

Fig. 49b.  
The Eastern Phoebe is at the northern edge of its wintering range in Maryland. Variable in abundance from year to year, in warm years it can be found in very low numbers throughout the state except in Garrett County. The warmer climate of Worcester County results in consistently higher numbers.

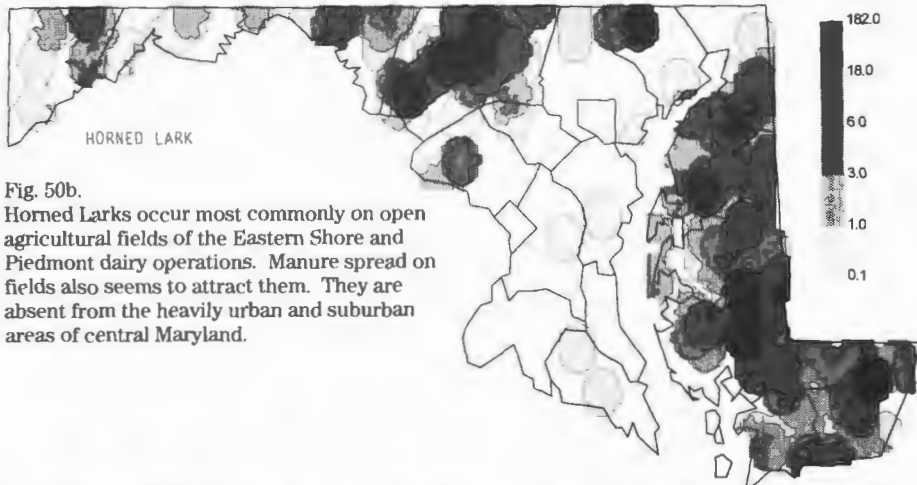


Fig. 50b.  
Horned Larks occur most commonly on open agricultural fields of the Eastern Shore and Piedmont dairy operations. Manure spread on fields also seems to attract them. They are absent from the heavily urban and suburban areas of central Maryland.

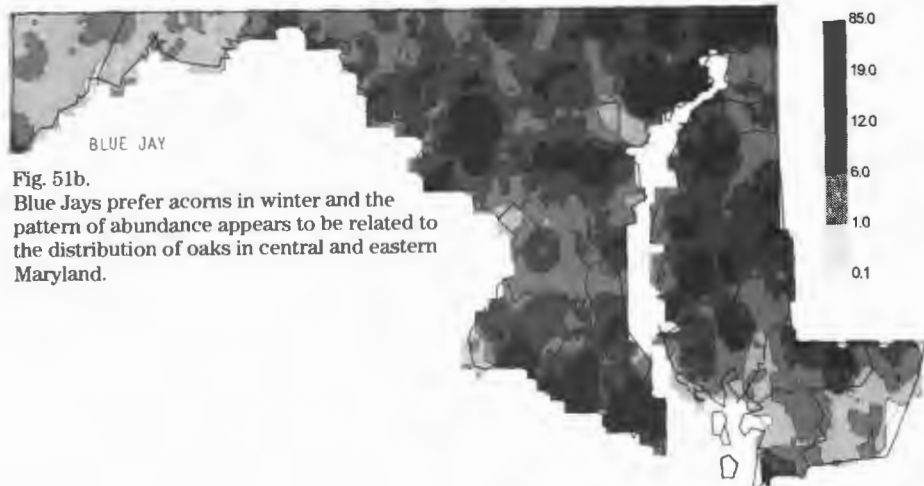


Fig. 51b.  
Blue Jays prefer acorns in winter and the pattern of abundance appears to be related to the distribution of oaks in central and eastern Maryland.

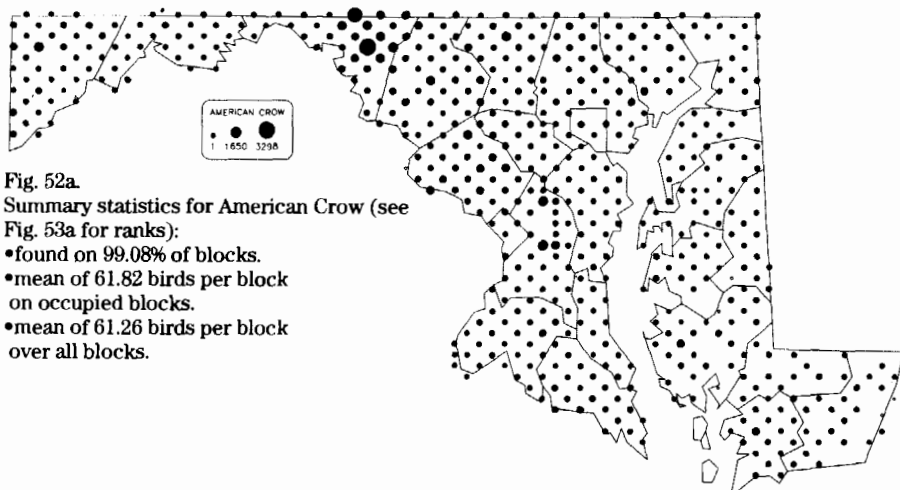


Fig. 52a.

Summary statistics for American Crow (see Fig. 53a for ranks):

- found on 99.08% of blocks.
- mean of 61.82 birds per block on occupied blocks.
- mean of 61.26 birds per block over all blocks.

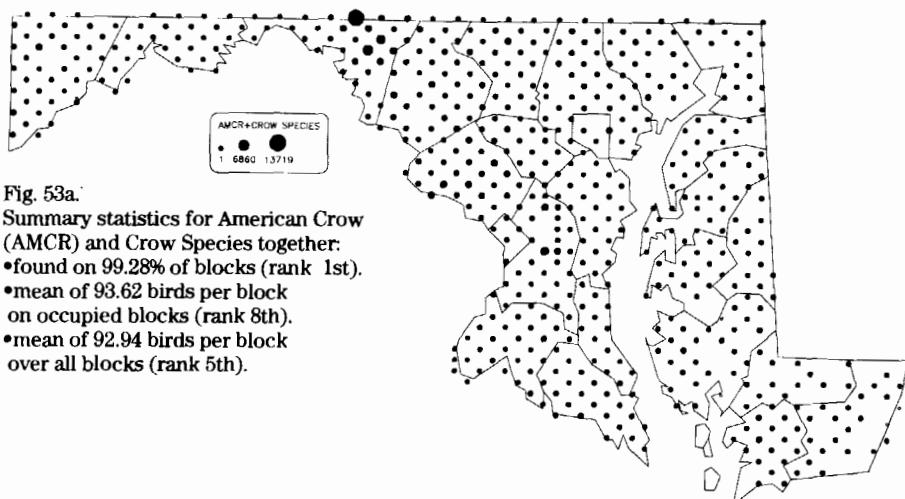


Fig. 53a.

Summary statistics for American Crow (AMCR) and Crow Species together:

- found on 99.28% of blocks (rank 1st).
- mean of 93.62 birds per block on occupied blocks (rank 8th).
- mean of 92.94 birds per block over all blocks (rank 5th).

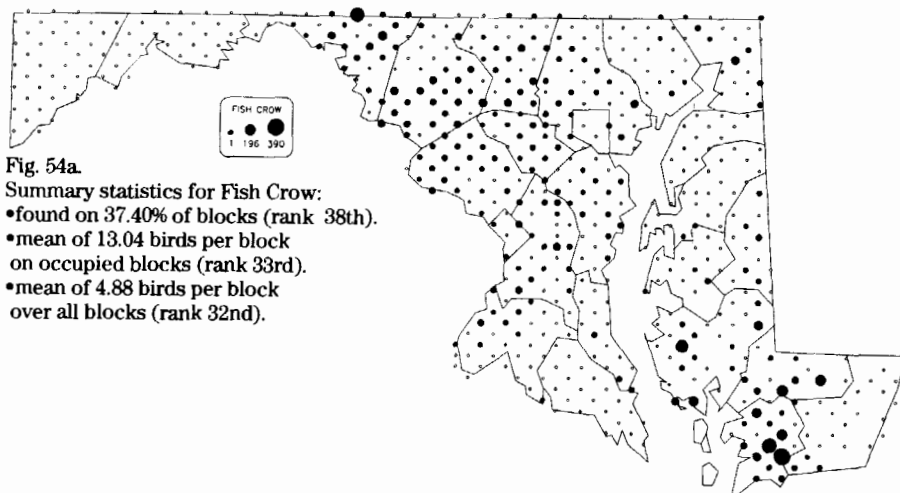


Fig. 54a.

Summary statistics for Fish Crow:

- found on 37.40% of blocks (rank 38th).
- mean of 13.04 birds per block on occupied blocks (rank 33rd).
- mean of 4.88 birds per block over all blocks (rank 32nd).

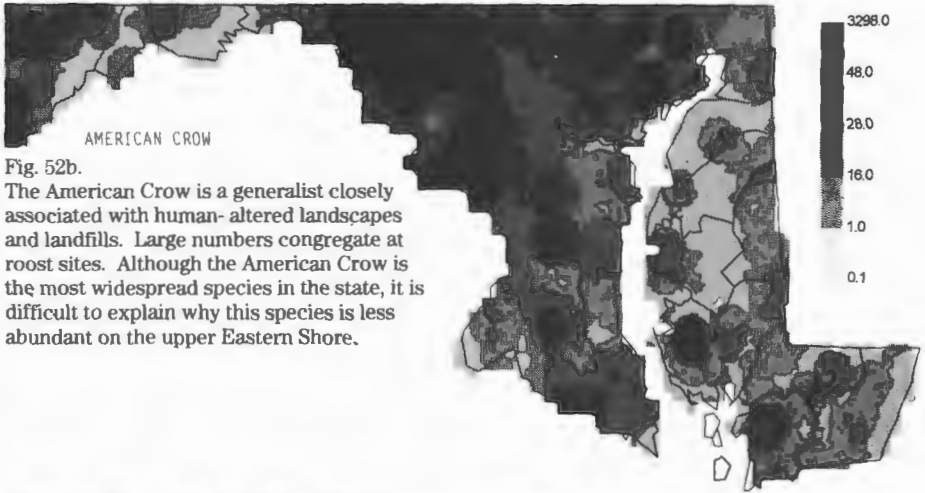


Fig. 52b.

The American Crow is a generalist closely associated with human- altered landscapes and landfills. Large numbers congregate at roost sites. Although the American Crow is the most widespread species in the state, it is difficult to explain why this species is less abundant on the upper Eastern Shore.

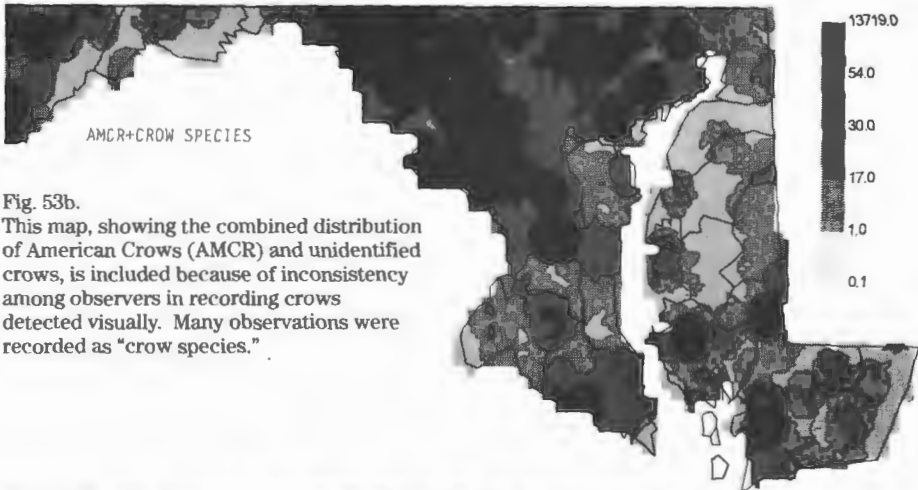


Fig. 53b.

This map, showing the combined distribution of American Crows (AMCR) and unidentified crows, is included because of inconsistency among observers in recording crows detected visually. Many observations were recorded as "crow species."

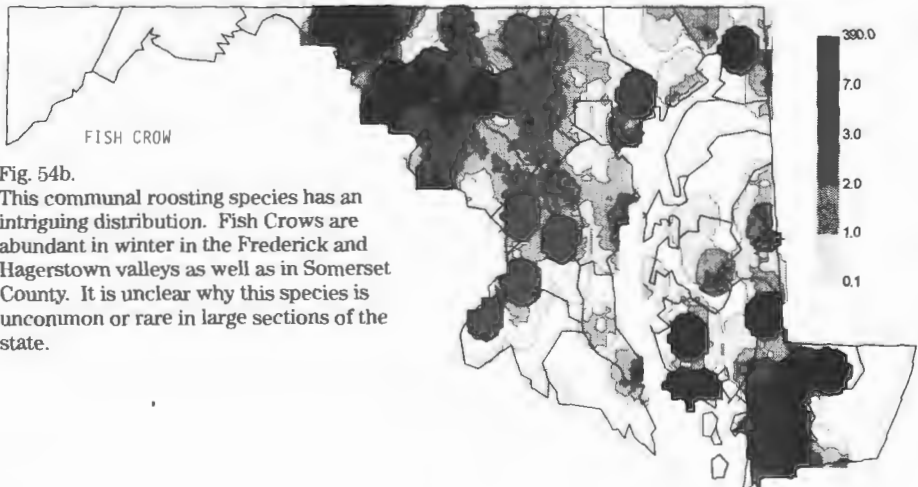


Fig. 54b.

This communal roosting species has an intriguing distribution. Fish Crows are abundant in winter in the Frederick and Hagerstown valleys as well as in Somerset County. It is unclear why this species is uncommon or rare in large sections of the state.

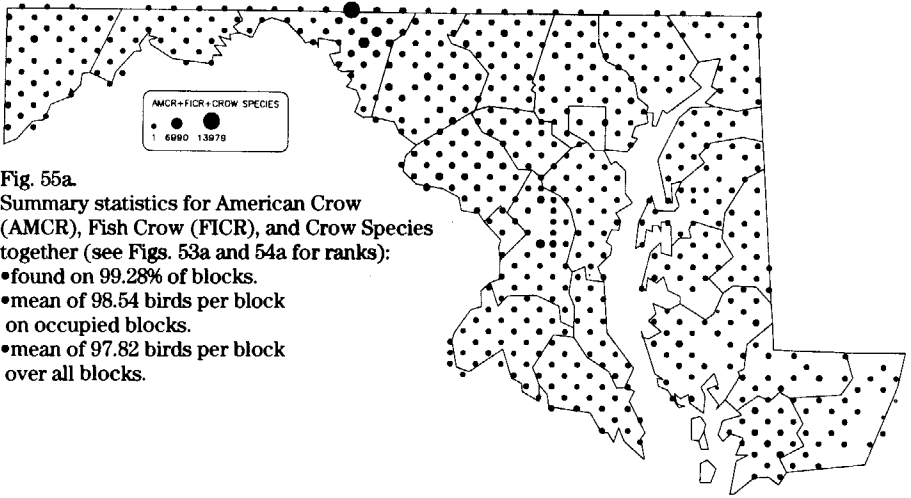


Fig. 55a.

Summary statistics for American Crow (AMCR), Fish Crow (FICR), and Crow Species together (see Figs. 53a and 54a for ranks):

- found on 99.28% of blocks.
- mean of 98.54 birds per block on occupied blocks.
- mean of 97.82 birds per block over all blocks.

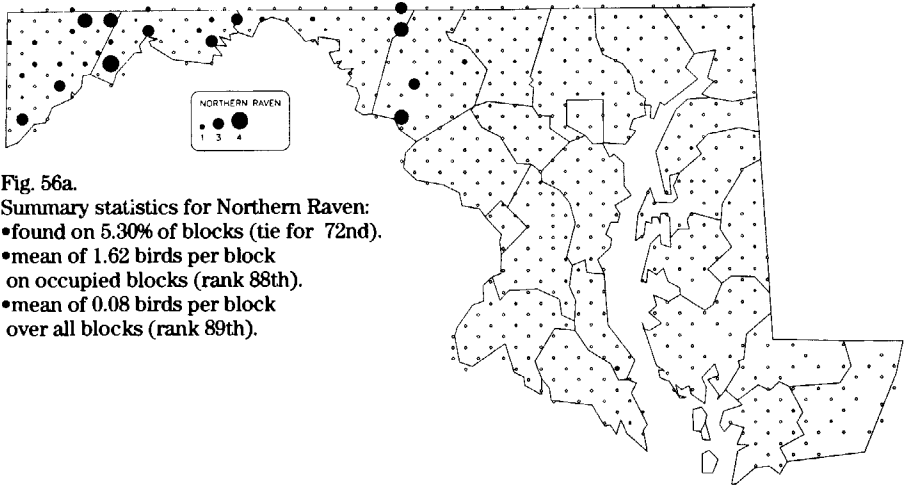


Fig. 56a.

Summary statistics for Northern Raven:

- found on 5.30% of blocks (tie for 72nd).
- mean of 1.62 birds per block on occupied blocks (rank 88th).
- mean of 0.08 birds per block over all blocks (rank 89th).

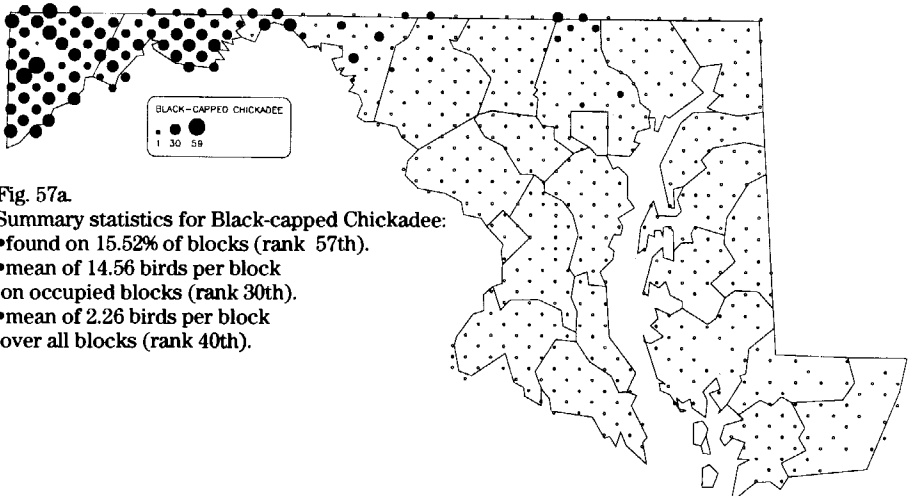
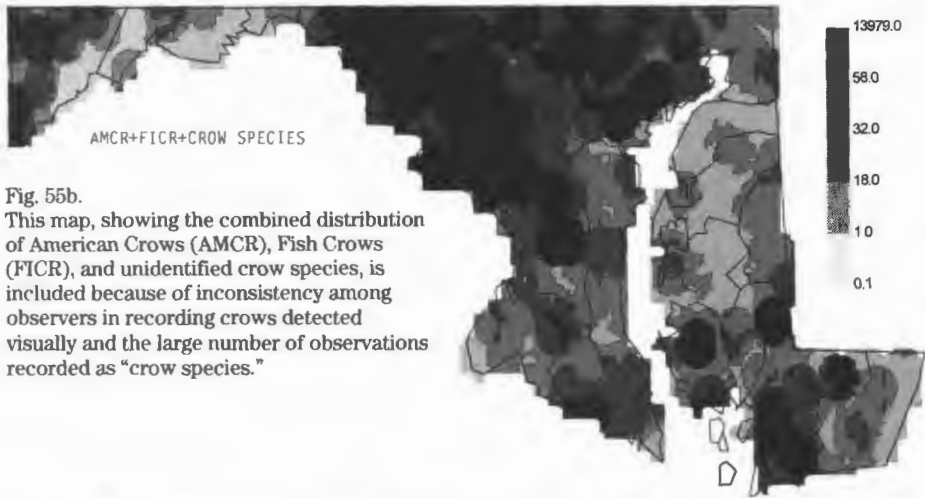


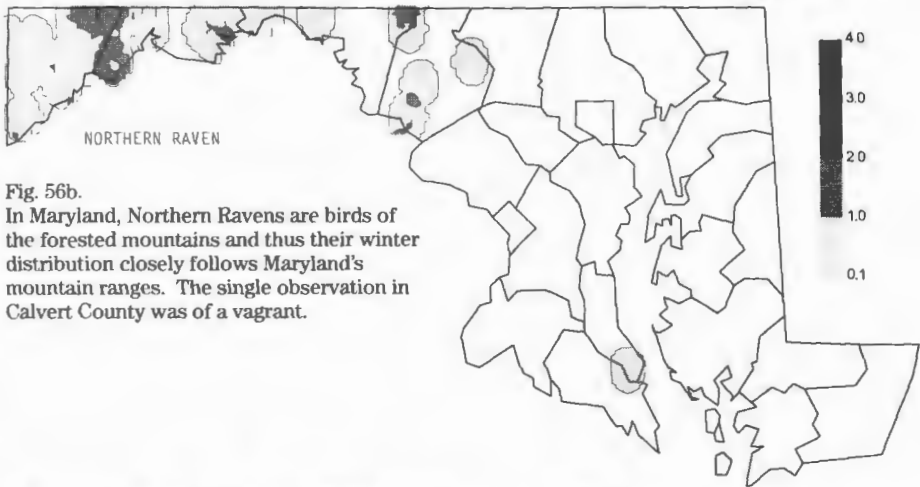
Fig. 57a.

Summary statistics for Black-capped Chickadee:

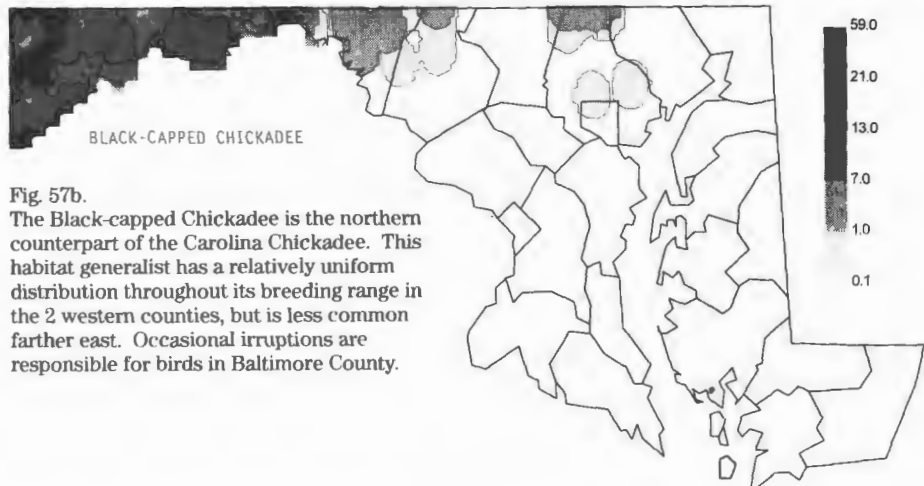
- found on 15.52% of blocks (rank 57th).
- mean of 14.56 birds per block on occupied blocks (rank 30th).
- mean of 2.26 birds per block over all blocks (rank 40th).



**Fig. 55b.**  
 This map, showing the combined distribution of American Crows (AMCR), Fish Crows (FICR), and unidentified crow species, is included because of inconsistency among observers in recording crows detected visually and the large number of observations recorded as "crow species."



**Fig. 56b.**  
 In Maryland, Northern Ravens are birds of the forested mountains and thus their winter distribution closely follows Maryland's mountain ranges. The single observation in Calvert County was of a vagrant.



**Fig. 57b.**  
 The Black-capped Chickadee is the northern counterpart of the Carolina Chickadee. This habitat generalist has a relatively uniform distribution throughout its breeding range in the 2 western counties, but is less common farther east. Occasional irruptions are responsible for birds in Baltimore County.

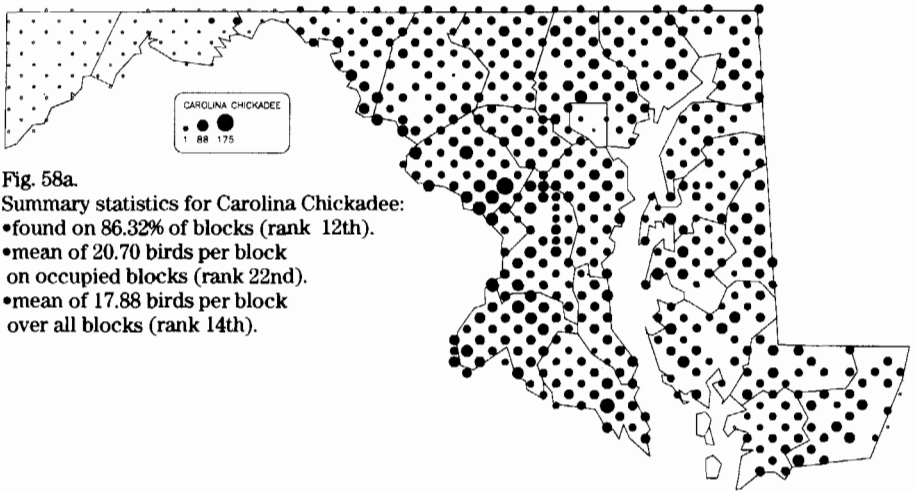


Fig. 58a.

Summary statistics for Carolina Chickadee:

- found on 86.32% of blocks (rank 12th).
- mean of 20.70 birds per block on occupied blocks (rank 22nd).
- mean of 17.88 birds per block over all blocks (rank 14th).

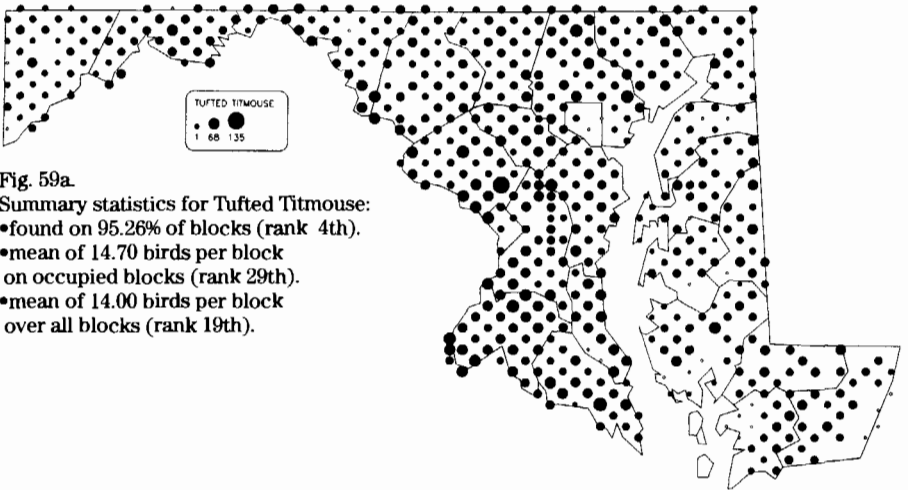


Fig. 59a.

Summary statistics for Tufted Titmouse:

- found on 95.26% of blocks (rank 4th).
- mean of 14.70 birds per block on occupied blocks (rank 29th).
- mean of 14.00 birds per block over all blocks (rank 19th).

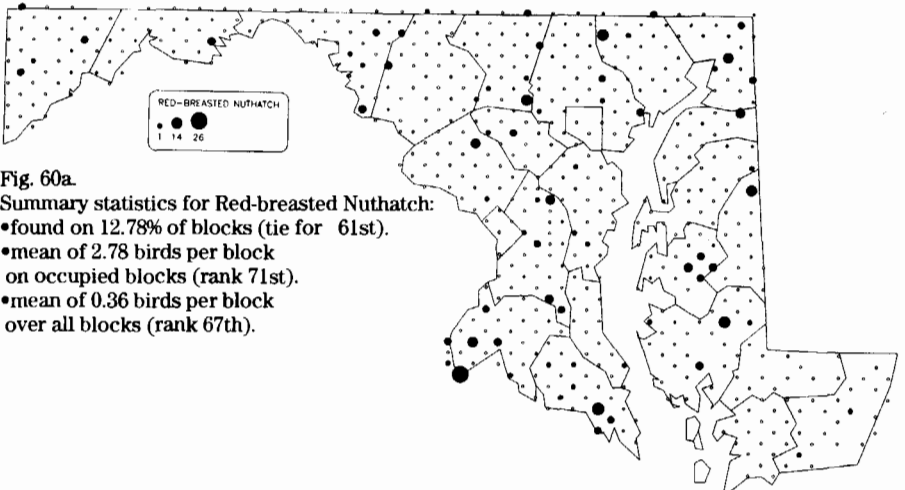


Fig. 60a.

Summary statistics for Red-breasted Nuthatch:

- found on 12.78% of blocks (tie for 61st).
- mean of 2.78 birds per block on occupied blocks (rank 71st).
- mean of 0.36 birds per block over all blocks (rank 67th).

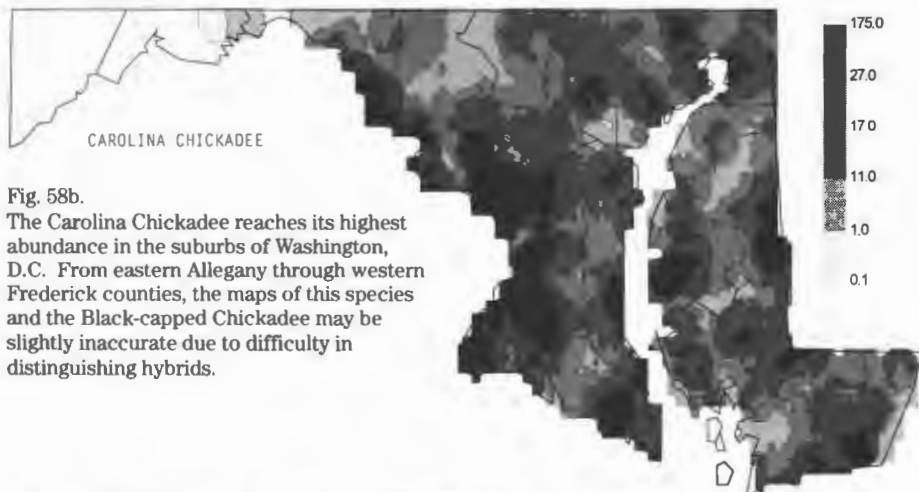


Fig. 58b.

The Carolina Chickadee reaches its highest abundance in the suburbs of Washington, D.C. From eastern Allegany through western Frederick counties, the maps of this species and the Black-capped Chickadee may be slightly inaccurate due to difficulty in distinguishing hybrids.

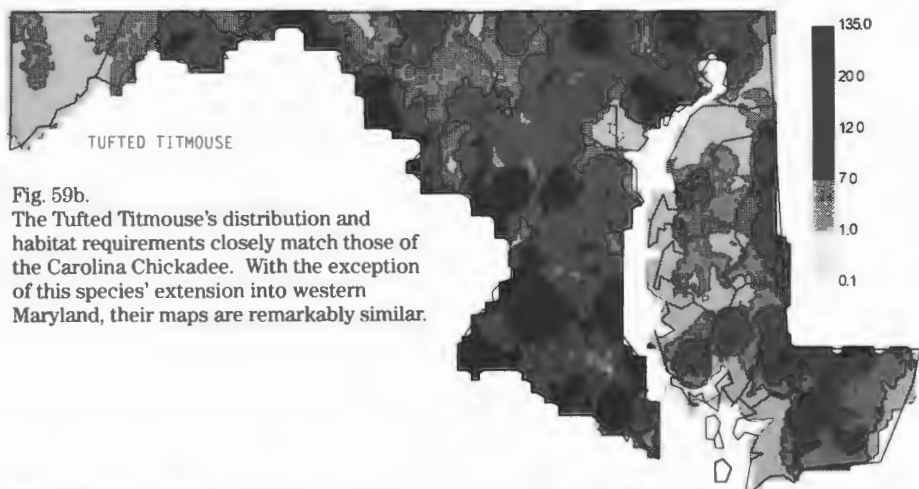


Fig. 59b.

The Tufted Titmouse's distribution and habitat requirements closely match those of the Carolina Chickadee. With the exception of this species' extension into western Maryland, their maps are remarkably similar.

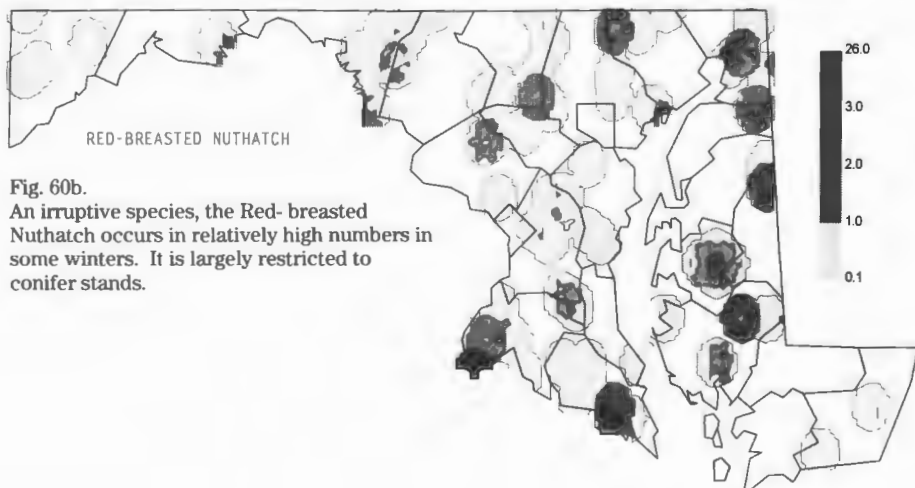


Fig. 60b.

An irruptive species, the Red-breasted Nuthatch occurs in relatively high numbers in some winters. It is largely restricted to conifer stands.

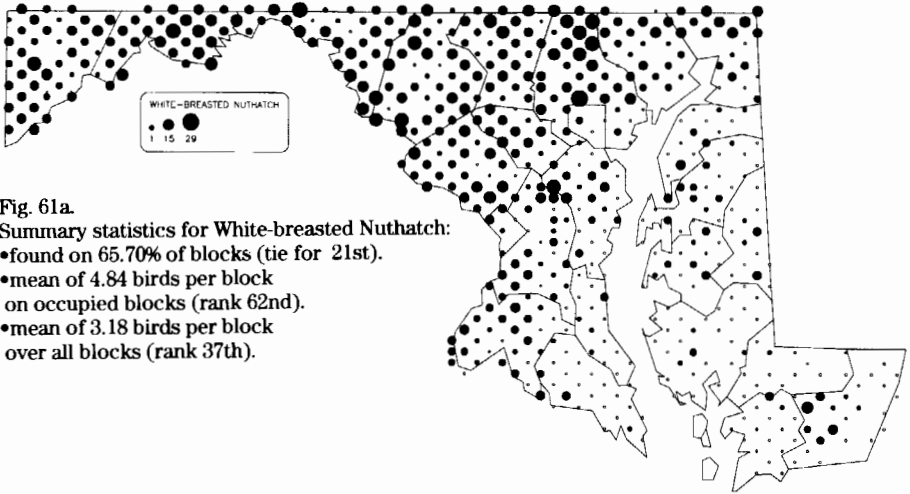


Fig. 61a.

Summary statistics for White-breasted Nuthatch:

- found on 65.70% of blocks (tie for 21st).
- mean of 4.84 birds per block on occupied blocks (rank 62nd).
- mean of 3.18 birds per block over all blocks (rank 37th).

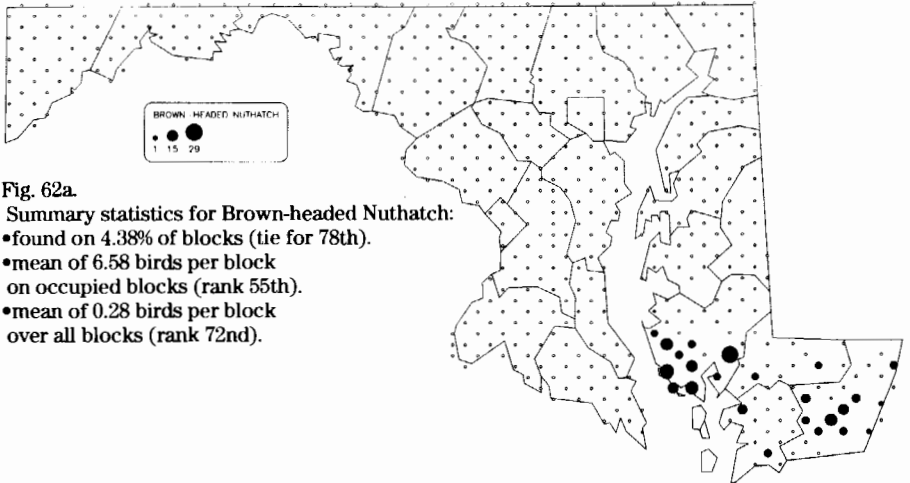


Fig. 62a.

Summary statistics for Brown-headed Nuthatch:

- found on 4.38% of blocks (tie for 78th).
- mean of 6.58 birds per block on occupied blocks (rank 55th).
- mean of 0.28 birds per block over all blocks (rank 72nd).

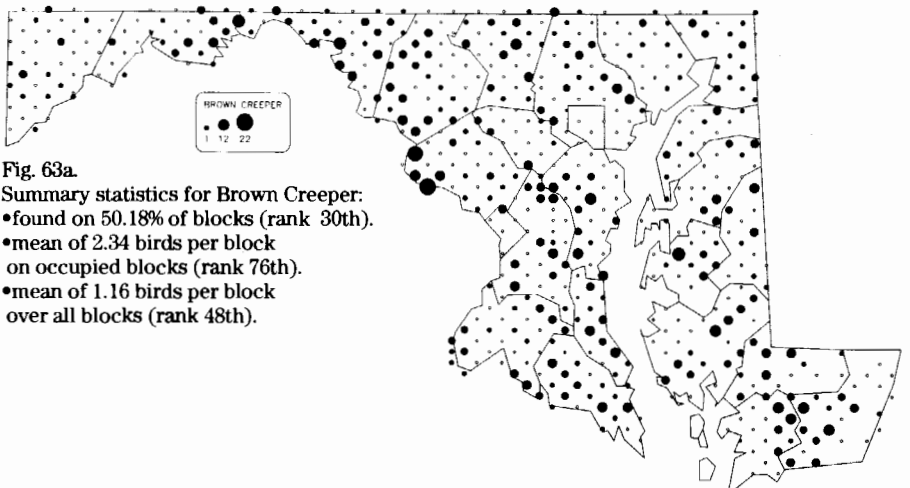
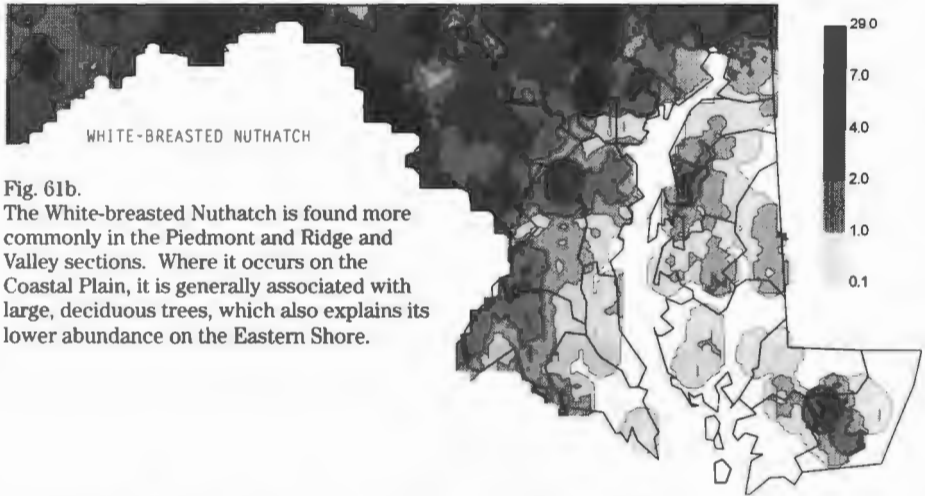


Fig. 63a.

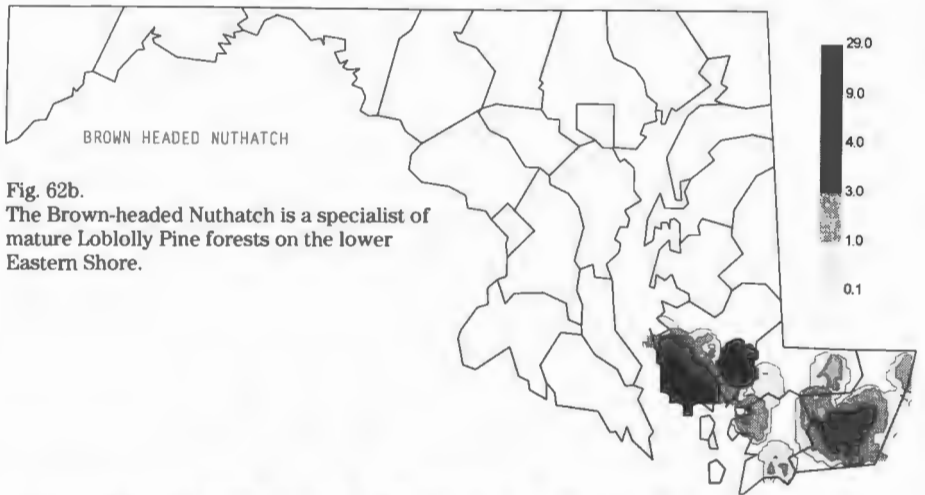
Summary statistics for Brown Creeper:

- found on 50.18% of blocks (rank 30th).
- mean of 2.34 birds per block on occupied blocks (rank 76th).
- mean of 1.16 birds per block over all blocks (rank 48th).

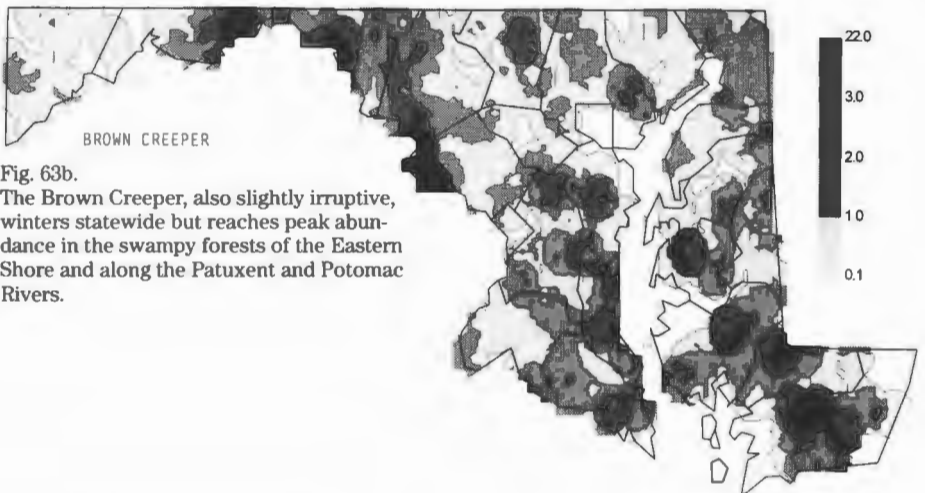




**Fig. 61b.**  
The White-breasted Nuthatch is found more commonly in the Piedmont and Ridge and Valley sections. Where it occurs on the Coastal Plain, it is generally associated with large, deciduous trees, which also explains its lower abundance on the Eastern Shore.



**Fig. 62b.**  
The Brown-headed Nuthatch is a specialist of mature Loblolly Pine forests on the lower Eastern Shore.



**Fig. 63b.**  
The Brown Creeper, also slightly irruptive, winters statewide but reaches peak abundance in the swampy forests of the Eastern Shore and along the Patuxent and Potomac Rivers.

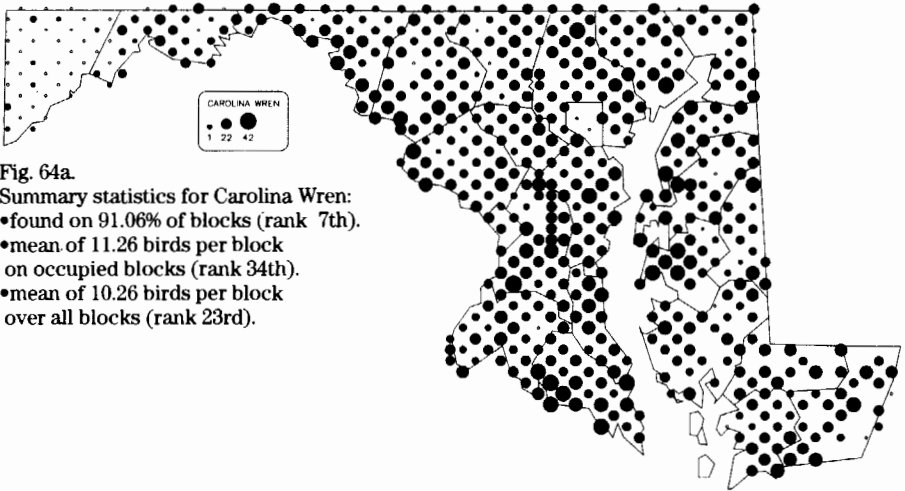


Fig. 64a.

- Summary statistics for Carolina Wren:
- found on 91.06% of blocks (rank 7th).
  - mean of 11.26 birds per block on occupied blocks (rank 34th).
  - mean of 10.26 birds per block over all blocks (rank 23rd).

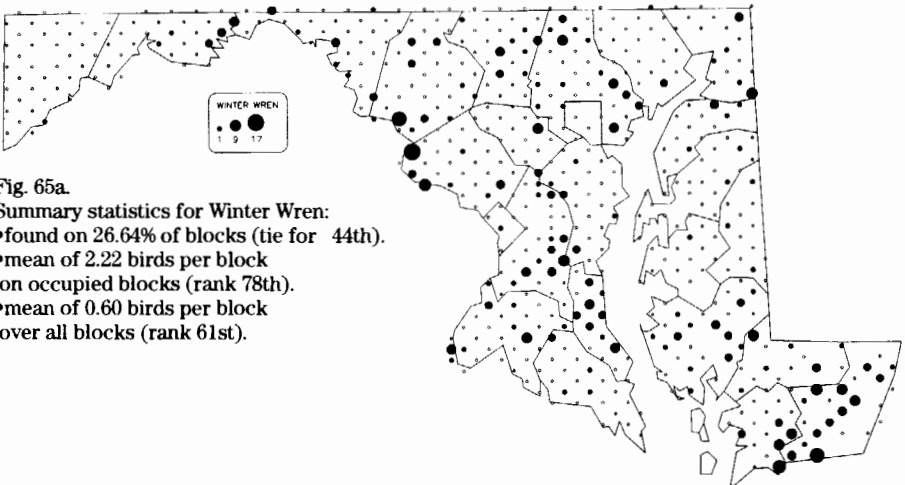


Fig. 65a.

- Summary statistics for Winter Wren:
- found on 26.64% of blocks (tie for 44th).
  - mean of 2.22 birds per block on occupied blocks (rank 78th).
  - mean of 0.60 birds per block over all blocks (rank 61st).

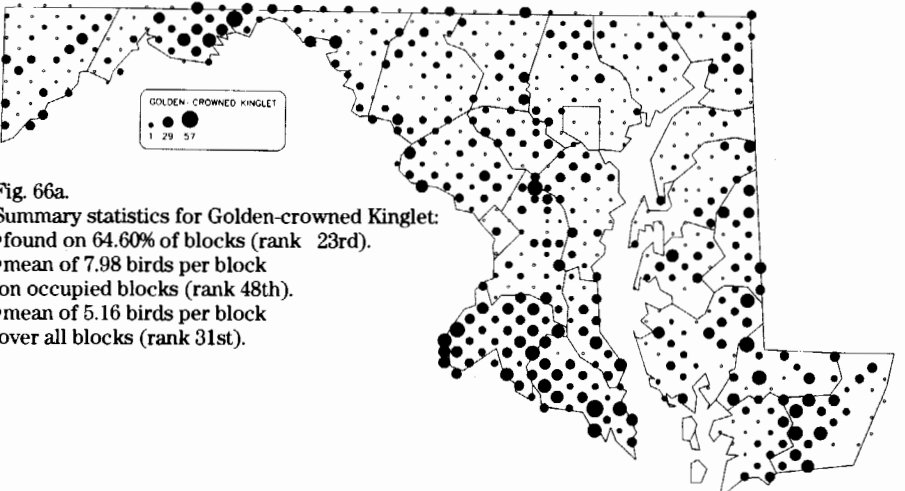
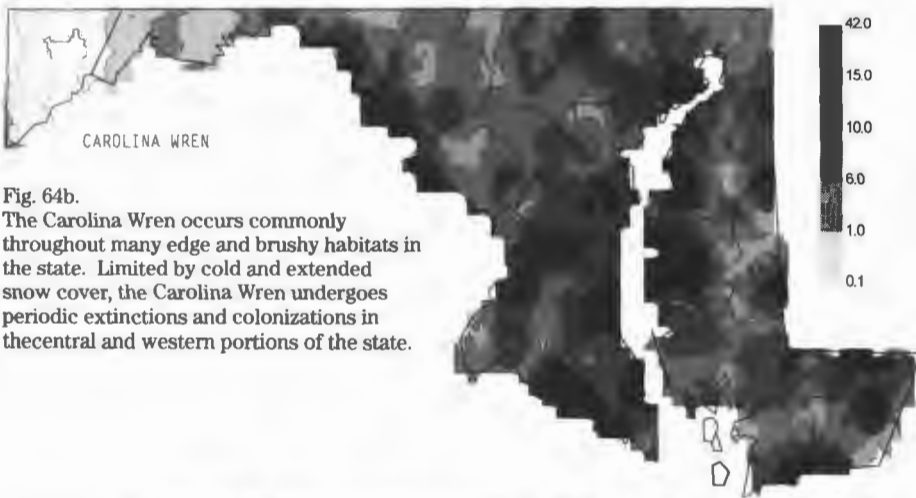
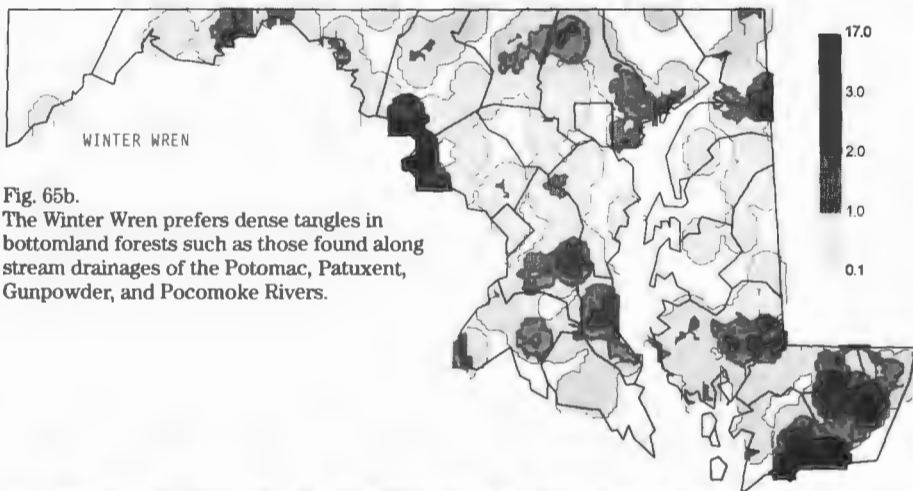


Fig. 66a.

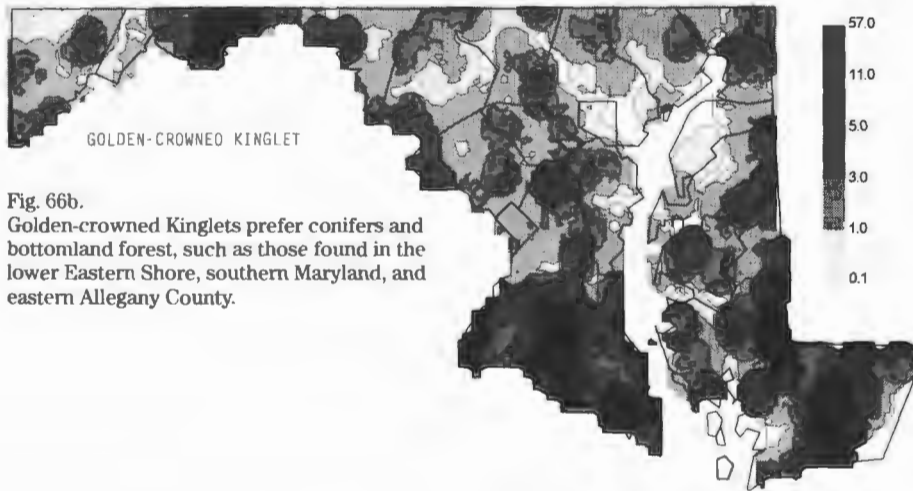
- Summary statistics for Golden-crowned Kinglet:
- found on 64.60% of blocks (rank 23rd).
  - mean of 7.98 birds per block on occupied blocks (rank 48th).
  - mean of 5.16 birds per block over all blocks (rank 31st).



**Fig. 64b.**  
The Carolina Wren occurs commonly throughout many edge and brushy habitats in the state. Limited by cold and extended snow cover, the Carolina Wren undergoes periodic extinctions and colonizations in the central and western portions of the state.



**Fig. 65b.**  
The Winter Wren prefers dense tangles in bottomland forests such as those found along stream drainages of the Potomac, Patuxent, Gunpowder, and Pocomoke Rivers.



**Fig. 66b.**  
Golden-crowned Kinglets prefer conifers and bottomland forest, such as those found in the lower Eastern Shore, southern Maryland, and eastern Allegany County.

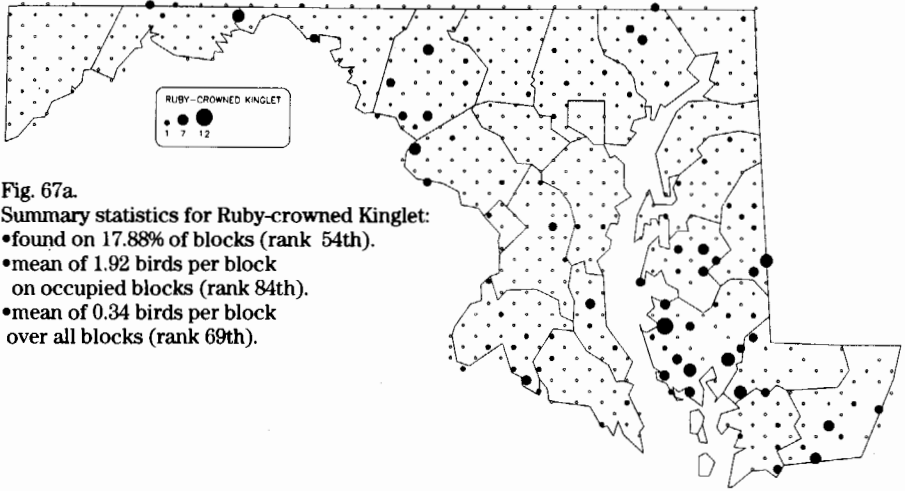


Fig. 67a.

Summary statistics for Ruby-crowned Kinglet:

- found on 17.88% of blocks (rank 54th).
- mean of 1.92 birds per block on occupied blocks (rank 84th).
- mean of 0.34 birds per block over all blocks (rank 69th).

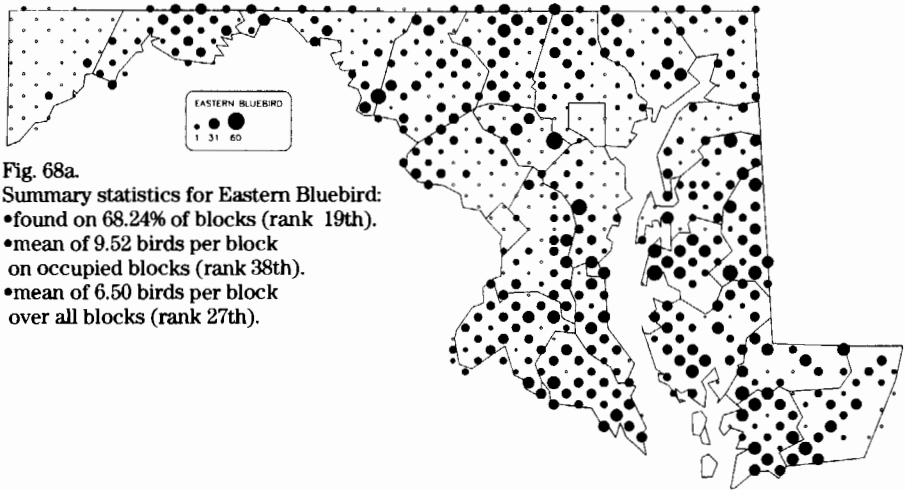


Fig. 68a.

Summary statistics for Eastern Bluebird:

- found on 68.24% of blocks (rank 19th).
- mean of 9.52 birds per block on occupied blocks (rank 38th).
- mean of 6.50 birds per block over all blocks (rank 27th).

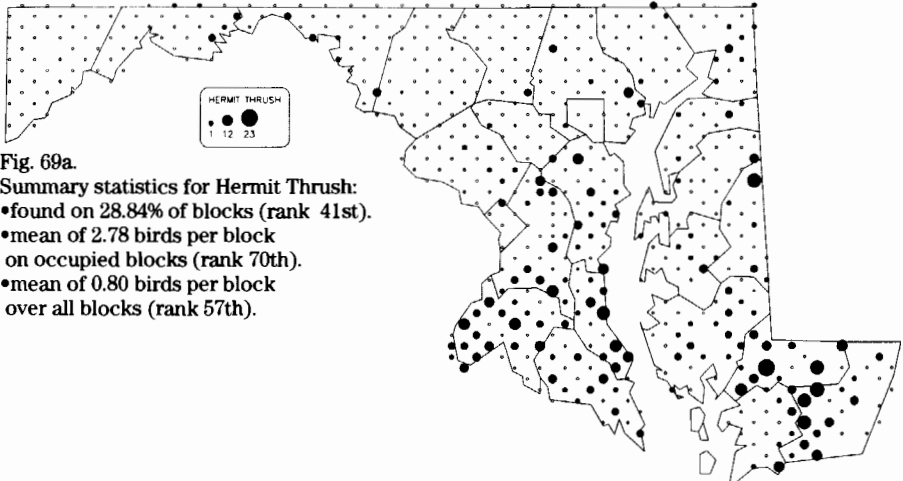
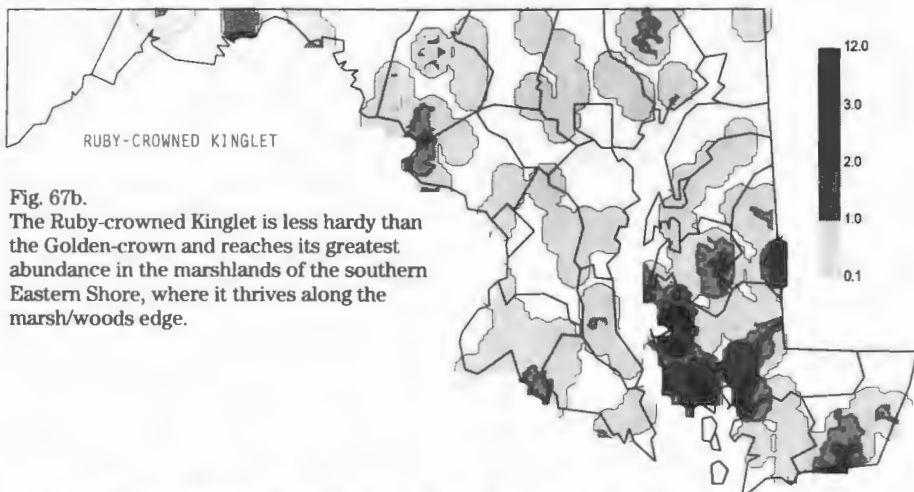


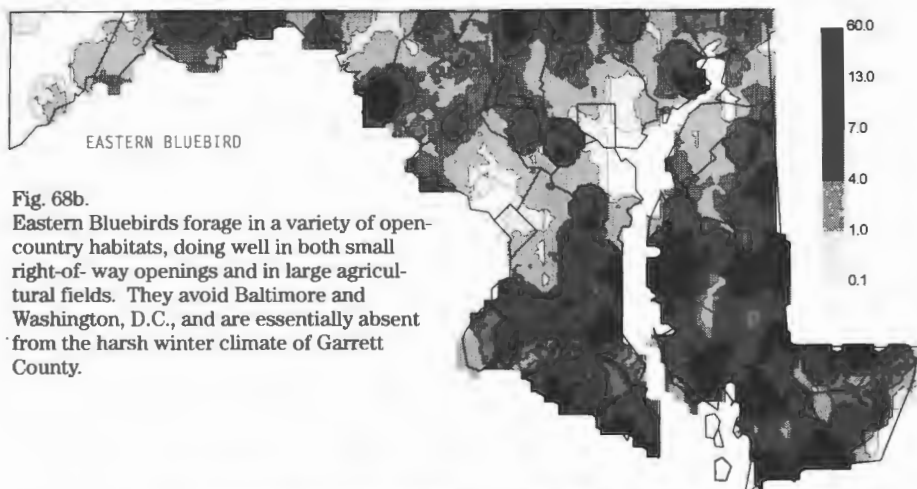
Fig. 69a.

Summary statistics for Hermit Thrush:

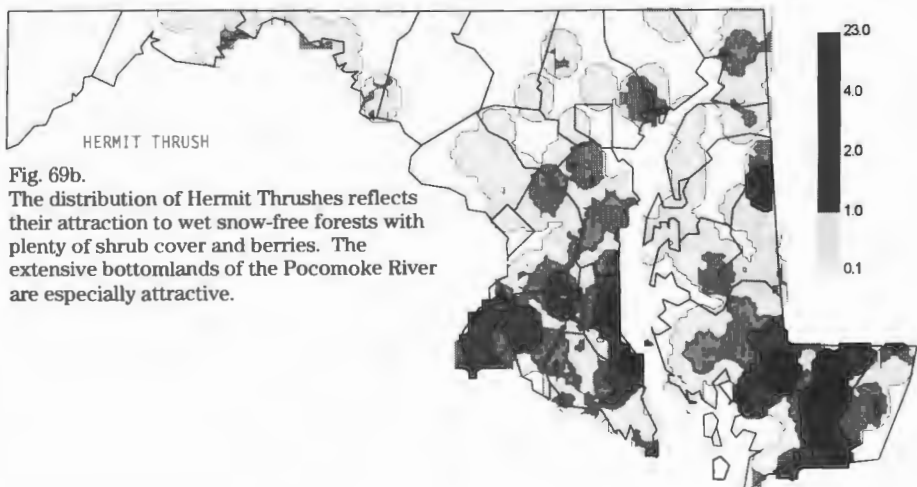
- found on 28.84% of blocks (rank 41st).
- mean of 2.78 birds per block on occupied blocks (rank 70th).
- mean of 0.80 birds per block over all blocks (rank 57th).



**Fig. 67b.**  
The Ruby-crowned Kinglet is less hardy than the Golden-crown and reaches its greatest abundance in the marshlands of the southern Eastern Shore, where it thrives along the marsh/woods edge.



**Fig. 68b.**  
Eastern Bluebirds forage in a variety of open-country habitats, doing well in both small right-of-way openings and in large agricultural fields. They avoid Baltimore and Washington, D.C., and are essentially absent from the harsh winter climate of Garrett County.



**Fig. 69b.**  
The distribution of Hermit Thrushes reflects their attraction to wet snow-free forests with plenty of shrub cover and berries. The extensive bottomlands of the Pocomoke River are especially attractive.

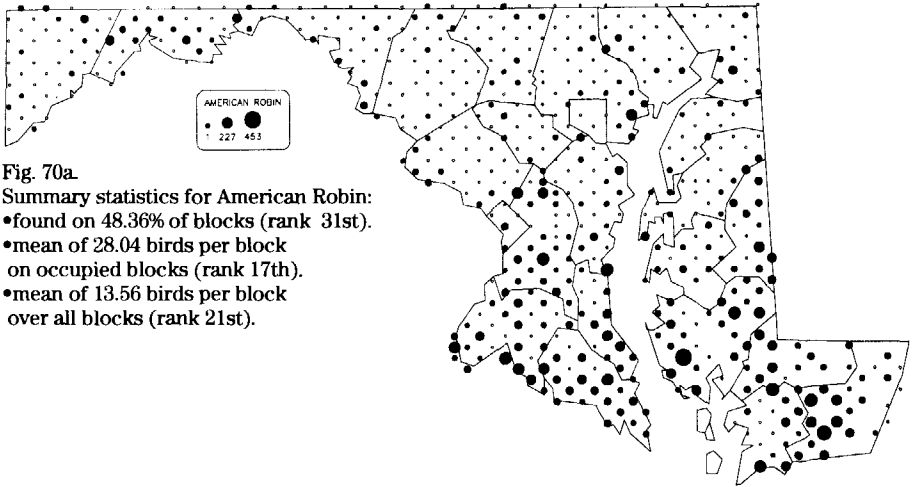


Fig. 70a.

Summary statistics for American Robin:

- found on 48.36% of blocks (rank 31st).
- mean of 28.04 birds per block on occupied blocks (rank 17th).
- mean of 13.56 birds per block over all blocks (rank 21st).

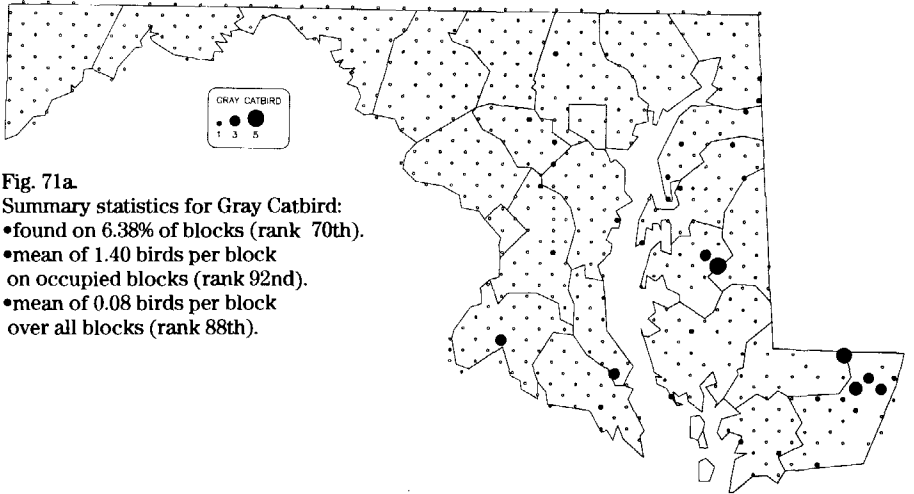


Fig. 71a.

Summary statistics for Gray Catbird:

- found on 6.38% of blocks (rank 70th).
- mean of 1.40 birds per block on occupied blocks (rank 92nd).
- mean of 0.08 birds per block over all blocks (rank 88th).

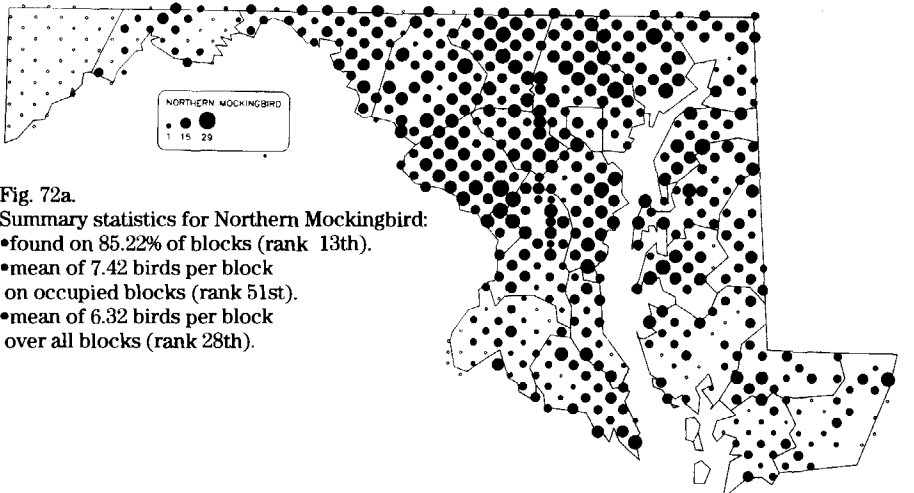


Fig. 72a.

Summary statistics for Northern Mockingbird:

- found on 85.22% of blocks (rank 13th).
- mean of 7.42 birds per block on occupied blocks (rank 51st).
- mean of 6.32 birds per block over all blocks (rank 28th).

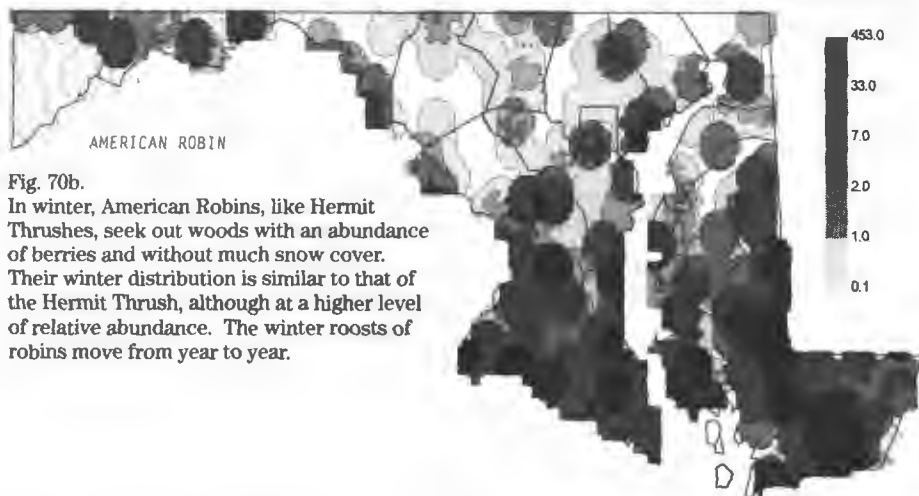


Fig. 70b.

In winter, American Robins, like Hermit Thrushes, seek out woods with an abundance of berries and without much snow cover. Their winter distribution is similar to that of the Hermit Thrush, although at a higher level of relative abundance. The winter roosts of robins move from year to year.

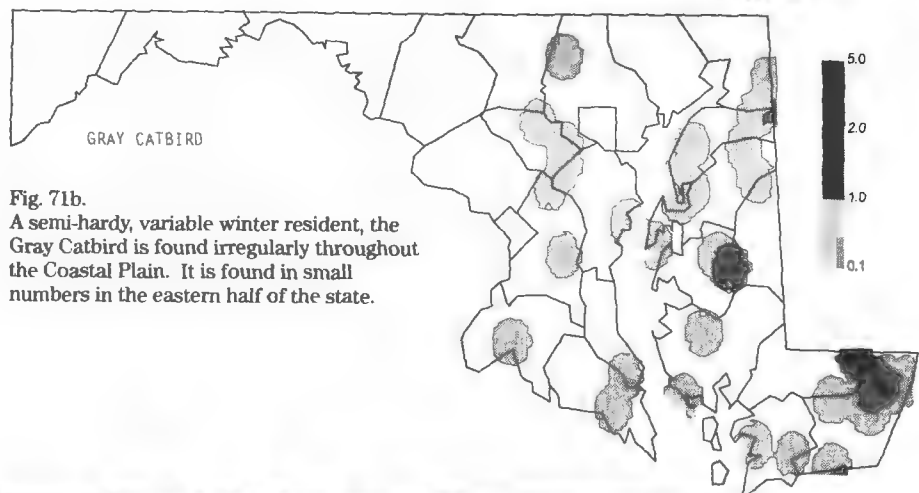


Fig. 71b.

A semi-hardy, variable winter resident, the Gray Catbird is found irregularly throughout the Coastal Plain. It is found in small numbers in the eastern half of the state.

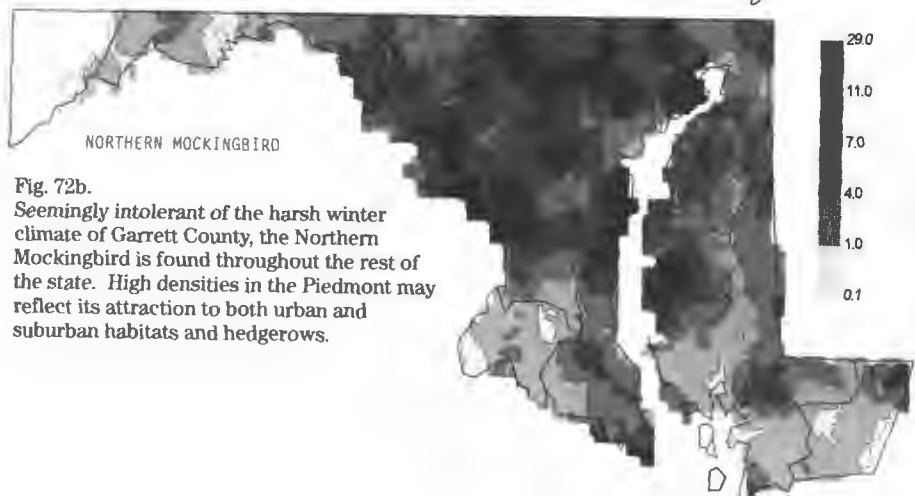


Fig. 72b.

Seemingly intolerant of the harsh winter climate of Garrett County, the Northern Mockingbird is found throughout the rest of the state. High densities in the Piedmont may reflect its attraction to both urban and suburban habitats and hedgerows.

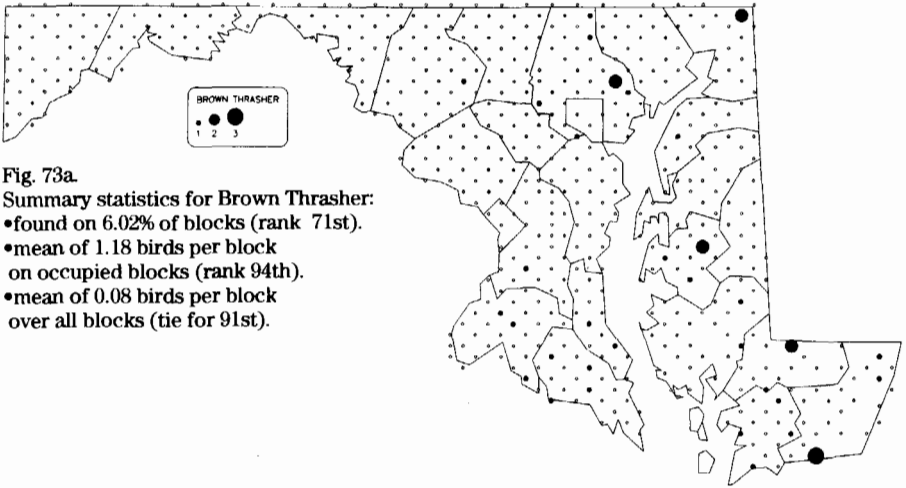


Fig. 73a.

Summary statistics for Brown Thrasher:

- found on 6.02% of blocks (rank 71st).
- mean of 1.18 birds per block on occupied blocks (rank 94th).
- mean of 0.08 birds per block over all blocks (tie for 91st).

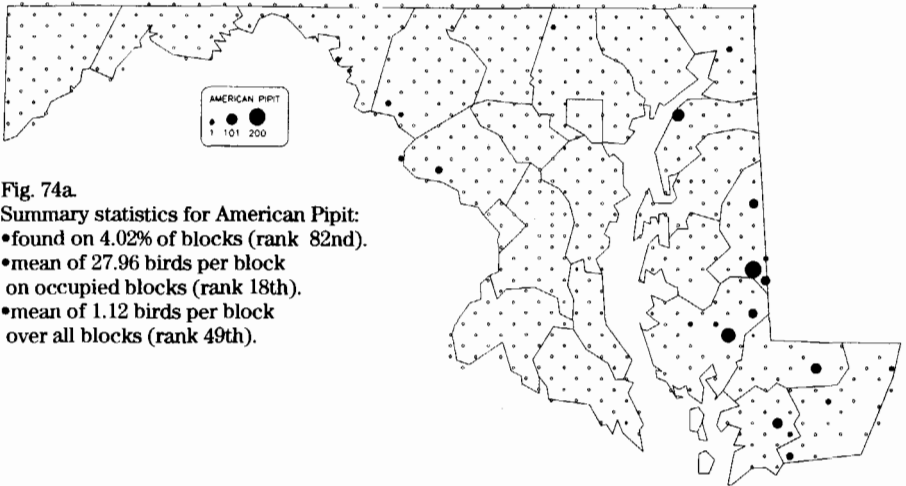


Fig. 74a.

Summary statistics for American Pipit:

- found on 4.02% of blocks (rank 82nd).
- mean of 27.96 birds per block on occupied blocks (rank 18th).
- mean of 1.12 birds per block over all blocks (rank 49th).

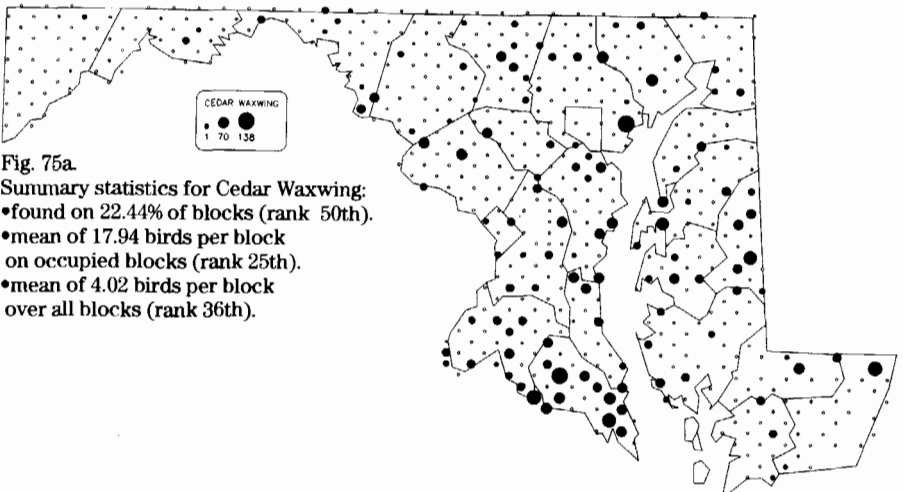
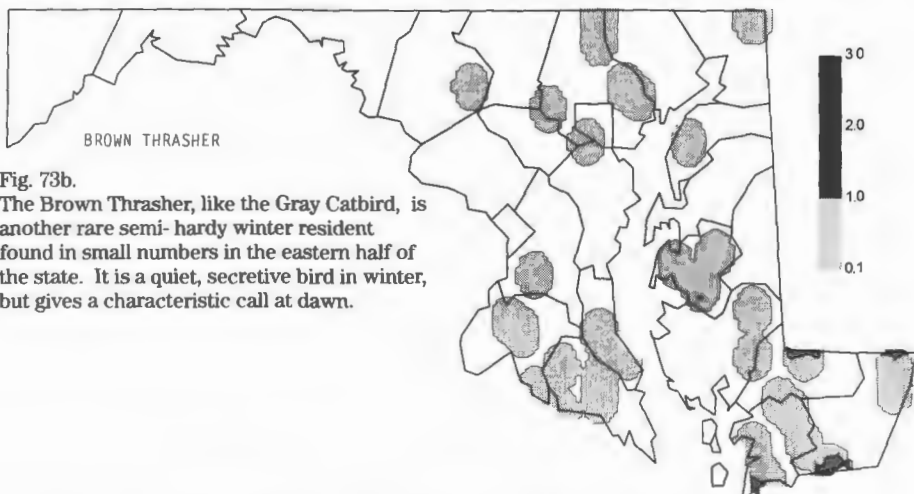


Fig. 75a.

Summary statistics for Cedar Waxwing:

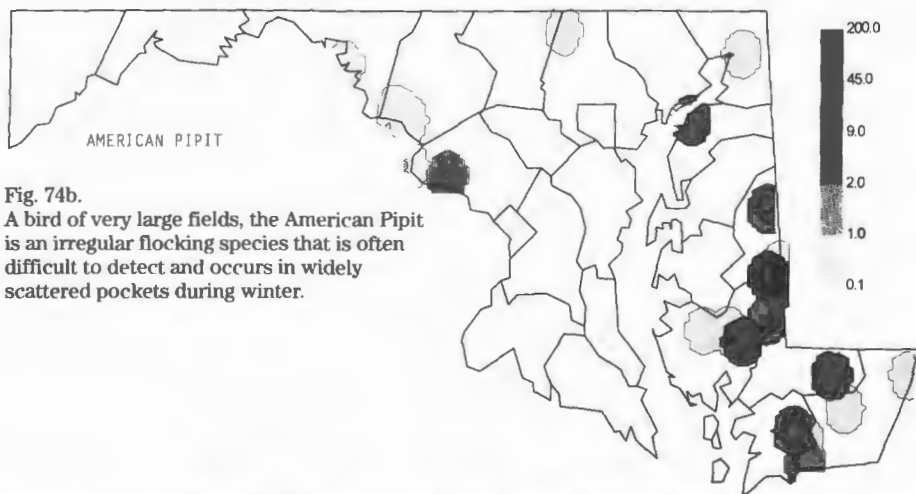
- found on 22.44% of blocks (rank 50th).
- mean of 17.94 birds per block on occupied blocks (rank 25th).
- mean of 4.02 birds per block over all blocks (rank 36th).





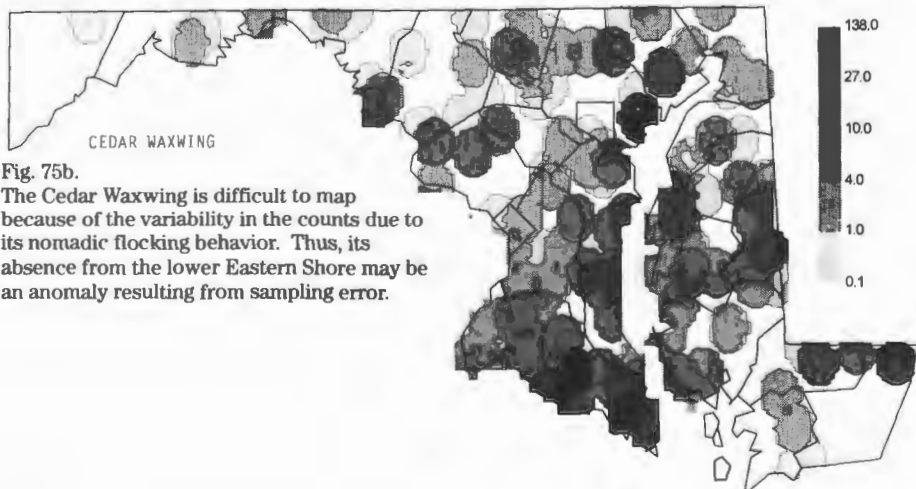
BROWN THRASHER

**Fig. 73b.**  
The Brown Thrasher, like the Gray Catbird, is another rare semi-hardy winter resident found in small numbers in the eastern half of the state. It is a quiet, secretive bird in winter, but gives a characteristic call at dawn.



AMERICAN PIPIT

**Fig. 74b.**  
A bird of very large fields, the American Pipit is an irregular flocking species that is often difficult to detect and occurs in widely scattered pockets during winter.



CEDAR WAXWING

**Fig. 75b.**  
The Cedar Waxwing is difficult to map because of the variability in the counts due to its nomadic flocking behavior. Thus, its absence from the lower Eastern Shore may be an anomaly resulting from sampling error.

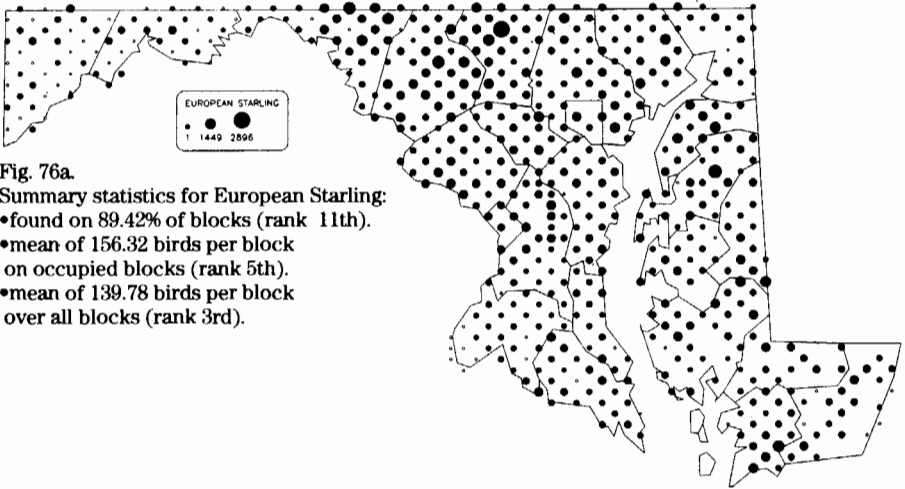


Fig. 76a.

Summary statistics for European Starling:

- found on 89.42% of blocks (rank 11th).
- mean of 156.32 birds per block on occupied blocks (rank 5th).
- mean of 139.78 birds per block over all blocks (rank 3rd).

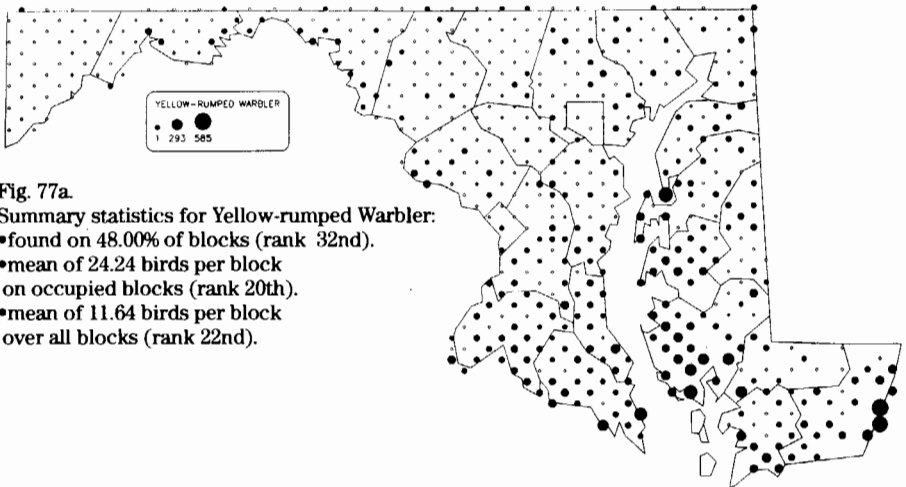


Fig. 77a.

Summary statistics for Yellow-rumped Warbler:

- found on 48.00% of blocks (rank 32nd).
- mean of 24.24 birds per block on occupied blocks (rank 20th).
- mean of 11.64 birds per block over all blocks (rank 22nd).

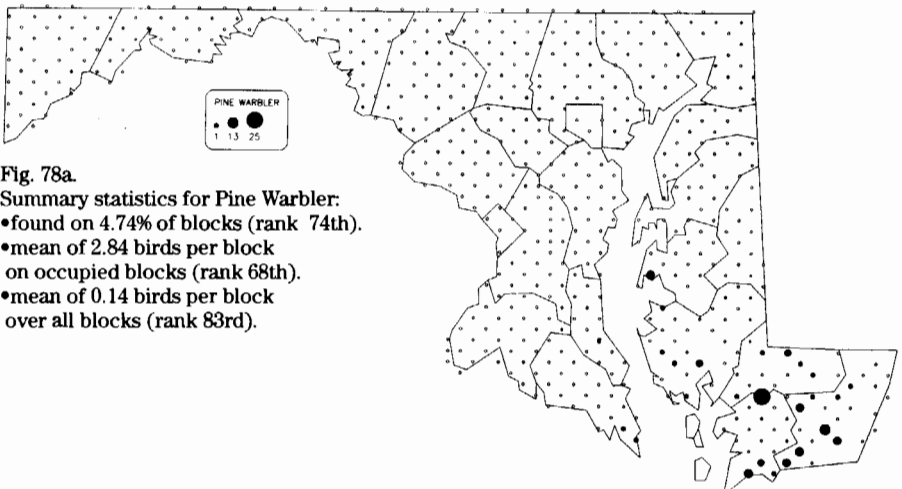


Fig. 78a.

Summary statistics for Pine Warbler:

- found on 4.74% of blocks (rank 74th).
- mean of 2.84 birds per block on occupied blocks (rank 68th).
- mean of 0.14 birds per block over all blocks (rank 83rd).

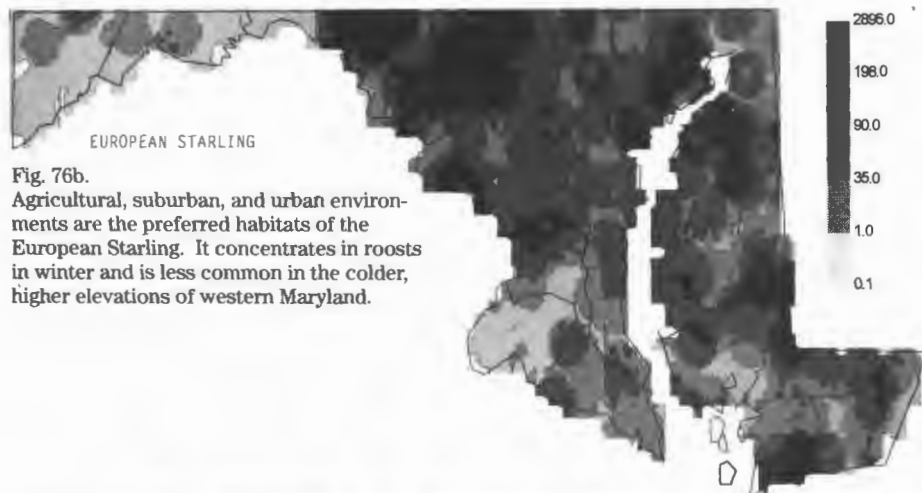


Fig. 76b.

Agricultural, suburban, and urban environments are the preferred habitats of the European Starling. It concentrates in roosts in winter and is less common in the colder, higher elevations of western Maryland.

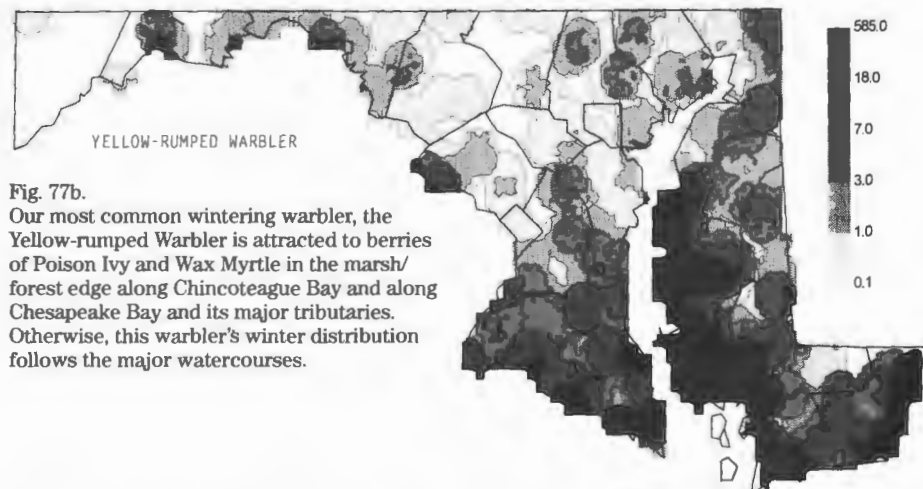


Fig. 77b.

Our most common wintering warbler, the Yellow-rumped Warbler is attracted to berries of Poison Ivy and Wax Myrtle in the marsh/forest edge along Chincoteague Bay and along Chesapeake Bay and its major tributaries. Otherwise, this warbler's winter distribution follows the major watercourses.

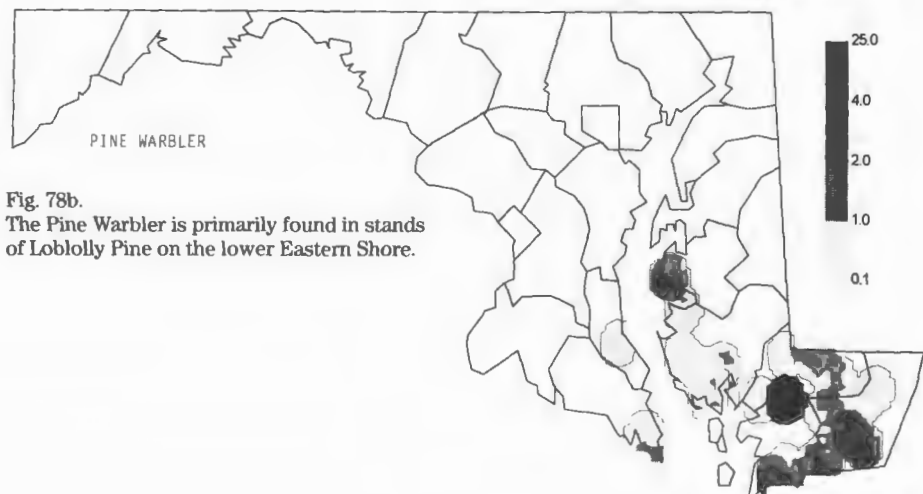


Fig. 78b.

The Pine Warbler is primarily found in stands of Loblolly Pine on the lower Eastern Shore.

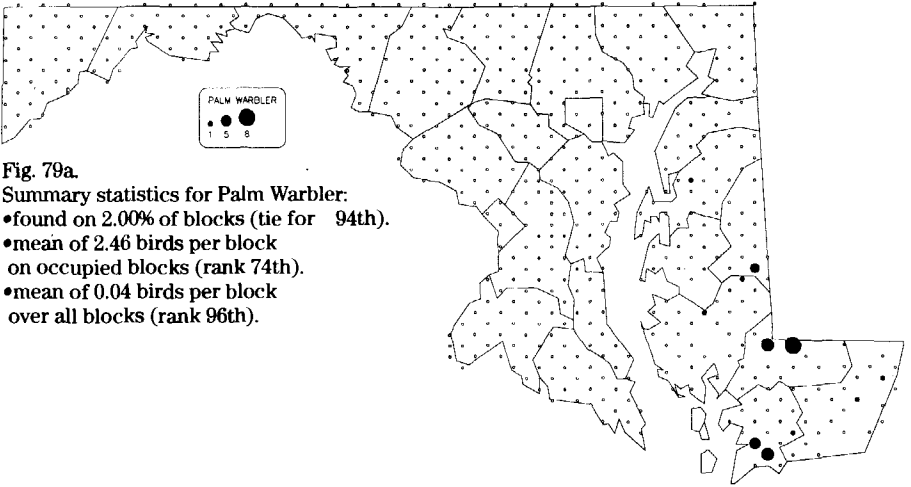


Fig. 79a.

Summary statistics for Palm Warbler:

- found on 2.00% of blocks (tie for 94th).
- mean of 2.46 birds per block on occupied blocks (rank 74th).
- mean of 0.04 birds per block over all blocks (rank 96th).

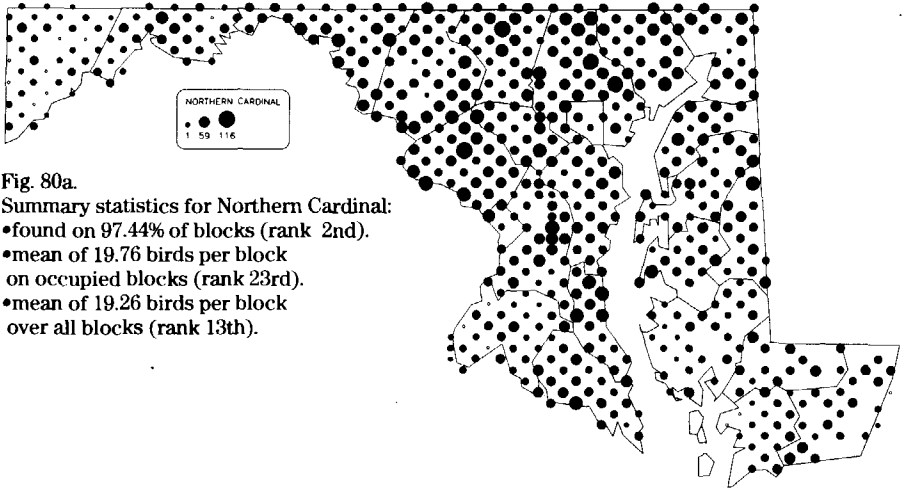


Fig. 80a.

Summary statistics for Northern Cardinal:

- found on 97.44% of blocks (rank 2nd).
- mean of 19.76 birds per block on occupied blocks (rank 23rd).
- mean of 19.26 birds per block over all blocks (rank 13th).

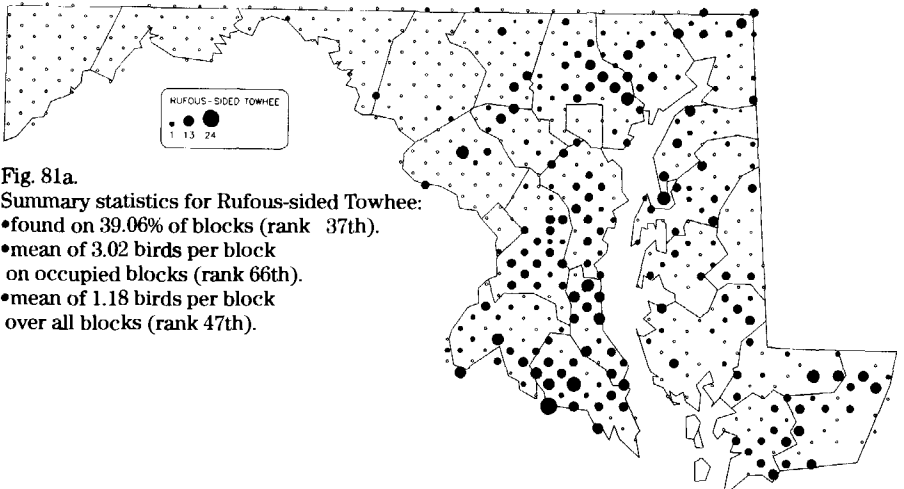
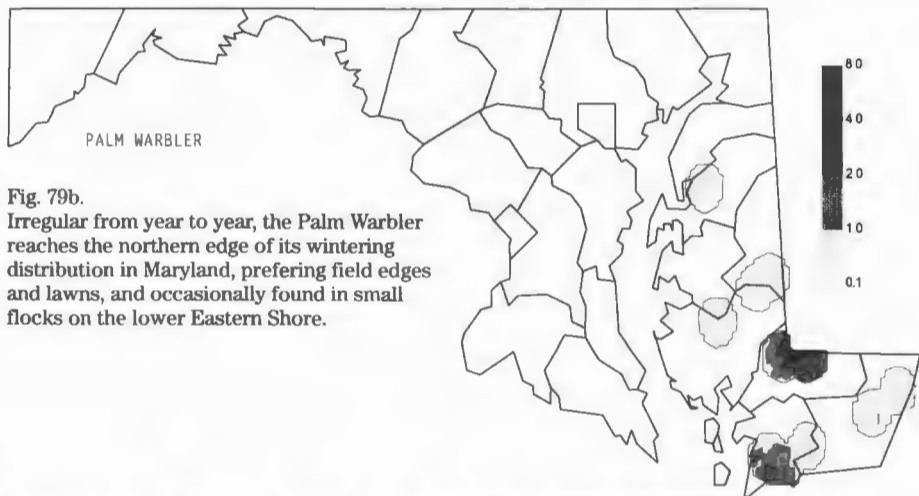


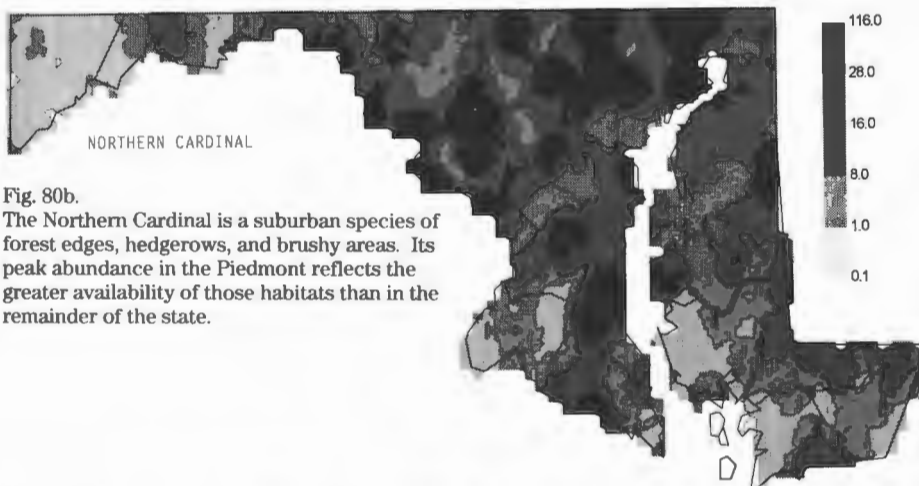
Fig. 81a.

Summary statistics for Rufous-sided Towhee:

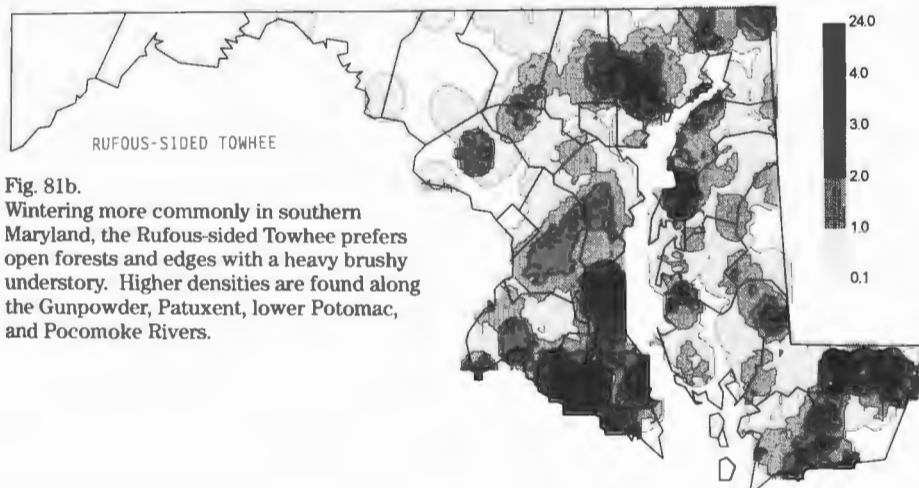
- found on 39.06% of blocks (rank 37th).
- mean of 3.02 birds per block on occupied blocks (rank 66th).
- mean of 1.18 birds per block over all blocks (rank 47th).



**Fig. 79b.**  
Irregular from year to year, the Palm Warbler reaches the northern edge of its wintering distribution in Maryland, preferring field edges and lawns, and occasionally found in small flocks on the lower Eastern Shore.



**Fig. 80b.**  
The Northern Cardinal is a suburban species of forest edges, hedgerows, and brushy areas. Its peak abundance in the Piedmont reflects the greater availability of those habitats than in the remainder of the state.



**Fig. 81b.**  
Wintering more commonly in southern Maryland, the Rufous-sided Towhee prefers open forests and edges with a heavy brushy understory. Higher densities are found along the Gunpowder, Patuxent, lower Potomac, and Pocomoke Rivers.

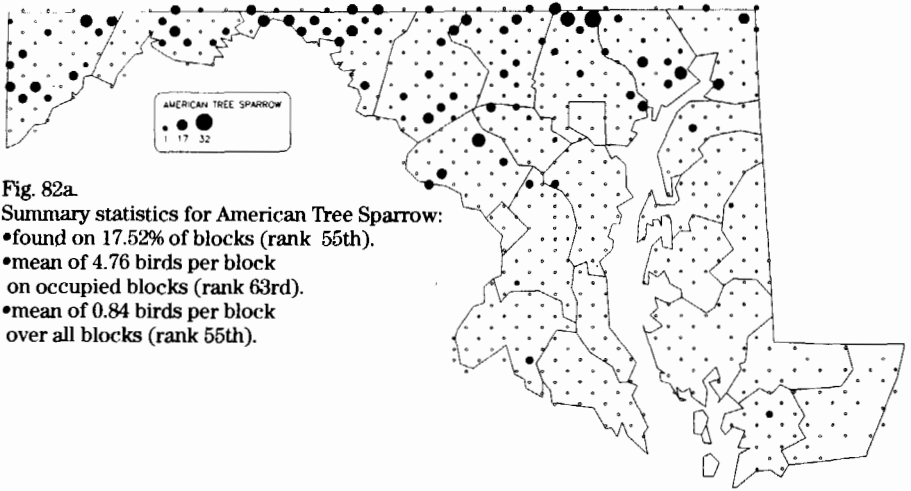


Fig. 82a.

Summary statistics for American Tree Sparrow:

- found on 17.52% of blocks (rank 55th).
- mean of 4.76 birds per block on occupied blocks (rank 63rd).
- mean of 0.84 birds per block over all blocks (rank 55th).

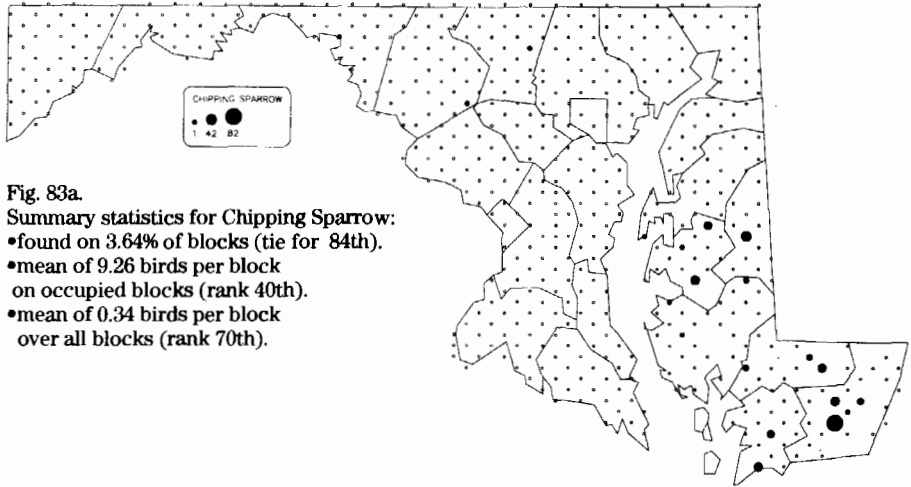


Fig. 83a.

Summary statistics for Chipping Sparrow:

- found on 3.64% of blocks (tie for 84th).
- mean of 9.26 birds per block on occupied blocks (rank 40th).
- mean of 0.34 birds per block over all blocks (rank 70th).

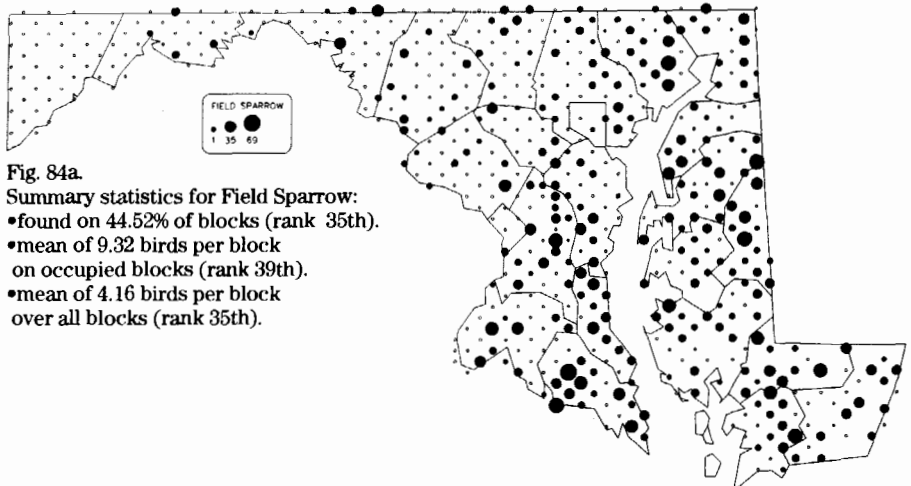


Fig. 84a.

Summary statistics for Field Sparrow:

- found on 44.52% of blocks (rank 35th).
- mean of 9.32 birds per block on occupied blocks (rank 39th).
- mean of 4.16 birds per block over all blocks (rank 35th).

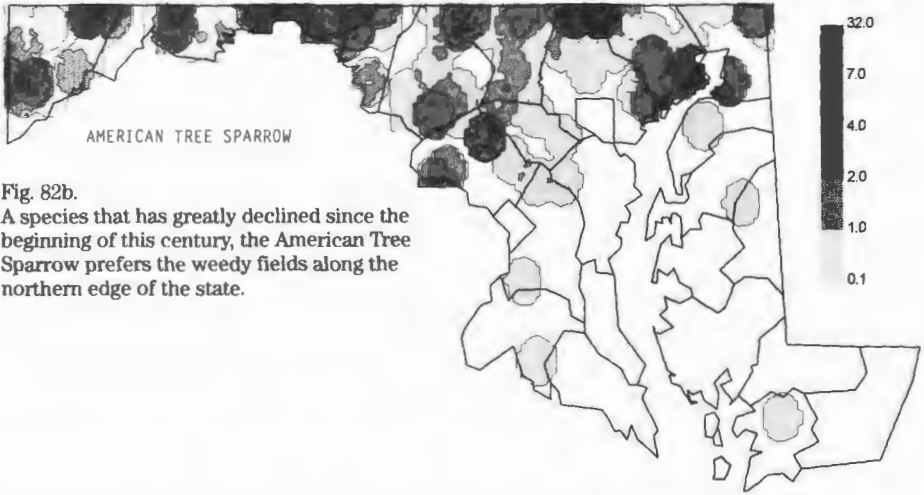


Fig. 82b.  
A species that has greatly declined since the beginning of this century, the American Tree Sparrow prefers the weedy fields along the northern edge of the state.

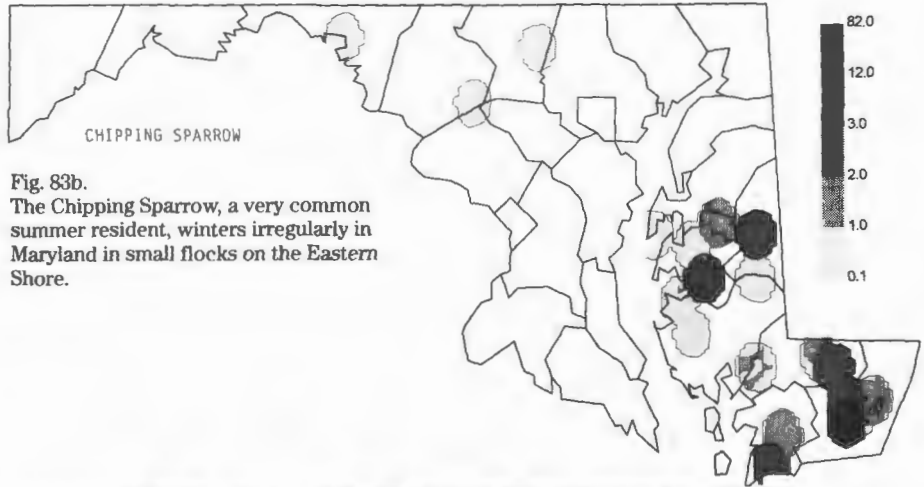


Fig. 83b.  
The Chipping Sparrow, a very common summer resident, winters irregularly in Maryland in small flocks on the Eastern Shore.

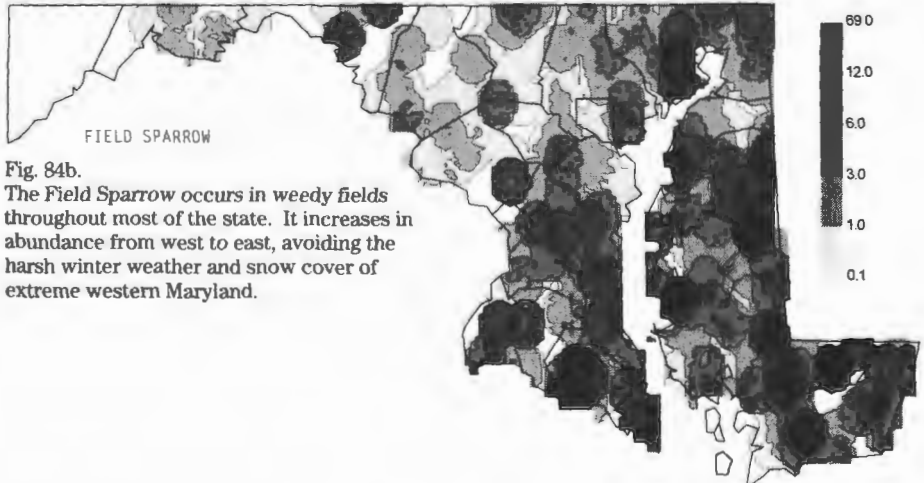


Fig. 84b.  
The Field Sparrow occurs in weedy fields throughout most of the state. It increases in abundance from west to east, avoiding the harsh winter weather and snow cover of extreme western Maryland.

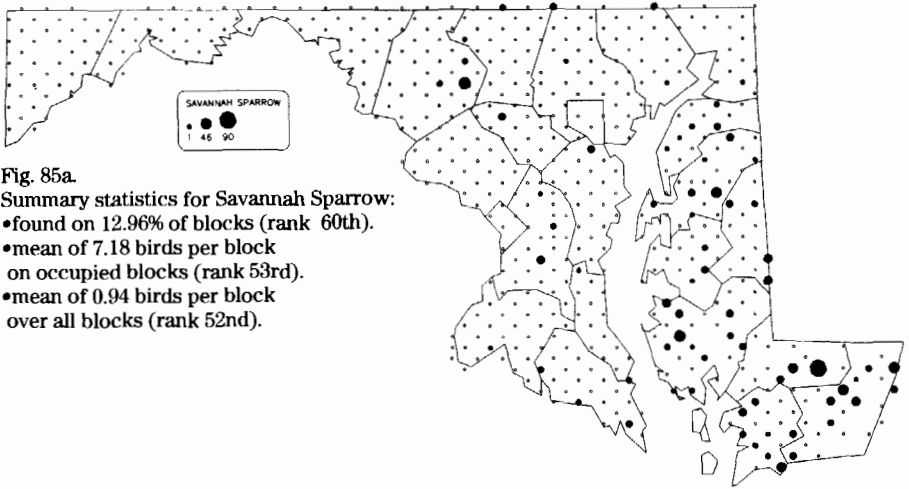


Fig. 85a.

Summary statistics for Savannah Sparrow:

- found on 12.96% of blocks (rank 60th).
- mean of 7.18 birds per block on occupied blocks (rank 53rd).
- mean of 0.94 birds per block over all blocks (rank 52nd).

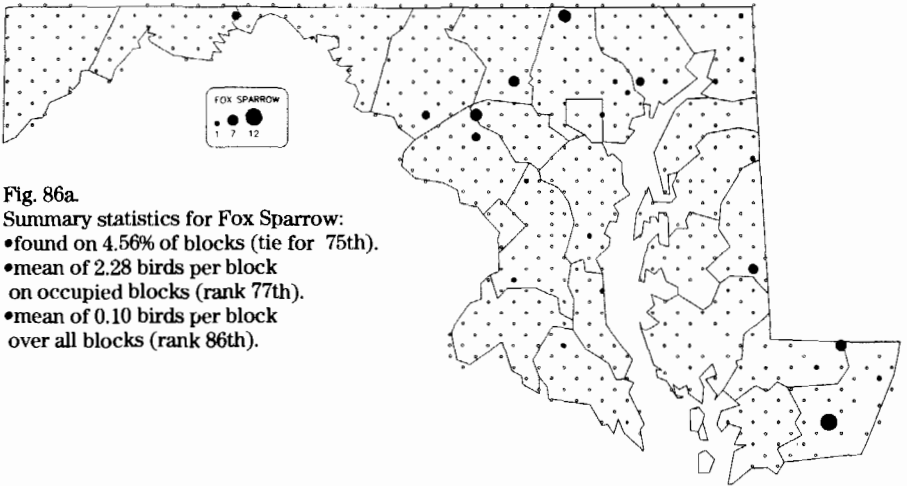


Fig. 86a.

Summary statistics for Fox Sparrow:

- found on 4.56% of blocks (tie for 75th).
- mean of 2.28 birds per block on occupied blocks (rank 77th).
- mean of 0.10 birds per block over all blocks (rank 86th).

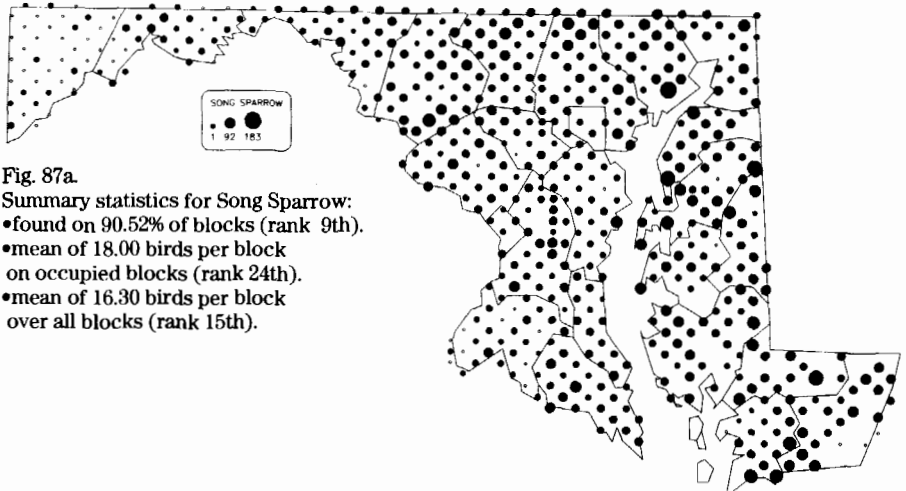
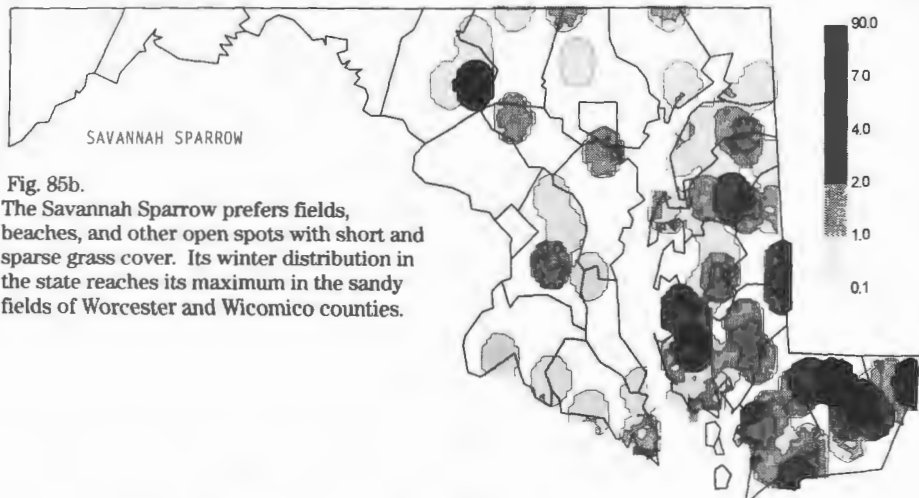


Fig. 87a.

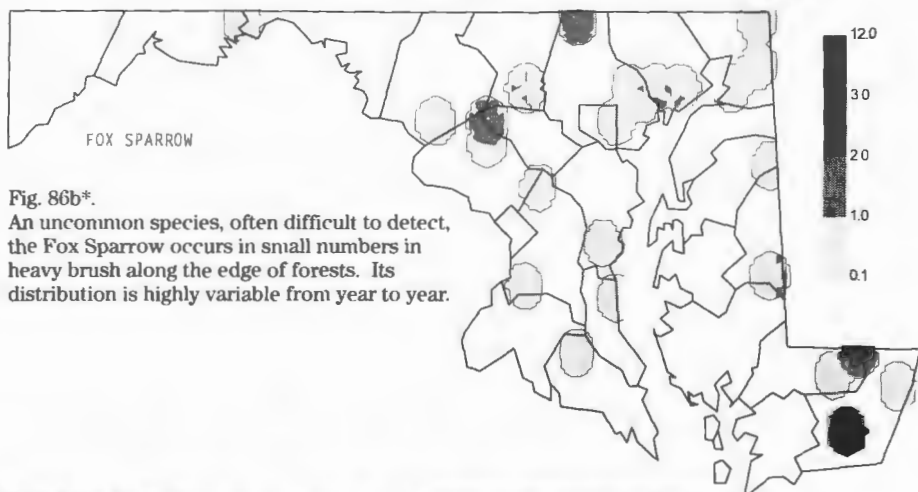
Summary statistics for Song Sparrow:

- found on 90.52% of blocks (rank 9th).
- mean of 18.00 birds per block on occupied blocks (rank 24th).
- mean of 16.30 birds per block over all blocks (rank 15th).

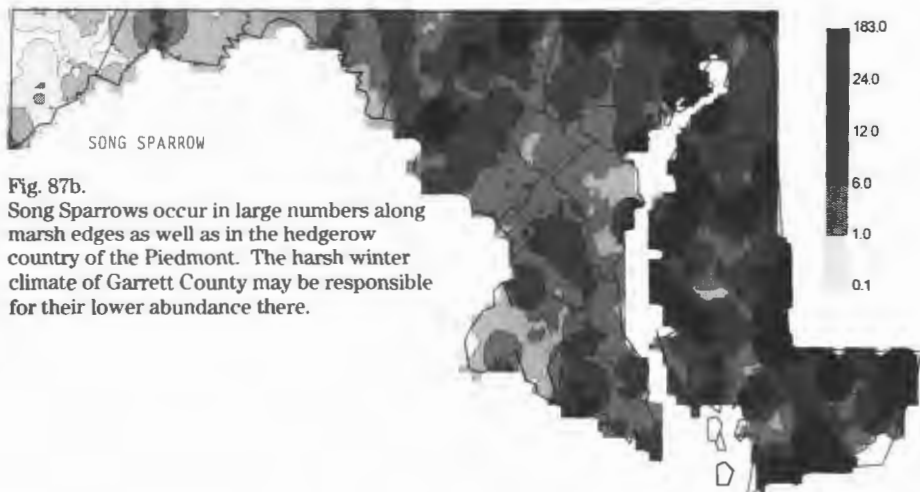




**Fig. 85b.**  
The Savannah Sparrow prefers fields, beaches, and other open spots with short and sparse grass cover. Its winter distribution in the state reaches its maximum in the sandy fields of Worcester and Wicomico counties.



**Fig. 86b\*.**  
An uncommon species, often difficult to detect, the Fox Sparrow occurs in small numbers in heavy brush along the edge of forests. Its distribution is highly variable from year to year.



**Fig. 87b.**  
Song Sparrows occur in large numbers along marsh edges as well as in the hedgerow country of the Piedmont. The harsh winter climate of Garrett County may be responsible for their lower abundance there.

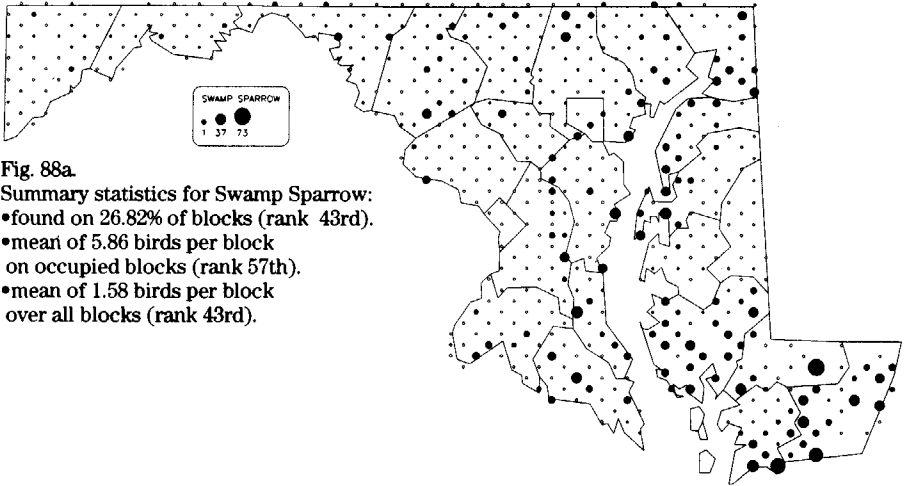


Fig. 88a.

**Summary statistics for Swamp Sparrow:**

- found on 26.82% of blocks (rank 43rd).
- mean of 5.86 birds per block on occupied blocks (rank 57th).
- mean of 1.58 birds per block over all blocks (rank 43rd).

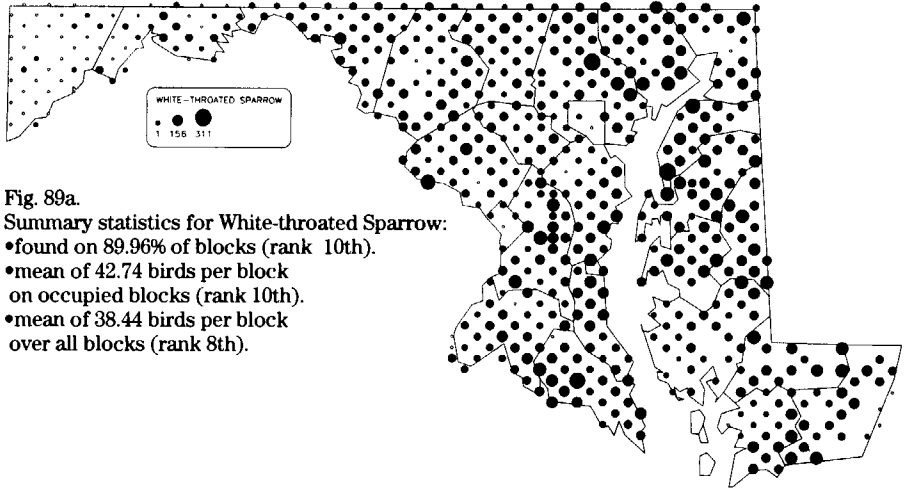


Fig. 89a.

**Summary statistics for White-throated Sparrow:**

- found on 89.96% of blocks (rank 10th).
- mean of 42.74 birds per block on occupied blocks (rank 10th).
- mean of 38.44 birds per block over all blocks (rank 8th).

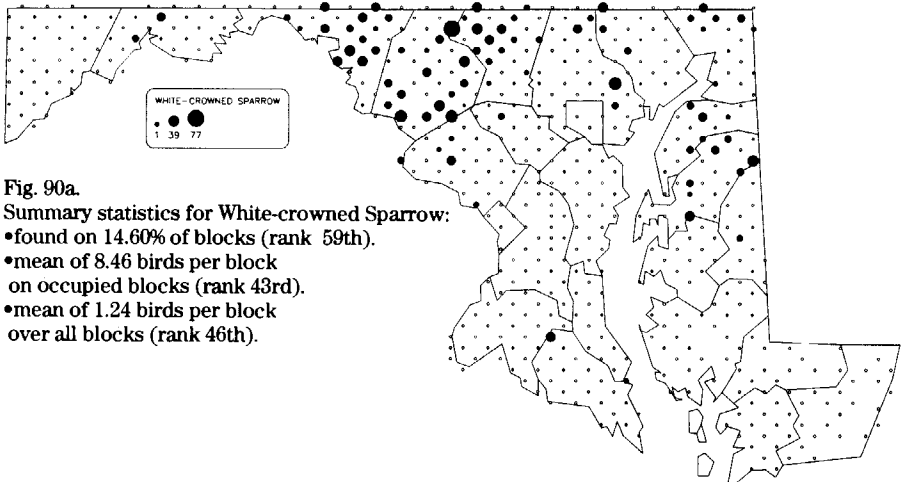
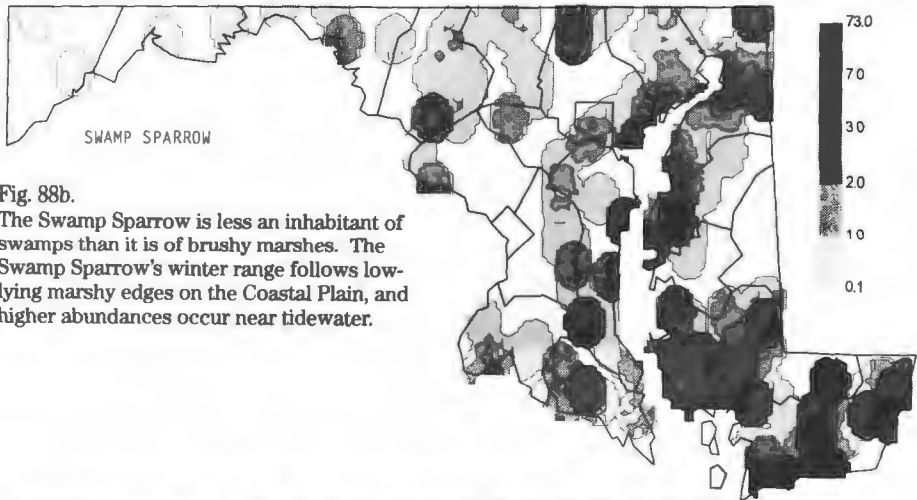


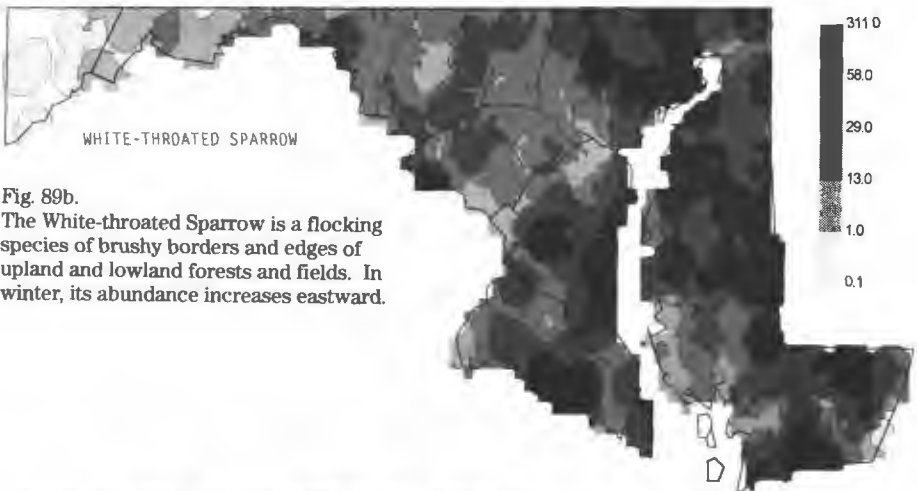
Fig. 90a.

**Summary statistics for White-crowned Sparrow:**

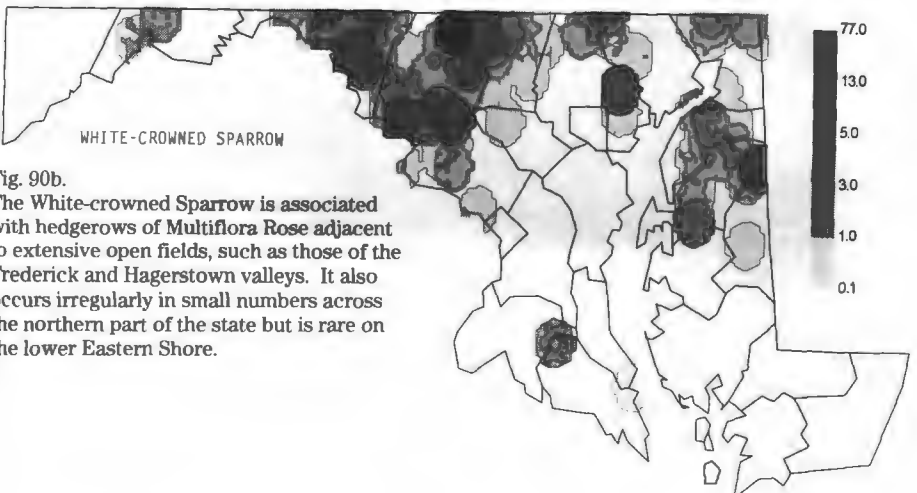
- found on 14.60% of blocks (rank 59th).
- mean of 8.46 birds per block on occupied blocks (rank 43rd).
- mean of 1.24 birds per block over all blocks (rank 46th).



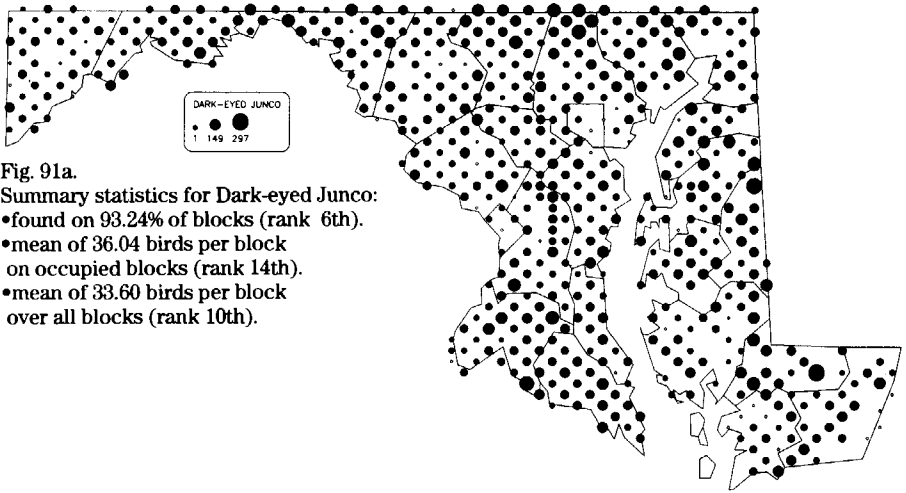
**Fig. 88b.**  
 The Swamp Sparrow is less an inhabitant of swamps than it is of brushy marshes. The Swamp Sparrow's winter range follows low-lying marshy edges on the Coastal Plain, and higher abundances occur near tidewater.



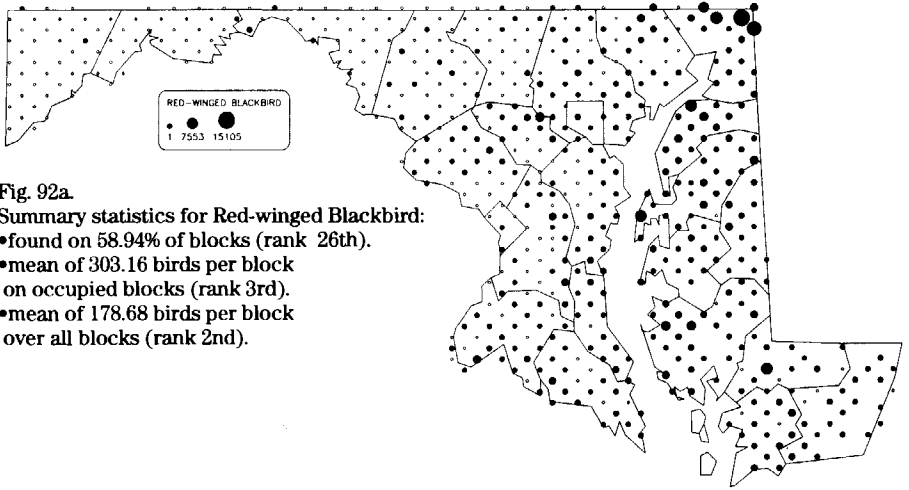
**Fig. 89b.**  
 The White-throated Sparrow is a flocking species of brushy borders and edges of upland and lowland forests and fields. In winter, its abundance increases eastward.



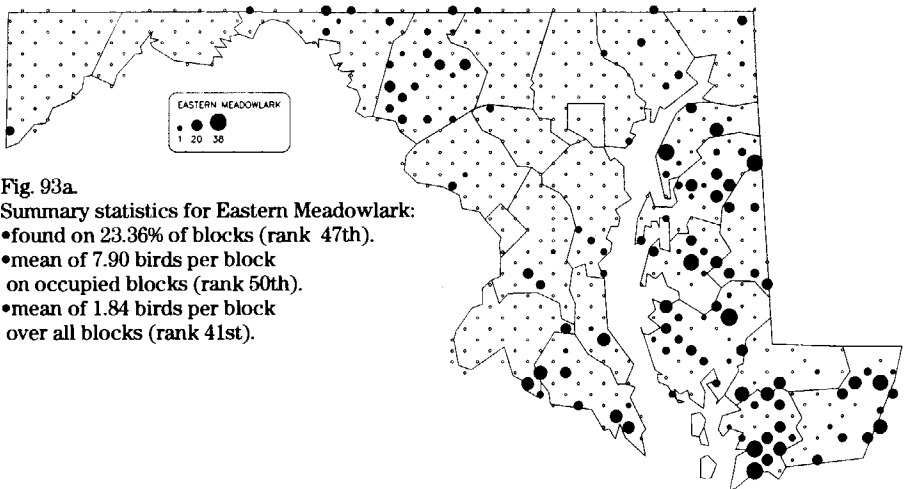
**Fig. 90b.**  
 The White-crowned Sparrow is associated with hedgerows of Multiflora Rose adjacent to extensive open fields, such as those of the Frederick and Hagerstown valleys. It also occurs irregularly in small numbers across the northern part of the state but is rare on the lower Eastern Shore.



**Fig. 91a.**  
Summary statistics for Dark-eyed Junco:  
•found on 93.24% of blocks (rank 6th).  
•mean of 36.04 birds per block on occupied blocks (rank 14th).  
•mean of 33.60 birds per block over all blocks (rank 10th).



**Fig. 92a.**  
Summary statistics for Red-winged Blackbird:  
•found on 58.94% of blocks (rank 26th).  
•mean of 303.16 birds per block on occupied blocks (rank 3rd).  
•mean of 178.68 birds per block over all blocks (rank 2nd).



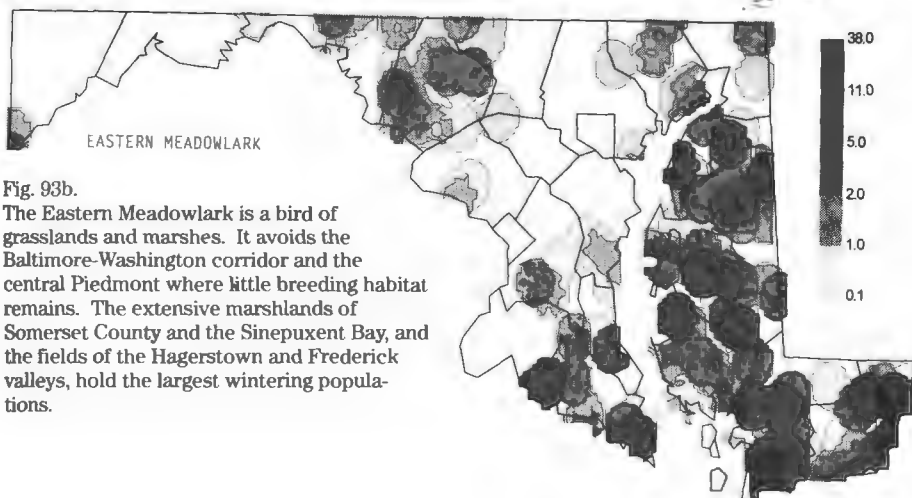
**Fig. 93a.**  
Summary statistics for Eastern Meadowlark:  
•found on 23.36% of blocks (rank 47th).  
•mean of 7.90 birds per block on occupied blocks (rank 50th).  
•mean of 1.84 birds per block over all blocks (rank 41st).



**Fig. 91b.**  
Dark-eyed Juncos occur throughout the state in a variety of habitats. Greatest abundance is in the northern Piedmont and the interior of the Eastern Shore.



**Fig. 92b.**  
Red-winged Blackbirds occur in large flocks in winter, when they forage in agricultural fields and roost in the tidal marshes. Their abundance is greatest in snow-free agricultural fields throughout the Eastern Shore.



**Fig. 93b.**  
The Eastern Meadowlark is a bird of grasslands and marshes. It avoids the Baltimore-Washington corridor and the central Piedmont where little breeding habitat remains. The extensive marshlands of Somerset County and the Sinepuxent Bay, and the fields of the Hagerstown and Frederick valleys, hold the largest wintering populations.

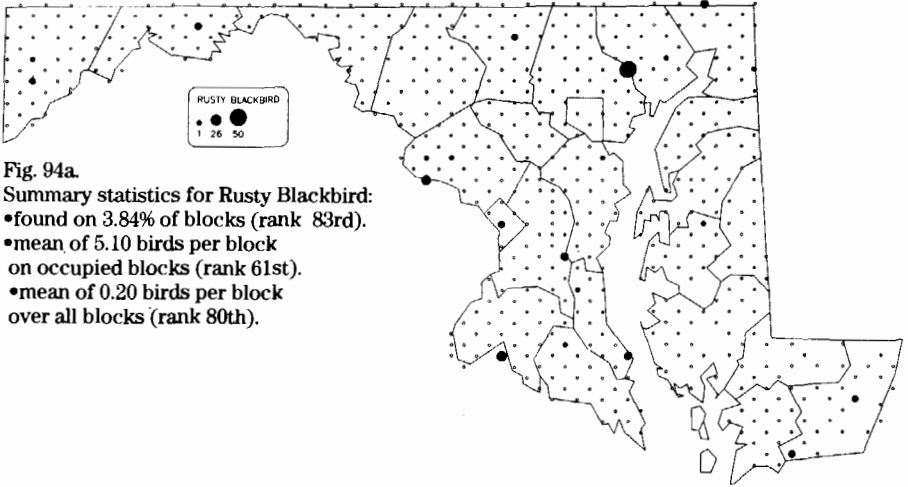


Fig. 94a.

## Summary statistics for Rusty Blackbird:

- found on 3.84% of blocks (rank 83rd).
- mean of 5.10 birds per block on occupied blocks (rank 61st).
- mean of 0.20 birds per block over all blocks (rank 80th).

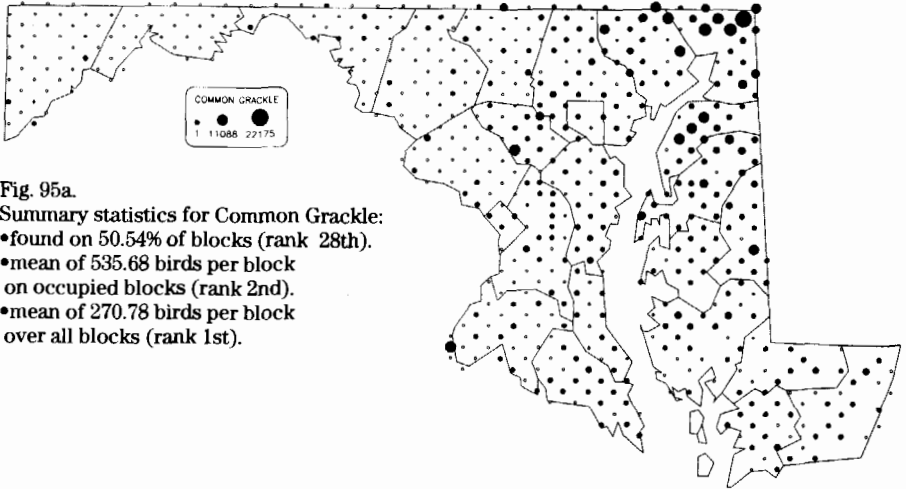


Fig. 95a.

## Summary statistics for Common Grackle:

- found on 50.54% of blocks (rank 28th).
- mean of 535.68 birds per block on occupied blocks (rank 2nd).
- mean of 270.78 birds per block over all blocks (rank 1st).

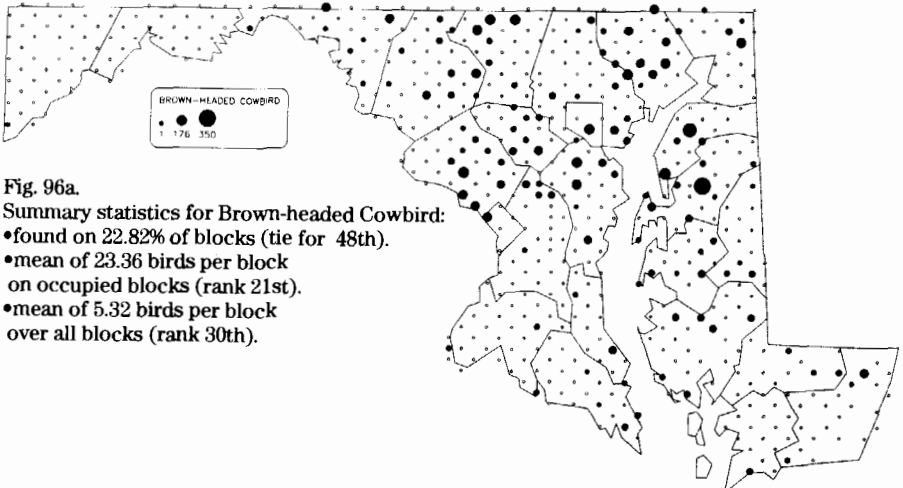


Fig. 96a.

## Summary statistics for Brown-headed Cowbird:

- found on 22.82% of blocks (tie for 48th).
- mean of 23.36 birds per block on occupied blocks (rank 21st).
- mean of 5.32 birds per block over all blocks (rank 30th).

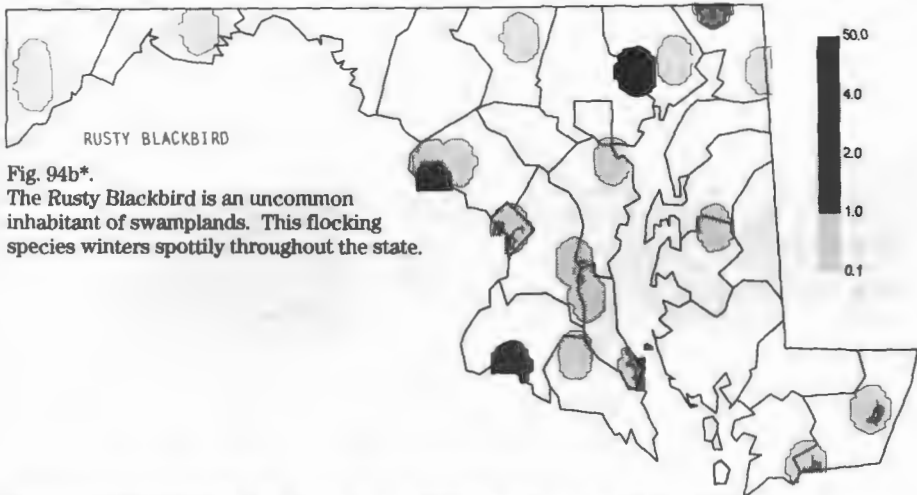


Fig. 94b\*.  
The Rusty Blackbird is an uncommon inhabitant of swamplands. This flocking species winters spottily throughout the state.

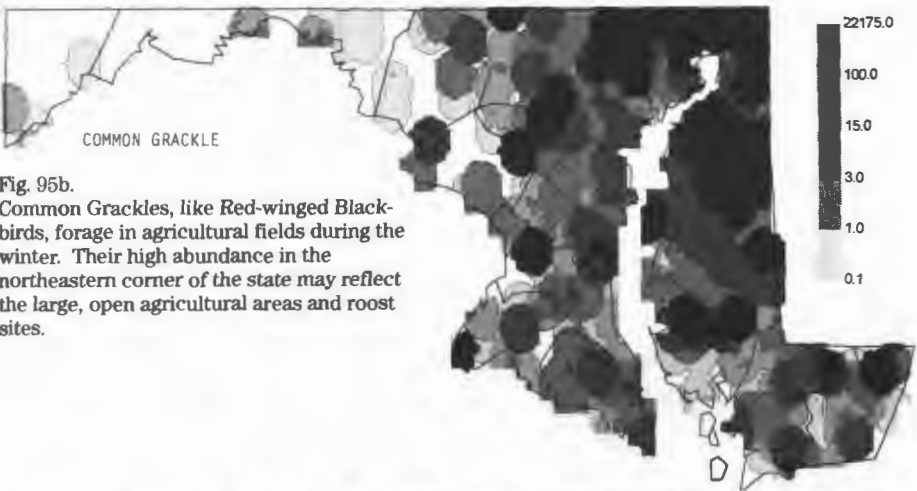


Fig. 95b.  
Common Grackles, like Red-winged Blackbirds, forage in agricultural fields during the winter. Their high abundance in the northeastern corner of the state may reflect the large, open agricultural areas and roost sites.

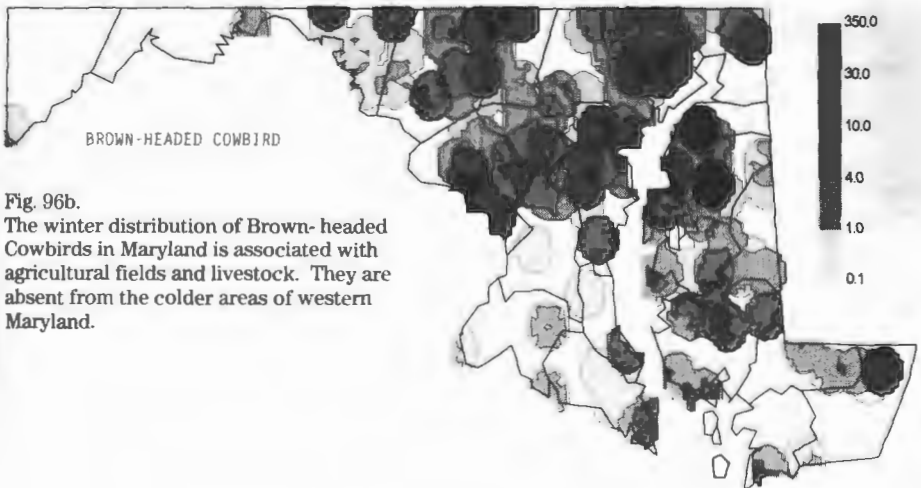


Fig. 96b.  
The winter distribution of Brown-headed Cowbirds in Maryland is associated with agricultural fields and livestock. They are absent from the colder areas of western Maryland.

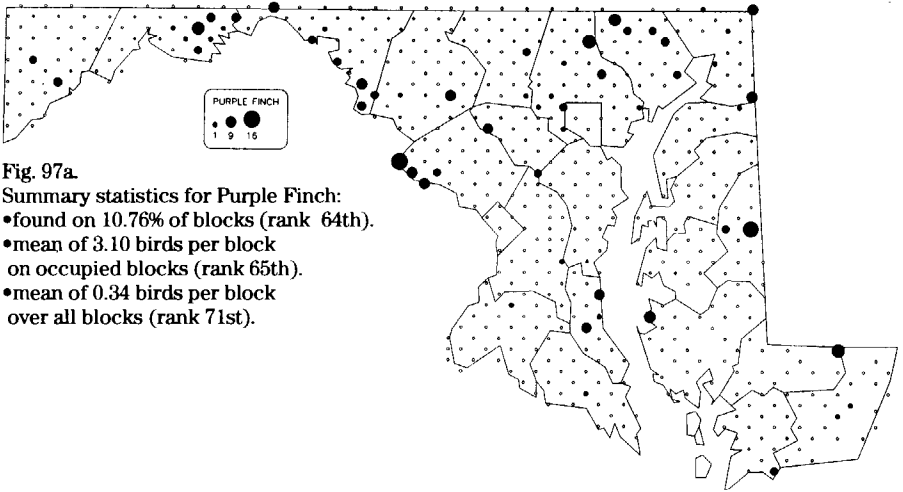


Fig. 97a.

Summary statistics for Purple Finch:

- found on 10.76% of blocks (rank 64th).
- mean of 3.10 birds per block on occupied blocks (rank 65th).
- mean of 0.34 birds per block over all blocks (rank 71st).

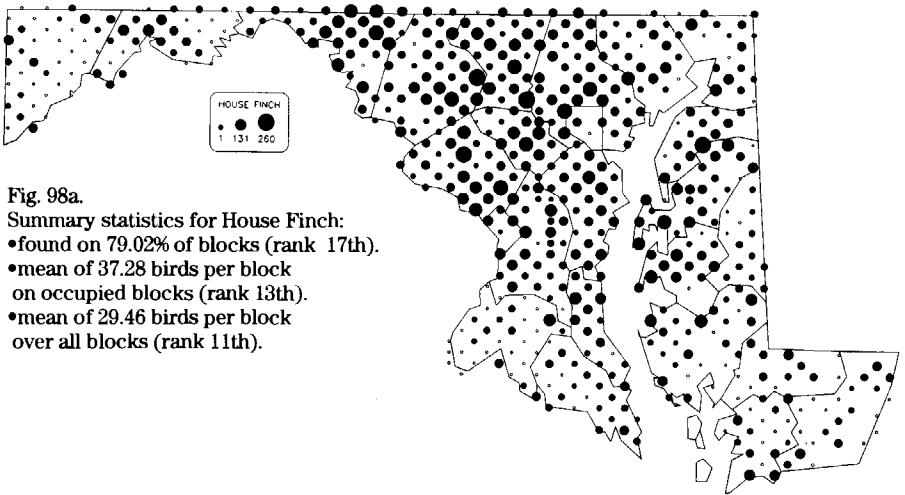


Fig. 98a.

Summary statistics for House Finch:

- found on 79.02% of blocks (rank 17th).
- mean of 37.28 birds per block on occupied blocks (rank 13th).
- mean of 29.46 birds per block over all blocks (rank 11th).

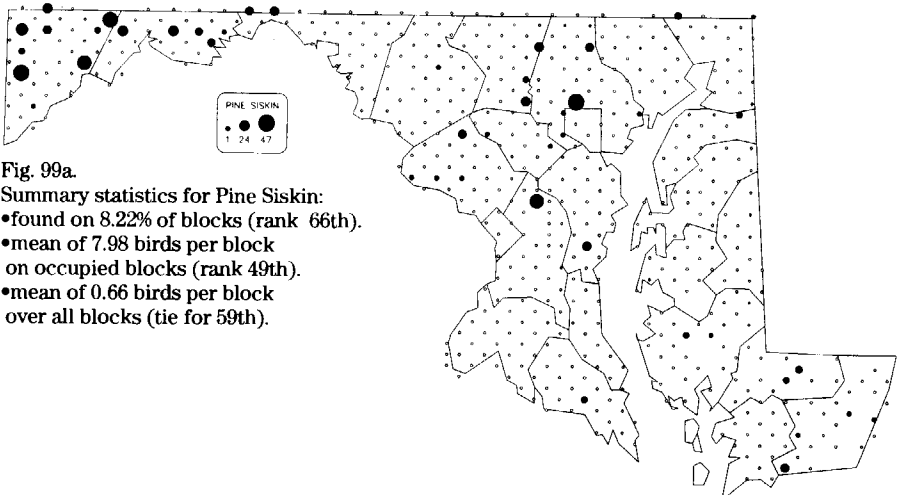
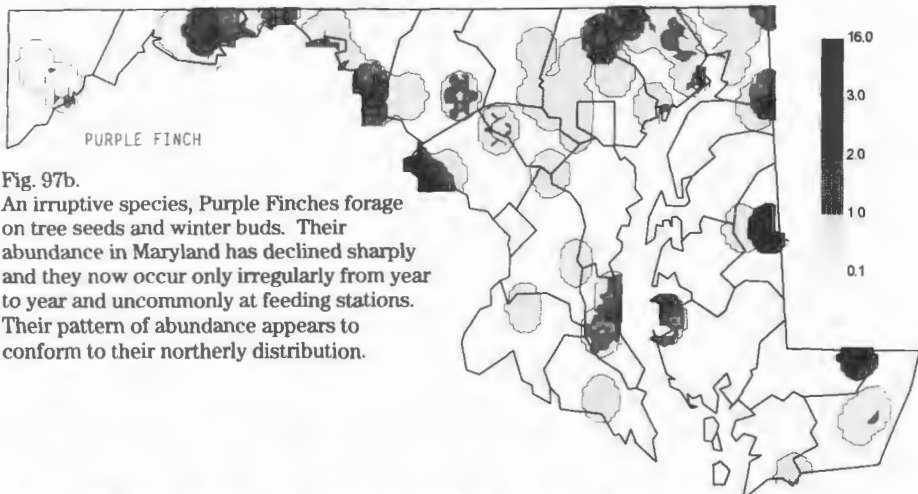


Fig. 99a.

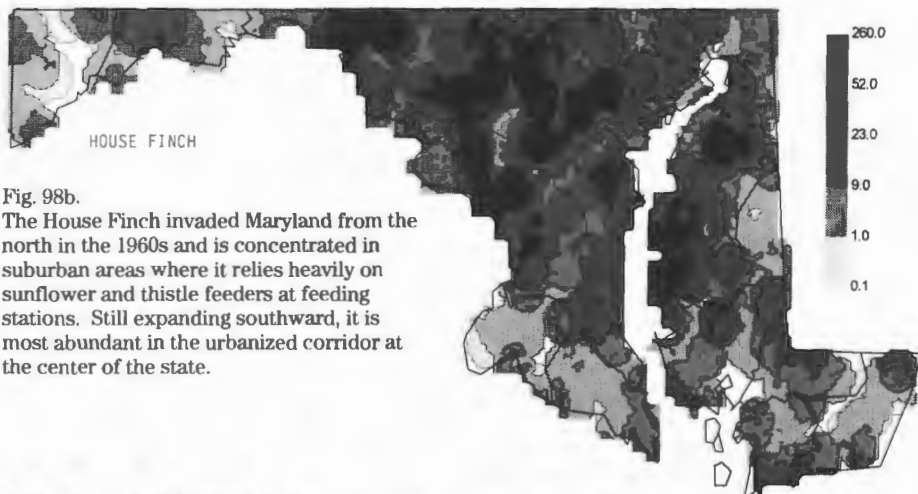
Summary statistics for Pine Siskin:

- found on 8.22% of blocks (rank 66th).
- mean of 7.98 birds per block on occupied blocks (rank 49th).
- mean of 0.66 birds per block over all blocks (tie for 59th).

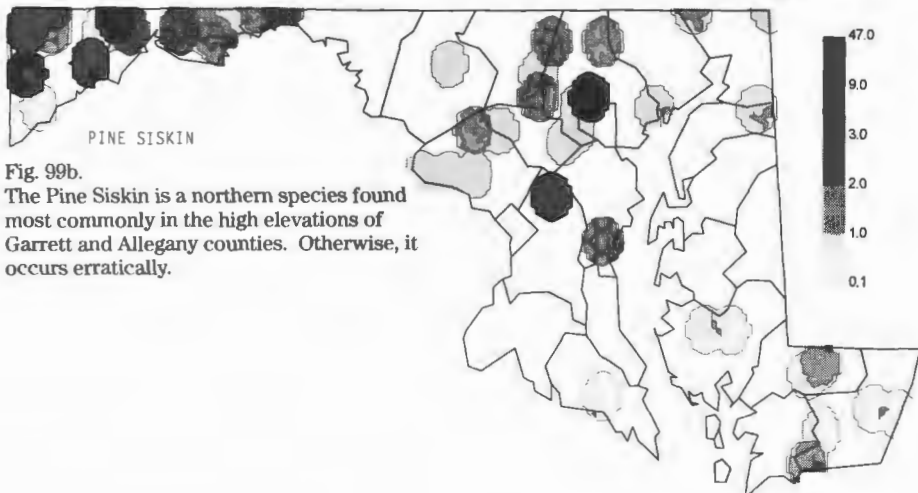




**Fig. 97b.**  
An irruptive species, Purple Finches forage on tree seeds and winter buds. Their abundance in Maryland has declined sharply and they now occur only irregularly from year to year and uncommonly at feeding stations. Their pattern of abundance appears to conform to their northerly distribution.



**Fig. 98b.**  
The House Finch invaded Maryland from the north in the 1960s and is concentrated in suburban areas where it relies heavily on sunflower and thistle feeders at feeding stations. Still expanding southward, it is most abundant in the urbanized corridor at the center of the state.



**Fig. 99b.**  
The Pine Siskin is a northern species found most commonly in the high elevations of Garrett and Allegany counties. Otherwise, it occurs erratically.

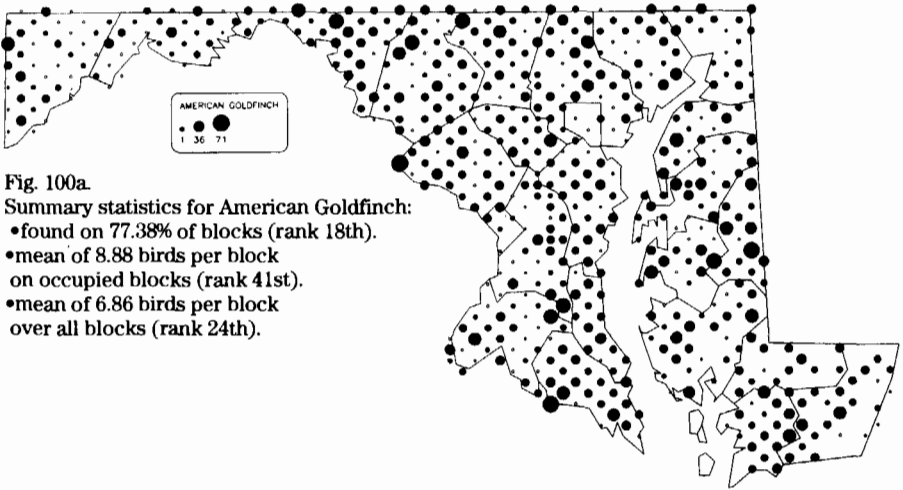


Fig. 100a.

Summary statistics for American Goldfinch:

- found on 77.38% of blocks (rank 18th).
- mean of 8.88 birds per block on occupied blocks (rank 41st).
- mean of 6.86 birds per block over all blocks (rank 24th).

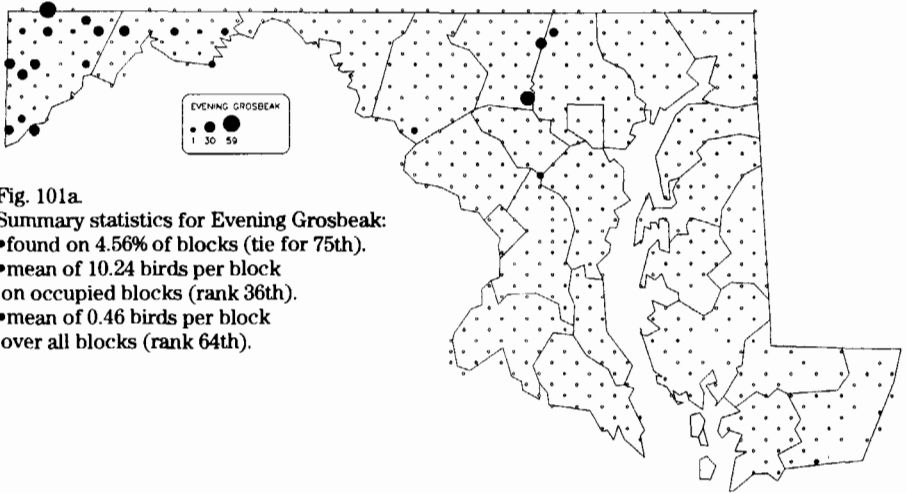


Fig. 101a.

Summary statistics for Evening Grosbeak:

- found on 4.56% of blocks (tie for 75th).
- mean of 10.24 birds per block on occupied blocks (rank 36th).
- mean of 0.46 birds per block over all blocks (rank 64th).

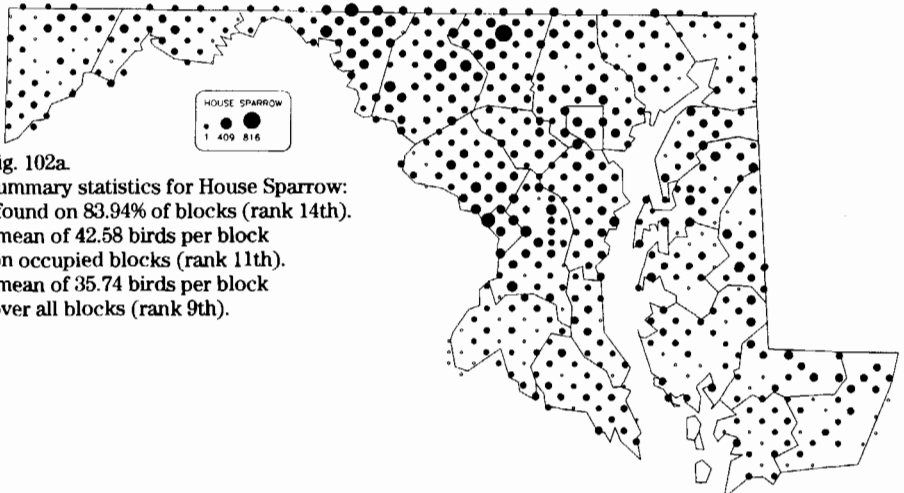


Fig. 102a.

Summary statistics for House Sparrow:

- found on 83.94% of blocks (rank 14th).
- mean of 42.58 birds per block on occupied blocks (rank 11th).
- mean of 35.74 birds per block over all blocks (rank 9th).



Fig. 100b. Winter flocks of the American Goldfinch tend to be unevenly distributed, not conforming to any predictable pattern. Surprisingly, no concentration was detected in the Baltimore-Washington corridor, where feeding stations abound.

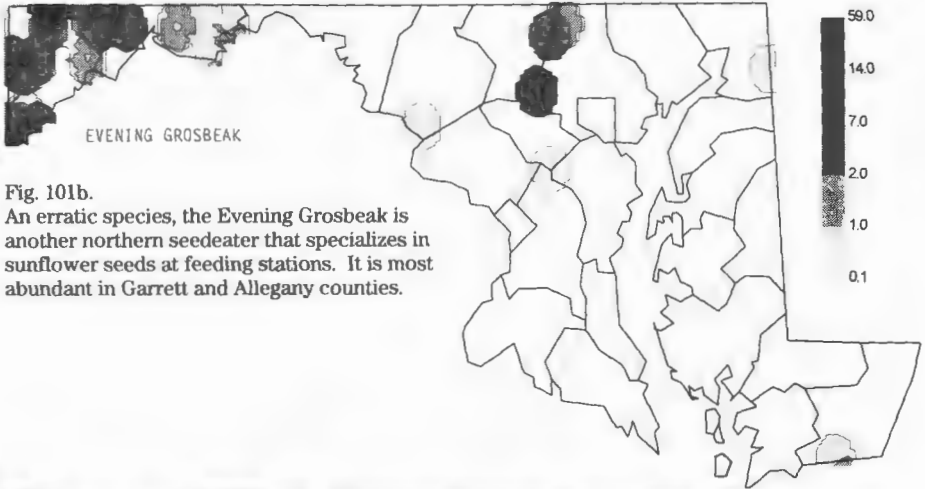


Fig. 101b. An erratic species, the Evening Grosbeak is another northern seedeater that specializes in sunflower seeds at feeding stations. It is most abundant in Garrett and Allegany counties.

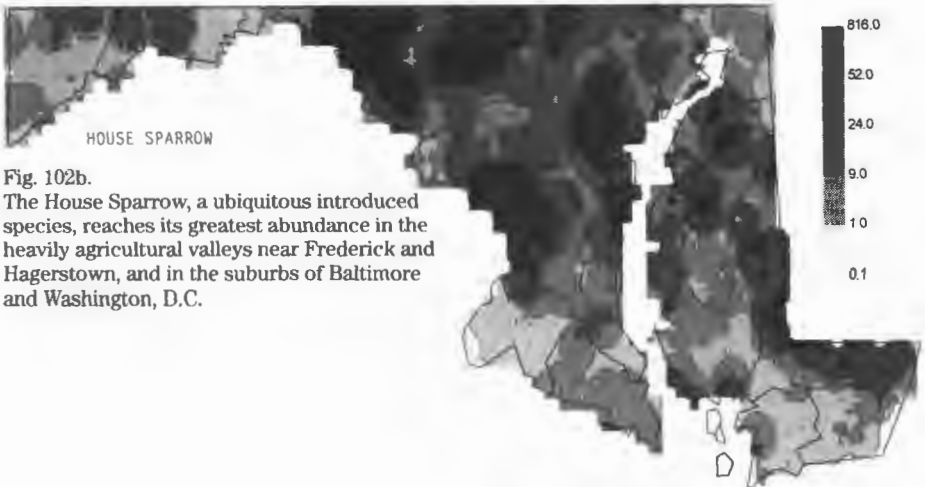


Fig. 102b. The House Sparrow, a ubiquitous introduced species, reaches its greatest abundance in the heavily agricultural valleys near Frederick and Hagerstown, and in the suburbs of Baltimore and Washington, D.C.

Table 1. Species detected on fewer than 10 blocks during the winter bird survey. Also shown are number of blocks (N), mean abundance per 4-hour survey on occupied blocks (blocks where the species was detected), mean abundance per 4-hour survey over all blocks, and the location (county or Washington, D.C.) of blocks where each species was detected.

Species	N	Mean Abundance		Location <sup>1</sup>
		Occupied Blocks	All Blocks	
Red-throated Loon	2	4.00	0.0146	23
Common Loon	4	6.25	0.0456	9, 19, 23
Pied-billed Grebe	5	3.00	0.0274	2, 8, 9, 21, 24
Horned Grebe	8	3.38	0.0503	9, 20, 23, 24
Northern Gannet	4	7.50	0.0547	9, 18, 23
Double-crested Cormorant	2	16.50	0.0602	8
Great Egret	1	1.00	0.0018	2
Black-crowned Night-Heron	4	2.75	0.0201	19, 23, 24
Ross' Goose	2	1.00	0.0036	23
Brant	2	107.00	0.3905	23
Green-winged Teal	6	7.17	0.0785	2, 10, 14, 19, 22
Northern Pintail	5	5.00	0.0456	9, 14, 23
Northern Shoveler	2	1.50	0.0055	3, 14
Gadwall	6	5.83	0.0639	4, 9, 19, 23
Lesser Scaup	3	10.33	0.0566	8, 19, 22
Oldsquaw	7	3.57	0.0456	9, 23
Surf Scoter	1	1.00	0.0018	23
Ruddy Duck	5	724.00	6.6058	4, 8, 9, 13, 14
Northern Goshawk	2	1.00	0.0036	6, 14
Rough-legged Hawk	5	1.60	0.0146	9, 11, 16, 19
Virginia Rail	2	4.00	0.0146	9
American Coot	3	22.00	0.1204	3, 23
Black-bellied Plover	2	35.00	0.1277	23
Greater Yellowlegs	5	4.60	0.0420	3, 19, 23
Lesser Yellowlegs	1	2.00	0.0036	9
Sanderling	4	92.75	0.6770	18, 23
Dunlin	1	790.00	1.4416	23
Long-billed Dowitcher	1	4.00	0.0073	19
American Woodcock	9	1.11	0.0182	8, 9, 10, 11, 20, 23
Bonaparte's Gull	3	1.00	0.0055	5, 8, 18
Thayer's Gull	1	1.00	0.0018	3
Lesser Black-backed Gull	2	1.00	0.0036	2, 6
Eastern Screech-Owl	4	1.00	0.0073	5, 16, 19, 21
Short-eared Owl	2	1.00	0.0036	10, 23
Northern Saw-whet Owl	1	1.00	0.0018	15
Tree Swallow	1	60.00	0.1095	23
House Wren	2	1.00	0.0036	19
Marsh Wren	6	1.17	0.0128	9, 18, 23
Northern Shrike	1	1.00	0.0018	7
Orange-crowned Warbler	2	1.00	0.0036	3, 19
Black-and-white Warbler	1	1.00	0.0018	18
Common Yellowthroat	5	1.00	0.0091	2, 3, 10, 14, 18
Indigo Bunting	1	1.00	0.0018	22



# WINTER BIRD SURVEY INSTRUCTIONS

**GOAL:** To survey in a uniform manner the wintering bird life of Maryland. After an initial 6-year survey period, we will develop winter range and relative abundance maps for diurnal wintering birds. In subsequent decades this technique will be used to monitor fluctuations, trends, and cycles in populations. It may also serve to monitor emigrations of unpredictable northern species.

**METHODS:** Maryland has been divided into a grid of approximately 1200 blocks, each about 10 sq. mi. in size. This is the same grid system used in the Maryland Breeding Bird Atlas project. Each surveyed block will receive 4-hours of on-foot coverage by experienced birders. Due to the difficulties of attempting to survey all 1200+ blocks, only 1/2 the blocks will be covered, namely a checkerboard pattern of "target" blocks. In the first year, alternate southern blocks in each 7 1/2 minute quadrangle will be surveyed during the first year, in the second year, middle blocks and in the third year, northern blocks. The cycle will then repeat in the 4th, 5th, and 6th years, to complete the targeted blocks.

**CHOOSING A ROUTE:** It is important to cover a block in proportion to the habitats present in the block. For example, if the block contains 40% suburbs, 10% marsh, 10% fields, and 40% woods you should spend about 1 1/2 hours in the suburbs and in the woods and about 1/2 hour in the marsh and in the fields. Most blocks can meet this criterion with one continuous 4-hour route. However, if the habitats present are too scattered, some driving is permitted. Do not exceed 1/2 hour of driving time and do not count birds during that time or consider it part of the total 4 hours. It might also be necessary to retrace part of your route to sample an important habitat. Again, the time spent retracing should not be considered part of the 4 hours, nor should birds be counted. A walking speed of 1-1.5 miles per hour is suggested. Hence, 4 hours of coverage should be about 4-6 miles. This speed allows time to "work" mixed flocks of birds, but not to dawdle or sit. Complete roadside coverage is not recommended, but in some blocks it might be necessary. If a block dictates largely or entirely walking on roads, it will probably be easy to cover up to 6 miles. If you complete 4 hours of coverage before you complete your proposed route, stop counting and return to your car. If you reach your proposed end point before the 4 hours is up, extend coverage, but not along the already-covered route. If possible, examine the map and scout the area ahead of time, asking permission if necessary. Plan your route before the actual day of coverage.

**TIMING OF ROUTES:** In order to keep the surveys comparable, a time period of 7:30-11:30 has been chosen. This avoids the brief period of intense bird activity at dawn, and everyone gets to sleep later. The survey can be extended up till noon to compensate for driving time, as described above.

**COUNTING:** Each block will be visited once by one observer. A companion may act as recorder but should not help lure or spot birds. Pishing may be used to attract mixed flocks but no tapes or owl imitations are permitted. The object is not to maximize the number of birds recorded, but to survey winter birds in a uniform manner. Use the field sheet provided, counting all individual birds seen or heard in each of 8 half-hour segments. If you would rather not carry a clip board, a small note pad, with a page for each 1/2 hour will be satisfactory. In blocks with water, time should not be spent scoping or waiting for birds. Open water or other special habitats like landfills should be surveyed following the 4 hours of foot coverage. The results from these special areas should be written in at the bottom of the form. Waterbirds flying over or in fields found during the walking portion of the survey should be treated like any other species. Upon completion of your survey be sure to record all weather information and mark the location of the route you took on the map. Also be sure to mark the location of the end point of each 1/2 hour segment.

**GENERIC SPECIES:** Winter birds are often difficult to identify to species. For completeness sake, please record all birds such as crows and gulls that you are not able to separate by species.

**REPORTING:** After completing the count, transfer the data to the summary sheet provided, and fill in the weather data. Total the 8 columns and double-check the species total for each column to make sure it agrees with the species total for each half-hour on the field sheet. Please return your field sheets and maps. These maps are from a personal collection and their replacement is expensive.

**WEATHER CODES:** Please record the percentage of ground that is covered with snow and the percentage of ice on the water bodies in your block. Please record wind speed using the following codes: 0 - smoke rises vertically, 1 - smoke drifts, 2 - wind felt on face, 3 - light flags extended, 4 - wind raises dust and loose paper, 5 - crested wavelets on inland waters. Please record sky conditions using the following Weather Bureau codes: 0 - Clear or a few clouds, 1 - Partly cloudy (scattered), 2 - cloudy, 4 - fog or smoke, 5 - Drizzle, 7 - Snow, 8 - Showers

**A FEW PRACTICAL HINTS:**

If there is snow on the ground wear waterproof boots.

Dress in layers and bring 2 more layers than you think you could possibly need.

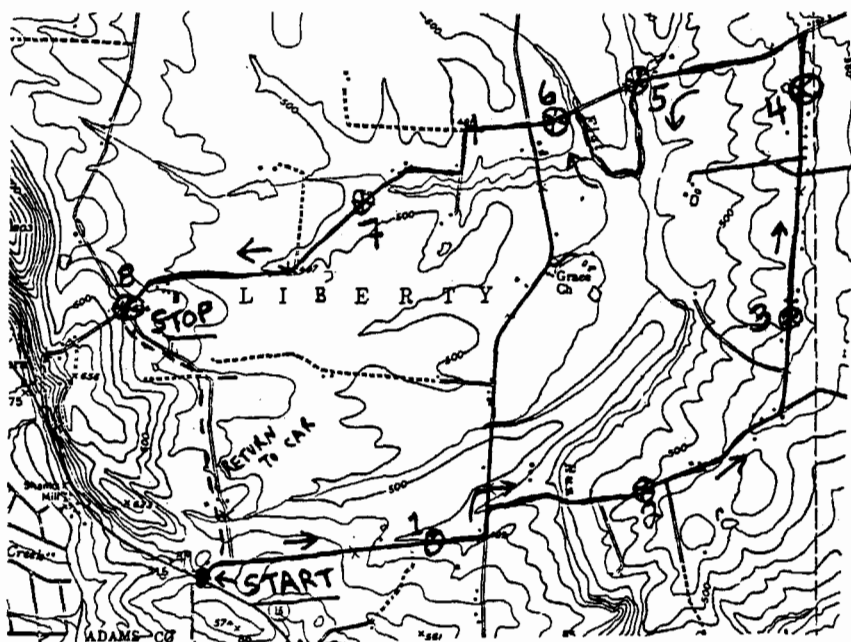
Bring Chapstick.

A pocketful of "trail mix" can keep your energy and spirits high while walking those boring fields.

Two observers can easily survey different blocks using one car by establishing pickup locations along a road at the end of the count.

**SAMPLE MAP**

showing how to mark your route  
and 1/2-hour points



## Sample Letter To Observers

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**WINTER BIRD SURVEY**


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November 13, 1992

Dear \_\_\_\_\_

We've made it! To the last year of the Winter Bird Survey, that is. I'm hoping you'll want to participate this final year so that we can be assured of a data set that will truly represent the whole state.

This year we will be making a second sweep through northern blocks in the USGS quadrangles that overlay the state. In 1990 we visited those blocks for the first time and surveyed 95 of them. That was a great effort, but nonetheless there are still over 100 blocks remaining and this is our last chance to do them. Priorities for coverage have been established. Of highest priority are 67 blocks which, if not surveyed, will leave serious gaps in our data collection. Of these, 27 have been singled out as absolutely essential for coverage. Of next priority are the remaining targeted blocks. In many urban areas, all the targeted blocks have already been surveyed. You will see from the block listing on the reverse side that our critical needs are in Garrett, Allegany, Washington, Carroll, Kent, Dorchester and Wicomico counties. We hope you will make the extra effort to travel farther this year so that all the blocks will be covered. However, you might also consider those northern blocks which have not been targeted. In other words, we would be delighted if you would do a non-targeted northern block rather than none at all.

Would you please fill out the enclosed form and return it to me by December 1? As before, I will do my best to give you the blocks of your choice, but that will not always be possible. Also, please do not opt for a priority block unless you feel very sure that you can complete it. I plan to send you your block assignments by the middle of December. At that time you will receive detailed instructions, the field and reporting sheets and any needed maps. A brief description of the project is given below and a summary of the first five years' worth of data will appear in the November-December issue of the Yellowthroat.

If you any questions, please do not hesitate to call me at 410-647-9513. I again extend my sincere appreciation to all those who have participated in the past.

Sincerely,

Sue Ricciardi, Coordinator  
1132 Ferber Avenue  
Arnold, MD 21012

**Description of Project:** The goal is to develop winter range and relative abundance maps for diurnal wintering birds. Maryland has been divided into a checkerboard grid of blocks (same as those used in the Breeding Bird Atlas). Each targeted block will be surveyed once by one observer on foot from 7:30 to 11:30 a.m. between January 10 and February 10. The walking route of approximately 4 1/2 miles is chosen in proportion to the habitats present.



Summary Sheet

<u>County/Route name</u>	<u>number</u>	<u>Aleck (circle one)</u>	<u>no.</u>	<u>Month</u>	<u>Day</u>	<u>Year</u>	<b>WINTER BIRD SURVEY</b>
		<u>NW NE CW CE SW SE</u>					

<u>Last Name</u>	<u>Initials</u>	<u>START</u> Time: <u>Temp:</u>	<u>END</u> Time: <u>Temp:</u>	<u>Sky:</u>	<u>Wind:</u>	<u>% ICE</u>	<u>IN or SNOW</u>

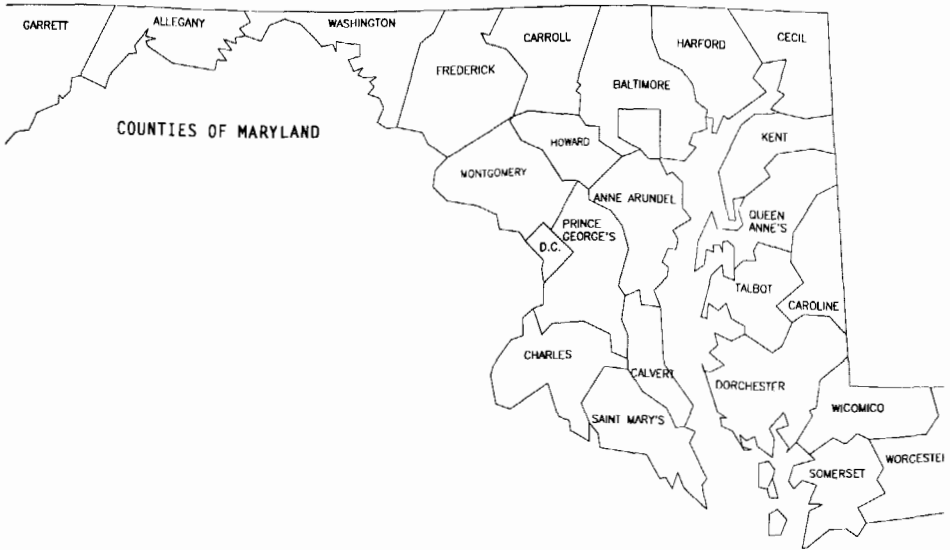
<u>Male-bird counts</u>	1	2	3	4	5	6	7	8	<u>Total</u>
G B HERON									
TUNDRA SWAN									
SNOW GOOSE									
CAN GOOSE									
WOOD DUCK									
BLACK DUCK									
MALLARD									
COMMON MERG									
B VULTURE									
T VULTURE									
BALD EAGLE									
HARRIER									
SHARP-SHIN									
COOPER'S H									
RED-SHOULDR									
RED-TAIL H									
KESTREL									
PHEASANT									
GROUSE									
TURKEY									
BOBWHITE									
KILLDEER									
SNIPE									
R B GULL									
H GULL									
G B B GULL									
ROCK DOVE									
MOURNING D									
KINGFISHER									
R H WPECKER									
R B WPECKER									
SAPSUCKER									
DOWNY WPKR									
HAIRY WPKR									
FLICKER									
PILEATED WP									
PHOEBE									
HORNED LARK									
JAY									
AM CROW									
FISH CROW									
RAVEN									
B C CHICKDE									
C CHICKADEE									
TITMOUSE									
R B NUTHCH									
W B NUTHCH									
B H NUTHCH									
CREEPER									
CAR WREN									
WINTER WREN									
G C KINGLET									
R C KINGLET									
BLUEBIRD									

<u>Male-bird counts</u>	1	2	3	4	5	6	7	8	<u>Total</u>
H THRUSH									
ROBIN									
CATBIRD									
MOCKINGBIRD									
THRASHER									
PIPIT									
WAXWING									
STARLING									
MYRTLE WARB									
PINE WARBLE									
CARDINAL									
TOWHEE									
TREE SPARO									
FIELD SPARO									
SAVANNAH SP									
FOX SPARROW									
SONG SPARO									
SWAMP SPARO									
W T SPARROW									
W C SPARROW									
JUNCO									
SNOW BUNTING									
REDWING B									
MEADOWLARK									
RUSTY BIRD									
C GRACKLE									
COWBIRD									
PURPL FINCH									
HOUSE FINCH									
SISKIN									
GOLDFINCH									
GROSBEAK									
HOUSE SPARO									
<b>TOTALS</b>									
<b>NO. OF SPECIES</b>									

SPECIES		WATERBIRD COUNTS	
Species	Total	Species	Total

### Index to Map Numbers

2	Great Blue Heron	53	American+Crow species
3	Tundra Swan	54	Fish Crow
4	Mute Swan	55	American+Fish+Crow species
5	Snow Goose	56	Northern Raven
6	Canada Goose	57	Black-capped Chickadee
7	Wood Duck	58	Carolina Chickadee
8	American Black Duck	59	Tufted Titmouse
9	Mallard	60	Red-breasted Nuthatch
10	American Wigeon	61	White-breasted Nuthatch
11	Canvasback	62	Brown-headed Nuthatch
12	Ring-necked Duck	63	Brown Creeper
13	Common Goldeneye	64	Carolina Wren
14	Bufflehead	65	Winter Wren
15	Hooded Merganser	66	Golden-crowned Kinglet
16	Common Merganser	67	Ruby-crowned Kinglet
17	Red-breasted Merganser	68	Eastern Bluebird
18	Black Vulture	69	Hermit Thrush
19	Turkey Vulture	70	American Robin
20	Bald Eagle	71	Gray Catbird
21	Northern Harrier	72	Northern Mockingbird
22	Sharp-shinned Hawk	73	Brown Thrasher
23	Cooper's Hawk	74	American Pipit
24	Red-shouldered Hawk	75	Cedar Waxwing
25	Red-tailed Hawk	76	European Starling
26	American Kestrel	77	Yellow-rumped Warbler
27	Ring-necked Pheasant	78	Pine Warbler
28	Ruffed Grouse	79	Palm Warbler
29	Wild Turkey	80	Northern Cardinal
30	Northern Bobwhite	81	Rufous-sided Towhee
31	Killdeer	82	American Tree Sparrow
32	Common Snipe	83	Chipping Sparrow
33	Ring-billed Gull	84	Field Sparrow
34	Herring Gull	85	Savannah Sparrow
35	Herring+Ring-billed+Gull species	86	Fox Sparrow
36	Great Black-backed Gull	87	Song sparrow
37	Rock Dove	88	Swamp Sparrow
38	Mourning Dove	89	White-throated Sparrow
39	Great Horned Owl	90	White-crowned Sparrow
40	Barred Owl	91	Dark-eyed Junco
41	Belted Kingfisher	92	Red-winged Blackbird
42	Red-headed Woodpecker	93	Eastern Meadowlark
43	Red-bellied Woodpecker	94	Rusty Blackbird
44	Yellow-bellied Sapsucker	95	Common Grackle
45	Downy Woodpecker	96	Brown-headed Cowbird
46	Hairy Woodpecker	97	Purple Finch
47	Northern Flicker	98	House Finch
48	Pileated Woodpecker	99	Pine Siskin
49	Eastern Phoebe	100	American Goldfinch
50	Horned Lark	101	Evening Grosbeak
51	Blue Jay	102	House Sparrow
52	American Crow		



### MARYLAND BIRDLIFE

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