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

Activities undertaken by the Society include the following:

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

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LATE SEASON USE OF GLOSSY IBIS (*Plegadis falcinellus*) NESTS BY WHITE IBIS (*Eudocimus albus*) IN VIRGINIA

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Abstract

The White Ibis (*Eudocimus albus*) has only recently been documented along the eastern shore of Virginia and remains a limited breeder. Proximity to freshwater and mammalian predation dictates the timing and location of breeding attempts and makes the breeding ecology of the species difficult to study. During the 2009 and 2010 breeding season, White Ibis were found initiating clutches in Glossy Ibis (*Plegadis falcinellus*) nests at a Virginia colony site late in the season. These were nests that successfully fledged Glossy Ibis nestlings earlier in the same breeding season. It remains unclear whether these were inexperienced breeding individuals initiating a first nesting attempt, or re-nesters after a failed nesting attempt at a different colony site. This observation represents the first temporal interspecific nest sharing behavior for this species. Since nest sharing within the same breeding season has implications for parasite transmission, interspecific competition, and overall breeding success, these observations will strengthen our understanding of White Ibis breeding biology.

Introduction

The dynamics of colonial nesting makes the breeding biology of many wading birds difficult to study. Nest building, egg dates, and re-nesting are subject to weather conditions, competition for space, and food availability (Gawlik 2002, Crozier and Gawlik 2003). In the case of White Ibis (*Eudocimus albus*), proximity to fresh water is also an important factor in the timing and location of breeding, as nestlings are unable to process high levels of salinity and require freshwater prey during early development (Bildstein 1997).

Northward expansion of nesting White Ibis has recently changed the composition of many mixed species wading bird breeding colonies along the east coast of the United States. While the breeding ecology for the White Ibis has been studied extensively in the southern region of the United States (Frederick 1987, Bildstein et al. 1990), it is not well documented for coastal Virginia, as the species was first detected in 1977 and remains a limited breeder (Williams et al. 2007). Timing of nesting as well as clutch size and success rates from this region are poorly understood.

Study Area and Methods

Chimney Pole Marsh (37°28'N, 75°43'W), located on the eastern shore of Virginia, has been protected by The Nature Conservancy since 1970, and is part of the Virginia Coast Reserve (VCR) Long-Term Ecological Research (LTER) network. The marsh is dominated by low-lying vegetation including smooth and Salt Meadow Cordgrass (*Spartina alterniflora* and *S. patens*, respectively) (Kastler and Wiberg 1996). Waterbird species commonly found nesting on the marsh include Great Egret (*Ardea alba*), Snowy Egret (*Egretta thula*), Cattle Egret (*Bulbulcus ibis*), Tricolored Heron (*Egretta tricolor*), Little Blue Heron (*Egretta caerulea*), Black-crowned Night Heron (*Nycticorax nycticorax*), Glossy Ibis (*Plegadis falcinellus*), and Double-crested Cormorant (*Phalacrocorax auritus*). In addition, the colony supports a large breeding population of Laughing, Great Black-backed, and Herring Gulls (*Larus atricilla*, *L. marinus*, and *L. argentatus*, respectively). White Ibis have only used the marsh for breeding in recent years, first nesting in the colony in 2005.

Chimney Pole is part of a regular breeding waterbird census that includes all of the known mixed-species wading bird colonies along the eastern shore of Virginia. The surveys are performed by a number of state, federal, and private organizations. Due to interspecific variation in phenology, surveys are performed during the height of the breeding season (typically in May to early-June) in order to gain an accurate count of nesting individuals. To supplement these surveys, additional research has been performed since 2008 at Chimney Pole marsh that warrants multiple visits to the colony over the duration of the breeding season for observations (CEC, unpubl. data).

Results and Discussion

On 27 May 2008, 12 pairs of White Ibis were documented nesting on Chimney Pole marsh during the breeding bird survey. The following year, on 6 May 2009, no White Ibis were detected in any colony along the eastern shore of Virginia during the breeding season survey. Despite high nest-site fidelity in the species, it was assumed that the White Ibis had relocated to a new breeding location.

On 25 June, 2009 13 pairs of White Ibis in adult plumage were observed at Chimney Pole marsh, where they had

previously been absent. At this time, the White Ibis were documented laying eggs and incubating in successful Glossy Ibis nests from earlier in the same breeding season. Many of the nests used by White Ibis were part of an ongoing study in which Glossy Ibis nestlings were banded and nests were under observation for the duration of the nestling phase, which began on 3 May 2009. In all of the re-used nests, Glossy Ibis nestlings had fledged as recently as one week prior to occupancy by White Ibis. Although a number of Glossy Ibis were still in the colony, no interspecific competition was documented. During this same period, recently fledged White Ibis were found in foraging groups throughout the region, suggesting that, at least in some locations, White Ibis had completed nesting for the season.

During the 2010 breeding season survey which took place in 5 May, White Ibis were once again absent from the Chimney Pole colony and remained absent through the month of May. On 15 June 2010, adult White Ibis were present and were once again observed initiating clutches on Chimney Pole in Glossy Ibis nests that had been previously successful within the same breeding season. Clutch size ranged from 3 to 5 eggs for both years.

Burger and Miller (1977) documented Glossy Ibis re-using abandoned nests of Snowy Egrets (*E. thula*) within the same breeding season and re-use of interspecific nests in subsequent years accounted for 40% of Glossy Ibis nests, but no observations of temporal interspecific nest sharing within a breeding season have been made where nestlings of one species successfully fledge before nesting even begins for another species. Despite what is known about Glossy Ibis nest re-use, there is no evidence that White Ibis behave in the same way (Heath et al. 2009).

While late-season nesting has been documented in the White Ibis (Williams et al. 2006), interspecific nest sharing has not, and may represent a way for individuals to expedite late breeding efforts, as nest construction is a process that can take up to 14 days (Heath et al. 2009). This strategy, however, is not something that has been witnessed before, as Piazza and Wright (2004) documented White Ibis nesting late in the season using sticks from unattended nests to build their own, but no use of already constructed nests.

As nest-sharing could have implications for parasite transmission, it seems likely that the nest-sharing observed was by inexperienced birds or individuals attempting a second nest late in the season and facing a tradeoff between sharing a parasite load with the previous nest's occupants and the time required to initiate a new nest. Because White ibis may initiate second nesting attempts at different colony sites, the distinction between a late first nesting attempt and a second attempt is difficult (Heath et al. 2009).

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Literature Cited

- Bildstein, K. L. 1997. Wading-bird science: A guide for the Twenty-First Century. *Colonial Waterbirds* 20:138-142.
- Bildstein, K. L., Post, W., Frederick, P. and J. W. Johnston. 1990. Freshwater wetlands, rainfall, and the breeding ecology of white ibises in coastal South Carolina. *Wilson Bulletin* 102:84-98.
- Burger, J. and L. M. Miller. 1977. Colony and nest site selection in White-faced and Glossy Ibises. *Auk* 94:664-676.
- Crozier, G. E. and D. E. Gawlik. 2003. Wading bird nesting effort as an index to wetland ecosystem integrity. *Waterbirds* 26:303-324.
- Frederick, P. C. 1987. Extra-pair copulations in the mating system of White ibis (*Eudocimus albus*). *Behaviour* 100:170-201.
- Gawlik, D. E. 2002. The effects of prey availability on the numerical response of wading birds. *Ecological Monographs* 72:329-346.
- Heath, J. A., Frederick, P., Kushlan, J. A. and K. L. Bildstein. 2009. White Ibis (*Eudocimus albus*). The Birds of North America Online (A. Poole, Ed.). Ithaca; Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/009doi:10.2173/bna.9>
- Kastler, J. A. and P. L. Wiberg. 1996. Sedimentation and boundary changes of Virginia salt marshes. *Estuarine, Coastal and Shelf Science* 42:683-700.
- Piazza, B. P. and V. L. Wright. 2004. Within-season nest persistence in large wading bird rookeries. *Waterbirds* 27:362-367.
- Williams, B., B. Akers, M. Beck, R. Beck, and J. Via. 2006. The 2005 beach-nesting and colonial waterbird survey of the Virginia barrier islands. *The Raven* 77:27-33.
- Williams, B., Brinker, D. F., and B. D. Watts. 2007. The status of colonial nesting wading bird populations within the Chesapeake Bay and Atlantic barrier island-lagoon system. *Waterbirds* 30:82-92.

THE VIRGINIA BALD EAGLE SURVEY: A HISTORY

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The Virginia Bald Eagle Survey is a national treasure. The survey has become one of the most significant serial data sets in the world. Over the past 55 years, the survey has documented biocide-induced reproductive suppression, the resulting population low, and a dramatic recovery in both reproductive rates and the overall population following the ban of DDT and like compounds. The survey itself has become one of the most effective tools in the effort to recover the eagle population in Virginia, allowing for the enforcement of wildlife laws and providing information on the effectiveness of management actions. More than population information alone, the effort has produced a wealth of ecological information on a population recovering within an increasingly human-dominated landscape. It has become one of the best records of arguably the greatest conservation achievement in our nation's history. My objective here is to provide a brief history of the survey effort and some of the events that shaped its development.

Tyrrell Survey

In the spring of 1935, during a time when bald eagles were persecuted throughout their range, a bill was introduced in Congress to protect the national symbol from extinction. The bill passed the Senate, but failed in the House of Representatives. [A modification of this bill became the Bald and Golden Eagle Act of 1940 (16 U.S.C. 668-668d; 54 Stat. 250).] During the breeding season of 1934, W. Bryant Tyrrell and other members of the Natural History Society of Maryland made regular observations of an eagle nest along the Magothy River south of Baltimore, including prey use and chick development through the period of fledging. Photographs of the chicks appeared in the New York Times and were brought to the attention of Warren F. Eaton. Eaton was working on the status of hawks and owls and their economic importance. Eaton contacted Tyrrell about the possibility of a survey of eagles throughout the Chesapeake Bay region and an investigation of food habits.

Understanding the gravity of the situation and the need to collect information to support the Senate bill, Tyrrell wrote a letter to Professor R. V. Truitt of the University of Maryland inquiring about the potential for funding from the University or the State to support such a survey. Truitt contacted the National Audubon Society and in January of 1936 the president of that Society, John H. Baker, met with Warren Eaton and Bryant Tyrrell in New York City to lay out a plan and to acquire associated funding to survey nesting eagles throughout the Bay region, including New Jersey, Delaware, Maryland, and Virginia.

Tyrrell initiated the nest survey in February of 1936 (Tyrrell 1936). He began by contacting the community of ornithologists, oologists, game wardens, and other people

who were most likely to know of nest locations. Harold H. Bailey provided him with a map of 54 nests in Virginia. Edward J. Court, a prominent egg collector in the region, claimed to know of 90 nest locations, but provided Tyrrell with only eight that could not be climbed. Tyrrell used these eight locations as a basis for the survey, but when entering a new community he would also visit the country store and local landowners to take advantage of local knowledge about breeding pairs, and thus accumulated additional nest sites for the survey.

Although the survey was ground-based and covered only a portion of the region, it became the benchmark against which future efforts would be compared (e.g., Abbott, 1963; Byrd et al., 1990; Watts et al., 2008). This is true because it was the only major effort to quantify eagle numbers and productivity prior to the DDT era. In Virginia, the survey included the Potomac River to its mouth, a small portion of the Rappahannock River, approximately 20 miles of the James River east of Richmond, and the coastal area from Pungo through Back Bay. Tyrrell surveyed 19 nests, 16 of which were occupied in 1936. Fifteen of these nests successfully produced 33 chicks.

The efforts of Tyrrell have provided the conservation community with more than a population survey. His report to the National Audubon Society, notes, and nest logs provide an account of eagle-human interactions during a critical time before both the passage of the Bald and Golden Eagle Act and the DDT era, a time during which eagles were under considerable pressure from various sectors of society (e.g., loggers gave eagles no consideration and numerous nest trees were lost annually to forest clearing; many fur trappers, farmers, and waterfowl hunters shot eagles on sight; collectors staked out nests in order to take adult pairs and eggs for sale on the open market).

Modern Survey

Despite the fact that he never surveyed eagles within the Chesapeake Bay, Charles L. Broley and his work on Florida eagles ignited a national conservation movement and indirectly led to the establishment of the Chesapeake Bay Bald Eagle Survey. Broley, a retired bank manager from Winnipeg, Canada, spent the winter months in Tampa, Florida. He became increasingly concerned about habitat loss, shooting, and egg collecting in western Florida that he believed was causing eagle declines. At the age of 60, he initiated a banding program in 1939 and banded more than 1,200 eaglets over the following 20 years. Broley's seminal work not only documented new aspects of eagle ecology (Broley 1947), but also provided one of the most complete records of progressive nest failures during the early years of the DDT era. In an area where he once banded more than

150 chicks in a single year, by 1958 Broley could only locate a single chick to band. His energy and relentless advocacy on behalf of eagle conservation spawned efforts across the species range. His belief that the Chesapeake Bay could serve as a stronghold for the species in the East led to the Bay becoming one of the first focal monitoring locations.

In 1955, a committee was established within the Audubon Naturalist Society to collect data on the status of bald eagles within the Chesapeake Bay region (Abbott 1957). Jackson Miles Abbott was a member of that committee and would lead the survey effort for the next 20 years. Abbott, a military engineer, accomplished naturalist, artist, lecturer, and writer transformed the effort from a volunteer project to a formal survey. Many of the ecological discoveries made in the survey's early years led to the development of effective aerial monitoring. Abbott's detailed field notes and published papers provide a complete accounting of efforts and observations during a critical period of the survey's development. The survey would not have survived and prospered without his leadership and dedication.

Between 1956 and 1962, the survey progressed from a volunteer-based ground survey to a more effective aerial survey (Abbott 1967). The survey was first conceived as a volunteer effort. The committee executed an outreach campaign to recruit observers that included announcements in the Washington Post. In the first year, nine observers provided nest locations and observations. Despite a considerable outreach campaign, the committee was unable to engage a large enough pool of qualified observers to cover known nesting sites or to complete follow-up productivity observations. By 1960 the effort had collected information on 68 nest sites, but information on productivity was limited. During the first 4 years, Abbott was never able to exceed 20% coverage of known nests by volunteers, due to the small pool of observers and the remoteness of many nests. During these initial five years it became increasingly evident to Abbott that a ground effort would not be adequate to meet survey objectives. In the spring of 1959, Abbott had the first opportunity to do a limited flight for eagles in an H-23 army helicopter and realized that aerial surveys were the best option for monitoring nests. During the 1960 National Audubon Society convention in New York City, Alexander Sprunt IV announced a continental effort by the Society to assess bald eagle populations. The effort focused on a mid-winter survey and breeding surveys within selected geographic areas of importance. The Chesapeake Bay Survey joined this effort, and in 1962 Abbott conducted the first aerial survey of the Bay with an assessment of productivity (Abbott 1963). The army provided helicopter support along the Potomac and the United States Fish and Wildlife Service provided survey planes for the remaining areas.

In 1963, Frederick R. Scott III joined Abbott in conducting the aerial survey and the team flew the Bay for eagles through 1976. Often considered the dean of Virginia birdwatchers, Scott had an encyclopedic knowledge of bird populations, was the editor of *The Raven* for 27 years, and was one of the region's staunchest conservationists. During most years, Abbott flew the upper Bay from the Potomac River north and Scott flew the lower Bay from the Rappahannock River south. Through the 1960s and

1970s, Abbott and Scott served as witnesses to a stable but unsettled eagle population with low productivity and high abandonment rates.

The year 1977 was a transition year for the bald eagle survey and for eagle conservation within the Chesapeake Bay. In January of 1977, the Chesapeake Region Eagle Group was established with representatives from the Fish and Wildlife Service, Maryland Wildlife Administration, Virginia Game Commission, the National Wildlife Federation, the Audubon Naturalist Society, the Maryland Ornithological Society, and the Virginia Society of Ornithology. Very close to this time period, the Fish and Wildlife Service, under the authority of the Endangered Species Act, appointed a Chesapeake Bay Bald Eagle Recovery Team to develop a recovery plan and to oversee monitoring and recovery efforts. During that same year, the state wildlife agencies assumed responsibility for the nest survey. In Virginia, Mitchell A. Byrd, professor of biology at the College of William and Mary and a true pioneer of bird conservation, conducted the survey on behalf of the state agency, and he remained committed to the survey for the next 34 years. In 1991, Bryan D. Watts joined the Virginia survey and the two monitored the population together for the next 20 years.

Following the federal listing of bald eagles in 1967 under the Endangered Species Protection Act of 1966 (16 U.S.C. 668aa-668cc) and, subsequently, under The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), efforts were mounted throughout the species range and there was a movement toward more standardized monitoring programs. The Virginia survey transitioned to a standard two-flight approach, consisting of one flight in March to locate new nests and determine the status of known nests, and a second flight in late April and May to check active nests for productivity. The survey also became more systematic in its coverage of the Coastal Plain including Chesapeake Bay tributaries to the fall line, the Eastern Shore, and lower Tidewater including Back Bay and the North Landing River. Mapping of nests became more standardized, using 7.5 minute topographic quadrangles to provide the resolution needed to enforce regulations of The Endangered Species Act.

As bald eagle populations continued their remarkable recovery throughout the late 1990s, wildlife agencies across the species range began to divert resources away from eagle monitoring to more pressing priorities. Beginning in 2000, financial responsibility for the Virginia survey has been increasingly assumed by the Center for Conservation Biology, a research and conservation organization founded in 1992 by Bryan Watts and Mitchell Byrd. The Center is shared between the College of William and Mary and the Virginia Commonwealth University and is committed to long-term species conservation. This survey has continued to document eagle population growth, productivity and distribution to the present. The 2010 survey checked more than 900 nests and monitored 684 occupied territories (Watts and Byrd, 2010). Throughout the years, the survey has conducted more than 22,000 nest checks, including more than 13,000 since the year 2000.

Acknowledgments

The Virginia Bald Eagle Survey has truly been a community effort with contributions from dozens of eagle biologists, environmental activists, bird watchers, and concerned citizens all coming together around a common goal. Funding for the Virginia Survey has been provided by the Virginia Department of Game and Inland Fisheries, U.S. Fish and Wildlife Service, U.S. Department of Defense, Audubon Naturalist Society, National Audubon Society, Virginia Society of Ornithology, and the Center for Conservation Biology.

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. 1967. The Chesapeake Bay eagles: Summary Report – 1936; 1955-1965. *Atlantic Naturalist* **22**:20-25.
- Broley, C. L. 1947. Migration and nesting of Florida Bald Eagles. *Wilson Bulletin* **59**:1-68.
- Byrd, M. A., Therres, G. D., Wiemeyer, S. N., 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. 49 pp.
- Tyrrell, W. B. 1936. Unpublished report of bald eagle nest survey of the Chesapeake Bay region. National Audubon Society, Washington, D.C. 30 pp.
- Watts, B. D. and Byrd, M. A. 2010. Virginia bald eagle nest and productivity survey: Year 2010 report. Center for Conservation Biology Technical Report Series, CCBTR-10-09. College of William and Mary, Williamsburg, VA. 40 pp.
- Watts, B. D., G. D. Therres, G. D., and Byrd, M. A. 2008. Recovery of the Chesapeake Bay bald eagle nesting population. *Journal of Wildlife Management* **72**:152-158.

VIRGINIA CHRISTMAS BIRD COUNTS: 2009-2010 SEASON

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That long string of mild winters and gentle counts we enjoyed for several years became a distant memory in December, when a monumental storm blanketed almost the entire state on the first weekend of the 2009-10 count period. Several counts had to be postponed or cancelled altogether and observers participating in those events that did take place fought through almost unbearable conditions to find birds. In many places the temperatures did not rise above freezing all day. Ice-covered ponds, rivers, and lakes held no waterfowl, and land birds were hunkered down to ride out the onslaught in the shelter of deep woods and impenetrable brush.

Eastern Shore was one of the hardest hit areas. Bay overlooks up and down the Shore were completely inaccessible. Many roads were under water or completely washed away. Agricultural fields, which often yield a variety of shorebirds, were inundated by several feet of water. Many of the small patches of woods, where passerines were hunkered down away from the winds, were surrounded by shallow lakes and inaccessible. At Chincoteague National Wildlife Refuge (NWR) birders usually find an impressive array of waterfowl on the impoundment in the middle of the spit known as "The Hook." This year, however, it was transformed into a series of shallow ponds covering acres, and winds blowing at a steady 40 mph on count day yielded almost no birdlife in that area. The gale blowing in from the ocean turned the entire shoreline into a sandstorm, reducing visibility to only a few feet, and the dunes on the refuge shoreline were simply swept away.

Norfolk and Virginia Beach in the extreme southeastern corner of the state endured an unprecedented siege of rainfall prior to the count season. By the end of December, both cities chalked up 60 inches of rain, the second highest yearly total on record. Most of that fell during the last two months of 2009. Great Dismal Swamp NWR count, also located in that section of the state and originally scheduled for the very early part of the season was cancelled, and unrelenting rain precluded any thoughts of rescheduling the event. Dense fog was a problem on the Little Creek count, and even though skies were clear, heavy wind at Back Bay presented difficulties for observers trying to count birds on the tossing seas.

The colossal snow storm on the first Saturday of the count period, when many counts were scheduled, smothered almost two-thirds of the northern and western Virginia landscape. Charlottesville, along with many other counts scattered throughout the area, recorded deep snow, sometimes as much as 14 to 24 inches, preventing much exploration on foot. Birders found roads closed to all traffic or too dangerous to travel in many places. Sustained winds,

over 30 mph on some days, lowered visibility to almost zero, complicating matters even further.

Many counts planned for that day were successfully completed later in the count period, but those that were rescheduled on New Year's weekend found little improvement in weather conditions. Winds of up to 50 mph howled along the coast, whipping sand and sea into a white froth that stung faces, burned eyes, froze toes, and generally made life miserable. More than one birder commented that it was the worst conditions in which they had ever birded.

Not in the 106-year history of Virginia CBCs have so many counts been cancelled due to harsh weather conditions. Those missing from the line up in 2009 were: Dismal Swamp, Hopewell, The Plains, Big Flat Mountain, and Breaks Interstate Park. Many of those birders living within a count circle, opted to stay home and count birds in their yards; consequently, the number of birders manning feeding stations jumped to 106 this year, twice last year's number and, by far, exceeding the 35-year average of 45.

Somehow, even in the severest conditions birders persevered to make some astonishing finds. An immature male Rose-breasted Grosbeak (*Pheucticus ludovicianus*) was found on the Calmes Neck count, huddling on the ground near a clump of snow. This was the second time the species has been recorded on a Virginia Christmas count. A spectacular, frame-filling shot of a male Painted Bunting (*Passerina ciris*) perching on a backyard feeder was a first for Williamsburg, the seventh state-wide CBC record. A Golden Eagle (*Aquila chrysaetos*) was a first record and a Snow Bunting (*Plectrophenax nivalis*) the second for Rockingham County. Two Lark Sparrows (*Chondestes grammacus*) comprised Cape Charles's first record of that species. All the above sightings were well-documented and accompanied by good photographs.

A noteworthy first was a Broad-winged Hawk (*Buteo platypterus*) at Cape Charles. No photograph was obtained, but at various times, both on count day and during count week, two or three birders observed what they believed to be the same bird coursing about in the count circle area.

A very unusual sighting was that of a White-winged Crossbill (*Loxia leucoptera*) at Waynesboro. The occurrence of this species is quite interesting, as its appearance is very irregular and completely unpredictable. Christmas count records comprise a very short list. A significant number of White-wings were seen near Washington DC in 1916 as birders conducted counts along the trolley lines that stretched from the capitol down to Mount Vernon. That year, three counts registered a total of 25 birds at the Dyke and Four-mile Run station stops at Arlington and

Alexandria. From 1917 through 1959, no White-wings were recorded on any count in the state. From then until this year, the species has been recorded only ten times: 35 birds at Mount Rogers in 1960; 10 at Charlottesville, 11 at Harrisonburg, and 52 at Mount Rogers in 1965; one at Brooke in 1971; two at Darlington Heights in 1977; three at Fort Belvoir, three at Highland County, and a count week sighting at Central Loudoun in 1997; and, of course, the lone sighting at Waynesboro this year.

Other unusual records were a Brewer's Blackbird (*Euphagus cyanocephalus*) at Fort Belvoir, Great Egret (*Ardea alba*) at Manassas-Bull Run, two Red-breasted Mergansers (*Mergus serrator*) at Central Loudoun, two Double-crested Cormorants (*Phalacrocorax auritus*) at Nokesville, Hooded Merganser (*Lophodytes cucullatus*) at Blackford, four Northern Harriers (*Circus cyaneus*) and 12 Red-tailed Hawks (*Buteo jamaicensis*) at Chatham, two Virginia Rails (*Rallus limicola*) at Northern Shenandoah Valley, a Bald Eagle (*Haliaeetus leucocephalus*) at Glade Spring, Lesser Black-backed Gull (*Larus fuscus*) at Washington's Birthplace, Bonaparte's Gull (*Chroicocephalus philadelphia*) at Darlington Heights, Blue-headed Vireo (*Vireo solitarius*) at Charlottesville, five Eastern Meadowlarks (*Sturnella magna*) at Mount Rogers-Whitetop, two Redheads (*Aythya americana*) at Walkerton and a count-week Nashville Warbler at Back Bay rounded out the list.

A free-flying Brant (*Branta bernicla hrota*) showed up on a pond in Charlottesville and appeared to be a feral bird, not an escapee from a collection. A Glaucous Gull (*Larus hyperboreus*) was observed on the Fort Belvoir count for the first time since 1987. Brooke had two new species: five Black-crowned Night-Herons (*Nycticorax nycticorax*), and two Palm Warblers (*Dendroica palmarum*). The sighting of Common Yellowthroat (*Geothlypis trichas*) was only the third in the Brooke count's 63-year history, and an Osprey (*Pandion haliaetus*) was a first for Gordonsville.

Speaking of Ospreys, they keep appearing in greater numbers every winter. This year's state total of 18 equaled the all-time high set last year. Little Creek chalked up an imposing 8 birds and Newport News set its record high with four. Only once (2006) in the last 25 years has Osprey been absent from the state roster of count. Bald Eagles (*Haliaeetus leucocephalus*) continue to appear more regularly in the western half of the region, with birds spotted at Augusta and Rockingham counties and also at Lexington, Glade Spring and Tazewell. The statewide total keeps inching closer to 1000 birds, with a total of 947 seen this year. Coastal Plain sites reporting record numbers were Nassawaddox, Back Bay, Nansemond River, Mathews County, Williamsburg and Walkerton. Brooke, also on the Coastal Plain, sighted 68, its second-highest total.

More records of interest around the state were as follows: a Pomarine Jaeger (*Stercorarius pomarinus*) was the first seen at Back Bay since 1988; a nice photograph was obtained of a Ruby-throated Hummingbird (*Archilochus colubris*) which appeared for the second time at Cape Charles; Mathews County recorded only its second record of Green-winged Teal (*Anas crecca*) in its 41-year history; a Yellow-throated Warbler (*Dendroica dominica*) appeared again at Fort Belvoir for the fourth year in a row and a Brown-headed Nuthatch (*Sitta pusilla*) at Fort Belvoir was only the second record for

the count and for Fairfax County. Chincoteague recorded a Black-headed Gull (*Chroicocephalus ridibundus*), the first since 1990, and two Ash-throated Flycatchers (*Myiarchus cinerascens*) were great finds at Little Creek. At Lynchburg, the city fast becoming known as the hummingbird capital of Virginia, two Rufous Hummingbirds (*Selasphorus rufus*) were observed on count day. Two American Pipits (*Anthus rubescens*) were seen on the Chesapeake Bay count. Considering that this count is held on the bridge-tunnel span that stretches 18 miles across the mouth of Chesapeake Bay, it may seem surprising that pipits would be present, but in fact, this is the fifth time they have shown up over the 16-year history of that count. The Rough-legged Hawk (*Buteo lagopus*) at Chincoteague was the first found there in nine years and the Glossy Ibis (*Plegadis falcinellus*) was the ninth occurrence at Cape Charles and the only count sighting anywhere in the state since 2003.

And there were some all-time high counts here and there that should be mentioned. 21,580 Snow Geese (*Chen caerulescens*; white form) were twice the previous high at Cape Charles. Walkerton birders chalked up an impressive 1,144 Ring-necked Ducks (*Aythya collaris*) and 66 showed up at Fincastle. Although it didn't come close to Fort Belvoir's all-time high of 3,855 American Wigeons (*Anas americana*) set in 1987, the 957 found there this year far surpasses totals of the past few years. Walkerton's 101 Wild Turkeys (*Meleagris gallopavo*) were almost double the numbers of the last 10 or 12 years, and the 75 Double-crested Cormorants (*Phalacrocorax auritus*) far exceeded previous numbers of that species at Chesapeake Bay Bridge-Tunnel. Little Creek, the perennial stronghold of Anhingas (*Anhinga anhinga*), listed three individuals, the most ever. Twenty Blue-winged Teal (*Anas discors*) at Warren set the all-time high record for that count; in fact, it's their first sighting of Blue-wings since 1997. Roanoke's record 93 Gadwall (*A. strepera*) is noteworthy. Little Creek, with 35, and Back Bay, with 61, led the state in numbers of Lesser Black-backed Gulls. Four other counts reported this species, as well as the aforementioned individual found at Washington's Birthplace.

It was not a strong year for Red-breasted Nuthatches (*Sitta canadensis*), Pine Siskins (*Spinus pinus*), Golden-crowned Kinglets (*Regulus satrapa*), or for Ruby-crowned Kinglets (*R. satrapa*), Purple Finches (*Carpodacus purpureus*) and Swamp Sparrows (*Melospiza georgiana*), but American Pipit numbers were substantially higher than in the previous five years, especially at Back Bay, Williamsburg, and Darlington Heights, where 300, 726, and 73 were found, respectively. However, totals of this species in the western part of the state were generally much lower than usual.

The memory of Peggy Opengari, lost to cancer this past summer, hung heavily over the Giles County count this year, as 18 participants struggled in bitter weather conditions to conduct the count that she compiled for eight years in this mountainous region. Only one significant species could be found, a large falcon flying over an intersection in Pearisburg, thought to be a Peregrine (*Falco peregrinus*), but not seen well enough to be identified with certainty.

Another unexpected loss was the sudden demise of Chuck Auckerman, compiler of the Rockingham County count for the past 12 years. Chuck began his compiling duties for that count when Max Carpenter retired from the position in 1997. Chuck died just before this year's count, but Bill Benish ably picked up the reins and becomes only the third person to compile that count since 1958. The only other change in the compiler lineup was at Buchanan County, where Tom Hunter stepped up to take Michelle Talbott's primary compiler position when she and her family moved out of state.

Data from the counts are tabulated in three Tables on the following pages. In all three Tables, the counts ("Count Circles") are numbered in identical order from 1 to 47, beginning with the Eastern Shore counts and proceeding in a roughly east-to-west and north-to-south configuration. Eastern Shore Count Circles are numbered 1-5, Coastal Plain Count Circles 6-15, Piedmont Count Circles 16-28, and Mountains and Valleys Count Circles 29-47. Table 1 lists the number of individuals of each species seen, Table 2 & 3 the field conditions (primarily collection and meteorological data), compilers of counts and circle location and information for the central location of each of the 47 counts,

SPO = Still water partly open
 SWO = Still water open
 U = Unknown
 U or UNK = Unknown
 V or VAR = variable
 VARCOM = Virginian Avian Records Committee
 W = West
 WMA = Wildlife Management Area
 WOP = Water open

Abbreviations used in the following tables:

a = adult
 Blvd = Boulevard
 CLD = Cloudy
 CLM = Calm
 CLR = Clear
 Cmdr = Commander
 Co = County
 CW = Count week
 Dec = December
 E = East
 FOG = Foggy
 HSN = Heavy snow
 HVR = Heavy rain
 I = immature
 Jan = January
 Jct = Junction
 LGR = Light rain
 LSN = Light snow
 MCD = Mostly cloudy
 MCR = Mostly clear
 MPF = Moving water partly frozen
 mph = miles per hour
 Mt = Mountain
 MWO = Moving water open
 N = North
 NP = National Park
 NR = not recorded
 NWR = National Wildlife Refuge
 PCD = Partly cloudy
 PCR = Partly clear
 Rd = Road
 Rt = Route
 S = South
 SFZ = Still water frozen
 Sp = species
 SPF = Still water partly frozen

Table 1. Species and Numbers of Individuals Seen

SPECIES:	Count Circle																															
	Snow Goose (white form)	Snow Goose (blue form)	Ross's Goose	Brant	Cackling Goose	Canada Goose	Mute Swan	Tundra Swan	Wood Duck	Gadwall	Eurasian Wigeon	American Wigeon	black duck x mallard hybrid	Mallard	Black Duck/ Mallard sp.	Blue-winged Teal	Northern Shoveler	Northern Pintail	American Green- winged Teal	duck sp.	Canvasback	Redhead	Ring-necked Duck	Greater Scaup	Lesser Scaup	scaup sp.	Common Eider	Surf Scoter				
Count Circle	8,701	6	...	46	...	1,508	...	375	...	726	CW	1,230	1,695	...	504	11	...	608	935	502	4	...	...	25	10	32	6	...	255			
	6,260	30	2	265	...	1,208	...	...	...	...	...	4	54	...	111	...	...	...	...	13	...	...	200	...	...	...	...	...	1			
	2,449	28	...	5	...	557	...	64	3	45	...	4	185	...	112	...	3	15	280	...	...	...	6	...	...	...	...	...	...
	21,000	57	4	2,000	1	3,000	...	63	13	303	2	282	1,239	...	524	...	2	57	10	671	...	1	...	161	7	13	2	1	1,268			
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	88			
	...	...	...	150	...	281	...	...	45	64	...	27	18	...	530	...	...	119	6	15	...	...	...	97	1	26	1	4	186			
	2,580	23	...	...	...	814	...	520	10	127	...	35	302	...	234	...	...	13	29	73	...	1	7	13	...	63	1	2	129			
	...	...	...	...	1	2,522	1	...	7	162	...	26	127	...	138	...	...	71	1	3	...	60	659	...	...	7	102	...	90			
	...	...	...	...	...	623	...	...	3	89	1	38	19	...	514	...	...	...	...	...	...	3	8	6	2	1	8	...	112			
	...	...	...	...	...	1,066	1	141	4	...	...	1	45	...	228	...	...	...	...	...	...	...	...	...	7	40	...	...	345			
	...	...	...	...	...	2,445	32	32	5	77	...	55	76	...	277	...	...	1	...	237	...	291	...	335	...	14	...	...	...	...
	...	...	...	1	2	9,636	...	57	4	133	...	2	161	...	830	...	...	8	1,308	187	...	4	...	1	2	1,144	...	...	...	...	...
	Washingtons Birthplace	...	...	...	...	...	13,314	1	82	1	56	...	...	168	...	790	...	...	...	...	14	...	4	...	30	3	336	...	...	5	...	
		...	...	...	...	...	2,565	14	1,083	...	400	...	2	23	...	556	...	2	...	3	...	435	...	...	71	...	2,135	...	...	...	...
		...	...	...	...	...	14,918	...	278	23	1,668	...	957	1,910	...	4,353	...	56	125	107	...	1,817	92	377	6	9,666	900	...	...	...	...
		15. Fort Belvoir	...	...	...	...	4,624	...	...	2	...	...	...	86	...	314	...	...	2	...	8	11	...	...	35	...	...	...	...	...	...
	16. Central Loudoun	30	...	...	...	...	...	...	...	...	...	...	...	4	...	126	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
	17. Manassas-Bull Run	...	...	...	...	...	2,097	...	...	3	4	...	...	35	...	291	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...
	18. Nokesville	...	...	...	...	...	1,218	...	...	...	...	...	...	...	...	14	...	...	...	...	4	...	...	3	...	...	...	...	...	...	...
	19. Chancellorsville	...	...	...	...	...	237	3	...	...	...	...	...	16	...	194	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
	20. Lake Anna	...	...	...	...	...	352	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	21. Gordonsville	...	...	...	...	...	1,534	...	...	...	...	...	...	5	...	43	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
	22. Charlottesville	...	...	...	1	...	415	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	23. Warren	...	...	...	...	...	1,676	5	...	...	...	...	1	2	...	120	...	20	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	24. Darlington Heights	...	...	...	...	...	294	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	25. Banister River WMAS	...	...	...	...	...	265	...	...	22	...	...	...	2	...	7	...	...	...	...	...	47	...	2	...	...	...	...	...	...	...	...
	26. Lynchburg	...	...	...	...	...	196	...	...	1	...	...	...	CW	...	46	...	CW	...	...	...	...	...	73	...	4	...	...	...	...	...	...
	27. Chatham	...	...	...	...	...	133	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	28. Danville	...	...	...	...	...	181	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	29. Calmes Neck	...	...	...	...	...	2,458	...	3	...	...	...	...	72	...	124	...	...	...	...	1	...	1	14	...	...	...	...	...	...	...	...
	30. N. Shenandoah Valley	...	...	...	...	...	3,503	...	1	9	1	...	CW	87	...	778	...	...	...	8	20	...	...	17	...	...	...	...	...	...	...	...
	31. Shenandoah NP-Luray	...	...	...	...	...	463	...	...	...	23	...	2	95	...	447	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
	32. Rockinham County	...	...	...	...	...	115	2	...	2	...	...	...	...	...	278	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
	33. Augusta County	1	...	...	...	...	718	...	...	1	20	...	3	6	...	124	...	11	...	16	...	1	...	5	...	...	...	...	...	...	...	...
	34. Waynesboro	...	...	...	...	...	776	...	...	1	...	...	...	20	...	81	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	35. Lexington	...	...	...	...	...	397	...	...	...	27	...	...	2	...	45	...	...	...	2	...	...	...	30	...	...	...	...	...	...	...	...
	36. Peaks of Otter	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	37. Fincastle	...	...	...	...	...	437	...	...	...	...	...	...	6	...	124	...	2	...	2	...	...	...	66	...	...	...	...	...	...	...	...
	38. Roanoke	...	...	...	...	...	433	...	...	...	93	...	2	1	...	173	...	...	...	8	...	...	...	1	...	...	...	...	...	...	...	...
	39. Blacksburg	...	...	...	...	...	194	...	...	...	...	...	...	1	...	89	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	40. Giles County	...	...	...	...	...	312	...	...	...	...	4	...	4	...	83	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...
	41. Tazewell	...	...	...	...	...	174	...	...	1	5	...	...	6	...	108	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	42. Mount Rogers-Whitetop	...	...	...	...	...	38	...	...	...	...	...	...	...	...	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	43. Glade Spring	...	...	...	...	...	413	...	...	...	8	...	...	4	...	217	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	44. Blackford	...	...	...	...	...	79	...	...	2	2	...	...	2	...	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	45. Bristol	...	...	...	...	...	536	...	...	...	11	...	32	1	...	613	...	1	...	2	...	...	...	102	...	2	...	...	...	...	...	...
	46. Buchanan County	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	41,021	144	6	2,468	5	78,725	59	2,699	164	4,044	3	2,707	6,479	1	14,311	11	23	953	2,440	2,175	125	3,213	110	3,347	36	12,351	1,021	7	2,479	...	...

Table 1. Species and Numbers of Individuals Seen (continued)

SPECIES:	White-winged Scoter		Black Scoter	scoter sp.	Long-tailed Duck	Bufflehead	Common Goldeneye	Hooded Merganser	Common Merganser	Red-breasted Merganser	Ruddy Duck	Ring-necked Pheasant	Ruffed Grouse	Wild Turkey	Northern Bobwhite	Loon	Common Loon	Loon sp.	Pied-billed Grebe	Horned Grebe	Eared Grebe	grebe sp.	Northern Gannet	American White Pelican	Brown Pelican	Double-crested Cormorant	Great Cormorant	Anhinga	Great Blue Heron (Blue form)	Great Egret	Snowy Egret	Little Blue Heron	Tricolored Heron
	Count	Circle																															
1. Chincoteague	...	144	410	13	802	9	249	2	34	109	1	...	CW	1	8	38	...	6	28	...	...	1	1	...	...	11	...	...	98	44	4	5	3
2. Wachapreague	211	...	64	...	21	2	...	...	23	4	1	33	...	1	4	...	...	...	...	...	...	7	...	...	5	...	...	1	1
3. Nassawadox	98	CW	103	4	21	15	...	...	21	15	...	13	...	5	1	...	...	...	...	...	...	38	...	...	24	...	...	...	...
4. Cape Charles	2	53	220	53	1,845	8	448	...	315	163	...	...	...	2	1	185	247	...	53	22	...	...	43	...	9	134	19	...	94	22	3	2	28
5. Chesapeake Bay	2	24	...	5	2	...	...	...	69	...	...	...	...	...	...	40	18	...	...	1	...	...	1,200	...	25	75	12	...	1	...	...	...	...
6. Little Creek	5	74	13	28	265	...	328	...	68	20	...	...	...	...	...	72	72	...	26	1	...	...	228	...	102	3,085	11	3	74	49	3	...	1
7. Back Bay	134	...	60	...	43	1,250	...	...	...	...	...	81	57	...	31	1	...	...	98	...	23	251	2	...	35	20	9	...	5
8. Nansemond River	523	5	204	7	50	701	...	...	...	11	4	1	7	...	29	2	...	...	1	...	1	1,174	...	...	38	10	...	...	...
9. Newport News	6	65	14	...	554	5	176	...	14	81	...	...	...	...	...	1	58	6	24	46	...	...	7	...	29	716	...	...	51	27	...	...	...
10. Mathews County	6	42	...	23	845	26	88	14	233	337	...	...	...	8	...	1	65	...	5	6	...	...	5	...	14	30	...	...	44	...	...	...	...
11. Williamsburg	77	6	165	...	26	133	...	...	...	...	...	...	...	...	31	3	...	...	...	...	13	791	...	...	46	2	...	...	...
12. Walkerton	82	...	35	...	3	7	...	...	...	101	...	...	...	...	8	...	...	...	...	...	...	1	...	...	49	...	...	...	...
13. Washingtons Birthplace	3	171	45	73	29	44	508	...	...	...	11	2	...	...	...	3	2	...	...	...	...	...	...	29	...	12	...	...	...	...
14. Brooke	83	...	237	6	...	456	...	...	...	7	15	...	2	...	49	3	...	...	...	...	...	196	...	...	63	...	...	...	...
15. Fort Belvoir	571	8	360	627	21	687	...	...	...	42	...	...	...	...	2	...	...	...	...	...	...	...	17	...	314	1	...	...	...
16. Central Loudoun	46	...	54	178	2	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	43	...	...	...	...
17. Manassas-Bull Run	26	...	43	133	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	13	1	...	...	...
18. Nokesville	8	...	...	20	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...
19. Chancellorsville	33	...	9	...	...	85	...	...	...	...	...	...	...	...	12	...	...	...	...	...	...	...	...	...	2	...	...	...	...
20. Lake Anna	100	...	13	...	...	6	...	...	...	31	8	...	6	...	15	CW	...	...	...	...	...	1	...	...	16	...	...	...	...
21. Gordonsville	13	...	...	...	...	...	...	42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
22. Charlottesville	5	...	...	...	...	...	...	1	...	...	...	...	5	...	...	...	...	...	...	...	...	...	9	...	...	...	...
23. Warren	20	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...
24. Darlington Heights	17	...	...	...	...	...	...	36	20	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...
25. Banister River WMAs	4	...	10	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...	...	...	...
26. Lynchburg	2	...	11	CW	...	...	...	...	...	8	CW	...	...	...	5	...	...	...	...	...	...	...	...	...	3	...	...	...	...
27. Chatham	7	...	...	...	...	...	...	51	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
28. Danville	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...
29. Calmes Neck	5	...	19	19	15	2	...	...	...	41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...	...	...	...
30. N. Shenandoah Valley	CW	1	56	74	CW	1	...	...	...	29	9	...	...	...	1	...	...	...	...	...	...	CW	...	...	45	...	...	...	...
31. Shenandoah NP-Luray	16	...	4	...	...	...	8	...	...	...	...	1	...	...	...	...	...	...	...	...	...	22	...	...	...	...
32. Rockinham County	1	...	...	...	...	...	...	10	...	...	...	...	2	...	...	...	...	...	...	...	...	...	11	...	...	...	...
33. Augusta County	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...
34. Waynesboro	2	...	...	...	6	...	...	...	...	2	...	...	...	...	...	...	...	...	...	3	...	...	...	...
35. Lexington	26	6	...	...	...	...	...	10	...	...	...	...	10	...	...	...	...	...	...	...	...	...	10	...	...	...	...
36. Peaks of Otter	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37. Fincastle	9	...	7	...	...	...	...	...	...	45	1	...	...	...	6	...	...	...	...	...	...	...	...	...	1	...	...	...	...
38. Roanoke	19	...	1	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	...	...	...	...
39. Blacksburg	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	CW	...	...	...	...
40. Giles County	2	...	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...
41. Tazewell	1	...	...	...	...	...	...	25	...	...	...	...	7	...	...	...	...	...	...	...	...	...	6	...	...	...	...
42. Mount Rogers-Whitetop	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
43. Glade Spring	5	...	...	...	...	...	...	15	...	...	...	...	1	...	...	...	...	...	...	...	...	...	24	...	...	...	...
44. Blackford	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	8	...	...	...	...
45. Bristol	1	156	...	249	...	...	...	...	...	...	63	...	...	6	...	49	1	...	...	...	...	...	...	...	...	23	...	...	...	...
46. Buchanan County	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
47. Wise County	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
Totals	21	410	943	126	6,657	113	3,224	1,115	980	4,594	1	4	692	82	390	622	58	395	121	1	8	1,583	1	216	6,558	44	3	1,255	176	19	8	38	

Table 1. Species and Numbers of Individuals Seen (continued)

SPECIES:	Count Circle																														
	Black-crowned Night-Heron	White Ibis	Glossy Ibis	Wood Stork	Black Vulture	Turkey Vulture	Osprey	Bald Eagle	bald eagle, age	Northern Harrier	Sharp-shinned Hawk	Cooper's Hawk	Accipiter sp.	Red-shouldered Hawk	Broad-winged Hawk	Red-tailed Hawk	Rough-legged Hawk	Golden Eagle	golden eagle, age	large hawk sp.	hawk sp.	American Kestrel	Merlin	Peregrine Falcon	falcon sp.	Clapper Rail	King Rail	Virginia Rail	Sora	American Coot	
1. Chincoteague	2	54	228	...	54	38a, 16i	19	2	4	...	2	...	9	1	6	3	1	5
2. Wachapreague	6	66	1	12	5a, 1i, 6u	6	1	2	4	7	1	...	2
3. Nassawadox	30	120	...	33	33nr	19	7	2	...	2	...	21	...	...	...	...	...	17	...	...	...	...	...	...	...	2	
4. Cape Charles	...	19	1	...	100	200	1	50	50nr	46	14	5	...	9	1	41	...	...	...	...	...	23	3	6	...	74	3	...	...	25
5. Chesapeake Bay	
6. Little Creek	4	...	...	...	109	27	8	6	6i	5	7	3	...	2	...	8	...	...	...	...	...	1	...	2	...	1	...	...	...	23
7. Back Bay	CW	42	111	...	21	12a, 9i	38	8	5	...	6	...	16	...	...	...	...	...	23	3	...	...	14	29	1	1,285	...	
8. Nansemond River	70	106	3	19	11a, 7i, 1u	3	9	9	...	2	...	26	...	...	...	...	...	9	2	1	...	4	...	...	...	3	
9. Newport News	5	4	4	11	9a, 2i	6	6	3	...	...	...	14	...	...	...	...	...	1	1	1	...	3	...	...	...	2	
10. Mathews County	39	118	...	31	19a, 12i	6	3	2	...	8	...	21	...	...	...	...	...	2	6	...	...	...	...	...	...	...
11. Williamsburg	118	285	...	58	34a, 24i	5	9	5	...	20	...	29	...	...	...	...	...	4	...	...	...	2	...	...	...	21	
12. Walkerton	282	396	...	68	45a, 23i	7	3	4	...	12	...	39	...	...	...	...	...	6	...	...	...	...	...	...	...	42	
13. Washingtons Birthplace	95	140	...	153	91a, 49i, 13u	17	1	1	...	2	...	16	...	...	...	...	...	6	...	...	...	...	...	...	...	...
14. Brooke	5	...	...	...	61	111	...	108	56a, 52i	3	2	1	...	15	...	11	...	...	...	...	...	2	...	...	...	...	...	...	...	1,226
15. Fort Belvoir	167	101	...	190	105a, 85i	5	13	8	4	32	...	47	...	...	...	...	...	...	3	1	...	2	1	...	1,915	...	
16. Central Loudoun	245	341	...	30	17a, 13i	14	11	18	...	102	...	125	...	...	...	...	...	21	...	...	...	...	...	...	...	3	
17. Manassas-Bull Run	97	27	...	5	3a, 2i	1	4	5	2	49	...	22	...	...	...	...	...	3	1	...	...	...	...	...	...	...
18. Nokesville	35	81	...	23	11a, 12i	3	6	4	...	39	...	25	...	...	...	...	...	6	1	...	...	...	...	...	...	1	
19. Chancellorsville	5	18	...	2	2a	...	1	...	...	8	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	76	
20. Lake Anna	37	79	...	4	2a, 2i	2	1	1	...	11	...	21	...	...	...	...	...	1	...	...	...	...	...	...	...	2	
21. Gordonsville	20	29	1	1	1i	...	...	1	...	8	...	10	...	...	...	...	...	2	...	...	...	...	...	...	...	...
22. Charlottesville	103	167	...	...	...	...	6	5	...	17	...	27	...	...	...	...	...	1	...	...	...	...	...	...	...	...
23. Warren	65	106	...	...	...	13	3	6	...	9	...	29	...	...	...	...	...	6	...	...	...	...	...	...	...	...
24. Darlington Heights	39	144	...	1	1nr	8	2	4	...	12	...	41	...	...	...	...	...	4	...	...	...	...	...	...	...	...
25. Banister River WMAS	31	92	...	4	4a	1	...	3	...	3	...	31	...	...	...	...	...	5	...	...	...	...	...	...	...	...
26. Lynchburg	77	87	1	1	1nr	...	5	2	...	2	...	4	...	...	...	...	...	CW	CW	...	...	...	...	...	...	6	
27. Chatham	2	55	...	...	...	4	1	6	...	...	...	12	...	...	...	...	...	3	...	...	...	...	...	...	...	...
28. Danville	12	67	...	2	2a	...	...	1	...	4	...	9	...	...	...	...	...	4	...	...	...	...	...	...	...	...
29. Calmes Neck	35	76	...	16	8a, 8i	2	6	7	...	27	...	38	...	1	1a	...	...	12	...	...	...	...	...	...	...	8	
30. N. Shenandoah Valley	54	168	...	11	6a, 5i	8	9	12	...	25	...	89	CW	...	...	...	...	28	1	...	...	...	2	...	...	5	
31. Shenandoah NP-Luray	3	...	...	...	89	18	...	5	2a, 3i	1	4	4	...	4	...	38	...	...	...	...	...	22	...	...	...	...	...	...	...	...
32. Rockingham County	28	330	...	1	1nr	...	2	4	1	2	...	39	...	1	NR	...	...	45	...	...	...	...	...	...	...	...
33. Augusta County	104	246	...	1	1i	2	5	4	...	1	...	38	...	...	...	...	...	20	...	1	...	...	...	...	...	2	
34. Waynesboro	41	145	...	...	...	4	4	4	...	2	...	26	...	...	...	...	...	6	...	...	...	...	...	...	...	...
35. Lexington	26	46	...	2	2a	...	5	5	1	2	...	16	...	...	...	...	...	6	1	...	...	...	...	...	...	2	
36. Peaks of Otter	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37. Fincastle	49	138	...	...	...	...	3	8	...	4	...	33	...	...	...	...	...	12	...	...	...	...	...	...	...	3	
38. Roanoke	81	58	...	...	...	...	2	3	...	...	...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39. Blacksburg	80	10	...	...	...	...	CW	2	1	CW	...	5	...	...	...	...	...	1	...	...	...	...	...	...	...	...
40. Giles County	1	2	1	1	1i	...	...	2	...	...	...	10	...	...	...	...	...	...	4	...	1	...	...	...	...	...
41. Tazewell	1	...	1a	...	...	3	1	2	...	8	...	...	...	...	...	8	...	...	...	...	...	...	...	4	
42. Mount Rogers-Whitetop	1	10	...	...	...	...	...	2	...	...	...	7	...	...	...	...	...	4	...	...	...	...	...	...	...	...
43. Glade Spring	89	84	...	1	1a	2	2	6	...	...	...	33	...	...	...	...	...	16	...	...	...	...	...	...	...	1	
44. Blackford	4	2	...	...	...	1	1	1	...	6	...	20	...	10	...	...	...	6	1	...	...	...	...	...	...	...
45. Bristol	1	...	...	...	76	133	...	1	1nr	...	...	7	...	2	...	21	...	...	...	...	...	18	...	...	...	...	...	...	...	51
46. Buchanan County	1	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...
47. Wise County	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	15	19	1	CW	2,704	4,774	18	927	499a, 345i, 20u, 87nr	247	176	183	9	453	1	1,097	1	12	1a, 11nr	1	3	376	21	12	1	86	16	35	1	4,717	

Count Circle

[illegible]

Count Circle

[illegible]

Table 1. Species and Numbers of Individuals Seen (continued)

SPECIES:	Count Circle																														
	Blue-headed Vireo	Blue Jay	American Crow	Fish Crow	crow, sp.	Common Raven	Horned Lark	Tree Swallow	Carolina Chickadee	Black-capped Chickadee	chickadee sp.	Tufted Titmouse	Red-breasted Nuthatch	White-breasted Nuthatch	Brown-headed Nuthatch	Brown Creeper	Carolina Wren	House Wren	Winter Wren	Sedge Wren	Marsh Wren	Golden-crowned Kinglet	Ruby-crowned Kinglet	Blue-gray Gnatcatcher	Eastern Bluebird	Hermit Thrush	American Robin	Gray Catbird	Northern Mockingbird		
1. Chincoteague	...	25	226	8	17	...	22	122	41	...	...	14	3	1	15	5	64	3	9	...	...	19	2	...	85	21	194	10	37	
2. Wachapreague	...	5	910	172	...	...	1	...	42	...	...	12	6	...	22	1	22	...	...	...	1	...	...	...	89	5	137	1	22	
3. Nassawadox	...	21	320	...	...	...	20	...	68	...	...	19	3	...	26	4	61	5	6	...	...	10	4	...	178	13	121	2	53	
4. Cape Charles	...	96	329	6	39	...	7	...	97	...	...	61	5	1	4	13	229	20	44	2	3	31	39	...	274	88	1,954	52	122	
5. Chesapeake Bay	
6. Little Creek	3	98	690	930	...	...	...	1	94	...	...	37	...	17	36	11	86	1	4	...	...	20	11	...	94	7	1,630	5	50	
7. Back Bay	1	9	440	8	...	...	...	53	100	...	...	26	...	9	19	4	72	2	6	1	1	7	38	...	75	12	755	12	40	
8. Nansemond River	3	65	73	61	36	...	30	...	121	...	...	45	...	5	10	5	94	3	4	1	...	25	28	...	176	18	1,504	1	106	
9. Newport News	...	84	115	8	...	...	...	...	100	...	...	51	...	7	...	4	29	...	...	...	...	3	4	...	26	1	2,088	...	72	
10. Mathews County	...	102	589	...	...	...	...	...	161	...	...	59	2	10	43	4	109	...	2	...	...	5	8	...	706	17	677	7	97	
11. Williamsburg	...	75	184	...	15	...	...	...	171	...	...	160	3	46	13	5	153	...	2	...	...	23	35	...	143	21	707	3	72	
12. Walkerton	...	82	742	...	...	...	130	...	90	...	...	109	...	41	...	13	83	...	12	...	...	59	18	...	204	38	209	4	58	
13. Washingtons Birthplace	...	25	320	...	...	...	37	...	19	...	...	32	...	4	...	5	25	1	2	...	...	15	10	...	62	16	65	...	21	
14. Brooke	...	241	553	10	...	...	...	...	255	...	...	189	1	88	...	2	149	...	1	...	...	11	25	...	195	9	320	2	95	
15. Fort Belvoir	...	626	1,519	274	3,039	...	...	...	875	...	...	671	1	260	1	50	342	...	21	...	...	101	49	1	478	80	3,681	2	165	
16. Central Loudoun	...	544	628	238	343	13	14	...	491	...	...	367	5	181	...	20	287	...	4	...	...	31	28	...	637	38	751	2	317	
17. Manassas-Bull Run	...	605	536	63	106	2	...	...	393	...	...	331	2	114	...	5	234	...	9	...	...	15	9	...	196	20	1,808	...	114	
18. Nokesville	...	343	254	85	49	...	12	...	127	...	...	113	...	42	...	6	78	...	2	...	...	32	2	...	135	9	106	1	64	
19. Chancellorsville	...	14	101	1	...	...	...	...	23	...	...	34	CW	...	...	...	20	...	...	...	1	...	...	...	49	4	46	...	10	
20. Lake Anna	...	23	202	...	...	1	...	...	29	...	...	32	...	6	...	...	22	...	...	...	...	14	5	...	112	9	331	1	27	
21. Gordonsville	...	34	98	...	...	4	...	...	9	...	...	21	...	4	...	...	15	...	...	...	1	...	...	...	103	2	98	...	28	
22. Charlottesville	1	226	591	19	...	11	...	...	170	...	...	150	...	59	...	3	172	...	6	...	...	34	32	...	223	25	496	...	69	
23. Warren	...	117	416	2	...	12	75	...	64	...	...	61	...	40	...	3	80	...	3	...	...	15	9	...	196	24	3,175	1	47	
24. Darlington Heights	...	70	540	...	...	2	66	...	50	...	...	43	...	16	...	3	31	...	1	...	...	32	9	...	113	13	786	...	51	
25. Banister River WMAs	...	120	171	...	...	CW	...	...	26	...	...	23	...	9	7	7	27	...	4	...	...	7	7	...	175	13	3,260	...	18	
26. Lynchburg	...	133	81	6	...	CW	73	117	1	24	...	2	52	...	CW	6	CW	59	1	71	...	29	
27. Chatham	...	30	31	...	...	...	...	...	5	...	...	10	...	6	...	...	4	...	2	...	...	3	1	...	43	4	96	...	7	
28. Danville	...	34	47	...	...	...	...	...	41	...	...	45	...	15	5	...	22	...	1	...	...	6	4	...	57	2	468	...	42	
29. Calmes Neck	...	160	420	...	19	...	19	58	184	...	...	172	2	84	...	8	59	...	6	...	...	26	4	...	392	26	130	...	78	
30. N. Shenandoah Valley	...	349	1,902	9	...	3	39	...	358	...	...	245	2	110	...	20	87	...	42	...	1	37	13	...	586	13	4,232	...	135	
31. Shenandoah NP-Luray	...	71	404	45	...	32	96	...	160	...	...	140	...	45	...	7	53	...	6	...	...	56	5	...	100	16	120	...	42	
32. Rockingham County	...	55	599	1	6	4	245	...	52	2	5	82	...	23	...	4	26	...	2	...	...	2	...	...	127	...	76	...	47	
33. Augusta County	...	80	354	7	...	4	36	...	66	1	...	64	1	15	...	1	24	...	...	...	...	...	...	...	171	...	147	...	60	
34. Waynesboro	...	157	673	...	...	7	31	...	94	...	...	121	1	29	...	1	33	...	...	...	...	16	2	...	219	8	31	1	85	
35. Lexington	...	209	741	13	...	11	2	...	72	30	79	140	...	51	...	3	71	...	4	...	...	33	5	...	144	36	2,233	...	66	
36. Peaks of Otter	...	4	15	...	...	...	...	...	7	...	...	2	...	...	...	...	6	...	2	...	...	...	...	...	6	3	138	...	1	
37. Fincastle	...	143	696	...	...	4	...	...	82	...	...	88	...	16	...	...	37	...	2	...	...	5	...	...	128	7	704	...	59	
38. Roanoke	...	29	211	...	...	2	...	...	54	...	...	45	...	21	1	...	23	...	1	...	...	14	...	...	58	1	2	...	22	
39. Blacksburg	...	82	203	...	...	6	CW	...	80	...	...	126	1	34	...	1	69	...	2	...	...	5	1	...	19	1	1	1	21	
40. Giles County	...	33	181	5	...	...	...	...	31	3	1	36	...	23	...	4	22	...	6	...	...	3	1	...	47	2	2	...	24	
41. Tazewell	...	9	174	...	...	4	25	...	20	...	...	26	...	2	...	...	8	...	1	...	...	2	...	...	3	1	3	...	4	
42. Mount Rogers-Whitetop	...	31	551	...	...	5	...	...	47	...	...	46	...	14	...	...	12	...	...	...	7	1	...	...	49	1	10	...	5	
43. Glade Spring	...	56	625	...	...	3	100	...	55	...	...	73	...	30	...	...	38	...	...	...	4	3	...	...	254	...	2	...	58	
44. Blackford	...	48	832	...	...	50	...	...	33	...	...	40	...	18	...	...	10	1	...	...	2	4	...	...	45	...	8	...	50	
45. Bristol	...	92	768	...	...	5	...	...	103	...	...	77	1	57	...	2	88	...	4	...	...	72	10	...	196	4	35	1	70	
46. Buchanan County	...	1	150	...	...	...	...	...	15	...	...	19	...	12	...	1	13	...	...	...	...	2	...	...	...	4	2	...	...	...
47. Wise County	...	10	677	...	...	...	...	...	23	...	...	22	3	5	...	...	8	...	...	...	...	...	...	...	...	1	8	...	...	...
Total	8	5,466	20,882	1,971	3,669	205	1,046	176	5,271	36	85	4,396	43	1,616	202	227	3,249	36	223	4	5	813	426	1	7,431	632	33,416	109	2,660		

Table 1. Species and Numbers of Individuals Seen (cont.)

SPECIES:	Count Circle																										
	Brown Thrasher	European Starling	American Pipit	Cedar Waxwing	Orange-crowned Warbler	Nashville Warbler	Yellow-rumped (Myrtle) Warbler	Yellow-throated Warbler	Pine Warbler	Palm Warbler	Common Yellowthroat	Eastern Towhee	American Tree Sparrow	Chipping Sparrow	Field Sparrow	Lark Sparrow	Savannah Sparrow	Savannah (Ipswich) Sparrow	Nelson's Sparrow	Saltmarsh Sparrow	sharp-tailed sparrow sp.	Seaside Sparrow	Fox Sparrow	Song Sparrow	Swamp Sparrow	White-throated Sparrow	White-crowned Sparrow
1. Chincoteague	8	1,418	19	80	2,106	...	10	5	...	12	1	92	17	...	44	6	146	85	435	...
2. Wachapreague	2	1,291	...	12	484	1	...	3	...	44	4	...	9	1	35	1	175	...
3. Nassawadox	3	740	50	31	...	...	498	...	7	19	...	6	...	157	18	...	36	...	2	...	...	29	108	56	306	20
4. Cape Charles	14	2,649	15	72	2,354	...	38	45	3	34	...	183	147	2	273	13	3	1	2	1	46	574	162	1,193	1
5. Chesapeake Bay	2
6. Little Creek	15	1,400	...	90	1	...	343	...	27	1	1	14	...	55	4	...	27	1	1	...	2	101	12	230	...
7. Back Bay	6	1,725	300	5	1	CW	1,080	...	7	4	2	12	...	81	8	...	89	...	...	...	...	5	113	32	218	...
8. Nansemond River	14	2,969	23	176	4	...	673	...	15	12	...	39	...	179	6	...	134	...	...	2	...	31	251	19	527	...
9. Newport News	13	2,951	...	11	...	...	332	...	2	...	...	26	1	74	2	...	2	...	...	...	...	1	50	5	456	...
10. Mathews County	22	1,126	...	237	...	...	887	...	23	...	...	14	...	309	1	...	6	...	...	...	...	11	113	9	770	...
11. Williamsburg	16	1,066	726	162	...	...	451	...	24	...	1	66	...	117	13	...	55	...	...	...	...	18	154	33	439	...
12. Walkerton	22	1,670	178	208	1	...	76	...	1	...	...	25	...	209	17	...	53	...	...	...	...	13	277	39	1,182	12
13. Washingtons Birthplace	5	362	...	79	...	...	40	...	1	...	...	11	...	5	52	...	39	...	...	...	...	1	34	4	156	30
14. Brooke	4	3,075	10	341	228	2	1	16	...	13	22	...	10	71	10	756	4
15. Fort Belvoir	18	3,139	90	267	...	...	223	1	...	...	1	57	...	17	101	...	50	...	...	...	...	14	814	214	2,241	5
16. Central Loudoun	3	9,997	14	259	...	...	133	...	...	...	...	18	15	7	54	...	4	...	...	...	...	1	268	9	993	29
17. Manassas-Bull Run	1	3,568	6	80	...	...	288	...	...	...	...	19	...	25	72	...	2	...	...	...	...	9	317	16	642	...
18. Nokesville	...	6,414	1	77	...	...	80	...	...	...	...	27	1	5	72	...	38	...	...	...	...	7	224	23	369	126
19. Chancellorsville	...	104	...	15	3	2	7	...	23	...
20. Lake Anna	...	412	...	27	78	...	1	1	...	1	63	...	6	33	2	51	...
21. Gordonsville	...	2,915	...	22	...	...	21	...	...	...	...	...	25	5	43	...	...	...	...	...	...	6	27	2	96	27
22. Charlottesville	1	504	...	227	...	...	174	...	...	...	...	20	...	1	44	...	5	...	...	...	...	6	127	2	462	30
23. Warren	...	367	9	303	...	...	148	...	1	...	...	9	2	...	59	...	12	...	...	...	...	3	232	11	639	59
24. Darlington Heights	...	1,677	73	193	...	...	129	...	2	...	...	8	...	2	8	...	10	...	...	...	...	3	56	1	280	26
25. Banister River WMAs	2	230	16	60	...	...	47	...	3	...	...	26	...	38	7	...	6	...	...	...	...	8	51	6	119	4
26. Lynchburg	...	86	1	103	...	...	2	...	...	...	...	10	...	2	1	...	...	...	...	...	...	4	68	...	303	...
27. Chatham	...	1,020	...	24	3	5	...	2	6	...	7	21	3	43	...
28. Danville	3	874	...	55	12	7	...	27	3	3	82	...
29. Calmes Neck	...	2,511	...	38	...	...	26	...	...	...	...	6	7	...	15	...	...	...	...	...	...	8	100	...	1,015	38
30. N. Shenandoah Valley	...	20,298	...	181	...	...	182	...	...	...	1	2	8	3	30	...	5	...	...	...	...	8	176	3	696	81
31. Shenandoah NP-Luray	...	1,653	...	22	...	...	78	...	...	...	...	...	1	...	38	...	1	...	...	...	...	1	52	1	218	43
32. Rockingham County	...	2,932	...	42	...	...	34	...	...	...	...	...	...	3	7	...	4	...	...	...	...	4	51	...	217	228
33. Augusta County	...	1,791	...	8	...	...	81	...	...	...	...	1	...	...	26	...	6	...	...	...	...	4	88	1	170	72
34. Waynesboro	...	910	...	234	...	...	72	...	...	...	...	8	1	4	66	...	5	...	...	...	...	9	127	1	398	66
35. Lexington	...	2,514	9	302	...	...	135	...	...	...	...	25	...	...	47	...	2	...	...	...	...	7	124	1	582	46
36. Peaks of Otter	...	45	...	28	1	2	6	...	34	...
37. Fincastle	...	5,016	...	77	...	...	108	...	...	...	...	22	...	1	1	...	1	...	...	...	...	2	58	...	256	16
38. Roanoke	...	526	...	...	...	...	4	...	1	...	...	...	1	1	16	...	...	...	...	...	...	...	34	...	98	...
39. Blacksburg	...	298	CW	9	...	...	10	...	...	...	...	15	...	...	9	...	...	...	...	...	...	12	81	...	170	46
40. Giles County	...	4	...	...	...	...	39	...	...	...	...	5	...	...	10	...	...	...	...	...	...	14	92	...	31	4
41. Tazewell	...	642	1	2	4	1	32	17	13
42. Mount Rogers-Whitetop	...	307	...	20	...	...	16	...	...	...	...	8	...	...	21	...	...	...	...	...	...	3	79	1	42	24
43. Glade Spring	...	1,596	...	4	...	...	61	...	...	...	...	11	...	2	32	...	...	...	...	...	...	...	134	...	41	184
44. Blackford	...	1,001	...	77	...	...	100	...	...	...	...	5	...	4	9	...	3	...	...	...	...	3	104	...	38	125
45. Bristol	...	923	...	72	...	...	83	...	...	1	...	17	...	38	8	...	...	...	...	...	...	2	121	5	134	12
46. Buchanan County	...	52	2	2	28	...	8	...
47. Wise County	...	159	1	2	8	...	5	...
Total	172	96,927	1,542	4,330	7	CW	11,926	1	163	90	10	616	65	1,706	1,186	2	944	14	5	3	3	1	306	5,770	769	17,356	1,371

Table 1. Species and Numbers of Individuals Seen (continued)

SPECIES:	Dark-eyed Junco (State-colored)	Snow Bunting	Northern Cardinal	Rose-breasted Grosbeak	Painted Bunting	Red-winged Blackbird	Eastern Meadowlark	Rusty Blackbird	Brewer's Blackbird	Common Grackle	Boat-tailed Grackle	Brown-headed Cowbird	blackbird sp.	Baltimore Oriole	Purple Finch	House Finch	White-winged Crossbill	Pine Siskin	American Goldfinch	House Sparrow	Total species	Total Individuals
Count Circle																						
1. Chincoteague	149	6	68	...	...	5,268	114	1	...	85	34	24	93	...	...	9	...	2	34	42	133	36,625
2. Wachapreague	273	...	76	...	...	362	111	...	...	104	110	93	...	...	5	1	...	...	27	3	101	17,558
3. Nassawadox	129	...	156	...	...	5,025	128	25	...	3,927	...	742	2,030	1	1	37	...	...	113	20	108	22,934
4. Cape Charles	285	...	271	...	...	1,962	185	3	...	4,467	99	186	...	1	2	171	...	...	172	20	157	67,031
5. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	1,946
6. Little Creek	68	...	118	...	...	650	1	3	...	1,144	176	96	...	...	...	70	...	7	78	87	128	19,335
7. Back Bay	72	...	96	...	...	7,730	104	25	2	9,170	169	214	...	...	1	26	...	...	336	40	129	35,272
8. Nansemond River	620	...	179	...	...	1,772	58	...	1	914	3	501	...	3	...	43	...	...	65	7	123	36,879
9. Newport News	169	...	117	...	...	1,066	3	85	...	1,145	5	44	...	1	...	47	...	...	66	66	99	16,259
10. Mathews County	1,466	...	163	...	...	1,183	116	1	...	362	15	66	2,103	1	...	190	...	...	206	20	101	18,378
11. Williamsburg	661	...	341	...	1	3,142	64	75	...	7,613	...	112	...	1	...	136	...	...	117	23	102	26,156
12. Walkerton	921	...	255	...	...	8,896	47	1	...	844	...	28	52,000	3	...	37	...	...	111	19	97	85,437
13. Washingtons Birthplace	185	...	42	...	...	652	104	...	...	...	...	19	264	CW	...	13	...	...	79	9	93	19,944
14. Brooke	514	...	313	...	...	488	...	...	...	79	...	8	...	...	1	64	...	...	85	35	93	24,050
15. Fort Belvoir	1,675	...	959	...	...	1,966	6	51	1	4,311	...	145	302	...	2	233	...	...	413	341	111	81,524
16. Central Loudoun	982	...	612	...	...	205	4	...	...	431	...	38	127	...	6	104	...	1	249	178	87	28,353
17. Manassas-Bull Run	1,291	...	521	...	...	20	8	...	...	59	...	1	1	...	...	59	...	...	119	209	77	16,335
18. Nokesville	540	...	137	...	...	1,782	22	4	...	20,693	...	558	...	...	2	21	...	...	99	74	85	36,729
19. Chancellorsville	47	...	30	...	...	...	11	...	...	176	...	...	...	...	CW	7	...	...	22	CW	53	1,362
20. Lake Anna	216	...	38	...	...	...	...	4	...	22	...	1	...	...	...	16	...	...	62	1	75	5,177
21. Gordonsville	228	...	68	...	...	...	11	...	...	1	...	38	...	...	12	4	...	...	3	2	57	5,808
22. Charlottesville	310	...	259	...	...	4	...	1	...	18	...	2	...	...	1	64	...	...	154	35	67	6,077
23. Warren	537	...	177	...	...	1	36	...	...	...	...	...	...	...	11	83	...	...	39	20	70	9,595
24. Darlington Heights	477	...	169	...	...	7	181	...	...	225	...	8	...	...	5	96	...	...	35	4	70	6,498
25. Banister River WMAS	161	...	57	...	...	100	60	290	...	4	...	1	...	...	2	29	...	...	23	4	76	6,353
26. Lynchburg	335	...	268	...	...	...	...	...	...	10	...	5	...	...	12	158	...	...	176	13	67	3,055
27. Chatham	36	...	8	...	...	35	10	...	...	9	...	...	...	...	1	12	...	...	8	...	53	1,841
28. Danville	159	...	37	...	...	...	5	...	...	...	...	...	...	...	7	47	...	...	13	1	53	2,754
29. Calmes Neck	814	...	553	1	...	6	...	...	...	120	...	5	34	...	2	98	...	...	161	158	79	11,359
30. N. Shenandoah Valley	110	...	441	...	...	63	6	7	...	32	...	49	...	...	358	11	...	...	289	177	99	37,890
31. Shenandoah NP-Luray	311	...	146	...	...	...	20	1	...	...	...	2	...	...	3	80	...	...	59	95	71	6,055
32. Rockingham County	317	1	174	...	...	...	14	...	...	...	...	51	...	...	2	44	...	...	108	157	66	7,687
33. Augusta County	283	...	95	...	...	3	30	1	...	412	...	43	...	...	...	28	...	...	64	93	74	6,156
34. Waynesboro	447	...	199	...	...	1	12	...	...	3	...	1	...	...	1	125	1	...	174	57	69	6,002
35. Lexington	583	...	154	...	...	13	37	2	...	727	...	53	...	...	34	131	...	...	140	...	76	10,799
36. Peaks of Otter	51	...	13	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	9	...	33	428
37. Fincastle	225	...	155	...	...	1	3	...	...	300	...	...	...	...	36	80	...	...	55	12	67	9,568
38. Roanoke	85	...	91	...	...	...	...	...	...	...	...	...	...	...	...	67	...	...	28	6	52	2,612
39. Blacksburg	142	...	159	...	...	...	CW	...	...	...	...	...	...	...	4	54	...	...	140	43	55	2,756
40. Giles County	196	...	59	...	...	...	...	...	...	...	...	...	...	...	6	12	...	...	37	16	56	1,536
41. Tazewell	32	...	25	...	...	5	9	...	...	1	...	...	...	...	...	5	...	...	17	108	57	1,698
42. Mount Rogers-Whitotop	236	...	77	...	...	...	5	...	...	...	...	...	...	...	...	16	...	...	17	7	49	1,909
43. Glade Spring	52	...	126	...	...	...	4	...	...	...	...	...	...	...	...	18	...	...	67	52	59	5,326
44. Blackford	90	...	83	...	...	17	1	...	...	6	...	3	...	...	2	67	...	...	136	44	68	3,657
45. Bristol	88	...	138	...	...	...	6	...	...	...	...	...	...	...	CW	46	...	6	67	27	83	6,777
46. Buchanan County	51	...	51	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	48	8	35	637
47. Wise County	30	...	42	...	...	13	...	...	...	...	...	...	...	...	3	6	...	...	12	54	33	1,194
Total	16,649	7	8,316	1	1	42,438	1,537	579	4	57,414	611	3,137	56,954	11	523	2,673	1	28	4,574	2,333	200	763,311

Table 2: Field Data

	Number of Observers	Minimum number of parties	Maximum number of parties	Number of feeder observers	Hours at feeders	Hours owling	Miles owling	Hours on foot	Hours by car	Hours on skis	Hours by bicycle	Hours by motor boat	Hours by non-motor boat	Total party-hours	Miles on foot	Miles by car	Miles on skis	Miles by bicycle	Miles by motor boat	Miles by non-motor boat	Total party-miles
1. Chincoteague	21	10	10	...	...	2.00	3.00	41.00	37.00	...	...	...	...	78.00	113.00	221.00	...	...	...	...	334.00
2. Wachapreague	11	5	8	...	...	...	...	3.00	40.50	...	...	...	...	43.50	0.25	296.00	...	...	...	...	296.25
3. Nassawadox	18	8	8	...	...	1.00	3.00	31.00	28.00	...	...	...	...	59.00	16.00	221.00	...	...	...	...	237.00
4. Cape Charles	37	9	17	...	...	3.00	14.00	98.00	42.00	...	...	4.00	...	144.00	48.00	325.00	...	...	20.00	...	393.00
5. Chesapeake Bay	3	1	1	...	...	...	...	9.00	...	...	...	...	...	9.00	1.00	...	...	...	...	...	1.00
6. Little Creek	23	9	12	2	3.00	2.75	15.00	58.00	17.00	...	...	5.00	...	80.00	31.00	211.00	...	...	12.00	...	254.00
7. Back Bay	31	11	19	...	...	3.00	17.00	74.00	13.00	...	...	5.00	...	92.00	36.00	272.00	...	...	15.00	...	323.00
8. Nansemond River	25	11	11	...	...	1.50	6.00	49.50	44.75	...	...	...	1.50	95.75	26.50	475.50	...	...	...	...	503.00
9. Newport News	30	12	12	1	1.00	...	...	40.50	37.75	...	...	...	...	78.25	48.75	264.00	...	...	...	...	312.75
10. Mathews County	50	15	15	...	...	2.75	13.00	38.00	80.50	...	...	...	...	118.50	29.50	495.50	...	...	...	...	525.00
11. Williamsburg	42	9	9	5	11.00	1.25	2.00	55.50	40.75	...	5.00	0.50	...	101.75	31.75	239.25	...	3.00	2.00	...	276.00
12. Walkerton	32	3	11	...	...	4.00	16.00	36.00	60.50	...	...	...	...	96.50	22.00	429.00	...	...	...	...	451.00
13. Washingtons Birthplace	18	6	9	...	...	2.00	14.50	21.00	27.00	...	...	...	...	48.00	14.00	189.00	...	...	...	...	203.00
14. Brooke	33	10	14	...	...	...	...	52.25	49.75	...	...	...	...	102.00	32.00	226.50	...	...	...	...	258.50
15. Fort Belvoir	153	60	62	6	9.50	10.75	16.50	267.25	62.75	...	...	...	...	330.00	166.25	317.50	...	...	...	...	483.75
16. Central Loudoun	90	25	26	2	6.00	7.00	46.50	96.50	60.75	...	...	...	...	157.25	74.25	551.25	...	...	...	...	625.50
17. Manassas-Bull Run	46	21	21	2	14.00	...	...	76.25	30.00	...	...	...	...	106.25	51.75	243.50	...	...	...	...	295.25
18. Nokesville	22	5	8	...	...	...	...	26.00	36.50	...	...	...	...	62.50	17.50	372.50	...	...	...	...	390.00
19. Chancellorsville	7	3	3	...	...	1.50	2.00	14.50	8.25	...	...	...	...	22.75	9.50	161.00	...	...	...	...	170.50
20. Lake Anna	10	5	5	...	...	1.00	12.00	15.00	24.50	...	...	...	...	39.50	7.00	287.50	...	...	...	...	294.50
21. Gordonsville	9	5	5	...	...	...	...	6.00	24.00	...	...	...	...	30.00	4.50	346.50	...	...	...	...	351.00
22. Charlottesville	26	15	16	...	...	...	...	85.50	21.00	...	...	...	...	106.50	73.00	170.00	...	...	...	...	243.00
23. Warren	25	1	10	...	...	...	...	47.75	20.25	...	...	...	...	68.00	37.25	209.00	...	...	...	...	246.25
24. Darlington Heights	22	5	5	1	1.50	2.00	23.50	17.00	27.50	...	...	...	...	44.50	12.50	254.50	...	...	...	...	267.00
25. Banister River WMAs	5	5	5	1	4.00	3.25	7.00	20.25	12.75	...	...	...	...	33.00	12.75	171.00	...	...	...	...	183.75
26. Lynchburg	12	1	12	33	58.75	0.25	0.00	21.50	2.75	...	...	...	...	24.25	9.25	24.00	...	...	...	...	33.25
27. Chatham	7	5	5	1	2.00	...	...	2.00	13.00	...	...	...	...	15.00	2.00	72.00	...	...	...	...	74.00
28. Danville	11	6	6	2	0.50	...	...	11.00	16.00	...	...	...	...	27.00	18.00	114.00	...	...	...	...	132.00
29. Calmes Neck	37	19	19	5	8.00	4.50	2.00	36.75	71.00	...	...	...	...	107.75	22.00	582.00	...	...	...	...	604.00
30. N. Shenandoah Valley	37	15	19	...	...	5.00	21.00	40.50	87.75	...	...	...	...	146.25	33.00	780.50	...	...	...	...	838.00
31. Shenandoah NP-Luray	23	10	11	3	12.00	2.00	5.50	28.75	34.25	...	...	...	7.50	70.50	16.50	237.00	...	...	...	...	271.00
32. Rockingham County	21	1	7	3	3.00	...	...	9.50	33.50	...	...	...	...	43.00	3.50	303.50	...	...	...	...	307.00
33. Augusta County	10	5	5	2	3.00	2.00	2.50	3.00	55.00	...	...	...	...	58.00	4.00	275.00	...	...	...	...	279.00
34. Waynesboro	25	9	9	2	2.00	2.00	6.00	12.25	50.25	...	...	...	...	62.50	7.00	430.00	...	...	...	...	437.00
35. Lexington	25	2	15	3	4.75	1.00	5.00	34.75	20.50	...	...	...	...	55.25	34.00	102.00	...	...	...	...	136.00
36. Peaks of Otter	4	3	3	...	...	1.00	1.00	5.00	8.00	...	...	...	...	13.00	3.00	24.00	...	...	...	...	27.00
37. Fincastle	24	11	11	...	...	...	...	5.00	41.00	...	...	...	...	46.00	4.00	180.00	...	...	...	...	184.00
38. Roanoke	13	8	8	...	...	...	...	9.50	29.00	...	...	...	...	38.50	8.00	132.00	...	...	...	...	140.00
39. Blacksburg	15	10	10	20	49.75	...	...	21.00	10.00	0.75	...	...	...	31.75	19.00	19.00	0.75	...	...	...	38.75
40. Giles County	18	5	5	6	2.00	1.00	0.00	9.50	18.50	...	...	...	...	28.00	8.50	129.00	...	...	...	...	137.50
41. Tazewell	3	2	3	2	6.00	...	...	1.00	9.00	...	...	...	...	10.00	2.00	164.00	...	...	...	...	166.00
42. Mount Rogers-Whitetop	6	3	3	...	...	...	...	1.00	19.50	...	...	...	...	20.50	1.00	264.00	...	...	...	...	265.00
43. Glade Spring	18	6	6	...	...	2.75	28.50	19.50	33.25	...	...	...	...	52.75	10.00	394.50	...	...	...	...	404.50
44. Blackford	17	7	7	1	8.00	4.00	28.00	5.00	8.00	...	...	...	...	13.00	5.00	347.00	...	...	...	...	352.00
45. Bristol	23	6	6	...	...	3.25	36.00	26.00	28.00	...	...	...	...	54.00	10.00	314.00	...	...	...	...	324.00
46. Buchanan County	4	2	2	1	4.00	...	...	1.00	23.00	...	...	...	...	24.00	2.00	147.00	...	...	...	...	149.00
47. Wise County	5	4	4	4	12.00	...	...	7.00	4.00	...	...	...	...	11.00	3.00	29.00	...	...	...	...	32.00
Total	1147	409	498	108	225.75	77.50	346.50	1,589.25	1,462.00	0.75	5.00	14.50	27.00	3,098.50	1,140.75	12,012.50	0.75	3.00	49.00	43.00	13,249.00

Table 2: Field Data (continued)

	Date	Time count started	Time count ended	Low temperature (°F)	High temperature (°F)	Wind Direction	Wind speed (mph)	Snow depth	Water conditions	a.m. skies	p.m. skies	Primary compiler	Primary compiler's e-mail	Secondary compilers
1. Chincoteague	Dec 29	0600	1700	29	34	NW	15-40	...	WOP	PCD	PCD	Richard Roberts	bandbird@verizon.net	...
2. Wachapreague	Dec 19	0730	1630	28	35	NE	20-30	...	SPF, MWO	CLD, HVR	CLD, HVR	Ivin Alles	invailes@verizon.net	Marilyn Alles
3. Nassawadox	Dec 20	0600	1730	30	35	NW	20-25	1	SPF, MWO	PCD	CLR	Harry Armistead	harryarmistead@hotmail.com	...
4. Cape Charles	Dec 30	0600	1900	27	40	NE	5-15	...	SPF, MWO	CLD	PCD	Harry Armistead	harryarmistead@hotmail.com	Ned Brinkley
5. Chesapeake Bay	Dec 26	0700	1600	42	46	S	5	...	WOP	MCD	MCD	Ned Brinkley	phoebetria@aol.com	...
6. Little Creek	Dec 31	0500	1700	38	42	NE	0-5	...	WOP	CLD, LGR	FOG	Paul Sykes	paul_sykes@usgs.gov	...
7. Back Bay	Dec 29	0530	1730	28	40	N	5-30	...	WOP	CLR	CLR	Paul Sykes	paul_sykes@usgs.gov	...
8. Nansemond River	Jan 2	0500	1730	25	34	NW	20-35	...	SPF, MWO	PCD	CLR	Robert Ake	rake@cox.net	...
9. Newport News	Dec 19	0730	1600	30	45	UNK	5-30	...	SPO, MWO	PCD	PCD	Clark White	cwbirds@cox.net	...
10. Mathews County	Jan 3	0415	1700	18	34	NW	15-40	...	SPF, MPF	CLR	CLR	John Bazuin, Jr.	bazuin.john@epa.gov	...
11. Williamsburg	Dec 20	0645	1815	23	37	NW	15-25	0.5-4	WOP	CLD	PCD	Bill Williams	jwwil2@wm.edu	...
12. Walkerton	Jan 3	0530	1745	15	32	W	10-30	...	SPF, MPF	CLR	CLR	Frederick Atwood	fredatwood@yahoo.com	...
13. Washingtons Birthplace	Jan 2	0545	1745	26	30	NW	10-35	...	SPF, MWO	PCD	PCD	William Portlock	portlock@bealenet.com	...
14. Brooke	Dec 14	0645	1700	35	54	SE	0-12	...	WOP	FOG	PCD	Odetta James	o.bo.james@verizon.net	...
15. Fort Belvoir	Jan 3	0400	1830	17	24	NW	20-45	0-2	SFZ	PCD	CLD	Kurt Gaskill	kurtcap187@verizon.net	...
16. Central Loudoun	Dec 27	0500	1715	25	53	NR	0-6	0-8	SPO, MPF	FOG	CLR	Joseph Coleman	jocoleam@rcn.com	...
17. Manassas-Bull Run	Dec 26	0700	1700	38	47	UNK	6-18	3-15	SFZ, MWO	FOG, LGR	PCD	Robert Shipman	ships333@yahoo.com	...
18. Nokesville	Dec 27	0500	1730	23	47	NE	3-6	1-4	SPO, MPF	FOG	PCD	Kim Hosen	kim@pwcconserve.org	...
19. Chancellorsville	Dec 27	0500	1715	30	48	UNK	5	0-20	SFZ, MPF	FOG	CLR	Beverly Smith	catbirds@verizon.net	...
20. Lake Anna	Jan 3	0545	1645	14	34	SW	10-30	...	SFZ, MPF	CLR	PCD	Michael Boatwright	mboatr@att.net	...
21. Gordonsville	Jan 3	0700	1700	15	24	SE	3-10	6	SPF, MWO	CLR	CLR	Donald Ober	dober@wildblue.net	...
22. Charlottesville	Dec 27	0530	1700	28	49	SW	2	24-28	WOP	CLR	CLR	Jennifer Gaden	igaden@embarqmail.com	...
23. Warren	Jan 3	0645	1730	16	30	VAR	0-35	2-6	SPF, MWO	CLR	CLR	Allen Hale	super@butebooks.com	...
24. Darlington Heights	Jan 3	0500	1700	14	35	WNW	10-15	...	SPO, MWO	CLR	CLR	Carolyn Wells	cwells@kinex.net	...
25. Banister River WMAs	Dec 27	0500	1730	24	49	CLM	...	...	SPF, MWO	CLR	CLR	Jeffrey Bialock	jobabird@gronline.com	...
26. Lynchburg	Dec 19	0700	1700	16	30	N	0-29	6-13	SFZ, MPO	CLD, HSN	CLD, HSN	Rexanne Bruno	bruno@lynchburg.edu	...
27. Chatham	Dec 27	0800	1700	25	53	SW	3	3	SPF, MWO	PCD	PCD	Mary Foster	chathambirds08@hotmail.com	...
28. Danville	Dec 19	0800	1800	34	52	UNK	NR	...	WOP	CLR	CLR	Laura Meder	laura.meder@averett.edu	...
29. Calmes Neck	Jan 3	0530	1700	7	19	W	25-33	6-12	SFZ, MWO	CLR	CLR	Margaret Wester	margaretwester@hotmail.com	Charles Turner
30. N. Shenandoah Valley	Jan 2	0530	1800	22	26	NW	13-40	...	SFZ, MWO	PCD	PCD	Rob Simpson	anrob@snphotos.com	...
31. Shenandoah NP-Luray	Jan 3	0600	1900	15	27	NW	5-30	0-10	SFZ, MPF	CLR	PCD	Alan Williams	alan_williams@nps.gov	...
32. Rockingham County	Jan 5	0000	1700	18	31	N	0-13	1-4	SPO, MPF	CLD	PCD	William Benish	wbenish@verizon.net	...
33. Augusta County	Dec 27	0600	1900	19	40	SW	0-5	25	SPO, MWO	PCR	PCR	Allen Larner	larnersky@mindspring.com	...
34. Waynesboro	Jan 2	0730	1430	17	28	UNK	5-35	0-9	SFZ, MWO	CLR	CLR	Crista Cabe	ccabe@mbc.edu	...
35. Lexington	Dec 26	0630	1730	33	40	UNK	...	5-18	SPF, MWO	FOG	FOG	Dick Rowe	rowera@vmi.edu	...
36. Peaks of Otter	Jan 5	0600	1500	18	24	NW	10-20	9	SFZ, MWO	PCD	PCD	Barry Kinzie	peckerridge@ntelos.net	...
37. Fincastle	Jan 3	0700	1700	12	22	NW	10-30	6-12	SPO, MWO	PCD	PCD	Barry Kinzie	peckerridge@ntelos.net	...
38. Roanoke	Jan 2	0745	1600	19	23	NW	NR	8	SMF, MWO	PCD	PCD	Bill Hunley	wjhunley@cox.net	...
39. Blacksburg	Dec 19	0730	1715	24	32	NW	5-17	12-15	SFZ, MPF	CLD, HSN	PCR	Patricia Polentz	polentz@va.net	Bruce Grimes
40. Giles County	Jan 02	0600	1700	12	18	VAR	5-10	2-8	SFZ, MPF	CLD	PCD	Bill Opengari	gramby@pentel.net	...
41. Tazewell	Dec 27	0700	1730	21	35	NW	5-7	1-3	SFZ, MPF	PCD	PCD, LSN	Sarah Cromer	scromer@netscope.net	...
42. Mount Rogers-Whitetop	Jan 2	0830	1730	6	20	NW	10-30	0-4	SFZ, MPF	PCR, LSN	PCR, LSN	Allen Boynton	allenboynton@hughes.net	...
43. Glade Spring	Dec 29	0600	1745	26	32	W	5-10	...	SFZ, MWO	PCD, LSN	CLR	Ronald Harrington	ronenharrington@bvnunet.net	...
44. Blackford	Dec 26	0400	1800	18	34	CLM	...	1-14	WOP	CLR	PCD	Robert Riggs	bebirding@jetbroadband.com	Tom Hunter
45. Bristol	Dec 27	0730	1730	22	44	SW	0-15	...	SPO, MPF	CLR	CLD	Richard Lewis	mountainbirds@email.com	...
46. Buchanan County	Dec 31	0800	1600	33	36	UNK	5-15	0-8	SPF, MWO	CLD, LGR	CLD, LGR	Tom Hunter	opiehunter@yahoo.com	...
47. Wise County	Dec 19	0730	1600	19	25	NW	0-20	6-8	SFZ, MPF	CLD, HSN	CLD, HSN	Randy Stanley	randy_stanley@comcast.net	...

Table 3. Count Circles Information

Circle	Sponsors and Organization	Longitude-Latitude Coordinates	Circle center descriptions
1. Chincoteague	...	37°58'N 75°22'W	2 miles north of center of Chincoteague in Accomack Co.
2. Wachapreague	...	37°40'N 75°42'W	Jct. of Rts. 789 & 715 in Accomack Co.
3. Nassawadox	Coastal Virginia Wildlife Observatory	37°43'N 75°38'W	Rt. 13 half way between Nassawadox & Birdsnest, Northampton Co.
4. Cape Charles	...	37°12'N 75°56'W	1.5 miles southeast of Capeville Post Office in Northampton Co.
5. Chesapeake Bay	...	37°05'N 76°08'W	Northern 3 bridge-tunnel islands & adjacent waters out to 1 mile.
6. Little Creek	Cape Henry Audubon	36°51'N 76°06'W	3.8 miles northeast of Kempsville in Virginia Beach.
7. Back Bay	Cape Henry Audubon	36°39'N 76°00'W	1.5 miles east of Back Bay.
8. Nansemond River	...	36°52'N 76°26'W	Jct. of Rts. 17 & 626 in Pughsville, Suffolk.
9. Newport News	Hampton Roads Bird Club	37°05'N 76°25'W	Northern corner of Magruder & Cmdr. Shepard blvds. in Hampton.
10. Mathews County	...	37°25'N 76°18'W	0.5 mile east of Beaverlett Post Office in Mathews Co.
11. Williamsburg	Williamsburg Bird Club	37°17'N 76°42'W	Colonial Williamsburg Information Center in Williamsburg.
12. Walkerton	...	37°46'N 77°02'W	1.5 miles southwest of Walkerton Bridge, just west of Whitebank.
13. Washingtons Birthplace	...	37°46'N 77°02'W	Horners in Westmoreland Co.
14. Brooke	...	38°22'N 77°20'W	Center Road, 3 miles east southeast of Brooke in Stafford Co.
15. Fort Belvoir	...	38°41'N 77°12'W	Pohick Episcopal Church, Fort Belvoir, in eastern Fairfax Co.
16. Central Loudoun	Loudoun Wildlife Conservancy	39°06'N 77°38'W	Near Jct. of Rts. 704 & 769 in Loudoun Co.
17. Manassas-Bull Run	Audubon Society of Northern Virginia	38°50'N 77°26'W	Centreville in western Fairfax Co.
18. Nokesville	...	38°37'N 77°33'W	Fleetwood Dr. (Rt. 611) at Cedar Run in Prince William Co.
19. Chancellorsville	...	38°16'N 77°40'W	Chancellorsville Battlefield, 10 miles west of Fredericksburg.
20. Lake Anna	...	38°05'N 77°49'W	Center of bridge over Lake Anna on Rt. 208.
21. Gordonsville	...	38°09'N 78°12'W	Jct. of Rts. 15 and 33 north of the town of Gordonsville in Orange Co.
22. Charlottessville	...	38°04'N 78°34'W	Near Ivy in Albemarle Co.
23. Warren	Monticello Bird Club	37°51'N 78°33'W	Keene in Albemarle Co.
24. Darlington Heights	...	37°12'N 78°36'W	Jct. of Rts. 665 & 660 in Darlington Heights in Price Edward Co.
25. Banister River WMAs	...	36°43'N 78°48'W	Banister River Wildlife Management Areas in Halifax Co.
26. Lynchburg	Lynchburg Bird Club	37°24'N 79°11'W	Lynchburg College in Lynchburg.
27. Chatham	...	36°49'N 79°23'W	At front of the courthouse in Chatham Courthouse, Pittsylvania Co.
28. Danville	...	36°34'N 79°25'W	Ballou Park in Danville.
29. Calmes Neck	...	39°07'N 77°54'W	Castlemans Ferry Bridge on Rt. 7 over Shenandoah River in Clarke Co.
30. N. Shenandoah Valley	...	39°03'N 78°10'W	Jct. of Crooked Run & Rt. 606 in Frederick Co.
31. Shenandoah NP-Luray	...	38°35'N 78°28'W	Hersberger Hill near Stanley in Page Co.
32. Rockingham County	Rockingham County Bird Club	38°26'N 79°02'W	Ottobine in Rockingham Co.
33. Augusta County	Augusta Bird Club	38°12'N 78°59'W	Jct. of Rts. 780 & 781 in Augusta Co.
34. Waynesboro	...	37°59'N 78°57'W	Sherando at Jct. of Rts. 610 & 664 in Augusta Co.
35. Lexington	...	37°59'N 78°57'W	Big Spring Pond in Rockbridge Co.
36. Peaks of Otter	...	37°27'N 79°36'W	Peaks of Otter Visitor Center in Bedford Co.
37. Fincastle	Woodpecker Nature Center, Roanoke Valley Bird Club	37°31'N 79°52'W	North of Fincastle near Jct. of Rts. 220 & 679 in Botetourt Co.
38. Roanoke	Roanoke Valley Bird Club	37°18'N 79°56'W	Oakland Blvd. & Williamson Rd. in Roanoke.
39. Blacksburg	New River Valley Bird Club	37°12'N 80°28'W	Jct. Rt. 657 & Rt. 685 in Montgomery Co.
40. Giles County	...	37°19'N 80°38'W	Pembroke in Giles Co.
41. Tazewell	...	37°08'N 81°30'W	Fourway in Tazewell Co.
42. Mount Rogers-Whitelop	Blue Ridge Birders	36°39'N 81°35'W	Jct. of Rts. 600 & 603 in Smyth Co..
43. Glade Spring	...	36°47'N 81°47'W	Jct. of Rts. 750 & 609 in Glade Spring.
44. Blackford	...	37°00'N 81°55'W	Confluence of the Clinch & Little rivers in Russell Co.
45. Bristol	...	36°35'N 82°06'W	Jct. of Rts. 647 & 654, east of Bristol TN in Washington Co, VA.
46. Buchanan County	Buchanan County Bird Club	37°15'N 82°13'W	Jct. of Rts. 680 & 638 at Pilgrims Knob in Buchanan Co.
47. Wise County	...	36°57'N 82°39'W	Dorchester in Norton City.

The 2010 Central Piedmont Important Bird Area (IBA) Protected Areas Survey

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Introduction

The recently-designated Central Piedmont Important Bird Area (IBA), Virginia's largest and newest IBA, consists of farmlands, fallow fields and forests that provide a home for many threatened bird species. Centered in Buckingham County at the heart of Virginia's Piedmont, this IBA includes portions of Albemarle, Amherst, Appomattox, Cumberland, Fluvanna, Goochland, Nelson and Prince Edward Counties, as shown in Figure 1.

Some key species that utilize the habitats of this vast IBA include Prairie Warbler, Kentucky Warbler and Wood Thrush, all of which are listed as species of continental conservation concern (National Audubon Society, 2010b). This IBA is also known to host four of the ten species identified as the top ten common birds in decline: Northern Bobwhite, Eastern Meadowlark, Field Sparrow,

and Grasshopper Sparrow (Butcher, 2007). The Northern Bobwhite has also been classified as a species of global conservation concern due to its steady population decline (National Audubon Society, 2010a).

In order to raise awareness of the Central Piedmont IBA and to collect a base level of data for its bird species, the Virginia Important Bird Areas Program of the National Audubon Society conducted a citizen science-based survey in May of 2010. Due to the large size of the IBA (>302,000 hectares), this survey was limited to the IBA's protected areas, which are easily accessible and provide a variety of habitats for bird species to breed. The survey thus included nine protected areas owned by the Commonwealth of Virginia, including two State Forests, three State Parks and four State Wildlife Management Areas. Additionally, surveys were conducted at Albemarle County's Totter Creek Park and at Fulfillment Farms in Esmont, Virginia.

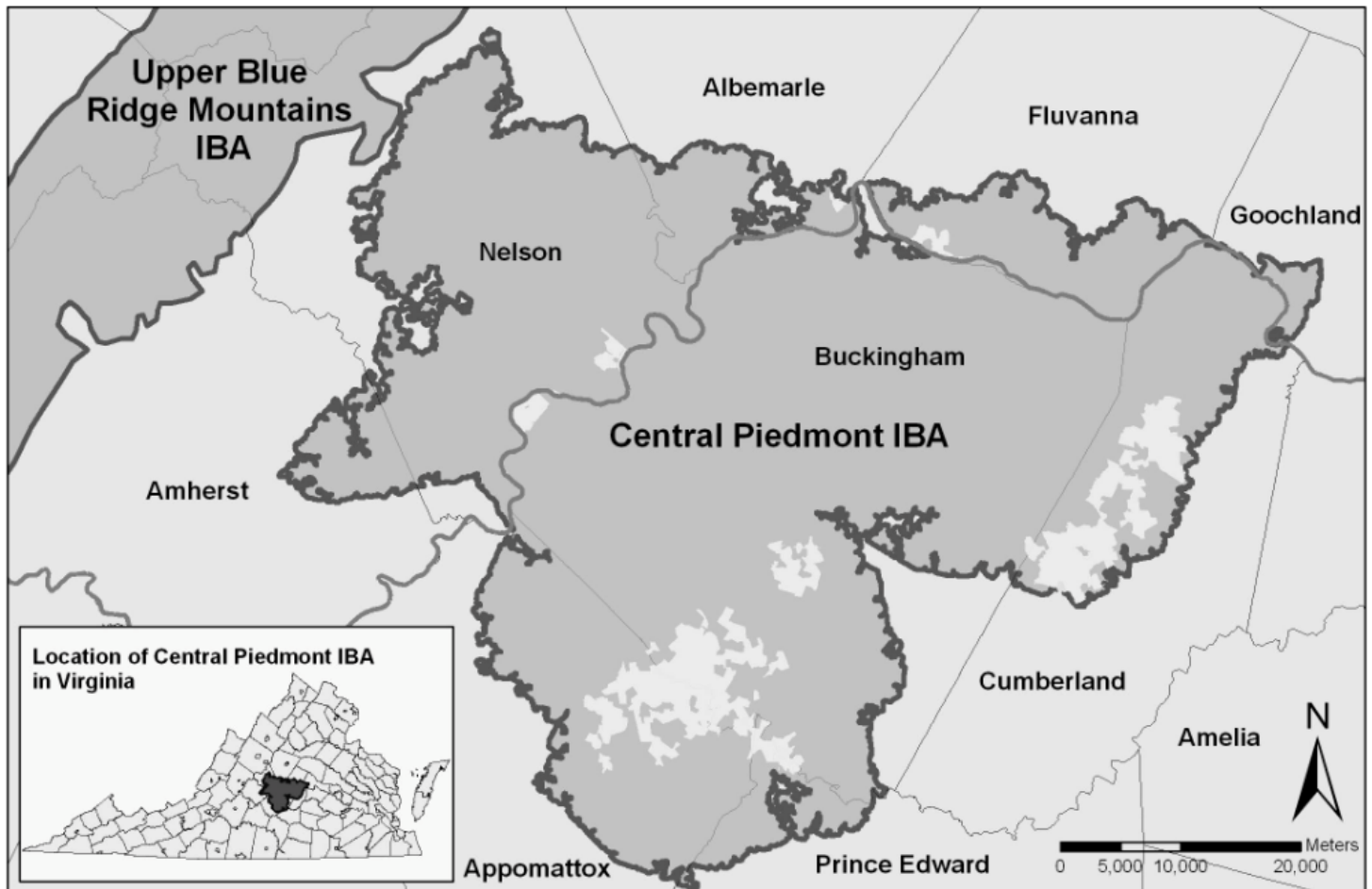


Figure 1. Map of the Central Piedmont Important Bird Area (IBA) and the localities it overlaps. The protected areas surveyed within the IBA are shown in light gray, with the exception of Fulfillment Farms.

Fulfillment Farms is a private land owned and protected by the Wildlife Foundation of Virginia; the property is accessible to the birding public by way of a free general use permit.

Methods

The Central Piedmont IBA survey was planned to take place from May 14-18, 2010. Weather conditions from May 14-16 were consistent with normal May weather for the region, with temperatures ranging from 16 to 31 degrees C. However, a series of frontal boundaries and accompanying storms caused rain, scattered thunderstorms and lower temperatures throughout the region from the evening of May 16 through May 19. Accordingly, the survey period was extended through Friday, May 21. Conditions from May 20-21 were similar to the first three days of the survey, except for the cooler temperatures ranging from 10 to 28 degrees C. A full survey of The Nature Conservancy's Fortune's Cove Preserve was not completed, despite the additional survey days. Twenty-three participants spent approximately 82.5 hours surveying 11 protected areas throughout the Central Piedmont IBA (Table 1, below).

Participants were assigned a protected area or portion thereof, encouraged to use a slow, steady birding pace in order to cover as much as possible of their survey territory's trails, and to pay special attention to habitats that might be a home to the survey's target species (Northern Bobwhite, Prairie Warbler, Kentucky Warbler, Louisiana Waterthrush, Wood Thrush, Field Sparrow, Grasshopper Sparrow and Eastern Meadowlark). Participants recorded all species seen or heard, their numbers, and evidence of breeding, such as courtship, fledglings and carrying of nest material, food or fecal sacs. Singing males were not included as breeding evidence, though in some cases it was evident that birds had set up defined breeding territories (e.g., multiple singing Red-eyed Vireos were observed at all 11 survey locations).

Results

A total of 112 species were detected during our survey of the Central Piedmont IBA's protected areas (see Appendix I, pp. 26-28). The three most common species were Red-eyed Vireo, with 372 individuals reported, Indigo Bunting, with 204, and Ovenbird, with 178. Red-eyed Vireo and Ovenbird were seen at all 11 surveyed protected areas, while Indigo Bunting was detected at all locations except Holliday Lake State Park. Rounding out the top ten most detected species were Tufted Titmouse, American Crow, Prairie Warbler, Blue-gray Gnatcatcher, Common Yellowthroat, Northern Cardinal and Common Grackle. In contrast to these, only one individual per species was recorded for 19 of the species.

Since the sizes of the 11 survey locations ranged from 93 hectares at Totier Creek Park to 7,906 hectares at the Appomattox-Buckingham State Forest (Mean = 1,772, SD = 2,745; see Table 1), observation times at the protected areas likewise varied, ranging from 3.5 hours at both Bear Creek Lake State Park and James River Wildlife Management Area to 16.25 hours at the Appomattox-Buckingham State Forest (Mean = 7.5, SD = 4.7; see Table 1). Following the example of Dolby (2007), an index of survey intensity was used to compare survey efforts throughout the IBA. Survey intensity, measured in hours birding per hectare of protected area, explained very little of the variation in species richness among the IBA's protected areas ($R^2 = 0.04$). Survey intensity was highest for Totier Creek Park and lowest for Cumberland State Forest, due largely to size considerations. In comparisons among the protected areas, the Featherfin Wildlife Management Area had the fewest number of species, with 39, while the Appomattox-Buckingham State Forest had the greatest number, with 67 (Table 1). The average number of species per protected area was 52.2 (SD = 10.2).

Approximately 92 of the 112 species detected by this survey are considered regular breeders within the Piedmont region of Virginia (Rottenborn & Brinkley, 2007). The survey confirmed breeding activity for 25 species, including four of special conservation concern: Prairie

Table 1. Field data collection summary.

Protected Area Name	Area (hectares)*	# Survey Parties (individuals)	Field Hrs.	# Species
Appomattox-Buckingham State Forest	7906	2 (2)	16.25	67
Bear Creek Lake State Park	132	1 (3)	3.50	42
Cumberland State Forest	6569	3 (6)	12.83	59
Featherfin Wildlife Management Area	1118	1 (2)	5.58	39
Fulfillment Farms	<809	1 (1)	3.67	45
Hardware River Wildlife Management Area	418	1 (3)	6.25	57
Holliday Lake State Park	101	1 (1)	7.00	46
Horsepen Lake Wildlife Management Area	1226	1 (2)	5.50	42
James River State Park	630	3 (6)	14.42	66
James River Wildlife Management Area	491	1 (1)	3.50	61
Totier Creek Park	93	1 (1)	4.00	50

* Protected area sizes were provided by the Virginia Department of Conservation and Recreation. The estimated size of Fulfillment Farms is based on information from the Fulfillment Farms website.

Warbler, Kentucky Warbler, Louisiana Waterthrush and Field Sparrow (see Appendix II, p. 29). Probable non-breeders, including vagrants or migrating warblers and shorebirds, are noted in Appendix I. Interesting sightings included four Blue-headed Vireos. Rottenborn & Brinkley (2007) list Blue-headed Vireo as an uncommon transient through Virginia's Piedmont from 10 April – 10 May; since these individuals were seen after 10 May, they may have been late migrants, or rare, local summer residents. Other rarities for the Piedmont included a probable Black-crowned Night-Heron, a Black-billed Cuckoo and a pair of American Woodcock at James River State Park; ten Red-headed Woodpeckers, including eight within the Appomattox-Buckingham State Forest; and one Alder Flycatcher, which was seen and heard (both song and call) at the James River Wildlife Management Area. In contrast to these detections of rarer birds, several common Piedmont species were not detected, including House Finch, Song Sparrow, Killdeer, Rock Pigeon and Great Horned Owl. Very low counts (<5) were also tabulated for common species such as House Sparrow, Barn Swallow, Eastern Screech-Owl and Barred Owl. Owls and nightjar species were probably not detected, or detected only in low numbers, due to the survey being conducted largely in daylight hours. Low or zero detections of common species, such as House Finch, House Sparrow and Rock Pigeon, may indicate that these invasive species prefer disturbed, human-populated areas in comparison to the protected areas that were surveyed. The 2007 State Parks Foray of the Virginia Society of Ornithology (VSO) also suggests this, as no House Finches, House Sparrows or Rock Pigeons were recorded within locations that overlap the Central Piedmont Important Bird Area (Dolby, 2007). Furthermore, this pattern appears to be historic, as breeding House Finches and Rock Pigeons were also largely absent from the Central Piedmont in the late 1980s (Trollinger and Reay, 2001).

With regard to target species of conservation concern, Prairie Warbler was the sixth-most abundant species overall, with 118 individuals detected. Other target species detected in good numbers included 49 Wood Thrush and 42 Field Sparrow. Only 15 Louisiana Waterthrush and 12 Kentucky Warbler were recorded, despite an abundance of proper habitat. However, we did find clear evidence that these species are still breeding within the IBA territory (see Appendix II). Lastly, we recorded less than 10 Northern Bobwhite and Grasshopper Sparrow, and Eastern Meadowlark was not seen. While these results are disappointing, we feel that these low totals may be a result of our survey methods. Future studies in the Central Piedmont IBA should include roadside surveys in order to cover the IBA's significant amount of early successional habitats, including fallow fields.

Discussion

The 2010 Central Piedmont IBA protected areas survey has provided valuable information as to the diversity and numbers of bird species throughout the region, inclusive of several threatened species of conservation priority. In particular, it seems that this IBA may be an important refuge within the Commonwealth for the Prairie Warbler, a species of continental conservation concern. Given that 118 Prairie Warblers were detected in the small proportion

of the IBA surveyed (<7%), and over 66,000 hectares of potential habitat were not surveyed, this IBA likely supports a continentally significant number of this threatened species. Accordingly, the National Audubon Society may eventually prioritize the Central Piedmont IBA as an IBA of continental significance based upon Prairie Warbler abundance, thus giving further credence to the importance of the central Virginia Piedmont for birdlife.

While this was the first comprehensive survey of the Central Piedmont IBA, several locations within it have been surveyed in the past. The Virginia Society of Ornithology's State Parks Foray in 2007 included Bear Creek Lake, Holliday Lake and James River State Parks (Dolby, 2007). Of those three State Parks, the most appropriate one for comparing the two surveys is Holliday Lake State Park, where the two survey efforts were quite similar: in the 2007 VSO Foray, one volunteer identified 50 species in 8 hours; in the 2010 survey, one volunteer identified 46 species in 7 hours. When comparing species diversity across the years, it is interesting to note that 11 of the species identified in the 2010 survey were not seen or heard in the 2007 Foray. Many of these species were May migrants that likely were not detected in 2007 due to the Foray's timing in June. On the other hand, 15 species seen or heard during the 2007 VSO Foray were not detected during this survey. In fact, while looking at the 50 species detected in 2007, there was an average decline of 3.7 individuals per species (SD = 3.9) from 2007 to 2010, with the steepest declines for Wood Thrush (16) and Red-eyed Vireo (16). However, because it took place less than 10 years ago, the 2007 VSO Foray cannot serve as a benchmark for a historic comparison at this time. Also, this comparison is limited to two, closely-spaced surveys in which there were slight differences in effort and timing. Thus, the results of this comparison cannot be construed as valid evidence of declines of concern at Holliday Lake State Park or elsewhere. Future studies might clarify whether the 2007-2010 difference in species abundance was due to differences in timing, methodology and/or short-term variation in species abundance or, instead, to long-term declines.

Despite its overall success, the 2010 survey could have been improved in several ways. A few target species, especially Northern Bobwhite, Grasshopper Sparrow and Eastern Meadowlark, were detected in very low numbers despite an abundance of appropriate habitat within the IBA. Unfortunately, despite the variety of habitats within the Central Piedmont's surveyed protected areas, these locations did not contain large tracts of grasslands, shrublands and scrub necessary for the species mentioned. Future surveys of the IBA should be more specific as to the habitat requirements of early successional target species. In particular, we would encourage future surveys of the Virginia Piedmont to include a road birding element with early morning roadside point counts. As a token of probable success in the future, a few of the participants chose to do some of their own road birding within the IBA on the way to or from their assigned protected areas and, over the small areas they birded, they were able to detect 40 Eastern Meadowlark and 17 Grasshopper Sparrows. These reports indicate that these species are definitely present within the IBA, but we must use different survey techniques in order

to detect them and adequately estimate their numbers.

In addition to refining survey type, it may be helpful to include a more structured protocol. This survey was specifically designed after the model of Christmas Bird Counts in order for the IBA Program to learn as much as possible about the Central Piedmont IBA's bird species and numbers. However, as Audubon and other organizations or agencies aim to increase their knowledge of the Central Piedmont IBA, most especially regarding trends in population change for priority bird species, it will be important for surveys to include a repeatable structure such that data can be compared over the years to come. While our primary interest in the Piedmont is not comparative, a structured protocol would also allow us to compare species diversity from protected area to protected area, or to other IBA locations throughout the Commonwealth. Finally, it is recommended that future surveys should be conducted in early June as to minimize detections of non-breeding migrants and maximize concentration on Virginia's breeding bird species.

A decade into the twenty-first century, many grassland and early successional species continue to decline in abundance throughout their ranges. Nonetheless, areas such as the Central Piedmont IBA still provide vital habitat strongholds for these species, including Northern Bobwhite, Prairie Warbler, Field Sparrow, Grasshopper Sparrow and Eastern Meadowlark. The Piedmont's forests also provide crucial breeding locations for other species of conservation concern, such as Kentucky Warbler, Louisiana Waterthrush and Wood Thrush. This survey has enabled the Virginia Important Bird Areas Program to gain a better understanding of bird diversity and numbers throughout the region, with the IBA's protected areas serving as a sample of habitats throughout the IBA. Going forward, the results of this survey may result in the eventual official designation of this local IBA as a continentally significant one. Regardless, as the Piedmont's bird species face continually increasing threats, it is important that conservation organizations and agencies continue to monitor the birds of this IBA in addition to sponsoring efforts that may restore, sustain and preserve the Virginia Piedmont's vital habitats.

Acknowledgements

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Resources Cited

Butcher, G. 2007. Common Birds in Decline. National Audubon Society. Retrieved from <http://stateofthebirds.audubon.org/cbid/magazine.php>

Dolby, A.S. 2007. The 2007 State Park Breeding Bird Foray. *The Raven* 78:27-56.

National Audubon Society. 2010a. A1: Threatened Species. National Audubon Society. Retrieved from <http://www.audubon.org/bird/iba/A1.html>

National Audubon Society. 2010b. B1 - Threatened Species. National Audubon Society. Retrieved from <http://www.audubon.org/bird/iba/B1.html>

Rottenborn, S.C., and Brinkley, E.S. 2007. Virginia's Birdlife: An Annotated Checklist, Fourth Edition.

Trollinger, J.B., and Reay, K.K. 2001. Breeding bird atlas of Virginia, 1985-1989. Virginia Department of Game and Inland Fisheries.

APPENDIX I: Species Count by Area (continues on following two pages)

SPECIES	AREA: Appomattox- Buckingham State Forest	Bear Creek Lake State Park	Cumberland State Forest	Featherfin Wildlife Management Area	Fulfillment Farms	Hardware River Wildlife Management Area	Holliday Lake State Park	Horsepen Lake Wildlife Management Area	James River State Park	James River Wildlife Management Area	Totter Creek Park	Total Survey Count
Canada Goose	--	--	1	--	--	9	--	--	7	4	--	21
Wood Duck	--	4	1	--	--	4	--	--	1	4	7	21
Mallard	--	--	--	--	--	--	1	--	--	--	--	1
Wild Turkey	2	--	--	--	--	--	--	1	--	--	--	3
Northern Bobwhite*	--	--	--	4	1	--	--	--	4	--	--	9
Great Blue Heron	1	1	--	--	--	--	--	--	--	1	1	4
Green Heron	--	--	1	--	--	2	--	--	--	1	--	4
Black-crowned Night-Heron	--	--	--	--	--	--	--	--	1	--	--	1
Black Vulture	--	--	1	2	--	1	--	--	1	--	3	8
Turkey Vulture	15	--	6	8	4	6	3	7	5	8	5	67
Osprey**	1	--	--	--	--	--	--	--	--	--	--	1
Bald Eagle	--	--	--	--	--	1	--	--	--	--	1	2
Cooper's Hawk	1	--	--	--	--	1	--	--	--	--	--	2
Red-shouldered Hawk	1	--	1	3	1	2	--	1	--	2	--	11
Broad-winged Hawk	1	--	--	--	--	--	--	--	--	--	--	1
Red-tailed Hawk	--	--	--	1	--	--	--	--	--	1	--	2
American Kestrel	--	--	--	--	--	--	--	--	1	--	--	1
Spotted Sandpiper**	--	--	--	--	--	--	3	--	--	--	--	3
Greater Yellowlegs**	--	--	--	--	--	--	--	--	--	2	--	2
Lesser Yellowlegs**	--	--	--	--	--	--	--	--	--	1	--	1
American Woodcock	--	--	--	--	--	--	--	--	2	--	--	2
Mourning Dove	10	--	4	--	2	--	--	2	1	14	1	34
Yellow-billed Cuckoo	20	3	24	--	3	5	1	1	10	3	6	76
Black-billed Cuckoo	--	--	--	--	--	--	--	--	1	--	--	1
Eastern Screech-Owl	2	--	--	--	--	--	--	--	--	--	--	2
Barred Owl	4	--	--	--	--	--	--	--	--	--	--	4
Whip-poor-will	--	--	--	--	--	--	--	--	2	--	--	2
Chimney Swift	--	--	--	8	--	--	--	1	--	4	--	13
Ruby-throated Hummingbird	1	--	--	1	1	3	1	--	--	1	6	14
Belted Kingfisher	2	--	--	--	--	--	1	--	1	1	1	6
Red-headed Woodpecker	8	--	1	--	--	--	--	--	--	1	--	10
Red-bellied Woodpecker	4	3	13	3	1	3	1	--	13	--	3	44
Downy Woodpecker	3	1	5	--	--	3	--	--	2	2	1	17
Hairy Woodpecker	1	1	--	--	1	2	--	1	--	1	1	8
Northern Flicker	6	--	2	--	1	--	--	1	3	--	--	13
Pileated Woodpecker	8	1	6	4	--	1	--	3	11	2	4	40
Eastern Wood-Pewee	11	1	31	1	2	7	1	4	14	2	4	78
Acadian Flycatcher	9	1	28	3	--	4	1	2	7	2	3	60

APPENDIX I: Species Count By Area (continued)

[illegible]

APPENDIX I: Species Count By Area (continued)												
SPECIES	AREA: Appomattox- Buckingham State Forest	Bear Creek Lake State Park	Cumberland State Forest	Featherfin Wildlife Management Area	Fulfillment Farms	Hardware River Wildlife Management Area	Holliday Lake State Park	Horsepen Lake Wildlife Management Area	James River State Park	James River Wildlife Management Area	Totter Creek Park	Total Survey Count
Yellow-rumped Warbler**	--	1	--	--	--	--	--	--	--	--	--	1
Black-throated Green Warbler**	--	--	--	--	1	--	--	--	--	--	1	2
Yellow-throated Warbler	--	1	1	--	--	--	1	1	--	--	2	6
Pine Warbler	22	1	28	--	2	1	1	5	15	--	--	75
Prairie Warbler*	28	--	22	10	9	12	1	5	6	24	1	118
Palm Warbler**	--	--	--	--	--	--	--	--	1	--	--	1
Bay-breasted Warbler**	--	--	1	--	--	--	--	--	--	--	--	1
Blackpoll Warbler**	1	1	11	1	--	45	1	1	5	5	--	71
Black-and-white Warbler	12	1	17	--	--	3	1	--	1	--	4	39
American Redstart	--	--	--	--	2	1	1	--	2	1	1	8
Prothonotary Warbler	--	2	2	--	--	--	--	--	--	--	--	4
Worm-eating Warbler	2	--	--	--	--	5	2	--	2	1	2	14
Ovenbird	56	7	89	4	1	4	1	8	2	1	5	178
Northern Waterthrush**	--	--	--	--	--	--	--	--	--	1	--	1
Louisiana Waterthrush*	3	1	5	--	1	2	2	--	1	--	--	15
Kentucky Warbler*	4	--	7	--	--	--	--	--	1	--	--	12
Common Yellowthroat	7	3	20	5	10	9	--	1	15	27	3	100
Hooded Warbler	29	3	30	--	1	2	1	--	--	1	2	69
Canada Warbler**	--	--	--	--	--	--	--	--	1	--	--	1
Yellow-breasted Chat	11	--	7	9	3	3	--	1	7	23	--	64
Summer Tanager	4	1	6	--	--	--	1	--	3	--	1	16
Scarlet Tanager	12	3	21	1	3	2	1	--	7	2	5	57
Eastern Towhee	23	--	14	3	1	2	1	2	3	3		52
Chipping Sparrow	20	1	2	3	3	--	1	1	5	1	3	40
Field Sparrow*	9	--	6	12	4	--	--	1	4	6	--	42
Grasshopper Sparrow*	3	--	--	--	--	--	--	--	--	--	--	3
Northern Cardinal	20	2	11	10	4	9	2	1	25	4	3	91
Blue Grosbeak	--	--	--	--	3	--	2	--	5	8	1	19
Indigo Bunting	25	3	17	34	10	15	--	4	31	45	20	204
Red-winged Blackbird	--	1	--	--	--	1	--	--	8	12	--	22
Common Grackle	2	--	--	--	--	4	6	--	--	75	--	87
Brown-headed Cowbird	4	--	11	1	--	5	1	2	4	5	3	36
Orchard Oriole	--	--	--	--	--	4	--	--	--	6	--	10
Baltimore Oriole**	--	--	--	--	--	3	--	--	--	--	1	4
American Goldfinch	9	1	7	5	4	8	--	2	7	6	7	56
House Sparrow	--	--	1	--	--	--	--	--	--	--	--	1
Total Species	67	42	59	39	45	57	46	42	66	61	50	112

* Target species for this survey.

** Probable non-breeders; includes both migrants and vagrants.

APPENDIX II: Breeding evidence for 25 Central Piedmont IBA species*

AREA:	Appomattox-Buckingham State Forest	Bear Creek Lake State Park	Cumberland State Forest	Featherfin Wildlife Management Area	Fulfillment Farms	Hardware River Wildlife Management Area	Holiday Lake State Park	Horsepen Lake Wildlife Management Area	James River State Park	James River Wildlife Management Area
SPECIES										
Canada Goose									pair	
Wood Duck		pairs (2)				pair				pairs (2)
Green Heron						pair				
Red-shouldered Hawk						c.f.				
American Woodcock									pair	
Ruby-throated Hummingbird	n.b.									
Eastern Kingbird	c.f.									
Red-eyed Vireo								c.n.m.		
Carolina Wren			pair							
Blue-gray Gnatcatcher	c.f.				pair	court.			pair	
Northern Mockingbird					pair					
Prairie Warbler					pairs (2)					
Ovenbird			pairs (2)							
Louisiana Waterthrush	fledg.		c.f.				c.f.			
Kentucky Warbler	pair		pair							
Common Yellowthroat										pair
Yellow-breasted Chat								display		
Summer Tanager			pair						pair	
Scarlet Tanager			pair, c.f.							
Field Sparrow					pair					pair
Northern Cardinal		pair		pair					pairs (2)	
Blue Grosbeak									pair	
Indigo Bunting		pair	pairs (2)	pairs (4)					pair, m.f.f.	
Common Grackle						nesting				
American Goldfinch				pairs (2)					pair	

*ABBREVIATIONS: **c.f.** = carrying food; **c.n.m.** = carrying nesting material; **court.** = courtship; **fledg.** = fledgling(s); **m.f.f.** = males fighting for female; **n.b.** = nest building. Singing males were not included as breeding evidence, though in some cases it was evident that birds had set up defined breeding territories (e.g., multiple singing Red-eyed Vireos were observed at all 11 survey locations).

ANNUAL REPORT OF THE VIRGINIA AVIAN RECORDS COMMITTEE

AMY K. GILMER
VARCOM Secretary

The 2009 Virginia Avian Records Committee (VARCOM) included Robert Ake (Chair), Alan Schreck, Bill Williams, David Clark, Todd Day, Matt Hafner, Adam D'Onofrio, and Tom Saunders.

The following decisions were made by the Virginia Avian Records Committee during calendar year 2009. Accepted records fall into one of the following Categories, as specified in VSO bylaws:

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

Category 2. Sight records without physical evidence, but for which there is written documentation from one or more observers accepted by VARCOM. This Category currently includes 23 species: Garganey, Barrow's Goldeneye, Yellow-nosed Albatross, Fea's Petrel, Short-tailed Shearwater, Neotropic Cormorant, Greater Flamingo, Reddish Egret, White-tailed Kite, Western Marsh Harrier, Red-necked Stint, Eurasian Woodcock, Black Guillemot, Black-billed Magpie, Bell's Vireo, Boreal Chickadee, Sprague's Pipit, Bohemian Waxwing, Sage Thrasher, Townsend's Warbler, Spotted Towhee, Black-throated Sparrow, and Shiny Cowbird. **Several of these species have reportedly been photographed in Virginia; VARCOM would very much appreciate help in locating photographs or specimens of Category 2 species.** (Green-tailed Towhee has now been photographed in Virginia, but VARCOM would also appreciate receiving documentation and/or photographs of twentieth-century records in the state.)

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

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

documentation is known.

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

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

The following codes are used in the accounts:

† = written documentation

ph. = photograph

vr. = voice recording

vt. = videotape

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

Accepted Records

CALLIOPE HUMMINGBIRD (*Stellula calliope*), 1 individual, Virginia Beach, Nov 4-7 and Nov 17, 2007 [Shelly Polimine], Category 1 (†, ph.), 1st state record.

WESTERN GREBE (*Aechmophorus occidentalis*), 1 individual, confluence of Little Hunting Creek and the Potomac River, Fairfax County, Dec 5, 2005 [Carolyn Williams, Gary Filerman, George Lea, Steve Shaffer, and Leslie Vandivere], Category 2 (†), 5th Coastal Plain since Jan 2004 Review List.

TRICOLORED HERON (*Egretta tricolor*), 1 individual, Staunton River SP, Halifax County, Aug 13, 2006, [Jeff Blalock], Category 2 (†), 1st Piedmont since Jan 2004 Review List.

BROWN BOOBY (*Sula leucogaster*), 1 individual, First Landing SP, Virginia Beach, Aug 8, 2006 [Matt Hafner], Category 1 (†, ph.), 1st state record since Jan 2004 Review List.

GREATER WHITE-FRONTED GOOSE (*Anser albifrons*), 6 individuals, Elk Garden, Russell County, Jan 5-6, 2007 [Bob Riggs], Category 1 (†, ph.), 6th Mountains and Valleys since Jan 2004 Review List.

SCISSOR-TAILED FLYCATCHER (*Tyrannus forficatus*), 1 individual, Yaros Farms, Northampton County, Apr 25, 2006 [Ned Brinkley], Category 1 (†, ph.), 3rd Coastal Plain since the Jan 2004 Review List.

EURASIAN COLLARED DOVE (*Streptopelia decaocto*), 1 individual, Lebanon, Russell County, Apr 20, 2007 [Bob

Riggs], Category 2 (+), 2nd Piedmont since Jan 2004 Review List.

RUFF (REEVE) (*Philomachus pugnax*), 1 individual, Craney Island, Portsmouth, May 17, 2007 [Bill Williams], Category 2 (+), 2nd Coastal Plain since Jan 2004 Review List.

EURASIAN COLLARED DOVE (*Streptopelia decaocto*), 2 individuals, Sangerville, Augusta County, May 20, 2007 [Brenda Tekin, Andrew Clem, Yulee Larner], Category 1 (+, ph.), 3rd Mountains and Valleys since Jan 2004 Review List.

BLACK-BELLIED WHISTLING DUCK (*Dendrocygna autumnalis*), 2 individuals, Pinewood Lake, Alexandria, June 6, 2007 [Mark Moran], Category 1 (+, ph.), 1st Piedmont record since Jan 2004 Review List.

PAINTED BUNTING (*Passerina ciris*), 1 individual, Loudoun County, mid January – February 25, 2007 [Anne, Matt and Walker Buckman], Category 1 (+, ph.), 1st Piedmont record since Jan 2004 Review List.

MAGNIFICENT FRIGATEBIRD (*Fregata magnificens*), 1 individual, False Cape State Park, Virginia Beach, June 5, 2007 [Tom Griffith, Chuck Butler, Jon Kirkpatrick, and Jordan Sellers], Category 2 (+), 2nd Coastal Plain since Jan 2004 Review List.

BLACK-NECKED STILT (*Himantopus mexicanus*), 1 individual, Shirley Plantation, Charles City County, May 26, 2007 [Arun K. Bose], Category 2 (+), 3rd Coastal Plain since Jan 2004 Review List.

SANDHILL CRANE (*Grus Canadensis*), 1 individual, Compton Mountain, Buchanan County, June 22, 2007 [Roger and Lynda Mayhorn], Category 1 (+, ph.), 6th Mountains and Valleys since Jan 2004 Review List.

POMARINE JAEGER (*Stercorarius pomarinus*), 1 individual, Mountain Lake, Franklin County, June 18, 19, & 22, 2007 [George R. Wheaton and Cheryl A. Wheaton], Category 2 (+), 3rd Piedmont since Jan 2004 Review List.

SURF SCOTER (*Melanitta perspicillata*), 1 individual, Albemarle County, April 18, 2007 [Stauffer and Elinor Miller, Mo Stevens, Jenny Gaden], Category 1 (+, ph.), 3rd Piedmont record since Jan 2004 Review List.

WHITE IBIS (*Eudocimus albus*), 2 individuals, Buckingham County, July 20, 2007 [David Spears], Category 2 (+), 4th Piedmont record since Jan 2004 Review List.

WHITE IBIS (*Eudocimus albus*), 2 individuals, Loudoun County, July 18, 2007 [Joe Coleman], Category 2 (+), 5th Piedmont record since Jan 2004 Review List.

RED-CKADEED WOODPECKER (*Picoides borealis*), 1 individual, Fairfax County, July 21, 2007 [Paul Lavrakas], Category 1 (+, ph.), 1st Piedmont record since Jan 2004 Review List.

WHITE IBIS (*Eudocimus albus*), 3 individuals, Dinwiddie County, August 8-9, 2007 [Adam D'Onofrio and Tina Trice], Category 1 (+, ph.), 5th Piedmont record since Jan 2004 Review List.

AMERICAN AVOCET (*Recurvirostra americana*), 1 individual, Surry County, August 18, 2007 [Adam D'Onofrio and Tina Trice], Category 1 (+, ph.), 3rd Coastal

Plain west of the Bay since the Jan 2004 Review List.

SNOWY EGRET (*Egretta thula*), 1 individual, Mecklenburg County, September 3, 2007 [Adam D'Onofrio, Tina Trice, and Fenton Day], Category 1 (+, ph.), 1st Piedmont record since Jan 2004 Review List.

MARBLED GODWIT (*Limosa fedoa*), 2 individuals, Surry County, August 18, 2007 [Adam D'Onofrio], Category 1 (+, ph.), 1st Coastal Plain record since Jan 2004 Review List.

HUDSONIAN GODWIT (*Limosa haemastica*), 1 individual, Surry County, August 18, 2007 [Adam D'Onofrio], Category 1 (+, ph.), 1st Coastal Plain record since Jan 2004 Review List.

RUDDY TURNSTONE (*Arenaria interpres*), 3 individuals, Mecklenburg County, September 2, 2007 [Adam D'Onofrio, Tina Trice and Fenton Day], Category 1 (+, ph.), 4th Piedmont record since Jan 2004 Review List.

LARK SPARROW (*Chondestes grammacus*), 1 individual, Albemarle County, August 4, 2007 [Mark Adams], Category 2 (+), 1st Piedmont record since Jan 2004 Review List.

VARIED THRUSH (*Ixoreus naevius*), 1 individual, Rappahannock County, November 8, 2007 [Andrew M. Platt], Category 2 (+), 3rd state record since Jan 2004 Review List.

TOWNSEND'S SOLITAIRE (*Myodestes townsendi*), 1 individual, Botetourt and Bedford Counties, November 19, 2007 [Matt Hafner], Category 1 (+, ph.), 1st state record since Jan 2004 Review List.

FORK-TAILED FLYCATCHER (*Tyrannus savanna*), 1 individual, Rockbridge County, November 12, 2007 [John Pancake and Ann Olson], Category 1 (+, ph.), 1st Mountains and Valleys since Jan 2004 Review List.

CAVE SWALLOW (*Petrochelidon fulva*), 1 individual, Gloucester County, December 17, 2007 [David Hewitt and Eugene Bureson], Category 1 (+, ph.), 10th Coastal Plain record since Jan 2004 Review List.

ROSS'S GOOSE (*Chen rossii*), 1 individual, Henrico County, December 22, 2007 [Adam D'Onofrio and Tina Trice], Category 2 (+), 7th Coastal Plain since Jan 2004 Review List.

MARBLED GODWIT (*Limosa fedoa*), 1 individual, Albemarle County, August 6, 2007 [Stauffer Miller], Category 1 (+, ph.), 1st Piedmont record since Jan 2004 Review List.

ANHINGA (*Anhinga anhinga*), 1 individual, Newport News, July 25, 2007 to September 3, 2007 [Nick Flanders, Jane Frigo, and Stephen Living], Category 1 (+, ph.), 1st Coastal Plain record since Jan 2004 Review List.

PAINTED BUNTING (*Passerina ciris*), 1 individual, Augusta County, December 10, 23, 24, 26, 2007 [Allen Larner and William Leigh], Category 1 (+, ph.), 2nd Mountains and Valleys since Jan 2004 Review List.

ROSS'S GOOSE (*Chen rossii*), 1 individual, Washington County, December 31, 2007 [Rack Cross], Category 1 (+, ph.), 7th Mountains and Valleys since Jan 2004 Review List.

SCISSOR-TAILED FLYCATCHER (*Tyrannus forficatus*) 1 individual, Buchanan County, July 5, 2007 [Jack Brown], Category 2 (+), 4th Coastal Plain record since Jan 2004 Review List.

WHIMBREL (*Numenius phaeopus*) 1 individual, Hog Island WMA, Surry County, October 27, 2007 [Adam D'Onofrio], Category 2 (+), 4th Coastal Plain record west of the Bay since Jan 2004 Review List.

KIRTLAND'S WARBLER (*Dendroica kirtlandii*) 1 individual, Grayson County, September 25, 2007 [Anita Huffman], Category 2 (+), 2nd Mountains and Valleys record since Jan 2004 Review List.

LAUGHING GULL (*Larus atricilla*) 6 individuals, Staunton River State Park, Halifax County, December 16, 2007 [Adam D'Onofrio], Category 2, (+), 1st Piedmont south of Interstate 64 since Jan 2004 Review List.

WHITE IBIS (*Eudocimus albus*) 1 individual, Bath County, August 12, 2007 [Tina Kemper], Category 2 (+), 1st Mountains and Valleys record since Jan 2004 Review List.

WHITE-WINGED SCOTER (*Melanitta fusca*) 1 individual, Roanoke County, February 2, 2008 [Mike Purdy], Category 1 (+, ph.), 1st Mountains and Valleys since Jan 2004 Review List.

BARNACLE GOOSE (*Branta leucopsis*) 1 individual, Rockbridge County, March 9, 2008 [Dick and Lucy Rowe], Category 3a (+, ph.), 4th Mountains and Valleys since Jan 2004 Review List.

BLACK-CHINNED HUMMINGBIRD (*Archilochus alexandri*) 1 individual, Bedford County, December 8, 2007 [Bruce Peterjohn], Category 1 (+, ph.), 1st Piedmont record since Jan 2004 Review List.

PACIFIC LOON (*Gavia pacifica*) 1 individual, Kerr Reservoir, Mecklenburg County, December 25, 2007- March 15, 2008 [Adam D'Onofrio], Category 1 (+, ph.), 5th Piedmont record since Jan 2004 Review List.

RED-THROATED LOON (*Gavia stellata*) 2 individuals, Kerr Reservoir, Mecklenburg County, February 23, 2008 - March 15, 2008 [Adam D'Onofrio], Category 2, (+), 4th Piedmont south of Interstate 64 since Jan 2004 Review List.

LESSER BLACK-BACKED GULL (*Larus fuscus*) 1 individuals, Kerr Reservoir, Mecklenburg County, January 12, 2008 - February 23, 2008 [Adam D'Onofrio], Category 1 (+, ph.), 2nd Piedmont record since Jan 2004 Review List.

WHITE-WINGED SCOTER (*Melanitta fusca*) 3 individuals, Kerr Reservoir, Mecklenburg County, December 25, 2007- March 15, 2008 [Adam D'Onofrio], Category 1 (+, ph.), 2nd Piedmont record since Jan 2004 Review List.

SURF SCOTER (*Melanitta perspicillata*) 3 individuals, Kerr Reservoir, Mecklenburg County, December 25, 2007- March 15, 2008 [Adam D'Onofrio], Category 1 (+, ph.), 4th Piedmont record since Jan 2004 Review List.

ANHINGA (*Anhinga anhinga*) 2 individual, Northumberland County, May 1-2, 2008, [Richard Davis],

Category 1 (+, ph.), 2nd Coastal Plain record north of the James and west of the Bay since Jan 2004 Review List.

GREAT EGRET – subspecies unknown (*Ardea alba*) 1 individual, Chincoteague, June 24-26 2008, [William Leigh], Category 1 (+, ph.), as *Ardea alba* only, 1st Coastal Plain record since Jan 2004 Review List.

SANDHILL CRANE (*Grus Canadensis*) 5 individuals, Loudoun County, December 16, 2007 [Scott Baron, Robert Klarquist, and John Williamson], Category 1 (+, ph.), 6th Piedmont record since Jan 2004 Review List.

REDDISH EGRET (*Egretta rufescens*) 1 individual, Craney Island Disposal Area, Portsmouth, July 22, 2008, [Bill Williams, Shirley Devan, Alex Minarik and Seig and Alice Kopinitz], Category 1 (+, ph.), 1st Coastal Plain record since Jan 2004 Review List.

SABINE'S GULL (*Xema sabini*) 1 individual, Grandview Beach Park, Hampton, June 24, 2008, [Bill Williams], Category 1 (+, ph.), 3rd Coastal Plain record since Jan 2004 Review List.

SCISSOR-TAILED FLYCATCHER (*Tyrannus forficatus*) 1 individual, Spotsylvania County, June 4, 2008, [Rick Estes, Mary Sutherland, Corey Estes], Category 1 (+, ph.), 5th Piedmont record since Jan 2004 Review List.

TEREK SANDPIPER (*Xenus cinereus*) 1 individual, Craney Island Disposal Area, Portsmouth, August 9, 2008, [Benjamin Copeland and others], Category 1 (+, ph.), 1st state record.

TRICOLORED HERON (*Egretta tricolor*) 1 individual, Staunton View Park near the borders of Mecklenburg, Charlotte and Halifax Counties, July 26, 2008, [Adam D'Onofrio and Tina Trice], Category 1 (+, ph.), 2nd Piedmont record since Jan 2004 Review List.

WHITE IBIS (*Eudocimus albus*) 8 individuals, Staunton View Park near the borders of Mecklenburg, Charlotte and Halifax Counties. July 26, 2008, [Adam D'Onofrio and Tina Trice], Category 1 (+, ph.), 7th Piedmont record since Jan 2004 Review List.

GREAT WHITE HERON (*Ardea occidentalis*) 1 individual, Claytor Lake in Pulaski County, October 11, 2008, [Mark Mullins], Category 1 (+, ph.), 1st Mountains and Valleys since Jan 2004 Review List.

SELASPHORUS HUMMINGBIRD (*Selasphorus sasin* OR *Selasphorus rufus*) 1 individual, Claytor Lake in Pulaski County, October 23-26, 2008, [Mark Mullins], Category 1, as *Selasphorus sp.*, (+, ph.), 1st Mountains and Valleys since Jan 2004 Review List.

LONG-BILLED CURLEW (*Numenius americanus*) 1 individual, Buchanan County, December 21, 2008 – January 21, 2009, [Roger Mayhorn], Category 1 (+, ph.), 1st state record.

TOWNSEND'S SOLITAIRE (*Myadestes townsendi*) 1 individual, Rockingham County, January 7, 2009, [Matthew Gingerich], Category 1 (+, ph.), 2nd state record.

WHITE-WINGED CROSSBILL (*Loxia leucoptera*) 4 individuals, Clarke County, February 1, 2009, [Larry Meade], Category 1 (†, ph.), 1st Mountains and Valleys since Jan 2004 Review List.

WHITE-WINGED SCOTER (*Melanitta fusca*) 2 individuals, City of Richmond, February 2-22, 2009, [Arun Bose, Lewis Barnett, Janice Frye], Category 1 (†, ph.), 3rd Piedmont record since Jan 2004 Review List.

“RICHARDSON’S” CACKLING GOOSE (*B. h. hutchinsii*) 4 individuals, Henrico County, January 28 & February 8, 2009, [Arun Bose], Category 1 (†, ph.), 1st Coastal Plain record since Jan 2004 Review List.

GOLDEN EAGLE (*Aquila chrysaetos*) 1 individual, King George County, April 6, 2009, [Sandy Spencer], Category 1 (†, ph.), 1st Coastal Plain record since Jan 2004 Review List.

CALLIOPE HUMMINGBIRD (*Stellula calliope*) 1 individual, Bedford County, October – February 13, 2009, [Thelma Dalmas], Category 1 (†, ph.), 1st Mountains and Valleys since Jan 2004 Review List.

SANDHILL CRANE (*Grus canadensis*) 1 individual, Norfolk, May 4, 2009, [Wendy Hazel], Category 1 (†, ph.), 1st Coastal Plain record since Jan 2004 Review List.

ANHINGA (*Anhinga anhinga*) 1 individual, Bedford County, May 8, 2009, [Rexanne Bruno], Category 2 (†), 3rd Mountains and Valleys record since Jan 2004 Review List.

WESTERN TANAGER (*Piranga ludoviciana*) 1 individual, James City County, January 6-February 27, 2009, [Bill Williams], Category 1 (†, ph.), 3rd Coastal Plain record since Jan 2004 Review List.

WHITE-WINGED DOVE (*Zenaida asiatica*) 1 individual, James City County, “Late February” – March 18, 2009, [Bill Williams], Category 1 (†, ph.), 7th Coastal Plain record since Jan 2004 Review List.

RED-THROATED LOON (*Gavia stellata*) 1 individual, Mecklenburg County, December 20, 2008- January 24, 2009, [Adam D’Onofrio], Category 1 (†, ph.), 5th Piedmont record since Jan 2004 Review List.

LESSER BLACK-BACKED GULL (*Larus fuscus*) 1 individual, Mecklenburg County, December 20, 2008-March 29, 2009, [Adam D’Onofrio], Category 1 (†, ph.), 3rd Piedmont record since Jan 2004 Review List.

SANDHILL CRANE (*Grus canadensis*) 1 individual, Augusta County, May 28, 2009, [Elaine Carwile, Ed Lawler, Allen Larner], Category 1 (†, ph.), 11th Mountains and Valleys since Jan 2004 Review List.

WILSON’S PHALAROPE (*Phalaropus tricolor*) 1 individual, Charles City County, August 26, 2008, [Adam D’Onofrio], Category 1 (†, ph.), 1st Coastal Plain record since Jan 2004 Review List.

SANDHILL CRANE (*Grus canadensis*) 2 individuals, Chesapeake, June 12, 2009, [Marvin Powers], Category 1 (†, ph.), 2nd Coastal Plain record since Jan 2004 Review List.

WOOD STORK (*Mycteria americana*) 1 individual, Shenandoah County, August 23, 2009, [Glenn Koppel, Mary Alice Koenekke], Category 1 (†, ph.), 1st Mountains and Valleys since Jan 2004 Review List.

SANDHILL CRANE (*Grus canadensis*) 1 individual, Westmoreland County, August 22, 2009, [Adam S. Draper, Leslie A. Royds, Richard N. and Patricia J. Draper], Category 1 (†, ph.), 3rd Coastal Plain record since Jan 2004 Review List.

Submissions Not Accepted

ARCTIC TERN (*Sterna paradisaea*), 1 individual, Chincoteague NWR, Accomack County, Assateague Island, June 1, 2007.

MISSISSIPPI KITE (*Ictinia mississippiensis*) 1 individual, Loudoun County, May 17, 2008.

LARK BUNTING (*Calamospiza melanocorys*) 1 individual, Bedford County, July 30, 2008.

ANHINGA (*Anhinga anhinga*) 1 individual, Rockfish Gap Hawk Watch near Afton, October 26, 2008.

ROSEATE TERN (*Sterna dougallii*) 1 individual, Accomack County, Assateague Island, Chincoteague NWR, June 18, 2008.

Review of "Birds of Australia: Eighth Edition" by Ken Simpson and Nicolas Day; list price \$39.50; published by Princeton University Press 2010

Why, you may ask, does a review of a field guide for the birds of Australia, appear in the Raven? Well, when a Sand-Plover showed up in Augusta County in September 2009, I took along not only my 16+ year old memories of my life sightings of both species but, also my well-worn *Slater* Australian field guide. I understand the ID of that particular individual bird is still unclear despite consultation with numerous international experts. But, it does point out the value and relevance of looking outside our own borders when we come to identifying species.

I've birded a number of times throughout Australia – a continent of roughly similar size to the lower 48 that boasts a checklist of almost 800 species and a high proportion of endemics, including five endemic families.

First impressions: the illustrations by wildlife artist Nicolas Day are flat-out gorgeous. Even if you don't plan to bird in Australia, it's almost worth buying for the pictures alone! *Peterson* type arrows highlight significant field marks. The descriptive text in the species accounts is effective and often captures the essence of a species – for example the Common Myna is said to have an "arrogant" walk on the ground. Adjacent range maps, which also show the distribution of races, have check boxes on the right hand side as a place where you can mark up for your life list.

There are two useful features, particularly for non-Australian or beginning birders. The first is the Key to Families, which provides a brief description of the common features of the members (e.g. Albatrosses are "medium to very large, long-winged, gliding, oceanic seabirds") along with a thumbnail image of a typical representative species, and a page reference to the appropriate portion of the species accounts. The other useful feature, located towards the end of the book, is titled "Where the birds live" and describes the major vegetation and habitat types. The Appendix includes "hints for birdwatchers" which are applicable, and worth reading for birders on any continent.

US birders may find some of the terminology unfamiliar – for instance, shorebirds are "waders", and the Australian Owllet-nightjar is described as having a "possum-like" head – a reference to the Australian marsupial which is only distantly related to the American Opossum.

In addition to the accounts of regularly occurring species, there is a vagrant bird bulletin which provides full descriptive accounts including range maps and (albeit smaller) images of recognized rarities. There is also a section on breeding information with descriptions of nests, eggs, duration of incubation and fledgling stages, and breeding seasons. This last feature is one that North American field guides would do well to emulate.

At 6½" X 9", this cloth-bound edition is a little bigger than the National Geographic Field Guide to the Birds of North America. It weighs about the same, and hence is not as massive as the "big" Sibley. Size units for the birds are metric (as befits a metric country); there is a handy cm/inches conversion ruler on the end-papers for those who are unfamiliar with metric dimensions. The blue surface of these end-papers is

purportedly waterproof so that you can use the illustrations to match the beaks of beach-washed seabirds – or, according to the authors, rest your ice-cream there!

In all, a very comprehensive and practical field guide that represents state of the art. Definitely consider buying it if you plan to visit Australia or even if you just like to appreciate the diversity of birds in another part of our planet.

WENDY EALDING

Powhatan, VA

**Distorted Views Of Avian Diversity:
A Call To Action**

REVIEW OF: Boakes EH, McGowan PJK, Fuller RA, Chang-qing D, Clark NE, O'Connor, K, and Georgina MM. 2010. *Distorted views of biodiversity: spatial and temporal bias in species occurrence data.* PLoS Biol 8(6): e1000385. doi:10.1371/journal.pbio.1000385.

The ecological pressures faced by Virginia's birds will no doubt worsen over the coming decades. Therefore, at no time has the need to adequately monitor our state's avian populations been more urgent than now. To fully illuminate long-term species occurrence trends and to place current declines into context, new data must not only be collected, but also accompanied by a reliable, comprehensive, and fully accessible historical record. Bird distribution data have been generated and stored by a variety of means, including museum collections, the scientific literature, and banding records. Citizen scientists are playing an increasingly vital role in the collection of such data, and in fact, for few other scientific fields has the synergy between professional and citizen scientists been more important than for ornithology. The Virginia Society of Ornithology has contributed to this effort through its Annual Breeding Bird Foray, the Breeding Bird Atlas Project of the mid-1980s, and by facilitating other organizations' citizen projects such as the Audubon Society's Christmas Bird Count and the U.S. Geological Survey's Breeding Bird Survey. An article published recently in the on-line journal PLoS Biology, however, raises caution that such biodiversity information has been, and continues to be, subject to sampling bias, which may produce misleading interpretations of species distribution and abundance data.

In their essay, *Distorted views of biodiversity: Spatial and temporal bias in species occurrence data*, Elizabeth Boakes of the United Kingdom's Natural Environment Research Council and several co-authors argue that while historical data from various sources are crucial for evaluating long-term population trends, their biases must be considered if they are to be usefully applied to understand current species distributions and population dynamics. They furthermore assert that ongoing survey efforts must provide more reliable baseline primary data from which future generations can learn by avoiding typical sources of bias, such as focusing only on threatened species, protected lands, and alluring, species-rich field trip destinations.

To make their case, the authors analyzed distribution data for pheasants and their close allies (Order Galliformes)

collected primarily in Asia and Europe. They chose galliforms because they have been frequently collected by museums, and owing to their conspicuousness, their field documentation has been relatively thorough and accurate compared to other avian groups. The authors compared records from several sources: museums, scientific literature, banding activity, atlases, and website field trip reports. Upon analyzing both numbers of records and species occurrences across time and space, the authors revealed some enlightening patterns.

First, museum records, although the most historically and geographically comprehensive source, have declined in recent decades. Moreover, the authors found that many older specimens are unaccompanied by objective and easily accessible location information. Without precise georeferencing (latitude and longitude coordinates) of collection sites, museum specimens cannot contribute to our knowledge of past species distributions. Second, while the scientific literature on galliform biogeography has accumulated, it has increasingly focused on threatened species and particular geographic areas. Third, data from atlases and bird banding projects have been almost exclusively confined to Europe and Japan, thus are highly limited in their application to global conservation concerns. Finally, web-based field trip reports have been making up an increasingly greater percentage of recent species distribution data. Additionally, these reports have had broad geographical coverage, approaching that of museum collections, but they have tended to be biased toward species-rich areas or places where especially “charismatic” species are found. To summarize, information about species occurrences has come in a variety of “packages”, but each source has had its limitations.

The outcome of such observation biases, according to Boakes and her colleagues, is that misleading conclusions about species distributions have been drawn. For example, museum collections contain numerous specimens of the Red Jungle Fowl (the precursor of domestic chickens) collected in the Philippines, but the scientific literature contains exceedingly few accounts of them in that location. If scientists were to rely only upon literature, they might conclude that Red Jungle Fowl have always been scarce in the Philippines, perhaps only introduced by humans during recent millennia, as opposed to being a well-established native species.

On the other hand, the disproportionate attention paid to threatened species in recent years has revealed previously unknown populations. This effect may create the false impression that some threatened species’ ranges have been expanding. Lastly, the focus on highly biodiverse places has limited our knowledge of species inhabiting low-diversity locations. For instance, south Asian records for all galliform species collected prior to the 1930s are spread relatively evenly throughout the Indian subcontinent. Those collected from 1990 to 2006, however, include no records of any galliform in central or northeast India. Have galliforms disappeared from this vast swath of modern India, or has survey work ceased in this generally species-depauperate region owing to lack of interest by naturalists?

The authors propose some straightforward solutions to the survey bias dilemma. First, currently existing historical data must be safeguarded and added to easily accessible digital databases to expand opportunities for analysis of population dynamics over time. Expanding the pool of scientists who have access to data increases the likelihood that biologically significant patterns will be revealed and effective conservation solutions will be implemented in response. Second, new data must be thoroughly georeferenced to allow future ornithologists to track populations across both time and space. Common place names change over time and landmarks disappear rendering information gathered at those locations useless. Lastly, survey coverage must be extended to species-poor and previously neglected regions.

The authors also predict that web-based citizen science data collection will gain increasing prominence in biodiversity research. Cornell University’s Laboratory of Ornithology’s outreach programs, including eBird, exemplify how citizen science could be further developed to make even greater contributions to our knowledge about bird distributions.

How can the Virginia Society of Ornithology respond to the challenges presented in Boakes et. al’s commentary? We can rededicate ourselves to providing the comprehensive, reliable baseline data which future generations will need to protect Virginia’s birds. We can achieve this objective by applying repeatable methods in our own surveys and furnishing highly precise GPS georeferencing to accompany our species occurrence data. We can also extend coverage to species-poor and “underbirded” parts of the state, including more private landholdings. As birders, we are inherently drawn toward places where we are likely to net impressive field trip species totals, or where we might add to our life lists, but future ornithologists would thank us for providing baseline data on relatively overlooked, run-of-the-mill locales. An updated Breeding Bird Atlas, now in its initial planning stages, will move us significantly in this direction.

Moreover, we can contribute VSO survey data to a centralized global database such as the Global Biodiversity Information Facility (<http://www.gbif.org>) so that we can share our knowledge with the world in a more readily accessible format. Transcontinental information sharing promises to become even more crucial for the protection of our migratory species. We can also encourage more individual participation in fully vetted, web-based citizen science data collection such as eBird. Finally, many of us know of potentially valuable historical data sets which remain inaccessible to conservation biologists. Unlocking these hidden treasures may help to illuminate both the extent and causes of species declines that we are now witnessing.

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CORRECTION TO VOL. 73(1) OF THE RAVEN: Table 1 on page 11 of vol. 73(1) is incorrect in its entirety. The Table that is printed there summarizes the results of the 2002 beach-nesting and colonial waterbirds survey, and was correctly placed with the 2002 results summary published in *The Raven* 74(2): 53-57. The correct Table 1 for the 2001 survey is reproduced below.

Table 1. Census counts of bird species on Virginia barrier islands. From left to right, the Islands are: Assawoman, Metompkin, Cedar, Dawson Shoals, Parramore, Sandy, Chimney Pole Marsh, Hog, Rogue, Cobb, Little Cobb, Wreck, Ship Shoal, Godwin, Mink, Myrtle, Smith, Fishermans. Species abbreviations follow USGS Bird Banding Laboratory codes.

	Assa	Metom	Cedar	Das Shl	Parra	Sandy	Chm	Pol	Hog	Rogue	Cobb	L. Cobb	Wreck	Shp	Shl	Godwin	Mink	Myrtle	Smith	Fisher	Totals
BRPE																				1552	1552
DCCO							20														20
GBHE																				2	2
GREG							102				80		54							17	253
SNEG							34				60		15							36	145
LBHE							2				19		36							20	77
TRHE							36				75		65							39	215
CAEG							2				4		25							19	50
GRHE							2						2								4
BCNH											56		148							81	285
YCNH													2							2	4
WHIB											37		44							46	127
GLIB							19				49		46							8	122
NOHA																					
WIPL	14	14	19																		47
PIPL	36	65	50										1	2				6			160
AMOY	19	85	93	6		17	11	32			25	20	37	33			14	17	30		439
LAGU													1340							3800	5140
HEGU						580	252				268	610	907							925	3542
HERG						39	68				30	42	267							99	545
GBTE			6									8	28								42
CATE																					0
ROTE																				2580	2580
SATE																					0
COTE			422										249				4				675
FOTE																					0
LETE	23	196	110								18		46	20				14			427
BLSK			1116	25								55	475								1671

INFORMATION FOR CONTRIBUTORS

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

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

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



The Raven

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

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2010



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

Activities undertaken by the Society include the following:

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

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

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

Additional Information can be found on the Internet, at www.virginiabirds.net

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

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The Raven

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Editor
Wesley M. Brown



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A WHITE-WINGED TERN (*Chlidonias leucopterus*) AT CHINCOTEAGUE NATIONAL WILDLIFE REFUGE IN 2002, WITH COMMENTS ON IDENTIFICATION AND AGEING OF THE SPECIES AND A REVIEW OF REGIONAL RECORDS

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Abstract

This paper treats the identification and ageing of a White-winged Tern (*Chlidonias leucopterus*) observed at Chincoteague National Wildlife Refuge, Accomack County, Virginia, on 6-9 September 2002. Correspondence with authorities on tern identification, and a review of the literature on this Old World species, suggest that the bird was in its second calendar year or older, although sources often differ on age-related plumage aspects. In addition, this paper is intended to be a demonstration of research and its many cul de sacs, even when a relatively common and well-known species is the subject.

Field encounters

On the afternoon of 6 September 2002, I found a White-winged Tern (*Chlidonias leucopterus*) in company with seven Black Terns (*C. niger*) at Swan Cove, Chincoteague National Wildlife Refuge, Accomack County, Virginia. I first observed the bird at about 1415 EDT, then not again until 1530, when Ben Copeland, Tom Pendleton, and others also studied the bird with me. Total observation time was about 20-25 minutes at distances of 40-200 m with a Swarovski scope fitted with 30x wide eyepiece. Light was optimal at all times.

Comparison of the White-winged with the Black Terns was relatively easy, though the bird did not appear to associate with or forage in concert with them. As were the Black Terns, the White-winged was in flight and apparently foraging during all of our observations. Like the Blacks, it flew along the edges of Swan Cove, mostly the western and northern sides, about 4-10 m above the water as it watched the water's surface, occasionally dipping (not diving) to the surface in attempts to seize prey. The bird's behavior made photography very difficult; we did not secure any photographs of it. The bird was not heard to call during the observations at close range.

After taking notes on the bird, we consulted *The Sibley Guide to Birds* (Sibley, 2000) and the *Birds of Europe* (Mullarney *et al.*, 1999). Because we were not sure at the time how to age the bird (or at least, how to name its plumage), we made reference to these books while watching the bird in the field, and we determined then that the closest plumages illustrated in these were the "first-winter" bird in the *Sibley Guide* and the "winter adult" in the *Birds of Europe* (which does not illustrate a first-winter bird). Thus we concluded the observation with uncertainty as to the bird's age.

Later in the day, the bird was studied by people arriving to participate in the Virginia Society of Ornithology (VSO) field trip to Chincoteague, and the bird was also seen 7 September by Mike and Dixie Overton and by many additional VSO members, among them Todd M. Day, Susan Heath, Jon Little, Grayson Pearce, Beverly Leeuwenburg, Larry Lynch, Bill Akers, and H. Fenton Day, III. The final documented observation of the bird was at 1300 on 9 September 2002 by Michael L. P. Retter (sketches and field notes taken) and Nick Block, again in Swan Cove at relatively close range. Though several observers searched for the bird on 10 September, a cold front that passed during the evening had apparently ushered it and the Black Terns away from Swan Cove. Because I and several other birders had been checking Chincoteague consistently in August 2002, we suspect the White-winged Tern probably arrived there some time during the last few days of August or first few days of September.

Description from field notes

In direct comparison with Black Tern (both juveniles and adults present), the White-winged at Chincoteague showed a different overall shape, bill proportions, plumage, and flight behavior. The bird's black bill was obviously, noticeably slight in comparison to a Black Tern's, and it was certainly shorter than those of nearby Black Terns. It was surprising to the initial observers how visible this difference was, even at distances over 100 m. The proportions and shape of the White-winged Tern were also consistently, rather strikingly different from the Black Terns'. The bird's wings were less sharply pointed at the tip, and perhaps (proportionately) slightly wider than those of the Black Terns. The tail was not noticeably forked but appeared rather square-ended at most distances; a very slight difference between outer and inner rectrix length was barely perceivable at closest range, but this never produced the impression of a "forked" tail. The flight style of the bird was rather like the Black Terns', but the bird's wingstrokes were a bit shallower, its moves less darting, swooping, and nimble on the whole, appearing more "methodical" and less swallow-like. The body of the bird appeared more robust than those of the apparently slenderer Black Terns; overall, the bird appeared a bit "stumpier" than the Blacks and smaller by a bit.

The White-winged Tern was essentially all white below. Though in strong light one could see, from the ventral view, a bit of the upperwing's subtly contrasting

areas, for the most part the bird appeared white below, lacking from all angles Black Tern's dusky bar or spot or block or streak on the breast (where the leading edge of the wing meets the body) and also lacking Black's variable dusky markings along the body where the body plumage meets the axillaries and the trailing edge of the wings. The underwing coverts were uniformly white.

The White-winged's tail was a pale gray, much the same color as the back, a bit darker than the rump. No molt was observed in the tail, but it was not possible to study the tail in deep detail, as the bird never provided a proper angle for determining whether the outer webs of outer rectrices were paler than the remainder of the tail. The bird was never observed at rest, and so its leg color, and leg length relative to other terns', could not be studied. The bird's rather starkly white head showed small dark patches of black at the ear coverts, joined tentatively by a little grayish stippling over the mid-crown that narrowed and tapered off at the central upper hind-crown. The nape/collar was starkly white, like the rest of the head. The overall impression of the white-looking head (and indeed the overall impression of the bird)—with its small bill and almost doll-like, round-headed jizz—was that of a Little Gull (*Hydrocoloeus minutus*) in basic plumage, with its large dark eye surrounded entirely by white (no dark in the lores) and the impression, at most distances, of simply dark ear covert spots, as the stippling was not visible at greater distances.

When studying the bird, we noted that its basic pigmentation above was a chalky whitish gray, much paler than any of the Black Terns assembled in Swan Cove, and that its three outer primaries (and their greater coverts) consistently appeared distinctly duskier than the inner primaries, which appeared "neat" and paler gray, as with the overall color of most upperwing coverts. The upperwing secondary coverts appeared slightly disheveled, probably due to wear. A distinct dusky inner secondary bar was consistently noticeable, as was a less distinct dusky leading edge to the upperwing. (This feature is often called a "cubital bar" in the European literature on this species, and it incorporates the lesser if not the marginal coverts.) This area was distinct from (that is, did not join) the dusky primaries at the carpal joint, as most of the primary coverts were pale, like most of the upperwing surface.

The bird's back was of a tone with the gray upperwing and contrasted to varying degrees (depending on light and angle) with the whitish or pale grayish rump; I noted that the contrast was not nearly so stark as that seen in juvenile White-winged. Indeed, at some angles, the contrast between back and rump was not obvious at all. As with the greater/median upperwing coverts, the birds' back feathers and scapulars did not appear to be altogether fresh, at least when studied at closest range, but there were no darker feathers or feather edgings among them. The overall impression of color, in fact, was closer to some of the adjacent, also foraging Forster's Terns (*Sterna forsteri*) in Swan Cove, rather than to the Black Terns. On several

occasions, observers who looked away from the bird got back briefly onto the wrong bird—invariably a Forster's rather than a Black Tern! This caused some momentary confusion but offered an interesting index of the White-winged Tern's distinctiveness in this context.

Discussion

With reference to two excellent field guides while observing the bird, we were able to rule out any plumage of Whiskered Tern (*Chlidonias hybridus*) or of Black Tern, including Blacks of the nominate subspecies (treated in Mullarney *et al.*, 1999; see also Adriaens, 1999; Andrews *et al.*, 1999; Melgar, 2002; Mullarney, 2003). But it troubled us that the bird was not readily assignable to an age class, other than to note that it was clearly not a juvenile. White-winged Tern in Juvenile plumage shows a dark, almost blackish back that contrasts strongly with white nape and rump. (In older birds in basic plumages, the back is not contrastingly dark but pale gray, concolorous with most of the upperwing surface, although many earlier field guides do not depict these plumages; see below.)

For the purposes of this article, molts and plumages will be described using the system outlined by Howell (2010), which modifies the Humphrey-Parkes system. According to the Howell arrangement, White-winged Tern has a Complex Alternate Strategy of molt, which involves complete preformative and prebasic molts and partial prealternate molts in both first and definitive cycles. In Black Tern, some birds also have incomplete definitive presupplemental molts in some years (Heath *et al.*, 2009), and the same may be true of some White-winged Terns. The plumages produced by these molts are as follows, with older terminology in parentheses: **Juvenile** (Juvenal; held from fledging through September for most, but see Bradshaw & Wright, 2002); **Formative** (First-winter; held from early autumn through early spring); **First Alternate** (First-summer; held from late spring through late summer); **Definitive Basic** (Second-winter, or Adult Winter; held from early autumn through early spring); **Definitive Alternate** (Adult Summer). Some individuals that appear mostly like adults in Definitive Alternate, but with somewhat blotchy body plumage in spring, are likely in Second Alternate (Second-summer) plumage (Malling Olsen & Larsson, 1995; cf. Heath *et al.*, 2009). According to Howell's terminology, birds in their Juvenile through First Alternate plumages are said to be in their First Cycle; birds in their first Definitive Basic through Second Alternate are in their Second Cycle; older birds would be in Third and later cycles and are most easily called "adults" at this stage, though in the field, distinguishing some (many?) birds in their Second Cycle from adults would not be possible. In the discussion of the literature on White-winged Tern, below, I maintain the varying plumage terminologies of the source texts referenced but also reference the Howell system for clarity; discussion of the Chincoteague bird uses Howell's terminology exclusively.

As noted above, observers who took notes on the Chincoteague White-winged Tern were uncertain how to name the plumage we observed, although we easily ruled out Juvenile and Definitive Alternate plumages. We reasoned that the bird could be in a Definitive Basic plumage that showed no retained black in the underwing coverts; we thought that it might also be a “subadult,” that is, a bird in First Alternate; and we also wanted to consider carefully the possibility that the bird was in Formative plumage, even though the timing (September) and the different generations of remiges seemed to rule out that possibility. In much of the European literature cited below, the older name White-winged Black Tern is used to refer to *Chlidonias leucopterus*; the official English name currently is White-winged Tern in the United Kingdom as well as North America.

Because the references we examined in the field contained discrepancies whose significance was unclear, three aspects of the Chincoteague bird’s plumage—the presence of three darker outer primaries, the purely pale underwing coverts, and the dusky secondary bar and subtler cubital bar—required a review of the literature. This review revealed more inconsistencies among illustrations of the species and descriptions of plumages/ages; some of those issues are noted in a subsequent section on distinguishing ages of White-winged Tern.

1) Three darker outer primaries. Sibley’s “first-winter” bird shows a distinctly dusky cast to the outer three primaries; no such cast is illustrated in the “nonbreeding” adult in Sibley (2000), but it is distinctly illustrated in the “winter adult” in Mullarney *et al.* (1999). This discrepancy between these important field guides led to further investigation.

The treatment of the marsh terns (genus *Chlidonias*) in *The Macmillan Field Guide to Bird Identification* (Harris *et al.*, 1989) depicts an “adult winter” White-winged Tern with three dark outer primaries contrasting with pale inner primaries, matching the appearance of the Chincoteague bird, and this contrast is “a result of feather darkening caused by wear,” according to the text. Like other long-distance migrants, such as Common Tern (*Sterna hirundo*) and Black Tern, White-winged Tern’s remiges have a pale, powdery bloom when fresh; as this wears off, the darker basal part of the feather becomes visible (see Howell, 2010, p. 154). This difference in pigmentation indicates different generations of feathers (see, e.g., Howell, 2010, p. 25, Figure 34) and thus points away from a bird in Juvenile plumage, which would have remiges of one generation and, thus, of uniform appearance in September (see below).

Terns of Europe and North America (Malling Olsen & Larsson 1995), incorporating material from an excellent series on *Chlidonias* terns that appeared in the Swedish journal *Calidris* (Malling Olsen, 1989a,b) as well as subsequent short notes (e.g., Doherty, 1989; Breife, 1991), illustrates three darker outer primaries in a typical “winter adult.” That book also indicates that first-summer individuals can also have this appearance, and the text also identifies the reason for the darker appearance of the

outer primaries: “First-winter/first-summer plumage (and second-winter plumage): Much as adult winter plumage. In first summer like worn adult winter, but outer primaries (up to 5) grey-brown from wear.” While the European references noted above do not depict Formative plumage, the more recent Beaman & Madge (1998) illustrate a “first-winter” bird with somewhat dusky outer primaries (outer webs only), almost identical in this respect to their illustration of a “winter adult.” A short article on “first-summer” plumage by Bundy (1982) includes a sketch of a bird with dusky outer primaries.

Thus, based on the appearance of the Chincoteague bird’s primaries and based on the European literature, the bird would have been over a year old—in other words, not in Juvenile or Formative plumage but either in First Alternate or Definitive Basic plumage.

2) White underwing coverts. Sibley’s (2000) “first-winter” White-winged Tern shows a distinctly white underwing, much like a juvenile, but unlike the winter adult, which shows a very narrow edge of black along the greater underwing coverts. Many who have birded in the East and seen molting adult White-winged Tern in July and early August (e.g., in Delaware, where small numbers have been recorded, most recently in the 1990s) have seen such an underwing pattern and have assumed that this underwing is typical of adults in definitive basic plumage, not just of birds in prebasic molt. For most birders in the East, the European field guide of choice, in the 1990s, was Lars Jonsson’s *Birds of Europe* (1993), and the illustration of the “adult molting (autumn)” was typical of birds seen in late summer in Delaware (the Jonsson guide does not depict Formative or First Alternate plumages, and the illustration of Definitive Basic shows a perched bird that is partly hidden). The 2002 Chincoteague bird, with its white underwing coverts, has required reconsideration and revision of that assumption.

In an article titled “Identification of marsh terns in juvenile and winter plumages,” Alström (1989) cites a communication from A. R. Dean to the effect that “White-winged Black Terns in otherwise full winter plumage often show a little black on the underwing coverts” (p. 318), which suggests that some individuals in Definitive Basic show no black here. Malling Olsen & Larsson (1995) do not discuss the frequency of this mark; they note that “many [adults in basic plumage] show diagnostic black bar across underwing” and “some greater underwing-coverts may be retained, or have black tips in winter” (p. 161). Also, in the photographic plates of that book, the caption for number 193 reads: “Note retained black greater [underwing] coverts in good contrast to rest of underwing. Such dark lines may be retained during winter, and are then diagnostic for White-winged Black.” Harris *et al.* (1989) indicate that this remnant of black in the adult underwing coverts can be retained “late into its molt” (p. 139). Beaman & Madge (1998) indicate that “most have vestiges of black underwing coverts in form of scattered, or lines of, black feathering” but note that “birds with wholly white underwing” occur (p. 462).

From the available literature, then, it would seem that by no means all White-winged Tern in Definitive Basic plumage retain dark feathers in the underwing coverts in autumn, though when present, such feathers rule out Black Tern. My limited experience with adults of the species in basic plumage, both on wintering grounds in northeastern South Africa in 1999 (October) and on migration in southern France in 2007 (September), suggests that this is the case: at least four apparent adults in Africa and one in France showed clean white underwing coverts. Thus, Definitive Basic remains a strong possibility for the plumage of the Chincoteague bird, even in September.

3) Secondary bar and cubital bar. Sibley's (2000) "first-winter" White-winged shows a more noticeable secondary bar (less prominent than in his juvenile) than does his "adult nonbreeding" (which has little or none). Harris *et al.* (1989) show both a moderate cubital bar and secondary bar in the winter adult. Beaman and Madge (1998), by contrast, show only a faint cubital bar and no secondary bar in the winter adult and illustrate a strong pattern in the upperwing surface of the first-winter bird, with the outer edge of the wing essentially encircled by dark feathering: from the lesser coverts, through all outer primary coverts, around the wing tip, and through the ends of all remiges. This matches the account in *Birds of the Western Palearctic* (Cramp & Simmons, 1985), written by C. S. Roselaar, which notes that juveniles that have lost their dark saddles can still be told from winter adults because they "often show... complete dusky rim from primary coverts round wing-tip to tertials." Bundy (1982) illustrates older, first-summer birds with a noticeable secondary bar (mentioned in the text as a consistent feature at this age), and a lighter cubital bar. In *The Handbook of Australian, New Zealand, and Antarctic Birds* (Higgins & Davies, 1996), there is a fine illustration of a "first austral autumn" bird (Plate 44, p. 704) that is similar to the illustration of a first-winter bird in *Birds of the Western Palearctic* (Cramp & Simmons, 1985): all primary coverts are dark in the illustration, unlike in the Chincoteague bird, which showed a break of gray at the carpal joint between the less-pronounced cubital bar and the dusky gray primaries and greater upper-primary coverts, more like the adult illustrated in Harris *et al.* (1989).

Thus, because the literature is not settled (perhaps a result of variability in these plumage features?), it is unclear what plumage is indicated by moderate cubital and secondary bars, but most Old World sources would favor Definitive Basic over Formative; however, the Bundy (1982) article holds open the possibility of First Alternate plumage as well.

Another aspect of plumage we did not consider problematic while studying the bird—but one that arose in discussion of the bird with others who read the documentation on it—was the matter of the contrast between the back and rump. In the late 1960s through early 1990s, much emphasis was placed on this feature in American birding circles, and because field guides (e.g., Jonsson 1993) illustrated plumages most likely to be

observed in western Europe, where White-winged Tern is a regular vagrant, the emphasis made sense. After all, birds in Juvenile and Definitive Alternate plumages show strongly contrasting white rumps. Bundy (1982) notes that in First Alternate plumage, "the rump and tail usually look concolorous with the pale grey upperparts" (p. 131). More recent field guides (e.g., Mullarney *et al.*, 1999) do show how minor the back/rump contrast may appear, almost similar to Whiskered Tern in this respect.

Among tern species, molts and plumages can be complex and show much individual variation (Howell, 2010), and the plumage aspect of a single bird observed in the field may not be informative as to the bird's actual age. Too, birds in their first and second years of life often remain away from breeding areas (and places visited by birders), so that our understanding of these plumages is fragmentary in some cases. Indeed, one authoritative source (Higgins & Davies, 1996) cautions that basic plumages of White-winged Tern may be "inseparable" in the field (p. 776). Other authors do attempt to describe differences in these plumages as they relate to age, if not consistently. In the above perusing of the literature for clues to interpreting the upperwing and underwing pattern of the Chincoteague tern, it seems that Definitive Basic would be the most likely plumage but that First Alternate is also conceivable, either way indicating a bird more than a year old.

In turning to still other references for clues to distinguishing between these similar plumages, I sought further information on plumage features, in addition to the darker outer primaries, that would rule out the possibility of Formative plumage. The account in *Birds of the Western Palearctic* (Cramp & Simmons, 1985) indicates that this plumage is little known: "First-Winter Plumage change inadequately studied but some moult erratically or suffer unusual wear and fading." September plumages of White-winged Tern in particular have caused confusion, because of their variable appearances, some of this surely owing to the timing of preformative and prebasic molts (Davis, 1980; Vinicombe, 1980; van IJzendoorn & de Miranda, 1980b; Reid, 1988; Roberson, 1999; Campbell, 2000; Bradshaw & Wright, 2002). Reid's (1988) "Early acquisition of first-winter plumage by White-winged Black Tern" treats a single bird seen 14 September 1986 at Dungeness, England, that was initially aged as an "adult in winter plumage," as it lacked the conspicuous dark back of a juvenile. "It was, however, a first-winter individual, as indicated by its extensively grey 'saddle', some remaining blackish lower scapulars, fresh juvenile wing pattern, and relatively dark (dusky grey) tail." Such individuals in Formative plumage in early to mid-September may be considered "advanced," as most White-winged Tern in their first September show dark backs. Still more detail on such an advanced transition into Formative plumage is provided by Bradshaw and Wright (2002), who treat a molting bird seen at Rutland Water, England, 5 September 1999. The subtleties of Formative plumage are also depicted in Harris *et al.* (1989) and Beaman and Madge (1998). Alström (1989) notes: "First-winters can be told from

adults so long as they retain at least some juvenile wing or tail feathers" and indicates that "rarely [...] White-winged Black can be in full first-winter plumage as early as mid-September; according to Cramp & Simmons (1985), moult of the primaries starts in late November to early February" (p. 286). Thus, the Chincoteague bird's relatively pale tail, pale back lacking any trace of dark feathers, and especially lack of uniformly juvenile remiges rule out a bird in Formative plumage. Chris Kehoe (in litt.) writes: "I would firmly agree with the view that any tern with a clear moult contrast in the primaries in early fall cannot be a first-calendar year bird. No post-juvenile moult [in remiges] should occur until midwinter."

Distinctions between First Alternate and Definitive Basic are apparently far subtler, and the lack of photographs of the Chincoteague bird does not help matters, though good field sketches by M. L. P. Retter captured the aspects of plumage very well. There is relatively little in the literature on First Alternate plumage in the species. Bundy's (1982) "Field characters of first-year White-winged Black Terns" begins to remedy the literature's lacuna on First Alternate plumage with his observations in Saudi Arabia from May through August. In this article, the sketch of a first-summer bird closely resembles Sibley's "first-winter" bird, with outer primaries duskier, a noticeable secondary bar (mentioned in the article as a consistent feature of this plumage), and a lighter cubital bar. "The first-summer individuals are like winter-plumaged adults, being essentially pale grey above and white below" (Bundy, 1982, p. 130). Bundy indicates that one distinction of first-summer birds from at least some winter adults is the purely pale underwing coverts (though he observed two first-summer birds with "some blackish 'smudges'" in the underwing coverts); he also indicates that first-summer birds have a stronger secondary bar than winter adults. Alström (1989) agrees: "Second-calendar year birds remain in 'winter plumage' throughout spring and summer; full breeding plumage is not attained until spring of the third calendar year." The account in *Birds of the Western Palearctic* (Cramp & Simmons, 1985) notes exceptions, as did Bundy: "In first summer and second winter (spent in Africa), resembles winter adult; may show small incidence of breeding plumage (e. g., partially black underwing coverts) in first summer, but not fully acquired until second spring" (cf. also van IJzendoorn & de Miranda 1980a; Malling Olsen, 1989a,b; Breife, 1991; Malling Olsen & Larsson 1995).

Photographs of flying White-winged Tern in Formative, First Alternate, and Definitive Basic plumages have proved difficult to locate; images of perched birds are unhelpful, because most of the plumage features of interest are visible only when the wings are spread. Malling Olsen & Larsson (1995) illustrate a bird in First Alternate in late August from Sweden (photograph #196); that bird has five darker outer primaries and has stronger secondary and cubital bars than the Chincoteague bird. Video of a young bird (Juvenile plumage, possibly with some preformative molt) from 10 September 2006 is posted online (<[http://](http://www.youtube.com/watch?v=4jPvlf7csEE)

www.youtube.com/watch?v=4jPvlf7csEE>) and shows a purely white underwing. In eastern North America, there is one confirmed record of a White-winged Tern in First Alternate (first-summer) plumage, documented at Cape May, New Jersey, on 5 June 1989 (photograph in American Birds 43: 1278).

Also of great interest, especially in North American context, is a non-adult White-winged Tern well documented and photographed at Elkhorn Slough, Moonglow Dairy, Monterey County, California in 1999. This bird was discovered 6 September, the same day as the Chincoteague bird, though there is some sentiment that the California bird was present earlier (Roberson, 1999). The California bird was said to be in "first-summer plumage" (Campbell, 2000) or "molting out of its first summer" (Roberson, 1999), and this assessment of First Alternate plumage appears to be correct [see also image published in Campbell (2000) and Joseph Morlan's field notes and John Sorenson's photographs, posted online: <<http://fog.ccsf.cc.ca.us/~jmorlan/wwte.htm>>]. There are some basic similarities between the California bird, which remained at the slough through 16 October, and the Virginia bird: chalky white plumage above and below, including underwing coverts; very little tonal contrast between back, nape, and tail; and lack of dark marks at the sides of the breast. Though rare White-winged Tern can show a small mark at the side of the breast, always smaller than on a Black Tern, the literature makes no mention of a Black lacking this mark [cf. photograph 20, Malling Olsen & Larsson (1995)], and those references that are explicit on the value of this mark indicate that its absence rules out Black Tern (e.g., Vinicombe & Cottridge, 1996). However, the California bird shows a much heavier, longer bill than the Virginia bird, more like Black Tern; it was in arrested molt midway through the primaries; and the black on the ear coverts is more extensive than on the Virginia bird, more like Black Tern. Although the bill proportions might suggest a hybrid in the case of the California bird, southeast Asian White-winged Tern have substantially longer and thicker bills than those of the White-winged Tern nesting in eastern Europe (Malling Olsen and Larsson 1995), which explains the difference in this case. Although Black and White-winged are known to form mixed pairs in Europe (Alexandersson, 1979; van IJzendoorn 1980) and North America (Mazzocchi & Muller, 1992), and birds with plumages intermediate between these species have been documented in England (Davis, 1980; Vinicombe, 1980), neither the California bird nor the Virginia bird showed plumage features that would be considered intermediate between any of the *Chlidonias* species. An interesting observation at Chincoteague from 1975 has largely been forgotten: an adult White-winged Tern "was noted associating with an adult Black Tern and an immature [juvenile] *Chlidonias* on July 18. The White-winged caught a small fish and fed one of the immatures, which was fluttering and begging" (Scott & Cutler, 1975). The observation was made by H. G. Stevenson and J. W. Cheevers, but I have been unable to locate any further information on it.

Conclusions

From the available literature and photographs, Definitive Basic would appear to be the best assessment of the plumage of the 2002 Chincoteague White-winged Tern. However, it is plausible that the bird was in its Definitive Basic for the first time in its life—in what used to be called “second-winter” plumage. This would make the Virginia bird more advanced than the California bird in terms of molt timing. Both birds showed a pale underwing (possibly more likely in September in a nonadult bird) and relatively pale gray tail (paler than in Juvenile plumage and possibly paler than in Formative plumage). However, the odds do favor an “adult” in the case of the Virginia bird, if one lacking black in the underwing coverts. Jonathan Alderfer (in litt.) favors this interpretation and suggests that an adult that failed to breed (or breed successfully) would likely have commenced prebasic molt earlier than is typical for successful breeders, thus possibly showing fully white underwing coverts in early September. Chris Kehoe, who has done extensive work with Common Terns of known age (White & Kehoe, 2001), suggests not assigning a specific age to the Chincoteague bird. He writes (in litt.):

“I would caution against trying to age your very well-described bird as anything other than 2cy+ [second calendar year or older], although the *freshness* of the outer primaries may give some clue: 2cy (and some 3cy) could show relatively fresh outer primaries (as these will/could have been grown relatively recently), whereas adults (and some other 3cy) will have replaced these earlier in spring prior to moving north, and they will be more conspicuously dark and worn. If the outer primaries on your bird were only marginally darker than the inners, it might be fair to assume therefore that it was an “immature” (2cy or 3cy), but more precise ageing isn’t possible. The view we take in our paper is that only juvenile Common Terns and those 2cy that show obviously retained juvenile features can be safely aged. Most other terns in summer can only be placed in the categories “adult-type” (but could actually be 3cy) and “immature” (could be 2cy or 3cy). Through our work on Common Terns, we discovered that the literature was replete with assumptions, and repetitions of these assumptions, which we found to be incorrect.”

Unfortunately, none of the observers of the White-winged Tern could assess the degree of freshness of the three outer primaries. In light of this constructive correspondence, then, it seems appropriate to conclude simply that Chincoteague bird was older than one year of age, thus in either First Alternate plumage or Definitive Basic plumage.

Status of White-winged Tern in Virginia and nearby states

Delaware has multiple records of White-winged Tern, some of multiple birds, from 1974 through 1993, when it was recorded in eleven years (Hess *et al.*, 2000), with subsequent accepted records of birds that stayed 22 May through 19

August 1995 and 27–30 April 2008 (F. Rohrbacher, in litt.). Other mid-Atlantic states have relatively few records of the species. Maryland’s only record is from the Chesapeake Bay at Point Lookout, 15–21 August 1994 (Blom *et al.*, 1995). North Carolina’s only accepted record of the species, at Bodie Island Lighthouse Pond 13 August 1994, was an adult in advanced prebasic molt (*Chat* 61: 276–277); a report not accepted by the state’s avian records committee came from the same location in August 1990 (R. J. Davis, pers. comm.; NCBRC, 1992). South Carolina has one accepted record, an adult in Definitive Basic plumage at the Savannah Spoil Site on 15 November 2000 (Davis, 2001), but that individual was observed and photographed only perched, so the wing pattern was not recorded. Georgia has one accepted record, from Jekyll Island on 15 September 1977 (Manns, 1978); the description indicates a pale-winged bird but is not extensive enough to draw conclusions about the age/plumage.

In Virginia, which has freshwater impoundments near the coast similar to those in Delaware, there are seven previous records of the species, all but one of single birds and all from Chincoteague National Wildlife Refuge (Table 1); some of these records almost certainly represent returning individuals. Very little is recorded about their plumages, but most birds observed May through July were said to be quite striking and obvious by those who saw them, thus birds in Definitive Alternate, though August 1975 adults were mostly molted into Definitive Basic, with one showing black stippling along the posterior edge of the underwing coverts, the other showing just scattered black feathers in this area (D. F. Abbott, in litt.). Unfortunately, Claudia Wilds’s notes on the September 1974 bird cannot be located in her archive (L. Oberman, in litt.).

Table 1. Reports of WHITE-WINGED TERN from Chincoteague National Wildlife Refuge, Virginia, 1963–1980

No.	Dates	Observers	Source or References
1	16 May -- early August 1963	F. G. Scheider	Murray, 1966; D. Crumb, in litt.
1	16 May -- 9 August 1964	F. G. Scheider	Hacker, 1964; Murray, 1966
1	8–30 May 1965	C. W. Carlson, M. Lewis, M. Nelson	Scott & Cutler, 1965
1	7 July -- 17 September 1974	L. K. Malone, C. P. Wilds, C. R. Vaughn, P. Stoddard, D. L. Hughes, P. G. Dumont, B. Beehler, J. W. Cheevers, H. G. Stevenson	Scott & Cutler, 1974; Scott & Cutler, 1975; Ake & Scott, 1975
1	10 July -- 17 August 1975	L. K. Malone, B. Williams, C. P. Wilds	Scott, 1975; Scott, 1977
2	25–27 August 1975	D. F. Abbott, J. M. Abbott	Scott, 1976; Scott, 1977
1	7–13 July 1980	D. F. Abbott, J. M. Abbott, R. F. Ringler, F. R. Scott	Armistead, 1980

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Literature cited

- Adriaens, P. 1999. The American Black Tern in County Dublin. *Birding World* 12:378-379.
- Ake, R. L., and F. R. Scott. 1975. News and notes: Little Gulls at Craney Island. White-winged Black Tern at Chincoteague. Saxis Marsh observations. *The Raven* 46:71-72.
- Alexandersson, H. 1979. En hybridisering mellan vitvingad tärna *Chlidonias leucopterus* och svarttärna *Chlidonias niger* på Öland 1978. [Hybridization between White-winged Tern and Black Tern at Öland in 1978.] *Calidris* 8:151-153.
- Alström, P. 1989. Identification of marsh terns in juvenile and winter plumages. *British Birds* 82:296-319.
- Andrews, R., R. Higgins, and J. Martin. 1999. The American Black Tern in Avon. *Birding World* 12:416-418.
- Armistead, H. T. 1980. The nesting season: Middle Atlantic coast region. *American Birds* 34:882-885.
- Beaman, M., and S. Madge. 1998. *The Handbook of Bird Identification for Europe and the Western Palearctic*. Princeton University Press, Princeton, NJ.
- Blom, E., M. O'Brien, and E. J. Scarpulla. 1995. The fall migration: Middle Atlantic coast region. *American Birds* 49:30-33.
- Bradshaw, C., and J. Wright. 2002. A White-winged Black Tern in an unusually advanced state of molt. *British Birds* 95:449-453.
- Breife, B. 1991. Svarttärna och vitvingad tärna i vinterdrakt [Black Tern and White-winged Tern in winter plumage]. *Calidris* 20:90.
- Bundy, G. 1982. Field characters of first-year White-winged Black Terns. *British Birds* 75:129-131.
- Campbell, C. 2000. Possible Anywhere: White-winged Tern. *Birding* 32:216-230.
- Cramp, S., and K. E. L. Simmons (eds.). 1985. *Handbook of the Birds of Europe, the Middle East, and North Africa, the Birds of the Western Palearctic. Volume 4: Terns to Woodpeckers*. Oxford University Press, Oxford.
- Davis, A. H. 1980. Tern showing mixed characters of Black and White-winged Black Tern. *British Birds* 75:579-580.
- Davis, R. J. 2001. The fall migration: Southern Atlantic Coast region. *North American Birds* 55:39-41.
- Doherty, P. 1989. Ageing of White-winged Tern. *Birding World* 2:328-329.
- Hacker, C. W. 1964. VSO Wachapreague Field Trip, August 1964. *The Raven* 35:48-49.
- Harris, A., L. Tucker, and K. Vinicombe. 1989. *The Macmillan Field Guide to Bird Identification*. Grange Books, London.
- Heath, S. R., E. H. Dunn, and D. J. Agro. 2009. Black Tern (*Chlidonias niger*). In: *The Birds of North America Online* (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, New York. Retrieved from the Birds of North America Online: <<http://bna.birds.cornell.edu/bna/species/147>>.
- Higgins, P. J., and S. J. F. Davies, eds. 1996. *Handbook of Australian, New Zealand, and Antarctic Birds. Volume 3*. Oxford University Press, Oxford.
- Howell, S. N. G. 2010. *Molt in North American Birds*. Houghton Mifflin, Boston, MA.
- Jonsson, L. 1993. *Birds of Europe with North African and the Middle East*. Princeton University Press, Princeton, NJ.
- Malling Olsen, K., and H. Larsson. 1995. *Terns of Europe and North America*. Translated by David A. Christie. Christopher Helm, London.
- Malling Olsen, K. 1989a. Art- och alderbestämning av *Chlidonias*-tarnor [Identification and ageing of *Chlidonias* terns]. Part 1. *Calidris* 18:11-20.
- . 1989b. Art- och alderbestämning av *Chlidonias*-tarnor [Identification and ageing of *Chlidonias* terns]. Part 2. *Calidris* 18:165-170.
- Manns, R. 1978. A White-winged Black Tern at Jekyll Island, Georgia. *The Oriole* 43:30-31.
- Mazzocchi, I. M., and S. L. Muller. 1992. A White-winged Tern nests in New York state. *Kingbird* 42:210-212.
- Melgar, C. 2002. North American and European Black Terns. Posted online: <<http://www.birdinghawaii.co.uk/Blackternarticle2.htm>>.
- Mullarney, K. 2003. The American Black Tern in County Wexford. *Birding World* 19:279-282.
- Murray, J. J. 1966. Changes in the Virginia avifauna: 1963-1965. *The Raven* 37:59-61.
- NCBRC [North Carolina Bird Records Committee]. 1992. Report of the North Carolina Bird Records Committee 1991. *Chat* 56:52-55.
- Reid, K. 1988. Early acquisition of first-winter plumage by White-winged Black Tern. *British Birds* 81:398.
- Roberson, D. 1999. Monterey County Rarities: 1999. Posted online: <http://montereybay.com/creagrus/MTY_rare.html>.

- Scott, F. R. 1975. The nesting season: Middle Atlantic coast region. *American Birds* 29:954-957.
- . 1976. The fall migration: Middle Atlantic coast region. *American Birds* 30:47-51.
- . 1977. News and notes: Loons in summer. Ruffs in 1975. White-winged Black Tern returns. *The Raven* 48:31-32.
- Scott, F. R., and D. A. Cutler. 1965. The spring migration: Middle Atlantic coast region. *Audubon Field Notes* 19:457-460.
- . 1975. The fall migration: Middle Atlantic coast region. *American Birds* 29:34-40.
- . 1974. The nesting season: Middle Atlantic coast region. *American Birds* 28:885-889.
- Sibley, D. A. 2000. *National Audubon Society: The Sibley Guide to Birds*. Knopf, NY.
- Van IJzendoorn, E. J. 1980. Broedgeval van Zwarte *Chlidonias niger* x Witvleugelstern *C. leucopterus*. *Dutch Birding* 2:62-65.
- van IJzendoorn, E. J. and J. D. de Miranda. 1980a. Onvolledig zomerkleed bij Witvleugelstern [Incomplete alternate plumage in White-winged Tern]. *Dutch Birding* 1:108.
- . 1980b. Over verenkleeden van Witvleugelstern in september [On plumages of White-winged Tern in September]. *Dutch Birding* 2:62-64.
- Vinicombe, K. 1980. Tern showing mixed characters of Black Tern and White-winged Black Tern. *British Birds* 73:223-225.
- Vinicombe, K., and D. Cottridge. 1996. *Rare birds in Britain and Ireland a photographic record*. Harper Collins, London.
- White, S. J., and C. V. Kehoe. 2001. Difficulties in determining the age of Common Terns in the field. *British Birds* 94:268-277.

THE JUNE 2010 FORAY: CULPEPER AND FAUQUIER COUNTIES

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The Virginia Society of Ornithology conducted its annual Breeding Bird Foray in Culpeper and Fauquier Counties this year, from June 12 to 20. We observed 101 species and obtained evidence of breeding for 55 of these. Coverage of the counties was best within the Culpeper Basin IBA and in northernmost Fauquier (especially Sky Meadows State Park). The more frequent sightings of several grassland species, as compared to the Piedmont Region of the eastern US as a whole, provide support for the importance of the Culpeper Basin IBA to grassland birds.

INTRODUCTION

Grassland and shrubland birds have experienced the most pronounced declines of any group in North America (McCracken, 2005). A primary purpose of the 2010 VSO Foray was to focus on these relatively understudied birds. Therefore, we turned our attention to the Culpeper Basin Important Bird Area (IBA) (National Audubon Society, 2010). This IBA is particularly suitable for the protection of grassland and shrubland birds because of its geology. The Culpeper Basin is a rift valley formed during the break-up of Pangea, about 200 million years ago. Historically, the basic, clay-rich soil of the Culpeper Basin provided a relatively “open” habitat favored by grassland and shrubland birds. However, the flatness of the land in the Basin has promoted agriculture there, which has resulted in extensive land-cover changes. On the other hand, the soil tends not to “perk” well, discouraging residential development, so that the habitat remains rather open and undeveloped. Restoration of grassland and shrubland habitat would be much easier in this area than in other parts of the Piedmont in Virginia. Thus, the Culpeper Basin is a conservation priority for the birds that depend on these habitats. (Much of the preceding is based on a conversation with Chris Ludwig, Virginia Department of Conservation and Recreation.) Unfortunately, very little of the Culpeper Basin IBA is formally protected (National Audubon Society, 2010).

Much of the Culpeper Basin IBA lies within Culpeper and Fauquier Counties (Figure 1). Therefore, we chose these counties for the 2010 Foray in order to focus on grassland and shrubland birds, and to provide additional data of use to the IBA. Another consideration was that these counties have not been thoroughly covered in past Forays. The Madison County Foray of 1996 (Dalmás, 1997) included a small section of Culpeper County. Fauquier County was forayed in 2001, but the results were never published. The State Parks Foray of 2002 included Sky Meadows

in Fauquier County, and the Riparian Foray of 2008 (Harding, 2008) included a section of the Rapidan River that abuts Culpeper County. Other surveys also provide little coverage. The yearly North American Breeding Bird Survey (Sauer *et al.*, 2008) barely enters the Foray area, covering only a little of the southeast corner of Fauquier and the westernmost corner of Culpeper County. Culpeper County is also inadequately covered by eBird counts.

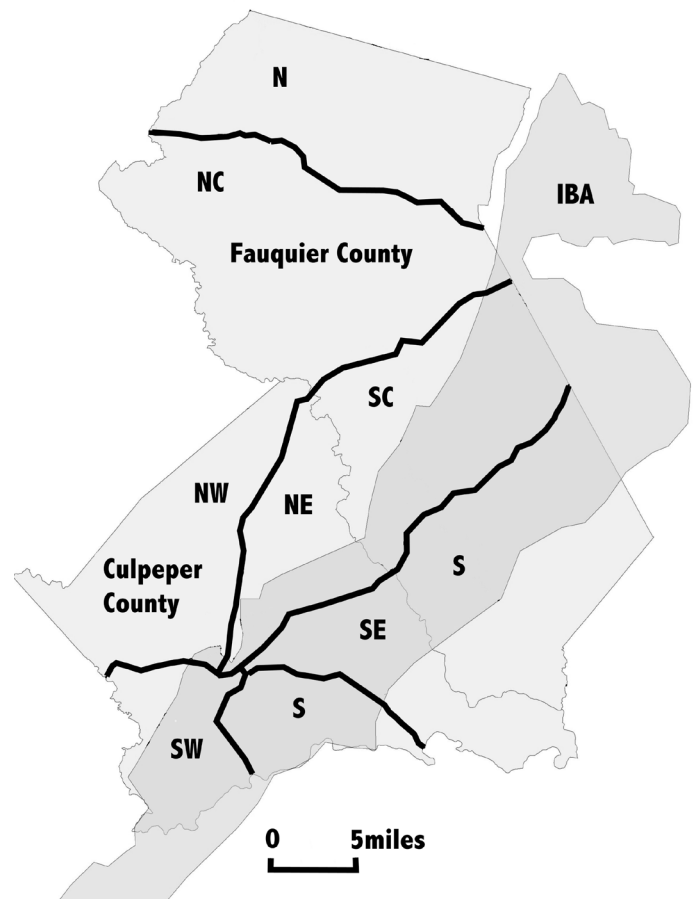


Figure 1: The nine subdivisions of Culpeper and Fauquier Counties. Subdivisions are designated by their approximate directional (N, E, S, W) and geographical (C=central) positions within each county, and are delineated by major highways and County lines, as shown. Each was surveyed separately, as reported in Table 2 (see pp. 18-19).

North-Central Fauquier (NC): Andrew Dolby

South-Central Fauquier (SC): Bill Williams, Arun Bose

Southern Fauquier (S): Wendy Ealding, Gerry Weinberger, David England, Wes & Susan Brown

Participants were instructed to cover their areas as completely as possible (Figure 2). The survey was conducted as a series of eBird-style “stationary” counts (13%), for which all birds were counted at a stationary location, or as “traveling” counts (87%), while walking and/or driving, usually for less than five miles, although two counts were 7 miles, one was 16 miles, and one was 40 miles (the routes taken in the latter two cases are roughly shown by the small dots in Figure 2). Location (and preferably GPS coordinates at the start of the count), date, starting time, duration, and distance were recorded for each count. In addition, evidence of breeding activity was sought. Participants were provided with a list of suggested sites, including public land, private land that we had permission to enter, and some roads that appeared suitable (either by preview or GoogleMap). Recorded bird sounds were not used. Table 1 summarizes the main field data collection parameters.

The official Foray period was June 12 - 20, 2010. The weather was hot at times, with highs of 87-89°F during the two weekends in Culpeper; otherwise the temperature was normal, in the low 80's. It did not rain much (brief, mid-afternoon thunderstorms for the first few days of the Foray, rain in the early morning of June 16, perhaps a few other instances).

Data from a nearby area was obtained from Mary Elfner and Andrew Reuter, who surveyed Manassas Battlefield Park on June 17. The park is outside the Foray area, but within the Culpeper IBA.

RESULTS and DISCUSSION

Overall Numbers

Twenty-seven participants covered 200 miles in a total of 122 hours (Table 1). They detected a total of 101 species: 88 in Culpeper County, 94 in Fauquier County, and 88 in the Culpeper Basin IBA within these counties (Table 2, pp. 18-19). They obtained evidence of breeding for 55 of the species (Table 3, pp. 20-21). The individual checklists are available on eBird; 95 are under the username “2010VSOforay” (password provided upon request). A further 40 checklists are under the username “Baron/Foray”; this is the subset from Sky Meadows State Park (see below). The data from all 135 lists will be included as an appendix to the online

version of this publication on the VSO website (<http://www.virginiabirds.net>).

The bird counts in Table 2 are subdivided into nine areas, as described in Methods and shown in Figure 1. However, it is clear upon examination of Figure 2 and Table 1 that the counts can be subdivided in another way. Most of the counts fall into two regions: the Culpeper Basin IBA and northernmost Fauquier County (especially Sky Meadows State Park). We will discuss these regions separately.

Sky Meadows State Park

A large fraction of the total number of checklists (40 out of 135) come from Sky Meadows State Park, in the extreme northwest of Fauquier County. This is partly because birds were counted in conjunction with a survey by the North American Butterfly Association. The park was covered more intensively than other areas during the Foray, with more walking and little driving during the counts. The dataset contained significant overlap, because more than one participant covered the same trail on different days. Scott Baron undertook the project of adjusting for this by determining high counts on trails where there was overlap. A summary of those corrected counts will be found in an appendix to the online report (<http://www.virginiabirds.net>).

The VSO State Parks Foray of 2007 included Sky Meadows (Dolby, 2007), providing us with a dataset to compare to ours. The amount of effort (4200 minutes in 2007, *versus* 2584 during this Foray), number of participants (5 *vs.* 4), and number of species (96 *vs.* 78) was somewhat greater in 2007. Consequently, the total number of birds seen was also somewhat greater, but the relative abundances are roughly similar (Table 4, pp. 22).

The habitat at Sky Meadows is at the high end of the elevation range in Culpeper and Fauquier Counties, and this was reflected in noticeable differences in the suite of species seen. Many more warblers were found in Sky Meadows than in the rest of the Foray area; four warbler species were reported only from Sky Meadows and another two were seen only in northernmost Fauquier County, including Sky Meadows. Woodpeckers and Baltimore Orioles were also more numerous in northernmost Fauquier County. Willow Flycatcher, Black-billed Cuckoo, Barred Owl, and Common Raven were seen only in northernmost Fauquier County. All but one of the Red-headed Woodpeckers were in northernmost Fauquier County. Rose-breasted Grosbeaks and American Woodcock were reported only from Sky Meadows.

TABLE 1. Number of Checklists, Times, and Distances

	FAUQUIER					CULPEPER						GRAND TOTAL	Sky Meadows	Culpeper IBA
Subdivision	N	NC	SC	S	TOTAL	NW	NE	SW	S	SE	TOTAL			
Checklists	50	6	19	13	88	1	3	14	13	16	47	135	40	73
Minutes	3750	158	84	686	4678	240	300	785	817	500	2642	7320	2584	3462
Miles	46.3	6	19	13	84.3	40	17	10.4	33.7	14.7	115.8	200.1	36.3	138.4

Subdivisions are described above, in this section, and depicted in Figure 1.

Frequencies of Species Occurrence (excluding Sky Meadows)

With the exception of Sky Meadows, previous Forays do not provide any exact comparisons for this year's Foray (see Introduction). Therefore, I turned to the "Piedmont Region" (extending from Pennsylvania to Georgia) as a basis of comparison. The Piedmont Region is one of the "Bird Conservation Regions" defined by the U.S. North American Bird Conservation Initiative (NABCI) as "ecologically distinct regions in North America with similar bird communities and habitats".

I compared the "frequencies" of the species seen during the Foray to those reported on eBird for the Piedmont Region during the middle two weeks of June 2009 (Table 5, pp. 23-24). (The data from Sky Meadows is excluded, because it is not in the Piedmont Region.) "Frequency", which is the percentage of checklists reporting the occurrence of the species of interest, provides a conservative way of evaluating the significance of the species that were seen. I found that the Foray frequencies were generally similar to those for the Piedmont Region (with a few interesting exceptions; see below).

The number of checklists for the Piedmont Region was substantial in mid-June of 2009 (~1000, Table 5), providing a more than adequate basis of comparison. However, eBird was only launched in 2002, so looking at earlier years to discern trends is less satisfactory. The species that show the greatest indication of decline in the Piedmont Region (comparing *ex-post facto* postings on eBird for mid-June of 2000 *versus* postings for mid-June of 2009) are Grasshopper Sparrow and Eastern Meadowlark. More robust indications exist that these species are indeed declining (Table 6). Interestingly, these two species are also the ones showing the most elevated frequencies in our Foray dataset relative to those of the 2009 Piedmont Region dataset (Table 5 and see below), leading one to surmise that these species are doing well in the Foray area.

Once I exclude species that are found on 0% of the Piedmont Region 2009 checklists (i.e., on somewhere between 0-4 lists out of ~1000, because the percentage has been rounded), I am left with 140 species that one might expect to see (Table 5). We observed 100 of these, but I am not surprised by any of the 40 species we missed. Most of those 40 species occurred on fewer than 2% of the 2009 checklists for the Piedmont region (i.e., on 3 to 24 lists out of ~1000), as shown in Table 5. The only exceptions were Double-crested Cormorant (an uncommon to rare summer visitor in Virginia's Piedmont), and Brown-headed Nuthatch and Prothonotary Warbler (both more abundant further south) (Rottenborn and Brinkley, 2007; Sauer *et al.*, 2008). Six of the unseen species are nocturnal, so their absence from our lists was not surprising.

There have been a couple of other recent surveys in Virginia's Piedmont. A survey further south was carried out earlier this year (Bryan, 2010), but is not strictly comparable, as it occurred in May. The Culpeper Basin IBA was surveyed in May and June of 2007 (the checklists are

TABLE 6. Species of Conservation Concern in the Culpeper Basin IBA*

Species of Conservation Concern	Manassas Battlefield Park	2010 Foray (within the IBA)	TOTAL	Top 10 Common Birds in Decline
Global Priority:				
Northern Bobwhite		5	5	#1
Red-headed Woodpecker				
Henslow's Sparrow				rare in VA
Continental Priority				
Dickcissel		6	6	
Grasshopper Sparrow	2	48	50	#10
Loggerhead Shrike				#8
Prairie Warbler	11	31	42	
Short-eared Owl				
Upland Sandpiper				
Other Important Species				
Eastern Meadowlark	5	58	63	#6
Field Sparrow	2	54	56	#9
Barn Owl				

*Species of Conservation Concern (<http://www.audubon.org/bird/iba/criteria.html>) were counted in those parts of the Culpeper Basin IBA that are within the two counties surveyed in this Foray. They were also counted on June 17, 2010, in Manassas Battlefield Park, which is situated within the IBA, by Mary Elfner and Andrew Reuter. "Top 10 Common Birds in Decline" is taken from "State of the Birds" (Audubon Society, 2010).

on eBird under the username "CulpeperIBA" and the data will be included as an appendix to the online version of this report). However, I found that the 2010 Foray dataset matched the 2009 Piedmont dataset much better than it matched the June portion of the 2007 dataset. Presumably this is because the June 2007 dataset represents more than an order of magnitude less effort than the 2010 Foray dataset (and two orders of magnitude less than the 2009 Piedmont dataset).

Grassland Birds and the Culpeper Basin IBA

Species of conservation concern which might occur in the Culpeper Basin IBA are listed in Table 6. These birds all prefer an "open" habitat, and some are obligate grassland species. Six of the species on the list were observed during the Foray (Table 6). The frequencies of four of the six species seem especially significant: Field Sparrow had threefold, Eastern Meadowlark sixfold, and Grasshopper Sparrow tenfold higher frequencies than seen in the 2009 data (Table 5). In addition, Dickcissels were on 4% of our checklists, whereas they were on 0% of the 2009 Piedmont checklists (actually on ~0.3%, rounded to 0). These four were the only species that showed such high frequencies relative to the 2009 Piedmont Region numbers. Since all four are obligate grassland species, these observations argue strongly for the importance of the Culpeper Basin IBA to grassland birds. Some other grassland and/or open-land species showed an approximately twofold higher frequency, which is tantalizing.

Although the habitat remains rather open throughout the Culpeper Basin IBA, the "true historic grasslands communities" of the Culpeper Basin exist almost exclusively in Manassas National Battlefield Park (National Audubon Society, 2010). The Park is not within the Foray area, but was surveyed on June 17, 2010, by Mary Elfner and Andrew Reuter.

Selected Individual Species Accounts

Species whose counts, frequencies, or locations seemed unremarkable have been omitted from these accounts.

We saw few MALLARDS compared to the June Piedmont Region counts (Table 5). These are listed as "uncommon residents, more common northward" in Virginia's Piedmont (Rottenborn and Brinkley, 2007), so perhaps we did not see many because we under-sampled their habitat.

Rexanne Bruno and Paul Nasca reported a WILD TURKEY on Raccoon Ford Road in southern Culpeper County on June 13, the only one seen during the Foray.

We did not see DOUBLE-CRESTED CORMORANT, perhaps due to a shortage of suitable habitat.

Karen Heatwole heard a possible BLACK-CROWNED NIGHT-HERON at dusk on the Rapidan River in southwest Culpeper County, a few days after the official Foray time period. She saw an immature bird of this species at the pond on her farm nearby in July of 2004. This species was not seen during the Foray.

Karen Heatwole reported an OSPREY at the intersection of routes 615 and 647 along the Rapidan River. These are rare and local residents in the Piedmont of Virginia, but are probably increasing (Rottenborn and Brinkley, 2007). The only previous sighting of an Osprey in Culpeper County reported to eBird in any year was seen on April 30, 2010, at

Longlea Retreat Center by David Gersten, about 15 miles north of the present sighting.

A single SHARP-SHINNED HAWK was reported by Rexanne Bruno and Paul Nasca at "Salubria" on Route 3, Culpeper County.

An AMERICAN WOODCOCK was seen by Joe Coleman on Bridle Trail in Sky Meadows State Park midmorning on June 19. The fact that only one woodcock was seen during the Foray is likely due to the fact that it is a nocturnal species. We note that only one was seen in Sky Meadows during the 2007 VSO Foray (Dolby, 2007).

BARRED OWL and EASTERN SCREECH-OWL were each seen only once. Joe Coleman saw the Barred Owl between 7 and 8 am on June 20 on Carole Miller's property, which is on both sides of Rokeby Rd, Rte. 623, a few miles south of Upperville. Karen Heatwole saw the screech-owl in southwestern Culpeper County on June 13, at 8:50 PM.

We detected 50 YELLOW-BILLED CUCKOOS. About half (19) were in Northern Fauquier County (7 in Sky Meadows), with the rest scattered rather evenly throughout the two counties. These common summer residents are said to be declining throughout the state (Rottenborn and Brinkley, 2007). However, our frequencies of 18% (Sky Meadows) and 24% (for the rest of the Foray) were much higher than for the Piedmont Region in mid-June 2009 (6-7%; Table 5). One account of breeding activity in northern Fauquier County on June 20 was reported by Joe Coleman (Table 3).

Wendy Ealding observed a BLACK-BILLED CUCKOO at Lake Thompson in Fauquier County. This bird is a rare summer resident in Virginia's Piedmont, and an uncommon and declining resident in the mountains nearby (Rottenberg and Brinkley, 2007). A second possible Black-billed Cuckoo was heard a few days later near the radio towers, at a higher elevation in Thompson WMA, by Anne Chazal. The only two eBird reports for the Foray counties are in 2007 (in Phelps WMA), and in 2003 (Thompson WMA).

RED-HEADED WOODPECKERS were found almost exclusively in northernmost Fauquier County, where they were seen in good numbers (Table 2). The only bird seen outside northernmost Fauquier County is one that Karen Heatwole saw in southwestern Culpeper County.

A WILLOW FLYCATCHER was seen in only two locations in northern Fauquier County: Sky Meadows and the Goose Creek Bridge.

LOGGERHEAD SHRIKE was a focus of the Foray, but none was seen. They are seen regularly in Sky Meadows (e.g., Table 4), but we did not see them there, despite heavy sampling. Shrikes have also been sighted in other parts of Fauquier County (eBird). In addition, Karen Heatwole saw a loggerhead shrike in southwest Culpeper County in 2001, and Todd Day reported one in 2007 in southeast Culpeper County (va-bird). We had hoped that the paucity of shrikes might be a function of the fact that Culpeper County is under-birded, but we have no evidence that this is the case.

All participants reported crows of one or both species, but only two participants scored for “crow sp.”. Since it seems likely that the circumstances when FISH CROWS and AMERICAN CROWS are not safely distinguishable (McGowan, 2002) occur more often than that, it is possible that Fish Crows were undercounted to some degree. We note that many more Fish Crows were reported from Sky Meadows during the 2007 Foray than during this Foray (Table 4).

The HOUSE WREN is listed as a locally common summer resident in the Piedmont, “...most common in the north and near the Blue Ridge” (Rottenborn and Brinkley, 2007). This appears to be the case in our dataset: 6 of the 11 wrens were in Sky Meadows.

The six warblers that were seen only in northernmost Fauquier County (above) included BLUE-WINGED WARBLER, CERULEAN WARBLER, REDSTART, WORM-EATING WARBLER, KENTUCKY WARBLER, AND HOODED WARBLER. The rarest was the single sighting of Blue-winged Warbler by Joe Coleman on Bridle Trail in Sky Meadows on June 19.

PRAIRIE WARBLERS, like a few other ‘grassland’ species, were seen on about twice as many of the Foray checklists as compared to the 2009 Piedmont dataset (Table 5). While we don’t want to overinterpret this finding, we note that a survey of another Piedmont region in Virginia in May of 2010 also revealed a healthy number of Prairie Warblers (Bryan, 2010).

Only one SUMMER TANAGER was seen, consistent with the observation that they have become fairly rare in the northern part of Virginia (Rottenborn and Brinkley, 2007). It was observed on June 12, 2010, by Rexanne Bruno on Raccoon Ford Road in southern Culpeper County.

Rexanne Bruno and Paul Nasca heard a possible SAVANNAH SPARROW in southern Culpeper County. The only other eBird sighting of Savannah Sparrow in Culpeper County during breeding season was made by Jay Keller near Stevensburg on June 10, 2007. Savannah sparrows have been seen occasionally during breeding season in Fauquier County, both in Sky Meadows (va-bird; Dolby, 2007) and near Remington (va-bird), but not during the Foray.

DICKCISSELS are listed as irregular summer residents in Virginia (Rottenborn and Brinkley, 2007). They are normally rare, with incursions some years from the core breeding range in the central US. The non-core breeding range is often occupied only by unpaired males (Temple, 2002). We noted that our Dickcissels were indeed singing males. All the Dickcissels seen during the Foray fell within the Culpeper Basin IBA, which is no surprise given that these birds are obligate grassland specialists (Temple, 2002). In fact, according to eBird data, Dickcissel sightings in Virginia are concentrated in the Culpeper Basin IBA, which indicates that it may be a stronghold for Dickcissels in Virginia.

The HOUSE FINCH is a common permanent resident throughout Virginia, but only 6 were seen during the Foray. The frequency was much lower than the ~33% frequency in June 2009 for the Piedmont Region as a whole (Table 5). We note that house finches were also “surprisingly uncommon” in the 1996 Foray of neighboring counties (Dalmas, 1997). House finches are mostly found in urban and suburban areas in the eastern US (Hill, 1993), and such areas were largely avoided during the 2010 Foray. The three in Sky Meadows were not on the trails, the two in the rest of Fauquier County were in Crockett Park and on Grassdale Road, and the one in Culpeper County was on route 647. The frequency for ROCK PIGEON was also a little low, perhaps for the same reason.

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REFERENCES

- Bryan, D.A. 2010. The 2010 Central Piedmont Important Bird Area (IBA) Protected Areas Survey. *The Raven* 81(1):22-29.
- Conservation Easements, Fauquier County. 2001, last modified 3/31/2010. (http://www.fauquiercounty.gov/government/departments/commdev/index.cfm?action=conservation_easmnts)
- Dalmas, J.H. 1997. The 1996 Madison County Foray. *The Raven* 68(1):3-27.
- Dolby, A. 2007. The 2007 State Park Breeding Bird Survey. *The Raven* 78(2):27-56.
- Draft 2010 Culpeper County Comprehensive Plan. 2007. (<http://web.culpepercounty.gov/CountyGovernment/PlanningZoning.aspx>)
- eBird, Audubon and the Cornell Lab of Ornithology. 2010. (<http://ebird.org/content/ebird>).
- Fauquier County Comprehensive Plan. 2009. [2001, last modified 2009] (<http://www.fauquiercounty.gov>)

- gov/government/departments/commdev/index.cfm?action=compplan1).
- Geology.com. 2010. (<http://geology.com/state-map/virginia.shtml>)
- GoogleMap Data. 2010. (<http://maps.google.com/>)
- Harding, S. 2008. The 2008 VSO Foray - Breeding Birds of Riperian Areas. *The Raven* 79:38-52.
- Hill, Geoffrey E. 1993. House Finch (*Carpodacus mexicanus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.proxy.lib.umich.edu/bna/species/046>
- McCracken, J.D. 2005. Where the Bobolinks Roam: The Plight of North America's Grassland Birds. *Biodiversity* 6(3):20-29.
- McGowan, K.J. 2002. How do you tell a fish crow from an American crow? Cornell Laboratory of Ornithology. (<http://www.birds.cornell.edu/crows/FishCrow.htm>)
- NABCI. 2002. Bird Conservation Regions. <http://www.nabci-us.org/bcrs.html>)
- National Audubon Society. 2010. Important Bird Areas in the U.S. Available at <http://www.audubon.org/bird/iba/07/2010>
- Rottenborn SC and ES Brinkley. 2007. Virginia's Birdlife, an annotated checklist. Virginia Society of Ornithology. 4th edition.
- Sauer, J. R., J. E. Hines, and J. Fallon. 2008. The North American Breeding Bird Survey, Results and Analysis 1966 - 2007. Version 5.15.2008. USGS Patuxent Wildlife Research Center, Laurel, MD
- Site Report:Culpeper Basin. (<http://iba.audubon.org/iba/profileReport.do?siteId=3086&navSite=search&pagerOffset=0&page=1>)
- State of the Birds, Common Birds in Decline, The Audubon Society Inc. 2010. (<http://stateofthebirds.audubon.org>)
- Temple, Stanley A. 2002. Dickcissel (*Spiza americana*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.proxy.lib.umich.edu/bna/species/703>
- U.S. Census Bureau. 2010. (<http://quickfacts.census.gov/qfd/index.html>)
- va-bird Listserve. (<http://mailman.listserve.com/listmanager/listinfo/va-bird>).

TABLE 2. Bird Counts. "N", "NC", *etc.*, designate the nine subdivisions of the two counties, as delineated in Figure 1. "IBA" includes only those checklist locations within the Culpeper Basin IBA.

SPECIES	FAUQUIER				CULPEPER					TOTAL	IBA
	N	NC	SC	S	NW	NE	SW	S	SE		
Canada Goose	113	30	93	2	5		17	29		289	139
Wood Duck	1	1					23			25	23
Mallard			1	2	2					5	1
Wild Turkey								1		1	1
Northern Bobwhite								5		5	5
Great Blue Heron	2	1	2	2			7	3		17	14
Green Heron	3		1			4	2	3	1	14	11
Black Vulture	9		6	2		6	3	10		36	25
Turkey Vulture	40	1	43	7		3	14	74	8	190	145
Osprey							1			1	1
Bald Eagle	1			1			4			6	4
Sharp-shinned Hawk								1		1	1
Cooper's Hawk	1		2	1				1		5	4
Red-shouldered Hawk	3	1	3	1			5	1	3	17	9
Red-tailed Hawk	3		2				3	3	3	14	11
American Kestrel	7			1		3	1	1		13	6
Killdeer	6	1	4	3	3		2	27		46	36
American Woodcock	1									1	
Rock Pigeon	16		3				4	1		24	8
Mourning Dove	42	9	17	46	10	44	29	25	9	231	168
Yellow-billed Cuckoo	19	1	7	2	2		13	6		50	28
Black-billed Cuckoo	1									1	
Eastern Screech-Owl							1			1	1
Barred Owl	1									1	
Chimney Swift	17	1	2	3			8	9	1	41	19
Ruby-throated Hummingbird	5		3	1			3	2	1	15	9
Belted Kingfisher	4			1			1			6	1
Red-headed Woodpecker	32								1	33	
Red-bellied Woodpecker	38	7	13	10	2	1	22	14	8	115	65
Downy Woodpecker	30	2	7	3			5	3	2	52	20
Hairy Woodpecker	8	2	3				23	1		37	6
Northern Flicker	23	1	3	3			1	1		32	7
Pileated Woodpecker	9	2	1		1	2	2	2		19	7
Eastern Wood-Pewee	60	5	20	10	2	11	14	9	8	139	67
Acadian Flycatcher	39	8	8	3	1		3	3		65	17
Willow Flycatcher	2									2	
Eastern Phoebe	18	2	8	7	2	2	7	6	3	55	31
Great Crested Flycatcher	24	1	10	1			1	3		40	14
Eastern Kingbird	13	1	7	7	3	2	5	10		48	32
White-eyed Vireo	1		1	6		8	2	5	1	24	16
Yellow-throated Vireo	9		3		1		2	4		19	9
Warbling Vireo					1		4	1		6	5
Red-eyed Vireo	52	4	18	13	3	18	18	10	5	141	70
Blue Jay	49	3	15	7	10	15	11	11	5	126	55
American Crow	50	15	5	12	40	1	22	44	10	199	80
Fish Crow	9	1	4			1				15	8
Common Raven	9									9	
Horned Lark				1			2			3	3
Purple Martin	1	6	10	34			16	8	41	116	105
Tree Swallow	69	2	7	3	4	8	1	5	3	102	24

SPECIES	FAUQUIER				CULPEPER					TOTAL	IBA
N. Rough-winged Swallow	22	4	3		3		3			35	6
Cliff Swallow	12								8	20	8
Barn Swallow	94	8	29	14	10	7	29	50	2	243	134
Carolina Chickadee	31	15	19	4	2	10	13	9	3	106	56
Tufted Titmouse	34	14	17	9	10	1	12	23	3	123	57
White-breasted Nuthatch	28	6	7			1	4	1	1	48	12
Carolina Wren	10	3	9	4	10	2	10	7	4	59	35
House Wren	6				3				2	11	2
Blue-gray Gnatcatcher	45	2	8	2	3		11	6	3	80	30
Eastern Bluebird	36	3	14	8	4	2	7	28	2	104	54
Wood Thrush	52	5	12	9		10	6	22	12	128	58
American Robin	39	10	13	18	10	13	14	62	13	192	124
Gray Catbird	51	6	3	4	25	2	4	15	3	113	31
Northern Mockingbird	32	6	15	12	20	2	18	49	8	162	102
Brown Thrasher	38	1	8	8	15	23	2	8	2	105	43
European Starling	248	18	36	12	10	72	30	280	2	708	433
Cedar Waxwing	32		11			2	11	4	6	66	30
Blue-winged Warbler	1									1	
Northern Parula	8		2	2			5	2		19	11
Yellow Warbler	4					1		1		6	2
Pine Warbler			4	4				2		10	9
Prairie Warbler	1		8	4	5		7	13	3	41	31
Cerulean Warbler	13									13	
American Redstart	24									24	
Worm-eating Warbler	3	2								5	
Ovenbird	8	4	4	7			3	4	1	31	15
Louisiana Waterthrush	6	3			1		1			11	1
Kentucky Warbler	10	1								11	
Common Yellowthroat	40	4	10	7	3	32	17	21	14	148	97
Hooded Warbler	11									11	
Yellow-breasted Chat	6		2		2		5	9		24	16
Summer Tanager								1		1	1
Scarlet Tanager	30	7	3	1	2		1			44	6
Eastern Towhee	78		9	8	4	23	16	33	4	175	87
Chipping Sparrow	22	3	18	13	10		9	32	8	115	73
Field Sparrow	52		8	6	4	3	12	15	22	122	54
Savannah Sparrow								?		?	?
Grasshopper Sparrow	5	3	5	7	2	3	13	8	13	59	48
Song Sparrow	29	5	3	4	2	1	9	17	3	73	38
Northern Cardinal	61	5	36	17	10	4	40	29	6	208	129
Rose-breasted Grosbeak	2									2	
Blue Grosbeak	4	1	4	2	3		1	4		19	9
Indigo Bunting	109	4	25	25	25	26	50	47	12	323	167
Dickcissel			1	1			1	3		6	6
Red-winged Blackbird	83	17	10	99	11	34	21	66	33	374	258
Eastern Meadowlark	58	3	8	12	5	4	5	26	3	124	58
Common Grackle	93	19	3	7	10	48	66	59	27	332	213
Brown-headed Cowbird	18	9	4	5	2	2	7	17		64	31
Orchard Oriole	25	2	4	3	3	3	13	7	2	62	31
Baltimore Oriole	19	3		2	1		1			26	4
House Finch	3		1	1				1		6	3
American Goldfinch	68	8	14	31	3	34	41	40	12	251	167
House Sparrow	17	2	12		2	1	12	8	3	57	39
Crow sp.	5			1						6	1

TABLE 3. Evidence of Breeding.

Species	Culpeper	Fauquier	Culpeper Basin IBA
Canada Goose		Large young; Recently fledged young	Large young
Wood Duck	Female w/young		Female w/young
Black Vulture		Recently fledged young	
Red-tailed Hawk	Carrying food; potentially nesting - hawk flew from nest location but did not observe it on the nest		Carrying food; potentially nesting - hawk flew from nest location, but did not observe it on the nest
Killdeer		Fledgling; Pair; Agitated; Distraction display; On nest; Nest with 3 eggs	Fledgling
Mourning Dove	Nested earlier	Pair (2)	Nested earlier
Yellow-billed Cuckoo		Territory	
Red-headed Woodpecker		Carrying food	
Red-bellied Woodpecker		Juvenile; Recently fledged young; Adult feeding young	Recently fledged young
Downy Woodpecker		Recently fledged young (2); Pair	
Eastern Wood-Pewee		Territory; carrying food	Carrying food
Acadian Flycatcher		Territory; On nest	
Eastern Phoebe		Incubating; On nest; Pair	Incubating
Great Crested Flycatcher		Adults taking turns feeding young in cavity	
Yellow-throated Vireo		Territory	
Red-eyed Vireo		Territory	
Blue Jay		Carrying food; Pair (3)	Carrying food
Purple Martin	Nesting, feeding young	Nesting; active purple martin house	Nesting
Tree Swallow		Young at nest box; Agitated; Nest with young; Courtship; On	Young at nest box
Cliff Swallow	Nesting under the Remington Rd bridge	Nesting under the Rectortown Rd bridge over Goose Creek.	Nesting under the Remington Rd bridge
Barn Swallow	Young seen; Nesting	11 nests including 4 with young; Recently fledged young; Pair	Young seen; Nesting
Carolina Chickadee		Recently fledged	
Tufted Titmouse		Juvenile; Feeding young	Feeding young
Carolina Wren	Nest with 4 eggs		Nest with 4 eggs
House Wren		On nest	
Blue-gray Gnatcatcher	Nesting	Nest with young; Adult feeding young	Nesting
Eastern Bluebird	Young seen; Nest with 5 eggs	Pair; On nest (2); 4 nests with 15 eggs; Nest with 4 young	Young seen; Nest with 5 eggs
Wood Thrush		Territory; Pair	
American Robin		Pair; Territory; Agitated	
Gray Catbird		Carrying food; Carrying nesting material (2nd nest of season?); Adults feeding young; Pair (3)	
Northern Mockingbird	Nest w/4 eggs	Agitated; Pair(2)	Nest w/4 eggs
Brown Thrasher	Young seen	Recently fledged young; Recently fledged	Recently fledged young
European Starling		Juveniles seen; On nest	
Cedar Waxwing		Pair	
Northern Parula		Territory	
Ovenbird		Territory	

Species	Culpeper	Fauquier	Culpeper Basin IBA
Common Yellowthroat		Territory; Pair (3); Agitated; Carrying food	
Yellow-breasted Chat		Territory	
Scarlet Tanager		Territory (2)	
Eastern Towhee		Pair; Recently fledged young (2)	
Chipping Sparrow	Fledged young	Territory; agitated adults; Pair; Recently fledged	Fledged young; agitated adults
Field Sparrow		Agitated indicating nest nearby (2); Recently fledged	Agitated indicating nest nearby
Grasshopper Sparrow	Young and adult bringing food.		Young and adult bringing food.
Song Sparrow		Nest building; Carrying food	
Northern Cardinal	Fledged young	Territory; Pair (2)	Fledged young
Blue Grosbeak		Pair	
Indigo Bunting		Territory; Female seen with food item; Pair (2); Agitated behavior; Carrying food	Female seen with food item
Red-winged Blackbird	Immatures seen	Agitated behavior (5); Pair	Immatures seen
Eastern Meadowlark		Territory	
Common Grackle	Carrying nest material; Feeding young	Nesting; Juveniles; Carrying food	Carrying nest material; Feeding young; Nesting; Recently Fledged Young
Orchard Oriole		Territory; Pair	
Baltimore Oriole		Pair; Carrying nest material; Nest building; Territory	
House Finch		Pair	
American Goldfinch		Territory	
House Sparrow		Entering PUMA box; entering nest box; Pair; On nest; Carrying food	Entering PUMA box

TABLE 4 Bird Counts, Sky Meadows. Total counts for Sky Meadows State Park from this year's Foray are compared with those from the 2007 VSO Foray (Dolby, 2007).

Species	2010 Foray	2007 Foray
Canada Goose	23	33
Wood Duck	1	
Ruffed Grouse		3
Wild Turkey		1
Northern Bobwhite		3
Great Blue Heron	1	2
Green Heron	1	6
Black Vulture	5	4
Turkey Vulture	11	24
Bald Eagle		1
Sharp-shinned Hawk		1
Cooper's Hawk		1
Red-shouldered Hawk		1
Broad-winged Hawk		1
Red-tailed Hawk	2	7
American Kestrel	4	5
Killdeer	3	7
Spotted Sandpiper		1
American Woodcock		1
Rock Pigeon	11	36
Mourning Dove	17	33
Yellow-billed Cuckoo	7	19
Eastern Screech-Owl		1
Chimney Swift	6	11
Ruby-throated Hummingbird	1	1
Belted Kingfisher		4
Red-headed Woodpecker	19	28
Red-bellied Woodpecker	23	40
Downy Woodpecker	17	13
Hairy Woodpecker	2	4
Northern Flicker	15	18
Pileated Woodpecker	5	20
Eastern Wood-Pewee	27	51
Acadian Flycatcher	11	18
Willow Flycatcher	1	4
Eastern Phoebe	8	9
Great Crested Flycatcher	14	37
Eastern Kingbird	4	17
Loggerhead Shrike		4
White-eyed Vireo	1	1
Yellow-throated Vireo	8	7
Red-eyed Vireo	30	69
Blue Jay	24	61
American Crow	20	35
Fish Crow	4	18
Crow sp.	2	
Common Raven	5	15
Purple Martin		4
Tree Swallow	42	70

No. Rough-winged Swallow		2
Barn Swallow	42	47
Carolina Chickadee	18	31
Tufted Titmouse	22	51
White-breasted Nuthatch	19	32
Carolina Wren	2	12
House Wren		4
Blue-gray Gnatcatcher	9	46
Eastern Bluebird	21	39
Wood Thrush	26	58
American Robin	17	16
Gray Catbird	19	33
Northern Mockingbird	19	15
Brown Thrasher	13	32
European Starling	179	122
Cedar Waxwing	18	25
Yellow Warbler	1	4
Yellow-rumped Warbler		3
Pine Warbler		1
Prairie Warbler	1	
Cerulean Warbler	9	12
American Redstart	5	23
Worm-eating Warbler	2	5
Ovenbird	3	6
Louisiana Waterthrush	3	4
Kentucky Warbler	7	13
Common Yellowthroat	36	32
Hooded Warbler	8	9
Yellow-breasted Chat	4	4
Scarlet Tanager	18	54
Eastern Towhee	41	80
Chipping Sparrow	5	15
Field Sparrow	37	62
Savannah Sparrow		1
Grasshopper Sparrow	3	1
Song Sparrow	15	21
Northern Cardinal	16	44
Rose-breasted Grosbeak	2	2
Blue Grosbeak	2	4
Indigo Bunting	63	97
Bobolink		2
Red-winged Blackbird	38	76
Eastern Meadowlark	19	50
Common Grackle	24	32
Brown-headed Cowbird	6	45
Orchard Oriole	12	17
Baltimore Oriole	14	30
House Finch	3	2
American Goldfinch	26	50
House Sparrow	14	27
SUM	1236	2143

TABLE 5. Frequencies in the US Piedmont and VSO Foray Regions. Frequencies (percentage of checklists reporting a given species) are given for the Piedmont Region of the eastern US in June of 2009 and for the 2010 Foray. Sky Meadows checklists and a Trillium Trail checklist from Thompson WMA have been removed from the Foray dataset to calculate Foray frequencies, because these areas are outside the Piedmont Region and have a rather different suite of species.

SPECIES	2009 Piedmont		2010 Foray
	June 8-14	June 15-21	June 12-20
Canada Goose	27	24	14
Mute Swan	1	2	0
Wood Duck	6	7	5
Gadwall	2	1	0
American Black Duck	1	1	0
Mallard	25	20	3
Ring-necked Duck	0	1	0
Hooded Merganser	0	1	0
Common Merganser	1	1	0
Ruddy Duck	1	1	0
Northern Bobwhite	3	1	2
Ring-necked Pheasant	1	1	0
Wild Turkey	3	2	1
Common Loon	1	0	0
Pied-billed Grebe	1	0	0
Neotropic Cormorant	0	1	0
Double-crested Cormorant	9	8	0
Least Bittern	0	1	0
Great Blue Heron	19	23	13
Great Egret	5	5	0
Snowy Egret	2	1	0
Green Heron	12	10	11
Bl.-crowned Night-Heron	2	2	?
Y.-crowned Night-Heron	1	1	0
Black Vulture	10	9	16
Turkey Vulture	25	23	45
Osprey	3	4	1
Bald Eagle	3	2	4
Northern Harrier	1	0	0
Sharp-shinned Hawk	0	0	1
Cooper's Hawk	4	5	5
Red-shouldered Hawk	9	8	15
Broad-winged Hawk	1	0	0
Red-tailed Hawk	14	12	8
American Kestrel	2	1	5
Sora	1	0	0
Killdeer	14	7	16
Black-necked Stilt	1	0	0
Spotted Sandpiper	1	1	0
Greater Yellowlegs	1	0	0
Lesser Yellowlegs	1	0	0
Laughing Gull	0	1	0
Ring-billed Gull	2	2	0
Herring Gull	2	1	0
Great Black-backed Gull	1	1	0
Rock Pigeon	10	13	6
Mourning Dove	60	61	56

Yellow-billed Cuckoo	7	6	24
Black-billed Cuckoo	0	0	1
Eastern Screech-Owl	1	0	1
Great Horned Owl	1	0	0
Barred Owl	2	1	1
Common Nighthawk	1	1	0
Chuck-will's-widow	1	0	0
Whip-poor-will	1	0	0
Chimney Swift	29	27	13
Ruby-thr. Hummingbird	19	17	11
Belted Kingfisher	8	8	5
Red-headed Woodpecker	4	2	4
Red-bellied Woodpecker	45	43	43
Downy Woodpecker	39	35	20
Hairy Woodpecker	5	5	11
Red-cock. Woodpecker	1	0	0
Northern Flicker	19	16	12
Pileated Woodpecker	9	8	11
Eastern Wood-Pewee	21	18	45
Acadian Flycatcher	16	14	16
Willow Flycatcher	12	5	1
Eastern Phoebe	20	20	30
Great Crested Flycatcher	20	18	17
Eastern Kingbird	21	18	27
White-eyed Vireo	9	8	10
Yellow-throated Vireo	6	3	11
Blue-headed Vireo	1	0	0
Warbling Vireo	8	5	6
Red-eyed Vireo	24	23	40
Blue Jay	52	50	32
American Crow	49	44	47
Fish Crow	13	12	9
crow sp.	3	3	1
Common Raven	0	0	2
Horned Lark	1	0	2
No. Rough-winged Swallow	13	12	10
Purple Martin	6	7	13
Tree Swallow	21	21	20
Bank Swallow	1	1	0
Barn Swallow	30	25	46
Cliff Swallow	3	3	3
Carolina Chickadee	38	36	33
Black-capped Chickadee	~3	~2	0
Tufted Titmouse	51	50	34
White-breasted Nuthatch	30	30	15
Brown-headed Nuthatch	8	6	0
Carolina Wren	49	46	33
House Wren	29	28	6
Marsh Wren	2	1	0
Blue-gray Gnatcatcher	22	16	27
Eastern Bluebird	30	31	39
Veery	4	5	0

TABLE 5. (cont.)

Wood Thrush	24	20	39
American Robin	60	57	43
Gray Catbird	44	43	31
Northern Mockingbird	40	35	49
Brown Thrasher	17	13	32
European Starling	37	32	30
Cedar Waxwing	18	17	14
Blue-winged Warbler	2	2	1
Northern Parula	8	5	13
Yellow Warbler	15	10	5
Chestnut-sided Warbler	1	0	0
Yellow-throated Warbler	3	1	0
Pine Warbler	10	7	6
Prairie Warbler	9	7	19
Cerulean Warbler	1	0	0
Black-and-white Warbler	1	2	0
American Redstart	4	3	1
Prothonotary Warbler	4	2	0
Worm-eating Warbler	1	1	2
Ovenbird	10	9	15
Louisiana Waterthrush	2	3	5
Kentucky Warbler	1	1	2
Common Yellowthroat	23	22	41
Hooded Warbler	3	2	0
Yellow-breasted Chat	7	4	15
Eastern Towhee	26	26	37
Bachman's Sparrow	1	0	0
Chipping Sparrow	32	26	45
Field Sparrow	14	12	37
Savannah Sparrow	1	1	?
Grasshopper Sparrow	3	3	34
Song Sparrow	39	35	33
Summer Tanager	5	3	1
Scarlet Tanager	8	8	14
Northern Cardinal	71	70	58
Rose-breasted Grosbeak	2	3	0
Blue Grosbeak	6	4	14
Indigo Bunting	29	25	63
Dickcissel	0	0	4
Bobolink	2	2	0
Red-winged Blackbird	34	31	48
Eastern Meadowlark	7	6	38
Common Grackle	48	47	38
Brown-headed Cowbird	32	29	23
Orchard Oriole	17	11	27
Baltimore Oriole	20	13	10
House Finch	40	39	3
American Goldfinch	51	50	55
House Sparrow	25	27	20
Number of species	138	125	98-100
Number of Checklists	543	492	94

VIRGINIA SOCIETY OF ORNITHOLOGY ANNUAL MEETING, 2010

ALYCE QUINN
VSO Secretary

The annual meeting was held April 23-25 in Farmville, VA

Friday Night Meeting

Welcome

Andrew Dolby, standing in for Rexanne Bruno who was unable to attend*, called the meeting to order at 8:05 p.m. and thanked the Margaret Watson Bird Club for hosting.

David Spears spoke briefly about the different sites each field trip would visit.

Reports

Field Trips - Information about upcoming trips can be found on the website: Piney Grove May 29, Highland County June 4-6, Culpeper Basin IBA Survey June 12-20.

Conservation and Education - Clubs are urged to apply for money that is available from both these committees for small projects.

Current focus of the Board is on outreach. We are developing new brochures, looking at electronic delivery of the newsletter, and we are on Facebook.

Treasurer - Sue Thrasher reported that we began the year with approximately \$49,000 in the general fund and \$132,000 in restricted funds. We ended the year with \$49,734 in the general fund and \$134,104 in restricted funds.

Nominating Committee - David Spears proposed the following list of nominees for 2011:

President – Rexanne Bruno

Past President – David Spears

Vice President – Andrew Dolby

Secretary – Alyce Quinn

Treasurer – Sue Thrasher

Membership Secretary – Thelma Dalmas

Newsletter Editors – Linda Fields and Alan Schreck

Raven Editor – Wes Brown

Board Members – Elisa Enders of Portsmouth,
David Hannah of Charlottesville,
and Larry Meade of Vienna.

Joe Coleman moved to close the nominations, Wes Brown moved to adopt the selection, motion passed unanimously.

Thelma Dalmas moved to adjourn at 8:15 p.m.

Saturday Meeting

Saturday morning several field trips in the Farmville area were offered.

Saturday afternoon seven studies were presented and discussed at the Paper Session.

Banquet

David Spears was awarded the President's Pin.

Jackson Abbott Conservation Award

The award was presented to Larry Valade and the late Thyra Valade for placing a conservation easement on and donating their 20-acre property to the University of Mary Washington.

J. J. Murray Research Award

Winners of this year's awards are Marie Pitts for "Land Cover Predictors of Occupancy and Reproductive Success of Eastern Bluebirds on Golf Courses, and Stephen Reeves for "Effect of Supplemental Feeding on Corticosterone in Eastern Bluebirds."

Speaker

Ted Floyd, Editor of *Birding* magazine, presented "Birding at Night – the Final Frontier."

Sunday Meeting

Several field trips were offered Sunday morning.

* VSO President Rexanne Bruno was stranded in Bucharest, Romania. A widespread high concentration of airborne particulates from a massive volcanic eruption in Iceland made flying conditions hazardous and caused flight cancellations and airport closures across Europe.

Review of 'BIRDS OF THE WEST INDIES', a volume in the Princeton Illustrated Checklist series, by Norman Arlott; list price \$24.95; published by Princeton University Press, 2010.

The West Indies is a popular destination for Virginia birdwatchers – whether they do some occasional birding while on vacation there, or go there as a birding destination. I have visited the area many times in the last 30 years and have birded it in both manners, most recently in January/February 2011, when I was able to use the reviewed book in the field. I was also able to discuss it with some local bird guides.

This book is part of a series of Princeton Illustrated Checklists, which series appears destined to cover the whole world. I have all those published to date and they all have the same format, drawbacks and advantages. The series as a whole is usually quite accurate, but crams a large number of species into a small format, with little space for showing different plumages for each species. The distribution maps are always at the back and the amount of data given is usually fairly minimal, so I have tended to use them, as the series' title indicates, as illustrated checklists and not as books I use in the field for identification purposes. If I am using a country-specific guide for identification purposes, it is often useful to have along one of these illustrated checklists, as they usually cover a wider area (such as Southern South America or the Non-passerines of South America), and that is helpful for seeing similar species that occur nearby, or in checking out the wider range of species I have been watching.

In this case, however, there is already a pocket-sized guide covering precisely the same area – a book with precisely the same name (*Birds of the West Indies*) and also published by Princeton, at an identical list price! So I do wonder why Princeton published this new book – perhaps just because it does indeed intend to cover the world with Illustrated Checklists in exactly the same standard format? Thus, the following obvious questions arise: do you need both books? and, if not, which is preferable?

As usual, the answers to obvious questions are not so obvious! The rest of this review centers around a comparison between the two books. The 'other' *Birds of the West Indies* is in the Princeton Field Guides series, by H. Raffaele *et al.*, published in 2003, and still available. This older book is based on the authors' more detailed and larger format 'A Guide to the Birds of the West Indies', published in hardback in 1998. I always take the latter with me when I go birdwatching in the area (along with an island-specific guide, if there is one), though it is nice to also have a pocket-sized book available for carrying in the field.

Before I get into a detailed comparison of the two pocket-sized books, let me make a couple of disclosures, as I have come in contact with their authors. Herb Raffaele is

a 'local', who served with the US Fish and Wildlife Service, and who addressed the Northern Virginia Bird Club at my request some years ago. While I have never met Norman Arlott, he did paint (just for me) a Cuban Parakeet at the time I 'adopted' this species when joining the Rare Bird Club of BirdLife International.

Size. The smaller Raffaele *et al.* field guide (I shall call this Raffaele from here onwards) measures 5¼ x 8½ inches, while Arlott (as I shall call it) is 5 x 7½ inches. However, Arlott has more pages than Raffaele (240 *vs* 208) and so is a little thicker (⅝ *vs* ½ inch). Each weighs about 13 ounces.

Quality of artwork. While I generally like the artwork in Arlott, the standard format used here – most species are shown precisely from the side, all facing left – does not compare well with that in Raffaele, with its varied poses that look much more like real birds. Raffaele had the advantage, of course, of being able to borrow liberally from the earlier hardback volume. However, both books are pretty well illustrated; neither will lead you astray and cause mis-identifications, though neither is free of errors, as detailed below.

There are some species where illustrations of birds in flight are essential to the identification process – especially ducks, raptors, shorebirds, gulls and terns, doves, swifts and swallows. Raffaele has these, but Arlott lacks illustrations of flying ducks, shorebirds, terns and doves. You would need to have with you a North American field guide to confidently identify many of these, and for the doves even that would not serve, as the island species are mostly local.

In the copy of Arlott I reviewed, the chestnut and rufous colors are far too deep and intense. This is particularly noticeable in the plates covering the lizard cuckoos, the St Lucia Pewee, some of the wrens, the bluebirds, the solitaires, the tremblers, the Cedar Waxwing and some orioles. My guess is that this is a printing problem and not caused by the artist. The colors of these species in Raffaele are more lifelike.

Format. Arlott uses the traditional sequence for presenting species, which I find much the easier. Raffaele largely does this also, but with some exceptions that I find rather a nuisance. He does this because, as he says, "in some cases, particularly among marine and aquatic birds, species have been grouped according to similarity of appearance to help facilitate comparison".

Both books place their texts opposite their illustrations, and both are rather skimpy with the text, as demanded by this size of guide. One really needs more, which is the principal reason I always take the earlier Raffaele *et al.* hardback with me on trips, even if I don't carry it in the field.

A big difference between the books is the placement of the distribution maps. Arlott has them all at the back, which is the standard format for these Princeton Illustrated Checklists. I usually find this intensely irritating, but less so in this case. (When you use this book, I hope you know which island you are on!) And since the islands of occurrence are usually mentioned in Arlott's text, one seldom needs to refer to the maps. However, the geographic text references occupy space which could have been used for other information. This is one reason why I have generally found that Raffaele manages to get in more information than does Arlott.

How up-to-date are these books? Inevitably, Arlott wins hands down, being published 5 years later than Raffaele (though the latter has been brought up to date relative to the larger hardback edition). In addition, Arlott includes a separate note concerning the recent splitting of the Greater Antillean Oriole into four separate species, which is a nice touch. There are so many splits emerging these days (with plenty more to come!) that guidebooks rapidly become out-of-date taxonomically. Not much you can do about that, I'm afraid, but publishers can help by showing different subspecies whenever they can be readily identified. This is particularly important for a West Indies guide, because subspecies which have become distinctive in morphology (and sometimes vocally as well) on different islands, with little or no gene flow between them, may already be or will become separate species. When splits are recognized, of course, you can always look at your records to see which islands you saw the species on. But it is so much nicer if you also remember checking out how one island's version actually differed from the others. For this reason, I try to look at all of the small bird species on each island, as though they were each full species.

How well do these two volumes describe the different subspecies? Let us start with the Greater Antillean Oriole just mentioned. Arlott shows all four of the (then) subspecies. Raffaele shows only three, inexplicably omitting the Cuban subspecies (though the pocket-size edition is an improvement on the hardback, which only showed one!).

Both Arlott and Raffaele illustrate only one of the two forms of Plain Pigeon, but Arlott describes the difference, while Raffaele does not. And Arlott is also better at separating out the races of American Kestrel.

There are differences in the two books in their treatment of the Loggerhead Kingbird, and both are at fault. There are easily identifiable races in the Bahamas, Cuba and Hispaniola/Puerto Rico. Arlott separates out the first two but ignores the latter. Raffaele handles the last two, but ignores the Bahamian race. So you need both books to get proper coverage!

Arlott is much better than Raffaele on coverage of the Red-legged Robin, illustrating all the significant races. A small flaw is not mentioning that there are two races in Cuba, a Bahamian in the eastern part of the island and a Cuban in the west and center. Raffaele just shows two races

and does not mention that there are others, though they are quite distinctive.

"Adelaide's" Warbler is covered much better in Raffaele, who accepts that this is indeed three different species, all of which he illustrates: Adelaide's Warbler (endemic to Puerto Rico), St. Lucia Warbler and Barbuda Warbler. Arlott treats these three forms as races of Adelaide's, illustrating two of them (but failing to highlight the rather subtle differences between them), while only describing the rather different-looking race from Barbuda. It would have been better to illustrate the two very different forms, and then to describe how one had subtle differences on two different islands.

Arlott covers the very variable Bananaquit very well, with Raffaele being somewhat skimpy.

Neither of these books show the three races of Zapata Sparrow that exist quite isolated from each other in Cuba.

How accurate are these two pocket guides? Generally speaking, both books are accurate but, as usual, one really wonders how some errors manage to get in there. Indeed, there are too many to detail them all. Here are a few.

Arlott handles the Red-footed Booby in a most unfortunate manner (while Raffaele gets it right). This species has a brown and a white face phase for the adults, with the brown much more common around some islands. The Arlott text makes no mention of this; a first look at the Plate seems only to show the light phase. Indeed, this has led one local reviewer to state that the book has totally ignored the common dark phase. That isn't true, as an illustration of it is there, but unfortunately it is placed so that it does not strike the eye, and the lack of any text mention means many will miss it and be puzzled about what they are seeing.

The Ring-billed Gull is common in Puerto Rico (as stated in Raffaele, contrary to Arlott).

The Arlott illustration of the Cuban Screech-Owl, looking almost the same as the Puerto Rican Screech-Owl, is not correct. It should have a browner breast covered with whitish spots, and it is not obviously streaked. Raffaele has it right.

But when it comes to the barn owls, Arlott has it about right, while Raffaele makes a major mistake. There used to be only two recognized barn owls in the region - the widespread Barn Owl, and the Ashy-faced Owl of Hispaniola. The hardback Raffaele *et al.* had this right, showing also that the Barn Owl came in two forms - the one we readily recognize (with a white face and body) and a rufous form from the southern Lesser Antilles. I saw and heard the latter in Grenada ten years ago, but it looked (and more importantly, sounded) so different from the common Barn Owl that I questioned whether it was a Barn Owl at all. The gurus agreed, after doing additional research, and initially re-assigned these Lesser Antillean birds to be a race of the Ashy-faced Owl. I thought this decision was questionable. To my mind, the correct treatment is that given in the second edition of *Owls of the World* (Koenig

and Weick, published by Yale in 2008): a Barn Owl race in the Greater Antilles, an Ashy-faced Owl in Hispaniola (which also has Barn Owls), and two races of the Lesser Antilles Barn Owl, one in Dominica and a darker form in the other islands.

For this review, however, the question is how well have the two smaller guides handled the situation? Arlott does a passable job. It still assigns the Grenada birds to Ashy-faced Owl, but at least it gives separate illustrations of the nominate Ashy-faced Owl and of one of the rufous-faced races from the Lesser Antilles (and notes that there are two such races). Raffaele, behind the times, keeps the rufous-faced Lesser Antillean birds within Barn Owl and illustrates both the white-faced and the rufous-faced races (although it does not acknowledge that the Dominica birds are different than the others). So far, so good. But then the howler! It labels the two forms wrongly, showing the Lesser Antillean birds as 'white' and the Greater Antillean birds as 'rufous'. That will surely create confusion if you are lucky enough to find one of these birds! Purely bad editing, I suppose.

An equivalent howler in Arlott concerns the beautiful little Tody species. The one thing that separates out the Puerto Rican Tody from the others, especially from the very similar Cuban Tody, is that it is the only one WITHOUT pink flanks. Yet there they are on the Arlott illustration. Raffaele got this right.

Conclusion. As you will have read, neither of the two pocket-sized guides is perfect. Each has its own strengths that you will find potentially useful. And only having one of them will lead you to missing out on some useful information. So, as these are both relatively cheap books (in an absolute sense, but certainly as a percentage of the cost of a trip to the West Indies), I would strongly recommend that you take both! That having been said, however, since neither book will lead you to make identification errors, you could use either on its own with reasonable confidence. But do also take, if you can, the earlier hardback Raffaele and, where they exist, island-specific guides.

Stephen Eccles
Annandale, VA
March, 2011

IN MEMORIAM

Robert James Watson (1920-2010)

Robert James Watson was born in October of 1920 in Blacksburg, Virginia, where some of his relatives had served on the faculty of Virginia Tech. Early in life his grandmother taught him to appreciate and identify birds. In 1940 he earned a BS degree in Business from Virginia Tech. While an Ensign in the US Navy during WWII, he became proficient in communications, secret codes, and translations of Japanese documents. After the war, he earned MS and Ph.D. degrees in History from the University of Virginia. He served for many years in the National Security Agency as a historical and communications expert.

He joined the Virginia Society of Ornithology (VSO) in 1940, while still a student at Virginia Tech, and maintained his membership in the organization for 70 consecutive years. His first publication in *The Raven*, a list of birds observed on one of the Pacific Islands at which he was stationed, appeared in Vol. 16 (November – December 1945). He was elected to the Executive Board of the VSO in 1950. In 1954, he was elected Secretary of the VSO, a position that he held for 30 years. His long-term service as secretary is especially remarkable in view of the fact this was before the “age of computers” and all minutes were taken and copies laboriously made using carbon paper!

Always a proponent of bird study within the state, at the 1980 VSO Board of Directors meeting, he proposed that an award be established to promote undergraduate and graduate research on Virginia birds and made the initial donation to what would become the Murray Award. In 1984, Robert James Watson’s contributions to the VSO were recognized by presenting to him one of the first James Eike Service Awards. He remained an active member of the organization throughout his life and at the Fredericksburg Annual Meeting (2009) both he and his wife, Laura, received a standing ovation at the dinner banquet.

Locally, he was a founding member and, later, president of the Northern Virginia chapter of the VSO (now the Northern Virginia Bird Club) and he participated in many of the Christmas Bird Counts in Arlington and Mathews County. His friends will remember him for his dry wit, infectious smile, and genuine enthusiasm whenever he was in the field in search of birds. He will be missed by all for his knowledge of and dedication to the study and conservation of birds. He passed away on 1 July 2010.

David W. Johnston, Thelma Dalmus and Barbara Chambers.

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- Brinkley, E. 2007. Bulwer's Petrel (*Bulweria bulwerii*)
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- Bruno, R. & L. Farmer. 2009. Fifty Years of the
Lynchburg Christmas Bird Count,
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- Bryan, D. 2010. 2010 Central Piedmont Important
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- Carr, P. 2006. Book Review: The History of
The Virginia Society of Ornithology. 77(2):48
- Clarkson, C. 2010. Late Season Use of Glossy
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- Dalmas, T. 2006. A History of
The Virginia Society of Ornithology. 77(2):37-47
- Dalmas, T. 2006.
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- Dalmas, T. 2007. A Summary of *In Memoriam*
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- Devan, S. 2009. Townsend's Solitaire in James City
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- Dolby, A. 2007. The 2007 State Park
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- Dolby, A. 2010. Distorted Views of Avian Diversity:
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- Dolby, A. & C. Mellinger. 2006. The Virginia Society of
Ornithology 2006 Foray: A Focus on the Northern
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- Ealding, W. 2009. June 2009 VSO Foray, Greenville &
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- Ealding, W. 2010. Review of *Birds of Australia: Eighth
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- Eccles, S. 2010. Book Review:
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Virginia Avian Records Committee. 79(1&2):53-57
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- Gilmer, A. 2010. Annual Report of the 2008 Virginia
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- Johnston, D. 2007. Book Review: Birds of Augusta
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- Kain, T. 2006. Virginia Christmas Bird Counts:
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- Mays, R. 2006. Brown Creeper nesting
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- O'Bryan, C., J. Coffey & A. Jones. 2008.
Southwest Virginia's First Winter Nest
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- Quinn, A. 2008. Virginia Society of Ornithology
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- Quinn, A. 2009. Virginia Society of Ornithology
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- Spears, D. 2009. Review of *Birds of Wintergreen*,
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- Taber, B. 2007. Birds of the
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INFORMATION FOR CONTRIBUTORS

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

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