

MARYLAND BIRDLIFE



Bulletin of the Maryland Ornithological Society, Inc.

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MARYLAND ORNITHOLOGICAL SOCIETY, INC.

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Cover: Little Tern nestlings at Millers Island, Baltimore County. Photo by Stephen W. Simon, June 22, 1977.



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AMERICAN OYSTERCATCHER AND HERRING GULL BREED IN DORCHESTER COUNTY

Henry T. Armistead

On June 4, 1977, I spent most of the day exploring all of Barren Island, which is situated about one mile west of Hooper's Island on the edge of Chesapeake Bay. Among the most interesting of the 48 species of birds seen in this area were a Black Vulture that flushed out of the undergrowth adjacent to the Barren Island heronry and a singing Acadian Flycatcher in the center of the island's large loblolly pine stand. which was otherwise nearly bereft of land birds. Lingering shorebirds made the day memorable and included 1 Semipalmated Ployer, 1 Killdeer, 19 Black-bellied Plovers, 18 Ruddy Turnstones, 2 Dunlins, 5 Short-billed Dowitchers, 70 Semipalmated Sandpipers, and 4 Sanderlings. In the late afternoon I checked a series of oyster and sand bars north of Barren Island in an area just north of Barren Island Gap and south of small areas known as the Big Broads, the Marshes, and Long Marshes. Other than resting waterbirds these were all devoid of birdlife except for one. This one bar was about 500 feet long and contained the following nests.

Contents:	0 eggs	1 egg	2 eggs	3 eggs	Total Nests
American Oystercatcher	_	ī			1
Herring Gull	3	-	1	_	4
Common Tern	_	_	_	1	1
Little Tern	_	2	43	13	58
Total					64

This may possibly be the most diversified ground/sand nesting bird population of any island in Chesapeake Bay. The oystercatcher and gull nests represent first breeding records for Dorchester County. The oystercatcher nest is a new breeding record for the Maryland part of the Bay. The two species' nests were within eleven paces of each other. The oystercatcher egg measured approximately 40 X 57.5 mm. The gull eggs were 47.5 X 70 mm and 47.5 X 67.5 mm. A pair of oystercatchers remained on the island during the length of my stay there as did adults of the other breeders, the gulls and terns flying nervously overhead. Earlier in the day a single oystercatcher egg (circa 40 X 57.5 mm) was discovered on the south end of Barren Island over three miles to the south. This was a few feet from the Bay edge in Spartina patens and not in the sand. Although a pair of anxious oystercatchers had remained in

the area during the entire time of my visit, I assumed this first egg had either washed away somehow from the real nest or was the product of an oystercatcher having "misfired." At any rate, these big, attractive shorebirds were definitely attempting to breed on Barren Island as well.

Third and fourth oystercatcher breeding localities were established on June 19, 1977. The third was a sandspit on Pone Island (Bloodsworth Point) where two adults accompanied two downy chicks. This is on the south edge of the naval bombing impact area directly next to an abandoned helicopter on top of which was an Osprey nest. A few hours after my visit a ship shelled this area. The fourth site was about one mile south on the north end of Adam Island, also navy owned. Here two adult oystercatchers accompanied three large young. The feathering on the young here was well developed but they did not fly. Two slipped into the marsh grasses. The third swam out from the shore. Less than one hundred yards from where they were first seen an 81 mm mortar was in firing position surrounded by crates of live rounds. Such is the strange admixture of semiwilderness marsh islands and military activity which comprises the Bloodsworth Island area. Oystercatchers were first seen in Dorchester County at Adam Island in May 1972. At that time I found two opened and abandoned eggs there which may well have been oystercatcher eggs. The shell fragments are each slightly larger than one half of a whole egg, probably victims of an unknown predator.

A second Herring Gull nesting site was located on June 19, 1977, on a well-vegetated sand bar on the southwest side of Holland Island. Sixteen adult birds were seen wheeling high overhead and calling after having flushed from the bar. Five nests were found; three were empty, one contained a recently dead chick, and the last a 100-watt bulb. At this same site two pairs of Herring Gulls and a female Gadwall flushed out of the grass on July 3, 1976, when breeding was suspected but not Less than 100 yards from this tiny gull colony on a similar verified. small island was a colony of Common Terns with 21 active nests, all with eggs except for one with two young. These Herring Gull nests represent a modest range extension of about 8 miles (Holland Island) and 31 miles (Barren Island Gap sand bar) up the Bay from the three very large colonies on Smith Island (at Easter Point, Ewell, and Rhodes Point). latter number thousands of birds and seem to be the only other Herring Gull colonies in the Maryland part of the Chesapeake Bay. In the late 1950's, before it completely eroded away, Sharp's Island, in Talbot County, was the northernmost gull colony in the Bay and also the site of the first detected Herring Gull nesting in Maryland (Maryland Birdlife 12:3-5, March 1956, "A Trip to Sharp's Island," by Richard L. Kleen). Sharp's Island was about 20 miles northwest of the Barren Island area.

28 East Springfield Ave., Philadelphia, Pa. 19118

Corrigendum. Maryland's first Thin-billed Murre, on December 29, 1976 (Maryland Birdlife 33: 105), was discovered not by Jay Sheppard, but by Charles Vaughn, who showed it to Mr. Sheppard.

NUMBER OF BROODS PER SEASON RAISED BY SOME BIRDS AT BALTIMORE

Hervey Brackbill

Many species of birds raise just one family a year. Others regularly raise two, or even more. For most multi-brooded species, including some of our commonest ones, the number of broods normally raised by successful parents is unknown. Yet this information is just as essential as knowledge of the clutch size if one wishes to estimate the annual reproductive effort or "recruitment" of a species. Knowledge of recruitment, in turn, can be used to estimate annual mortality, so it is of real importance to conservationists.

One of my efforts as a bird-watcher in Baltimore's northwestern suburbs has been to determine the number of broods raised by marked birds of the species in my neighborhoods. The accompanying table gives the results I have obtained since 1938. Most of the figures are for color-banded pairs that I have succeeded in following through their entire breeding seasons.

The figures represent successful nestings only; some of the pairs also had one or more failures but persisted until they achieved the normal number of families for their species. On the other hand, some of the same species, and some additional ones, disappeared from my vicinity after a single early-spring nesting, or appeared only at what should have been second-brood time; whether these were really single-brooded or whether they had successful or unsuccessful nestings elsewhere during the year is unknowable.

It should be noted that these figures are for the Baltimore area; in Western Maryland, where the breeding season is shorter, and in Southern Maryland, where it is longer, permanent residents such as the Cardinal and Song Sparrow may well be able to raise fewer and more broods, respectively.

Species	Number of Broods	Number of Pairs Observed; Comment
American Kestrel Falco sparverius	1	Two unmarked pairs.
Killdeer Charadrius vociferus	2	Two pairs; the birds were not marked, but in each year one nesting immediately followed the other in the same area.
Common Flicker Colaptes auratus	1	Four unmarked pairs.
Red-bellied Woodpecker Melanerpes carolinus	1	Four color-banded pairs.

Species	Number of Broods	Number of Pairs Observed; Comment
Red-headed Woodpecker Melanerpes erythrocephali	l us	One pair, the female color-banded.
Downy Woodpecker Picoides pubescens	1	One color-banded pair.
Eastern Kingbird Tyrannus tyrannus	1	Three unmarked pairs.
Great Crested Flycatcher Myiarchus crinitus	1	One color-banded pair.
Rough-winged Swallow Stelgidopteryx ruficolli	. l	Three unmarked pairs.
Blue Jay <i>Cyanocitta cristata</i>	1	Eight pairs, 7 of them color-banded.
American Crow Corvus brachyrhynchos	1	Two unmarked pairs.
Carolina Chickadee Parus carolinensis	1	Six color-banded pairs.
Tufted Titmouse Parus bicolor	1	Seven color-banded pairs. Rarely, 2 broods may be raised; I once saw a begging juvenile apparently fed on the very late date of September 29 (Auk 87: 531, 1970).
House Wren /Troglodytes aedon	2	Three pairs, 2 of them color-banded.
Northern Mockingbird Mimus polyglottos	2, 3	Eight pairs, 7 of them color-banded. Unluckily, the one pair that I believe raised 3 broods were unbanded; their record was: eggs laid April 14-16 at 2501 Pickwick Road in Dickeyville, 2 young fledged on unknown date; eggs laid May 16-19 at 2500 Pickwick, banded young fledged by June 13; 2 unbanded fledglings found at 2506 Pickwick on August 2.
Gray Catbird Dumetella carolinensis	2	Seven color-banded pairs.
Brown Thrasher Toxostoma rufum	2	Observation of 1 color-banded male: carrying food June 8, feeding a fledging August 7-16.
American Robin Turdus migratorius	. 2, 3	Thirteen color-banded pairs; 11 pairs had 2 successful nestings, 2 pairs had 3.

<u>Species</u>	Number of Broods	Number of Pairs Observed; Comment
Wood Thrush Hylocichla mustelina	2	Three color-banded pairs.
Starling Sturnus vulgaris	2	Five color-banded pairs.
House Sparrow Passer domesticus	2, 3	Four pairs, 3 of them color-banded. Two pairs raised 2 broods, 1 raised 3, and 1 (unbanded) raised at least 2 and apparently 3.
Northern Cardinal Cardinalis cardinalis	2, 3	Eleven color-banded pairs. Two broods common, 3 not uncommon, and I believe 4 pairs are raised sometimes, although I have never succeeded in keeping track of a pair through 4 successful nestings.
Rufous-sided Towhee Pipilo erythrophthalmus	2	Three color-banded pairs.
Song Sparrow Melospiza melodia	2, 3	Five color-banded pairs; 3 raised 2 broods and 2 raised 3. I believe that more than 3 are sometimes raised.
		2620 Poplar Drive, Baltimore 21207



BLUE JAY ANTING IN SOUTHERN MARYLAND

John H. Fales

The afternoon of June 12, 1977 in Calvert County was clear with a high temperature of 86° F. In an open wooded area off Rt. 521 near Potts Point on the Patuxent River I observed a Blue Jay (Cyanocitta cristata) anting among old leaves on the ground. When the bird flew I collected ants on the exact spot. They were identified by D.R. Smith, Systematic Laboratory, Washington, D.C. as Formica pallidefulva nitidiventris Emery (Hymenoptera-Formicidae).

Lovie M. Whitaker (Wilson Bull. 69:195-262, 1957) described anting, "as the application of foreign substances to the plumage and possibly the skin." He also presented a list of species of ants known to be involved with anting by various bird species. Although ants of the genus Formica were listed, the species involved here was not given. This is a probable new ant-bird relationship regarding this interesting bird behavior.

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THE SEASON

SPRING MIGRATION, 1977

Robert F. Ringler

Before proceeding with this season's report let me express the gratitude and admiration of all members of the MOS to my predecessor as author of this column--Chan Robbins. Preparing The Season for so many years was a monumental task, and though probably a labor of love, I am sure it was a great burden. I especially appreciate the opportunity given me to continue this effort.

I am altering the format of the Season report to conform more closely to the approximate seasons of the birds. This will never be a perfect fit, but we can present a fuller picture of the migrations and breeding and wintering seasons by using the following dates.

The spring migration report will cover the period March 1 through May 31 and will appear in the September issue. In the past the arrival date charts were divided between early and later arriving species. In the future these dates will be combined in one chart covering the entire migration period. Realizing that migrants may be passing through our area into June it is necessary for observers to include June departure dates in their spring reports. As these reports need not be submitted immediately there is ample time to complete the departure date records.

June 1 through July 31 will encompass the breeding season report, which will appear in the December issue. Though some species nest outside these dates one report for the entire breeding cycle will present a more nearly complete picture of Maryland breeding birds. Notes on summer vagrants and early arriving fall birds should also be included, though the arrival date charts should go with the following season's report.

The fall migration report, covering August 1 through November 30, will appear in the March issue. Fall arrival and departure date charts for all species should be submitted with this report, including early arrivals during June and July.

. The winter season will be December 1 through February 28/29 and will appear in the June issue. Effects of weather will be a significant

part of this report, together with information from the Christmas Counts and stray rarities.

Reports from observers should be received no later than about one month after the end of the season, or approximately the first of July, September, January, and April respectively. This will give all observers time to complete their reports to their own satisfaction. In this manner I hope to keep the reports up to date. Everyone's cooperation is essential. Remember that more than just arrival and departure dates and reports of rarities are valuable. The many observers throughout the State can keep in touch with local trends, and notes to that effect should be included whenever possible. Everyone is welcome to contribute. This column can only be as complete as the reports received.

In order to change over to the new system this report will cover only April and May. Some observations from March are included for completeness, but most are in the previous season's report.

Heavy rains (snow in western Maryland, April 6/7) during the first week of April depressed temperatures below normal until a heat wave struck on the 12th. Two and a half weeks of dry weather lasted through the 23rd. Light rains continued almost daily from April 24 to May 7 producing localized waves of migrants. The remainder of May was mostly dry with temperatures above normal.

Major contributors for Tables 1 and 2 and other field notes were: Garrett County--Fran Pope, Dorothea Malec, Charles Hills; Allegany and Washington Counties--Dorothea Malec, Alice Mallonee, Charles Hills; Frederick--Charley Mullican, John Richards; Carroll--Rick Blom, Mike Resch, Steve Hardiman, David Williams; Baltimore City and County--Rick Blom, Mike Resch, Jim Stasz, Steve Simon, Peggy Bohanan, Hank Kaestner, John Trochet; Harford--John Wortman, Chuck Graham; Howard--Steve Simon, Rosamond Munro, Jo Solem; Montgomery--Margaret Donnald, Herb Douglas, Paul Nistico, Robert Warfield; Prince Georges--Herb Douglas, Paul Nistico, Sam Droege, Leonard Teuber, Danny Bystrak, Chan Robbins; Anne Arundel--Hal Wierenga, Ellen Gizzarelli; Charles--Leonard Teuber, Karen Miles; Calvert--John Fales; Kent--Floyd Parks; Caroline--Mr. & Mrs. A. J. Fletcher; Talbot--Jan Reese, Harry Armistead; Dor-chester--Harry Armistead; Lower Eastern Shore--Charles Vaughn, Rich Rowlett, Bob Ringler, Peggy Bohanan.

Loons, Grebes, Pelagics. Hal Wierenga reports that traveling south down Chesapeake Bay the relative abundance of loon species changes as the water becomes progressively saltier. An Apr. 17 cruise from South River into Virginia waters produced the following counts of Common Loons and Red-throated Loons respectively: off Anne Arundel County 86:1, off Calvert County 51:34, off St. Marys County 45:116, and in Virginia 34:131. Wierenga had his peak count of Common Loons flying past Sandy Pt. on Apr. 9 with 309. A late Red-throated Loon was at Poplar I., Talbot Co., May 7 (Reese). The outstanding flight of Red-necked Grebes through the State on their northbound migration ended with late birds on Apr. 12 in

	Median	Table 1. Spring Arrival Dates, 1977	
<u>Species</u>	10-yr 1977	Garr Al/W Fred Carr Balt Harf Howa Mont PrGe AnAr Char Caly Kent Caro Talb Dorc L	<u>ES</u>
Common Loon Double-crested Cormorant Green Heron Little Blue Heron	4/13 4/ 3 4/16 4/ 5 4/20 4/15 4/28 5/ 7	0 0 0 0 0 0 0 0 0 5/5 0 0 5/20 0 5/8 5/7 4	1/23 1/ 3
Great Egret Snowy Egret	4/17 4/ 3 4/16 4/ 5	0 0 3/29 0 5/ 7 0 0 4/ 9 0 4/ 3 0 5/19 4/20 0 3/30 3/26 4 0 0 0 0 4/ 1 5/13 0 0 0 4/17 0 0 0 0 0 4/ 8 4/ 2 4	
American Bittern	4/17 4/17	4/16 0 0 0 4/16 0 5/7 4/23 3/30 4/15 4/26 0 4/19 0 0 0	0
Glossy Ibis Broad-winged Hawk Virginia Rail	4/16 4/ 3 4/18 4/14 4/13	0 0 0 0 0 4/30 0 0 0 0 3/27 0 0 5/3 4/2 4 4/23 4/5 4/15 4/12 4/30 4/23 4/14 4/6 4/11 4/29 0 0 4/23 0 0 0 4/25 0 0 0 4/3 0 0 0 0 0 0 3/26	1/ 3 W
Sora Common Gallinule	4/24 4/23	0 0 0 0 4/25 0 5/7 0 0 4/1 0 0 0 0 0 4/23 0 0 0 0 4/30 0 4/20 0 4/22 4/24 4/15 0 0 0 0 5/7	0
Semipalmated Plover Black-bellied Plover	5/ 4 5/ 7 5/ 3 5/10	0 0 5/10 0 5/7 5/7 0 0 0 4/23 0 0 5/6 0 5/7 5/7 5	5/ 7 W
Upland Sandpiper	5/ 7	5/7 0 5/7 0 4/21 0 0 0 0 4/15 0 0 0 5/8 0 0	10 1723
Lesser Yellowlegs Solitary Sandpiper Willet	4/20 4/15 5/ 1 4/30 4/22 4/26	5/ 2 5/ 7 4/20 5/ 7 4/ 3 4/30 4/23 5/ 1 4/23 4/22 4/27 0 4/15 5/11 0 5/ 7 5	4/23 5/ 7 4/ 3
Spotted Sandpiper Short-billed Dowitcher	4/28 4/27 5/ 3 5/ 7	4/18 5/ 7 5/ 7 4/27 4/19 4/26 4/29 4/17 4/20 5/ 1 4/27 4/23 4/21 5/ 7 5/ 7 5/ 7 5	5/ 7 4/ 3
Semipalmated Sandpiper	5/ 4 5/ 4	0 0 0 0 5/6 0 0 0 5/7 5/7 0 0 5/3 0 0 4/23 4	4/23
Least Sandpiper Pectoral Sandpiper	5/ 2 4/29 4/14 4/ 2	4/29 5/ 7 3/29 4/26 4/21 5/ 7 5/ 7 0 4/30 4/ 5 5/ 7 0 4/15 5/ 5 5/ 3 4/ 7 4	4/ /
Dunlin	5/ 1 4/18	0 0 0 0 4/20 0 0 0 4/17 0 0 5/18 0 0 3/26	W
Laughing Gull	4/16 3/29		3/27 4/ 3
Forster's Tern	4/24		
Common Tern	5/ 3 4/19 5/ 4 5/ 4		5/ 1
Little Tern	4/30 4/6		,, <u> </u>
Caspian Tern Yellow-billed Cuckoo	5/ 5 5/ 7	5/75/3 4/275/75/35/74/30/5/75/15 5/3/5/ <u>7</u> 0 5/75	5/ 1
Chuck-will's-widow	5/ 3 5/ 4		4/23
Whip-poor-will	4/24 4/23		4/12
Common Nighthawk	5/ 7 5/ 7	5/75/7 0 0 5/9 5/5 5/7 5/5 5/7 5/11 5/3 5/7 5/6 5/7	٥
Chimney Swift	4/17 4/18		4/22
Ruby-throated Hummingbird	4/30 4/29		4/21
Eastern Kingbird	4/28 4/27		4/30
Great Crested Flycatcher	5/1 5/3	5/ 3 5/ 7 5/ 7 5/ 7 4/23 5/ 5 5/ 3 5/ 1 4/27 5/ 1 5/ 7 5/16 5/ 7 5/ 2 4/26 5/ 7 4	4/27
Acadian Flycatcher	5/4 5/7		5/ 7
Willow Flycatcher	5/20 5/ 9		.0
Least Flycatcher	5/ 5 5/ 7		5/14
Eastern Pewee	5/ 4 5/ 7		5/ 7
Bank Swallow	5/2 5/4		
Rough-winged Swallow	4/20 4/10		
Cliff Swallow	5/3 5/		0
House Wren	4/21 4/18	7 22 47 13 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47 20 47	4/11
Marsh Wren	5/ 2 4/29	1 0 0 0 0 1,000 0, 1 0 0 1,000 1,00 0 1 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,0	4/23 4/21
Gray Catbird	4/25 4/24	10/ 1 1/2/ 0/ 0	4/21
Brown Thrasher	4/8 4/		
Wood Thrush Swainson's Thrush	4/23 4/24 5/ 6 5/ 3		0
Januaria del a littuati	3/ 0 3/	10/ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

Crasica	Med		C	A1 (II	C	C	ID-14	Hand	llaa	Maak	DC-1	A A	CL	C-1	V4	C	T-71	D	
<u>Species</u>	<u>10-yr</u>	19//	Garr	AI/W	rea	carr	Bait	Hart	Howa	mont	PrGe	Anar	unar	Laiv	Kent.	caro	IAID	Dorc	LES
Gray-cheeked Thrush	5/8	5/16	5/17	0	0	0	5/ 7	0	5/16	c / 7	5/ 3	5/18	0	0	5/16	0		•	ο
	5/ 3	5/ 7	5/ 2			0									5/ 7	-	0	0	-
Veery Blue-gray Gnatcatcher	4/12	4/8	4/16	5/ 7 4/18	5/ 7 4/29			5/ 6 4/12		5/ 5 4/ 3		5/ 3 4/ 3	5/ 7 4/ 7	4/ 5	4/12	5/ 7	0 4/5		5/ 7 3/29
Ruby-crowned Kinglet	4/12	3/30	4/15	4/18	4/29	4/11		4/16						47 S	4/12	4/10 W	4/ 5 W	4/ /	3/29 W
White-eyed Vireo	4/24	4/18	5/ 7	5/ 7	5/ 7	1/25												4/16	
Yellow-throated Vireo	4/30	5/ 7	5/ 7	5/ 7	5/ 7	4/23	4/19		5/ 7		4/24	5/ 7	4/27	4/30	5/ 8	5/ 7	3/ 0	4/10	4/30
Solitary Vireo	4/26	4/16	4/15	" ₀	4/16	Ö	4/8	0	3/ /	5/ 1		4/19	0	47,30	4/30	3/ /	Ô	0	4/ 30
Red-eyed Vireo	4/30	4/30	5/ 7	5/7		4/26			5/ 2							4/21		5/ 7	4/20
Warbling Vireo	5/ 2	5/ 7	3,0	5/ 7	4/29	0	4/26					0	0	4/30	5/ 5	5/ 7	3/ 0	3/ 0	0
Black-and-white Warbler	4/22	4/21	5/ 7	5/ 7	5/ 7			4/30				4/21	4/12			4/19			3/27
Prothonotary Warbler	4/25	4/20	3/0	5/ 7	5/ 7	7/23	4/17	7,30	5/ 7	4/23		5/ 7	4/15		4/17	4/29	- 0	4/16	
Worm-eating Warbler	5/ 2	5/ 7	ŏ	5/ 7	" ₀	5/ 7	5/1		5/ 4		4/22	" ₀	7,13	5/11		5/ 7	Õ		5/ 1
Golden-winged Warbler	5/ 3	5/ 7	5/ 7	5/ 7	ŏ	" oʻ	5/ 7	, o	5/ 7	٠, ,	4/27		ŏ	0	5/ 3	5/ 7	ő	0	70
Blue-winged Warbler	5/ 3	5/ 7	5/ 7	5/ 7	5/ 7	5/ 7	4/26			4/23	4/20	4/25	ñ	õ	4/21		ő	ŏ	5/ 7
Tennessee Warbler	5/ 4	5/ 7	5/ 7	5/ 7	0	0	5/ 7		5/ 7	5/ 7		5/ 7	ŏ	-	5/12		õ	ŏ	"0
Nashville Warbler	5/ 2	5/ 1	5/ 1	5/ 2	ő	- 0	4/26		5/ 7	57 7	4/26		4/20	0	5/1	0	0	4/20	
Northern Parula Warbler	4/25	4/18	4/25			4/23			4/20	4/16	4/12	4/13		4/19				-7,20	4/17
Yellow Warbler	4/27	4/22	4/22	4/23		.,	4/20			5/ 1	4/14	4/21		4/14		4/26	4/20	4/23	
Magnolia Warbler	5/ 4	5/ 7	5/ 5	5/ 7	0	0	5/ 7			5/ 7		5/ 7		5/11		5/ 7	0	5/ 7	
Cape May Warbler	5/4	5/ 7	5/ 7	5/ 7	5/ 7	Õ	5/ 1		5/ 5	5/ 7		5/ 7	0		5/ 3	ັ່ດໍ	ŏ	5/14	5/ 7
Black-throated Blue Warbler	5/ 3	57 7	5/ 3	5/ 7	0	- ŏ	5/ 2					5/ 3	5/ 7	5/ 7	5/ 7	5/ 7	5/15		5/ 7
Yellow-rumped Warbler	4/15	4/15	4/15		4/20		4/3				4/19	4/16	W	3/ 5	4/ 3	W	W	W	W
Black-throated Green Warbler		5/ 7	4/24	5/ 7	0	0	5/ 1		5/ 7		4/30	5/ 7	5/ 7	5/ 5	5/ 7	5/ 6	ö		5/ 7
Cerulean Warbler	5/3	5/ 7	5/ 7	5/ 7	Ō	Ō		5/ 7				0	0	0	0	0	ō	0	0
Blackburnian Warbler	5/4	5/ 7	5/ 5	5/ 7	Ō	Ō	5/ 7		5/ 7	5/ 7		5/ 7	5/ 5	0	5/ 7	5/ 7	Ō	ō	5/ 7
Yellow-throated Warbler	4/17	4/ 4	0		0	0	4/6			4/ 3	4/25		4/ 1	0		0		4/16	4/ 3
Chestnut-sided Warbler	5/3	5/ 5	5/ 3	5/2	0	0	4/28	5/ 7	5/5	5/ 7	5/ 5	4/28	5/ 7	5/ 7	4/30	Ó	0	0	5/ 7
Bay-breasted Warbler	5/ 7	5/ 7	5/ 7	5/ 7	0	0	5/ 7	5/15	5/ 7	5/ 7	5/ 7		5/14	0	5/10	5/ 7	0	5/14	0
Blackpoll Warbler	5/5	5/ 7	5/ 7	5/ 7	0	0	5/ 7	5/14	5/ 7	5/ 7	5/ 2	5/ 3	5/ 7	5/ 7	5/8	5/ 7	5/10	5/14	5/ 7
Prairie Warbler	4/25	4/25	4/23	5/ 7	5/ 7	5/ 7	4/26	4/30	4/19	5/ 7	4/15	4/22	4/27	0	4/15	4/28	4/23	4/20	4/17
Palm Warbler	4/13	4/14	4/28		0	0	4/6	0	4/17	4/ 3	4/14	4/ 9	0	0	4/18	0	0		W
Ovenbird	4/25	4/20	5/ 7	5/ 7	5/ 7	5/ 1	4/19	4/24	4/23	4/19	4/17	4/16	4/20	4/21	4/15	4/16	5/ 7	4/16	4/17
Northern Waterthrush	5/ 1	5/ 1	5/ 3	5/ 7	5/ 7	0	4/28	4/30	5/ 7	4/23	4/24	4/23	5/ 7	0	4/22	0	0	0	5/ 7
Louisiana Waterthrush	4/10	4/8	5/ 7		5/ 7	4/20	4/12	4/17	4/2	4/ 3	3/30	3/30	3/30	4/21		4/8	0	0	4/2
Kentucky Warbler	5/ 3	5/ 2	5/ 7	5/ 7	5/ 7	4/26	4/27	5/ 1	5/ 2	5/ 1	4/30	4/25	5/ 7	0	5/ 7	4/27	0	5/ 7	5/ 7
Mourning Warbler	5/22	5/25	5/29	0	0	0	5/30	0	0	5/25	5/12	0	0	5/ 7	0	0	0	0	0
Common Yellowthroat	4/20	4/16	4/23	5/ 2	4/20		4/ €	4/23	4/23	4/23	4/12		4/15	4/22	4/12	4/13	4/8	4/ 7	4/7
Yellow-breasted Chat	5/3	5/4	5/ 7	5/ 7	5/ 7	0	4/26	5/ 7	5/ 2	5/2	5/6	5/ 1	4/20		4/30	5/ 3	0	5/ 7	5/ 7
Hooded Warbler	5/ 1	5/6	5/ 5	5/ 7	5/ 7	0	4/21	0	5/ 7	5/ 7	4/24	4/26	4/20	4/30		5/8	0	0	5/ 7
Wilson's Warbler	5/ 7	5/ 7	5/ 7	0	0	0	5/2	5/ 7	5/ 7	5/ 7	5/ 7	5/ 7	0	0	5/11	5/12	0	0	5/ 7
Canada Warbler	5/8	5/ 7	5/ 7	5/ 7	0	0	5/ 7	5/ 3	5/ 7	5/ 3	5/ 7	5/ 7	5/ 7	5/11	0	5/ 6	0	5/ 7	0
American Redstart	5/ 1	4/30	4/30	5/ 7	5/ 7	0	4/26	4/30	5/5	5/ 1	4/28	4/26	4/27	4/30	4/19	4/13	0	4/20	4/30
Bobolink	5/4	5/ 7	4/25	5/ 7	0	0	5/7	5/ 7	5/ 7	5/ 7	5/ 3	5/ 3	5/ 7	5/6	5/ 7	5/ 7	0	5/ 7	5/ 7
Orchard Oriole	5/ 1	5/ 1	5/ 1	5/ 7	5/ 3	0	4/28			5/ 1	4/18	4/27	5/ 7	5/ 3				4/20	
Northern Oriole	4/30	4/30	4/27	5/ 2	5/ 3	5/_7		3/15	5/ 4	4/23		5/ 2	5/ 7	4/30		4/30	0_		4/30
Scarlet_Tanager	5/ 1	4/24	5/ 4	5/ 1	5/ 7	5/ 7	4/24	4/26	4/24	4/23	4/26	4/21	4/20	4/30	4/21	4/22	5/10		4/17
Summer Tanager	5/ 4	5/ 7	.0	_ 0_	_ 0_	0	5/ 7		5/ 7	5/ 1	5/ 5	5/ 1	4/26	5/12	0	4/22	0	5/ 7	
Rose-breasted Grosbeak	5/ 3	5/ 5		5/ 7	5/ 7	0		4/30		5/ 1		5/ 7	5/ 7	5/ 5		5/ 7			
Blue Grosbeak	5/ 4	5/ 6	0_	5/ 7	0_	0	5/ 7			5/ 7		5/ 1	5/ 6		4/29				5/ 7
Indigo Bunting	5/ 2	5/ 2	5/ 1	5/ 7		4/20		4/26		5/ 2	5/ 2	5/ 1	5/ 2		4/25		5/_8		5/ 7
Grasshopper Sparrow	5/ 3	5/ 7	5/ 7	5/ 7	5/ 7	5/ 7	5/ 1	_==			4/19		5/ 7		4/17		0	4/23	
White-crowned Sparrow	5/ 3	5/ 7	4/30		5/ 7	3/ 5	5/ 6	_5/ 7	5/ 7	5/ 7	4/12	5/ 7	0	. 0	5/ 7	5/ 7	4/12	4/ 7	0_

	11- 4		. 1	Tab1e	2.	Spring	g Depa	artur	e Date	es, 19	977							
Species		ian 1977	Garr	<u>A1/W</u>	Fred	Carr	Balt	Howa	Mont	<u>PrGe</u>	AnAr	Char	Calv	Kent	Caro	<u>Talb</u>	Dorc	<u>LES</u>
Common Loon	5/8	5/11	5/ 7		0			5/ 7		4/30			0	5/20 0	0		5/14	•
Red-necked Grebe Horned Grebe	5/ 1	4/ 9 5/ 7	0 4/13	E / 7	0	4/12 4/ 3	4/ 8 4/16	0	0 5/ 7	3/14 4/28	4/ 9 5/ 7	0 5/ 7	0 4/13	4/9	0	0 5/ 7	0 5/ 7	0 5/14
Double-cr. Cormorant		5/ 9	5/7	0	0	4/ 3	5/11	0	3/ /	0		5/ 7	4/13	4/ 3	5/ 7	6/27	5/ 7	5/14
Whistling Swan	5/ 2	4/11	3/19		0	4/12		-	4/10	-	3/28	3/ ₀ ′	3/29	4/9	0	0,2,	5/ 7	0
Canada Goose	5/ 5	5/ 7	4/16	5/ 7	5/ 7	5/ 7	5/17	$\frac{3}{5}$ / $\frac{7}{7}$	5/ 7	5/ 7	5/14	5/ 7	3/28		5/ 7		 -	5/14
Common Pintail	5/ 4	5/ 6	770	5/ 7	3/29	4/27	5/ 7	" ₀	" ₀	" o	3/20	" ₀	0	5/ 6	0	0	5/ 7	0
Green-winged Teal	4/28	5/ 7	3/27		5/ 3	4/3	5/10	ő	Ö	5/ 7	5/ 9	ő	Õ	4/30	_	Ö	5/ 7	_
American Wigeon	4/27	5/ 7	3/27		4/ 9	5/ 7	5/ 7	4/21	5/ 7	0	5/ 7	ŏ	4/9	5/ 7	0	4/14	5/18	0
Northern Shoveler	4/19	4/ 3	4/13		7,0	ິ່ດ໌	4/ 3	7,21	0	ŏ	0	4/15	ິ່ 0	3/31	Õ	0	4/16	-
Redhead		4/ 9	3/18	0,10	0		4/24	ŏ	- ŏ -	ŏ	ň	0	<u>ŏ</u> -	4/ 9	3/17	0	4/ 9	-1/ 0
Ring-necked Duck	4/14	4/10	4/18	-	Õ	4/ 3	4/ 5	4/24	Õ		3/16		ŏ	4/12	4/11	-	4/ 9	ŏ
Canvasback	4/17	4/11	3/20		ō		4/24	3/14	ō	0	5/10	0		4/12	0	0	4/ 9	5/ 7
Lesser Scaup	5/ 1	4/24	5/ 8	5/ 7	Ō		4/24		5/ 7	3/28	4/24	4/27	4/ 3	5/ 7	5/ 1	4/14	5/ 7	4/ 3
Common Goldeneye	5/ 1	4/4	3/18	0	0	Ó	4/13	0	Ó	3/27			0	4/4	.0	4/3	4/ 9	0
Bufflehead	4/28	4/10	5/ 2	3/18	5/ 7	4/15	3/28	3/18	0	4/12	5/ 9	0	3/27	5/ 7	0	4/ 7	4/ 7	0
01dsquaw	4/17	4/ 9	3/28	3/18	0	0	4/24	0	0	0	4/19	0	4/9	3/24	0	4/ 3	4/ 9	5/ 7
Ruddy Duck	5/4	5/ 7	0	4/5	0	0	4/ 3	0	0	5/ 5	5/ 7	5/ 7	0	5/ 7	0	5/23	5/18	5/14
Hooded Merganser	4/20	4/8	3/28	5/ 7	0	4/27	4/4	0	0	4/9	0	4/15	0	3/21	0	0	4/ 7	0
Common Merganser	4/23	4/ 9	0	5/ 7	3/12	4/ 3	4/12	5/ 7	5/ 7	3/27		0	0	3/19	0	0	4/16	0
Red-breast Merganser	5/ 4	5/14	5/ 7	0	0	4/15	5/17	0	0	0	6/15	5/ 7	0	5/ 7	0		6/19	5/14
American Coot	5/4	5/ 7	5/ 7	5/ 7		0	5/ 7	5/ 7	5/ 7	5/18		5/ 7	6/8	5/ 7	4/11	3/22	5/14	0
Semipalmated Plover	5/27	5/27	0	0	5/17	0	6/8	0	0	0	6/6	0	0	5/20	0		6/5	
Black-bellied Plover	-,	5/27	5/17	0	0	0	5/18	0	0	0	6/9	0	0	5/26	0		-,	5/27
Greater Yellowlegs	5/ 9	5/11	5/ 7	5/ 7	6/ 7	0		5/ 7	5/ 7	5/22			0		5/ 7	5/ 6	5/14	
Lesser Yellowlegs	5/ 7	5/ 7	5/ 7	5/ 7	6/ 7	5/ 7	5/18	0	0	4/30	5/ 7	0	0	5/ 8	5/ 7	0	5/14	5/14
Solitary Sandpiper	5/12	5/14	5/ 7	5/ 7	5/13	5/ 7	5/28			5/15	5/20		0_	5/15	5/11	0_	5/14	5/14
Spotted Sandpiper	5/18	5/14	5/27		5/17	5/ 7	6/ 2		5/ 7	5/22	6/ 6	5/_7	5/ 7	5/ 7	5/_7	5/17		
Ruddy Turnstone		5/29	0	0_	0_	0	5/19	0	0_	0_	6/ 9	0	0_	0	0_		6/_4	' -
Common Snipe	5/ 4	5/ 7	5/27	5/ 7	5/ 7	0	5/17	0_	5/ 7	5/ 7	5/ 7			4/28		4/12	0	0
Short-bill Dowitcher		5/18	0	5/_7	0	0	0	.0	0	0	6/ 9	0	0	5/18	0	0	6/19	
Semipalmated Sandp.	5/26	6/ 5	0_	0_	0	0_	6/ 2	0_	0	0	6/15	0_	0	6/5	0_	0	6/ 5	
Least Sandpiper	5/18	5/18	5/_7	5/ 7	5/17		5/26	5/ 7	0	5/28	5/31	5/ 7	0	5/20	5/ 7			
Pectoral Sandpiper	5/ 8	5/15	0	5/ 7	•	0	5/20	_ 0 _	Õ	0		0	0	5/16	0	0	5/14	•
Bonaparte's Gull	5/ 4	4/18	4/18		0	4/15	5/ 7	5/ 7	0	5/ 4	$\frac{6}{1}$	0	0	4/ 9	<u> </u>		4/ 9	
Yel-bell. Sapsucker	5/ 2	5/ 7		5/ 7	5/ 7	0	5/ 7	4/26	5/ 7	5/ 7	5/ 7	0	3/10	2/13	0	0	0	0_
Red-breast Nuthatch	5/ 4	5/ 7		0		0	5/ 7	0	0	5/ 7	5/_7	4/30	0	0	4/11	5/ 8	4/20	5/ 7

	Med	ian	i															
<u>Species</u>	10-yr	1977	<u>Garr</u>	<u>A1/W</u>	Fred	<u>Carr</u>	<u>Balt</u>	<u>Howa</u>	Mont	<u>PrGe</u>	<u>AnAr</u>	Char	<u>Calv</u>	<u>Kent</u>	Caro	<u>Talb</u>	Dorc	LES
Brown Creeper	4/21	4/19		5/ 7	4/16	0	4/19	0	5/8	4/15	5/12	0	3/17	5/ 3	0	4/8	0	0
Winter Wren	4/25	4/18	0	0		4/27	5/ 7	4/17	Ó	4/19	4/13		0	0		0	4/ 9	0
Hermit Thrush	5/ 4	5/ 4		5/ 7	4/16	0	5/ 7	5/ 7	5/15	5/ 7		4/15	4/30	4/20	0	4/16	4/9	5/ 7
Swainson's Thrush	5/22	5/16	5/ 7	0	5/ 7		5/17	5/24	5/30	5/27	6/ 5	5/15	6/ 5	5/16	5/25	5/27	5/14	5/15
Gray-cheeked Thrush	5/23	5/18	5/17	Ō	0	0	5/18	5/16	6/5	5/27	5/22	0	0	5/16	0	5/27	0	5/15
Veery	5/16	5/16					5/18		5/23	5/16	5/23	5/ 7	5/16	5/26	5/16	0	5/14	5/15
Golden-crown Kinglet	4/15	4/11		5/ 7		0	4/12	5/ 7	0	3/19	4/ 1	0	0	0	0	0	4/9	0
Ruby-crowned Kinglet		5/ 7	5/ 7	5/ 7		0	5/ 7	5/ 7	5/11	5/13	5/14	4/20	0	4/20	0	0	4/20	0
Water Pipit	5/4	5/ 7	3/19	5/ 7	5/ 7	0	5/ 7	0	5/ 7	0	4/ 1	0	0	5/ 7	5/ 7	4/ 7	5/ 7	5/15
Solitary Vireo	5/ 5	5/ 7		5/ 7	0	0	5/ 7	5/ 7	5/ 7	5/ 7	5/ 7	0	0		5/ 7	0	0	5/14
Blue-winged Warbler	5/ 9	5/ 7				0	5/ 9		5/17	5/ 5	5/ 7	0	0	5/ 7	5/ 7	0	0	5/15
Tennessee Warbler.	5/18	5/20	6/ 2		5/ 7	0	5/17	5/ 7	5/22	5/21	5/14	0	6/ 3	5/20	0	0	0	0
Nashville Warbler	5/11	5/11	6/ 2	5/ 7	0	0	5/18	5/ 7	5/15	5/16	5/ 7		0	5/11	0	0	5/ 7	0
Magnolia Warbler	5/20	5/15			0	0	5/18	6/5	5/22	5/17	5/14	5/15	5/11	6/ 1	5/14	0	5/ 7	5/14
Cape May Warbler	5/13	5/16	6/ 2		5/ 7	0	5/18	5/20	5/8	5/14	5/21	0	5/16	5/16	0	0_	5/14	5/14
Black-thr. Blue W.	5/15	5/16			5/ 7	0	5/20	5/17	5/30	5/17	5/21	5/15	5/16	5/16	5/ 7	5/15	5/14	5/15
Yellow-rumped Warb.	5/13	5/14	5/ 7	5/ 7	5/ 7	5/ 7	5/24	5/ 7	5/15	5/17	5/15	5/15	5/16	5/11	5/ 7		5/14	
Black-thr. Green W.	5/12	5/14			5/ 7	0	5/22	5/11	5/14	5/19			6/5	5/15	0	0	5/14	5/14
Blackburnian Warbler	5/15	5/15			0	0	5/12	5/15	5/14	5/18	5/15				5/ 7	0	0	5/15
Chestnut-sided Warb.	5/15	5/14				0	5/17	5/ 7	5/29	5/22	5/14	5/15	5/_7		0	0_	0	5/14
Bay-breasted Warbler	5/18	5/14	6/ 2		0	0	5/18	5/31	5/12	5/16	5/14		0	5/16	5/ 7	0	5/14	5/14
Blackpoll Warbler	5/31	6/ 2	6/ 2	6/ 2		0	6/ 7	6/2			6/ 9	5/15				5/28		6/11
Palm Warbler	5/ 3	5/ 7	5/ 7	5/ 7	0	0	5/ 7		5/ 7			0	4/ 3		0	0	5/14	0
Northern Waterthrush	5/19	5/20			5/ 7	0	5/31	5/15			5/29		0	5/20	0	0	0	5/15
Mourning Warbler	5/28	5/30	5/29	0	0	0	0		5/25		0	0		0	0	0	0	0_
Wilson's Warbler	5/21	5/17	6/ 2	0	0	0	5/20	5/ 7	5/10			0	0	5/11	0	0	0_	5/14
Canada Warbler	5/26	5/18			0	0	5/21					5/15		5/26		0	5/ 7	0
Bobolink	5/15	5/12			5/ 7	0	5/26	5/11			6/15				5/14	0	-,	5/14
Rusty Blackbird	5/6	5/ 7	5/ 7	5/ 7	4/9	3/26	5/ 7	0		5/ 7	0	4/27	4/13			_ 0_	4/20	.0_
Rose-breast Grosbeak		5/15			5/ 7	0	5/18		5/18							5/ 7		5/15
Evening Grosbeak	5/ 4	5/ 1	5/ 7	5/ 7		0	4/30		0	4/27	5/ 1	4/30	2/17	5/ 9	4/25			5/_7
Purple Finch	5/4	5/ 7			5/ 7	0	5/ 7	5/10	5/ 7		5/ 3	0		5/16	0_	0	4/20	0_
Savannah Sparrow	5/5	5/ 7		5/ 7	0	0	5/ 7	0	5/ 7			4/20				0	5/14	•
Northern Junco	5/ 2	4/23	4/23		4/9		5/ 7	5/ 7	4/23					4/20	1 -		4/20	
Am. Tree Sparrow	3/27	3/ 9	5/ 7		2/ 8	0	4/ 1	0	0	3/ 9		0	. 0	0	0	0_	0_	0
White-crown Sparrow	5/ 9	5/12	5/ 7	5/12	5/ 7	0_	5/12				5/12		· 0_	5/16				0
White-throat Sparrow		5/14	5/ 7	5/ 7	5/10		5/17					5/ 7					5/14	
Fox Sparrow	4/5	4/16	5/ 7		.,	0	5/ 8		.0		4/ 1			4/21	3/23	0	0	0
Swamp Sparrow	5/ 8	5/ 7		5/ 7	0	0	<u> 5/18</u>	5/ 7	5/18	5/18	5/20	5/ 7	5/ 7				4/16	

Carroll, Apr. 9 in Anne Arundel, and Apr. 8 in Baltimore Counties. High counts of shearwaters off Ocean City were 6 Cory's (rare in spring) and 29 Sooty Shearwaters, both on May 29. Five Sooties on Apr. 24 broke the arrival record for the State. In addition, Manx Shearwaters were seen on Apr. 23 (3), Apr. 24 (1), Apr. 30 (3), May 8 (1) and May 29 (1). A single Leach's Storm Petrel was seen on Apr. 30. Breaking the State arrival record by 4 days were 30 Wilson's Storm Petrels on Apr. 23. High count for this species was 1,177 on May 29. All pelagic notes <u>fide</u> Rich Rowlett. A late Northern Gannet was observed from Assateague I. during a convention field trip, May 14.

Cormorants, Herons. The highest count of Double-crested Cormorants for the season was 568 in Worcester County on May 7, while one at Savage River Reservoir, Allegany Co., the same day was rare for the mountains (Pope). Unusual spring migrant waders included single Louisiana Herons at Sandy Pt. on Apr. 2 and May 2, 2 Little Blue Herons there on May 5, 1 on May 27 (Wierenga), and 3 adult and 1 immature Little Blues at Bellevue, Talbot Co., May 8 (Armistead). Armistead also counted 76 Great Egrets and 53 Snowy Egrets at Hooper I., Dorchester Co., Apr. 9.

Waterfowl. Mute Swans appeared in Garrett County at Herrington Manor. Two were seen there Apr. 15 with at least one bird present through Apr. 23 (Pope). Brant are unusual away from the coast; however, one at Piney Run Reservoir, Carroll Co. on Apr. 1 and 2 (Blom), 2 at Sandy Pt. on Apr. 3 and one there on Apr. 19 (Wierenga) indicate that a few will stray. A Greater White-fronted Goose was seen by Floyd Parks, Apr. 17. It was with a flock of Canada Geese on a pond south of Chestertown. Parks also reported a pair of Garganey at Remington Farms, Kent Co., May 5 and 6. The Garganey is a teal of Eurasian origin which has been recorded several times in North America, mostly in Alaska. Unfortunately the possibility that these birds may have escaped from captivity precludes the addition of this species to the official State list. Though this situation is a recurring problem, sightings of exotic waterfowl should continue to be reported. Five White-winged

Table 3. Migrant Diurnal Raptors at Sandy Pt. S. P.

Species	Total	First-Last	High Count
Turkey Vulture	228	2/20-5/16	23 on 4/6 & 4/16
Black Vulture	6	3/29 - 4/16	2 on 4/12
Sharp-shinned Hawk	370	3/11-5/13	55 on 4/22
Cooper's Hawk	10	3/29-4/27	2 on 3/29 & 4/12
Red-tailed Hawk	69	2/9-4/27	25 on 4/6
Red-shouldered Hawk	11	2/19 - 4/27	2 on 4/6
Broad-winged Hawk	75	4/6 - 5/20	13 on 4/13
Rough-legged Hawk	2	3/29-4/6	1
Bald Eagle	5	3/3-5/11	2 on 3/3
Northern Harrier	28	2/20-5/20	3 on 3/29 & 4/27
Osprey	97	3/10-5/19	10 on 3/29 & 5/5
Peregrine Falcon	1	4/27	1.
Merlin	3	4/27-5/5	2 on 5/5
American Kestrel	235	2/23-5/17	26 on 4/3

and 27 Surf Scoters passing Sandy Pt. on May 14 (Wierenga) were late, as were 11 Black Scoters at Poplar I., Talbot Co. May 22 (Reese). The high count of Red-breasted Mergansers was 400 off the mouth of the South River, Apr. 9 (Wierenga).

Hawks. Hal Wierenga's hawk watch at Sandy Pt. produced the totals in Table 3. His highest one-day total was 113 birds on Apr. 6. Other interesting hawk reports included Northern Goshawks in Harford County on Apr. 1 (Graham) and at Bellevue, Talbot Co. on Apr. 4 (Armistead); 5 Rough-legged Hawks at Blackwater, Apr. 7, and a late Rough-leg there, Apr. 23 (Armistead); a Bald Eagle at Lusby; Calvert Co., Apr. 14 (Fales); and a Merlin at Baltimore, Apr. 22 (Stasz).

Rails, Shorebirds. The first Sora arrived at Sandy Pt. Apr. 1, followed by a Virginia Rail on Apr. 3, and a Common Gallinule on Apr. 24. Two King Rails were heard over Annapolis, Apr. 18. High counts for Sora were 7 on Apr. 24 and May 7, and 13 Virginias on the latter date (Wierenga). Black Rails appeared in Baltimore County, with the first bird arriving on Apr. 29 in Black Marsh. On the following night, it was joined by two others, which continued calling through May 6 (Blom). high count of 12 was in Somerset County, May 7. Armistead reported that Black Rails were scarce in the Elliott Is. marshes this year. A Blacknecked Stilt was in the Visitor's Center pool at Blackwater NWR, Apr. 7 (Armistead). This species is rarely seen in Maryland, but may be on the increase. Other interesting shorebird reports were 12 Black-bellied Plovers at Sandy Pt. on May 9 (Wierenga), the first Baltimore County record of Ruddy Turnstone with a breeding-plumage bird on Pleasure Is., May 17 (Resch, Blom), a female Wilson's Phalarope in Frederick, May 3 (Mullican), and 33 Dunlins at Cornersville, Dorchester Co., May 18 (Reese). Forty Red and 66 Northern Phalaropes were seen off Ocean City, Apr. 30. The last Reds were seen on May 8 and Northerns on May 29. Statewide Bird Count on May 7 yielded some exceptional numbers of shorebirds across the State: 44 Greater Yellowlegs, 122 Solitary and 68 Pectoral Sandpipers in Frederick County, 162 Solitary and 157 Spotted Sandpipers in Baltimore County, 116 Least Sandpipers in Prince Georges County and 225 in Dorchester County, and Worcester County's collection of 384 Willets, 206 Short-billed Dowitchers, 637 Sanderlings, 482 Semipalmated Sandpipers, and 224 Dunlins. Extraordinary were the two Western Sandpipers found by John Trochet in Cranesville Swamp, Garrett County, May 7.

Jaegers, Gulls and Terns. Five Pomarine Jaegers off Ocean City on May 29 (Rowlett) were late and a reported Long-tailed Jaeger on May 8 (P.G. DuMont, M.V. Barnhill) deserves additional description. Gulls continued to be cause for excitement in Baltimore. These sightings will be discussed in a separate article. Other reports of gulls came from Wierenga: a Glaucous Gull below the Bay Bridges on Apr. 9 and one at Sandy Pt. on May 14, a record late spring date for the State; a second-year Iceland Gull at Sandy Pt., Apr. 5 through May 7, joined by a first-year bird on May 7; four different Lesser Black-backed Gulls (1 adult and 3 sub-adult) there between May 2 and 14; a high count of 992 Bonaparte's Gulls passing the point on Apr. 2, with an adult Little Gull

accompanying them; and another adult Little Gull with a partial hood off Calvert County, Apr. 17. Another Little Gull was off Ocean City on Apr. 23, another adult Lesser Black-back was there on Apr. 30, and two adult Black-legged Kittiwakes on May 29 were the latest spring records by a month (Rowlett). Twenty-one Arctic Terns were seen in that area on May 8 (P.G. DuMont, M.V. Barnhill). Two Roseate Terns in Baltimore on Apr. 12 are documented in the gull article. Eight Black Terns were seen flying up the Patapsco River into Baltimore Harbor, May 12 (Kaestner, Blom).

Owls. Wierenga's migrant Barn Owl count at Annapolis totaled 73 flying over at night from Mar. 3 to May 13. A late Short-eared Owl was at Blackwater Refuge on Apr. 16 (Armistead).

Passerines. The warm weather of late winter and again during mid-April accelerated the spring migration for small landbirds. Among the notable early arrivals was as Eastern Kingbird, Apr. 7, in Baltimore (Bohanan). Willow Flycatchers in Garrett, Howard, and Montgomery Counties on May 7 tied the state arrival record as did the Bank Swallow in Calvert County, Apr. 5 (Fales). Blue-gray Gnatcatchers were found in two counties on Mar. 29: Worcester (Vaughn) and Baltimore (Ringler, Blom). Vaughn's White-eyed Vireo on Apr. 2 at Massey Crossing, Worcester County, was a State record by 6 days. A Blue-winged Warbler on Apr. 20 in Prince Georges County (Douglas) tied another state record. On Apr. 20 Teuber in Charles County and Armistead in Dorchester County beat the state record for Nashville Warbler by 3 days. A Cape May Warbler seen singing in Prince Georges County, Apr. 19 (Droege) was a new record by one day. An American Redstart in Denton on Apr. 13 (M. Nuttle) was exceptionally early. Scarlet Tanagers appeared early everywhere. One in Somerset County on Apr. 17 (Vaughn) was a record by one day. There were probably many other local early records. Only two waves of migrants were reported: May 7 in Baltimore County and May 15 in Kent County. The fallout of birds at North Pt., Baltimore County was astounding. See the May Count results (Maryland Birdlife 33:56-68) for exact figures. Most of these birds were in areas devoid of migrants the day before. The flocks apparently were knocked down by stormy weather during the night and most remained through May 8 to replenish their fat reserves. Overall the county totaled 1,494 thrushes, 472 vireos, and 6,568 warblers, 75% of which were in the eastern part of the county along Chesapeake Bay. Among the latest of migrants was a Palm Warbler near Seward, Dorchester County, May 14, seen by Armistead and Claudia Wilds. On the negative side some reporters observed the decrease in numbers of Carolina Wrens, both kinglets, and Cerulean and Kentucky Warblers. Conversely, Golden-winged and Chestnut-sided Warblers were believed by others to be in greater numbers.

3501 Melody Lane, Baltimore 21207

REPORT COLOR-MARKED BIRDS

Herons, swans, geese, hawks, shorebirds, gulls, martins, and other birds are being marked with colored leg bands, dyes, or other markers in Maryland and nearby states. In most cases the origin of the birds can be traced. Report details to the Editor or to the Bird Banding Lab.

EUROPEAN STARLINGS NEST IN OFFSHORE STRUCTURES

Jan G. Reese

A European Starling (Sturnus vulgaris) flushed from within the signal apparatus of an offshore navigational marker off Kent Narrows in the Chester River, Chesapeake Bay, on June 29, 1975. Characteristic calls of young starlings came from within the steel tube supporting the navigational aid and a parent bird carrying several large insects landed at the marker. Steel framework prevented observation of the nest within the structure's cavity. On July 9 the parent birds were still actively feeding young in the tube. This nest was about 6 m above the water and approximately 250 m from the nearest point of land--the tip of a 1.5 km long, narrow peninsula jutting north into the river from the mainland. Any other nest-to-land distances would have been close to a kilometer away. This nest site was active again in both May and June of 1976 and 1977; another active nest in 1977 was present in another navigational marker about 25 m west of this site.

A starling was incubating 6 eggs in an old Common Flicker (*Colaptes auratus*) cavity in the top of a rotten piling offshore in Broad Creek, Choptank River, Chesapeake Bay, on April 14, 1977. This cavity was just over a meter above the water, about 50 m from the mainland, and two broads (6 and 4 young, respectively) fledged from here later in the spring.

I found no previous records in the literature of European Starlings nesting offshore, but Ball (Auk 62:79-97, 1945) reports starlings nesting in cliff cavities along the coast of the Gaspé Peninsula in New Brunswick, Canada. Nesting in offshore structures may represent pioneering into new habitats and locales by this highly adaptive species.

I thank David Krantz for assistance in making these observations.

Box 298, St. Michaels 21663



UNUSUAL FOOD HABIT FOR HAIRY WOODPECKER

John H. Fales

On March 18, 1977 I observed a Hairy Woodpecker (*Picoides villosus*) hanging upside down and swinging on the outer branches of a small hackberry tree (*Celtis occidentalis*) on the beach at Plum Point, Calvert County, Maryland. The bird was energetically working on some of the numerous hard galls on the end of petioles attached to the branches. I collected 28 of the galls, which varied in diameter from 11 to 17 mm. I cut some of them open, revealing small insects, but on close examination none appeared to have been opened by the woodpecker. However, there was a small opening in the end opposite the petiole. I kept the galls in a jar and 130 small insects emerged. The woodpecker appeared

to know that these galls contained insects, which it apparently could extract without opening the galls.

The insects were identified by Dr. M.B. Stoetzel, Systematic Entomology Laboratory, U.S.D.A., as a jumping plant louse, *Pachypsylla venusta* (Osten-Sacken)(Hemiptera-Homoptera, Psyllidae), the largest of the hackberry psyllid gall makers. They were found by D.L. Crawford (U.S.N.M. Bull. No. 85, 1914) to have a body length of 4.4 mm, and they are specific to hackberry trees.

The manner in which the Hairy Woodpecker could extract the psyllids from these galls is explained by T.S. Roberts in, The Birds of Minnesota (1932). He stated that, "The hairy woodpecker possesses in its tongue one of the most remarkably developed and perfectly adapted instruments for extracting the tree larvae from their tunnels. The tip is a rigid, barbed spear and can be thrust out to an astonishing distance..."
..."the tongue darts out, the inner ends uncoil, the spear transfixes the grub, and with little ado the larva is dragged from its retreat into the bill of the bird..."

I presume that this specialized tongue afforded the Hairy Wood-pecker the means to remove the psyllids from the galls. Beal (U.S.D.A., Biol. Surv. Bull. $3^{\rm l}$, 1911) did not mention psyllids as food for the Hairy Woodpecker, so this observation may be an unusual food habit for this species.

2809 Ridge Road, Huntingtown 20639

CATO DOVEDEDBY EDULT

ACADIAN FLYCATCHER EATS POKEBERRY FRUIT

Chandler S. Robbins

On the evening of Sept. 23, 1976, while removing an Acadian Flycatcher (Empidonax virescens) from a net in my front yard, I suddenly found my hand sprayed with the familiar stain of digested pokeberry (Phytolacca americana) juice. Telltale signs about the vent of the flycatcher left no doubt as to the source of the purple stain.

At this time of year I take precautions to protect my clothes from pokeberry stain when handling Gray Catbirds (Dumetella carolinensis), Scarlet Tanagers (Piranga olivacea) and all thrushes of the genera Turdus, Hylocichla, and Catharus. Although I have banded several hundred Empidonax flycatchers in Maryland in the past decade, this is the first evidence I have seen that birds of this genus feed on pokeberries.

This Acadian Flycatcher was a young bird with an incompletely ossified skull and with juvenile feathers still present on the crown, wing coverts, and middle of the back. Although it had no subcutaneous fat, it was in good condition and weighed 13.7 grams, or 0.7 grams more than when I banded it 24 hours before. It had been a cool morning with

temperatures in the low fifties, but the temperature was 72° F. at the time the bird was captured. Plenty of flying insects were available, so choice of plant food had not been a necessity.

Bent quotes Beal¹ as stating that 2.95% of the food of the Acadian Flycatcher is vegetable matter; fruit was found in 5 of the 100 stomachs examined, but the only items specifically mentioned were seeds of black-berries or raspberries. Similar percentages (2 to 4%) of vegetable food were given for the other eastern *Empidonax* flycatchers; the only mention of pokeberry seeds was under the Least Flycatcher (*E. minimus*), for which pokeberry seeds were found in a single stomach out of 177 examined.

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BOOK REVIEW

THE WORLD OF ROGER TORY PETERSON

John C. Devlin and Grace Naismith. 1977. NYT Times Books, a division
of Quadrangle/The New York Times Book Co., Inc., N.Y. 266pp. \$14.95.

This book is subtitled "An Authorized Biography" and seems to get much of its material from personal interviews with RTP himself and many of his contemporaries. Perhaps it's the method of reporting the conversations which causes some stiff, choppy passages. But for the dedicated bird watcher like myself, everything in the book is a source of genuine interest: Peterson's early childhood in Jamestown, N.Y. with a father opposed to the time spent watching birds; his early career as a painter of designs on furniture; his art schooling in New York; his teaching career; his friendships with all the early giants in ornithology; his opinions on the art and science of bird watching. Even the old RTP legends from the early days at the Audubon Camp in Maine are faithfully chronicled. Peterson's three marriages are dealt with straightforwardly and with taste.

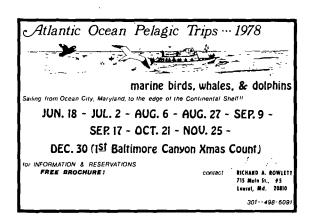
It's a book that will easily interest all birdwatchers. And yet as the story of a life in which a person followed his inspired interest, in spite of early opposition, to the heights of a world renowned career, it is an important statement. It is easily read, and has many photographs and prints of Peterson's loveliest paintings. An Appendix lists all of Peterson's works, affiliations and awards. There is an index which, incidentally, lists two references to Chandler S. Robbins, both references giving the opinion we have held for many years, that BIRDS OF NORTH AMERICA, A GUIDE TO FIELD IDENTIFICATION is Peterson's most formidable competition in bird field guides. There is a copy of THE WORLD OF ROGER TORY PETERSON in the Cylburn Library.

Joy Wheeler

¹Beal, F.E.L. 1912. Food of our more important flycatchers. U.S. Dept. Agr. Biol. Surv. Bull. 44.

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