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Cover: Great Horned Owl raised by George Smith. Photo by Terry Willis.



HABITAT PREFERENCE OF CAVITY NESTING BIRDS AT CAREY RUN SANCTUARY IN MARYLAND

WILLIAM J. DEVLIN AND GALE R. WILLNER

Artificial nest boxes have successfully provided bluebirds and other cavity nesters with additional sites for raising young. Literature is available on methods of construction and placement of boxes for the purpose of establishing bluebird trails (Zeleny 1976). The objective of this study was to determine the habitat preferences of three cavity nesters, the Eastern Bluebird (*Sialia sialis*), Tree Swallow (*Iridoprocne bicolor*), and House Wren (*Troglodytes aedon*), all of which use artificial nest boxes at Carey Run. This sanctuary is located in western Maryland in Garrett County and is owned by M.O.S. It consists of about 165 acres of woods, old fields, abandoned orchards, two streams, and a pond.

Nest boxes were established and a trail has been maintained since the 1960's. Boxes are used by field mice during the winter for protection against the elements; in spring and summer cavity nesters use them for nesting purposes. From April to August, these boxes are checked regularly for number of eggs laid, and number of young produced and fledged. Prior to the nesting season in 1979, the authors, with the aid of Dr. Ed and Donna Gates, recorded the dimensions and orientation of each nest box, and measured the following habitat variables: the distances of small, medium, and large perches, height of grass around the box, and species of surrounding vegetation. This information was then analyzed by discriminant analysis using the computer facilities at the Appalachian Environmental Laboratory in Frostburg, Maryland.

We found that the relation of a box to various tree or perch sizes was important to the species selecting the nest box. At Carey Run, the bluebirds nested in boxes an average distance of 6.3 m from small shrubs or low perches (fence wires, stumps). House Wrens nested closer to small shrubs, 3.4 m, and Tree Swallows nested the farthest, 14.1 m. Bluebirds used boxes an average of 24.4 m from tall trees while wrens nested closer, 14.8 m. Tree Swallows nested the farthest, 33.8 m. Grass height in front of bluebird nests was the shortest, averaging 0.59m in April; intermediate at wren nests, 0.85 m; and tallest at Tree Swallow nests, 1.01 m. Bluebirds used nest boxes with openings facing northeast to south (51° to 195°), while wrens used boxes facing southeast to southwest (134° to 198°), and swallows nested in boxes facing south to west-northwest (175° to 285°). Other measurements are tabulated in Table 1 and are illustrated in Figure 1.

We compared our findings at Carey Run to another trail that is maintained near Beltsville, Maryland. We found that bluebirds at the Beltsville Agricultural Research Center selected nest sites in locations similar to that found at Carey Run.

Table 1. Comparison of habitat variables recorded at Carey Run Sanctuary for 3 cavity nesters using artificial nest boxes. Measurements are in meters and indicate mean values.

Measurement variables	Eastern Bluebird	House Wren	Tree Swallow
Distance to nearest small perch anywhere (shrubs or fence wires)	6.3 m	3.4 m	14.1 m
Distance to nearest medium perch anywhere (saplings or posts)	15.5 m	8.6 m	31.7 m
Distance to nearest large perch in front of box (trees or poles)	31.8 m	13.2 m	36.8 m
Distance from the front of the box to the back (inside)	10.4 cm	10.3 cm	10.6 cm
Height of medium perch in front of box	3.3 m	4.7 m	3.7 m
Distance to nearest large perch anywhere	24.4 m	14.8 m	33.8 m
Diameter of nearest large perch in front of box	24.6 cm	23.3 cm	60.7 cm
Height of grasses two meters in front of box	0.59 m	0.85 m	1.01 m
Range of opening compass orientations	51-195°	134-198°	175-285°
Number of nests	11	25	9

The main competitor at Beltsville was the House Sparrow (*Passer domesticus*) and to a lesser degree the Tufted Titmouse (*Parus bicolor*) and Carolina Chickadee (*P. carolinensis*). From our data we found that the bluebird and the House Sparrow had overlapping habitat requirements which explains the high use of bluebird nest boxes by this competitor. See Willner et al. (*Am. Midl. Nat.*, in press) for more details.

We are grateful to Dr. L. Zeleny for providing nest box use at Beltsville Agricultural Research Center. F.P. Younger prepared the figure. Financial support for this project was provided by the Appalachian Environmental Laboratory, the Maryland Ornithological Society, the E.A. Bergstrom Memorial Research Fund of the Northeastern Bird-banding Association, and a Grant-in-Aid of Research from Sigma Xi. We appreciate Dr. Ed Gates for reviewing this article.

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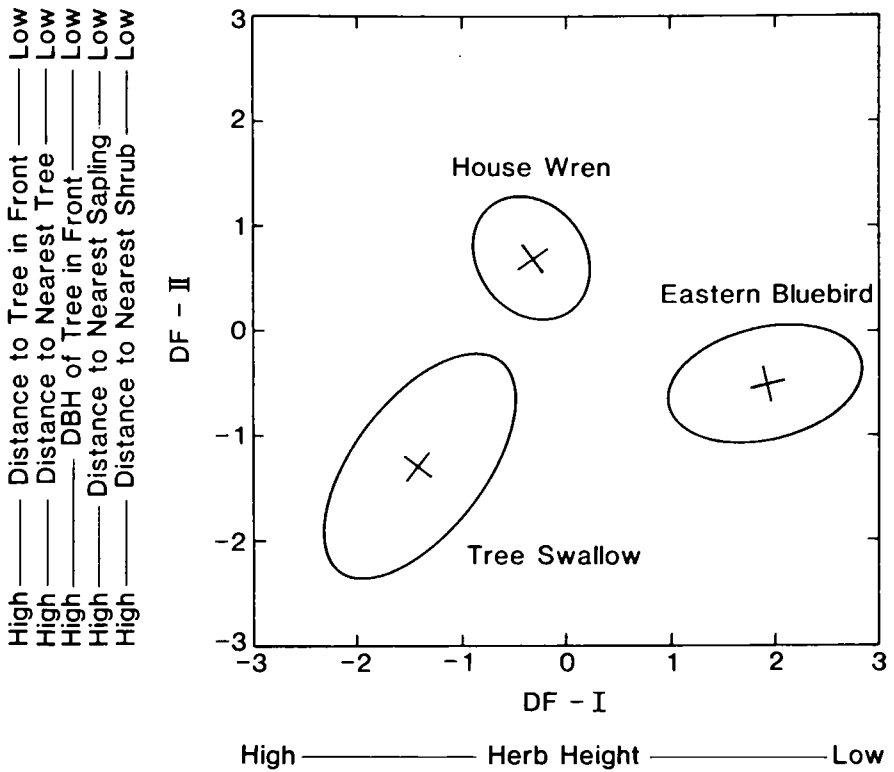


Figure 1. Comparison of habitat requirements of the Eastern Bluebird, Tree Swallow and House Wren in the discriminant space at Carey Run.

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BEHAVIOR OF HAND-REARED GREAT HORNED OWLS

BERTHA CORY

"Here, owl! Hi there, owl! Come on, Hoot," George Smith called to his friend in the woods surrounding his home on an inlet off the east fork of Langford Bay near Chestertown, Maryland. Suddenly with a flurry of wings, a Great Horned Owl (*Bubo virginianus*) settled onto a branch a few feet above George's head. His huge eyes fixed on George, who continued to talk to him. Clearly, the bird was attending to every word, turning his head first to one side and then the other, soon talking back in short screeches. This unorthodox conversation went on for more than twenty minutes, with Hoot flitting occasionally from one tree to another, but never far away. At one point he rested on George's arm, still staring without a waver. Finally George brought out the gift he had been saving, a large fish head, and placed it on the cab of his pickup truck. Hoot was fascinated and, with only a little coaxing, zoomed down to the truck. Tarrying briefly, he claimed his prize and took off for the trees to dine in private.

This scene in April 1981 had its origins a year before in a great storm of March 1980. A Mrs. James Wilson of Rock Hall, Maryland, discovered a baby owl under a pine tree, bedraggled but alive. Strong winds apparently had blown him out of his nest. A week earlier she had found a dead young owl beneath a nest in the same tree. Her concern led her, through a number of telephone calls, to George Smith, who readily accepted the orphan.

A large cardboard box in George's living room became home for the baby. With meals of tidbits of meat or fish, hand fed by George or his son Jimmy, the owl thrived and grew. As the weather warmed, his box was moved to the porch, and on sunny days there were outings to the yard. George identified the bird as a Great Horned Owl and named him "Hoot." Official status was given to Hoot when he was banded at the end of March by Dorothy Mendinhall at Damsite near Tolchester, Maryland.

George's twelve cats and three dogs accepted Hoot as just one more member of the household. From time to time they nuzzled and sniffed him while Hoot accepted their attentions as though it was perfectly natural for a bird of prey to have friends among small mammals. He grew up believing that this was his "family."

George was queried about Hoot's behavior: "When he comes to you, what does he usually do—sit on your head, or your hand, or what?" George replied, "Oh no. He lights on a limb near me, or on the ground, or walks up to my feet. Then I pat him, or scratch his back. He likes that. Sometimes he nibbles on my finger but never so as to hurt me. Once in a while, he takes my finger in his claws, and that is different. His talons are like sharp needles, and I feel that. A few times I have put him on my shoulder, but he has never wanted to stay there. He would rather light on my arm. Sometimes I can shake hands with him."

When Hoot arrived in March, he was probably around six weeks old, an estimate based on his size (about one foot tall) and the development of his feathers. By April he was walking around the lawn and trying to hop up on the picnic table. His first attempts to fly were clumsy failures as he would flop down and fall over himself. George tried to help him, holding his feet as he fluttered his wings. The first of May was eventful—Hoot flew for the first time, all of fifteen feet before plopping down. But each day this awkwardness gradually gave way to assurance, and within two weeks he flew with grace and ease. After his first true flights he never came back inside the house, but still, during June and July, stayed close for daily hand-feeding by George. His diet included cut-up chunks of rabbit, squirrel, fish, mouse, or waterfowl. He hadn't yet learned to hunt. By August he started to disappear for several days at a time, and, as time passed, his absences stretched out.

One day in September George came out of the house to find Hoot with a new kitten in his talons. When Hoot saw George, he flew off with the kitten. This was probably his first recorded "kill." After this time, George noticed that new kittens were sometimes missing and that a group of five ducks dwindled to three, but Hoot was never known to attack his original "family."

In October Hoot brought some friends around, all Great Horned Owls. Among them, one was judged by George to be a girl friend, because she was larger and had a higher pitched voice. When Hoot was on the ground, he frequently looked up at her on her tree branch.

During the extreme cold in January 1981 Hoot showed up more regularly, to sit on George's arm and to get his choice hand-outs. In February he would come and go, sometimes hungry and sometimes not. Now, more than a year old, he seems to return as much to visit his friend George and his "family" as to enjoy the free meals.

There is no question but that this wild bird of prey is behaving in a most atypical manner toward a human being, twelve cats and three dogs. He displays none of the aggression toward any of this group that is normal for him with other animals, and they show no fear of him. One of the cats even seems to seek his company. When she sees him on a tree branch, she sometimes climbs up and sits next to him, as close as a foot away. The owl accepts son Jimmy, and he unquestionably responds to George, by coming close to him, by listening to him, by making screeching sounds as though communicating.



Figure 1. George Smith with Great Horned Owl. Photo by Terry Willis.

Bird literature suggests "imprinting" as the basis for Hoot's relationship to his non-traditional family. "Imprinting" is the indelible emotional bond of the young to the first moving objects experienced, usually the parents. Scientists who have studied bird learning (Hess, Klopfer, Lorenz) have written at great length about this concept, formulated as a result of observations of the primary socialization process in newly hatched birds. Food imprinting and environmental imprinting have also been experimentally observed. As convenient as it might be to describe Hoot's behavior with his human/animal family as an example of imprinting, this hypothesis must be rejected because of the age at which Hoot was found. Imprinting occurs within a few hours, or at most, days of birth. Hoot must have been five or six weeks old when he was found. A more traditional concept, that of association learning, is the most likely explanation. Reinforcement of this learning occurs constantly on his return visits to the environment where he grew up, where he is fed and where he continues to interact with George and the original house animals.

Early in May 1981 another young Great Horned Owl was found near Fairlee, outside Chestertown. It was lying on its side in some weeds at the edge of a field. Brought to the veterinarian, Dr. Robert Forney, the young bird was extremely weak but holding his own. Dr. Forney contacted George Smith, and soon the owl was living in a box on George's porch. As before, the house cats and dogs accepted the newcomer as a matter of course. With George's hand-feeding, he regained his strength and began hopping around. George soon had a name for him, "Clacker." As he was more fully feathered than Hoot had been on arrival and slightly larger, his age was judged to be two to three months. As an older bird, Clacker was wilder than Hoot and not quite as responsive. But he still liked to be scratched on his back and petted.

By the first of June Clacker started trips outdoors and went through trial-and-error attempts to fly. By the 24th of June, he flew 70 yards to a neighboring dock, where George had to rescue him with a crab net. He was returned to the porch but protested by clawing holes in the net. Hoot eventually discovered Clacker and flew in close to him on the lawn for lengthy "owl conversations." By July 5 Clacker took off to the woods nearby, probably hoping to share Hoot's choice hunting ground.

Hoot and Clacker were not the first owls to be adopted into George Smith's household. A few years ago a very young pair of owls was found and brought home by Jimmy. These were still white and probably no more than ten days old. One was killed, but the other grew up under George's careful attentions. George recalls one time when he fed the owl some hamburger. One of the cats went up to him and licked the remains off his beak. However, unlike Hoot, this owl flew off and never returned to George for hand-outs, although he did stay close by in the woods for quite a long time.

"I've been used to wild creatures all my life," says George Smith, befriender of Great Horned Owls. A resident of Kent County, Maryland, since 1941, except for an absence during World War II, he has had abundant opportunity to follow his favorite sport, hunting—usually for deer and for geese. His summers are occupied with gardening. Since 1976, when he retired as a Master Mariner on freighters that travelled world-wide, he has been able to spend full time enjoying these

hobbies. He interrupts them only to assist on the Committee Boat at St. Michaels for the log canoe races, in which Jimmy competes. But over the years a major interest continues to be rescuing wounded birds and animals. He admits success in raising and rehabilitating rabbits, fox, raccoons, ducks, and Canada geese; it has only been the 'possums that haven't worked out too well.

Among all of these beneficiaries of George's care, he still has a special fondness for his Great Horned Owls. He talks to Hoot almost daily and sometimes to Clacker. It is suspected that he looks forward to raising the next feathered orphan to show up in Kent County.

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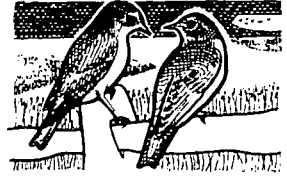
A ROCK DOVE BATHING IN DEEP WATER

WILLIAM L. MURPHY

At noon on Saturday, June 13, 1981, Ellen G. Fader and I were preparing to sail a small boat out into Herring Bay from a dock in Deale, Anne Arundel County, Maryland. Our attention was drawn to a Rock Dove (*Columba livia*) that was circling low near the boat. The dove glided to within a foot or so of the surface of the water, which at that point is about six feet deep, then flapped its wings strongly and settled on the surface. It dipped its head under water several times and splashed the water backward over its wings and body. The dove appeared to be very buoyant, like a small gull. It remained there for about 30 seconds, not swimming at all, but simply floating. As our boat cleared the dock and headed toward the dove, it rose from the surface with a few powerful wingbeats and flew up and away.

I have never seen or heard of any species of dove resting on the surface of a body of water, and I was astounded to witness this event.

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THE SEASON

FALL MIGRATION, AUG. 1-NOV. 30, 1981

ROBERT F. RINGLER

It was a very cool fall season with average temperatures remaining below normal in all four months: 1.8° in August, 1.2° in September, 3.5° in October, and 0.3° in November. The overall season was deficient in precipitation with -1.6" in August, +0.1" in September, +0.25" in October, and -2.5" in November.

Early snowfall in the mountains was negligible and the ground was clear going into the winter. Reservoir levels remained low, altering the habitat around the periphery of the lakes and producing some interesting results in the birds attracted there, particularly at Triadelphia.

By far the most bizarre bird of the season was the adult Brown Pelican that apparently spent part of September and October on Liberty Reservoir. Much to the chagrin of local birders our first knowledge of the bird's presence came by way of an article in the Baltimore *Evening Sun* of Oct. 13, complete with photograph. It frequented the area of the lake around the Nicodemus Road Bridge, a very narrow though deep section of the reservoir. With the level of the lake down 10-15 feet, large areas of shoreline were exposed, providing points of land where the bird preferred to rest if undisturbed. Otherwise it could be found drifting lazily below the bridge waiting for a handout from the fishermen above who crowd the bridge and shore on weekends. When the fishermen would catch an undersize crappie they would smack it on the pavement and toss it over to the pelican which they dubbed Freddie as they became accustomed to its presence. Occasionally the bird would fly under the bridge from one side to the other. The lowered level of the lake made this an easy passage. In flight it could be seen that the pelican was in wing molt.

The fishermen stated that the bird had been present for several weeks; it probably appeared some time in September, possibly in association with a storm of tropical origin. The source of the bird was immediately questioned. The Baltimore County Humane Society, which is located less than a mile away, had no knowledge of the bird. It is not known to have escaped from any zoo, according to officials at the Baltimore Zoo. A film of Freddie and some of the spectators was shown on local television. The pelican was last seen on Sunday, Oct. 18 after delighting many observers in the previous five days and giving the fishermen something else to talk about rather than why the fish weren't biting.

In the migration tables for this season several counties have been combined. Under the Western Maryland column a "g" stands for Garrett County, a "w" for

Table 1. Fall Arrival Dates, 1981

Species	10-Yr. Median	1981 Median	W. Md.	Fr/Ca	Balt.	Ha/Ce	Howa.	Mont.	Pr. G.	A. A.	So. Md.	K/QA	Caro.	Talb.	Dorc.	LES
Common Loon	10/6	10/11	10/20g	0	11/14	0	9/24	0	10/25	9/6	10/3s	10/25	0	9/13	0	10/11
Horned Grebe	11/5	11/8	—	11/8c	0	0	10/2	11/14	0	—	0	0	—	—	—	—
Pied-billed Grebe	9/22	9/24	9/20	9/24	9/27	—	8/18	—	9/25	—	9/19c	10/26	—	0	0	—
Double-crested Cormorant	9/4	8/25	0	0	8/1	0	—	0	—	—	9/9s	8/27	0	8/12	9/9	8/24
Little Blue Heron	7/31	8/12	0	7/23	0	0	8/21	0	8/22	7/21	—	0	0	8/12	—	—
Cattle Egret	8/12	8/13	0	0	0	8/30h	0	—	8/22	0	8/5	7/29	0	—	—	—
Great Egret	8/1	7/30	0	6/27	7/18	0	8/2	8/2	—	7/19	8/5	7/30	0	—	—	—
Snowy Egret	7/29	8/1	—	8/30c	8/1	0	8/31	—	—	7/19	8/1	7/1	0	7/27	—	—
Whistling Swan	11/10	11/9	12/7g	0	—	—	10/25	10/29	11/25	10/28	11/11c	—	11/11	10/29	11/9	—
Canada Goose	9/23	9/21	8/30	9/23	10/11	9/26h	9/6	9/27	9/21	9/23	9/23s	8/22	8/30	9/19	8/28	—
Snow Goose	10/10	10/18	10/24	0	0	10/2	11/2	0	0	11/8	9/23s	10/5	11/10	—	10/12	—
Gadwall	10/6	10/19	10/7	11/15c	—	0	10/19	—	10/4	11/21	—	10/1	0	0	11/9	—
Common Pintail	10/2	10/3	0	0	0	11/22	9/21	—	11/1	0	10/10	9/2	—	10/3	9/5	—
Green-winged Teal	9/25	10/8	10/24	10/9	11/14	11/16h	9/10	—	9/29	—	10/4c	0	10/7	10/10	9/5	—
Blue-winged Teal	8/29	8/27	—	8/8	9/6	0	9/10	0	—	0	0	8/8	0	0	8/18	9/5
American Wigeon	9/29	10/1	10/7	10/16	9/27	0	9/10	0	10/4	11/21	—	10/1	0	9/19	10/1	—
Northern Shoveler	10/16	10/8	0	—	0	0	10/9	0	10/8	—	0	0	0	11/28	9/21	0
Redhead	11/6	11/15	0	11/15c	11/15	—	0	0	12/6	0	11/6	11/14	—	—	12/13	—
Ring-necked Duck	10/29	10/25	10/26	11/8c	10/24	11/5h	10/21	11/11	10/8	0	11/25	0	10/9	10/12	0	—
Canvasback	11/4	11/12	0	—	10/25	11/21h	11/1	—	11/1	11/15	11/11	—	11/20	—	—	11/14
Greater Scaup	11/6	—	0	0	—	—	0	—	0	11/21	11/11	—	0	—	12/13	—
Lesser Scaup	10/24	10/19	10/19g	11/8c	10/12	10/19h	10/4	—	10/17	11/15	10/12	10/27	10/9	11/28	—	10/19s
Common Goldeneye	11/6	11/14	—	11/15c	11/14	—	12/2	—	11/1	11/15	11/7	—	—	—	—	—
Rufflehead	11/3	11/1	10/24	11/8c	11/7	—	10/21	—	10/13	11/7	11/6	10/27	11/20	10/28	—	—
Oldsquaw	11/7	11/8	0	11/8c	11/11	—	10/3	0	0	11/7	11/6c	11/14	0	—	—	11/11
White-winged Scoter	10/18	11/7	0	0	0	11/22	0	0	0	11/7	9/23s	11/14	0	10/4	—	—
Surf Scoter	10/20	10/17	0	0	10/17	0	0	0	0	11/15	10/3s	11/14	0	—	0	10/11
Black Scoter	10/16	10/24	0	0	0	0	0	0	0	11/15	10/3s	11/14	0	—	0	9/3
Ruddy Duck	10/16	10/12	10/10	10/16	10/12	—	9/24	—	10/4	11/7	11/6	9/7	10/13	10/12	—	—
Hooded Merganser	11/12	11/19	11/25g	11/8c	11/19	11/22	11/3	—	10/25	—	0	—	—	0	12/13	—
Common Merganser	11/21	11/19	—	—	11/19	11/22	12/12	—	0	0	11/11	—	11/10	0	—	0
Red-breasted Merganser	11/6	11/12	0	0	—	0	0	0	11/15	0	11/11	—	0	—	—	11/12
Broad-winged Hawk	9/9	8/24	8/17w	7/30	—	8/2h	8/25	9/11	—	9/9	8/23	9/1	—	—	—	0
Rough-legged Hawk	11/22	11/21	10/31w	11/28	—	0	9/29	11/28	12/1	0	0	12/20	12/19	10/19	11/14	10/23s
Northern Harrier	9/13	9/5	8/21w	8/29	9/10	9/21	10/9	9/5	—	8/17	—	8/29q	9/28	9/19	8/17	—
Osprey	9/1	8/24	8/25w	8/23	8/22	9/13	8/4	9/5	—	9/9	—	—	—	—	8/3	—
Merlin	9/21	10/2	9/18	10/7	0	9/21	0	10/5	10/2	9/9	10/10	0	11/5	10/3	0	9/20
American Kestrel	8/31	8/14	8/24w	—	7/23	—	—	8/20	—	9/9	—	8/12	—	7/17	8/17	7/31w
American Coot	10/18	10/9	9/20	10/10	9/27	11/22	10/9	0	10/8	—	11/16	0	10/21	—	0	—
Semipalmated Plover	8/1	8/1	7/27	7/30	8/8	0	8/30	0	0	7/27	—	7/23	0	8/29	8/17	8/1
Lesser Golden Plover	9/15	9/20	0	0	9/27	0	0	9/20	0	9/9	10/10	—	0	9/4	0	—
Black-bellied Plover	8/28	8/29	0	0	9/27	0	0	0	0	7/27	0	0	0	8/29	9/21	8/1s

Table 1 (cont.) Fall Arrival Dates, 1981

Species	10-Yr. Median	1981 Median	W. Md.	Fr/Ca	Balt.	Ha/Ce	Howa.	Mont.	Pr. G.	A. A.	So. Md.	K/QA	Caro.	Talb.	Dorc.	LES
Greater Yellowlegs	7/31	7/20	0	7/13	7/19	0	8/14	-	-	0	-	7/21	7/24	7/19	8/17	7/5
Lesser Yellowlegs	7/28	7/19	8/14	6/28	7/19	0	7/29	0	-	7/1	9/26	7/7	0	7/19	8/31	6/26
Solitary Sandpiper	7/26	7/26	7/29	8/1	7/4	0	7/24	8/1	-	0	-	7/24	0	0	-	0
Spotted Sandpiper	8/6	7/17	7/4g	-	8/13	0	8/20	8/9	-	7/15	-	7/12	0	7/19	-	7/6
Ruddy Turnstone	8/1	8/22	0	0	8/22	0	0	0	0	0	0	0	0	-	8/31	8/2s
Common Snipe	9/17	9/7	0	8/23	8/19	0	9/16	0	9/25	0	0	0	-	8/29	9/24	-
Short-billed Dowitcher	8/5	7/19	0	0	7/19	0	0	0	0	7/1	0	0	0	8/29	9/5	7/5
Sanderling	8/18	7/26	0	0	0	0	0	0	0	7/19	11/8	0	0	0	0	7/26
Semipalmated Sandpiper	7/26	7/25	8/7	7/25	7/25	0	8/30	0	0	7/21	-	7/22	0	7/19	8/17	7/18
Western Sandpiper	8/8	8/1	0	8/1	7/25	0	0	0	0	7/19	-	0	0	9/18	9/5	-
Least Sandpiper	7/21	7/9	7/4g	6/28	7/4	0	-	-	-	7/19	0	7/15	0	7/19	-	0
Pectoral Sandpiper	8/2	7/22	7/19	7/23	7/19	0	-	0	-	7/27	0	7/22	0	7/19	9/5	8/10s
Dunlin	10/8	10/7	10/28g	0	8/1	0	10/7	0	0	0	0	11/15	0	7/19	-	-
Bonaparte's Gull	11/4	11/13	0	11/21	11/14	0	0	0	11/1	-	10/31	0	-	11/28	11/13	-
Forster's Tern	7/22	7/26	0	0	7/26	-	0	0	0	7/21	-	0	0	8/29	-	-
Common Tern	8/21	8/22	9/7	0	8/22	0	0	0	0	8/22	7/29	0	-	-	-	-
Caspian Tern	8/7	8/22	0	0	7/26	-	0	0	9/1	8/22	9/19	0	0	7/28	9/5	7/19
Saw-whet Owl	11/4	10/28	11/10g	0	0	0	0	10/17	10/12	0	0	11/8	0	0	0	-
Common Nighthawk	8/22	8/22	8/24	8/9	7/26	8/22	8/9	8/23	8/21	-	8/24c	9/5	8/26	-	-	-
Common Flicker	9/16	9/20	-	-	9/13	-	-	9/20	-	-	-	9/21	-	9/26	-	-
Red-headed Woodpecker	9/21	9/24	-	-	9/27	-	9/24	9/19	-	9/29	-	10/27	0	8/31	9/5	-
Yellow-bellied Sapsucker	9/28	10/1	10/16g	9/25	9/25	9/27h	10/9	10/8	10/1	-	9/19c	9/23	10/24	10/4	-	-
Eastern Phoebe	9/26	9/19	8/30g	-	9/13	9/9h	-	9/2	9/25	9/26	-	9/29	-	9/26	-	-
Yellow-bellied Flycatcher	8/31	8/18	8/30g	0	8/29	-	-	8/18	8/16	8/15	-	8/19	0	0	0	-
Traill's Flycatcher	9/1	8/16	0	-	-	-	-	8/19	8/13	8/8	0	0	0	8/31	0	0
Least Flycatcher	8/29	8/22	0	0	8/18	8/19	0	8/26	8/13	8/6	8/29	8/30	0	8/30	0	0
Olive-sided Flycatcher	8/27	8/30	0	0	0	8/26h	0	9/5	0	0	8/30	0	0	0	0	0
Tree Swallow	8/10	8/3	-	8/23	7/18	7/24h	8/21	8/9	-	7/29	8/5	8/20	-	8/2	8/3	8/1 + s
Bank Swallow	7/24	7/24	-	8/1	7/16	7/23h	-	7/26	-	7/15	8/1	8/21	0	7/3	-	-
White-breasted Nuthatch	9/29	9/18	7/30w	-	9/12	-	-	9/12	9/26	-	9/6	-	10/2	-	9/18	-
Red-breasted Nuthatch	9/12	9/10	9/10	8/29c	9/10	10/2	9/13	9/11	9/10	9/10	9/13c	8/22	9/13	9/9	-	8/22
Brown Creeper	10/2	10/3	-	-	10/8	9/30	10/11	10/11	9/26	10/3	10/4c	9/29	-	9/26	-	10/11
Winter Wren	10/5	10/3	10/26g	-	10/12	-	10/9	9/26	9/26	9/24	11/8	9/26	-	10/3	-	-
Hermit Thrush	10/9	10/10	9/25g	10/14	10/10	10/14h	10/12	10/7	10/8	10/10	-	10/9	11/10	10/10	-	-
Swainson's Thrush	9/8	9/5	9/6g	-	8/28	9/11h	9/10	8/22	8/27	8/17	9/19c	9/5	9/22	9/5	-	0
Grey-cheeked Thrush	9/22	9/18	9/13g	9/25	9/13	0	0	9/6	9/18	9/27	9/26	9/20	-	9/12	0	0
Veery	9/4	8/28	8/27g	9/6	8/19	8/28h	9/10	8/17	8/22	9/5	0	8/29	0	9/2	0	0
Golden-crowned Kinglet	10/5	10/8	11/3g	10/4	10/8	10/25	10/9	10/10	9/26	10/17	10/4c	9/27	10/1	10/4	-	10/11
Rudy-crowned Kinglet	9/24	9/24	8/17g	9/8	9/12	9/26	9/15	9/26	9/22	9/20	10/4 + c	9/27	-	9/26	-	10/12w
Water Pipit	10/18	10/24	10/24	11/8c	10/9	0	11/12	10/22	11/11	11/21	10/12	0	11/10	10/20	-	10/11
Cedar Waxwing	9/3	9/5	9/20w	8/9	10/9	9/1h	9/10	8/22	10/4	-	8/16	8/14	-	9/5	9/25	-
Loggerhead Shrike	9/24	-	-	-	0	0	0	0	10/24	0	0	0	0	8/26	0	10/4s

Table 1 (cont.). Fall Arrival Dates, 1981

Species	10-Yr. 1981		W. Md.	Fr/Ca	Balt.	Ha/Ce	Howa., Mont.	Pr. G.	A.A.	So. Md.	K/QA	Caro.	Talb.	Dorc.	LES	
	Median	Median														
Solitary Vireo	9/29	9/23	9/23	—	9/24	9/19h	9/25	9/25	9/20	9/20	—	10/9	0	0	0	0
Philadelphia Vireo	9/16	9/15	9/23	0	9/10	0	0	9/19	9/11	9/11	9/23s	0	0	9/7	9/25	0
Black-&-white Warbler	8/23	8/19	8/9g	—	7/31	—	8/23	7/28	8/20	8/17	9/6	8/19	—	9/2	9/5	—
Blue-winged Warbler	8/27	8/23	—	—	8/22	—	8/17	8/24	8/25	8/19	0	0	0	8/29	0	0
Tennessee Warbler	9/2	9/5	8/26g	9/6	8/26	0	9/10	9/6	8/10	9/6	8/30	9/8	0	9/5	0	0
Orange-crowned Warbler	10/3	10/12	0	10/12	10/17	10/30	0	0	10/8	0	9/20	0	0	0	—	—
Nashville Warbler	9/7	9/5	9/11g	8/29	8/27	8/26	9/2	9/10	9/10	9/6	—	9/5	0	9/6	—	0
Magnolia Warbler	9/4	8/29	9/5	8/29 + c	8/25	8/26h	9/11	8/29	8/18	9/5	9/13c	8/22	—	7/15	—	—
Cape May Warbler	9/7	9/10	9/10g	9/10	9/10	9/20	9/12	9/11	9/10	9/12	9/13c	8/22	—	9/5	0	—
Black-throated Blue Warbler	9/8	8/30	9/6g	8/29	8/29	9/19h	8/26	8/28	8/28	9/6	8/30	9/10	—	9/4	0	0
Yellow-rumped Warbler	9/28	9/25	9/24	9/25	9/12	10/4	9/14	10/8	9/25	10/11	10/2s	9/26	9/11	9/16	—	9/29s
Black-throated Green Warbler	9/11	9/10	8/22g	—	8/27	—	9/11	9/11	9/10	9/12	8/16	9/11	9/13	9/2	—	0
Blackburnian Warbler	9/3	8/29	8/20g	8/29c	—	—	—	9/7	9/10	8/22	8/9	—	9/9	—	—	0
Chestnut-sided Warbler	8/29	9/1	8/9g	9/5	8/27	9/5h	8/17	9/6	8/21	9/6	—	—	0	—	—	0
Bay-breasted Warbler	9/4	9/10	9/11g	9/3	9/10	0	8/30	9/12	9/10	—	—	9/10	0	9/11	—	0
Blackpoll Warbler	9/12	9/10	9/13g	9/9	9/6	0	—	9/11	9/12	9/10	—	9/10	9/16	9/7	0	0
Palm Warbler	9/27	9/26	9/30	0	9/26	—	9/12	10/10	9/13	9/27	9/26	9/16	0	9/7	—	10/10
Ovenbird	8/30	8/25	—	—	8/20	—	9/6	8/20	—	8/19	—	8/30	—	8/31	—	—
Northern Waterthrush	8/31	8/23	—	0	8/15	8/28h	9/12	8/18	8/5	9/7	8/30	8/19	0	—	0	0
Connecticut Warbler	9/13	9/12	9/6g	0	9/13	0	0	9/8	8/30	9/5	9/12	9/12	—	9/13	9/21	0
Mourning Warbler	9/5	9/8	0	0	—	0	9/10	9/7	9/6	9/13	0	—	0	0	0	0
Wilson's Warbler	9/8	9/11	9/13	0	9/10	9/7h	9/11	9/13	8/19	9/13	0	9/13	0	9/2	0	0
Canada Warbler	8/21	8/19	8/25	9/1	8/24	—	8/19	8/17	8/10	8/17	0	8/19	—	9/6	0	0
American Redstart	8/23	8/20	8/22g	—	8/4	8/28h	9/6	8/13	8/2	8/15	9/4	8/20	9/9	8/13	9/5	8/16
Bobolink	8/26	8/25	—	8/27	8/30	0	0	8/24	—	0	—	9/10	8/20	8/18	8/26	8/23
Rusty Blackbird	10/17	10/20	—	10/16	11/14	10/25	10/27	10/22	10/18	—	10/18c	—	—	10/10	—	—
Rose-breasted Grosbeak	9/12	9/10	8/26	—	9/5	9/13	9/10	9/9	9/7	9/11	9/13c	9/20	9/12	9/2	0	0
Evening Grosbeak	11/4	11/1	11/1g	—	0	—	11/17	10/28	10/14	10/30	—	11/9	—	11/8	0	0
Purple Finch	10/4	9/26	9/24	10/25	9/25	9/21h	10/12	9/10	9/13	9/27	10/18 + c	10/9	10/22	9/5	9/9	0
Common Redpoll	—	2/4	1/20g	0	2/9	0	2/27	—	0	0	0	0	0	0	0	1/31w
Pine Siskin	10/29	10/22	11/5g	10/22	10/27	10/3	—	10/10	11/19	10/19	—	11/3	0	10/18	—	—
Red Crossbill	11/12	12/24	12/19g	0	2/25	0	0	11/21	0	0	0	0	0	0	0	12/29
White-winged Crossbill	—	2/13	2/24g	0	2/13	2/6	2/13	2/16	—	0	11/3s	0	0	0	0	—
Savannah Sparrow	9/22	9/26	9/6	10/9	9/26	—	—	0	—	8/14	—	0	10/4	—	—	—
Northern Junco	10/6	9/29	10/14g	10/10	9/29	9/30	9/28	9/26	9/22	10/17	10/17 + s	9/23	10/19	9/15	9/20	—
American Tree Sparrow	11/21	11/11	11/2	11/8c	11/14	10/25	—	11/15	—	11/23	—	—	—	—	0	0
White-crowned Sparrow	10/14	10/10	10/19w	10/10	10/9	10/11	—	10/10	10/17	—	10/17 + c	10/11	—	10/4	0	10/10
White-throated Sparrow	9/30	9/26	9/26	10/10	9/26	10/3	10/8	9/18	9/24	9/7	10/7s	9/25	10/13	9/26	9/21	—
Fox Sparrow	10/28	11/5	11/8w	11/11	10/12	10/28h	11/6	10/25	9/28	11/15	11/22c	11/4	11/15	10/28	—	—
Lincoln's Sparrow	9/28	9/23	0	—	9/11	10/5h	0	9/14	9/25	—	10/9s	9/21	0	—	0	0
Swamp Sparrow	10/4	10/3	—	10/9	9/26	10/5h	10/11	10/4	9/24	10/3	10/4c	10/2	—	9/26	9/21	—
Snow Bunting	11/18	11/28	12/19g	11/18	0	0	11/25	12/13	0	11/5	0	0	0	12/20	11/28	—

Table 2. Fall Departure Dates, 1981

Species	10-Yr.		1981														
	Median	Median	W. Md.	Fr/Ca	Balt.	Ha/Ce	Howa.	Mont.	Pr. G.	A. A.	So. Md.	K/QA	Caro.	Talb.	Dorc.	LES	
Double-crested Cormorant	10/18	10/26	O	O	9/27	O	9/26	O	11/21	10/26	10/10	11/4	O	10/10	11/29	11/12	
Green Heron	10/4	10/10	—	10/10	9/27	9/3	10/11	10/29	10/25	9/26	—	—	—	10/26	9/21	—	
Little Blue Heron	9/28	9/19	O	9/24	O	O	8/31	O	9/5	—	9/19	O	O	8/12	9/26	11/22s	
Cattle Egret	10/7	11/1	O	O	12/3	11/17	O	11/1	—	O	10/12	7/29	O	12/20	10/12	—	
Great Egret	10/9	10/3	O	9/24	9/27	1/3h	10/3	9/5	11/1	10/25	10/12	—	O	10/3	9/24	1/6s	
Snowy Egret	10/15	10/3	9/20w	—	10/25	O	9/22	9/5	10/3	—	10/12	—	O	10/4	9/24	11/22s	
Blue-winged Teal	10/9	10/5	9/23	9/24	9/6	12/20	—	O	10/13	9/26	O	11/15	O	O	11/9	—	
Wood Duck	11/3	11/7	11/20g	11/15c	11/7	—	11/12	11/1	11/1	—	11/11	—	10/20	—	9/21	—	
Broad-winged Hawk	10/3	10/4	10/24w	9/30	9/24	10/10	9/28	10/5	10/2	10/8	10/4c	9/16	11/5	10/10	10/1	O	
Osprey	10/14	10/22	11/7w	10/16	11/19	10/12	11/19	10/22	10/25	10/19	10/2s	10/25	10/2	11/5	10/14	—	
Common Gallinule	—	9/25	O	O	O	O	O	O	9/15	8/5	O	10/9	10/5	—	—	—	
Semipalmated Plover	9/25	9/26	—	—	9/20	O	9/29	O	O	—	11/7	—	O	8/29	9/26	—	
Lesser Golden Plover	9/30	10/8	O	O	9/27	O	O	9/20	O	10/8	10/10	11/29	O	9/20	O	10/18	
Greater Yellowlegs	10/30	11/17	O	11/28	9/27	O	11/15	10/22	11/1	O	—	11/23	11/17	—	12/31	12/30s	
Lesser Yellowlegs	10/13	11/23	—	11/22	11/26	O	11/19	O	10/24	—	9/26	11/23	O	—	12/31	1/2	
Solitary Sandpiper	9/23	9/27	—	9/7	9/27	O	10/30	9/7	10/2	O	10/4c	—	O	O	9/7	O	
Spotted Sandpiper	9/28	10/4	9/9	10/10	9/27	O	12/10	—	10/13	—	—	—	O	—	9/9	—	
Short-billed Dowitcher	9/13	—	O	O	8/23	O	O	O	—	O	O	O	O	8/30	9/26	—	
Semipalmated Sandpiper	10/3	9/23	—	9/24	9/27	O	9/22	O	O	—	10/2	8/30	O	—	9/7	—	
Western Sandpiper	10/21	9/28	O	—	9/27	O	O	O	O	9/19	10/30	O	O	9/18	12/12	9/29s	
Least Sandpiper	9/28	9/20	—	9/13	9/27	O	9/20	9/20	10/1	—	O	8/30	O	—	10/12	O	
Pectoral Sandpiper	10/13	11/13	—	11/13	11/15	O	9/26	O	11/15	—	O	—	O	—	10/12	—	
Laughing Gull	11/10	11/3	O	O	11/26	11/8	O	9/26	10/16	—	11/28	—	10/29	10/26	12/13	—	
Forster's Tern	11/7	11/11	O	O	11/11	9/6	O	O	O	11/20	10/10	O	O	10/10	11/28	11/12	
Common Tern	10/5	9/26	9/7	O	8/22	O	O	O	O	O	10/10	—	O	9/26	—	11/13	
Little Tern	8/17	8/19	O	O	8/8	O	O	O	O	—	8/22	—	O	—	9/5	8/16	
Royal Tern	10/24	11/8	O	O	8/22	O	O	O	O	11/20	11/8	O	O	10/10	—	11/13	
Caspian Tern	10/10	10/4	O	O	10/1	10/3	O	O	10/3	10/4	11/6	O	O	10/10	9/9	10/11	
Yellow-billed Cuckoo	9/29	9/27	9/20w	10/25	9/27	9/13	9/20	10/3	10/2	9/20	10/12	9/27	9/28	9/13	9/9	—	
Black-billed Cuckoo	9/26	9/27	—	—	9/27	9/10	10/10	10/9	O	O	—	O	O	9/12	O	O	
Whip-poor-will	9/16	9/13	—	—	—	—	—	—	9/14	—	—	9/5	9/12	9/26	—	—	
Common Nighthawk	9/21	9/23	9/17g	9/11	9/24	9/26	9/15	9/27	9/25	—	—	9/13	—	10/25	9/21	—	
Chimney Swift	10/10	10/10	10/11w	10/12	10/21	10/11	10/9	10/12	10/8	10/13	10/4c	—	10/9	10/4	9/26	—	
Ruby-throated Hummingbird	9/28	9/22	9/20w	9/7	9/21	10/1	10/2	9/27	9/22	9/13	9/28c	10/9	9/18	10/14	9/21	—	
Eastern Kingbird	9/15	9/10	—	9/10	9/10	9/12	9/14	8/31	9/3	8/30	9/19	—	8/25	9/7	9/21	—	
Great-crested Flycatcher	9/16	9/13	—	9/13	9/13	9/13	9/20	9/13	—	—	9/6	10/31	9/9	9/12	9/14	—	

Table 2 (cont.). Fall Departure Dates, 1981

Species	10-Yr.		1981													
	Median	Median	W. Md.	Fr/Ca	Balt.	Ha/Ce	Howa.	Mont.	Pr. G.	A.A.	So. Md.	K/QA	Caro.	Talb.	Dorc.	LES
Eastern Phoebe	10/27	10/22	10/14g	10/25	10/26	10/13h	10/20	10/26	11/15	10/25	10/17c	10/14	10/22	11/3	9/26	-
Yellow-bellied Flycatcher	9/20	9/20	9/17g	O	9/13	9/19h	9/19	10/3	9/27	9/20	10/2	9/25	O	O	O	O
Acadian Flycatcher	9/18	9/20	9/21g	9/1	9/14	9/9h	9/14	9/27	9/27	9/22	9/19c	9/28	-	-	-	-
Traill's Flycatcher	9/16	9/11	-	-	-	-	-	9/18	9/9	9/7	O	O	-	9/13	O	O
Least Flycatcher	9/22	9/26	-	O	9/15	-	O	10/3	9/30	9/10	8/30	9/26	O	9/26	O	O
Eastern Pewee	10/3	9/25	9/13	9/13	9/28	9/21h	10/9	10/2	9/25	9/20	10/17c	9/20	-	9/27	9/25	-
Tree Swallow	10/17	10/17	10/1	12/6	10/19	10/30	10/20	12/6	10/8	10/19	10/4c	10/15	10/24	10/12	9/21	10/11
Bank Swallow	9/12	9/16	9/9	9/5	8/22	10/7	9/24	9/20	-	10/2	8/30	10/5	O	9/6	9/26	9/12
Rough-winged Swallow	9/27	9/19	9/20w	10/10	-	9/18	8/31	9/13	-	10/19	-	10/1	-	-	9/5	-
Barn Swallow	9/20	9/28	9/20w	9/24	9/8	10/7	10/4	10/19	9/28	10/19	9/19	10/12	-	9/27	9/26	-
Cliff Swallow	9/7	8/31	-	9/13	8/14	O	8/31	-	-	10/2	8/22	O	O	O	O	O
Purple Martin	9/7	9/7	-	8/22	9/3	9/16	-	9/13	9/10	10/2	9/7c	9/6	-	9/3	9/21	8/15w
House Wren	10/12	10/9	9/27	9/24	10/9	-	-	10/10	10/10	9/20	-	10/11	-	10/31	9/21	-
Gray Catbird	10/22	11/3	10/14w	10/9	11/26	10/16h	11/25	10/22	11/13	10/11	-	11/3	11/5	-	11/14	-
Brown Thrasher	10/20	10/4	9/27	9/25	-	-	9/22	10/12	10/22	10/17	10/4c	10/12	11/7	9/26	9/25	-
Wood Thrush	10/9	10/11	-	-	10/11	9/30	9/27	10/12	10/16	10/11	-	10/11	9/29	10/10	9/25	-
Hermit Thrush	11/2	11/6	10/14g	-	10/25	11/19h	-	10/30	11/12	12/5	-	11/1	11/10	-	-	-
Swainson's Thrush	10/15	10/11	10/5g	10/4	10/11	9/21h	10/12	10/25	10/18	10/18	10/20	10/5	10/10	9/26	O	-
Gray-cheeked Thrush	10/10	10/11	9/29g	10/12	9/29	O	O	10/18	10/16	9/27	11/8	10/11	10/3	10/10	O	O
Veery	9/27	9/26	-	9/12	9/20	9/26	9/23	9/29	10/1	9/19	O	9/26	O	9/26	O	O
Blue-gray Gnatcatcher	9/16	9/19	9/19w	9/1	10/4	9/20	9/20	9/13	-	9/6	9/13c	9/15	-	10/4	9/21	-
White-eyed Vireo	9/29	10/2	9/30	-	9/27	9/30	10/10	10/4	10/10	10/3	10/4c	9/20	9/21	10/4	9/21	-
Yellow-throated Vireo	9/13	9/13	-	-	9/6	9/19	9/13	9/13	9/13	9/27	9/20	-	-	-	-	-
Solitary Vireo	10/14	10/9	-	-	-	-	10/9	10/11	10/11	10/3	-	10/9	O	O	O	O
Red-eyed Vireo	10/3	10/3	9/27g	9/24	10/8	9/30	10/10	10/20	10/11	10/3	10/4c	10/31	9/21	9/27	9/21	-
Philadelphia Vireo	9/27	9/24	1/23	O	9/20	O	O	9/26	10/5	-	9/23s	O	O	-	9/25	O
Warbling Vireo	9/15	9/11	-	9/12	-	-	9/10	9/5	9/12	O	O	O	O	O	O	O
Black-&white Warbler	10/8	10/4	9/26	-	9/27	10/6	10/6	10/13	10/11	10/3	10/4c	10/12	9/21	10/4	9/26	-
Prothonotary Warbler	8/26	9/2	-	-	-	9/2	O	9/7	8/20	-	-	-	-	-	-	-
Worm-eating Warbler	9/8	9/4	8/25	8/31	8/26	-	-	9/7	9/15	-	-	9/10	-	-	-	-
Golden-winged Warbler	9/4	9/13	-	O	9/13	O	O	9/26	9/19	O	O	O	9/9	9/13	O	O
Blue-winged Warbler	9/15	9/13	9/6	-	9/13	-	-	9/15	9/24	-	O	O	O	9/12	O	O
Tennessee Warbler	10/9	10/9	10/5g	9/13	10/11	O	10/10	10/8	10/10	10/22	10/4c	10/12	O	9/26	O	O
Nashville Warbler	10/7	10/9	9/30	-	10/12	9/19	10/10	10/10	10/13	10/17	10/4c	10/9	O	10/4	9/25	O
Northern Parula Warbler	10/5	10/3	-	9/25	10/9	10/6	9/25	9/20	10/11	10/1	10/2s	-	9/16	10/4	-	-
Yellow Warbler	9/16	9/13	-	-	9/27	9/1	-	-	-	9/12	-	-	9/13	9/27	-	-

Table 2 (cont.), Fall Departure Dates, 1981

Species	10-Yr. 1981		W. Md.	Fr/Ca	Balt.	Ha/Ce	Howa.	Mont.	Pr. G.	A. A.	So. Md.	K/QA	Caro.	Talb.	Dorc.	LES
	Median	Median														
Magnolia Warbler	10/7	10/10	9/30	11/11	10/9	11/11	10/10	10/14	10/11	10/3	9/19c	10/14	9/21	10/10	9/25	10/11
Cape May Warbler	10/9	9/30	9/30	9/24	10/27	9/20	9/29	9/25	10/4	10/24	9/20c	9/26	10/1	10/10	O	10/11
Black-throated Blue Warbler	10/8	10/10	9/26g	—	10/9	10/12	10/9	10/11	10/10	10/11	10/12	10/31	9/22	10/4	O	O
Black-throated Green Warbler	10/8	10/11	11/6g	10/12	10/11	11/9	10/10	10/12	10/5	10/3	10/4c	10/11	10/11	10/4	9/25	O
Blackburnian Warbler	9/26	9/23	9/17g	9/13	9/27	9/30	9/30	10/10	9/25	—	9/20	9/25	9/21	9/11	9/21	O
Yellow-throated Warbler	—	9/20	—	9/24	—	O	9/19	9/5	—	O	9/12	—	—	9/27	9/21	—
Chestnut-sided Warbler	9/22	9/30	9/30	9/13	9/27	—	9/28	10/8	10/8	9/26	10/25	10/9	O	10/4	9/21	O
Bay-breasted Warbler	9/30	9/27	9/20w	9/13	9/27	O	—	9/26	10/5	9/27	10/25	9/26	O	10/4	9/25	O
Blackpoll Warbler	10/10	10/6	9/21g	9/25	10/7	O	10/6	—	10/10	—	—	9/29	—	10/10	O	O
Pine Warbler	10/3	10/2	—	—	9/20	—	10/9	9/5	9/25	10/3	10/25	—	11/5	10/10	9/21	—
Prairie Warbler	9/19	9/18	9/27	—	9/5	9/10	9/20	—	9/18	—	9/12	—	—	9/19	—	—
Palm Warbler	10/19	10/24	10/27g	O	10/31	11/11	10/6	10/10	10/25	12/5	10/18	10/24	O	10/12	—	10/10
Ovenbird	10/6	10/3	9/26	—	10/2	9/19	10/27	10/29	10/12	10/4	—	10/12	9/10	9/26	—	—
Northern Waterthrush	9/26	9/26	9/13	O	9/22	9/21h	—	10/3	9/27	9/26	—	10/9	O	9/26	O	O
Louisiana Waterthrush	8/19	8/30	—	8/30	8/30	—	—	9/7	8/19	—	—	—	—	—	—	—
Kentucky Warbler	9/4	9/2	—	—	8/30	9/3	9/23	8/31	8/19	—	9/4	—	—	—	—	—
Connecticut Warbler	9/29	9/22	9/13	O	9/21	O	O	9/30	10/4	10/4	9/12	9/12	9/22	9/26	9/21	O
Mourning Warbler	9/24	9/27	O	O	9/20	O	9/10	10/6	10/4	9/13	O	10/11	O	O	O	O
Common Yellowthroat	10/19	10/14	11/2	10/10	10/27	10/16h	10/10	10/12	11/5	10/17	10/12	10/24	—	10/10	10/1	—
Yellow-breasted Chat	9/29	10/3	—	—	9/13	9/21h	—	10/5	10/12	—	9/26	10/11	—	10/3	—	—
Hooded Warbler	9/16	9/22	10/5g	—	10/10	—	9/16	9/25	9/22	9/19	O	O	O	O	O	—
Wilson's Warbler	9/22	10/2	9/30	O	9/26	10/3	—	9/27	10/25	—	O	—	O	10/3	O	O
Canada Warbler	9/25	9/21	9/20w	9/6	9/13	9/21h	10/4	9/26	9/27	9/11	O	9/26	9/21	9/27	O	O
American Redstart	10/4	10/7	9/26	9/12	10/15	10/6	10/10	10/8	10/11	10/3	9/20	10/25	10/9	10/4	9/21	10/11
Bobolink	9/23	9/26	—	—	9/27	O	O	9/26	9/22	O	9/19	9/10	9/25	9/26	10/1	—
Orchard Oriole	8/17	8/11	—	8/9	—	—	—	8/13	—	8/8	—	—	—	—	9/21	—
Northern Oriole	9/24	9/20	—	9/24	11/24	9/30	—	9/19	9/10	9/7	9/19c	—	—	9/11	9/21	10/11
Scarlet Tanager	10/6	9/27	9/30	—	9/27	—	9/27	9/26	10/13	9/27	9/26	10/14	10/5	10/4	9/21	—
Summer Tanager	9/22	9/18	O	O	O	8/24	O	O	9/18	—	9/12c	—	10/16	9/18	9/21	—
Rose-breasted Grosbeak	10/5	10/5	10/1	9/30	10/2	10/13	10/6	10/8	10/5	10/3	10/4c	9/20	10/1	10/4	O	O
Blue Grosbeak	9/21	9/20	9/20w	—	—	9/3h	—	—	9/25	9/26	—	—	9/25	9/11	9/7	—
Indigo Bunting	10/6	10/4	10/1	9/24	10/17	10/11	9/30	10/8	10/8	10/4	10/4c	10/11	10/3	10/4	—	—
Savannah Sparrow	10/29	10/21	—	—	10/30	10/11	10/12	O	10/31	—	—	O	10/12	11/28	—	—
Chipping Sparrow	11/2	11/3	10/17	11/11	11/8	11/11	—	10/28	10/25	—	10/18c	10/24	11/13	11/28	—	—
Lincoln's Sparrow	10/19	10/16	O	10/15c	10/31	10/16h	O	10/14	10/22	10/17	10/9s	10/24	O	10/12	O	O

Washington County; all other dates are from Allegany County. Under the Frederick/Carroll column a "c" means Carroll County and all other dates are Frederick County. The Harford/Cecil column has an "h" for Harford County and all others are from Cecil County. In Southern Maryland a "c" is for Charles County, an "s" for St. Marys County, and all others are Calvert County. The K/QA column has a "q" for Queen Annes County and all other dates are for Kent County. On the Lower Eastern Shore an "s" is for Somerset County, a "w" for Wicomico County, and all others are for Worcester County.

Observers:

Western Maryland—Truman Doyle, Chris Ludwig, Alice Mallonee, Jim Paulus, Fran Pope, Sallie Thayer, Jim Wilkinson.

Frederick—David Wallace.

Baltimore—Warren Bielenberg, Peggy Bohanan, Gladys Cole, Bob Jarboe, Mike Resch, Barbara Ross, Joe Schreiber, Eddie Slaughter, Jim Stasz.

Harford/Cecil—Barbara Bilsborough, Dennis and Jean Kirkwood, Sean McCandless.

Howard—Brenda Bell, Jon Boone, Russell Chandler, Martha Chestem, Eileen & John Clegg, Fred Cowden, Frances Dawson, Jane Farrell, Mary Hall, Marcia Krishnamoorthy, Paul Leifer, Grazina & Mike McClure, Rosamond Munro, Frances Nahrgang, David & Elaine Pardoe, Jay Sheppard, Jo Solem, Eva Sunnell, Mark Wallace.

Montgomery—Larry Bonham, Margaret Donald, Paul and Michael O'Brien, Erika Wilson.

Prince Georges—Danny Bystrak, Ric Conn, Chan Robbins.

Anne Arundel—Alex and Helene Hammer, Wayne Klockner, Bob Melville, Pat Vanorny, Hal Wierenga.

Southern Maryland—Walt Kraus, Paul Nistico, Ernie Willoughby.

Kent—Jimmy Gruber, Dorothy Mendinhall.

Caroline—Ethel Engle, A.J. and Roberta Fletcher, Inez Glime, Marvin Hewitt, Alicia Knotts, Mariana Nuttle, J. Rinehart, Inez Wheatley.

Talbot—Terry Allen, Jeff Effinger, Jan Reese.

Dorchester—Harry Armistead, Lester Coble.

Lower Eastern Shore—Sam Dyke, Debbie Mignogno, Bob Warfield.

Loons, Grebes, Pelagics. Early Common Loons were one at Sandy Point, Sept. 6 (Klockner), and 13 on the Choptank River, Sept. 13 (Effinger). The first Red-throated Loon of the season was at Ocean City on Oct. 11 (Warfield). Unusual was one inland on Triadelphia Reservoir on Nov. 25 (M. Wallace). Resch saw 11 Red-necked Grebes in Baltimore on Nov. 11, an unprecedented number in fall. There were 7 Pied-billed Grebes on Piney Run Reservoir on Nov. 15 (Ringler). Off Ocean City on Sept. 12 Effinger and party saw 3 Cory's Shearwaters and one Audubon's Shearwater. Effinger spotted the first Northern Gannet of the season, one immature off Assateague on Oct. 5.

Cormorants, Frigatebird. The first Great Cormorant of the fall was seen in St. Marys County on Oct. 28 (Willoughby). Interesting reports of Double-crested Cormorants were 25 at Poplar Island on Aug. 12 (Wierenga, Mignogno), one at the east end of the Bay Bridge on Aug. 30 (Allen), 150 in Talbot County on Sept. 9 (Reese), one on Triadelphia Reservoir on Sept. 26 (M. Wallace), 34 at Washington on Oct. 8

(David Czaplak), 2 at Widgeon Wharf on the Wicomico River on Oct. 12 (Ringler), and 35 at Ocean City on Nov. 12 (Slaughter). A Magnificent Frigatebird was reportedly seen about 30 miles east of Ocean City on Aug. 30 (Clay & Pat Sutton).

Table 3. Estimated Breeding Pairs at Smith Island Heronries in 1981.

Localities:	Hog Neck	Cherry Island	Barnes Landing	Pines	Frances Gut	Total
Date Censused:	8/1	8/2	8/2	8/1	8/1	
Great Blue Heron	1	10				11
Green Heron	1	2				3
Little Blue Heron	20	20	2	5	15	62
Cattle Egret	2	15		20	5	42
Great Egret	5	15	1	3	5	29
Snowy Egret	10	25	10	2	20	67
Louisiana Heron	5	25		8	35	73
Black-crowned Night Heron	2	25	5	5	100	137
Yellow-crowned Night Heron	10	20		15	10	55
Glossy Ibis		15	3	5	15	38
Total	56	172	21	63	205	517

Heron, Ibis. Armistead censused the heronries on the Maryland portion of Smith Island on Aug. 1 and 2. His totals are in Table 3. A late fall concentration of Great Blue Herons at Conowingo Dam on the Susquehanna was 18 on Nov. 29 (Ringler). The high count of Green Herons was 27 at Lilypons on Aug. 30 (D. Wallace) and a late one was at Patuxent Wildlife Research Center on Oct. 25 (Bystrak). Single immature Little Blue Herons were reported at Wilde Lake in Columbia on Aug. 20 (Cowden), at Piscataway on Aug. 22-30 (Nistico), at Chesapeake Beach on Sept. 19 (Kraus), at Lilypons on Sept. 24 (D. Wallace), and at Deal Island Wildlife Management Area (WMA) on Nov. 22 (Mignogno). On Poplar Island on Aug. 12 there were 100 pairs of Cattle Egrets with young chicks in the nests (Wierenga, Mignogno), and on the South Point islands in Chincoteague Bay there were at least 450 immature Cattle Egrets, 10 nests with young less than 5 days old, 15 nests with eggs, 1 nest with 1 young about 2 days old and 2 eggs (1 pipped), and 1 nest with 3 eggs (1 pipped). Other Cattle Egret sightings were 75 near Bellevue in Talbot County on Sept. 19 (Armistead), 6 along I-95 in Cecil County on Sept. 26 (Resch), 1 near Comus, Montgomery Co., on Nov. 1 (Warfield), and 1 at Ft. McHenry on Nov. 6 (Bielenberg). Warfield witnessed some impressive egret flights at West Ocean City during the summer. The birds came from the marshes along the St. Martins River and were flying south to roosts somewhere south of Ocean City at dusk. His counts were 355 on July 25, 336 on Aug. 4, 265 on Aug. 5, 445 on Aug. 6, 259 on Aug. 8, 394 on Aug. 15, 420 on Aug. 23, 338 on Aug. 29, and 314 on Sept. 6. He estimated that 95% of the birds were Great Egrets and the remainder Snowy Egrets. Other Great Egrets were 50 at Blackwater on Sept. 7 (Armistead), 18 at Back River on Sept. 26 (Ringler), and a late bird flying over Fort Smallwood on Oct. 25 (Ringler). Among the late Snowy Egrets were 1 near Mountain Lock on the Potomac in Washington County on Sept. 20 (D. Boone, Ringler), 4 at Westport in Baltimore City on Oct. 25 (Ringler), and 5 at Deal Island WMA on Nov. 22 (Mignogno). A Louisiana Heron flying north over Ramona's Beach in Baltimore County on Aug. 22 was unusual for the upper part of

Chesapeake Bay (Blom, Ringler). There were 4 at Blackwater Refuge on Sept. 26 (Armistead) and 1 at Deal Island WMA on Nov. 22 (Mignogno). The Black-crowned Night Heron roosts in Baltimore numbered 45 at Masonville on Sept. 27 and 25 at Soller's Point on Nov. 14 (Ringler). A late Yellow-crowned Night Heron was at Chesapeake Beach on Oct. 3 (Kraus). Single Least Bitterns were seen on Swan Island at Smith Island on Aug. 1 (Armistead, et al.) and at Hughes Hollow on Aug. 2 (Bonham). The only American Bittern reported was at Kenilworth Aquatic Gardens on Nov. 26 (Ringler). There were 2 Glossy Ibis at Lilypons from Aug. 8 through Sept. 7 (D. Wallace), 15 at Blackwater on Aug. 31 (Roger Anderson), and a final 4 there on Sept. 5 (Armistead, Alice Jones).

Swans, Geese. A Whistling Swan at Sandy Point on Aug. 29 (Klockner) probably summered. The big flight of Canada Geese occurred on Sept. 23 and 24 when Wierenga estimated 875 flying over Fort Smallwood on the first day and 175 the next. Brant were seen several times in the bay region this year. Two were at Fort Smallwood on Oct. 25 and 28 (Ringler, et al.), one at Sandy Point on Nov. 5 (Wierenga), and one at Gray's Point in Cambridge on Nov. 28 and 29 (Czaplak, Coble). The Greater White-fronted Goose with 2 hybrid young was seen at Blackwater on Oct. 18 (Robert Hilton, et al.). Willoughby found a flock of 10 unusually early Snow Geese at an unusual location—Breton Bay near Leonardtown on Sept. 23. Others in Allegany County on Oct. 24 (Paulus) and Howard County on Nov. 2 (M. Wallace) were in equally unlikely places. Another 8 were at Sandy Point on Nov. 5 (Wierenga, Mignogno). On Nov. 22 Warfield noted many flocks of Snow Geese flying in from the east to Ocean City and then turning south. That day had been preceded by two days of strong westerly winds that may have blown the birds off course. At Blackwater on Nov. 27 Paul O'Brien discovered and photographed a Ross's Goose with a flock of Canada and "Blue" Geese near the Visitor's Center. Refuge personnel and other birders present that day also saw the bird. Thus another species is added to the official list of Maryland birds.

Ducks. Reese found a Mallard with 5 small dependent young (about 10 days old) at St. Michaels on Sept. 20. The high count of Green-winged Teal was 425 at Blackwater on Sept. 26 (Armistead). The high for Wood Ducks was 41 at Lilypons on Aug. 29 (D. Wallace). There were 26 Redheads at Eastern Neck on Nov. 14 for an ANS field trip and the high for Ring-necked Ducks was 150 at Georgetown Reservoir on Nov. 26 (Ringler). Two Canvasbacks that summered in Baltimore continued through the early fall together with one Lesser Scaup (Ringler, et al.).

An immature male King Eider was at the jetty in Ocean City on Oct. 11 (Ringler, et al.). Two drake White-winged Scoters at Poplar Island on Aug. 12 (Wierenga, Mignogno) no doubt summered locally. On Oct. 4 Reese counted 30 migrant White-wings in Talbot County. The 6 Surf Scoters on Liberty Reservoir on Oct. 17 (Harvey Mudd, Jim Orgain) were a first for that location. The 15 Black Scoters at Ocean City on Sept. 3 (Warfield) may have been early migrants. The high count of Hooded Mergansers was 47 near Kettering on Nov. 19 (John Krehbil). A drake Red-breasted Merganser summered near Arundel Road south of Annapolis.

Diurnal Raptors. Several hawk watches in the state produced their usual inspiring results. Several of these are reviewed in Tables 4 and 5 for some daily totals and Tables 6 and 7 for some seasonal totals. Wierenga also made some

interesting hawk counts in Montgomery County. During 10.5 hours of observation on several days this fall he tallied a total of 906 birds of 11 species (86.3 birds/hour). The more memorable of these days were: on Sept. 11 at the Rockville landfill, 422 Broad-winged Hawks in 3.5 hours plus 7 Turkey Vultures, 5 Black Vultures, 2 Sharp-shinned Hawks, 2 Cooper's Hawks, 6 Red-tailed Hawks, 1 Red-shouldered Hawk, 5 Ospreys, and 4 American Kestrels; on Sept. 13 at Davis Airfield north of Laytonsville, 335 Broad-wings in less than an hour; and on Oct. 5 at the landfill again, 21 Turkey Vultures, 2 Black Vultures, 36 Sharp-shinned Hawks, 5 Cooper's Hawks, 2 Red-tails, 1 Red-shoulder, 3 Broad-wings, 1 Osprey, 1 Merlin, and 6 kestrels.

Table 4. Daily Diurnal Raptor Counts in Allegany County.

	9/14	9/17	9/18	9/19	10/10	10/15	10/17	10/24	10/25	10/31	11/1	11/3	Total
Turkey Vulture					5	10	2		2				19
Sharp-shinned Hawk	25	28	21	13		9	5			1	6		108
Cooper's Hawk		1			1	2	1						5
Red-tailed Hawk					24	1	23		4	85	111	83	334
Red-shouldered Hawk									1		2		3
Broad-winged Hawk	125	98	976	114									1313
Bald Eagle						1							1
Northern Harrier	1					1	1			2	3		8
Osprey	1	2		4									11
Merlin				1									1
American Kestrel	5	30	9	2	1								47
Unidentified					16	4	16		1				37
Total	157	159	1011	133	47	28	48	0	8	88	122	83	1887

The numbers from Oct. 10-25 are from Dan's Rock by Chris Ludwig and the other dates are from Town Hill by Jim Paulus. Ludwig's observations covered 7.3 hours including 1 hour on the unproductive Oct. 24 (17.9 birds/hour). Hours were not recorded at Town Hill.

Table 5. Daily Diurnal Raptor Counts in Talbot County.

	9/17	9/18	9/19	9/20	9/21	9/26	9/27	10/3	10/4	10/10	10/17	11/28	Total
Turkey Vulture			20	25		15		20	15	21		7	123
Black Vulture			6					1	3	2			12
Sharp-shinned Hawk	(2)		8	3		12(30)	16	119	31(19)	27	(3)		239
Cooper's Hawk						1(2)		4	1	1		1	9
Red-tailed Hawk			2	2		1		2	1	5		2	15
Red-shouldered Hawk									(1)				1
Broad-winged Hawk	(500)	653				4(2)	68	2	(1)	18			1246
Bald Eagle								1		6			7
Northern Harrier			3			1(2)			1(2)	3			10
Osprey			3	2		3	1		2	1(1)			12
Peregrine Falcon										1			1
Merlin								1		1			2
American Kestrel			12	3	(6)	4(4)	6	53	6(2)	16		1	107
Total	(502)	653	54	35	(6)	41(40)	91	203	60(25)	102(1)	(3)	11	1784

Totals in parentheses are by Jan Reese at unspecified locations; others are by Henry Armistead near Bellevue. Totals are the highest possible for all sites allowing for duplication. These birds were migrating along the eastern edge of Chesapeake Bay.

The high count of Black Vultures at Lilypons was 56 on Aug. 23 (Wilson). The only Northern Goshawks reported away from South Mountain were one at Piscataway on Nov. 22 (Nistico) and one at Rockville on Nov. 28 (O'Brien). Other flights of Broad-wings that were reported were 22 at Lake Roland on Sept. 10 (Ringler), 200 near Liberty Reservoir on Sept. 13 (Ben Yokel), 37 at Frederick on Sept. 14 (D. Wallace), 262 at Rockville on Sept. 21 (O'Brien), and in northern Baltimore County near Shawan Road John Canoles observed approximately 600 on Sept. 20, 1300 on the 21st and 500 on the 22nd. An early Rough-legged Hawk on Sept. 29 in Howard County (M. Wallace) was undescribed. Any Rough-legs before late October are unusual. Others were 3 at Wittman on Oct. 19

Table 6. Seasonal Diurnal Raptor Counts, Washington Monument State Park.

Species	First	Last	Total	High Counts
Turkey Vulture	8/21	12/6	112	53 on 10/24, 40 on 11/1, 21 on 10/12
Black Vulture	8/21	12/6	33	10 on 8/21, 9 on 9/11
Northern Goshawk	9/21	11/13	6	2 on 9/21
Sharp-shinned Hawk	8/21	11/15	1076	102 on 9/21, 76 on 9/26 and 10/3
Cooper's Hawk	9/9	11/9	70	15 on 10/3, 5 on 10/9 and 10/12
Red-tailed Hawk	8/17	12/6	1305	312 on 11/17, 214 on 10/28, 76 on 11/1
Red-shouldered Hawk	8/21	12/3	65	7 on 10/31, 4 on 11/1
Broad-winged Hawk	8/17	10/24	1522	401 on 9/19, 274 on 9/12, 146 on 9/21
Rough-legged Hawk	10/31		1	
Golden Eagle	10/31	12/3	11	4 on 11/5, 2 on 11/7
Bald Eagle	9/11	9/23	7	3 on 9/12, 2 on 9/19
Northern Harrier	8/21	11/11	100	20 on 10/31, 12 on 11/15
Osprey	8/25	11/7	93	13 on 9/9, 11 on 9/11 and 9/23
Peregrine Falcon	9/21	10/3	5	2 on 9/21
Merlin	9/21	10/8	7	2 on 9/21
American Kestrel	8/24	10/22	89	25 on 9/9, 21 on 9/23, 11 on 9/12
Unidentified			169	
Total	8/17	12/6	4671	

These numbers are submitted by Truman Doyle but represent the efforts of many observers.

Table 7. Fort Smallwood Park, Anne Arundel County

Species	First	Last	Total	High Counts
Turkey Vulture	9/9	10/28	133	20 on 10/3 and 10/7, 13 on 10/13
Black Vulture	10/20		2	2 on 10/20
Sharp-shinned Hawk	9/10	11/16	2068	414 on 10/8, 403 on 10/3, 265 on 9/19
Cooper's Hawk	9/19	11/16	57	9 on 10/8, 7 on 10/19, 6 on 10/3 and 10/4
Red-tailed Hawk	9/22	11/16	64	17 on 10/20, 10 on 10/19, 10/28, and 11/7
Red-shouldered Hawk	9/9	10/28	8	2 on 10/19
Broad-winged Hawk	9/9	10/8	1681	1497 on 9/23, 103 on 9/28, 44 on 9/19
Bald Eagle	9/9	10/24	14	4 on 9/23, 3 on 9/19
Northern Harrier	9/9	11/16	160	40 on 9/19, 15 on 9/23, 12 on 9/9
Osprey	9/9	10/19	142	43 on 9/19, 19 on 9/9, 11 on 9/23 and 10/7
Peregrine Falcon	9/21		1	
Merlin	9/9	10/8	30	11 on 10/3, 5 on 10/7 and 10/8
American Kestrel	9/9	10/28	686	148 on 9/9, 127 on 10/3, 114 on 9/23
Unidentified			73	
Total	9/9	11/16	5119	

These numbers were submitted by Hal Wierenga and represent 158 hours of observation on 31 days (32.4 birds/hour).

(Effinger), 1 at Deal Island WMA on Oct. 23 and 4 there on Nov. 9 (Wierenga), 1 in southern Frederick County on Nov. 28 (D. Wallace), and 1 at Rockville the same day (O'Brien). Golden Eagle sightings included an immature flying down the Potomac at Summit Hall on Nov. 1 (Bonham), an immature at Deal Island WMA on Nov. 11 (Wierenga), the first at Blackwater on Nov. 14 (Slaughter) and 2 there (an adult and immature) on the 29th (Coble), and an adult at Irish Grove Sanctuary on Nov. 29 (Charles Swift, Richard Schad). Bald Eagle sightings away from Blackwater were an adult and immature at Poplar Island on Aug. 12 feeding on a dead Great Blue Heron (Wierenga, Mignogno), an immature at Hughes Hollow on Sept. 5 (Bonham), 2 adults at Popes Creek on Oct. 4 (Ringler, et al.), and an immature at Summit Hall on Nov. 1 (Bonham). Early migrant Northern Harriers were at Sandy Point on Aug. 17 (Klockner), Kent Narrows on Aug. 29 (Allen), and Piney Run on Aug. 30 (Ringler). An Osprey at Deep Creek Lake on Nov. 5 (Pope) was very late in the mountains and another at Loch Raven on Nov. 19 (Ringler) was likewise late for the Piedmont. A Peregrine Falcon was seen at Rockville on Sept. 23 (O'Brien). On Assateague Scott Ward described the Peregrine flight as considerably less than the last two autumns though still much higher than earlier years. A higher percentage of adults was banded there this year with 24 adult and 66 immature birds captured. This may indicate a reduced nesting success of northern birds this year. Numbers of Merlins have increased dramatically, with a total of 345 seen this season. One outstanding day there was Sept. 20 when Effinger counted 46 Merlins flying down the coast. Other Merlin sightings were in Prince Georges County on Oct. 2 (Conn), at Fishing Creek Marsh on Oct. 10 (Kraus), at Tilghman on Oct. 21 (Effinger), at Denton on Nov. 5 (Nuttle), and at Tanyard on Nov. 17 (Engle).

Turkeys, Rails. David Wallace encountered 5 Wild Turkeys in the Catoctin area on Aug. 1. He also found a Sora at Lilypons from at least early August through Oct. 16. There were 2 Common Gallinules remaining at Sandy Point on Sept. 15 (Wierenga), 3 still at Laurel through mid-October (Leifer), 1 in Talbot County on Oct. 5 (Reese), and 1 found dead on a sidewalk in Denton under power lines on Oct. 9 (Fletchers). Early migrant American Coots arrived by twos at Rocky Gap on Sept. 20 (Wilkinson) and at Masonville on Sept. 27 (Ringler).

Shorebirds. A lowered water level in the headquarters pond at Blackwater produced good shorebirding this fall. Comprehensive counts made there by Armistead on three dates in September are tabulated in Table 8. There were 170 Killdeer in Northeast Creek near Essex on Nov. 14 (Ringler). On Assateague on Aug. 16 Stasz and party found 20 Piping Plovers. Lesser Golden Plovers were reported as follows: 2 near Bellevue on Sept. 2 and 1 there on Sept. 20 (Armistead), 2 at Summit Hall Turf Farm in Montgomery County on Sept. 20 (O'Brien, Warfield), 21 at Fort Smallwood on Sept. 23 (Wierenga), 4 at Masonville on Sept. 27 (Ringler, Kaestner, et al.), 1 at Chesapeake Beach on Oct. 10 (Kraus), 34 on Assateague on Oct. 18 (Scott Ward), and 1 at Remington Farms on Nov. 29 (W.R. Stott). Early Black-bellied Plovers were at Ewell on Aug. 1 and 3 at Cherry Island, Smith Island on Aug. 2 (Armistead, et al.); others of interest were in Talbot County on Aug. 29 (Effinger), at Masonville on Sept. 27 (Kaestner, et al.), and 4 birds at Blackwater on Nov. 28. The only Hudsonian Godwit reported was in the Tingle's Island area of Assateague on Nov. 13 (Dyke). A migrant Upland Sandpiper was seen at Princess Anne on Aug. 25 (Mignogno) and 12 remained in southern

Table 8. Shorebirds at Blackwater NWR Headquarters Pond, Fall of 1981.

Species	Date	9/5	9/7	9/26
Semipalmated Plover		15	10	2
Killdeer		3	1	9
Greater Yellowlegs		9	4	3
Lesser Yellowlegs		32	20	7
Solitary Sandpiper		1	1	0
Spotted Sandpiper		4	1	—
Short-billed Dowitcher		243	153	1
Semipalmated Sandpiper		500	300	—
Western Sandpiper		6	5	3
Least Sandpiper		4	6	—
White-rumped Sandpiper		3	2	—
Pectoral Sandpiper		3	1	3
Stilt Sandpiper		19	5	2

Frederick County on Sept. 24 (D. Wallace). Late Greater Yellowlegs were at Tanyard on Nov. 17 (Engle), Eastern Neck Refuge on Nov. 23 (Gruber), and Lilypons on Nov. 28 (D. Wallace). The high count of Lesser Yellowlegs was 48 at Sandy Point on Aug. 8 (Wierenga), and late birds were at Lilypons on Nov. 22 (D. Wallace) and Eastern Neck on Nov. 23 (Gruber). A late Willet was at Deal Island on Oct. 24 (Wierenga). A Ruddy Turnstone at Ramona's Beach in Baltimore County on Aug. 22 (Blom, Ringler) and 2 at Blackwater on Aug. 31 (Roger Anderson) were the only ones reported away from the coast. Wilson's Phalaropes were found at Blackwater on Aug. 6 and Assateague on Aug. 7 (O'Brien), and at Beltsville Agricultural Research Center on Sept. 25 (Ringler, Bystrak). A Northern Phalarope was at Princess Anne on Sept. 25 (Mignogno) and 3 Red Phalaropes were seen off Ocean City on Sept. 12 (Effinger). Early Common Snipe were at Fort McHenry on Aug. 19 (Bielenberg), Lilypons on Aug. 23 (Wilson), and in Talbot County on Aug. 29 (Effinger). At Barnes Landing on Smith Island on Aug. 2 Armistead and party found 11 Short-billed Dowitchers with 13 Greater Yellowlegs, 7 Willets, and a Ruddy Turnstone. Effinger found a Long-billed Dowitcher at the Choptank Bridge dredge spoil pond in Talbot County on Sept. 26. Wierenga counted 13 at Deal Island WMA from Oct. 23-26 and 6 there on Nov. 11. A Western Sandpiper was at Lilypons on Aug. 1 (Ludwig) and 15 were at Sandy Point on Sept. 8 (Wierenga). Kraus found 1 White-rumped Sandpiper at North Beach on Oct. 10 and Wierenga counted 6 at Deal Island WMA on Oct. 23-26. Late Pectoral Sandpipers were at Lilypons on Nov. 13 (D. Wallace), Loch Raven on Nov. 15 (John Robinson, et al.), and at Piscataway on Nov. 15 (Nistico). A Purple Sandpiper was seen at Sandy Point on Nov. 21 and 23 (Wierenga, et al.). An early Dunlin was at the Choptank Bridge pond on July 19 (Effinger) and others occurred at more normal times at Triadelphia Reservoir on Oct. 7 (M. Wallace), at Deep Creek Lake (2) on Oct. 28 (Pope), and at Eastern Neck on Nov. 15 (Gruber). Stilt Sandpipers were widely reported this fall with several at the Choptank Bridge on July 19 (Effinger), singles at Worton and Remington Farms on July 29 (Gruber), 3 at Sandy Point on Aug. 8 and 7 there on Sept. 17 (Wierenga), 1 at North Beach on Aug. 22 (Kraus), 4 at Back River on Aug. 30 (Resch), and 4 at Lilypons on Sept. 5 (D. Wallace). A Ruff was on Assateague on Aug. 16 (Blom, Ringler).

Jaeger, Gulls. A Pomarine Jaeger was photographed flying past Assateague on Sept. 18 by William S. Seegar and Scott Ward. The first Glaucous Gull of the

season was at the Rockville landfill on Nov. 27 (Bonham, O'Brien, et al.) and the first Iceland Gull was there on Nov. 17 (Wierenga, O'Brien). Lesser Black-backed Gulls again made a good showing with the familiar bird at Fort McHenry being the earliest arrival on Sept. 25 (Bielenberg). Others were at Conowingo on Nov. 13 (Robert Schutsky), Eastern Neck on Nov. 14 for the ANS field trip, Chesapeake Beach on Nov. 21 (Kraus), Rockville on Nov. 24 (O'Brien), and 2 (an adult and a sub-adult) at the Salisbury landfill on Nov. 27 (Wierenga, Mignogno). The white Ring-billed Gull remained at Sandy Point through Sept. 8 (Wierenga). Inland Laughing Gulls were 8 at Lake Kittamaquidi in Columbia on Aug. 16 (Ludwig), at Rockville on Sept. 26 (O'Brien), and 200 at Greensboro on Oct. 29 (Hewitt). The 35 Bonaparte's Gulls at Ocean City on Nov. 13 (Slaughter) were the first reported and 2 at Lilypons on Nov. 21 (D. Wallace) were the only birds inland.

Terns, Skimmers. Kraus spotted 2 Gull-billed Terns at North Beach on Aug. 16 where they are rare. Counts of Forster's Terns submitted were 175 at Poplar Island on Aug. 12 (Wierenga, Mignogno), 50 at Ocean City on Nov. 12 (Slaughter), and 32 at Bay Ridge on Nov. 20 (Wierenga). Late nesting of Common Terns was documented at West Troy Island, Smith Island on Aug. 2 (Armistead, et al.) with 3 nests with 1 egg and 6 nests with 2 eggs. Other Common Terns of note were 75 at Poplar Island on Aug. 12 (Wierenga, Mignogno), 1 at North Branch, Allegany Co. on Sept. 7 (Paulus), 10 in Talbot County on Sept. 26 (Reese), and 1 at Ocean City on Nov. 13 (Slaughter). There were 40 Royal Terns at Cherry Island, Smith Island on Aug. 2 (Armistead, et al.), 4 at Poplar Island on Aug. 12 (Wierenga, Mignogno), 1 at Baltimore on Aug. 22 (Stasz), and 2 at Bay Ridge on Nov. 20 (Wierenga). An immature Sandwich Tern also was seen by Wierenga, Armistead, and Mignogno at Cherry Island on Aug. 2 approximately 2 miles southwest of Crisfield. It was a banded bird. This is the first record for the Maryland portion of the bay. Dave Abbott counted 254 Caspian Terns at the Anacostia Naval Air Station on Sept. 1. Bystrak noted Caspian Terns at Patuxent WRC, Sept. 1-11, with a high count of 25 on the 6th. The only Black Terns reported were at West Ocean City on July 25 (Warfield) and at Sandy Point on Sept. 8 (Wierenga). At Smith Island there were 11 Black Skimmers on Swan Island on Aug. 1 and 190 on Cherry Island on Aug. 2 (Armistead, et al.). This species seems to be increasing in the bay. Wierenga found 1 immature skimmer at Sandy Point on Aug. 6-10, another at Poplar Island on Aug. 12, and an adult with an immature at Sandy Point on Nov. 8. Others lingered at Ocean City at least through Nov. 22 (Bonham).

Parakeet, Owls. A Monk Parakeet spent at least two weeks around South Point, Worcester Co. during October (Bea Marty). David Czaplak noted fledged young Barn Owls in Washington on Nov. 15, indicating a late nesting. The only Long-eared Owl to be reported was at Rockville on Nov. 27 (Barry Cooper). There were 3 Short-eared Owls at Deal Island WMA on Nov. 26 (Wierenga, Mignogno). Saw-whet Owls were banded at Patuxent WRC on Oct. 12 (Bystrak), Adventure Sanctuary in Montgomery County on Oct. 17 (Donnald), Damsite near Tolchester on Nov. 8 (Mendinhal), and at Mt. Nebo WMA in Garrett County on Nov. 10 (Pope). The only other Saw-whet Owl seen was at Rockville on Nov. 7 (O'Brien).

Nighthawks, Swifts, Hummingbirds. Two huge flocks of Common Nighthawks were seen this fall. One was observed 2 miles southeast of Laytonsville where Wierenga counted 1,258 on Aug. 26. He noted 23 individual flocks of 11-175 birds. In Baltimore on Aug. 30 Mr. and Mrs. Tom Simpson estimated almost 1,000 in flocks of 200-300 birds. The only sizable flock of Chimney Swifts noted this fall was of 400+ birds at Easton on Sept. 16 (Reese). The latest swifts were 5 at Washington on Oct. 22 (Dave Abbott). Floyd Wooters found a nest of the Ruby-throated Hummingbird at Easton that contained two young on Sept. 10. A pair of birds was still near the nest through Oct. 8.

Kingfishers, Woodpeckers. A Belted Kingfisher at Ewell on Aug. 1 (Armistead, et al.) was definitely a sign of migration at that location. The only number of kingfishers reported was 8 at Lilypons on Aug. 23 (Wilson). A Common Flicker at Swan Island on Aug. 2 (Armistead, et al.) was also a migrant. Most observers reported a very good season for Red-headed Woodpeckers with the most notable being 12 migrating along Town Hill on Sept. 17 (Paulus). An early Yellow-bellied Sapsucker was in Charles County on Sept. 19 (Dennis Hodsden). A Downy Woodpecker was at Ewell on Aug. 1 (Armistead, et al.); this species is not known to nest there.

Flycatchers. David Wallace counted 90 Eastern Kingbirds at Gambrill State Park on Sept. 3, a very large concentration for that date. A very late Great Crested Flycatcher was seen at Damsite on Oct. 31 (Gruber). A late Eastern Phoebe was at Piscataway on Nov. 15 (Nistico). A late Yellow-bellied Flycatcher was banded at Adventure on Oct. 3 (Donnald) along with a late Least Flycatcher. Olive-sided Flycatchers were noted at Edgewood on Aug. 26 (Resch), Chesapeake Beach on Aug. 30 (Kraus), and at several places along the C & O Canal from Sept. 5 at Hughes Hollow (Bonham) to Sept. 18 at McKee-Beshers WMA (Czaplak).

Swallows. Ludwig estimated 1,300 Bank Swallows at Lilypons on Aug. 1 and Wilson estimated 150 there on Aug. 23. Czaplak found about 400 in Washington on Aug. 22. Two others were slightly off course 40 miles off Ocean City on Sept. 12 (Effinger). Late Bank Swallows were at Fort Smallwood on Oct. 2 (Wierenga, Clark Jeschke) and in Kent County on Oct. 5 (Gruber). Also in the flock at Lilypons on Aug. 1 Ludwig estimated 1,000 Rough-winged Swallows and 200 Barn Swallows. Late Barn Swallows were at Rockville on Oct. 19 (O'Brien) and Fort Smallwood the same day (Wierenga). Other late migrants seen by Wierenga and Jeschke at Fort Smallwood on Oct. 2 were 2 Cliff Swallows and a Purple Martin. A large roost of Purple Martins numbering in the tens of thousands began building up in an abandoned orchard in Salisbury during July and reached its peak during mid-August (Charles Vaughn).

Corvids. The only tallies of Blue Jay migration came from Talbot County where Reese estimated 300+ on Sept 26 and 700+ on Oct. 4. Armistead and party found 2 American Crows at Cherry Island on Aug. 2, notable because they are quite rare on the bay islands. The crow roost at Rockville was estimated at 1,000+ by Wilson on Nov. 26. Armistead saw a record number of Fish Crows going over his property near Bellevue on Nov. 28; the estimated 970 birds were apparently going to roost on Poplar Island.

Nuthatches, Wrens. Early Red-breasted Nuthatches were at Damsite on Aug. 22 (Gruber) and near Liberty Lake on Aug. 29 (Hammer). Early Winter Wrens were banded at Damsite on Sept. 26 (Mendinhall) and Adventure on Sept. 28 (Donnald). A Carolina Wren in Mountain Lake Park on Nov. 3 (Pope) was a good find in Garrett County. A Sedge Wren was still singing at Elliott Island on Aug. 6 (O'Brien).

Mimids, Thrushes. Northern Mockingbirds may be increasing again in Garrett County judging by the number of sightings this fall. Pope noted 2 in Mountain Lake Park on Sept. 26, 1 on Oct. 12, and 1 on Nov. 5 eating rosehips in her yard. Another was along the Youghiogheny River near Oakland on Oct. 30 (Thayer). Gruber estimated 2,000 American Robins in a Chestertown field on Nov. 18. An early Hermit Thrush was banded near Oakland on Sept. 25 (Thayer). An early Swainson's Thrush was banded at Sandy Point on Aug. 17 (Klockner) and the most reported seen were 20 in Talbot County on Sept. 26 (Reese). A late Gray-cheeked Thrush was in Calvert County on Nov. 8 (Nistico).

Kinglets, Pipits, Waxwings. A Blue-gray Gnatcatcher at Pines, Smith Island on Aug. 1 (Armistead, et al.) was a typically early migrant. Late birds were found on Oct. 4: 1 at Fort McHenry (Bielenberg) and 3 by the Talbot County Bird Club. A record early Ruby-crowned Kinglet was found near Oakland on Aug. 17 (Thayer) and the next was in Frederick County on Sept. 6 (D. Wallace). The only flocks of Water Pipits to be reported were 75 in Talbot County on Oct. 20 (Reese) and 20 at Summit Hall Turf Farm on Nov. 1 (Bonham). The 6 Cedar Waxwings at Oxford on Aug. 6 (Reese) may have been evidence of local breeding. A late clutch of waxwings hatched on Sept. 9 at Boonsboro (Doyle).

Shrikes, Vireos. Effinger found 2 Loggerhead Shrikes in Talbot County for several days beginning Aug. 26, when they usually migrate through this region. Another was at Deal Island WMA from Oct. 4 (Mignogno, Wierenga) through Nov. 27 (Charles Swift, Richard Schad). A late Yellow-throated Vireo was in Anne Arundel County on Sept. 27 (Hammer). A very early Solitary Vireo, perhaps a local breeder, was in Frederick County on Sept. 6 (Nistico) and a definite migrant was banded at Romney Creek, Aberdeen on Sept. 19 (Bilsborough). Late Red-eyed Vireos were banded at Adventure on Oct. 20 (Donnald) and Damsite on Oct. 31 (Mendinhall). An early Philadelphia Vireo was in Talbot County on Sept. 7 (Effinger).

Warblers. Among the earliest arrivals for this family were a Cape May Warbler banded at Damsite on Aug. 22, a Blackburnian Warbler at Sunderland on Aug. 9 (Kraus), a Chestnut-sided Warbler in Columbia on Aug. 17 (Ludwig), a Palm Warbler in Talbot County on Sept. 7 (Effinger), and a Northern Waterthrush on Aug. 5, a Connecticut Warbler on Aug. 30, and a Wilson's Warbler on Aug. 19 all three banded at Patuxent WRC (Bystrak). Golden-winged Warblers were detected only in September with birds on the 9th at Greensboro (Hewitt) and in Talbot County (Effinger), on the 13th near Liberty Reservoir (Ben Yokel) and at Tilghman Island (Talbot County Bird Club, at Rockville on the 14th and 26th (O'Brien), and 1 banded at Laurel on the 19th (Robbins). The only Orange-crowned Warblers reported were banded at Patuxent on Oct. 8 (Bystrak), seen at Gambrill S.P. on Oct. 12 (D. Wallace), banded at McDonogh on Oct. 17 (Jarboe), and seen at Elkton

on Oct. 30 (McCandless). Armistead banded a good total of 5 Nashville Warblers near Bellevue on Sept. 20. Likewise, 8 Black-throated Green Warblers seen at Denton on Oct. 5 (Nuttle) was a good number. The only migrant Cerulean Warbler noted was at Sunderland on Aug. 23 (Kraus). Connecticut Warblers appeared in good numbers including 10 banded at Adventure during September. Others of note were at Sunderland on Sept. 12 (Kraus), banded at Damsite the same day, on the 13th at Severn Run (Hammer) and on Tilghman Island (Talbot County Bird Club), on the 21st at Blackwater (Coble) and at Rockville (O'Brien), and banded near Bellevue on the 26th (Armistead). Mourning Warblers were few, with birds at Rockville on Sept. 7 (O'Brien), Severn Run on Sept. 13 (Hammer), banded at Adventure on Oct. 6, and banded at Damsite on Oct. 11. A host of birds survived late into the season with a Tennessee Warbler at Annapolis on Oct. 22 (Wierenga), a Cape May Warbler at Sandy Point on Oct. 24 (Wilkinson) and another at Fort McHenry on the 27th (Bielenberg), a Black-throated Blue Warbler banded at Damsite on Oct. 31, a Black-throated Green Warbler investigating a seed feeder in Mountain Lake Park on Nov. 6 (Pope), a Blackburnian Warbler at Rockville on Oct. 10 (O'Brien), Yellow-throated Warblers in Frederick County on Sept. 24 (D. Wallace) and in Talbot County on the 27th (Reese), a Chestnut-sided Warbler banded at Damsite on Oct. 9, a Palm Warbler at Sandy Point on Nov. 21 (Wierenga), Ovenbirds in Howard County on Oct. 27 (Munro) and banded at Adventure on the 29th, a Louisiana Waterthrush at Rockville on Sept. 7 (O'Brien), an extraordinarily late Kentucky Warbler in Howard County on Sept. 23 (Solem), a Common Yellowthroat at Frostburg on Nov. 2 (Ludwig), a Hooded Warbler banded near Oakland on Oct. 5 (Thayer) and 1 at Fort McHenry on the 10th (Bielenberg), and a Wilson's Warbler at Piscataway on Oct. 25 (Nistico). Banding records from Damsite in Kent County are by Dottie Mendinhall and those at Adventure Sanctuary by Margaret Donald and assistants.

Icterids, Tanager. The only flock of Bobolinks noted was 350 near Worton on Sept. 10 (Gruber). The 8 "Baltimore" Orioles at Seneca on Aug. 15 (Wilson) marked the high point of that species' migration. Another observed in downtown Baltimore on Nov. 24 (Stasz) probably attempted to winter locally. The only concentration of Rusty Blackbirds to be reported was 50 at Lilypons in October and November (D. Wallace). A male and 2 female Boat-tailed Grackles were reported at Fishing Creek Marsh in Calvert County on Aug. 16 (Kraus). An exceptionally late Summer Tanager was at Denton on Oct. 16 (Knotts).

Finches. Twelve Blue Grosbeaks at Denton on Sept. 25 (Fletchers) were the most reported from one location. Reese noted an Indigo Bunting still singing in Talbot County on Sept. 11 and a late one was banded at McDonogh on Oct. 17 (Jarboe). Reports of Evening Grosbeaks were scattered with these sightings of numerous birds: 30-40 near Oakland on Nov. 1 (Thayer), 21 at Chestertown on Nov. 9 (Gruber), and 30 at Mountain Lake Park on Nov. 15 (Pope). Early Purple Finches were in Talbot County on Sept. 5 (Effinger) and at Rockville on the 10th (O'Brien). Mr. and Mrs. Calvin Coblentz found House Finches nesting in a small evergreen on their 26th floor balcony at the Ridgely in Towson for the third consecutive year. Reese noted fledgling House Finches in Annapolis on Sept. 3. The only reports of Red Crossbills were 20 at Loch Raven on Nov. 15 (John Robinson, et al.) and at Rockville on Nov. 21-23 (O'Brien). The only White-winged Crossbill sighting was at Chancellors Point, St. Marys County on Nov. 3 (Allison Turner).

Sparrows. Reese found a dead Savannah Sparrow in Annapolis on Aug. 14, an exceptionally early date for a migrant. The earliest of the more typical arrivals was at Frostburg on Sept. 6 (Ludwig). A Grasshopper Sparrow on Assateague on Aug. 7 (O'Brien) was an early migrant and one lingered to Oct. 7 in Howard County (M. Wallace). Wierenga noted a "Nelson's" Sharp-tailed Sparrow at Sandy Point on Oct. 2. An unusually early White-throated Sparrow was seen by the Hannays and the Obermans at Fort Smallwood on Sept. 7. A very early Fox Sparrow was banded at Patuxent WRC on Sept. 28 (Bystrak). Dead Lincoln's Sparrows were found in Lexington Park on Oct. 9 (Willoughby) and McDaniel on Oct. 12 (Effinger). Snow Buntings were reported at Sandy Point, with 11 on Nov. 5 and 15 on the 8th (Wierenga), at Lilypons, with 2 on Nov. 18 (D. Wallace), at Triadelphia from Nov. 25 through Dec. 17 (M. Wallace, et al.), and at Blackwater with 35 on Nov. 28 (Kaestner, et al.).

3501 Melody Lane, Baltimore, MD 21207

A CEDAR WAXWING NEST IN WORCESTER COUNTY, MARYLAND

D. DANIEL BOONE

Stewart and Robbins (*Birds of Maryland*, 1958) describe the breeding status of Cedar Waxwing (*Bombycilla cedrorum*) in Maryland as: "common in the Allegheny Mountain section; uncommon in the Ridge & Valley, Piedmont, and Upper Chesapeake sections; rare in the Western Shore and Eastern Shore sections."

On June 11-12, 1980, while camping at Shad Landing State Park on the Pocomoke River, I observed a pair of Cedar Waxwings at their nest. I was walking around the marina when I heard the high, thin notes of a waxwing. Stopping to locate the source, I spied the bird perched atop a 40-foot White Pine near the boat docks. "A late migrant," I thought (the latest departure date is June 15). The calling bird flew and another waxwing, perching nearby but undetected by me, followed. They flew a short distance and landed atop another pine. The first bird was still calling.

I promptly found a comfortable seat in order to watch the pair further. Within 10 minutes one of the waxwings flew into the pine in which I first spotted it. I scanned the area in which it landed but could not immediately find the bird. A closer look, however, revealed a nest in that vicinity. The nest was about 30 feet above the ground so I could not see if it was occupied. Continuing to watch, I eventually observed a waxwing leaving the nest. Then the pair returned and perched by the nest. The next day I again observed a waxwing fly into and sit on the nest. This represents the first reported nest record of a Cedar Waxwing for Worcester County, Maryland.

12123 Dove Circle, Laurel, MD 20708

JUNIOR NATURE CAMP REPORT, 1979 and 1980

A report of the 1978 Junior Nature Camp of the Baltimore Chapter of MOS was published in *Maryland Birdlife* 34:182-183, 1978. Without any trace of unwarranted pride, I can say that I am confident that these past three camps fit well within the 20-year MOS tradition of excellence in nature education. Each session was unique in character but identical in the high degree of excitement generated for nature study. Most of that excitement came from the campers themselves, for it has always been our policy to operate the camp for children who have already been captivated by their love of nature study by the time they are 8 or 9 years old. Reports of each camp session have already been carried in the *Newsletter* of the Baltimore Chapter. We are reporting in *Maryland Birdlife* to the entire membership since we have been registering campers from other counties and feel that there is a wide interest in the activities of the camp. We invite an even wider representation, especially from areas where no Nature Camps are conducted.

The main difference in the 1979 and 1980 versions of Junior Nature Camp from their 1978 predecessor was the location. After 10 years at Camp King's Landing in Calvert County, we moved to Camp Hashawha in Carroll County. The deciding factor was the cost of facilities and transportation. We do have a few regrets about the change...no Great Blue Herons flying along the wide Patuxent, no chance sighting of an eagle, no Whip-poor-wills singing near the tents in the early morning. There was never more than a moment's time for these regrets, however, once we started to make Hashawha our home for Junior Nature Camp '79. Three times before the opening of the first camp, prospective leaders met at Hashawha for field days to explore the area, to locate good spots for the mist nets, to find streams and springs, to follow the paths with the help of maps and to learn how to avoid the steepest hills.

Hashawha is an Indian word meaning "oldfields." History reports Indians using the area for many centuries before the earliest European settlers arrived. Indians' migratory paths from Ohio to the Delaware coast crossed Hashawha's fields. Indians who summered on the Chesapeake Bay wintered along Hashawha's streams in the protected valleys. When white men and women began to move into Carroll County in the 1700's Hashawha was made into a 2,270 acre land grant, which was divided many times through the years. During the Civil War, Confederate cavalry (on its way to Hanover) encamped throughout the fields. It was easy for us to see why Indians and early settlers would have found the area so hospitable. There remains in one of the valleys, close to a spring, an old log cabin built before the Civil War, standing now as an example of the architecture of necessity, chimney built of local stone, logs hewn from trees felled nearby. In 1977 the Carroll County Commissioners opened modern Hashawha to be used by the citizenry to learn to understand, to appreciate, and to conserve our natural resources. All school children of the county spend a week of their sixth grade at the camp. The number of groups wanting to visit Hashawha keeps the schedule full throughout the rest of the year. We have been able to use the excellent facilities to good advantage, a large lodge with dining room and classrooms, and 5 large cabins,

surrounded by 300 acres within the boundaries of the camp and 700 adjoining acres owned by the county to be kept free from development. In 1979 we had 50 campers with 25 leaders, in 1980, 65 campers with 30 leaders.

Campers who had been to King's Landing with us noticed the contrast in the terrain immediately, the rock-strewn hillsides of the Piedmont differing markedly from the sandy coastal plain of Calvert County. Two large streams run through Hashawha's valleys providing ample material for study of fresh water organisms. Swampy stretches allow the study of many kinds of plants in addition to those found along the streams and on the wooded hillsides. A pond created by damming one small stream is another fertile area for students of aquatic biology. The tall grasses, the thickets, the deep woods, and the open fields furnish living space for mammals, reptiles, amphibians, and insects to hide in while we seek clues to their habits and identities. The sky from the hilltops of Hashawha has given us the entire range of possibilities for study: the moon, clouds heavy with rain, clouds threatening storms, 30 m.p.h. winds, lightning, rain and hail, and many bright shining hours of sun to cast light on our discoveries. Our leaders come equipped with knowledge of astronomy, botany, mammals, aquatic biology, geology, insects and spiders, reptiles and amphibians, meteorology and mapmaking, ecology and energy, and of course, birds.

Our emphasis on bird study was noticeable in the selection of our Friday evening visiting speakers, in the continuous maintenance of our banding stations, in our popular bird walks, and in our frequent reports of current bird sightings. Our Friday night speakers spoke of soaring vultures and hawks in 1979, in 1980 of bluebirds. In 1979, 70 species of birds were listed, of which we'll mention 8 warblers: Worm-eating, Blue-winged, Northern Parula, Yellow, Blackpoll, Prairie, Common Yellowthroat, American Redstart; 5 sparrows: Grasshopper, Vesper, Field, Chipping, Song; and 3 vireos: White-eyed, Red-eyed, Yellow-throated. Twenty-seven species were observed nesting: Eastern Bluebird, Northern Oriole, Scarlet Tanager, Ring-necked Pheasant, and Eastern Phoebe, to name a few. In 1979 we were constantly aware of the Grasshopper Sparrow nesting in a newly cut field near the dining hall. In 1980 we missed these birds, but understood how disturbing the close cutting of the field must have been to their nesting activities. The banders banded 19 species, a total of 72 birds in 1979, the Grasshopper Sparrow being the most unusual for the JNC banders. In 1980 we recorded seeing 59 species, the most noteworthy being the nesting Blue-winged Warbler. Our banders banded a total of 56 birds of 13 species in 1980. The most exciting bird-in-hand was a Red-bellied Woodpecker. The intensity of its color, its obvious pent up energies made it a memorable bird. Our second year of banding in the same area near the old cabin produced a number of interesting returns: 3 Field Sparrows from the 6 banded in 1979, 1 Blue-winged Warbler from the 2 banded in 1979, 1 each of Indigo Bunting, Carolina Chickadee, and Gray Catbird. Thinking of the migratory flights of the warblers and the Indigo Bunting to South America caused us to marvel at the cosmic relationships of these tiny creatures with this small spot in Carroll County. The difference between the reports of the 2 years is a reflection of the shorter period of banding in 1980 because of the weather and also because of our incomplete reporting at our final meeting on Sunday afternoon.

With the many streams lining the valleys, ox-bowing through the meadows, we found our groups spending much time at stream side learning about the inhabitants of the watery environment. Representatives of Trout Unlimited and Save Our Streams augmented the extensive knowledge of our aquatic biology teachers. Large numbers of different kinds of specimens were found, indicating good water quality in Hashawha's streams. Though it is still early in the season when we visit the camp and the organisms are quite small and difficult to see, campers did find several kinds of sculpin, some dace, and darters. A newly molted crayfish was found with its discarded exoskeleton nearby. Plankton containing several identifiable species of microscopic plants and animals: copepods, daphnia, spirogyra, oscillatoria, to name a few, was observed with microscopes carried to streamside and in the laboratory set up in a classroom in the lodge. Six kinds of insect larvae were found: mayfly, caddisfly, dobson fly, crane fly, midgefly, and mosquito.

The plants, ranging from the oaks and maples of the climax forest to the microscopic algae found in the bark of those trees, the grasses in the fields, the wildflowers (most notable being 4-leaved milkweed and Bowman's root), the non-flowering fungi, mosses and ferns, kept many groups busy for hours. At least 33 species of woody plants were identified, including 4 kinds of oaks. These same trees supplied us with ecological studies..."holes in trees" and "communities in a woodpile." Microscopes, binoculars, and magnifying glasses were used to discover the various forms of life using holes in trees for their homes.

One of our geology leaders admitted that Hashawha is located within a rather uninteresting geologic formation, too limited to see any grand design. No matter, they had no trouble interesting our young geologists in the techniques of study. They learned that the rocks in the roadbed outside the lodge were marble, a common rock in Carroll County, but probably originating in nearby Baltimore County. Phyllite, another rock of local origin, was found in the chimney of the pre-Civil War cabin. A look at the bottom of the streams allowed them to discover quartz pebbles. The instructors spoke of the probable ages of these rocks, helping the campers realize just how old these fields are. The campers used dilute hydrochloric acid to help them distinguish the difference between the marble and the phyllite, making them feel very scientific indeed. To take home with them to continue their studies the campers were given geology maps of Maryland.

Herpetology has always been a popular pursuit at Junior Nature Camp. The short list of specimens found at Hashawha is inversely proportional to the amount of time spent searching for them. Fortunately, leaders often bring their own specimens of snakes and turtles to round out their studies. At Hashawha our herpetology list included bullfrogs, American toad, salamanders (red-backed, dusky and northern two-lined), turtles (snapping, spotted and box) and a milk snake.

Mammal study groups recorded sightings and other evidence of chipmunks, gray and red squirrels, deer, raccoons, skunk, fox and bats. A Hav-a-Hart trap was set out both years but yielded nothing either time.

Insect and spider classes combed the grasses, peered into dark corners, and looked under old logs for small creatures with 6 or 8 legs. A chrysalis of a Baltimore checkerspot butterfly was found, initiating a discussion of Maryland's official insect. Spider study was included in our program for the first time in 1979. Its popularity demanded that we repeat it the following year. Spiderwebs were noted for their beauty as well as their identifiable characteristics.

A nature photography group had the advantage of practicing their art under the direction of an accomplished professional photographer. They were directed to observe Hashawha from a broader perspective, the old log cabin and the new solar oriented dining hall, the broad vistas from the tops of hills to the smaller views of minute samples of life. They learned to interpret nature through the lens of a camera and produced some lovely prints on our Polaroid cameras with instant returns, as well as on their own rolls of film to be developed later for reminders of some supreme moments.

Wind energy and the energy of the sun did not go unnoticed. Wind energy was observed turning Hashawha's prominent wind mill, built to eventually supply energy to pump water for the camp. The sun's energy was directed by a collection of small devices to cook a hot dog, quick-dry a wet tennis shoe, distill water, provide moisture for survival, and turn small wheels. On a hot sunny day a representative of Solar Action of Maryland kept us aware of the many possibilities of the power of the energy of the sun. Our nurse passed around cooling drinks of water to keep us comfortable during these demonstrations.

Weather observations were made at intervals during both sessions. It was only natural for the Director to have wished for cloudless skies for all our days and nights at Hashawha, but we had all studied science long enough to know that meteorology cannot control the weather, only observe it and try to predict it. At no time was our program curtailed by the cloudy, wet, sometimes violent weather. We were prepared with alternate plans for indoor activities and became adept at managing the schedule to fit the weather. At 1979's campfire, held under cloudy skies, we sang and spoke of how we all became interested in nature study, hoping that the skies would clear if we sang long enough. Just as we dismissed for bedtime we finally noticed the clouds breaking with a bright moon shining through. Our astronomer had his telescope set up in short order and the moon was visible long enough for everyone to get an exciting, enlarged view before the clouds covered it again. In 1980 it was obvious that the campers were actually enjoying their indoor "campfire," complete with storytelling, singing, and a slide show of a recent eclipse brought to us by the members of the Baltimore Astronomical Society while hail, heavy rains, floods, lightning, and 30 m.p.h. winds prevailed outside.

Each year, late on Saturday afternoon, some light moments are scheduled in: one year, "nose-bag-drama," one year "create-a-beaste", when campers in small groups can amalgamate their new-found knowledge, flavor it with some humor, and present it to their campmates for applause. It is a welcome break in the intensity of the day's serious pursuits and gives the campers a chance to react to the abundance of images presented to them.

If there is any criticism to be made of the program it may lie in our emphasis on the specifics of Hashawha's natural history. In the future we may want to broaden the scope of our field work to include relationships of the multitudes of life forms surrounding us at Hashawha. One short weekend in June each year is hardly enough to more than touch lightly a small sample of all the possibilities. Our record keeping needs to be improved too. For the 10 years that we were at King's Landing we have almost no records of the flora and fauna surveyed. We do not have a very good beginning on that score at Hashawha, either. We do have a file of evaluations by campers and leaders, both groups praising our efforts, asserting the worth of Junior Nature Camp, determining to return. We invite you to join us.

Joy Wheeler, Director JNC, '78, '79, '80
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BOOK REVIEWS

BREEDING BIRDS AND OLD FIELD SUCCESSION ON FALLOW LONG ISLAND FARMLAND

Wesley E. Lanyon. 1981. Bull. Amer. Mus. Nat. Hist. Vol. 168, Article 1. New York. 60 p. black & white photos, charts, maps. \$3.90.

Plant succession on fallow farmland influences directly the diversity and density of bird populations in the area. The author was able to study this phenomenon over a period of 20 years at the Kalbfleisch Field Research Station on Long Island. The records published here are of obvious value in the ongoing study of that area and would serve as good models for the keeping of records at our Sanctuaries. Nest descriptions of the bird species studied are worth reading in themselves. The bird species observed, listed in the order in which they became breeding birds in these old fields are: Red-winged Blackbird, Song Sparrow, Field Sparrow, Indigo Bunting, Common Yellowthroat, Blue-winged Warbler, Gray Catbird, Brown Thrasher, Rufous-sided Towhee. Lanyon states his conclusions clearly and compares his findings with similar studies in other areas.

Joy Wheeler

BIRDS AT RISK A Comprehensive World-Survey of Threatened Species

Ralph Whitlock. 1981. Moonraker Press, Willshire, England. 159 p., maps, color and black & white photos, index. \$30.00.

A review of the birds that have become extinct within the period of our known history is a logical beginning for a book about birds at risk in modern times, depressing as it is. It is interesting to note how many of the flightless birds have become extinct, flight being one of birds' major assets in survival. The author then presents reasons for birds becoming endangered today: restrictive ranges of small islands and limiting altitudes, the extension of agriculture, the direct and indirect interference of man, assets and liabilities derived from the birds' own life style. Some birds have adapted to man; man has attempted to preserve and protect the birdlife in some areas. The illustrations of the book are a curious mixture of paintings by Matthew Hillier, black & white photographs, many by the famous Eric Hosking, and color photographs, several of noticeably poor color quality. The book seems a bit over priced, but has been endorsed by the World Wildlife Fund which may be receiving some of the profits.

Joy Wheeler

BLACK VULTURES NESTING IN ALLEGANY COUNTY

DAVID M. LYONS AND JIM WILKINSON

A Black Vulture (*Coragyps atratus*) was observed on March 8 and 15, 1981, roosting in trees on the north slope of Rocky Gap, 6 miles northeast of Cumberland, Allegany County, Maryland. On March 29 a narrow cave was located two-thirds of the way up a cliff, close to the previous sighting. An adult Black Vulture was flushed from the cave; it perched in a nearby tree for several minutes, then disappeared out over the valley. Feces and several molted feathers were found around the entrance, but there was no other evidence of nesting.

On May 30 an adult Black Vulture was again flushed from the cave and exhibited the same hesitation in leaving the area as was observed on the previous visit. Two downy nestlings were discovered in the cave. The nestlings hissed and crawled to the farthest crevices of the cave. Only one individual was retrievable, and it regurgitated several times while being handled and photographed. McHargue (1981) reported that nestlings she handled frequently during a growth study never regurgitated. The nestling was returned to the cave and the nest site left undisturbed for the rest of the summer.

The cave entrance was 2.0 m high and 0.6 m wide and was exposed to the southeast. The cavity twisted 3.0 m back into the cliff, becoming very narrow toward the back.

Although common in southeastern Maryland, the Black Vulture is listed as a rare visitor in the two western counties of the state (Stewart & Robbins 1958) and we know of no nesting records west of Frederick County.

McHargue, L.A. 1981. Black Vulture Nesting, Behavior and Growth. *Auk* 98:182-185.
Stewart, R.E., and C.S. Robbins. 1958. Birds of Maryland and the District of Columbia. North American Fauna 62. U.S. Dept. Interior, Washington, D.C. pp. 106-107.

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BOOK REVIEWS

THE COUNTRY JOURNAL BOOK OF BIRDING AND BIRD ATTRACTION

Alan Pistorius. Illus., Don Almquist. 1981. W.W. Norton & Co., New York. Black and white line drawings, map, charts, 274 p. \$15.95.

With the spreading popularity of birding has come a growing number of "how-to" birding books. If I had not already allowed myself to be caught up in this inexplicable activity, I'm not sure that any one of these books would be stated strongly enough to convince me to take up my binoculars and follow. However, since I've already done that, these books fascinate me. I

read them to see in writing old, well-learned techniques repeated and reinforced, to see old familiar names in the birding world listed and quoted, to read the classic anecdotes of rare bird finds, to relive my own experiences in finding a special bird. And in so doing I pick up new stories; I determine to develop my observations into something more scientific, and I add to my knowledge of birding beyond Maryland's boundaries.

Pistorius does present topics useful to the person with birdwatching as a hobby: feeding, establishing bird houses, attracting birds to the ordinary urban and suburban property "long on lawn and short on habitat." His descriptions of trees and shrubs are complete and are summed up in chart form, along with a map of zones of plant hardiness. If erecting a bird house for cavity nesters, maybe something you've always wanted to do, there are directions complete with chart, to help you do just that. There is even the amazing suggestion that if you put up the right box in the right place, you may even attract a Prothonotary Warbler.

In the Birding part of the book Pistorius describes the listings and competitions in which you may want to become involved, the Atlas Project as it got its start in Britain and expanded into Maryland (yes, he mentions the Maryland Ornithological Society's part in that), the Audubon Society's Breeding Bird Census and the Breeding Bird Survey of the U.S. Fish & Wildlife Service. Chandler Robbins is quoted as confirming the fact that all three of these surveys are valuable, each one producing some information not provided by the other.

As for the madness of birding, the Big Year, the Big Day, Pistorius describes these well enough to make even the most casual birder determine to take part some time, before infirmity clouds the eyepieces of the binoculars, which were so clear just 20 years ago.

The lack of a bibliography is justified by the author by including instead a "Master List of Bird Books" and his own list of the most serious ornithological journals.

I would want to have this book on my shelf not for many of the good points already mentioned, alone, but also for the tone of the very last 3 paragraphs. The author's expression of the continuity of the birding year is almost poetic, and could be picked up and read often, each time evoking an emotion recognizable to all birders for its cosmic implications.

Joy Wheeler

THE ENERGY BOOK A Look at the Death Throes of One Energy Era and the Birth Pangs of Another. Wayne Hanley and John Mitchell. 1979. 175 p.

A LIFE OUTDOORS A Curmudgeon Looks at the Natural World. Wayne Hanley. 1980. 114 p.

QUABBIN The Accidental Wilderness. Thoman Conuel. 1981. 62 p. Massachusetts Audubon Society. Stephen Green Press, Brattleboro, Vt.

The Massachusetts Audubon Society publishes the *Man and Nature* Series and these are the three most recent annual publications. They are attractive books, not large, and very readable, worth the price of membership in the Society, affectionately known as "Mass Audubon." We get them as the result of our exchange agreement with *Maryland Birdlife*, and they are kept with the rest of the exchange journals in the third floor closet at Cylburn. "Quabbin," the most recent one, is an historic and environmental account of Boston's water supply, sensitively written, presenting the controversies of displacing families and farms for water supply, with the unexpected result of an important wilderness within 60 miles of a large city. The story must parallel that of Baltimore's Loch Raven, both being created within the same decade. What can we learn from Quabbin's restricted usage that will help us to determine a healthy future for Loch Raven and the rest of our watersheds?

I mention these three small volumes for your review to introduce an idea for us of MOS. There are educated opinions and philosophers among us energy-conscious Marylanders; we have our share of curmudgeons looking at the natural world; we have a story to be told about "accidental" wildernesses in our state. It's time for some of us to be publishing for the rest of the world to read. Our stories are as worth telling as those of Massachusetts.

Joy Wheeler



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