2023 Wild Turkey Observation Survey Summary

The Maryland Department of Natural Resources (DNR) has conducted an annual summer wild turkey observation survey since 1993. The primary purpose of this survey is to estimate reproductive success, but other important information can be obtained from the data. Like most wildlife species, turkeys depend on annual reproduction to add new individuals to the population. This survey, along with other sources of data, allows managers to monitor turkey populations and helps explain and predict annual or regional population changes.

Thanks to all the volunteers and DNR staff that assisted with this survey!

RESULTS

A total of 7,160 wild turkeys were reported by 684 individuals or groups that participated in 2023. This is similar to the 7,344 turkeys observed by 648 participants in 2022. Sample size remains very high compared to the pre-2021 surveys when the online data form was not available, providing excellent confidence in the accuracy of results. Estimates of reproductive success were not statistically different between observations reported online vs. emailed/mailed (2.16 vs. 2.20 poults per hen).

Statewide, the 2023 primary reproductive index was estimated at 2.2 poults per hen. This was slightly lower than both the 2022 index the 15-year average of 2.6 poults per hen. The number of hens observed with young (63%) and the number of poults observed per brood (3.6) were also slightly below-average, indicating lower nesting success and poult survival this summer. Regionally, the index was still above 2 poults per hen in most regions, which can be considered a general threshold where production should be adequate to replace annual adult turkey losses. The lowest poult per hen ratios were observed in the Lower Eastern Shore region and the Central region.

SURVEY METHODOLOGY

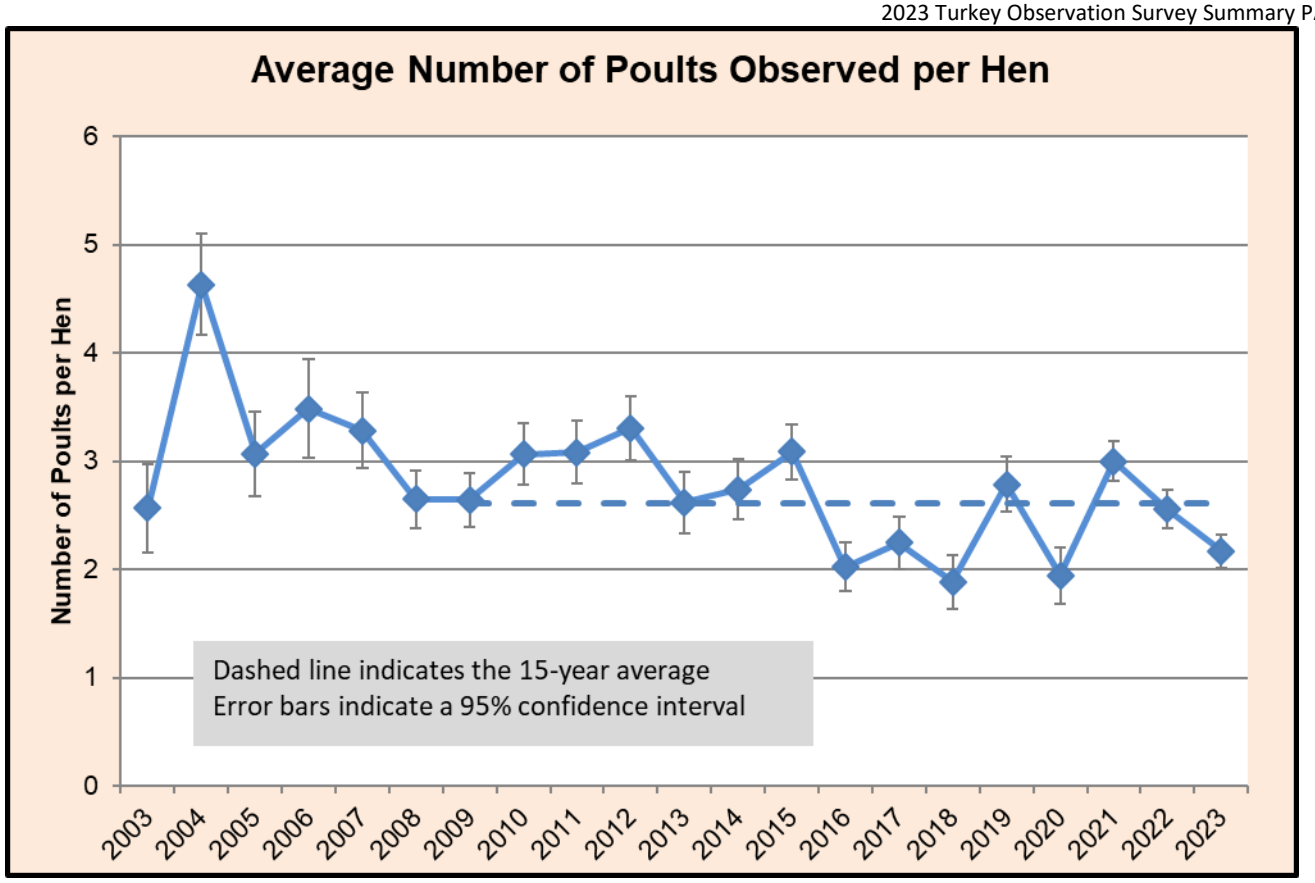
Survey forms and a link to the online form are distributed to DNR personnel, previous participants, and the public via email and social media. The survey is conducted during the months of July and August when broods are most easily observed and age can be readily determined. For each sighting, participants record the county and number of hens, poults, gobblers and unidentified turkeys observed.

Data are screened and analyzed using standardized guidelines to minimize bias or inaccuracies in the results. An annual production index is calculated as the average number of poults observed per adult hen, including hens without young. Other important data, such as the average number of poults per brood and the percentage of hens observed with young, are also calculated.

Various factors can impact wild turkey reproduction annually, including weather patterns, habitat quality, and predator communities. This year, above average rainfall during the critical peak nesting period in some regions appeared to have lowered nesting success. Preliminary data from a separate hen ecology study currently underway suggest that many nests were lost due to predation during late April and early May. Wet weather may increase predation on nests, likely because predators can scent nesting hens more effectively.

This survey has documented a general decline in turkey production since the early 2000's. Production was exceptionally poor in many regions of the state between 2016 and 2020, resulting in noticeably fewer turkeys in some areas. But a bumper crop of poults in 2021 and average production in 2022 increased populations in most regions. **This year's moderate reproductive success may slow population growth in some areas, but should be adequate to keep populations strong throughout most of Maryland.** Note that this survey provides an index that is useful to assess statewide and regional trends in reproduction, but local conditions can impact populations differently in certain areas.

More detailed information and regional results can be found below.


Average Number of Poults Observed per Hen
Number of Poults per Hen
0
1
2
3
4
5
6
2003
2004
2005
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2011
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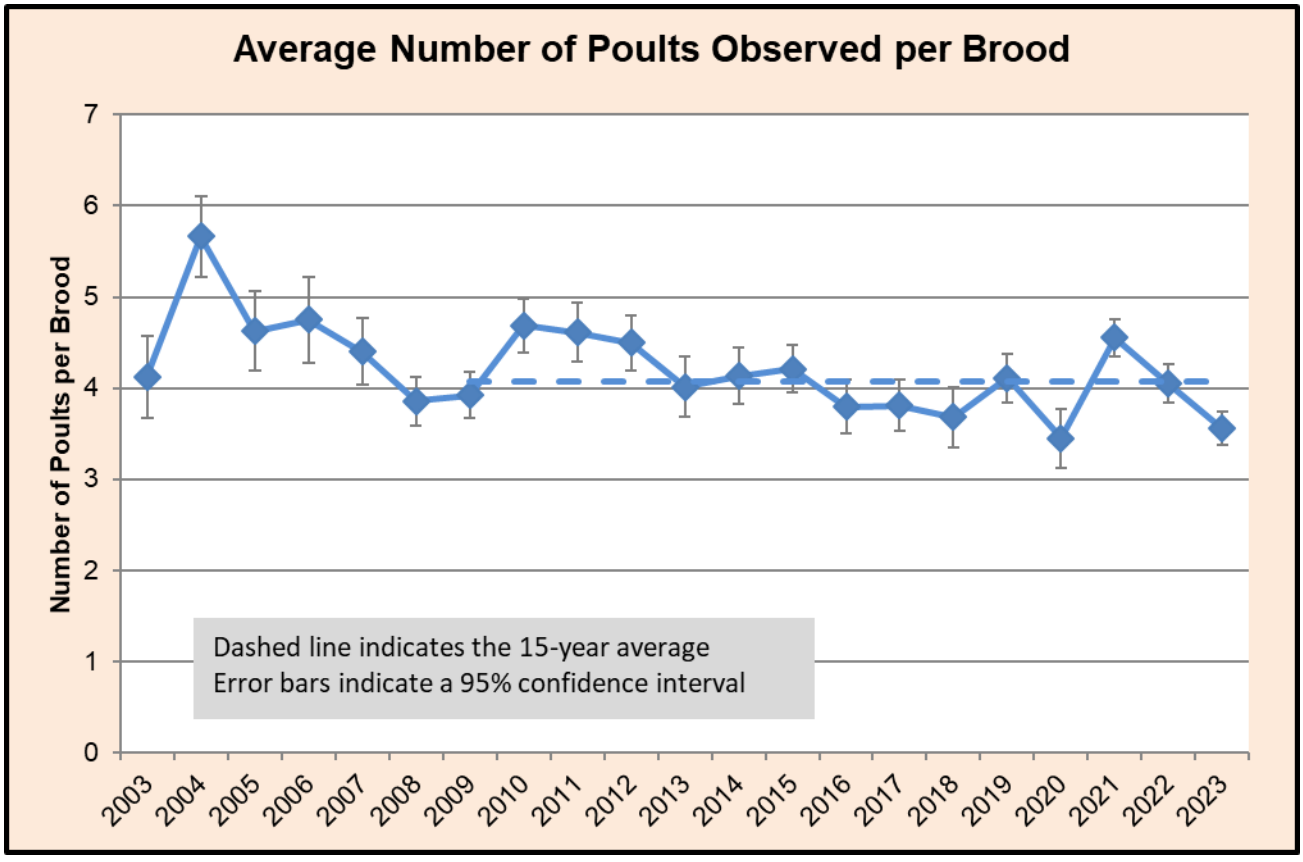
Dashed line indicates the 15-year average
Error bars indicate a 95% confidence interval


Average Number of Poults Observed per Brood
Number of Poults per Brood
0
1
2
3
4
5
6
7
2003
2004
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2023
Dashed line indicates the 15-year average
Error bars indicate a 95% confidence interval

Table 1. Statewide Wild Turkey Observation Survey data, 2013-2023

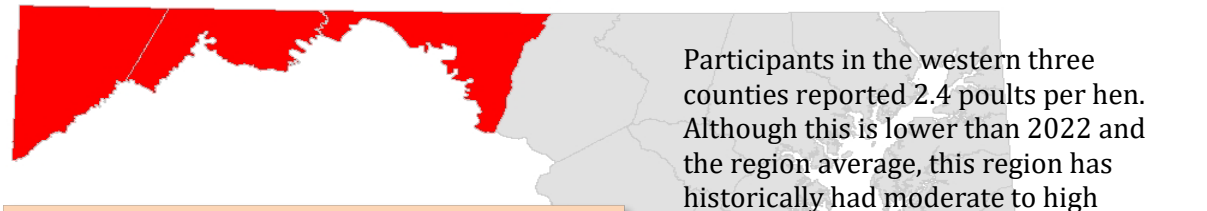
Year	No. of Participants	No. of Observations	Turkeys Observed					Percent of Hens Observed w/ Brood	Average No. Poults per Hen	Average No. Poults per Brood
			Hens	Poults	Gobblers	Unidentified	Total			
2013	82	448	835	2059	405	17	3316	71.1	2.6	4.0
2014	84	520	954	2276	478	17	3725	69.0	2.7	4.1
2015	81	540	1054	3007	557	16	4634	78.2	3.1	4.2
2016	91	644	1176	1979	708	25	3888	51.6	2.0	3.8
2017	84	578	940	1919	544	12	3415	59.7	2.3	3.8
2018	99	502	851	1298	419	14	2582	47.9	1.9	3.2
2019	91	553	899	2403	472	14	3788	72.1	2.8	4.1
2020	80	420	766	1265	390	9	2430	56.1	1.9	3.4
2021	737	1216	2225	6334	531	74	9164	68.9	3.0	4.6
2022	648	1144	2068	4378	838	60	7344	64.6	2.6	4.1
2023	**684**	**1157**	**2171**	**4131**	**820**	**38**	**7160**	**63.2**	**2.2**	**3.6**
15-year Average	211	655	1182	2756	526	26	4490	65.6	2.6	4.0

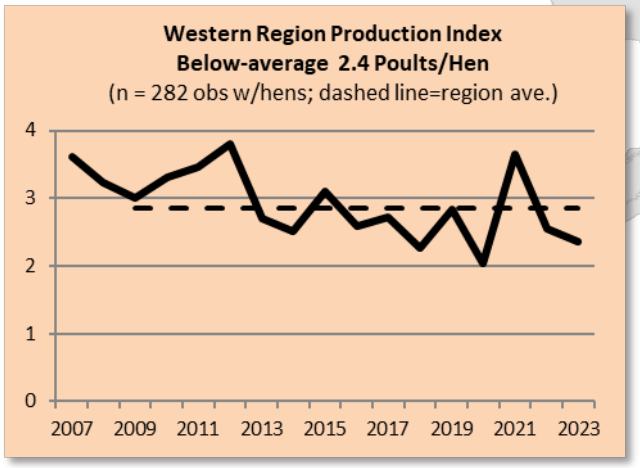
Table 2. Regional Wild Turkey Observation Survey data, 2023

	No. of Observations	Turkeys Observed					Percent of Hens Observed w/ Brood	Average No. Poults per Hen	Average No. Poults per Brood
		Hens	Poults	Gobblers	Unidentified	Total			
Western	328	628	1281	239	7	2155	65.9	2.4	3.6
Central	210	315	543	128	3	989	56.2	2.0	3.5
Southern	195	424	876	140	9	1449	70.0	2.3	3.5
Upper ES	200	347	776	98	9	1230	66.0	2.4	3.8
Lower ES	224	457	655	215	10	1337	55.8	1.7	3.2

[1] Regions defined as:
Western – Garrett, Allegany, Washington;
Central – Frederick, Carroll, Baltimore, Harford, Howard, Montgomery, Anne Arundel
Southern – Prince George's, Calvert, Charles, St. Mary's
Upper Eastern Shore – Cecil, Kent, Queen Anne's, Talbot, Caroline
Lower Eastern Shore – Dorchester, Wicomico, Worcester, Somerset

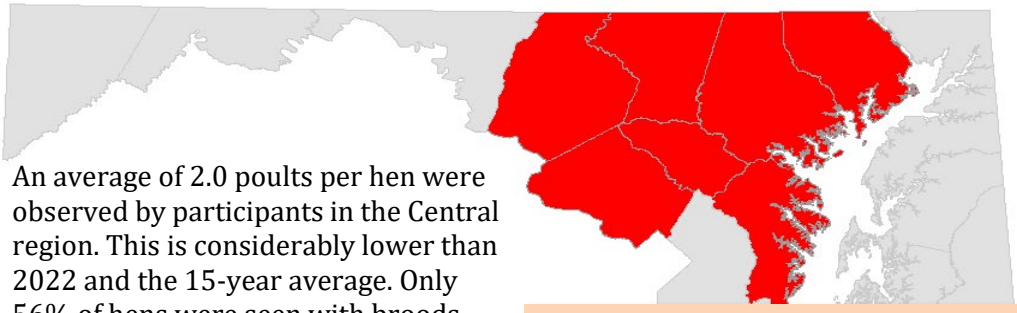
Western Region:
Garrett, Allegany, and Washington



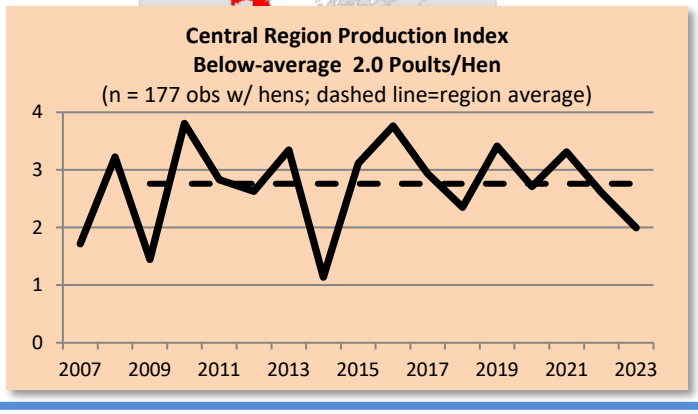


Participants in the western three counties reported 2.4 poults per hen. Although this is lower than 2022 and the region average, this region has historically had moderate to high reproduction each year. Over 65% of hens were seen with young and brood sizes were near-average (3.6 poults per brood). Populations in the western region have generally been strong for many years, with poult per hen ratios consistently above 2.0. Although this year's production is slightly lower than last year, it should be enough to maintain populations at similar levels.

Central Region:
Frederick, Carroll, Baltimore, Harford, Howard, Montgomery, Anne Arundel

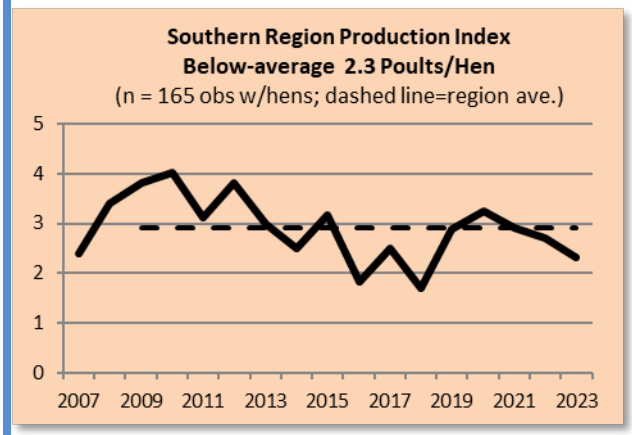


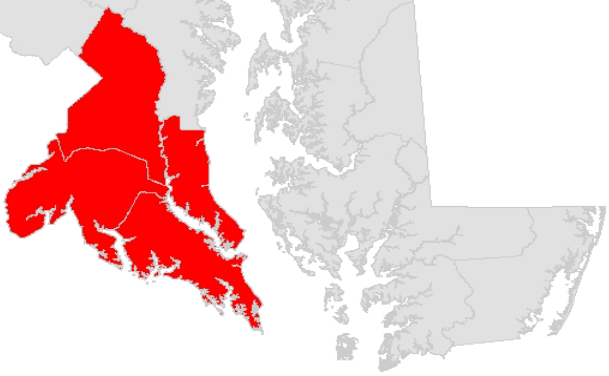
An average of 2.0 poults per hen were observed by participants in the Central region. This is considerably lower than 2022 and the 15-year average. Only 56% of hens were seen with broods which likely accounted for the lower production. An average of 3.5 poults were seen per brood. This region has seen tremendous population growth and expansion into non-traditional areas over the last 15 years. This year's lower production may slow growth somewhat but should not result in any noticeable declines.



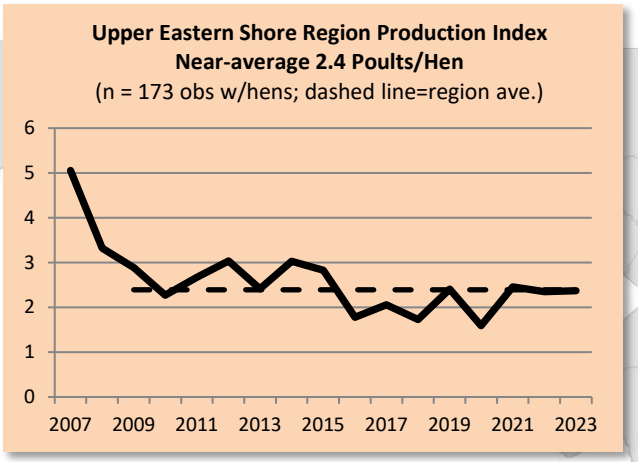
Southern Region:
Prince George's, Calvert, Charles, St. Mary's

Observers in the Southern region recorded an average of 2.3 poults per hen. This is slightly below last year's estimate and the region average. Nesting success appeared to be high with 70% of hens sighted with broods. Average brood size was 3.5 poults per brood. Turkey numbers grew quickly in the Southern region in the mid 2000's, and then stabilized. Although this year's estimates were lower than the last 3 years, production was likely adequate to keep the population strong in the region.





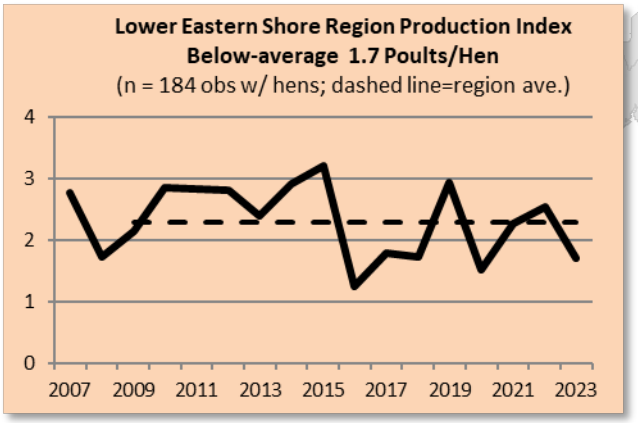
Upper Eastern Shore:
Cecil, Kent, Queen Anne's, Talbot, Caroline

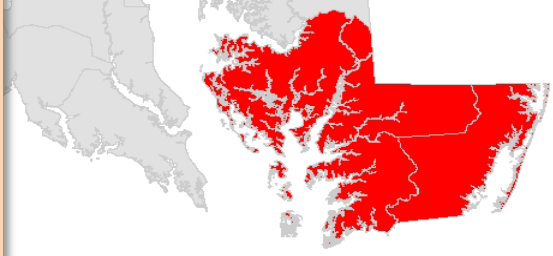


An average of 2.4 poults per hen were reported in the Upper Eastern Shore region, similar to the 2022 estimate and the region average. About 66% of hens were observed with a brood and average brood size was 3.8. A general decline in reproductive success has been noted here in the last 15 years, following a period of rapid growth in the 2000's. But the moderate production seen in the last 3 years should help keep populations stable.

Lower Eastern Shore:
Dorchester, Wicomico, Worcester, Somerset

Lower Eastern Shore region participants reported 1.7 poults per hen, the lowest estimate in the state and well below last year's estimate. Both nesting success and poult survival declined with 55% of hens seen with poults and an average brood size of only 3.2. Previously high turkey numbers have declined in many parts of this region over the last decade. Moderate production in 2021-22 appeared to have halted continued declines and increased numbers in pockets. However turkey populations are not expected to noticeably improve this year with the low reproductive success documented.





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