

The Raven

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

Activities undertaken by the Society include the following:

1. An annual meeting (usually in the spring), held in a different part of the state each year, featuring talks on ornithological subjects and field trips to nearby areas.

2. Other forays or field trips lasting a day or more and scheduled throughout the year so as to include all seasons and to cover the major physiographic regions of the state.

3. A journal, *The Raven*, published twice yearly, containing articles about 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 addition, local chapters of the Society, located in some of the larger cities and towns of Virginia, conduct their own programs of meetings, field trips and other projects.

Those wishing to participate in any of the above activities, or to cooperate in advancing the objectives of the Society, are cordially invited to join. Annual dues are \$15.00 for active members, \$25.00 for sustaining members, \$50.00 or more for contributing members, \$400.00 for life members, and \$20.00 for family members (limited to husband, wife and their dependent children).

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THE 1996 MADISON COUNTY FORAY

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The Virginia Society of Ornithology's 1996 Breeding Bird Foray was conducted from 4 June through 9 June in Madison County, plus parts of adjacent Greene, Rappahannock, Culpeper, Orange and Fauquier Counties. Headquarters was the Super 8 Motel at the US Rt. 29 Business exit, Culpeper. The 31 participants found 137 species of birds in the area during this period, of which 128 were suspected or confirmed to be breeding in the area.

The official Foray area is a triangle bordered by longitude 78° on the east, latitude 38° 15' on the south and the crest of the Blue Ridge to the northwest. Culpeper and Orange, the only nearby towns with populations over 500, lie just outside this area. Major highways include US Rts. 29 and 15 in the valley and US Rts. 33, 211, and 522, which cross the Blue Ridge at Swift Run, Thornton and Chester Gaps, respectively. Essentially all of the higher elevations in the Foray area lie within Shenandoah National Park, so US Rts. 33 and 211 and the inter-connecting Skyline Drive are the only motor vehicle access to this area.

Elevations in the Foray area range from 4,050 feet at Hawksbill to about 250 feet along the Rapidan River. All of the stream drainage in this area is into the Rappahannock River basin, with the exception of the southern part of Greene County which is in the Rivanna/James River basin. This 850 square mile area was subdivided by county and by elevation over 2,000 feet, for a total of nine reporting sectors, as shown in Figure 1.

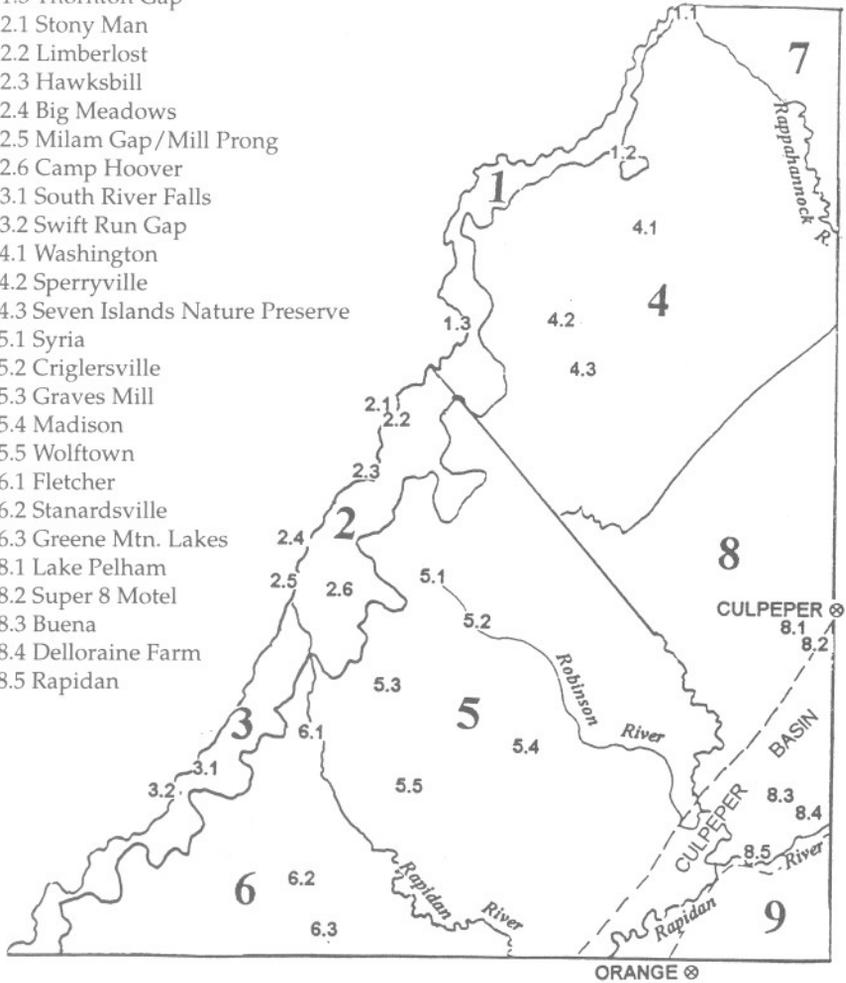
A total of 54 daily field lists and a cumulative total of 332 party-hours, plus numerous incidental reports, went into the compilation. Of this total, 75 party-hours were spent in the highlands and 257 party-hours in the lowlands. The few hours of field work between 21:00 and 05:30 were insufficient to assess relative abundance of nocturnal species.

As in previous Forays, participants were provided copies of a site prospectus, as well as field lists and county maps. Assignments to the Foray sectors were rotated among available parties for the five-day period, thus providing maximum coverage efficiency and compensating for variables in the weather, time of day and ability of observers. The weather was not a major factor on the 1996 Foray; other than rain in some parts of the area on 8 June, conditions were ideal for birding. Note that there is a high probability of duplication when the same areas are searched on successive days, so the most meaningful measure of relative abundance is the high count of a species by one party on a single day.

An annotated listing of the Foray results are provided in the Appendix.

Frequently Mentioned Sites

- 1.1 Chester Gap
- 1.2 Mount Marshall
- 1.3 Thornton Gap
- 2.1 Stony Man
- 2.2 Limberlost
- 2.3 Hawksbill
- 2.4 Big Meadows
- 2.5 Milam Gap/Mill Prong
- 2.6 Camp Hoover
- 3.1 South River Falls
- 3.2 Swift Run Gap
- 4.1 Washington
- 4.2 Sperryville
- 4.3 Seven Islands Nature Preserve
- 5.1 Syria
- 5.2 Criglersville
- 5.3 Graves Mill
- 5.4 Madison
- 5.5 Wolfstown
- 6.1 Fletcher
- 6.2 Stanardsville
- 6.3 Greene Mtn. Lakes
- 8.1 Lake Pelham
- 8.2 Super 8 Motel
- 8.3 Buena
- 8.4 Delloraine Farm
- 8.5 Rapidan



- | | | |
|-------------------------------|-------------------------------|-----------------|
| 1. Rappahannock Co. >2,000 ft | 4. Rappahannock Co. <2,000 ft | 7. Fauquier Co. |
| 2. Madison Co. >2,000 ft | 5. Madison Co. <2,000 ft | 8. Culpeper Co. |
| 3. Greene Co. >2,000 ft | 6. Greene Co. <2,000 ft | 9. Orange Co. |

Figure 1. Sectors of the Madison County Foray, 1996.

Species looked for but not found were Pied-billed Grebe (*Podilymbus podiceps*), Great Egret (*Casmerodius albus*), American Black Duck (*Anas rubripes*), Ring-necked Pheasant (*Phasianus colchicus*), Chuck-will's-widow (*Caprimulgus carolinensis*), Bank Swallow (*Riparia riparia*), Red-breasted Nuthatch (*Sitta canadensis*), and Vesper Sparrow (*Poocetes gramineus*). The Vesper Sparrow was once common at Big Meadows in Shenandoah National Park (Sydnor 1942, Wetmore 1950) and was regularly found on VSO field trips in the Park in the past (e.g. Steirly 1957, Theilen 1965, Hacker 1972). Plant succession in the Park appears to have claimed all of the rocky pasture habitat favored by this species.

THE HIGHLANDS

Shenandoah National Park, especially the high-elevation portion between Swift Run and Thornton Gaps, has been studied extensively by ornithologists. The first definitive annotated bird checklist was published by Alexander Wetmore of the Smithsonian Institution, based on records from 1935 through the end of July 1950 (Wetmore 1950). These data, as well as the reports of VSO sponsored summer field trips to this area from 1953 through 1972 and other individual observations, comprise the high-elevation baseline for comparison with the 1996 Foray results.

The high-elevation habitat is primarily second-growth oak-hickory forest, primarily northern red oak (*Quercus rubra*) and chestnut oak (*Quercus prinus*). The fast-growing tulip poplar (*Liriodendron tulipifera*) is becoming the dominant canopy tree in sheltered areas. Hemlocks (*Tsuga canadensis*), some up to 400 years old, dominate seepage slopes and cool ravines. Remnants of the southernmost stand of balsam fir (*Abies balsamea*) still survive on the summit of Hawksbill.

It might seem as if Shenandoah National Park would be an ideal place to monitor bird populations, since the habitat is "stable" and safe from development or lumbering. On the contrary, ice and wind storms, floods, drought, fires, air pollution, and fungal, insect, and animal pests are constantly changing the area. Thousands of trees, especially oaks on exposed ridges, have been destroyed by the combination of harsh winters and repeated defoliation by the gypsy moth (*Porthetria dispar*). The great virgin hemlock stands are under severe pressure from another alien pest, the hemlock woolly adelgid (*Adelges tsugae*). Tree casualties open the canopy, a condition favoring the growth of understory trees, shrubs, and rank weeds, which are highly vulnerable to fire during drought conditions. Plant succession has claimed virtually all of the old field habitat within the Park; only a small remnant of the formerly extensive pastureland around the Big Meadows area is maintained by the National Park Service.

One explanation for declines in songbird populations is forest fragmentation via roads, power lines, lumbering, and other clearings, which makes woodland species more vulnerable to nest predation by the Brown-headed Cowbird (*Molothrus ater*). Foray results appear to substantiate this theory. Wetmore (1950) considered the cowbird to be a "casual" breeder, but it is now one of the more common species in the Park. Favour and Scott (1955) considered the Black-throated Blue Warbler (*Dendroica caerulescens*) to be "common above 2,500 feet," but there was only one bird reported on the 1996 Foray. Likewise, virtually all of

the Blackburnian Warblers (*Dendroica fusca*) and Black-throated Green Warblers (*Dendroica virens*) were found at Camp Hoover, an isolated cove at the headwaters of the Rapidan River.

This is not an aberration. The ascendance of the cowbird and the decline of the warblers were well documented in the VSO Field Trip reports (e.g. Steirly 1957, Theilen 1965, Hacker 1972), and in another report filed by Abbott (1986) during the Virginia Atlas Project. It is apparent that the breeding bird populations in Shenandoah National Park have declined significantly. Even normally common permanent residents such as woodpeckers, chickadees, and cardinals were found in very low numbers.

Not all birds have been adversely affected. The American Redstart (*Setophaga ruticilla*) was considered only "fairly common" by Wetmore (1950) and Favour and Scott (1955), but it was found to be the most common bird in the Park on the 1996 Foray. Likewise, Wetmore considered the Cerulean Warbler (*Dendroica caerulea*) and Worm-eating Warbler (*Helmitheros vermivorus*) to be rare, and they were not found in the Park on the 1954 field trip. They were among the more common birds in the Park on the 1996 Foray. A list of the ten most common highland species is given in Table 1.

Perhaps the most unusual species of the Foray was a singing Nashville Warbler (*Vermivora ruficapilla*) on the Mt. Marshall trail. Other significant finds included the Alder Flycatcher (*Empidonax alnorum*) at Big Meadows, and the Golden-crowned Kinglet (*Regulus satrapa*) at two different sites. A singing Clay-colored Sparrow (*Spizella pallida*) was found at Big Meadows two days before the Foray. However, the most notable event was the return of the Peregrine Falcons (*Falco peregrinus*) to the cliffs below Stony Man; there were two adults feeding three young, and these were the same birds which successfully raised two young here in 1994 (United States Department of the Interior 1996).

Table 1. The most abundant highland (>2,000 ft) species on the 1996 Madison County Foray.

Species	Average Number per 8-hour Party-day
American Redstart (<i>Setophaga ruticilla</i>)	42.1
Eastern Towhee (<i>Pipilo erythrophthalmus</i>)	31.8
Red-eyed Vireo (<i>Vireo olivaceus</i>)	30.8
Veery (<i>Catharus fuscescens</i>)	26.4
Acadian Flycatcher (<i>Empidonax virescens</i>)	24.5
Ovenbird (<i>Seiurus aurocapillus</i>)	21.8
Indigo Bunting (<i>Passerina cyanea</i>)	19.1
Dark-eyed Junco (<i>Junco hyemalis</i>)	19.0
Scarlet Tanager (<i>Piranga olivacea</i>)	18.9
American Robin (<i>Turdus migratorius</i>)	11.4

THE LOWLANDS

There are few documented breeding season records of birds in the Foray area outside the Park, so field work was concentrated in the lowlands. The Virginia Atlas Project (Ridd 1989) provided valuable distributional data, but the only known quantitative data are those from the US Fish and Wildlife Breeding Bird Survey. One of the Survey's routes (Tryme), a 25 mile transect through Madison and Rappahannock Counties, has been censused most years between 1973 and 1995 (B. Peterjohn, pers. comm.), so these data served as a baseline for elevations below 2,000 feet.

This area is surprisingly rural for its proximity to Charlottesville and the cities of northern Virginia. Open pastures and croplands make up about half the area, and most of the balance is cedar scrub, clearcuts, and pine plantations. Only remnants of the nominal hardwood forest survive. The northern part of the area is hilly, rocky pastureland. The southwestern part of the area is a penepplain with little evidence of the once colossal Appalachian mountain range. Perhaps most interesting is the part of the southeastern corner lying within the Culpeper Basin, a very flat plain dotted with low peaks resulting from ancient lava flows (Frye 1986).

As always, lakes, ponds, and riverine areas were priorities in the lowlands surveys. The largest body of water in the area is 230-acre Lake Pelham, the reservoir for the town of Culpeper. Also of note are the three Greene Mountain lakes near Stanardsville, White Oak Lake (reservoir for town of Madison), and the lake at Seven Islands Nature Preserve in Rappahannock County. Major rivers in the area include the Rapidan, Robinson, Conway, Hazel, and Thornton.

All of the area streams experienced severe flooding in June 1995, so a special effort was also made to assess the effects of this flood on riparian species. Access to the area was somewhat restricted, since several of the smaller bridges were still out during the Foray, and repair crews continued to work on many roads into the mountains. The best testimony to the devastating effects of this flood was the huge debris flow at Kinsey Run, just above the town of Graves Mill, Madison County. Another minor handicap was the din of the 17-year cicadas (*Magicicada septendecim*), which was at its loudest in the bottomlands along the Rapidan River.

Lowland highlights include Bald Eagles (*Haliaeetus leucocephalus*) seen along the Rapidan River every day of the Foray, several records for Northern Harrier (*Circus cyaneus*), and the sightings of a Savannah Sparrow (*Passerculus sandwichensis*). Common Ravens (*Corvus corax*) were found near the rock quarry at Buena (Culpeper County). The 1996 breeding season also featured an invasion of Dickcissels (*Spiza americana*) in the Mid-Atlantic states, and they were found in record Foray numbers in four of the six counties covered. A list of the most common lowland species is given in Table 2.

Table 2. The most abundant lowland (<2,000 ft) species on the 1996 Madison County Foray.

Species	Average Number per 8-hour Party-day
Common Grackle (<i>Quiscalus quiscula</i>)	87.1
Indigo Bunting (<i>Passerina cyanea</i>)	48.2
Canada Goose (<i>Branta canadensis</i>)	41.6
European Starling (<i>Sturnus vulgaris</i>)	36.8
American Crow (<i>Corvus brachyrhynchos</i>)	30.6
Barn Swallow (<i>Hirundo rustica</i>)	29.0
Mourning Dove (<i>Zenaida macroura</i>)	26.2
Red-winged Blackbird (<i>Agelaius phoeniceus</i>)	25.0
Red-eyed Vireo (<i>Vireo olivaceus</i>)	24.6
Northern Cardinal (<i>Cardinalis cardinalis</i>)	22.7

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APPENDIX

ANNOTATED SPECIES LIST

Double-crested Cormorant (*Phalacrocorax auritus*). Two birds were seen 5 June on the lake at Seven Islands Nature Preserve (Rappahannock County; J. Dalmas, d'Orgeix and Van Dreil), and there were several other reports of single birds from this site. The only other record was a bird flying along the lower Rapidan River on 6 June (Dalmases).

Great Blue Heron (*Ardea herodias*). Scarce; one count of seven birds on a canoe trip down the Robinson and Rapidan Rivers on 5 June (Ober and Heatwole).

Green Heron (*Butorides virescens*). Very uncommon in the lowlands. There were two counts of five birds, both on 6 June, in Culpeper County (Dalmases) and in Rappahannock County (Wood, Jones and Fields).

Black-crowned Night-heron (*Nycticorax nycticorax*). One record. One immature was seen by the lake at Seven Islands Nature Preserve (Rappahannock County) on 5 June (J. Dalmas, d'Orgeix and VanDreil).

Tundra Swan (*Cygnus columbianus*). One record. An apparently injured bird was found on 5 June, along with about ten captive Trumpeter Swans (*Cygnus buccinator*) in a breeding program at Seven Islands Nature Preserve (Rappahannock County; J. Dalmas, d'Orgeix and VanDreil).

Mute Swan (*Cygnus olor*). Two records, both on 6 June at Lake Pelham (Culpeper County). There was one sighting of a pair with one downy young (Dalmases) and another sighting, perhaps of the same pair, with three young (Hansrotes). This species has apparently become established in this area over the past decade; there was at least one report from an adjacent block on the Virginia Atlas Project (Clapp, pers. comm.).

Canada Goose (*Branta canadensis*). Abundant in the lowlands, with numbers far in excess of those reported on the Tryme Breeding Bird Survey (B. Peterjohn, pers. comm.). The high count of 208 birds, 190 of these at Seven Islands Nature Preserve, was from Rappahannock County on 5 June (J. Dalmas, d'Orgeix and Van Dreil). At least 17 different broods were reported. There were no records from the highlands.

Wood Duck (*Aix sponsa*). Uncommon. The high count of 24 birds, which included five broods totaling 18, was tallied on a canoe trip down the Robinson and Rapidan Rivers on 5 June (Ober and Heatwole). Heatwole found a box with 10 eggs at Delloraine Farm on 4 June; the eggs were gone by 7 June, when she found a hen with nine downy young (possibly the same brood?). Another hen with 12 half-grown young was seen 6 June on the Rapidan River from the US Rt. 522 bridge (Dalmases).

Mallard (*Anas platyrhynchos*). Uncommon. The high count was 15 birds on 5 June at Seven Islands Nature Preserve (Rappahannock County; J. Dalmas, d'Orgeix and Van Dreil). There was one report of a pair with four young along the Conway River in Greene County on 5 June (Brinkley). Also on 5 June, a hen was flushed off a nest with 10 eggs in dense grass about 20 feet from the Rappahannock River just above the Kelly's Ford bridge in Fauquier County, about 12 miles east of the Foray area (Stevens and Barbee).

Black Vulture (*Coragyps atratus*). Uncommon in the lowlands. The high count was nine birds in Rappahannock County on 5 June (J. Dalmas, d'Orgeix and Van Dreil). A few were also seen at the higher elevations.

Turkey Vulture (*Cathartes aura*). Common at all elevations. The maximum count was 50 birds on 7 June (Brinkley).

Osprey (*Pandion haliaetus*). Three reports, all on 5 June. Two birds were found on a canoe trip down the Robinson and Rapidan Rivers (Ober and Heatwole). One was seen near the US Rt. 522 bridge over the Rapidan River (Bazuin), and another was seen flying up the Rappahannock River above Kelly's Ford, east of the Foray area (Stevens and Barbee).

Bald Eagle (*Haliaeetus leucocephalus*). This species was not on the preliminary list, but was found every day of the Foray. A second-year immature was found on 4 June at the southernmost of the Greene Mountain lakes (Greene County; Brinkley). Adults were seen by two parties on 5 June along the Rapidan River, at the Culpeper/Orange County line (Bazuin, Ober and Heatwole). On 6 June, a subadult was seen along the Robinson River in Culpeper County, and an adult was seen along the Rapidan River (Orange County; Dalmases). An immature was seen on 7 June from the Skyline Drive (Rockingham County), a few miles north of Swift Run Gap (Wood, Jones, Fields and Thrasher). An adult was seen on 8 June at Seven Islands Nature Preserve, Rappahannock County (Arginteanu and Robinson). These sightings represent at least four different birds. This species has been in the Rapidan area since 1994 (Heatwole, pers. comm.).

Northern Harrier (*Circus cyaneus*). Three reports. One adult female was found on 5 June at dusk in a field along Culpeper Co. Rt. 601 (Dalmases). An adult male was seen on 7 June in a field along Madison Co. Rt. 616, just north of the Rapidan River (Bazuin). An adult female was seen, also on 7 June, near Batna (Culpeper County) about 6 miles east of the Foray area (Brinkley).

Sharp-shinned Hawk (*Accipiter striatus*). Two lowland records. One was reported from the Robinson River valley (Madison County) on 5 June (Arginteanu and Robinson), and one was seen from the Co. Rt. 647 bridge over the Rappahannock River (Rappahannock County) on 8 June (Dalmases and Fields).

Cooper's Hawk (*Accipiter cooperii*). Three lowland records. One bird was seen on 5 June along Co. Rt. 636 (Orange County) and two birds were seen in Madison

County on 7 June, one on Co. Rt. 620 and one on Co. Rt. 616 (Bazuin).

Red-shouldered Hawk (*Buteo lineatus*). A total of eight birds was reported from the lowlands, five from Rappahannock County. The high count of two birds was reported on 7 June (Clapp) and 9 June (Bazuin).

Broad-winged Hawk (*Buteo platypterus*). This species was widespread but very scarce, with eight birds from the lowlands and four from the mountains, with no party reporting more than two birds. Brinkley reported an adult on a nest on 7 June at Camp Hoover (Madison County).

Red-tailed Hawk (*Buteo jamaicensis*). Very uncommon in the lowlands; no reports from the highlands. The highest one-day count was four birds on 7 June (Brinkley).

American Kestrel (*Falco sparverius*). Reported only from the lowlands, where it seemed widespread but in very low numbers. The high count of three birds was reported from Rappahannock County on 5 June (J. Dalmas, d'Orgeix and Van Dreil) and again on 8 June (Brinkley), including one which carried a small rodent to a nest under the eaves of Mt. Lebanon Church, at the junction of US Rt. 522 and Co. Rt. 626.

Peregrine Falcon (*Falco peregrinus*). Three parties reported this species from the Stony Man area during the Foray. One very agitated adult bird was seen at the summit of Stony Man on 5 June (Hansrotes) and on 7 June (Dalmases). The Dalmases later saw a pair soaring over the cliffs from Stony Man Overlook, about a mile north of the summit, and they were also seen here calling and displaying for over an hour on an 8 June Audubon Naturalist Society field trip (Kirkpatrick et al.). On a follow-up visit to the area on 29 June, Brinkley found a fledgling which made distress calls, and the adult female which responded by stooping on him, coming within inches of striking! Shenandoah National Park personnel reported that this pair had begun courtship displays in March, and had four eggs in the nest by May, three of which hatched. They also reported that this is the same pair which successfully raised two young here in 1994, and made an unsuccessful nesting attempt in 1995 (United States Department of Interior 1996).

Ruffed Grouse (*Bonasa umbellus*). Three records. One was found on 7 June on the South River Falls Trail (Greene County; Crowley). On 8 June, two birds were found at Camp Hoover (Madison County; Arginteanu, Robinson and Van Dreil), and one other was found on the Mt. Marshall trail (Rappahannock County; Brinkley).

Wild Turkey (*Meleagris gallopavo*). There were several scattered reports, with the high count of seven – an adult with six young – reported from the McConnell Farm near Nasons (Orange County) on 9 June (Ober). An adult with at least two young was noted on 5 June on Rappahannock Co. Rt. 618 (J. Dalmas, d'Orgeix and Van Dreil).

Northern Bobwhite (*Colinus virginianus*). Uncommon in the lowlands. The high

count of 20 was reported on 7 June (Hansrotes). The only high elevation record was a single bird found on 7 June (Arginteanu and Robinson). This species was considered fairly common in Shenandoah National Park during the first Skyland field trips (Favour and Scott 1954), and the Tryme Breeding Bird Survey (B. Peterjohn, pers. comm.) data shows it was abundant in the lowlands well into the 1980's.

Killdeer (*Charadrius vociferus*). Uncommon in the lowlands. High counts of five were recorded on 6 June (Dalmases) and on 7 June (Bazuin).

Spotted Sandpiper (*Actitis macularia*). One record: one bird seen on a canoe trip down the Robinson and Rapidan Rivers on 5 June (Ober and Heatwole).

Upland Sandpiper (*Bartramia longicauda*). This species was not found in the Foray area, but three birds were seen at the Virginia Turf Farm near Remington (Faquier County) on 6 June (Van Dreil) and one was seen on 7 June (Brinkley). This area is about 12 miles east of Culpeper.

American Woodcock (*Scolopax minor*). Four records. Thomas found one on 4 June at her residence along the Thornton River in Rappahannock County. Heatwole found one on 6 June on her farm near Rapidan in Culpeper County. Brinkley found three birds on 7 June in southern Greene County, one early in the morning and two after sunset.

Rock Dove (*Columba livia*). Fairly common in the lowlands. The high count was 27 birds in the northern part of the Foray area on 8 June (Dalmases and Fields).

Mourning Dove (*Zenaida macroura*). Very common in the lowlands. There was one very high count of 140 birds from the Culpeper Basin area on 6 June (Dalmases). Heatwole found two active nests in this same area, one with two eggs six feet up in a red cedar (*Juniperus virginiana*) on 1 June, and one with two young six feet up in the rafters of a barn on 10 June. Clapp found an old nest on 4 June seven feet up in a bittersweet (*Solanum dulcamara*) tangle on a large red cedar (*Juniperus virginiana*) in Cedar Hill Cemetery (Madison County).

Black-billed Cuckoo (*Coccyzus erythrophthalmus*). Four records of single birds. The one high-elevation record was on the trail from Milam Gap to Hoover Camp (Madison County) on 4 June (Smith). Thomas found one at her residence along the Thornton River (Rappahannock County) on 5 June. Brinkley had two other Madison County records, one on 5 June along Co. Rt. 657, and one fresh road kill on US Rt. 29 near the junction with Co. Rt. 612.

Yellow-billed Cuckoo (*Coccyzus americanus*). Uncommon. There were two maximum counts of seven birds, one on 6 June in the Culpeper Basin (Dalmases), and one in Madison County on 7 June (Bazuin). A nest was found about 30 feet up in an elm (*Ulmus* sp.) at Delloraine Farm (Culpeper County) on 1 June (Heatwole).

Barn Owl (*Tyto alba*). Ober had the only records of this species from the Montpelier Naturalists' nest box program. Of four nest boxes checked on 6 June, two were inactive, one in a Madison County silo contained three young birds, and one in an Orange County barn contained four eggs. No adult birds were seen.

Eastern Screech-Owl (*Otus asio*). Four records of single birds, implying this species was fairly common in the area, considering the few hours spent owling.

Great Horned Owl (*Bubo virginianus*). Two records. One was heard calling at Shenandoah Hills Campground, on US Rt. 29 in Madison County, on 6 June (Arginteanu and Robinson). A young bird was heard calling on 9 June at Rounton Farm (Orange County; Ober).

Barred Owl (*Strix varia*). Four reports. Two birds were found along Mill Prong Trail to Hoover Camp (Madison County; Smith), and one was found on the South River Falls Trail (Greene County; Hansrotes), on 4 June. Possibly the same bird was seen hunting along the South River Falls Trail on 6 June (Brinkley and Day). The only lowland report was a bird heard calling at 06:00 on 8 June near the Georgia Stone Quarry at Buena (Culpeper County; Ober).

Common Nighthawk (*Chordeiles minor*). Heard daily in the late afternoon at the motel near Culpeper by most of the participants. Two birds were also heard in downtown Culpeper at about 21:00 on 5 June (J. Dalmas and d'Orgeix). The only report away from Culpeper was a bird reported near Criglersville (Madison County) on 7 June, at about 09:30 (Brinkley).

Whip-poor-will (*Caprimulgus vociferus*). Fairly common. There were only three reports, but there was one of 16 birds in southern Greene County on 7 June (Brinkley) and another of five birds in southern Culpeper County on 5 June (Dalmases).

Chimney Swift (*Chaetura pelagica*). Fairly common throughout. The high count of 30 birds was from the Robinson River valley on 5 June (Arginteanu and Robinson). Birds were seen entering a nest site in the town of Washington (Rappahannock County) on 8 June (Garvin, Benner, Rupchis and Day).

Ruby-throated Hummingbird (*Archilochus colubris*). Rare. There were only three reports of more than one bird, with the maximum of three from Delloraine Farm near Rapidan (Culpeper County) on 6 June (Heatwole). Brinkley observed many hummingbird feeders, but only three birds, in his nearly 40 hours of field work. Ober and Heatwole observed a female nest building over the Rapidan River on 5 June. Heatwole (pers. comm.) found another nest at her farm after the Foray, which produced fledged young by 22 July.

Belted Kingfisher (*Ceryle alcyon*). Very uncommon, perhaps because of the floods during the previous breeding season. There were three reports of three birds each on 5 June (Arginteanu and Robinson), 6 June (Larner and Obenschain) and 8 June (Bazuin). On 8 June, Brinkley observed a male carrying a fish into a burrow near Graves Mill (Madison County).

Red-headed Woodpecker (*Melanerpes erythrocephalus*). One record, a bird seen along Robinson River Road, (Culpeper Co. Rt. 721) on 5 June (Bazuin).

Red-bellied Woodpecker (*Melanerpes carolinus*). Uncommon in the lowlands. The high count of nine was reported on 6 June (Dalmases) and on 8 June (Bazuin). A bird was seen at a nest hole along Rappahannock Co. Rt. 622 on 6 June (Wood, Jones and Fields). There were only two birds reported from the highlands.

Downy Woodpecker (*Picoides pubescens*). Uncommon. The high count was 14 birds in Rappahannock County on 8 June (Brinkley). Most of these were found along the Mt. Marshall Trail, where two active nests were seen in dead deciduous trees, each at a height of about 20 feet. A bird was also seen entering a nest hole 20-25 feet up in a dead deciduous tree on 5 June along the Limberlost Trail (Madison County; Hansrotes).

Hairy Woodpecker (*Picoides villosus*). Very uncommon. The high count of four birds was reported on 8 June (Garvin, Benner, Rupchis and Day). Young birds were heard in a nest 25-30 feet up in a dead deciduous tree near Amicus (Greene County) on 4 June (Brinkley). An adult carrying food was noted along a trail near Big Meadows (Madison County) on 5 June (Hansrotes). Birds suspected to be nesting at Camp Hoover (Madison County) on 7 June were confirmed on a 29 June return trip, when a nest hole 15 feet up in a small dead hemlock (*Tsuga canadensis*) and six birds, four adults and two juveniles, were found (Brinkley).

Northern Flicker (*Colaptes auratus*). Surprisingly uncommon. The highest one-day count was only five birds, in Rappahannock County on 9 June (Bazuin). Bazuin also observed an adult carrying food along Culpeper Co. Rt. 721 on 5 June.

Pileated Woodpecker (*Dryocopus pileatus*). Locally common in Shenandoah National Park, uncommon in the lowlands. There were numerous one-day counts of five or six birds, and one very high count of 19 birds, 16 of these along Mt. Marshall Trail (Rappahannock County) on 8 June (Brinkley).

Eastern Wood-pewee (*Contopus virens*). Common throughout. The high count of 26 birds was on 5 June (Brinkley).

Acadian Flycatcher (*Empidonax virens*). Very common in the highlands to fairly common in the lowlands. The highest one-day count was the 72 birds reported by Brinkley on 7 June, 49 of these from the Camp Hoover/Fork Mountain area. Smith reported 44 birds on a 4 June hike into this area via the Mill Prong Trail. Adults were seen feeding young along South River Falls Trail (Greene County) on 4 June (Hansrotes), and a family of fledged young birds was seen along the Robinson River (Culpeper County) on 5 June (Ober and Heatwole).

Alder Flycatcher (*Empidonax alnorum*). One record of an apparent pair at Big Meadows (Madison County) on 6 June (Brinkley and Day). A singing bird was

still being found in this area as late as 21 June, but follow-ups to obtain evidence of breeding were unsuccessful (Brinkley, pers. comm.). I am unaware of any documented summer records of this species from Shenandoah National Park.

Willow Flycatcher (*Empidonax traillii*). Rare with a total of 11 birds appearing on only eight of the 54 daily lists. Three parties reported two birds. Most of the birds were found in the southern part of the Foray area, all in the lowlands.

Least Flycatcher (*Empidonax minimus*). Locally common at ~3,400 feet on Lewis Mountain (Madison County) where the high count was ten birds on 6 June (Arginteanu and Robinson). Not found elsewhere, with the exception of one 8 June report from the foot of the mountains in Rappahannock County. One bird was found singing continuously from tall deciduous trees at the edge of a recent clearing on Co. Rt. 681, about 2 miles west of Va. Rt. 231 (Clapp). The elevation there is 970 feet.

Eastern Phoebe (*Sayornis phoebe*). Fairly common in the lowlands. The high count of 14 birds was from the Greene Mountain Lakes area of Greene County on 4 June (Brinkley). There were at least 20 confirmed breeding records for this species from Greene, Madison, Culpeper and Rappahannock Counties, including 16 nests found by Clapp under area bridges. Very uncommon in Shenandoah National Park, where Wetmore (1950) regarded this species as a common summer resident.

Great Crested Flycatcher (*Myiarchus crinitus*). Uncommon in the lowlands, more common in Shenandoah National Park. Four parties shared the high one-day count of six birds. An adult was seen feeding young on 6 June along Madison Co. Rt. 622 (Wood, Jones and Fields).

Eastern Kingbird (*Tyrannus tyrannus*). Fairly common at low elevations. There was one very high count of 30 birds on 7 June (Brinkley); no other party had more than nine birds.

Horned Lark (*Eremophila alpestris*). Uncommon and local. There were only four reports totaling 21 birds, including one flock of 15 on 6 June along Culpeper Co. Rt. 649 near its junction with US Rt. 15 (Dalmases).

Purple Martin (*Progne subis*). Uncommon in the lowlands. Over half of the 70 birds on the Foray were found in Greene County, where Brinkley had the largest one-day count of 14 birds on 4 June. This mirrors the higher human population in this part of the area. Clapp noted four active boxes in the area just west of Brightwood (Madison County), also on 4 June.

Tree Swallow (*Tachycineta bicolor*). Fairly common. This species has become established in the area since the first Piedmont Virginia nesting record from Madison County in 1971 (Larner and Scott 1978). The high count was 33 birds on 5 June from the area of Rappahannock County south of Sperryville (J. Dalmás, d'Orgeix and Van Dreil). Nesting in Bluebird boxes was reported from Greene

County on 7 June (Arginteanu and Robinson), and from Rappahannock County, also on 7 June (Clapp). Clapp noted four occupied boxes at one site near Fletcher Mill, three with four or five young and one with three eggs. Heatwole noted birds nesting on 1 June, in gourds 5-16 ft. above the ground at Delloraine Farm. The nest five feet above the ground contained six eggs, of which three hatched.

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*). Uncommon in the lowlands. Most of the high count of 13 birds was along the Rapidan River near Graves Mill (Madison County) on 5 June (Brinkley), where birds were seen entering nest holes. Clapp noted an empty nest and two old nests at the base of the Co. Rt. 622 bridge over the Covington River (Rappahannock County) on 3 June and five nests, two with young, in drainage holes in the Co. Rt. 638 bridge over the Robinson River (Madison County) on 4 June.

Cliff Swallow (*Hirundo pyrrhonota*). Only one record. Two birds were seen on 8 June along Rappahannock Co. Rt. 622 near Smedley (Garvin, Benner, Rupchis, and Day). The species was not found at the farms around Decapolis (Madison County) where the first nesting colony of this species in the Virginia Piedmont was found in 1954 (Irvine 1961). The species was also absent from all of the major bridges in the area; either the birds were never present, or all old nests were destroyed during the June 1995 floods.

Barn Swallow (*Hirundo rustica*). Very common in the lowlands and locally common in Shenandoah National Park. By far the highest count was the 159 birds reported from the lowlands on 7 June (Brinkley). At least ten nests at five different nesting sites were found on 8 June under Va. Rt. 231 bridges in Rappahannock County. The contents of the nest ranged from freshly laid eggs to near-fledged young (Clapp).

Blue Jay (*Cyanocitta cristata*). Fairly common in the lowlands, where the highest count was only 16 birds on 7 June (Brinkley). A bird was seen gathering nesting material at Cedar Hill Cemetery in the town of Madison on 4 June (Clapp). Very uncommon in Shenandoah National Park, where Wetmore (1950) regarded it as common.

American Crow (*Corvus brachyrhynchos*). Very common in the lowlands, but less so at the higher elevations. The highest count was 85 birds in Madison County on 6 June (Larner and Obenschain).

Fish Crow (*Corvus ossifragus*). Occasionally recorded at scattered sites in Madison County. One was heard at the Shenandoah Hills Campground on US Rt. 29 south of Madison on 4 June, and two more were found on 7 June near the junction of US Rt. 29 and Va. Rt. 230 (Arginteanu and Robinson). Two birds were also found near Criglersville on 7 June (Brinkley). Several parties also reported hearing this species at Foray headquarters, just west of Culpeper.

Common Raven (*Corvus corax*). Fairly common in Shenandoah National Park, where the high count of 14 birds was recorded on 5 June (Hansrotes). Brinkley

noted three young begging noisily from two adults at Camp Hoover, (Madison County) on 7 June. Low elevation records included one bird each on 4 and 6 June from Delloraine Farm near Rapidan (Culpeper County; Heatwole) and two birds found on Culpeper Co. Rt. 615 near Buena on 8 June (Ober). These birds are apparently attracted to the high cliffs at the Georgia Stone Quarry at Buzzard Mountain, which is about a mile east of Buena and a mile west of Delloraine Farm.

Black-capped Chickadee (*Parus atricapillus*). One record. Brinkley found two birds, both giving the typical two-syllable call, on the Mt. Marshall Trail near Big Devils Stairs (Rappahannock County) on 8 June. One of the birds had the typical Black-cap appearance, with heavy body, frosty remige edges, and lots of speckles on the bib.

Carolina Chickadee (*Parus carolinensis*). Fairly common in the lowlands but quite scarce in the highlands. The high count was 16 birds on 5 June (Brinkley). An adult was seen feeding a moth to fledged young along US Rt. 211 in Rappahannock County on 6 June (Hansrotes).

Chickadee (*Parus sp.*). Five birds were reported which were not differentiated to species. Smith reported two on a hike down Mill Prong Trail to Hoover Camp on 4 June. Brinkley and Day reported two on South River Falls Trail (Greene County) on 6 June. Another was reported on 7 June along the Skyline Drive (Wood, Jones, Fields and Thrasher).

There have been numerous breeding season reports in the Park over the years (e.g. Abbott 1985, Stevens 1965, Sydner 1942) of birds which had characteristics of *P. atricapillus*. Recent genetic studies (Sattler 1994) indicate that most of the chickadees in the northern Virginia Blue Ridge are hybrids.

Tufted Titmouse (*Parus bicolor*). Common in the lowlands, uncommon in the Park. The high of 27 birds was reported on 7 June from Culpeper/Orange Counties (Hansrotes). Adults were seen carrying food on 5 June at two Madison County sites, one near Big Meadows (Hansrotes) and one near Graves Mill (Brinkley).

White-breasted Nuthatch (*Sitta carolinensis*). Very uncommon. The high count of only five birds was from the Madison County lowlands on 6 June (Bazuin). An adult was seen carrying food at the Pinnacle Picnic Grounds (Madison County) on 5 June (Hansrotes).

Brown Creeper (*Certhia americana*). One report, a bird seen on Limberlost Trail (Madison County) on 8 June by Kirkpatrick and others on an Audubon Naturalist Society field trip.

Carolina Wren (*Thryothorus ludovicianus*). Fairly common in the lowlands; not found in Shenandoah National Park. The high count was 14 birds on 6 June (Hansrotes). Much less common than on the recent Tryme Breeding Bird Surveys, probably because of the severity of the past winter (B. Peterjohn, pers. comm.).

House Wren (*Troglodytes aedon*). Very uncommon throughout, except for the northernmost part, where it was common. The high count of seven birds on 8 June was mostly from Fauquier County (Dalmases and Fields).

Winter Wren (*Troglodytes troglodytes*). Three reports. One was reported from South River Falls Trail (Greene County) on 6 June (Brinkley and Day). One was found on Stony Man Trail (Madison County) on 8 June (Kirkpatrick et al.) and two more were found between Thornton Gap and Limberlost, also on 8 June (Garvin, Benner, Rupchis and Day).

Golden-crowned Kinglet (*Regulus satrapa*). Two Madison County reports of birds found at Camp Hoover on 7 June (Brinkley) and on Limberlost Trail on 8 June (Garvin, Benner, Rupchis and Day). The singing bird at Camp Hoover was watched feeding, but it was never seen carrying food.

Blue-gray Gnatcatcher (*Poliophtila caerulea*). Fairly common in the lowlands; rare at higher elevations. There was one very high count of 23 birds in Greene County on 4 June (Brinkley). A nest was found on 1 June in a large Ash (*Fraxinus* sp.) at Delloraine Farm (Culpeper County) about 60 feet from the ground (Heatwole). Another with an incubating female was about 30 feet up in a black locust (*Robinia pseudoacacia*) south of Graves Mill (Madison County) on 8 June (Brinkley).

Eastern Bluebird (*Sialia sialis*). Common in the lowlands, uncommon in Shenandoah National Park. The high count of 75 was tallied in Greene and Madison Counties on 5 June (Brinkley). Checking nest boxes in the area, Clapp had five records of adults with fledged young and nine boxes with eggs, including one with six eggs; most of these records were from Madison and Rappahannock Counties.

Veery (*Catharus fuscescens*). Very common at the higher elevations. There were two counts of 48 birds, one on 5 June (Hansrotes) and the other on 6 June (Arginteanu and Robinson). The Hansrotes noted an adult carrying food on 5 June along the Hawksbill Mountain Trail (Madison County).

Wood Thrush (*Hylocichla mustelina*). Common in Shenandoah National Park but uncommon in the lowlands. The high count was 25 birds from the mountains of Rappahannock County on 8 June (Brinkley). The Hansrotes had two breeding records, a bird carrying food on 4 June along the South River Falls Trail (Greene County) and another on 5 June brooding and feeding young in a nest in a seven foot hemlock (*Tsuga canadensis*) along Limberlost Trail (Madison County).

American Robin (*Turdus migratorius*). Common, but well below typical Foray numbers. The high count was 48 birds (Brinkley). There were 11 confirmed breeding reports, including one nest with six young on 6 June (Arginteanu and Robinson).

Gray Catbird (*Dumetella carolinensis*). Fairly common at all elevations. The high

count of 28 birds was along the Skyline Drive on 6 June (Arginteanu and Robinson). A nest was found in a chest-high shrub along Limberlost Trail (Madison County) on 5 June (Hansrotes). Birds were also found nesting on 6 June along Rappahannock Co. Rt. 620 (Wood, Jones and Fields).

Northern Mockingbird (*Mimus polyglottos*). Very common at low elevations, but not found above 2,000 feet. The high count was 78 birds on 7 June (Brinkley). There were 13 confirmed breeding records, including seven nests with from one to five eggs (Clapp).

Brown Thrasher (*Toxostoma rufum*). Fairly common in the lowlands and rare in the highlands. The high count was the 15 birds found by Brinkley on 7 June. Larner and Obenschain observed an adult carrying food near Syria (Madison County) on 5 June. Clapp found three nests with eggs, two in Madison County on 4 June and one in Rappahannock County on 8 June.

Cedar Waxwing (*Bombycilla cedrorum*). Fairly common at all elevations. The high count of 46, which included one flock of 45, was seen in the Mill Prong Trail/Camp Hoover area on 4 June (Smith). Clapp found a pair on 4 June building a nest 35 feet up in a 50 foot white oak (*Quercus alba*) at Hebron Church (Madison County). Nest building was also observed near Syria (Madison County) on 5 June (Larner and Obenschain) and along Culpeper Co. Rt. 721 on 8 June (Wood, Jones and Thrasher).

Loggerhead Shrike (*Lanius ludovicianus*). One record. Day found one bird on 6 June being harassed by kingbirds (*Tyrannus tyrannus*) in the field below the junction of Greene Co. Rts. 622 and 624. Several parties returned to the site to search for this bird and the Savannah Sparrows (*Passerculus sandwichensis*) which were also found here, but the shrike was not seen again.

European Starling (*Sturnus vulgaris*). Abundant in the lowlands but only fairly common in Shenandoah National Park. The high count of 155 was from Rappahannock County on 8 June (Bazuin). Many immatures were noted throughout the area.

White-eyed Vireo (*Vireo griseus*). Very uncommon in the lowlands. The highest one-day count was four birds on 6 June (Hansrotes).

Solitary Vireo (*Vireo solitarius*). Fairly common at high elevations. The high count was nine birds from the Mill Prong Trail/Hoover Camp area (Madison County) on 4 June (Smith).

Yellow-throated Vireo (*Vireo flavifrons*). Very uncommon, although there was one high count of nine birds in Madison County on 6 June, mostly along the Rapidan River valley below Graves Mill (Bazuin). Only six birds were found in the 75 hours spent in Shenandoah National Park.

Warbling Vireo (*Vireo gilvus*). Only found in riparian areas where it was uncom-

mon. The high count was eight birds in the Robinson River valley west of Banco (Madison County) on 8 June (Bazuin).

Red-eyed Vireo (*Vireo olivaceus*). Very common at all elevations. The high count was the 130 birds found by Brinkley on 7 June. Birds were seen carrying nesting material and building a nest 4 June on the South River Falls Trail (Greene County; Hansrotes), and one along the Skyline Drive on 7 June was seen carrying food (Wood, Jones, Fields and Thrasher).

Blue-winged Warbler (*Vermivora pinus*). One record. Two birds were found on Madison Co. Rt. 662 between Wolfstown and Graves Mill on 7 June (Wood, Jones, Fields and Thrasher).

Nashville Warbler (*Vermivora ruficapilla*). One record. A singing bird was found on 8 June on the Mt. Marshall Trail (Rappahannock County) at an elevation of about 2000 feet (Brinkley). This area is described as a steep dry hardwood slope with chestnut oak (*Quercus prinus*), red maple (*Acer rubrum*), American beech (*Fagus grandifolia*), and a few tulip poplars (*Liriodendron tulipifera*). This bird could not be found on a 29 June return trip. This record is reminiscent of several other Virginia breeding season reports of this species (e.g. Stevens 1967, 1968 and 1976).

Northern Parula (*Parula americana*). Uncommon and local. This species appeared on only 15 of the 54 daily lists, but the high count was 11 birds in the Mill Prong Trail/Camp Hoover area on 4 June (Smith).

Yellow Warbler (*Dendroica petechia*). Uncommon in the lowlands, where the high count of eight birds was made on 6 June, mostly in southern Culpeper County (Dalmases). The Dalmases also had the only record from Shenandoah National Park, a singing bird on 7 June at Hensley Hollow Overlook (Rockingham County).

Chestnut-sided Warbler (*Dendroica pensylvanica*). Fairly common at the higher elevations. The high count was 14 birds on 6 June (Arginteanu and Robinson).

Black-throated Blue Warbler (*Dendroica caerulescens*). A singing bird on 6 June along South River Falls Trail (Greene County) was the only record for the Foray (Brinkley and Day). This species is one which was once considered to be fairly common in the Park (Wetmore 1950), and common above 2,500 feet (Favour and Scott 1954). Our observations, along with reports of the VSO field trips to Shenandoah National Park from 1953 through 1972 (e.g. Steirly 1957, Theilen 1965, Hacker 1972), which were heavily concentrated on the prime habitat for this species, suggest a general decline in numbers. It was not found in three days of field work during the Virginia Atlas Project (Abbott 1986).

Yellow-rumped Warbler (*Dendroica coronata*). Brinkley found a singing bird at Camp Hoover on 7 June, presumably a very late migrant.

Black-throated Green Warbler (*Dendroica virens*). Locally common in the Camp

Hoover area of Madison County but virtually absent elsewhere. There were only six reports with counts of seven on 4 June (Smith) and 7 June (Brinkley) and eight on 8 June (Arginteanu and Robinson) by the Camp Hoover parties. The only other reports were of single birds, including one from the lowlands in the Graves Mill area of Madison County on 7 June (Wood, Jones, Fields and Thrasher).

Blackburnian Warbler (*Dendroica fusca*). Locally common in the Camp Hoover area of Madison County but virtually absent elsewhere. There were only four reports, but counts of 22, 16, and 8 birds at Camp Hoover on 4 June (Smith), 7 June (Brinkley) and 8 June (Arginteanu and Robinson), respectively. The only other report was of two birds at the summit of Hawksbill on 6 June (Arginteanu and Robinson). There were no reports from the Limberlost area, where it was once the most common species (Favour and Scott 1954).

Yellow-throated Warbler (*Dendroica dominica*). Two reports. One bird was found along Rappahannock Co. Rt. 621 on 6 June (Wood, Jones and Fields), and one was found on 7 June at the Greene Co. Rt. 619 bridge over Henshaw Run (Brinkley).

Pine Warbler (*Dendroica pinus*). Rare in the lowlands. This species appeared on only eight daily lists, with a high of three on 7 June along Madison Co. Rt. 621 (Bazuin). No highland records.

Prairie Warbler (*Dendroica discolor*). Uncommon in the lowlands. The high count of 12 birds was from the northernmost part of the area on 8 June (Dalmases and Fields). Wetmore (1950) regarded this species as fairly common in Shenandoah National Park, but there was only one high elevation report of a single bird on the South River Falls Trail on 4 June (Hansrotes).

Blackpoll Warbler (*Dendroica striata*). One record of apparent late migrants. Two birds were found along Madison Co. Rt. 662 on 7 June (Wood, Jones, Fields and Thrasher).

Cerulean Warbler (*Dendroica cerulea*). Wetmore (1950) had only one record of this species, but it is now locally common at higher elevations. Brinkley reported 24 birds on 7 June, 18 of these from Fork Mountain, just south of Camp Hoover. A few were also reported from the lowlands, including one bird found along the Conway River on Greene Co. Rt. 667 near Fletcher, where the elevation is about 800 feet (Arginteanu and Robinson).

Black-and-white Warbler (*Mniotilta varia*). Uncommon at high elevations. The high count was six birds found in the Mill Prong Trail/Hoover Camp area of Madison County on 4 June (Smith). No lowland reports.

American Redstart (*Setophaga ruticilla*). Abundant in the highlands. There were five counts of over 40, with the high count of 72 reported from the Mill Prong Trail/Hoover Camp area of Madison County on 4 June (Smith). The Hansrotes observed a bird carrying food on 4 June along the South River Falls Trail (Greene

County). Wetmore (1950) considered this species only to be a fairly common summer resident. Very uncommon in the lowlands, except for one very high count of 17 birds on 8 June in the area around Sperryville (Rappahannock County; Garvin, Benner, Rupchis and Day).

Worm-eating Warbler (*Helmitheros vermivorus*). Uncommon in Shenandoah National Park, but apparently quite common in the Mt. Marshall area of Rappahannock County, where on 8 June Brinkley tallied 48 of the 75 birds found during the entire Foray period. Brinkley also found a nest with four eggs in the leaf litter at the base of a small chestnut oak (*Quercus prinus*). There was no other one-day count of more than six birds. Very scarce in the lowlands. The only report away from the mountains was of two birds near Richardsville (Culpeper County) on 6 June (Stevens and Barbee).

Ovenbird (*Seiurus aurocapillus*). Very common at high elevations. There were two counts of 39 birds, in the Mill Prong Trail/Hoover Camp area of Madison County on 4 June (Smith) and in Rappahannock County on 8 June (Brinkley). The latter record included 31 birds along the Mt. Marshall Trail; one of these flushed from a nest with three eggs. Rather uncommon in the lowlands, where the high count was eight birds found by Brinkley on 8 June, along Rappahannock Co. Rt. 614.

Northern Waterthrush (*Seiurus noveboracensis*). One lowland record of an apparent late migrant on 6 June in typical stream-bottom habitat (Day).

Louisiana Waterthrush (*Seiurus motacilla*). Uncommon. The high count was eight birds found in the Camp Hoover area (Madison County) on 8 June (Arginteanu and Robinson).

Kentucky Warbler (*Oporornis formosus*). There were ten reports of this species, all of single birds except for one of two birds near Richardsville (Culpeper County) on 6 June (Stevens and Barbee) and one amazing report of 13 birds from the Mt. Marshall area of Rappahannock County on 8 June (Brinkley).

Common Yellowthroat (*Geothlypis trichas*). Fairly common in the lowlands, where the highest count was the 16 birds found in Culpeper/Orange Counties on 7 June, mostly in the Rapidan River floodplain (Hansrotes). Very scarce in Shenandoah National Park where single birds were reported except for one report of ten birds from Big Meadows on 6 June (Brinkley and Day).

Hooded Warbler (*Wilsonia citrina*). Fairly common locally in the mountains, especially the ridges around the Camp Hoover area of Madison County, where there were reports of nine birds on 4 June (Smith) and 13 birds on 8 June (Brinkley). There were a few reports of single birds away from the mountains, except for one of six birds near Richardsville, Culpeper County on 6 June, including one nest with three eggs (Stevens and Barbee).

Canada Warbler (*Wilsonia canadensis*). Very uncommon and local at high eleva-

tions, with only five reports of a total of 12 individuals. The high count was of five birds, including three near the summit of Hawksbill on 6 June (Arginteanu and Robinson). Favour and Scott (1954) considered this species to be locally common at high elevations and abundant on Hawksbill.

Yellow-breasted Chat (*Icteria virens*). Widespread but uncommon. The high count was seven birds in southern Rappahannock County on 8 June (Clapp). There was only one report from the highlands, a single bird reported on 8 June from the Mt. Marshall area (Rappahannock County; Brinkley). Wetmore (1950) considered this species to be a common summer resident in the Park. The Tryme Breeding Bird Survey results show a steep decline in the lowland numbers as well (B. Peterjohn, pers. comm.).

Summer Tanager (*Piranga rubra*). Six reports of single birds and one of a pair found along Culpeper Co. Rt. 633 on 7 June (Clapp). Of the eight birds reported, one was in Orange County and the remainder were in Culpeper County.

Scarlet Tanager (*Piranga olivacea*). Very common at the higher elevations; fairly common at low elevations. The high count was 30 birds on 7 June (Brinkley).

Northern Cardinal (*Cardinalis cardinalis*). Very common in the lowlands but virtually absent from Shenandoah National Park where Wetmore (1950) considered it common. The high count of 55 was from Culpeper/ Orange Counties on 7 June (Hansrotes). Clapp found used nests at two Madison County sites, one on 4 June eight feet up in a 12 foot red cedar (*Juniperus virginiana*) at Oak Grove Baptist Church, Co. Rt. 634, and the other on 6 June eight feet up in a grapevine/ bittersweet (*Vitis* sp./*Solanum dulcamara*) tangle along Co. Rt. 663.

Rose-breasted Grosbeak (*Pheucticus ludovicianus*). Fairly common at the higher elevations. The high count was nine birds in the Mill Prong Trail/Hoover Camp area of Madison County on 4 June (Smith). There was one 5 June report of a bird north of Graves Mill (Madison County) where the elevation is about 1500 feet (Brinkley).

Blue Grosbeak (*Guiraca caerulea*). Widespread but uncommon in the lowlands. The high count was 16 birds on 7 June (Brinkley).

Indigo Bunting (*Passerina cyanea*). Abundant in the lowlands; also very common in Shenandoah National Park. The high count was 160 birds on 7 June (Brinkley). Fledged young were noted along Culpeper Co. Rt. 721 (Wood, Jones and Thrasher). This is the only species reported on every one of the 54 daily lists.

Dickcissel (*Spiza americana*). This irruptive species mounted a major invasion of the Mid-Atlantic states in 1996. Fourteen different birds were found at six Foray sites, all of which are in addition to sites found from 1984—1988 on the Virginia Atlas Project (Ridd 1989):

- (1) up to four birds on Culpeper Co. Rt. 601, about a mile south of its junction with US Rt. 15, on 4, 5 and 6 June (Dalmases). A bird had

- also been seen at this site on 12 May (J. Dalmás).
- (2) one bird on Madison Co. Rt. 620 near its junction with Co. Rt. 616, 4 June (Clapp).
 - (3) two birds on Orange Co. Rt. 615 at its junction with Co. Rt. 627, 6 June (Dalmases)
 - (4) three birds on Culpeper Co. Rt. 692, 7 June (Hansrotes)
 - (5) three birds on Greene Co. Rt. 609, 0.5 mile west of US Rt. 29, 7 June (Brinkley).
 - (6) one bird on Greene Co. Rt. 609, 0.3 mile east of US Rt. 29, 7 June (Brinkley)

Birds were also seen east of the Foray area on 7 June, including five birds on Culpeper Co. Rt. 647 just west of Batna, one bird at the Virginia Turf Farm, Fauquier Co. Rt. 651, and two more on Co. Rt. 651 about one mile south of the Turf Farm (Brinkley). A total of five birds had been found on all of the previous twenty-five VSO Breeding Bird Forays.

Eastern Towhee (*Pipilo erythrophthalmus*). Abundant in the highlands and common in the lowlands. The high of 72 was from Rappahannock County, including 44 on the Mt. Marshall Trail on 8 June, where a male was seen attending a female on a nest (Brinkley). Adults were also seen feeding fledged young on 4 June along the South River Falls Trail (Greene County; Hansrotes).

Chipping Sparrow (*Spizella passerina*). Very common in the lowlands and fairly common in Shenandoah National Park. The high count was 84 birds on 7 June (Brinkley). Breeding was confirmed at 16 different sites, including nine nests found by Clapp, and in every county but Fauquier.

Clay-colored Sparrow (*Spizella pallida*). This bird was not found during the Foray period, but Garvin reported a singing bird at the southwest corner of Big Meadows on 2 June, just prior to the Foray. Attempts to relocate the bird on subsequent days were unsuccessful. This may be the first record of this species in Virginia during the breeding season.

Field Sparrow (*Spizella pusilla*). Common, although only locally at the higher elevations. The high one-day count of 22 was from Big Meadows (Madison County) on 6 June, where adults were also observed feeding young (Brinkley and Day). An old nest was located five feet up in a nine foot red cedar (*Juniperus virginiana*) on Madison Co. Rt. 616 (Clapp) and birds were seen feeding young on 6 June along Rappahannock Co. Rt. 620 (Wood, Jones and Fields).

Savannah Sparrow (*Passerculus sandwichensis*). One record. A singing bird was found on 4 June in a pasture below the junction of Greene County Rts. 622 and 624, south of Stanardsville (Brinkley). This bird was still present on 7 June (Brinkley, Dalmases). On a return trip to the area on 19 June, Brinkley found two adults feeding two recently fledged young. This may be the first breeding record of this species for the Virginia Piedmont (Kain 1987).

Grasshopper Sparrow (*Ammodramus savannarum*). Common in the lowlands.

There was one near record count of 82 birds on 7 June by Brinkley, whose total tally of 190 birds was over half that found by all of the participants on the Foray.

Song Sparrow (*Melospiza melodia*). Fairly common in the lowlands. The high count of 14 birds was recorded in Culpeper/Orange Counties on 6 June (Dalmases) and along Rappahannock Co. Rt. 614 on 8 June (Brinkley). A well-hidden nest with five eggs in the top of a three foot multiflora rose (*Rosa multiflora*) was found on 1 June at Delloraine Farm, on Culpeper Co. Rt. 647 (Heatwole).

Dark-eyed Junco (*Junco hyemalis*). Very common at the higher elevations, not recorded elsewhere. There were eight counts of more than 12 birds, and a high of 39 birds recorded by Arginteanu and Robinson on 6 June. A nest was found along Stony Man Trail (Madison County) on 8 June (Garvin, Benner, Rupchis and Day).

Red-winged Blackbird (*Agelaius phoeniceus*). Very common in the lowlands but absent from the higher elevations. The high count of 96 birds, mostly from the Culpeper Basin area, was recorded on 6 June (Dalmases). There were six sites at which breeding was confirmed, including Orange, Culpeper and Rappahannock Counties, five of these found by Clapp.

Eastern Meadowlark (*Sturnella magna*). Very common in the lowlands, and absent from the higher elevations, even though it was once considered locally common at Big Meadows (Wetmore 1950). The high count of 88 birds was on 7 June (Brinkley).

Common Grackle (*Quiscalus quiscula*). Abundant in the lowlands but rarely seen in Shenandoah National Park. The highest count was the 260 birds in the Wolfstown/Graves Mill area of Madison County on 6 June (Bazuin). Numerous breeding records were noted, with the evidence consisting mostly of immature birds.

Brown-headed Cowbird (*Molothrus ater*). Common and widespread in the lowlands and locally common in Shenandoah National Park. The high count of 30 birds was made in the Park on 6 June (Arginteanu and Robinson). Wetmore (1950) considered this species an occasional visitor to the Park.

Orchard Oriole (*Icterus spurius*). Fairly common in the lowlands. Brinkley's 4 June tally of 43 birds in southern Greene County appears to be a new record count for the Piedmont (Kain 1987). There was one highland record of a single bird reported on 6 June (Arginteanu and Robinson). Nests of this species were found on 8 June along Rappahannock Co. Rts. 681 and 621 (Garvin, Benner, Rupchis and Day) and in Orange County on 7 June (Brinkley).

Baltimore Oriole (*Icterus galbula*). Fairly common in the lowlands. As with the previous species, Brinkley had a very high count of 33 birds in southern Greene County. Nests were noted: (a) with four young along Rappahannock Co. Rt. 620

on 6 June (Wood, Jones and Fields), (b) 35 feet up in a sycamore (*Platanus occidentalis*) along Culpeper Co. Rt. 640 where a female was observed on 7 June removing a fecal sac and feeding young (Clapp), (c) being built on 8 June along Culpeper Co. Rt. 721 (Wood, Jones and Thrasher), and (d) along Rappahannock Co. Rt. 622 on 8 June (Garvin, Benner, Rupchis and Day).

House Finch (*Carpodacus mexicanus*). Surprisingly uncommon. There was one high count of nine birds on 5 June in Greene and Madison Counties. Clapp had three confirmed breeding records. Birds were seen on 3 June gathering nesting material at Gid Brown Baptist Church on Rappahannock Co. Rt. 622. An old nest was found six feet up in a nine foot arborvitae (*Thuja occidentalis*) along Madison Co. Rt. 687 near Pratts. Another old nest was built inside a Mockingbird (*Mimus polyglottos*) nest, which was 4.5 feet up in a seven foot boxwood (*Buxus* sp.) at Bethel Baptist Church (Culpeper County). A few were seen in the Park near the Big Meadows and Skyland Lodges.

American Goldfinch (*Carduelis tristis*). Common throughout the area. The high count of 36 birds, mostly from southern Culpeper County, was reported on 5 June (Bazuin).

House Sparrow (*Passer domesticus*). Common in the lowlands. The high count of 25 was from the Culpeper Basin area on 6 June (Dalmases). Clapp found one nest with four eggs on 4 June in a bluebird box at Antioch Baptist Church (Madison County) and another box with three abandoned eggs on 7 June along Co. Rt. 620 at Fletcher Mill, (Rappahannock County). There were no records from the higher elevations.

DIFFERENTIAL FALL PASSAGE TIMES IN TWO SUBSPECIES OF THE PALM WARBLER THROUGH THE EASTERN SHORE OF VIRGINIA

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The Palm Warbler (*Dendroica palmarum*) has two recognized subspecies; the Western Palm Warbler (*D. p. palarum*) and the Yellow Palm Warbler (*D. p. hypochysea*; American Ornithologists' Union 1983). The subspecies differ in morphology, plumage coloration, and distribution (Bent 1949). The Western Palm Warbler breeds from northeastern British Columbia, east to central Ontario, and south to northern Wisconsin and Minnesota. The winter range of the Western Palm Warbler lies along the Gulf Coast, from Louisiana to Florida, extending northward to South Carolina and south to the Bahama Islands and the Greater Antilles. The breeding range of the Yellow Palm Warbler generally lies to the east of the Western Palm Warbler. The Yellow Palm Warbler breeds from eastern Ontario, east to southern Newfoundland, and south to New Hampshire. The winter distribution of the Yellow Palm Warbler generally overlaps much of winter range of the Western Palm Warbler. However, the Yellow Palm Warbler does not occur as far south, being limited to southern Florida.

The fall and spring migratory distribution and chronology of the Western Palm Warbler are also different from those of the Yellow Palm Warbler (Bent 1949). During the spring, the Western Palm Warbler primarily migrates west of the Allegheny Mountains while the Yellow Palm Warbler passes primarily to the east of this landmark. The fall migration routes are quite similar, although the Western Palm Warbler has been observed more frequently east of the Allegheny Mountains to the Atlantic Coast during autumn. Differential timing of passage between the subspecies has been described in both the spring and fall (Bent 1949, Griscom and Sprunt 1957, Chapman 1968). In general, the Western Palm Warbler has been observed to initiate spring and fall passage earlier than the Yellow Palm Warbler. However, these reports have compared only the dates of first occurrence between the two subspecies at different geographic locations. The purpose of this study is to describe and compare the temporal distribution of fall passage between the subspecies of the Palm Warbler over an entire season at a single geographic location.

METHODS

Data were compiled from the records of the Kiptopeke Banding Station. The station was established in 1963 near the tip of the Delmarva Peninsula and has operated nearly every year since at the same location (see Scott 1963 for a site description). Banding operations are conducted each year during September and October with the primary interest of banding fall land bird migrants.

In order to examine the timing of migration, the frequency of each subspecies captured was totaled for each banding day from the years 1968 to 1995 (excluding 1983 when records were incomplete). Total net hours within a season varied between years. However, the cumulative net hours over the 27 years remained consistent when compared before and after a median banding date. Therefore, with no detected seasonal bias in net effort, the total birds captured for each day was used as the test statistic to compare the temporal distribution of captures between subspecies and the standardized captures (captures/1,000 net hrs) was used only as a descriptive statistic to describe the year to year variation in capture rates.

RESULTS

A total of 813 Yellow Palm and 2,465 Western Palm warblers was captured over the 27 years examined. Capture rates of the two subspecies showed considerable variation among years. The capture rate of the Yellow Palm Warbler ranged from a low of 0.4 birds/1,000 net hrs in 1990 to a high of 15.0 birds/1,000 net hrs in 1995 and averaged 2.5 ± 3.1 (SD) birds/1,000 net hrs. The Western Palm Warbler varied from a low of 0.7 birds/1,000 net hrs in 1981 to a high of 28.0 birds/1,000 net hrs in 1995 and averaged 8.1 ± 6.2 (SD) birds/1,000 net hrs. The median capture dates were 3 October and 13 October for the Western Palm and Yellow Palm warblers, respectively (Figure 1). The median dates of capture were significantly different for the subspecies (Mann Whitney U test, $U = 546937$, $p < 0.001$). The median date of capture for the Western Palm Warbler preceded that for the Yellow Palm Warbler by an average of 10.5 ± 4.7 (SD) days.

Several species of migratory birds exhibit differential passage times between age classes (i.e. immature versus adult birds) (Nolan and Ketterson 1990, Husnel 1991). It is possible that the earlier passage dates of the Western Palm Warbler were a result of earlier passage by members of one age class. To examine the possible effects of age on the observed passage dates, we used a subset of five banding seasons to compare seasonal trends in age ratios of captured Western Palm Warblers. The proportion of immature birds in the subset sample was compared before and after a median date of capture. Age ratios were statistically indistinguishable before and after the subset median date of capture ($X^2 = 1.12$, $p > 0.50$), demonstrating there was no shift in the proportion of immature birds in the sample between early and late segments within a season.

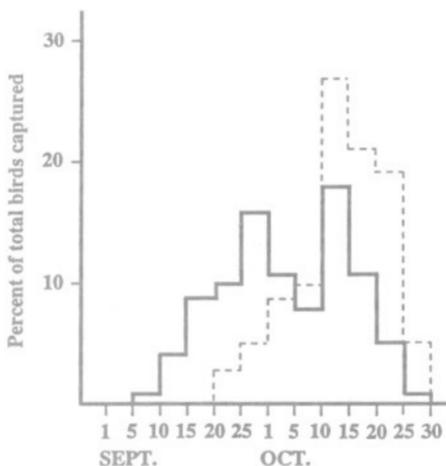


Figure 1. Percentage of total Western Palm Warblers (solid line) and percentage of total Yellow Palm Warblers (dashed line) captured over five day intervals in September and October. Median capture dates were 3 October and 13 October for the Western Palm and Yellow Palm warblers, respectively. Records were compiled from 27 fall banding seasons at Kiptopeke, Virginia.

DISCUSSION

The Western Palm Warbler passes through Kiptopeke in the first week of September (Figure 1). The Yellow Palm Warbler does not begin passage through this site until the third week in September (Figure 1.). This result is similar to previously reported observations at different geographic locations (Bent 1949, Griscom and Sprunt 1957, Chapman 1968). Furthermore, the temporal distribution of Western Palm Warbler captures was statistically distinguishable from that of the Yellow Palm Warbler. Comparisons of median dates of capture between the subspecies revealed that the Western Palm Warbler precedes the Yellow Palm Warbler by an average of ten days.

The earlier passage time of the Western Palm Warbler was not a result of differential passage of age classes. Age ratios remained consistent across the banding period. This result may demonstrate that the earlier passage times of the Western Palm Warbler were movements among entire populations (i.e. all age classes).

The reasons for earlier passage times of the Western Palm Warbler remain speculative. However, the result may be expected due to the more southern winter distribution of the Western Palm Warbler. Previous studies have documented earlier spring passage dates for species that breed in more northerly latitudes (Francis and Cooke 1986, Hagan et al. 1991). The results we obtained are similar to migratory patterns of Dark-eyed Juncos (*Junco hyemalis*; (Nolan and

Ketterson 1990), in which relative passage times of individuals that winter farthest south precede the passage of individuals that winter in more northerly latitudes.

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SIMULTANEOUS BROODING BY TWO MOURNING DOVES

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Incubation or brooding by two adult birds at the same time does occur, but is rare. It has been reported in the Red-legged Partridge (*Alectoris rufa*), Temminck's Stint (*Calidris temminckii*), Chimney Swift (*Chaetura pelagica*), Siberian Jay (*Perisoreus infaustus*), European Robin (*Erithacus rubecula*), Willow Warbler (*Phylloscopus trochilus*), Song Sparrow (*Melospiza melodia*), Northern Cardinal (*Cardinalis cardinalis*), and Reed Bunting (*Emberiza schoeniclus*) (Skutch 1987, Welty and Baptista 1988).

Simultaneous incubation has only once been reported in Mourning Doves (*Zenaida macroura*). Skutch (1987) found a nest of an American Robin (*Turdus migratorius*) that contained one robin egg, two eggs of a Yellow-billed Cuckoo (*Coccyzus americanus*), and two eggs of a Mourning Dove. The Mourning Dove was seen incubating along with the Cuckoo. A survey of pertinent nesting literature failed to reveal any report where two Mourning Doves incubated or brooded on a single nest at the same time (Craig 1911, Nice 1923, 1938, Bent 1932, Pearson and Moore 1939, Monk 1947, Austin 1951, Quay 1951, Scofield 1952, Swank 1955, Jackson and Baskett 1964).

At 10:00, 8 June 1996, a rather bulky Mourning Dove nest composed of needles and twigs from a white pine (*Pinus strobus*), was discovered in the rain gutter of a private residence in East Hempfield Township, Lancaster County, Pennsylvania. The nest contained a recently hatched nestling and a piped egg about to hatch. An adult Mourning Dove flushed from the nest just prior to its examination, and a second Mourning Dove was perched about three meters away on the eaves of the roof. When the site was re-examined at 08:30, 14 June, two adult Mourning Doves were found sitting side by side on the nest (the nest held two nestlings with opened eyes and developing contour feathers). Both birds flushed from the nest, the female performed distraction injury feigning (broken wing ruse), dropping to the ground as if it could not fly well, walking away from the nest site with wings extended, and occasionally jumping into the air as if making an attempt to fly. When about 30 m from nest site, she easily flew to a limb high in a tree. The second adult flew directly from the nest to another tree, but gave no behavioral indication of its sex. The nest was revisited three more times that day, at 10:00, 12:15 and 14:30; on each occasion both adults were again sitting side by side on it, apparently simultaneously brooding the young. The nest was visited

again on 22 June with observations at 09:00, 12:00, and 15:30. At each of these times one adult was sitting on the nest while the other either perched on the side of the nest or on the side of the rain gutter beside the nest. The heads of two large young protruded from beneath the sitting adult, allowing no remaining space for the second adult. On 30 June the nest was found abandoned.

Mourning Doves are social birds, with lone individuals seeking others to rest and preen near (Goodwin 1983). A mated pair also shares incubation, although usually on a rather rigid ritualized schedule (Goodwin 1983, Johnston and Janiga 1995). The male replaces the female and incubates from approximately 09:30 to 15:00 (Nice 1938); the female attends the nest the rest of the day, and the eggs are almost continuously covered (Craig 1911, Nice 1923, Bent 1932). Presumably the brooding schedule is similar to that of incubation.

Two possible alternative explanations for the apparent simultaneous brooding behavior can be dismissed. The change in incubators or brooders by Mourning Doves may be done in two ways (Goodwin 1983). Either the incoming bird sits on the tail of the incubating bird, which then creeps out from under it and flies directly away in the opposite direction (this assures continuous incubation of the eggs), or the incubating bird leaves when it sees the incoming bird approach the nest from 0.5-1.5 m (the eggs are uncovered for 3-120 sec). The observations of two adults sitting side by side on the nest at various times during the day do not match either of these behaviors. The second possible explanation, that the companion brooder was a recently fledged individual, must also be dismissed. Skutch (1976) has reported that, upon approaching a brooding White-tipped Dove (*Leptotila verreauxi*), the bird flew away feigning injury, and then an almost fully grown young arose from the nest and flew away. The second bird sitting on the Pennsylvania nest was not a recently fledged juvenile. It was of full adult size, plumage and color, and lacked the stiff-quilled juvenile feathers, buffy-brown dorsal coloration and whitish borders of the wing coverts of the juvenile (Bent 1932). All of its behaviors, including fully developed flight, were those of an adult. Also it was not being brooded, it was brooding. Unfortunately, this second bird could not be sexed.

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CAROLINA CHICKADEE "INCUBATES" EGGLESS NEST

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A Carolina Chickadee (*Parus carolinensis*) had a half-built nest in a bluebird box in my backyard in Aldie (Loudoun County) Virginia, on 22 April 1996. On 29 April, the nest contained the chickadee and two cold, unincubated eggs suggesting a clutch in the early stages of laying. When I rechecked the box on 8 May, I found the chickadee evidently incubating, but when she flew I found that there were no eggs in the nest. On subsequent checks at 18:22 on 10 May, and 07:09 on 16 May, the bird was still "incubating" the empty nest. The bird was not present on 23 May, but flew from the vicinity of the box two days later. After this date I did not see the chickadee at or near this nest. Thus, this chickadee had remained on an empty nest for at least eight days and possibly as many as 17 days.

The nest was abnormal for this species; it had a well-formed cup but lacked a bottom, with the eggs having been laid on the bare floor of the box. In a normal nest, not only is there a well formed bottom but, during laying, the chickadees cover the eggs with nest material to conceal them from predators. I have only once previously found a similar Carolina Chickadee nest, one with five cold eggs on the bare bottom of a bluebird box at Sky Meadows State Park, Virginia (Fauquier County), on 7 May 1993.

The Sky Meadows nest almost certainly failed as a result of House Wren (*Troglodytes aedon*) interference with the nest. A House Wren was on the fence near the box when I found the chickadee nest, and the box contained a nearly complete House Wren nest when I next examined it.

I do not know what took the eggs in the Aldie nest. It is unlikely that it was either a raccoon (*Procyon lotor*), because the box is mounted on a steel pole, or a black snake (*Elaphe obsoleta*), because the weather during this period was unusually cold and rainy. I suspect that the two (or possibly more) eggs may have been thrown out by a Brown-headed Cowbird (*Molothrus ater*), because many of these birds were concurrently visiting my feeding station about 10 yards away.

Apparently birds "incubating" eggless nests are relatively uncommon. I have been unable to find much evidence of this trait in the literature. I did find reports

of Canada Geese (*Branta canadensis*; Fjetland 1978) and Wood Ducks (*Aix sponsa*; Heusmann and Peckala 1976) "incubating" eggless nests, but found no references to such behavior in North American passerines. However, similar behavior has been reported in two Old World congeners of the chickadee, the Great Tit (*Parus major*) and the Blue Tit (*Parus caeruleus*). One Great Tit in Great Britain sat on an empty nest for at least 23 days (Male 1977), but it is uncertain whether the nest ever contained eggs. Another Great Tit that lost a full clutch to vandalism sat on the empty nest for at least another 16 days (Owen 1940). Still other Great Tits are known to have built nests and "brooded" upon them although eggs were never laid (editorial note in Male 1977). Dhondt and Eyckerman (1978) reported two instances of "incubation" of empty nests in nesting records for about 1,200 pairs of Great Tits in Belgium; one of the tits sat on an empty nest for 21 days.

Kittle (1978) found a Blue Tit on an empty nest in Great Britain in 1976 and the same bird also sitting on an empty nest the following year. Dhondt and Eyckerman (1978) reported Blue Tits sitting on empty nests in about 1,000 nestings in Belgium, 1969-1977, but provided few details.

I suspect that the Carolina Chickadee at Aldie may have been an inexperienced breeder, or one whose brooding instinct was much stronger than usual. Data from the European records tend to support this conjecture. Both the Blue Tit reported by Kittle and one of the Great Tits reported by Dhondt and Eyckerman were known to be first-year birds. This factor is clearly not invariant as one of the Blue Tits recorded on an empty nest was three or four years old (Dhondt and Eyckerman 1978).

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ANOTHER INSTANCE OF A CAROLINA CHICKADEE LAYING EGGS IN TWO NESTS

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A recent note reported a Carolina Chickadee (*Parus carolinensis*) that laid and incubated eggs in two separate cups within the same nest box in Ohio (Doherty and Condit 1994). We recently discovered evidence of another instance of such behavior. In the D. Ralph Hostetter Museum at Eastern Mennonite University in Harrisonburg, Virginia, is a Carolina Chickadee double nest with three eggs in the larger nest cup and two in the adjacent smaller one (Fig. 1). Data with this set are only "Mrs. Gordon Shantz, 5 June 1975". Mellinger learned from Mrs. Shantz that the double nest had been in a bluebird box on a farm near Ridgeville, Virginia, just east of Harrisonburg, Rockingham County, and now included in Harrisonburg. Mrs. Shantz said that the nest was abandoned when found, presumably because it had been thoroughly soaked by a storm.

The arrangement of eggs in the two Virginia nests is the same as found in the Ohio nests; eggs were apparently incubated in both Ohio nests, but young hatched in only the nest with three eggs.

We know of no other instance of multiple nests in North American parids, but this phenomenon has been reported several times in Europe. In one instance a pair of Great Tits (*Parus major*) built three nests beneath three holes in an inverted flowerpot. In these nests the eggs numbered five, four, and one, but all nests were eventually deserted (Harrison 1961). In another situation a pair of Blue Tits (*Parus caeruleus*) built five complete and two partial nests under an inverted earthenware bowl. Eventually two eggs were laid in one nest and one egg in each of three others (Harrison 1961). Both species entered their nests through drainage holes in the bottoms of the pots.

Instances of a bird laying eggs in more than one nest cup are known for only a few other species in North America. Eastern Phoebe (*Sayornis phoebe*) have laid eggs in adjacent nest cups under bridges in Virginia and elsewhere (Clapp 1993,



Figure 1. Double nest of a Carolina Chickadee. The nest is in the collection of the D. Ralph Hostetter Museum at Eastern Mennonite University in Harrisonburg, Virginia.

and references therein). In 1994, an Eastern Phoebe laid eggs in two different cups on adjacent concrete supporting pillars along US Rt. 15, just north of Leesburg, Loudoun County, Virginia (Clapp, pers. obs). One nest evidently fledged young; the eggs in the other were abandoned.

A Chipping Sparrow (*Spizella passerina*) built two nests side by side at a site in Maryland and laid three eggs in one nest, one in the other. Apparently only the cup with three eggs was incubated (Fisher 1897). A Bell's Vireo (*Vireo bellii*) in Oklahoma had a double nest with one nest containing three near-fledging young and a female laying eggs in the other nest (Morse 1927).

American Robins (*Turdus migratorius*) have built multiple nests, once on the steps of a ladder and twice where rafters rested on long horizontal girders (Herrick 1935) and a Carolina Wren (*Thryothorus ludovicianus*) built seven nests in a row under a bridge in Georgia (Denton 1950).

At least 15 Old World species have been reported making multiple nests (Hemmingsen 1956). "Mistakes" in multiple nest building are predominantly from thrushes in the Old World (Owen 1911, 1918, Jourdain 1918, Marraige 1919, Duncan 1925, Hawkins 1925, Southern 1937, Lucas 1948, Ashby et al. 1947, Venables and Venables 1949). Other birds building such multiple nests in Europe include a Pied Wagtail (*Motacilla alba*; Boyd 1928) and a Chaffinch (*Fringilla coelebs*; Colthrup 1911).

In most of these instances, as for most of the North American instances cited above, such nests are usually made in circumstances in which the bird clearly had confused the nest site from visit to visit and entailed man-made sites such as

the rungs of a ladder or rafters provided repetitive similarity not likely to be found in the species' usual nesting sites. Instances in which multiple nests are made as described above for the Carolina Chickadee are far more rare. Examples from Europe include a Dunnock (*Prunella modularis*) that built two nests side by side in a hedge, but finished neither (Colthrup 1911), and a Song Thrush that built or partially built three nests in ivy on an oak (Mees 1950)

Richard C. Banks, David W. Johnston, Robert Reynolds, and Richard Zusi made helpful comments on the manuscript.

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A VERMILION FLYCATCHER IN WOODBRIDGE, VIRGINIA; FIRST RECORD FOR THE STATE

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On 13 December 1994, I (along with Dennis Shiflett and Bill Godfrey) observed a single adult, male, Vermilion Flycatcher (*Pyrocephalus rubinus*) landing on the pebble patio area of the observation/control building (#306) on the Woodbridge Research Facility's northeastern meadow (Prince William County). It faced us directly at a distance of approximately 15 ft, showing a full expanse of bright red from throat to chest, and on its belly and under tail coverts. Its plumage was ruffled in the brisk northerly wind. It seemed very energetic, almost hyperactive, twisting, turning and pumping its rather short, notched tail. After several quick turns in place it flew up to the railing of the patio (at this point 10-12 ft from the observers) and preened for a couple of minutes before disappearing around the southwest corner of the building. About five minutes passed before it reappeared and perched for another 3 minutes on a fireplug just below and beyond its original patio perch. At 10:25, it made an abrupt departure west along the Research Facility's north fence line. An American Kestrel (*Falco sparverius*) moving nearby may have contributed to its failure to return. The flycatcher was under close observation for a total of approximately 10 minutes.

In addition to the field marks noted above, this individual had dark eyes and a dark bill. Its red forehead/crest was separated from the rest of the frontal red by an unbroken eye line and ear patch of chocolate brown which blended with the brown of the nape, back, and upper tail. It showed faint, double, wing bars. Both crest and chest feathers were ruffled. The vermilion forehead/frontal crown area appeared to have a narrow, dark, median line. The dark crown line, which was sometimes visible, was noted by several observers. Overall size was judged to be slightly (about 0.5 in) less than an Eastern Phoebe (*Sayornis phoebe*).

At the time of the sighting, it was overcast and the temperature was 34°F. Visibility was 2 miles. The wind was from the north at 10-15 knots.

After reporting this sighting to Erika Wilson, the Voice of the Naturalist, a VSO visit to the site was scheduled for 14 December. On this occasion, the (apparently) same individual was sighted in the Woodbridge Research Facility's central complex of nearly deserted buildings. Despite intermittent rain and poor lighting, several people photographed the bird.

Over the next two weeks, additional individuals and groups (approximately fifty people altogether) were able to observe and photograph this bird (15, 16, 20, 22, 28 December) on the Research Facility site - almost always in the building

complex where it seemed to be getting insects from chinks on the mortar of the brick walls. In one instance it was observed catching an earthworm. On two occasions the bird seemed to be drooping its wings while at rest. Once, only the right wing was held in this way. At no time, however, did it appear to have difficulty flying. It was alone except when Eastern Phoebes shared the trees near the one heated building. The only time it was seen outside the research complex (other than the first sighting) was when it was observed returning from a nearby marsh area conspicuously occupied by a mixed flock of Tufted Titmice (*Parus bicolor*), Carolina Chickadees (*Parus carolinensis*), Dark-eyed Juncos (*Junco hyemalis*), Song Sparrows (*Melospiza melodia*), and at least two Eastern Phoebes.

The Vermilion Flycatcher was last seen on the morning of 1 January 1995, during the Audubon Christmas Count. The period 13 December-1 January had been comparatively warm. Nighttime temperatures rarely dropped below freezing and during the day rose into the mid to upper 40's. When next visited, on 3 January, temperatures had fallen to the low to mid 20's and the Research Facility's one occupied building had suffered a heating failure. Subsequent visits, from 6 January - 29 January, failed to yield additional sightings.

[Editor's note: This is the first accepted state and Coastal Plain record for Virginia - not the second, as indicated in the 1996 Report of the Virginia Avian Records Committee report published in *The Raven* 67 (2).]

FIRST RECORD OF A HOARY REDPOLL (*Carduelis hornemanni*) IN VIRGINIA

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On 27 February 1994, the author, along with Robert L. Anderson, Robert L. Ake, David L. Hughes, Gary Williamson, Susan T. Hubbard, Joyce Livermore, George and Rosemarie Harris, Bettye Fields, Maryann Madison, and other members of the Cape Henry Audubon Society, observed a Hoary Redpoll at the feeder located at the home of the Albert Beverage family on Route 636 in Monterey, Highland County. The observations lasted from 07:25-07:35 and the bird was studied in favorable light at distances under 10 m.

Also present at the feeder were 40-50 Common Redpolls (*Carduelis flammea*), a species staging its first winter "invasion" of the mid-Atlantic states since the winter of 1977-1978. Scanning through this flock for the third time in two days, I noticed a remarkably frosty whitish bird with a very small bill. Several other people on the field trip attested that the bird was easy to distinguish from the flock by virtue of the white ground color of its plumage and its small bill.

We recorded the following characters with the bird under observation. The rump was an immaculate white, as were the under tail coverts, a condition not to be expected in *C. flammea*. The plumage of the sides was white with two small dark streaks. The edges of the back and mantle and scapular feathers (particularly the latter) were bright white, unlike those in any *C. flammea* in the flock (and a field characteristic limited to *C. hornemanni*). The nuchal region and hind crown posterior to the small red "poll" were white and unstreaked, and there was a hint of buff in the ear coverts. A very narrow band of pale plumage was present anterior to the poll, posterior to the maxilla. The breast and belly were white and unmarked, with no obvious cast of pink as is sometimes seen. The wing bar produced by the greater coverts was bright white and wide, widest in the center of the bar, and wider than on adjacent *C. flammea*. The bird was much smaller-headed, stouter-bodied, and tinier-billed. The bill showed the typical "pushed in" look of a female *C. hornemanni*. The presence of a few dark streaks in the flanks suggested *C. h. exilipes* rather than the larger and paler nominate form. Previous and subsequent reviews of leucistic individual *C. flammea* rule out such a form based on both structure and pigmentation, as all such individuals thus far documented have shown long, irregular white mantle feathers against very dark feathers in the back, which produces a very different appearance than the neat, white mantle of adult *C. hornemanni*.

No agonistic encounters between this individual and surrounding *C. flammea* were noted, as is typically the case with prolonged observations of *C. hornemanni* among feeding flocks of *C. flammea* at feeding stations (Czaplak 1995). The bird did, however, hold its wings drooped away from the upper tail coverts for extended periods (over one minute), with head and tail slightly raised and breast low to the asphalt; this may have been a threat posture directed at the Common Redpolls.

On 28 February 1994, Brian Patteson secured excellent photographs of this individual, which was seen by nearly 100 birders in subsequent weeks through at least 1 April 1994. One other report of a Hoary Redpoll was made in the state over the winter — an individual at Middletown, Virginia, on 23 and 31 January (R. Simpson, pers. comm.), although photographs of that individual were not sufficient for scrutiny by the Virginia Avian Records Committee. West Virginia also obtained its first *C. hornemanni* in this southward irruption (Hall 1994), and there were numerous reports of the species from Maryland (cf. Czaplak 1995, Blom et al. 1994) and the states to the northeast (Brinkley et al. 1994). Although juvenile and adult female *C. h. exilipes* can be difficult to distinguish from *C. flammea* under most field conditions, this winter's flight considerably improved the U. S. birdwatching community's knowledge of reliable field characters for both species (Czaplak 1995).

Hybridization between the two species — one concern voiced by some of the first observers on 27 February — has never been demonstrated, and both are currently maintained as separate species on all national, regional, and world avifaunal lists (Knox 1988). The Monterey bird was found to conform with all characteristics described in earlier articles (e. g., Lansdown et al. 1991), as well in subsequent publications (Jännes 1995) on the field identification of this species.

[Editor's Note: This record was accepted by the Virginia Avian Records Committee, becoming the first State and first Mountain and Valleys record.]

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FIRST RECORD OF A BAND-RUMPED STORM-PETREL (*Oceanodroma castro*) IN VIRGINIA

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On 14 August 1988, the authors, in company with Grayson Pearce, Erika Wilson, and others, observed seven different Band-rumped Storm-Petrels (*Oceanodroma castro*) at various distances off the coast of Virginia.

The first two birds were observed several times; Brinkley observed them flying toward a group of resting Cory's Shearwaters (*Calonectris diomedea*) first at 10:15 at 36° 34' 42" N, 74° 33' 00" W, just north of the border with North Carolina. Noticeable in this first encounter was a storm-petrel, substantially larger than nearby Wilson's Storm-Petrels (*Oceanites oceanicus*). Subsequently, this pair and five other individuals were observed clearly for a total of about 20 minutes, in deep water (2,000 m or greater) with a Gulf Stream incursion at the surface (sea water surface temperature 25°C or greater, with *Sargassum* spp. algae present in small scattered groups). Light was intense, but favorable for observation of all the individuals.

Our notes on these Band-rumped Storm-Petrels include the following observations of plumage, structure, and flight behavior. The plumage of these birds differed from adjacent Wilson's Petrels in being slightly darker overall, with much less contrast between the paler greater upper wing coverts (often collectively called a "carpal bar" because it extends from the carpal joint) and the remainder of the wing than in any of the Wilson's in any stage of molt. These coverts in the Band-rumped were, in all cases, seen to be a dusky gray-brown, whereas all Wilson's showed a paler, dirty white or tannish white cast to the greater coverts. In all cases the white "band" of the rectrix coverts occupied less overall area of the caudal projection than was the case in any Wilson's, by at least 10-15%, in each case, and appeared as an even band across the rump that then extended onto the rather heavy "side rump" (between vent and upper tail coverts) onto the underside. This did not appear nearly as uniform as a "cigar band," as some published descriptions have suggested. In the Leach's Storm-Petrel (*Oceanodroma leucorhoa*), the greater upper wing coverts are somewhat

broader and usually intensely buffy, or in molt at least show a warm buff cast, never seen in the Band-rumped. The upper tail coverts in Leach's are of a different shape above (more oval) and frequently show a dark dividing line down the center of the rump, oriented along the axis of the body.

The proportions of all the birds consistently set them apart from Wilson's. All had a more "bullish" appearance than the daintier Wilson's, with a stouter head and thicker bill, a heavier cephalic projection overall by virtue of a heavier breast, and larger overall size. The caudal projection may have seemed greater than it actually was, because of the proportionately smaller area of white (rectrix coverts). The shallow notch in the tail of Band-rumped was not clearly observed on any of the birds, but this is very difficult to detect at sea and is generally not seen clearly in Band-rumped Storm-Petrels studied off the North Carolina coast. The much deeper fork in the tail of Leach's Storm-Petrels would have been easily seen at the 15-100 m distances at which we saw these Band-rumped.

The wing area appeared greater than that of Wilson's on all birds, because of the bird's flight behavior, in which the wings were often held out and away from the body, with the trailing edge often quite straight when the wings were not in motion. In the Beaufort force-3 winds of the day, all storm-petrels were observed to engage in a roller-coaster-like dynamic soaring in point-to-point flight, a flight attitude more powerful than that of Wilson's under these conditions, and more direct than that of Leach's. All Band-rumped Storm-Petrels seen that day flew on flatter and stiffer wings, with less upstroke than usually is observed in Leach's Storm-Petrel, with much more gliding, and far fewer course changes between strokes. The shape of the wing in this flight mode was often distinctly sickle-shaped when the wings were not fully extended. There was no suggestion, when the wings were in motion, of the swallow-like fluttering of Wilson's, or of the deep and erratic nighthawk-like wing strokes of Leach's, whose sharp angle at the carpal joint is much greater than that of Band-rumped in most flight behaviors. However, when first encountered, all birds were seen to engage in evasive flight behavior very similar to typical locomotion of Leach's. In all cases, when the flocks of storm-petrels or shearwaters, with which these birds were resting, were approached, the Band-rumped Storm-Petrels were the first to flush from the flocks and all flew directly away from the boat, making photographic documentation impossible. This behavioral difference from other storm-petrel species was first noted by Lee (1984) and is consistent in our experience with this species off North Carolina.

These sightings constitute the first records of the species in Virginia, though published chronologically after a photographic record of 1991 (Abbott and Czaplak 1993). Both authors are familiar with the species from the Gulf Stream waters of the Continental Slope off North Carolina's coast, where they have jointly recorded nearly 1000 observations of the species. The species was recorded from the Continental Slope waters off the New Jersey coast (Carteret Canyon, 10 September 1990, A. Brady, pers. comm.), but otherwise only as a hurricane-blown vagrant in the interior of other eastern North American states and provinces. It has not yet been recorded from Maryland or Delaware waters.

Given the species' status as a regular resident off the central North Carolina coast from late May to early September, we feel that it is probably an irregular, very uncommon visitor to Gulf Stream-influenced waters well off the Virginia

coast in the summer and early autumn. Owing to the infrequency of pelagic excursions in Virginia waters, as well as to the infrequency of episodes of Gulf Stream incursions into the Continental Slope waters visited on such excursions, records of the species will likely continue to be few, until research cruises are conducted, such as have been conducted in North Carolina waters for the past 20 years.

[Editor's note: These sightings were accepted by the VSO Avian Records Committee. They represent, chronologically, the first record of this species in Virginia, but constitute the second accepted record for the state.]

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FIRST RECORD OF A COMMON MURRE OFF THE VIRGINIA COAST

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At about 13:20, on 13 February 1994, during a pelagic birding trip, one of our leaders, Michael O' Brien, spotted a large alcid off the port side of the boat. Our location, at the time, was 36°59'30"N, 74°54'00"W (about 50 miles east of Cape Henry) in 50 m of water. We had already seen several Razorbills (*Alca torda*) earlier in the day, but this bird appeared somewhat longer-necked. Upon closer approach we quickly identified it as a Common Murre (*Uria aalge*). It was about equal in size to a Razorbill but had a longer, thinner neck and a tapered bill. The bird had a considerable amount of white in the face, which shaded to a smoky gray toward the neck. The crown and the back of the neck appeared very dark, almost black, and there was also a dark postocular stripe. The rest of the upperparts were a very dark brown, almost black, with the exception of a short white crescent formed by the trailing edge of the secondaries in the folded wing. The underparts were an immaculate white. We ruled out the possibility of the bird being a Thick-billed Murre (*Uria lomvia*) because that species is much darker-headed in all plumages. We were able to get very close to the bird, and I took several photographs (Fig. 1), which represented the first documented occurrence of a Common Murre in Virginia.

[Editor's note: This sighting was accepted by the VSO Avian Records Committee, becoming the first State record for this species.]

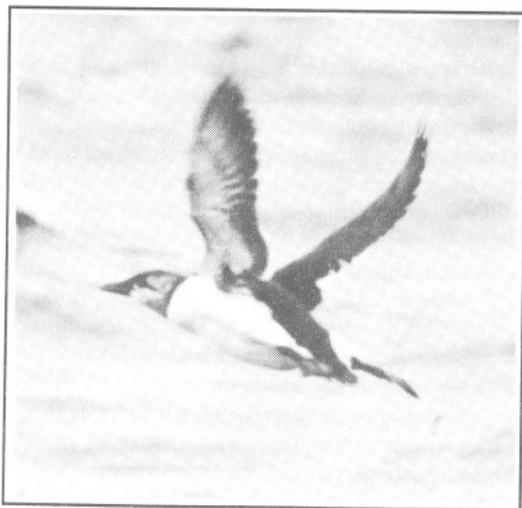


Figure 1. The first Common Murre seen off the coast of Virginia. Photographed by J. B. Patteson on 13 February 1994.

VIRGINIA CHRISTMAS BIRD COUNTS 1995-96 SEASON

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For the first time in ten years, there were fewer Christmas counts held in Virginia than in the previous year. Results from only 47 locations were received, down from an all-time high of 51 in 1994. The Dismal Swamp count was canceled because of torrential rains that rendered all roads through the swamp impassable and illness precluded activities at Nickelsville. No data from Nokesville or Lake Anna were received by *Audubon Field Notes* or *The Raven*.

Results from Chesapeake Bay-Bridge Tunnel, Walkerton, Darlington Heights, Lynchburg, Highland County, Peaks of Otter, Roanoke, Claytor Lake, Glade Spring, and Bristol were received for publication only in *The Raven*. There were no new counts added to the roster.

As in the past few years, a few counts were not conducted according to the standard Christmas Bird Count criteria. The Chesapeake Bay Bridge-Tunnel census is conducted only on the islands of the bridge tunnel complex and birds are counted only one mile out from the structures. The Highland County census, on the other hand, covers almost twice the area of the standard 15 mile diameter circle. The Darlington Heights census was conducted on 21 January, well outside the count period set by the Audubon Society. There is some debate as to whether these censuses, which do not fall within the guidelines set by Audubon and which other counts rigidly follow, should actually be included in the following tables. Important data, however, are gathered from them and there seems to be no other appropriate means of publishing them except as individual compilations in this or another journal.

The counts in Appendix I are arranged geographically. Counts 1 through 15 are located in the Coastal Plain, counts 16 through 27 are in the Piedmont, and counts 28 through 47 all fall within the region known as Mountains and Valleys. (See Appendix I, pages 52-73 for the 1995-96 Virginia Christmas Bird Count species list and pages 74-75 for count conditions; See Appendix II for Christmas Count descriptions.)

One hundred ninety-nine species, five forms, and two hybrids were found in 1995. In addition, a jaeger (*Stercorarius*) of undetermined species was spotted at Back Bay, and a hummingbird identified only as *Selasphorus*, sp. was found at Little Creek. One other species, a Snowy Owl (*Nyctea scandiaca*), was present at Northern Shenandoah Valley during count week, but could not be found on

count day.

The temperature was generally much colder than that experienced during the count period of the previous year. More than half the sites reported ice and at least five sites experienced snowfall. Rain and fog plagued observers on 16 counts. Temperatures ranged from a low of 10°F at Philpott Reservoir to a high of 60°F at Clifton Forge and Roanoke, both of which held their counts on 16 December.

Two species were new to the list, a Pacific Loon (*Gavia pacifica*) at Back Bay and a Mew Gull (*Larus canus*) at Nansemond River. Three Thayer's Gulls (*L. thayeri*) also were reported at Nansemond River and a California Gull (*L. californicus*) was reported at Little Creek.

Several species were found that occur infrequently in Virginia Christmas counts. The Least Bittern at Back Bay was the first reported on a Christmas count since 1985. White Ibis (*Eudocimus albus*), Glossy Ibis (*Plegadis falcinellus*), the European form of the Green-winged Teal (*Anas crecca*), Eurasian Wigeon (*Anas penelope*), Harlequin Duck (*Histrionicus histrionicus*), Common Moorhen (*Gallinula chloropus*), Iceland Gull (*Larus glaucooides*), two Painted Buntings (*Passerina ciris*), Red Crossbill (*Loxia curvirostra*), White-winged Crossbill (*L. leucoptera*), and Common Redpoll (*Carduelis flammea*) were also found. It should be noted that the Common Redpoll was located in the Tennessee section of the Bristol count. Please also keep in mind that rare species seen on any counts must be accepted by the Virginia Avian Records Committee (VARCOM) before being officially included on the cumulative Christmas count list.

In spite of the total being augmented by these unusual birds, the overall species count was 15 lower than last year. This is because a lot of the "regular rarities" did not appear. Among the missing were Red-necked Grebe (*Podiceps grisegena*), Eared Grebe (*P. nigricollis*), Green Heron (*Butorides virescens*), Greater White-fronted Goose (*Anser albifrons*), Common Eider (*Somateria mollissima*), King Eider (*S. spectabilis*), Ring-necked Pheasant (*Phasianus colchicus*), Spotted Sandpiper (*Actitis macularia*), Black-legged Kittiwake (*Rissa tridactyla*), Yellow-breasted Chat (*Icteria virens*), and Northern Oriole (*Icterus galbula*).

Two Blue-gray Gnatcatchers (*Poliophtila caerulea*) reported on the Breaks Interstate Park count were not accepted because no documentation accompanied the count. In addition, a Summer Tanager (*Piranga rubra*), reported from Nokesville on the 1994-95 Christmas count, was rejected by VARCOM because the details contained within the documentation were insufficient to allow positive confirmation.

APPENDIX 1
1995-96 CHRISTMAS BIRD COUNTS IN VIRGINIA

Key for pages 52-73: Bold, underlined figures indicate an unusual species or an unusual number of individuals for that particular count. "CW" indicates that the species was seen during count week, but not on count day.

Key for pages 74 - 75:

Weather codes:

CLD = Cloudy
CLR = Clear
FOG = Foggy
HVR = Heavy rain
LGR = Light rain
LGS = Light snow
LHR = Light to heavy rain
LHS = Light to heavy snow
MCD = Mostly cloudy
MCR = Mostly clear
OVC = Overcast
PCD = Partly cloudy
PCR = Partly clear
RAI = Rain
SSH = Snow showers
SNO = Snow

Wind codes:

V = Variable

Water codes:

MPF = Moving water partly frozen
MWO = Moving water open
SMF = Still water mostly frozen
SPF = Still water partly frozen
SPO = Still water partly open
SWF = Still water frozen
WOP = Water open
WPF = Water partly frozen
WPO = Water partly open

	Snow Goose (blue form)	Snow Goose	Brant	Canada Goose	Canada Goose (small form)	Wood Duck	Green-winged Teal (European)	Green-winged Teal (American)	American Black Duck
1. Chincoteague	8	11,638	1350	825	...	4	...	3	660
2. Wachapreague	...	67	1320	1527	...	4	...	106	847
3. Cape Charles	1	559	568	1719	...	...	...	231	927
4. CBBT	16	...	...	...	...	...	...
5. Little Creek	...	333	369	186	...	208	...	304	181
6. Back Bay	6	1470	...	1250	...	15	1	351	500
7. Nansemond River	CW	142	...	8	...	2	43
8. Newport News	...	1	98	650	...	...	...	...	36
9. Mathews	196	...	8	...	1	19
10. Williamsburg	...	1	...	1158	...	2	...	61	69
11. Hopewell	65	650	...	5694	...	20	...	...	227
12. Walkerton	405	...	...	...	1	1
13. Wash. Birthplace	...	7	...	2748	...	...	...	3	595
14. Brooke	264	...	...	...	...	2
15. Fort Belvoir	...	13	...	5178	...	27	...	322	1904
16. Manassas-B.R.	3991	...	...	...	...	...
17. Chancellorsville	1221	...	1	...	...	...
18. Gordonsville	1594	...	...	...	...	...
19. Charlottesville	1125	...	...	...	...	21
20. Warren	247	...	...	...	13	19
21. Darlington Heights	61	...	...	...	...	...
22. Kerr Reservoir	28	...	...	...	41	32
23. Banister WMA	126	...	8	...	...	...
24. Lynchburg	161	...	2	...	10	19
25. Danville	328	...	16	...	...	...
26. Martinsville	393	...	...	...	2	2
27. Philpott Res.	CW	9
28. Calmes Neck	5836	...	3	...	...	242
29. N. Shen. Valley	...	1	...	1705	1	8	...	6	52
30. Shen. NP-Luray	434	...	6	...	1	1
31. Big Flat Mtn.
32. Rockingham Co.	1	1	...	256	...	1	...	8	...
33. Highland County	37	...	...	...	...	...
34. Augusta Co.	236	...	...	...	13	...
35. Waynesboro	590	CW	4	...	19	49
36. Lexington	85	...	...	...	...	5
37. Peaks of Otter	14	...	...	...	...	...
38. Clifton Forge	6	...	9	...	...	9
39. Fincastle	148	...	2	...	...	...
40. Roanoke	123	...	4	...	6	3
41. Blacksburg	...	2	...	512	...	...	...	2	15
42. Claytor Lake	CW	...	...	...	6	5
43. Tazewell	107	...	...	...	...	...
44. Glade Spring	303	...	3	...	...	66
45. Bristol	631	...	2	...	29	8
46. Breaks I.S. Park	2	...	...	...
47. Wise County
Total individuals	81	14,743	3721	42,240	1	367	1	1541	6568

	Mallard	Mallard Hybrid	Northern Pintail	Blue-winged Teal	Northern Shoveler	Gadwall	Eurasian Wigeon	American Wigeon	Canvasback	Redhead	Ring-necked Duck	Greater Scaup
890	2	...	105	28	...	258	...	...	4	...
713	2	...	1	7	...	33	...	...	3	...
656	33	6	37	674	1	714	...	37	188	13
...	5
1121	9	1	212	250	...	589	55	6	208	19
740	208	18	504	1355	1	3576	3	18	28	2
169	2	...	77	57	...	93	3336	5	180	2
1242	15	107	...	389	54	452	192	...
265	16	...	...	...	...	...	CW	...	...	250
387	12	...	2	5	...	289	1713	2	461	...
358	14	...	...	58	...	32	...	...	323	...
90	3	...	...	...	...	...	...	...	1+8	...
941	171	...	16	9600	2	49	630
524	1	695	...	564	20	12	105	...
1922	259	1	49	46	...	18	2555	8	50	342
459
48	23	...
46
...
22	3	...
58	1	...	...	...	...	2	...
...
174	6	...	9	51	...	361	45	...	543	...
355	4	25	...	5	...
197	3	...	1	13	...	6	...	...	43	...
83
20	4	...	...	...	...	...	...
103
776	2	...	6	...	...	128	...
1427	3	...	1	6	...	13	12	1	CW	1
172	2	...	...	...	...	6	...	...	...	...
...
243	11	...	10	...	...	24	...	...	1	...
7	2
259	2	6	...	1	...	...	...	...
298	1	...	...	2	...	1	...	...	...	1	...	...
162
...
108	1	...	...	...	...	...	...
194	7	...	...	...	...	...	...
450	2	3	...	38	1	...	...	...
371	7	...	7	6	...	2	1	6	...	...
10
346	5	12	...	2	...	...	...	...
943	57	...	59	...	2	...	22	1
5
...
...
17,354	1	592	28	1040	3623	2	7093	17,422	550	2579	1267	

	Lesser Scaup	scaup, sp.	Harlequin Duck	Oldsquaw	Black Scoter	Surf Scoter	White-winged Scoter	scoter, sp.	Common Goldeneye
1. Chincoteague	2	...	...	20	...	13	...	240	6
2. Wachapreague	5	...	...	19	4	85	...	...	2
3. Cape Charles	32	...	1	83	468	5334	86	1350	32
4. CBBT	...	...	...	210	42	510	205	...	6
5. Little Creek	5	65	...	3	26	506	3	...	2
6. Back Bay	540	...	...	...	465	900	17	86	1
7. Nansmond River	2	...	...	...	...	86	1	...	5
8. Newport News	16	...	...	28	24	18	4	70	54
9. Mathews	CW	3	...	240	83	263	...	150	160
10. Williamsburg	200	245	...	...	...	...	...	...	19
11. Hopewell	5	...	...	...	...	...	...	...	2
12. Walkerton	2	...	...	...	...	...	...	...	...
13. Wash. Birthplace	9270	...	...	...	...	...	...	...	524
14. Brooke	36	...	...	...	...	...	...	...	48
15. Fort Belvoir	4814	6453	...	3	...	...	3	...	46
16. Manassas-B.R.	...	...	...	...	...	...	...	...	...
17. Chancellorsville	...	...	...	...	...	...	...	...	...
18. Gordonsville	...	...	...	...	...	...	...	...	...
19. Charlottesville	...	...	...	...	...	...	...	...	...
20. Warren	...	...	...	...	...	...	...	...	3
21. Darlington Heights	...	...	...	...	...	...	...	...	...
22. Kerr Reservoir	9	...	...	...	...	...	2	...	3
23. Banister WMA	...	...	...	...	...	...	...	...	...
24. Lynchburg	1	...	...	...	...	...	...	...	...
25. Danville	...	...	...	...	...	...	...	...	...
26. Martinsville	1	...	...	...	...	...	...	...	...
27. Philpott Res.	...	...	...	...	...	...	...	...	...
28. Calmes Neck	...	...	...	...	...	...	...	...	1
29. N. Shen. Valley	...	...	...	...	...	...	...	...	3
30. Shen. NP-Luray	...	...	...	...	...	...	...	...	...
31. Big Flat Mtn.	...	...	...	...	...	...	...	...	...
32. Rockingham Co.	...	...	...	...	...	...	...	...	...
33. Highland County	...	...	...	...	...	...	...	...	...
34. Augusta Co.	...	...	...	...	...	...	...	...	...
35. Waynesboro	...	...	...	...	...	...	...	...	...
36. Lexington	...	...	...	...	...	...	...	...	...
37. Peaks of Otter	...	...	...	...	...	...	...	...	...
38. Clifton Forge	2	...	...	...	...	...	...	...	...
39. Fincastle	...	...	...	...	...	...	...	...	...
40. Roanoke	...	...	...	...	...	...	...	...	...
41. Blacksburg	85	1	...	...	...	...	...	...	3
42. Claytor Lake	...	...	...	...	...	...	...	...	...
43. Tazewell	...	...	...	...	...	...	...	...	...
44. Glade Spring	...	...	...	...	...	...	...	...	...
45. Bristol	2	...	...	...	...	...	...	...	...
46. Breaks I.S. Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...
Total individuals	15,029	6,767	1	606	1112	7715	321	1896	920

	Bufflehead	Bufflehead X Hooded Merganser	Hooded Merganser	Common Merganser	Red-breasted Merganser	Ruddy Duck	duck, sp.	Black Vulture	Turkey Vulture	Osprey	Bald Eagle	Northern Harrier
604	...	193	...	151	4	20	125	205	...	9	30	
233	...	104	2	59	11	...	10	198	...	4	39	
1330	...	253	...	716	33	78	103	355	...	6	63	
5	154	...	...	...	...	...	...	...
1033	...	1166	4	126	756	...	...	...	2	3	4
13	...	275	...	844	80	100	56	99	...	6	42	
333	CW	43	30	280	5046	...	85	40	1	4	7	
667	...	121	...	35	351	8	7	13	...	...	7
1349	...	43	...	239	19	...	22	12	...	2	6	
181	...	276	...	1	2964	40	135	82	...	28	3	
41	...	190	4	1	8	...	18	70	...	108	10	
1	...	3	...	...	...	...	36	90	...	5	5
498	...	57	41	401	13,795	15,000	94	206	...	103	12	
121	...	40	58	225	370	...	11	11	...	6	8	
536	...	311	3501	60	276	...	28	70	...	81	5	
6	...	11	...	...	2	...	13	72	...	...	5
71	...	19	...	...	83	...	3	17	...	2	...
9	...	58	...	...	8	...	21	103	...	...	1
3	...	17	...	...	...	...	212	578	...	...	1
...	...	5	...	...	3	...	56	189	...	...	1
...	20	88	...	...	11	
289	...	50	...	...	14	...	79	25	...	6	4
13	...	2	6	...	...	...	84	107	...	1	1
4	...	15	...	1	1	...	186	335	...	1	...	
5	...	2	...	...	...	...	14	31	...	...	...
29	...	23	...	...	2	...	34	52	...	...	...
13	1	5	...	1	...	
...	...	8	...	...	...	...	84	79	...	...	5
...	...	CW	...	1	2	...	105	166	...	5	10	
...	289	358	...	...	2	
...	5	14	...	...	...
...	105	483	...	...	2	
4	...	22	...	...	1	...	...	...	...	3	1
...	121	397	...	...	10	
...	30	72	...	...	2	
...	...	2	...	...	...	...	75	47	...	1	...
...	5	5	...	...	...
...	58	CW	...	2	
...	18	93	...	...	1	
31	...	48	...	...	...	...	53	60	...	CW	...
178	...	58	...	...	...	...	217	153	...	...	...
2	35	16	...	...	1	
...	1	...	...	...
109	...	149	...	...	4	...	21	21	...	...	...
...	1	...	...	...	2	
7711	CW	3564	3646	3294	23,833	15,248	2661	5153	3	385	303	

	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk	Accipiter, sp.	Red-shouldered Hawk	Red-tailed Hawk	Rough-legged Hawk	Buteo, sp.	Golden Eagle
1. Chincoteague	11	...	...	...	7	27	...	...	...
2. Wachapreague	16	2	...	2	1	34	1	...	...
3. Cape Charles	33	13	1	...	8	74	...	...	...
4. CBBT	...	...	...	...	...	...	...	...	...
5. Little Creek	8	8	...	...	1	27	...	...	...
6. Back Bay	11	3	...	...	17	55	2	...	...
7. Nansemond River	6	4	...	...	1	21	...	...	...
8. Newport News	6	4	...	...	1	13	...	...	...
9. Mathews	10	2	...	...	17	15	...	...	...
10. Williamsburg	6	3	...	...	14	24	1	...	...
11. Hopewell	12	1	...	...	25	74	1	...	...
12. Walkerton	4	1	...	...	12	19	...	...	...
13. Wash. Birthplace	6	2	...	...	15	37	...	...	...
14. Brooke	4	3	...	1	18	18	...	...	...
15. Fort Belvoir	15	4	...	...	48	59	...	...	...
16. Manassas-B.R.	2	9	...	1	37	65	...	...	...
17. Chancellorsville	...	1	...	...	2	4	...	...	...
18. Gordonsville	...	1	...	...	9	22	...	...	...
19. Charlottesville	...	6	...	...	9	36	...	...	...
20. Warren	5	4	...	...	6	41	...	...	...
21. Darlington Heights	2	2	...	...	10	44	...	...	...
22. Kerr Reservoir	9	1	...	...	6	22	...	...	...
23. Banister WMA	2	2	...	...	1	12	...	...	...
24. Lynchburg	4	7	...	...	...	73	...	...	...
25. Danville	2	4	...	...	...	22	...	...	...
26. Martinsville	2	1	...	...	2	14	...	...	...
27. Philpott Res.	1	1	...	...	...	7	...	...	...
28. Calmes Neck	7	9	...	...	6	100	1	...	...
29. N. Shen. Valley	16	11	...	...	8	104	2	...	...
30. Shen. NP-Luray	10	9	...	...	...	59	2	...	...
31. Big Flat Mtn.	...	...	...	...	...	1	...	1	...
32. Rockingham Co.	5	2	...	...	...	33	...	...	...
33. Highland County	1	...	...	...	...	7	1	...	3
34. Augusta Co.	6	7	...	...	1	59	1	...	...
35. Waynesboro	4	10	...	1	2	45	...	...	...
36. Lexington	1	...	...	...	2	16	...	...	...
37. Peaks of Otter	2	...	...	...	...	10	...	...	...
38. Clifton Forge	1	1	...	...	2	4	...	...	...
39. Fincastle	4	3	...	...	1	32	...	...	...
40. Roanoke	9	5	1	...	2	37	...	...	2
41. Blacksburg	9	1	...	1	...	24	...	1	...
42. Claytor Lake	CW	...	...	...	1	21	CW	1	...
43. Tazewell	1	1	...	...	2	17	...	...	...
44. Glade Spring	5	2	...	...	...	42	...	...	1
45. Bristol	6	3	...	...	...	21	...	...	...
46. Breaks I.S. Park	...	...	...	...	...	...	...	...	...
47. Wise County	2	1	...	...	2	8	...	...	...
Total individuals	266	154	2	6	296	1499	13	2	7

American Kestrel	Merlin	Peregrine Falcon	Ruffed Grouse	Wild Turkey	Northern Bobwhite	Clapper Rail	King Rail	Virginia Rail	Sora	Common Moorhen	American Coot
19	2	2	...	...	29	2	...	...	...	...	...
57	2	4	...	...	22	6	...	3	...	...	1
58	5	5	...	3	50	29	...	1	...	...	241
...
25	4	...	...	...	...	39	...	1	...	...	935
55	2	1	...	...	33	2	16	16	3	2	3300
21	...	CW	...	...	...	8	3	...	2	1	23
27	...	3	...	...	...	13	...	1	...	...	233
14	CW	13	9	...	...	...	...	...
7	25	5	...	...	...	...	46
23	20	16	...	...	...	...	...	5
11	14	...	...	...	...	...	...	...
12	89	4	...	...	...	...	...	...
2	6	7	...	...	...	...	...	1020
12	1	16	...	2	1	...	...	53
11	10	9	...	...	...	...	...	70
6	3	21	...	...	...	...	...	14
6	9	13	...	...	...	...	...	1
17	3	27	5	...	...	...	...	...	...
12	47	11	...	...	...	...	...	...
14	6	10	...	...	...	...	...	...
15	7	9	...	...	1	1	...	2500
5
14	22	32	...	...	...	...	...	48
7	12	14	...	...	...	...	...	...
10	11	...	...	...	...	...	...	8
2	1	...	...	...	...	...	...	...
25	1	1	6	...	...	...	...	...	28
50	6	13	14	...	...	...	...	...	3
29	17	1	...	...	...	...	...	...	8
...	3	...	...	...	...	...	...	...	...
45	2	CW	...	...	...	...	...	...	5
4	1	...	...	...	...	...	...	...	...
44	1
21	7	2	CW	...	...	...	...	...	5
8	23	8	...	...	...	...	...	...
2	9	...	...	...	...	...	...	...
4	2	9	...	...	...	...	...	...	...
19	2	...	2	14	22	...	...	...	...	...	...
13	1	...	1	41	...	...	...	...	...	...	2
14	1	36	...	...	...	...	...	...	2
6	1	1	10	...	...	...	...	...	38
10	1	19	...	...	...	...	...	...	...
26	...	1	1	...	...	...	...	...	...	...	...
43	2	...	...	...	...	1	...	...	85
...	2	11	...	...	...	...	...	...	...
6	5	5	5	...	...	...	...	...	...
831	18	16	57	473	404	113	21	25	6	3	8675

	American Woodcock	jaeger, sp.	Laughing Gull	Bonaparte's Gull	Mew Gull	Ring-billed Gull	California Gull	Herring Gull	Thayer's Gull
1. Chincoteague	19	...	...	...	...	2303	...	461	...
2. Wachapreague	3	...	...	1	...	3982	...	3144	...
3. Cape Charles	33	...	...	15	...	1689	...	1041	...
4. CBBT	...	...	...	...	...	2010	...	950	...
5. Little Creek	2	...	6	338	...	7785	1	1442	...
6. Back Bay	...	1	5	1320	...	4100	...	720	...
7. Nansemond River	...	...	1	2	1	6966	...	13,987	3
8. Newport News	30	...	16	88	...	9147	...	1524	...
9. Mathews	3	...	...	31	...	1219	...	500	...
10. Williamsburg	4	...	8	137	...	1109	...	136	...
11. Hopewell	1	...	...	1	...	17,879	...	520	...
12. Walkerton	...	...	...	...	...	68	...	...	...
13. Wash. Birthplace	...	...	...	1	...	582	...	10	...
14. Brooke	1	...	...	...	...	3600	...	189	...
15. Fort Belvoir	8	...	4	6	...	10,830	...	1637	...
16. Manassas-B.R.	...	...	...	...	...	207	...	10	...
17. Chancellorsville	...	...	...	...	...	45	...	47	...
18. Gordonsville	...	...	1	...	...	4	...	...	...
19. Charlottesville	1	...	...	...	...	...	...	...	...
20. Warren	1	...	...	...	...	...	...	...	...
21. Darlington Heights	1	...	...	...	...	...	...	...	...
22. Kerr Reservoir	3	...	...	403	...	5000	...	15	...
23. Banister WMA	...	...	...	15	...	229	...	1	...
24. Lynchburg	...	...	...	...	...	6	...	...	...
25. Danville	1	...	...	...	...	34	...	...	...
26. Martinsville	...	...	...	...	...	1635	...	1	...
27. Philpott Res.	...	...	...	...	...	CW	...	...	...
28. Calmes Neck	...	...	...	...	...	3	...	...	...
29. N. Shen. Valley	...	...	...	...	...	CW	...	...	...
30. Shen. NP-Luray	...	...	...	...	...	...	...	...	...
31. Big Flat Mtn.	...	...	...	...	...	...	...	...	...
32. Rockingham Co.	...	...	...	...	...	...	...	...	...
33. Highland County	...	...	...	...	...	...	...	...	...
34. Augusta Co.	...	...	...	...	...	1	...	...	...
35. Waynesboro	...	...	...	...	...	...	...	...	...
36. Lexington	...	...	...	...	...	...	...	...	...
37. Peaks of Otter	...	...	...	...	...	...	...	...	...
38. Clifton Forge	3	...	...	...	...	...	...	...	...
39. Fincastle	...	...	...	...	...	...	...	...	...
40. Roanoke	1	...	...	...	...	203	...	...	...
41. Blacksburg	...	...	...	...	...	1273	...	2	...
42. Claytor Lake	...	...	...	100	...	70	...	...	...
43. Tazewell	...	...	...	...	...	...	...	...	...
44. Glade Spring	...	...	...	...	...	...	...	...	...
45. Bristol	...	...	...	...	...	611	...	...	...
46. Breaks I.S. Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	...	...	...	...	...	...	...	...
Total Individuals	115	1	41	2458	1	82,590	1	26,337	3

	Iceland Gull	Lesser Black-backed Gull	Great Black-backed Gull	gull, sp.	Royal Tern	Forster's Tern	Rock Dove	Mourning Dove	Barn Owl	Eastern Screech-Owl	Great Horned Owl	Snowy Owl	Barred Owl
...	...	124	75	...	...	...	274	427	...	7	4	...	...
...	...	129	135	...	...	2	53	615	...	6	...	...	...
...	...	516	80	1	...	...	627	753	1	7	11	...	...
...	2	175	1200	...	...	...	1	...	...	...	...	...	...
...	7	617	...	...	22	1397	1764	...	...	19	13	...	4
...	2	572	...	...	122	43	709	...	...	13	6	...	4
2	10	2546	1000	...	...	691	1027	...	...	5	7	...	1
...	...	292	345	...	40	830	1032	...	...	2	2	...	...
...	...	44	...	...	57	35	313	...	...	3	28	...	1
...	...	121	30	...	5	116	328	...	...	2	4	...	6
...	...	96	...	...	...	256	907	2	3	10	...	6	6
...	1	...	...	6	177	...	...	...	...	...	1
...	...	8	...	...	...	10	599	1	...	...	1	...	1
...	...	215	...	...	...	69	363	...	...	...	3	...	2
...	2	445	2709	...	...	451	640	3	21	31	...	...	22
...	197	616	...	...	2	...	...	4
...	14	53	...	...	...	...	...	1
...	14	179	4	2	...	...	...	1
...	232	261	...	7	1	...	...	2
...	113	550	...	1	...	...	...	1
...	34	445	...	6	1	...	...	...
...	57	204	...	1	3	...	...	1
...	46	35	...	4	5	...	...	1
...	551	446	...	14	6	...	...	1
...	310	322	...	1	...	...	...	4
...	91	28	...	1	...	...	...	...
...	63	269	...	6	...	...	...	2
...	365	863	...	15	7	...	...	4
...	1749	1542	1	22	1	CW	...	...
...	452	611	...	11	5	...	...	8
...	1	...	...	...	1
...	447	843	1	2	CW	...	...	1
...	15	19	...	...	1	...	...	2
...	688	683	...	2	...	...	...	1
...	597	920	2	2	1	...	...	CW
...	174	94	...	11	2	...	...	...
...	5	...	5	...	...	...	...
...	267	125	...	3	1	...	...	...
...	257	549	...	18	6	...	...	...
...	457	249	...	6	3	...	...	3
...	402	655	...	CW	CW	...	...	...
...	120	43	...	2	...	...	...	...
...	432	177	...	3	...	...	...	...
...	134	391	...	9	1	...	...	1
...	454	1020	...	19	22	...	...	1
...	19	...	...	...	...	...	...
...	164	103	...	3	1	...	...	1
Total	2	23	5900	5575	1	248	13,755	21,973	15	265	189	CW	89

	Long-eared Owl	Short-eared Owl	Northern Saw-whet Owl	owl, sp.	<i>Selasphorus</i> , sp.	Belted Kingfisher	Red-headed Woodpecker	Red-bellied Woodpecker	Yellow-bellied Sapsucker
1. Chincoteague	...	3	...	...	...	21	...	43	4
2. Wachapreague	24	...	57	2
3. Cape Charles	1	2	...	...	...	19	1	62	6
4. CBBT
5. Little Creek	1	39	3	67	9
6. Back Bay	19	...	65	8
7. Nansemond River	...	1	...	...	...	14	1	61	5
8. Newport News	36	...	41	5
9. Mathews	36	...	71	11
10. Williamsburg	19	...	63	10
11. Hopewell	22	5	160	33
12. Walkerton	9	2	25	7
13. Wash. Birthplace	6	6	45	11
14. Brooke	17	4	78	8
15. Fort Belvoir	35	3	338	28
16. Manassas-B.R.	...	3	...	1	...	9	...	110	6
17. Chancellorsville	8	...	21	1
18. Gordonsville	3	1	35	24	...
19. Charlottesville	19	2	168	74	...
20. Warren	18	3	90	32	...
21. Darlington Heights	38	5
22. Kerr Reservoir	16	4	37	10	...
23. Banister WMA	39	26	9	...
24. Lynchburg	9	2	85	36	...
25. Danville	3	...	39	14	...
26. Martinsville	2	...	27	6	...
27. Philpott Res.	1	...	9	16	...
28. Calmes Neck	...	CW	...	...	11	38	228	62	...
29. N. Shen. Valley	2	CW	...	...	36	12	123	47	...
30. Shen. NP-Luray	15	...	50	25	...
31. Big Flat Mtn.	1	...	14	14	...
32. Rockingham Co.	10	4	28	4	...
33. Highland County	1	...	6	...	47
34. Augusta Co.	12	1	61	4	...
35. Waynesboro	7	1	48	21	...
36. Lexington	1	...	9	...	11	9
37. Peaks of Otter	1	...	17	12	...
38. Clifton Forge	1	...	3	...	20	19	...
39. Fincastle	11	...	39	16	...
40. Roanoke	14	...	33	34	...
41. Blacksburg	14	2	29	15	...
42. Claytor Lake	...	1	...	...	2	...	8	7	...
43. Tazewell	8	1	2	...	...
44. Glade Spring	11	1	13	9	...
45. Bristol	12	...	31	5	...
46. Breaks I.S. Park	1	...	...
47. Wise County	8	...	11	2	...
Total individuals	3	10	9	3	1	592	136	2634	685

	Downy Woodpecker	Hairy Woodpecker	Northern Flicker	Pileated Woodpecker	Eastern Phoebe	Horned Lark	Tree Swallow	Blue Jay	American Crow	Fish Crow	crow, sp.	Common Raven
27	10	128	3	15	72	74	118	146	3	38	...	
23	3	81	...	11	...	...	87	878	16	67	...
52	13	160	10	19	391	38	313	681	347	16	...	
...	
53	3	100	23	5	...	...	341	1155	880	...	...
55	8	95	13	21	...	10	128	516	118	...	...
33	5	34	2	3	8	...	133	319	671	...	...
28	4	63	10	...	2	...	196	484	...	20	...	
32	5	81	15	12	...	...	170	989	4	...	...
49	5	90	21	8	18	...	127	199	...	62	...	
85	8	176	25	31	2	...	236	422	22	81	...	
11	2	21	3	12	18	...	37	192	...	...	...
37	13	111	10	8	2	...	97	461	2	...	...
64	9	70	20	6	...	...	239	480	14	270	...
280	64	240	76	8	2	...	328	1292	473	1282	...	
124	11	90	30	1	...	...	532	714	45	349	...
25	1	15	11	3	...	...	65	196	...	...	...
33	8	45	22	2	...	...	177	585	1	...	...
145	23	181	69	21	1	...	657	1857	499	...	6	
85	8	68	42	12	116	...	265	1031	4	...	9	
42	11	45	11	...	65	...	216	1175	...	...	...
25	8	59	7	33	21	...	239	337	...	...	...
19	7	18	2	6	...	...	144	193	...	...	...
78	15	86	37	24	...	...	273	797	7	...	7
20	8	42	6	4	51	...	123	423	...	...	...
24	3	15	3	3	...	...	95	195	...	...	3
19	5	6	8	8	52	...	37	298	...	...	CW
263	13	138	69	3	145	...	743	958	2	...	2	
199	25	118	48	4	100	...	1450	1390	1	...	3	
119	14	25	39	9	445	...	321	2659	11	...	36	
15	4	3	16	2	...	...	10	38	...	...	8
19	3	19	10	3	147	...	274	732	2	...	8	
9	3	1	1	1	...	...	30	824	...	...	47
67	4	24	9	5	32	...	555	1166	86	474	8	
67	6	43	27	18	118	...	346	1506	129	452	9	
30	9	10	11	5	...	...	97	625	...	...	6
32	12	20	23	6	...	...	19	73	...	...	5
32	5	10	5	1	...	...	33	272	...	...	7
55	8	52	26	6	46	...	253	904	1	...	5	
57	18	42	28	13	...	...	153	899	...	...	...
119	16	32	30	6	50	...	280	630	...	...	14
17	2	19	1	2	926	...	35	396	...	...	1
17	2	4	4	1	...	...	165	517	...	...	10
25	1	17	8	4	...	...	226	660	...	...	4
35	7	17	20	7	...	...	349	536	...	...	3
5	...	...	2	...	...	...	...	33	...	...	...
27	6	12	17	...	...	...	114	569	...	...	6
2677	418	2726	873	372	2820	122	10,826	31,402	3338	3111	207	

	Black-capped Chickadee	Carolina Chickadee	chickadee, sp.	Tufted Titmouse	Red-breasted Nuthatch	White-breasted Nuthatch	Brown-headed Nuthatch	nuthatch, sp.	Brown Creeper
1. Chincoteague	...	91	...	61	12	4	24	1	17
2. Wachapreague	...	94	...	12	2	2	10	...	2
3. Cape Charles	...	170	...	33	24	6	3	...	21
4. CBBT	...	...	...	...	...	...	...	...	...
5. Little Creek	...	209	...	80	12	7	58	...	25
6. Back Bay	...	197	...	69	2	29	32	...	6
7. Nansemond River	...	147	...	71	3	2	8	...	6
8. Newport News	...	204	...	95	2	3	...	...	14
9. Mathews	...	181	...	83	6	2	18	...	4
10. Williamsburg	...	189	...	140	3	52	17	...	9
11. Hopewell	...	225	...	105	...	42	14	...	...
12. Walkerton	...	20	...	28	...	3	...	...	3
13. Wash. Birthplace	...	45	...	47	5	9	...	...	2
14. Brooke	...	...	...	186	5	62	...	...	11
15. Fort Belvoir	...	999	...	778	10	236	...	...	45
16. Manassas-B.R.	...	383	...	325	7	100	...	...	6
17. Chancellorsville	...	94	...	79	5	31	...	...	10
18. Gordonsville	...	120	...	79	1	33	...	...	3
19. Charlottesville	...	459	...	340	62	152	...	...	15
20. Warren	...	177	...	100	18	83	...	...	13
21. Darlington Heights	...	113	...	70	1	29	...	...	3
22. Kerr Reservoir	...	132	...	69	36	24	25	...	9
23. Banister WMA	...	42	...	36	2	21	3	...	1
24. Lynchburg	...	283	...	256	19	113	...	...	17
25. Danville	...	133	...	97	...	20	11	...	1
26. Martinsville	...	56	7	24	11	9	6	...	1
27. Philpott Res.	...	64	4	35	8	18	6	...	3
28. Calmes Neck	1	476	...	397	1	264	...	...	53
29. N. Shen. Valley	5	671	...	368	17	226	...	...	50
30. Shen. NP-Luray	4	431	...	322	21	120	...	...	44
31. Big Flat Mtn.	...	28	...	23	...	25	...	...	6
32. Rockingham Co.	3	98	...	81	3	33	...	...	3
33. Highland County	38	...	...	14	3	17	...	...	3
34. Augusta Co.	10	209	...	159	13	72	...	...	13
35. Waynesboro	2	243	...	239	6	102	...	...	5
36. Lexington	37	64	84	85	6	20	...	...	6
37. Peaks of Otter	13	52	...	41	10	30	...	...	4
38. Clifton Forge	49	51	...	68	11	34	...	...	...
39. Fincastle	35	218	...	169	18	78	...	...	11
40. Roanoke	23	199	...	158	31	56	...	...	25
41. Blacksburg	7	210	92	148	13	134	...	...	7
42. Claytor Lake	4	29	11	11	12	9	2	...	3
43. Tazewell	...	37	...	39	3	19	...	...	...
44. Glade Spring	...	75	...	61	...	31	...	...	1
45. Bristol	...	156	...	87	19	43	...	...	3
46. Breaks I.S. Park	...	6	...	10	1	15	...	...	...
47. Wise County	...	165	...	164	13	64	...	...	1
Total individuals	231	8245	198	5942	457	2484	237	1	485

Carolina Wren	House Wren	Winter Wren	Sedge Wren	Marsh Wren	wren, sp.	Golden-crowned Kinglet	Ruby-crowned Kinglet	Blue-gray Gnatcatcher	Eastern Bluebird	Hermit Thrush	American Robin
95	...	13	...	1	...	44	8	...	360	31	894
77	2	3	...	1	...	30	10	...	463	7	341
271	13	22	11	5	...	55	15	...	274	76	81
...
136	3	6	...	2	...	51	32	...	10	23	2600
138	2	12	11	18	...	57	34	...	79	39	534
93	3	3	...	5	...	34	25	...	120	17	422
103	1	2	...	1	8	26	9	...	32	2	86
148	4	5	1	...	...	9	4	...	555	18	608
63	3	4	...	...	...	72	48	...	235	17	74
187	...	26	...	...	...	105	44	1	212	45	40
14	...	...	...	...	...	20	8	...	190	9	80
63	...	3	...	...	...	34	10	...	201	32	194
110	...	4	...	1	...	45	39	...	137	27	37
415	4	38	...	...	...	123	47	...	179	86	66
81	...	1	...	1	...	38	15	...	164	10	135
19	...	...	...	...	...	20	2	...	92	1	27
42	...	1	...	...	...	42	4	...	172	6	34
240	...	10	...	...	...	74	45	...	375	59	394
143	...	5	...	...	...	39	16	...	300	24	250
43	...	3	...	...	...	78	3	...	237	11	53
76	4	13	...	1	...	41	36	...	240	44	398
41	...	11	...	...	...	5	19	...	50	7	99
242	...	11	...	...	...	65	32	...	268	26	126
82	...	3	...	...	...	33	12	...	312	8	128
71	1	2	...	...	...	14	20	...	80	5	8
37	...	10	...	...	...	38	6	...	42	33	3
140	...	10	...	...	...	63	15	...	488	22	71
126	...	12	...	...	...	115	32	...	573	13	428
102	1	7	...	...	...	121	19	...	270	10	27
9	...	5	...	...	...	9	2	...	33	8	1
33	...	4	...	...	...	15	3	...	68	3	2
1	...	...	...	...	...	5	...	...	5	...	...
77	...	5	...	...	...	22	7	...	213	6	2
83	...	9	...	...	...	24	18	...	202	25	16
37	...	7	...	...	...	89	13	...	179	31	19
21	...	1	...	...	...	19	...	...	45	6	9
26	...	1	...	...	...	3	11	...	12	...	3
132	...	8	...	...	...	56	6	...	346	24	85
158	...	3	...	...	...	66	18	...	135	15	8
115	...	8	...	...	...	47	7	...	107	6	10
13	...	2	...	...	...	19	4	...	46	CW	6
18	...	2	...	...	...	4	...	...	24	2	1
43	...	1	...	...	...	16	6	...	46	1	13
93	...	2	...	...	...	89	7	...	119	8	5
...	...	...	...	...	...	3	...	...	...	...	...
45	...	4	...	...	...	25	5	...	61	10	28
4302	41	302	23	36	8	2002	716	1	8341	853	8446

	Gray Catbird	Northern Mockingbird	Brown Thrasher	American Pipit	Cedar Waxwing	Loggerhead Shrike	European Starling	White-eyed Vireo	Solitary Vireo
1. Chincoteague	1	51	2	88	10	...	4666	...	...
2. Wachapreague	9	141	5	...	30	...	2576	...	...
3. Cape Charles	33	90	11	115	132	...	5185	...	...
4. CBBT	...	...	...	...	...	...	...	...	...
5. Little Creek	3	185	13	1	147	...	14,520	...	...
6. Back Bay	50	144	20	54	6	...	1500	1	2
7. Nansemond River	4	62	11	128	95	...	14,488	1	...
8. Newport News	7	90	5	...	...	...	3700	...	...
9. Mathews	5	100	23	...	249	...	1716	...	...
10. Williamsburg	2	54	10	...	80	...	949	...	...
11. Hopewell	4	89	5	317	482	...	3340	...	...
12. Walkerton	1	28	2	29	20	...	439	...	...
13. Wash. Birthplace	2	36	4	127	248	...	1707	...	...
14. Brooke	1	103	1	...	325	...	1600	...	...
15. Fort Belvoir	2	172	...	13	459	...	9273	...	...
16. Manassas-B.R.	...	169	...	...	222	...	13,097	...	...
17. Chancellorsville	...	15	...	...	41	...	522	...	...
18. Gordonsville	...	51	...	...	40	3	1789	...	...
19. Charlottesville	...	174	...	...	274	...	15,318	...	...
20. Warren	2	93	1	...	168	2	456	...	...
21. Darlington Heights	...	56	2	25	28	3	932	69	...
22. Kerr Reservoir	...	57	10	329	271	5	111	...	...
23. Banister WMA	...	23	9	...	29	...	123	...	...
24. Lynchburg	...	121	1	...	175	...	1908	...	...
25. Danville	1	60	...	...	39	...	954	...	...
26. Martinsville	...	47	...	...	1	...	846	1	...
27. Philpott Res.	...	11	...	60	18	...	443	...	...
28. Calmes Neck	2	223	...	...	77	3	12,864	...	...
29. N. Shen. Valley	...	283	...	1	496	10	54,679	...	...
30. Shen. NP-Luray	...	144	...	15	109	1	6497	...	...
31. Big Flat Mtn.	...	1	...	...	...	...	...	...	...
32. Rockingham Co.	...	59	...	...	1	...	8875	...	...
33. Highland County	...	3	...	...	...	...	1614	...	...
34. Augusta Co.	1	196	...	...	86	1	3041	...	...
35. Waynesboro	...	160	1	...	10	...	2687	...	...
36. Lexington	...	51	...	2	64	1	736	...	...
37. Peaks of Otter	...	1	...	...	4	...	...	...	...
38. Clifton Forge	...	11	1	...	2	...	161	...	...
39. Fincastle	...	188	1	...	23	3	1207	2	...
40. Roanoke	...	111	...	...	11	...	1624	...	...
41. Blacksburg	...	91	4	...	70	...	4302	...	...
42. Claytor Lake	...	20	...	...	...	...	249	...	...
43. Tazewell	...	9	1	...	5	...	626	...	...
44. Glade Spring	...	46	1	...	8	1	1174	...	...
45. Bristol	...	115	3	...	102	5	2124	...	...
46. Breaks I.S. Park	...	...	...	...	...	...	...	...	...
47. Wise County	...	11	2	...	5	2	738	...	...
Total individuals	130	3945	149	1304	4662	40	205,356	71	5

	Orange-crowned Warbler	Yellow-rumped Warbler	Yellow-rumped (Audubon's) Warbler	Pine Warbler	Palm Warbler	Black-and-white Warbler	Common Yellowthroat	Northern Cardinal	Painted Bunting	Dickcissel	Rufous-sided Towhee	American Tree Sparrow
...	...	1095	...	9	6	...	...	110	...	...	21	2
...	...	349	...	2	3	...	...	181	...	...	11	1
3	4599	...	...	6	21	...	1	186	...	...	69	2
...
1	1070	1	14	2	...	...	1	177	1	...	35	4
3	3745	...	20	6	...	...	4	161	...	...	50	1
1	1127	...	12	1	...	...	1	208	...	...	41	...
...	684	...	1	...	...	...	1	149	...	...	35	...
...	659	...	7	2	...	...	...	309	1	...	76	3
1	505	...	16	...	...	...	...	142	...	...	20	...
...	204	...	2	...	...	...	...	279	...	...	44	2
...	16	...	1	1	...	...	...	35	...	...	9	1
...	62	...	1	...	...	...	...	196	...	...	14	...
...	61	...	...	...	...	...	...	194	...	...	15	15
...	146	...	6	2	1	2	759	...	...	...	24	68
...	272	...	1	...	...	...	...	354	...	...	6	52
...	10	...	...	...	...	...	...	48	...	...	3	...
...	163	...	4	...	...	...	...	80	...	...	1	...
...	303	...	...	...	...	...	...	457	...	...	44	40
...	166	...	...	...	...	...	1	233	...	...	24	2
...	...	...	2	...	...	...	...	328	...	...	6	27
...	99	...	13	...	...	...	3	150	...	...	153	...
...	8	...	2	...	...	...	...	68	...	...	30	...
...	50	...	4	...	...	...	...	291	...	...	49	3
...	15	...	11	...	...	...	...	166	...	...	12	...
...	18	...	1	...	...	...	...	82	...	...	19	6
...	14	...	1	...	...	...	...	54	...	...	22	...
...	21	...	...	...	...	...	...	849	...	...	11	169
...	173	...	10	...	...	...	1	499	...	...	7	82
...	119	...	1	...	...	...	...	291	...	...	1	6
...	1	...	...	...	...	...	...	9	...	...	1	...
...	22	...	...	...	...	...	...	61	...	...	...	16
...	...	...	...	...	...	...	...	11	...	...	...	38
...	44	...	...	...	...	...	...	193	...	...	2	39
...	32	...	...	...	...	...	...	388	...	...	9	145
...	96	...	...	...	...	...	...	198	...	...	5	25
...	1	...	...	...	...	...	...	36	...	...	2	1
...	...	...	...	...	...	...	...	48	...	...	4	...
...	74	...	...	...	...	...	...	284	...	...	30	86
...	15	...	...	...	...	...	...	209	...	...	9	...
...	32	...	...	...	...	...	...	196	...	...	10	4
...	14	...	...	...	...	...	...	42	...	...	CW	2
...	...	...	...	...	...	...	...	45	...	...	8	...
...	13	...	...	...	...	...	...	101	...	...	18	...
...	20	...	...	...	...	...	...	217	...	...	39	...
...	...	...	...	...	...	...	...	5	...	...	...	...
...	1	...	...	...	...	...	...	85	...	...	9	...
Total individuals	9	16,118	1	147	44	1	15	9164	2	1	998	842

	Chipping Sparrow	Field Sparrow	Vesper Sparrow	Savannah Sparrow	Savannah (pswich) Sparrow	LeConte's Sparrow	Sharp-tailed Sparrow	Seaside Sparrow	Fox Sparrow
1. Chincoteague	44	51	...	24	...	...	3	1	4
2. Wachapreague	90	138	1	46	4	...	26	1	11
3. Cape Charles	84	228	4	604	1	...	48	7	162
4. CBBT	...	...	...	...	...	...	...	...	...
5. Little Creek	32	24	...	43	1	...	7	3	36
6. Back Bay	46	34	...	124	29	3	1	...	6
7. Nansemond River	4	25	...	67	CW	...	CW	1	27
8. Newport News	1	30	...	6	...	...	...	...	8
9. Mathews	27	28	...	12	...	...	1	...	9
10. Williamsburg	84	45	...	45	...	...	...	...	6
11. Hopewell	12	139	...	22	...	...	...	...	...
12. Walkerton	1	27	...	...	...	...	...	...	...
13. Wash. Birthplace	...	17	...	5	...	...	...	...	1
14. Brooke	...	100	...	1	...	...	...	...	...
15. Fort Belvoir	...	105	...	19	...	...	...	...	4
16. Manassas-B.R.	...	43	...	...	...	...	...	...	2
17. Chancellorsville	5	1	...	...	...	...	...	...	...
18. Gordonsville	1	28	...	...	...	...	...	...	...
19. Charlottesville	7	181	1	17	...	...	...	...	2
20. Warren	...	103	...	6	...	...	...	...	...
21. Darlington Heights	4	149	...	17	...	...	...	...	2
22. Kerr Reservoir	11	126	...	50	...	...	...	...	15
23. Banister WMA	10	63	...	3	...	...	...	...	...
24. Lynchburg	5	45	...	...	...	...	...	...	1
25. Danville	...	41	...	5	...	...	...	...	2
26. Martinsville	...	98	...	...	...	...	...	...	1
27. Philpott Res.	...	30	...	...	...	...	...	...	...
28. Calmes Neck	...	23	1	1	...	...	...	...	2
29. N. Shen. Valley	2	110	1	18	...	...	...	...	4
30. Shen. NP-Luray	...	74	...	5	...	...	...	...	6
31. Big Flat Mtn.	...	...	...	...	...	...	...	...	...
32. Rockingham Co.	...	9	...	...	...	...	...	...	...
33. Highland County	...	8	...	...	...	...	...	...	1
34. Augusta Co.	4	59	...	...	...	...	...	...	2
35. Waynesboro	...	33	...	3	...	...	...	...	1
36. Lexington	...	19	...	...	...	...	...	...	6
37. Peaks of Otter	...	29	...	...	...	...	...	...	...
38. Clifton Forge	3	2	...	28	...	...	...	CW	...
39. Fincastle	4	112	...	8	...	...	...	...	2
40. Roanoke	3	20	...	1	...	...	...	...	...
41. Blacksburg	4	29	...	...	...	...	...	...	1
42. Claytor Lake	...	58	...	...	...	...	...	...	...
43. Tazewell	...	16	...	...	...	...	...	...	...
44. Glade Spring	...	5	...	...	...	...	...	...	...
45. Bristol	...	36	...	...	...	...	...	...	4
46. Breaks I.S. Park	...	4	...	...	...	...	...	...	...
47. Wise County	...	21	1	...	...	...	...	...	1
Total individuals	488	2566	9	1180	35	3	86	13	329

	Song Sparrow	Lincoln's Sparrow	Swamp Sparrow	White-throated Sparrow	White-crowned Sparrow	sparrow, sp.	Dark-eyed Junco	Lapland Longspur	Snow Bunting	Red-winged Blackbird	Eastern Meadowlark	Rusty Blackbird
294	...	101	608	...	...	...	663	...	10	5627	232	4
180	...	19	565	...	...	...	463	...	1	1263	327	...
486	1	315	789	1	2	...	186	...	...	18,378	525	76
...	1	...	...	...
158	...	47	434	...	...	...	358	...	...	1318	4	3
218	...	279	326	1	...	...	409	...	2	6242	321	12
225	...	43	474	...	...	...	456	CW	CW	14,907	73	1
137	...	20	277	...	...	...	132	...	1	1281	71	...
264	...	29	843	...	...	...	1480	...	1	1012	109	...
254	...	11	307	...	...	...	730	...	...	7683	118	...
454	...	77	1730	6	...	...	960	...	...	1202	157	6
49	...	5	251	...	...	...	171	...	...	704	28	...
92	...	21	583	...	...	...	567	...	...	2085	56	...
239	...	19	570	...	...	...	820	...	1	800	5	25
439	...	88	1408	3	...	...	1462	...	1	658	22	25
117	...	4	221	18	...	...	990	...	...	20	...	...
21	44	4	...	...	189	...	...	...	4	...
101	173	5	...	...	462	...	...	95	30	...
481	...	66	1078	79	...	...	1080	...	...	106	128	...
483	...	16	751	94	...	...	786	...	...	...	43	1
96	...	3	316	32	...	...	1329	...	...	63	34	...
370	1	363	778	32	...	...	710	1	...	932	44	44
41	...	71	256	12	...	...	446	...	...	170	18	...
271	...	13	689	13	...	...	588	...	...	...	30	...
160	363	45	...	...	481	...	...	533	36	...
169	...	35	209	...	...	...	223	...	...	15	18	...
56	...	2	180	...	...	...	760	...	...	1	44	...
128	...	12	495	314	...	...	752	...	...	799	20	509
177	...	18	631	127	...	...	1127	...	CW	259	59	108
109	465	493	...	...	596	3	5	144	33	...
2	107	...	...	...	109	...	...	...	...	...
55	133	124	...	...	100	...	...	...	48	7
2	14	...	...	...	371	...	...	28	47	1
83	...	5	241	220	...	...	364	...	...	...	48	...
216	1	38	541	279	...	...	446	...	...	4	65	...
78	...	5	173	55	...	...	235	...	...	8	4	...
17	...	3	51	...	...	...	507	...	...	...	...	...
31	64	60	...	...	103	...	...	114	1	...
192	1	9	470	142	...	...	435	...	...	12	12	...
111	...	12	319	14	...	...	218	...	...	...	12	1
164	...	2	192	164	...	...	248	...	...	...	54	1
64	...	2	40	93	...	...	75	...	CW	2	43	...
52	33	12	...	...	41	...	...	1	24	...
91	...	2	113	84	...	...	45	...	...	34	13	...
153	...	1	242	123	...	...	133	...	...	...	9	...
6	...	3	1	...	...	...	18	...	...	...	...	...
116	...	5	56	3	...	...	127	...	...	1	15	...
7702	4	1764	18,604	2652	2	22,951	4	23	66,501	2984	824	

	Brewer's Blackbird	Boat-tailed Grackle	Common Grackle	Brown-headed Cowbird	blackbird, sp.	Purple Finch	House Finch	Carpodacus, Sp.	Red Crossbill
1. Chincoteague	...	242	4054	32	...	4	203	...	...
2. Wachapreague	117	96	25	7	419	...	...
3. Cape Charles	...	757	20,252	540	2800	6	192	...	...
4. CBBT
5. Little Creek	1	273	539	19	...	3	219	...	...
6. Back Bay	...	458	179	680	...	8	188	...	...
7. Nansemond River	5459	72	2250	3	48	...	...
8. Newport News	...	195	901	10	...	40	154	...	...
9. Mathews	...	92	477	2	...	...	315	...	...
10. Williamsburg	333	628	300	1	118	...	...
11. Hopewell	2336	5	...	7	216	...	...
12. Walkerton	6524	...	...	...	74	...	...
13. Wash. Birthplace	11,702	39	505,000	5	71	...	...
14. Brooke	229	2	...	...	300	...	...
15. Fort Belvoir	533	372	...	17	514	...	8
16. Manassas-B.R.	1552	...	2120	...	333	...	...
17. Chancellorsville	5	...	...	...	98	...	...
18. Gordonsville	510	4	...	8	103	...	...
19. Charlottesville	3	8	...	27	753	...	...
20. Warren	633	629	...	38	154	...	...
21. Darlington Heights	21	49	...	19	55	...	...
22. Kerr Reservoir	122	38	...	8	128	...	...
23. Banister WMA	800	1	...	1	22	...	...
24. Lynchburg	6	4	...	40	433	...	...
25. Danville	54	33	...	55	293	...	...
26. Martinsville	11	63	...	...
27. Philpott Res.	6	17	...	...
28. Calmes Neck	22,972	295	...	3	602	...	...
29. N. Shen. Valley	1	...	17	161	...	25	1171	...	...
30. Shen. NP-Luray	310	3	350	13	343	...	...
31. Big Flat Mtn.
32. Rockingham Co.	13	222	...	...	209	...	...
33. Highland County	2	11	...	3	2	...	...
34. Augusta Co.	60	2	...	7	331	...	...
35. Waynesboro	2	31	...	23	155	...	...
36. Lexington	8	158	...	1
37. Peaks of Otter	6	6	...	...
38. Clifton Forge	2	...	53	35	1	...	...
39. Fincastle	3	...	...	39	207	...	2
40. Roanoke	11	203	...	4
41. Blacksburg	8	2	...	8	445	...	...
42. Claytor Lake	CW	140	...	...
43. Tazewell	4	59	...	...
44. Glade Spring	8	2	...	4	131	...	...
45. Bristol	11	150	...	1
46. Breaks I.S. Park
47. Wise County	40	...	...	4	282	4	...
Total individuals	2	2017	80,778	3992	512,898	518	10,078	4	15

White-winged Crossbill	Common Redpoll	Pine Siskin	American Goldfinch	Evening Grosbeak	House Sparrow	Total number of species	Total number of individuals	Date	Time in field (a.m. to p.m.)
...	96	...	165	159	47,810	27 Dec	0530-1715
...	87	...	15	126	26,857	16 Dec	0600-1725
...	327	...	53	157	93,595	30 Dec	0430-1730
...	26	26	5,631	26 Dec	0700-1630
...	...	1	180	...	108	141	51,043	31 Dec	0500-1730
...	...	50	155	...	224	146	56,791	29 Dec	0510-1730
...	136	...	57	129	80,271	2 Jan	0030-1730
...	122	...	132	114	30,124	16 Dec	0500-1630
...	140	...	88	107	17,764	31 Dec	0500-1700
...	...	14	120	3	36	109	25,561	17 Dec	0500-1700
...	...	1	169	5	74	103	43,577	17 Dec	0615-1700
...	30	...	20	73	10,271	17 Dec	0800-1700
...	187	13	7	96	581,833	16 Dec	0515-1715
...	244	...	147	91	16,937	18 Dec	0700-0415
...	...	25	687	38	506	123	71,908	31 Dec	0300-1900
...	146	...	232	71	29,097	30 Dec	0400-1800
...	30	...	17	64	3,494	1 Jan	0700-1700
...	21	11	34	72	7,318	17 Dec	0700-1700
...	...	20	163	3	46	79	29,431	31 Dec	0600-1730
1	...	10	186	9	24	82	9,472	17 Dec	0630-1730
...	81	...	72	66	9,830	21 Jan	0005-1700
...	...	7	160	6	52	108	17,343	17 Dec	0500-1800
...	59	...	72	78	4,312	17 Dec	0730-1730
...	112	2	82	86	10,108	16 Dec	0200-2400
...	104	...	40	68	6,329	16 Dec	0530-1630
...	...	1	27	8	39	75	5,005	30 Dec	0500-1600
...	63	...	27	62	3,083	28 Dec	0600-1715
...	95	...	379	89	54,946	30 Dec	0400-1900
...	...	37	191	24	229	103	74,078	16 Dec	0400-1800
...	179	16	232	82	18,347	17 Dec	0630-1730
...	2	...	...	38	533	29 Dec	0645-1730
...	62	2	191	73	14,388	16 Dec	0800-1630
...	...	2	27	656	178	60	4,166	22 Dec	0610-1630
...	114	9	128	76	11,159	16 Dec	0630-1715
...	154	30	211	81	12,176	28 Dec	0650-1640
...	84	...	40	37	4,279	26 Dec	0500-1800
...	13	...	...	46	1,205	22 Dec	0800-1600
...	...	2	77	2	62	64	2,055	16 Dec	0800-1700
...	...	1	230	...	33	78	7,737	17 Dec	0500-1700
...	...	1	167	...	61	78	6,921	16 Dec	0200-1700
...	203	5	143	83	12,694	16 Dec	0430-1730
...	15	...	3	71	3,341	26 Dec	0700-1745
...	...	3	59	6	205	57	2,880	30 Dec	0700-1700
...	66	...	163	70	4,905	30 Dec	0001-2400
...	1	...	169	...	47	78	9,855	31 Dec	0430-1730
...	3	...	...	22	155	16 Dec	0700-1530
...	90	3	117	65	3412	16 Dec	0530-1730
1	1	175	5832	851	4785	199	1,513,642	...	...

	Temperatures (° Fahrenheit)	Wind direction	Wind speed (miles/hour)	Skies (a.m.)	Skies (p.m.)
1. Chincoteague	22-33	NW	10-25	CLR	CLR
2. Wachapreague	40-46	NW	20-25	CLD, HVR	CLD, LGR
3. Cape Charles	25-45	NW-SW	0-10	CLR	CLR
4. CBBT	28-41	N	10-35	CLD	CLD
5. Little Creek	38-55	NE	0-10	CLD, LGR	CLD, LGR
6. Back Bay	24-40	NW-N	0-15	CLR	CLR
7. Nansemond River	29-36	N	5	FOG	FOG
8. Newport News	38-48	NW	1-10	CLD, FOG, LGR	PCD
9. Mathews	39-41	-	CALM	CLD, FOG LGR	CLD, FOG LGR
10. Williamsburg	30-50	N	15-20	CLR	CLR
11. Hopewell	28-43	ENE	6	PCR	PCR
12. Walkerton	34-52	N	7-10	CLR	CLR
13. Wash. Birthplace	39-45	NE	15-25	CLD, HVR	CLR
14. Brooke	28-38	SW	0-3	PCD	LGR
15. Fort Belvoir	28-49	-	CALM	CLR	CLD
16. Manassas-B.R.	18-45	V	0-5	CLR	CLR
17. Chancellorsville	38-39	NNE	5	CLD, FOG LGR	CLD, FOG, LGR
18. Gordonsville	28-59	NE	0-5	CLR	CLR
19. Charlottesville	33-50	-	CALM	CLD, FOG, LHR, LHS	CLD
20. Warren	29-43	NW	0-15	CLR	CLR
21. Darlington Heights	19-32	NW	0-10	OVC, SNO	PCD to CLR
22. Kerr Reservoir	31-44	WNW	0-20	CLR	PCD
23. Banister WMA	28-47	NW	0-5	CLR	CLR
24. Lynchburg	39-58	NW	10-15	PCR, RAI	CLR
25. Danville	51-58	-	CALM	CLD, LGR	PCD
26. Martinsville	25-40	V	0-10	PCD	PCD
27. Philpott Res.	10-22	NW	0-15	CLR	CLR
28. Calmes Neck	20-42	NW	0-5	PCR, LGR	PCR
29. N. Shen. Valley	37-46	SW	5	CLD, RAI	PCR
30. Shen. NP-Luray	20-45	V	0-5	PCD, FOG	PCD
31. Big Flat Mtn.	24-43	SW	0-12	CLR	CLR
32. Rockingham Co.	40-44	NW	5	CLD	CLR
33. Highland County	26-34	N	10-40	LGS	LGS
34. Augusta Co.	35-57	N	4-7	CLD, LGR	CLR
35. Waynesboro	12-39	W	5-30	CLR	CLD
36. Lexington	25-34	NW	10-20	CLD, LGS	PCR
37. Peaks of Otter	18-30	N	15	PCD	PCD
38. Clifton Forge	48-60	W	0-5	CLR	CLR
39. Fincastle	25-45	W	1-3	PCD	PCD
40. Roanoke	40-60	W	0-10		
41. Blacksburg	44-54	NW	5-15	CLD, RAI	CLR
42. Claytor Lake	19-30	NW	15-25	MCD, SSH	MCR
43. Tazewell	19-40	SW	3-5	CLR	CLR
44. Glade Spring	20-50	-	CALM	PCD	CLR
45. Bristol	27-50	V	0-5	PCD	CLD
46. Breaks I.S. Park	39-55	W	1-5	PCD, FOG, LGR	CLR
47. Wise County	40-52	SW	5-15	CLD, LGR	CLR
Totals	...	...	...	...	...

Inches of snow on the ground	Water conditions	Number of feeder observers	Hours at feeder	Hours owling	Miles owling	Number of field observers	Number of field parties(non-owling)
...	SPO, MWO	...	...	2.00	4.25	17	11
...	WOP	...	...	1.00	1.00	19	11
...	SWF, MWO	...	...	6.25	11.00	36	9-16
...	WOP	...	...	...	...	7	2
...	WOP	...	...	4.60	29.00	23	11-14
...	WPF	...	...	3.00	15.00	32	16-19
...	SPO, MWO	1	2.00	4.00	32.00	9	7
...	WOP	...	...	4.50	25.50	37	13
...	SPO, MWO	2	2.00	3.75	23.50	32	11-12
...	WOP	...	...	3.50	16.00	21	9-11
...	WOP	...	...	4.75	32.50	36	13-19
...	WOP	...	...	...	...	11	4
...	WOP	...	...	1.25	11.00	18	7-9
...	WOP	...	...	...	...	19	9
...	SPF, MWO	1	1.00	20.00	72.50	111	38
...	SWF, MPO	2	4.00	3.00	20.00	41	12
...	WOP	...	...	...	...	9	4
...	SPO, MWO	...	...	2.50	3.50	10	6
...	SWF, MWO	...	...	3.50	9.00	20	18
...	WOP	...	...	1.50	16.00	16	12
...	SWF, MPF	1	2.00	8.50	56.00	18	6
...	WOP	...	...	2.25	32.50	7	5-6
...	WOP	...	...	1.50	6.50	6	5
...	WOP	...	12.00	15.00	28.00	42	16-20
...	WOP	2	6.00	1.50	7.00	14	10
...	WPF	1	1.00	2.00	25.00	6	4
...	SMF, MPF	2	2.00	1.00	10.00	5	2-4
...	WPO	...	...	5.00	14.00	39	16
...	SPF, MWO	...	...	4.50	25.00	57	22
...	WOP	4	16.50	2.50	1.25	25	16
...	SPO, MWO	...	...	0.50	1.00	2	2
...	SWF, MWO	...	...	0.25	0.50	21	8
2-6 > 1800 ft	WPO MWO	...	...	...	...	5	2
...	SPF, MWO	1	4.00	2.00	20.00	29	13
...	SWF, MPF	...	...	0.25	...	28	14
...	SPF, MWO	5	6.00	3.00	25.00	17	4-7
...	SPO, MPF	...	...	...	...	14	5
...	WOP	2	10.00	2.00	...	8	8
...	WOP	...	...	5.00	20.00	25	15
...	WOP	5	6.00	2.50	...	27	11
...	WOP	8	24.25	3.00	27.00	28	10-12
1	SPF, MWO	...	...	...	...	10	4
...	SPF, MPF	1	8.00	...	...	9	5
...	SPF, MWO	...	...	...	...	15	7
...	WPF	...	...	...	...	25	6-7
...	WOP	...	...	...	...	1	1
...	WOP	3	9	2.00	17.50	15	6-7
...	...	36	109.75	132.35	648.00	1022	446-484

	Hours on foot	Hours by car	Hours by canoe/boat	Total hours (excludes owling & feeder hours)	Miles on foot	Miles by car	Miles by canoe/boat	Total miles (excludes owling miles)
1. Chincoteague	40.00	31.00	...	71.00	40.00	209.00	...	249.00
2. Wachapreague	33.00	41.00	5.00	79.00	27.00	290.00	13.00	330.00
3. Cape Charles	120.50	19.00	3.00	142.50	78.00	341.00	10.00	429.00
4 CBBT	6.00	1.00	...	7.00	3.00	51.00	...	54.00
5. Little Creek	89.00	22.00	...	111.00	51.00	406.00	...	457.00
6. Back Bay	96.00	24.00	3.00	123.00	70.00	374.00	17.00	461.00
7. Nansmond Rv.	34.00	22.00	...	56.00	18.50	471.00	...	489.50
8. Newport News	49.75	54.50	...	104.25	37.75	479.50	...	517.25
9. Mathews	35.50	62.75	1.50	99.75	22.25	371.00	7.00	400.25
10. Williamsburg	45.75	51.00	0.50	97.25	37.00	406.50	3.00	446.50
11. Hopewell	104.50	20.75	7.50	132.75	61.50	252.00	10.25	323.75
12. Walkerton	19.00	38.00	12.00	69.00	24.00	342.00	54.00	420.00
13. Wash. Birthpl.	18.25	32.25	3.00	53.50	12.50	419.00	42.00	473.50
14. Brooke	44.50	27.00	...	71.50	40.00	160.00	...	200.00
15. Fort Belvoir	200.50	52.00	...	252.50	154.50	290.50	...	445.00
16. Manassas-B.R.	78.00	22.00	...	100.00	19.00	184.00	...	203.00
17. Chancellorsville	13.00	20.00	...	33.00	12.00	202.50	...	214.50
18. Gordonsville	15.50	33.75	...	49.25	20.00	254.00	...	274.00
19. Charlottesville	113.00	21.00	...	134.00	95.00	201.00	...	296.00
20. Warren	72.50	9.00	...	81.50	68.00	138.00	...	206.00
21. Darlington Hghts	15.00	38.50	...	53.50	14.50	417.00	...	431.50
22. Kerr Reservoir	26.25	23.25	...	49.50	17.00	318.00	...	335.00
23. Banister WMA	21.00	8.50	...	29.50	15.50	64.00	...	79.50
24. Lynchburg	53.00	47.00	...	100.00	31.00	522.00	...	553.00
25. Danville	25.50	24.50	...	50.00	40.00	229.00	...	269.00
26. Martinsville	9.00	17.00	...	26.00	6.00	125.00	...	131.00
27. Philpott Res.	7.00	16.00	...	23.00	5.50	93.00	...	98.50
28. Calmes Neck	41.50	88.00	...	129.50	50.75	650.50	...	701.25
29. N. Shen. Valley	84.00	123.00	...	207.00	87.50	936.00	...	1023.50
30. Shen. NP-Luray	64.00	65.00	...	129.00	57.50	562.00	...	619.50
31. Big Flat Mtn.	20.00	...	...	20.00	32.00	...	...	32.00
32. Rockingham Co.	17.75	26.75	...	44.50	17.25	220.00	...	237.75
33. Highland Co.	2.50	15.75	...	18.25	2.50	224.50	...	227.00
34. Augusta Co.	29.75	62.75	...	92.50	20.50	547.00	...	567.50
35. Waynesboro	54.25	49.25	...	103.50	55.50	533.00	...	588.50
36. Lexington	28.00	16.00	...	44.00	19.00	102.00	...	121.00
37. Peaks of Otter	20.00	12.00	...	32.00	24.00	81.00	...	105.00
38. Clifton Forge	21.00	6.00	...	27.00	20.00	118.00	...	138.00
39. Fincastle	48.00	23.00	...	71.00	52.00	352.00	...	414.00
40. Roanoke	28.00	56.50	...	84.50	48.00	191.00	...	239.00
41. Blacksburg	36.25	24.00	...	60.25	34.25	202.00	...	236.25
42. Claytor Lake	7.25	20.25	...	27.50	4.75	161.50	...	166.25
43. Tazewell	3.00	35.00	...	38.00	5.00	180.00	...	185.00
44. Glade Spring	26.50	41.00	...	67.50	15.50	241.50	...	257.00
45. Bristol	24.50	36.00	...	60.50	15.5	462.00	...	477.50
46. Breaks I.S. Park	6.50	1.50	...	8.00	4.00	30.00	...	34.00
47. Wise County	19.50	32.00	...	51.50	18.50	281.00	...	299.50
Totals	1967.25	1512.50	35.50	3515.25	1605.00	13,685.00	156.25	15,446.25

APPENDIX II

CHRISTMAS COUNT DESCRIPTIONS

(Observers are listed for Chesapeake Bay Bridge-Tunnel, Walkerton, Darlington Heights, Lynchburg, Highland County, Peaks of Otter, Roanoke, Claytor Lake, Glade Spring, and Bristol—counts which do not appear in *Audubon Field Notes*.)

1. CHINCOTEAGUE NATIONAL WILDLIFE REFUGE. 37°58'N 75°22'W
Center: 2 miles north of center of Chincoteague in Accomack County.
Compiler: Teta Kain (7083 Caffee Creek Lane, Gloucester VA 23061-3374)
2. WACHAPREAGUE. 37°40'N 75°42'W
Center: Jct. 789 and 715 in Accomack County.
Compilers: Irvin and Marilyn Ailes (6479 Myrtle Lane, Chincoteague VA 23336)
3. CAPE CHARLES. 37°12'N 75°56'W
Center: 1.5 miles southeast of Capeville Post Office in Northampton County.
Compiler: Henry Armistead (523 E. Durham St., Philadelphia PA 19119)
4. CHESAPEAKE BAY BRIDGE-TUNNEL. 37°02'N 76°05'W
Location: The northern three bridge-tunnel islands and adjacent waters out to one mile.
Compiler: Ned Brinkley (108 Cocke Hall, University of Virginia, Charlottesville 22903)
Observers: George Armistead, Henry T. Armistead, Ned Brinkley, Peter Hill, Randy Moore, Matt Sharp, and Chris Witt.
5. LITTLE CREEK. 36°51'N 76°06'W
Center: 3.8 miles northeast of Kempsville in Virginia Beach.
Compiler: Paul Sykes, Jr. (1080 Forest Rd., Watkinsville GA 30677)
6. BACK BAY NATIONAL WILDLIFE REFUGE. 36°39'N 76°00'W
Center: 1.5 miles east of Back Bay NWR.
Compiler: Paul Sykes, Jr. (1080 Forest Rd., Watkinsville GA 30677)
7. NANSEMOND RIVER. 36°52'N 76°26'W
Center: Jct. 17 and 626 in Pughsville, Suffolk.
Compiler: Ned Brinkley (108 Cocke Hall, University of Virginia, Charlottesville 22903)
8. NEWPORT NEWS. 37°05'N 76°25'W
Center: Northern corner of Magruder & Cmdr. Shepard Blvds in Hampton.
Compiler: Hayes Williams (PO Box 95, White Marsh, VA 23183-0095)
9. MATHEWS. 37°25'N 76°18'W
Center: 0.5 mile east of Beaverlett Post Office in Mathews County.
Compiler: Mary Pulley (HCR 75, Box 656, Hudgins, VA 23076)
10. WILLIAMSBURG. 37°17'N 76°42'W
Center: Colonial Williamsburg Information Center in Williamsburg.
Compiler: Lee Schuster (209 Cherwell Court, Williamsburg, VA 23188)

11. HOPEWELL. 37°23'N 77°17'W
Center: Curles Neck in Henrico County.
Compilers: Larry Robinson (3320 Landria Dr., Richmond VA 23225)
and Wendy Ealding (9006 Eider Landing, Chesterfield, VA 23832)
12. WALKERTON. 37°46'N 77°02'W
Center: Jct. 633 and 634 in King and Queen County.
Compiler: Rob Breeding (Rt. 1, Box 820, Hanover, VA 23069)
Observers: Arun Bose, Rob Breeding, Charles Gibson, Kent Ihrman, Ann Jennings, Kevin Jennings, Teta Kain, Tony Perdue, Bill Portlock, Cindy Schulz, and Glenn Turner.
13. WASHINGTON'S BIRTHPLACE. 38°07'N 76°57'W
Center: Horners in Westmoreland County.
Compiler: Bill Portlock (23195 Mt. Cloud Rd., Bowling Green VA 22427)
14. BROOKE. 38°22'N 77°20'W
Center: At center road 3 miles east southeast of Brooke in Stafford County.
Compiler: David Stewart (10715 Midsummer Dr., Reston VA 22091)
15. FORT BELVOIR. 38°41'N 77°12'W
Center: Pohick Church at Colechester Rd. and Jefferson Davis Hwy. in eastern Fairfax County
Compiler: David F. Abbott (43579 Plantation Terr., Ashburn, VA 22011)
16. MANASSAS-BULL RUN. 38°50'N 77°26'W
Center: Centreville in western Fairfax County.
Compiler: Peter Stangel (1003 Lynn St. SW, Vienna, VA 22180)
17. CHANCELLORSVILLE 38°16'N 77°40'W
Center: Chancellorsville Battlefield, 10 miles west of Fredericksburg in Spotsylvania County.
Compiler: Joella Killian (Dept. Biology, Mary Washington College, Fredericksburg, VA 22401)
18. GORDONSVILLE. 38°09'N 78°12'W
Center: Jct. of 15 and 33 north of the town of Gordonsville in Orange County.
Compiler: Donald R. Ober (PO Box 6, Orange, VA 22960)
19. CHARLOTTESVILLE. 38°04'N 78°34'W
Center: Near Ivy in Albemarle County.
Compiler: Charles Stevens (615 Preston Pl., Charlottesville VA 22903)
20. WARREN. 37°51'N 78°33'W
Center: At Keene in Albemarle County.
Compiler: Charles Stevens (615 Preston Pl., Charlottesville, VA 22903)
21. DARLINGTON HEIGHTS. 37°12'N 78°37'W
Center: Darlington Heights Post Office in Prince Edward County.
Compiler: Carolyn Wells (204 Fayette St., Farmville, VA 23901)
Observers: Vera Copple, John Dalmas, Thelma Dalmas, Angie Foote, Dale Hodges, Jane Holman, Ann Ingram, Jane Jobe, Judy McCann, Tanya Mister, Tom Price, Teresa Ranson, May Shorter, David Spears, Mike Stinson, Randy Thrasher, Sue Thrasher, Joel Wagener, and Carolyn Wells.

22. JOHN H. KERR RESERVOIR. 36°36'N 78°18'W
Center: East end of John H. Kerr Dam in Mecklenburg County.
Compiler: Brian Patteson (PO Box 1135, Amherst, VA 24521)
23. BANISTER RIVER WILDLIFE MANAGEMENT AREAS. 36°43'N 78°48'W
Center: At Banister River Wildlife Management Areas in Halifax County.
Compiler: Jeffrey Blalock (103 Elizabeth Court, South Boston VA 24592)
24. LYNCHBURG. 37°24'N 79°11'W
Center: Lynchburg College in Lynchburg.
Compiler: John Dalmas (502 Rainbow Forest Dr., Lynchburg VA 24502)
Observers: Mike Boatwright, Ed Calvert, John Dalmas, Thelma Dalmas, Virginia Delaney, Lora DeVan, Kathie Driscoll, Betty Epperson, Robert Epperson, Bob Eubank, Rita Fleet, Charles Hansrote, Melva Hansrote, Mike Hayslett, Phyllis Jones, Margaret Kehrer, Victor Kehrer, Melvin Mitchell, Gene Moore, Myriam Moore, Wyatt Murphy, Brian Patteson, Carol Peters, Taylor Piephoff, Claudia Puckette, Dan Puckette, Daniel Puckette, Norma Jean Rist, James Scranton, Barbara Shedd, Doug Shedd, Macon Smith, Marek Smith, Susan Stanton, Mike Stinson, Ed Theisinger, Randy Thrasher, Sue Thrasher, Jimmy Watts, Margaret Wenning, Susan Wingfield, and Jo Wood
25. DANVILLE. 36°34'N 79°25'W
Center: Ballou Park in Danville.
Compiler: Russell C. Brachman (139 Pendleton Rd., Danville VA 24541)
26. MARTINSVILLE. 36°44'N 79°49'W
Center: South end of dam at Martinsville Reservoir #2 in Henry County.
Compiler: James S. Beard (401 Hairston St., Martinsville, VA 24112)
27. PHILPOTT RESERVOIR. 36°53'N 80°03'W
Center: Near Jct. 605 and 623 in Franklin County.
Compiler: Clyde Kessler (PO Box 3612, Radford VA 24143)
28. CALMES NECK. 39°07'N 77°54'W
Center: Castlemans Ferry Bridge, SR 7 and the Shenandoah River in Clarke County.
Compilers: Frances Endicott (Rt. 1, Box 448, Bluemont, VA 22012) and Greg Justice (PO Box 226, Millwood, VA 22646)
29. NORTHERN SHENANDOAH VALLEY. 39°03'N 78°10'W
Center: Jct. Crooked Run and Rt. 606 in Frederick County.
Compiler: Rob Simpson (Rt. 1, Box 154-B, Stephens City, VA 22655)
30. SHENANDOAH NATIONAL PARK—LURAY. 38°35'N 78°28'W
Center: Hershberger Hill near Stanley in Page County.
Compiler: Marsha McCabe (Rt. 4, Box 348, Luray, VA 22835)
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)
32. ROCKINGHAM COUNTY. 38°26'N 79°02'W
Center: Ottobine in Rockingham County.
Compiler: Max Carpenter (Rt. 1, Box 396, Dayton VA 22821)

33. HIGHLAND COUNTY. 38°21'N 79°37'W
Center: Near Vanderpool Gap in Highland County.
Compiler: Ned Brinkley (108 Cocke Hall, University of Virginia, Charlottesville 22903)
Observers: Ned Brinkley, Greg Justice, Ann Simpson, Robert C. Simpson, and Lori Weir.
34. AUGUSTA COUNTY. 38°12'N 78°59'W
Center: Jct. 780 and 781 in Augusta County.
Compiler: John Mehner (1036 Selma Blvd., Staunton, VA 24401)
35. WAYNESBORO. 37°59'N 78°57'W
Center: Sherando at Jct. 610 and 664 in Augusta County.
Compiler: Crista Cabe (400 Walnut Ave., #2, Waynesboro, VA 22980)
36. LEXINGTON. 37°51'N 79°29'W
Center: Big Spring Pond in Rockbridge County.
Compilers: Robert O. Paxton (460 Riverside Dr., #72, New York NY 10027) and George Tolley (Rt. 7, Box 25, Lexington, VA 24450)
37. PEAKS OF OTTER. 37°27'N 79°36'W
Center: Peaks of Otter Visitor Center in Bedford County.
Compiler: Barry Kinzie (PO Box 446, Troutville VA 24175)
Observers: Jim Ayers, Mike Donahue, Charles Hansrote, Charles Hansrote, Jr., Charles Hansrote, III, Melva Hansrote, Eunice Hudgins, John Hudgins, Bill Hunley, Barry Kinzie, Mike Smith, Kathy Summers, Kent Summers, and Liz Williams.
38. CLIFTON FORGE. 37°49'N 79°46'W
Center: Jct. 42 and 60 in Alleghany County.
Compiler: Allen LeHew (76 Allegeny, Clifton Forge VA 24422)
39. FINCASTLE. 37°31'N 79°52'W
Center: North of Fincastle near Jct. 220 and 679 in Botetourt County.
Compiler: Barry Kinzie (PO Box 446, Troutville VA 24175)
40. ROANOKE 37°18'N 79°56'W
Center: Oakland Blvd. and Williamson Road in Roanoke.
Compiler: Michael Donahue (4814 Bandy Rd. SE, Apt. 4, Roanoke VA 24014)
Observers: Dan Abbott, Jim Ayers, Fred Cramer, Kent Davis, Mike Donahue, Tad Finnell, David Holt, Joyce Holt, Eunice Hudgins, Bill Hunley, Mary Justice, Tina Kemper, Susan Kidd, Barry Kinzie, Mike Purdy, Tim Quinn, Mike Smith, Kathy Summers, Kent Summers, Liz Williams, Guy Winterbotham, and five feeder watchers.
41. BLACKSBURG. 37°14'N 80°25'W
Center: Jct. 685 and 657 near Linkous Store in Montgomery County.
Compiler: Clyde Kessler (PO Box 3612, Radford VA 24143)
42. CLAYTOR LAKE 37°03'N 80°44'W
Center: Jct. 611 and Norfolk & Southern Railroad in Pulaski County.
Compiler: Clyde Kessler, (PO Box 3612, Radford VA 24143)
Observers: Mary Ann Bentley, Stan Bentley, Raymond Callahan, Ben Case, Todd Case, Larry Crane, Rita Crane, Alan Kessler, Clyde Kessler, and Pat Polentz.

43. TAZEWELL. 37°08'N 81°30'W
Center: Fourway in Tazewell County.
Compiler: Sarah Cromer (Box 765, North Tazewell VA 24630)
44. GLADE SPRING. 36°47'N 81°47'W
Center: Jct. 750 and 609 in Glade Spring.
Compiler: Ed Morgan (259 Bardley St., Abingdon, VA 24210)
Observers: Wallace Coffey, Jo Ann Detta, Dan Graybeal, Ron Harrington, Diane Harris, Warren Harris, Marty Huber, Dan Kegley, Geoffery Larsen, Larry McDaniel, Ed Morgan, Peter Morgan, Bob Quillen, Randy Smith, and Beth Wright.
45. BRISTOL. 36°36'N 82°07'W
Center: Jct. 647 and 654, east of Bristol TN in Washington County, VA.
Compiler: Richard P. Lewis (407 V. I. Ranch Road, Bristol, TN 37620)
Observers: Rob Biller, Ed Burke, Ron Carico, Wallace Coffey, Jo Ann Detta, Jane Fleenor, Pat Galliher, Bert Hale, Ken Hale, Lindsey Hale, Loraine Hale, Ron Harrington, Greg Harris, Marty Huber, Rick Knight, Geoff Larsen, Tom Laughlin, Phillip Lewis, Richard Lewis, Larry McDaniel, Rick Phillips, Karen Quesenberry, Bob Quillen, Randy Smith, and Ramsey White.
46. BREAKS INTERSTATE PARK. 37°15'N 82°13'W
Center: 4.5 miles n.e. of Haysi in Buchanan County.
Compiler: Brian K. Compton (PO Box 147, Breaks, VA 24607)
47. WISE COUNTY 36°57'N 82°39'W
Center: At Dorchester in Norton City.
Compiler: Richard Peake (Clinch Valley College, College Ave., Wise VA 24293)





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 (D. H. Shedd, Department of Biology, Randolph-Macon Woman's College, Lynchburg, Virginia, 24503, 804-947-8493, dshedd@main.rmwc.edu).

Most manuscripts published in *The Raven* concern the distribution, abundance, and migration of birds in Virginia. Manuscripts on other ornithological topics, such as Virginia-based historical reviews, bibliographical reviews, life history notes, 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 VSO chapters and the various public and private organizations engaged in biological and conservation work in Virginia.

Format of *The Raven* generally follows guidelines set by the Council for Biology Editors as outlined in the *CBE Style Manual*, 5th edition (Council of Biology Editors, Inc., Bethesda, Maryland 20814). All manuscripts should be typewritten and double-spaced. Tables, table legends, and figure legends must also be typewritten and should be submitted on separate pages at the end of the manuscript. At this time, only black-and-white photographs, graphs, maps, illustrations, figures, etc., may be used in *The Raven*. The original size for these items should not exceed 5 x 7 inches. Vernacular and scientific names of birds should be those published in the Sixth edition of the A.O.U. Check-list of North American Birds and subsequent supplements. Linear measurements and weights should be in metric units.

Authors are strongly encouraged to send diskette, as well as, paper copies of their manuscripts. Copies typed in Word 7.0 (IBM compatible or Macintosh) are preferred, but other versions of Word, or WordPerfect (up to 5.1) are also acceptable.

Authors should consult recent editions of *The Raven* for additional information about style and format, or consult with the editor.

Deadlines for submission of articles are 15 December for the spring issue and 15 July for the fall issue.



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

Activities undertaken by the Society include the following:

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

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

Those wishing to participate in any of the above activities, or to cooperate in advancing the objectives of the Society, are cordially invited to join. Annual dues are \$15.00 for active members, \$25.00 for sustaining members, \$50.00 or more for contributing members, \$400.00 for life members, and \$20.00 for family members (limited to husband, wife and their dependent children).

Editorial queries and comments may be directed to Douglas H. Shedd, Department of Biology, Randolph-Macon Woman's College, Lynchburg, Virginia 24503.

OFFICERS OF THE VSO

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The Raven

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FIRST BREEDING RECORD FOR MISSISSIPPI KITE IN VIRGINIA

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During the 1800's, eastern populations of Mississippi Kites (*Ictinia mississippiensis*) bred throughout the U.S. coastal plains from South Carolina southward, except central and southern Florida, west into the Mississippi River Valley, and north into at least Illinois, Indiana, and Iowa (Parker and Ogden 1979). They were observed in significant numbers near Charleston, South Carolina, along the Savannah River, but occurred rarely in North Carolina. Kites were more rare in Tennessee and Kentucky, but a few early records exist, and they were suspected of breeding near the Mississippi River. During the early 1900's, Mississippi Kites suffered a significant decline in their population and distribution, disappearing throughout much of their historic range. However, healthy kite populations survived in swamps along the Mississippi River in Mississippi and Louisiana, and in coastal South Carolina. Speculated causes for the kite population declines included shooting (Mengel 1965, Wolfe 1967), egg collecting (Sutton 1939), and alteration of foraging habitat (Mengel 1965).

During the latter part of the 20th century, recovery of the Mississippi Kite has been recognized and documented. The Mississippi Kite appears to have benefited from human activity in parts of its range, unlike most other raptors. Examples of reoccupation of previously-abandoned range were documented with nesting records in South Carolina, Georgia, Florida, Alabama, and Mississippi (Parker and Ogden 1979). Censuses in western Tennessee (Kalla and Alsop 1983) documented significant numbers of Mississippi Kites (162, summer 1978) where they were considered to be the most common raptor in the flood plain of the Mississippi River.

Although Mississippi Kites historically nested in riparian woodlands in the central Great Plains, agricultural practices have caused a shift in nesting habitat to artificial tree plantings, e.g. shelterbelts (windbreaks), farm woodlots, and lawn trees in towns. In the central plains, where riparian habitats are generally more rare than on the eastern seaboard, this increase in man-made woody vegetation and tree plantings has significantly increased the potential nesting habitat. In the east, lumbering has had the effect of increasing cultivated areas, thus providing increased foraging habitat for kites without significantly reducing nesting habitat (Parker and Ogden 1979).

In recent years, Mississippi Kites have been observed at various localities in Virginia, including the ridges of the Appalachian Mountains (Kinzie 1985, Ake

1985), western piedmont of northern Virginia (Weigel 1989), and nearby mid-Atlantic flyways at spring and fall hawk migration counting sites (e.g., Cape May Point, New Jersey; Sutton 1993, Gallagher 1994). Mississippi Kites have been observed by many birders and are suspected, though without confirmation, of breeding in Greenville County, near the city of Emporia in southern Virginia. There, for the last several years, numerous kites of various ages have been observed hunting the agricultural fields and swamplands around the Meherrin River (pers. obs.). Mississippi Kites have been regularly observed since 1972 during the breeding season (May-July) in North Carolina (Lynch 1981), including Northampton County, immediately south of and adjacent to Greenville County, Virginia. Since Mississippi Kites were historically rare in these areas, recent sightings probably indicate an expansion of the Mississippi Kite range as opposed to a reoccupation of former range.

On 11 August 1996, A.J. Quezon, Suzanne Miller, and Robert Studholme observed the first documented breeding of Mississippi Kites in Virginia. A nest containing a near-fledging juvenile kite was discovered in the backyard of an unoccupied suburban home in Woodbridge (Prince William Co.) near the Potomac River approximately 30 kilometers south of Washington, D.C.

Two adult Mississippi Kites were first seen in Woodbridge in May of 1996 (Robert Studholme pers. comm.), and then regularly were reported on the Voice of the Naturalist, the rare bird alert for the metropolitan Washington, D.C. area, provided by the Audubon Naturalist Society of the Mid-Atlantic States. During mid-July, regular observations of the kites indicated the general area of their foraging and suspected nesting habitat to be in and around a residential community, approximately 30 years old with many large and mature deciduous and evergreen trees. Although the residential community was within a kilometer of the busy U.S. Rt. 1 corridor of Woodbridge, Virginia, it was also within a few kilometers of the Potomac and Occoquan Rivers and their shorelines. Regular observations confirmed the presence of an adult male and a female kite, obviously foraging and carrying prey items to a nest, but the nest remained undiscovered until 11 August 1996. The adult female, identified by her larger size, darker head and nape, and white barring in the undertail coverts (Wheeler and Clark 1995) did not show any evidence of molt until after the fledging of the juvenile, while the adult male was observed undergoing symmetric molt of the primary flight feathers in July.

The nest was in a silver maple (*Acer saccharinum*) tree in the backyard of an unoccupied house, 12-15 meters from the ground in a limb crotch off the main trunk approximately 3-5 meters from the top of the tree. The nest was constructed of small twigs and branches, some with dead leaves still attached, and was approximately 0.5 meter in diameter. When the nest was discovered, the juvenile was near fledging and was very active in the nest and surrounding branches. The adult kites returned to the nest at regular intervals to feed the juvenile, calling to it and eliciting a response from the juvenile. The adult voices were a two-part whistle comprising a short note in sequence with a longer drawn-out note descending in tone. The juvenile would periodically food-beg by calling to the adults and, on delivery of prey, emit excited squeaks and squeals. Prey items generally comprised flying insects, e.g. periodical cicadas (*Magicicada* spp.), but included at least one Chimney Swift (*Chaetura pelagica*; Studholme pers.

comm.). The juvenile fledged on 14 August, and for at least three weeks was seen in the immediate area around the nest tree, never ranging more than approximately 100-200 meters. It was regularly fed by at least one adult and soon began hunting flying insects on its own.

During the 1995 breeding season, two adult Mississippi Kites were observed feeding a juvenile in Woodbridge, Virginia (Robert Studholme, William S. Clark, Kerrie Kirkpatrick pers. comm.). Studies of breeding populations of Mississippi Kites (Parker 1988) have indicated that almost all Mississippi Kite adults attempt to nest during the breeding season and they remain near their nest sites during juvenile post-fledging and often after reproductive failure. Hence, the 1995 observation was likely also of a breeding pair of adult kites and their offspring, though a nest was not discovered.

[Editor's note: This record was accepted by the Virginia Avian Records Committee and becomes the first state breeding record for this species.]

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BREEDING RECORDS AND NESTING DIET OF THE NORTHERN SAW-WHET OWL (*Aegolius acadicus*) IN VIRGINIA

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In a nest box in Highland County, Virginia, on 13 March 1995, Pagels found an adult Saw-whet Owl (*Aegolius acadicus*) and two eggs. On his next visit, 11 May 1995, the box contained four nestling Saw-whet Owls. One appeared to be slightly larger than the others but its face was not visible. Three individuals had the white Y-shaped marking between and above the eyes which is characteristic of juvenile Saw-whet Owls. Cannings (1993) reported an incubation period for Saw-whet Owls of 27-28 days, thus the nestlings were probably about 30 days old at the time of the second visit. Although we did not see the fledglings, there was no evidence of mortality. This is apparently the first record of a successful breeding and rearing by the Saw-whet Owl in Virginia.

An unsuccessful breeding attempt was observed at the Clinch Mountain Wildlife Area (Russell County) near Saltville (Ridd 1990). On 29 March 1989, Baker had found a Saw-whet Owl and two eggs in a nest-box located approximately 33 m south of the Laurel Bed Lake shoreline. Two dead white-footed mice (*Peromyscus leucopus*) were on the floor of the nest-box and one of the globous and white eggs appeared wet. When Baker revisited the site one month later, accompanied by Mitchell Byrd, Saw-whet Owls were not observed. The nest-box contained egg shell fragments of two eggs and we surmised the eggs had been eaten. Both the Highland and Russell County observations were made as part of a nest-box study in Virginia's mountains that was initiated in 1985 to aid in determining the distribution and biology of the federally endangered northern flying squirrel (*Glaucomys sabrinus*).

The successful site, located in the Laurel Fork area of northwestern Highland County in a portion of the George Washington-Jefferson National Forest at an elevation of 1158 m, was forested with about 10% canopy openness in the summer. The canopy was layered; a high overstory canopy was present through-

out the area and a medium and low canopy were present in 60% and 10% of the area, respectively. Trees with a diameter at breast height (dbh) of 10 cm or greater were in decreasing order of abundance: American beech (*Fagus grandifolia*), red spruce (*Picea rubens*), black cherry (*Prunus serotina*), black locust (*Robinia pseudoacacia*), red maple (*Acer rubrum*), and northern red oak (*Quercus rubrum*). Additional understory habitat features are provided in Pagels et al. (1994).

The unsuccessful nest site was located at 1097 m elevation in Russell County, and had similar habitat features. A 23 m overstory canopy of *Q. rubrum* and *P. serotina* dominate the area. The nest box was located within a 0.1 ha clump containing yellow birch (*Betula alleghaniensis*) and black birch (*Betula lenta*) overstory canopy with an eastern hemlock (*Tsuga canadensis*) and *Rhododendron* midstory canopy to a 9 m total height. The site's northern aspect maintained a 20% grade sloping toward Laurel Bed Lake. Ten nest boxes located at spots in this area were inspected a total of 18 times over a five-year period. The Saw-whet Owl finding occurred on the twelfth check in the third year of the study.

The wooden nest box had a 14 cm x 14 cm x 34 cm cavity with an enlarged 54 mm diameter entrance hole placed 7.6 cm from the top of the box to its top edge. Red squirrels (*Tamiasciurus hudsonicus*) frequently enlarged nest box entrances during the study. Nest material in the box, comprised of shredded bark, leaves, and twigs to a depth of 15 cm, had probably been installed by a red squirrel or a southern flying squirrel (*Glaucomys volans*) which dominated the use of nest-boxes at this site. Several unidentified small feathers were also present. The previous check was made 13 December 1988 and at that time the box contained 25 cm of moss and birch leaves. This nest box was located on the southern face of a 38 cm dbh hardwood tree about 3.5 m above the ground.

The nest-box at the Highland County site was attached to a large *Q. rubrum* about 3.5 m above ground. The wooden box had the same inside measurements as the box described above, however, the diameter of the circular opening to the box was 48 mm. Front doors of all boxes used in the study are hinged at the bottom and a second hardware cloth front allows viewing of the nesting materials and box inhabitants when the hole is plugged and the wooden door opened at the time of box checks.

On 13 March 1995, in addition to the adult owl and two eggs, there were four dead *Peromyscus*, three on one side and another on the other side of the eggs, on the floor of the nest box. The four *Peromyscus* seemed excessive relative to the size of the Saw-whet Owl, but Cannings (1993) reported males often bring excess food to the nest, especially during egg-laying. All *Peromyscus* were in slate-gray juvenile pelage but were not handled to determine species; *P. leucopus* and *P. maniculatus* occur in the Laurel Fork area. Two identified live *P. leucopus* were present in the same nest-box on 9 October 1991. On 26 May 1994, the box contained a lactating *G. volans* and three juveniles. Boxes at this site had been checked in October, December, March, and May, of each year since their placement in summer, 1988.

There was no evidence of owl mortality when the Laurel Fork nest-box was collected in September 1995, to obtain prey remains. A nearly black, solid block of prey remains that filled about one third of the nest-box was heated for 36 hr to kill organisms in the material before the block was wetted to facilitate removal

and sorting of prey items. The almost complete skeleton of a *G. volans* was found on the floor of the box under the block of prey remains within a 2 cm mat of large leaves. The squirrel was nearly adult size but sutures were not fused and dentition was unworn. It is unknown whether it was an initial prey item or if the owl began to nest on the leaves and already dead squirrel. Cannings (1993) reported that the Saw-whet Owl occasionally takes juveniles of several relatively large species, including *Glaucomys*.

In addition to the *G. volans* skeleton, 259 dentary bones were isolated from the material, indicating a minimum of 130 small mammals. Skulls in pellets of the Saw-whet Owl are usually crushed (Cannings 1993) and that was especially true of the prey remains found in the nest box. Dentition, rostra, and occiputs were missing from most skulls, suggestive of juvenile prey with incompletely fused crania, and skulls that had been pulled apart by a small owl. Small mammal remains included one masked shrew (*Sorex cinereus*), four northern short-tailed shrews (*Blarina brevicauda*), 91 mice (*Peromyscus* spp.), and 34 arvicolines, or voles. All the voles appeared to be red-backed voles (*Clethrionomys gapperi*), but as noted, the dentition was missing in many specimens. Summarizing numerous studies of primarily winter prey taken by the Saw-whet Owl in eastern North America, Cannings (1993) found that species of *Peromyscus* (68.7%) and species of voles (20.4%) comprised nearly 90% of the diet of the Saw-whet Owl with incidental numbers of other organisms including insects, birds, and other small mammals. Little information is available on the nesting diet of the Saw-whet Owl in eastern North America (Cannings 1993).

In addition to the nesting localities reported here, juvenile Saw-whet Owls have been reported in summer from other sites: the Mountain Lake region, Giles Co., 20-22 June 1990 (Johnston 1997) and near Bridgewater (Rockingham Co.), 7 July 1987 (Johnston and Ehmann 1990). These few records leave major gaps in our knowledge about the breeding distribution of this owl in Virginia.

Finally, this report of nesting by the Saw-whet Owl in the Laurel Fork area of Highland County enhances the reputation of the area as the home of special vertebrates. The area may still harbor small numbers of the state endangered snowshoe hare (*Lepus americanus*) (M. Fies, personal communication), it contains three of five sites in Virginia where the state endangered water shrew (*Sorex palustris*) has been found (Pagels et al. *in press*), and it is one of only two areas in Virginia where the federally endangered northern flying squirrel (*Glaucomys sabrinus*) has been collected (Pagels et al. 1990). Along with the Saw-whet Owl, these mammals were among the many species of vertebrates found in the late Pleistocene deposits at Clark Cave in nearby Bath County, Virginia (Guilday et al. 1977).

[Editor's note: This record was accepted by the Virginia Avian Records Committee and becomes the first state breeding record.]

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OBSERVATIONS OF MIGRANT BOBOLINKS USING A FALL ROOST IN OYSTER, VIRGINIA

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In comparison to most passerine birds, the Bobolink (*Dolichonyx oryzivorus*) has an extraordinarily long migration. From breeding grounds in the northern United States and southern Canada to wintering grounds in and around the Pantanal Region of Argentina, Bobolinks cover a round-trip distance of 20,000 km (Martin and Gavin 1995). To complete the fall portion of this migration, Bobolinks may spend several weeks in staging areas during late summer and early fall. Within staging areas, individuals prepare for migration by completing their prebasic molt and accumulating large stores of fat, often increasing their body weight by as much as 50% (Gifford and Odum 1965).

Because Bobolinks become concentrated within staging areas and because particular staging areas may be used for many years, specific sites may be important to the migration ecology of a large numbers of individuals. Here, I: (1) describe a nocturnal roost of Bobolinks located on the lower Delmarva Peninsula, (2) provide an estimate of the number of Bobolinks using the roost, and (3) describe their afternoon flights into the roost.

METHODS

Oyster is a small community located on the seaside of the lower Delmarva Peninsula (Northampton Co.). Bobolinks have been observed staging for fall migration in and around Oyster for many years (Kain 1987). In late August and early September of 1992, large numbers of Bobolinks were observed moving into two nocturnal roost sites in the late afternoon hours. Both sites had been used previously for the deposition of dredge spoil material and were enclosed by a system of earthen dikes. The center of each site was covered by a dense monoculture of giant reed (*Phragmites australis*) between 2 and 3 m in height. Vegetation on the surrounding dike system was dominated by hackberry (*Celtis occidentalis*) and black cherry (*Prunus serotina*) saplings. The primary roost site covered 31.4 ha and was located on the south shoreline of Oyster Harbor near its mouth (Fig. 1). The secondary roost covered 69.7 ha and was located on the north shoreline of Oyster Harbor near its mouth.

In late August and early September, the movement patterns of Bobolinks were observed to determine the best method of estimating bird numbers. In the late afternoon, individuals move south in a narrow band along the east edge of the peninsula. Birds either moved directly across Oyster Harbor or would stage in groups along the edge of the secondary roost area before crossing the harbor. All birds crossing the harbor could be easily observed from an elevated vantage point on the shell road (located along the south shoreline and between the two roost areas) as they flew overhead. There was no effective method of counting birds that settled in the secondary roost site and never crossed the harbor, so this was not attempted.

On 10 September 1992, an attempt was made to estimate the number of birds crossing Oyster Harbor and entering the primary roost area. The survey began at 16:15 hrs and continued until dusk at 19:30 hrs. In order to examine the timing of movements, the survey period was subdivided into 15 min intervals. In the first 30 min of the survey, all birds were counted individually. As the period advanced, movement increased dramatically and groups of birds were estimated in increasing size categories of 10, 50, 100, 200, and eventually 500 individuals.

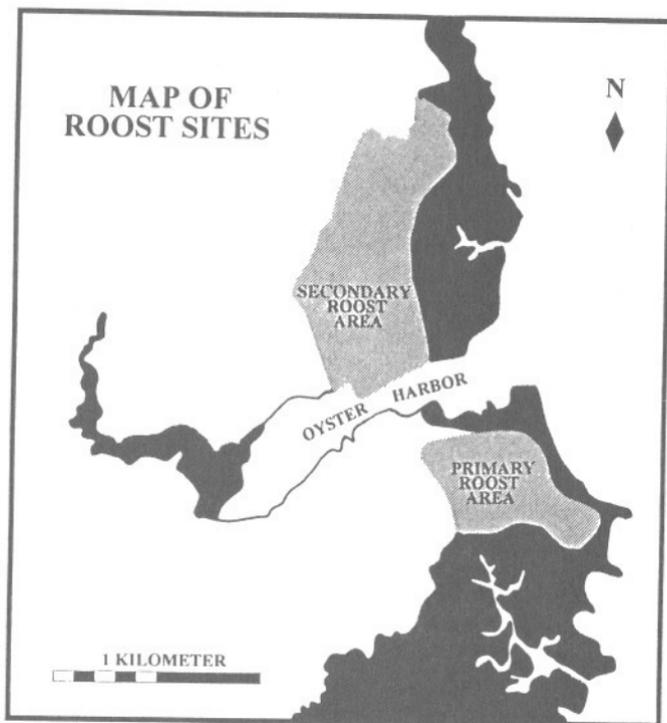


Figure 1. Map of primary and secondary roost sites (gray areas) near the mouth of Oyster Harbor. Black areas indicate tidal marshes. White areas in and east of Oyster Harbor represent open water. White areas west of tidal marshes indicate uplands.

RESULTS

Over the survey period, an estimated 61,000 Bobolinks crossed Oyster Harbor flying south. No birds were observed flying north across the harbor. All of the Bobolinks crossing the harbor stopped at the primary roost area and settled in the dense giant reed stand. The vast majority of these birds settled in an area less than 1 ha in size located near the center of the spoil area. Within this area, birds reached an average density of >5 birds/m². However, observations of birds (on days before and after 10 September) streaming into very small pockets within the giant reed suggest that birds must have sometimes reached maximum densities of several times this level. Many Bobolinks, particularly in the later time intervals, were observed to settle into and remain in the secondary roost area. No accurate counts of these birds could be made. However, it appeared that the majority of all birds did move across to the primary roost.

Although a large majority of Bobolinks (81.3%) arrived at Oyster Harbor in the last hour before dark, they appeared to have a relatively long window of movement to the roost (Fig. 2). During the first 15 min of the survey, over 100 individuals were counted, suggesting that they may begin to move to roost areas in early to mid-afternoon. At this time, most birds were flying in flocks of two to six. By 17:30 hrs, group size had increased considerably and by 18:30 hrs a continuous column of birds had formed. Between 18:45 hrs and 19:00 hrs, over 25,000 birds crossed the harbor. During this period, a continuous column of birds 10 m wide stretched to the north as far as could be seen with a spotting scope. Also during this period, three Merlins (*Falco columbarius*) were observed flying along the edge of the column.

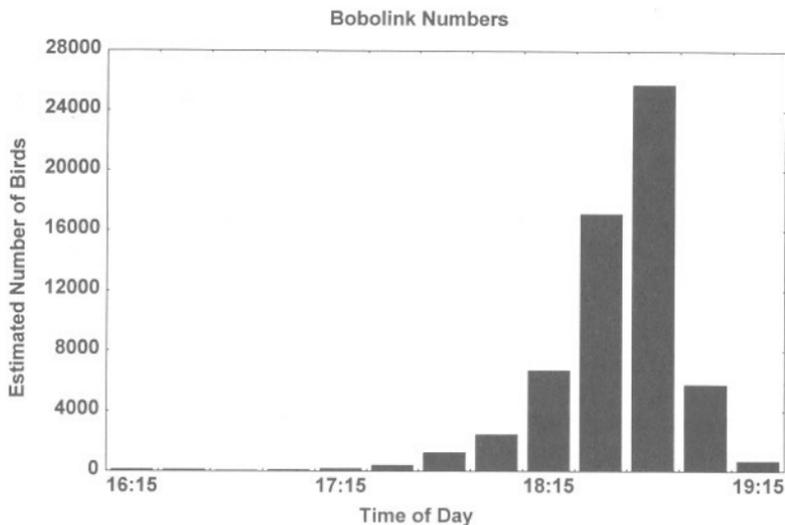


Figure 2. Temporal distribution of Bobolinks crossing Oyster Harbor and entering the primary roost site. Times indicated refer to the beginning of 15 min. periods. Darkness fell at 19:30 hrs.

DISCUSSION

Bobolinks are one of the earliest fall migrants to appear on the lower Delmarva Peninsula, moving through in largest numbers between mid-August and mid-September (pers. obs.). Individuals appear to roost at night and make most of their southward progress during the early morning and late afternoon hours. Bobolinks may be heard calling in groups of several to several hundred as they move high overhead and out over the Chesapeake Bay primarily in the early morning hours. The number of Bobolinks observed at Oyster during the fall of 1992 appears to be higher than during most years. Surveys of the same roost area during the fall of 1993 never exceeded 15,000 individuals (pers. obs.). Weather patterns during the early fall of 1992 were unusually stagnant with no frontal activity until early September. These conditions may have served to lower the normal turnover rate within the roost area and allow birds to build up over a 2-3 week period.

The locations of significant Bobolink feeding areas on the Delmarva Peninsula have not been identified. A cursory examination of mainland fields to the north of Oyster did not reveal a single individual. In the fall of 1993, the author and two other observers took a boat several miles to the north of Oyster in an attempt to locate the end of the afternoon bird column and to assess the use of other patches of common reed as roost sites. Birds did not settle in other available patches of common reed and the origin of the bird column was not discovered. It seems likely that the birds are foraging on marsh grasses somewhere in the extensive marshes behind Wallops, Assawoman, Metompkin, Cedar, and Paramore Islands. However, further investigation is needed to conclusively locate feeding areas.

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MAGNITUDE AND TIMING OF THE FALL MIGRATION OF NORTHERN SAW-WHET OWLS THROUGH THE EASTERN SHORE OF VIRGINIA, 1994-1996

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INTRODUCTION

In eastern North America, Northern Saw-whet Owls (*Aegolius acadicus*) primarily breed in the forests of Canada and the northern United States (Cannings 1993). Some scattered breeding locations occur in the mountains of Maryland, Virginia, West Virginia, Tennessee, and North Carolina (American Ornithologists' Union 1983, Smith et al. 1988). Although Saw-whet Owls are resident year-round throughout much of their breeding range, some populations migrate to wintering areas at lower latitudes (Mueller and Berger 1967a, Holroyd and Woods 1975, Weir et al. 1980). The winter range of most northeastern populations is believed to be in the east-central United States, but the limits of this range are uncertain (Cannings 1993). Sporadic winter records of this species exist for all southeastern states including Florida (Holroyd and Woods 1975, Miller and Loftin 1984, Smith et al. 1988).

The Atlantic coastal plain may serve as a Saw-whet Owl migration route that extends from Nova Scotia to the southeast (Holroyd and Woods 1975). Duffy and Kerlinger (1992) demonstrated that substantial numbers of Saw-whet Owls migrate at least as far south as Cape May, New Jersey, every year. Beginning in 1991, Saw-whet Owls have also been banded each fall at several locations in Maryland including Assateague Island National Seashore (Brinker et al. *in press*). Despite evidence that Saw-whet Owls use the Atlantic Coast as a flyway to wintering areas, there are very few fall or winter records of this species in Virginia. The species is described as a rare winter visitor on Virginia's coastal plain (Kain 1987).

Each autumn, migrating passerines, shorebirds, and diurnal raptors are concentrated on the lower Delmarva Peninsula. It seems likely that the penin-

sula should also function as a migration bottleneck for Saw-whet Owls reluctant to cross the Chesapeake Bay. The objectives of this study are to determine the magnitude and seasonal timing of the autumn migration of the species on the peninsula and to identify differences in the timing of migration between age classes.

METHODS

A banding study of migrating Northern Saw-whet Owls was conducted on the Eastern Shore of Virginia during each fall from 1994 to 1996. Owls were netted at 3 stations situated within a 10 km² area at the southern tip of the Delmarva Peninsula. These stations were located in the Eastern Shore of Virginia National Wildlife Refuge, Gatr Tract/Mockhorn Island Wildlife Management Area, and Kiptopeke State Park. Each station was wooded with a mixture of loblolly pine (*Pinus taeda*) and/or hardwoods (*Quercus* sp.) and contained moderate to dense understory vegetation.

A continuous line of six mist nets was erected along an east/west axis at each station. Mist nets were 12 m long x 2 m tall. Both 31 and 61 mm mesh nets were used. An electronic audio-lure was situated at the center of each net lane to attract migrating owls. Audio-lures consisted of a cassette tape-player, amplifier, and loud-speaker. A continuous broadcast of a Saw-whet "advertising call" (Cannings 1993) was played. The effectiveness of audio-lures has been demonstrated by increased capture rates over passive netting (i.e. netting without an audio-lure) at other owl banding stations in the United States. Capture rates are increased five- to ten-fold when an audio-lure is used (T. Erdman, pers. comm.).

Banding operations began during the third week of October and continued through the second week of December. Each night, nets were opened and audio-lures were started at sunset. Nets were usually checked in rounds occurring at 21:00 hrs, 24:00 hrs, 03:00 hrs and dawn. An individual round involved driving to all 3 stations in the order in which they were opened and inspecting nets for captured owls. The order in which stations were opened was varied night to night. Captured owls were stored in holding boxes and taken to the College of William and Mary field station (located on the Eastern Shore of Virginia National Wildlife Refuge) for processing. All owls were later released at their original site of capture.

Owls were banded with U.S. Fish and Wildlife Service aluminum tarsal bands. Wing chord measurements were recorded to the nearest mm and weight was recorded to the nearest gm. Wings were inspected for evidence of molt to determine age according to criteria established by the U.S. Fish and Wildlife Service (Anonymous 1977). During the summer, juvenile Saw-whet Owls undergo a prebasic I molt in which all flight feathers are replaced (Cannings 1993). Therefore, Saw-whet Owls are aged as hatching year (HY) if all primary and secondary remiges and coverts appear uniform in color. Each summer after hatching year (AHY) owls undergo a definitive prebasic molt in which the remigial molt is usually incomplete (Cannings 1993). As a result, owls are aged as AHY if primary and secondary remiges are not uniform in color, indicating the presence of more than one generation of feathers. Owls captured in 1994 were

examined for evidence of wing molt and were used to develop proficiency in age determination. Age classes for 1994 are not reported in the results due to potential observer error.

All distributions were tested for normality using Shapiro-Wilks' W tests. Measurements of weight for both adult and immature Saw-whet Owls conformed to normality. Therefore, a two-sample t -test was used to examine differences in weight between age classes. All other distributions tested did not conform to normality. As a result, nonparametric statistics were employed. Kolmogorov-Smirnov two-sample tests were used to demonstrate between year differences in the distribution of overall passage times. In addition, Mann-Whitney U tests were used to compare median dates of migration and to determine differences in wing chord measurements between age classes.

RESULTS

Banding operations were conducted on 32, 44, and 42 trap-nights in 1994-1996, respectively. The total effort for each respective season was 6,903; 9,481; and 8,817 net-h (net-h were calculated as 3 stations x 6 nets/station x hours of operation). Despite fairly similar effort between years, there were large variations in the number of individual Saw-whet Owls netted each season. 52 Saw-whet Owls were caught in 1994, 1,007 owls were caught in 1995, and 106 owls were caught in 1996 (Table 1).

Table 1. Effort, capture totals, and capture rates for Saw-whet Owl trapping on the lower Delmarva Peninsula, 1994-1996.

	1994	1995	1996
Trap-Nights	32	44	42
Net Hours	6,903	9,481	8,817
Owl Captures	52	1007	106
Owls/Trap-Night	1.6	22.9	2.5
Owls/100 Net-Hours	0.8	10.6	1.2

All owl banding stations in the mid-Atlantic states set new season highs in 1995 (Brinker et al. *in press*). The season total on the lower Delmarva Peninsula represented the largest number of Saw-whet Owls ever captured in eastern North America. Forty or more owls were trapped on the lower Delmarva on 11 different nights. The peak night occurred on 11 November, when 124 individual Saw-whet Owls were captured.

Figure 1 shows the seasonal timing of the Saw-whet Owl migration on the lower Delmarva Peninsula for each year. More than 90% of all Saw-whet Owls were captured between 1 November and 5 December of each year. The median dates of migration were 12 November in 1994, 17 November in 1995, and 14 November in 1996. Overall, 90% of owl captures took place by 30 November of each year.

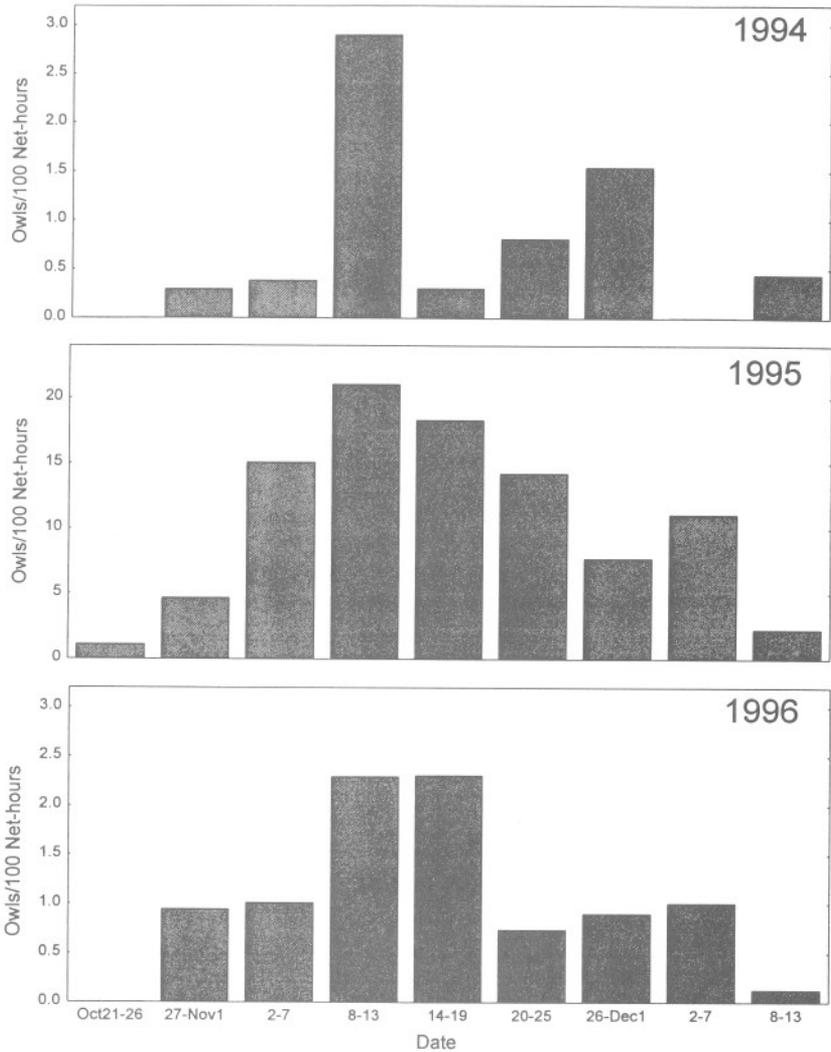


Figure 1. Seasonal capture rates of Saw-whet Owls on the lower Delmarva Peninsula, 1994-1996. Each season was divided into nine different six-night time intervals. Note that the scale of the Y-axis changes in different years.

In 1995, 83% of the Saw-whet Owls netted on the lower Delmarva were HY birds. That trend was reversed in 1996 when only 14% of the owls were immatures. For AHY and HY owls combined, the distributions of capture dates did not differ between 1994 and 1996 ($D=0.148$, $P>0.10$), however, the timing of migration was different in 1995 ($D=0.219$, $P<0.001$). Adult Saw-whet Owls

migrated later in 1995 than in 1996 ($U=4852$, $P<0.001$; Fig. 2). The median dates of migration of adult owls were 21 November and 14 November in 1995 and 1996, respectively. However, the passage times of immature owls were not significantly different between years ($U=5680$, $P>0.50$). The median dates of migration for immature Saw-whet Owls were 17 November and 16 November in

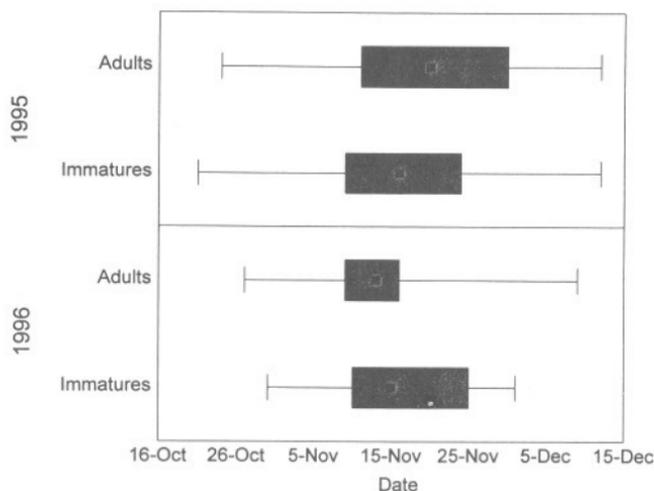


Figure 2. Seasonal timing of adult and immature Saw-whet Owl captures on the lower Delmarva Peninsula in 1995 and 1996. Points indicate median dates of migration, boxes represent the passage of the middle 50% of migrants, and brackets show extreme dates.

1995 and 1996, respectively. Although AHY owls migrated significantly later than HY owls in 1995 ($U=57635$, $P<0.001$), there was no detectable differences in the passage times of different age classes in 1996 ($U=601$, $P>0.50$).

Overall, owls captured in 1995 weighed less than in 1994 and 1996 ($t=3.744$, $df=1138$, $P<0.001$). However, this finding may be an artifact of between year differences in age ratios of owl captures. Within individual age classes, weights of captured owls did not differ between years ($P>0.10$ for both adults and immatures). Therefore, data from 1995 and 1996 were pooled for comparisons of weight between age classes. Adult Saw-whet Owls netted during both years were found to be heavier than immatures ($t=4.058$, $df=1077$, $P<0.001$). Mean weights were 91.6 ± 8.25 gm (mean \pm SD) and 89.0 ± 8.92 gm for AHY and HY owls, respectively. Wing chord data from 1995 and 1996 were also pooled for analysis because data within individual age classes did not differ between years ($U=45930$, $P>0.05$). Adults were found to be larger than immatures based on wing chord measurements ($U=83915$, $P<0.001$). Median wing chords were 141 mm for AHYT owls (mean = 140.2 ± 4.38 mm) and 139 mm for HY owls (mean = 138.7 ± 4.54 mm).

DISCUSSION

Although Northern Saw-whet Owls occur regularly on the Atlantic Coast each autumn, the magnitude of the migration is irruptive in nature. The number of Saw-whet Owls trapped at Cape May, New Jersey, during 1980-1988 ranged from a low of eight owls in 1984 to a high of 115 owls in 1980 (Duffy and Kerlinger 1992). Our data demonstrate that considerable year to year variation exists in the number of owls migrating through the lower Delmarva Peninsula. In 1995, the owl capture rate on the Delmarva was almost 10 times higher than in 1996 and 14 times higher than in 1994. It has been suggested that annual variations in the number of Saw-whet Owls migrating are almost entirely due to variations in breeding success (Weir et al. 1980). However, variation in the magnitude of migration is likely to be caused by a number of additional factors. Newton (1979) suggests that the most important cause of annual fluctuations in the number of migrating raptors is variation in the amount of available prey. In years with particularly harsh weather, such as unusually cold temperatures and early snow cover, prey availability may decrease drastically. Predators may be forced to migrate to lower latitudes in search of a sufficient prey base. As a result, the magnitude of the raptor migration may be larger than normal.

Age ratios of captured owls were found to vary between years. During the invasion year of 1995, 83% of the Saw-whet Owls netted on the lower Delmarva were immature birds. That trend was reversed in 1996 when 86% of owls caught were adults. This suggests that exceptional levels of productivity are a contributing factor in causing a major irruption year for this species. However, the difference in the number of immature Saw-whet Owls trapped in 1995 and 1996 is probably too extreme to be due to variation in productivity alone. In 1995, more than 800 immature Saw-whet Owls were trapped on the lower Delmarva while in 1996 only 15 immature owls were captured. Fluctuations in the abundance of prey may be an important factor contributing to this difference. Lack (1954) proposed that prey cycles may intensify the effect of food shortages because low prey years may often be preceded by years of abundant prey in which predator populations experience low mortality and high productivity. The combination of high population levels and sudden prey shortages may cause a major migration year for a species that is capable of migrating in irruptive fashion. Such factors may have been responsible for the Saw-whet Owl invasion seen on the Atlantic Coast in 1995.

The seasonal timing of the Saw-whet Owl migration on the lower Delmarva lags about 1.5 to 2 weeks behind the passage of this species on the Cape May Peninsula. Duffy and Kerlinger (1992) found a mid-migration date of 7 November for Saw-whet Owls captured at Cape May. This is 9 days before the mid-migration date on the lower Delmarva. During 1980-1988, 90% of Saw-whet Owl captures at Cape May occurred during a five week period between 16 October and 19 November. On the lower Delmarva 90% of Saw-whet Owls were caught during a five week period occurring between 1 November and 5 December.

Adults are known to migrate later than immatures in some species of owls as well as in diurnal raptors (e.g. Mueller and Berger 1967b, Geller and Temple 1983, Duffy and Kerlinger 1992). In 1995, AHY Saw-whet Owls were found to migrate slightly later than HY owls on the Eastern Shore. This agrees with Duffy

and Kerlinger (1992) who found that immatures move slightly ahead of adults at Cape May. However, in 1996, there was no detectable difference in the timing of migration of different age class owls netted on the lower Delmarva. Differences between the passage times of adults and immature Saw-whet Owls may be very small and the timing of migration for each age class may vary between years.

Although Saw-whet Owls breed almost exclusively in the northern forests of the United States and Canada, substantial numbers penetrate regions south of New Jersey each fall and winter. [Editor's note: see page 89, this issue.] Prior to the start of owl banding efforts in 1994, there was only a scattering of fall and winter records of Saw-whet Owls on Virginia's coastal plain. However, in both 1995 and 1996, more Saw-whet Owls were captured on the Eastern Shore of Virginia than at any other owl banding site in the eastern United States. Clearly this species occurs on Virginia's coastal plain as a regular transient each fall. Descriptions of Saw-whet Owls as rare on the coastal plain should be attributed to the secretive nature of the species rather than to its relative abundance.

ACKNOWLEDGEMENTS

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A SUMMARY OF THE 1996 BEACH-NESTING AND COLONIAL WATERBIRD SURVEY OF THE VIRGINIA BARRIER ISLANDS

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The twenty-second consecutive annual survey of the beach nesting and colonial waterbirds of the Virginia barrier islands was conducted 16-19 June 1996. The survey encompassed all of the islands, with the exception of Parramore Island, from Assawoman Island on the north through Fishermans Island on the south. Survey techniques were consistent with those previously described (Williams et al. 1990).

The spring of 1996, up to and including the survey period, was meteorologically uneventful. However, July proved to be significantly wet, punctuated by the passage of Hurricane Bertha in the early morning hours of 13 July. Rainfalls recorded at Painter in Accomack County (unpublished data — Virginia Institute of Marine Science) showed that during the month of July 1996, 14.37 inches of rain fell, more than three times the 56 year monthly mean of 4.22 inches. Up to eight inches of rain associated with Bertha were reported on parts of the Eastern Shore (B. Truitt, pers. comm.) The storm's effects on nesting bird populations are uncertain (B. Cross and B. Truitt, pers. comm.).

The most significant physiographic change since the last survey noted among

the islands was the closure of the inlet between the sand bar extension of Cedar Island and the north end of Cedar Island, making the area now completely accessible by foot. The extension formed in 1989 (Williams 1990) and had become a significant site for beach nesting activity.

Appendix 1 presents an island-by-island summary of the survey data. Brown Pelicans (*Pelecanus occidentalis*) continued to flourish at their Fishermans Island colony site. The 1996 total of 1,370 adults is a 39% increase over the 986 found in 1995 (Williams et al. 1996a). Again in 1996, an adult White Pelican (*Pelecanus erythrorhynchos*) was observed at the colony. Among the large waders, Great Blue Herons (*Ardea herodias*) increased 46% over 1995 (Williams et al. 1996) from 26 to 38 birds. Little Blue Heron figures were the second lowest in the survey's history, the lowest total being 30 in 1990 (Williams et al. 1991). The 103 Tricolored Herons (*Egretta tricolor*) recorded this year posts an all-time survey low, 37% below the previous minimum of 164 in 1995 (Williams et al. 1996a) and an 81% decline over the last 4 years. Cattle Egret (*Bubulcus ibis*) numbers were the third lowest in the survey's history.

The Black-crowned Night Heron (*Nycticorax nycticorax*) count was the highest since 1986 when 850 were recorded (Williams et al. 1990), far below the highest count for this species of 2,780 in 1976 (Williams et al. 1990). In 1976, 2,350 (85% of the total) were found on Fishermans Island; this year 480 (70% of the total) were from Fishermans Island. The Glossy Ibis (*Plegadis falcinellus*) count was the highest since 1987 when 463 were tallied (Williams et al. 1990). Fishermans and Hog islands produced the bulk of the count that year with 170 and 109 birds, respectively. This year the majority of the birds were recorded on Cobb Island (235).

Wilson's Plover (*Charadrius wilsonia*) numbers were down 27% from the 1995 season (Williams et al. 1996a), from 70 to 51 birds. Piping Plovers (*C. melodus*) also declined slightly from 1995 though the count (148) was the second highest for the survey. Assawoman, Metompkin, and Cedar Islands remain the most essential breeding locations for these species. Eighty percent of the Wilson's Plovers and 85% of the Piping Plovers were found on these islands. On Assawoman Island, habitat for these species is confined to the northernmost kilometer of the island. Similarly, on Cedar and Metompkin Islands the most suitable nesting areas for them is on these islands' northern halves where extensive beach overwash abuts *Spartina alterniflora* marsh.

The American Oystercatchers (*Haemaphysalis palliatus*) count of 604 was up 8% from the previous year (Williams et al. 1996a), but is significantly less than the 1,000+ birds found annually through 1989 (Williams et al. 1990). Metompkin and Cedar islands produced 45% of the survey total this year.

Gull species totals were mixed. Laughing Gulls (*Larus atricilla*) continued a five-year decline on the barrier islands reaching their lowest count ever for the survey. The bulk of the nesting birds was found on the northeast corner of Fishermans Island. Herring Gull (*L. argentatus*) counts were comparable to the previous survey (Williams et al. 1996a), though their numbers have declined 35% over the last 4 years from 4368 in 1992 (Williams et al. 1993). Great Black-backed Gulls (*L. marinus*) had their second highest count, eclipsed only by the count of 561 in 1986 (Williams et al. 1990).

Sandwich Terns (*Sterna sandvicensis*) typically nest among Royal Terns (*S. maxima*) in Virginia. This year, none were located among the Royal Terns on Fishermans Island. A single active nest was found on Wreck Island among a small nesting group of 57 Royal Terns.

The Common Tern (*S. hirundo*) count was the third lowest in survey history. In addition, Least Terns (*S. antillarum*) established an all-time low continuing a two-year decline. Black Skimmers (*Rynchops niger*) had their second lowest count ever after posting a modest increase in 1995 (Williams et al. 1996a). We encountered numerous fox (*Vulpes/Urocyon*) and raccoon (*Procyon lotor*) tracks on Cedar and Metompkin islands. Vehicular tire tracks were noted through two sites on Cedar Island.

Unusual discoveries made during the survey included a singing first-year male American Redstart (*Setophaga ruticilla*) discovered by Via on Fishermans Island on 16 June. Notable, too, for Fishermans was a territorial Red-eyed Vireo (*Vireo olivaceus*), evidence of the maturing deciduous trees on the island's west side. Single first year Gannets (*Morus bassanus*) were seen off Smith Island on 17 June and off Assawoman Island on 18 June. Three Surf Scoters (*Melanitta perspicillata*) were noted behind Myrtle Island on 17 June. Two Mute Swans (*Cygnus olor*) were seen flying behind Metompkin Island on 18 June. The same day, two Wilson's Storm Petrels (*Oceanites oceanicus*) were observed off Assawoman Island and two Common Loons (*Gavia immer*) were seen behind Cedar Island. The most notable species located during the survey was an adult male Snowy Plover (*Charadrius alexandrinus*) found on 18 June along the same stretch of beach on Cedar Island where one was located in 1995 (Williams et al. 1996a; 1996b).

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APPENDIX I

1996 Virginia Barrier Islands Colonial and Beach-nesting Waterbirds Survey-Total Number of Adults
June 16-19

	Asa	Metom	Cedar	Daw Sh	Parra	Chm Pl	Sandy	Hog	Rogue	Cobb	L. Cobb	Wreck	ShpShl	Gdwn	Mink	Myrtle	Smith	Fisher	Total
Wht Pel																		0	0
Brn Pel																		1370	1370
GBI Her																		38	38
Grt Egt				72					29			99						306	506
Sny Egt			53						16			47						61	177
LtBl Her									11			16						18	45
Tri Her									31			62						10	103
Cat Egt									4									65	69
Grn Her				2					1			2						2	7
BCN Her									78			127						480	685
YCN Her									4									6	10
Wht Ibis																		11	11
Glsy Ibis				6					235			39						174	454
No Har		1						2	1										4
Will Pivr	16	4	21									4	3				3		51
Pip Pivr	16	52	58									3					4	15	148
Am Oys	19	162	110	16				42	40	8		38	34			26	19	40	604
Lgh Gull									28									3538	3566
Her Gull			55				681		761	93	1200							667	2846
GBb Gull			10				114	2	46	12	226							42	452
Gb Tern	6		181						23	2	124	20							356
Cas Tern												2							2
Ryl Tern												57						4230	4287
Snd Tern												2						2	2
ComTern	76		376	87			34		4	18	664	97							1356
For Tern																			0
Lst Tern	27	12	140						16			76	42				14		327
Blk Skm	61		838	64			16	115	8	8	694	26							1830
Ngt Hwk																		1	1
Hrn Lark		10	9										1				2		23

COLLEGE CREEK HAWK WATCH

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Late winter and spring hawk migration has been documented in the Williamsburg area primarily for birds crossing the James River from Hog Island Wildlife Management Area (HIWMA) in Surry County (Taber 1992). I conducted additional migration surveys at College Creek in 1996 and 1997, a site three miles south of the earlier study. It is opposite the northward jutting point of land which serves to direct birds across the mile-wide stretch of water from HIWMA. This appears to be the north shore concentration point for the flight line that was surveyed earlier (Taber 1992).

On 16 March, 1996, 29 hawks were recorded in two hours and on 13 April, 49 hawks were recorded in only one hour, from the College Creek parking area on the Colonial Parkway. Over four days in 1996, nine hours of coverage yielded an average of 13 hawks per hour. This exceeded yields of only two hawks per hour from previous surveys (Taber 1992), prompting more extensive surveys in 1997. Observations in 1997 were made on parts of three days in February, 22 days in March, 18 days in April and two days in May. In 45 days, from 16 February to 24 May 1997, a total of 1,368 raptors of 12 species was recorded in 91 hrs (Table 1).

Table 1. Migrant raptors recorded at College Creek, 16 February-24 May, 1997

Turkey Vulture (<i>Cathartes aura</i>)	947
Osprey (<i>Pandion haliaetus</i>)	132
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	74
Black Vulture (<i>Coragyps atratus</i>)	56
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	44
Red-tailed Hawk (<i>Buteo jamaicensis</i>)	40
American Kestrel (<i>Falco sparverius</i>)	35
Northern Harrier (<i>Circus cyaneus</i>)	24
Cooper's Hawk (<i>Accipiter cooperii</i>)	7
Red-shouldered Hawk (<i>Buteo lineatus</i>)	5
Broad-winged Hawk (<i>Buteo platypterus</i>)	2
Merlin (<i>Falco columbarius</i>)	2
Total	1,368

Hawks were observed moving north on all wind directions. However, northwest and southwest winds concentrated birds at the point of land at HIWMA, where they crossed just east of College Creek. Easterly winds pushed birds to the west of the site. A third flight line, used mostly on light winds, was directly over my observation point. Birds usually moved north, but many moved toward the northwest. They were rarely high, generally below 50 feet. Some birds crossed only a few feet above the water. Most birds lost considerable altitude crossing the water. Only two birds, both Turkey Vultures (*Cathartes aura*) were seen moving south during the study.

Turkey Vultures were the most abundant migrants recorded and moved north on a variety of wind conditions. They usually crossed the river in groups of 5 to 20. The groups often circled above HIWMA and occasionally made two or more attempts at crossing, only to return, presumably for more lift, before making a successful crossing. Often, other species of raptors circled with the Turkey Vultures and crossed with them.

Bald Eagle numbers were higher than at most other eastern spring hawk sites, except for Braddock Bay, New York, which recorded 291 in 1996, mostly in May and June (HMANA 1997), which were months of little coverage at College Creek. Bald Eagles moved north alone and in groups of up to nine. Groups were either all immatures, or a mixture of adults and immatures. Immature birds accounted for 82% of the total. The James River is known to be a concentration area for Bald Eagles, but there remain questions about which birds are migrating, wintering, and summering. Ongoing research on the subject is being conducted by the Center for Conservation Biology at the College of William and Mary (Watts, pers. comm.)

There is little information about spring hawk movement in Virginia, for comparison to College Creek. In 1996, at Kiptopeke, 30 miles to the east, on Virginia's Eastern Shore, 279 hawks of 11 species were recorded in 92 hours over 11 days in April, in the first organized study there (HMANA 1997). In 1997, only 40 hawks were recorded there in 93 hours over 11 days in April and May (Taber unpub.). At Harvey's Knob, 150 miles to the west, in the Blue Ridge mountains, 297 hawks were recorded in 1994 (HMANA 1995), 828 hawks in 1995 (HMANA 1996), and 278 hawks in 1996 (HMANA 1997). Observers at Snicker's Gap, another mountain site, 140 miles to the northwest, recorded 601 hawks in 1996 (HMANA 1997).

In addition to the 12 raptor species already cited, four other species, all rare in this area, have been noted during the spring in the vicinity of College Creek. I saw adult Golden Eagles (*Aquila chrysaetos*) in April 1991, and April 1992, and an immature Northern Goshawk (*Accipiter gentilis*) in April 1991, that were three miles north of the site. I saw a light-phase Rough-legged Hawk (*Buteo lagopus*) one mile northeast of the site in March 1986. On 11 May 1997, I saw an adult Mississippi Kite (*Ictinia mississippiensis*) flying from HIWMA directly toward the College Creek site. It also is possible that that the route may be used throughout the summer by dispersing birds, because I saw a sub-adult Swallow-tailed Kite (*Elanoides forficatus*) moving northbound, directly over the site in August 1991. With expanded coverage, this site could provide important information about hawk movement in the east.

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AN UNUSUAL PREDATORY STRATEGY BY FISH CROWS

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At 13:45, 6 June 1997, we were attracted by a disturbance at the unfilled of two pools in the hippopotamus yard at the National Zoological Park, Washington, D.C. Upon reaching the pool, two adult Fish Crows (*Corvus ossifragus*) were observed attacking four juvenile Mallard Ducks (*Anas platyrhynchos*). A fifth, dead, headless duckling lay nearby. The Fish Crows were identified by their vocalizations, and the ducklings were judged to be close to two months old by their size and development (Bent 1923, Bellrose 1976).

The Fish Crows appeared to be "herding" the ducklings, with one crow in front of the duckling group blocking its forward progress while the second crow chased the young birds from the rear; the lead crow called about once every 15-30 sec. In this way the ducklings were forced into a compact, confused group, and pushed in a specific direction. The crow in front then rushed into the group and seized a young bird by its head and dragged it away. One particular duckling was the center of the crow's attention, and was dragged from the group twice before it escaped and returned to the duckling group. The first time it was dragged by its head approximately two meters and the second time about a meter. This had probably also occurred before we arrived because the young duck's head and neck feathers were quite disheveled, and it appeared dazed and weak. The headless duckling appeared freshly killed, as no doubt this would have been the fate of the other duckling, or possibly even some of the others, if the crows had not been disturbed and flown away.

Relatively little behavioral information has been published regarding the Fish Crow (Bent 1946, Goodwin 1976, Reaume 1988, Kilham 1989) and nothing has been mentioned of such consort herding. Fish Crows, like most other crows, are known to associate in groups and to be gregarious feeders (Bent 1946). The herding behavior described gives them a decided advantage in attacking groups of flightless juvenile birds, such as ducklings, plovers, or galliformes, when on land.

Fish Crows are well known nest robbers, particularly of eggs but also of nestlings of rookery birds such as various herons (Bent 1946, Goodwin 1976, Burger 1977, Laubhan and Reid 1991), White Ibis (*Eudocimus albus*; Shields and Parnell 1986, Bildstein et al. 1990), Wood Storks (*Mycteria americana*; Rodgers et

al. 1988), and Sandhill Crane (*Grus canadensis*; Dwyer and Tanner 1992). They are also known to occasionally prey on passerine birds such as House Sparrows (*Passer domesticus*; Bendire 1895) and Boat-tailed Grackles (*Quiscalus mexicanus*; Dunham 1990). We could find no mention of them attacking either fledglings or young Mallard Ducks.

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A REVIEW OF 19TH CENTURY YELLOW RAIL RECORDS FROM VIRGINIA

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Because of my long-time interest in historical bird records, I recently reviewed early Yellow Rail (*Coturnicops noveboracensis*) accounts from Virginia, and found several discrepancies in those listed for the 19th century. Below, I have identified these discrepancies and added a previously unknown, probable Virginia record.

Early accounts of birdlife in the Washington, D.C. region (including contiguous Virginia) by Coues and Prentiss (1862, 1883) contained statements such as, "The Yellow Rail, *P. noveboracensis*, is necessarily an inhabitant of the District, but during all these years, we have never succeeded in establishing the fact, and are therefore obliged still to omit it" (1883, p. 102). Jouy (1877) did not mention the species for the District. Smith and Palmer (1888, p. 147) stated: "In the collection of the National Museum are two Yellow Rails, both of which were taken in the marshes of the Potomac River near Washington: the first (No. 80,297) by T.[sic] E. Clark, October 4, 1879; the second (No. 96,617) by A. Skinner, March 28, 1884." In "A catalogue of birds of the Virginias," Rives (1890) erroneously assumed that these specimens were from Virginia. Murray (1952, p. 46): "The National Museum has two specimens taken in Potomac marshes, October 4, 1879, and March 28, 1884. The American Museum has a female, collected by Wirt Robinson in Buckingham, October 13, 1893; and a male from Suffolk, October 25, 1896." He, too, assumed that the "Potomac marshes" were in Virginia. Scott (1948) repeated these two records, but correctly gave the date of the Buckingham specimen as 29 October 1893. Kain (1987) reported that the Yellow Rail is "a rare transient near the coast," and, for the Piedmont, there are "two records (Buckingham, 29 Oct. 1893, and Dinwiddie Cos.)."

A check of current specimen records in the American and National Museums revealed the following:

American Museum of Natural History (AMNH)

#472179. Female. Wirt Robinson. Buckingham Co. 29 Oct. 1893

#354523. Male. Alphonso Royster. Suffolk. 25 Oct. 1896. From the Jonathan Dwight Collection

National Museum of Natural History (NMNH)

#153333. Male. Washington, D.C. [nothing on label or in the catalog about

Potomac marshes]. E. M. Hasbrouck. 14 April 1893.

#80297. Male. J. E. Clark. Washington, D.C. [nothing on label or in the catalog about Potomac marshes]. 4 Oct. 1879.

#189862. Sex ? Virginia, Suffolk. Received from J. W. Daniel, Jr. 21 Oct. 1903.

#129492. Sex ? Virginia, Nelson. Wirt Robinson. 27 Oct. 1893. "Mounted, dismounted"

Thus, the Buckingham date for the Robinson specimen in the AMNH should be 29 (not 13) October 1893. The specimens from Washington, D.C., contained nothing about Potomac marshes, and should not be attributed to Virginia. The Robinson specimen in the NMNH cannot be found today.

An additional record should be examined carefully. The National Institution (or Institute) for the Promotion of Science was organized in Washington, D.C., on 15 May 1840, and remained in existence until 1863. From its inception the Institute collected specimens of natural history and physical objects of historical interest. Between 1840 and 1846, the Institute published four *Bulletin[s] of the Proceedings of the Institute*, that included donations for the cabinet and the library at each stated meeting. In *Bulletin* 3:242, for the meeting of 13 November 1843, is the following entry – "Ortygometra [Coturnicops] noveboracensis, New York Rail [=Yellow Rail], said to be the only specimen ever found in this District, killed on the Potomac river, opposite Washington. – From George Washington Custis." Although both McAtee (1918) and Cooke (1929), maintained that this was a record for the District of Columbia, a careful examination of the stated location and its donor or collector strongly suggests that the record was from present-day Virginia.

The donor, and probably the collector, George Washington Parke Custis (30 April 1781-10 October 1857) was the grandson of Martha Washington. He inherited the 1,100-acre "Mount Washington" estate along the Potomac River. It became known as the Arlington Estate upon which Custis constructed a large dwelling now known as the Custis-Lee Mansion. The estate included forested land and agricultural fields which sloped to the river's edge. According to a map from 1860 (Nelligan 1950), an extensive marsh existed between the old Chesapeake and Ohio Canal and banks of the Potomac River. Furthermore, "...since he [Custis] liked to hunt, he might often be seen walking or riding about the estate with his gun and dogs..." (Nelligan, 1952, p. 11).

In the 1840s, the Mount Washington (Arlington House) estate technically belonged to Alexandria County of the District of Columbia. An act of the Virginia General Assembly in 1847 retroceded Alexandria County to Virginia from the District of Columbia. In 1920, the Virginia General Assembly changed the name of the Arlington area from Alexandria County to Arlington County.

In consideration of these geographical and historical facts and because the rail was killed "on the Potomac River, opposite Washington," it is highly probable that Custis obtained the rail in the marsh on his property, which in 1847 became part of Virginia. Unfortunately today the entire area has disappeared in a maze of parkways and roads, as well as dredged and filled riverside.

Upon the establishment of the Smithsonian Institution, many of the Institute's specimens were transferred to the Smithsonian over a period of several years, but the Custis-Arlington specimen cannot be located today in the Bird Division of the

National Museum of Natural History. That specimen of the Yellow Rail would represent the oldest known record for Virginia.

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VIRGINIA CHRISTMAS BIRD COUNTS: 1996-97 SEASON

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The total number of Christmas bird counts in Virginia rose to 50 in 1996. In that line-up are three new counts. It is the first time ever that the Greenways Wetlands area in Loudoun County has been covered. This count center is approximately where Goose Creek crosses US Rt. 15. The area covered is approximately a 4 mi. dia. circle. The two observers who participated focused on 160 acres comprising the Dulles Greenways Wetlands mitigation project. Other areas surveyed were Oak Hill and Beaverdam Reservoir, a body of water that has yielded some surprising Piedmont records in the past. Because of the size of the circle, this count does not meet the standards needed to be submitted to National Audubon Society's Field Notes.

Another new count that is not a customary 15 mi. dia. circle is Giles County. The observers concentrated solely on areas within the county boundaries, carefully avoiding sections included in the nearby Blacksburg count circle. Small-



Figure 1. Locations of the 1996-97 Christmas birds counts in Virginia. The count numbers correspond to those used in Appendices I and II.

scale counts were conducted at Mountain Lake in the western section of Giles County in 1936, 1940, 1942, and 1943, but there have been no others in the ensuing decades. Perhaps, in years to come, the count circle can be adjusted to meet the requirements of an official Christmas count as coverage of this unique area is a welcome addition to the state's data base.

The one new count that was set up to meet Audubon requirements is Blackford, centered at the confluence of the Clinch and Little Rivers in Russell County. Among other important habitats, this circle includes part of Laurel Bed Lake, a site of many significant sightings in the past. This section of the state has never been covered in a Christmas count and it will be interesting to see what turns up as the years go by.

After being rained out in 1995, the Dismal Swamp in Suffolk was back in the line-up this year, but the Walkerton count, located in King and Queen and King William Counties, was not held. The Chesapeake Bay Bridge-Tunnel (CBBT) count was submitted to the National Audubon Society's Field Notes for the first time this year.

As in previous years, the counts in Appendix I are arranged geographically, with the Eastern Shore counts listed first and the rest listed generally in an east to west and north to south configuration. Counts 1 through 15 are on the Coastal Plain, counts 16 through 28 are in the Piedmont, and counts 29 through 50 are in the Mountains and Valleys region of the state. (See Appendix I, pages 123-147 for the 1996-97 Virginia Christmas Bird Count species list and pages 148-150 for the count conditions; See Appendix II for Christmas Count Descriptions and Fig. 1 for count locations.)

Weather conditions throughout the state were fairly normal, both before and during the count period. There were no extreme temperatures. The lowest was 0°F at Augusta County and Blacksburg. The highest was 73°F at both Nansemond River and Fort Belvoir. Very little snow was reported falling or on the ground, the one exception being Highland County, where observers encountered heavy snowfall and severe weather conditions throughout the day of their count.

The total number of species found (213) was up considerably from last year's total of 199. Also recorded were four forms and two hybrids. Birds found during count week, but not on count day, were Green Heron (*Butorides virescens*; Back Bay), Glossy Ibis (*Plegadis falcinellus*; Back Bay), Black-tailed Gull (*Larus crassirostris*; CBBT), and Nashville Warbler (*Vermivora ruficapilla*; Chincoteague). The Black-tailed Gull had been found on the bridge-tunnel many times during the early winter by many observers and comprises the second state record. The Nashville Warbler was found in the Maryland sector of the Chincoteague count and, therefore, is not reviewed by the Virginia Avian Records Committee (VARCOM).

A new species was added to the list this year, the Rufous Hummingbird (*Selasphorus rufus*). There had been other sightings of *Selasphorus* hummingbirds on Virginia counts in the past, but none could be identified to species level until the well-documented individual started regularly visiting a feeder in the Augusta County count circle and stayed throughout the count period.

For the second year in a row, a Pacific Loon (*Gavia pacifica*) was discovered at Back Bay. Whether birders are becoming more adept at identification of this species or it is showing up more often in southside Virginia, *Gavia pacifica* is

being recorded more and more frequently in that area. In most circumstances, the six Eared Grebes (*Podiceps nigricollis*) at Bristol would be a real eyebrow-raiser, but unprecedented numbers of that species have been showing up on Lake Holston over the past two or three years. Drifting back and forth over the North Carolina-Virginia border, birders in that area have been busy keeping track of as many as 20 or more birds at a time.

Two Yellow-crowned Night-Herons (*Nyctanassa violacea*) were present, one at Nansemond River and one very rare individual at Blacksburg. That bird was well-documented, photographed, and seen by several observers. The sighting will be reviewed by VARCOM for official verification.

A highly unusual sighting was 25 Brant (*Branta bernicla*) on Lake Drummond in Dismal Swamp. This species is almost never found inland, but lately there have been reports of them drifting into wheat fields in the Back Bay area. The theory concerning their presence at Lake Drummond is that they may have followed a flock of Snow Geese (*Chen caerulescens*) to the area.

During the 1970's and early 1980's, American Avocets (*Recurvirostra americana*) showed up on Christmas counts with great frequency, the most ever found being 18 at Chincoteague in 1973. After 1981, they seem to disappear entirely until one was spotted in 1995 at Hog Island Waterfowl Management Area in Surry County, which is part of the Williamsburg circle. This year they returned in impressive numbers with six showing up at Cape Charles and 18 at Craney Island on the Nansemond River count. Craney is a favorite haunt of this species with nesting reported there in years past, so it will not be surprising if Avocets are reported frequently from that area in the future. Equally surprising and exciting for Mathews observers was a Piping Plover (*Charadrius melodus*) at Bethel Beach. That individual had been in that area all season and stayed well past the count season, being observed by many who came especially to see it. It was a first occurrence on the Mathews count.

Two decades ago Pomarine Jaegers (*Stercorarius pomarinus*) were found much more commonly at Back Bay, but there had been a complete absence of this species there since 1988. It was a welcomed surprise that observers spotted four offshore this year. Even though fresh carcasses had been found on previous counts or during count week, the Razorbill (*Alca torda*) found at Cape Charles was only the second Christmas count record, the previous an individual at Back Bay in 1976.

Two Marsh Wrens (*Cistothorus palustris*) caused plenty of excitement for observers on the Glade Spring Count. The birds were never actually seen well, but comparison of the song against that on tapes they had at the scene verified the birds' identity. Other unusual passerine sightings around the state were: Prairie Warbler (*Dendroica discolor*) at Back Bay; Black-and-white Warbler (*Mniotilta varia*) at Gordonsville; House Wren (*Troglodytes aedon*) at Danville; Palm Warblers (*Dendroica palmarum*) at Bristol and Glade Spring; Dark-eyed "Oregon" Juncos (*Junco hyemalis*) at Cape Charles and Giles County; a Snow Bunting (*Plectrophenax nivalis*) at Rockingham County; 10 Brewer's Blackbirds (*Euphagus cyanocephalus*) at Manassas-Bull Run; and a Common Redpoll (*Carduelis flammea*) at Greenways Wetlands.

This year's counts reflect recent changes in the American Ornithological Union (AOU) check-list fortieth supplement published in volume 112 of the Auk

(see Raven Vol. 67, p. 107). The Rufous-sided Towhee (*Pipilo erythrophthalmus*) has been split with the species normally occurring in Virginia now being called Eastern Towhee. The Sharp-tailed Sparrow (*Ammodramus caudacutus*) has been split into two species, Saltmarsh Sharp-tailed (*A. caudacutus*) and Nelson's Sharp-tailed (*A. nelsoni*). Both species were recorded on several counts. The Baltimore (*Icterus galbula*) and Bullock's (*I. bullockii*) orioles that were considered one species for a time and called Northern Oriole have now been separated again and we revert back to the old names. Four Baltimore Orioles were seen on this year's count, three at Williamsburg, and one at Hopewell. No Bullock's Orioles were reported.

In the unusual numbers department, there are several notable totals: Red-throated Loon (*Gavia stellata*) with a state-wide all-time high of 962 individuals far outstripped all previous totals, directly due to the 690 birds at Back Bay, a record for that count; Brown Pelican (*Pelecanus occidentalis*) numbers (246) were at an all-time high, due in part to the record 75 individuals found at Newport News, a new high for that count; 28 White Ibises (*Eudocimus albus*) is high for any season in Virginia, but that total, found at Cape Charles, outstripped the previous state total by 700%.

Although not a state high, the 8,123 Tundra Swans (*Cygnus columbianus*) seen on 21 counts was up considerably from numbers tallied over the last 16 years. Especially interesting were the birds found on both the Highland County and Clifton Forge counts. Snow Goose totals also exceeded totals from counts over the last seven years and Canada Goose (*Branta canadensis*) numbers continued to creep upward with all but five counts reporting them.

The 6,623 Northern Pintails (*Anas acuta*) were the most found in the state since 1979, thanks mostly to the 6,074 individuals at Chincoteague which broke a 30-year record for that count. Northern Shovelers (*A. clypeata*) were also found in record-breaking numbers (3,428), eclipsing the state high of 2,225 birds set in 1993, and more Gadwalls (*A. strepera*) were found in 1996 than in any previous year since 1976. The significant increase in number of these puddle-ducks seems to reflect the success they have enjoyed on their breeding grounds over the past several years, thanks in part to wetter years and to stepped-up efforts to preserve nesting habitat in the prairie pothole regions of the U. S. and Canada.

Most diving duck numbers were slightly below average, but Ruddy Ducks (*Oxyura jamaicensis*) showed up in unprecedented numbers, the most appearing at Williamsburg, where 152,688 birds were found. That is the most ever found during the Christmas count season.

Bald Eagles (*Haliaeetus leucocephalus*) inched to another all-time state high total, as did Wild Turkey (*Meleagris gallopavo*), with record-breaking flocks showing up in Newport News (a first for that count), Gordonsville, Darlington Heights, Lynchburg, Danville, and Northern Shenandoah Valley. The only other species for which state all-time-high totals were recorded were Ring-billed Gull (*Larus delawarensis*), 99,722 (previous high, 82,590 in 1995) and Lesser Black-backed Gull (*L. fuscus*), 36 (previous high, 23 in 1995).

Loggerhead Shrike (*Lanius ludovicianus*) numbers have not rebounded in the past two or three years and House Finch (*Carpodacus mexicanus*) numbers were lower this year with a state total of only 5,078 compared to the 10,000 to 17,000 usually tallied.

APPENDIX I

Key for pages 124-147: Bold, underlined figures indicate an unusual species or an unusual number of individuals for that particular count. "CW" indicates that the species was seen during count week, but not on count day.

Keys for pages 148-150:

Weather codes:

CLD = Cloudy
CLR = Clear
CMC = Cloudy to mostly cloudy
FOG = Foggy
HFG = Heavy Fog
LGR = Light rain
LHR = Light to heavy rain
LRS = Light rain and snow
MCR = Mostly clear
MHS = Moderate to heavy snow
PCD = Partly cloudy
PCR = Partly clear
PFG = Partly foggy
PTR = Partly cloudy to clear
RAI = Rain

Water codes:

MWO = Moving water open
SPF = Still water partly frozen
SPO = Still water partly open
SWF = Still water frozen
WOP = Water open
WPF = Water partly frozen
WMO = Water mostly open

Wind codes:

V = Variable

	Yellow-crowned Night-Heron	night-heron, sp.	White Ibis	Glossy Ibis	Tundra Swan	Mute Swan	Greater White- fronted Goose	Snow Goose (blue form)	Snow Goose
1. Chincoteague	460	40	...	<u>76</u>	<u>24,792</u>
2. Wachapreague	12	2	...	...	CW
3. Cape Charles	<u>28</u>	...	42	...	...	4	430
4. CBBT	CW	...	...	...	...
5. Little Creek	4	...	...	...	64
6. Back Bay	CW	...	1,640	...	...	36	13,035
7. Nansemond River	<u>1</u>	<u>1</u>	...	...	108	...	...	...	...
8. Dismal Swamp NWR	<u>3,966</u>	...	...	40	<u>2,176</u>
9. Newport News	32	...	...	...	...
10. Mathews	303	...	...	...	...
11. Williamsburg	89	14	...	...	...
12. Hopewell	7	...	...	550	80
13. Wash. Birthplace	1,216	...	...	...	<u>1</u>
14. Brooke	157	19	...	...	...
15. Fort Belvoir	75	2	...	...	2
16. Greenways Wetlands	<u>1</u>	<u>1</u>	...
17. Manassas-B.R.	<u>1</u>	...	...	...
18. Chancellorsville	<u>2</u>	...	...	...
19. Gordonsville
20. Charlottesvile	<u>1</u>	<u>1</u>	...	...	...
21. Warren	<u>1</u>	...	...	...	<u>1</u>
22. Darlington Heights
23. Kerr Reservoir
24. Banister WMA
25. Lynchburg
26. Danville	<u>1</u>
27. Martinsville
28. Philpott Res.
29. Calmes Neck	<u>1</u>	...	...	...	...
30. N. Shen. Valley	7	...	...	...	2
31. Shen. NP-Luray
32. Big Flat Mtn.
33. Rockingham Co.	<u>2</u>	...	...	...
34. Highland County	<u>1</u>	...	...	...	...
35. Augusta Co.
36. Waynesboro
37. Lexington
38. Peaks of Otter
39. Clifton Forge	<u>1</u>	...	...	...	...
40. Fincastle
41. Roanoke
42. Blacksburg	<u>1</u>	...	...	...	...	...	...	<u>1</u>	...
43. Claytor Lake
44. Giles County
45. Tazewell
46. Glade Spring
47. Blackford
48. Bristol
49. Breaks I.S. Park
50. Wise County
Total individuals	2	1	28	...	8,123	83	1	708	40,590

	Ross's Goose	Brant	Canada Goose	Canada Goose (small forms)	Wood Duck	Green-winged Teal	American Black Duck	Mallard	Black Duck x Mallard Hybrid	Northern Pintail	Blue-winged Teal	Northern Shoveler
...	5,615	2,240	...	7	449	1,946	961	...	<u>6,074</u>	...	...	998
...	5,350	1,504	...	...	80	81	331	...	...	...	...	...
...	176	1,385	...	5	36	555	191	...	80	2	79	...
...
...	...	183	...	<u>266</u>	53	89	854	...	3	...	95	...
...	<u>1</u>	...	400	1	3	233	318	980	...	400	26	115
...	593	3	3	278	58	293	...	8	...	<u>2,006</u>
...	...	25	204	...	95	...	19	63	2	...	...	...
...	...	130	128	...	1	2	52	1,042	...	1	...	21
...	...	7	690	...	6	...	20	517	...	...	...	...
...	725	...	11	22	158	184	...	...	...	13
...	14,233	...	68	33	208	516	...	16	...	...
...	4,339	...	1	18	1,001	1,021	...	...	...	...
...	1,023	...	...	...	25	569	...	2	...	32
...	6,748	...	36	199	958	2,346	...	23	1	54
...	2,798	...	...	60	410	987	...	2	...	2
...	1,636	...	...	...	1	278	...	2	...	...
...	316	...	...	...	...	95	...	...	...	...
...	1,856	...	...	4	...	73	...	...	...	...
...	1,485	...	...	...	2	26	...	...	...	...
...	1,599	...	...	3	13	163	...	1	...	...
...	<u>134</u>	...	...	2	3	...	...	...	...	...
...	159	...	11	8	48	350	...	1	...	...
...	44	...	4	...	5	8	...	...	...	...
...	<u>334</u>	...	CW	...	7	201	...	...	...	1
...	190	...	4	...	...	109	...	...	...	...
...	440	...	1	...	3	26	...	...	...	...
...	2	11	287	...	...	...	...
...	4,044	...	...	6	29	286	...	...	...	<u>2</u>
...	2,864	...	5	85	90	1,167	...	1	...	...
...	209	...	4	2	3	403	...	2	...	...
...	4	...	...	...	...	...	...	...	...	1
...	212	...	1	3	...	149	...	1	...	...
...	21	...	...	1	15	112	...	...	...	...
...	<u>497</u>	...	...	4	2	264	...	1	...	...
...	207	...	...	...	10	79	...	...	...	...
...	32	...	...	...	10	151	...	...	...	...
...
...	102	...	1	...	4	100	...	...	...	...
...	122	...	1	1	5	160	...	...	...	...
...	47	...	2	CW	13	284	...	...	...	<u>2</u>
...	762	...	...	...	34	188	...	...	...	...
...	32	...	...	4	9	287	1	...	...	...
...	73	...	...	...	3	2	...	...	...	...
...	152	...	...	...	...	172	...	...	...	...
...	537	...	...	...	29	693	...	2	...	7
...	77	...	...	6	...	49	...	...	...	...
...	500	...	...	...	6	798	...	3	...	...
...	10	...	...	...	...
...	6	...	...	...	...
Total individuals	1	11,303	55,880	1	536	1,592	6,252	17,834	3	6,623	29	3,428

	Red-breasted Merganser	Ruddy Duck	duck, sp.	Black Vulture	Turkey Vulture	Osprey	Bald Eagle	Northern Harrier
1. Chincoteague	600	459	...	65	348	1	8	47
2. Wachapreague	156	43	...	19	184	...	7	36
3. Cape Charles	315	34	...	148	322	1	3	45
4. CBBT	614	...	...	...	108	...	...	...
5. Little Creek	235	15	...	1	8	1	3	3
6. Back Bay	1,100	26	...	32	202	1	2	38
7. Nansemond River	390	1,715	...	15	103	2	4	11
8. Dismal Swamp NWR	...	3	...	40	154	...	5	1
9. Newport News	86	532	8	2	15	...	2	6
10. Mathews	417	98	26	14	130	...	9	6
11. Williamsburg	27	152,688	1,032	7	145	...	26	3
12. Hopewell	18	46	...	5	56	...	120	12
13. Wash. Birthplace	10	136	...	10	81	...	58	5
14. Brooke	157	427	...	29	98	...	19	3
15. Fort Belvoir	131	289	...	82	159	...	101	2
16. Greenways Wetlands	...	...	...	17	52	...	2	1
17. Manassas-B.R.	...	1	...	1	144	...	1	3
18. Chancellorsville	...	42	...	7	113	...	2	...
19. Gordonsville	...	...	20	97	83	...	...	...
20. Charlottesville	...	CW	...	139	587	...	...	...
21. Warren	...	...	...	121	430	...	1	3
22. Darlington Heights	...	...	...	47	201	...	...	6
23. Kerr Reservoir	...	15	...	21	53	...	12	4
24. Banister WMA	12	3	...	21	68	...	1	1
25. Lynchburg	...	...	...	108	170	...	CW	2
26. Danville	...	...	...	49	76	...	...	2
27. Martinsville	...	...	...	1	93	...	...	...
28. Philpott Res.	...	...	...	15	76	...	...	...
29. Calmes Neck	...	...	...	102	355	...	CW	1
30. N. Shen. Valley	...	...	...	150	375	...	2	4
31. Shen. NP-Luray	...	1	...	136	301	...	...	2
32. Big Flat Mtn.	...	...	...	7	9	...	...	...
33. Rockingham Co.	...	1	...	18	142	...	...	...
34. Highland County	...	...	...	...	...	...	2	...
35. Augusta Co.	...	3	...	64	210	...	...	...
36. Waynesboro	...	...	...	5	67	...	...	...
37. Lexington	...	...	...	48	96	...	1	...
38. Peaks of Otter	...	...	...	5	8	...	...	...
39. Clifton Forge	...	...	...	14	68	...	...	1
40. Fincastle	...	...	...	49	60	...	...	...
41. Roanoke	...	...	...	44	76	...	...	...
42. Blacksburg	...	1	...	158	41	...	...	1
43. Claytor Lake	...	...	...	2	21	...	...	1
44. Giles County	...	...	...	104	3	...	...	...
45. Tazewell	...	...	...	4	2	...	...	...
46. Glade Spring	...	...	...	56	131	...	...	...
47. Blackford	...	...	4	...	...	...	...	...
48. Bristol	...	...	...	51	71	...	3	...
49. Breaks I.S. Park	...	...	...	...	...	...	...	...
50. Wise County	...	...	...	...	...	...	...	2
Total Individuals	4,268	156,578	1,090	2,130	6,295	6	394	252

	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk	Accipiter, sp.	Red-shouldered Hawk	Red-tailed Hawk	Rough-legged Hawk	Buteo, Sp.	Golden Eagle	American Kestrel	Merlin	Peregrine Falcon
10	2	...	...	...	1	32	...	...	...	10	2	3
3	8	...	...	...	2	46	...	1	...	49	1	...
17	6	...	...	...	6	40	...	...	...	46	1	4
...	...	...	...	...	...	...	...	...	...	...	...	CW
3	3	...	...	...	2	18	...	...	...	12	1	2
10	5	...	...	1	7	40	...	...	...	52	2	...
2	3	1	...	...	1	27	1	...	...	32	2	1
2	1	...	...	...	6	11	...	...	...	14	...	...
7	5	...	...	...	7	27	...	2	...	13	1	3
15	2	...	...	1	12	11	...	...	...	7	...	...
4	1	...	...	...	8	13	...	...	...	5	...	...
4	...	...	...	...	5	46	...	...	...	20	...	...
2	...	...	...	...	13	32	...	...	...	5	...	...
3	1	...	...	...	27	36	...	...	...	1	...	...
18	9	1	2	47	76	...	...	...	...	15	1	...
3	...	...	...	...	5	9	...	...	...	1	...	...
4	7	...	...	...	24	38	...	...	...	4	...	...
1	...	...	...	...	3	4	...	...	...	2	...	...
2	...	...	...	1	5	17	...	2	...	11	...	...
3	3	...	...	...	14	42	...	...	...	6	...	...
5	1	...	...	...	9	39	...	...	...	11	...	...
4	3	...	...	...	...	11	1	...	...	14	...	...
3	2	...	...	...	9	12	...	...	...	12	...	...
CW	...	...	...	...	4	8	...	...	...	4	...	...
6	4	...	...	...	1	47	...	...	...	9	...	...
5	5	...	...	...	4	28	...	...	...	20	...	...
2	...	...	...	...	...	8	...	...	...	4	...	...
...	...	...	...	...	CW	16	...	...	...	1	...	...
4	7	...	...	...	1	90	1	...	...	30	...	...
17	3	...	...	...	3	112	1	...	...	19	...	...
3	9	...	...	...	2	36	...	...	...	30	...	...
1	...	...	...	...	...	2	...	...	...	...	...	...
1	4	...	...	...	...	21	...	...	...	18	...	...
...	1	...	...	...	2	...	6	...	4	11	...	...
7	2	...	...	...	...	39	...	...	...	26	...	...
3	3	...	...	...	3	32	...	...	...	17	...	...
2	1	...	...	1	3	13	...	...	...	5	...	...
...	...	...	...	...	...	10	...	...	...	1	...	...
...	...	...	...	...	1	4	...	...	...	...	...	...
4	4	...	...	...	2	19	...	...	...	19	...	...
1	3	...	...	...	...	18	...	...	CW	11	...	...
8	1	...	...	2	...	17	...	...	...	7	...	...
1	2	...	...	...	1	13	...	...	...	16	...	...
...	...	...	...	...	...	7	...	...	...	3	1	...
1	2	...	...	...	1	11	...	...	...	4	...	...
4	7	...	...	...	1	24	...	...	...	15	...	...
...	1	...	...	...	...	5	...	...	...	3	...	...
4	5	...	...	1	1	36	...	...	...	23	...	...
...	...	...	...	...	...	1	...	...	...	...	...	...
2	1	...	...	...	2	7	...	...	...	4	...	...
201	127	2	9	246	1,250	10	5	4	642	12	13	

	hawk, sp.	Ring-necked Pheasant	Ruffed Grouse	Wild Turkey	Northern Bobwhite	Clapper Rail	King Rail	Virginia Rail	Sora
1. Chincoteague	15	1	...	2	...
2. Wachapreague	1	...	...	...	12	8	...	...	...
3. Cape Charles	21	65	...	28	...
4. CBBT
5. Little Creek	22	1	...	...
6. Back Bay	33	...	15	12	4
7. Nansemond River	2	2	5	...	...	...
8. Dismal Swamp NWR	13	...	...	...	...
9. Newport News	10	16	7	...	...	...
10. Mathews	8	...	9	...	...	...
11. Williamsburg	7	15	...	...	...	...
12. Hopewell	...	4	...	8	14	...	...	...	...
13. Wash. Birthplace	4	1	...	...	...	...
14. Brooke	2	...	...	...	...
15. Fort Belvoir	4	12	...	2	...	...
16. Greenways Wetlands
17. Manassas-B.R.	11	...	...	...	...
18. Chancellorsville	13	...	...	...	...	...
19. Gordonsville	38	...	...	...	...	...
20. Charlottesville	1	22	...	...	...	...	...
21. Warren	72	31	...	...	...	...
22. Darlington Heights	13	2	...	...	...	...
23. Kerr Reservoir	25	7	...	...	...	...
24. Banister WMA	9	10	...	...	...	...
25. Lynchburg	67	26	...	...	...	...
26. Danville	37	2	...	...	...	...
27. Martinsville
28. Philpott Res.	...	1	...	1	...	...	...	...	...
29. Calmes Neck	CW	2	3	...	...	...	...
30. N. Shen. Valley	1	104	7	...	...	...	...
31. Shen. NP-Luray	...	1	...	20	...	...	...	...	...
32. Big Flat Mtn.	6	3	...	...	...	...	...
33. Rockingham Co.	1	CW	...	...	...	...	...
34. Highland County	1	...	...	...	...	...	...
35. Augusta Co.	...	2	1	...	...	...	...	...	...
36. Waynesboro	3	1	...	...	...	...
37. Lexington	8	...	...	...	...	...
38. Peaks of Otter	5	...	...	...	...
39. Clifton Forge	1	5	...	...	...	...	...
40. Fincastle	2	1	...	...	...	...	...
41. Roanoke	14	...	...	...	...
42. Blacksburg	3	...	...	...	...	...
43. Claytor Lake	15	...	...	...	...	...
44. Giles County	1	2	...	...	...	...
45. Tazewell	1	4	...	...	...	...	...
46. Glade Spring	1	...	...	...	...	...	...
47. Blackford	2	...	2	...	...	...	...
48. Bristol	1	5	...	...	...	...	...
49. Breaks I.S. Park	1	...	...	...	...	...	...
50. Wise County	4	1	...	...	...	...	...
Total Individuals	1	8	24	515	279	117	18	42	4

	Common Moorhen	American Coot	Black-bellied Plover	Semipalmated Plover	Piping Plover	Killdeer	American Oystercatcher	American Avocet	Greater Yellowlegs	Lesser Yellowlegs	yellowlegs, sp.	Willet
...	...	274	166	15	...	14	231	...	58	9	...	...
...	...	57	391	...	...	56	33	...	112	4	...	23
...	...	796	511	18	...	7	278	6	95	9	...	132
...	...	325	...	...	...	...	2	...	...	...	...	...
...	...	325	1	...	...	1	1	...	3	...	...	...
...	1	417	...	...	...	34	...	...	1	1	1	...
...	...	59	...	...	...	87	2	18	...	1	...	...
...	...	6	...	...	...	35	...	...	...	...	...	...
...	...	379	1	...	...	95	...	...	9	...	...	...
...	1	18	2	...	3	8	...	...
...	...	33	...	...	...	87	...	...	...	...	...	...
...	324	...	...	...	...	...	...
...	...	1,234	...	...	...	92	...	...	...	...	...	...
...	...	423	...	...	...	96	...	...	12	1	2	...
...	...	6	...	...	...	...	...	...	...	...	...	...
...	...	46	...	...	...	8	...	...	...	...	...	...
...	...	15	...	...	...	5	...	...	...	...	...	...
...	11	...	...	...	...	...	...
...	4	...	...	...	...	...	...
...	4	...	...	...	...	...	...
...	2	...	...	...	...	...	...
...	...	233	...	...	...	17	...	...	...	...	...	...
...	...	16	...	...	...	16	...	...	...	...	...	...
...	90	...	...	...	...	...	...
...	...	2	...	...	...	7	...	...	...	...	...	...
...	1	...	...	...	...	...	...
...	...	1	...	...	...	55	...	...	...	...	...	...
...	...	7	...	...	...	11	...	...	...	...	...	...
...	...	2	...	...	...	15	...	...	...	...	...	...
...
...	...	13	...	...	...	4	...	...	...	...	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	42	...	...	...	1	...	...	...	...	...	...
...	...	2	...	...	...	2	...	...	...	...	...	...
...	...	2	...	...	...	1	...	...	...	...	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...
...	12	...	...	...	...	...	...
...	27	...	...	...	...	...	...
...	6	...	...	...	...	...	...
...	...	34	...	...	...	...	...	...	...	...	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	3	...	...	...	2	...	...	...	...	...	...
...	3	...	...	...	...	...	...
...	...	120	...	...	...	20	...	...	...	...	...	...
...	...	3	...	...	...	...	...	...	...	...	...	...
...	6	...	...	...	...	...	...
Total Individuals	2	4,553	1,070	33	1	1,290	549	24	293	33	3	155

	Ring-billed Gull	California Gull	Herring Gull	Thayer's Gull	Iceland Gull	Lesser Black-backed Gull	Black-tailed Gull	glaucous x herring gull hybrid	Great Black-back Gull
1. Chincoteague	1,562	...	2,973	...	...	...	...	...	497
2. Wachapreague	2,611	...	2,313	...	...	1	...	...	145
3. Cape Charles	2,994	...	2,424	...	...	1	...	...	424
4. CBBT	10,350	1	622	1	1	CW	CW	...	44
5. Little Creek	5,930	...	4,200	...	...	17	...	1	630
6. Back Bay	3,755	...	570	...	...	4	...	...	196
7. Nansemond River	17,578	...	19,775	...	1	13	...	...	633
8. Dismal Swamp NWR	9,532	...	1,083	...	...	...	...	1,048	1,048
9. Newport News	9,492	...	5,793	...	...	...	...	1,002	1,002
10. Mathews	1,300	...	402	...	...	...	...	...	78
11. Williamsburg	1,516	...	249	...	...	...	...	...	84
12. Hopewell	10,149	...	200	...	...	...	...	...	79
13. Wash. Birthplace	360	...	1	...	...	...	...	...	1
14. Brooke	3,900	...	288	...	...	...	...	...	190
15. Fort Belvoir	9,350	...	960	...	1	...	...	...	446
16. Greenways Wetlands	4	...	...	...	...	...	...	...	...
17. Manassas-B.R.	555	...	5	...	...	...	...	...	...
18. Chancellorsville	64	...	...	...	...	...	...	...	...
19. Gordonsville	...	...	...	...	...	...	...	...	...
20. Charlottesville	...	...	...	...	...	...	...	...	...
21. Warren	...	...	...	...	...	...	...	...	...
22. Darlington Heights	...	...	...	...	...	...	...	...	...
23. Kerr Reservoir	6,598	...	8	...	...	...	...	...	...
24. Banister WMA	410	...	...	...	...	...	...	...	...
25. Lynchburg	...	...	...	...	...	...	...	...	...
26. Danville	8	...	...	...	...	...	...	...	...
27. Martinsville	834	...	1	...	...	...	...	...	...
28. Philpott Res.	...	...	...	...	...	...	...	...	...
29. Calmes Neck	...	...	...	...	...	...	...	...	...
30. N. Shen. Valley	1	...	...	...	...	...	...	...	...
31. Shen. NP-Luray	...	...	...	...	...	...	...	...	...
32. Big Flat Mtn.	...	...	...	...	...	...	...	...	...
33. Rockingham Co.	...	...	...	...	...	...	...	...	...
34. Highland County	...	...	...	...	...	...	...	...	...
35. Augusta Co.	...	...	...	...	...	...	...	...	...
36. Waynesboro	7	...	...	...	...	...	...	...	...
37. Lexington	...	...	...	...	...	...	...	...	...
38. Peaks of Otter	CW	...	...	...	...	...	...	...	...
39. Clifton Forge	...	...	...	...	...	...	...	...	...
40. Fincastle	...	...	...	...	...	...	...	...	...
41. Roanoke	182	...	...	...	...	...	...	...	...
42. Blacksburg	461	...	1	...	...	...	...	...	...
43. Claytor Lake	14	...	...	...	...	...	...	...	...
44. Giles County	...	...	...	...	...	...	...	...	...
45. Tazewell	...	...	...	...	...	...	...	...	...
46. Glade Spring	...	...	...	...	...	...	...	...	...
47. Blackford	...	...	...	...	...	...	...	...	...
48. Bristol	205	...	...	...	...	...	...	...	...
49. Breaks I.S. Park	...	...	...	...	...	...	...	...	...
50. Wise County	...	...	...	...	...	...	...	...	...
Total Individuals	99,722	1	41,868	1	3	36	...	1	5,497

gull, sp.	Royal Tern	Forster's Tern	tern, sp.	Razorbill	Alcid, sp.	Rock Dove	Mourning Dove	Barn Owl	Eastern Screech-Owl	Great Horned Owl	Barred Owl
...	310	126	...	29	21	1
404	3	...	...	63	207	...	8	3	...
...	1	...	872	163	1	22	41	...
...	1	1	...	...	...	...	...
...	...	6	...	...	...	1,510	1,082	...	28	7	2
...	...	217	...	1	...	395	207	...	8	30	4
5,000	315	168	1	7	10	1
10	43	203	...	24	1	8
2,965	...	3	...	...	...	740	481	...	...	6	4
...	4	144	4	...	...	67	165	...	...	14	...
8	...	15	...	...	...	127	126	...	12	12	3
...	...	1	...	...	...	62	579	1	1	2	3
...	81	1	2	3	1
...	30	351	...	...	2	...
146	727	846	2	10	23	18
...	9	2	...	...	1	...
...	134	420	...	...	2	1
...	70	...	...	...	...
...	161	267	2	...	1	...
...	299	294	...	10	5	1
...	148	408	...	2	2	...
...	11	249	...	6	...	...
...	33	203	1	6	4	2
...	65	159	...	3	1	2
...	123	366	...	10	10	1
...	133	304	...	1	1	3
...	132	206	...	2	...	...
...	61	49	...	4	1	...
...	547	755	...	11	1	2
...	1,024	1,559	1	23	4	2
...	493	992	1	9	1	4
...	6	...	3	1	...
...	477	590	...	...	2	...
...	39	...	2	1	...
...	347	500	...	1	...	1
...	279	302	...	1	1	1
...	281	72	...	11	1	1
...	8	...	1	1	...
...	91	40	...	2	1	...
...	476	411	...	7	1	...
...	449	245	...	8	4	1
...	492	499	...	5	1	...
...	431	96	1	2	...	...
...	1	28	...	...	1	2
...	364	356	...	2	...	...
...	170	358	1	9	3	1
...	58	80	...	4	1	...
...	371	727	...	10	19	...
...	17	...	...	...	...
...	126	192	...	3	1	2
8,533	4	386	7	2	1	13,048	15,654	13	309	248	72

	Short-eared Owl	Northern Saw-whet Owl	owl, sp.	Rufous Hummingbird	Belted Kingfisher	Red-headed Woodpecker	Red-bellied Woodpecker	Yellow-bellied Sapsucker
1. Chincoteague	1	...	...	...	28	...	79	7
2. Wachapreague	19	...	31	7
3. Cape Charles	31	...	38	8
4. CBBT
5. Little Creek	26	1	62	1
6. Back Bay	34	...	74	4
7. Nansemond River	2	...	...	...	19	2	33	5
8. Dismal Swamp NWR	12	3	142	14
9. Newport News	28	CW	52	4
10. Mathews	CW	...	...	...	34	...	101	8
11. Williamsburg	21	12	71	15
12. Hopewell	1	...	...	...	19	24	147	41
13. Wash. Birthplace	5	5	24	9
14. Brooke	17	5	121	14
15. Fort Belvoir	43	9	330	39
16. Greenways Wetlands	2	5	54	3
17. Manassas-B.R.	7	1	104	6
18. Chancellorsville	3	...	22	...
19. Gordonsville	1	1	35	8
20. Charlottesville	27	...	106	22
21. Warren	11	1	53	24
22. Darlington Heights	2	...	19	1
23. Kerr Reservoir	12	4	67	12
24. Banister WMA	2	65	31	10
25. Lynchburg	7	...	73	40
26. Danville	2	2	31	8
27. Martinsville	3	1	21	2
28. Philpott Res.	2	...	24	4
29. Calmes Neck	14	11	168	27
30. N. Shen. Valley	1	...	...	...	25	26	131	20
31. Shen. NP-Luray	13	...	57	19
32. Big Flat Mtn.	14	5
33. Rockingham Co.	7	8	32	1
34. Highland County	...	1	...	...	5	...	5	1
35. Augusta Co.	2	...	...	1	5	...	36	1
36. Waynesboro	9	...	37	3
37. Lexington	13	...	30	5
38. Peaks of Otter	4	4
39. Clifton Forge	3	...	9	13
40. Fincastle	14	2	35	14
41. Roanoke	12	...	21	13
42. Blacksburg	10	2	50	11
43. Claytor Lake	2	...	11	1
44. Giles County	5	...	6	1
45. Tazewell	8	...	3	...
46. Glade Spring	21	...	26	4
47. Blackford	1	...	2	2	5	...
48. Bristol	16	...	32	4
49. Breaks I.S. Park
50. Wise County	1	...	7	4
Total Individuals	7	1	1	1	602	192	2,664	467

Downy Woodpecker	Hairy Woodpecker	Northern Flicker	Pileated Woodpecker	Eastern Phoebe	Western Kingbird	Horned Lark	Tree Swallow	Blue Jay	American Crow	Fish Crow	crow, sp.
57	15	109	5	9	...	18	...	93	307	3	39
40	2	101	4	6	...	...	...	87	657	2	...
46	3	79	5	12	...	93	6	92	222	31	...
...
29	3	71	13	...	...	...	...	235	835	3,225	...
51	7	113	36	7	1	...	1	105	300	44	...
22	3	17	7	1	...	36	1	140	315	91	...
185	30	92	67	2	...	...	...	84	328	304	...
42	1	75	14	4	...	...	...	222	399	37	14
57	6	122	8	10	...	...	1	151	787	2	19
38	4	75	24	3	...	...	...	147	201	...	18
53	3	149	19	8	...	38	...	117	406	41	264
17	1	38	7	11	...	18	...	73	346	...	...
61	9	64	28	2	...	...	...	313	415	9	...
268	72	293	80	7	...	13	...	525	2,506	1,568	556
49	3	55	2	...	...	1	...	145	137	4	...
134	19	76	24	1	...	...	...	302	1,639	113	365
16	1	16	9	2	...	...	...	78	300	...	...
35	6	25	19	1	...	...	...	69	411	2	...
119	26	107	77	4	...	...	...	344	1,898	159	...
63	10	39	32	2	...	11	...	68	1,405	2	...
15	5	26	8	3	...	...	...	42	779	...	...
35	7	54	19	12	...	26	...	167	426	...	...
31	5	22	6	1	...	...	...	216	148	...	...
83	10	46	27	11	...	5	...	281	790	16	...
22	9	29	...	1	...	11	...	117	555	...	...
18	5	20	2	3	...	...	...	58	263	...	...
22	4	26	27	7	...	2	...	41	557	...	...
145	25	52	45	1	...	...	...	292	1,168	...	...
140	14	65	39	1	...	3	...	847	1,809	6	...
68	9	21	25	2	...	400	...	252	1,646	6	...
24	6	4	11	1	...	...	...	7	31	...	...
26	2	10	12	...	...	284	...	104	347	CW	...
9	4	...	6	...	...	5	...	23	632	...	...
29	2	24	7	2	...	176	...	348	1,215	50	146
42	4	18	28	1	...	...	...	119	548	61	260
43	11	24	13	2	...	53	...	155	933	1	...
13	3	5	7	...	...	...	...	10	93	...	...
11	3	28	17	1	...	...	...	65	115	...	...
50	10	23	22	1	...	120	...	453	1,174	...	...
49	10	16	19	2	...	...	...	202	414	...	...
112	20	37	25	5	...	18	...	295	622	...	...
15	4	3	11	...	...	...	...	44	622	...	...
18	4	3	5	...	...	...	...	16	143	...	...
26	2	3	5	...	...	...	...	63	146	...	...
26	3	13	13	5	...	...	...	130	559	...	...
7	1	15	6	...	...	...	...	24	113	...	...
31	2	22	37	4	...	...	...	279	1,118	...	...
4	...	...	2	...	...	...	...	6	28	...	...
37	6	10	6	...	...	2	...	74	489	...	...
2,533	414	2,335	930	158	1	1,333	9	8,120	31,297	5,747	1,681

	Common Raven	Black-capped Chickadee	Carolina Chickadee	chickadee, sp.	Tufted Titmouse	Red-breasted Nuthatch	White-breasted Nuthatch	Brown-headed Nuthatch
1. Chincoteague	...	...	218	...	46	...	1	33
2. Wachapreague	...	...	99	...	22	...	2	13
3. Cape Charles	...	...	164	...	41	5	...	2
4. CBBT	...	...	...	...	...	...	...	...
5. Little Creek	...	...	204	...	58	...	11	35
6. Back Bay	...	...	245	...	60	1	27	62
7. Nansemond River	...	...	223	...	107	...	CW	14
8. Dismal Swamp NWR	...	...	243	...	96	...	48	1
9. Newport News	...	...	172	...	109	1	7	1
10. Mathews	...	...	289	...	134	...	4	28
11. Williamsburg	...	...	133	...	70	...	38	17
12. Hopewell	...	...	243	...	92	...	25	...
13. Wash. Birthplace	...	...	23	...	25	...	11	...
14. Brooke	...	...	293	...	239	1	48	...
15. Fort Belvoir	...	...	1,285	...	1,019	2	177	...
16. Greenways Wetlands	1	...	58	...	60	...	19	...
17. Manassas-B.R.	...	...	523	...	395	1	70	...
18. Chancellorsville	...	...	80	...	58	...	20	...
19. Gordonsville	1	...	54	...	70	...	24	...
20. Charlottesville	15	...	452	...	301	1	107	...
21. Warren	4	...	229	...	98	...	43	...
22. Darlington Heights	...	...	51	...	30	...	4	...
23. Kerr Reservoir	...	...	62	...	79	2	13	14
24. Banister WMA	...	...	57	...	56	4	26	3
25. Lynchburg	4	...	264	...	274	3	74	...
26. Danville	...	...	93	...	92	6	14	7
27. Martinsville	3	...	63	...	30	...	5	11
28. Philpott Res.	...	...	92	...	72	...	26	3
29. Calmes Neck	12	...	511	...	343	...	196	...
30. N. Shen. Valley	8	5	638	...	480	4	168	...
31. Shen. NP-Luray	51	8	394	...	217	2	92	...
32. Big Flat Mtn.	6	...	83	...	28	1	35	...
33. Rockingham Co.	6	CW	57	...	72	...	24	...
34. Highland County	33	42	1	...	28	...	9	...
35. Augusta Co.	2	6	142	...	135	2	28	...
36. Waynesboro	...	2	166	...	156	...	49	...
37. Lexington	3	10	67	47	77	...	38	...
38. Peaks of Otter	10	10	38	...	24	...	8	...
39. Clifton Forge	6	4	54	...	49	...	40	...
40. Fincastle	2	8	138	...	111	1	20	...
41. Roanoke	3	10	153	...	108	1	25	...
42. Blacksburg	2	12	141	67	224	...	76	...
43. Claytor Lake	...	...	45	2	35	...	17	...
44. Giles County	1	29	31	...	33	...	16	...
45. Tazewell	3	...	45	...	36	8	14	...
46. Glade Spring	1	...	121	...	84	...	37	...
47. Blackford	5	4	15	...	11	...	11	...
48. Bristol	2	...	180	...	146	...	36	...
49. Breaks I.S. Park	...	1	6	...	12	...	9	...
50. Wise County	3	...	119	5	116	3	40	...
Total Individuals	187	151	9,057	121	6,258	49	1,832	244

Brown Creeper	Carolina Wren	House Wren	Winter Wren	Sedge Wren	Marsh Wren	Golden-crowned Kinglet	Ruby-crowned Kinglet	Blue-gray Gnatcatcher	Eastern Bluebird	Hermit Thrush	American Robin
10	86	8	41	3	1	276	24	1	170	36	1,256
1	62	2	4	...	...	28	2	...	232	17	126
8	184	30	19	17	7	88	33	1	252	49	357
...
11	110	...	6	4	1	54	27	1	7	11	1,235
7	108	9	8	29	9	65	27	...	122	7	775
4	135	7	16	1	3	60	17	...	49	4	433
13	94	3	49	...	...	101	34	1	70	104	936
3	77	1	2	...	1	29	37	...	23	4	258
...	137	...	5	...	...	25	19	...	771	18	5,066
7	55	5	16	...	1	46	26	...	209	19	582
8	105	...	11	...	...	38	20	...	182	26	2,416
2	6	...	2	...	...	12	3	...	81	9	385
7	47	...	3	...	...	41	2	...	183	14	178
40	420	3	23	...	...	118	18	1	295	64	545
12	27	...	2	...	...	12	1	...	138	4	7
31	79	...	2	...	...	173	5	...	244	6	242
2	20	...	...	...	...	11	...	...	77	...	24
1	25	...	...	...	...	10	1	...	73	3	18
15	223	...	10	...	...	122	22	...	282	16	56
8	112	...	5	...	...	31	7	...	210	8	62
4	21	...	2	...	...	28	4	...	152	...	48
8	59	2	17	...	1	45	23	...	151	23	156
4	27	...	4	...	...	53	24	...	181	8	19
9	94	...	23	...	...	45	34	...	252	21	7
1	31	1	1	...	...	17	3	...	185	1	33
1	30	...	7	...	...	15	23	...	57	1	5
6	22	...	2	...	...	35	12	...	104	4	1
28	136	...	8	...	...	30	8	...	286	1	7
15	76	...	11	...	...	56	13	...	384	11	42
15	44	...	5	...	...	28	5	...	198	16	89
3	6	...	...	...	...	10	3	...	11	4	...
5	11	...	2	...	...	6	...	...	107	...	138
2	1	...	10	...	...	22	...	...	24	1	...
1	17	...	1	...	...	12	2	...	77	7	30
3	40	...	4	...	...	11	6	...	130	1	6
1	40	...	2	...	...	29	3	...	117	14	791
3	8	...	4	...	...	23	1	...	13	1	2
3	14	...	2	...	...	...	...	...	19	14	5
8	58	...	7	...	...	72	20	...	175	6	1
9	48	...	13	...	...	53	19	...	124	4	5
10	82	1	13	...	...	20	2	...	138	9	18
2	31	...	3	...	...	4	1	...	48	1	...
5	11	...	2	...	...	7	2	...	60	4	2
...	22	...	2	...	...	5	...	...	30	...	5
1	78	...	1	...	2	18	...	...	91	...	2
...	6	...	...	...	...	...	...	...	47	...	2
3	77	...	9	...	...	63	7	...	113	15	2
3	5	...	2	...	...	4	...	...	...	...	...
5	28	...	1	...	...	11	...	...	34	7	6
348	3,235	72	382	54	26	2,062	540	5	6,978	593	16,379

	Gray Catbird	Northern Mockingbird	Brown Thrasher	American Pipit	Cedar Waxwing	Loggerhead Shrike	European Starling	White-eyed Vireo
1. Chincoteague	19	38	14	3	83	...	3,112	...
2. Wachapreague	12	110	3	...	223	...	1,692	...
3. Cape Charles	18	57	10	67	282	...	4,623	...
4. CBBT	...	...	...	...	CW	...	1	...
5. Little Creek	4	48	9	10	90	...	11,875	...
6. Back Bay	27	64	17	59	36	...	1,360	1
7. Nansemond River	3	41	5	22	1,171	...	2,029	...
8. Dismal Swamp NWR	27	19	10	...	277	...	3,712	2
9. Newport News	6	113	11	...	89	...	4,092	...
10. Mathews	12	87	13	...	1,058	...	2,919	...
11. Williamsburg	1	29	19	...	553	...	927	...
12. Hopewell	4	77	6	...	1,096	CW	2,241	...
13. Wash. Birthplace	1	19	4	55	119	...	401	...
14. Brooke	1	93	3	20	166	...	1,600	...
15. Fort Belvoir	4	186	2	17	791	...	3,044	...
16. Greenways Wetlands	...	37	...	...	...	...	60	...
17. Manassas-B.R.	1	94	1	...	475	...	2,710	...
18. Chancellorsville	...	15	...	...	2	...	182	...
19. Gordonsville	...	44	1	...	...	3	3,262	...
20. Charlottesville	...	128	1	...	44	...	1,132	...
21. Warren	1	84	...	...	109	...	725	...
22. Darlington Heights	...	31	...	210	45	2	602	...
23. Kerr Reservoir	...	40	15	211	92	1	138	...
24. Banister WMA	...	29	2	...	35	...	185	...
25. Lynchburg	...	144	1	...	143	...	1,634	...
26. Danville	...	60	2	...	46	...	779	...
27. Martinsville	...	21	...	...	...	...	521	...
28. Philpott Res.	...	10	...	...	...	...	300	...
29. Calmes Neck	1	192	...	...	69	1	7,522	...
30. N. Shen. Valley	1	230	...	...	405	...	13,773	...
31. Shen. NP-Luray	...	94	...	...	106	...	4,781	...
32. Big Flat Mtn.	...	1	...	...	...	...	...	...
33. Rockingham Co.	...	25	...	...	15	...	2,315	...
34. Highland County	...	1	...	...	2	...	389	...
35. Augusta Co.	...	105	...	...	2	...	7,860	...
36. Waynesboro	...	81	...	...	8	...	3,297	...
37. Lexington	...	35	...	...	44	1	1,547	...
38. Peaks of Otter	...	3	...	...	...	...	11	...
39. Clifton Forge	...	1	CW	...	10	...	264	...
40. Fincastle	...	109	...	...	51	1	1,492	...
41. Roanoke	...	70	...	...	...	...	1,445	...
42. Blacksburg	...	131	2	...	20	2	1,441	...
43. Claytor Lake	...	21	...	...	4	2	706	...
44. Giles County	...	14	...	...	15	1	34	...
45. Tazewell	...	9	1	...	...	2	655	...
46. Glade Spring	...	56	...	...	7	1	7,041	...
47. Blackford	...	9	...	...	...	...	498	...
48. Bristol	...	127	1	...	61	1	11,444	...
49. Breaks I.S. Park	...	...	2	...	...	...	...	...
50. Wise County	...	5	...	...	6	...	251	...
Total Individuals	143	3,037	155	674	7,849	18	122,624	3

Solitary Vireo	Orange-crowned Warbler	Nashville Warbler	Yellow-rumped Warbler	Pine Warbler	Prairie Warbler	Palm Warbler	Black-and-white Warbler	Common Yellowthroat	Northern Cardinal	Dickcissel	Eastern Towhee	American Tree Sparrow
1	1	CW	1,440	6	...	14	1	4	184	...	43	...
...	660	10	...	21	...	...	192	...	11	30
1	1	...	2,800	18	...	29	...	10	291	2	52	...
...	CW	...	...	...	...	...	...	...	...	...
...	314	19	...	2	...	3	147	...	44	...
1	1	...	1,415	13	1	2	...	6	150	...	37	...
...	1	...	494	22	...	3	...	3	162	...	47	4
3	2	...	90	26	...	...	...	5	106	...	108	1
...	412	3	...	...	...	...	177	...	45	...
...	537	24	...	...	...	...	260	...	63	...
...	255	5	...	...	...	1	188	...	61	1
...	108	...	...	1	...	4	166	...	51	2
...	35	...	...	...	...	...	95	...	19	...
...	56	...	...	...	...	...	167	...	10	...
...	139	...	...	6	...	4	681	...	46	18
...	19	...	...	1	...	...	179	...	1	4
...	239	2	...	...	...	...	343	...	9	1
...	5	...	...	...	...	...	68	...	2	...
...	1	...	132	...	...	...
...	42	...	...	...	...	...	399	...	17	...
...	23	...	...	...	...	1	334	...	26	1
...	18	...	...	...	...	...	58	...	3	...
...	22	10	...	...	...	3	210	...	117	...
...	13	12	...	...	...	...	99	...	34	...
...	34	3	...	...	...	...	370	...	19	...
...	10	18	...	...	...	...	182	...	13	...
...	29	3	...	...	...	...	116	...	15	...
1	69	6	...	1	...	...	81	...	10	...
...	13	...	...	...	...	...	477	...	4	20
...	184	...	...	...	...	...	815	...	4	45
...	101	...	...	...	...	...	323	...	6	11
...	30	...	4	...
...	11	...	...	1	...	...	89	...	2	3
...	8	...	1	4
...	26	...	...	...	...	...	203	...	3	1
...	16	...	...	...	...	...	166	...	5	3
...	176	...	...	...	...	...	98	...	11	2
...	1	...	...	...	...	...	22	...	5	...
...	7	...	...	...	...	...	34	...	...	...
...	28	2	...	...	...	...	280	...	10	8
...	5	1	...	...	...	...	195	...	24	...
...	67	...	...	...	...	...	326	...	30	...
...	10	...	...	...	...	...	55	...	2	...
...	3	...	...	...	...	...	61	...	9	1
...	91	...	11	1
...	10	...	...	1	...	...	135	...	10	...
...	14	...	...	...	...	...	41	...	7	...
...	37	...	...	2	...	...	241	...	32	...
...	11	...	...	...
...	130	...	9	...
7	6	...	9,987	203	1	84	2	44	9,368	2	1,092	161

	Chipping Sparrow	Field Sparrow	Vesper Sparrow	Savannah Sparrow	Savannah (Ipswich) Sparrow	LeConte's Sparrow	Saltmarsh Sharp-tailed Sparrow	Nelson's Sharp-tailed Sparrow
1. Chincoteague	136	111	...	141	1	...	1	3
2. Wachapreague	166	54	...	90	4	...	8	...
3. Cape Charles	245	235	19	479	1	...	21	15
4. CBBT	...	...	...	...	...	...	...	...
5. Little Creek	24	10	...	38	4	...	2	6
6. Back Bay	38	15	...	185	5	2	...	1
7. Nansemond River	39	17	...	149	...	...	...	2
8. Dismal Swamp NWR	39	8	...	...	...	...	...	...
9. Newport News	78	32	...	6	...	...	...	...
10. Mathews	88	27	...	...	...	...	3	...
11. Williamsburg	2	153	...	25	...	...	...	...
12. Hopewell	12	118	...	57	...	...	...	...
13. Wash. Birthplace	...	23	...	...	...	...	...	...
14. Brooke	1	25	...	...	...	...	...	...
15. Fort Belvoir	2	127	...	3	...	...	...	...
16. Greenways Wetlands	...	73	...	7	...	...	...	...
17. Manassas-B.R.	2	44	...	...	...	...	...	...
18. Chancellorsville	1	27	...	...	...	...	...	...
19. Gordonsville	...	38	...	3	...	...	...	...
20. Charlottesville	...	115	...	2	...	...	...	...
21. Warren	...	137	...	1	...	...	...	...
22. Darlington Heights	...	41	...	1	...	...	...	...
23. Kerr Reservoir	49	195	4	12	...	...	...	...
24. Banister WMA	11	7	...	4	...	...	...	...
25. Lynchburg	...	30	...	...	...	...	...	...
26. Danville	...	20	2	9	...	...	...	...
27. Martinsville	1	132	...	...	...	...	...	...
28. Philpott Res.	...	24	...	...	...	...	...	...
29. Calmes Neck	...	8	...	1	...	...	...	...
30. N. Shen. Valley	...	267	...	7	...	...	...	...
31. Shen. NP-Luray	...	53	...	...	...	...	...	...
32. Big Flat Mtn.	...	3	...	...	...	...	...	...
33. Rockingham Co.	...	5	...	3	...	...	...	...
34. Highland County	...	25	...	...	...	...	...	...
35. Augusta Co.	...	15	...	...	...	...	...	...
36. Waynesboro	...	36	...	1	...	...	...	...
37. Lexington	...	9	...	...	...	...	...	...
38. Peaks of Otter	...	2	...	...	...	...	...	...
39. Clifton Forge	...	5	...	...	...	...	...	...
40. Fincastle	2	48	...	1	...	...	...	...
41. Roanoke	2	51	...	...	...	...	...	...
42. Blacksburg	4	30	...	...	...	...	...	...
43. Claytor Lake	...	26	...	...	...	...	...	...
44. Giles County	...	28	...	...	...	...	...	...
45. Tazewell	...	8	...	...	...	...	...	...
46. Glade Spring	...	25	...	...	...	...	...	...
47. Blackford	6	10	...	2	...	...	...	...
48. Bristol	...	26	...	3	...	...	...	...
49. Breaks I.S. Park	...	...	...	...	...	...	...	...
50. Wise County	...	17	...	...	...	...	...	...
Total Individuals	948	2,535	25	1,230	15	2	35	27

sharp-tailed sparrow, sp.	Seaside Sparrow	Fox Sparrow	Song Sparrow	Lincoln Sparrow	Swamp Sparrow	White-throated Sparrow	White-crowned Sparrow	sparrow, sp.	Dark-eyed Junco	Dark-eyed (Oregon) Junco	Dark-eyed Junco (form?)
10	5	9	377	...	234	732	...	...	396	...	...
...	...	20	314	...	38	413	...	...	626	...	...
67	18	70	483	1	387	1,073	1	...	201	1	...
...
6	3	10	73	1	26	562	...	...	356	...	...
...	...	6	163	...	214	210	2	...	162	...	...
...	1	5	175	2	67	471	1	6	289	...	1
...	...	20	58	...	80	566	...	...	423	...	...
...	...	8	227	...	20	470	...	...	222	...	...
...	...	4	123	...	10	588	...	...	821	...	...
...	...	9	418	...	191	807	2	...	618	...	...
...	...	4	535	...	21	1,130	1	1	398	...	...
...	...	1	19	...	2	362	...	...	383	...	...
...	204	...	11	491	1	...	532	...	...
...	...	4	587	...	106	1,421	1	...	1,177	...	...
...	...	1	133	...	32	136	10	...	479	...	...
...	...	1	245	...	3	181	...	...	802	...	...
...	17	...	...	52	1	...	247	...	...
...	...	1	110	...	3	182	83	...	290	...	...
...	219	...	6	988	146	...	803	...	...
...	268	...	7	866	100	...	513	...	...
...	112	...	11	125	...	...	246	...	...
...	...	8	631	1	603	1,201	47	...	547	...	...
...	88	...	22	309	9	...	346	...	...
...	...	1	180	...	2	605	12	...	500	...	...
...	...	1	40	...	...	385	6	...	488	...	...
...	...	1	98	...	25	117	...	...	254	...	...
...	...	1	66	...	4	127	1	...	254	...	...
...	...	1	126	...	3	288	175	...	495	...	...
...	...	6	354	...	32	589	842	...	2,016	...	...
...	...	3	186	...	5	489	265	...	1,286	...	...
...	1	...	...	50	...	...	53	...	...
...	66	...	...	338	140	...	434	...	...
...	2	...	...	15	...	...	481	...	...
...	...	1	62	...	1	197	176	...	947	...	...
...	133	...	8	116	103	...	128	...	...
...	...	2	79	...	4	167	25	...	271	...	...
...	13	...	...	69	...	...	168	...	...
...	11	...	...	25	...	...	79	...	...
...	...	1	195	...	4	302	119	...	318	...	...
...	...	1	155	...	3	307	...	...	283	...	...
...	...	5	360	...	3	274	110	...	476	...	...
...	38	...	...	36	17	...	81	...	...
...	33	...	...	75	13	...	57	1	...
...	47	...	...	5	6	...	5	...	...
...	180	...	2	110	77	...	74	...	...
...	56	...	...	15	2	...	22	...	...
...	163	...	6	214	57	...	68	...	...
...	4	...	1	3	...	...	28	...	...
...	...	3	126	...	6	39	...	...	115	...	...
83	27	208	8,353	5	2,203	18,293	2,550	6	20,258	2	1

	Lapland Longspur	Snow Bunting	Red-winged Blackbird	Eastern Meadowlark	Rusty Blackbird	Brewer's Blackbird	Boat-tailed Grackle	Common Grackle
1. Chincoteague	21,256	177	46	...	152	21,972
2. Wachapreague	502	160	...	...	420	37
3. Cape Charles	...	1	895	157	1	...	1,328	14
4. CBBT
5. Little Creek	...	28	1,000	7	20	...	84	1,235
6. Back Bay	2,395	88	4	...	710	470
7. Nansemond River	1	130	3,266	71	64	...	1	6,202
8. Dismal Swamp NWR	485	17	223	...	...	195
9. Newport News	...	1	229	21	3	...	155	2,431
10. Mathews	1,338	127	...	...	23	96
11. Williamsburg	4,943	58	...	...	...	1,065
12. Hopewell	1,296	263	1	...	...	1,096
13. Wash. Birthplace	1,777	25	...	...	...	4,382
14. Brooke	40	2	7	...	...	21
15. Fort Belvoir	879	18	56	...	...	587
16. Greenways Wetlands	120	...	...	10	...	9
17. Manassas-B.R.	173	3	...	...	...	12
18. Chancellorsville	3
19. Gordonsville	18	...	...	...	3
20. Charlottesville	3	...	...	...	2
21. Warren	45	97	2	...	...	...
22. Darlington Heights	294	72	...	...	...	...
23. Kerr Reservoir	1,204	44	...	...	...	16
24. Banister WMA	83	10	33	...	...	34
25. Lynchburg	24	...	...	...	4
26. Danville	6	...	...	...	55
27. Martinsville	3	8	...	...	...	...
28. Philpott Res.	1
29. Calmes Neck	310	15	...	...	...	426
30. N. Shen. Valley	1,052	53	52	...	...	15
31. Shen. NP-Luray	2	2	552	123	6	...	...	...
32. Big Flat Mtn.
33. Rockingham Co.	...	1	12	54	315	...	...	30
34. Highland County	32	...	...	...	...
35. Augusta Co.	49	59	20	...	...	2,140
36. Waynesboro	75	3	...	...	...	25,001
37. Lexington	21	...	...	...	...
38. Peaks of Otter
39. Clifton Forge	2	...	...	...	...
40. Fincastle	61	...	...	...	5
41. Roanoke
42. Blacksburg	60	5	...	...	...
43. Claytor Lake	3	...	...	...	1
44. Giles County	2	...	...	...	...
45. Tazewell
46. Glade Spring	2	8	1	...	...	4
47. Blackford	7	2	...	...	12
48. Bristol	51	1	...	...	200
49. Breaks I.S. Park
50. Wise County	3	1	...	...	...	25
Total Individuals	3	163	44,278	2,031	862	10	2,873	67,798

Brown-headed Cowbird	blackbird, sp.	Baltimore Oriole	Purple Finch	House Finch	Carpodacus, sp.	Common Redpoll	Pine Siskin	American Goldfinch	Evening Grosbeak	House Sparrow
1,784	31	125	...	...	...	170	...	157
13	3	67	...	...	...	108	...	34
241	100	...	1	135	...	...	...	214	...	44
...	2	...	...
94	196	...	...	...	81	...	157
96	4	105	...	...	...	182	...	22
387	700,250	...	2	84	...	...	...	354	...	64
65	4	42	...	...	2	394	...	25
84	122	...	...	...	168	...	89
282	630	...	...	355	...	...	1	192	...	79
60	2,158	3	1	113	...	...	...	148	...	41
1,185	...	1	...	87	...	...	...	108	...	9
100	448,000	...	...	10	...	...	...	41	...	38
4	1	91	...	...	...	233	...	184
84	4	437	...	...	9	837	89	331
25	6	53	...	1	2	195	...	...
5	12	...	14	272	...	...	27	182	...	184
...	16	...	...	...	15	...	14
4	2	58	...	...	...	41	...	27
1	1	78	...	...	...	363	...	55
4	2	16	...	...	...	224	...	36
9	2	23	...	...	...	31	...	7
72	6	2	...	...	...	59	...	36
...	CW	42	...	...	...	26	...	42
...	9	231	...	...	...	127	1	69
...	24	116	...	...	1	54	...	55
...	16	42	...	...	...	90	...	25
...	6	10	3	...	...	117	...	43
774	17	165	...	...	...	166	...	167
355	22	391	...	...	6	249	1	180
126	66	...	26	62	...	...	4	151	...	322
2	4	...	...	...	...	4	...	...
...	3	76	...	...	...	85	...	197
...	1	50	...	...	2	53	...	111
30	10	322	...	...	...	91	...	253
6	97	...	...	...	132	...	159
...	1	...	36	71	...	...	...	63	...	10
...	3	...	...	...	...	6	...	...
...	43	...	...	...	38	...	64
7	9	117	...	...	...	165	...	51
1	CW	113	...	...	...	96	...	74
15	10	230	2	...	CW	185	...	157
...	37	...	...	...	14	...	23
...	6	9	...	...	...	13	...	4
...	57	...	...	...	8	...	134
3	26	...	...	...	119	...	114
...	17	...	...	...	124	...	7
...	6	225	...	...	...	139	...	55
...	3	...	...
...	5	42	...	...	...	116	...	99
5,918	1,151,217	4	297	5,078	5	1	54	6,776	91	4,048

	Total number of species	Total number of individuals	Date	Time in field (a.m. to p.m.)	Skies (a.m.)	Skies (p.m.)
1. Chincoteague	144	115,834	29 Dec	0500-1745	CLR	PCD
2. Wachapreague	116	28,571	21 Dec	0600-1700	PCR	PCD
3. Cape Charles	162	37,823	30 Dec	0200-1800	FOG	PFG
4. CBBT	35	15,302	26 Dec	0700-1500	CLR	CLR
5. Little Creek	133	42,040	31 Dec	0515-1710	FOG, LGR	FOG
6. Back Bay	142	38,230	29 Dec	0500-1715	PCD	CLR
7. Nansemond River	140	773,074	5 Jan	0045-2200	CLR	PCD
8. Dismal Swamp NWR	93	29,077	1 Jan	0700-1700	CLD	CLD
9. Newport News	120	38,056	21 Dec	0600-1700	PCD	CLR
10. Mathews	110	24,733	5 Jan	0500-1730	PCD	PCD
11. Williamsburg	103	175,291	22 Dec	0700-1600	CLR	CLR
12. Hopewell	101	43,776	22 Dec	0600-1645	PCD	CLD
13. Wash. Birthplace	86	469,008	21 Dec	0500-1700	CLR	CLR
14. Brooke	93	19,286	23 Dec	0645-1700	PCD	CLR
15. Fort Belvoir	126	60,879	5 Jan	0400-1900	CLD, RAI	PCR
16. Greenways Wetlands	75	7,007	19 Dec	0700-1700	CLD, MHS	CLD, MHS
17. Manassas-B.R.	80	13,952	28 Dec	0545-1715	CLD, LGR	CLR
18. Chancellorsville	54	2,358	29 Dec	0715-1600	CLD, LGR	CLD
19. Gordonsville	63	7,889	22 Dec	0700-1700	CLD	PCR
20. Charlottesville	69	12,043	29 Dec	0545-1815	CLD, LGR	PCR
21. Warren	78	9,322	5 Jan	0630-1745	CLD, LGR	CLR
22. Darlington Heights	62	3,910	5 Jan	0400-1730	LHR	PTR
23. Kerr Reservoir	105	16,102	22 Dec	0430-1700	PCD	PCD
24. Banister WMA	81	3,466	22 Dec	0700-1730	CLD	CLD
25. Lynchburg	74	8,436	21 Dec	0600-2230	CLR	CLR
26. Danville	73	4,742	21 Dec	0700-1630	CLR	CLR
27. Martinsville	66	3,968	1 Jan	0500-1700	CLD	CLD
28. Philpott Res.	63	2,775	28 Dec	0500-1730	MCR	MCR
29. Calmes Neck	81	21,463	4 Jan	0600-1800	CLR	CLR
30. N. Shen. Valley	99	34,714	21 Dec	0400-1800	CLR	CLR
31. Shen. NP-Luray	83	15,542	22 Dec	0600-1745	FOG, LRS	PCD, LRS
32. Big Flat Mtn.	39	485	27 Dec	0615-1700	CLR	CLD
33. Rockingham Co.	70	7,170	21 Dec	0800-1630	CLR	CLR
34. Highland County	61	2,385	19 Dec	0700-1600	SNO	SNO
35. Augusta Co.	74	17,100	21 Dec	0630-1730	CLR	CLR
36. Waynesboro	68	32,317	27 Dec	0630-1645	CLR	CLR
37. Lexington	69	5,964	26 Dec	0500-1745	PCD	PCD
38. Peaks of Otter	40	626	24 Dec	0800-1600	CLD, LGR	CLD, RAI
39. Clifton Forge	52	1,498	28 Dec	0800-1630	CLR	CLD
40. Fincastle	73	7,300	22 Dec	0600-1800	PCD	PCD
41. Roanoke	70	5,675	21 Dec	0530-1630	CLR	CLR
42. Blacksburg	78	8,952	23 Dec	0600-1715	MCR	MCR
43. Claytor Lake	62	3,036	31 Dec	0615-1645	CMC, LGR	CMC, LGR
44. Giles County	59	1,041	29 Dec	0430-1800	PCR	CLD
45. Tazewell	53	2,559	28 Dec	0700-1700	CLR	PCD
46. Glade Spring	70	11,341	5 Jan	0630-1745	PCD	PCD
47. Blackford	50	1,425	30 Dec	0500-2230	HFG	CLD
48. Bristol	77	18,872	28 Dec	0500-1730	CLR	PCD
49. Breaks I.S. Park	24	166	21 Dec	0700-1500	CLR	PCD
50. Wise County	57	2,373	21 Dec	0700-1730	CLR	CLR
Total individuals	213	2,208,954	-	-	-	-

Water conditions	Wind direction	Wind speed (miles/hour)	Inches of snow on the ground	Temperatures (- Fahrenheit)	Number of field observers	Number of field parties (non-owling)	Number of feeder observers	Hours at feeders	Hours owling	Miles owling
WOP	W	0-12	...	48-59	25	14	...	...	7.00	29.00
SPF, MWO	W	0-5	...	19-40	21	13	...	...	1.00	1.00
WOP	SW-NE	0-10	...	47-67	38	9-21	...	...	16.00	41.00
WOP	SE	10	...	31-53	10	1	...	...	...	...
WOP	NW	0-20	...	48-62	21	11-13	...	...	4.00	21.00
WOP	SW	0-10	...	49-71	33	10-18	...	...	3.75	25.00
WOP	SW	10-30	...	52-73	22	7-9	...	...	9.50	55.00
WOP	NE	0-5	...	35-45	24	8-12	...	...	...	...
WOP	calm	-	...	25-38	34	13	...	...	1.50	6.00
WOP	SE-NW	10-15	...	51-69	54	14-20	1	2.00	5.00	36.75
SPO, MWO	SW	10-15	...	28-53	27	9	...	...	3.50	7.50
SPF, MWO	SW	10-20	...	22-43	33	12	...	...	5.25	4.25
SWF, MWO	calm	-	...	12-30	14	6	...	...	1.00	6.00
SPF, MWO	SW	0-15	...	36-59	22	9-11	...	...	...	...
WOP	SW	20	...	49-73	165	50	1	4.00	53.00	69.00
WPF	calm	-	...	32	2	1	...	...	...	...
WOP	SW	3	...	39-55	93	19	...	...	2.75	27.00
WOP	SW	5-9	...	51-67	20	5	...	...	...	...
SPF, MWO	V	0-5	...	28-42	12	5-10	...	...	1.00	6.00
WOP	S	0-15	...	52-68	24	20	...	...	4.00	12.00
WOP	SW	0-25	...	54-69	17	12	...	...	2.00	8.00
WOP	SSW	5-20	...	55-64	13	5	...	...	3.00	29.00
SPF, MWO	WSW	0-18	...	18-45	8	4-7	...	...	...	...
SWF, MWO	NW	0-5	...	15-45	6	5	...	...	1.00	6.00
WPF	calm	-	...	9-30	40	15-17	4	9.00	6.00	37.00
SWP, MWO	calm	-	...	15-31	13	9	1	4.00	1.50	2.50
WOP	V	0-5	...	38-42	2	1-2	1	1.00	2.00	15.00
SPF, MWO	W	0-12	...	37-51	6	3	...	...	2.00	5.00
WOP	V	0-3	...	52-70	37	18	...	...	3.50	18.00
SWF, MWO	calm	-	...	5-58	57	22	...	...	6.00	27.00
SPF, MWO	W	0-10	3	18-43	14	12	4	12.50	2.25	...
WOP	NE-SE	0-8	...	36-55	2	2	...	...	1.00	1.25
SWF, MWO	calm	-	...	4-44	18	8	...	...	...	...
WPF	NE	10-18	...	27-34	4	2	...	...	...	...
SWF, MWO	S	0-3	2	0-32	24	11	2	4.00	1.50	30.00
WOP	SW	0-5	...	37-60	23	8-11	...	...	0.50	5.00
SPF, MWO	SW	5-10	...	24-42	13	7	3	3.00	1.50	12.00
WOP	SE	10	...	42-54	11	5	...	...	2.00	5.00
WOP	calm	-	...	50-55	7	5	3	10.00	...	...
SPF, MWO	W	1-3	...	18-35	20	11-13	...	...	2.00	5.00
SWF, MWO	NNW	0-10	...	6-35	16	12	4	2.00	2.00	4.00
SWF, MWO	calm	-	0-5	0-27	68	15	10	26.00	1.00	6.00
WMO	WNW	8-25	...	50-63	6	3	...	...	2.00	0.75
WOP	SSE	10-15	...	37-62	7	3	1	2.00	2.50	12.00
WOP	NE	3-5	...	34-45	8	6	...	...	...	...
WOP	V	5	...	45-70	20	6	...	...	1.50	15.00
WOP	SW	3-5	...	48-53	6	3	...	...	4.00	40.00
WOP	V	-	...	39-61	20	6	...	...	5.00	40.00
SPF, MWO	V	5-10	7	6-31	1	1	...	...	...	...
SWF, MWO	SW	5	1-2	10-30	11	6	2	5.25	1.00	14.50
-	-	-	-	-	1,192	456-508	38	85.00	175.00	679.00

	Hours on foot	Hours by car/bike	Hours by boat/canoe	Total hours (excludes rowing & feeder hours)	Miles on foot	Miles by car/bike	Miles by boat/canoe	Total miles
1. Chincoteague	75.00	41.00	...	116.00	50.00	250.00	...	300.00
2. Wachapreague	30.00	50.00	5.50	85.50	22.50	429.00	6.00	457.50
3. Cape Charles	122.00	28.00	4.00	154.00	74.00	364.00	10.00	448.00
4. CBBT	7.50	0.50	...	8.00	0.50	2.50	...	3.00
5. Little Creek	75.00	18.00	...	93.00	55.00	490.00	...	545.00
6. Back Bay	105.00	12.00	4.00	121.00	64.00	370.00	20.00	454.00
7. Nansemond R.	44.75	33.50	3.00	81.25	27.25	336.00	19.00	382.25
8. Dismal Swamp	36.75	39.50	...	76.25	40.75	150.00	...	190.75
9. Newport News	54.00	55.00	...	109.00	46.00	435.50	...	481.50
10. Mathews	76.50	53.75	1.00	131.25	53.00	348.50	1.00	402.50
11. Williamsburg	38.75	42.00	...	80.75	20.75	245.50	...	266.25
12. Hopewell	81.25	27.00	5.00	113.25	34.50	123.00	48.00	205.50
13. Wash. BP	11.00	22.00	4.00	37.00	6.00	232.00	42.00	280.00
14. Brooke	56.50	31.50	...	88.00	42.50	199.50	...	242.00
15. Fort Belvoir	224.00	25.50	...	249.50	214.00	150.00	...	150.00
16. Greenways	8.00	2.00	...	10.00	5.00	15.00	...	15.00
17. Manassas-B.R.	101.75	38.25	...	140.00	94.00	440.00	...	534.00
18. Chancellorsville	19.25	14.00	...	33.25	13.50	203.25	...	216.75
19. Gordonsville	25.50	21.00	...	46.50	24.00	211.00	...	235.00
20. Charlottesvile	115.50	24.50	6.00	146.00	105.50	273.00	5.00	383.50
21. Warren	80.50	20.50	...	101.00	83.00	180.00	...	263.00
22. Darlington Hgts	13.25	26.50	...	39.75	13.50	346.50	...	360.00
23. Kerr Reservoir	30.50	15.00	4.50	50.00	20.50	180.00	8.00	208.50
24. Banister WMA	19.00	15.50	...	34.50	18.00	190.00	...	208.00
25. Lynchburg	49.00	39.00	...	88.00	36.00	403.00	...	439.00
26. Danville	22.00	20.50	...	42.50	20.50	285.00	...	305.50
27. Martinsville	6.00	10.00	...	16.00	5.00	100.00	...	105.00
28. Philpott Res.	9.50	16.50	...	26.00	5.50	119.00	...	124.50
29. Calmes Neck	62.50	75.00	4.00	141.50	60.00	695.00	10.00	765.00
30. N. Shen. Valley	80.50	115.50	10.00	206.00	74.00	1,055.00	16.00	1,145.00
31. Shen-Luray	41.00	66.00	...	107.00	38.00	551.00	...	589.00
32. Big Flat Mtn.	20.00	...	...	20.00	29.00	...	...	29.00
33. Rockingham Co.	13.75	28.25	...	42.00	11.50	233.50	...	245.00
34. Highland Co.	3.00	11.00	...	14.00	4.00	75.00	...	79.00
35. Augusta Co.	13.75	65.50	...	79.25	8.00	603.75	...	611.75
36. Waynesboro	27.25	41.00	...	68.25	17.25	461.00	...	478.25
37. Lexington	28.00	17.00	...	45.00	24.50	146.50	...	171.00
38. Peaks of Otter	16.00	11.00	...	27.00	13.00	53.00	...	66.00
39. Clifton Forge	6.00	7.00	...	13.00	10.50	127.00	...	137.50
40. Fincastle	27.00	35.00	...	62.00	21.00	298.00	...	319.00
41. Roanoke	47.50	34.50	...	82.00	41.50	275.50	...	317.00
42. Blacksburg	68.75	27.75	...	96.50	56.25	209.00	...	265.25
43. Claytor Lake	9.00	12.00	...	21.00	6.00	122.00	...	128.00
44. Giles County	5.00	8.00	...	13.00	7.00	52.00	...	59.00
45. Tazewell	2.00	34.00	...	36.00	5.00	285.00	...	390.00
46. Glade Spring	11.00	39.75	...	50.75	8.50	377.00	...	385.50
47. Blackford	7.00	14.00	...	21.00	12.00	173.00	...	185.00
48. Bristol	31.00	28.00	...	59.00	17.00	431.00	...	448.00
49. Breaks I.S. Pk	5.00	3.00	...	8.00	3.00	26.00	...	29.00
50. Wise County	10.25	24.50	...	34.75	9.00	233.00	...	242.00
Total Individuals	2,071.00	1,406.25	51.00	3,528.25	1,670.75	13,268.50	185.00	15,290.25

APPENDIX II

CHRISTMAS COUNT DESCRIPTIONS

(Observers are listed for Blacksburg, Bristol, Claytor Lake, Darlington Heights, Giles County, Glade Spring, Greenways Wetlands, Highland County, Lynchburg, Peaks of Otter, Philpott Reservoir, and Roanoke —counts which do not appear in the National Audubon Society's *Field Notes*.)

1. CHINCOTEAGUE NATIONAL WILDLIFE REFUGE. 37°58'N 75°22'W
Center: 2 miles north of center of Chincoteague in Accomack County.
Compiler: Teta Kain (7083 Caffee Creek Lane, Gloucester VA 23061-3374)
2. WACHAPREAGUE. 37°40'N 75°42'W
Center: Jct. 789 and 715 in Accomack County.
Compilers: Irvin and Marilyn Ailes (6479 Myrtle Lane, Chincoteague VA 23336)
3. CAPE CHARLES. 37°12'N 75°56'W
Center: 1.5 miles southeast of Capeville Post Office in Northampton County.
Compiler: Henry Armistead (523 E. Durham St., Philadelphia PA 19119)
4. CHESAPEAKE BAY BRIDGE-TUNNEL. 37°05'N 76°08'W
Location: Bridge-tunnel complex across the mouth of the Chesapeake Bay
Compiler: Ned Brinkley (108 Cocke Hall, University of Virginia, Charlottesville 22903)
5. LITTLE CREEK. 36°51'N 76°06'W
Center: 3.8 miles northeast of Kempsville in Virginia Beach.
Compiler: Paul Sykes, Jr. (1080 Forest Rd., Watkinsville GA 30677)
6. BACK BAY NATIONAL WILDLIFE REFUGE. 36°39'N 76°00'W
Center: 1.5 miles east of Back Bay NWR.
Compiler: Paul Sykes, Jr. (1080 Forest Rd., Watkinsville GA 30677)
7. NANSEMOND RIVER. 36°52'N 76°26'W
Center: Jct. 17 and 626 in Pughsville, Suffolk.
Compiler: Ned Brinkley (108 Cocke Hall, University of Virginia, Charlottesville 22903)
8. DISMAL SWAMP. 36°40'N 76°29'W
Center: Jct. of Middle and Jericho Ditches in Great Dismal Swamp NWR.
Compilers: Don Schwab (1411 Planters Dr., Suffolk, VA 23434) and Tom Gwynn (1640 Morris Ave., Norfolk, VA 23509)
9. NEWPORT NEWS. 37°05'N 76°25'W
Center: Northern corner of Magruder & Cmdr. Shepard Blvds in Hampton.
Compiler: Hayes Williams (PO Box 95, White Marsh, VA 23183-0095)
10. MATHEWS. 37°25'N 76°18'W
Center: 0.5 mile east of Beaverlett Post Office in Mathews County.
Compiler: Mary Pulley (HCR 75, Box 656, Hudgins, VA 23076)
11. WILLIAMSBURG. 37°17'N 76°42'W
Center: Colonial Williamsburg Information Center in Williamsburg.
Compiler: William Holcombe (4705 Lady Slipper Path, Williamsburg, VA 23188)

12. HOPEWELL. 37°23'N 77°17'W
Center: Curles Neck in Henrico County.
Compiler: Larry Robinson (3320 Landria Dr., Richmond VA 23225)
13. WASHINGTON'S BIRTHPLACE. 38°07'N 76°57'W
Center: Horners in Westmoreland County.
Compiler: Bill Portlock (23195 Mt. Cloud Rd., Bowling Green VA 22427)
14. BROOKE. 38°22'N 77°20'W
Center: At center road 3 miles east southeast of Brooke in Stafford County.
Compiler: David Stewart (10715 Midsummer Dr., Reston VA 22091)
15. FORT BELVOIR. 38°41'N 77°12'W
Center: Pohick Church at Colechester Rd. and Jefferson Davis Hwy. in eastern Fairfax County
Compiler: David F. Abbott (43579 Plantation Terr., Ashburn, VA 22011)
16. GREENWAYS WETLANDS. 39°02'N 77°37'W
Center: Greenways Wetlands where Goose Creek crosses Hwy. 15 in Loudoun Co.
Compiler: David F. Abbott (43579 Plantation Terr., Ashburn, VA 22011)
Observers: David Abbott and George Wheaton.
17. MANASSAS-BULL RUN. 38°50'N 77°26'W
Center: Centreville in western Fairfax County.
Compiler: Stan Gray (7717 Shootingstar Dr., Springfield, VA 22152)
18. CHANCELLORSVILLE. 38°16'N 77°40'W
Center: Chancellorsville Battlefield, 10 miles west of Fredericksburg in Spotsylvania County.
Compiler: Joella Killian (Dept. Biological Sciences, Mary Washington College, Fredericksburg, VA 22401)
19. GORDONSVILLE. 38°09'N 78°12'W
Center: Jct. of 15 and 33 north of the town of Gordonsville in Orange County.
Compiler: Donald R. Ober (PO Box 6, Orange, VA 22960)
20. CHARLOTTESVILLE. 38°04'N 78°34'W
Center: Near Ivy in Albemarle County.
Compiler: Charles Stevens (615 Preston Pl., Charlottesville VA 22903)
21. WARREN. 37°51'N 78°33'W
Center: At Keene in Albemarle County.
Compiler: Charles Stevens (615 Preston Pl., Charlottesville, VA 22903)
22. DARLINGTON HEIGHTS. 37°12'N 78°37'W
Center: Darlington Heights Post Office in Prince Edward County.
Compiler: Carolyn Wells (204 Fayette St., Farmville, VA 23901)
Observers: John Dalmas, Thelma Dalmas, Glen Eller, Jane Holman, Ann Ingram, Jane Jobe, Judy McCann, Kim McDowell, Tanya Mister, David Spears, Mike Stinson, Randy Thrasher, Sue Thrasher, and Carolyn Wells.
23. JOHN H. KERR RESERVOIR. 36°36'N 78°18'W
Center: East end of John H. Kerr Dam in Mecklenburg County.
Compiler: Brian Patteson (PO Box 1135, Amherst, VA 24521)

24. BANISTER RIVER WILDLIFE MANAGEMENT AREAS. 36°43'N 78°48'W
Center: At Banister River Wildlife Management Areas in Halifax County.
Compiler: Jeffrey Blalock (103 Elizabeth Court, South Boston VA 24592)
25. LYNCHBURG. 37°24'N 79°11'W
Center: Lynchburg College in Lynchburg.
Compiler: John Dalmas (502 Rainbow Forest Dr., Lynchburg VA 24502)
Observers: V.L. Bailey, Russell Butkiewicz, Ed Calvert, John Dalmas, Thelma Dalmas, Virginia Delaney, Lora DeVan, Glen Eller, Betty Epperson, Robert Epperson, Bob Eubank, Ellen Ford, Charles Hansrote, Melva Hansrote, Mike Hayslett, Cinda Hurt, Mark Johnson, Victor Kehrer, Hazell Kitts, Gail McCormack, Gene Moore, Brian Patteson, Taylor Piephoff, Claudia Puckette, Dan Puckette, Daniel Puckette, James Scranton, Doug Shedd, Macon Smith, Marek Smith, Susan Stanton, Ed Theisinger, Marianne Theisinger, Randy Thrasher, Sue Thrasher, Margaret Wenning, Susan Wingfield, Jo Wood, Brian Worley, and Teresa Worley; plus Hope Montague, Myriam Moore, Wyatt Murphy, and Mac Williamson at feeders.
26. DANVILLE. 36°34'N 79°25'W
Center: Ballou Park in Danville.
Compiler: Russell C. Brachman (139 Pendleton Rd., Danville VA 24541)
27. MARTINSVILLE. 36°44'N 79°49'W
Center: South end of dam at Martinsville Reservoir #2 in Henry County.
Compiler: James S. Beard (401 Hairston St., Martinsville, VA 24112)
28. PHILPOTT RESERVOIR. 36°53'N 80°03'W
Center: Near Jct. 605 and 623 in Franklin County.
Compiler: Clyde Kessler (PO Box 3612, Radford VA 24143)
Observers: Jim Beard, Tom DeBusk, Carol Flieger, Wayne Hannah, Clyde Kessler, and Pat Polentz.
29. CALMES NECK. 39°07'N 77°54'W
Center: Castlemans Ferry Bridge, SR 7 and the Shenandoah River in Clarke County.
Compilers: Frances Endicott (Rt. 1, Box 448, Bluemont, VA 22012)
30. NORTHERN SHENANDOAH VALLEY. 39°03'N 78°10'W
Center: Jct. Crooked Run and Rt. 606 in Frederick County.
Compiler: Rob Simpson (1932 E. Refuge Church Rd, Stephens City, VA 22655)
31. SHENANDOAH NATIONAL PARK—LURAY. 38°35'N 78°28'W
Center: Hershberger Hill near Stanley in Page County.
Compiler: Marsha McCabe (3655 U. S. Hwy 211 East, Luray, VA 22835)
32. 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)
33. ROCKINGHAM COUNTY. 38°26'N 79°02'W
Center: Ottobine in Rockingham County.
Compiler: Max Carpenter (Rt. 1, Box 396, Dayton VA 22821)

34. HIGHLAND COUNTY. 38°21'N 79°37'W
Center : Near Vanderpool Gap in Highland County.
Compiler: Ned Brinkley (108 Cocke Hall, University of Virginia, Charlottesville 22903)
Observers: Ned Brinkley, Greg Justice, Ann Simpson, Robert C. Simpson.
35. AUGUSTA COUNTY. 38°12'N 78°59'W
Center: Jct. 780 and 781 in Augusta County.
Compiler: John Mehner (1036 Selma Blvd., Staunton, VA 24401)
36. WAYNESBORO. 37°59'N 78°57'W
Center: Sherando at Jct. 610 and 664 in Augusta County.
Compiler: Crista Cabe (400 Walnut Ave., #2, Waynesboro, VA 22980)
37. LEXINGTON. 37°51'N 79°29'W
Center: Big Spring Pond in Rockbridge County.
Compilers: Robert O. Paxton (460 Riverside Dr., #72, New York NY 10027) and George Tolley (Rt. 7, Box 25, Lexington, VA 24450)
38. PEAKS OF OTTER. 37°27'N 79°36'W
Center: Peaks of Otter Visitor Center in Bedford County.
Compiler: Barry Kinzie (PO Box 446, Troutville VA 24175)
Observers: Doris Gray, Charles Hansrote, Melva Hansrote, Eunice Hudgins, John Hudgins, Bill Hunley, Barry Kinzie, Katrina Knight, Kathy Summers, Kent Summers, and Liz Williams.
39. CLIFTON FORGE. 37°49'N 79°46'W
Center: Jct. 42 and 60 in Alleghany County.
Compiler: Allen LeHew (76 Allegheny, Clifton Forge VA 24422)
40. FINCASTLE. 37°31'N 79°52'W
Center: North of Fincastle near Jct. 220 and 679 in Botetourt County.
Compiler: Barry Kinzie (PO Box 446, Troutville VA 24175)
41. ROANOKE. 37°18'N 79°56'W
Center: Oakland Blvd. and Williamson Road in Roanoke.
Compiler: Michael Donahue (4814 Bandy Rd. SE, Apt. 4, Roanoke VA 24014)
Observers: Linda Cory, John Cutler, Mike Donahue, Tad Finnell, Doris Gray, Joyce Holt, Eunice Hudgins, John Hudgins, Bill Hunley, Barry Kinzie, Katrina Knight, Mike Purdy, Mike Smith, Kathy Summers, Kent Summers, Liz Williams.
42. BLACKSBURG. 37°14'N 80°25'W
Center: Jct. 685 and 657 near Linkous Store in Montgomery County.
Compiler: Clyde Kessler (PO Box 3612, Radford VA 24143)
Observers: Bill Akers, Jennifer Allen, Raymond Callahan, Harriett Cooper, Ken Cooper, Jim Craig, Jeff Crooke, Sue Daniels, Chris D'Orgeix, Shay Garriock, Bruce Grimes, Ben Handley, Charles Handley, Darelyn Handley, Tom Handley, Clyde Kessler, Memuna Khan, George Lacey, Suzie Leslie, Jim Lyons, Don Mackler, Tom Mathies, Warren Mays, Leigh McDougal, Jim Minick, Doug Pfeiffer, Pat Polentz, Mary Ratliff, Peggy Spiegel, Blair Spillman, Erik Stromberg, Paul Stromberg, Jerry Via, Tom Wieboldt, and Lauri Zuckerman.

43. CLAYTOR LAKE. 37°03'N 80°44'W
Center: Jct. 611 and Norfolk & Southern Railroad in Pulaski County.
Compiler: Clyde Kessler, (PO Box 3612, Radford VA 24143)
Observers: Mary Ann Bentley, Stan Bentley, Raymond Callahan, Justin Hite, Clyde Kessler, Suzie Leslie.
44. GILES COUNTY. 37°19'N 80°38' W
Center: Pembroke in Giles County.
Compiler: David A Brady (PO Box 70, Newport, VA 24128)
Observers: Bill Akers, David Brady, Tom Brobson, Rosemary Carlson, Lisa Linares, Bill Opengari, and Peggy Spiegel.
45. TAZEWELL. 37°08'N 81°30'W
Center: Fourway in Tazewell County.
Compiler: Sarah Cromer (Box 765, North Tazewell VA 24630)
46. GLADE SPRING. 36°47'N 81°47'W
Center: Jct. 750 and 609 in Glade Spring.
Compiler: Larry McDaniel (17 Crown Circle, Bristol, TN 37620)
47. BLACKFORD. 81°55'N 37°00'W
Center: Confluence of the Clinch and Little rivers in Russell County.
Compiler: Robert D. Riggs (Rt. 2, Box 27B, Lebanon, VA 24266)
48. BRISTOL. 36°36'N 82°07'W
Center: Jct. 647 and 654, east of Bristol TN in Washington County, VA.
Compiler: Richard P. Lewis (407 V. I. Ranch Road, Bristol, TN 37620)
Observers: Rob Biller, Ron Carico, Wallace Coffey, Jo Ann Detta, Jane Fleenor, Pat Galliher, Ken Hale, Ron Harrington, Anna Hess, Andy Jones, Lloyd Jones, Rick Knight, Tom Laughlin, Richard Lewis, Larry McDaniel, Judy Musick, Rick Phillips, Peter Range, Van Remsen, and Randy Smith.
49. BREAKS INTERSTATE PARK. 37°15'N 82°13'W
Center: 4.5 miles n.e. of Haysi in Buchanan County.
Compiler: Brian K. Compton (PO Box 147, Breaks, VA 24607)
50. WISE COUNTY. 36°57'N 82°39'W
Center: At Dorchester in Norton City.
Compiler: Richard Peake (PO Box 28, Wise VA 24293)

SHORT COMMUNICATIONS

Fall Migration Stopover of a Hooded Warbler. Relatively little is known about how species spend time during fall migration (Rappole 1995). In this note I report anecdotal evidence of a week-long stopover of a migratory Hooded Warbler (*Wilsonia citrina*).

On 10 October 1992, I first noted an adult male Hooded Warbler in my backyard in a suburban area of Chesterfield County, Virginia. The wooded yard has an understory of American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), and leaf litter, and an overstory of chestnut oak (*Quercus prinus*), red oak (*Q. rubra*), white oak (*Q. alba*), and tulip tree (*Liriodendron tulipifera*). This area is contiguous with an undeveloped, steeply-sloped strip of land along an intermittent tributary of Pocoshock Creek. The vegetation of the strip is similar to the yard, but the understory is much thicker with considerable downed wood. I observed the warbler almost entirely in the sloped strip of land.

The warbler was present at least through 17 October. I noted its presence nearly every day during this period by observing it foraging in the understory or by hearing the loud distinctive call note. It was not part of a mixed species group and appeared to be alone.

I am confident that it was the same individual during the week-long stay because I repeatedly observed an adult male in certain favored spots. Hooded Warblers are very rare migrants in my yard and I have never heard or seen one during spring migration in my eight years of residence.

Weather during the observation period was generally warm and sunny with a high of 86°F on 15 October and 80°F on 16 October. Wind direction varied between westerly and southerly. A cold front dropped the high to 59°F on the 18th with northerly winds (National Oceanic and Atmospheric Administration 1992).

A single observation such as this can only suggest possibilities. Perhaps it was aberrant behavior, but perhaps some passerine migrants require stopover habitat and time for building fat reserves during their southerly migration.

LITERATURE CITED

- NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION. 1992. Local climatological data: monthly summary. Richmond Intl. Airport.
- RAPPOLE, J. H. 1995. The ecology of migrant birds: A neotropical perspective. Smithsonian Institution Press. Washington, D. C.

Submitted by Paul Bedell, 10120 Silverleaf Terrace, Richmond, Virginia, 23236.

CORRECTIONS: RAVEN 68 (1)

Page 41: Vermilion Flycatcher (*Pyrocephalus rubinus*) seen at Woodbridge (Prince William Co.) was the second, rather than the first, state record. The first record was made by D. Schwab and T. Gwynn in January 1993 (Raven 65:89).

Page 55: 59 Eurasian Wigeons for the Bristol count should have been 59 American Wigeons.

Page 68: 69 White-eyed Vireos should have been 69 Yellow-rumped Warblers.

OBITUARY: CLAUDIA PHELPS WILDS, 1931-1997

HENRY T. ARMISTEAD

523 E. Durham St.

Philadelphia, Pennsylvania 19119-1225

Claudia Wilds died from cancer on June 8, 1997. Born in Hyannis, Massachusetts, she spent her early summers on Cape Cod. After a childhood in Aiken, South Carolina, she graduated from St. Timothy's School in Maryland, received a B.A. from Radcliffe College (English) and a M.Ed. from Harvard University. A resident of Washington, D.C., since 1958, her pre-ornithological career was in linguistics, specifically language training and testing at the Center for Applied Linguistics for State Department and other government personnel. In this capacity she exercised considerable power. Where language was a requirement, she could approve or deny foreign service appointments below the level of ambassador.

In the early 1970's Claudia began to devote herself entirely to ornithology. She was a volunteer and amateur in the finest sense, transcending the way in which these words are usually regarded. By any standard, she was, in fact, a professional: dedicated, steadfast, obdurate, and equally accomplished in the field or museum, behind a podium, or at the writing desk. Behind it all was her understated, highly intelligent, self-effacing, and gentle yet firm manner, her literate writing, and sense of humor with a galaxy of interests in addition to nature, ranging from the humanities to sports to politics.

Among her major contributions and accomplishments:

American Birding Association: Board of Directors: 1982-1996.

Birding: Associate Editor: 1989-1996.

Audubon Naturalist Society: Paul Bartsch Award.

Maryland Ornithological Society, Montgomery County chapter: President.

National Geographic Society Field Guide: First consultant: 1979-1980.

Finding Birds in the National Capital Area (1983; second edition 1992)

Smithsonian Institution Press: Author

National Audubon Society Master Guide to Birding (Knopf, 1983, v. 1-3):

Contributor.

Sometime in December 1971 I got a phone call from a woman I had not heard of who wanted to go on the Cape Charles Christmas count. I could not have guessed that she would eventually participate 13 times, or, more astounding, edit "my" count for 10 years. I remember one year we headed out of Oyster on the way to Smith Island. It was warm and dead calm, a day of unforgettable beauty.

Shorebirds were legion on the flats. On the glassy surface every grebe, loon, and duck was visible. At the end of the day Claudia said she would go on the count every year. The phenomenal growth of her interests and responsibilities prevented that but what she said showed the abiding fidelity of her coastal affinities, nurtured by childhood summers at Cape Cod and brought to fruition by her first birding epiphanies with Florida's showy wading birds and shorebirds on the Outer Banks.

With each year her involvement in ornithology grew. Soon enough, in addition to her impressive committee service, production of publications, research, presentations, field trips led, and offices held, Claudia's name appeared in the most exclusive forum of all: the high reputation and esteem of her colleagues - in the acknowledgment section of state-of-the-art books, as an authority you could send an undiagnosed photograph to, or as an expert ornithologists worldwide could turn to for help, and not always in the areas with which she is most closely identified: shorebirds and terns.

Claudia's regional service to field ornithology included:

Voice of the Naturalist: 1973-1985 full-time; 1985-1990 half-time.

Virginia Avian Records Committee: 1988-1990 and 1992-1994.

American Birds: Christmas Bird Count Editor for the Virginia-District of Columbia region: 1981-1990.

Virginia Society of Ornithology: Board of Directors: 1989-1992.

Raven: Assistant Editor: 1990-1995.

Virginia Breeding Bird Book Committee: 1990-1995.

Chincoteague Christmas Bird Count: Co-compiler: 1985-1986.

Washington, D. C., Christmas Bird Count: Compiler: 1975-1980.

Maryland Ornithological Society Records Committee: 1983-1994
(Chair, 1990-1994).

Audubon Naturalist Society: various offices held; dozens of articles published in Audubon Naturalist News, including 21 concerning identification.

Most extraordinary to me was Claudia's tenacity and dedication in two areas. First, her long service (1973-1990) as the voice for our regional hotline, "The Voice of the Naturalist." Unless you have done something like this you cannot imagine the work that goes into preparing literate, accurate, and informative weekly broadcasts, exercising judgment on what to include, winnowing suspect records, and returning phone calls or initiating them for clarification prior to recording. Second, from 1974 to 1987, Claudia conducted extensive surveys on two consecutive days of shorebirds at Chincoteague National Wildlife Refuge on the average of once every 10 days or so from late-March through early-November. That's quite a run. There are days of high humidity and temperatures in the 90's, times when you don't feel very well, or perhaps on the long drive down from Washington there is car trouble, or the motel has mishandled your reservation. But you keep going and get it done anyway. All of this data Claudia analyzed, extending our knowledge of shorebird habitat preference and spatio-temporal occurrence, and influencing refuge management policies. Plans are being made to publish this as a monograph.

In the 1980's rarities reports began to be looked at critically for the first time. It took courage then to reject records which were poorly documented (or not documented at all). Claudia Wilds, Rick Blom, Bob Ringler, and a few others were in the vanguard of what was essentially a period of reform. They had the guts to establish new standards. If these standards were met, the vast majority of records found acceptable will still stand a century from now. Most of the rest are suspect or at best, an unknown quantity.

During this time, many were put off or even alienated by these new standards. At times, I was. Many still do not accept this process, dismissing it as the province of ornithologically-correct "rarities police." But if our sightings are to have full significance we must document what we see. Claudia was one of the leaders of this revolution in birding responsibility. Rarities and strays often manifest the advancing edge of environmental problems and change: great droughts, temperature or other climactic changes, new patterns of land use or abuse, shifts of prey items such as fish, disturbed population dynamics, habitat degradation or destruction, new chemicals, and other phenomena we may not yet understand and which cause birds to wander. Aside from this utilitarian viewpoint, rarities are inherently interesting and should be accurately chronicled for their own sake.

It is ironic that obituaries are often the most vital component of journals. To read of someone's life is affirming. There needs to be more writing about naturalists as people. How can one do justice to a life in a couple of pages? Obituaries often say nothing about a person's human side.

I remember Claudia's gentle, understated manner, wry humor, and tenacity. At one meeting when the Maryland rarities committee was still in its formative stages and Rick Blom was holding forth at some length, expansive and stimulating, thermos of coffee at hand, Claudia looked over at me, smiled and winked as if to say: "There are some real characters in this business." She was a cultured, sophisticated person. On the way down to some coastal point I wondered what was on the radio. She identified it right away as Brahms First Piano Concerto. Sensible, with an analytical mind, I recall her telling me exactly what was in the pepperoni and other cold cuts I always take with me for snacks. She was the first to tell me about the Nova series on public television. Claudia enjoyed going to lectures and other events at universities near her Georgetown home. She introduced me to the writings of John Buchan. Sometimes if I used a word or phrase incorrectly I would come away from a field trip the wiser.

For several years Claudia had been working intensely on a monograph on terns of the world. This involved extensive worldwide travel, visits to museums, correspondence, and coordinating with an artist and a multitude of peers and colleagues. The book was about two-thirds completed. It is gratifying to hear that plans are underway for it to be finished by Joseph A. DiCostanzo of the American Museum of Natural History.

Claudia's special love was Chincoteague. She almost moved there but decided it was better to remain in Washington and be at the center of things. Her ashes were scattered at Chincoteague. The next time you are there, or see a shorebird or tern anywhere, remember this extraordinary person who so enriched our appreciation of what we hold dear and who continues to through the legacy of her writings, her influence, her example, and her low-key, yet very effective style.

Ave atque vale.

I extend my appreciation to the following people for providing valuable information and insights: Phil Davis, Dick Homan, Teta Kain, Paul Lehman, Lola Oberman, and Erika Wilson.

On some fond breast the parting soul relies,
Some pious drops the closing eye requires;
Ev'n from the tomb the voice of Nature cries,
Ev'n in our ashes live their wonted fires.
-Thomas Gray

Selected writings of Claudia P. Wilds:

1994. The ABA from hatching to fledging. *Birding* 26:34-37.
1994. WILD, C. P. AND D. CZAPLAK. Yellow-legged Gulls (*Larus cachinnans*) in North America. *Wilson Bull.* 106:344-356.
1993. Identification and ageing of Forster's and Common Terns. *Birding* 25:94-108.
1992. Finding birds in the national capital area. Second edition. Smithsonian Institution Press.
1991. The status and identification of Western Sandpipers in Virginia in spring migration. *Raven* 62:3-6.
1989. Terminology of plumage and molt. *Birding* 21:148-154.
1986. Black Rails and Tree Swallows. *Birding* 18:266.
1986. Marsh Wrens vs. Sedge Wrens. *Birding* 18:76.
1985. North American nighthawks. *Birding* 17:212-213.
1985. Unraveling the mysteries of brown swallows. *Birding* 17:209-211.
1985. Oversimplification of the field guides. *Birding* 17:111.
1985. Sage Thrasher at Chincoteague National Wildlife Refuge. *Raven* 56:44-45.
1985. Elegant Tern at Chincoteague National Wildlife Refuge. *Raven* 56:38-40.
1984. Snowy Egret/Little Blue Heron/Reddish Egret (white phase). *Birding* 16:15.

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1983. WILDS, C. P. AND M. NEWLON. The identification of dowitchers. *Birding* 15:151-166.
1982. Separating the yellowlegs. *Birding* 14:172-178.
1978. Mountain Plover at Chincoteague. *Raven* 49:34-35.

BOOK REVIEW

DAVID W. JOHNSTON
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LIFE IN THE CHESAPEAKE BAY. 1997. Alice Jane Lippson and Robert L. Lippson. Second edition. Johns Hopkins Press, 2715 N. Charles St., Baltimore MD 21218. \$19.95. 294 pp.

With the subtitle, "An Illustrated Guide to the Fishes, Invertebrates, Plants, Birds, and Other Animals of Bays and Inlets from Cape Cod to Cape Hatteras," this edition is geographically-expanded over the first edition in 1984, yet maintains the unique ecological zone approach. The book documents and illustrates many of the flora and fauna found on sandy beaches, intertidal flats, jetties, and in seagrass meadows, wetlands, and deeper open waters.

Each ecological zone (chapter) is profusely and accurately illustrated by A. J. Lippson, an accomplished biological illustrator, and is accompanied by a readable text on life history traits of much of the Bay's flora and fauna. For example, "Birds of the Shallow Waters" begins with swans, geese and ducks and easily carries the reader through different foraging techniques of herons, egrets, and ibises on to descriptions of the two yellowlegs' life styles. Elsewhere, one learns about and sees differences among species of gulls, terns, scoters, and other waterfowl, with emphases on different foods taken in different ways. I marvel at the attention to detail provided in the black-and-white illustrations. On the one hand, Ms. Lippson portrays for identification purposes the differences among several crabs, burrowing worms, and seaweeds. On the other, she depicts in one drawing the complex community of coexisting, interdependent animals on an oyster bar - mussels, sea squirts, anemones, barnacles, worms, and crabs. Such graphic illustrations are valuable teaching tools for the student of estuarine life.

I am impressed! This book is a "must" for people living along the Chesapeake Bay. Interdependencies are at the heart of ecology. Understanding them leads to a greater appreciation of biodiversity and the all-too-forgotten conservation ethic of preserving natural resources.

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LOCAL CHAPTERS OF THE VSO

The list of local chapters, compiled by the VSO Membership Committee (Larry Lynch, Chairman), was updated in August 1997. The number in parentheses after the chapter name is the approximate number of members in that chapter.

1. Augusta Bird Club (141)
2. Bristol Bird Club (40)
3. Cape Henry Bird Club (750)
4. Clinch Valley Bird Club (20)
5. Cumberland Nature Club (10)
6. Eastern Shore Bird Club (45)
7. Fairfax Audubon Society (5000)
8. Foothills Bird Club, Martinsville (25)
9. Hampton Roads Bird Club (75)
10. Lynchburg Bird Club (200)
11. Margaret H. Watson Bird Club (50)
12. Marion Bird Club (15)
13. Monticello Bird Club (170)
14. New River Valley Bird Club (50)
15. Northern Neck of Virginia Audubon Society (356)
16. Northern Shenandoah Valley Audubon Society (500)
17. Northern Virginia Chapter, VSO (700)
18. Richmond Audubon Society (1350)
19. Roanoke Valley Bird Club (150)
20. Rockbridge Bird Club (30)
21. Rockingham Bird Club (70)
22. Virginia Beach Chapter, National Audubon Society (650)
23. Westmoreland Bird Club (69)
24. Williamsburg Bird Club (120)

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INFORMATION FOR CONTRIBUTORS

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