoides forficatus*) north of KSP, perhaps the earliest State record in the spring. Hundreds of Double-crested Cormorants (*Phalacrocorax auritus*), dozens of Great Cormorants (*Phalacrocorax carbo*) and a Common Eider (*Somateria mollissima*) were at CBBT.

1994. - I spent several hours at CBBT on 21 May. Strong east winds produced hundreds of Northern Gannets (*Morus bassanus*) and a variety of gulls and terns.

1995. - Study time increased with hawk watches I held at KSP on 2 April, 8 April and 15 April that produced 88 birds. Many hawks were arriving from the west, apparently making landfall there. Surveys at CBBT on 15 April, 26 April

and 29 April produced heavy early morning flights of hundreds of loons per hour moving up the middle of the Bay and hundreds of swallows, shorebirds, herons, egrets, gulls, terns and songbirds moving from Cape Henry to the Eastern Shore. Unexpected there was a Red-headed Woodpecker (*Melanerpes erythrocephalus*).

On 7 May, the CBBT and KSP produced a wide variety of Neo-tropical migrant landbirds, including warblers, vireos, orioles and tanagers. On 6 June, during strong winds and torrential rain associated with former Hurricane Allison, Wilson's Storm-petrels (*Oceanites oceanicus*), Black Scoters (*Melanitta nigra*), Surf Scoters (*Melanitta perspicillata*) and an immature Northern Gannet were noted moving past the CBBT into the Bay.

1996. - The first coordinated spring hawk watch, sponsored by KESTREL (Kiptopeke Environmental Station, Research and Education Laboratory), now Coastal Virginia Wildlife Observatory, was conducted at KSP from 6-21 April and resulted in 281 hawks of 13 species. Only the numbers of hawks were recorded, though many other non-raptor species were noted flying past the observation platform. Noteworthy birds in the area included American White Pelican (*Pelecanus erythrorhynchos*), American Bittern (*Botaurus lentiginosus*), Black-necked Stilt (*Himantopus mexicanus*) and Red-headed Woodpecker.

1997. - Based on the intriguing results of the 1996 hawk watch, the first spring census of all migrant birds, sponsored by KESTREL, was conducted, primarily at KSP, for 11 days from 12 April to 3 May. The resulting total was 10,299 birds of 121 species. Shorebirds, mostly Black-bellied Plovers (*Pluvialis squatarola*) and Dunlin (*Calidris alpina*), were the most numerous, due to a single morning of heavy rain and northeast winds, which forced birds into bare agricultural fields in the area. Noteworthy were Red-headed Woodpecker, Brown-headed Nuthatch (*Sitta pusilla*) and Black-necked Stilt. On 4 June, after more than a week of steady east winds, there were at least 138 Wilson's Storm-petrels and a Harlequin Duck (*Histrionicus histrionicus*) at CBBT.

1998. - Because the birds in the 1997 census were observed flying mostly up the east side of the peninsula, KESTREL moved the census site from KSP to the 40-foot high platform at ESVNWR at the east side tip of the peninsula. The view from the platform is spectacular, covering open ocean, two barrier islands, beach, salt marsh, mixed pine and hardwood forest, open fields, treetops and thick understory. There were many more birds recorded (49,789) and more species (160) than in 1997.

The survey covered 22 days and 198 hours from 15 March to 16 May. Noteworthy in the area, but not seen by census volunteers, was a White-tailed Kite (*Elanus leucurus*) north of KSP on 26 April, later accepted as the second state record, and both a Swallow-tailed and a White-tailed kite at ESVNWR on 28 April. Impressive was a day-long northward flight of more than 18,000 Yellow-rumped Warblers (*Dendroica coronata*) in March. There were 21 species of warblers, 13 species of diurnal raptors and vultures, 14 species of waterfowl and 16 species of shorebirds. There were several large, but uncounted early morning flights of Barn Swallows (*Hirundo rustica*). At CBBT, where brief surveys were made, highlights

included Lesser Black-backed Gull (*Larus fuscus*) on the late date of 9 May, King Eider (*Somateria spectabilis*), Parasitic Jaeger (*Stercorarius parasiticus*), Yellow-bellied Flycatcher (*Empidonax flaviventris*), Bewick's Wren (*Thryomanes bewickii*), Nelson's Sharp-tailed Sparrow (*Ammodramus nelsoni*), Saltmarsh Sharp-tailed Sparrow (*Ammodramus caudacutus*) and a pair of American Oystercatchers (*Haematopus palliatus*) with a two-egg nest at the northernmost island on 16 May.

1999. - Growing momentum from the earlier spring surveys led to a full-time, late winter/spring migration program, jointly funded by ESNWR and Coastal Virginia Wildlife Observatory (formerly KESTREL), to document the magnitude and diversity of the spring migration. Biologist James Cameron was hired as program coordinator. He conducted field research from 1 March through 31 May. The program goals were: 1) to describe migrant bird movement; 2) to document habitat usage; 3) to provide a baseline for future monitoring programs; 4) to conduct a banding operation and 5) to provide interpretation to the public. Monitoring methods consisted of daily counts from the platform, as in 1998, observations from a set of 21 point-counts, which sampled a variety of habitats and weekly banding in April and May.

A total of 84 days and 651 hours of coverage produced more than 35,000 individuals and 208 species of migrants. The banding, though limited, still produced unusual birds, including Orange-crowned Warbler (*Vermivora celata*), Worm-eating Warbler (*Helmitheros vermivorus*) and Lincoln's Sparrow (*Melospiza lincolni*). Other noteworthy birds from the surveys included Mississippi Kite (*Ictinia mississippiensis*), with up to four individuals; Black-necked Stilt, now known as a regular through the area in spring; American Avocet (*Recurvirostra americana*); Black-tailed Gull (*Larus crassirostris*); Black-legged Kittiwake (*Rissa tridactyla*); Black-billed Cuckoo (*Coccyzus erythrophthalmus*); Sedge Wren (*Cistothorus platensis*); Mourning Warbler (*Oporornis philadelphia*); Wilson's Warbler (*Wilsonia pusilla*); Canada Warbler (*Wilsonia canadensis*); Painted Bunting (*Passerina ciris*); White-crowned Sparrow (*Zonotrichia leucophrys*) and a colony of 9 Dickcissels (*Spiza americana*), later confirmed as breeding.

2000. - Building on the work of 1999, two biologists were hired by CVWO to expand late winter/spring songbird banding and surveys at ESNWR. Calvin Brennan and Peter Froiland continued point-counts and platform surveys, while also adding a second banding site at Wise Point. The number of mist nets was increased from five in 1999 to 14. Protocols were established to match those used at the fall Kiptopeke Songbird Banding Station, operated by CVWO, so that results could be compared. A total of 806 birds was banded, of 60 species, as a result of the expanded effort. Highlights included the banding of 211 Common Yellowthroats and 135 Gray Catbirds, which were the two most numerous species captured.

Surprising was the capture of some unexpected species, including 3 "Traill's" Flycatchers (Alder/Willow *Empidonax alnorum*/*E. trailli*), 9 Blue-gray Gnatcatchers (*Poliptila caerulea*), 3 Orange-crowned Warblers, 1 Bay-breasted Warbler (*Dendroica castanea*), 2 Prothonotary Warblers (*Protonotaria citrea*), 2 Kentucky Warblers (*Oporornis formosus*), 3 Mourning Warblers (*Oporornis philadelphia*), 2

Canada Warblers (*Wilsonia canadensis*), 1 Hooded Warbler (*Wilsonia citrina*), 15 Yellow-breasted Chats (*Icteria virens*), 2 Seaside Sparrows (*Ammodramus maritimus*), 1 American Tree Sparrow (*Spizella arborea*), 8 Blue Grosbeaks (*Guiraca caerulea*) and 1 Brown-headed Cowbird (*Molothrus ater*). These are all species, which are seldom caught at the much larger volume Kiptopeke Banding Station, 6 kilometers to the north. American Tree Sparrow has never been captured at Kiptopeke in its nearly 40-year annual operation. Birds that were captured, but not banded, because of unavailable band sizes, were Broad-winged Hawk (*Buteo platypterus*), Ruby-throated Hummingbird (*Archilochus colubris*), Belted Kingfisher (*Ceryle alcyon*) and Boat-tailed Grackle (*Quiscalus major*). Highlights of birds observed during the surveys include White Ibis (*Eudocimus alba*), Mississippi Kite, Sandhill Crane (*Grus canadensis*), Black-necked Stilt, Iceland Gull (*Larus glaucoides*), Bicknell's Thrush (*Catharus bicknelli*) and Nashville Warbler (*Vermivora ruficapilla*).

2001. - Calvin Brennan returned for a second late-winter/spring season and was joined by Johnida Martin. They expanded the banding operation to 20 nets, 10 each at Bunker Trail and Wise Point. Their banding results were higher than in 2000, recording 1037 birds of 64 species. They began three weeks earlier and as a result, caught 240 Yellow-rumped Warblers, compared to 35 for the previous year. Yellow-rumped Warblers generally exit the area in mid to late March. Banding highlights included a Red-headed Woodpecker, Acadian Flycatcher (*Empidonax virescens*), Yellow-throated Vireo (*Vireo flavifrons*), Blue-headed Vireo (*Vireo solitarius*), Bicknell's Thrush, Cedar Waxwing (*Bombycilla cedrorum*), Worm-eating Warbler, Prothonotary Warbler, Mourning Warbler, Kentucky Warbler, Hooded Warbler and Lincoln's Sparrow. Highlights from the surveys included the Eurasian form of Green-winged Teal (*Anas crecca*), Harlequin Duck, Swallow-tailed Kite, Mississippi Kite, Sandhill Crane, Black-necked Stilt, Parasitic Jaeger, Lesser Black-backed Gull, Warbling Vireo (*Vireo gilvus*), Golden-winged Warbler (*Vermivora chrysoptera*) and Mourning Warbler.

2002. - Calvin Brennan returned for a third season and was joined by former CVWO staff member Deniz Aygen. Together they banded a remarkable total for a late winter/spring station. Their 2296 birds included 1035 Yellow-rumped Warblers, perhaps more abundant than in the previous year, due to a warmer winter and better rainfall, which provided fresh water in several ponds. Banding highlights included Willow Flycatcher, Barn Swallow, Marsh Wren, Blue-winged Warbler (*Vermivora pinus*), and two Bicknell's Thrushes. The three Bicknell's caught during 2001 and 2002 indicate the importance of ESNWR for this rarely seen and rarely captured species.

Spring migrant hawk watches at the tip of the Eastern Shore have produced widely different results over four consecutive years. The first count was held at KSP for 11 days in 1996, the second, also at KSP, was held for 11 days in 1997, the third, at ESNWR, for 19 days in 1998 and the fourth, also at ESNWR, for 31 days in 1999 (see Table 1). Particularly difficult to census are vultures and Bald Eagles (*Haliaeetus leucocephalus*), which are present throughout the year, though many are undoubtedly migrants. Ospreys (*Pandion haliaetus*), too, pose problems as many

set up breeding territories while others migrate through. Larger numbers of hawks choose to travel up the western shore of Chesapeake Bay in spring, as evidenced by spring hawk watches near Williamsburg (Taber, 1992 and 1997) and especially at Fort Smallwood, Maryland, 130 miles north of Williamsburg (HMANA, 1999). There may be larger hawk flights on the Eastern Shore than those experienced so far, as evidenced by 955 recorded on 12 April, 1996 at Cape Henlopen, Delaware, 120 miles to the north, on the coast (HMANA, 1997).

Table 1. Spring Hawk Watch Results, 1996-1999, on the Eastern Shore.

Species	KSP 1996	KSP 1997	ESVNWR 1998	ESVNWR 1999
Black Vulture	7	3	13	0
Turkey Vulture	67	5	14	1
Osprey	72	1	52	18
Mississippi Kite	0	0	0	2
Bald Eagle	2	2	8	7
Northern Harrier	47	3	29	11
Sharp-shinned Hawk	18	4	12	16
Cooper's Hawk	4	2	3	7
Northern Goshawk	1	0	0	0
Red-shouldered Hawk	1	0	0	0
Broad-winged Hawk	0	0	0	8
Red-tailed Hawk	20	0	5	10
American Kestrel	36	2	51	44
Merlin	3	2	21	21
Peregrine Falcon	1	0	4	2
Total	279	24	212	147

DISCUSSION

The southern tip of the Eastern Shore is an area where a great variety of migrant landbirds and waterbirds converge during spring. The area may appear as an island to spring migrants that are following the Atlantic coast. They must cross more than 30 km of open ocean to get there. For diurnal migrants, the Eastern Shore is visible, in clear weather, from Cape Henry, on the mainland, and interestingly, many birds choose this route in favor of the western shore of Chesapeake Bay, although that route requires a much shorter water crossing of only about 4 km over Hampton Roads. Nocturnal migrants may also be choosing the water-crossing to the Eastern Shore or they may make navigational errors or be blown off course. Nocturnal migrants may follow the artificial lights of the CBBT and diurnal migrants may view the CBBT as land, but unfortunately, there are no comprehensive spring migration studies in the area prior to the completion of the CBBT, to compare to current observations.

There appears to be only a modest hawk flight across the mouth of Chesapeake Bay and up the Eastern Shore, though regular users of the route are Ospreys, Northern Harriers, Sharp-shinned Hawks, American Kestrels and Merlins. The Merlin numbers are quite interesting, as they are rarely recorded anywhere as spring migrants.

The volume of the land bird migration at the tip of the Eastern Shore is much less in late winter and spring, as compared to the late summer and fall migration, for two reasons in particular: the birds are the survivors of at least one winter, instead of the young of the year, which have a high mortality rate and; there is no funneling effect of the narrowing Eastern Shore peninsula, as there is in late summer and fall, which concentrates the birds. Despite the lower volume of birds and 28% fewer net hours, many species were banded in higher numbers in Spring 2002 at ESVNWR than in Fall 2002 at KSP, including White-eyed Vireo, Blue-gray Gnatcatcher, Bicknell's Thrush, Wood Thrush, Gray Catbird, Louisiana Waterthrush, Common Yellowthroat, Indigo Bunting, Blue Grosbeak, Eastern Towhee, Swamp Sparrow and Orchard Oriole. More year-round studies are needed to help understand the stopover ecology, migration strategies and conservation needs of birds passing through the southern tip of Virginia's Eastern Shore.

ACKNOWLEDGMENTS

I would like to thank volunteers Bob Ake, Bob Anderson, Tom Armour, Ned Brinkley, Camille Darby, Fenton Day, George Harris, Earl Hodnett, Sue Hopkins, David Hughes, Charles McComb, Brian Patteson, John Porter, Don Schwab, Clark White, Bill Williams and Gary Williamson for their field efforts; Scott Flickinger and the KSP staff; Sue Rice and the ESVNWR staff; Hampton University and the College of William and Mary for housing assistance and the Board of Coastal Virginia Wildlife Observatory for its support in 1996-2000. More detailed information about the late winter/spring studies may be obtained by writing to CVWO.

LITERATURE CITED

- HAWK MIGRATION ASSOCIATION OF NORTH AMERICA. 1997. Migration studies. Vol. XXII. No.2.
- HAWK MIGRATION ASSOCIATION OF NORTH AMERICA. 1999. Migration studies. Vol. XXIV. No. 2.
- TABER, B. 1992. Spring raptor migration at Williamsburg. Raven 63: 69-72.
- TABER, B. 1997. College creek hawk watch. Raven 68: 110-112.

A SIX-YEAR SUMMARY OF THE COLLEGE CREEK HAWKWATCH, 1997-2002

BRIAN TABER

Coastal Virginia Wildlife Observatory
P.O. Box 912 Eastville, Virginia 23347

The College Creek Hawkwatch began in 1997 (Taber 1997). It is the only annual late winter and spring hawkwatch in Virginia that submits data to the Hawk Migration Association of North America (HMANA) and it is the southernmost of the east coast sites that regularly report to HMANA. The hawkwatch has completed six consecutive years, averaging more than 950 hawks and vultures per year. The total migrant hawks and vultures are shown in Table 1.

The site, on the Colonial Parkway, along the James River, two miles south of Williamsburg, lies in the path of northbound migrant birds crossing the east-west bend of the river, from Hog Island Wildlife Management Area, in Surry County, to the mouth of College Creek. Though numbers are small compared to late summer and fall concentrations at many hawkwatch sites, there is a steady, daily flow of migrants. Besides hawks and vultures, there are a number of other migrants at this season, including Tundra Swans (*Cygnus columbianus*), Fish Crows (*Corvus ossifragus*), Tree Swallows (*Tachycineta bicolor*), gulls, terns, shorebirds, herons, egrets and waterfowl. American White Pelican (*Pelecanus erythrorhynchos*) has been recorded twice at the site and Black-necked Stilt (*Himantopus mexicanus*) has been recorded once.

Visibility at the site is excellent with a 360 degree unobstructed view, half of which is over water. There is often a haze in the area, especially in warmer weather with little wind. Regular scanning, every few minutes, with binoculars, is important in finding migrants, which are often hundreds of yards away. Altitude of flight is generally less than 100 feet. Birds generally move northward, from about 9 a.m. (EST) to 1 p.m., as the air warms initially and forms thermal updrafts. Hawks and vultures usually circle over Hog Island, to gain altitude, before making the 2-4 kilometer water-crossing.

Turkey Vultures (*Cathartes aura*) are the most numerous of the migrant vultures and hawks at the site (Taber 2000), comprising 68%. Their numbers typically peak about the third week in March. I know of no other vulture migration concentration points in Virginia at this season.

Seventeen species of migrant hawks and vultures have been recorded at the site. Still expected are Rough-legged Hawk (*Buteo lagopus*) and Swallow-tailed Kite (*Elanoides forficatus*). White-tailed Kite (*Elanus leucurus*) is another possibility, with spring records from 10 miles upriver to the west and 40 miles to the east, on the Eastern Shore. Rarities at the hawkwatch include Golden Eagle (*Aquila chrysaetos*), seen on three occasions, Mississippi Kite (*Ictinia mississippiensis*), seen on three occasions, Peregrine Falcon (*Falco peregrinus*) seen on three occasions, Northern

Table 1. Migrant hawks and vultures recorded at College Creek Hawkwatch, 1997-2002.

Species	1997	1998	1999	2000	2001	2002
Black Vulture	56	33	12	18	20	71
Turkey Vulture	947	516	479	578	679	671
Osprey	132	57	80	34	57	92
Mississippi Kite	1	0	0	1	0	1
Adult Bald Eagle	13	2	12	16	1	0
Immature Bald Eagle	61	27	41	50	37	33
Northern Harrier	24	14	34	24	27	41
Sharp-shinned Hawk	44	15	88	32	36	47
Cooper's Hawk	7	0	16	2	9	8
Northern Goshawk	0	1	1	0	0	0
Red-shouldered Hawk	5	6	13	7	1	3
Broad-winged Hawk	2	0	3	7	4	7
Swainson's Hawk	0	0	0	0	1	0
Red-tailed Hawk	40	24	30	31	27	24
Golden Eagle	0	1	0	2	0	0
American Kestrel	35	17	27	15	34	24
Merlin	2	3	0	0	4	0
Peregrine	0	1	0	0	1	1
Unidentified	1	4	0	0	0	1
Total	1368	720	836	817	938	1024
Number of days	45	38	35	49	54	62
Number of hours	91	77	72	61	78	106
Number of species	12	13	12	13	14	13
Birds per hour	15	9	13	14	12	10

Goshawk (*Accipiter gentilis*), seen on two occasions and Swainson's Hawk (*Buteo swainsoni*), seen on one occasion.

Ospreys (*Pandion haliaetus*) are tremendously undercounted because their low-flying, fishing and circling behaviors make it difficult to accurately distinguish migrants from the many Ospreys setting up nests in the area. They are more easily counted when the first Ospreys arrive or when they pass overhead at very high altitude or when they steadily move upriver, sometimes in groups. Certainly hundreds and possibly thousands move through the area, based on the abundance in Chesapeake Bay and at hawkwatches farther north. Declining totals in the Osprey count at the site indicate an increasingly conservative approach in recording their numbers.

Bald Eagles (*Haliaeetus leucocephalus*) are also difficult to assess. There are documented summer and winter concentrations along the James River in the Williamsburg area (Sheehan 1998) and there are days of obvious late winter and

spring migration when they join in the hawk and vulture movement. Late summer and fall movements in the area have been little studied.

The numbers of birds and amount of coverage time have been quite consistent during the first six years of the hawkwatch. The modest number of hours per day reflects the lack of adequate coverage. Still, the hawkwatch documents the annual, steady movement of migrant hawks and vultures along coastal Virginia during late winter and spring.

ACKNOWLEDGMENTS

Thanks to volunteers Tom Armour, Charles McComb, Tim Reid and Bill Williams for coverage.

LITERATURE CITED

- SHEEHAN, W. 1998. Birds of the Williamsburg, Virginia area. Williamsburg Bird Club.
- TABER, B. 1997. College creek hawkwatch. Raven 68:110-112.
- TABER, B. 2000 Hawk migration studies. HMANA, Vol. XXV, No. 2, pp. 20-21.

IN MEMORIUM:
WILLIAM FRANKLIN ROUNTREY
22 DECEMBER 1914 – 19 MAY 2002

William Franklin Rountrey, an Honorary Life Member and former President of the Virginia Society of Ornithology (VSO), died on 19 May 2002 in Chesapeake, VA, at the age of 87, after a three-year battle with cancer. He was affectionately known to family, friends, and colleagues as Froggy. He acquired this interesting name from the old janitor at his elementary school, who gave most of the young students a nickname. Franklin was given this handle because he was a very active child, jumping and running about when outside the classroom, apparently striking the old gentleman as frog-like behavior. The label stuck for the remainder of his life, and everyone on a first-name basis called him Froggy. He was born in Norfolk County (became city of Chesapeake in 1964) on 22 December 1914 and lived in the Oaklette area his entire life. He graduated from Portlock High School as class salutatorian and in 1933 received a business degree from the Norfolk division of the College of William and Mary (now Old Dominion University). On 3 April 1947, he married Katharine (Kitty) Clagon Riggan of Norfolk County.

He was a truly remarkable individual, one might say a man for all seasons, who had a reputation in southeastern Virginia for getting things done. He was the retired president of McCallum Inspection Company and founder, past president, and CEO of McCallum Testing Laboratories. He became active in numerous Norfolk civic organizations in the late 1930's. He served on the Central YMCA Board, was the business manager and a board member of the Norfolk Symphony and Civic Chorus for 13 years, served two consecutive years as president of the Norfolk Junior Chamber of Commerce during World War II, was given the Junior Chamber's Key Man Award in 1942 and 1947, and was named the Junior Chamber's Outstanding Man of the Year in Virginia in 1946. He helped form and serve on the Norfolk Community Council, was instrumental in establishing the Norfolk Civic Chorus, the Miss Virginia Pageant, the Tidewater Council of Natural History, Norfolk's first Boy's Club, serving as secretary and later creating a second Boy's Club in the city, and had a large part in developing food handling procedures for the Norfolk Health Department. He served on the board of the Virginia Wildlife Federation and was its director from 1955 to 1956, was a past member and president of the Norfolk Rotary Club, a court-appointed member of the Chesapeake Zoning Appeals Board for more than 20 years, and former member and president of the Rotary Club of Chesapeake and the Tidewater Council of Natural History. He was a life member of the American Wood Preservers Association and the American Society of Testing and Materials, and active on committees of the American National Standards Institute. He was a lifelong member of the Oaklette United Methodist Church where he taught the Young Adult Class and Men's Bible Class for more than 50 years, was chairman of the board, chair of numerous commissions, church treasurer, trustee, and lay leader.

Froggy joined the VSO in 1950, served as vice president from 1955 to 1956, president from 1956-1960, and was active on the Executive Committee for a number of years as conservation chairman, and in 2000 became the 15th Honorary Life Member of the Society. While VSO president, he worked hard to have a bill passed by the General Assembly of Virginia for the protection of hawks and owls. The effort was successful, and the bill protecting raptors became Virginia law in 1958.

While president of the Tidewater Council of Natural History, he was the principle force in the founding of the Cape Henry Bird Club (now Cape Henry Audubon Society) at the organizational meeting at the Norfolk Museum on 9 January 1953. He was the club's first president from 1953-1954 and for many years served on the board of directors and as an advisor. At the organizational meeting, he proposed the club publish a bulletin for the membership, which was the forerunner of the present "Tidewater Naturalists," and had a major part in drafting the by-laws and constitution of the club as well as implementing regular organized field trips.

Froggy held a special interest in bird life of Southeastern Virginia and was a recognized authority on the subject. He spent many hours afield and was self-taught. If not birding alone, his frequent companions afield included Ed Ames, Floy Burford, Paul Dulaney, Dick Peake, Jack Perkins, Frank Richardson, Charles Steirly, Paul Sykes, and others. He was a keen observer with excellent eyesight and extraordinary hearing, being able to quickly identify birds by their songs and call notes long before electronic device were readily available to aid in learning such sounds. He was my mentor during my teenage years as a beginning birder. I feel most fortunate to have had a 50-year association with him. He was also the mentor to a number of other teenagers in the 1950s and early 1960s in the Norfolk-Virginia Beach area. Froggy had a particular fondness for the Stumpy Lake area and long ago recognized its rich species diversity and ecological importance. He wrote letters to officials and office holders of the City of Norfolk as far back as 1952 urging the city to make Stumpy Lake a wildlife preserve. He was also an accomplished botanist and could identify most of the flowering plants in Tidewater.

He was a regular contributor of his field observations to *The Raven*, *Audubon Field Notes*, and *American Birds*. He was co-discoverer, with Frank C. Richardson, of the first Say's Phoebe (*Sayornis saya*) (specimen collected now at the U.S. National Museum of Natural History) in Virginia on 26 December 1957. He participated on his first Christmas Bird Count in 1950 at Back Bay, and through 2001 participated on 100 CBSs (Back Bay 43 times, 1950-2001; Little Creek 44, 1955-1998; Norfolk County / Chesapeake 9, 1954-1967; Nansemond River, 4, 1957-1967).

Froggy was a kind, gentle, friendly man, soft spoken, with a great sense of humor, a strong drive to make things better, and accomplished businessman, had a calling for civic duty, was devoted to his family, strong in his beliefs, and had a passion for birds. He was admired by all that knew him and touched the lives of so many of us that had the privilege of his friendship. He will deeply missed. He is survived by his daughter, Kaye R. Herndon, and granddaughter, Sheron K. Antoskow.

IN MEMORIAM:
CONSTANCE SIMONS DU PONT DARDEN
4 March 1904—7 February 2002

Constance Simons du Pont Darden, known widely to readers of the *Raven* as an erudite contributor on the habits of nesting Yellow-crowned Night-Herons, and still more widely as a tireless, effervescent philanthropist and musician, passed away at age 97 in Norfolk. Her nearly century-long life was marked by unending kindnesses toward others and deep passions for music, bird and nature study, and photography.

Born one of nine children—the third daughter of eight—into the family of Irene du Pont, president of the DuPont Company in Wilmington, Delaware, “Connie” as her friends called her was raised by her mother to value service to others above all material wealth and to treasure and nurture relations with one’s family and all fellow human beings. Her father, according to *Virginian-Pilot* columnist Guy Fridell, was a “compassionate, tolerant person,” of whom it was said he was “never heard [to] say an unkind word about anybody.”

Schooled at the Baldwin School in Bryn Mawr, Pennsylvania, Constance also studied violin and viola in Philadelphia. She married Colgate W. Darden, Jr., who was to become Governor of Virginia, on 3 December 1927, and the couple took up residence in Algonquin Park at Crab Creek, a tributary of the Lafayette River, an area known for its variety of migrants. In 1946, the first nest of Yellow-crowned Night-Herons appeared on their property, and later a small colony of the birds was evident, becoming the focus of many hundreds of hours of patient observation. “She took up birdwatching while her three children were still quite young,” Fridell recalls, “and often she would go out before dawn at 4 o’clock and be home in time to put breakfast on the table.” Fridell remembers her saying “Once you’ve had the thrill of identifying one unusual bird by yourself, you’re caught. From then on, you get more and more interested.”

Her careful study of the night-herons, which amounted to voluminous notes and sketches, were published in condensed versions in the *Raven* (Vol. 18, Nos. 5 & 6 [May & June 1947], Vol. 33, No. 1 [March 1962]) and ultimately incorporated into a published dissertation on the species. In her travels around the state, she took a great interest in the distribution and migration of birds, and she was known to be just as keenly interested in helping people and in people-watching, according to Fridell. Her husband, who died 9 June 1981, once jested that she ran “a taxi service at all hours for the church,” driving elderly friends on their errands and to church. When young neighborhood children showed an interest in birdwatching, “Mrs. Darden” would present them loans of incomparable photographic books such as Crawford H. Greenewalt’s *Hummingbirds* (1960) to stoke their interest and hopefully inflame it into a passion such as hers. (Greenewalt [1902-1993], a brilliant chemical engineer and self-trained ornithologist, was coincidentally Du

Pont corporation's tenth president from 1948 to 1962 and was a participant in the Manhattan Project.)

Constance Darden was an active supporter of all of the musical arts in southern Tidewater, particularly the Virginia Symphony and the Virginia Opera, and she formed her own musical group, the "Over-the-Hill Quartet" in 1962, which played every Thursday. She played both violin and viola well into her eighth decade. Most people knew nothing of Constance Darden's deep generosity to local causes, as their gifts were almost always given anonymously. She is survived by three siblings—sisters Mrs. Sophie May and Octavia Bredin and brother Irene du Pont—by her son, Dr. Colgate W. Darden III of Columbia, South Carolina, and her daughter Irene Darden Field of Southampton County, Virginia, as well as by six grandchildren and two great-grandchildren.

---Edward S. Brinkley

ANNUAL REPORT OF THE VIRGINIA AVIAN RECORDS COMMITTEE

Susan A. Heath
VARCOM Secretary

The following decisions were made by the Virginia Avian Records Committee during calendar year 2001.

ACCEPTED RECORDS

- American White Pelican** (*Pelecanus erythrorhynchos*), one individual, Stuarts Draft, Augusta County, 26 November 2000. Third accepted Mountains and Valleys record in category one [Allen Lerner, Jean Brodwater].
- White-faced Ibis** (*Plegadis chihi*), 1 individual, photographed, Chincoteague WMA, 6 May 2001. Third accepted Coastal Plain record in category one [George Armistead, Marshall Iliff].
- Surf Scoter** (*Melanitta perspicillata*), two individuals, Sandy River Reservoir near Rice, Prince Edward County, 15 November 1999. One bird was accepted in category one, the second bird in category two. Fifth accepted Piedmont record [Mike Stinson].
- Swainson's Hawk** (*Buteo swainsoni*), one individual, Snickers Gap, Loudoun/Clark Counties, 29 September 2000. Second accepted Mountains and Valleys record in category two. [D. Michael Reyman].
- Sandhill Crane** (*Grus canadensis*), one adult, Madison County, 15-16 April 2000. Fourth accepted Piedmont record in category two [Karen Heatwole, George Harris].
- Sandhill Crane** (*Grus canadensis*), one individual, near Radford, Pulaski County, 11 January 2001. Fourth accepted Mountains and Valleys record in category two [Allen Boynton].
- Black-tailed Gull** (*Larus crassirostris*), one adult, photographed, Chesapeake Bay Bridge-Tunnel, Chesapeake CBC, 26 December 1999. Accepted in category one; fifth year this species has been recorded [Ned Brinkley, Brian Sullivan].
- Black-tailed Gull** (*Larus crassirostris*), one adult, photographed, Chesapeake Bay Bridge-Tunnel, 15 January 2000. Accepted in category one; fifth year this species has been recorded [Larry Lynch].
- Great Black-backed Gull** (*Larus marinus*), one individual, Lake Orange, Orange County, 21 December 2000. Fourth accepted Piedmont record in category two [George Harris].
- Great Black-backed Gull** (*Larus marinus*), 10 individuals, Lake Anna Point, Louisa/Spotsylvania Counties, 5 January 2001. Fifth accepted Piedmont record in category two [George Harris].

- Short-eared Owl** (*Asio flammeus*), one adult and two fledglings, Culpeper County, 29 May 2001. Unusual Piedmont breeding record accepted in category two [Karen Heatwole, George Harris, Rosemary Harris].
- Rufous Hummingbird** (*Selasphorus rufus*), one individual, photographed, Chesterfield County, 16 October to 7 November 2000. Fourth accepted Piedmont record in category one [John W. Coe, Larry Robinson].
- Alder Flycatcher** (*Empidonax alnorum*), one individual, Orange County, 25 May, 28 May, 29 May, 2 June, 24 June 2000. Third accepted Piedmont record in category two [George Harris, Ken Hollinga, David Hughes].
- Alder Flycatcher** (*Empidonax alnorum*), one individual, Phelps WMA, Fauquier County, 5 June 2001. Fourth accepted Piedmont record in category two [Larry Robinson].
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), pair and 4 young, Culpeper County, 15 June – 25 August 2000. First accepted breeding record in the state and Piedmont area. Second accepted Piedmont record. Accepted in category one [Karen Heatwole, Todd Day, John Bazuin, Allen Lerner, III, Larry Lynch].
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), one bird, Appomattox County, 13 June 2000. Reported from 30 May to 4 July. First accepted Piedmont record in category two [John Dalmas].
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), one bird, Prince Edward County, 24 June 2000. Third accepted Piedmont record in category two [John Dalmas].
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), one individual, Stuarts Draft, Augusta County, 23 July 1992. Third accepted Mountains and Valleys in category two [Stephen Rottenborn].
- Cave Swallow** (*Hirundo fulva*), one individual, Eastern Shore of Virginia NWR, Northampton County, 4 November–15 November 1999. Second accepted state and Coastal Plain record in category two. This is the first observation date of an accepted record [Brian Taber, Edward S. Brinkley].
- Cave Swallow** (*Hirundo fulva*), two individuals, Cape Charles, Northampton County, 1 May 2000. Third accepted state and Coastal Plain record in category two [Edward S. Brinkley].
- Yellow-rumped (Audubon's) Warbler** (*Dendroica coronata auduboni*), one individual, Cheapside, Northampton County, 30 December 2000. First accepted Coastal Plain record in category two [George Armistead, Evan Obercian].
- Townsend's Warbler** (*Dendroica townsendi*), one individual, Devil's Ditch area north of Kiptopeke State Park, Northampton County, 30 December 1999 - 12 January 2000. First accepted state and Coastal Plain record in category two [George Armistead, Marshall Iliff, Michael Stinson].
- Ovenbird** (*Seiurus aurocapillus*), one individual, Fort Belvoir, Fairfax County, 8 February 2001. Extends the date. Accepted in category two [Richard Fischer, Chris Eberly].

Wilson's Warbler (*Wilsonia pusilla*), one male, Lynchburg, 5 January 2001. Extends the fall date. Reported from 1 January – 18 January 2001. Accepted in category two [Thelma Dalmás].

Harris's Sparrow (*Zonotrichia querula*), one individual, Bull Run Post Office Road, Fairfax County, 10 December 1999-23 January 2000. Although two birds were reported, no one documented two birds at once and the documentation did not clearly describe two different birds. Only one bird, probably an adult, was accepted in category two [Kurt Gaskill, Valerie Kitchens, Carolyn Williams].

Dark-eyed Junco (*Junco hyemalis mearnsi*), one individual, photographed, Kiptopeke, Northampton County, 30 November-1 December 2000. Reported from 10 November – 29 January 2001. Accepted in category one [Jamie Cameron, Brian Sullivan].

SUBMISSIONS NOT ACCEPTED

Pacific Loon (*Gavia pacifica*), one individual, Fort Story, Little Creek CBC, 31 December 1999.

Mew Gull (*Larus canus*), one individual, Chesapeake Bay Bridge Tunnel Islands, island #1, 30 December 1999.

Bicknell's Thrush (*Catharus bicknelli*), one individual, Wise County, 3 September 1998.

Bicknell's Thrush (*Catharus bicknelli*), one individual, Wise County, 19 September 2000.

Townsend's Warbler (*Dendroica townsendi*), one individual, Kiptopeke State Park, Northampton County, 2 December 1999.

Kirtland's Warbler (*Dendroica kirtlandii*), one individual, Wise County, 10 May 1995.

Kirtland's Warbler (*Dendroica kirtlandii*), one individual, Wise County, 8 May 2000.

Wilson's Warbler (*Wilsonia pusilla*), one individual, Dyke Marsh, Fairfax County, 3-4 February 2001.

Bullock's Oriole (*Icterus bullockii*), one individual, Dyke Marsh, Fairfax County, 27 August 2000.

SUBMISSIONS CIRCULATING

American Swallow-tailed Kite (*Elanoides forficatus*), one individual, Shenandoah County, 14 August 2000.

Greater White-fronted Goose (*Anser albifrons*), one individual, Fishersville, Augusta County, 17 November – 21 November 1995.

Greater White-fronted Goose (*Anser albifrons*), six individuals, Lyndhurst, Augusta County, 7 January 20- March 1997.

Greater White-fronted Goose (*Anser albifrons*), one individual, Rosedale, Russell County, 24-25 October 2000.

Gyr Falcon (*Falco rusticolus*), one individual, Kiptopeke State Park, Northampton County, 21 October 2000.

- Lesser Black-backed Gull** (*Larus fuscus*), one individual, Lake Brittle, Fauquier County, 13 January 2001.
- Eurasian Collared- Dove** (*Streptopelia decaocto*), one individual, Sterling, Loudoun County, 10 March 2001 and other dates until 7 April 2001.
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), one individual, Mitchells, Culpeper County, 4 May-4 July 2001.
- Cave Swallow** (*Hirundo fulva*), one individual, Northampton County, 20 November 2000.
- Kirtland's Warbler** (*Dendroica kirtlandii*), one individual, Compton Mt, Buchanan County, 3 September 2001.
- Lark Bunting** (*Calamospiza melanocorys*), one male, Chesapeake Bay Bridge-Tunnel, island #3, 7 June 2000.
- Lark Bunting** (*Calamospiza melanocorys*), one individual, Lincoln, Loudoun County, 12 March 2001.

Annual Meeting of the Virginia Society of Ornithology
26 April 2002
Richmond, VA

The annual meeting was held at the Holiday Inn – Koger Center in Richmond. Larry Lynch presided over the annual business meeting. Elections were held in accordance with the VSO bylaws. The following candidates were elected unanimously:

President - Larry Lynch - Chesterfield County

Vice-President - Teta Kain - Gloucester

Secretary - Lauren Scott - Henrico County

Treasurer - Sue Thrasher - Lynchburg

Raven Editor - Paul Cabe - Lexington

Newsletter Co-Editors - Linda Fields and Alan Schreck - Arlington

Board of Directors for the term 2002 - 2005

Linda Cory - Roanoke

Bob Riggs - Lebanon

John Zimmerman - Charlottesville

INFORMATION FOR CONTRIBUTORS

The Raven, the official journal of the Virginia Society of Ornithology (VSO), functions to publish original contributions and review articles in ornithology, not published elsewhere, mostly relating to Virginia birdlife. Manuscripts should be sent to the editor, Paul R. Cabe, Biology Department, Washington & Lee University, Lexington, VA 24450 (cabep@wlu.edu).

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 history, 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 acceptance for publication.

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 published in the Seventh Edition of the A.O.U. Check-list of North American Birds and subsequent supplements. All measurements should be reported in metric units.

Preferred submission format for manuscripts is by electronic file, prepared using Microsoft® Word or WordPerfect®. Text files should contain minimal formatting. All graphics (photos, maps, graphs, charts) must be in black and white; original size should not exceed 5 x 7 inches. Files may be submitted by email attachment (preferred) or on floppy disk or CD. Authors are encouraged to consult with the editor on additional matters of content, format or style.

