

The Raven

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Editor
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BROWN CREEPER NESTING IN THE MOUNTAINS OF VIRGINIA

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INTRODUCTION

The Brown Creeper (*Certhia americana*) is an uncommon to common transient and winter resident throughout Virginia, and a rare or local summer resident at high elevations in the Ridge and Valley physiographic province (Kain 1987). A small summer population is also known to occur in western Fairfax County in the Piedmont (*fide* Scott 1971, Kain 1987, Clapp 1997). The first reported nest in Virginia was found under construction on 22 June 1965 near Mountain Lake in Giles County, at an elevation of about 975 m (Mumaw 1965). Several observers found two nests in the Little Meadows area (945 m) of Giles County on 2 and 3 June 1973. Both nests were active and at least one contained young (*fide* Scott 1974). J. W. Murray (*fide* Lerner and Scott 1978) reported an active nest on 15 June 1977 in the Poverty Creek valley of Montgomery County, at 640 m, and Shelton (1980) found a nest with young on 22 July 1977 on Mount Rogers (1746 m). A nest with eggs was also found near the Mountain Lake Biological Station (1158 m) by Jim M. Hill on 24 May 1985 (Clapp 1997, D. W. Johnston pers. comm.).

During 2002 and 2003, I observed five nests of the Brown Creeper in Virginia. Four nests were in the riparian zone of the Poverty Creek valley—Poverty Hollow—between Gap and Brush mountains, within the New River Valley Ranger District of the Jefferson National Forest in Montgomery County. They were observed in or near old-growth mixed coniferous-deciduous forest along the Poverty Creek drainage in the lower third of the valley between Boley Field and Pandapas Pond. The fifth nest was in old-growth red spruce-deciduous forest on Mount Rogers, within the Lewis Fork Wilderness Area of the Jefferson National Forest in Grayson County. I also found in Poverty Hollow a family group and what I presumed to be a pair preparing to breed. My observations are presented herein to provide additional information on these recent records.

FIELD OBSERVATIONS

Nest No. 1—I found the first nest on the morning of 27 April 2002 in Poverty Hollow, at an elevation of approximately 610 m. The nest was 6 m above ground on the northwest side of a dead pitch pine (*Pinus rigida*) and placed behind a loose slab of bark. The diameter of the nest tree was 26.5 cm at breast height and about 18 cm at the height of the nest. The tree was about 15 m tall and still had most of its bark below the level of the nest; a few limbs were also remaining. It had grown on level ground within 18 m of Poverty Creek. The ground surrounding the base of the nest tree was

relatively free of underbrush, except for a few rosebay rhododendrons (*Rhododendron maximum*) ranging in height from 1.5 to 3 m. Numerous fallen limbs and rotting logs were also on the ground. Surrounding trees included eastern hemlock (*Tsuga canadensis*), white pine (*P. strobus*), white oak (*Quercus alba*), northern red oak (*Q. rubra*), American hornbeam (*Carpinus carolinia*), red maple (*Acer rubrum*), sugar maple (*A. saccharum*), striped maple (*Acer pensylvanicum*) black birch (*Betula lenta*), and witch-hazel (*Hamamelis virginiana*). Several of the hemlocks, white pines, oaks, and sugar maples were up to 0.8 m in diameter, but most trees were medium sized and no taller than 25 m. Across the creek from the site was a large stand of fairly tall pitch and Virginia pines (*P. virginiana*). Patches of skunk cabbage (*Symplocarpus foetidus*) grew in swampy areas along the creek.

I located the nest by first watching the male feed the female on trees in its vicinity. After his mate disappeared, I followed the male closely until he ultimately led me to the pitch pine. In his bill he carried a small tuft of food items, which he fed to the female from outside the nest. The male continued to feed his mate, who appeared to be incubating eggs, for the remainder of the time I was at the site. In addition, the male sang continually during the time I was present and did so on my subsequent visits to the nest as well. This and other behaviors (i.e. incubation-feeding) usually made it possible to differentiate the sexes. The male's bill also appeared slightly larger than the female's.

On 29 April, I again observed incubation-feeding by the male. He fed the female at the nest and in trees nearby if she left before his arrival. As on 27 April, if the female was at the nest she received food at the edge of the bark slab, and then descended back to the nest to resume incubation. On 5 May, I was accompanied by Warren T. Mays, Curtis S. Adkisson, and Karen Adkisson. At the nest we again observed incubation-feeding by the male and apparent incubation by the female. With the use of Dr. Adkisson's scope, we also discovered an egg on the base of the nest, apparently caught in nest material and held in place by spider silk. It was visible on the base of the nest because that portion of the structure was protruding below the bark slab. I had first noticed the egg on 29 April, but on that date thought it was a spider egg case. Evidently the egg was dislodged from the nest proper on 28 April during violent winds.

On the afternoon of 10 May, both adults were feeding nestlings and the female was brooding for long periods after feeding them. The male did not feed the female during the time I watched, nor did he brood the young as far as I could tell. Food items were generally collected in trees several meters from the nest. Both parents were still feeding the young on 12 May and the female was brooding. On 15 May, the adults were feeding nestlings and bringing larger tufts of food items to the nest. I also saw them carrying out fecal sacs. Perhaps as a result of my distance from the nest—about 9 m—I could detect no begging cries from the young. As usual, the adults almost invariably landed below the bark slab and climbed upward to the nest; when exiting they always flew downward.

Upon reaching the nest site on the afternoon of 22 May, I found the nest dislodged from its bark slab and hanging sideways on the trunk. At the base of

the nest tree I found five dead nestlings that were each approximately 6 cm in length. Their eyes had apparently opened and their heads were covered with soft natal down. Pin feathers had broken from sheaths on their backs and wings, some measuring up to 5 mm in length, but most averaging about 3 mm. Their rectrices and chin feathers had barely started to break their sheaths. Based on the observations of Davis (1978), these developmental characteristics indicate that the young were about 13 days old. Apparently the nest had been destroyed the night before, and the young had probably frozen to death overnight when the temperature dropped to 0° C. Three of the nestlings had single puncture wounds on their bodies. The young had not begun to decompose and one individual's cloaca still had moist feces around it. The bulk of the hammock-like nest was composed of small hemlock twigs, pieces of outer bark, fine inner bark fibers, spider silk and cocoons, and small, unidentified passerine contour feathers. The nest cup was lined with soft strips of very fine, grass-like inner bark fibers and a few feathers. The nest's dimensions were as follows: outside diameter (side to side by front to back) 10.5 x 4.5 cm; outside height (top to bottom) 8 cm; inside cup diameter (side to side by front to back) 6.5 x 4 cm; inside cup depth (top to bottom) 3.2 cm.

On 28 May 2002, I heard the male Brown Creeper singing near the abandoned nest site, but I did not see the female. Although I again observed him singing in the area on 2, 8, and 15 June, I was still unable to find the female despite considerable search efforts. I neither saw nor heard the male in the area of the nest site when I visited on 22 and 30 June. I did, however, find a singing and apparently unmated male along Poverty Creek about 0.5 km west of the site on 22 June. These observations may suggest that a predator killed the female, probably on the date the nest was dislodged. The predator most likely discovered the nest during the night and caught the brooding female as she slept. When it dislodged the nest from behind the bark slab, the young fell to the ground and were either ignored or overlooked by the animal. The predator or the impact of their fall may have caused the nestlings' small wounds. Thus, the nest that survived two strong thunderstorms with violent winds, heavy rain, and hail, at least two wind storms with very strong gusts, and provided shelter for young on several nights with temperatures below 0° C, was apparently destroyed by an unidentified predator. A squirrel (Sciuridae) or common raccoon (*Procyon lotor*) seem the most likely candidates. Although not observed, southern flying squirrels (*Glaucomys volans*) were probably in the area. These nocturnal squirrels are known to kill and eat sleeping birds and bird eggs (Linzey 1998). A snake is another possibility, but the overnight temperatures had been quite low. I found an active Barred Owl (*Strix varia*) nest just 21 m from the Brown Creeper nest, so it is also possible but rather unlikely that the owls were involved in this nest's destruction.

Nest No. 2—I found the second nest in Poverty Hollow on the morning of 12 April 2003. It was located at an elevation of approximately 597 m and was almost 1 km southwest of the site of nest 1. The nest was about 3 m above ground behind a loose slab of bark that had buckled out from the trunk of a dead 6-m-tall white pine stub; it was placed on the west side of the tree. The trunk against which the

nest was built had a diameter of 20 cm at breast height and 15 cm at nest height, and had grown on level ground 24 m from Poverty Creek. The ground at the base of the pine was densely carpeted with moss and lycopodiums and numerous dead limbs and snags had fallen thereon. Most trees in the vicinity of the nest were tall white pines spaced between 6 and 12 m apart, some of which were quite large. Small eastern hemlocks and dead white pines were interspersed among the living white pines. Trees along nearby Poverty Creek were the same as those growing near the site of nest 1.

I rather easily located the nest shortly after hearing a Brown Creeper calling from the pines and subsequently finding the pair. I watched the female collecting nest materials from tree trunks while her mate sang nearby and eventually saw her fly to the nest tree. The nest had apparently been started quite recently, as only a few small twigs and bark strips had been placed between the bark and the trunk. On several occasions the male accompanied the female on her trips to the nest.

On 3 May, the female was incubating. I had been watching the nest for 38 minutes and once heard the male singing in the vicinity before she suddenly exited for a feeding break. Soon thereafter the male appeared and the two began feeding in trees close to the nest. On 13 May, I saw both adults making trips to the nest with food, indicating that young were present. On 20 May, Warren T. Mays, Curtis S. Adkisson, and I watched the adults collecting food near the nest tree and then making trips to the nest to feed the young. On 24 May, the adults were still feeding nestlings and making frequent trips to the nest with food, which they collected from tree trunks very close to the nest tree. I observed no fledglings, so felt that all young were still in the nest. On 6 June, I found the nest to be vacated and in good condition, with no evidence whatever of depredation. About 90 m east up Poverty Creek from the nest site, still within the old-growth mixed woods of the riparian zone, I found both parents with four to five fledged young. The fledglings could fly fairly well, but for only short distances. Their bills were still quite short and their rectrices only about 3 cm in length. The young were well feathered but rather fluffy, and gave soft, lispy 'chip' and 'see' notes similar to those of the adults, though louder and somewhat less wavering. I did not observe the adults feed the young, but did see the young follow them closely. Although I made observations in this same area on 23 June, but I could not locate the family.

The nest was hammock-like in shape and two "horns" of nest material were on either side of the cup. It was composed mainly of small, dead hemlock and hardwood twigs up to 12 cm long, pieces of outer bark, strips of inner bark fibers, wood chips, spider silk and cocoons, and a few downy Red-shouldered Hawk feathers. The nest was adhered to the bark slab with spider silk. The following were the nest's dimensions: outside diameter 15 x 7.7 cm; outside height 9 cm (17 cm including the "horns"); inside cup diameter 9 x 4.5 cm; inside cup depth 5 cm.

Nest No. 3—I found the nest on the morning of 3 May 2003 in Poverty Hollow, at an elevation of 610 m. It was located 3 m above ground in a dead and leaning pitch pine with a diameter of 23 cm. The tree was approximately 17 m tall and had practically no limbs or bark below the level of the nest, which was built

behind a loose slab of bark on the northwest side of the tree. This nest site was about 60 m east up Poverty Creek from the site of nest 1, and about 1.2 km northeast of nest 2. The nest tree was on level ground within the riparian zone and 30 m from the creek. The ground at the base of the tree was clear of underbrush for several meters, but large rosebay rhododendrons surrounded the site and created an almost impenetrable lower canopy in some areas. Large eastern hemlocks, white pines, and pitch pines were close to the nest tree. Other prominent large trees in the vicinity included white oak, northern red oak and sugar maple. A small woodland bog was also nearby, in which skunk cabbage was the most abundant plant. In the stand of hemlocks and pines there were numerous dead pitch pine snags, many with loose bark ideal for Brown Creeper nest sites.

I first observed this pair on 12 April, when the male was singing frequently and both he and his mate were climbing trees around the future nest site. The female was especially elusive, and disappeared several times while the male sang conspicuously from trees in the area. I observed neither of the adults carrying food or nest material. When I located the nest tree on 3 May, I was surprised to see that it was one of the same trees I had inspected for a nest on 12 April. On that date, however, there had been no sign of a nest behind the bark. From several meters away, I watched the female busily adding thin strips of inner bark to the nest, which seemed nearly finished. She was probably adding lining material to the cup. The male kept up his singing in trees nearby and fed the female at least twice while I was watching. Interestingly, at 07:19 EDT, the female flew to the nest empty-billed and remained there. The male carried food to the nest at 07:21 and presumably fed his mate before flying off. At 07:22 the female was still on the nest and the male still singing nearby. Between 07:25 and 07:30 I walked to a different observation point, as I had been trying to observe the birds through thick rhododendrons at a bad angle. I did not see either of the adults until 07:41, when the male flew to the nest empty-billed, looked behind the bark at the nest, and then flew off again. Finally, at 07:53, I saw the female look out from behind the bark slab and suddenly fly from the nest. A few minutes later she returned with soft nest material and from then until the time I left (08:20) was still making trips to the nest with this material. Since the female was apparently in the nest for 34 minutes after entering without nest material, she may have laid an egg. In this species, laying is known to occur in early morning hours, with incubation commencing after the last egg is laid (Davis 1978). Although Brown Creepers are not known to add material to their nests after the start of laying or during incubation, the behavior has been observed in the related Eurasian Treecreeper (*Certhia familiaris*) (Cramp and Perrins 1993).

When I returned on 13 May, I found the nest deserted. I watched it for half an hour and did not observe any activity; the adults were neither seen nor heard. I soon realized that the nest was slightly dislodged from behind the bark and further noticed that the bark itself was more detached from the trunk than before. When I inspected the nest, I found the shells of at least three creeper eggs as well as some moist yolk scattered throughout the nest material.

On 24 May, while making observations in the vicinity of the old nest site, I heard a singing male Brown Creeper. The bird sang in trees below the nest site and very close to it, but I could not find his mate. On 23 June, I again observed what was almost certainly the same male singing a short distance down Poverty Creek. As in nest 1, a predator may have caught the female while she was on the nest incubating. Afterwards, the male could neither find his mate nor attract a new female.

This nest was composed of small dead hemlock and hardwood twigs up to 15 cm in length, rather large pieces of outer bark (including that of pine and white oak), strips of inner bark fibers, wood chips, a few pine needles, a small dried white oak leaf, and spider silk and cocoons. The nest lining was fine strips of inner bark.

Nest No. 4—I found this nest in Poverty Hollow on the afternoon of 24 May 2003, at an elevation of approximately 640 m at the base of Brush Mountain. The nest was 3.5 m high in a dead pitch pine with a diameter of about 30 cm at breast height and a similar diameter at the height of the nest. It was behind a loose slab of bark and facing east. There was very little bark on the tree, and none remaining below the level of the nest. The tree was about 15 m tall and had only a few broken limbs above the nest. The tree was located at the top of a steep hill overlooking Poverty Creek and a small ravine through which a stream flowed. The tree had grown on slightly upsloping ground and at its base there was no vegetation. Nearby, however, dense rosebay rhododendrons, mountain laurels (*Kalmia latifolia*), small sourwoods (*Oxydendrum arboreum*) and saplings of canopy species formed rather dense underbrush. Eastern hemlocks, pitch pines, oaks, and tulip poplars (*Liriodendron tulipifera*) were prominent canopy species, but only medium in size. Vegetation along Poverty Creek was similar to that described in the preceding records. This nest site was nearly 0.5 km northeast of nest 3.

When found, the nest was still under construction but nearly complete. The male was singing frequently near the nest tree while his mate collected material to add to the nest lining. This nest was perhaps the most exposed of any that I observed, and, unlike the others, I could easily see the female on it. The nest seemed to be composed mainly of bark strips and wood chips and lined with soft inner bark fibers. Once I saw the female carry a spider egg case to the nest and deposit it along the cup.

On 23 June, the nest was gone and much of the nest tree's bark, including the nest slab, was on the ground. The nest had apparently melted into the leaf litter around the base of the tree, but the slab on which it had once been attached had a few small hemlock twigs adhered to its inner surface with spider silk. Evidently wind blew the bark off the tree and thus destroyed the nest. On this date I found the pair across Poverty Creek from the hill and heard the male singing.

Nest No. 5—On the morning of 12 July 2003, I found the fifth nest on the south-facing side of Mount Rogers in Grayson County, at an elevation of 1707 m. The nest was 2.5 m above ground behind a loose slab of bark on a dead red spruce (*Picea rubens*) and facing roughly east. The nest tree was quite tall and had a diameter of approximately 30 cm at breast height. It had also grown less than 5 m from the

Appalachian Trail. The tree was in a small clearing in a stand of old-growth red spruce. A few yellow birch (*Betula alleghaniensis*) and mountain ash (*Sorbus americana*) trees were nearby, and clumps of young spruce up to 3 m tall were abundant around the nest tree. The ground at this point was fairly level, but moss-covered boulders and numerous fallen logs were at the base of the tree.

I suspected a nest was at the site when I heard a singing male in trees nearby. Carefully checking all potential bark slabs, I eventually came across the one under which the nest was built. The female was incubating and flushed only after I attached a small mirror to a stick and placed it against the slab. She and the male boldly returned to the nest tree in protest as I inspected its contents. Seeing five eggs in the nest cup, I made a quick departure. When I passed by the nest site along the Appalachian Trail in the afternoon, I again heard the male singing from trees in the vicinity of the nest.

I was unable to determine of what materials this nest was composed, but they were similar to those described in the other nests, and the lining was soft fibers or downy-like material. As usual, the nest's shape and size seemed to conform to the size of the crevice in which it was built.

Family Group—On the morning of 30 June 2002, while walking with Aubrey O. Neas in mixed woods just outside the riparian zone along Poverty Creek, I found two adult creepers making frequent trips from trees near the creek to drier woods along Federal Road 269 with food in their bills. I could also hear the high-pitched calls of young birds. A few minutes later, while standing in the road, I noticed movement on the trunk of a northern red oak above the road. Looking closer, I discovered four fledglings, just barely out of the nest, huddled together about 5.5 m above ground on the trunk. When the adults fed the young, the fledglings' bright yellow gapes were obvious when they opened their mouths. Their rectrices were about 2.5 cm long and their bills were short. They did not fly during the time we watched, but remained stationary on the oak trunk. Despite careful inspection of trees around the oak, we were unable to locate any nest, so we assumed it was across the road in the riparian zone. This observation was made approximately 90 m east of nest site 1.

Pair—On the afternoon of 24 May 2003, while walking along Poverty Creek at a point about 0.5 km northeast of all the other pairs, I found a new pair at an elevation of 616 m. The two birds were feeding on trees near one another in an area with predominantly deciduous vegetation. Dominant deciduous trees included white oak, northern red oak, chestnut oak, hickories, and maples, all of which were fairly large. Tall white pines and small eastern hemlocks were interspersed among the hardwoods, as were pitch pines, the latter being mostly tall, dead trees. Rosebay rhododendrons about 4.5 m tall were abundant along Poverty Creek in association with American hornbeam, witch-hazel, and maples. I followed the pair for over half an hour, but never saw them go to a nest or young.

This pair was almost certainly in the courtship stage and possibly prospecting for a suitable nest site. The male frequently fed the female when she flew to him or he flew to her and both would often feed in the same tree. The two

would then sail downward like falling leaves and alight together on a new tree or in different trees nearby. The pair never left this general area during the time I watched, and the female repeatedly flew to dead pines with loose bark, searched the bark slabs for short periods, and then continued feeding with her mate. Both male and female kept in regular contact with one another while feeding, as did all the other pairs, by 'chip' or 'see' notes, and the male sang several times. His song seemed unusually soft in comparison to the rather loud voices of other male creepers farther down the creek.

When I passed through the area on 23 June, I again heard the male singing at this locale, but I did not have time to search for a nest. Nevertheless, this pair was probably preparing to breed when first observed on 24 May.

DISCUSSION

I found five Brown Creeper nests in Montgomery and Grayson counties during 2002 and 2003. Observations were made at each nest to provide information on breeding behaviors and nest chronologies. I also observed a family group and a pair preparing to breed in Montgomery County. Brown Creepers are fairly common in the spruce-fir forests on Mt. Rogers (1746 m) and its sister peak Whitetop Mountain (1682 m) in Grayson, Smyth, and Washington counties, and the breeding population at those locales is well known. In contrast, the breeding population in Montgomery County has never been studied.

During his 34-year stay in Montgomery County, Smyth (1912, 1927) did not record the Brown Creeper as a summer resident, despite trips made to Poverty Hollow (Smyth 1997) and other parts of the county. Summarizing his observations over a 21-year period (1891-1912), Smyth (1912, E.A. Smyth, Jr. unpub. ms.) stated that he had observed the Brown Creeper as only a spring and fall transient and winter visitor from 10 April [1903] to 1 May [1898] and 10 October [1903] to 18 February [1904]. The April and May dates are intriguing, and suggestive of possible breeders, but he left no data on the locations at which he made the observations.

Searching for evidence of a Canadian zone avifauna on Gap Mountain in June 1948, Watson (1948) found no Brown Creepers or other evidence of Canadian flora or fauna. But apparently he did not search the lower portions of the Poverty Creek valley along Poverty Creek between Gap and Brush Mountains, where the flora and avifauna do possess distinctly "northern" characters. Private land holdings in the area, as well as logging operations, may have prevented Smyth and Watson from fully exploring the region of the valley where Brown Creepers breed, and maturation and reforestation of the forest have undoubtedly provided more suitable breeding habitat for the species since the 1940s.

Brown Creepers were first reported in the breeding season in Poverty Hollow in 1965, when J.W. Murray (*vide* Murray 1965, J.W. Murray unpubl. data) observed one individual along Poverty Creek on 22 May. In June and July 1967, Murray (*vide* Scott 1967) again observed an individual in the same area, at an elevation of 610 to 640 m. On 15 June 1977, Murray (*vide* Larner and Scott 1978) found an active nest in Poverty Hollow in the same area, at 640 m. The nest was gone on 19

June, but found caught in a sapling near the nest tree. During summer months in the 1970s and early 1980s, C.S. Adkisson (pers. comm.) observed Brown Creepers in Poverty Hollow, and often heard singing males. The birds were always in the "northern" section of the valley along Poverty Creek. J.A. Groth also recorded the species there in June or July 1983 (*vide* Hall 1983).

The Brown Creeper summer population may be present in Poverty Hollow due to a frost pocket (C.S. Adkisson pers. comm.) in the region of the valley described in this paper, which could explain the area's "northern" habitat. It is the only portion of the valley where the species has been found regularly during the breeding season since about the 1960s, and the only location in Montgomery County where the species is known to breed. Other species, such as Red-breasted Nuthatch (*Sitta canadensis*), Blackburnian Warbler (*Dendroica fusca*), and Rose-breasted Grosbeak (*Pheucticus ludovicianus*) have also been observed in the summer in the same area (Murray 1974, J.W. Murray unpub. data, C.S. Adkisson pers. obs., R.S. Mays unpub. data). The question of whether breeding creepers are present year-round in Poverty Hollow is not easily answered, as the banding of breeding individuals is the only sure way of making such a determination. However, unlike the Red-breasted Nuthatch, which apparently occurs during the breeding season in Poverty Hollow only after its winter irruptions (R.S. Mays pers. obs.), the Brown Creeper may indeed be a resident species, since it is not known to undergo irruptions. I observed both the Red-breasted Nuthatch and Brown Creeper nesting in 2002, but did not observe any nuthatches in 2003. The nuthatches were common in the winter of 2001-2002, but not present in the winter of 2002-2003 (R.S. Mays pers. obs.). Brown Creepers were present in the valley during both winters. On 22 March 2003, I observed a Brown Creeper along Poverty Creek near the site of nest 1 in 2002. This, of course, is not a late date for the species' spring occurrence in Montgomery County, but in view of the early nesting habits of the species in Poverty Hollow (i.e. nest 2 was under construction on 12 April 2003) courtship would almost certainly have to take place in late March and early April. I obtained more compelling evidence on 27 September 2003 and 11 October 2003. In a brief search along Poverty Creek, I observed two singing males on 27 September, but no other individuals away from the creek. On 11 October, I observed one singing male along Poverty Creek and another calling bird near the creek. I also observed three other individuals in Poverty Hollow on this date, but they were seen on the higher ridges of Gap Mountain and were not calling. These birds were probably northern migrants, whereas those along the Poverty Creek drainage were likely the birds that nested in the summer. This would seem to suggest that a resident Brown Creeper population occurs in Poverty Hollow, but circumstantial evidence is not conclusive. It is possible that the birds migrate south for the winter.

While the habitat in the Poverty Creek valley is favorable for Brown Creeper nesting, the decline of the eastern hemlock due to the invasive hemlock woolly adelgid (*Adelges tsugae*) will probably have some effect in years to come. Future censuses in the valley will hopefully provide insight into the population and its breeding status. This species' low nest success is an important factor that needs more

study. Observers should report any Brown Creeper sightings during the summer in Montgomery County, especially in areas along Poverty Creek, and possibly the nearby Craig Creek drainages, as well as the higher elevations of Mount Rogers and Whitetop. A long-term study of the species' breeding status in Montgomery County and other parts of the Virginia mountains would also be helpful.

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NEST-SITTING BY A MALE NORTHERN CARDINAL (*CARDINALIS CARDINALIS*)

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SUMMARY

On a cold day in April 2005, I observed a male Northern Cardinal (*Cardinalis cardinalis*) sit on a nest in a typical incubation position for a short period of time. The female cardinal might have communicated the need for the male to incubate by singing just before she left the nest.

BACKGROUND

Male Northern Cardinals (*Cardinalis cardinalis*) do not regularly incubate eggs or brood nestlings (Laskey 1944). Bent (1968) mentions that male cardinals have occasionally been observed briefly incubating, but he gives no further details. It is possible that the bright coloration of the males might be a liability during incubation, although a short study using painted cardboard models of cardinals did not show increased predation on nests with male replicas (Miller 1999). During unpredictable cool spring weather, however, it might be adaptive for males to incubate briefly, while the female forages. In such cases, an incubating female might benefit from an effective method of communicating to her mate that she is about to leave the nest.

Female cardinals often sing from the nest, and one previously described function of female song in cardinals is to coordinate food delivery by the male to an incubating or brooding female on the nest (Halkin 1997). In this report, I will suggest another possible function for female song from the nest, that of instigating male incubation in cold weather.

OBSERVATIONS

On April 24, 2005 at roughly 1400h in suburban Charlottesville, Virginia (breezy, 10° C), I heard a female cardinal sing one short, loud song from on, or very near her nest. The nest was located in the lowest branches of a juniper tree (*Juniperus* spp.) 1.5m above the ground. The song consisted of three syllable-types, with the trilled *chirr* syllable placed at the end (see Halkin and Linville 1999 for sonogram of *chirr*). After she sang, the female flew from the tree and out of sight. Roughly 15-20s later, a male cardinal arrived in the tree and perched within 1m of the nest. The male then sat on the nest in typical incubation position and remained on the nest for 45-60s. The male left the nest and perched within 1m of the nest for 30-45s. The male then flew to a branch on the other side of the same tree, about 2.5m away from nest and perched there for about 1 min before flying away. The female returned to the nest and resumed incubation about 3 min later.

On April 27, 2005, at 0800h, I noticed three dead, newly-hatched chicks on the pavement below the nest. The nest was abandoned later that afternoon.

DISCUSSION

This observation suggests that male cardinals occasionally sit on nests in typical incubation position, potentially during cold weather, and further suggests that females might communicate with their mates prior to leaving the nest. It is unclear how much warmth male cardinals are able to provide while sitting on the nest, since they lack a featherless, highly vascularized brood patch; however, the males of other species of passerines, such as house sparrows (*Passer domesticus*) also lack distinct brood patches, but do incubate (Bartlett et al. 2005). Although clear brood patches have not been reported in male cardinals, several males in Wisconsin possessed ventral edematous areas, and further study of male cardinals is necessary to check for the presence of small brood patches, especially in the northern parts of their range (S. Halkin, personal communication).

Pairs of cardinals that succeed at producing early broods of young can re-nest up to three times during a breeding season, and it is likely that such pairs have higher reproductive success than pairs that breed later in the season (Laskey 1944; Halkin and Linville 1999), both because of the number of offspring produced and because young hatched early in the spring have a longer time to learn to forage and to build up fat reserves before the onset of cold weather during the fall than do late-season chicks. Early season breeding also has its costs; in central North Carolina, broods of cardinals hatched in late April often fail during cool spring weather (personal observation).

Further observations of incubating cardinals are necessary to determine whether females are more likely to sing prior to forays off the nest during cool weather, when there would be a need for the male to sit on the nest. In this case, it is possible that the male cardinal was watching and saw his mate fly off the nest, but it is also possible that her song alerted him to her impending departure.

ACKNOWLEDGEMENTS

I thank Sylvia Halkin for helpful discussions.

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VIRGINIA CHRISTMAS BIRD COUNTS: 2005-2006 SEASON

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For the third year in a row, the line-up of 47 Christmas Bird Counts in Virginia remained the same. Counts have remained remarkably stable over the past six years. This consistency lends itself well in analyzation of data gleaned from the counts for various studies.

Again, the Dismal Swamp count was not conducted for various reasons. There is a strong possibility that it will be conducted on a regular basis starting next year, but there may be changes from previous years. The federal government has authorized sweeping changes to take place in the Swamp involving forest management, road maintenance, and restricted access to special areas which may affect count activities within areas of refuge boundaries.

The weather this year was about the same as the previous three or four years. Nine counts, mostly those in the Piedmont and Mountain & Valley regions, experienced precipitation in the form of rain or snow. Many compilers reported cloudy to partly cloudy skies during at least part of count day. Only Cape Charles, Chesapeake Bay Bridge-Tunnel (CBBT), Warren, Danville, Rockingham County, and Peaks of Otter experienced clear skies all day. The highest temperature recorded was 63° F. at Back Bay. The lowest temperature was right next door at Chesapeake Bay Bridge-Tunnel registering 1° F.

The total number of birds (1,281,063) seen was average. The only times the total number of individuals spiked to two or three million over the past 12 years was when huge flocks of blackbirds, mostly Common Grackles (*Quiscalus quiscula*) were recorded in 1996, 1998, and 2004. The other years, with the exception of 2003 when less than one million were counted, have been exceptionally consistent with totals ranging from 1,006,904 to 1,531,710.

The total number of species seen on all counts was 209, slightly below the previous 12-year average of 211. Several rarities among that total and are discussed below. It should be kept in mind that they must be reviewed and accepted by the Virginia Avian Records Committee (VARCOM) before they can be officially added to the official total.

The Manx Shearwater (*Puffinus puffinus*) at CBBT was the only species new to the Virginia counts this year. That brings the cumulative total to 314. The only other time a shearwater of any kind has ever been spotted on a Virginia Christmas count was one spotted during a count in the late 1990s, but it could not be identified as to species.

There were some other very rare sightings around the state and one of the most exciting was the Red-cockaded Woodpecker (*Picoides borealis*) in Mathews County. With only about 30 known individuals residing in the entire state of Virginia, all of them in the county of Sussex on the south side of the James River, this sighting was completely unexpected. The bird is certainly not unknown to Virginia counts, indeed, between one and five individuals were sighted on 12 Back Bay counts between 1923 and 1977 and one was seen on the old Norfolk County Count in 1967. One other sighting was a count-week bird reported at Newport News in 1985. That was the first report of the species north of the James River. Then in 1996, one individual visited the front yard of a home near White Stone in Lancaster County on the Northern Neck. It stayed for 12 days in March of 1996, becoming the second north-of-the-James sighting. Between the elusive nature of the Mathews County bird and the foggy weather, photographic attempts failed to produce any identifiable images.

Two birds at Craney Island on the Nansemond River count zoomed within 20 feet of observers, allowing five pictures to be taken that were identifiable as Cave Swallows (*Petrochelidon fulva*). This is the second Virginia Christmas count record for this species.

For the fifth year in a row, a Clark's Grebe (*Aechmophorus clarkii*) was spotted at Little Creek, and a Pacific Loon (*Gavia pacifica*) was reported off Back Bay. This species has been reported eight times over the past 11 years, but scanty or incomplete details have resulted in doubts about the true identity of some of these individuals.

For the second year in a row Common Raven (*Corvus corax*) was found at Ft. Belvoir. This species seems to be ever so slowly creeping eastward as scattered sightings have been reported in widely separated areas of the Coastal Plain.

The Eurasian Collared-Dove (*Streptopelia decaocto*) made a quantum leap in numbers and occurrence. Previously Cape Charles reported one bird in 2003 and again in 2004. This year Cape Charles reported three individuals, Back Bay observers found 27 and a Blacksburg observer counted 16, for a combined state total of 46.

Other unusual reports were: Osprey (*Pandion haliaetus*) at Charlottesville; Allen's Hummingbird (*Selasphorus sasin*) at Cape Charles; Greater Scaup (*Aythya marila*) at Shenandoah NP-Luray; Blue-winged Teal (*Anas discors*) at Northern Shenandoah Valley; Brown-headed Nuthatch (*Sitta pusilla*) at Fort Belvoir; Herring Gull (*Larus argentatus*) at Lynchburg; Laughing Gull (*Larus atricilla*) at The Plains; American Tree Sparrow (*Spizella arborea*) at Washington's Birthplace; and a Northern (Red-shafted) Flicker (*Colaptes auratus*) at Waynesboro.

With the advent of digital photography, more and more birders toting cameras into the field to record their sightings. Nice photos of an Iceland Gull (*Larus glaucoides*) at Back Bay; Eurasian Collared-Doves at Blacksburg, Ross's Goose (*Chen rossii*) at Hopewell; *Selasphorus* Hummingbird at Newport News; Gray Catbird (*Dumetella carolinensis*) at Augusta County; Mute Swan (*Cygnus olor*) at Banister River WMAs; and a Yellow-throated Warbler (*Dendroica dominica*) coming to a feeder at Little Creek were some of the noteworthy photos received this year.

One of the frustrating aspects of editing Christmas counts is determining what to do about rarities reported with no documentation submitted, or details that are so scanty or poorly written that it is impossible to decide what the observer saw. In most cases, the records have to be expunged. Too often birders send in details about everything except the physical description of the bird and its behavior. Many times they go into great detail about equipment used, weather conditions, names of observers, etc, but not one word is written to describe the bird in question. The increase in photographs obtained has helped, but poor documentation or lack thereof remains one of the greatest problems concerning Christmas counts.

As always there are a lot of interesting high counts to be gleaned from the reports each year and 2005 was no exception. Some of the more notable were more Eastern Towhees (*Pipilo erythrophthalmus*) around this year than usual with the state total of 1,242 being the highest since 1975. One hundred were found in Augusta County and at Blacksburg and 81 at The Plains; 11 Common Moorhens (*Gallinula chloropus*) at Cape Charles; 527 Fish Crows (*Corvus ossifragus*) at Central Loudoun; 118 Hooded Mergansers (*Lophodytes cucullatus*) at Gordonsville; and 1,054 Rusty Blackbirds (*Euphagus carolinus*) at Hopewell. Blue-winged Teal (*Anas discors*) at Northern Shenandoah Valley; and an American Tree Sparrow (*Spizella arborea*) at Washington's Birthplace.

It is always interesting to examine state all-time high totals, especially when the number of counts remains as consistent as it has over the past several years. And even though counts have been continuously conducted in Virginia for 100 years, record-breaking totals occur every year and 2005 was no exception. Species for which new high totals were set were Greater White-fronted Goose (*Anser albifrons*) (6); the blue form of Snow Goose (*Chen caerulescens*) (4,292—more than twice the previous total of 1,891 in 1999); Eurasian Wigeon (*Anas penelope*) (3); Lesser Scaup (*Aythya affinis*) (37,674); Red-shouldered Hawk (*Buteo lineatus*) (575—numbers of this species have steadily increased over the past five years and has been significantly augmented by the large populations occurring in the Northern Virginia region); and Red Knot (*Calidris canutus*) (74—though this is not a record high, it is, by far, the most seen since the record of 520 was set in 1970).

Concern was expressed that the Fort Belvoir count was held on a Saturday instead of the usual Sunday date and that this change would affect the waterfowl numbers, especially in one sector along the Potomac. It would seem, however, that numbers were not as low as was expected, especially noting the spectacular increase in numbers of Lesser Scaup—35,958, which exceeded the previous high by 14,000 birds. Most other waterfowl held their numbers to normal levels, perhaps indicating that the birds simply shifted locations away from the heavily hunted areas. Smart ducks!

On the other end of the scale, the march to probable extirpation of the Loggerhead Shrike (*Lanius ludovicianus*) in the state of Virginia continues. For the past six years state totals have dwindled to the low teens. This year's total was 13, just two short of the lowest number recorded in 60 years. In 1945, just six shrikes were found, but there were only seven counts state-wide that year!

The Christmas count tables are arranged by physiographic provinces in the following manner: Eastern Shore and Coastal Plain, 1 through 15; Piedmont, 16 through 27; and Mountains & Valleys, 28 through 47. They also are loosely listed north to south and east to west.

Abbreviations used in the tables and circle descriptions are as follows:

Weather and water codes: CLD = Cloudy; CLR = Clear; FOG = Foggy; HVR = Heavy rain; LGR = Light rain; LGT = light; LSN = Light snow; MCD = Mostly cloudy; MWO = Moving water open; PCD = Partly cloudy; PCR = Partly clear; PCR = Partly clear; SMF = Still water mostly frozen; SMO = Still water mostly open; SPF = Still water partly frozen; SPO = Still water partly open; VAR = Variable; and WOP = Water open.

Direction: E = East; N = North; S = South; and W = west;

Bird descriptions: CW = Count Week; a = adult; i = immature; u = Unknown; and Sp = species?

Count & Circle descriptions: Blvd = Boulevard; CBBT = Chesapeake Bay Bridge-Tunnel; Co. = County; Jct = Junction; Neg = Negligible; NP = National Park; Rd = Road; Rt(s) = Route(s); SR = State route; TN = Tennessee; Unk = Unknown; VA = Virginia; and WMA = Wildlife Management Area.

2005-2006 CHRISTMAS COUNT DESCRIPTIONS

The number appearing before each count coincides with the numbered counts in the count table. Observers are listed below for Warren, Darlington Heights, Lynchburg, Danville, Big Flat Mountain, Peaks of Otter, Roanoke, Giles County, and Bristol—counts which were not submitted to the National Audubon Society.

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

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

Compilers: Richard and Nancy Roberts (bandbird@verizon.net).

2. WACHAPREAGUE. 37°40'N 75°42'W

Center: Jct. of rts. 789 and 715 in Accomack County.

Compilers: Irvin and Marilyn Ailes (irvailles@intercom.net).

3. CAPE CHARLES. 37°12'N 75°56'W

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

Compiler: Henry Armistead (harryarmistead@hotmail.com).

4. CHESAPEAKE BAY BRIDGE-TUNNEL (CBBT). 37°05'N 76°08'W
Center: The northern three islands of the bridge-tunnel complex and adjacent waters out to one mile.
Compiler: Ned Brinkley (phoebetria@aol.com).
5. LITTLE CREEK. 36°51'N 76°06'W
Center: 3.8 miles northeast of Kempsville in Virginia Beach.
Compiler: Paul Sykes (paul_sykes@usgs.gov).
6. BACK BAY NATIONAL WILDLIFE REFUGE. 36°39'N 76°00'W
Center: 1.5 miles east of Back Bay.
Compiler: Paul Sykes (paul_sykes@usgs.gov).
7. NANSEMOND RIVER. 36°52'N 76°26'W
Center: Jct. of rts. 17 and 626 in Pughsville, Suffolk.
Compiler: Les Willis (leswillis@clwillis.com).
8. NEWPORT NEWS. 37°05'N 76°25'W
Center: Northern corner of Magruder & Cmdr. Shepard boulevards in Hampton.
Compiler: Hayes Williams (joycewms@inna.net).
9. MATHEWS COUNTY. 37°25'N 76°18'W
Center: 0.5 mile east of Beaverlett Post Office in Mathews County.
Compilers: Mary Pulley and John Bazuin, Jr. (bazuin.john@epamail.epa.gov).
10. WILLIAMSBURG. 37°17'N 76°42'W
Center: Colonial Williamsburg Information Center in Williamsburg.
Compiler: Bill Holcombe (biljanholc@widomaker.com).
11. HOPEWELL. 37°23'N 77°17'W
Center: Curles Neck in Henrico County.
Compiler: Arun Bose (arunbose@akbose.com).
12. WALKERTON. 37°46'N 77°02'W
Center: 1.5 miles southwest of Walkerton bridge, just west of Whitebank.
Compiler: Fred Atwood (fredatwood@yahoo.com).
13. WASHINGTONS BIRTHPLACE. 38°07'N 76°57'W
Center: Horners in Westmoreland County.
Compiler: William Portlock (portlock@bealenet.com).

14. BROOKE. 38°22'N 77°20'W
Center: At Center Road 3 miles east southeast of Brooke in Stafford County.
Compiler: David Stewart (dbstewart1@verizon.net).
15. FORT BELVOIR. 38°41'N 77°12'W
Center: Pohick Episcopal Church, Fort Belvoir, in eastern Fairfax County.
Compiler: Kurt Gaskill (kurtcapt87@aol.com).
16. CENTRAL LOUDOUN. 39°06'N 77°38'W
Center: Near jct. of rts. 704 and 769 in Loudoun County.
Compiler: Joseph Coleman (jandkcoleman@erols.com).
17. THE PLAINS. 38°48'N 77°52'W
Center: 7 miles northwest of Warrenton on the west side of Watery Mountain along Carter Creek in Fauquier County.
Compiler: Todd Day (blkvulture@aol.com).
18. MANASSAS-BULL RUN. 38°50'N 77°26'W
Center: Centreville in western Fairfax County.
Compiler: Laura Stephens (info@asn.v.org).
19. CHANCELLORSVILLE. 38°16'N 77°40'W
Center: Chancellorsville Battlefield, 10 miles west of Fredericksburg in Spotsylvania County.
Compiler: Joella Killian (jkillian@umw.edu).
20. LAKE ANNA. 38° 05'N 77° 49'W
Center: Center of bridge over Lake Anna on rt. 208.
Compiler: Mike Boatwright (mboater@att.net).
21. GORDONSVILLE. 38°09'N 78°12' W
Center: Jct. of rts.15 and 33 north of the town of Gordonsville in Orange County.
Compiler: Donald Ober (dober@ns.gemlink.com).
22. CHARLOTTESVILLE. 38°04'N 78°34'W
Center: Near Ivy in Albemarle County.
Compiler: Charles Stevens and Jenny Gaden (jgaden@earthlink.net).

23. WARREN. 37°51'N 78°33'W

Center: At Keene in Albemarle County.

Compiler: Charles Stevens (615 Preston Place, Charlottesville, VA 22903).

Participants: Dan Bieker, Peter Brask, Jim Childress, Tom Dierauf, Peter Dutnell, Ike Eichelkraut, Sonya Eicheldraut, Francis Fife, Allen Hale, Greg Kelly, Tom Klippstein, Toots Klippstein, Ken Lawless, Peter Mehring, Lynn Merhib, Bill Minor, Maureen Minor, Jim Nix, Tim O'Kaine, Mo Stevens, Lew Tanner, Dave West, David White, Sean Zinner, and John Zimmerman.

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

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

Compiler: Carolyn Wells (cwalls@kinex.net).

Participants: Sandra Breil, John Dalmas, Thelma Dalmas, Damien Fehrer, Deanna Fehrer, Jimmy Gates, Ann Ingram, Judy McCann, Sue McCullough, Kathy Menold, Peter Menold, Tom Price, May Shorter, Brent Slaughter, Laura Slaughter, David Spears, Randy Thrasher, Sue Thrasher, and Carolyn Wells.

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

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

Compiler: Jeffrey Blalock (jcbabirder@gcronline.com).

26. LYNCHBURG. 37°24'N 79°11'W

Center: Lynchburg College in Lynchburg.

Compilers: John and Thelma Dalmas (jtdalmas@juno.com).

Participants: Bill Alexson, Gayle Alexson, Mike Boatwright, REXANNE Bruno, John Dalmas, Thelma Dalmas, Virginia Delaney, Kathie Driscoll, Jim Elder, Sandra Elder, Bob Epperson, Betty Epperson, Bob Eubank, Robert, Ferrell, Cory Goff, Charles Hansrote, Melva Hansrote, Mike Hayslett, Cinda Hurt, Peggy Lyons, Dick Miller, RuthAnn Miller, Gene Moore, Phyllis Murphy, Wyatt Murphy, Lee Perry, Michael Perry, Gene Sattler, Glennys Sheppard, Susan Stanton, Laura-Gray Street, Randy Thrasher, Sue Thrasher, Steve Vessels, Sandra Weigand, Margaret Wenning, Judy Wiegand, Susuan Wingfield, and Jo Wood.

27. DANVILLE. 36°34'N 79°25'W

Center: Ballou Park in Danville.

Compiler: Laura D. Meder (laura.meder@averett.edu).

Participants: Pat Brachman, Barbara Clark, Fenton Day, Edward Fisher, Patt Fisher, Mary Foster, Sarah Foster, Ann Garbett, Faye Huppert, Frank Huppert, Laura Meder, Jim Petsoules, Mary Petsoules, Sue Wickers, and Gordon Woody

28. CALMES NECK. 39°07'N 77°54'W

Center: Castlemans Ferry Bridge on rt. 7 over Shenandoah River in Clarke Co.

Compiler: Margaret Wester (margaretwester@hotmail.com).

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

Center: Jct. of Crooked Run and rt. 606 in Frederick County.

Compilers: Rob and Ann Simpson (snphotos@adelphia.com).

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

Center: Hershberger Hill near Stanley in Page County.

Compiler: Mara Meisel (mara_meisel@nps.gov).

31. BIG FLAT MOUNTAIN. 38°11'N 78°43'W

Center: On Pasture Fence Mountain in Albemarle County.

Compiler: Charles Stevens (615 Preston Pl., Charlottesville, VA 22903).

Participants: Charles Stevens and Tom Wieboldt.

32. ROCKINGHAM COUNTY. 38°26'N 79°02'W

Center: Ottobine in Rockingham County.

Compiler: Chuck Aukerman (aucker@aol.com).

33. AUGUSTA COUNTY. 38°12'N 78°59'W

Center: Jct. of rts.780 and 781 in Augusta County.

Compiler: John Spahr (jspahr@yahoo.com).

34. WAYNESBORO. 37°59'N 78°57'W

Center: Sherando at Jct. of rts. 610 and 664 in Augusta County.

Compiler: Crista Cabe (ccabe@mbc.edu).

35. LEXINGTON. 37°51'N 79°29'W

Center: Big Spring Pond in Rockbridge County.

Compilers: Bob Paxton (rop1@columbia.edu) and GeorgeTolley (gtolley@rockbridge.net).

36. PEAKS OF OTTER. 37°27'N 79°36'W

Center: Peaks of Otter Visitor Center in Bedford County.

Compiler: Barry Kinzie (peckerridge@ntelos.net).

Participants: Mike Donahue, Sara Donahue, Charles Hansrote, Melva Hansrote, Bill Hunley, Barry Kinzie, Anne Tucker, and Bill Tucker.

37. FINCASTLE. 37°31'N 79°52'W

Center: North of Fincastle near Jct. of rts. 220 and 679 in Botetourt County.

Compiler: Barry Kinzie (peckerridge@ntelos.net).

38. ROANOKE. 37°18'N 79°56'W

Center: Oakland Blvd. And Williamson Rd. in Roanoke.

Compiler: Bill Hunley (wjhunley@cox.net).

Participants: Robin Austin, Sarah Brooks, Linda Christenson, Mike Donahue, Sarah Donahue, Norris Ford, Bill Grant, Joyce Holt, Eunice Hudgins, John Hudgins, Bill Hunley, Barry Kinzie, Katrina Knight, Connie Marsh, Alice Quinn, Tim Quinn, Mike Purdy, Joe Riggins, Mike Townsend, Ellie Wefel, and Pam Wefel

39. BLACKSBURG. 37°12'N 80°28'W

Center: Jct. Merrimac Rd. (rt. 657) & Prices Fork Rd. (rt. 685) in Montgomery Co.

Compilers: Patricia A. Polentz (polentz@va.net) and Bruce Grimes (bugpix@verizon.net).

40. GILES COUNTY. 37°19'N 80°38'W

Center: Pembroke in Giles County.

Compiler: Peggy Spiegel (gramby@pemt.net).

Participants: David Brady, Tom Brobson, Chris Frye, Bruce Grimes, J. Hartley, John Kell, Bill Opengari, Jim Phillips, Judy Phillips, Grady Spiegel, Peggy Spiegel, and Mary Ratliff.

41. TAZEWEEL. 37°08'N 81°30'W

Center: Fourway in Tazewell County.

Compiler: Sarah Cromer (scromer@netscope.net).

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

Center: Jct. of rts. 600 and 603.

Compiler: Allen Boynton (allenboynton@earthlink.net).

43. GLADE SPRING. 36°47'N 81°47'W

Center: Jct. of rts. 750 and 609 in Glade Spring.

Compiler: Ron Harrington (roneharrin@aol.com).

44. BLACKFORD. 37°00'N 81°55'W

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

Compiler: Robert Riggs (sheba@mounet.com).

45. BRISTOL. 36°35'N 82°06'W

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

Compiler: Richard Lewis (mountainbirds@email.com).

Participants: Robin Austin, Sarah Brooks, Linda Christenson, Mike Donahue, Sarah Donahue, Norris Ford, Bill Grant, Joyce Holt, Eunice Hudgins, John Hudgins, Bill Hunley, Barry Kinzie, Katrina Knight, Connie Marsh, Alice Quinn, Tim Quinn, Mike Purdy, Joe Riggins, Mike Townsend, Ellie Wefel, and Pam Wefel.

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

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

Compiler: Terry Owens (bip@mounet.com).

47. WISE COUNTY. 36°57'N 82°39'W

Center: At Dorchester in Norton City.

Compiler: Randy Stanley (randyst@compunet.net).

Count name	Greater White-fronted Goose	Snow Goose (white morph)	Snow Goose (blue morph)	Ross's Goose	Brant	Cackling Goose	Canada Goose	Mute Swan	Trumpeter Swan	Tundra Swan
1. Chincoteague	...	7,630	12	...	804	...	1,182	...	...	771
2. Wachapreague	...	5,281	235	...	1,144	...	2,040	...	...	...
3. Cape Charles	...	3,117	31	...	1,040	...	2,302	...	...	308
4. Chesapeake Bay	...	CW	...	...	21	...	...	...	...	92
5. Little Creek	44	...	939	...	...	302
6. Back Bay	...	694	6	1	...	...	783	...	...	423
7. Nansemond River	...	25	...	...	46	...	1,619	1	...	65
8. Newport News	...	20	...	...	142	...	710	...	...	29
9. Mathews County	105	...	2,453	3	...	471
10. Williamsburg	1	1,771	24	...	40
11. Hopewell	...	2,000	4,000	3	...	...	11,088	...	...	...
12. Walkerton	...	1	2	...	...	...	11,220	...	...	119
13. Washingtons Birthplace	...	3	2	...	...	2	13,604	5	...	1,404
14. Brooke	1,400	75	...	731
15. Fort Belvoir	1	12,469	...	...	467
16. Central Loudoun Co.	6,809	...	...	...
17. The Plains	3	11,558	1	CW	15
18. Manassas-Bull Run	...	1	...	...	...	...	2,334	...	...	...
19. Chancellorsville	1,011	11	...	...
20. Lake Anna	458	...	...	...
21. Gordonsville	...	1	...	...	...	...	1,985	...	...	...
22. Charlottesville	1,174	2	...	...
23. Warren	2,339	9	...	...
24. Darlington Heights	215	...	...	...
25. Banister River WMAs	247	1	...	CW
26. Lynchburg	1,124	...	...	...
27. Danville	251	...	...	...
28. Calmes Neck	...	1	4	...	...	...	3,534	...	...	2
29. N. Shenandoah Valley	5,722	...	...	...
30. Shenandoah NP-Luray	583	...	...	...
31. Big Flat Mountain	1	...	...	...
32. Rockingham County	260	...	...	...
33. Augusta County	957	...	...	...
34. Waynesboro	...	1	...	...	...	...	566	...	...	...
35. Lexington	60	...	...	...
36. Peaks of Otter
37. Fincastle	354	...	...	...
38. Roanoke	498	...	...	...
39. Blacksburg	722	1	...	...
40. Giles County	333	...	...	...
41. Tazewell	144	...	...	...
42. Mount Rogers-Whitetop	12	...	...	...
43. Glade Spring	...	1	...	...	...	...	187	...	...	...
44. Blackford	68	...	...	...
45. Bristol	6	...	...	1	...	...	591	...	...	...
46. Breaks Interstate Park	1	...	...	...
47. Wise County
Totals	6	18,776	4,292	5	3,346	7	107,678	133	CW	5,239

Count name	Wood Duck	Gadwall	Eurasian Wigeon	American Wigeon	American Black Duck	black duck/mallard hybrid	black duck-mallard sp.	Mallard	Blue-winged Teal	Northern Shoveler
1. Chincoteague	40	50	...	351	1,305	...	154	832	...	262
2. Wachapreague	141	142	...	38	57	...	...	304	...	...
3. Cape Charles	4	631	1	379	638	3	...	595	...	48
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	96	201	...	56	23	...	...	533	...	205
6. Back Bay	2	256	...	123	483	...	...	663	4	53
7. Nansemond River	CW	627	...	109	53	...	...	165	...	82
8. Newport News	1	47	...	155	47	...	...	511	...	18
9. Mathews County	...	...	...	...	3	...	...	213	...	...
10. Williamsburg	4	27	1	23	44	...	...	210	...	3
11. Hopewell	1	145	...	9	55	...	...	143	...	8
12. Walkerton	11	128	...	4	14	...	...	269	9	16
13. Washingtons Birthplace	...	9	...	2	434	...	...	1,095	...	...
14. Brooke	...	23	...	316	13	...	...	228	...	7
15. Fort Belvoir	58	2,179	...	313	1,518	...	...	3,364	4	95
16. Central Loudoun Co.	12	18	...	2	44	...	...	549	...	...
17. The Plains	1	101	1	140	66	...	...	409	...	1
18. Manassas-Bull Run	...	...	...	...	...	...	...	155	...	...
19. Chancellorsville	...	...	...	...	...	...	...	61	...	...
20. Lake Anna	4	...	...	...	...	...	...	115	...	...
21. Gordonsville	...	...	...	...	6	...	...	54	...	...
22. Charlottesville	3	...	...	...	2	...	...	73	...	...
23. Warren	2	...	...	...	1	...	...	84	...	...
24. Darlington Heights	...	...	...	...	...	...	...	9	...	...
25. Banister River WMAs	...	2	...	...	...	...	...	58	...	...
26. Lynchburg	5	6	...	...	50	...	...	249	...	...
27. Danville	...	...	...	...	...	...	...	44	...	...
28. Calmes Neck	...	...	...	...	109	...	...	323	...	...
29. N. Shenandoah Valley	12	8	...	7	54	...	...	917	1	...
30. Shenandoah NP-Luray	4	...	...	1	9	...	...	259	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	5	...	1	...	...	...	396	...	...
33. Augusta County	...	6	...	10	...	...	...	209	...	13
34. Waynesboro	...	...	...	...	1	...	...	138	...	...
35. Lexington	...	...	...	...	8	...	...	541	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...	...
37. Fincastle	4	21	...	7	...	...	...	41	...	...
38. Roanoke	...	23	...	21	4	...	...	313	1	1
39. Blacksburg	1	18	...	11	32	...	...	439	...	...
40. Giles County	...	...	...	6	9	...	...	91	...	...
41. Tazewell	...	...	...	...	5	...	...	78	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	25	...	...
43. Glade Spring	...	6	...	1	6	...	...	307	1	4
44. Blackford	...	...	...	...	3	...	...	121	...	...
45. Bristol	...	16	...	28	6	1	...	466	...	...
46. Breaks Interstate Park	2	...	...	...	...	...	...	2	...	...
47. Wise County	...	...	...	...	...	...	...	6	...	...
Totals	408	4,695	3	2,113	5,102	4	154	15,657	20	816

Count name	Northern Pintail	American Green-winged Teal	Canvasback	Redhead	Ring-necked Duck	Greater Scaup	Lesser Scaup	scaup sp.	Common Eider	Harlequin Duck
1. Chincoteague	1,562	210	...	...	22	...	3	...	...	...
2. Wachapreague	4	7	1	...	38	...	...	...	...	...
3. Cape Charles	11	284	...	5	117	80	16	5	...	...
4. Chesapeake Bay	...	...	...	CW	...	14	17	...	2	3
5. Little Creek	16	98	...	...	69	28	49	...	1	...
6. Back Bay	94	330	...	2	2	...	50	...	...	...
7. Nansemond River	5	26	635	...	71	...	30	...	...	...
8. Newport News	...	2	231	23	57	14	3	...	...	...
9. Mathews County	...	...	...	1	...	2	4	8	...	...
10. Williamsburg	...	11	2,850	6	886	...	63	...	...	...
11. Hopewell	1	...	3	...	128	1	2	...	...	...
12. Walkerton	430	218	...	...	516	...	...	...	...	...
13. Washingtons Birthplace	...	7	841	...	6	5	639	500	...	...
14. Brooke	...	...	1,800	...	92	6	764	...	...	...
15. Fort Belvoir	79	229	702	36	570	9	35,958	4,800	...	...
16. Central Loudoun Co.	...	45	...	...	42	...	7	...	...	...
17. The Plains	9	6	13	...	1,131	4	19	...	...	...
18. Manassas-Bull Run	...	...	...	...	...	...	...	...	...	...
19. Chancellorsville	...	...	...	...	4	11	...	...	...	...
20. Lake Anna	...	...	...	...	...	...	...	...	...	...
21. Gordonsville	...	...	...	...	6	...	...	...	...	...
22. Charlottesville	...	...	...	...	1	...	...	...	...	...
23. Warren	...	...	3	...	99	...	...	...	...	...
24. Darlington Heights	...	...	...	...	2	...	...	...	...	...
25. Banister River WMAs	...	...	...	...	...	...	6	...	...	...
26. Lynchburg	...	...	...	...	199	...	...	...	...	...
27. Danville	...	...	...	...	...	...	1	1	...	...
28. Calmes Neck	...	7	...	4	37	...	...	...	...	...
29. N. Shenandoah Valley	2	21	...	...	34	1	1	...	...	...
30. Shenandoah NP-Luray	...	3	...	...	4	1	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	5	...	...	...	...	...	...	...	...
33. Augusta County	...	6	3	1	...	...	1	...	...	...
34. Waynesboro	CW	2	1	...	...	...	...	...	...	...
35. Lexington	...	14	...	...	...	2	...	...	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...	...
37. Fincastle	...	27	5	1	8	...	...	...	...	...
38. Roanoke	3	12	...	2	44	...	2	...	...	...
39. Blacksburg	3	...	1	...	2	...	30	...	...	...
40. Giles County	...	...	...	...	...	...	...	...	...	...
41. Tazewell	...	...	...	...	...	...	...	...	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	14	...	...	...	...	...	...	...	...
44. Blackford	...	...	...	...	...	...	...	...	...	...
45. Bristol	1	8	...	5	75	...	9	...	...	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...	...
Totals	2,220	1,592	7,089	86	4,262	178	37,674	5,314	3	3

Count name	Surf Scoter	White-winged Scoter	Black Scoter	scoter sp.	Long-tailed Duck	Bufflehead	Common Goldeneye	Hooded Merganser	Common Merganser
1. Chincoteague	115	...	82	33	4	724	6	221	13
2. Wachapreague	139	4	5	88	25	594	4	60	...
3. Cape Charles	659	1	372	150	53	1,072	13	129	...
4. Chesapeake Bay	230	6	94	...	380	29	2	...	...
5. Little Creek	308	1	99	...	139	361	2	612	...
6. Back Bay	13	...	64	48	...	5	1	15	...
7. Nansemond River	167	...	2	...	1	794	18	222	...
8. Newport News	286	200	...	...	8	678	43	231	...
9. Mathews County	552	...	72	187	67	887	55	50	1
10. Williamsburg	...	...	...	...	1	82	6	263	1
11. Hopewell	...	...	...	...	...	152	3	53	75
12. Walkerton	...	...	...	...	...	77	...	12	1
13. Washingtons Birthplace	404	...	46	...	55	246	254	54	72
14. Brooke	...	...	...	...	...	136	1	261	45
15. Fort Belvoir	...	...	...	...	...	552	6	318	455
16. Central Loudoun Co.	...	...	...	...	...	20	CW	76	175
17. The Plains	...	...	...	...	...	152	1	83	410
18. Manassas-Bull Run	...	...	...	...	...	...	...	6	...
19. Chancellorsville	...	...	...	...	...	62	...	8	55
20. Lake Anna	...	...	...	...	3	70	...	2	...
21. Gordonsville	...	...	...	...	...	5	...	118	...
22. Charlottesville	...	...	...	...	...	...	...	6	...
23. Warren	...	...	...	...	...	43	...	12	...
24. Darlington Heights	...	...	...	...	...	2	...	16	...
25. Banister River WMAs	...	...	...	...	...	15	3	13	...
26. Lynchburg	...	...	...	...	...	8	1	71	...
27. Danville	...	...	...	...	...	...	...	4	...
28. Calmes Neck	...	...	...	...	...	2	...	34	1
29. N. Shenandoah Valley	...	...	...	...	...	CW	4	42	30
30. Shenandoah NP-Luray	...	...	...	...	1	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	...	...	...	...	...	...	1	...
33. Augusta County	...	...	...	...	...	...	...	4	...
34. Waynesboro	...	...	...	...	...	...	...	...	...
35. Lexington	...	...	...	...	...	...	...	12	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...
37. Fincastle	...	...	...	...	...	5	...	2	...
38. Roanoke	...	...	...	...	...	6	...	26	...
39. Blacksburg	...	...	...	...	...	181	CW	89	4
40. Giles County	...	...	...	...	...	3	3	23	...
41. Tazewell	...	...	...	...	...	...	...	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	...	...	...	...	2	...	4	...
44. Blackford	...	...	...	...	...	...	...	...	...
45. Bristol	...	...	...	...	...	176	2	150	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	9	...
Totals	2,873	212	836	506	737	7,141	428	3,312	1,338

Count name	Red-breasted Merganser	Ruddy Duck	duck sp.	Ruffed Grouse	Wild Turkey	Northern Bobwhite	Red-throated Loon	Pacific Loon	Common Loon	loon sp.	Pied-billed Grebe
1. Chincoteague	111	406	...	...	...	44	2	...	36	...	4
2. Wachapreague	106	...	...	...	36	3	35	...	49	...	...
3. Cape Charles	883	321	...	...	4	4	6,582	...	164	2	38
4. Chesapeake Bay	...	...	...	...	...	...	72	...	19	...	...
5. Little Creek	110	48	...	...	...	...	45	...	27	...	20
6. Back Bay	259	4	...	...	...	1	26	1	126	...	10
7. Nansemond River	560	1,126	...	...	35	3	...	...	2	...	9
8. Newport News	75	375	...	...	58	...	7	...	33	...	27
9. Mathews County	259	1,735	...	...	4	2	116	...	224	...	1
10. Williamsburg	25	2,281	...	...	1	...	...	...	14	...	12
11. Hopewell	26	153	5	...	41	21	...	...	...	...	7
12. Walkerton	...	99	...	...	8	...	...	...	...	...	21
13. Washingtons Birthplace	45	241	...	...	2	1	6	...	11	...	...
14. Brooke	7	1,195	...	...	1	1	...	...	2	...	44
15. Fort Belvoir	16	3,487	...	...	16	1	...	...	3	...	13
16. Central Loudoun Co.	...	3	...	...	20	...	...	...	...	...	...
17. The Plains	...	32	...	...	14	...	...	...	...	...	13
18. Manassas-Bull Run	...	...	...	...	...	...	...	...	...	...	...
19. Chancellorsville	...	146	...	...	...	...	...	...	...	...	10
20. Lake Anna	1	...	...	...	...	1	...	...	25	...	16
21. Gordonsville	...	2	...	...	...	...	...	...	...	...	...
22. Charlottesville	...	...	...	...	...	...	...	...	...	...	1
23. Warren	...	1	...	...	17	23	...	...	...	...	5
24. Darlington Heights	...	...	...	...	1	2	...	...	...	...	...
25. Banister River WMAs	5	1	540	...	5	...	...	...	...	...	1
26. Lynchburg	...	1	...	...	70	1	...	...	...	...	14
27. Danville	...	...	...	...	...	...	...	...	...	...	...
28. Calmes Neck	13	6	...	...	29	2	...	...	...	...	4
29. N. Shenandoah Valley	CW	4	...	...	39	2	...	...	...	...	3
30. Shenandoah NP-Luray	2	19	...	1	10	...	...	...	...	...	4
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	...	...	2	23	...	...	...	...	...	...
33. Augusta County	...	5	...	...	3	...	...	...	...	...	4
34. Waynesboro	...	...	...	...	2	...	...	...	...	...	...
35. Lexington	...	1	...	...	10	...	...	...	...	...	2
36. Peaks of Otter	...	...	...	...	40	...	...	...	...	...	...
37. Fincastle	1	2	...	1	12	...	...	...	...	...	...
38. Roanoke	...	2	...	...	9	...	...	...	1	...	3
39. Blacksburg	7	...	1	...	11	...	...	...	...	...	5
40. Giles County	...	...	...	1	1	...	...	...	...	...	1
41. Tazewell	...	...	...	...	29	...	...	...	...	...	3
42. Mount Rogers-Whitetop	...	...	...	1	10	...	...	...	...	...	...
43. Glade Spring	...	...	...	2	3	...	...	...	...	...	...
44. Blackford	...	...	...	1	...	...	...	...	...	...	...
45. Bristol	...	...	...	5	23	...	...	...	2	...	71
46. Breaks Interstate Park	...	...	...	6	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	7	...	...	...	...	...	2
Totals	2,511	11,696	546	20	594	112	6,891	1	738	2	368

Count name	Horned Grebe	Red-necked Grebe	Eared Grebe	Clark's Grebe	Manx Shearwater	Northern Gannet	American White Pelican	Brown Pelican	Double-crested Cormorant	Great Cormorant
1. Chincoteague	42	...	...	...	...	4	...	...	17	...
2. Wachapreague	23	...	...	...	...	10	...	...	41	...
3. Cape Charles	107	3	...	...	...	88	...	8	97	40
4. Chesapeake Bay	1	3	...	...	1	4,900	...	4	1	28
5. Little Creek	6	...	...	1	...	298	...	144	975	6
6. Back Bay	...	...	...	...	...	894	...	148	42	...
7. Nansemond River	934	...	...	...	...	...	CW	164	1,085	1
8. Newport News	184	...	...	...	...	3	...	56	1,112	...
9. Mathews County	22	...	...	...	...	43	...	1	9	...
10. Williamsburg	16	...	...	...	...	...	...	4	619	...
11. Hopewell	36	...	...	...	...	...	...	...	283	...
12. Walkerton	...	...	...	...	...	...	...	...	...	...
13. Washingtons Birthplace	1	...	...	...	...	...	...	...	8	...
14. Brooke	...	...	...	...	...	...	...	...	12	...
15. Fort Belvoir	...	...	...	...	...	...	...	...	17	...
16. Central Loudoun Co.	...	...	...	...	...	...	...	...	...	...
17. The Plains	...	...	...	...	...	...	...	...	1	...
18. Manassas-Bull Run	...	...	...	...	...	...	...	...	...	...
19. Chancellorsville	...	...	...	...	...	...	...	...	...	...
20. Lake Anna	53	1	...	...	...	...	...	...	15	...
21. Gordonsville	...	...	...	...	...	...	...	...	...	...
22. Charlottesville	...	...	...	...	...	...	...	...	...	...
23. Warren	...	...	...	...	...	...	...	...	...	...
24. Darlington Heights	...	...	...	...	...	...	...	...	...	...
25. Banister River WMAs	2	...	...	...	...	...	...	...	1	...
26. Lynchburg	...	...	...	...	...	...	...	...	1	...
27. Danville	...	...	...	...	...	...	...	...	...	...
28. Calmes Neck	...	...	...	...	...	...	...	...	...	...
29. N. Shenandoah Valley	1	...	...	...	...	...	...	...	...	...
30. Shenandoah NP-Luray	...	...	...	...	...	...	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	...	...	...	...	...	...	...	...	...
33. Augusta County	...	...	...	...	...	...	...	...	...	...
34. Waynesboro	...	...	...	...	...	...	...	...	...	...
35. Lexington	...	...	...	...	...	...	...	...	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...	...
37. Fincastle	...	...	...	...	...	...	...	...	...	...
38. Roanoke	...	...	...	...	...	...	...	...	...	...
39. Blacksburg	...	...	...	...	...	...	...	...	...	...
40. Giles County	...	...	...	...	...	...	...	...	...	...
41. Tazewell	...	...	...	...	...	...	...	...	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	...	...	...	...	...	...	...	...	...
44. Blackford	...	...	...	...	...	...	...	...	...	...
45. Bristol	4	...	10	...	...	...	...	...	...	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...	...
Totals	1,432	7	10	1	1	6,240	CW	529	4,336	75

Count Name	American Bittern	Great Blue Heron	Great Egret	Snowy Egret	Little Blue Heron	Tricolored Heron	Green Heron	Black-crowned Night-Heron	White Ibis	Black Vulture
1. Chincoteague	...	91	64	4	...	...	1	2	...	13
2. Wachapreague	1	58	5	...	...	...	...	1	...	57
3. Cape Charles	1	83	21	6	3	2	...	17	83	200
4. Chesapeake Bay	CW	...	...
5. Little Creek	...	89	49	1	...	...	...	9	...	101
6. Back Bay	5	45	2	...	...	...	...	2	...	5
7. Nansemond River	...	30	1	2	...	...	...	...	...	7
8. Newport News	...	70	65	...	...	...	...	4	...	...
9. Mathews County	...	58	1	...	...	...	...	...	...	13
10. Williamsburg	...	50	5	...	...	...	...	...	...	35
11. Hopewell	...	80	1	...	...	...	...	...	...	78
12. Walkerton	...	58	...	...	...	...	...	...	...	289
13. Washingtons Birthplace	...	47	...	...	...	...	...	...	...	48
14. Brooke	...	38	...	...	...	...	...	...	...	116
15. Fort Belvoir	...	254	...	...	...	...	...	1	...	79
16. Central Loudoun Co.	...	18	...	...	...	...	...	...	...	102
17. The Plains	...	21	1	...	...	...	...	...	...	161
18. Manassas-Bull Run	...	4	...	...	...	...	...	...	...	37
19. Chancellorsville	...	5	...	...	...	...	...	...	...	31
20. Lake Anna	...	10	...	...	...	...	...	...	...	28
21. Gordonsville	...	5	...	...	...	...	...	...	...	21
22. Charlottesville	...	9	...	...	...	...	...	...	...	204
23. Warren	...	5	...	...	...	...	1	...	...	26
24. Darlington Heights	...	7	...	...	...	...	...	...	...	23
25. Banister River WMAs	...	8	...	...	...	...	...	...	...	25
26. Lynchburg	...	15	...	...	...	...	...	...	...	128
27. Danville	...	3	...	...	...	...	...	...	...	64
28. Calmes Neck	...	18	...	...	...	...	...	...	...	46
29. N. Shenandoah Valley	...	47	...	...	...	...	...	...	...	156
30. Shenandoah NP-Luray	...	15	...	...	...	...	...	7	...	170
31. Big Flat Mountain	...	1	...	...	...	...	...	...	...	3
32. Rockingham County	...	7	...	...	...	...	...	...	...	21
33. Augusta County	...	9	...	...	...	...	...	...	...	87
34. Waynesboro	...	6	...	...	...	...	...	1	...	60
35. Lexington	...	10	...	...	...	...	...	...	...	91
36. Peaks of Otter	1
37. Fincastle	...	9	...	...	...	...	...	...	...	72
38. Roanoke	...	4	...	...	...	...	...	...	...	36
39. Blacksburg	...	21	...	...	...	...	...	...	...	87
40. Giles County	...	6	...	...	...	...	...	...	...	2
41. Tazewell	...	7	...	...	...	...	...	...	...	13
42. Mount Rogers-Whitetop	...	2	...	...	...	...	...	...	...	8
43. Glade Spring	...	25	...	...	...	...	...	...	...	106
44. Blackford	...	17	...	...	...	...	...	...	...	8
45. Bristol	...	29	...	...	...	...	...	1	...	67
46. Breaks Interstate Park	...	3	...	...	...	...	...	...	...	2
47. Wise County	...	1	...	...	...	...	...	...	...	...
Totals	7	1,398	215	13	3	2	2	45	83	2,927

Count Name	Turkey Vulture	Osprey	Bald Eagle	bald eagle - age	Northern Harrier	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk	Accipiter sp.
1. Chincoteague	58	...	8	4a, 1i, 3u	10	8	4	...	...
2. Wachapreague	307	...	...	...	25	4	4	...	...
3. Cape Charles	489	1	28	28u	51	20	9	...	...
4. Chesapeake Bay	...	...	1	1a	...	...	...	...	...
5. Little Creek	209	2	2	1a, 1i	3	5	5	...	...
6. Back Bay	32	2	2	2a	14	7	4	...	...
7. Nansemond River	86	...	7	6a, 1i	4	1	1	...	...
8. Newport News	18	1	11	7a, 4i	4	6	4	...	...
9. Mathews County	144	...	16	10a, 5i, 1u	5	8	2	...	...
10. Williamsburg	144	1	17	11a, 6i	2	7	4	...	...
11. Hopewell	72	...	76	45a, 31i	7	4	6	...	...
12. Walkerton	199	...	39	16a, 23i	19	5	5	...	...
13. Washingtons Birthplace	192	...	116	88a, 28i	11	4	1	...	...
14. Brooke	37	...	63	40a, 23i	5	1	1	...	...
15. Fort Belvoir	93	...	107	67a, 40i	2	15	11	...	5
16. Central Loudoun Co.	454	...	8	5a, 3i	17	4	7	...	3
17. The Plains	304	...	16	8a, 8i	5	14	5	...	...
18. Manassas-Bull Run	145	...	2	1a, 1i	1	6	4	...	3
19. Chancellorsville	62	...	4	3a, 1u	CW	1	1	...	1
20. Lake Anna	90	...	6	5a, 1i	...	4	1	...	...
21. Gordonsville	44	...	1	1a	3	2	1	...	...
22. Charlottesville	680	1	...	...	...	6	3	...	...
23. Warren	152	...	...	...	3	2	4	...	...
24. Darlington Heights	140	...	1	1u	14	3	4	...	...
25. Banister River WMAs	153	...	4	1a, 3i	4	2	3	...	...
26. Lynchburg	405	...	1	1a	...	4	5	...	...
27. Danville	146	...	...	...	...	2	1	...	...
28. Calmes Neck	271	...	4	1a, 3i	7	2	6	...	...
29. N. Shenandoah Valley	328	...	7	7a	12	19	19	...	...
30. Shenandoah NP-Luray	226	...	3	2a, 1i	1	7	7	...	...
31. Big Flat Mountain	6	...	...	...	...	...	...	...	...
32. Rockingham County	340	...	...	...	...	3	2	...	...
33. Augusta County	259	...	...	...	6	8	3	...	...
34. Waynesboro	249	...	...	...	4	...	1	...	...
35. Lexington	180	...	3	2a, 1i	2	1	2	...	2
36. Peaks of Otter	5	...	...	...	...	...	1	...	...
37. Fincastle	200	...	1	1a	2	8	7	...	...
38. Roanoke	45	...	...	...	...	1	8	...	...
39. Blacksburg	16	...	...	...	3	11	6	1	1
40. Giles County	7	...	1	1u	...	...	1	...	...
41. Tazewell	4	...	...	...	...	...	2	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	1	...	...
43. Glade Spring	58	...	...	...	...	2	7	...	...
44. Blackford	...	...	...	...	1	2	1	...	...
45. Bristol	28	...	3	3u	...	1	4	...	...
46. Breaks Interstate Park	1	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	1	...	1	...	...
Totals	7,078	8	558	336a, 184i, 38u	248	210	179	1	15

Count Name	Red-shouldered Hawk	Red-tailed Hawk	Rough-legged Hawk	<i>Buteo</i> sp.	hawk sp.	Golden Eagle	golden eagle - age	American Kestrel	Merlin	Peregrine Falcon	Clapper Rail
1. Chincoteague	1	15	...	...	...	...	...	7	1	1	5
2. Wachapreague	1	20	...	...	...	...	...	18	1	2	2
3. Cape Charles	4	43	...	...	...	...	...	28	2	5	66
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...	...
5. Little Creek	1	10	...	...	...	...	...	9	2	...	26
6. Back Bay	7	17	...	...	...	...	...	20	...	...	...
7. Nansemond River	2	16	...	...	...	...	...	11	...	...	40
8. Newport News	...	14	...	...	...	...	...	5	...	...	1
9. Mathews County	7	20	...	...	3	...	...	3	...	...	6
10. Williamsburg	16	9	...	...	...	...	...	4	...	...	1
11. Hopewell	16	24	...	...	...	...	...	20	1	2	...
12. Walkerton	25	33	...	...	...	1	1i	9	1	...	...
13. Washingtons Birthplace	14	28	...	...	...	...	...	7	1	...	...
14. Brooke	12	16	...	...	...	...	...	1	1	...	...
15. Fort Belvoir	80	63	...	...	...	...	...	6	1	1	...
16. Central Loudoun Co.	80	91	...	1	...	...	...	15	...	...	...
17. The Plains	118	129	...	...	...	...	...	29	3	...	...
18. Manassas-Bull Run	21	17	...	...	...	...	...	6	...	...	...
19. Chancellorsville	11	13	...	...	...	...	...	8	...	...	...
20. Lake Anna	5	14	...	...	...	...	...	4	CW	...	...
21. Gordonsville	6	13	...	...	...	...	...	14	...	...	...
22. Charlottesville	23	33	...	...	...	...	...	8	...	...	...
23. Warren	5	61	...	...	...	...	...	11	...	...	...
24. Darlington Heights	9	46	...	...	...	...	...	18	...	...	...
25. Banister River WMAs	6	27	...	...	...	...	...	6	1	...	...
26. Lynchburg	3	33	...	...	...	...	...	8	...	...	...
27. Danville	3	7	...	...	...	...	...	4	...	...	...
28. Calmes Neck	36	51	...	...	...	...	...	22	...	...	...
29. N. Shenandoah Valley	30	148	...	...	...	...	...	43	...	...	...
30. Shenandoah NP-Luray	4	63	...	...	...	1	1a	29	...	...	...
31. Big Flat Mountain	...	3	...	...	...	...	...	...	...	...	...
32. Rockingham County	1	31	...	...	...	...	...	28	...	CW	...
33. Augusta County	...	55	...	...	...	...	...	45	...	...	...
34. Waynesboro	1	30	...	...	...	...	...	22	...	...	...
35. Lexington	2	31	...	...	...	...	...	19	...	...	...
36. Peaks of Otter	1	5	...	...	...	...	...	...	...	...	...
37. Fincastle	5	84	...	...	...	...	...	23	...	...	...
38. Roanoke	...	28	...	...	...	...	...	6	...	...	...
39. Blacksburg	6	29	...	1	...	...	...	19	1	...	...
40. Giles County	1	9	...	...	...	...	...	7	...	...	...
41. Tazewell	3	13	...	...	...	...	...	8	...	...	...
42. Mount Rogers-Whitetop	...	4	...	...	...	...	...	6	...	...	...
43. Glade Spring	1	31	1	...	...	...	...	22	...	...	...
44. Blackford	1	24	...	...	...	...	...	17	...	...	...
45. Bristol	...	28	...	...	...	...	...	22	...	...	...
46. Breaks Interstate Park	4	2	...	...	...	...	...	1	...	...	...
47. Wise County	3	6	...	...	...	...	...	5	...	...	...
Totals	575	1,487	1	2	3	2	1a, 1i	623	16	11	147

Count Name	King Rail	Virginia Rail	rail sp.	Sora	Common Moorhen	American Coot	Sandhill Crane	Black-bellied Plover	American Golden-Plover	Semipalmated Plover
1. Chincoteague	...	1	...	...	...	...	...	11	...	...
2. Wachapreague	3	...	338	1	1
3. Cape Charles	...	2	...	...	11	77	...	603	...	24
4. Chesapeake Bay
5. Little Creek	1	1	...	...	...	17	...	...	...	...
6. Back Bay	18	7	...	4	...	51	...	3	...	...
7. Nansemond River	1	...	...	...	...	20	...	...	...	...
8. Newport News	125	...	58	...	...
9. Mathews County	2	...	...
10. Williamsburg	20	...	...	...	...
11. Hopewell	163	...	...	...	...
12. Walkerton	75	...	...	...	...
13. Washingtons Birthplace	1	...	...	6	...	...	...	...
14. Brooke	2,200	...	...	...	...
15. Fort Belvoir	4	...	...	...	...	2,052	...	...	...	...
16. Central Loudoun Co.
17. The Plains	1	2	...	...	...
18. Manassas-Bull Run
19. Chancellorsville	411	...	...	...	...
20. Lake Anna
21. Gordonsville
22. Charlottesville
23. Warren
24. Darlington Heights
25. Banister River WMAs
26. Lynchburg	8	...	...	...	...
27. Danville
28. Calmes Neck	14	...	...	...	...
29. N. Shenandoah Valley	5	...	...	...	...
30. Shenandoah NP-Luray	1	...	...	...	...
31. Big Flat Mountain
32. Rockingham County	2	...	...	...	...
33. Augusta County	19	...	...	...	...
34. Waynesboro	CW	...	...	...	...
35. Lexington
36. Peaks of Otter
37. Fincastle	2	...	...	...	...
38. Roanoke	6	...	...	...	...
39. Blacksburg	3	...	...	...	...
40. Giles County
41. Tazewell
42. Mount Rogers-Whitetop
43. Glade Spring	4	...	...	...	...
44. Blackford
45. Bristol	71	...	...	...	...
46. Breaks Interstate Park	16	...	...	...	...
47. Wise County
Totals	24	11	1	4	11	5,372	2	1,015	1	25

Count Name	Killdeer	American Oystercatcher	Greater Yellowlegs	Lesser Yellowlegs	yellowlegs sp.	Willet	Marbled Godwit	Ruddy Turnstone	Red Knot	Sanderling
1. Chincoteague	173	40	20	4	...	84	14	4	...	67
2. Wachapreague	...	247	57	1	...	324	...	59	...	62
3. Cape Charles	52	202	102	54	1	86	24	87	...	347
4. Chesapeake Bay	...	...	...	...	...	...	...	3	...	...
5. Little Creek	1	49	3	...	...	4	...	17	...	106
6. Back Bay	41	...	6	8	...	...	...	...	73	198
7. Nansemond River	37	...	2	...	...	...	...	...	...	211
8. Newport News	58	...	2	...	...	...	...	8	...	48
9. Mathews County	82	1	1	...	...	...	...	1	1	99
10. Williamsburg	24	...	...	...	...	...	...	...	...	...
11. Hopewell	125	...	...	...	...	...	...	...	...	...
12. Walkerton	234	...	37	7	...	...	...	...	...	...
13. Washingtons Birthplace	...	...	...	...	...	...	...	...	...	...
14. Brooke	1	...	...	...	...	...	...	...	...	...
15. Fort Belvoir	55	...	43	...	...	...	...	...	...	...
16. Central Loudoun Co.	1	...	...	...	...	...	...	...	...	...
17. The Plains	3	...	...	...	...	...	...	...	...	...
18. Manassas-Bull Run	6	...	...	...	...	...	...	...	...	...
19. Chancellorsville	2	...	...	...	...	...	...	...	...	...
20. Lake Anna	3	...	...	...	...	...	...	...	...	...
21. Gordonsville	...	...	...	...	...	...	...	...	...	...
22. Charlottesville	...	...	...	...	...	...	...	...	...	...
23. Warren	8	...	...	...	...	...	...	...	...	...
24. Darlington Heights	13	...	...	...	...	...	...	...	...	...
25. Banister River WMAs	19	...	...	...	...	...	...	...	...	...
26. Lynchburg	11	...	...	...	...	...	...	...	...	...
27. Danville	...	...	...	...	...	...	...	...	...	...
28. Calmes Neck	6	...	...	...	...	...	...	...	...	...
29. N. Shenandoah Valley	9	...	...	...	...	...	...	...	...	...
30. Shenandoah NP-Luray	26	...	...	...	...	...	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...
32. Rockingham County	4	...	...	...	...	...	...	...	...	...
33. Augusta County	3	...	...	...	...	...	...	...	...	...
34. Waynesboro	...	...	...	...	...	...	...	...	...	...
35. Lexington	1	...	...	...	...	...	...	...	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...	...
37. Fincastle	16	...	...	...	...	...	...	...	...	...
38. Roanoke	10	...	...	...	...	...	...	...	...	...
39. Blacksburg	15	...	...	...	...	...	...	...	...	...
40. Giles County	...	...	...	...	...	...	...	...	...	...
41. Tazewell	...	...	...	...	...	...	...	...	...	...
42. Mount Rogers-Whitetop	1	...	...	...	...	...	...	...	...	...
43. Glade Spring	9	...	...	...	...	...	...	...	...	...
44. Blackford	2	...	...	...	...	...	...	...	...	...
45. Bristol	14	...	...	...	...	...	...	...	...	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	...
47. Wise County	9	...	...	...	...	...	...	...	...	...
Totals	1,074	539	273	74	1	498	38	179	74	1,138

Count Name	Western Sandpiper	Least Sandpiper	Purple Sandpiper	Dunlin	peep sp.	Short-billed Dowitcher	dowitcher sp.	Wilson's Snipe	American Woodcock	Laughing Gull
1. Chincoteague	11	...	...	405	200	10	...	4	13	1
2. Wachapreague	240	11	...	4,884	...	4	...	...	1	...
3. Cape Charles	4	2	6	4,796	5	27	...	...	51	3
4. Chesapeake Bay	2	...	...	...	...	...	...	46
5. Little Creek	5	45	...	...	...	...	2	28
6. Back Bay	27	...	...	...	10	4	8
7. Nansemond River	35	10	...	62	...	...	...	...	6	1
8. Newport News	31	...	...	700	...	...	...	1	2	249
9. Mathews County	237	...	...	...	...	1	...
10. Williamsburg	2	51
11. Hopewell	...	CW	...	CW	...	...	...	7	1	1,362
12. Walkerton	105	10	...	4	73	4	...
13. Washingtons Birthplace	13	2	2
14. Brooke	9	...	251
15. Fort Belvoir	2	6	17
16. Central Loudoun Co.	2	...	...
17. The Plains	CW
18. Manassas-Bull Run
19. Chancellorsville
20. Lake Anna	1
21. Gordonsville
22. Charlottesville
23. Warren	1	...
24. Darlington Heights	1	...
25. Banister River WMAs	3	...	...
26. Lynchburg
27. Danville
28. Calmes Neck	3	...	...
29. N. Shenandoah Valley	10	...	...
30. Shenandoah NP-Luray	5	...	...
31. Big Flat Mountain
32. Rockingham County	7	...	...
33. Augusta County	5	...	...
34. Waynesboro	2	...	...
35. Lexington	10	...	...
36. Peaks of Otter
37. Fincastle	1	...	...
38. Roanoke	2	...	...
39. Blacksburg
40. Giles County
41. Tazewell
42. Mount Rogers-Whitetop	5	...	...
43. Glade Spring	5	...	...
44. Blackford
45. Bristol	2	...	...
46. Breaks Interstate Park
47. Wise County
Totals	321	23	13	11,261	215	41	4	181	97	2,020

Count Name	Little Gull	Black-headed Gull	Bonaparte's Gull	Ring-billed Gull	California Gull	Herring Gull	Iceland Gull	Lesser Black-backed Gull	Glaucous Gull	Great Black-backed Gull
1. Chincoteague	1,221	...	1,354	...	...	...	151
2. Wachapreague	6	944	...	1,063	...	...	...	47
3. Cape Charles	5,724	4,943	...	2,991	...	2	1	728
4. Chesapeake Bay	1	1	9,500	5,600	...	2,100	...	7	...	310
5. Little Creek	1	2	216	7,100	...	555	...	9	...	345
6. Back Bay	154	3,730	...	348	1	43	...	287
7. Nansemond River	1	22,776	...	14,676	...	8	...	535
8. Newport News	5,754	...	708	...	...	...	138
9. Mathews County	27	898	...	473	...	...	...	107
10. Williamsburg	5	886	...	21	...	1	...	23
11. Hopewell	13	10,036	...	300	...	...	...	60
12. Walkerton	275	...	...	...	...	...	...
13. Washingtons Birthplace	2,274	...	4	...	...	...	8
14. Brooke	10,750	...	231	...	...	...	78
15. Fort Belvoir	3	5,655	CW	411	...	2	...	255
16. Central Loudoun Co.	562	...	25	...	...	...	...
17. The Plains	1,910	...	218	...	1	...	16
18. Manassas-Bull Run	271	...	...	...	...	...	...
19. Chancellorsville	33	...	...	...	...	...	...
20. Lake Anna	31	4,116	...	563	...	1	...	293
21. Gordonsville	1	...	...	...	...	...	...
22. Charlottesville
23. Warren	1	...	...	...	...	...	...
24. Darlington Heights
25. Banister River WMAs	CW	1,330	...	6	...	...	...	...
26. Lynchburg	611	...	1	...	...	...	...
27. Danville	11	...	...	...	...	...	...
28. Calmes Neck	4	...	...	...	...	...	...
29. N. Shenandoah Valley	1	...	...	...	...	...	...
30. Shenandoah NP-Luray
31. Big Flat Mountain
32. Rockingham County
33. Augusta County	CW	...	...	...	...	...	...
34. Waynesboro
35. Lexington	1	...	...	...	...	...	...
36. Peaks of Otter
37. Fincastle	125	...	...	...	...	...	...
38. Roanoke	73	...	1	...	...	...	...
39. Blacksburg	1,357	...	...	...	...	...	...
40. Giles County	14	...	...	...	...	...	...
41. Tazewell
42. Mount Rogers-Whitetop
43. Glade Spring
44. Blackford
45. Bristol	24	432	...	...	...	...	...	...
46. Breaks Interstate Park
47. Wise County
Totals	2	3	15,704	93,695	CW	26,049	1	74	1	3,381

Count name	gull sp.	Forster's Tern	Black Skimmer	Rock Pigeon	Eurasian Collared-Dove	Mourning Dove	dove sp.	Barn Owl	Eastern Screech-Owl	Great Horned Owl
1. Chincoteague	...	2	...	308	...	395	...	...	16	13
2. Wachapreague	238	96	...	53	...	724	...	...	...	1
3. Cape Charles	...	54	...	563	3	559	...	...	6	17
4. Chesapeake Bay	...	1	...	4	...	...	...	...	...	...
5. Little Creek	...	401	6	1,365	...	693	...	...	18	13
6. Back Bay	...	59	...	112	27	359	...	...	13	9
7. Nansemond River	741	...	293	...	1	...	1
8. Newport News	...	23	...	1,402	...	1,279	...	...	...	1
9. Mathews County	66	94	...	3	...	336	...	...	1	20
10. Williamsburg	...	7	...	...	...	404	...	...	6	3
11. Hopewell	65	1	...	82	...	517	...	...	4	12
12. Walkerton	468	...	...	6	25
13. Washingtons Birthplace	26	...	497	...	1	3	14
14. Brooke	20	...	184	...	...	...	...
15. Fort Belvoir	363	...	...	551	...	1,497	...	...	14	15
16. Central Loudoun Co.	293	...	584	...	1	5	2
17. The Plains	194	...	499	...	1	15	12
18. Manassas-Bull Run	100	...	684	...	1	...	4
19. Chancellorsville	20	...	78	...	...	5	2
20. Lake Anna	60	...	90	...	...	1	5
21. Gordonsville	85	...	125	...	...	4	16
22. Charlottesville	76	...	263	...	...	4	6
23. Warren	160	...	391	...	...	4	5
24. Darlington Heights	93	...	389	...	...	1	1
25. Banister River WMAs	50	...	86	...	...	7	5
26. Lynchburg	294	...	497	...	...	13	4
27. Danville	98	...	98	...	...	...	...
28. Calmes Neck	891	...	1,580	...	2	5	3
29. N. Shenandoah Valley	986	...	1,262	...	...	22	1
30. Shenandoah NP-Luray	484	...	491	...	3	11	4
31. Big Flat Mountain	1	...
32. Rockingham County	751	...	237	...	...	3	1
33. Augusta County	237	...	544	...	...	...	1
34. Waynesboro	391	...	274	...	...	1	...
35. Lexington	657	...	331	...	2	12	3
36. Peaks of Otter	1	...
37. Fincastle	268	...	450	...	...	5	...
38. Roanoke	1,408	...	362	...	...	...	...
39. Blacksburg	364	16	913	1	2	7	6
40. Giles County	43	...	156	...	...	1	1
41. Tazewell	176	...	...	2	...
42. Mount Rogers-Whitetop	267	...	207	...	...	1	...
43. Glade Spring	780	...	268	...	...	3	2
44. Blackford	58	...	520	...	...	3	...
45. Bristol	336	...	208	...	...	8	5
46. Breaks Interstate Park	134	...	83	...	...	...	...
47. Wise County	67	...	72	...	...	2	...
Totals	732	738	6	14,875	46	20,123	1	14	234	233

Count Name	Barred Owl	Long-eared Owl	Short-eared Owl	Northern Saw-whet Owl	owl sp.	Allen's Hummingbird	rufous/Allen's hummingbird sp.	Belted Kingfisher	Red-headed Woodpecker	Red-bellied Woodpecker
1. Chincoteague	1	...	2	...	...	...	...	17	...	14
2. Wachapreague	...	...	...	...	...	...	...	19	...	13
3. Cape Charles	...	...	...	...	...	1	...	26	2	29
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	1	...	...	...	...	...	...	29	...	33
6. Back Bay	3	...	...	...	...	...	...	16	...	37
7. Nansemond River	...	...	...	...	...	...	...	19	...	55
8. Newport News	...	...	...	...	...	...	1	36	...	49
9. Mathews County	1	...	...	...	...	...	...	33	...	63
10. Williamsburg	1	...	...	...	...	...	...	20	17	69
11. Hopewell	3	...	...	...	...	...	...	20	5	98
12. Walkerton	9	...	...	...	...	...	...	28	26	67
13. Washingtons Birthplace	2	...	1	...	...	...	...	8	8	60
14. Brooke	...	...	...	...	...	...	...	15	13	127
15. Fort Belvoir	23	...	...	...	...	...	...	58	2	622
16. Central Loudoun Co.	12	1	...	...	...	...	...	16	8	238
17. The Plains	5	...	...	1	...	...	...	14	2	203
18. Manassas-Bull Run	1	...	...	...	...	...	...	4	2	98
19. Chancellorsville	1	...	...	...	...	...	...	4	...	46
20. Lake Anna	...	...	...	...	...	...	...	8	1	35
21. Gordonsville	...	...	...	...	...	...	...	2	...	34
22. Charlottesville	3	...	...	...	...	...	...	16	1	97
23. Warren	3	...	...	...	...	...	...	10	1	77
24. Darlington Heights	3	...	...	...	...	...	...	2	2	34
25. Banister River WMAs	11	...	...	...	...	...	...	4	13	26
26. Lynchburg	2	...	...	...	...	...	...	16	3	83
27. Danville	...	...	...	...	...	...	...	2	...	19
28. Calmes Neck	7	...	...	...	...	...	...	11	13	154
29. N. Shenandoah Valley	2	1	2	1	...	...	...	47	14	165
30. Shenandoah NP-Luray	2	...	...	...	...	...	...	25	...	75
31. Big Flat Mountain	...	...	...	...	1	...	...	1	...	10
32. Rockingham County	...	...	...	...	...	...	...	8	7	20
33. Augusta County	...	...	1	...	...	...	...	8	...	53
34. Waynesboro	...	...	...	...	...	...	...	10	...	27
35. Lexington	...	...	...	...	...	...	...	12	...	34
36. Peaks of Otter	...	...	...	...	...	...	...	1	...	17
37. Fincastle	...	...	...	...	...	...	...	8	2	41
38. Roanoke	...	...	...	...	...	...	...	15	...	54
39. Blacksburg	...	...	1	...	...	...	...	16	1	78
40. Giles County	...	...	...	...	...	...	...	6	...	17
41. Tazewell	...	...	...	...	...	...	...	5	...	13
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	1	...	7
43. Glade Spring	3	...	...	...	...	...	...	11	1	24
44. Blackford	...	...	...	...	...	...	...	8	...	8
45. Bristol	2	...	...	...	...	...	...	16	...	18
46. Breaks Interstate Park	...	...	...	...	...	...	...	3	...	1
47. Wise County	1	...	...	...	...	...	...	1	...	11
Totals	102	2	7	2	1	1	1	655	144	3,153

Count Name	Yellow-bellied Sapsucker	Downy Woodpecker	Hairy Woodpecker	Red-cockaded Woodpecker	Northern (Yellow-shafted) Flicker	Northern (Red-shafted) Flicker	Pileated Woodpecker	Eastern Phoebe	Loggerhead Shrike	White-eyed Vireo
1. Chincoteague	3	39	7	...	48	...	7	7	...	...
2. Wachapreague	3	12	3	...	62	...	...	4	...	...
3. Cape Charles	7	28	8	...	95	...	9	12	...	...
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	6	28	2	...	36	...	9	...	...	...
6. Back Bay	9	31	3	...	54	...	22	5	...	...
7. Nansemond River	8	28	3	...	33	...	11	7	...	...
8. Newport News	15	38	5	...	63	...	5	2	...	...
9. Mathews County	17	28	8	1	75	...	33	6	...	...
10. Williamsburg	39	31	7	...	96	...	24	5	...	...
11. Hopewell	38	36	14	...	128	...	41	17	...	...
12. Walkerton	38	56	14	...	140	...	45	32	...	...
13. Washingtons Birthplace	21	39	19	...	104	...	26	17	...	...
14. Brooke	20	58	12	...	73	...	27	2	...	...
15. Fort Belvoir	78	465	121	...	442	...	138	10	...	...
16. Central Loudoun Co.	45	168	18	...	167	...	38	3	1	...
17. The Plains	71	216	17	...	114	...	36	4	...	...
18. Manassas-Bull Run	7	79	15	...	84	...	16	...	...	...
19. Chancellorsville	12	29	6	...	26	...	19	1	...	...
20. Lake Anna	12	29	4	...	35	...	11	6	...	...
21. Gordonsville	5	22	7	...	37	...	14	4	...	...
22. Charlottesville	48	98	9	...	93	...	53	8	...	...
23. Warren	48	70	9	...	70	...	36	22	...	...
24. Darlington Heights	18	51	3	...	30	...	27	15	...	...
25. Banister River WMAs	12	14	3	...	38	...	4	10	...	...
26. Lynchburg	24	54	10	...	45	...	26	10	...	...
27. Danville	3	22	9	...	14	...	6	2	...	2
28. Calmes Neck	42	124	28	...	100	...	37	6	1	...
29. N. Shenandoah Valley	60	168	23	...	84	...	47	3	3	...
30. Shenandoah NP-Luray	21	86	11	...	20	...	29	10	...	...
31. Big Flat Mountain	9	22	6	...	5	...	7	...	...	...
32. Rockingham County	2	23	5	...	6	...	9	...	...	...
33. Augusta County	10	60	5	...	17	...	5	4	...	...
34. Waynesboro	2	26	5	...	15	1	17	4	...	...
35. Lexington	12	43	10	...	19	...	24	2	1	...
36. Peaks of Otter	9	18	3	...	4	...	9	2	...	...
37. Fincastle	11	31	5	...	38	...	12	4	...	...
38. Roanoke	19	53	4	...	34	...	12	2	...	...
39. Blacksburg	33	125	23	...	36	...	48	13	1	...
40. Giles County	4	34	4	...	11	...	8	1	...	...
41. Tazewell	2	18	4	...	3	...	6	1	1	...
42. Mount Rogers-Whitetop	...	8	2	...	7	...	1	3	...	...
43. Glade Spring	9	29	1	...	8	...	9	16	1	...
44. Blackford	7	16	7	...	6	...	5	3	3	...
45. Bristol	7	45	14	...	16	...	40	15	1	...
46. Breaks Interstate Park	1	4	5	...	3	...	11	9	...	...
47. Wise County	10	23	9	...	16	...	29	4	...	...
Totals	877	2,725	510	1	2,650	1	1,048	313	13	2

Count Name	Blue-headed Vireo	Blue Jay	American Crow	Fish Crow	crow sp.	Common Raven	Horned Lark	Tree Swallow	Cave Swallow	Carolina Chickadee
1. Chincoteague	...	47	238	1	...	...	...	...	...	88
2. Wachapreague	...	31	304	12	...	...	...	...	...	58
3. Cape Charles	...	35	315	4	...	...	40	4	...	133
4. Chesapeake Bay
5. Little Creek	1	72	651	921	2,000	...	...	5	...	143
6. Back Bay	...	91	95	4	...	...	2	...	...	75
7. Nansemond River	2	78	89	159	...	...	3	...	2	114
8. Newport News	...	190	427	6	...	...	...	...	...	213
9. Mathews County	...	113	285	2	63	...	...	...	...	191
10. Williamsburg	...	89	133	...	...	...	...	...	...	186
11. Hopewell	...	92	157	...	13	...	30	...	...	170
12. Walkerton	...	88	418	...	11	...	43	...	...	102
13. Washingtons Birthplace	...	117	203	...	...	...	54	...	...	41
14. Brooke	...	211	295	...	...	...	...	...	...	147
15. Fort Belvoir	...	981	2,082	522	778	1	6	...	...	1,295
16. Central Loudoun Co.	...	495	713	524	373	6	...	...	...	411
17. The Plains	...	788	980	79	66	23	164	...	...	545
18. Manassas-Bull Run	...	321	363	52	699	...	...	...	...	227
19. Chancellorsville	...	152	215	...	...	...	...	...	...	94
20. Lake Anna	...	94	238	1	...	...	...	...	...	114
21. Gordonsville	...	127	163	1	...	...	...	...	...	48
22. Charlottesville	...	584	432	152	...	5	...	...	...	308
23. Warren	...	410	370	...	...	2	23	...	...	188
24. Darlington Heights	...	213	425	...	...	1	30	...	...	77
25. Banister River WMAs	...	113	238	...	...	...	...	...	...	48
26. Lynchburg	...	414	456	3	...	3	...	...	...	156
27. Danville	...	52	114	...	...	...	...	...	...	106
28. Calmes Neck	...	403	631	1	...	4	...	...	...	415
29. N. Shenandoah Valley	...	921	1,600	CW	...	6	24	...	...	492
30. Shenandoah NP-Luray	...	253	845	24	...	46	566	...	...	301
31. Big Flat Mountain	...	8	14	...	...	11	...	...	...	40
32. Rockingham County	...	122	240	...	...	1	58	...	...	48
33. Augusta County	...	335	1,048	19	...	2	133	...	...	95
34. Waynesboro	...	225	314	14	...	4	10	...	...	127
35. Lexington	...	310	1,169	10	...	11	1	...	...	68
36. Peaks of Otter	...	23	47	...	...	3	...	...	...	29
37. Fincastle	...	354	714	...	...	8	31	...	...	71
38. Roanoke	...	216	217	...	...	2	...	...	...	110
39. Blacksburg	...	458	736	...	...	4	355	...	...	227
40. Giles County	...	120	191	...	...	7	...	...	...	53
41. Tazewell	...	117	869	...	...	11	...	...	...	56
42. Mount Rogers-Whitetop	...	83	394	...	...	11	...	...	...	64
43. Glade Spring	...	251	584	...	...	3	201	...	...	101
44. Blackford	...	116	615	...	...	13	11	...	...	69
45. Bristol	...	174	585	...	...	1	...	...	...	154
46. Breaks Interstate Park	...	39	46	...	...	1	2	...	...	18
47. Wise County	...	112	714	...	...	5	12	...	...	122
Totals	3	10,638	21,972	2,511	4,003	195	1,799	9	2	7,938

Count Name	Black-capped Chickadee	chickadee sp.	Tufted Titmouse	Red-breasted Nuthatch	White-breasted Nuthatch	Brown-headed Nuthatch	nuthatch sp.	Brown Creeper	Carolina Wren	House Wren
1. Chincoteague	...	...	20	...	...	14	...	12	83	2
2. Wachapreague	...	...	20	3	...	10	...	3	31	...
3. Cape Charles	...	...	29	4	10	...	...	22	158	19
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	...	...	33	1	11	19	...	9	104	1
6. Back Bay	...	...	32	2	13	24	...	6	125	11
7. Nansemond River	...	...	45	...	6	11	...	6	136	8
8. Newport News	...	...	83	2	9	2	...	10	84	...
9. Mathews County	...	...	93	...	5	22	...	2	122	...
10. Williamsburg	...	...	109	4	52	20	...	12	115	2
11. Hopewell	...	...	68	...	47	10	...	...	155	4
12. Walkerton	...	...	77	1	19	...	...	14	130	...
13. Washingtons Birthplace	...	...	43	1	15	...	...	1	102	1
14. Brooke	...	...	126	1	53	...	...	3	110	...
15. Fort Belvoir	...	...	914	48	486	1	...	84	822	1
16. Central Loudoun Co.	...	...	215	26	187	...	...	27	283	...
17. The Plains	...	...	312	56	217	...	...	58	332	...
18. Manassas-Bull Run	...	...	129	8	91	...	...	7	151	...
19. Chancellorsville	...	...	66	...	40	...	...	12	52	...
20. Lake Anna	...	...	62	...	28	...	...	7	51	...
21. Gordonsville	1	...	47	1	27	...	...	4	52	...
22. Charlottesville	...	...	179	5	115	...	...	17	243	...
23. Warren	...	...	77	4	64	...	...	5	170	...
24. Darlington Heights	...	...	41	2	22	...	...	2	51	...
25. Banister River WMAs	...	...	35	...	11	7	...	5	47	...
26. Lynchburg	...	...	137	2	50	...	...	6	164	...
27. Danville	...	...	70	1	21	6	...	1	72	...
28. Calmes Neck	...	...	281	10	133	...	...	30	130	...
29. N. Shenandoah Valley	22	...	312	23	195	...	...	33	179	...
30. Shenandoah NP-Luray	4	...	177	9	139	...	...	21	138	...
31. Big Flat Mountain	...	...	39	11	29	...	...	8	25	...
32. Rockingham County	9	...	35	...	19	...	...	3	24	...
33. Augusta County	...	...	93	1	29	...	...	2	59	...
34. Waynesboro	...	...	98	...	30	...	...	1	56	...
35. Lexington	32	49	114	1	37	...	...	2	64	...
36. Peaks of Otter	5	...	42	...	14	...	...	...	32	...
37. Fincastle	3	...	82	2	26	...	...	2	87	...
38. Roanoke	3	...	77	4	49	...	...	8	106	...
39. Blacksburg	2	82	236	2	106	...	1	14	192	...
40. Giles County	12	...	55	...	34	...	...	4	25	...
41. Tazewell	...	...	44	3	33	...	...	2	21	...
42. Mount Rogers-Whitetop	2	9	26	2	12	...	...	...	11	...
43. Glade Spring	2	...	67	1	42	...	...	...	70	2
44. Blackford	1	...	29	1	28	...	...	1	36	1
45. Bristol	...	...	115	...	51	...	...	5	125	...
46. Breaks Interstate Park	3	...	23	3	20	...	...	...	15	...
47. Wise County	...	...	68	8	37	...	...	2	48	...
Totals	101	140	5,075	253	2,662	146	1	473	5,388	52

Count Name	Winter Wren	Sedge Wren	Marsh Wren	Golden-crowned Kinglet	Ruby-crowned Kinglet	kinglet sp.	Blue-gray Gnatcatcher	Eastern Bluebird	Hermit Thrush	American Robin
1. Chincoteague	14	...	2	28	5	...	...	60	20	1,885
2. Wachapreague	3	...	...	12	2	...	...	149	3	305
3. Cape Charles	32	16	23	42	28	...	...	84	36	115
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	19	3	2	33	22	...	...	9	14	1,260
6. Back Bay	11	31	8	27	25	...	...	91	14	600
7. Nansemond River	17	6	5	48	30	...	...	65	17	1,640
8. Newport News	2	1	1	18	22	...	...	57	5	1,075
9. Mathews County	4	...	1	10	8	...	...	597	7	1,266
10. Williamsburg	12	...	...	21	25	...	...	173	30	1,442
11. Hopewell	36	...	...	39	49	...	2	180	35	4,949
12. Walkerton	20	...	...	56	24	...	...	169	33	4,480
13. Washingtons Birthplace	12	...	...	36	12	...	...	138	37	582
14. Brooke	4	...	...	22	9	...	...	145	35	738
15. Fort Belvoir	66	...	1	304	46	...	...	318	120	1,934
16. Central Loudoun Co.	12	...	...	81	17	...	...	359	20	8,802
17. The Plains	11	...	...	204	27	...	...	455	68	568
18. Manassas-Bull Run	3	...	...	17	1	...	...	72	1	1,363
19. Chancellorsville	1	...	...	38	...	...	...	118	8	157
20. Lake Anna	3	...	...	60	4	...	...	86	7	980
21. Gordonsville	2	...	...	5	1	...	...	142	1	72
22. Charlottesville	11	...	...	112	21	...	...	236	48	354
23. Warren	10	...	...	61	17	...	...	280	24	490
24. Darlington Heights	2	...	...	41	12	...	...	286	11	414
25. Banister River WMAs	4	...	...	8	19	...	...	100	10	185
26. Lynchburg	9	...	...	38	17	...	...	247	18	57
27. Danville	4	...	...	43	5	...	...	75	15	231
28. Calmes Neck	5	...	...	58	5	...	...	321	11	86
29. N. Shenandoah Valley	14	...	...	88	14	...	...	663	42	3,657
30. Shenandoah NP-Luray	8	...	...	51	2	...	...	304	25	263
31. Big Flat Mountain	4	...	...	5	1	...	...	7	11	14
32. Rockingham County	...	...	...	8	1	...	...	90	2	93
33. Augusta County	1	...	...	18	2	...	...	212	4	579
34. Waynesboro	2	...	...	9	1	...	...	107	2	6
35. Lexington	4	...	...	92	14	...	...	151	12	1,479
36. Peaks of Otter	1	...	...	10	4	...	...	32	5	3
37. Fincastle	4	...	...	21	12	...	...	190	11	151
38. Roanoke	1	...	...	34	17	...	...	85	9	145
39. Blacksburg	26	...	...	95	10	5	...	150	17	239
40. Giles County	...	...	...	15	...	...	...	28	4	56
41. Tazewell	...	...	...	22	...	...	...	39	3	14
42. Mount Rogers-Whitetop	3	...	...	33	...	...	...	23	1	1
43. Glade Spring	3	...	...	19	1	...	...	90	CW	17
44. Blackford	...	...	...	5	...	...	...	31	...	2
45. Bristol	8	...	...	77	6	...	...	106	18	28
46. Breaks Interstate Park	3	...	...	7	...	19	...	12	6	26
47. Wise County	7	...	...	39	...	...	...	58	2	55
Totals	418	57	43	2,110	538	24	2	7,390	822	42,858

Count Name	Gray Catbird	Northern Mockingbird	Brown Thrasher	European Starling	American Pipit	Cedar Waxwing	Orange-crowned Warbler	Yellow-rumped Warbler	Yellow-throated Warbler	Pine Warbler
1. Chincoteague	17	18	22	789	47	51	...	2,095	...	3
2. Wachapreague	5	29	3	1,950	...	25	...	253	...	...
3. Cape Charles	24	43	9	1,101	88	81	4	1,930	...	7
4. Chesapeake Bay	...	...	...	...	1	...	...	...	...	...
5. Little Creek	4	45	2	1,615	...	55	1	226	1	14
6. Back Bay	31	43	15	1,135	26	30	2	1,670	...	12
7. Nansemond River	8	46	7	1,887	2	174	4	542	...	16
8. Newport News	5	91	12	4,752	...	22	...	460	...	8
9. Mathews County	7	103	17	1,976	5	338	...	1,021	...	8
10. Williamsburg	10	65	11	1,636	1	586	...	580	...	8
11. Hopewell	14	64	8	2,707	495	524	...	346	...	5
12. Walkerton	7	31	10	654	122	458	...	157	...	3
13. Washingtons Birthplace	6	51	5	612	13	240	...	201	...	3
14. Brooke	2	55	4	1,447	48	604	...	268	...	...
15. Fort Belvoir	9	232	8	3,601	2	1,426	...	358	...	1
16. Central Loudoun Co.	7	175	1	2,702	2	833	...	287	...	...
17. The Plains	5	208	4	26,255	21	979	...	471	...	...
18. Manassas-Bull Run	1	45	2	2,070	...	643	...	70	...	...
19. Chancellorsville	...	26	1	289	...	474	...	113	...	...
20. Lake Anna	...	28	1	376	...	364	...	183	...	1
21. Gordonsville	...	31	...	419	...	196	...	131	...	...
22. Charlottesville	1	98	1	503	...	1,028	...	294	...	...
23. Warren	2	73	1	371	34	552	...	433	...	...
24. Darlington Heights	...	52	...	164	...	412	...	207	...	2
25. Banister River WMAs	...	35	4	506	28	333	...	179	...	6
26. Lynchburg	...	107	...	2,223	...	471	...	109	...	...
27. Danville	...	44	1	632	...	52	...	40	...	1
28. Calmes Neck	3	102	...	5,659	...	506	...	36	...	...
29. N. Shenandoah Valley	3	270	1	16,213	34	238	...	373	...	...
30. Shenandoah NP-Luray	...	87	...	4,250	10	214	...	168	...	2
31. Big Flat Mountain	...	...	...	...	...	10	...	2	...	...
32. Rockingham County	...	42	...	2,303	2	...	...	13	...	...
33. Augusta County	1	150	1	9,958	...	109	...	95	...	...
34. Waynesboro	1	55	...	2,043	...	143	...	65	...	...
35. Lexington	2	45	...	2,872	...	342	...	191	...	...
36. Peaks of Otter	...	1	...	...	...	...	...	...	...	...
37. Fincastle	1	128	...	2,304	...	286	...	152	...	...
38. Roanoke	...	60	...	1,560	...	275	...	36	...	...
39. Blacksburg	5	143	3	2,826	203	292	...	62	...	...
40. Giles County	...	9	...	411	...	40	...	39	...	...
41. Tazewell	...	5	1	1,039	...	8	...	...	...	...
42. Mount Rogers-Whitetop	...	13	...	216	...	...	...	1	...	...
43. Glade Spring	...	45	1	2,824	...	48	...	26	...	...
44. Blackford	...	33	1	898	...	...	...	32	...	...
45. Bristol	...	89	2	1,687	...	49	...	109	...	...
46. Breaks Interstate Park	...	5	2	118	...	...	...	12	...	...
47. Wise County	...	21	1	318	...	21	...	15	...	...
Totals	181	3,141	162	119,871	1,184	13,532	11	14,051	1	100

Count Name	Palm Warbler	Common Yellowthroat	warbler sp.	Eastern Towhee	American Tree Sparrow	Chipping Sparrow	Field Sparrow	Vesper Sparrow	Lark Sparrow	Savannah Sparrow
1. Chincoteague	...	1	...	14	...	67	43	...	...	179
2. Wachapreague	1	1	11	20	...	...	6
3. Cape Charles	34	4	...	28	...	156	73	1	...	86
4. Chesapeake Bay
5. Little Creek	1	1	...	13	...	24	5	...	...	19
6. Back Bay	1	12	...	45	...	60	20	1	1	140
7. Nansemond River	1	2	...	38	...	13	62	...	...	70
8. Newport News	20	2	10	3	...	...	21
9. Mathews County	...	2	...	25	...	121	53	...	...	24
10. Williamsburg	1	...	...	41	...	52	62	...	...	41
11. Hopewell	...	2	...	31	...	26	18	...	...	30
12. Walkerton	46	...	24	28	...	...	21
13. Washingtons Birthplace	...	1	...	38	1	3	41	...	...	39
14. Brooke	25	4	4	20	...	...	15
15. Fort Belvoir	173	4	...	182	...	...	31
16. Central Loudoun Co.	2	...	...	42	60	4	157	...	...	4
17. The Plains	...	1	...	81	12	7	363	...	...	24
18. Manassas-Bull Run	9	3	...	13	...	...	...
19. Chancellorsville	9	...	8	103	...	...	...
20. Lake Anna	8	...	1	11	...	...	12
21. Gordonsville	5	...	4	43	...	...	...
22. Charlottesville	39	3	...	107	...	...	2
23. Warren	37	1	25	171	...	...	21
24. Darlington Heights	26	...	11	52	...	...	9
25. Banister River WMAs	38	...	30	13	...	...	25
26. Lynchburg	49	...	7	36	...	...	7
27. Danville	13	...	...	33	...	...	...
28. Calmes Neck	4	9	1	49	...	...	5
29. N. Shenandoah Valley	8	15	...	76	...	...	4
30. Shenandoah NP-Luray	1	2	...	20	...	...	...
31. Big Flat Mountain	6	...	...	...
32. Rockingham County	2	1	...	6	...	...	...
33. Augusta County	4	15	...	15	CW	...	8
34. Waynesboro	10	...	...	30	...	...	7
35. Lexington	23	...	...	28	...	...	...
36. Peaks of Otter	2	...	...	3	...	...	...
37. Fincastle	47	...	8	22	...	...	1
38. Roanoke	15	...	...	16	...	...	...
39. Blacksburg	2	100	...	10	29	...	3	7
40. Giles County	22	...	...	15	...	...	...
41. Tazewell	9	...	...	27	...	...	...
42. Mount Rogers-Whitetop	23	...	...	...
43. Glade Spring	1	...	...	17	...	1	32	...	...	...
44. Blackford	11	...	7	23	...	...	1
45. Bristol	2	...	...	44	...	4	27	...	...	...
46. Breaks Interstate Park	13	...	...	1	...	...	...
47. Wise County	16	...	...	4	...	...	...
Totals	43	26	2	1,242	133	699	2,184	2	4	859

Count Name	Savannah (Ipswich) Sparrow	Nelson's Sharp-tailed Sparrow	Saltmarsh Sharp-tailed Sparrow	sharp-tailed sparrow sp.	Seaside Sparrow	Fox Sparrow	Song Sparrow	Lincoln's Sparrow	Swamp Sparrow	White-throated Sparrow
1. Chincoteague	1	...	...	...	...	7	449	...	218	622
2. Wachapreague	18	...	6	4	1	3	105	...	3	272
3. Cape Charles	7	6	53	5	32	8	393	...	66	364
4. Chesapeake Bay
5. Little Creek	...	12	4	4	2	12	70	...	7	147
6. Back Bay	4	240	...	163	152
7. Nansemond River	...	15	72	...	4	7	282	...	121	298
8. Newport News	2	...	...	...	110	...	5	410
9. Mathews County	2	210	...	16	338
10. Williamsburg	2	96	...	17	460
11. Hopewell	6	368	1	102	586
12. Walkerton	12	334	...	26	1,074
13. Washingtons Birthplace	2	216	...	49	502
14. Brooke	4	213	...	12	734
15. Fort Belvoir	19	1,296	...	196	2,855
16. Central Loudoun Co.	12	557	...	68	1,139
17. The Plains	1	1,231	...	113	1,552
18. Manassas-Bull Run	144	...	2	319
19. Chancellorsville	2	77	...	9	131
20. Lake Anna	2	97	...	14	157
21. Gordonsville	1	153	...	8	252
22. Charlottesville	3	438	...	13	863
23. Warren	8	482	...	22	1,155
24. Darlington Heights	2	103	...	17	253
25. Banister River WMAs	5	54	...	3	145
26. Lynchburg	3	109	...	3	440
27. Danville	1	68	...	4	114
28. Calmes Neck	1	367	...	17	706
29. N. Shenandoah Valley	5	324	...	11	929
30. Shenandoah NP-Luray	148	...	2	400
31. Big Flat Mountain	9	...	...	122
32. Rockingham County	1	88	...	...	162
33. Augusta County	5	166	...	2	522
34. Waynesboro	89	...	10	240
35. Lexington	1	67	...	2	351
36. Peaks of Otter	15	...	...	38
37. Fincastle	7	161	...	2	275
38. Roanoke	135	...	3	154
39. Blacksburg	7	385	...	1	485
40. Giles County	5	52	...	1	103
41. Tazewell	114	...	1	26
42. Mount Rogers-Whitetop	70	...	1	16
43. Glade Spring	158	...	...	107
44. Blackford	1	136	...	...	68
45. Bristol	4	172	...	7	245
46. Breaks Interstate Park	2	27	...	5	19
47. Wise County	128	...	...	46
Totals	26	33	137	13	39	167	10,706	1	1,342	20,348

Count Name	White-crowned Sparrow	Dark-eyed Junco	Lapland Longspur	Snow Bunting	Northern Cardinal	Red-winged Blackbird	Eastern Meadowlark	Rusty Blackbird	Common Grackle	Boat-tailed Grackle
1. Chincoteague	...	240	...	...	159	6,815	50	3	300	28
2. Wachapreague	...	195	...	...	114	753	12	...	3,111	...
3. Cape Charles	3	109	1	...	116	1,430	150	...	136	516
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	1	95	...	2	99	1,160	...	3	148	55
6. Back Bay	1	44	...	...	69	1,365	13	2	1,700	33
7. Nansemond River	...	220	...	...	104	1,326	16	...	1,333	35
8. Newport News	...	388	...	...	182	388	17	...	3,305	166
9. Mathews County	...	1,511	...	...	269	1,426	57	...	281	...
10. Williamsburg	...	544	...	...	149	1,241	32	12	1,189	...
11. Hopewell	30	851	...	...	241	3,580	64	1,054	510	...
12. Walkerton	...	373	...	...	210	14,407	63	2	12,896	...
13. Washingtons Birthplace	16	317	...	...	124	1,849	114	2	7,437	...
14. Brooke	4	935	...	...	183	392	32	...	170	...
15. Fort Belvoir	10	1,940	...	...	1,396	1,792	17	...	22,303	...
16. Central Loudoun Co.	32	1,149	...	...	546	192	24	1	11	...
17. The Plains	81	1,729	...	...	587	1,499	28	58	21,025	...
18. Manassas-Bull Run	15	574	...	...	322	159	...	...	6	...
19. Chancellorsville	...	209	...	...	84	12	26	...	8,502	...
20. Lake Anna	5	446	...	...	82	6	4	110	137	...
21. Gordonsville	23	230	...	...	133	...	19	...	1,279	...
22. Charlottesville	33	604	...	...	347	...	19	1	...	...
23. Warren	89	492	...	...	219	2	40	260	10	...
24. Darlington Heights	14	385	...	...	121	...	99	98	7	...
25. Banister River WMAs	...	424	...	...	57	7	35	36	2	...
26. Lynchburg	5	385	...	...	303	2	39	...	94	...
27. Danville	...	178	...	...	66	...	...	...	15	...
28. Calmes Neck	40	1,100	...	...	554	33	3	...	5	...
29. N. Shenandoah Valley	126	1,054	...	...	582	69	27	...	7	...
30. Shenandoah NP-Luray	104	382	2	...	186	26	27	2	129,110	...
31. Big Flat Mountain	...	51	...	...	17	...	...	...	...	...
32. Rockingham County	75	99	...	...	78	...	21	...	...	...
33. Augusta County	234	373	...	...	272	153	84	10	69	...
34. Waynesboro	74	156	...	...	89	5	3	...	...	...
35. Lexington	38	250	...	...	148	10	51	40	1	...
36. Peaks of Otter	...	153	...	...	32	...	...	...	...	...
37. Fincastle	104	314	...	...	166	31	43	...	60	...
38. Roanoke	14	260	...	...	187	...	...	...	...	...
39. Blacksburg	145	369	1	...	353	11	85	15	4	...
40. Giles County	8	155	...	...	57	...	14	...	...	...
41. Tazewell	34	67	...	...	76	5	...	...	...	...
42. Mount Rogers-Whitetop	18	150	...	...	63	...	...	...	...	...
43. Glade Spring	227	56	...	...	87	...	14	...	250	...
44. Blackford	49	130	...	...	130	...	3	...	...	...
45. Bristol	119	58	...	...	169	...	2	...	...	...
46. Breaks Interstate Park	...	59	...	...	24	3	5	...	9	...
47. Wise County	3	46	...	...	99	1	20	...	2	...
Totals	1,774	19,849	4	2	9,651	40,150	1,372	1,709	215,424	833

Count Name	Brown-headed Cowbird	blackbird sp.	Baltimore Oriole	Purple Finch	House Finch	Red Crossbill	Pine Siskin	American Goldfinch	Evening Grosbeak	House Sparrow
1. Chincoteague	106	...	...	...	59	...	...	55	...	113
2. Wachapreague	...	120	...	1	22	...	...	68	...	26
3. Cape Charles	7	...	...	3	34	...	2	199	...	23
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	60	...	2	6	100	...	...	111	...	72
6. Back Bay	339	...	...	1	50	...	...	76	...	29
7. Nansemond River	81	...	...	...	65	...	...	56	...	29
8. Newport News	52	...	...	...	281	...	...	134	...	111
9. Mathews County	137	...	...	...	178	...	...	115	...	39
10. Williamsburg	202	...	...	1	91	...	1	227	...	66
11. Hopewell	141	600	6	7	141	...	...	74	...	19
12. Walkerton	22	150,000	...	9	41	...	...	125	...	11
13. Washingtons Birthplace	...	...	...	2	18	...	...	177	...	26
14. Brooke	1	...	...	8	111	...	...	231	...	88
15. Fort Belvoir	28	600	2	21	565	...	1	1,020	...	641
16. Central Loudoun Co.	93	125	...	81	281	...	2	419	...	122
17. The Plains	769	...	...	94	197	...	2	440	...	147
18. Manassas-Bull Run	...	...	...	...	316	...	2	219	...	176
19. Chancellorsville	...	...	...	2	54	...	...	113	...	15
20. Lake Anna	...	...	...	7	44	...	...	249	...	4
21. Gordonsville	103	...	...	29	51	...	...	56	...	13
22. Charlottesville	12	...	...	168	155	...	...	232	...	23
23. Warren	11	...	...	117	66	...	...	209	...	16
24. Darlington Heights	35	...	...	60	7	...	1	86	...	14
25. Banister River WMAs	...	...	...	14	11	...	...	66	...	26
26. Lynchburg	30	...	...	31	391	...	1	254	...	68
27. Danville	...	600	...	1	18	...	...	89	...	56
28. Calmes Neck	50	...	...	17	79	...	...	224	...	218
29. N. Shenandoah Valley	24	...	...	236	511	...	2	434	...	214
30. Shenandoah NP-Luray	4	...	...	56	107	...	...	201	...	113
31. Big Flat Mountain	...	...	...	...	...	...	...	9	...	...
32. Rockingham County	...	...	...	11	83	2	1	74	...	138
33. Augusta County	263	...	...	81	140	...	...	181	...	273
34. Waynesboro	...	...	...	36	134	...	...	104	...	135
35. Lexington	1	...	...	191	97	...	2	226	...	22
36. Peaks of Otter	...	...	...	15	...	...	...	27	...	...
37. Fincastle	35	...	...	79	98	...	4	179	...	2
38. Roanoke	1	...	...	9	82	...	...	134	...	34
39. Blacksburg	72	...	...	66	208	...	...	367	...	154
40. Giles County	1	...	...	72	25	...	...	44	...	16
41. Tazewell	...	...	...	...	11	...	...	113	...	289
42. Mount Rogers-Whitetop	...	...	...	...	13	...	1	50	3	22
43. Glade Spring	220	...	...	5	26	...	...	140	...	150
44. Blackford	...	...	...	2	19	...	...	99	...	10
45. Bristol	...	...	...	13	82	...	...	166	...	32
46. Breaks Interstate Park	...	...	...	13	11	...	3	88	...	11
47. Wise County	1	...	...	6	26	...	...	91	...	42
Totals	2,901	152,045	10	1,571	5,099	2	25	8,051	3	3,848

Count name	Greater White-fronted Goose	Snow Goose (white morph)	Snow Goose (blue morph)	Ross's Goose	Brant	Cackling Goose	Canada Goose	Mute Swan	Trumpeter Swan	Tundra Swan
1. Chincoteague	...	7,630	12	...	804	...	1,182	...	...	771
2. Wachapreague	...	5,281	235	...	1,144	...	2,040	...	...	...
3. Cape Charles	...	3,117	31	...	1,040	...	2,302	...	...	308
4. Chesapeake Bay	...	CW	...	...	21	...	...	...	...	92
5. Little Creek	44	...	939	...	...	302
6. Back Bay	...	694	6	1	...	...	783	...	...	423
7. Nansemond River	...	25	...	...	46	...	1,619	1	...	65
8. Newport News	...	20	...	...	142	...	710	...	...	29
9. Mathews County	105	...	2,453	3	...	471
10. Williamsburg	1	1,771	24	...	40
11. Hopewell	...	2,000	4,000	3	...	...	11,088	...	...	...
12. Walkerton	...	1	2	...	...	...	11,220	...	...	119
13. Washingtons Birthplace	...	3	2	...	...	2	13,604	5	...	1,404
14. Brooke	1,400	75	...	731
15. Fort Belvoir	1	12,469	...	...	467
16. Central Loudoun Co.	6,809	...	...	...
17. The Plains	3	11,558	1	CW	15
18. Manassas-Bull Run	...	1	...	...	...	...	2,334	...	...	...
19. Chancellorsville	1,011	11	...	...
20. Lake Anna	458	...	...	...
21. Gordonsville	...	1	...	...	...	...	1,985	...	...	...
22. Charlottesville	1,174	2	...	...
23. Warren	2,339	9	...	...
24. Darlington Heights	215	...	...	...
25. Banister River WMAs	247	1	...	CW
26. Lynchburg	1,124	...	...	...
27. Danville	251	...	...	...
28. Calmes Neck	...	1	4	...	...	...	3,534	...	...	2
29. N. Shenandoah Valley	5,722	...	...	...
30. Shenandoah NP-Luray	583	...	...	...
31. Big Flat Mountain	1	...	...	...
32. Rockingham County	260	...	...	...
33. Augusta County	957	...	...	...
34. Waynesboro	...	1	...	...	...	...	566	...	...	...
35. Lexington	60	...	...	...
36. Peaks of Otter
37. Fincastle	354	...	...	...
38. Roanoke	498	...	...	...
39. Blacksburg	722	1	...	...
40. Giles County	333	...	...	...
41. Tazewell	144	...	...	...
42. Mount Rogers-Whitetop	12	...	...	...
43. Glade Spring	...	1	...	...	...	...	187	...	...	...
44. Blackford	68	...	...	...
45. Bristol	6	...	...	1	...	...	591	...	...	...
46. Breaks Interstate Park	1	...	...	...
47. Wise County
Totals	6	18,776	4,292	5	3,346	7	107,678	133	CW	5,239

Count name	Wood Duck	Gadwall	Eurasian Wigeon	American Wigeon	American Black Duck	black duck/mallard hybrid	black duck-mallard sp.	Mallard	Blue-winged Teal	Northern Shoveler
1. Chincoteague	40	50	...	351	1,305	...	154	832	...	262
2. Wachapreague	141	142	...	38	57	...	...	304	...	...
3. Cape Charles	4	631	1	379	638	3	...	595	...	48
4. Chesapeake Bay	...	...	...	...	...	...	...	...	...	...
5. Little Creek	96	201	...	56	23	...	...	533	...	205
6. Back Bay	2	256	...	123	483	...	...	663	4	53
7. Nansemond River	CW	627	...	109	53	...	...	165	...	82
8. Newport News	1	47	...	155	47	...	...	511	...	18
9. Mathews County	...	...	...	...	3	...	...	213	...	...
10. Williamsburg	4	27	1	23	44	...	...	210	...	3
11. Hopewell	1	145	...	9	55	...	...	143	...	8
12. Walkerton	11	128	...	4	14	...	...	269	9	16
13. Washingtons Birthplace	...	9	...	2	434	...	...	1,095	...	...
14. Brooke	...	23	...	316	13	...	...	228	...	7
15. Fort Belvoir	58	2,179	...	313	1,518	...	...	3,364	4	95
16. Central Loudoun Co.	12	18	...	2	44	...	...	549	...	...
17. The Plains	1	101	1	140	66	...	...	409	...	1
18. Manassas-Bull Run	...	...	...	...	...	...	...	155	...	...
19. Chancellorsville	...	...	...	...	...	...	...	61	...	...
20. Lake Anna	4	...	...	...	...	...	...	115	...	...
21. Gordonsville	...	...	...	...	6	...	...	54	...	...
22. Charlottesville	3	...	...	...	2	...	...	73	...	...
23. Warren	2	...	...	...	1	...	...	84	...	...
24. Darlington Heights	...	...	...	...	...	...	...	9	...	...
25. Banister River WMAs	...	2	...	...	...	...	...	58	...	...
26. Lynchburg	5	6	...	...	50	...	...	249	...	...
27. Danville	...	...	...	...	...	...	...	44	...	...
28. Calmes Neck	...	...	...	...	109	...	...	323	...	...
29. N. Shenandoah Valley	12	8	...	7	54	...	...	917	1	...
30. Shenandoah NP-Luray	4	...	...	1	9	...	...	259	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	5	...	1	...	...	...	396	...	...
33. Augusta County	...	6	...	10	...	...	...	209	...	13
34. Waynesboro	...	...	...	...	1	...	...	138	...	...
35. Lexington	...	...	...	...	8	...	...	541	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...	...
37. Fincastle	4	21	...	7	...	...	...	41	...	...
38. Roanoke	...	23	...	21	4	...	...	313	1	1
39. Blacksburg	1	18	...	11	32	...	...	439	...	...
40. Giles County	...	...	...	6	9	...	...	91	...	...
41. Tazewell	...	...	...	...	5	...	...	78	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	25	...	...
43. Glade Spring	...	6	...	1	6	...	...	307	1	4
44. Blackford	...	...	...	...	3	...	...	121	...	...
45. Bristol	...	16	...	28	6	1	...	466	...	...
46. Breaks Interstate Park	2	...	...	...	...	...	...	2	...	...
47. Wise County	...	...	...	...	...	...	...	6	...	...
Totals	408	4,695	3	2,113	5,102	4	154	15,657	20	816

Count name	Northern Pintail	American Green-winged Teal	Canvasback	Redhead	Ring-necked Duck	Greater Scaup	Lesser Scaup	scaup sp.	Common Elder	Harlequin Duck
1. Chincoteague	1,562	210	...	...	22	...	3	...	...	...
2. Wachapreague	4	7	1	...	38	...	...	...	...	...
3. Cape Charles	11	284	...	5	117	80	16	5	...	...
4. Chesapeake Bay	...	...	...	CW	...	14	17	...	2	3
5. Little Creek	16	98	...	...	69	28	49	...	1	...
6. Back Bay	94	330	...	2	2	...	50	...	...	...
7. Nansemond River	5	26	635	...	71	...	30	...	...	...
8. Newport News	...	2	231	23	57	14	3	...	...	...
9. Mathews County	...	...	...	1	...	2	4	8	...	...
10. Williamsburg	...	11	2,850	6	886	...	63	...	...	...
11. Hopewell	1	...	3	...	128	1	2	...	...	...
12. Walkerton	430	218	...	...	516	...	...	...	...	...
13. Washingtons Birthplace	...	7	841	...	6	5	639	500	...	...
14. Brooke	...	...	1,800	...	92	6	764	...	...	...
15. Fort Belvoir	79	229	702	36	570	9	35,958	4,800	...	...
16. Central Loudoun Co.	...	45	...	...	42	...	7	...	...	...
17. The Plains	9	6	13	...	1,131	4	19	...	...	...
18. Manassas-Bull Run	...	...	...	...	...	...	...	...	...	...
19. Chancellorsville	...	...	...	...	4	11	...	...	...	...
20. Lake Anna	...	...	...	...	...	...	...	...	...	...
21. Gordonsville	...	...	...	...	6	...	...	...	...	...
22. Charlottesville	...	...	...	...	1	...	...	...	...	...
23. Warren	...	...	3	...	99	...	...	...	...	...
24. Darlington Heights	...	...	...	...	2	...	...	...	...	...
25. Banister River WMAs	...	...	...	...	...	...	6	...	...	...
26. Lynchburg	...	...	...	...	199	...	...	...	...	...
27. Danville	...	...	...	...	...	...	1	1	...	...
28. Calmes Neck	...	7	...	4	37	...	...	...	...	...
29. N. Shenandoah Valley	2	21	...	...	34	1	1	...	...	...
30. Shenandoah NP-Luray	...	3	...	...	4	1	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	5	...	...	...	...	...	...	...	...
33. Augusta County	...	6	3	1	...	...	1	...	...	...
34. Waynesboro	CW	2	1	...	...	...	...	...	...	...
35. Lexington	...	14	...	...	...	2	...	...	...	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...	...
37. Fincastle	...	27	5	1	8	...	...	...	...	...
38. Roanoke	3	12	...	2	44	...	2	...	...	...
39. Blacksburg	3	...	1	...	2	...	30	...	...	...
40. Giles County	...	...	...	...	...	...	...	...	...	...
41. Tazewell	...	...	...	...	...	...	...	...	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	14	...	...	...	...	...	...	...	...
44. Blackford	...	...	...	...	...	...	...	...	...	...
45. Bristol	1	8	...	5	75	...	9	...	...	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...	...
Totals	2,220	1,592	7,089	86	4,262	178	37,674	5,314	3	3

Count name	Surf Scoter	White-winged Scoter	Black Scoter	scoter sp.	Long-tailed Duck	Bufflehead	Common Goldeneye	Hooded Merganser	Common Merganser
1. Chincoteague	115	...	82	33	4	724	6	221	13
2. Wachapreague	139	4	5	88	25	594	4	60	...
3. Cape Charles	659	1	372	150	53	1,072	13	129	...
4. Chesapeake Bay	230	6	94	...	380	29	2	...	...
5. Little Creek	308	1	99	...	139	361	2	612	...
6. Back Bay	13	...	64	48	...	5	1	15	...
7. Nansemond River	167	...	2	...	1	794	18	222	...
8. Newport News	286	200	...	...	8	678	43	231	...
9. Mathews County	552	...	72	187	67	887	55	50	1
10. Williamsburg	...	...	...	...	1	82	6	263	1
11. Hopewell	...	...	...	...	...	152	3	53	75
12. Walkerton	...	...	...	...	...	77	...	12	1
13. Washingtons Birthplace	404	...	46	...	55	246	254	54	72
14. Brooke	...	...	...	...	...	136	1	261	45
15. Fort Belvoir	...	...	...	...	...	552	6	318	455
16. Central Loudoun Co.	...	...	...	...	...	20	CW	76	175
17. The Plains	...	...	...	...	...	152	1	83	410
18. Manassas-Bull Run	...	...	...	...	...	...	...	6	...
19. Chancellorsville	...	...	...	...	...	62	...	8	55
20. Lake Anna	...	...	...	...	3	70	...	2	...
21. Gordonsville	...	...	...	...	...	5	...	118	...
22. Charlottesville	...	...	...	...	...	...	...	6	...
23. Warren	...	...	...	...	...	43	...	12	...
24. Darlington Heights	...	...	...	...	...	2	...	16	...
25. Banister River WMAs	...	...	...	...	...	15	3	13	...
26. Lynchburg	...	...	...	...	...	8	1	71	...
27. Danville	...	...	...	...	...	...	...	4	...
28. Calmes Neck	...	...	...	...	...	2	...	34	1
29. N. Shenandoah Valley	...	...	...	...	...	CW	4	42	30
30. Shenandoah NP-Luray	...	...	...	...	1	...	...	...	...
31. Big Flat Mountain	...	...	...	...	...	...	...	...	...
32. Rockingham County	...	...	...	...	...	...	...	1	...
33. Augusta County	...	...	...	...	...	...	...	4	...
34. Waynesboro	...	...	...	...	...	...	...	...	...
35. Lexington	...	...	...	...	...	...	...	12	...
36. Peaks of Otter	...	...	...	...	...	...	...	...	...
37. Fincastle	...	...	...	...	...	5	...	2	...
38. Roanoke	...	...	...	...	...	6	...	26	...
39. Blacksburg	...	...	...	...	...	181	CW	89	4
40. Giles County	...	...	...	...	...	3	3	23	...
41. Tazewell	...	...	...	...	...	...	...	...	...
42. Mount Rogers-Whitetop	...	...	...	...	...	...	...	...	...
43. Glade Spring	...	...	...	...	...	2	...	4	...
44. Blackford	...	...	...	...	...	...	...	...	...
45. Bristol	...	...	...	...	...	176	2	150	...
46. Breaks Interstate Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	9	...
Totals	2,873	212	836	506	737	7,141	428	3,312	1,338

IN MEMORIAM: MYRIAM PUTNAM MOORE

THELMA DALMAS
1230 Viewmont Drive
Evington, VA 24550

Myriam P. Moore, age 93, died on January 15, 2006 at the Medical Care Center in Lynchburg, Virginia. She was born September 8, 1912 in Laurens County, South Carolina, the only child of Elmer Eugen Putnam and Fredonia Zeigler Putnam.

She was widely known for her interest in nature, including both birds and wildflowers, and enthusiastically introduced countless others to the wonders of the natural world. She was a popular speaker at bird clubs, church groups, and civic organizations. Many have called her a “spark-plug” because she just had that knack of getting people started. Whether she was encouraging you to get up on the ridge and count hawks, turn out for a breeding bird survey, or attend a woodcock walk, Myriam could both inspire and motivate a person to action. For over thirty years, from the 1960s through the mid 1990s, she could be found at virtually every VSO annual meeting or field trip, often with young birders in tow. Many members of the VSO can recall wonderful days when she invited friends to her country retreat, Green Valley, in Botetourt County. Her hospitality was legendary, and she always seemed to appear with an endless supply of picnic “goodies” on every outing.



Known by many as the “Hawk Lady”, Myriam really put Virginia hawk watching on the map. She began observing the raptor migration from Purgatory Mountain in the 1960s and in 1975 moved the primary site in the central Blue Ridge to Harvey’s Knob. Even in her eighties, Myriam could be counted on to appear every autumn up on the ridge with her sharp blue eyes turned toward the sky. A hawk watch platform was named in her honor at the Woodpecker Ridge Natural Area near Troutville. Myriam had been recognized on a national level for her contributions to the study of raptor migration by the Hawk Migration Association of North America and received the HMANA Joe Taylor Award for extraordinary service to the organization and its mission.

Myriam served as Treasurer of the VSO in 1967 and 1968 and was on the Board of Directors from 1969 through 1972. She was well known for her energetic work with the local chapter bird clubs throughout the state during which time she acted as the chief “good will ambassador” for the VSO. She edited the Newsletter during the 1970s and continued through 1985. She was one of the first the recipients of the Eike Award and also the first person to be awarded the Myriam Putnam Moore Award for outstanding service to the Virginia Society of Ornithology.

Myriam moved to Lynchburg in 1949 and resided there until her death. On the local level Myriam had served as the president of the Lynchburg Bird Club, compiled the winter Christmas bird count for over 20 years, and established the Lynchburg summer breeding bird count. For a number of years she was regional supervisor of the Selective Service and retired from that position in 1976.

Myriam, whose parents both taught music at Averett College, had a special love of music and was particularly supportive of the efforts of young musicians.

Myriam is survived by two daughters, Myriam E. (Gene) Moore and Anita M. Boyer. She is also survived by two grandchildren, three great-grandchildren, and two great, great-grandchildren.

On a personal level, I will miss Myriam's smile and gracious manner. During the last years of her life, ill health crippled her body but her spirit had remained undiminished. When I wrote to Mike Boatwright, one of the people that she had first met years ago, to let him know the news of her death, he replied "She was so instrumental in shaping me as a "fledgling birder" as she was in shaping so many lives young and old. Virginia, I dare say the world, will never know another quite like her."

ANNUAL REPORT OF THE VIRGINIA AVIAN RECORDS COMMITTEE

SUSAN A. HEATH
VARCOM SECRETARY
George Mason University
Environmental Science Department
Fairfax, VA

The 2005 Virginia Avian Records Committee (VARCOM) included Ned Brinkley (Chair), Bob Ake, Bob Anderson, Dan Cristol, Mike Stinson, Craig Tumer, Bill Williams, and Erika Wilson.

The following decisions were made by the Virginia Avian Records Committee during calendar year 2005. 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.

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.

Category 4. Records that are judged to be acceptable by historical standards but that may not meet current standards of acceptance. Includes extinct species that once occurred in Virginia, for which there is no clear written or physical evidence (e.g., Eskimo Curlew).

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 Mute Swan, Rock Pigeon, House Sparrow, House Finch, and European Starling.

The following codes appear in the accounts:

† = written documentation

ph. = photo

vr. = voice recording

vt. = videotape

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

ACCEPTED RECORDS

- Anhinga** (*Anhinga anhinga*), 1 individual, Rockfish Gap, Augusta County, Sep 7 & 10, 2003, [Brenda Tekin], category 2 (+), 2nd Mountains and Valleys.
- Pacific Loon** (*Gavia pacifica*) 1 individual, Little Creek CBC, Virginia Beach, Ft. Story, Dec 31, 2003, [David Hughes], category 2 (+), accepted as Pacific or Arctic Loon.
- Pacific Loon** (*Gavia pacifica*), 1 individual, Little Creek CBC, 64th Street, Virginia Beach, Dec 31, 2003, [Bob Anderson], category 2 (+), accepted as Pacific or Arctic Loon.
- Rose-breasted Grosbeak** (*Pheucticus ludovicianus*), 1 individual, Lynchburg, Bedford County, Jan 26– Feb 28, 2004 [Thelma Dalmás], category 1 (+, ph.), 1st winter record in Piedmont.
- Black Skimmer** (*Rynchops niger*), 2 individuals, Lake Anna, Spotsylvania/Louisa Counties, Sep 19, 2003, [Steve Rottenborn], 1 individual category 1 (+, ph.), 1 individual category 2 (+), 3rd Piedmont.
- Sabine's Gull** (*Xema sabini*), 1 individual, Lake Anna, Spotsylvania/Louisa Counties, Sep 19, 2003, [Steve Rottenborn], category 1 (+, ph.), 2nd Piedmont.
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), 1 individual (apparently nesting), Countryside Golf Course, Roanoke, Jul 5, 2004, [Tim and Lyce Quinn, Brenda Tekin], category 1 (+, ph.), 3rd Mountains and Valleys.
- White-winged Dove** (*Zenaida asiatica*), 1 individual, Eastern Shore of Virginia National Wildlife Refuge, Northampton County, Nov 17, 2003, [Bill Williams], category 2 (+), 5th Coastal Plain.
- Magnificent Hummingbird** (*Eugenes fulgens*), 1 individual, Radford, Oct 22-25, 2003 [John Pierce], category 1 (+, ph.), 1st state record.
- Western Tanager** (*Piranga ludoviciana*), 1 individual, Chippokes State Park, Surry County, Apr 18, 2004 [Mitchell Byrd], category 2 (+), 6th Coastal Plain.
- White-faced Ibis** (*Plegadis chihi*), 1 individual, Chincoteague National Wildlife Refuge, Accomack County, May 25, 2004, [Mike Boatwright], category 2 (+), 5th Coastal Plain.
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), 1 individual, Metompkin Bay, Accomack County, May 8, 2003, [Wes and Susan Brown], category 1 (+, ph.), 9th Coastal Plain.
- Willet** (*Catoptrophorus semipalmatus*), 1 individual, Lake Anna, Louisa County, Sep 19, 2003, [Steve Rottenborn], category 2 (+), 2nd Piedmont.
- Red-necked Phalarope** (*Phalaropus lobatus*), 1 individual, Lake Anna, Spotsylvania County, Sep 19, 2003, [Steve Rottenborn], category 2 (+), 6th Piedmont.
- Le Conte's Sparrow** (*Ammodramus leconteii*), 2 individuals, North Fork Wetlands, Prince William County, Nov 1, 2002, [Steve Rottenborn], category 2 (+), 4th Piedmont.
- Royal Tern** (*Sterna maxima*), 52 individuals, Lake Anna, Louisa County, Sep 19, 2003, [Steve Rottenborn], 2 individuals category 1 (+, ph.), 50 individuals category 2 (+), 5th Piedmont.

- Greater Shearwater** (*Puffinus gravis*), 1 individual (found dead), Town Point, Suffolk, July 13, 1996, [Les Willis], category 1 (†, ph.), 1st inland record.
- Loggerhead Shrike** (*Lanius ludovicianus*), 1 individual, Sandbridge, Virginia Beach, 23 Mar 1978, [Edward S. Brinkley], category 2 (†), 1st Coastal Plain [N. B.: This species has only recently (January 2004) become a Review Species on the Coastal Plain, where it was formerly regular but scarce through the early 1970s.].
- White-winged Tern** (*Chlidonias leucopterus*), 1 individual, Chincoteague National Wildlife Refuge, Accomack County, Sep 6-9, 2002, [Edward S. Brinkley]. Category 2 (†), 5th Coastal Plain.
- Long-tailed Jaeger** (*Stercorarius longicaudus*), 1 individual, Craney Island, Portsmouth, Sep 18, 2004, [Bill Williams, Dan Cristol], category 2 (†), 1st onshore Coastal Plain.
- Red-necked Phalarope** (*Phalaropus lobatus*), 1 individual, Leonard's Pond, Rockingham County, Sep 9, 2004, [Brenda Tekin], category 1 (†, ph.).
- Parasitic Jaeger** (*Stercorarius parasiticus*), 2 individuals, Lake Anna, Spotsylvania/Louisa Counties, Sep 19, 2003, [Steve Rottenborn], 1 individual category 1 (†, ph.), 1 individual category 2 (†), 2nd Piedmont.
- Arctic Tern** (*Sterna paradisaea*), 1 individual, Lake Anna, Spotsylvania County, Sep 19, 2003, [Steve Rottenborn], category 2 (†), 3rd Piedmont.
- Swallow-tailed Kite** (*Elanoides forficatus*), 1 individual, Gloucester Point, Gloucester County, Jul 19, 2004 [Mike Boatwright], category 2 (†), 3rd Coastal Plain west of the Bay.
- Elegant Tern** (*Sterna elegans*), 1 individual, Chincoteague Causeway, Accomack County, Aug 4, 2004, [Mike Boatwright], category 1 (†, ph.), 2nd state, 2nd Coastal Plain.
- American White Pelican** (*Pelecanus erythrorhynchos*), 1 individual, Runt Powell's Farm, Halifax County, May 8-9, 2004, [Jeff Blalock], category 2 (†), 1st Piedmont.
- Eurasian Collared-dove** (*Streptopelia decaocto*), 1 individual, Colonial Beach, Westmoreland County, Feb 12, 2004, [Dan Kluza], category 2 (†), 2nd Coastal Plain.
- Least Tern** (*Sterna antillarum*), 1 individual, Lake Anna, Spotsylvania County, Sep 19, 2003, [Steve Rottenborn], category 2 (†), 6th Piedmont.
- Black-necked Stilt** (*Himantopus mexicanus*), 1 individual, Hog Island Wildlife Management Area, Surry County, Apr 17, 2004, [Brenda Tekin], category 1 (†, ph.), 1st Coastal Plain west of the Bay.
- American White Pelican** (*Pelecanus erythrorhynchos*), 6 individuals, Occoquan National Wildlife Refuge, Prince William County, May 14, 2003, [Erika Wilson], category 2 (†), 2nd Coastal Plain west of the Bay.
- Ash-throated Flycatcher** (*Myiarchus cinerascens*), 1 individual, Chesapeake Bay Bridge-Tunnel, Nov 23, 2004, [Rob and Ann Simpson], category 1 (†, ph.), 6th Coastal Plain.
- Cave Swallow** (*Petrochelidon fulva*), 1 individual, Chincoteague National Wildlife Refuge, Accomack County, Dec 4-5, 2004, [Gretchen Knapp], category 1 (†, ph.), 5th Coastal Plain.

- Clay-colored Sparrow** (*Spizella pallida*), 1 individual, Dutch Gap Conservation Area, Chesterfield County, Sep 11, 2004, [Bob Reilly], category 2 (†), 2nd Piedmont.
- Eurasian Collared-dove** (*Streptopelia decaocto*), five individuals, intersection of Longview Drive and Woodland Drive, Isle of Wight County, Aug 29, 2004, [Adam D'Onofrio], 1 individual category.1 (†, ph.), 4 individuals category 2 (†), 3rd Coastal Plain.
- Henslow's Sparrow** (*Ammodramus henslowii*), 1 individual, Sky Meadows State Park, Fauquier County, Oct 16, 2004, [Kurt Gaskill], category 2 (†), 2nd Piedmont.
- Cave Swallow** (*Petrochelidon fulva pallida*), 11+ individuals, Northampton County, Nov 5, 2004, [Mike Stinson], category 2 (†), 5th Coastal Plain.
- Western Tanager** (*Piranga ludoviciana*), 1 individual, Virginia Beach, Jan 9–Apr 22, 2005, [Nylia Proescher and Mary Reid Barrow], category 1 (†, ph.), 7th Coastal Plain.
- Townsend's Warbler** (*Dendroica townsendi*), 1 individual, College of William and Mary campus, Williamsburg, Oct 8, 2004, [Dan Cristol], category 2 (†), 2nd state record.
- White-winged Scoter** (*Melanitta fusca*), 1 individual, Lake Anna, Spotsylvania County, Jan 10, 1999, [George Harris], category 2 (†), 1st Piedmont (after the January 2004 Review List).
- California Gull** (*Larus californicus*), 1 individual, Neabsco Creek, Prince William County, Nov 26, 2004, [Kurt Gaskill], category 2 (†), 8th Coastal Plain.
- Common Raven** (*Corvus corax*), 1 individual, Richmond, Mar 9, 2005, [Brent Tarter], category 2 (†).
- Pacific Loon** (*Gavia pacifica*), 1 individual, Kerr Reservoir, Mecklenburg County, Apr 10, 2005 [Adam D'Onofrio], category 1 (†, ph.), 3rd Piedmont.
- American Avocet** (*Recurvirostra americana*), 1 individual, Charles City County, Apr 23, 2005 [Allen Bryan], category 1 (†, ph.), 1st Coastal Plain west of the Bay.
- Lark Sparrow** (*Chondestes grammacus*), 1 individual, Lunenburg County, Apr 26, 2005 [Adam D'Onofrio], category 1 (†, ph.), 1st Piedmont.
- Black-necked Stilt** (*Himantopus mexicanus*), 1 individual, Occoquan Bay National Wildlife Refuge, Prince William County, Apr 28, 2005 [Jay and Carol Hadlock], category 2 (†), 2nd Coastal Plain west of the Bay.
- Scissor-tailed Flycatcher** (*Tyrannus forficatus*), 1 individual, White Marsh Road, Suffolk, Jun 7, 2005, [Paul Hess, Sam Sinderson], category 1 (†, ph.), 10th Coastal Plain.
- Henslow's Sparrow** (*Ammodramus henslowii*), 4 individuals, Manassas Battlefield, Prince William County, May 31–Jul 24, 2005, [Bruce Peterjohn], category 2 (†), 2nd Piedmont, first Piedmont breeding (after January 2004 Review List).
- White Ibis** (*Eudocimus albus*), 1 individual, Kerr Reservoir, Mecklenburg County, Jul 24, 2005 [Adam D'Onofrio], category 1 (†, ph.), 1st Piedmont (after January 2004 Review List).
- Mountain Bluebird** (*Sialia currucoides*), 1 individual, Rt. 600, Northampton County, Nov 27–28, 2004 [Jon Little], category 1 (†, ph.), 1st state.

American White Pelican (*Pelecanus erythrorhynchos*), one individual, Hog Island, Surry County, Aug 18, 2005 [Adam D'Onofrio], category 1 (†, ph.), 2nd Coastal Plain west of the Bay.

SUBMISSIONS NOT ACCEPTED

Band-rumped Storm-petrel (*Oceanodroma castro*), 1 individual, Sunset Beach, Northampton County, Sep 18, 2003.

White-tailed Kite (*Elanus leucurus*), 1 individual, Eastern Shore of Virginia National Wildlife Refuge, Northampton County, Sep 17, 2004.

Bewick's Wren (*Thryomanes bewickii*), 2 individuals, Hopewell CBC, Henricus Historical Park, Chesterfield County, Dec 19, 2004.

Whimbrel (*Numenius phaeopus*), 1 individual, Crozet, Albemarle County, May 28, 2000.

Ross's Goose (*Chen rossii*), 1 individual, Turkey Island Road, Henrico County, Nov 28, 2004.

Henslow's Sparrow (*Ammodramus henslowii*), 1 individual, Quillen's Pond, Augusta County, Oct 20, 2004.

Royal Tern (*Sterna maxima*), 1 individual, Farmville, Prince Edward County, May 17, 2003.

Thayer's Gull (*Larus thayeri*), 1 individual, Occoquan River, Fairfax County, Jan 2, 2005.

Clay-colored Sparrow (*Spizella pallida*), 1 individual, Newland, Richmond County, Feb 26, 2005.

Clay-colored Sparrow (*Spizella pallida*), 1 individual, Rappahannock National Wildlife Refuge, Richmond County, Jan 9, 2005.

Eared Grebe (*Podiceps nigricollis*), 1 individual, Willow Lake, Rockbridge County, Mar 31, 2005.

Clay-colored Sparrow (*Spizella pallida*), 1 individual, North Garden, Albemarle County, May 8, 2001.

Western Kingbird (*Tyrannus verticalis*), 1 individual, North Garden, Albemarle County, Oct 5, 2003.

Henslow's Sparrow (*Ammodramus henslowii*), 1 individual, Syon Abby, Franklin County, Oct 24, 2004.

Mew Gull (*Larus canus*), 1 individual, Back Bay NWR, Virginia Beach, Dec 29, 2004.

Varied Thrush (*Ixoreus naevius*), 1 individual, town of North, Mathews County, Jan 4, 2005.

SUBMISSIONS IN REVIEW

White-faced Ibis (*Plegadis chihi*), 1 individual, Chincoteague National Wildlife Refuge, Accomack County, Apr 29, 2005.

Sandhill Crane (*Grus canadensis*), 1 individual, Forest Lane, Stafford County, May 22, 2005.

Clay-colored Sparrow (*Spizella pallida*), 1 individual, Sattler's yard, Lynchburg, Apr 29–May 3, 2004.

Clay-colored Sparrow (*Spizella pallida*), 1 individual, Ferrel's yard, Lynchburg, May 1-3, 2005.

Red-throated Loon (*Gavia stellata*), 1 individual, Kerr Reservoir, Mecklenburg County, Feb 12, 2005.

Barnacle Goose (*Branta leucopsis*), 1 individual, Walnut Hills Campground, Augusta County, Jun 23–Aug 17, 2005.

California Gull (*Larus californicus*), 1 individual, Hunting Creek, Fairfax, March 13, 2005.

ERRATA

For Brinkley et al. 2001. Seabird records associated with hurricane activity in Virginia in the late 1990s. *Raven* 72.2: 95-125.

The observers' initials RLA and CM were erroneously included in Table 3 (lines 5, 8), Table 4 (lines 5, 16), and Table 5 (lines 1-9, 14-16). Additionally, the first two elements in the last line of Table 4 (CNWR; 05/09/99+) should each be shifted one cell to the right.

For Dolby, A. 2005. Virginia Society of Ornithology 2005 Russel and Wise County Foray. *The Raven* 76(2): 17-25.

A portion of the discussion and all of the literature cited were inadvertently omitted. These sections are reproduced in their entirety below.

DISCUSSION

The previous forays with most applicable comparisons to Russell County were the Washington County foray, held in 1966 (Scott 1966), and the Tazewell County forays conducted in 1972 (Scott 1973) and 1986 (Peake 1987). These two counties border Russell County and have the greatest physiogeographic similarity with it compared to other counties in the region where forays have been held. Although total numbers of species detected in these surveys (Washington Co., 117 species; Tazewell Co., 119 and 126, respectively) do not differ greatly from what was found in 2005 for Russell County, many species were reported in far fewer numbers. For example, while the peak count for Chestnut-sided Warblers at Laurel Bed Lake was 40 in 1972 (Scott 1973), it was only three in 2005 (Dalmas and Dalmas). Black-throated Green Warblers were described as "common" in 1972 (Scott 1973), but again, only three were seen during this foray (Talbot et al.). Northern Bobwhite were also classified as "common" in 1966 (Scott 1966) and 1972 (Scott 1973), but were scarce in Tazewell County by 1986 (Peake 1987). Only one was detected in Russell County this year (Dalmas), which is consistent with the well-documented decline of this species in the southeastern U.S. over the last several decades (Williams et al 2004).

Several species were consistently reported during these past forays, but were conspicuously absent this year in Russell County, including Wood Ducks, American Woodcocks, Blue-winged Warblers, Golden-winged Warblers, and Vesper Sparrows. Whereas American Woodcocks and Blue-winged Warblers were previously recorded in only small numbers, the other three species were both described as "fairly common" in 1972 (Scott 1973), and only Golden-winged Warblers had noticeably declined in Tazewell County by 1986 (Peake 1987). Golden-winged Warblers are included on the Partners-In-Flight Watch List (Pashley et al. 2000), and the failure to detect them

during this foray most likely reflects the real population declines recently observed throughout the southeastern portion of its range. Klaus and Buehler (2001) found that Golden-winged Warblers in the southern Appalachians of eastern Tennessee and western North Carolina prefer regenerating forest and tend to nest along edges between maturing forest stands and open habitat patches free of woody vegetation. It is possible that such habitat was not visited by surveyors this year, but perhaps such habitat has declined in southwestern Virginia and may partially explain why this species was not detected.

Vesper Sparrows have undergone some population decline across North America, but this decline has been geographically limited and has been mainly attributed to habitat loss (U.S. Breeding Bird Survey). It is unknown why they were not detected in Russell County this year, since their numbers have experienced moderate increases in the southeastern portion of their range and suitable agricultural and grassland habitat should have been available to them. Additionally, Vesper Sparrows readily inhabit reclaimed strip mines, suggesting that this type of habitat remediation could increase their populations in western Virginia (Whitmore and Hall 1978).

Five Bobolinks were reported along Route 656 in Elk Garden (Mayhorn and Mayhorn), a notably encouraging sighting for Russell County. This grassland species, which prefers abandoned hayfields, has drastically declined across the eastern United States (Bollinger and Gavin 1992), and its only other foray report occurred during the 1986 Tazewell County foray (Peake 1987).

Previous forays covering Mount Rogers in 1974 (Scott 1975) and 1980 (Scott 1982), Buchanan and Dickinson Counties in 1984 (Peake 1986), and Lee County in 1992 (Dalmás 1993) provide the most useful comparisons with results from the Wise County portion of the 2005 foray. These prior surveys included high elevation locations similar to High Knob Recreation Area or encompassed part of the Appalachian Plateau physiogeographic region. Again, although total species richness is roughly comparable to previous years, far fewer surveyors covered Wise County in 2005. Thus, comparing species' abundances across years is problematic. However, several species that were consistently noted in the region during earlier surveys were not detected this year: Black-billed Cuckoos, Red-breasted Nuthatches, Golden-crowned Kinglets, Pine Warblers, and Red Crossbills. With the exception of Pine Warblers, the Southern Appalachians represent a southern extreme for each of these species' breeding ranges (U. S. Breeding Bird Survey), and populations near geographical range limits tend to be more vulnerable to disturbance. Furthermore, all of these species have at least some dependency on coniferous or mixed-coniferous forest, a habitat that has declined sharply at high elevations in the Southeast (Rabenold et al. 1998). This habitat reduction has resulted in well-documented, pronounced declines in southeastern populations of conifer-dependent species such as Red-breasted Nuthatches and Golden-crowned Kinglets (Rabenold 1998), which may be reducing their chances of being found at any location throughout the region.

Finally, owing simply to imperfect detection probabilities of some species, some species that are known to occur on in Russell and Wise may not have been detected. Detectability may have differed among species based on such factors

as vegetation density, differences in each species' song properties and singing persistence, and each species' tolerance of roadsides, trails, and other routes of access used by surveyors (Kery and Schmidt 2004). Additionally, the failure to detect some species reported during previous forays may have stemmed from limited foray participation in 2005. However, absence of reports may reflect well-corroborated regional species declines, associated especially with habitat loss and change. Eight and 10 species reported during this foray, respectively, appear on the Watch Lists of the Audubon Society and Partners In Flight. Thus, Southwestern Virginia remains an important region to the state's avifauna and warrants continued monitoring.

ACKNOWLEDGEMENTS

The data reported in this manuscript were contributed by the following foray participants: John and Thelma Dalmás, John Drummond, Richard Kretz, David Raines, Roger and Lynda Mayhorn, John Spahr, Ed Talbott Jr., Ed Talbott III, and Bill Williams. Thank you also to Tom Hunter for providing surveyors with local information.

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LOCAL CHAPTERS OF THE VSO – 2006

Audubon Society of Northern Virginia
Augusta Bird Club
Back Bay Birding Club
Bristol Bird Club
Buchanan County Bird Club
Cape Henry Audubon Society
Clinch Valley Bird Club
Eastern Shore Bird Club
Fredericksburg Bird Club
Hampton Roads Bird Club
Lynchburg Bird Club
Margaret H. Watson Bird Club
Monticello Bird Club
New River Valley Bird Club
Northern Neck of Virginia Audubon Society
Northern Virginia Bird Club
Richmond Audubon Society
Roanoke Valley Bird Club
Rockbridge Bird Club
Rockingham Bird Club
Russell County Bird Club
Virginia Beach Audubon Society
Virginia Bluebird Society
Williamsburg Bird Club

INFORMATION FOR CONTRIBUTORS

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

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

Format of *The Raven* generally follows guidelines set by the Council for Biology Editors as outlined in the CBE style manual, 6th edition, 1994 (Council of Biology Editors, Inc., 11250 Roger Bacon Dr., Reston, VA 20190). Recent volumes of *The Raven* should be inspected for style. Vernacular and scientific names of birds should be those published in the Seventh Edition of the A.O.U. Check-list of North American Birds and subsequent supplements. All measurements should be reported in metric units.

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



The Raven

JOURNAL OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

Volume 77

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2006



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

Activities undertaken by the Society include the following:

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

In additions, local chapters of the Society, located in some of the larger cities and towns of Virginia, conduct their own programs of meetings, field trips and other projects.

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STATUS AND DISTRIBUTION OF COLONIAL WATERBIRDS IN COASTAL VIRGINIA: THE 2003 BREEDING SEASON

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ABSTRACT

We conducted a systematic survey of colonial waterbirds in coastal Virginia during the breeding season of 2003. More than 800 surveys were conducted of 446 colonies during the breeding season of 2003. Colonies contained an estimated 79,343 breeding pairs of 24 species. Gulls were the most abundant group with more than 50,000 breeding pairs. Terns and waders accounted for 8,399 and 15,557 pairs respectively. Laughing gulls were several times more abundant than any other species and represented 56.7% of the total waterbird community. Great Blue Herons were the most widely distributed species with more than 200 colonies documented. The barrier island/lagoon system of the Eastern Shore was the most important region for the majority of colonial species encountered. This region supported 22 of the 24 species found in coastal Virginia and accounted for greater than 70% and 35% of all breeding pairs and colonies, respectively. For 18 of the 24 species, the region supported more than 50% of the known coastal population.

The colonial waterbird community in coastal Virginia declined by more than 16% during the 10 years between 1993 and 2003. Losses were widespread with 17 of 24 species exhibiting negative trends. The magnitude of declines varied between species with 10 species declining by more than 40% and 4 species declining by more than 70%. Cattle Egrets showed the highest loss rate, declining from an estimated 1,459 to only 166 pairs over the 10-yr period. Seven species increased between 1993 and 2003. Dramatic expansions were documented for White Ibis, Great Black-backed Gull, Double-crested Cormorant, and Brown Pelican. The overall waterbird community declined within all geographic regions except the western shore. Due to the area's importance to the overall community, declines on the seaside of the Delmarva Peninsula accounted for more than 85% of the broader coastal decline.

INTRODUCTION

In Virginia, colonial waterbirds include herons, egrets, ibises, gulls, terns, skimmers, cormorants, and pelicans. These birds share the unusual characteristic of nesting in dense assemblages. The result of this behavior is that they typically breed in very few locations such that the loss of a few breeding areas may have profound consequences on a population level. Due to their position in the aquatic

food web, they are considered to be good indicators of ecosystem health. The most significant threats to colonial waterbirds in the state include human disturbance, predation, habitat loss, and contaminants. Protection of sensitive colonies depends on the availability of current locational information. Development of strategic management plans to protect these species and breeding areas requires a broader understanding of population trends.

In 1993, a systematic survey of colonial waterbird species was conducted that covered the entire Coastal Plain from the outer coastline to the fall line (Watts and Byrd 1998). This survey was the most comprehensive assessment to date of the colonial waterbird community in coastal Virginia. The effort covered 446 colonies supporting an estimated 94,947 pairs of 24 species. After the conclusion of the 1993 survey, the consortium of partners that participated in the survey collectively agreed to maintain a survey interval of 10 years to track long-term trends. The 2003 breeding season represents the 10-year anniversary of the 1993 survey.

The purpose of this effort was to generate population estimates for all colonial waterbird species nesting in the Coastal Plain of Virginia in 2003. Information compiled is intended to (1) be integrated into biological databases to be used in the environmental review process, (2) provide information for comparison to past and future surveys for the purpose of assessing long-term population trends, and (3) be used in the formulation of management recommendations.

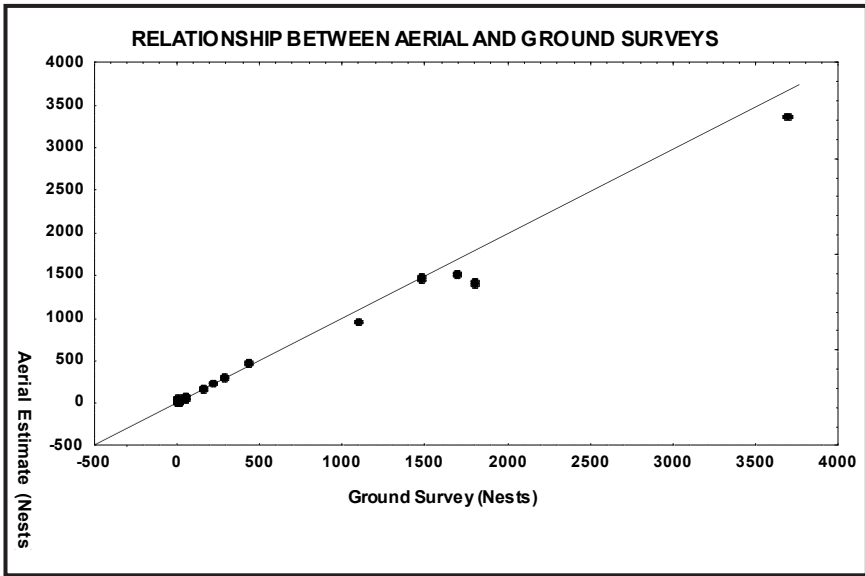
METHODS

Field Surveys – An extensive aerial survey was conducted using fixed-wing aircraft in 2003 during early stages of the breeding season. All mainland waterways, barrier islands, Bay islands, and marshlands were overflown and searched for wading bird colonies. Due to their wide distribution and large numbers, only the largest inland reservoirs and farm ponds were surveyed. Because Great Blue Heron colonies often form near the headwaters of small streams, a special attempt was made to follow all tributaries to their origin. Aerial surveys were conducted by systematically flying over areas at an altitude of approximately 100-150 m and searching for evidence of breeding colonies. Once detected, a colony was circled long enough to allow observers to map the colony location and estimate its size. All colonies were given a unique alpha-numeric code and plotted on 7.5 min topographic quadrangles. Groups of breeding pairs were considered independent colonies if they were: (1) separated from other groups within a continuous habitat by at least 400 m, (2) separated from other groups by a distinctive barrier, or (3) separated from other groups by a significant habitat discontinuity (e.g. birds in dune grassland adjacent to birds in a patch of deciduous saplings).

Follow-up ground counts were conducted for all locations except inland Great Blue Heron colonies and most gull colonies. Great Blue Heron colonies were widespread and often situated in remote locations or over extensive swamps. Financial and logistical constraints did not allow for ground surveys of these sites. Many gull colonies were distributed over large areas. We believe that aerial surveys of these colonies are more effective and less disruptive compared to ground surveys.

Population Estimates – Colony size estimates were based primarily on counts of active nests, and occasionally on the number of adults present. The number of breeding adults was used when nest counts were impractical or when deemed inappropriate due to colony disturbance. Colony size was based on complete counts whenever possible. However, due to the large size of many colonies, estimates were derived for a large portion of the colonies. All estimates for aerial surveys were performed by the same observer. In order to evaluate the level of error in aerial estimates 20 colonies were chosen for aerial/ground comparisons. Aerial estimates and complete ground counts were conducted within 10 days of each other. Included were colonies of Great Blue Herons, Laughing Gulls, Herring Gulls, Forster's Terns and Common Terns. Colonies ranged in size from less than 20 to several thousand. Average disparity between paired surveys was $8.9 \pm 1.69\%$ (Mean \pm SE). Agreement between aerial and ground surveys was very good for colonies below 500 pairs (Figure 1). Beyond 500 pairs, aerial surveys underestimated colony size by 5-15%. This level of error is consistent with the reduction in data resolution used for population estimates in 1993 (Watts and Byrd 1998) as outlined below.

FIGURE 1. Relationship between aerial and ground surveys.



Many different observers were involved with ground surveys. To reduce observer bias across surveys, data resolution for estimates was reduced by rounding off reported numbers to the nearest value using the following graded scale: nearest 5 for <50, nearest 10 for 50-200, nearest 25 for 200-400, nearest 50 for 400-1,000, nearest 100 for 1,000-2,000, and nearest 200 for >2,000. Complete counts were used when reported without rounding.

Breeding chronology was taken into account when designing the survey. Mainland areas likely to support early nesting waders were flown from early April to mid-May. Coastal marshes and islands supporting gulls, terns, and allies were flown

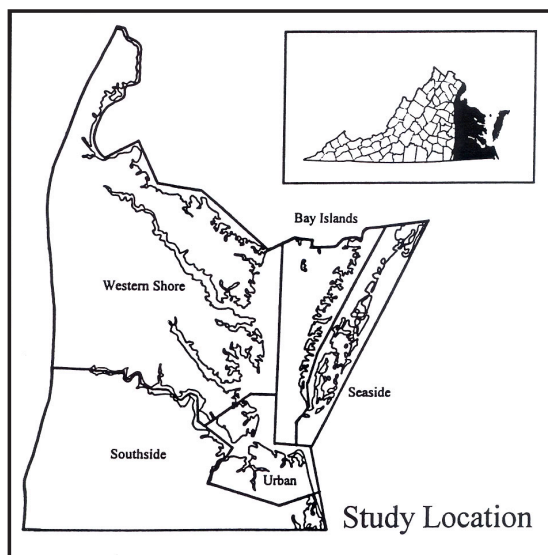
between mid-May and mid-June. Ground counts of urban areas were conducted during April, May, and June. Ground counts of barrier islands, bay islands, and marshlands were conducted during June and July.

Due to the differences in breeding chronology and circumstances, different surveys were used to generate population estimates for different species. Numbers from aerial surveys were used for inland wader colonies. Ground surveys were used for all urban colonies and colonies on barrier and bay islands. Ground surveys were also used for colonies on marshlands with the exception of Laughing Gull colonies. Laughing Gull colonies often cover many hectares making estimation of nest numbers much easier from the air.

Population estimates are presented as breeding pairs. Breeding pairs were estimated on a colony by colony basis and compiled to generate an overall population estimate. For colonies surveyed using nest counts or estimates, a one-to-one relationship between nests and pairs was assumed. For colonies surveyed using count or estimates of adults, a one-to-one relationship between adults and pairs was assumed. The portion of population estimates that were based on nests is provided to allow the reader to recalculate population estimates based on number of adults.

Geographic Regions – For the presentation of gross distribution patterns, the Coastal Plain was broken down into five geographic regions (Figure 2). Regions

FIGURE 1. Study location



included were: 1) Eastern Shore seaside – barrier island/lagoon system along seaward margin of the Delmarva Peninsula northward to the Maryland/Virginia boundary line, 2) Bayside and Bay islands – western shoreline of the Delmarva Peninsula to the Maryland/Virginia border, and Chesapeake Bay islands of Virginia, 3) Urban – major urban areas of lower tidewater, including the cities of Virginia Beach, Norfolk, Portsmouth, Chesapeake, Newport News, and Hampton, 4)

Western Shore – south shoreline of the Potomac River to the south shoreline of the James River including all areas from the western shore of the Chesapeake Bay west to the fall line, and 5) Southside – lands south of the James River to the Virginia/North Carolina border including all land between the Atlantic Ocean and the fall line (except areas designated as urban).

RESULTS

Population Estimates – A total of 446 different waterbird colonies was mapped and surveyed during the 2003 breeding season. Colonies contained an estimated 79,343 breeding pairs of 24 species (see Watts and Paxton 2004 for species/colony details and Appendix I for species names). Colony size varied from 2 to 4,700 pairs with 76.2% of colonies containing less than 100 pairs and 91.0% containing less than 500 pairs. More than 70% of all colonies larger than 500 pairs were Laughing Gull colonies. The majority (74.0%) of colonies contained only one species and 94.6% contained three species or less. Seven mixed-species rookeries contained seven species or more.

Abundance varied widely between species and species groups (Table 1). Gulls were the most abundant group with >50,000 breeding pairs. Terns and waders accounted for 8,399 and 15,557 pairs respectively. Although waders accounted for less than 20% of estimated pairs, they accounted for more than 50% of colonies. Great Blue Herons were the most widely distributed species with more than 200

TABLE 1. Estimated number of breeding pairs for all geographic regions combined in 2003. The category “colonies” refers to the number of colonies that included each species. “%Nests” is the portion of the population estimate that was based on counts of nests rather than adults (see Methods).

Species	Colonies	Median	Range	%Nests	Pop. Est.
Waders					
White Ibis	2	----	32-45	0	77
Glossy Ibis	11	62	16-290	2.9	818
Great Blue Heron	203	14	2-1500	>99.9	9136
Great Egret	35	60	2-385	79.7	2720
Snowy Egret	16	48	6-209	15.5	882
Tricolored Heron	11	30	2-195	4.9	507
Little Blue Heron	8	38	3-140	12.3	310
Cattle Egret	6	20	1-74	0.6	166
Green Heron	12	5	1-14	98.1	60
Black-cr Night Heron	14	21	4-325	1.6	640
Yellow-cr Night Heron	40	4	2-55	99.2	241
Gulls					
Great Black-backed Gull	31	23	1-200	46.5	1084
Herring Gull	38	63	1-617	51.9	4521
Laughing Gull	60	450	6-4800	95.8	44953
Terns					
Gull-billed Tern	17	14	1-101	66.1	322
Caspian Tern	1	1	1	100	1
Royal Tern	4	500	203-1855	28.0	2858
Sandwich Tern	2	----	3-4	0	7
Forster's Tern	58	25	1-350	65.8	2477
Common Tern	37	32	1-791	60.9	1891
Least Tern	24	12	1-200	23.3	843
Others					
Black Skimmer	14	60	1-1037	8.5	1828
Dble-crested Cormorant	5	267	10-469	100	1338
Brown Pelican	4	476	52-679	100	1661
Total	446		1-4800	81.8	79343

colonies. Laughing gulls were several times more abundant than any other species and accounted for 56.7% of the total waterbird community. Other than Laughing Gulls, only Great Blue Herons, Great Egrets, Herring Gulls, and Royal Terns exceeded 2,500 breeding pairs. The remaining 19 species accounted for less than 20% of the total breeding pairs.

Geographic Distribution – The barrier island /lagoon system of the Eastern Shore was the most important region for the majority of colonial species encountered (Table 2). In 2003, this region supported 22 of the 24 species found in coastal Virginia and accounted for greater than 70% and 35% of all breeding pairs and colonies,

TABLE 2. Summary of species distributions across geographic areas. “Col” refers to the number of colonies within the respective regions. “Prs” indicates the estimated number of breeding pairs within each region. “%” indicates the percentage of the total population found within each region.

Species	Seaside			Bay Islands			Urban			Western Shore			Southside		
	Col	Prs	%	Col	Prs	%	Col	Prs	%	Col	Prs	%	Col	Prs	%
Waders															
White Ibis	2	77	100.0												
Glossy Ibis	8	669	81.8	3	149	18.2									
Great Blue Heron				17	576	6.3	4	51	0.6	158	7112	77.8	24	1397	15.3
Great Egret	9	467	17.2	3	470	17.3	3	586	21.5	12	359	13.2	9	838	30.8
Snowy Egret	9	624	70.7	6	178	21.2				1	80	9.1			
Tricolored Heron	7	456	89.9	4	51	10.1									
Little Blue Heron	5	249	80.3	3	61	19.7									
Cattle Egret	5	146	88.0	1	20	12.0									
Green Heron				2	7	11.7	7	25	41.6	3	28	46.7			
Black-crowned Night Heron	9	590	92.2	4	50	7.8									
Yellow-crowned Night Heron	1	2	0.8	1	4	1.7	38	234	96.3	1	3	1.2			
Gulls															
Great Black-backed Gull	15	720	66.4	15	353	32.6	1	11	1.0						
Herring Gull	18	3417	75.6	17	1066	23.6	1	24	0.5	2	14	0.3			
Laughing Gull	58	41692	92.7	1	550	1.2	1	2711	6.1						
Terns															
Gull-billed Tern	16	304	94.4				1	18	5.6						
Caspian Tern	1	1	100.0												
Royal Tern	2	2058	72.0	2	800	28.0									
Sandwich Tern	2	7	100.0												
Forster's Tern	51	1521	61.4	7	956	38.6									
Common Tern	31	843	44.6	4	248	13.1	2	800	42.3						
Least Tern	22	703	83.4				1	140	16.6						
Others															
Black Skimmer	12	1679	91.8	1	65	3.6	1	84	4.6						
Double-crested Cormorant	1	10	0.7	2	907	67.8	1	154	11.5	1	267	20.0			
Brown Pelican	1	454	27.3	3	1207	72.7									
Total	162	56,689	71.5	45	7,718	9.7	48	4,838	6.1	166	7,863	9.9	25	2,235	2.8

respectively. For 18 of the 24 species, the region supported more than 50% of the known coastal population. Many of these species were found almost exclusively in this region. Only the Great Blue Heron, Great Egret, Green Heron, Yellow-crowned Night Heron, Double-crested Cormorant, and Brown Pelican were more abundant in other regions. The number of species supported by the other four geographic regions varied widely. The Bay region supported 19 species whereas the urban, western shore, and southside regions supported 12, 7, and 2 respectively. The Bay region also supported 8 species in common with the Eastern Shore that were not found elsewhere. The Bay region was the dominant region for the Double-crested Cormorant and the Brown Pelican. Cities included in the urban region supported substantial populations of Common Terns, Least Terns, Laughing Gulls, Double-crested Cormorants, Great Egrets, Green Herons, and Yellow-crowned Night Herons. This was the dominant region for the Yellow-crowned Night Heron. The western shore was the dominant region for the Great Blue Heron and the Green Heron. Greater than 78% of the Great Blue Heron colonies were located within this area. The southside region supported substantial populations of both Great Blue Herons and Great Egrets.

Population Changes – The colonial waterbird community in coastal Virginia declined by more than 16% during the 10 years between 1993 and 2003 (Table 3).

There was no change in either the number or type of species breeding in the area. Despite considerable turnover in colonies, the total number of colonies was identical between the two surveys. Population estimates for 17 of 24 species declined. Declines varied considerably between species with 10 species declining more than 40% and 4 species

TABLE 3. Comparison of colony numbers and estimated number of breeding pairs for 1993 and 2003. The category "colonies" refers to the number of colonies that included each species. Population estimates refer to breeding pairs.

Species	1993 Colonies	1993 Pop. Est.	2003 Colonies	2003 Pop. Est.	% Change
Waders					
White Ibis	1	3	2	77	+2466.7
Glossy Ibis	11	1008	11	818	-18.8
Great Blue Heron	156	9112	202	9136	+0.3
Great Egret	45	2520	35	2720	+7.9
Snowy Egret	15	2329	16	882	-62.1
Tricolored Heron	11	767	11	507	-33.9
Little Blue Heron	10	374	8	310	-17.1
Cattle Egret	9	1459	6	166	-88.6
Green Heron	22	154	13	60	-61.0
Black-crowned Night Heron	13	526	14	640	+21.7
Yellow-crowned Night Heron	35	388	40	241	-37.9
Gulls					
Great Black-backed Gull	26	514	31	1084	+110.9
Herring Gull	35	8801	38	4521	-48.6
Laughing Gull	110	45387	60	44953	-0.9
Terns					
Gull-billed Tern	30	606	17	322	-46.9
Caspian Tern	5	8	1	1	-87.5
Royal Tern	3	6250	4	2858	-54.3
Sandwich Tern	2	30	2	7	-76.7
Forster's Tern	72	2939	58	2477	-15.7
Common Tern	40	6781	37	1891	-72.1
Least Tern	26	1171	24	843	-28.0
Others					
Black Skimmer	25	3098	14	1828	-41.0
Double-crested Cormorant	4	354	5	1338	+278.0
Brown Pelican	2	368	4	1661	+351.4
Total	446	94947	446	79343	-16.4

declining more than 70%. Cattle Egrets showed the highest loss rate, declining from an estimated 1,459 to only 166 pairs. Seven species increased between 1993 and 2003. Dramatic expansions were documented for White Ibis, Great Black-backed Gull, Double-crested Cormorant, and Brown Pelican.

Changes in population estimates varied widely between species and across geographic areas (Table 4). The overall waterbird community declined within all geographic regions except the western shore. Due to the area's importance

to the overall community, declines on the seaside of the Delmarva Peninsula had a dramatic impact on the coastal plain as a whole. Breeding pairs within this region dropped from 69,968 to 56,689 and accounted for more than 85% of the overall coastal decline. In general, the direction and magnitude of changes for species within this region drove their overall changes. Some notable

TABLE 4. Changes in population estimates for colonial waterbirds between 1993 and 2003 for specific geographic regions. Values presented represent % change as calculated by (2003 est. - 1993 est.)/(1993 est.)(100). "Col." Indicates that the region was colonized between 1993 and 2003.

Species	Seaside	Bay Islands	Urban	Western Shore	Southside
Waders					
White Ibis	+2466.7	----	----	----	----
Glossy Ibis	-14.1	-34.9	----	----	----
Great Blue Heron	-100.0	+171.7	+10.9	+6.4	-35.4
Great Egret	-47.2	+840.0	-25.4	+86.0	+38.1
Snowy Egret	-66.5	-61.9	----	Col.	----
Tricolored Heron	-36.0	-5.5	----	----	----
Little Blue Heron	-24.5	+38.6	----	----	----
Cattle Egret	-82.9	-94.7	----	-100.0	----
Green Heron	-100.0	-87.9	-32.4	+133.3	----
Black-crowned Night Heron	+33.5	-40.4	----	----	----
Yellow-crowned Night Heron	-96.8	-55.5	-25.9	Col.	----
Gulls					
Great Black-backed Gull	+98.9	+56.9	Col.	----	----
Herring Gull	-44.0	-60.4	Col.	Col.	----
Laughing Gull	-6.1	-31.3	Col.	----	----
Terns					
Gull-billed Tern	-49.7	----	+800.0	----	----
Caspian Tern	-85.7	----	----	----	----
Royal Tern	-36.7	-73.3	----	----	----
Sandwich Tern	-76.7	----	----	----	----
Forster's Tern	-29.9	+24.2	----	----	----
Common Tern	-74.0	-38.0	-74.5	----	----
Least Tern	-5.9	----	-67.0	----	----
Others					
Black Skimmer	-34.1	-81.4	-57.8	----	----
Double-crested Cormorant	Col.	+15016.7	+9.2	+32.2	----
Brown Pelican	+40.1	+2643.2	----	----	----
Total	-19.0	-21.2	-4.8	+7.3	-19.3

exceptions were Great Blue Heron and Great Egret. Several colonization events occurred during the 10-year period. Gulls continued the geographic expansion observed in recent decades to colonize the urban and western shore regions. A Snowy Egret colony was surveyed in Gloucester County that had formed in the past few years. Double-crested Cormorants bred for the first time on the seaside of the Delmarva in the mid-1990s.

Seaside Region – The barrier island/lagoon system along the seaward edge of the Delmarva Peninsula is the most important region for colonial waterbirds in Virginia. In addition to the 1993 survey, a systematic survey of the seaside region was conducted in 1998. In the majority of species, comparison of the 1993, 1998, and 2003 surveys (Table 5) shows consistent trends over time. Snowy Egret, Tricolored

Heron, Cattle Egret, Green Heron, Yellow-crowned Night Heron, Herring Gull, Laughing Gull, Gull-billed Tern, Common Tern, and Black Skimmer all showed a consistent decline across the three surveys. White Ibis, Great Black-backed Gull, and Double-crested Cormorant showed consistent increases. Patterns for other species exhibited mixed trends between surveys.

TABLE 5. Population estimates for colonial waterbirds within the barrier island/lagoon system of the Delmarva Peninsula. Values represent estimated number of breeding pairs. Data from 1993 are from Watts and Byrd 1998. Data from 1998 are from Truitt and Schwab 2001.

Species	1993	1998	2003
Waders			
White Ibis	3	18	77
Glossy Ibis	779	822	669
Great Blue Heron	8	10	0
Great Egret	885	976	467
Snowy Egret	1862	1212	624
Tricolored Heron	713	530	456
Little Blue Heron	330	195	249
Cattle Egret	854	540	146
Green Heron	47	3	0
Black-crowned Night Heron	442	359	590
Yellow-crowned Night Heron	63	36	2
Gulls			
Great Black-backed Gull	362	369	720
Herring Gull	6106	4653	3417
Laughing Gull	44387	43784	41692
Terns			
Gull-billed Tern	604	478	304
Caspian Tern	7	4	1
Royal Tern	3250	3451	2058
Sandwich Tern	30	54	7
Forster's Tern	2169	2426	1521
Common Tern	3247	1727	843
Least Tern	747	709	703
Others			
Black Skimmer	2549	1766	1679
Double-crested Cormorant	0	6	10
Brown Pelican	324	470	454
Total	69968	64608	56689

DISCUSSION

During the 2003 breeding season, coastal Virginia supported a substantial community of colonial waterbirds. The size of this community exceeded estimates from the late 1970s (Erwin and Korschgen 1979) by more than 44% but was less than the 1993 estimates (Watts and Byrd 1998) by more than 16%. The seaside of the Delmarva Peninsula continues to be the single most important region for colonial waterbirds in coastal Virginia. This small area supported more than 70% of all breeding pairs and was the dominant region for 17 of 24 species surveyed. The Bay region also supported a diverse community of species but much lower numbers of individuals compared to the seaside. Urban areas supported half of all species and significant populations of selected species. The western shore and southside regions were most significant for supporting a large number of Great Blue Heron and Great Egret colonies.

The entire colonial waterbird community declined more than 16% from 94,947 breeding pairs in 1993 to only 79,343 breeding pairs in 2003. Much of this decline is accounted for by declines in the barrier island / lagoon system. Five species increased by more than 20% over the 10-year period. Many of these population increases have followed colonization events where populations do not appear to have reached stable levels (e.g. Double-crested Cormorants, Brown Pelicans, Great Black-backed Gulls). Thirteen of 24 species declined by more than 20% with 10 of those declining more than 40%. Some species experiencing recent declines have followed population increases associated with earlier colonization events (e.g. Glossy Ibis, Cattle Egret). For some of these species it remains difficult to separate the relative influences of local condition from regional population phenomena on population trends. Caution should be used when attempting to attribute declines to local factors. However, all of the species that nest on open barrier beaches experienced substantial declines. Many of these species have nested on the islands as far back as records exist. Their declines may be linked to continuing increases in predator populations on the islands. If so, these populations should respond to predator management where feasible. A summary of specific groups is given below.

As a group, waders declined 16.5% over the 10-year period from an estimated 18,640 pairs to 15,557 pairs. Nearly 90% of this overall decline was due to the dramatic loss of waders on the seaside. These declines have been ongoing and represent a loss of some historic colonies during the decade and a reduction in birds within a couple of key colonies. Particularly notable were reductions in most mid-sized herons. Other more moderate reductions were documented in urban colonies and large colonies within the southside region.

White Ibis – Nesting of the White Ibis was first confirmed in Virginia in 1977 on Fisherman Island (Frohring and Beck 1978). Breeding has been restricted to the barrier islands. Breeding areas have been surveyed each year since 1975 (Williams et al. 1990). Until recent years, birds were associated with a mixed-species heronry on Fisherman's Island exclusively with no indication of further expansion (Williams et al. 1992). In 1998, this pattern changed when birds appeared in the Cobb-Island heronry (Williams et al. 2000). This event was followed in 2001 when the Wreck-Island heronry was colonized (Williams et al. 2002). The expansion from Fisherman Island likely resulted from mammalian predation. The heronry was abandoned in 2002 and has not been used since that time.

Glossy Ibis – The Glossy Ibis was first found breeding in Virginia on Hog Island in 1956 (Bock and Terborgh 1957). The breeding population increased dramatically throughout the 1960's reaching a high by the mid-1970s (Custer and Osborn 1977). Since this time the species has steadily declined on the barrier islands (Williams et al. 1990). By 1993, the coastal plain population had been reduced by more than 50% from historic highs (Watts and Byrd 1998). Between 1993 and 2003, the population has declined by more than 18%. This decline is due to reductions within two barrier island colonies (Fisherman and Cobb Islands) and one Bay island colony (Watts Island). Colonies elsewhere have remained fairly stable.

Great Blue Heron – The Virginia population of Great Blue Herons has increased dramatically since the 1960s. In 1964, only 5 colonies of this species were known for coastal Virginia. In 1975, 15 colonies were surveyed containing more than 2,400 pairs (Custer and Osborn 1977). In 1984, 31 colonies were known supporting nearly 3,600 pairs (Beck unpubl. data). In 1993, 156 colonies were documented supporting more than 9,000 pairs. The 2003 survey documented 202 colonies supporting 9,136 pairs. This represents a 30% increase in the number of colonies over the 10-year period. An increase in the number of colonies within some geographic areas and fragmentation of existing colonies in others have contributed to this pattern. The number of colonies and birds increased dramatically along the bayside of the Delmarva Peninsula, Mobjack Bay, and the Rappahannock River. These areas supported relatively few colonies prior to 1993. A number of larger colonies that have been active for 10-15 years have become increasingly fragmented into smaller colonies in recent years. The factors contributing to the breakdown of these colonies are not clear. The 2003 survey documented fewer colonies and pairs within both the Chickahominy River and southside Virginia. In general, the numbers of Great Blues documented during the 2003 survey was less than what has been observed during Bald Eagle surveys in recent years suggesting that the population increase between 1993 and 2003 may be underestimated. The breeding season of 2003 was a poor year for Great Blues due to very high rainfall.

Great Egret – The Virginia population of Great Egrets has increased more than 3 fold in the past 30 years. Trends have been similar to the Great Blue Heron. As with Great Blue Herons, the poor breeding season of 2003 appears to have masked what has been a much larger increase in inland areas since 1993. This species has historically had a breeding distribution skewed to the coast. In recent years, an increasing number have colonized inland Great Blue colonies particularly within the extensive swamps of the Chickahominy, Blackwater, Nottoway, and Meherrin drainages. Populations increased in all areas except the urban and seaside regions. The number of urban colonies declined from 7 to 3 over the 10-year period. One of the colonies located in 2003 had formed in 2002 indicating that 5 colonies were lost during the decade. The conflict between egrets and residential landowners has continued to move birds out of lower tidewater since the mid-1980s (Watts unpublished data). The decline in breeding pairs on the seaside of the Delmarva Peninsula has occurred both within the barrier island colonies and the mixed heronries around and south of Chincoteague Bay. The loss of the Fisherman Island colony in 2002 accounted for approximately 30% of the decline. Remaining declines involved the colonies south of Chincoteague Bay.

Snowy Egret – Historically, Snowy Egrets bred as far north as New England. However, by the turn of the century, demand from the millinery trade had resulted in a contraction of the breeding range down to North Carolina (Ogden 1978). The first evidence of recolonization was in 1941 when birds were discovered breeding on the seaside of the Delmarva (Murray 1952). By the mid-1950s, this species was documented in all geographic areas of coastal Virginia except the southside region (e.g. Grey 1950, Abbott 1955). However, since the 1970s breeding has been restricted

to the seaside of the Delmarva and the offshore islands of the upper Bay. Numbers have declined steadily on the barrier islands since the mid-1970s. The coastal plain-wide survey in 1993 was comparable to the surveys of the mid-1970s (Custer and Osborn 1977, Watts and Byrd 1998). Between 1993 and 2003 the population declined by more than 60%. Nearly 80% of this decline was accounted for by the seaside region. Although declines are continuing on the barrier islands, the colonies around Chincoteague Bay are responsible for more than 85% of the seaside declines. Declines within the upper Bay are primarily due to losses on Watts Island. During the 2003 survey a new colony of 80 pairs was discovered on a small marsh islet within the Guinea Marshes of Gloucester County. This is the first breeding record for this species along the western shore for more than 40 years.

Tricolored Heron – The Tricolored Heron was first documented to nest in Virginia when breeding birds were discovered on the seaside of the Delmarva in 1941 (Murray 1952). Colonization of Virginia was part of a broader, northward range expansion that occurred between the 1940s and 1970s (Ogden 1978). In Virginia, the population apparently increased to a high that reached a plateau during the 1950's through the 1970s (Erwin and Korschgen 1979). The species has declined on the barrier islands since that time (Williams et al. 1990). The population estimate of 1993 (Watts and Byrd 1998) was more than 50% reduced from that of the mid-1970s (Custer and Osborn 1977). Between 1993 and 2003, the population declined by 34%. Nearly all of this decline is accounted for by losses in the Chincoteague Bay heronries. Nesting birds on the Chesapeake Bay islands have been stable. Despite the loss of the Fisherman Island colony, birds on the barrier islands have shown a small increase between 1993 and 2003 (although estimate for 2003 was considerably higher than recent years).

Little Blue Heron – Little Blue Herons were one of the most abundant waders along the Atlantic Coast from the 1930s to the 1950s (Ogden 1978). Historic breeding records for this species exist for all of the geographic regions of coastal Virginia (Grey 1950, Murray 1952, Abbott 1955). The species declined dramatically from the 1950s to the 1970s (Erwin and Korschgen 1979) and is now found only on the seaside of the Delmarva Peninsula and within 3 colonies on Chesapeake Bay islands. From 1993 to 2003, Little Blue Herons declined by an estimated 17%. Virtually all of this decline was due to losses within the barrier island heronries. The loss of the Fisherman Island heronry accounted for approximately half of this decline. The additional loss of the species from the Chimney Pole Marsh heronry and declines in the Cobb Island heronry account for most of the remainder.

Cattle Egret – The Cattle Egret was first found breeding in Virginia in 1961 (Scott and Cutler 1961). Colonization of Virginia was part of a rapid, broad-front range expansion that followed first establishment in North America in 1953 (Crosby 1972, Telfair 1994). The Virginia population increased rapidly during the 1960s. Although there has been considerable year to year variation on the barrier islands, numbers have declined since the mid-1970s and precipitously since the mid-1990s. Cattle Egrets experienced a dramatic decline between 1993 and 2003 within all breeding areas. Only 20 pairs were detected on islands within the Chesapeake Bay. Birds

disappeared from the Hopewell colony on the James River in the mid-1990s and have never returned. Most of the declines documented on the seaside were within the extensive heronries in Chincoteague Bay.

Green Heron – Green Herons nest widely throughout the Coastal Plain. Due to their broad distribution and cryptic coloration, none of the colonial waterbird surveys have adequately covered this species. Population estimates are inadequate to assess trends outside of the heronries that are surveyed regularly. Within the heronries that are surveyed regularly, Green Herons have declined dramatically within both the barrier island/lagoon system and the Chesapeake Bay islands. More moderate declines were documented in the traditional colonies within urban areas.

Black-crowned Night Heron – The breeding population of Black-crowned Night Herons in coastal Virginia declined by an estimated 80% between 1975 (Custer and Osborn 1977) and 1993 (Watts and Byrd 1998). Within the barrier island/lagoon system, this trend continued through the 1998 survey (Truitt and Schwab 2001). The increase observed during the 2003 survey is not consistent with recent trends after 1998. Numbers nesting on the island of the Chesapeake Bay declined over this period. Comparison of 1992 and 2003 for the barrier islands suggests that the species has been stable over this time period (2003 was an exceptional year compared to other recent years). The only real increase detected was within mixed heronries around Chincoteague Bay.

Yellow-crowned Night Heron – The Yellow-crowned Night Heron likely bred in Virginia in the 1800s but was apparently absent by the early 1900s. The first modern breeding record for Virginia was in 1947 (Darden 1947). This event corresponds with a range expansion from the southeast northward to New England (Watts 1995). In Virginia, Yellow-crowns increased within urban areas of Norfolk, Hampton, Virginia Beach, and Portsmouth at least through the early 1990s (Watts unpublished data). Since 1993, the population has declined by nearly 38%. This decline is evident within all regions that supported birds in 1993. Pairs are absent or much reduced within many of the urban neighborhoods where they were documented in the 1980s and early 1990s (Watts unpublished data). The population on the barrier islands has declined since the mid-1970s and Yellow-crowns are now rare breeders. Most of the reduction along the seaside over the 10-year period was accounted for by the loss of a significant colony in Chincoteague. Bay islands have only supported a small number of pairs in recent years.

As a group, gulls declined by more than 7.5% over the 10-year period from an estimated 54,702 breeding pairs in 1993 to 50,558 in 2003. Nearly all of this decline was due to losses of Herring Gulls. Great Black-backed Gulls increased considerably over the period and Laughing Gulls declined by less than 1%.

Great Black-backed Gull – In 1970, the Great Black-backed Gull was found breeding on Fisherman Island (Scott and Cutler 1970). This event was part of a broader range expansion that began in the early 1900s and has moved down the Atlantic Coast (Good 1998). Since the 1970s, this species has rapidly colonized other locations on both the seaside and Chesapeake Bay islands. By 1993, most Herring

Gull colonies contained small numbers of Great Black-backed Gulls (Watts and Byrd 1998). Between 1993 and 2003, this species has continued to expand both in numbers and distribution. Colonization of the Hampton Roads Tunnel Island represents the first toe hold in the lower portion of the Bay. This species may be increasing at the expense of other waterbird species.

Herring Gull – A single Herring Gull nest was found on the seaside near Cobb Island in 1948 (Murray 1952). By 1977, 9 colonies containing more than 2,900 pairs were reported (Erwin and Korschgen 1979). The 1993 survey located 35 colonies supporting an estimated 8,800 pairs. The breeding population on the barrier islands apparently reached a high in the late 1980s and has shown evidence of a decline since that time (Williams et al. unpublished data). Between 1993 and 2003 the Coastal Plain population declined by an estimated 49%. Consistent declines were observed in both regions where breeding was documented in 1993. The 2003 survey adds further support to the documented decline within the barrier island/lagoon system between 1993 and 1998 (Truitt and Schwab 2001). In the past 2 years, new colonies have been recorded on the Hampton Roads Tunnel Island (Beck unpublished data) and near the mouth of the York River (this survey). These events are first breeding records for urban and western shore regions of the Coastal Plain.

Laughing Gull – Virginia has apparently been a stronghold for breeding Laughing Gulls for centuries. This species has been the numerically dominant colonial waterbird during all comprehensive surveys conducted of the Coastal Plain. Between 1977 and 1993 there was a considerable increase in population estimates. Between 1993 and 1998, there was a very small decline in numbers on the seaside of the Delmarva Peninsula (Truitt and Schwab 2001). The barrier island population has exhibited considerable variation since the mid-1970s but estimates over the past 15 years have consistently represented only 20-30% of those during the late 1980s. The population estimate seaside in 2003 was consistent with the gradual decline observed in 1998. The 2003 breeding season appeared to be particularly difficult for marsh colonies. A series of extreme tides kept marsh islands within the southern portion of the lagoon system under water for most of the season. Breeding pairs were forced to move to the northern portion of the system where marshes are higher. For this reason, many of the traditional colonies were not occupied and colonies around Chincoteague Bay were much larger than during most years.

As a group, terns declined over the 10-year period by more than 50% from an estimated 17,785 to 8,399 breeding pairs. This was the greatest decline of all the broad taxonomic groups with every species showing declines of more than 15%. Species experiencing the deepest declines were those most closely associated with open beach habitats.

Gull-billed Tern – The Gull-billed Tern has experienced extreme population swings in coastal Virginia over the past 200 years (Parnell et al. 1995). In the mid-1800s this species was considered to be abundant along the barrier islands. By the late 1800s and early 1900s they had been reduced to very low numbers by hunters supplying the millinery trade (Bailey 1913). Throughout the early 1900's numbers remained very low (Austin 1932). By the mid-1970s numbers appear to have

recovered to those comparable with the 1800s. By 1993, the population had declined once again to approximately 20% of 1970s levels (Watts and Byrd 1998). On the seaside, the 1998 and 2003 surveys show continuing declines (Watts and Byrd, 1998, Truitt and Schwab 2001). Between 1993 and 2003 both the estimated population size and the number of occupied colonies had declined by approximately 50%.

Caspian Tern – There is some evidence that Caspian Terns once bred in greater numbers along the Virginia barrier islands than they have from 1900 to present (reviewed by Weske et al. 1977). Eggging and hunting apparently reduced their numbers in the 1880s to a low from which they have never fully recovered. Since 1900, Caspians have been documented in very low numbers breeding in scattered locations along the seaside and occasionally on Chesapeake Bay islands. They appear to be present consistently since the mid-1970s. In 1993 only 7 pairs were documented in 5 locations. During the 2003 survey, only a single pair was documented. Although the Virginia population of Caspians appears to be very small in recent decades, it is also likely that this species is not well surveyed. Unlike Royal and Sandwich Terns that nest in large conspicuous colonies, Caspians often nest as single pairs on shell piles in the lagoon system or within small colonies of other smaller terns.

Royal Tern – In Virginia, Royal Terns have apparently always been the most abundant of the large terns. Like many of the other terns, their numbers have fluctuated widely through the years due to natural and human perturbations. This species also appears to move over a larger spatial scale such that local population patterns may reflect movements rather than population changes. This possibility is supported by wide fluctuations in adjacent states (D. Brinker, S. Cameron unpublished data). Royal Terns have declined on the barrier islands since the early 1980s (Williams et al., unpublished data). The population estimate for the broader Coastal Plain in 1993 was comparable to estimates from the mid-1970s (Erwin and Korschgen 1979). Since 1993, the number of breeding pairs on both the seaside and on the Chesapeake Bay islands has declined dramatically. However, this is in contrast to a slight increase in numbers on the seaside between 1993 and 1995 (Truitt and Schwab 2001).

Sandwich Tern – Virginia and occasionally Maryland represent the northern range limit for breeding Sandwich Terns. There is no evidence that this species was ever a common breeder in Virginia. Scattered records in the late 1800s and early 1900s imply that this species was an uncommon nester associated with Royal Tern colonies on the barrier islands (records reviewed by Weske et al. 1977). There is a paucity of reports throughout the middle 1900s until the late 1960s when the species was discovered nesting again on the barrier islands (Buckley and Buckley 1968). Breeding has been consistent on the barrier islands since the mid-1970s but has involved relatively few individuals. Numbers documented during the annual barrier island survey have fluctuated widely since the mid-1970s (Williams et al. unpublished data). The decline from 30 pairs in 1993 to 7 pairs in 2003 is within the range of annual variation.

Forster's Tern – Like many of the other colonial species that nested historically in coastal Virginia, Forster's Terns were greatly impacted by market hunting from the

1870s though approximately 1910 (Howell 1911, Austin 1932). Due to their nesting habits, the status of Forster's Terns was less known compared to other tern species. Forster's nest in scattered colonies within the lagoon system on wrack deposited in the marshes or on other topographic highs. Their distributions are subject to change depending on the availability of nesting substrate. This makes them difficult to survey effectively. The first comprehensive survey of Forster's was in 1977 (Erwin and Korschgen 1977). By 1993, numbers appeared to have doubled (Watts and Byrd 1998). Between 1993 and 2003 estimated population size declined by more than 15%. However, this species is particularly vulnerable to high tides. Tidal inundation within the lagoon system during the breeding season of 2003 was well above normal with much of the southern portion being underwater for extended periods of time. How these weather events may have influence the survey is not known.

Common Tern – Historically, the Common Tern nested throughout coastal Virginia wherever there was suitable substrate away from predators. Like many of the other species, Common Terns were hunted to very low numbers by the turn of the 20th century but there were signs of recovery by the early 1930s (Austin 1932). Since the 1960s Common Tern colonies have been documented in many areas of the Coastal Plain. However, over the past 20 years colonies have disappeared from the western shore and lower tidewater. Since the 1980s, Common Terns have shown consistent declines on the barrier islands (Williams et al. unpublished data). However declines on the islands were compensated for by the formation of the largest colony in the state on the Hampton Roads Tunnel Island such that estimates from 1977 (Erwin and Korschgen 1979) and 1993 (Watts and Byrd 1998) were comparable. Between 1993 and 2003, Common Terns declined by more than 70% in coastal Virginia. Considerable declines were documented in all 3 geographic regions that supported colonies in 1993. Much of the overall decline was accounted for by the recent losses within the tunnel island colony. The recent invasion of this site by Laughing Gulls has reduced the Common Tern population by more than 75%. This loss was not absorbed in other regions.

Least Tern – Historically, Least Tern colonies have been documented throughout many areas of coastal Virginia including up major tributaries to near tidal fresh waters. Abundant on the barrier islands this species was hunted relentlessly during the late 1800s to near extirpation. After release from hunting pressures, Least Terns rebounded rapidly. Numbers appear to have reached a high in the early 1980s and have declined steadily since that time (Beck et al. 1990). Between 1993 and 2003 the population has declined 28% from 1171 to 843 breeding pairs. Although there have been modest declines on the barrier islands over this time, most of this decline is accounted for by a drop in the Grandview Beach and Craney Island colonies. A large amount of unoccupied habitat remains on both the western shore and along the barrier islands. Human disturbance and predation pressure appear to have made these areas unsuitable.

As a group, the three remaining waterbird species examined have increased more than 26% from 3,820 to 4,827 breeding pairs. This overall increase reflects the fact that both Double-crested Cormorants and Brown Pelicans are recent colonizers

that are rapidly expanding. This increase masks the substantial decline in Black Skimmers.

Black Skimmer – The Black Skimmer appears to have been a common nester on the barrier islands for as far back as records are available. Due to their coloration, skimmers were not valued in the millinery trade and so were not hunted as actively as many of the other beach-nesting species. They also were favored by the locals and so did not experience the same degree of pressure from eggers. From most accounts, Black Skimmers were one of the numerically dominant species on the barrier islands throughout most of the 20th century. However, between the mid-1970s and the 1990s numbers on the barrier islands were reduced by 70%. This decline has continued between 1993 and 2003 as the coastal population declined 41% from an estimated 3,098 to 1,828 breeding pairs. This decline has been consistent for all geographic regions supporting colonies. Numbers on the Hampton Roads Tunnel Island have declined in response to the Laughing Gull invasion. Numbers on Great Fox Island and surrounding areas in the upper Chesapeake Bay were reduced in 2003 compared to 1993. Productivity on the barrier island has been very poor for many years. In recent years, mammalian predators appear to be limiting both distribution and productivity on the islands.

Double-crested Cormorant – Breeding of the Double-crested Cormorant in Virginia was first confirmed in 1978 on a small vegetated island in the James River near Hopewell (Scott 1978). Range wide cormorants have experienced wide fluctuations in numbers and distribution throughout the 20th century (Hatch 1984). Colonization of Virginia represents an expansion beyond the historic range following a low during the DDT era (1940s-1972) (Hatch and Weseloh 1999). After 1984, the Virginia population expanded rapidly to 5 colonies by 1995 containing more than 400 pairs (Watts and Bradshaw 1996). The seaside of the Delmarva was not colonized until 1995. Between 1993 and 2003 the population increased by 278% from 354 to 1,338 pairs. The majority of this increase is accounted for by the rapid expansion of the Shanks Island colony. Six pairs were first found nesting in the Brown Pelican colony in 1993. By 2003, this colony contained 907 pairs.

Brown Pelican – The Brown Pelican was first found breeding in Virginia on Fisherman Island in 1987 (Williams 1989). During this same year, birds were also found nesting on Metomkin Island (Williams 1989). Since that year, breeding on the barrier islands has been restricted to Fisherman Island. In 1992, an additional colony was formed in the upper Chesapeake Bay on Shanks Island north of Tangier (Brinker, pers. Comm.). The Fisherman and Shanks Island colonies have been the only breeding locations known since 1992. Colonization of Virginia represents a northward range expansion from North Carolina that extends beyond the historic range and follows recovery of southeastern populations from contaminants. Since its discovery, the Shanks Island colony has grown exponentially apparently fueled by continued immigration. In 1993, there were only 53 pairs documented in this colony (Watts and Byrd 1998). By 1999, the colony supported 913 breeding pairs (Watts 1999). Between 1993 and 2003 the Virginia population increased 351% from an estimated 368 to 1661 breeding pairs. The Fisherman Island colony has increased and then declined over

this time period. Growth in the Shank's Island colony has slowed in the past few years suggesting that it may be reaching capacity.

Sources of Error in Estimates – There are numerous sources of potential error associated with the survey techniques and the population estimates presented above. The first is that some colonies may have gone undetected, leading to an underestimate of population size. The magnitude of this error varies among species but is most severe in species that are widely distributed, nest singly or in small colonies, and are difficult to detect from the air. Population estimates for these species would be greatly improved by extensive ground surveys. For example, extensive ground surveys for Yellow-crowned Night Herons in urban areas increased the known Virginia population by 500% in just 3 years (Watts 1995). However, broad surveys of similar species have not been practical, probably resulting in gross underestimates of population size. For the majority of species examined here, the influence of this source of error is likely small. The obvious exception to this is the Green Heron. This species breeds singly or in small groups throughout the Coastal Plain. Survey approaches used here do not adequately represent status.

A second source of error inherent to the population estimates is observer bias. Number estimates vary among individual observers. Because the same observer may repeatedly make the same errors, variability in the overall estimate is reduced by using the same observer. As mentioned above, all aerial estimates were made by the same individual. Even though several individuals participated in ground surveys, the majority of colonies were surveyed by relatively few individuals. No attempt was made to adjust estimates for observer bias. Accuracy of aerial estimates was assessed in the methods section.

A third source of error is the timing of surveys. Ideally, surveys should be timed to reflect peak breeding activity within colonies. However, peak breeding differs between species and may vary considerably between years and between colonies within years. This uncertainty may be overcome by conducting multiple surveys. Multiple surveys were not practical due to the extent of this study and for many species may be detrimental to breeding success. As mentioned above, nesting phenology was taken into account when designing the survey and when generating population estimates. It is not possible, at this time, to assess the significance of this source of error on overall population estimates.

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**THE VIRGINIA SOCIETY OF ORNITHOLOGY
2006 FORAY:
A FOCUS ON THE NORTHERN SAW-WHET OWL
(*AEGOLIUS ACADICUS*)**

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INTRODUCTION

For the first time in its history, the 2006 Virginia Society of Ornithology Breeding Bird Foray departed from its traditional all-species coverage and instead targeted a single focal species, the Northern Saw-whet Owl (*Aegolius acadicus*). This cavity nesting species is eastern North America's smallest owl. It prefers coniferous forest, but may also be found in mixed or deciduous forest or woodlands (Cannings 1993). Small mammals comprise the majority of its diet (Cannings 1993). During the last decade, Northern Saw-whet Owl fall migration has been monitored by several banding stations at locations across Virginia, including the Eastern Shore, central Piedmont, and Shenandoah Valley. Data gleaned from these stations suggest that Virginia is an important link along these owls' migratory corridor (Brinker et al. 1997; Mellinger pers comm). Past research has also revealed much about habitat use of wintering owls, particularly along the Eastern Shore (Whalen et al. 1997; Churchill and Brinker 2000; Whalen and Watts 2002;).

Far less is known about the distribution of breeding Northern Saw-whet Owls in Virginia. The core of its breeding range in eastern North America extends from southern Ontario, Quebec, and the maritime provinces of Canada to northern Ohio, Pennsylvania, and New Jersey (Cannings 1993). However, peripheral breeding populations have been identified in the southern Appalachians, including high elevation forests in western Virginia. The first record of a successful nesting attempt by a Northern Saw-whet Owl pair in Virginia was reported in 1995 in Highland County, when an active nest was discovered in a nest box intended for northern flying squirrels (Pagels and Baker 1997). Other anecdotal breeding reports or

sightings of juveniles during summer are from such locations as Shenandoah National Park and Mt. Rogers, including apparently unsuccessful nesting attempts in artificial nest boxes (Pagels and Baker 1997).

Given the current scarcity of information about this species in Virginia and its vulnerability to habitat loss, we determined that a more systematic survey of breeding Northern Saw-whet Owls would contribute needed baseline data to support future population assessment and conservation efforts. Furthermore, recent surveys in Maryland and Pennsylvania have found owls in greater abundance and in more varied habitat than expected (Brinker, pers. comm.). Perhaps greater survey effort could similarly reveal a more extensive breeding population than previously thought. Finally, nocturnal species in general have received scant attention during past forays. A foray targeting such a strongly nocturnal species would begin to address this significant void in the collective foray effort.

METHODS

The survey was conducted from April 15 through June 6, 2006. Eighteen participants completed 16 routes by automobile in 13 different counties (Table 1). With the exception of Richmond County, which is located on the Northern Neck, all counties in which counts were conducted were situated along the Blue Ridge or bordered West Virginia. Routes were 6.5k long, with stops approximately 800m apart, and were run during the hours between dusk and midnight. Surveyors stopped at sites that were forested on at least one side of the road and free of human disturbance, especially noise pollution. Each survey stop was 15min long and consisted of audio-playbacks broadcasted for short intervals and alternated with listening periods (Appendix I). Calls were broadcasted so that they could be heard from at least 500m away. A total of 10min and 40sec during each stop was dedicated to watching for closely approaching owls and listening for owl vocalizations. Participants were instructed to avoid conducting surveys during steady rain or under windy (Beaufort scale 4 or greater) or foggy conditions.

RESULTS AND DISCUSSION

Northern Saw-whet Owl responses were detected at fifteen out of 125 total survey stops, a 12% response rate (Table 1). While the peak number of responses occurred in Montgomery County (Table 1), a total of six survey routes, all conducted in different counties, yielded at least one Northern Saw-whet Owl vocal response. The earliest detection occurred on April 28 in Giles County, and the latest was on May 30 in Frederick County (Table 1).

The locations and characteristics of sites where Saw-whet Owls were detected were consistent with previous reports of breeding owls in Virginia (Pagels and Baker 1997). Lack of detections may be attributable not only to absence of owls, but failure of playbacks to elicit responses from territorial pairs. Conversely, if owls were not present at the particular time when a given survey route was conducted, they may have established their territories earlier. Our results nonetheless reinforce prior anecdotal evidence that breeding Northern Saw-whet Owls are more widespread than previously thought.

Table 1. Locations, calendar dates, and detections of Northern Saw-whet Owls in response to call playbacks. Playbacks were conducted at 800m intervals along 6.5km auto routes.

County	Calendar Date	No. of detections
Augusta/Albemarle	May 9	3
Clark	May 10	-
Frederick	May 30	3
Giles	April 28	1
Giles	May 9	1
Greene	April 15	-
Highland	May 9	2
Highland	May 10	-
Highland	May 14	1
Highland	May 15	-
Montgomery	May 6	5
Richmond	May 11	-
Rockingham	June 6	-
Rockingham/Greene	May 18	-
Shenandoah	May 16	-
Warren/Rappahannock	April 22	-

Most current breeding range maps for the Northern Saw-whet Owl show the southeastern extent of their contiguous range as a narrow finger extending south-southwest from western Maryland and into northern West Virginia, and include a separate, isolated breeding population that straddles the border between Tennessee and North Carolina (Cannings 1993; Johnsgard 2002; Alderfer 2006). Our results, in conjunction with published breeding reports from the 1990s, may force a reconfiguration of this species' range map to include a corridor that connects the southern edge of the contiguous breeding population in western Maryland to the isolated pocket along the Appalachian spine to the southwest. Furthermore, our data suggest that this corridor would have to be drawn deeper into western Virginia than any current range map indicates.

This survey was limited in scope, but calls strongly for more extensive monitoring of breeding Northern Saw-whet Owls in Virginia. Populations at the peripheries of a given species' geographical range are often most vulnerable to decline in the face of environmental challenges. Since the Virginia population is situated near the southeastern extreme for the species, it may suffer sooner than other populations from breeding resource changes stemming from such causes as invasive species, deforestation, and global warming. Finally, given positive responses of these owls to nest boxes (Cannings 1993; Pagels and Baker 1997), perhaps greater initiative could be taken to expand nest box availability to increase the frequency of successful nesting attempts.

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Appendix I. The sequence of listening and calling periods on playback tapes used by foray participants during survey road-side stops. The activity of the Period is indicated as either (L) for quiet listening or (P) as observation/listening while the tape is playing owl vocalizations (Gross and Brauning, unpublished Pennsylvania Game Commission technical report).		
Time	Period	Activity
0:00	L	Listen for owl vocalizations (2 minutes)
2:00	P	Tape plays owl vocalization (15 seconds)
2:15	L	Quiet. Listening period (25 seconds)
2:40	P	Tape plays owl vocalization (15 seconds)
2:55	L	Quiet. Listening period (25 seconds)
3:20	P	Tape plays owl vocalization (15 seconds)
3:35	L	Quiet. Listening period (25 seconds)
4:00	P	Tape plays owl vocalization (15 seconds)
4:15	L	Quiet. Listening period (25 seconds)
4:40	P	Tape plays owl vocalization (15 seconds)
4:55	L	Listen for 2 minutes
6:55	P	Calling period. Continuous vocalizations for 3 minutes (15 seconds of calls followed by 2-second breaks).
10:00	L	Quiet. Listening period (5 minutes)
15:00	END	End of survey

THE 2005 BEACH-NESTING AND COLONIAL WATERBIRD SURVEY OF THE VIRGINIA BARRIER ISLANDS

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For the thirty-first consecutive year a comprehensive survey of the beach-nesting and colonial waterbirds of the Virginia barrier islands from Assawoman Island, Accomack County on the north through Fishermans Island, Northampton County on the south was conducted. Parramore Island was not visited. The survey was accomplished 19-22 June 2005 following strategies consistent with those employed since the project was initiated in 1975 (Williams 1976, Williams et al. 1990). A total of 30 colonies with 15,712 adults of 21 species was documented. Table 1 provides an island-by-island summary of the total number of adults for each species, and a 30-year (1975-2004) survey mean. Significant finds for this survey included new nesting sites for Double-crested Cormorant (*Phalacrocorax auritus*), Brown Pelican (*Pelecanus occidentalis*), and White Ibis (*Eudocimus albus*).

The geographic scope of these surveys falls within the larger Eastern Shore seaside complex described as the "barrier island/lagoon system along the seaward margin of the Delmarva Peninsula northward to the Virginia/Maryland boundary line" (Watts and Byrd 1998, 2004), encompassing the Virginia portion of Assateague Island, all of Wallops Island, and the Chincoteague marshes of northeastern

Accomack County. The data presented herein must be considered within this broader context. Consequently, comparisons, where appropriate, will be made between this survey and seaside surveys conducted in 1993 (Watts and Byrd 1998), 1998 (Truitt and Schwab 2001), and 2003 (Watts and Byrd 2004).

Double-crested Cormorants nested for the eighth consecutive year on Chimney Pole Marsh, Northampton County. Seventeen active nests were located 22 June including one 5-egg nest and one 3-egg nest. The remaining 15 nests had large downy to feathered young. This is the highest nest count for this site, the previous high being 14 in 2004 (Williams et al. 2005). Unprecedented were eight active nests found 20 June on Club House Point in Wachapreague Inlet, Accomack County. These included four 2-egg nests, two 1-egg nests, and 2 nests with 2 downy chicks each. This site marks the third for Eastern Shore seaside, the first being 5 nests in Chincoteague Bay, Accomack County in 1995 (Watts and Bradshaw 1996).

Brown Pelicans continued to nest on the northeast corner of Fishermans Island where the adult count 19 June was 1080. This was a 127% increase over the 476 found in 2004 (Williams et al. 2005), and above the survey mean of 947. Highly significant were nesting Brown Pelicans on Sandy Island, Northampton County 22 June, a first for the species at that location. The colony site had 53 adults and 13 nests, one of which contained a single egg. Since 1992 the known Virginia Brown Pelican breeding sites have been in the upper Chesapeake Bay on Shanks Island, Accomack County and Fishermans Island (Watts and Byrd 2004). The species nested on Metompkin Island, Accomack County in 1987 (Williams 1989), and 1992 (Williams et al. 1993).

The number of Great Egrets (*Ardea alba*) (356), though down by 30% from the 2004 total of 526 (Williams et al. 2005), was well within the 30-year survey mean of 383. Between 1993-1998 the seaside population experienced a 10% increase (Truitt and Schwab 2001). However, by 2003 the population had declined 47.2% (Watts and Byrd 2004), much of that attrition due to the disappearance of the Fishermans Island heronry in 2002 (Williams et al. 2003, Watts and Byrd 2004).

This survey's count of 105 Snowy Egrets (*Egretta thula*) was down 56% from the 2004 count of 240, and well below the survey mean of 468. Snowy Egret is listed in the North American Waterbird Conservation Plan (Kushlan et al. 2002) as High Concern within the Western Hemisphere - "populations known or thought to be declining and have some other known or potential threat". During the 1993-1998 interval the seaside population declined by 35% (Truitt and Schwab 2001) and by 2003 the decline reached 66.5% (Watts and Byrd 2004). The abandonment of the Fishermans Island heronry was a contributed to that decline.

Little Blue Heron (*E. caerulea*) and Tricolored Heron (*E. tricolor*) are also Western Hemispheric High Concern species (Kushlan et al. 2002). This survey found 44 Little Blue Herons and 225 Tricolored Herons, both well below their respective historical survey means of 118 and 406. The former species' seaside population declined 24.5% between 1993-2003, the latter declined 36% (Watts and Byrd 2004).

The survey encountered only 4 nesting Cattle Egrets (*Bubulcus ibis*), 97% below the survey mean of 152. Once a prominent member of seaside mixed species heronries it declined 82.9% from 1993 to 2003 (Watts and Byrd 2004).

The survey found 446 breeding Black-crowned Night-Herons (*Nycticorax nycticorax*). Although this count was 36% below the 30-year mean of 694, it marked a 3-year positive trend, part of the species' 33.5% seaside population increase between 1993-2003 (Watts and Byrd 2004).

White Ibis have shown a population doubling time of 4.1 years (Williams et al. in press) since the species first documented Virginia nesting on Fishermans Island in 1977 (Frohring and Beck 1978). This survey's total of 141 White Ibis, the highest count for the long-term survey for this species, was 541% above the historical mean of 22, reflective of the species' 7600% population increase between 1993-2003 (Watts and Byrd 2004).

White Ibis colonized a new nesting site this season in the small bifurcated mixed species heronry on Chimney Pole Marsh, Northampton County. Thirteen adults were noted at active nests 22 June. This is the fourth known breeding location for the species, all within Northampton County. In addition to Fishermans Island, it was noted in a Hog Island heronry in 1977, 1979, and 1981 (Williams et al. unpubl. data), in a Cobb Island heronry in 1983 (Williams unpubl. data) and 1998 (Williams et al. 2000), and annually since 2000, and on Wreck Island in 1982 (Williams et al. unpubl. data), 1991 (Williams et al. 1992), and annually since 2001.

Although 47% below the 30-year mean of 435 this survey's 232 Glossy Ibis (*Plegadis falcinellus*) was the highest since 454 were recorded in 1996 (Williams et al. 1997). Between 1993-2003 the species' seaside population declined by 14.1% (Watts and Byrd 2004).

The 22 Wilson's Plovers (*Charadrius wilsonia*) recorded for this survey was 55% below the survey mean of 49 and was the lowest count since 1985 when 18 were found (Williams et al. 1990). All birds located this year were on the survey's three northernmost islands-Assawoman (4), Metompkin (6), and Cedar (12).

Piping Plovers (*C. melodus*) had the long term survey's second highest total with 172 adults, 46% above the survey mean of 119. Nine young were observed and two 4-egg nests were located all on Metompkin Island 19 June. Eighty-five percent of birds were from the three northernmost islands as follows: Assawoman Island 26, Metompkin Island 57, Cedar Island 63. Additional birds were found on Ship Shoal Island (11), Myrtle Island (13), and Smith Island (2) 20 June.

American Oystercatchers (*Haematopus palliatus*) retreated 35% from their forward momentum of 777 in 2004 (Williams et al. 2005) with a count of 504.

The survey results showed a mixed pattern among gull species. This year's 2270 Laughing Gulls (*Larus atricilla*), all on Wreck Island, was 76% below the survey mean of 9356. This species posted a -6.1% change from 1993-2003 (Watts and Byrd 2004). The Herring Gull (*L. argentatus*) total (3187) was well within the survey mean of 3116, a trend not reflective of its 44% seaside population decline between 1993-2003 (Watts and Byrd 2004).

Great Black-backed Gulls (*L. marinus*) first bred in Virginia in 1970 on Fisherman's Island (Scott and Cutler 1970). Since then the species' breeding population increased dramatically. The count of 506 for this survey was 91% above the survey mean of 265, commensurate with its 98.9% seaside population increase between 1993-2003 (Watts and Byrd 2004).

Gull-billed Tern (*Gelochelidon nilotica*) is a High Concern species throughout its range (Kushlan et al. 2002). For this long-term survey the species reached an all-time low of 42 adults in 2001 (Williams et al. 2002). This year's count of 228 was a 38% increase over the 2004 count of 165 (Williams et al 2005), though it was 59% below the 30-year survey mean, and reflective of its 49.7% seaside population decline between 1993-2003 (Watts and Byrd 2004).

For the ninth consecutive survey no nesting Caspian Terns (*Hydroprogne caspia*) were found.

This year's tally of 3300 Royal Terns (*Thalasseus maxima*), all on Wreck Island, was 28% below the survey's 30-year mean of 4567. It is noteworthy that the seaside population increased 6% between 1993-1998 (Truitt and Schwab 2001) then experienced a subsequent reversal that resulted in a -36.7% change by 2003 (Watts and Byrd 2004).

Sandwich Terns (*T. sandwicensis*) posted their second highest count (134) in the survey's history, all from the Wreck Island Royal Tern colony site. This total was 379% above the 30-year survey mean of 28. The previous high of 140 in 1983 (Williams et al. 1990) was dramatically eclipsed in July 2004 when 222 pairs were recorded as part of a Wreck Island banding foray (Williams et al. 2005, D. Field, pers comm.). During the 1993-2003 time period the species showed a -76.7% seaside population change (Watts and Byrd 2004). Common Terns (*S. hirundo*), with a total of 755 this year, gained 17% over the previous year (643) (Williams et al. 2005), yet remained well below the long-term survey mean of 2698. The species seaside population declined 74% between 1993-2003. A single Forster's Tern (*S. forsteri*) colony of 14 birds was found on Metompkin Island 19 June.

Least Terns (*Sternula antillarum*) are also a Western Hemisphere species of High Concern (Kushlan et al. 2002). The seaside breeding population declined 5.9% between 1993-2003 (Watts and Byrd (2004). This survey's total of 571 was 16% below the 30-year survey mean of 684.

The Black Skimmer (*Rynchops niger*) count (2023) was a 39% increase over 2004 (1458) (Williams et al. 2005), an indication the species may be reversing a -34.1% seaside population trend that occurred between 1993-2003 (Watts and Byrd 2004).

Additional species of note included 2 Wilson's Storm-Petrels (*Oceanites oceanicus*) 21 June off Myrtle Island, and one off Hog Island 22 June. It is not unusual to encounter Clapper Rail (*Rallus longirostris*) nests during our surveys. However, to find them on high sandy beaches seems quite out of the ordinary. Such was the case for this survey. Five nests were located on 19 June including a 9-egg nest on Assawoman Island, 3 on Metompkin Island, with 6, 10 and 13 eggs respectively, and one on Wreck Island with 11 eggs. All of these nests were in beach grass (*Ammophila arenaria*) clumps >50m away from tidal marsh. Thirteen Willet (*Tringa semipalmata*) nests were found, all on 20 June, including three 4-egg nests on Metompkin Island and ten 4-egg nests on Cedar Island. A Seaside Sparrow (*Ammodramus maritimus*) nest with 3 eggs was located 20 June on Metompkin Island. Two Chuck-will's-widows (*Caprimulgus carolinensis*) sang nightly 20 and 21 June on Hog Island.

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THE RATIO OF SHARP-SHINNED HAWKS TO COOPER'S HAWKS AT THE KIPTOPEKE HAWKWATCH, 1995-2006

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Sharp-shinned Hawks (*Accipiter striatus*) and Cooper's Hawks (*Accipiter cooperii*) are common late summer and fall migrants recorded at the Kiptopeke Hawkwatch, which is located at Kiptopeke State Park, six kilometers north of the tip of the Delmarva Peninsula, on Virginia's Eastern Shore. The hawkwatch was established in 1977 and operated yearly with volunteers from 1977 until 1995 (Williams 2002). Beginning in 1995, full-time professional staff have been hired by Coastal Virginia Wildlife Observatory (CVWO), which greatly increased the daily and seasonal coverage time from the volunteer effort. CVWO hawkwatch staff record migrating hawks daily from 1 September through 30 November, usually from about 7 a.m. to 7 p.m. (Eastern Standard Time) early in the season with coverage decreasing to about 8 a.m. to 3 p.m. by mid-November, as the flights diminish.

The ratio of Sharp-shinned Hawks (SS) to Cooper's Hawks (CH) at Kiptopeke has been highly variable from 1995 through 2006 when full-time professional staff were employed (Table 1). The ratio was even more variable during the period 1977 to 1995, but due to the non-standardized coverage of the volunteer effort, the ratio for that period will not be addressed here.

In addition to the professional staff, a corps of experienced volunteers is present at the hawkwatch regularly, though not every day, throughout the season, which helps to mitigate the bias and different abilities of the official hawkwatchers. During the 12 years of this study the hawkwatchers have been Brian Sullivan (1995-1997), Marshall Iliff (1998), Sue Hopkins (1999), Calvin Brennan (2000-2001), Zach Smith (2002), Jen Ottinger (2003), Sam Stuart (2004-2005) and Scott Mc Connell (2006).

A gradual increase in the SS:CH ratio was noted for 1995-1997, then a trend toward a much lower ratio (Table 1). What could account for the differences in the ratios, which range from a high of more than 10 SS:CH to a low of less than 3 SS:CH? Are there fewer SS or more CH in eastern North America? Assessing populations of hawks is difficult, though annual hawkwatches are a major source of data for drawing conclusions. The total numbers reflect a huge decrease for SS, except for the spike in 1999, but the CH numbers have been much more steady. The CH average for the first five years of the study period is 2,352, which compares to 1,921 for the average of the last five years of the study period, an 18% decline. By contrast, the SS average for the first five years of the study period is 19,127, compared to only 6,268 for the last five years of the study period, a decline of 67%.

One rather humbling explanation for the variance in the SS:CH ratio might be that hawkwatchers, including the author, who also volunteers at Kiptopeke, have continued

TABLE 1. Total Sharp-shinned Hawks and Cooper's Hawks and ratio of SS:CH at Kiptopeke Hawkwatch, 1995-2006.

Year	Sharp-shinned	Cooper's	Ratio
1995	26,355	3,625	7.3:1
1996	23,105	2,511	9.2:1
1997	24,137	2,364	10.2:1
1998	7,256	1,360	5.3:1
1999	14,781	1,902	7.8:1
2000	5,970	1,575	3.8:1
2001	8,998	1,968	4.6:1
2002	5,625	1,822	3.1:1
2003	6,109	1,634	3.7:1
2004	5,324	1,977	2.7:1
2005	6,645	2,301	2.9:1
2006	7,639	1,871	4.1:1
Total	141,944	24,910	5.7

to learn field marks throughout their hawkwatching "careers," as field guides and journal articles have become more refined. While the small male Sharp-shinned and large female Cooper's hawks are generally easier to identify, a standard saying is that "male Cooper's Hawks are probably the most misidentified birds in North America." Separating male Cooper's Hawks from female Sharp-shinned Hawks is one of the toughest assignments for a hawkwatcher. Have Cooper's Hawks appeared to become more "common" as birders have learned to identify them?

Another complicating factor is that an official hawk counter may decide to identify a hawk based on the "best fit" approach, taking into account all field marks seen well or may take the "unidentified" approach, where a species label is not assigned. The "unidentified" category numbers, however, are very small compared to season totals and not likely to influence analysis.

As another possible explanation, Sharp-shinned Hawk population decline has been linked to the decline of songbirds and their food source (Bolgiano 2006). This decline was in turn tied to the end of an infestation of spruce budworm, a songbird food source and the concurrent destruction of large areas of northern forests (Bolgiano 2004).

There is also a hawk banding station at Kiptopeke (Hodnett 2002) and banding results for 1995-2005 show a very consistent ratio of captures of SS:CH, except for a rather high ratio in 2001 and a rather low ratio in 2004, the only year that more CH than SS were captured (Table 2). A very important consideration, however, is that unlike the hawkwatch, which counts all passing hawks seen, the hawk banding station captures birds based on such variables as the species' characteristics of aggressiveness and the availability of various sizes of lure birds used. The ratio of SS:CH captures is very low, compared to that of the hawkwatch. Hawk capture data was not included for 2006, as the hours were greatly reduced.

There have been habitat changes at Kiptopeke State Park during the period 1995-2006, most notably that trees have grown taller, which has reduced visibility somewhat at the hawkwatch. There has also been construction of several lodges, but the change in the overall appearance of the area's landscape is not dramatic and probably does

TABLE 2. Total Sharp-shinned Hawks and Cooper's Hawks captured at Kiptopeke Hawk Banding Station and ratio of SS:CH captures, 1995-2005.

Year	Sharp-shinned	Cooper's	Ratio
1995	350	241	1.5:1
1996	436	165	2.6:1
1997	528	313	1.7:1
1998	353	232	1.5:1
1999	528	341	1.5:1
2000	262	145	1.8:1
2001	317	89	3.6:1
2002	292	100	2.9:1
2003	225	150	1.5:1
2004	113	133	0.8:1
2005	249	156	1.6:1
Total	3653	2065	1.8:1

not favor either SS or CH or account for any increase or decrease of either SS or CH on their historic migratory routes at Kiptopeke.

Further analysis of accipiter numbers at North American hawkwatch sites, together with data from breeding bird surveys and information from the new Raptor Population Index studies, sponsored by the Hawk Migration Association of North America will continue to shed light on the population status. Such work will also help formulate possible conservation strategies of Sharp-shinned Hawks and Cooper's Hawks.

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A HISTORY OF THE VIRGINIA SOCIETY OF ORNITHOLOGY

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ABSTRACT

The Virginia Society of Ornithology is now over 75 years old, and the original charter membership of 42 has increased to approximately 800. The purpose of the organization, as stated at the initial meeting held on December 7, 1929 at Lynchburg, was to provide a means of drawing together bird students from across the state and to gather and share information on the birds of Virginia. The journal, *The Raven*, was first issued in January of 1930 and has remained the primary method of timely dissemination of information on bird distribution and occurrence. The Virginia Society of Ornithology (VSO) sponsors the publication of annotated checklists (the first in 1952), conducts field trips and forays, provides scholarships and awards for ornithological studies, recognizes outstanding conservation efforts within the state, and evaluates bird sightings through the Virginia Avian Records Committee. This article summarizes the contributions of the founders of the organization and provides a synopsis of the activities of the Virginia Society of Ornithology.

THE INCEPTION OF THE VSO

In October of 1929, Ruskin S. Freer, Professor of Biology at Lynchburg College, sent out letters to about 70 people who might have an interest in establishing an organization devoted to the study of birdlife in Virginia. Mary Dise, of Glen Rock, Pennsylvania (formerly of Amherst County) had supplied 15 of those names and Katherine Stuart, of Alexandria, had furnished eight names. About 35 replies were received. As Freer (1930, p. 3) stated, "the idea toward the formation of such a group grew out of the writer's desire to make the acquaintance of other ornithologists."

Although comments were generally positive, some respondents were pessimistic about such an organization due to the small number of bird students in the state and the relatively large distances separating them. However, it was felt that these problems could be overcome by the publication of a monthly bulletin and the establishment of local groups within the state. In consultation with Joseph J. Murray, of Lexington, and Merriam G. Lewis, of Rockbridge County, Ruskin Freer sent out invitations to attend an organizational meeting set for 7 December 1929 at Lynchburg.

At the time, it was felt that if six to eight people attended the meeting, the effort to establish an organization for bird study would be successful. When the meeting convened at 10:00 am in Westover Hall on the campus of Lynchburg College, 18 persons were present. M. G. Lewis presented a talk on the past, present, and future of bird study in Virginia.

Although the President's Report (Freer, 1930, p. 3) summarizing this initial meeting states that "It was decided to organize as the Virginia Society of Ornithologists," the name was subsequently always given as The Virginia Society of Ornithology (VSO). Officers elected on 7 December 1929 were Ruskin S. Freer - President, Charles O. Handley - Vice President, Lena B. Henderson - Secretary-Treasurer, and Joseph J. Murray, Editor.

In addition to the above mentioned officers, others attending the initial meeting in Lynchburg were Ralph M. Brown, Mrs. C. L. Burgess, Robert Carroll, J. T. Dameron, Bertha Daniel, Rosa Gilliam, Florence Hague, J. I. Hamaker, M. G. Lewis, Mary Percy, Grace Taylor, and Mrs. W. E. Ward. The period for Charter Membership was held open until April 1930, and this membership list is included in Appendix 1. Annual membership dues were set at \$1.50.

The purpose of the Virginia Society of Ornithology as formulated at the organizational meeting was twofold: first, to provide a means of drawing together bird students from across the state so that they might get to know and help one another, and second to gather and disseminate information on the birds of Virginia. A committee was appointed to work on the formation of a constitution, and this constitution was approved in 1931.

The name of the bulletin, *The Raven*, was suggested by Charles Handley and was immediately accepted. As Handley stated in proposing the name, "The Raven is a bird of wisdom—as canny as the Crow—yet it has not flourished under the advance of the white man into its nesting grounds. It is a bird of the crags and remote places and carries with it a breath of the wilderness" (Murray, 1930). The first issue of *The Raven* appeared in January 1930. A grant of \$50 from the Commission of Game and Inland Fisheries made it possible to mail the journal to a number of people who might have some interest in the new organization. According to J. J. Murray, (Murray, 1964) at that time, only two southern states were publishing ornithological journals (those journals were the *Kentucky Warbler* and the *Florida Naturalist*).

OFFICERS AND ORGANIZATION

At the organizational meeting in 1929, the four offices of president, vice-president, secretary-treasurer and editor were established. The constitution, approved at the first annual meeting, also made a provision for two members of an executive committee. In 1931, the office of secretary-treasurer was split into two offices. In 1941, the number of persons serving on the executive committee was increased to six, and increased to nine in 1951. The office of Newsletter Editor was added in 1985 and that of Membership Secretary in 2006. For a complete list of all officers of the Virginia Society of Ornithology, see Appendix 2.

In 1965, the question of tax-exempt status for the Virginia Society of Ornithology was discussed. After consultation with Harry Frazier, III (a VSO member who practiced law in Richmond), the decision was made to pursue incorporation as a non-profit, scientific organization. On June 28, 1968 a charter of incorporation was received from the State Corporation Commission. Following incorporation, the Executive Committee was designated as the Board of Directors.

LOCAL CHAPTERS

In the first issue of the VSO journal *The Raven*, the role of local bird clubs was mentioned. It was hoped that these groups would facilitate the study of birds on a regional level and provide the opportunity for those who were interested in birds to share information. As early as 1930 informal groups were in place at Lynchburg, Richmond, Norfolk, and Alexandria. In a March 1944 article in *The Raven*, Ruskin Freer also mentions groups that had been formed at Roanoke and Eastern Mennonite College at Harrisonburg.

Over the years, loosely organized groups sometimes changed directions, temporarily suspended or disbanded operation, making it difficult to trace the history of some of the clubs within the state. However, today 24 local bird clubs representing a wide variety of geographical areas are affiliated with the Virginia Society of Ornithology. The local chapters of the VSO are listed in Appendix 3.

Beginning in the late 1960s, Myriam P. Moore devoted a great deal of time and energy toward cultivating increased participation of the local bird clubs in the activities of the Virginia Society of Ornithology. She traveled to many of the clubs, making presentations on the work of the state society and instituted Local Chapter workshops at the VSO annual meetings. Clubs were encouraged to attend field trips and local activities were featured in the VSO Newsletter.

PUBLICATIONS

The Raven - The journal, *The Raven*, has always been the primary publication of the Virginia Society of Ornithology. It was initially published on a monthly basis in 8 1/2 by 11 inch mimeographed format. In 1931, the August and September issues were combined, and from that time on the journal was published either monthly, or by combining two months, through Volume 32 (1961). Successive numbering of pages throughout a volume was started in 1937.

Beginning with Volume 33 (1962) *The Raven* format was changed to that of a standard journal and it was published quarterly through 1983. Difficulties in meeting a timely publication schedule resulted in annual editions of *The Raven* from 1984 through 1990. Since 1991, *The Raven* has been issued on a semi-annual basis. Over the 77-year history of the Virginia Society of Ornithology, only six people have served as Editor. Joseph J. Murray is the record holder for longevity, beginning with Volume 1, Number 1 (1930) and continuing through Volume 40, Number 2 (1969). He was succeeded by Frederic R. Scott, who served through 1988. For a complete list of the editors, see Appendix 2.

From its inception, the purpose of *The Raven* was to promote a better understanding of bird distribution and occurrence in Virginia. Field notes from across the state were included in virtually all of the early volumes. However, other papers of interest were also featured including regional annotated checklists, ecological studies, life histories of various species, and other works pertinent to ornithology in the state. Occasionally papers not related to Virginia ornithology were published, the first by J. Adger Smyth on birds observed during a trip to Florida in the February-March 1934 issue. (Smyth, 1934)

The VSO Newsletter - The VSO Newsletter was first issued in 1956. Originally conceived of as simply a means of announcing details about field trips or meetings, initially there was no publication schedule and the Newsletter often consisted of a one or two-page letter to the membership. Under the guidance of Myriam P. Moore, the Newsletter grew both in scope and content. By the mid 1970s The Newsletter was issued quarterly and in addition to information about upcoming events, featured articles on the Local Chapter bird clubs throughout the state. In 1985, the position of Newsletter Editor was added as an officer of the VSO.

Virginia Birds - In 2004, another journal, Virginia Birds, was included in the publication schedule of the Virginia Society of Ornithology. Linda Fields and Alan Schreck volunteered to edit this quarterly journal of bird sightings in the state. Eight regional editors compile and submit reports of interesting records to help develop a more clear idea of distribution and the changing status of species.

Checklists and Monographs - Since the inception of the Virginia Society of Ornithology, J. J. Murray had been interested in publication of an annotated checklist of the birds of Virginia. In the February 1931 issue of The Raven, he included a checklist of the birds from nine regions of the state that had been compiled by individual members of the society. In a short article that appeared in the January 1934 issue, Ruskin Freer noted that J. J. Murray was "at work on the manuscript of a new book on the birds of Virginia." (Freer, 1934)

In 1952, the Virginia Society of Ornithology published A Checklist of the Birds of Virginia by J. J. Murray. In this 113-page publication, Murray included a brief history of ornithology in Virginia, a description of the physical features and faunal zones, and an annotated checklist of the species found in the state. In the preface, Murray states that his aim is to show in brief "what is known about the status of each bird on the Virginia list." Later known as the "Green Book" (due to the color of the cover), Murray's work was the foundation of knowledge about bird distribution and status throughout the state for the next 25 years. Although this publication is not among the Virginia Society of Ornithology Avifauna Number series, it is the first book-length publication of the Virginia Society of Ornithology.

Virginia Avifauna Number 1, The Birds of Rockbridge County, Virginia by J. J. Murray was published in 1957. This 59-page publication is a revision of an article of the same name that appeared in the July and August 1944 issues of The Raven. Virginia Avifauna Number 2, Virginia's Birdlife, An Annotated Checklist was published in 1979. Prepared by a 12 member Checklist Committee chaired by YuLee Lerner, this 117-page publication is a revision of Murray's 1952 book. Since the earlier work had long been out of print, the 1979 book was eagerly welcomed when it was presented at the 50th anniversary meeting of the VSO in Lynchburg. In a tradition of color theme" naming, this edition has become known as the "Red Book."

In a remarkable spirit of efficiency, Virginia Avifauna Number 3, Virginia's Birdlife, An Annotated Checklist was published only eight years later in 1987. Edited by Teta Kain, this revision of the 1979 work would serve as the basic compilation of bird records for the state until the present time. The "Blue Book" is out of print

and has been unavailable since 2004. Work on a revision is ongoing and is expected to be completed soon.

Publication Numbers 4 through 6 in the Virginia Avifauna Series deal with raptors and egg dates for Virginia birds (Johnston and Ehmann 1990, Johnston and Clapp 1993, Clapp 1997).

Virginia Atlas Project – In the early 1980s informal discussion began among several VSO members as to the feasibility of instituting a breeding bird atlas project in Virginia. At the July 1983 Board of Directors meeting Sue Ridd presented a proposal to begin such a project. At that time, Maryland and Delaware were already working on an atlas while Pennsylvania and West Virginia were conducting trial runs. The VSO Board of Directors voted in favor of beginning a trial year in 1984. Sue Ridd was appointed as director and an atlas committee was appointed to initiate work on the Virginia Atlas Project (VAP).

With funding from the Virginia Department of Game and Inland Fisheries and under the direction of Sue Ridd, volunteers collected field data from 1984 through 1989. The state was divided geographically into twelve regions, and coordinators were appointed to assist with the compilation and collection of information. In 1989, Virginia's Breeding Birds: An Atlas Workbook, edited by Sue Ridd, was published. It was hoped that this book, featuring maps indicating the status of what had been discovered about breeding bird distribution, would prove useful to volunteers and regional coordinators in completing the field work.

Various difficulties, including financial constraints and an inability to agree on the scope of the final book, delayed publication. In 2001, the Virginia Department of Game and Inland Fisheries published the data, edited by Jeffrey Trollinger and Karen Reay (2001). This publication includes distributional maps of the 215 species observed during the atlas project as well as historical information about atlas programs, and information on the climate, geography and vegetation of Virginia

ACTIVITIES OF THE VSO

Annual Meetings - During the early days of the Virginia Society of Ornithology, executive meetings were scheduled on an informal basis. The primary means of conducting the business of the organization was the annual meeting. Over the years as the VSO grew in membership and the executive committee increased in number, business meetings were scheduled two or three times per year. However, all elections and other matters that require a full vote of the membership continue to be conducted at the annual meeting.

The Virginia Society of Ornithology held its first annual meeting on 13-14 February 14, 1931 at Richmond. Approximately 25 people attended the two-day session. At the business meeting the constitution was approved and officers were elected. At the afternoon paper session Ruskin Freer presented a paper on grassland birds and J. J. Murray spoke on methods of keeping bird records. There was an evening program and a field trip to nearby Curles Neck the next morning.

This general format of scheduling has been kept for nearly all following annual meetings. The Virginia Society of Ornithology suspended annual meetings from 1942

through 1945 due to the difficulties of travel during World War II. Beginning in the early 1960s, local bird clubs throughout the state began making arrangements for and hosting the annual meetings. A tradition of "homecoming" has been celebrated with annual meetings held in Lynchburg to commemorate the 25th, 50th, and 75th anniversary of the founding of the Virginia Society of Ornithology.

Although many memorable annual meetings were held, only the 1951 gathering at Danville received the distinction of being featured in an article in the New York Times. This 30 April 1951 press report was reprinted in the May-June, 1951 issue of *The Raven*.

"Bird Watchers and Pickets Get All Fowled Up" -- "In a long history of bird walks, the Virginia Society of Ornithology had never gotten involved in anything like its bird walk here yesterday. Some 100 members of the society, here for their annual meeting, began their bird walk bright and early. Their course took them past strikebound Riverside Mill. Pickets, mistaking the procession for another parade of strikers, joined the caravan. The bird watchers, and the confused pickets, stopped to study the waterfowl on the Dan River. Danville police, totally befuddled by the whole performance, sent squad cars, sirens wailing, to investigate. A parade permit was demanded during the ensuing discussion, but finally the police, the embarrassed pickets, and the bird watchers got the thing straightened out."

A complete list of the dates and sites of the Annual Meetings is found in Appendix 4.

Field Trips and Forays - Providing opportunities for the membership to join together to visit areas of ornithological interest has always been an integral part of the Virginia Society of Ornithology. The first field trip took place at Back Bay on 18-19 April 1930 and results were reported in *The Raven*. In following years members organized trips to a variety of areas including the Eastern Shore, Highland County, the Dismal Swamp, Mount Rogers, various sites in the Blue Ridge, and Curle's Neck near Richmond.

In the early 1950s, the opportunity to participate on two-day trips to Skyland in the Shenandoah National Park was offered on an annual basis. These field trips were referred to as forays, and this term later came to represent a more organized effort to investigate bird life in a specific area of the state. By 1966, Frederic Scott had developed the idea that more information on the breeding birds of a particular site could be gathered if individuals skilled in bird identification worked in small groups to cover designated routes within a limited geographic area. The first foray operating under this format took place at Mount Rogers in 1966.

In recent years the idea of expanding the foray concept to address questions regarding a specific habitat or the distribution of a particular species has been implemented. In 2002, Joshua LeClerc directed a foray designed to sample the bird population on a number of Virginia's golf courses. In 2006, a foray was designed to assess the occurrence of Saw-whet Owls (*Aegolius funereus*) during the breeding

season in Virginia. For a complete list of all forays, including a reference to the volume number of *The Raven* in which the results were reported, see Appendix 7.

The Virginia Society of Ornithology still offers field trips that are open to all members and provides leaders to assist with bird identification. These field trips take place at sites that are expected to support a large variety of species. In recent years a field trip to Chincoteague is scheduled in early September to coincide with the autumn shorebird migration. Winter field trips take place at the coast, and a summer trip is usually scheduled for the Mount Rogers area. The spring annual meeting sites rotate throughout the state and field trips are always included.

Virginia Avian Records - One of the reasons for the establishment of the Virginia Society of Ornithology was to gather and disseminate information on the birds of Virginia. From the beginning, bird reports were evaluated before inclusion in the state records. Initially, this evaluation of sightings was a more or less informal process directed by J. J. Murray who, as editor of *The Raven*, made decisions about which records would be included in the journal. By the 1950s, a Records Committee had been formed, with J. J. Murray acting as chairman.

In the mid 1980s, discussion about a more formal method of evaluating records resulted in the proposal that bylaws be established for the Records Committee. At the 5 March 1988 Board of Directors meeting, John Dalmás, who was chairman of the committee, developed and submitted proposed bylaws for the Virginia Avian Records Committee (VARCOM) which were accepted by the VSO Board of Directors. The purpose of this committee is "to evaluate all reports and documentation of rare, unusual, or difficult to identify bird species and identifiable subspecies originating within Virginia's boundaries and adjacent ocean waters. Additionally, VARCOM evaluates unusual breeding records for Virginia and reports of species that are found outside of their normal seasonal or geographical limits within the state." An annual report summarizing the work of VARCOM is submitted for publication in *The Raven*.

Kiptopeke - Beginning in the early 1960s, bird banding at Kiptopeke Beach on the Eastern Shore featured prominently in the activities of the Virginia Society of Ornithology. In the autumn of 1962, Frederic Scott observed what appeared to be an unusual concentration of songbirds at the tip of this peninsula extending into the Chesapeake Bay. The next year, Scott along with other VSO members, Mike and Dorothy Mitchell, Walter and Doris Smith, and Charles Hacker, established what would today "become the second oldest songbird banding operation in North America" (Taber 2003).

The banding project was supported in part by contributions from the Virginia Society of Ornithology and funding from the Virginia Department of Game and Inland Fisheries. However, the volunteer banders initially bore most of the expenses. By the late 1980s, it was becoming clear that the privately owned site used for bird banding would be considered for development. Efforts initiated by the bird banders, the Virginia Society of Ornithology, and many other conservation organizations to insure that the area would be preserved eventually resulted in the establishment

of Kiptopeke State Park. The following paragraph is from an article by Brian Taber in the November 2003 issue of Virginia Wildlife.

A granite marker and inscribed plaque was dedicated at Kiptopeke in October 2002 to the "Founders" in conjunction with the 10th Annual Eastern Shore Birding Festival, an event which surely would not exist, but for the efforts of the early volunteers. At the opening night session of the festival, Betty Scott (wife of the late Frederic Scott), Walter and Doris Smith and Dorothy Mitchell were honored with an emotional standing ovation for their vision and dedication. The Kiptopeke Founders Fund was established in July 2003 by Coastal Virginia Wildlife Observatory as a way to preserve the legacy of the founding volunteers and to insure that such studies and environmental education will continue for many years to come. The Observatory, a non-profit organization established in 1994, now operates the songbird banding station with seasonal biologists and volunteers.

Awards - Since its organization, the Virginia Society of Ornithology has raised money, funded scholarships, and made grants to promote bird study in the state. In 1980, the Murray Award was established to honor Joseph J. Murray, a charter member of the VSO and editor of *The Raven* from its inception until 1969. This annual award is designed to promote graduate and undergraduate research on Virginia birds. Proposals are submitted for consideration, and the winners are encouraged to present the results of their studies at the VSO annual meeting.

In 1973 the Virginia Society of Ornithology established a conservation award to be given to individuals or organizations that have demonstrated outstanding conservation work in the state of Virginia. The award, a framed certificate acknowledging the accomplishments of the recipient, is presented at the annual meeting. In 1989, the award was renamed in honor of Jackson M. Abbott for his lifelong devotion to conservation and his effective work on its behalf. A list of the recipients of the conservation award is found in Appendix 5.

At the 5 November 1983 meeting, the Virginia Society of Ornithology Board of Directors approved the President's Service Award and the James W. Eike Service Award. A committee was appointed to formally establish the criteria for the awards and to design the two pins. At the 3 March 1984 Board Meeting the criteria and pin designs were approved.

The President's Service Award is given to the outgoing president at the annual meeting. The name was changed to the Ruskin S. Freer President's Award in honor of the first president of the Virginia Society of Ornithology (Ruskin Freer had died in February of 1984.). Following the 1984 annual meeting, the Ruskin Freer President's Service Award pin was mailed to all living persons who had served as president of the Virginia Society of Ornithology.

The James W. Eike Service Award was named in honor of James Eike, a member of the Virginia Society of Ornithology from 1933 until his death in 1983. Eike's long and faithful service, his dedication, and his enthusiasm in promoting the work of

the VSO gave him a unique status in the organization. He was the only member to serve non-consecutively as president (1949-1952; 1968-1970).

The James W. Eike Service Award is given to honor a person for outstanding service to the Virginia Society of Ornithology. Eligibility for consideration would include service as an officer, board member, foray director, field trip leader, or other contributions to the organization. From 1984 through 1999 the membership committee received nominations for the Eike Award recipient. In 1999 at the Warm Springs board meeting, the Eike Service Award Committee was appointed to select the Eike Award recipient. All members of this committee must be previous Eike Award recipients. Letters of recommendation are sent to the chairman of the Eike Award Committee and calls for nominees may be posted in the VSO Newsletter. The Eike Service Award was initially presented at the 1984 Annual Meeting in Hampton. The first pin was given to Claire Eike, in honor of her late husband for whom the award was named. The people who have been recipients of this award are listed in Appendix 6.

The highest service award is the Myriam P. Moore Award. Instituted in 1983, this award is for a very high level of achievement in service areas and for long and continuous service and a demonstrated devotion to the principles and objectives of the VSO. This award has been given twice, the first time to Myriam P. Moore at the 1983 Annual Meeting and to Thelma Dalmas at the 2006 Annual Meeting.

CONCLUDING REMARKS

In looking back over the history of the Virginia Society of Ornithology, the present day membership is indeed thankful to have had the opportunity to "stand on the shoulders of giants". The charter membership of 42 has increased to almost 800 members. The founding members faced many obstacles, not the least of which was general apathy toward bird protection and inadequate lines of communication between those who were interested in the study of birds. The work of J. J. Murray and his unflagging efforts to maintain publication of *The Raven* for 39 years are exemplary.

The dedication, support, and loyalty of the membership are also commendable. Ruskin Freer, the first president, attended the 50th anniversary meeting in Lynchburg where he presented a paper on the founding of the organization. Bernice Rives Ragsdale, who was the last surviving Charter Member, maintained her association with the Virginia Society of Ornithology for 74 years, until her death in 2003. Today we have 17 members who have maintained membership in the VSO for more than 50 years and have been recognized as Honorary Life Members. The longest held membership is by Ernest P. Edwards, who joined in 1938, and still remains active in ornithological research. His latest publication, *Birds of Shenandoah National Park, Blue Ridge Parkway, and Great Smoky Mountains National Park*, was released in 2006.

The volunteer service by members of the organization is outstanding. Among those who devoted many years of work to the Virginia Society of Ornithology was Florence Hague who served as secretary from 1931 through 1954, when she was succeeded

by Robert J. Watson who served until 1984. Frederic R. Scott, who followed J. J. Murray, was editor of *The Raven* for 19 years and Barbara Sue Thrasher has served the society as treasurer since 1992. For the past 30 years, Thelma Dalmás has handled all matters pertaining to membership service.

Today communication between members and with the general public has been greatly facilitated by the advent of the electronic age. The Virginia Society of Ornithology supports a website, www.virginiabirds.net where information about upcoming events is available as well as a means to contact the organization, its local chapters, and the records committee. The VSO produces a statewide field checklist and makes available a wide variety of literature pertaining to ornithology in Virginia. The original goals of the organization continue to be a high priority and the future of the Virginia Society of Ornithology seems secure.

ACKNOWLEDGEMENTS AND COMMENTS ON SOURCES

Having been a member of the Virginia Society of Ornithology since 1972, and attended almost every Board of Directors meeting over the past 30 years, provide a unique aspect in summarizing the history of the organization. Working on this project has been facilitated by the fact that a complete set of *The Raven* as well as most of the issues of the VSO Newsletter are in my possession. An electronic index of *The Raven* developed by Teta Kain has been an invaluable tool. In addition, Ruskin Freer left many of his original papers in my keeping and Myriam Moore provided me with copies of the minutes of meetings of the Executive Committee dating from the mid 1950s. For the most part, I have used the information that was written "at the time" rather than a compilation of that material issued at a later date or found in other sources.

In citing literature, I have restricted listings of *The Raven* to those issues that contain articles devoted primarily to the history of the organization. Among the articles rich in detail are Ruskin Freer's report in the first issue of *The Raven*, and papers written for that journal by Freer (1944) and Murray (1954, 1964). David Johnston's *History of Ornithology in Virginia* (2003) also contains information on the history of the Virginia Society of Ornithology. Although not directly related to the Virginia Society of Ornithology, a paper by Murray (1933) does provide a synopsis on early work in the state. Much of the information for this paper was gleaned from other issues of *The Raven* as well as from minutes taken at meetings and in these instances the citation is included in the text. The University of Virginia library has been designated as the repository of the Virginia Society of Ornithology archives and copies of most of the material used in this paper can be found there.

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BOOK REVIEW

THE HISTORY OF ORNITHOLOGY IN VIRGINIA

DAVID W. JOHNSTON, 2003

UNIVERSITY OF VIRGINIA PRESS

PAUL R. CABE

*Biology Department**Washington and Lee University**Lexington, VA 24450*

Virginia, containing a great diversity of habitats and a long history or European settlement, has an equally impressive contribution to the field of ornithology. Much of this, and more besides, is included in the recent compendium by David Johnston.

If we adopt a definition of ornithology as “the study of birds,” the topic is well covered, with delightful accounts of what the first Europeans saw and described, in addition to information gleaned about the native Algonquian knowledge of the local bird fauna. The accounts of the early travellers, explorers, and naturalists make especially fine reading. Given Virginia’s proximity to the Smithsonian Institute and our nations capital, many ornithologists associated with these institutions studied in Virginia, and these contributions are well noted. The legacy of Virginia’s ornithologists is followed to the present day, and I was pleased to read about or see mentioned people who influenced my own early interests in birds, including YuLee Lerner, John Mehner, and Mitchell Byrd.

There are also more or less stand-alone essays on a variety of related topics. The chapter on Virginia’s “special places” well known to most birders, includes the Eastern Shore, Back Bay, Highland County, Mount Rogers, and others. These accounts include a bit of history, and also some of the more notable avian discoveries. Other chapter-length essays include a history of the conservation movement and game laws. A brief history of artists who have pictured birds is given, along with United States presidents who showed an interest in birds. For some of the presidents mentioned, the chief attraction may have been duck hunting, but others, notably Thomas Jefferson and Teddy Roosevelt, demonstrated a keen interest in birds. Jefferson’s interests in natural history are perhaps well known, but I was interested to learn that Teddy Roosevelt may have been one of the last naturalists to see Passenger Pigeons in the wild (the sighting was made in 1907 in Albermarle County). Other chapters include “Extirpated and Nonnative Birds” and “Falcons, Eagles, Hawks, and Banding.”

Finally, there are five appendices, including Algonquian names for birds, prominent collectors and observers, and a brief selection of Virginia nature writings.

Altogether, an enjoyable and informative book which many Virginia birders and naturalists will want to have on their shelves.

VIRGINIA SOCIETY OF ORNITHOLOGY ANNUAL MEETING, 2006

May 5-7, 2006
Breaks Interstate Park
Buchanan County

FRIDAY, MAY 5, 8 PM
Business Meeting, John Spahr, President of VSO, presiding

Opening Remarks

Spahr welcomed all in attendance giving special recognition to those who traveled long distances to get there. One person came from Arizona.

Spahr thanked the Buchanan County Bird Club for hosting the annual meeting. He remarked on the fine preparatory work and excellent organization of the weekend events. He acknowledged the excellent website for the event set up by Ed Talbott.

Treasurer's Report Sue Thrasher

The end of the 2005 Calendar Year report:

General Fund balance	44,798.90
Restricted Funds balance	108,566.08
Income from dues	11,365.00
Total Receipts	21,105.09
Total Disbursements	25,348.61
Balance as of Report Date	<u>\$149,121.36</u>

Dues Increase – John Spahr pointed out that dues had not increased since 1995. During that time expenses have increased, particularly with the publication of Virginia Birds. Therefore, the new dues structure is:

Active	\$20
Family	\$25
Sustaining	\$35
Contributing	\$60
Life	\$500

Discussion - The question of student membership was raised. Thelma Dalmas answered that students were troublesome because they were hard to track and the organization usually lost \$10 per year because students kept moving. One person expressed the opinion that Life Members were not paying their way, and suggested that there might be some way to recognize them and encourage them to pay more. This will be discussed at a future board meeting.

Nomination Committee Report

Teta Kain, chair of the Nomination Committee, presented the slate for the 2006-2007.

Officers – 2006-2007

President – John Spahr (Staunton)

Vice President – David Spears (Dillwyn, Buckingham County)

Secretary – Jennifer Gaden (Charlottesville)

Treasurer – Sue Thrasher (Lynchburg)

Newsletter Co-Editors – Linda Fields & Alan Schreck (Arlington)

Raven Editor – Paul Cabe (Raphine, Rockbridge County)

Membership Chairman – Thelma Dalmas (Evington, Campbell County)

Past President – Teta Kain (Gloucester County)

Board of Directors (Class of 2009)

Glen Eller (Galax) geller@ls.net

Adam D'Onofrio (Petersburg) bigadfromlb@webvt.net

David Clark (Norfolk) david.clark1@verizon.net

There were no nominations from the floor. A motion was made and seconded to approve the slate as presented. It was approved unanimously. Spahr thanked the nominating committee, Teta Kain, Peggy Opengari, David Spears, and Clark White.

Announcements

Roving Ravens - The 2006 Roving Ravens team is Linda Fields, Alan Schreck, Todd Day and Eric Hynes. They will compete in the World Series of Birding on May 13, sponsored once again by Leupold & Stevens. Spahr encouraged people to support the team by completing a pledge form or making a straight donation. The proceeds will go toward the production of Virginia Birds.

Gold Book – the Annotated Checklist of Virginia Birds has been updated and is being edited. It is expected to be printed by the end of the year.

Breeding Bird Foray – The 2006 foray will focus on the Northern Saw Whet Owl. Spahr suggested that those interested in participating should contact Clair Mellinger.

Field Trips - The Mount Rogers Field trip will take place June 23-25, 2006. Contact Peggy Opengari for more information.

Adjournment – a motion was made, seconded and passed to adjourn at 8:25 pm.

At the conclusion of the business meeting Ed Talbott showed a DVD of his photography of the birds of the Breaks Interstate Park. That was followed by a power point presentation by Roger Mayhorn about the weekend field trips.

SATURDAY, MAY 6
Paper Session, 1:30 pm, Pike Room

Clair Mellinger – Saw-whet Owls Migration Into and Through Western Virginia
Caitlin Kight – Effects of Human Disturbance on the Breeding Success of Eastern Bluebirds

Terry Smith – Female Ornamentation and Male Mate Choice in *Prothonotaria citrea*, the Prothonotary Warbler, In Virginia

Rebeka Brasso – The Effects of Mercury Contamination on the Nesting Success of Tree Swallows

Banquet – 8pm, Conference Center

After the banquet Spahr again acknowledged the excellent job done by the Buchanan County Bird Club in organizing the annual meeting. He singled out Roger and Lynda Mayhorn and Ed and Michelle Talbott for their fine work.

Spahr recognized Stephen Russell, who came to the meeting from Arizona, as a 50-year member of VSO.

Recognition – Thelma Dalmas recognized the late Myriam Putnam Moore, September 8, 1912 – January 15, 2006. She related her many contributions to both the Lynchburg Bird Club and the VSO. She was one of the first recipients of the Eike Award and the only person to ever be awarded the Myriam Putnam Moore Award for outstanding service to the VSO. She was a close personal friend of Dalmas. At the service in her memory Dalmas's daughter Jennifer played the violin. A recording of this music was played at the banquet as a memorial to Myriam Moore.

Myriam Putnam Moore Award - Spahr announced the second winner of the Myriam Putnam Moore Award, a person who has given outstanding long term service to the VSO - Thelma Dalmas. Spahr cited her many contributions over three decades. She has acted as treasurer, membership chair and now membership secretary, organized the speakers directory for almost a decade, answered all the VSO mail, acted as vice president and president of the VSO, is a past recipient of the Eike award and serves as corporate memory. Teta Kain presented her with a Turner sculpture of the Green Heron.

The Jackson Abbott Conservation Award was not awarded this year, but will be given next year.

Conservation Committee - Sandy Spencer, on behalf of the VSO conservation committee, announced that the closing date for public comment to the proposed delisting of the American Bald Eagle is May 17. Comments should be addressed to the Endangered Species Program, accessible on the Fish and Wildlife Service homepage www.fws.gov. (Note, if no longer on the homepage, click on Endangered Species on the side bar.) The conservation committee supports not delisting because habitat guidelines are not in place for concentration areas.

J.J. Murray Award – Gene Sattler announced the winners of the J. J. Murray Award, given to undergraduate or graduate students to promote research in ornithology. Sattler reminded us that the Northern Neck chapter donates \$1000 every

year to enable the VSO to make a second Murray award. The 2006 winners were: Rebecka Brasso, "Effects of mercury contamination on the avian community along the South River, Virginia, using the Tree Swallow (*Tachycineta bicolor*) as a bioindicator", working under Dr. Daniel Cristol, Associate Professor of Biology, for a Master of Science degree, College of William and Mary

Andy Glass, "Osprey foraging behavior and population dynamics in the lower Chesapeake Bay", working under Dr. Bryan Watts, Director of the Center for Conservation Biology, for a Master of Science degree, College of William and Mary

Banquet Speaker – Before introducing the speaker, Roger Mayhorn acknowledged Bob and Diana Riggs. It was Bob who first suggested having the annual meeting at the Breaks and subsequently departed for Iraq as a member of the National Guard, leaving all the work to Mayhorn (that said affectionately). Bob was present on a ten day leave, and all showed appreciation for his service.

Mayhorn then introduced Donald Kroodsma, researcher and author of *The Singing Life of Birds*. Kroodsma spoke about the experiences he relates in his book.

After the talk Lynda Mayhorn and Michelle Talbott distributed door prizes.

Adjournment: The meeting adjourned after 10 pm.

Respectfully submitted by Jenny Gaden.

2006-2007 VIRGINIA SOCIETY OF ORNITHOLOGY OFFICERS AND COMMITTEE CHAIRS

President: John Spahr, Staunton, VA

Vice President: David Spears, Dillwyn, VA

Past President: Teta Kain, Gloucester, VA

Treasurer: Barbara "Sue" Thrasher, Lynchburg, VA

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Membership Secretary: Thelma Dalmas, Evington, VA

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Annual Meetings: Crista Cabe, Weyers Cave VA

Breeding Birds of VA: Richard C. Banks, Alexandria, VA

Center for Conservation: Bryan Watts, Williamsburg, VA

Coastal VA Wildlife: Peggy Opengari Pearisburg, VA

Eike Award: Bill Akers, Blacksburg, VA

Field Trips: Clark White, Yorktown, VA, Peggy Opengari, Pearisburg, VA

Important Bird Areas: Bill Portlock, Jim Waggoner, Alexandria, VA; Paul Bedell,
Richmond, VA

Legal Counsel: D. Wayne O'Bryan, Mechanicsville, VA

Murray Award and Archives: Gene Sattler, Lynchburg, VA

Partners in Flight: Jim Waggoner, Peggy Opengari

Publications: David Spears, Dillwyn, VA

Records Chair: Ned Brinkley, Cape Charles, VA

Records Secretary: Susan Heath, Centreville, VA

Research: Andrew Dolby, Fredericksburg, VA

Thanksgiving Count: Susan Wingfield, Lynchburg, VA

Web Master: Linda Fields and Alan Schreck, Arlington, VA

Wind Power: Rick Webb (west), Monterey, VA; Bob Anderson (coast), Norfolk,
VA

INFORMATION FOR CONTRIBUTORS

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

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

Format of *The Raven* generally follows guidelines set by the Council for Biology Editors as outlined in the CBE style manual, 6th edition, 1994 (Council of Biology Editors, Inc., 11250 Roger Bacon Dr., Reston, VA 20190). Recent volumes of *The Raven* should be inspected for style. Vernacular and scientific names of birds should be those published in the Seventh Edition of the A.O.U. Check-list of North American Birds and subsequent supplements. All measurements should be reported in metric units.

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

