

# Report on the Second Pennsylvania May Count - May 8, 1993

by Marshall J. Iliff

Pennsylvania's second year of participation in the North American Migration Count (NAMC) and first year of participation in International Migratory Bird Day, was certainly a successful one. Greatly increased coverage and more favorable weather produced much more impressive and representative totals. 383 observers in 213 parties walked, drove, boated and biked 5444 miles in 29 counties for 1545.4 hours to find 107,193 individuals of 208 species (and 2 hybrids) [Table 1]. Compare this to the 141 observers, 72 parties, 10 counties, 713 hours, 34,426 individuals, 182 species and 1 hybrid of last year to gauge the improvement (Iliff 1992). Every county that reported had increased coverage from last year to this year (with the exception of Butler and Lackawanna, whose lists were never received) and totals for 195 of the 208 species were greater than last year's totals for the same species. It would certainly be wonderful to see participation continue to blossom like this in the years to follow!

A pair of weak high pressure centers over New York City and east of Charleston S.C. yielded no significant precipitation, no significant wind, and no significant cloud cover: east of the Mississippi River had **no** significant weather patterns. A strong low pressure system in central Nebraska with a cold front from western Minnesota through central Texas yielded a band of torrential rains through the eastern Great Plains states, with numerous tornados in Kansas. West of this line the birding weather was generally favorable.

Reports from the NAMC coordinators in Texas, Missouri, Tennessee, and Maryland suggest that a weak migration wave moved on May 5-6 and a secondary wave on May 15-16. There was no significant movement on May 7-8-9.

A brief explanation of the count methodology appeared in last year's article (Iliff 1992), but the "separate list" issue needs reiteration. In order

to enable future analysts of the data to compute birds per 10 party hours using the "type of birding" that most accurately records the species' abundance, the "official reporting form" asked that observers record the species on 4 separate lists: **night**, **feeder**, **stationary**, and **regular**. Common sense dictates that 1 hour of "Owling", 1 hour of hawkwatching, 1 hour of feeder

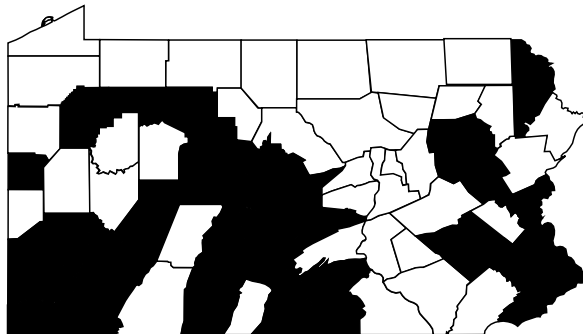


Figure 1. Participating counties

watching, and 1 hour of "regular birding" would produce quite different results. Consider the potential differences in numbers of Great-horned Owls, Sharp-shinned Hawks, House Finches and Red-eyed Vireos! While **owling** is fairly well understood to encompass any birding done before dawn and/or after dusk, **feeder watching**, **stationary** birding, and **regular** birding could use some additional explanation. The **feeder** watching category is meant to be used by those observers who spend all or a significant amount of time [an hour or more] watching birds attracted to feeders. Birders who are doing mostly **regular** birding should not list birds in the feeder watching category for every feeding station they happen to check out. **Stationary** birding differs from feeder watching only in the lack of feeders. Here, the birder remains in one location for an extended period of time [hawk watch, river watch, banding station, etc.], usually sitting on a chair or a soft rock. **Stationary** counts do not include time spent scanning gulls at a landfill, shorebirds on a tidal flat, or ducks in a lake; a **stationary** count should be at least 2 hours in one location.

**Regular** birding is really what most observers do: walk and count birds, or drive from hotspot to hotspot and take a short walk or just stand by the car. I hope this simple explanation has attested to the importance of separating the lists, and I hope that the compilers and participants will continue to cooperate, with the knowledge that this is important in the long run.

Ascertaining the extent of the nocturnal effort was somewhat enigmatic. The 12 counties reporting night hours found 151 individuals of 23 species, but several counties may not have reported their owling time (most notably Mifflin, Franklin and Philadelphia) as pre- and post-dawn times were recorded. It is important to report these numbers correctly for the reasons discussed earlier in this text. Regardless of possible reporting errors, the 6 species of Owls and Caprimulgids comprised the majority (58%) of the total night birds. 12 Screech Owls were garnered in 6 counties, 14 Great Horneds in a different 6, and 30 Barreds in yet a different set of 6 counties, with 11 of 12 "owling counties" finding some species of owl during their effort. Indiana's effort was exceptional, with 3 parties and 4.5 hours of night birding producing 51 individuals and a species count (17) more than twice that of the nearest competitor (Huntingdon, with 8).

The top ten most abundant birds were:

|                         |      |
|-------------------------|------|
| 1. American Robin       | 7206 |
| 2. European Starling    | 5990 |
| 3. Red-winged Blackbird | 5901 |
| 4. Common Grackle       | 5769 |
| 5. House Sparrow        | 2912 |
| 6. Song Sparrow         | 2865 |
| 7. House Finch          | 2763 |
| 8. Gray Catbird         | 2727 |
| 9. American Crow        | 2714 |
| 10. American Goldfinch  | 2626 |

Last year, House Sparrow and Gray Catbird did not make the list, while this year Tree Swallow and Chipping Sparrow did not make it.

The latter was largely due to the lack of any large flights (last year Mifflin had 527 while this year only 66 were recorded).

While 30 new species were added to the cumulative list with the increased coverage this year, only 5 species were missed from last year.

Reported last year only: Ring-necked Duck (2, Indi); Rusty Blackbird (27, Indi, West, Luze, Lack (24)); Common Redpoll (1, Indi); Orange-crowned Warbler (12, Butler - see corrections); Connecticut Warbler (1, West).

Reported this year only: Great Cormorant (2, Phil); Least Bittern (2, Bucks); Little Blue Heron (1, Berks); Yellow-cr. Night-Heron (1, Cumb); Northern Pintail (1, Indi); Canvasback (1, Blair); Ruddy Duck (3, Bucks); Goshawk (2, Wayne); Peregrine Falcon (4, Wayne, Phil); Northern Bobwhite (12, Miff, Phil, Fran, West); Black-necked Stilt (1, Phil); Upland Sandpiper (17, Vena, Lawr, Adams); Semi-palmated Sandpiper (11, Phil); Pectoral Sandpiper (2, Vena); Common Snipe (4, Centre, Phil, Lawr); Laughing Gull (60, Dela, Phil); Great Black-backed Gull (45, Phil, Dela); Black Tern (4, West, Cumb, Indi); N. Saw-whet Owl (1, West); Chuck-will's Widow (1, Juni); Alder Flycatcher (5, West, Wayne, Fore); Gray-cheeked Thrush (5, Nort, Dela); Loggerhead Shrike (2, Adams, Fran); Philadelphia Vireo (3, Indi, Lawr, Nort); Palm Warbler (5, Fore, Indi, Fran, Bucks); Blackpoll Warbler (146, 12 counties); Summer Tanager (5, Greene); Blue Grosbeak (9, Fran, Bucks); Dickcissel (1, Faye); Lincoln's Sparrow (1, Vena).

Several of the rarer species for which documentation was requested and received are listed below.

2 **Great Cormorants** were well-described late stragglers from the Delaware River in Philadelphia County. An increasing species, Maryland's first May Count record came in 1989, but there have since been at least two other mid-May records of the species in Maryland.

1 **Black-necked Stilt** was reported by Dorian Anderson, Tim Cook, Robert Ridgely and Chris Walters from the Philadelphia Sewage Ponds (Philadelphia County) where they have nested in recent years (*Pa. Birds* 3:79).

1 **N. Saw-whet Owl** was heard at dawn by David Johnston at a location where Saw-whet Owls had spent the winter (Westmoreland County).

1 **Chuck-will's Widow** was heard at night in Juniata County. This species is increasing through much of the East, but is still rare in Pennsylvania. The Pennsylvania Breeding Bird Atlas reported only 2 records during its mid-eighties survey period, and the NAMC provides an opportunity to record its spread (or lack thereof) through Pennsylvania.

Single **Loggerhead Shrikes**, extremely rare and declining breeders in the East (and especially Pennsylvania), were found in both Adams and Franklin Counties. The Adams County bird was recorded at the site where the first modern Pennsylvania nesting was confirmed in 1992 (Kennell 1992). The Franklin County sighting was reported by Phillip Schaff. Both reports come from the Ridge and Valley section of Pennsylvania, which lies just north of Maryland's last remnant population and where Atlas workers reported 6 possibly breeding Shrikes in the mid-eighties. Hopefully the NAMC can help monitor Shrike populations in Pennsylvania and throughout the east in the years to come.

The **Henslow's Sparrow** in Luzerne County was accompanied by excellent details, as apparently the bird was present for several days after the count, and was confirmed by the compiler, Edwin Johnson.

1 female **Dickcissel** was seen and heard at a reclaimed strip mine in Fayette County by Dave Kreuger, who provided an excellent written description.

A number of scarce spring migrants were also accompanied by written descriptions. These species are found almost annually on the Maryland counts in very small numbers, and should be found regularly on the Pennsylvania count as well, especially as many may pass through western Pennsylvania in greater numbers than through Maryland. Among these "scarce migrants" are 4 Black Terns, 1 Olive-sided Flycatcher, 5 Gray-cheeked Thrushes, 3 Philadelphia Vireos, 2 Mourning Warblers, 7 Wilson's Warblers, and a Lincoln's Sparrow.

In the exotic category, a Ruddy Shelduck in Delaware County, and a Sichuan Pheasant in Juniata County were reported, but did not make the main list.

While this year's cut of rarities included some unusual birds, the rarest sightings were not so much migrants, but of summer residents with limited populations in the northeast. Some expanding, some declining, they are just the species that the NAMC will monitor so that we can understand their changing population dynamics in the years to come.

I must again stress the importance of documentation of rarities. The checklists that were sent to compilers and some participants indicated which species would require documentation and the extent of documentation necessary. In general, documentation was sufficient, and in some cases it was extensive. However, 2 Connecticut Warblers, very rare migrants in the East in spring, were submitted from Northampton County without comment, and were deleted. Similarly, the 20 Gray-cheeked Thrushes from Forest County represented an extraordinary number of a fairly scarce migrant, were not adequately documented, and were deleted. Please note however, that such deletions are not final. The 12 Orange-crowned Warblers that were deleted last year from Butler county for lack of documentation, have been re-entered in to the master data base due to the excellent documentation submitted after the article was printed.

In the following discussion of species ranges and population fluctuations as shown by the NAMC, the maps (figures 3-8) are meant to show the concentrations of each species in Pennsylvania. They were formed quite simply by listing each species in birds per 10 "regular" party hours from most to least and dividing them into 4 abundance categories. The divisions of these categories varies from species to species in order to show areas of specific concentration, rather than a species' abundance relative to other species.



Figure 2. Relative abundance key.

Figure 2 shows the different degrees of shading in 6 southern Pennsylvania counties and is meant to be used as a key. They are arranged from darkest to lightest with the first four showing varying species densities, the fifth pattern indicating 0 individuals in the given county, and the rightmost, pure white county indicating that no report was received from that county.

Attesting to the accuracy of such maps Figures 3 and 4 show the distribution of two similar species, the White-eyed Vireo and Solitary Vireo, that should be mostly on their breeding grounds at this point (Iloff *et al.*, unpublished ms.). Comparing these maps with those of the *Atlas of Breeding Birds in Pennsylvania* (Brauning 1992) reveals very similar centers of abundance.

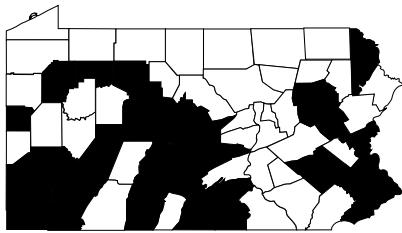


Figure 3. White-eyed Vireo

White-eyed Vireos (Fig. 3) were most concentrated in the southwestern counties (Greene, Lawrence, Washington, Fayette and Westmoreland) with a secondary concentration in the Southeast (Bucks, Delaware, Philadelphia, Berks). Scattered sightings throughout the Appalachians and High Plateau sections (Brauning 1992) also conform with the atlas maps.

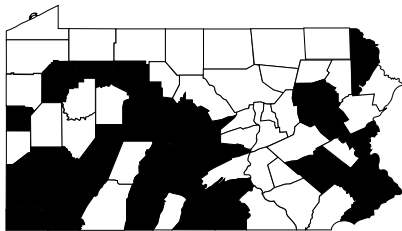


Figure 4. Solitary Vireo

The Solitary Vireo's NAMC map (Figure 4) and Atlas map similarly show the species' areas of concentration: in this case the Appalachian, the Allegheny Mountain, the Allegheny High Plateau and the Pocono Plateau

sections (see Brauning 1992). Clearly, however, some migration was still occurring as these birds were recorded in the Southeastern counties as well, where they do not nest (Brauning 1992).

This year's migration on count day ranged from excellent in eastern Pennsylvania to poor in the western portion of the state. Compare the comments from eastern Pennsylvania (Delaware and Berks Counties) to those of western Pennsylvania (Allegheny and Lawrence Counties). Figures 5 through 8 depict the centers of abundance of several species that, while some nest, are principally migrants through the state. These maps show that these migrants were concentrated in eastern Pennsylvania. Numerous other unpublished maps showed similar concentrations in the east (Black-throated Blue, Chestnut-sided, Magnolia, etc...).

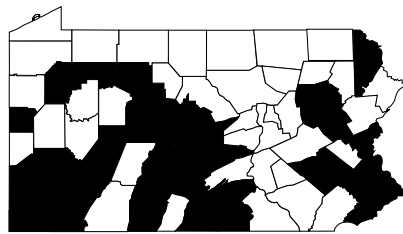


Figure 5. "Myrtle" Warbler

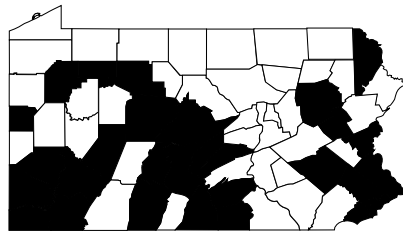


Figure 6. White-throated Sparrow

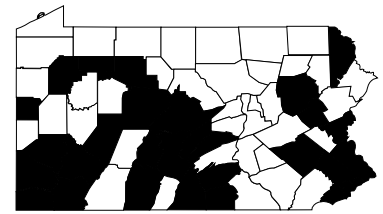


Figure 7. Veery

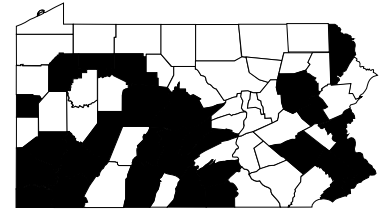


Figure 8. Black-and-white Warbler

Figures 9 and 10 are meant to show the different migration routes of two similar species of warblers. The Blackpolls migrate through the eastern part of the state while the Bay-breasteds move through the west. These maps present the very kind of information that this count is hoped to produce: A snapshot of migration on the given day.

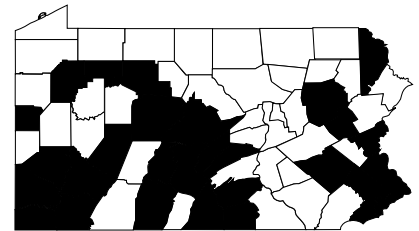


Figure 9. Blackpoll Warbler

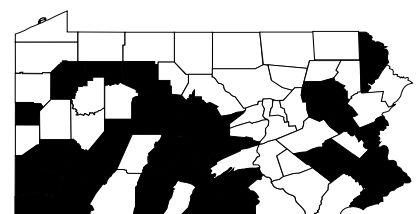


Figure 10. Bay-breasted Warbler

The following comments were received along with the compiler's list and lend further support to the Southeast migrant fallout shown by the maps.

*"May 7 was a great day for birds and migration. There were birds all over the place. This was one of the biggest migrations in a long time. It was like back in the 1950s."*

- John C. Miller, Delaware County

*"The highest number of warblers were recorded along the Kittatinny ridge, a continuous ribbon of forest along north Berks that is a migrant highway. Kerry Grim and Dean Kendall walked stretches of it and found Ovenbird heaven."*

- Rudy Keller, Berks County

*"Almost no fallout of migrants. All but a handful of the warbler species are returned local nesters."*

- Paul Hess, Allegheny County

*"Warbler variety very disappointing and numbers way down from last year. Maybe many went through early. Also very disappointed in flycatcher count and variety."*

- Barbara Dean, Lawrence County

A number of interesting trends showed up in comparison to last year's data, and were often supported by Maryland's more extensive pool of data.

Many observers commented on the lack of cuckoos last year and the comparative increase this year. Comparing Pennsylvania's data from this year and last year shows a tenfold increase in both species from last year to this year (Tables 2 and 3). Even more meaningful is the Maryland data which similarly shows a 6 year low for both species in 1992 and while the 1993 numbers are almost double the 1992 numbers, they were still at the second lowest in 6 years (please note that the date of the count varies from year to year, so some fluctuations are attributable to the date of the count).

Table 2. Yellow-billed Cuckoo

|    | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  |
|----|-------|-------|-------|-------|-------|-------|
| MD | 2.701 | 1.714 | 1.834 | 2.367 | 0.700 | 1.560 |
| PA | -     | -     | -     | -     | 0.018 | 0.158 |

Table 3. Black-billed Cuckoo

|    | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  |
|----|-------|-------|-------|-------|-------|-------|
| MD | 0.376 | 0.268 | 0.333 | 0.296 | 0.193 | 0.235 |
| PA | -     | -     | -     | -     | 0.018 | 0.158 |

Another species whose numbers on the count fluctuate greatly from year to year is the Blackpoll Warbler. Some of this fluctuation is also attributable to changing count dates, but some is also controlled by other factors. Table 4 compares the numbers for Pennsylvania and Maryland, and shows that a significant influx occurred in 1993 that had not arrived by May 9 of last year.

Table 4. Blackpoll Warbler

|    | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  |
|----|-------|-------|-------|-------|-------|-------|
| MD | 1.624 | 0.673 | 0.739 | 2.981 | 0.259 | 2.750 |
| PA | -     | -     | -     | -     | 0.000 | 0.959 |

While compiling the data, I noticed exceptional numbers of "Baltimore" Orioles from Pennsylvania and couldn't help but wonder if this was consistent with the Maryland data.

Table 5. "Baltimore" Oriole

|    | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  |
|----|-------|-------|-------|-------|-------|-------|
| MD | 5.691 | 5.672 | 4.576 | 5.257 | 4.500 | 5.810 |
| PA | -     | -     | -     | -     | 3.680 | 7.580 |

Indeed, Table 5, shows that numbers this year were above average, and the high numbers in Pennsylvania were probably closely correlated with the high numbers in Maryland.

\* \* \*

As each year introduces new information, our understanding of the patterns and processes of migration to and through Pennsylvania will increase. There is so much still to be learned...but do we have the time?

I extend my thanks again to all observers that participated this year, and especially to the county compilers. My sincerest thanks are extended to Frank and Barbara Haas for their advice and help with both the data and the layout of the article. Most importantly I wish to extend special thanks to Jim Stasz for his help and undying support throughout the writing of this article, and over the past three years. Next year we may have a new state coordinator, and it's hoped the Pennsylvania effort will continue to boom.

\*\*\*\*\*

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#### CORRECTIONS TO THE 1992 MAY COUNT:

The following errors from last year's article are hereby corrected:

On page 59, the 4th most common species should read Common Grackle with 1,914.

In the table, the American Bittern reported from Juniata County was an error, thus the total is 1 in 1 county.

Details were received for the 12 Orange-crowned Warblers in Butler County, so they should be added to the main list, thus the total species for Butler should read 108, and the total individuals, 2,344.

The total species recorded in Pennsylvania on the count should therefore read 183, and the total individuals, 34,437.

Juniata County reported 6 hours owling, bringing the total hours to 21 hours owling. Juniata also reported 6.5 miles foot, 198 miles car with 204.5 total miles traveled, and bringing the state totals to 208.5, 2492 and 2698.5 respectively. ♣

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Table 1. Statewide May Count, 8 May 1993

|                            | Gree. | Faye. | Wash. | Alle. | West. | Indi. | Lawr. | Vena. | Fore. | Elk. | Clea. | Cent. | Bedf. | Blair. | Hunt. | Miff. | Juni. | Fran. | Adam. | Cumb. | Wayn. | Luze. | Carb. | Nort. | Berk. | Mont. | Bucks. | Phil. | Dela. | Tot. | #Co.s |    |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|------|-------|----|
| Common Loon                | -     | -     | -     | -     | 2     | 2     | -     | 4     | -     | 2    | -     | 1     | -     | 3      | 1     | 2     | -     | 1     | -     | -     | 5     | 4     | 2     | -     | -     | -     | 2      | 1     | -     | 32   | 14    |    |
| Pied-billed Grebe          | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | 1     | 1     | -     | -     | 6     | 3     | -     | -     | -     | -      | -     | -     | -    | 11    | 4  |
| Great Cormorant            | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -      | -     | 2     | -    | 1     |    |
| Double-crested Cormorant   | -     | -     | -     | -     | -     | -     | -     | -     | 4     | -    | 6     | -     | -     | -      | -     | -     | -     | -     | -     | -     | 6     | -     | -     | -     | 3     | -     | 51     | 206   | 102   | 378  | 7     |    |
| American Bittern           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | 1     | -     | -     | -     | -     | 2      | -     | -     | 3    | 2     |    |
| Least Bittern              | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -      | -     | -     | -    | 2     | 1  |
| Great Blue Heron           | 16    | -     | -     | -     | 16    | 5     | 4     | 3     | 2     | 6    | 2     | -     | 3     | 3      | 2     | 2     | -     | 5     | -     | 4     | 19    | 3     | -     | -     | 20    | -     | 9      | 8     | 4     | 136  | 20    |    |
| Great Egret                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -     | -     | -      | 8     | 7     | 16   | 3     |    |
| Little Blue Heron          | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | 1     | -     | -     | -      | -     | -     | 1    | 1     |    |
| Green Heron                | -     | 1     | -     | 3     | 5     | 4     | 2     | 1     | -     | -    | 1     | 6     | -     | 6      | 4     | 1     | -     | 11    | -     | 1     | 3     | 4     | 1     | -     | 8     | -     | 6      | 10    | 2     | 80   | 20    |    |
| Black-crowned Night-Heron  | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | 1     | -     | 32    | -     | 1     | -     | -     | -     | -     | -      | 61    | 44    | 139  | 5     |    |
| Yellow-crowned Night-Heron | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -     | -     | -     | -      | -     | -     | 1    | 1     |    |
| Tundra Swan                | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | 2     | -     | -     | -     | -     | -     | -     | -      | -     | -     | 3    | 2     |    |
| Mute Swan                  | -     | -     | -     | -     | 10    | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | 1     | -     | -     | -     | -     | -     | -     | 3     | -     | 2      | -     | -     | 16   | 4     |    |
| Canada Goose               | 41    | 6     | -     | 2     | 99    | 94    | 40    | 55    | 81    | 49   | -     | 16    | -     | 21     | 12    | 26    | 27    | 62    | 59    | 98    | 117   | 64    | 20    | 21    | 230   | 82    | 157    | 704   | 235   | 2418 | 26    |    |
| Wood Duck                  | 3     | 11    | -     | -     | 21    | 27    | 3     | 2     | 6     | 13   | 2     | 3     | 3     | -      | 10    | 2     | 13    | 24    | 1     | 2     | 44    | 12    | -     | -     | 13    | -     | 31     | 39    | 36    | 321  | 23    |    |
| American Black Duck        | -     | -     | -     | -     | -     | -     | -     | -     | 1     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | 2     | -     | -     | 1     | 18    | -     | -     | -      | 9     | 10    | 41   | 6     |    |
| Mallard                    | 9     | 16    | -     | 2     | 113   | 121   | 58    | 15    | 6     | 10   | 36    | 35    | 8     | 42     | 30    | 37    | 37    | 126   | 15    | 59    | 29    | 1     | 6     | 9     | 52    | 11    | 134    | 248   | 38    | 1303 | 28    |    |
| Northern Pintail           | -     | -     | -     | -     | -     | 1     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -      | -     | -     | 1    | 1     |    |
| Blue-winged Teal           | -     | -     | -     | -     | -     | -     | -     | 2     | -     | -    | -     | -     | -     | -      | 1     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -      | 4     | -     | 10   | 4     |    |
| American Wigeon            | -     | -     | -     | -     | 1     | -     | 2     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -     | -     | -     | -      | -     | 4     | 3    |       |    |
| Canvasback                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | 1      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -      | -     | 1     | 1    | 1     |    |
| Lesser Scaup               | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -      | -     | -     | 1    | 1     |    |
| Bufflehead                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | 2     | -     | -     | -     | -     | -     | -     | -     | -     | -      | -     | 2     | 1    | 1     |    |
| Hooded Merganser           | -     | -     | -     | -     | -     | -     | -     | -     | 2     | 5    | -     | -     | -     | -      | 1     | -     | -     | -     | -     | -     | 2     | 3     | -     | -     | -     | -     | -      | -     | 13    | 5    | 5     |    |
| Common Merganser           | -     | -     | -     | -     | -     | -     | -     | -     | 15    | 10   | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | 14    | 1     | -     | -     | -     | -     | 1      | -     | -     | 41   | 5     |    |
| Red-breasted Merganser     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 3    | -     | -     | -     | -      | 1     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 1      | 1     | -     | 6    | 4     |    |
| Ruddy Duck                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 3      | -     | 3     | 1    | 1     |    |
| Black Vulture              | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | 16    | 5     | -     | -     | -     | -     | -     | 8     | -     | -      | -     | 29    | 3    | 3     |    |
| Turkey Vulture             | 35    | 6     | 2     | -     | 41    | 46    | 3     | 15    | 28    | 21   | 7     | 13    | 6     | 62     | 45    | 27    | 25    | 135   | 16    | 19    | 42    | 57    | 9     | 17    | 82    | 8     | 71     | 12    | 22    | 872  | 28    |    |
| Osprey                     | -     | -     | -     | -     | -     | 1     | -     | 1     | 2     | 2    | 2     | 1     | 1     | 1      | 2     | 1     | 1     | 1     | -     | 3     | -     | 4     | -     | -     | 2     | -     | 7      | 1     | -     | 33   | 17    |    |
| Bald Eagle                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | 2     | -     | -     | -     | -     | -     | -      | -     | -     | 2    | 1     | 1  |
| Northern Harrier           | -     | -     | -     | -     | -     | 1     | -     | -     | -     | 1    | -     | -     | -     | -      | -     | -     | -     | 1     | -     | -     | -     | 2     | -     | -     | -     | -     | -      | 1     | -     | 6    | 5     | 5  |
| Sharp-shinned Hawk         | 1     | -     | -     | -     | 6     | 2     | 2     | 1     | -     | 1    | -     | 1     | 2     | 2      | -     | -     | 1     | -     | -     | -     | 3     | 2     | 1     | -     | 2     | -     | 2      | -     | 1     | 27   | 14    | 14 |
| Cooper's Hawk              | 5     | 1     | -     | -     | 7     | 3     | -     | 1     | -     | 1    | 2     | -     | 2     | 2      | -     | -     | 2     | -     | -     | -     | 4     | 2     | -     | -     | 1     | -     | -      | 1     | -     | 32   | 13    | 13 |
| Northern Goshawk           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | 2     | -     | -     | -     | -     | -     | -      | -     | -     | 2    | 1     | 1  |
| Red-shouldered Hawk        | 1     | 1     | -     | -     | 3     | -     | -     | -     | 1     | 5    | -     | -     | -     | -      | 2     | -     | 1     | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -      | -     | -     | 15   | 8     | 8  |
| Broad-winged Hawk          | 1     | 1     | -     | -     | 5     | 4     | -     | 1     | -     | 4    | 3     | 3     | 4     | -      | 6     | -     | 3     | -     | -     | 1     | 2     | 5     | 6     | -     | -     | 1     | 5      | -     | 2     | 57   | 18    | 18 |
| Red-tailed Hawk            | 11    | 1     | -     | 2     | 26    | 28    | 8     | 5     | 2     | 1    | 1     | 7     | 4     | 6      | 13    | 4     | 3     | 17    | 2     | 7     | 14    | 5     | -     | 13    | 22    | 4     | 20     | 13    | 4     | 243  | 27    | 27 |
| buteo sp.                  | -     | -     | -     | -     | -     | -     | -     | -     | -     | 2    | 1     | -     | -     | -      | -     | -     | -     | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -      | -     | -     | 4    | 3     | 3  |
| American Kestrel           | 1     | -     | -     | -     | 14    | 23    | 2     | 1     | -     | 1    | 1     | 6     | 4     | 2      | 5     | 5     | 6     | 10    | 2     | 6     | 6     | 2     | -     | -     | 14    | 1     | 6      | 9     | 4     | 131  | 23    | 23 |
| Peregrine Falcon           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -     | -     | -      | -     | -     | -     | -     | -     | -     | 1     | -     | -     | -     | -     | -     | 3      | 2     | 6     | 3    | 3     | 3  |
| Ring-necked Pheasant       | 9     | 2     | -     | -     | 22    | 5     | 1     | 1     | -     | 2    | 2     | -     | 2     | 1      | 3     | 4     | 10    | -     | 8     | 1     | 2     | -     | -     | 3     | 7     | 1     | 13     | 35    | 25    | 159  | 22    | 22 |
| Ruffed Grouse              | 7     | -     | -     | -     | 1     | 21    | -     | 2     | 4     | 3    | 2     | 3     | 2     | 2      | -     | 9     | 6     | 1     | 2     | 1     | 4     | 6     | -     | 4     | 9     | -     | 1      | -     | -     | 79   | 18    | 18 |
| Wild Turkey                | 34    | -     | -     | -     | 1     | 39    | 19    | -     | 7     | 1    | -     | 14    | 1     | 4      | 6     | 8     | 1     | 4     | 1     | -     | 17    | 17    | -     | 1     | 1     | 4     | 3      | -     | -     | 183  | 20    | 20 |

Table 1. Statewide May Count, 8 May 1993 (cont.)

|                           | Gree. | Faye. | Wash. | Alle. | West. | Indi. | Lawr. | Vena. | Fore. | Elk. | Clea. | Cent. | Bedf. | Blair | Hunt. | Miff. | Junl. | Fran. | Adam. | Cumb. | Wayn. | Luze. | Carb. | Nort. | Berk. | Mont. | Bucks | Phil. | DeLa. | Tot. | #Cos |     |    |   |  |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-----|----|---|--|
| Northern Bobwhite         |       |       |       |       |       | 6     |       |       |       |      |       |       |       |       |       | 1     |       | 3     |       |       |       |       |       |       |       |       |       |       | 2     |      | 12   | 4   |    |   |  |
| Virginia Rail             |       |       |       |       |       | 1     |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       | 3     |       |       |       |       | 3     |       |      | 7    | 3   |    |   |  |
| Sora                      |       |       |       |       | 2     |       | 1     |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       | 4     |       |       |       |       | 4     |       |      | 11   | 4   |    |   |  |
| Common Moorhen            |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 25    |      | 12   | 37  | 2  |   |  |
| American Coot             |       |       |       |       |       | 1     |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       | 1     |       |       |       |       |       |       |      | 2    | 2   |    |   |  |
| Killdeer                  | 41    | 9     | 1     | 4     | 55    | 97    | 20    | 5     | 7     | 13   | 13    | 3     | 3     | 12    | 10    | 4     | 11    | 66    | 5     | 22    | 28    | 19    | 1     | 5     | 12    |       | 14    | 46    | 10    | 536  | 28   |     |    |   |  |
| Black-necked Stilt        |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1    | 1    | 1   |    |   |  |
| Greater Yellowlegs        |       |       |       |       |       | 4     | 1     | 1     |       |      |       | 3     |       |       |       |       |       | 1     |       | 2     |       | 2     |       |       |       |       |       |       | 19    | 4    | 37   | 9   |    |   |  |
| Lesser Yellowlegs         |       |       |       |       |       | 1     | 1     | 1     | 1     | 1    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 4    | 6    | 3   |    |   |  |
| Solitary Sandpiper        | 2     | 3     |       |       | 1     | 2     |       | 1     |       | 1    | 1     | 4     |       | 3     | 5     |       |       | 1     |       | 5     |       | 1     | 3     |       |       | 6     |       | 9     | 9     | 6    | 63   | 18  |    |   |  |
| Spotted Sandpiper         |       |       |       | 1     | 9     | 14    |       | 4     | 1     | 6    | 1     | 11    | 1     | 9     | 7     | 1     | 11    | 14    | 1     | 8     | 3     | 9     |       |       |       | 13    |       | 6     | 13    | 5    | 148  | 22  |    |   |  |
| Upland Sandpiper          |       |       |       |       |       |       | 4     | 2     |       |      |       |       |       |       |       |       | 11    |       |       |       |       |       |       |       |       |       |       |       |       |      | 17   | 3   |    |   |  |
| Semipalmated Sandpiper    |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 11    |      | 11   | 1   |    |   |  |
| Least Sandpiper           |       |       |       |       |       | 2     |       | 1     |       |      |       | 3     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 17    | 8    | 31   | 5   |    |   |  |
| Pectoral Sandpiper        |       |       |       |       |       |       |       | 2     |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      | 2    | 1   |    |   |  |
| Common Snipe              |       |       |       |       |       |       | 2     |       |       |      |       | 1     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1    | 4    | 3   |    |   |  |
| American Woodcock         |       |       |       |       |       | 3     | 6     | 4     |       | 1    |       |       |       |       | 10    |       |       |       | 1     | 2     | 3     |       |       |       |       |       |       |       | 1     | 31   | 9    |     |    |   |  |
| Laughing Gull             |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 37   | 23   | 60  | 2  |   |  |
| Bonaparte's Gull          |       |       |       |       |       | 1     |       |       |       |      |       | 2     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      | 3    | 2   |    |   |  |
| Ring-billed Gull          |       |       |       |       |       | 3     | 22    | 3     |       | 8    |       | 41    |       |       |       |       | 2     |       |       | 35    | 26    | 1     | 18    |       | 24    |       | 71    | 79    | 35    | 368  | 14   |     |    |   |  |
| Herring Gull              |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      | 137  | 4   |    |   |  |
| Great Black-backed Gull   |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 20   | 25   | 45  | 2  |   |  |
| Black Tern                |       |       |       |       |       | 1     | 2     |       |       |      |       |       |       |       |       |       |       |       | 1     |       |       |       |       |       |       |       |       |       |       |      | 4    | 3   |    |   |  |
| Rock Dove                 | 17    | 18    |       | 10    | 85    | 58    | 12    | 26    | 13    | 24   | 26    | 24    | 56    | 36    | 52    | 74    | 114   | 158   | 10    | 119   | 43    | 54    | 4     | 1     | 82    | 2     | 55    | 546   |       | 1719 | 27   |     |    |   |  |
| Mourning Dove             | 88    | 51    |       | 17    | 200   | 231   | 15    | 18    | 20    | 30   | 60    | 35    |       | 38    | 44    | 70    | 29    | 197   | 14    | 68    | 140   | 88    | 22    | 31    | 100   | 51    | 123   | 470   | 105   | 2355 | 27   |     |    |   |  |
| Black-billed Cuckoo       | 8     | 1     | 1     |       | 2     | 6     |       |       |       |      | 1     | 3     |       |       | 1     |       |       |       |       |       | 1     | 1     |       |       |       |       |       |       | 2     | 2    | 29   | 12  |    |   |  |
| Yellow-billed Cuckoo      | 5     | 1     |       |       | 4     | 2     |       |       |       |      | 1     |       |       |       | 4     |       |       |       |       |       |       |       |       |       |       |       |       |       | 6     | 2    | 25   | 8   |    |   |  |
| Barn Owl                  |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1     |      | 1    | 1   |    |   |  |
| Eastern Screech-Owl       |       |       |       |       |       | 5     | 3     | 4     | 1     | 1    |       | 4     |       | 1     |       |       | 2     | 1     |       |       |       | 1     |       |       |       |       |       |       |       |      | 23   | 10  |    |   |  |
| Great Horned Owl          | 2     |       |       |       |       | 4     | 3     |       |       |      |       |       |       | 3     | 4     |       | 1     | 2     | 1     |       |       |       |       |       |       | 2     | 7     | 2     | 1     | 3    | 36   | 14  |    |   |  |
| Barred Owl                | 5     | 1     | 1     |       | 6     | 2     |       |       |       | 23   |       |       |       |       | 2     |       |       | 6     | 1     | 2     |       | 2     |       |       |       |       |       |       |       |      | 51   | 11  |    |   |  |
| Northern Saw-whet Owl     |       |       |       |       |       | 1     |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      | 1    | 1   |    |   |  |
| Common Nighthawk          | 2     |       |       |       |       | 5     |       |       |       |      | 1     |       |       |       |       |       |       | 1     | 2     |       |       |       |       |       |       |       |       | 2     | 2     | 20   | 10   |     |    |   |  |
| Chuck-will's-widow        |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       | 1     |       |       |       |       |       |       |       |       |       |       |       |      | 1    | 1   |    |   |  |
| Whip-poor-will            |       |       |       |       |       |       | 1     |       | 3     |      | 4     |       |       | 2     | 2     | 8     |       | 2     |       |       |       | 1     | 10    |       |       |       |       |       |       |      | 33   | 9   |    |   |  |
| Chimney Swift             | 63    | 43    | 3     | 20    | 150   | 178   | 58    | 21    | 2     | 6    | 34    | 40    | 5     | 23    | 38    | 15    | 44    | 113   | 3     | 83    | 61    | 59    |       |       | 9     | 55    | 3     | 126   | 71    | 88   | 1414 | 28  |    |   |  |
| Ruby-throated Hummingbird | 16    | 16    |       | 3     | 30    | 59    | 2     | 4     | 5     | 4    | 15    | 3     | 21    | 6     | 12    | 34    | 11    | 18    | 5     | 6     | 10    | 2     |       |       | 3     | 4     | 3     | 7     | 1     | 10   | 310  | 27  |    |   |  |
| Belted Kingfisher         | 1     | 1     |       |       | 5     | 10    | 1     | 2     | 7     |      | 1     | 9     | 3     | 3     | 8     | 3     | 3     | 10    | 1     | 3     | 8     | 8     | 3     | 1     | 3     | 1     | 6     | 5     | 2     | 108  | 26   |     |    |   |  |
| Red-headed Woodpecker     |       |       |       |       |       |       | 1     |       |       |      | 1     | 1     |       |       |       |       | 2     | 5     | 2     | 1     |       |       |       |       |       |       |       |       |       |      | 15   | 9   |    |   |  |
| Red-bellied Woodpecker    | 19    | 5     | 1     | 4     | 34    | 27    | 7     | 3     | 2     |      |       | 12    | 5     | 13    | 20    | 14    | 12    | 79    | 5     | 15    |       | 2     |       |       |       |       |       |       |       | 26   | 560  | 25  |    |   |  |
| Yellow-bellied Sapsucker  |       |       |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |     | 18 | 3 |  |
| Downy Woodpecker          | 11    | 6     |       | 2     | 48    | 33    | 4     | 3     | 5     | 11   | 21    | 12    | 6     | 19    | 18    | 19    | 10    | 52    | 9     | 16    | 44    | 19    | 2     |       | 16    | 42    | 11    | 30    | 67    | 12   | 548  | 28  |    |   |  |
| Hairy Woodpecker          | 4     | 3     | 1     | 1     | 6     | 12    | 1     | 3     | 4     | 7    | 5     | 3     | 5     | 7     | 3     | 12    | 3     |       | 2     | 6     | 9     | 1     | 3     | 2     | 9     | 3     | 3     | 15    | 13    | 146  | 28   |     |    |   |  |
| Northern Flicker          | 26    | 4     | 3     | 3     | 38    | 65    | 3     | 15    | 11    | 9    | 13    | 15    | 10    | 14    | 29    | 20    | 9     | 67    | 5     | 21    | 28    | 17    | 4     | 22    | 45    | 14    | 31    | 131   | 45    | 717  | 29   |     |    |   |  |
| Pileated Woodpecker       | 9     | 3     | 1     | 1     | 21    | 12    | 2     | 2     | 6     | 2    | 1     | 4     | 1     | 8     | 14    | 4     | 9     | 18    | 3     | 2     | 7     | 6     | 3     |       |       | 4     |       |       | 1     | 3    | 2    | 149 | 27 |   |  |









Table 1. Statewide May Count, 8 May 1993 (cont.)

|                        | Greer. | Faye.Wash. | Alle.West. | Indi. | Lawr. | Vena. | Fore. | Elk.  | Clea. | Cent.  | Bedf.  | Blair | Hunt. | Miff. | Junj. | Fran. | Adam. | Cumb. | Wayn. | Luze. | Carb. | Nort. | Berk. | Mont. | Bucks | Phil. | Dela. | Tot.  |       |        |
|------------------------|--------|------------|------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Observers              | 13     | 4          | 1          | 3     | 26    | 26    | 4     | 5     | 11    | 16     | 12     | 10    | 6     | 11    | 8     | 4     | 40    | 3     | 14    | 17    | 14    | 2     | 10    | 13    | 8     | 46    | 45    | 9     | 383   |        |
| Parties                | 9      | 5          | 1          | 2     | 16    | 18    | 1     | 2     | 5     | 6      | 7      | 2     | 6     | 7     | 5     | 2     | 20    | 2     | 10    | 9     | 8     | 1     | 5     | 9     | 6     | 16    | 24    | 4     | 213   |        |
| Hours foot             | 31.0   | 17.0       | 8.0        | 6.0   | 63.8  | 62.3  | 9.5   | 5.0   | 30.0  | 19.0   | 20.5   | 18.0  | 8.5   | 28.0  | 23.0  | 2.0   | 6.5   | 60.0  | 7.5   | 29.5  | 42.0  | 27.5  | 6.0   | 34.5  | 51.0  | 14.0  | 48.0  | 101.5 | 8.0   | 787.5  |
| Hours car              | 18.0   | 12.5       | 0.0        | 1.5   | 35.5  | 67.0  | 3.0   | 13.5  | 8.0   | 16.5   | 9.5    | 11.0  | 1.5   | 22.0  | 23.5  | 7.0   | 12.5  | 46.0  | 2.3   | 12.0  | 43.0  | 12.5  | 2.5   | 2.0   | 12.8  | 0.5   | 10.0  | 8.0   | 6.0   | 420.0  |
| Hours boat             | 0.0    | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 3.5    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 3.5    |
| Hours canoe/kayak      | 0.0    | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    |
| Hours bike             | 0.0    | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 5.0   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 5.0    |
| Miles foot             | 13.0   | 6.0        | 5.5        | 6.0   | 49.0  | 48.5  | 6.0   | 5.0   | 26.0  | 19.0   | 15.0   | 15.5  | 1.5   | 12.0  | 24.0  | 4.0   | 6.0   | 35.0  | 6.0   | 11.0  | 35.0  | 19.5  | 10.0  | 16.5  | 32.8  | 11.5  | 40.0  | 79.8  | 22.0  | 581.0  |
| Miles car              | 167.0  | 182.0      | 0.0        | 20.0  | 362.0 | 705.0 | 85.0  | 174.0 | 91.0  | 178.0  | 91.0   | 159.0 | 10.0  | 112.0 | 227.0 | 240.0 | 175.0 | 281.0 | 50.0  | 142.0 | 260.0 | 298.0 | 80.0  | 15.0  | 114.0 | 1.5   | 68.5  | 16.0  | 350.0 | 4656.2 |
| Miles boat             | 0.0    | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    |
| Miles canoe/kayak      | 0.0    | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    |
| Miles bike             | 0.0    | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 9.5   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 9.5    |
| Hours Feeder Watch     | 7.0    | 2.0        | 0.5        | 0.0   | 14.5  | 23.8  | 0.0   | 8.0   | 3.5   | 6.5    | 17.0   | 7.0   | 3.5   | 13.0  | 1.0   | 11.5  | 3.0   | 6.0   | 0.0   | 8.0   | 0.0   | 0.0   | 0.0   | 3.0   | 14.0  | 1.0   | 0.0   | 14.5  | 3.0   | 171.3  |
| # Feeder Watchers      | 4      | 1          | 1          | 0     | 4     | 14    | 0     | 2     | 3     | 4      | 12     | 6     | 2     | 3     | 1     | 6     | 1     | 7     | 0     | 4     | 0     | 0     | 2     | 7     | 1     | 0     | 4     | 2     | 91    |        |
| # Feeding Stations     | 4      | 1          | 1          | 0     | 4     | 14    | 0     | 3     | 3     | 4      | 10     | 3     | 1     | 6     | 1     | 5     | 0     | 4     | 0     | 0     | 0     | 0     | 2     | 6     | 1     | 0     | 4     | 2     | 86    |        |
| Hours Stationary       | 19.0   | 0.0        | 3.0        | 3.0   | 12.0  | 21.5  | 0.0   | 0.0   | 5.0   | 4.0    | 5.0    | 0.0   | 8.0   | 1.0   | 0.0   | 0.0   | 7.0   | 5.0   | 2.5   | 1.0   | 0.0   | 0.0   | 0.0   | 13.0  | 4.8   | 0.0   | 8.5   | 0.0   | 4.0   | 127.3  |
| # Parties Stationary   | 4      | 0          | 1          | 1     | 2     | 4     | 0     | 0     | 1     | 4      | 4      | 0     | 2     | 1     | 0     | 4     | 4     | 1     | 1     | 0     | 0     | 0     | 3     | 3     | 0     | 2     | 0     | 2     | 44    |        |
| # Observers Stationary | 6      | 0          | 1          | 1     | 2     | 5     | 0     | 0     | 1     | 6      | 4      | 0     | 1     | 0     | 0     | 5     | 4     | 2     | 1     | 0     | 0     | 0     | 3     | 4     | 0     | 4     | 0     | 2     | 53    |        |
| Hours Owling           | 0.0    | 0.0        | 1.0        | 0.0   | 0.5   | 4.5   | 0.0   | 3.0   | 0.0   | 5.0    | 0.0    | 0.5   | 0.0   | 4.0   | 3.5   | 0.0   | 1.0   | 1.5   | 0.0   | 1.0   | 0.0   | 2.0   | 1.0   | 0.0   | 0.3   | 0.0   | 0.0   | 0.0   | 2.0   | 30.8   |
| Miles Owling           | 0.0    | 0.0        | 0.0        | 0.0   | 7.0   | 8.0   | 0.0   | 56.0  | 0.0   | 22.0   | 0.0    | 0.0   | 2.0   | 21.5  | 0.0   | 14.0  | 22.3  | 0.0   | 0.0   | 0.0   | 15.0  | 5.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 20.0  | 192.8  |
| # Parties Owling       | 0      | 0          | 1          | 0     | 1     | 3     | 0     | 2     | 0     | 2      | 0      | 1     | 0     | 3     | 3     | 0     | 1     | 2     | 0     | 4     | 0     | 1     | 1     | 0     | 1     | 0     | 0     | 0     | 2     | 28     |
| # Observers Owling     | 0      | 0          | 1          | 0     | 1     | 6     | 0     | 4     | 0     | 3      | 0      | 2     | 0     | 3     | 4     | 0     | 1     | 3     | 0     | 4     | 0     | 2     | 0     | 1     | 0     | 0     | 0     | 0     | 2     | 39     |
| Time Start             | 0545   | 0730       | 0630       | 0600  | 0600  | 0440  | 0800  | 0530  | 0700  | 0700   | ? 0600 | 0530  | 0400  | 0400  | 0400  | 0515  | 0000  | 0515  | 0600  | 0530  | 0400  | 0630  | 0530  | 0800  | 0530  | 0800  | 0600  | 0330  | 0500  |        |
| Time Stop              | 2000   | 2000       | 2130       | 1300  | 1900  | 2300  | 2030  | 2030  | 2400  | ? 2315 | 1930   | 2200  | 2300  | 2100  | 2115  | 2400  | 1940  | 2200  | 2000  | 1900  | 1500  | 1900  | 1930  | 1200  | 2045  | 1700  | 1900  |       |       |        |
| Temperature            | -      | -          | -          | 48    | 47    | 44    | 50    | 40    | -     | 60     | -      | -     | 37    | 41    | 45    | 48    | 44    | 50    | 55    | -     | 50    | 42    | -     | 50    | 49    | -     | -     | 52    | 60    |        |
| Pre-dawn               | 39     | 46         | 45         | 56    | 50    | 44    | -     | 40    | 49    | 60     | -      | 45    | 39    | 42    | 45    | 50    | 47    | 54    | 60    | 46    | 52    | 43    | -     | 50    | -     | -     | 55    | 65    |       |        |
| Dawn                   | -      | 54         | 65         | 66    | 56    | 65    | -     | 60    | 62    | 70     | -      | 68    | 60    | 50    | 58    | 64    | 60    | 65    | -     | 60    | 62    | 45    | 52    | -     | -     | -     | 43    | 69    |       |        |
| AM                     | 78     | 78         | 75         | 74    | 74    | 76    | -     | 80    | 73    | 80     | -      | 74    | 70    | 70    | 70    | 82    | 75    | 70    | -     | 68    | 74    | -     | 75    | 51    | -     | -     | 73    | 73    |       |        |
| Noon                   | 84     | 80         | 80         | 78    | 80    | 83    | 70    | 90    | 78    | 78     | -      | 79    | 75    | 75    | 75    | 63    | 86    | 78    | 78    | 75    | 76    | 60    | 75    | 78    | -     | -     | 77    | 78    |       |        |
| PM                     | 73     | 78         | 65         | 76    | 75    | 75    | -     | 77    | 70    | 70     | -      | 74    | 72    | 55    | 63    | 70    | -     | 64    | 72    | 70    | 76    | -     | 65    | 72    | -     | -     | 72    | 60    |       |        |
| Sunset                 | -      | -          | -          | 64    | 70    | 60    | -     | 65    | -     | 60     | -      | -     | 70    | 70    | 55    | 60    | 60    | -     | -     | -     | 74    | -     | -     | 59    | -     | -     | -     | 68    |       |        |
| Post-dusk              |        |            |            |       |       |       |       |       |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |

W ind: Less than 5 miles per hour across the state the entire day.

Percent Cloud Cover  
 Pre-dawn  
 Dawn  
 AM  
 Noon  
 PM  
 Sunset  
 Post-dusk

Precipitation: No rain or fog reported.