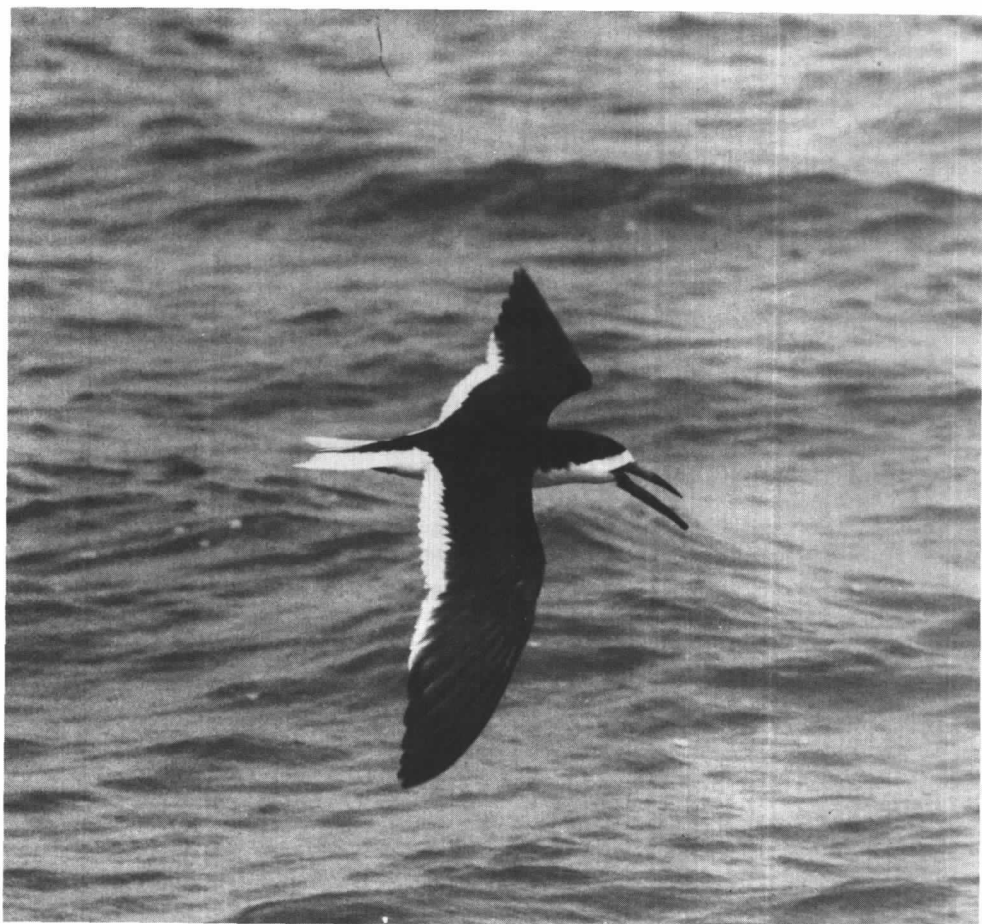


ISSN 0147-9725



MARYLAND BIRDLIFE



Bulletin of the Maryland Ornithological Society, Inc.

DECEMBER 1985
VOLUME 41
NUMBER 4

MARYLAND ORNITHOLOGICAL SOCIETY, INC.
 Cylburn Mansion, 4915 Greenspring Ave., Baltimore, Maryland 21209

STATE OFFICERS FOR JUNE 1985 TO JUNE 1986
EXECUTIVE COUNCIL

President: CDR Anthony White, 5872 Marbury Road, Bethesda, MD 20817 229-1641
 Vice President: Richard Dolesh, 17800 Croom Road, Brandywine, MD 20613 579-2256
 Treasurer: Emily Joyce, 1550 Ellsworth Avenue, Crofton, MD 21114 721-2239
 Secretary: Helen Ford, 408 Beach Drive, Annapolis, MD 21403 267-8417
 Executive Secy.: Richard Danca, 4414 Albemarle St. NW, Washington, DC 20016 244-5150
 Past President: Martha Chestem, 10850 Faulkner Ridge Cr, Columbia, MD 21044 730-1527

STATE DIRECTORS

Allegany	*Mark Weatherholt Robert Hiegel	Howard	*John Clegg Jane Farrell Eva Sunell Paul Zucker
Anne Arundel	*James Cheevers Laddie Flyger Sue Ricciardi	Jug Bay	*John Gregoire Sue Dorney
Baltimore	*Robert F. Ringler John Cullom Graham Egerton Benjamin Kaestner Mac Donough Plant Steve Simon Jean Worthley	Kent	*Stephen A. Hitchner Margaret Duncan
Caroline	*Steve Westre Mariana Nuttle	Montgomery	*Gary Nelson Margaret Donnalld Philip A. DuMont John Malcolm Lola Oberman
Carroll	*Geraldine Newton William D. Ellis	Patuxent	*William L. Murphy Chandler S. Robbins
Frederick	*Michael Welch David H. Wallace	Talbot	*Virginia Graebert Jeff Effinger Steve Goodbred
Harford	*Kermit Updegrove William Russell Joyce Sherman	Washington	*Betty & Ray McCoy Norma Lewis Betty McCoy
		Wicomico	*Maureen McAllister Lee Meinersmann

* Denotes Chapter President

Active Membership (adults)	\$6.00 plus local chapter dues
Student Membership (full-time students)	2.00 plus local chapter dues
Junior Membership (under 18 years)	1.00 plus local chapter dues
Family Membership (Mr. & Mrs.)	8.00 plus local chapter dues
Sustaining Membership	10.00 plus local chapter dues
Life Membership	200.00 (4 annual installments)
Member-at-Large	5.00



THREATENED BREEDING BIRDS OF MARYLAND¹

CHANDLER S. ROBBINS and D. DANIEL BOONE

By protecting our rare and endangered species we help preserve the diversity of life for future generations to admire and study. The past two decades have culminated in the realization of this ideal not only at the national level, but also in a great many of the 50 states.

Maryland has an unusually rich avifauna for a state of its size. There are 187 species of birds that breed regularly within the boundaries of the State, and 19 other species are known to have nested here in the past (Robbins and Bystrak 1977). The Breeding Bird Survey that co-operators of the U.S. Fish and Wildlife Service conduct in Maryland each summer provides an annual index to population changes of the more common species, based on 50 randomly distributed roadside counts of 50 stops each. This survey detects many short-term population changes such as those caused by weather-related mortality or nest loss. It also shows long-term trends such as those resulting from continuing loss of wetlands, the spread of urban areas, and other changes in land use. Although the more common species that can be detected at randomly located roadside stops can be monitored on an annual basis, there is much concern that loss of certain very restricted habitats could result in the total loss of some of our rarer nesting species unless these are given special attention.

The primary purpose of this paper is to provide a synthesis of the best scientific information concerning Maryland's rare breeding birds. This information should allow the Secretary of the Department of Natural Resources to make an informed assessment of the extent and nature of the threat affecting the continued existence of many of Maryland's nesting avifauna. The Secretary of the Department of Natural Resources has the authority to add species to or remove species from the Maryland Endangered Species list.

In 1971, the Maryland Legislature passed the first Endangered Species Act (Article 66C, Section 125, Annotated Code of Maryland). In 1972, the State of Maryland listed 21 species as Endangered. However, only those birds considered federally Endangered Species were included in this total, i.e., Bald Eagle, Peregrine Falcon, Eskimo Curlew and Red-cockaded Woodpecker. By 1979, Taylor (this proceedings) had "developed and refined listing criteria for state threatened and endangered species." Nevertheless, the 1980 revised list of Maryland's Endangered Species does not include any additional birds. However, in 1982, the U.S. Fish and Wildlife Service (Potter 1982) nominated 5 species of Maryland's

¹Reprinted from *Threatened and Endangered Plants and Animals of Maryland*, A.W. Norden, D.C. Forester, and G.H. Fenwick, Editors, Maryland Natural Heritage Program Special Publication 84-I, 1984, with permission from the Maryland Department of Natural Resources.

breeding avifauna for consideration as federally Threatened or Endangered Species, i.e., Piping Plover, Roseate Tern, Bewick's Wren, Loggerhead Shrike and Bachman's Sparrow.

In March 1973, Robbins prepared a preliminary draft of a List of Rare or Endangered Breeding Birds of Maryland; this draft was widely circulated to concerned agencies and organizations, and comments and recommendations were solicited. The list contained 56 breeding birds, and provided the following for each species: its status as published in 1895 by Kirkwood, in 1958 by Stewart and Robbins, and as determined in 1972; the average number of individuals recorded on the Breeding Bird Survey during 1968-1972; an estimate of the number of pairs nesting annually in Maryland; the counties in which the species nests; and the nesting habitat.

Two revisions of that list have subsequently been distributed, and the present paper is a result of further evaluation with relation to present populations, numbers of known nesting sites, and rate of population change or rate of loss of suitable habitat.

The following chief sources of information were used in revising this paper:

1. The quarterly *Season* reports in *Maryland Birdlife* prepared by Robbins (through 1976) and Ringler (from 1977).
2. Annual monitoring of coastal nesting colonies by Dr. John S. Weske, Elwood Martin, Janet Ganter, and others.
3. Annual surveillance of the islands of Lower Chesapeake Bay by Henry T. Armistead, especially his comprehensive 1978 paper.
4. Breeding Bird Atlases being developed by the Maryland Ornithological Society, including published atlases for Montgomery and Howard Counties (Klimkiewicz and Solem 1978), preliminary maps for Baltimore City and County, Garrett, Washington, Prince Georges, and Somerset Counties, and early returns from the Statewide atlas project of 1983.

All species included meet one or more of the following three provisions: (1) fewer than 5 known nesting sites in Maryland (each site being defined as an area extending to as much as one square mile); (2) fewer than 20 nesting pairs; or (3) the total number of pairs is fewer than 300 and there is evidence that the population is decreasing from loss of habitat.

Breeding species not in the annotated list that are believed to be represented by fewer than 100 pairs in Maryland are listed. Species such as the Pine Siskin and Red Crossbill and several species of waterfowl at the periphery of their range are erratic in their breeding distribution and are excluded from consideration.

The only taxa in the annotated list that do not presently breed in Maryland are those designated as, or under consideration for, Threatened or Endangered Species by the U.S. Fish and Wildlife Service. i.e., the Arctic race of the Peregrine Falcon, Roseate Tern, Red-cockaded Woodpecker and Bachman's Sparrow. Many other rare species migrate through Maryland but are not as critically dependent on Maryland habitats as are the birds that nest here. For that reason we are treating only the nesting species.

Following is a summary of the information currently available on the Maryland distribution and populations of 30 of our rarest and most threatened bird species.

Table 1. Synopsis of other rare breeding species

	Species	Preferred Habitat	Region
Extant Maryland Breeding Species			
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Freshwater ponds	Statewide
American Bittern	<i>Botaurus lentiginosus</i>	Marshes	Statewide
Hooded Merganser	<i>Lophodytes cucullatus</i>	Rivers and ponds	Statewide
Sora	<i>Porzana carolina</i>	Marshes	Coastal Plain
Purple Gallinule	<i>Porphyryla martinica</i>	Marshes	Coastal Plain
Spotted Sandpiper	<i>Actitis macularia</i>	Shores	Statewide
Great Black-backed Gull	<i>Larus marinus</i>	Islands	Lower Eastern Shore
Sandwich Tern	<i>Sterna sandvicensis</i>	Tidal beaches	Worcester County
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	Boreal bogs	Western Maryland
Alder Flycatcher	<i>Empidonax alnorum</i>	Boreal bogs	Garrett County
Common Raven	<i>Corvus corax</i>	Cliffs, woodlands	Western Maryland
Sedge Wren	<i>Cistothorus platensis</i>	Sedge meadows	Statewide
Blackburnian Warbler	<i>Dendroica fusca</i>	Hemlock woods	Western Maryland
Dickcissel	<i>Spiza americana</i>	Clover, alfalfa fields	Central Maryland
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Broomsedge fields	Statewide
Purple Finch	<i>Carpodacus purpureus</i>	Northern conifers	Garrett County
Extirpated Maryland Breeding Species			
Peregrine Falcon	<i>Falco peregrinus</i>	Remote cliffs	Except Eastern Shore
Roseate Tern	<i>Sterna dougallii</i>	Tidal beach	Worcester County
Long-eared Owl	<i>Asio otus</i>	Conifers	Western Maryland
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	Bogs and ridgetop woods	Garrett County
Red-cockaded Woodpecker	<i>Picooides borealis</i>	Open loblolly pine woods	Lower Eastern Shore
Olive-sided Flycatcher	<i>Nuttallornis borealis</i>	Boreal bogs	Garrett County
Swainson's Thrush	<i>Catharus ustulatus</i>	Boreal forest	Garrett County
Bachman's Sparrow	<i>Aimophila aestivalis</i>	Scattered pine and scrub	Central and Western
Lark Sparrow	<i>Chondestes grammacus</i>	Sparse pine, barren soil	Garrett County
*White-throated Sparrow	<i>Zonotrichia albicollis</i>	Boreal bogs	Garrett County

*In spite of numerous summer records, no substantive evidence exists to document this species as ever breeding in Maryland. This species does not regularly breed in West Virginia or southern Pennsylvania.

The open squares on the maps show sites from which there are no records since 1956 (Stewart and Robbins 1958). Open circles indicate nesting locations in the period 1957 through 1976 and solid dots designate sites occupied one or more years from 1977 through 1983.

Little Blue Heron, *Egretta caerulea*

Armistead (1978) found this colonial waterbird breeding in Maryland only on Holland and Smith Islands in the Chesapeake Bay. In addition, Osborn and Custer (1978) reported the Little Blue on two dredge spoil islands in the Chincoteague Bay area of Worcester County. Although the yearly breeding population of this heron in Maryland approaches 300 pairs, the number of colonies has rapidly decreased in recent years and the population is declining. The Tricolored (Louisiana) Heron (*Egretta tricolor*) and Glossy Ibis (*Plegadis falcinellus*) have breeding populations over our 300 pair arbitrary limit but are nearly as rare in Maryland as the Little Blue Heron. Both are known at present from fewer than 10 nesting sites in the state. Because the Little Blue breeds in mixed species heronries, a periodic and comprehensive survey of all heronry sites should be undertaken. In addition, preservation or protection of a few other Chesapeake Bay islands that possess large, mixed-species heronries is recommended. See Figure 1.

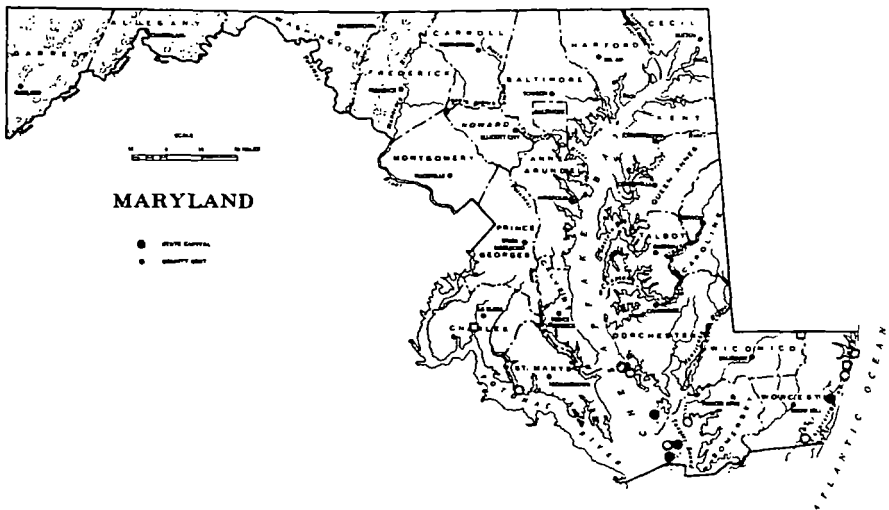


Figure 1. Breeding distribution of Little Blue Heron.

Bald Eagle, *Haliaeetus leucocephalus*

This species still breeds sparingly in several of our tidewater counties; the only real concentration of breeding birds is on and adjacent to Blackwater National Wildlife Refuge in Dorchester County. The breeding population was 32 pairs in 1973, 55 in 1983. The status has changed from fairly common in 1895 and 1958 to uncommon in 1983. The Bald Eagle is listed for Maryland as an Endangered Species by both the federal and State governments. See Figure 2.

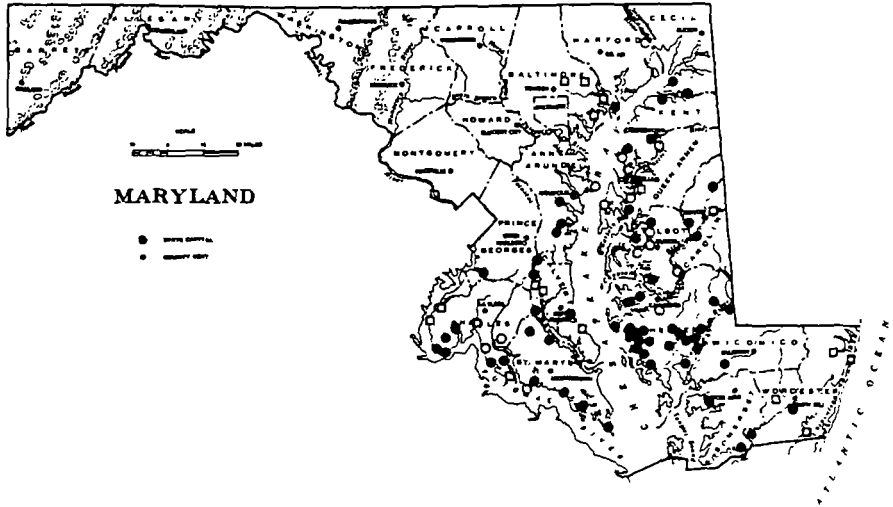


Figure 2. Breeding distribution of Bald Eagle.

Northern Harrier, *Circus cyaneus*

Stewart and Robbins (1958) considered this species a fairly common breeder in sedge meadows of Garrett County and in tidal marsh and marsh meadows in the tidewater section of the State. Since then, in Maryland and throughout the region, it has experienced a general decline (Breeding Bird Survey). Only one has been found on the Garrett County Atlas work which began in 1980. On the Somerset County Atlas, which began in 1976, it has been recorded only at Deal Island and at Irish Grove Sanctuary. In Virginia it is now considered a very local summer resident on the Eastern Shore and in Mathews County (Larner et al. 1979). See Figure 3.

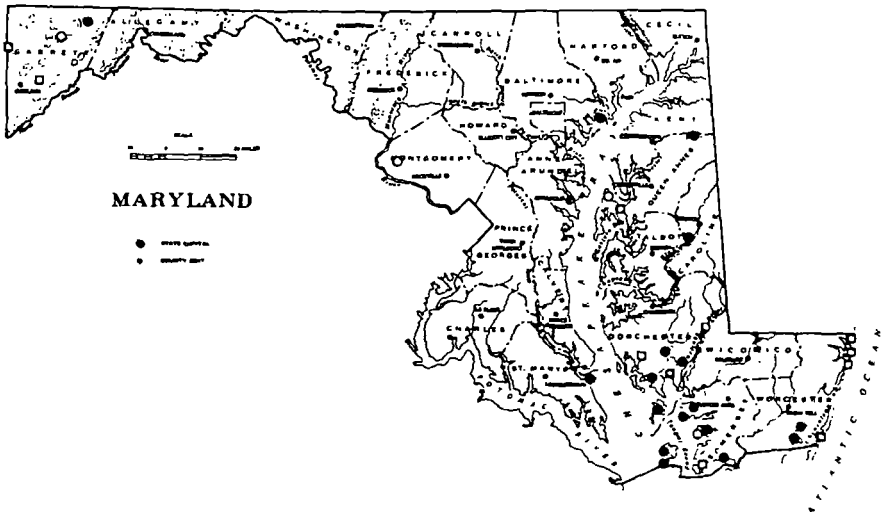


Figure 3. Breeding distribution of Northern Harrier.

Sharp-shinned Hawk, *Accipiter striatus*

The historic breeding distribution of this raptor included all of Maryland west of the Fall Line. Stewart and Robbins (1958) recorded the Sharp-shin as being a fairly common breeder in the Allegheny Mountains; uncommon in the Ridge and Valley section; and rare on the Piedmont. Since 1891, no confirmed breeding records are known for this species off the Allegheny Plateau in Maryland. Recently, nests have been found in Garrett County (D. Boone) near Cranesville and Finzel. Pairs or adults carrying food were sighted along Cherry Creek, near Deer Park and in the vicinity of Avilton (D. Boone). The estimated breeding population in Maryland is fewer than 20 pairs.

Northern Goshawk, *Accipiter gentilis*

Not reported nesting in Maryland since 1901, this northern species was found breeding in Garrett County in 1980 (D. Boone, *Wilson Bulletin*, in press). This is the southeasternmost known locality in the United States. We strongly recommend the addition of Goshawk to the Maryland Endangered Species List in order to protect the nests and young from disturbance or collection by falconers.

Peregrine Falcon, *Falco peregrinus anatum* and *F. p. tundrius*

The status of nesting Peregrines in Maryland has declined from rare in 1895, to rare and local through 1952, absent from 1953 to 1977, and the one released pair in Baltimore, 1978 to 1982 (Ringler 1979). This species nested regularly on remote cliffs into the mid-50's, but together with the rest of the Appalachian population has disappeared as a breeding species. Both the former breeding race *anatum* and the Arctic race *tundrius* are included on the State and federal Endangered lists.

Black Rail, *Laterallus jamaicensis*

Although the American Ornithologists' Union (1957) did not include Maryland in the list of states where this species breeds, it has long been known that the Elliott Island marsh in Dorchester County is one of the most dependable places in the

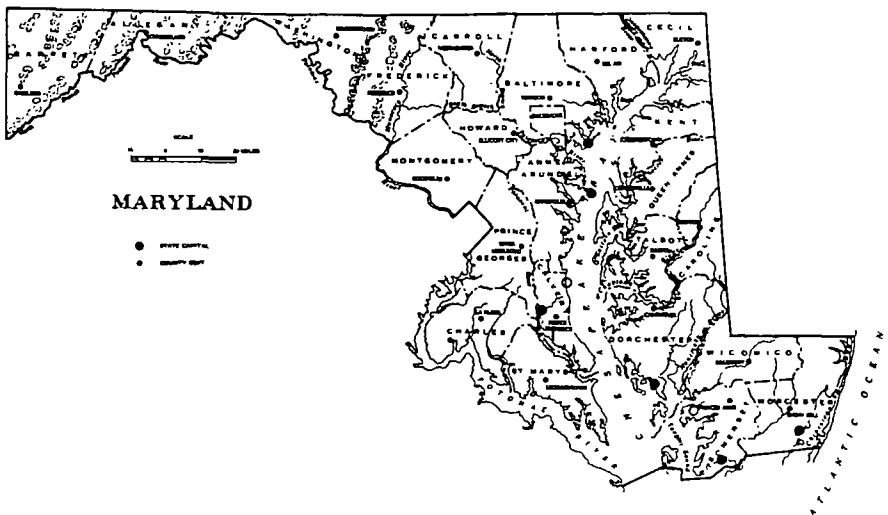


Figure 4. Breeding distribution of Black Rail.

United States to find this rare bird. Changes in marsh ecology as a result of continued ditching for mosquito control could jeopardize that site. Very small numbers are found irregularly in *Spartina patens* marshes on the Baltimore County shore; at Sandy Point State Park; in the Patuxent marshes near Huntingtown; and at Irish Grove Wildlife Sanctuary on Pocomoke Sound. See Figure 4.

Wilson's Plover, *Charadrius wilsonia*

This plover was unknown in Maryland in 1895, but in both 1958 and 1973 was listed as a rare breeding bird with a population of fewer than 10 pairs. It no longer is known to nest north of Ocean City, being restricted to undisturbed areas of the ocean beach on Assateague Island. This is at or near the northern breeding limit for the species. In 1983, the estimated Maryland breeding population is fewer than 10 pairs. See Figure 5.

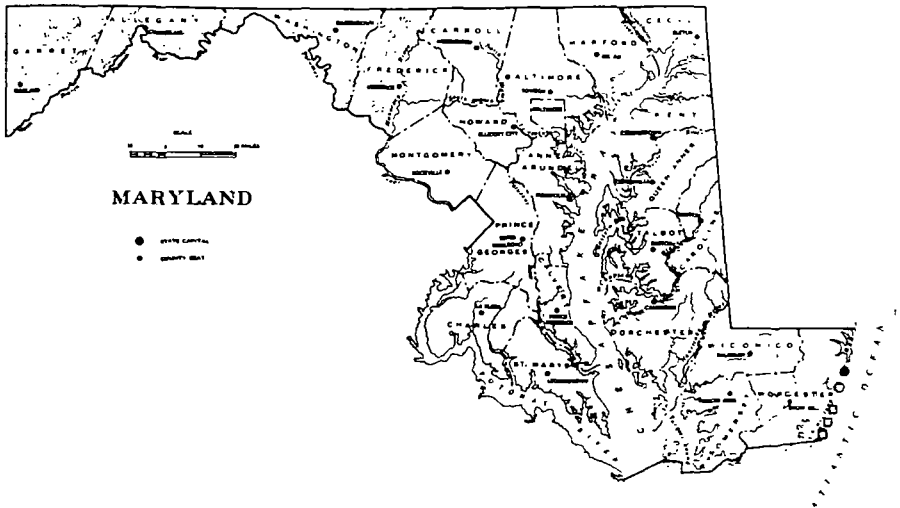


Figure 5. Breeding distribution of Wilson's Plover.

Piping Plover, *Charadrius melodus*

The only breeding habitat remaining in Maryland for this nationally rare shorebird is on Assateague Island south of Ocean City. Probably fewer than 30 pairs breed in Maryland in any year. Nesting areas should be identified on Assateague Island and posted during the breeding season to minimize disturbance. The U.S. Fish and Wildlife Service (Potter 1982) lists Piping Plover as a candidate Endangered Species. See Figure 6.

American Oystercatcher, *Haematopus palliatus*

Stewart and Robbins (1958) recorded this species as a rare breeder in the coastal area of Worcester County. Today, nests are known from Assateague Island and from small islands in northern Chincoteague Bay as well as a few islands in the Chesapeake Bay in Dorchester County (Armistead 1977, 1978). Management practices, as with the Piping Plover, should help this species on Assateague. Denuding a few small islands in Chincoteague Bay and keeping these sites free of disturbance will greatly assist this species, as well as the Black Skimmer and many

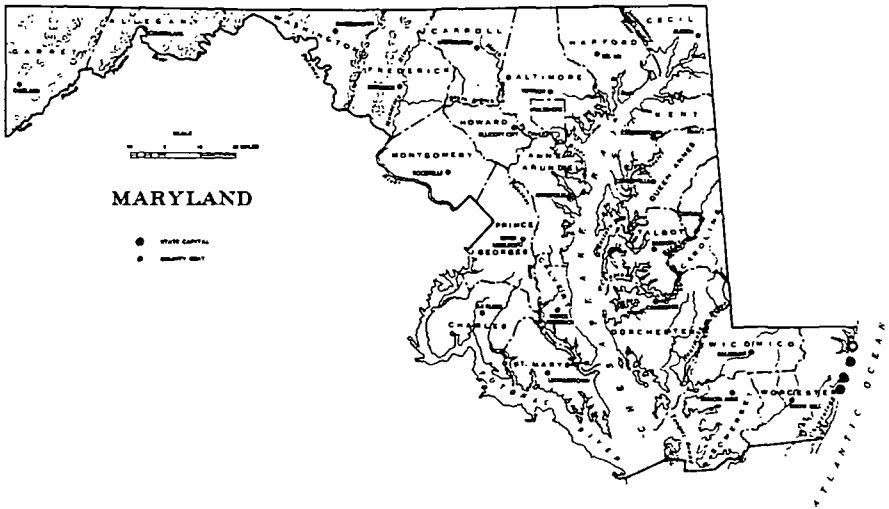


Figure 6. Breeding distribution of Piping Plover.

species of terns. At present, probably fewer than 20 pairs breed annually in Maryland. See Figure 7.

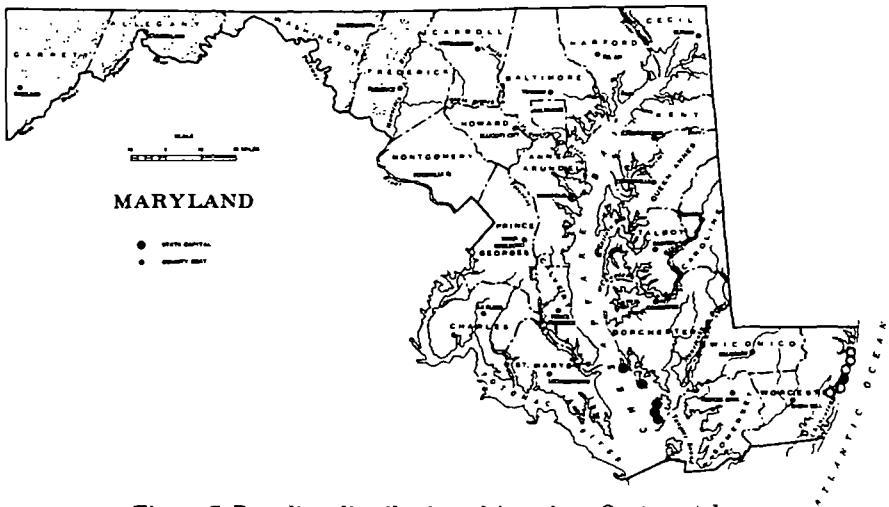


Figure 7. Breeding distribution of American Oystercatcher.

Upland Sandpiper, *Bartramia longicauda*

In 1895 and 1958 this was a fairly common breeder in Maryland, but its status has now declined to rare. It is no longer known to nest in Baltimore County and has not been seen during the summer in Washington County since 1965. A few birds still nest in some years in the Frederick Valley of western Maryland, but the only area where it is now a regular nesting bird is in Garrett County in the vicinity of Redhouse, Gortner, and Accident. It requires extensive upland hayfields. The breeding population is estimated at fewer than 20 pairs. See Figure 8.

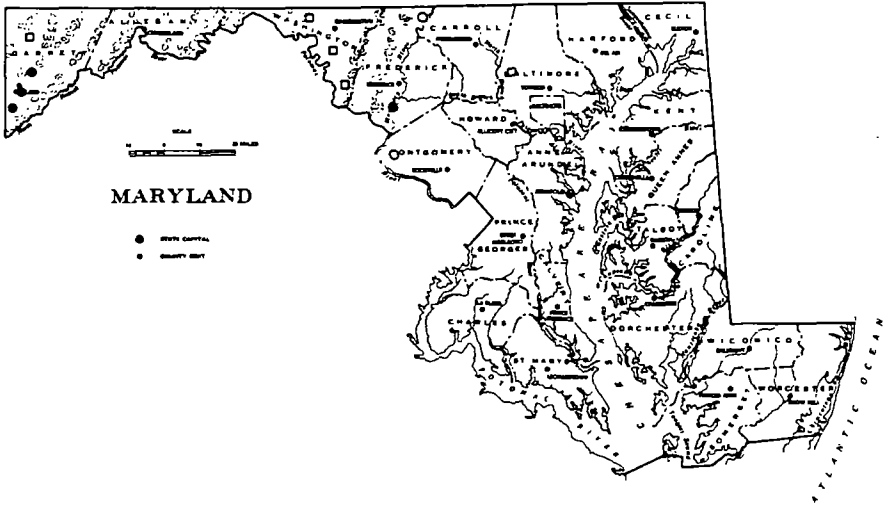


Figure 8. Breeding distribution of Upland Sandpiper.

Gull-billed Tern, *Sterna nilotica*

This tern has been found nesting in Maryland only on the islands in Sinepuxent and Chincoteague Bays, where one or two pairs occur sporadically in colonies of Common Terns. This bird was unknown before 1895, was fairly common in 1957, but has recently disappeared entirely as a breeding species in Maryland because of the erosion of spoil banks in the coastal bays and the growth of dense vegetation on those islands that still remain. See Figure 9.

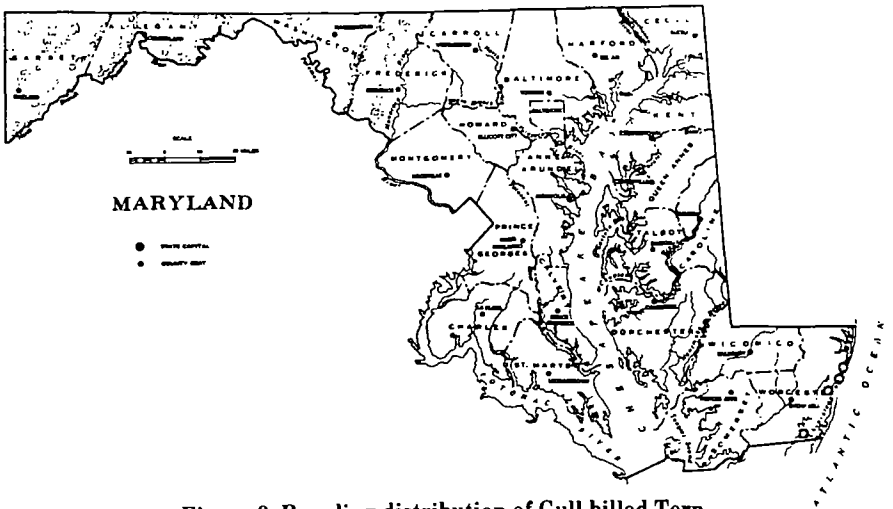


Figure 9. Breeding distribution of Gull-billed Tern.

Royal Tern, *Sterna maxima*

This species was unknown from Maryland in 1895. It was first found nesting in the State during 1950 and since that time has nested occasionally on islands in Chincoteague Bay. The largest number of young produced in any one year was about 800 on the Cedar Islands. This species has declined in status from locally common in 1958 to rare in 1972. It is not likely that it will continue to nest in Maryland unless isolated islands nearly bare of vegetation can be kept free of disturbance. At no time have more than two colonies been known to exist simultaneously within the boundaries of Maryland. See Figure 10.

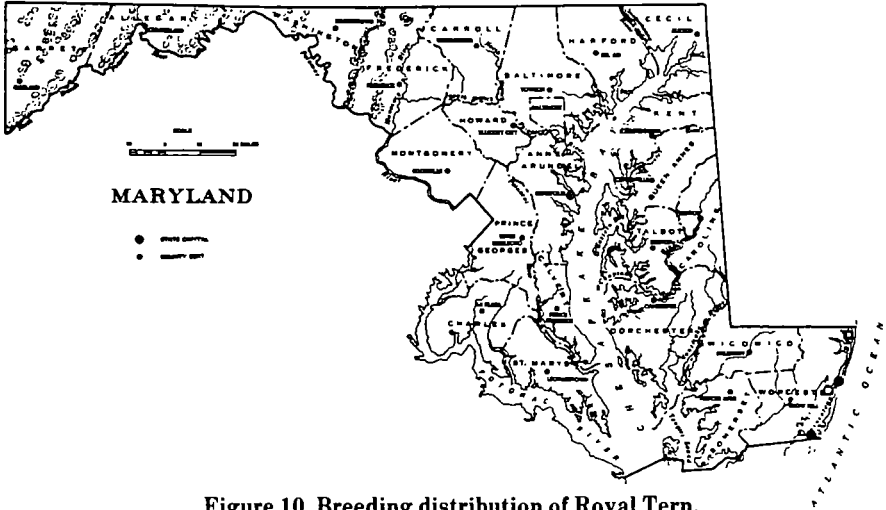


Figure 10. Breeding distribution of Royal Tern.

Roseate Tern, *Sterna dougallii dougallii*

Court (1936) discovered the first breeding colony for Maryland in 1933 on the barrier beach of Assateague Island south of Ocean City. This species nested commonly on islands in Sinepuxent Bay until 1938 (Poole 1942). The Roseate Tern is now considered extirpated as a breeding bird since there have been no nesting records for Maryland since 1938. The U.S. Fish and Wildlife Service (Potter 1982) lists the North American race of the Roseate Tern as a candidate Endangered Species but omitted Maryland from the list of states that encompass its breeding range.

Least Tern, *Sterna antillarum*

As recently as 1958 (Stewart and Robbins 1958), there were 3 dozen known nesting colonies of Least Terns scattered throughout the middle and lower section of Chesapeake Bay and the lower Potomac River as well as tidewater areas along the coast. At least half of those colonies no longer exist, as a direct result of loss of habitat coupled with interference from dogs and people. This species requires open sandy habitats that are free of disturbance during the nesting season. Although this is probably the most common bird on the present list, with populations possibly approaching 300 pairs, the population decline and loss of habitat have been so rapid that this species is in danger of disappearing entirely unless steps are taken to preserve sufficient areas of suitable, undisturbed beach habitat along Chesapeake Bay and the coastal strip. See Figure 11.

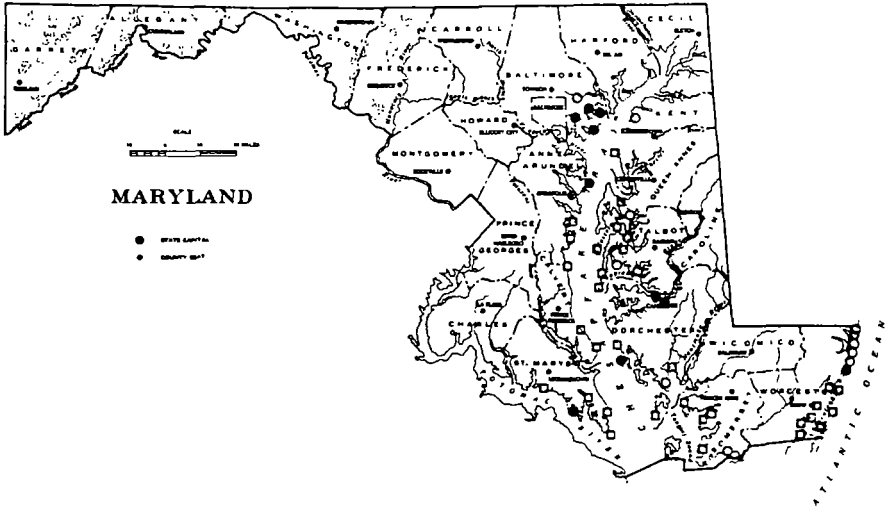


Figure 11. Breeding distribution of Least Tern.

Black Skimmer, *Rynchops niger*

Unknown from Maryland in 1895, the Black Skimmer was considered a common nesting species in the State by 1958, but has since declined to uncommon. The Black Skimmer is dependent on spoil banks in the coastal bays. No more than three colonies have existed in Maryland at any one time. These birds are susceptible to flooding at times of unusually high tide. Thus, habitat management such as removing vegetation from sandy areas well above the high tide mark might prove beneficial to this species. The Black Skimmer generally nests on the same islands with Common Terns. The present number of nesting pairs is estimated at fewer than 50. See Figure 12.

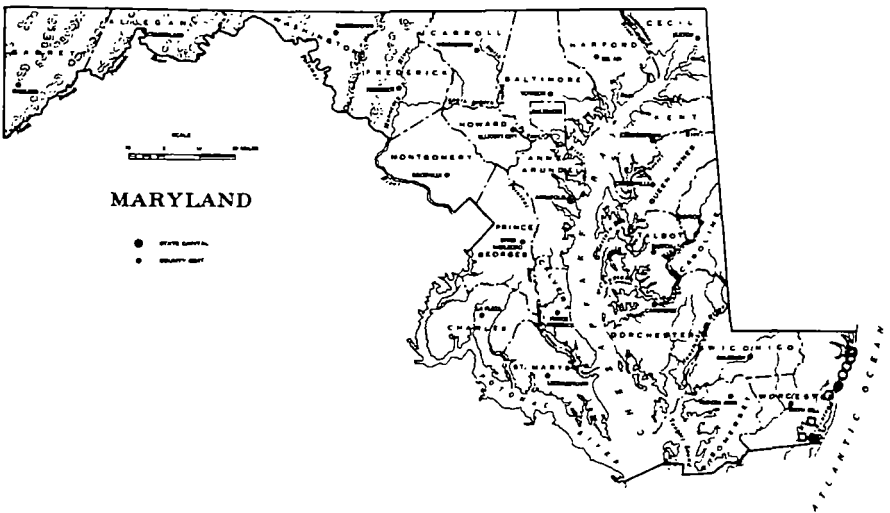


Figure 12. Breeding distribution of Black Skimmer.

Short-eared Owl, *Asio flammeus*

The only actual nest records of this species in Maryland are from Dorchester County in 1923 (Stewart and Robbins 1958) and 1958 (Stewart 1958a). However, a very few pairs probably nest in Maryland almost every year. This bird requires extensive salt or brackish marshes or large undisturbed fields. In recent years, it has been found during the breeding season in the extensive marshes of Dorchester and Somerset Counties, at Kent Narrows in Queen Annes County, and in fields near Poolesville in Montgomery County and near Denton in Caroline County. The total breeding population for the State is estimated at fewer than 10 pairs. Maryland is near the southern limit of Short-eared Owl's breeding range, but there are two records for the Piedmont of Virginia (Larner et al. 1979). See Figure 13.

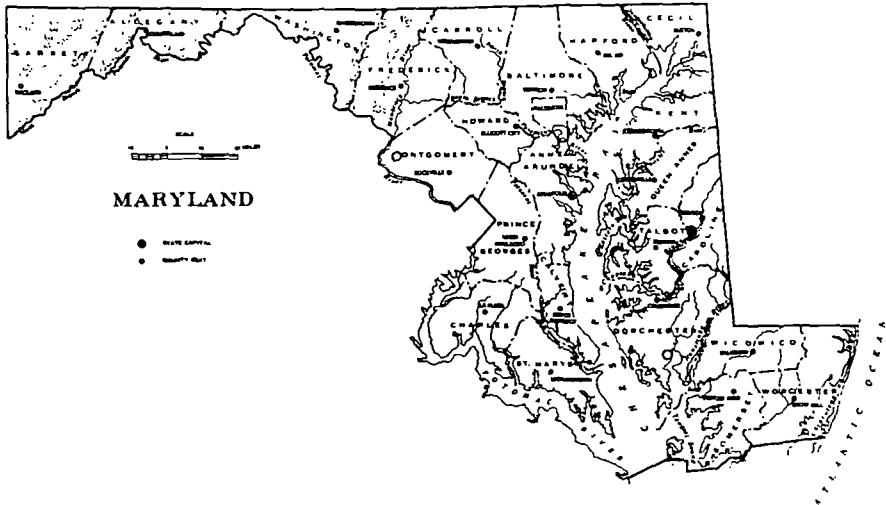


Figure 13. Breeding distribution of Short-eared Owl.

Red-cockaded Woodpecker, *Picoides borealis*

This species is on both the federal and State Endangered lists and has been observed infrequently in Maryland. It is a non-migratory bird which was found in 1932-33 and in 1958 nesting in mature Loblolly Pine stands infected with red heart disease near Golden Hill in Dorchester County (Stewart 1958b). There is hope that this rare species still exists somewhere in the vast expanse of open pine woods along the Dorchester County marshes. No more than one pair has ever been found in Maryland at one time. Recent surveys (Devlin et al. 1980a) have failed to reveal breeding activity in Maryland, although marginal habitat exists (Devlin et al. 1980b).

Red-breasted Nuthatch, *Sitta canadensis*

Although nesting has never been confirmed in Maryland, there are many old reports inferring the probability of breeding. Preble (1900) recorded "a family" group near Bittinger during June and July, 1899. Brooks (1937) reported this species as nesting along the Youghiogheny River as well as in the Maryland portion of Cranesville Swamp. Today, the deep woods near Bittinger are gone and

it has decreased greatly in the Appalachians (Larner et al. 1979, Smith 1980). This Appalachian race of the Bewick's Wren is now a federal candidate Endangered Species (Potter 1982). None has been found during the Garrett County Atlas field work, and only one nest was located for the Washington County Atlas. The only place it is still known to occur nearly every year is in Allegany County near Dan's Rock (1983), but even at this site it could not be found in 1981 or 1982. See Figure 15.

Winter Wren, *Troglodytes troglodytes*

This boreal species used to be locally common in spruce forest along the headwaters of the Casselman River in Garrett County and was still a regular breeding bird in 1914 (Behr 1914, Eifrig 1915, 1920). One was seen in summer in Cranesville Swamp by Brooks (1936) who concluded that it "probably breeds sparingly in densely wooded areas" of Garrett County. Stewart and Robbins (1958) were unable to find Winter Wrens in summer in Maryland, although they winter in all parts of the state. Although nesting has yet to be proven, a scattering of recent records indicates that this species may be expanding its breeding range back into Maryland. See Figure 16.

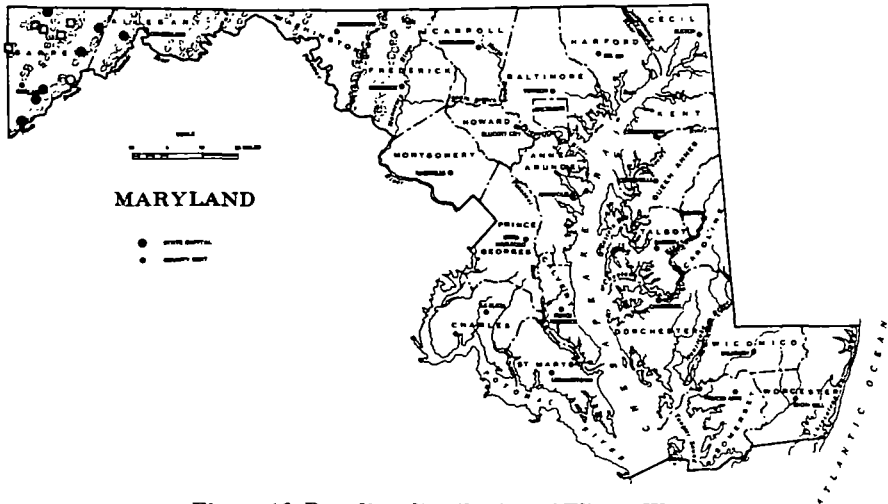


Figure 16. Breeding distribution of Winter Wren.

Golden-crowned Kinglet, *Regulus satrapa*

Before 1980 this species had been found nesting only in spruce bogs at Wolf Swamp and Cranesville, both in Garrett County. In 1980-82, other Garrett County observations included locations in mature hemlocks at Swallow Falls State Park, in patches of mature spruce at the Pleasant Valley Recreation Center, at Cranesville Swamp (southern section), and near Kempton. A nest was found in a spruce plantation in New Germany State Park (J. Boone 1982) and another bird was found nest building near Rock Lodge in central Garrett County, also in 1982 (D. Boone). In 1981, a pair of Golden-crowned Kinglets was found in a mature spruce forest barely in Carroll County northwest of Manchester. This species is primarily dependent on mature spruce trees, and the loss of these trees could remove this bird from the list of breeding species. The estimated number of pairs is fewer than 20. See Figure 17.

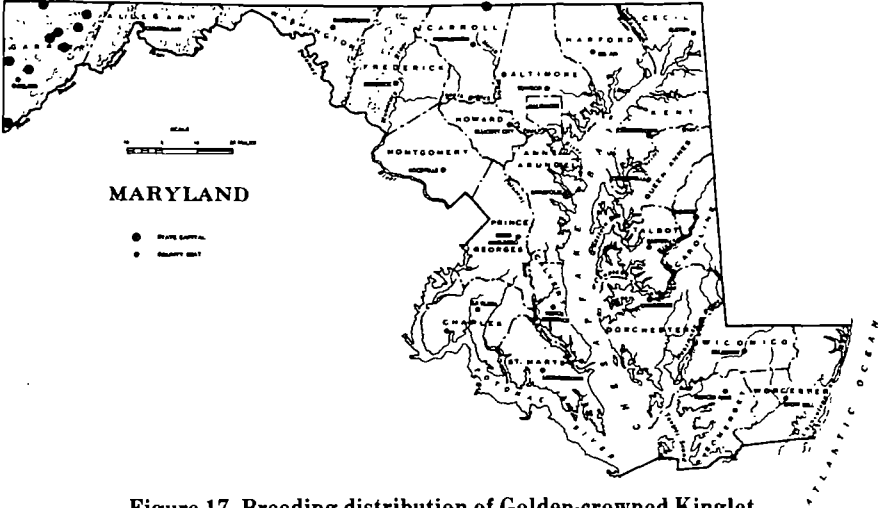


Figure 17. Breeding distribution of Golden-crowned Kinglet.

Loggerhead Shrike, *Lanius ludovicianus migrans*

The Loggerhead Shrike was not known as a breeding bird in Maryland in 1895, and was listed as uncommon in 1958. Today it is very rare. It formerly nested locally in hedgerows of thorn bushes or Red Cedars in Prince Georges, Montgomery, and Washington Counties. Recent nestings include several sites in the Hagerstown Valley, and two locales in the Frederick Valley: one near Thurmont in 1982 and 1983 (D. Boone), and one nest at Lily Pons in 1983 (D. Wallace - Maryland Atlas Project data). The northeastern race of Loggerhead Shrike is now a federal candidate Endangered Species (Potter 1982). The total Maryland nesting population does not exceed 10 pairs. See Figure 18.

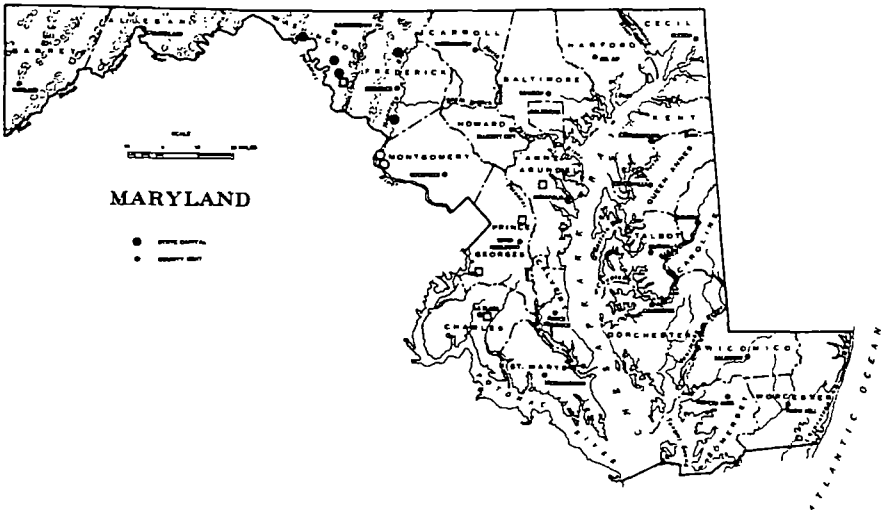


Figure 18. Breeding distribution of Loggerhead Shrike.

Nashville Warbler, *Vermivora ruficapilla*

In Maryland this species is limited primarily to spruce bogs during the breeding season. Nesting has been confirmed only at Wolf and Piney Mountain Swamps and The Glades. Several recent summer records may indicate that this species is increasing its breeding population in Garrett County. However, very few bog habitats are found on publicly managed lands and development pressures are accelerating the destruction of many of the privately owned wetlands. The population is estimated at fewer than 20 pairs. See Figure 19.

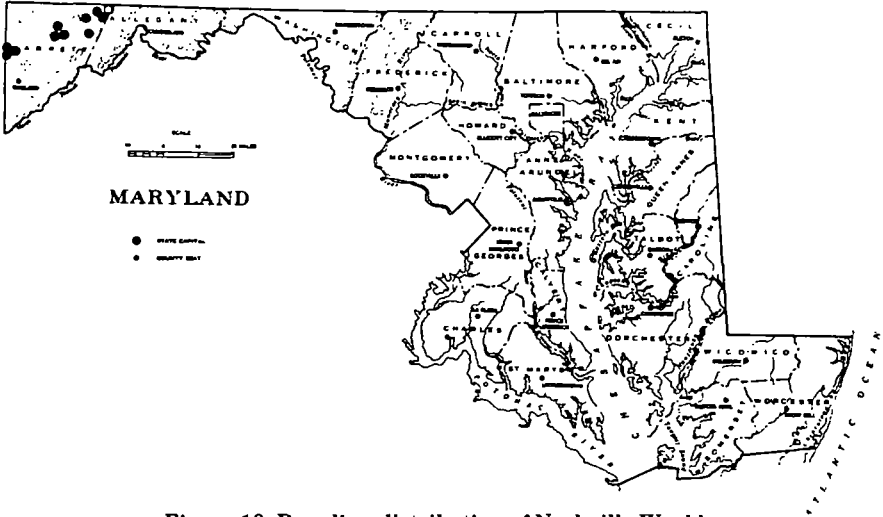


Figure 19. Breeding distribution of Nashville Warbler.

Yellow-rumped (Myrtle) Warbler, *Dendroica coronata*

The curious circumstances surrounding this "accidental" breeding bird (Kumlien 1880) need repeating. In June 1879, near Havre de Grace, Harford County, an adult male and a female (with a broken wing) were found with 3 half-grown young. No subsequent breeding records of this species are known in Maryland. However, on 3 June 1981, a singing male was observed in a bog along Meadow Mountain in Garrett County (Ringler 1981). On 12 June 1983, D. Boone sighted a singing male in a bog along a plantation of Red Pine near Rock Lodge. This bird was also observed carrying food. Perhaps these recent records only indicate late migrants or summer vagrants, however the potential exists for nesting Yellow-rumped Warblers in Garrett County in light of the recent breeding of this warbler in West Virginia (Hall 1983).

Swainson's Warbler, *Limnothlypis swainsonii*

Stewart and Robbins (1958) listed this species as uncommon in the Pocomoke swamp and rare in other stream swamps in Worcester County. Further exploration has failed to reveal other nesting sites between the locality at the Delaware line and the population south of Pocomoke City. Small populations continue to persist at both sites, and it is hoped that posting the north site in 1981 with Maryland Ornithological Society signs discouraging the use of tape playback will help protect the birds from harassment. No more than 10 pairs per year have ever been found in Maryland, which lies at the northeastern extremity of its breeding range.

This species also nests in adjacent montane counties of West Virginia and Pennsylvania, but has not yet been found in the Maryland mountains. See Figure 20.

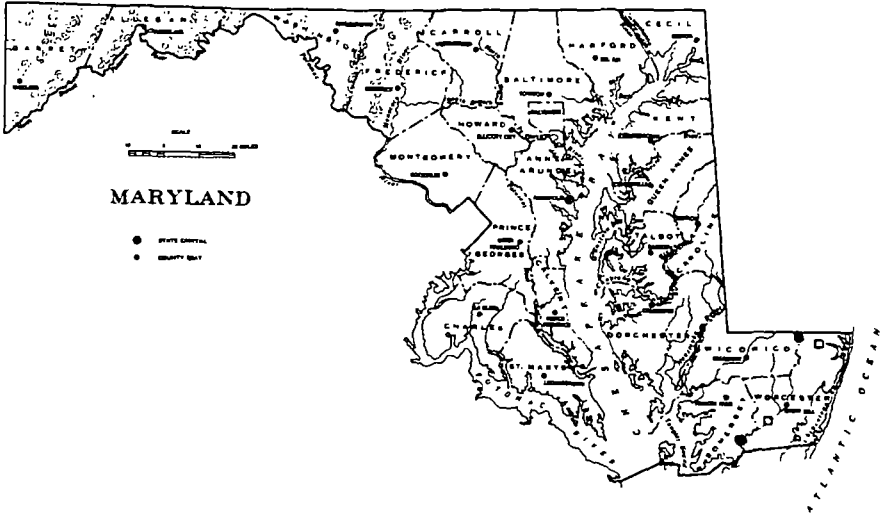


Figure 20. Breeding distribution of Swainson's Warbler.

Mourning Warbler, *Oporornis philadelphia*

This is a northern species that historically nested in Maryland only on Backbone Mountain, in thickets above 3000 feet. However, in 1983, a singing male summered near Herrington Manor (Dowell and Pope). The population is estimated at fewer than 10 pairs. See Figure 21.

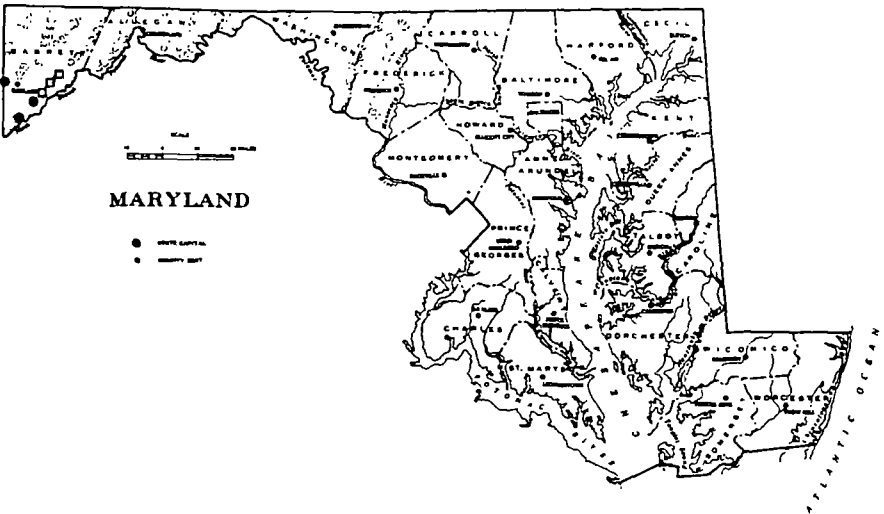


Figure 21. Breeding distribution of Mourning Warbler.

Bachman's Sparrow, *Aimophila aestivalis*

Maryland lies at the very northern limit of the historic breeding range of this southern species. It was not known from Maryland until 1896, but since that time there have been scattered observations of up to 6 singing males or pairs in Prince Georges and Montgomery Counties within 12 miles of the District of Columbia boundary (Stewart and Robbins 1958). As the suburbs have expanded, the habitat required by this species (weedy abandoned fields with open growth of shrubs and small pine or deciduous trees) has drastically declined and during the past 25 years the Bachman's Sparrow has not been found breeding in this part of the State. During the period 1900 to 1910 it occurred in Garrett County of western Maryland, and in June 1923 a singing male was observed near Oakland (Brooks 1936). The only place it has summered in recent years (irregularly) is in Allegany County on Green Ridge Mountain (about 1 mile north of the Potomac River), where 3 pairs were discovered on territory in 1947. In addition, Carlson (1968) reported a small breeding colony on Green Ridge during the summers of 1963 and 1964. There has not been a summer sighting of this species in Maryland since 1970. Bachman's Sparrow is now a federal candidate Endangered Species (Potter 1982). See Figure 22.

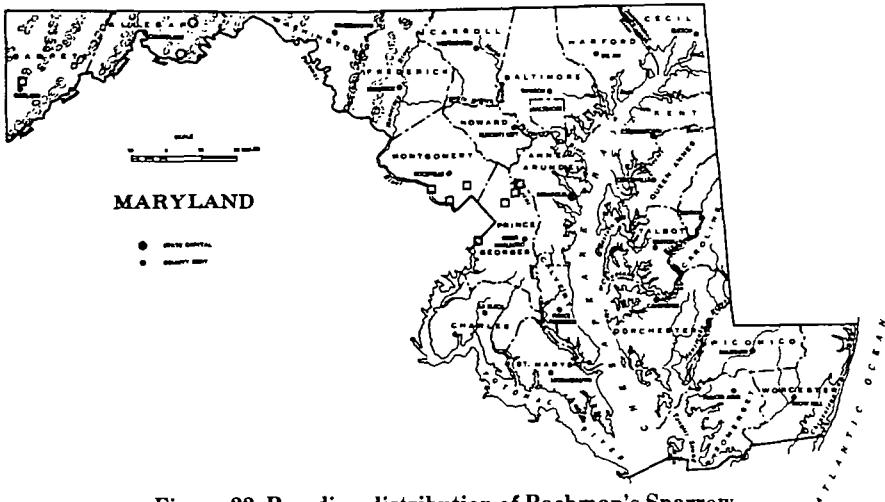


Figure 22. Breeding distribution of Bachman's Sparrow.

Coastal Plain Swamp Sparrow, *Melospiza georgiana nigrescens*

This tidewater subspecies of the Swamp Sparrow was described by Bond and Stewart (1951). It has a very limited range, being restricted to portions of New Jersey, Delaware, and the Nanticoke River marshes near Vienna in Wicomico County, Maryland. The status in 1958 was given as fairly common and local, but numbers on Maryland's Eastern Shore have since been reduced and it is now considered uncommon and local. In the 1950's it was easily seen from the US 50 causeway at Vienna, but recent attempts to locate it there have frequently been unsuccessful. Atlas studies have shown for the first time that Swamp Sparrows nest in suitable marsh habitat in Montgomery and Howard Counties (Klimkiewicz and Solem 1978) and are widely distributed through the tidal marshes of Baltimore County (unpub. atlas data). They are also known to occur in the tidal marshes of northern Anne Arundel County. However, the subspecific identity of these Piedmont and Western Shore Coastal Plain birds has not

yet been determined. If they are true *nigrescens*, this range extension brightens considerably the future of the race in Maryland. If, on the other hand, they prove to be intergrades with *georgiana*, like the birds in Delaware County, Pennsylvania, and Salem and Cape May, New Jersey (American Ornithologists' Union 1957), the prospects of *nigrescens* surviving without additional protection are bleak. This is one of the few birds originally described from Maryland. The population on Maryland's Eastern Shore is estimated at fewer than 20 pairs.

Dark-eyed Junco, *Junco hyemalis*

Known only as a breeding bird in Garrett County, Stewart and Robbins (1958) recorded this Junco as fairly common on Backbone Mountain above 3000 feet and as uncommon elsewhere above 2500 feet. The Garrett County Atlas surveys did not find any evidence of this species from 1979 to 1981. Recent summer sightings (D. Boone) are of a pair carrying food near Roth Rock (1982), a family group near Kempton (1983), and a singing male at High Rock (1983). The paucity of reports after 1958 indicates that this species' population has declined in Maryland, and now is estimated at fewer than 20 pairs. See Figure 23.

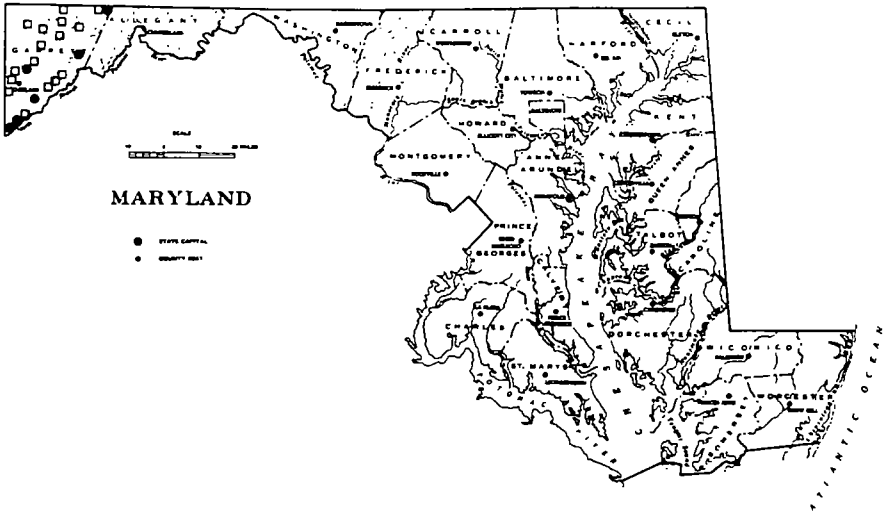


Figure 23. Breeding distribution of Dark-eyed Junco.

DISCUSSION

The 30 species discussed above are those that are believed to be in the greatest danger of disappearing entirely from Maryland's, and the nation's, breeding avifauna unless special precautionary measures are taken to protect the birds and their habitat. Protection and management of nesting habitat for these birds will also benefit many other avian species that are rare and local in their breeding distribution within Maryland.

Additional species that we estimate are presently represented by fewer than 100 nesting pairs in Maryland are identified in Table 1, together with a synopsis of

habitat requirements and the geographic area of the state where they occur. Most of these species are on the periphery of their breeding range. Over half of them are dependent on wetland habitats. Some (Purple Gallinule, Great Black-backed Gull, and Sandwich Tern) are presently expanding their range and have only recently begun to nest in Maryland. Others (Sora and Common Raven) are now increasing, while still others (Alder Flycatcher, Sedge Wren, and Henslow's Sparrow) are decreasing. One (Northern Saw-whet Owl) is nocturnal and probably is more widespread than the very few recent records suggest.

A few other species that have historically nested in Maryland are now considered extirpated (see Table 1). Former breeding species that have become extirpated in the 20th Century (with approximate last date of suspected breeding in Maryland) are Peregrine Falcon (1952), Roseate Tern (1933-38), Long-eared Owl (1950), Yellow-bellied Sapsucker (1949), Red-cockaded Woodpecker (1958), Olive-sided Flycatcher (1937), Swainson's Thrush (1908, 1917), Bachman's Sparrow (1964), and Lark Sparrow (1926). White-throated Sparrows possibly nested in Cranesville Swamp in 1952, however, no actual evidence of breeding was found. There is also a doubt that, if nesting did occur, the birds used the relatively small Maryland portion of that wetland. No further evidence of nesting has ever been found there or anywhere else in Maryland, although summering individuals are often reported.

It is unlikely that Roseate Tern or Swainson's Thrush will nest in the State in the near future, as their respective breeding ranges have contracted to areas far from Maryland's borders. It is problematic whether the Red-cockaded Woodpecker or Bachman's Sparrow will return as breeding species in Maryland. Perhaps if suitable habitat were provided and maintained their return would be hastened. The 1981 summering of the Olive-sided Flycatcher at Finzel raises hopes that this species' range could expand southward again to include Garrett County.

More thorough ornithological coverage of the State would probably reveal breeding sites for Long-eared Owl and Yellow-bellied Sapsucker, as these species' known breeding ranges extend close to Maryland. The Peregrine Falcon was last found breeding naturally in Maryland in 1952. However, starting in 1975 a tower on Carroll Island, in eastern Baltimore County, has been used as a hacking site in a captive breeding program designed to re-establish this species throughout its former range. Scarlett, the famous Baltimore City Peregrine, successfully cared for and fledged four young in both 1979 and 1980. This raises the possibility, once again, of having naturally breeding Peregrines in Maryland.

Of all the species of birds considered rare in this paper, most can be found nesting in one of two critical habitats in Maryland; mountain peatlands or "bogs" and the coastal barrier and bay islands.

Bogs that contain a well developed conifer stand or fringe are the most important habitats for many of the rarest breeding birds in Maryland. Few areas like this are still intact and many have been destroyed or greatly disturbed by stripmining, logging, flooding and grazing. Surprisingly, of all the State-owned acreage in Garrett County, only portions of a few small, sphagnous wetlands are in public ownership. Finzel Swamp is the only bog habitat that is entirely protected in Garrett County, thanks to The Nature Conservancy. Acquisition and protection of a few of the remaining bog areas is imperative in order to secure breeding habitats for many of Maryland's rarest birds.

Assateague and the other islands in the Chincoteague Bay are the only Maryland nesting habitats for several species of birds; these include the Wilson's and Piping Plovers, as well as many colonial nesting terns and Black Skimmer. Existing populations of these rare species should be monitored and their locations kept free of disturbance. In addition, isolated islands in the Chincoteague and Sinepuxent Bays should be surveyed and a few suitable ones should be managed by removing most of the vegetation in order to create the open ground that is necessary for these species to nest.

We hope that the many land management agencies within the State of Maryland will communicate and cooperate with one another in order to manage and protect Maryland's rare birdlife. If the same successful wildlife management practices and techniques that have multiplied our Wild Turkey and Ruffed Grouse could be applied to maintain or increase our terns and herons; then, perhaps, the ideal of preserving our natural diversity is close to realization.

ACKNOWLEDGMENTS

We thank the following colleagues for contributing recent observations or constructive comments on the text and maps: H. T. Armistead, E. A. T. Blom, M. C. Brosnan, D. Bystrak, R. Chipley, B. A. Dowell, G. H. Fenwick, M. R. Fuller, J. Ganter, M. K. Klimkiewicz, D. S. Lee, E. M. Martin, D. W. Mehlman, F. Pope, R. F. Ringler, R. A. Rowlett, J. M. Sheppard, G. J. Taylor, E. L. Thompson, J. S. Weske, and H. L. Wierenga.

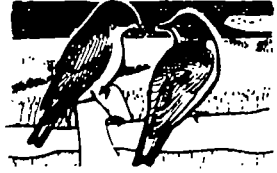
LITERATURE CITED

- American Ornithologists' Union. 1957. Check-list of North American birds. Baltimore, Md. 691 p.
- American Ornithologists' Union. 1982. Thirty-fourth supplement to the American Ornithologists' Union Check-list of Northern American Birds. *Auk* 99(3):1CC-16CC.
- Armistead, H. T. 1977. American Oystercatcher and Herring Gull Breed in Dorchester County. *Md. Birdlife* 33: 111-112.
- Armistead, H. T. 1978. Summer birds of Lower Chesapeake Bay islands in Maryland. *Md. Birdlife* 34:99-151.
- Behr, H. 1914. Some breeding birds of Garrett Co., Md. *Auk* 31:548.
- Bond, G. M., and R. E. Stewart. 1951. A new Swamp Sparrow from the Maryland Coastal Plain, *Wilson Bull.* 63:38-40.
- Boone, J. E. 1982. A Maryland nesting of the Golden-crowned Kinglet. *Md. Birdlife* 38:79-85.
- Brooks, M. G. 1936. Notes on the land birds of Garrett County, Maryland. *Nat. Hist. Soc. Md. Bull.* 7:6-14.
- Brooks, M. G. 1937. Pine Siskins in western Maryland. *Wilson Bull.* 49:294.
- Carlson, C.W. 1968. Where to Go: Ridge and Valley Birding, Eastern Allegany County, Maryland. *Atlantic Naturalist* 23:143-149.
- Court, E. J. 1936. Four rare nesting records of Maryland. *Auk* 53:95-96.
- Devlin, W. J., J. A. Mosher, and G. J. Taylor. 1980a. History and present status of the Red-cockaded Woodpecker in Maryland. *American Birds* 34:314-316.

- Devlin, W. J., J. A. Mosher, and G. J. Taylor. 1980b. Potential Red-cockaded Woodpecker habitat in Maryland. *Natural History Miscellanea* No. 212, Oct. 15, 1980.
- Eifrig, C. W. G. 1915. Notes on some birds of the Maryland Alleghanies; an anomaly in the check-list. *Auk* 32:108-110.
- Eifrig, C. W. G. 1920. Additions to the "Birds of Allegany and Garrett Counties, Maryland." *Auk* 37:598-600.
- Hall, G.A. 1983. West Virginia Birds: Distribution and Ecology. Special Pub. #7, Carnegie Mus. of Nat. Hist. Pittsburgh, Pa. 180 p.
- Kirkwood, F.C. 1895. A list of the birds of Maryland. *Md. Acad. Sci. Trans.* 2:241-382.
- Klimkiewicz, M. K., and J. K. Solem. 1978. The Breeding Bird Atlas of Montgomery and Howard Counties, Maryland. *Md. Birdlife* 34:3-39.
- Kumlien, L. 1880. The Yellow-rumped Warbler (*Dendroeca coronata*) breeding in eastern Maryland. *Bull. Nuttall Ornith. Club* 5:182-183.
- Larner, Y. R. (Chairman, Checklist Committee). 1979. Virginia's birdlife, an annotated checklist. Virginia Avifauna 2, Va. Soc. of Ornithology, Lynchburg. 118 p.
- Osborn, R. G., and T. W. Custer. 1978. Herons and Their Allies: Atlas of Atlantic Coast Colonies, 1975 and 1976. Biological Services Program, U.S. Fish and Wildlife Service, Washington, D.C. 211 p.
- Poole, F. G. 1942. Breeding notes Eastern Shore birds. *Bull. Nat. Hist. Soc. Md.* 12:56-58.
- Potter, J. C. 1982. Endangered and Threatened Wildlife and Plants; Review of Vertebrate Wildlife for Listing as Endangered or Threatened Species. *Fed. Register* 47:58454-58460.
- Preble, E. A. 1900. The summer birds of Western Maryland. Md. Geological Survey 294-307.
- Ringler, R. F. 1979. Breeding season, June 1 - July 31, 1979. *Md. Birdlife* 35:98-104.
- Ringler, R. F. 1980. Breeding season, June 1 - July 31, 1980. *Md. Birdlife* 36:130-140.
- Ringler, R. F. 1981. Breeding season, June 1 - July 31, 1981. *Md. Birdlife* 37:133-141.
- Ringler, R.F. 1982. Fall migration, Aug. 1-Nov. 30, 1981. *Md. Birdlife* 38:10-28.
- Robbins, C. S. and D. Bystrak. 1977. Field List of the Birds of Maryland. Maryland Avifauna #2, Maryland Ornithological Society.
- Smith J. L. 1980. Decline of the Bewick's Wren. *Redstart* 47:77-82.
- Stewart R. E. 1958a. Recent Breeding Records of Birds in Maryland. *Atlantic Naturalist* 13: 246-247.
- Stewart, R.E. 1958b. Nesting of the Red-cockaded Woodpecker in Maryland. *Md. Birdlife* 14: 63-64.
- Stewart, R.E., and C.S. Robbins, 1958. Birds of Maryland and the District of Columbia. North American Fauna 62, U.S. Fish and Wildlife Service, Washington, D.C. 401 p.

Patuxent Wildlife Research Center, Laurel, MD 20708

Maryland Natural Heritage Program, Department of Natural Resources, Annapolis, MD 21401



THE SEASON

BREEDING SEASON, JUNE 1—JULY 31, 1985

ROBERT F. RINGLER

Much of this summer's data comes from the third year of the Breeding Bird Atlas Project, for which a great amount of material was received. The weather was near normal for temperature, and generally below average for precipitation. Hurricane Bob in July did little to relieve the impending drought conditions, which lowered reservoir levels and allowed more shorebirds for the fall migration.

Observers: Roger Anderson, Rick Blom, David Czaplak, Sam Droege, Sam Dyke, Ethel Engle, Jane Farrell, Jerry & Roberta Fletcher, Helen Ford, Inez Glime, Jimmy & Patricia Gruber, Alex Hammer, Dick Hegner, Marvin Hewitt, Bob Hilton, Clark Jeschke, Dennis Kirkwood, Wayne Klockner, Chris Ludwig, Colin McAllister, Joan McKearnan, Dave Mehlman, Paul Nistico, Mariana Nuttle, John, Michael, & Paul O'Brien, Phil Olsen, Patricia Rouse, Ron Runkles, Steve Simon, Connie Skipper, Eddie Slaughter, Jo Solem, Wally Sumner, Eva Sunell, Dave Walbeck, David Wallace, Robert Warfield, Hal Wierenga, Erika Wilson.

Abbreviations: DC = District of Columbia, NWR = National Wildlife Refuge, PWRC = Patuxent Wildlife Research Center, WMA = Wildlife Management Area, "+" = other observers.

Loon, Grebes. A Common Loon in breeding plumage was in Cox Creek on Kent Island on June 11 (Carol & Lee McCollough). This was probably a straggler from spring migration. However, another in breeding plumage on the Gunpowder River on July 18 (Mathilda Weiss) was probably summering locally. Two pairs of Pied-billed Grebes nested at Brandon Shores in northern Anne Arundel County this summer (Ringler). Three small young were seen on June 26, and on July 4 there were 4 adults with 7 downy young both in and out of nests. A summering Horned Grebe was off Thomas Point, Anne Arundel Co., on June 26 (Ford).

Pelagics. Results of the June 15 pelagic trip out of Ocean City were 1 Cory's Shearwater, 1 Greater Shearwater, 1 Sooty Shearwater, and 1500 Wilson's Storm-Petrels. The latter were also seen from shore at Ocean City, with 6 on July 12 (P. O'Brien), 10 on July 18 (McAllister) and 67 on July 29 (P. O'Brien). At the mouth of the Potomac River another 12 were seen east of Point Lookout on July 30 (Jeschke). An immature Northern Gannet was seen from Assateague on June 3 (Slaughter). In recent years this species has been seen regularly in very small numbers offshore in June.

Brown Pelican. Brown Pelicans have been summering in increasing numbers in Maryland and this year were seen more frequently than ever in the Ocean City area. On June 3 there were 9 immatures off Assateague (Slaughter). Sightings at Ocean City were 11 on June 23 (Ringler), 10 on July 11 (Warfield), 4 on July 12 (P. O'Brien), 20 on July 13 (Warfield), 3 on July 18 (McAllister), 3 on July 20 (Blom, Wierenga,

Ringler), and 4 on July 25 (Greg Gough). O'Brien also saw 56 from Assateague on July 12, and on July 20 another was sitting on a duck blind at Greys Cove south of Ocean City (Blom, Wierenga, Ringler).

Double-crested Cormorant. Summering Double-crested Cormorants have become commonplace. This year there were 3 in St. Marys County on June 12 (Wilson), 20 in DC on June 13 (Czaplak), 39 in the Susquehanna Flats— Havre de Grace area on June 20 (Kirkwood, Spike Updegrove), 28 at Brandon Shores on June 26 and 5 there on July 4 (Ringler), 1 at Pennyfield on July 7 (Mehlman) and 16 at Hart-Miller on July 28 (Ringler +).

Hérons, Ibises. At least 2 Least Bitterns were found at Lilypons from July 4 (Olsen) through the 27th with 1 seen on the 28th (Anderson). A fledgling Least Bittern was seen at Kenilworth Aquatic Gardens on July 6 (Czaplak +), and on July 14 Dyke counted 14 at Deal Island WMA during a canoe trip in the impoundment there. There were 90 Great Blue Heron nests at Barren Island on May 26 (Armistead +). Walbeck found a single Great Blue nest with 1 young bird along the Monocacy River in Carroll County on July 20. Great Blue Herons are rare and apparently secretive and solitary breeding birds in the Piedmont. Non-breeding summer Great Blues included 4 at Liberty Reservoir on June 13 (Simon), 16 at Brandon Shores on June 26 (Ringler), 5 at Loch Raven on July 8 (Simon) and 40 at PWRC on July 30 (Droege). Post-breeding dispersal of Great Egrets began early with 2 at Westport in Baltimore on June 26 (Ringler). Others were 7 in Charles County on July 7 (Nistico), 7 on Kent Island on July 12 (Blom), 2 at Lilypons in Frederick County on July 21 (Hilton) and 5 there on the 27th (Ringler +), and 16 at PWRC on July 30 (Droege); the high count for the season was 100 at Deal Island WMA on July 27 (Dyke). An early Snowy Egret nest on Poplar Island contained eggs on April 18 (McKearnan). This is the earliest nest record for the state. There were 5 Snowys at Point Lookout on June 12 (Wilson), 1 at Remington Farms, Kent Co., on July 2 (Grubers), 22 at Kent Island on July 12 (Blom), and 3 at Fruitland on July 21 (Ringler). An immature Little Blue Heron was at Point Lookout on June 12 (Wilson) and another immature was at Remington Farms on July 29 (Gruber). An immature Tricolored Heron was at Sandy Point on July 15 (M. O'Brien). Wilson also found 13 Cattle Egrets at Scotland in St. Marys County on June 12, and in Queen Annes County on July 13 there were 15 on Tilghman Neck and 1 on Corsica Neck (Ringler). Most of these birds represent post-breeding dispersal or distant feeding from the nest area. Another record early egg date was a Black-crowned Night-Heron nest off South Point on April 21 (McKearnan). Czaplak saw fledged young Black-crowns at the National Zoo colony on June 18, and an immature was seen on Kent Island on July 12 (Blom). Up to 4 adult Yellow-crowned Night-Hérons summered at Lilypons, apparently without nesting. They were first seen on May 27 and the last observation was of 2 on July 28 (Wallace). An adult Yellow-crown was at Sycamore Landing on June 2 (J. & P. O'Brien). An immature White Ibis was at Lilypons from July 16 (Gough) at least through July 27. On the latter date a Glossy Ibis was also there (Ringler +). Another immature White Ibis was at Elliott on July 17 (M. O'Brien). McKearnan found another record-early Glossy Ibis nest with eggs on April 21 at the heronry off South Point.

Waterfowl. Two Tundra Swans, an adult and an immature, remained at the Hurlock sewage lagoons from May 26 throughout the summer (Ringler). Armistead and Paul Spitzer found a Mute Swan nest with 2 young in it on Barren Island on May 26. Summering Snow Geese included 4 adults near Whaleysville on June 5 and an immature in Boxiron Creek on June 15 (Ringler), all these in Worcester County. Nesting Canada Geese had downy young at Whaleysville on June 15 (Ringler), and

the breeding flock at Liberty Reservoir, supplemented by birds of the year, had grown to 37 on July 8 (Simon). Simon counted 20 Wood Ducks at Loch Raven on July 20 and 51 Mallards there on July 16. There were 110 Mallards at Hurlock on June 23 (Ringler) despite predation by Snapping Turtles. A new breeding species for the state was discovered by Don Perkuchin at Blackwater NWR on June 12 when he observed a female Northern Shoveler with 7 small young. Also at Blackwater, Guy Willey saw a female Gadwall with 9 small young on May 18. Non-breeding summering diving ducks were single male Lesser Scaups at Hurlock and Brandon Shores throughout the season (Ringler), 2 male Lessers at Hart-Miller on July 28 (Ringler +), 3 Oldsquaws off the Holly Beach Farm in Anne Arundel County on July 1 (Ford), single female Hooded Mergansers at Prettyboy Reservoir on June 9 (Haven Kolb) and at Masonville in Baltimore on July 14 (Ringler), a group of Ruddy Ducks throughout the summer at Hurlock with a high count of 7 on July 21 (Ringler), and 2 drake Ruddys at Hart-Miller on July 28 (Ringler +).

Diurnal Raptors. Single Ospreys wandering in the Piedmont were at Triadelphia on July 7 (Sunell) and Lilypons and Liberty Reservoir on July 27 (Ringler +). An adult Bald Eagle was sitting on the dike at the Hurlock sewage lagoons on June 23 (Ringler), and Anderson saw an immature with 2 adults at Scientist Cliffs on June 27. A female Northern Harrier at Hurlock on June 9 (Ringler) was unusual away from the marshes in Dorchester County. In Worcester County a female was flushed from a roost site at Scarboro Landing on June 15 (Ringler), other birds were seen at Public Landing and Scott Hammocks during the summer, and a female with 2 fledged juveniles was on St. Martins Neck on July 20 (Wierenga +). Cooper's Hawks are rare breeders on the Coastal Plain. This year single birds were seen at Ocean Pines on June 9 (Ringler) and near Hollywood in St. Marys County on June 28 (Byron Swift). Woody Martin reports that Red-shouldered Hawks had an average nesting season along the Patuxent River with 33 nests that he monitored producing about 50 young. Klockner saw an adult Broad-winged Hawk near Wango on June 14, and Czaplak saw 1 with 2 immatures in Rock Creek Park on July 23. Both could be breeding locations with the former being one of the very few for the lower Eastern Shore. Czaplak also reports that 4 American Kestrels fledged from a radar tower at the Naval Research Lab in DC this summer. A Peregrine Falcon was seen at Hart-Miller on July 28 (Blom +), possibly wandering from one of the nest locations within sight of the islands, either downtown Baltimore or the Bay Bridge.

Gallinaceous Birds, Rails. Wilson saw a male Ring-necked Pheasant on July 3 at Elliott, a location where the species has been established in small numbers for some years. A female pheasant with 4 downy young was at Masonville in Baltimore on July 14 (Ringler); this also an established population that survives in the city. With the introduction of Wild Turkeys into many parts of the state where they have not existed for many years we will probably be seeing more reports of this species, such as the 2 near Snow Hill in Worcester County on June 15 (Ringler). Wallace saw single Chukars at 2 locations in Frederick County in the Blue Ridge Summit NW atlas block near a game farm close to the Pennsylvania line. Bill Burt did some very special work in the Elliott Island area looking for Black Rail nests. He found 1 on July 18 with 6 eggs in it, 7 eggs the following day and 8 on the 20th through the 22nd. When he checked the nest on August 2 the eggs had hatched. He found another nest on July 19 with recently hatched eggs in it. A King Rail was seen at Hughes Hollow near Seneca on June 2 (J. & P. O'Brien) and 1 at Lilypons on July 27 (Alex Hammer +); both being rare inland locations for this species. Also at Lilypons Hilton found a Virginia Rail with 5 juveniles on July 21. Common Moorhens successfully nested at Brandon Shores where on June 26 an adult was with 1 downy young, 2 other adults were on

inaccessible nests, and 2 more adults also were seen. At Lilypons moorhens also succeeded, as observations of 2 adults began on June 21 (M. O'Brien) and proceeded to an adult with downy young on July 7 and adult with juvenile on July 28 (Wallace). Sam Dyke observed a pair of American Coots with young on June 15 at Deal Island WMA where the species has been a sporadic breeder in the past. Other coots, presumably non-breeders, were 2 at Lake Haven near Berlin on June 9, 1 at Masonville on July 4, and 1 at Hurlock on July 21 (Ringler).

Plovers, Oystercatcher, Stilts, Avocet. The 4 Black-bellied Plovers at Ocean City on June 23 (Ringler) were either late spring stragglers or summering non-breeders. A Lesser Golden-Plover at Fox Hill Levels on Assateague on June 13 (J. O'Brien, Dan Audet) does not fit any migration pattern for the species. No Wilson's Plovers were reported this year. Among the late spring migrants at New Road Landing in Wicomico County on June 9 were 2 Semipalmated Plovers (Ringler). Paul O'Brien found 7 Piping Plovers on Assateague on July 12. The flock of Killdeer at Summit Hall Turf Farm in Montgomery County had built to 69 on July 14 (Hilton). A fledgling American Oystercatcher was seen at Ocean City on June 16 (Ringler). Dyke saw 1 Black-necked Stilt at Deal Island WMA on July 14, but on the 21st there was an apparent family group of 2 adults and 3 immatures there (Ringler) and this group was seen through August 6 (Walbeck). It is presumed that these birds nested in the impoundment but there is no other evidence. Another Black-necked Stilt was seen at Elliott on July 30 (M. O'Brien). An American Avocet in breeding plumage was at Hart-Miller on July 28 (Blom +).

Sandpipers. An early fall migrant Greater Yellowlegs was at Remington Farms on July 2 (Gruber) and there were 50 gathered at Deal Island WMA on July 27 (Dyke). A Lesser Yellowlegs was also at Remington Farms on July 2 (Gruber) and there were 4 at Leading Point in Baltimore on July 7 (Ringler). Dyke also found 50 Lessers at Deal on July 27 and there were 75 at Hart-Miller on July 28 (Ringler +). Warfield noted his first migrant Willet at West Ocean City on July 5, and Gruber found 1 at Swan Point in Kent County on the 2nd. Bonnie Smith found 2 Spotted Sandpipers on June 8 along the Monocacy River near Woodsboro where they may be nesting, though the possibility of very late spring migrants exists. Whimbrel sightings were more plentiful than for most summer seasons, starting with a late spring migrant at Ocean City on June 8 (Ringler +) and 1 at Fox Hill Levels on Assateague on June 14 (J. O'Brien, Dan Audet). Warfield saw his first fall migrant Whimbrel at West Ocean City on July 6 and other sightings were 6 on Assateague on July 12 (P. O'Brien), 1 at Hart-Miller on July 28 (Ringler +) and 1 at Ocean City on July 30 (M. O'Brien). The last spring Ruddy Turnstones were 3 at Point Lookout on June 12 (Wilson) and 3 at Ocean City on June 23 (Ringler); the first for the fall was at West Ocean City on July 23 (Warfield). Red Knots may have summered on the coast this year, as there were 50 at Ocean City on June 8 and 30 on June 23 (Ringler), and on July 12 Paul O'Brien found 20 at Ocean City and 25 on Assateague.

O'Brien also saw the first 2 Sanderlings of the season on Assateague on July 12, though these may also have been summering birds. Definite migrants were not far behind, as there were 200 at Ocean City on July 20 (Ringler), 1 at Liberty Reservoir in Carroll County on July 27 (Hammer +), 3 at Four-Mile Run in DC on July 27-28 (Czaplak) and 4 at Hart-Miller on July 28 (Blom +). Among the shorebirds lingering from the spring at New Road Landing in Wicomico County on June 9 were 78 Semipalmated Sandpipers and 2 White-rumped Sandpipers (Ringler). The first fall migrant Western Sandpipers reported were 4 on Assateague on July 12 (P. O'Brien), 1

at Loch Raven on July 19 and 21 (Simon), and 1 at Liberty Reservoir in Carroll County on July 27 (Ringler +). There were 2 Least Sandpipers at Masonville and 3 at Brandon Shores on July 4 (Ringler), followed by 2 at Harford Glen on July 8 (Kirkwood), 373 on Assateague on July 12 (P. O'Brien), 50 at Hurlock on July 21 (Ringler) and 150 at Deal Island WMA on July 27 (Dyke). The last White-rumped Sandpipers of the spring were 15 at Ocean City on June 15 (Ringler +). There was 1 Dunlin at Ocean City on June 15-16 (Ringler +) and 1 on Assateague on July 12 (P. O'Brien). The first Stilt Sandpipers of the fall were 1 at Deal Island WMA on July 21 (Ringler) and 1 at Elliott on July 30 (M. O'Brien) but there was an impressive 175 at Hart-Miller on July 28 (Ringler +). Short-billed Dowitchers for the spring ended with 2 at Ocean City on June 23 (Ringler); fall migrants were 2 at Masonville on July 14 (Ringler), 10 at Deal Island WMA on July 27 (Dyke), and 5 at Liberty Reservoir in Carroll County on the same day (Ringler +).

Gulls. McKearnan established some early nest records for gulls in Maryland with the following nests with eggs: Laughing Gull at Assateague on May 10, Herring Gull in Chincoteague Bay on April 20, and Great Black-backed Gull in Chincoteague Bay on May 11. Czaplak saw 5 adult Laughing Gulls in DC on June 21 and 6 on July 30. A juvenile Laugher had made it to Baltimore by July 28 (Ringler). Sightings of Franklin's Gulls at Sandy Point were a sub-adult on June 14, an adult on June 19 and a first-summer bird on July 15 (M. O'Brien + , see photo in *American Birds*, 39:897). A first-summer Bonaparte's Gull was at Hurlock on June 23 and July 21 (Ringler). Summering flocks of Ring-billed Gulls were 165 at Back River on July 7 (Ringler) and 100 in DC on July 16 (Czaplak); fall migrants were 3 juveniles at Sandy Point on July 10 (P. O'Brien), West Ocean City on July 11 (Warfield), a juvenile among a flock of 25 at Tower Gardens on Kent Island on July 12 (Blom) and 1 inland at Loch Raven on July 19 (Simon). A dramatic range extension for nesting Herring Gulls occurred this summer as one pair nested on the dike at Hart-Miller. Gordon Bennett, the supervisor of the impoundments, photographed the nest with eggs on June 6 and the large young bird out of the nest on July 15 and 20. Wilson counted 44 Herring Gulls at Point Lookout on June 12. These birds may be visitors from nesting colonies in the lower bay or summering non-breeders. A Great Black-back nest with 2 eggs was found on Barren Island on May 26 (Armistead +). Czaplak saw 4 immature Great Black-backs summering in DC and saw an adult there on July 25.

Terns, Skimmers. Reports of Gull-billed Terns away from nesting sites were 2 at Fox Hill Levels on Assateague on June 14 (J. O'Brien, Dan Audet), a surprising 3 at Sandy Point on July 10 and 2 at Ocean City on July 12 (P. O'Brien). Caspian Terns are increasing as summering non-breeders, with this year's score being 2 at Hurlock on June 16 (Ringler), 12 in the Susquehanna Flats area on June 20 (Kirkwood), 2 at Westport in Baltimore on June 26 (Ringler) and 1 in DC on July 10 (Czaplak). Though Royal Terns have not been found nesting in Maryland in recent years they may do so again soon as there were 32 at Point Lookout on June 12 (Wilson), 1 flying over Schumacher Pond in Salisbury on June 16 (Dyke) and a juvenile at Ocean City on July 20 (Ringler +). Also at Ocean City 2 Sandwich Terns (an adult and a juvenile) were seen on July 20 (Wierenga +) and July 27 (Sumner). Paul O'Brien counted 336 Common Terns at Ocean City and 200 on Assateague on July 12. The 3 Forster's Terns at Choptank on June 13 (Engle) may have dispersed early from the breeding colonies as was certainly the case for 15 at Tower Gardens and 7 at Romancoke on Kent Island on July 12 (Blom), 4 in DC on July 17 (Czaplak) and 5 at Upper Ferry in Wicomico County on July 21 (Ringler). Armistead and party counted 703 *Sterna* tern nests on Barren Island on May 26 with the percentage of Forster's increasing over past years. Nests with eggs of Least Terns included another state early record with 1 on

Assateague on May 18 (McKearnan) and 1 at Cornfield Harbor in St. Marys County on June 30 (Patty Craig, Jim Boxwell). At Swan Creek in Kent County Gruber saw 12 Least Terns on June 12 and at Choptank Engle saw 3 on July 6 and 18 on the 13th. Single Black Terns were seen at Ocean City on July 20 (Warfield), DC on July 27 (Czaplak) and Hart-Miller on July 28 (Ringler +). Armistead and party also found 5 Black Skimmer nests on Barren Island on May 26. A skimmer flying down the Pocomoke River at Cedar Hall Wharf at dusk on June 22 (Ringler) was rather far from any nest sites. A fledgling skimmer was seen at Ocean City on July 20 (Ringler +).

Cuckoo, Goatsucker, Woodpecker, Flycatchers. A Black-billed Cuckoo heard calling at Wye Landing in Talbot County on June 17 (Klockner) was rare for the Eastern Shore. Also unusual were a Chuck-will's-widow heard at Accokeek on June 21-22 (Nistico) and 1 heard at Denton on July 2 (Nuttle). An adult Red-headed Woodpecker on Tilghman Neck on July 13 (Ringler) was rare for Queen Annes County. Also there the same day an Acadian Flycatcher was feeding a fledgling Brown-headed Cowbird that was sitting on a power line. A singing Alder Flycatcher was at the familiar site in Baltimore County at Monkton on June 1 (P. O'Brien). A first for the Maryland Eastern Shore was the potential breeding of Willow Flycatcher as a singing bird was on St. Martins Neck in Worcester County on July 20 (Ringler +). Ludwig and the Solems found a pair of Least Flycatchers near Jessup in Howard County on June 22 and 29, extremely rare away from western Maryland as a breeder. Wilson counted 22 Eastern Kingbirds at Elliott on July 3, including one that was carrying nesting material; this is rather late in the season to be nest-building.

Swallows, Nuthatches. Czaplak noted his first migrant Purple Martins in DC on July 13, but Bank Swallows were even earlier there with 10 on June 20. Tree Swallows were active in a martin house in West Ocean City on June 15 (Ringler). Gruber estimated 150 Northern Rough-winged Swallows at Remington Farms on July 17 with 175 Bank Swallows. Other early migrant Banks were 10 at Hurlock and 6 at Denton on June 16 (Ringler), 1 at Bestpitch on July 3 (Wilson), 200 at Easton on July 21 (Ringler) and over 1000 at Hart-Miller on July 28 (Blom +). Blom found a Red-breasted Nuthatch in Carroll County on July 10 in the spruces of the Hanover watershed which extends barely into Maryland. Others had been seen at this site on the Pennsylvania side. Blom also found a pair of Brown-headed Nuthatches near Church Hill in Queen Annes County on July 13, the farthest north that the species has been recorded breeding.

Creepers, Wrens, Waxwings. Brown Creepers continue to do well as breeders with 1 at Battle Creek Cypress Swamp on June 20 (Anderson), a fledgling in Rock Creek Park (Czaplak) and 1 on Meekins Neck in Dorchester County in mid-July (Droege). Connie Skipper found a Carolina Wren singing along Foster Road in Garrett County on July 6 and saw 2 birds there on the 13th as this species continues its comeback in the mountains. A House Wren heard singing in the center of Pocomoke City on June 22 (Ringler) is the only inland breeding record for Worcester County. There was 1 Sedge Wren singing at Elliott on July 30 (M. O'Brien) and several Marsh Wrens at Scarboro Landing in Worcester County on June 15 (Ringler). It was another fairly good year for Cedar Waxwings on the coastal plain, though not quite as many as last year were found, such as 2 adults and 2 immatures at Point Lookout on July 20 (Patty Craig, Anne Bishop).

Vireos, Warblers. A Warbling Vireo, rare on the Eastern Shore, was active near a nest along Grove Creek in Queen Annes County on July 13 (Ringler). Klockner considered the Yellow Warbler he saw at Arnold in Anne Arundel County on July 30 to be a fall migrant because they do not nest there. Quite remarkable were 2 Magnolia Warblers at Tanyard on July 31 (Engle), definitely early migrants. Two fledgling Pine Warblers were in Pocomoke Swamp on the early date of June 5 (Ringler); in Montgomery County, where it is a rare breeder, an adult was feeding a fledgling near Rockville on June 19 (Marie Plante), and in Frederick County, where it is also rare, 1 was at Salamander Rock on June 21 (Wallace). On June 7 Ringler and party saw a Prothonotary Warbler being chased across a broad part of the Pocomoke River near Snow Hill by a Laughing Gull! A Swainson's Warbler was seen singing along the Pocomoke at Mattaponi Landing on June 16 (Ringler) and another was at Scientist Cliffs on June 22 and 24 (Anderson) where it is an extraordinary rarity for the Western Shore.

Dickcissels, Sparrows, Blackbirds and Orioles. Though 1 Dickcissel was seen at Sandy Point on June 14 (M. O'Brien), all other reports came from southern Frederick County, with birds near Buckeystown from June 21 to July 21 and a maximum of 5 on July 17 (M. O'Brien +), and near Lilypons from June 30 to July 28 with 2 there on the latter date (Anderson). A Vesper Sparrow seen singing near Hurlock on June 16 (Ringler) was a rarity for Dorchester County. The only report of Henslow's Sparrow was also in Dorchester County with 2 at Savannah Lake on July 3 (Wilson). A Seaside Sparrow was at Brandon Shores on June 8 (Hammer, Jim Wilkinson), possibly a late migrant as the species is not known to nest there. Ludwig and the Solems found a singing Swamp Sparrow in Howard County near Jessup on June 22. This is a rare breeder in the Piedmont. The first fall Bobolinks were 2 males at Lilypons on July 17 (M. O'Brien). A female Boat-tailed Grackle was seen carrying food on St. Martins Neck on the rather late date of July 20 (Ringler +). An immature male Northern Oriole seen near Ocean Pines on July 4 (Jeschke) was another summer rarity for Worcester County.

3501 Melody Lane, Baltimore 21207

Book Review

BEHAVIOR OF FLEDGLING PEREGRINES

Steve K. Sherrod. 1983. *The Peregrine Fund, Inc., Ithaca, New York. 202p. \$10.*

With the well-reported hatching of four eggs produced by Scarlett herself, appropriately assisted by her mate of choice, Beauregard, Baltimore's attention is once more focused on young Peregrine Falcons. Since 1978 when this young female Peregrine first appeared in downtown Baltimore, Scarlett has become Baltimore's best watched bird, her fame spreading far outside the registered (but still unlicensed) bird-watching community of 600 + Baltimore Chapter MOS members. Five years has been long enough for us all to have learned of this fair falcon's lack of success in attracting a permanent mate until this year and of her outstanding success in raising hatchlings brought to her by Cornell University ornithologists and placed in her 33rd floor USF&G Building scrape. Scarlett's 1984 hatchlings can only benefit from her previous experience. Since Scarlett first established her skyscraper scrape her aerial activities have been closely watched by teams from Cornell, by John Barber, an MOS member employed at USF&G, by all USF&G employees who could manage a few moments away from their jobs and by countless MOS members from around the state.

The 1984 season has added new intensity to our watching. How timely that this book is ready now. We'll be better able to interpret activities at the nest for the 35-48 days before the fledgings leave. We can compare their behavior with Sherrod's descriptions of his observations in nature, in tame or wild hacks, as reported for The Peregrine Fund, Inc. We can be ready for the moment of the first flight of the four hungry young birds and how they develop their ability to pursue their own prey. How they mature to the season of their first migration and whether they will leave as a family group or whether they will leave at all are questions whose answers will demand reasons for close and continuous observation. For us it may be easy to follow the flight paths of the young as they weave among the tall buildings and over city streets in search of the ever-present city pigeon. Sherrod may have envied us this ease as he described the tough job it was to follow his peregrine families over almost inaccessible Greenland cliffs and in wild Australia as well as the three broods of hacked falcons in the coastal salt marshes of Maryland, from one of which Scarlett herself may have come. Sherrod's anecdotes of the not so polite behavior of hungry young peregrines toward their parents and siblings may give us points to look for as we view the nest through the windows of the USF&G 33rd floor. Generously scattered through the book are charts and graphs that give an even clearer picture of peregrine behavior as it develops to maturity. The lists of "target species" of vertebrates pursued by hungry young peregrines as observed by the author makes my own list of species targeted merely for pleasure look fairly tame. Notable in his lists, however, and in great majority among the delectable Great Blue Herons, Black-bellied Plovers, Herring Gulls, etc. are the same species showing up in my own lists: "unidentified gulls, unidentified small birds." Black and white line drawings of posed peregrine behavior add interest throughout the book. Clearly this is a book worthy of our attention if we are going to be able to do educated watching of fledging Peregrine Falcons as the efforts of the Peregrine Fund, Inc., generate the reintroduction of this bird into eastern North America.

Joy Wheeler

CONTENTS, DECEMBER 1985

Threatened Breeding Birds of Maryland . <i>C.S. Robbins and D.D. Boone</i>	87
Breeding Season, June 1 - July 31, 1985 <i>Robert F. Ringler</i>	109
Book Review. <i>Joy Wheeler</i>	115
Behavior of Fledgling Peregrines by S. K. Sherrod	

MARYLAND BIRDLIFE

Published Quarterly by the Maryland Ornithological Society, Inc. to Record and Encourage the Study of Birds in Maryland.

Editor: Chandler S. Robbins, 7900 Brooklyn Bridge Rd., Laurel, Md. 20707 (725-1176)

Assoc. Editor: Robert F. Ringler, 3501 Melody Lane, Baltimore, Md. 21207

Asst. Editors: Eirik A.T. Blom, 1618 Somerville Rd., Bel Air, Md. 21014
 Mark Hoffman, 313 Fernwood Dr., Severna Park, Md. 21146
 James Stasz, 14741 Oden Bowie Rd., Upper Marlboro 20772

Mailing: Montgomery and Howard County Chapter

Headings: Schneider Design Associates, Baltimore