2018 Wild Turkey Observation Survey Summary

The Maryland Department of Natural Resources (DNR) has annually conducted a 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 game birds, wild turkeys are very dependent on reproduction to add new individuals to the population. This information, along with other sources of data, allows managers to monitor turkey populations and helps explain any annual or regional population changes.

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

SURVEY METHODOLOGY

Survey forms are distributed to interested DNR personnel, hunters, bird-watchers, landowners, and citizens. The survey is conducted during the months of July and August when broods are most easily observed and age can be readily determined. Participants are asked to record the county and number of hens, poults, gobblers, and "unknown" turkeys observed.

An annual production index is calculated as the average number of poults observed per adult hen. Other important data such as the average number of poults per brood and the percentage of hens observed with young are also calculated.

RESULTS

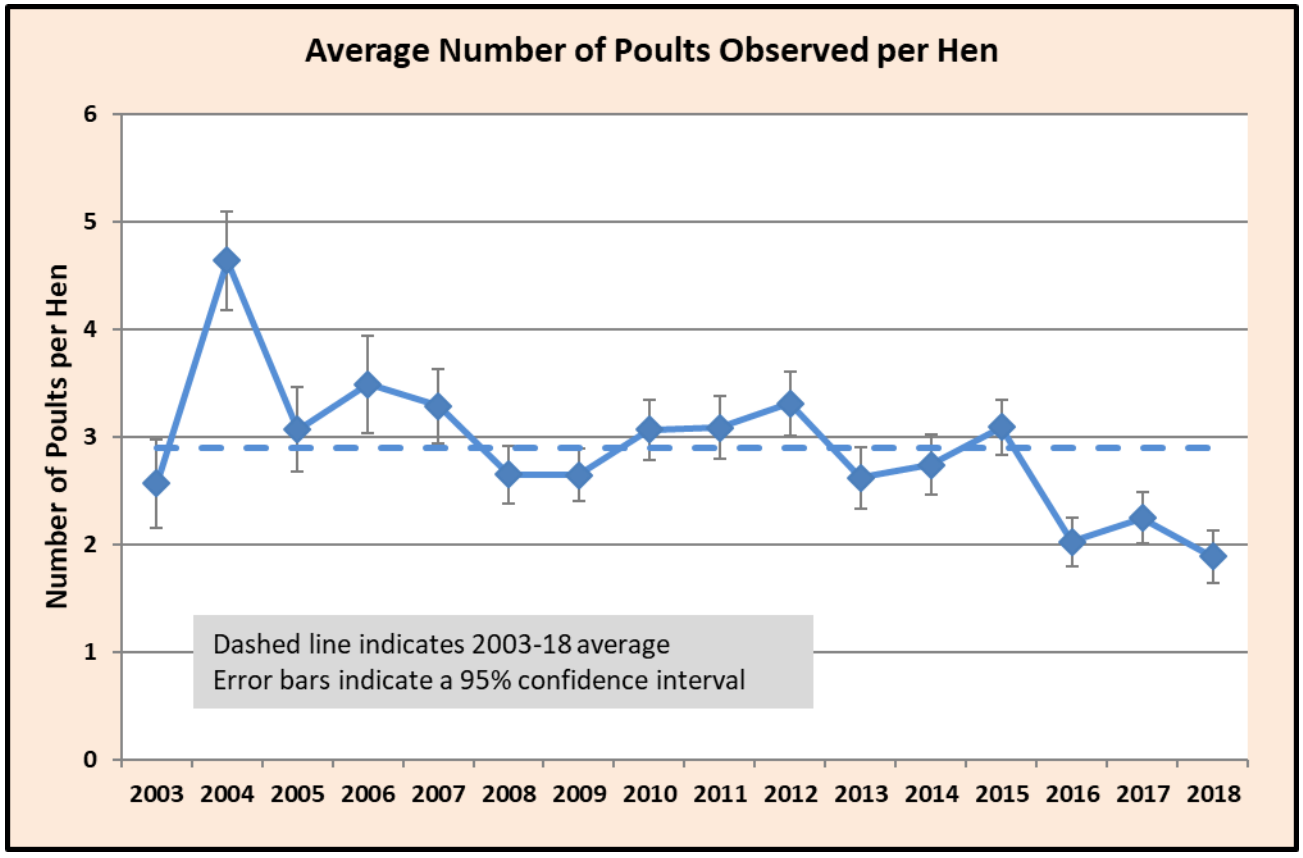
A total of 2,582 wild turkeys were recorded by the 99 individuals or groups that returned survey forms in 2018, lower than the 3,415 turkeys observed by 84 participants in 2017. Statewide, the 2018 reproductive index was at a record low average of 1.9 poults per hen. This is below both the 2017 index of 2.3 poults per hen and the 16-year average of 3.0 poults per hen. The survey documented below average reproduction in all regions of the state.

Statewide, a record low of 48% of hens were observed with young, well below the average of 69%. This suggests that nesting success was very low this year, especially for 1st nesting attempts. Only 39% of hens were seen with a brood in July. Later nesting attempts may have been somewhat more successful, but the proportion of hens seen with young in August was still below average at 58%.

The average number of poults observed per brood was also at a record low of 3.2, well below the average of 3.7 and indicative of poor poult survival. Above average spring and summer rainfall in most of the state may have impacted reproduction this year. Research has shown that persistent wet weather increases predation on nests, likely because predators can scent nesting hens more effectively. Some hens that lose their first nest may attempt to renest, but they typically lay fewer eggs and are less successful. Precipitation during summer can also impact survival of young poults.

This is the 3rd consecutive summer of poor reproduction in most of the state. Although turkey populations are somewhat resilient to variations in poult production, multiple years of low production will likely result in a decline in the statewide population. A long-term decline in reproductive success and turkey populations has been documented in many states. Research to investigate possible reasons is currently being conducted.

More detailed information and regional results can be found below.


Average Number of Poults Observed per Hen
Number of Poults per Hen
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2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018
Dashed line indicates 2003-18 average
Error bars indicate a 95% confidence interval

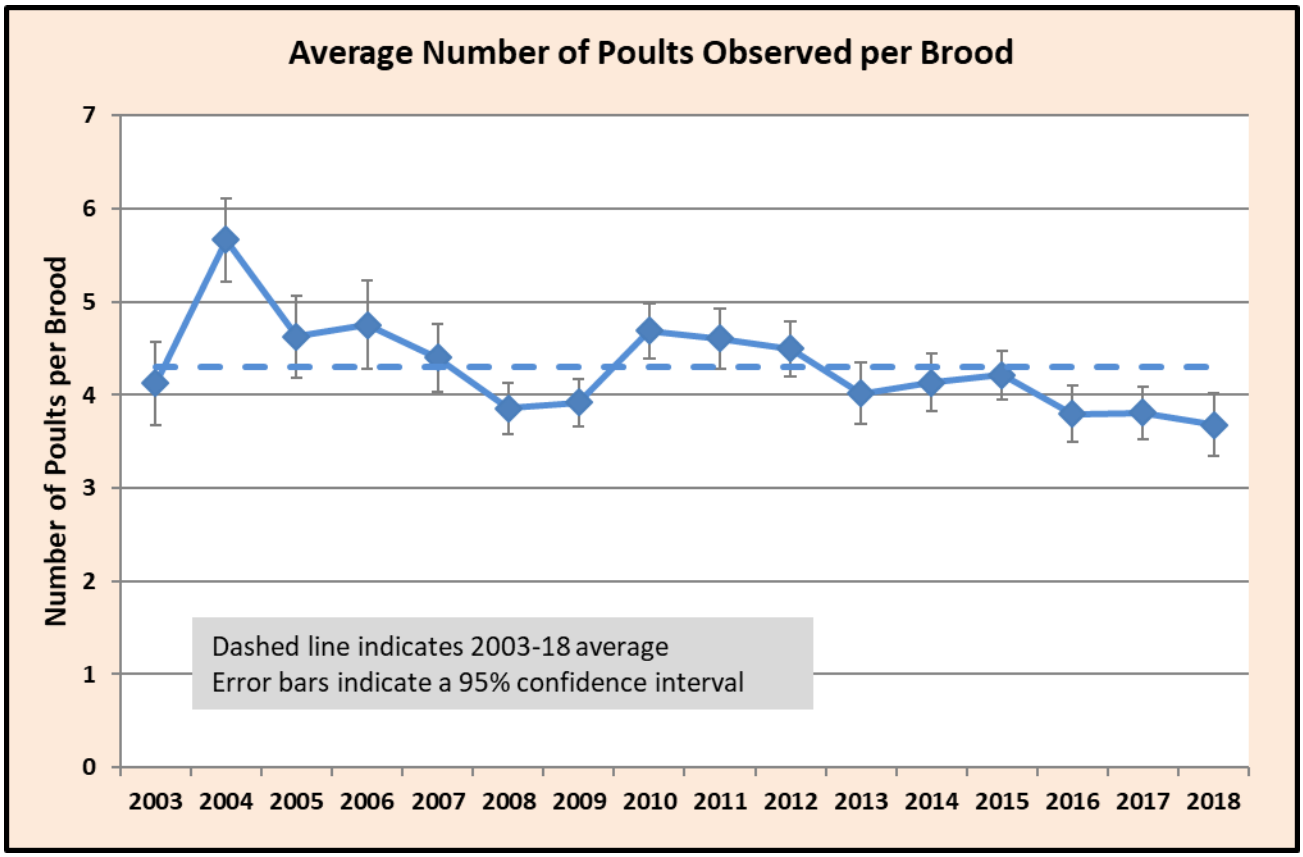
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Table 1. Statewide Wild Turkey Observation Survey data, 2008-2018

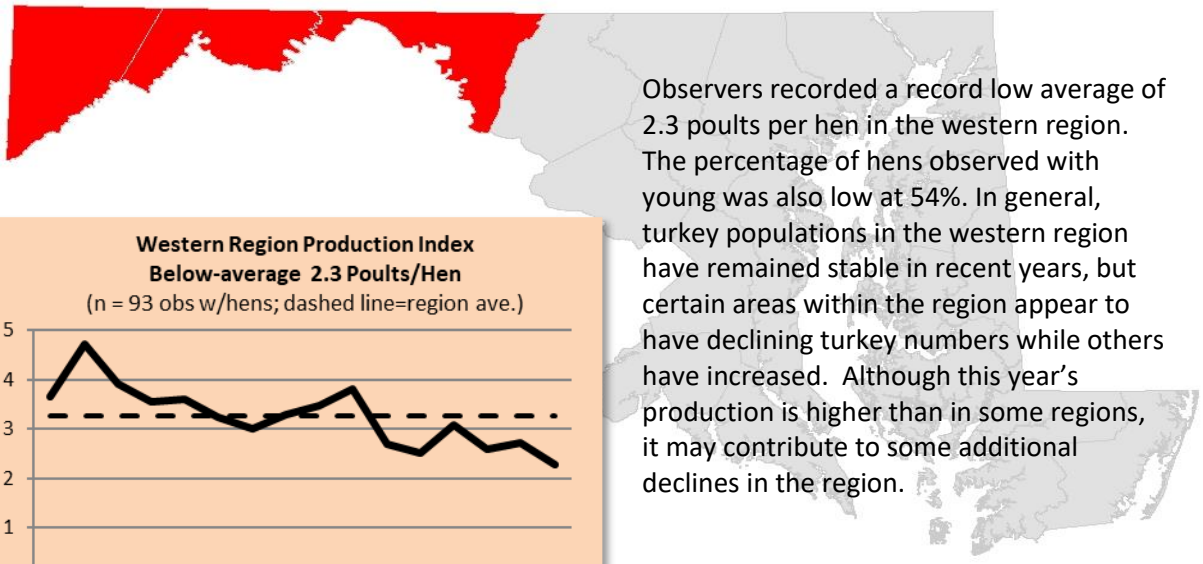
Year	No. of Observations	No. of Turkeys Observed					Percent of Hens Observed w/ Brood	Average No. Poults per Hen	Average No. Poults per Brood
		Hens	Poults	Gobblers	Unidentified	Total			
2008	427	841	1952	363	21	3177	72.3	2.6	3.9
2009	542	871	2054	504	39	3468	67.7	2.6	3.9
2010	537	998	2738	347	10	4093	69.1	3.1	4.7
2011	567	1021	2665	441	16	4143	67.4	3.1	4.6
2012	464	902	2833	434	31	4200	77.3	3.3	4.5
2013	448	835	2059	405	17	3316	71.1	2.6	4.0
2014	520	954	2276	478	17	3725	69.0	2.7	4.1
2015	540	1054	3007	557	16	4634	78.2	3.1	4.2
2016	644	1176	1979	708	25	3888	51.6	2.0	3.8
2017	578	940	1919	544	12	3415	59.7	2.3	3.8
2018	**502**	**851**	**1298**	**419**	**14**	**2582**	**47.9**	**1.9**	**3.2**
Average (since 2003)	445	794	2037	392	16	3240	69.4	3.0	4.3

Table 2. Regional Wild Turkey Observation Survey data, 2018

	No. of Observations	No. of Turkeys Observed					Percent of Hens Observed w/ Brood	Average No. Poults per Hen	Average No. Poults per Brood
		Hens	Poults	Gobblers	Unidentified	Total			
Western	107	205	383	60.0	6	654	53.7	2.3	3.9
Central	34	38	89	19.0	3	149	55.3	2.4	4.1
Southern	86	112	174	97.0	0	383	49.1	1.7	3.5
Upper ES	140	235	306	106.0	2	649	42.1	1.7	3.6
Lower ES	135	261	346	137.0	3	747	47.1	1.7	3.6

[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

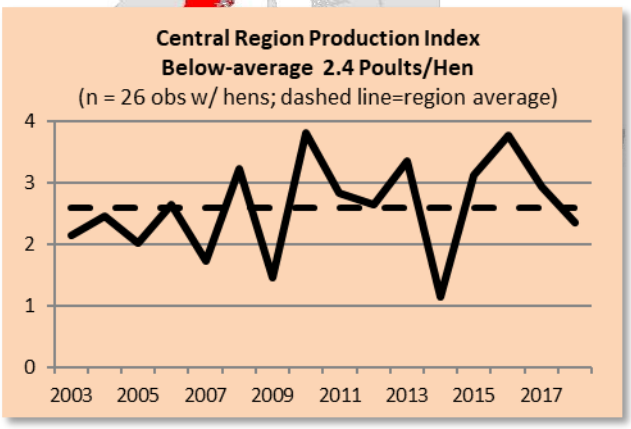
Western Region:
Garrett, Allegany, and Washington



Observers recorded a record low average of 2.3 poults per hen in the western region. The percentage of hens observed with young was also low at 54%. In general, turkey populations in the western region have remained stable in recent years, but certain areas within the region appear to have declining turkey numbers while others have increased. Although this year's production is higher than in some regions, it may contribute to some additional declines in the region.

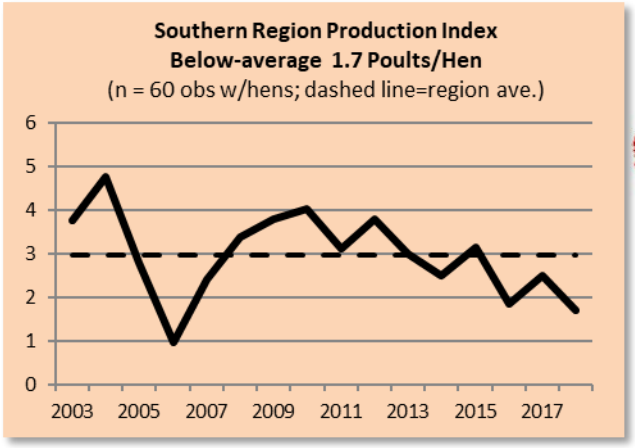
Central Region:
Frederick, Carroll, Baltimore, Harford, Howard, Montgomery, Anne Arundel

In the central region, participants recorded 2.4 poults per hen. Although this was the highest regional index in the state this year, it is still much lower than the previous 3 years in the central region. A modest 55% of hens were seen with young and the number of poults per brood was higher than other regions at 4.1. This region has had very different population trends compared to the rest of the state over the last few years. Their numbers and range have been growing rapidly. This summer's lower production may slow population growth somewhat but strong production in previous years should be enough to keep numbers strong.

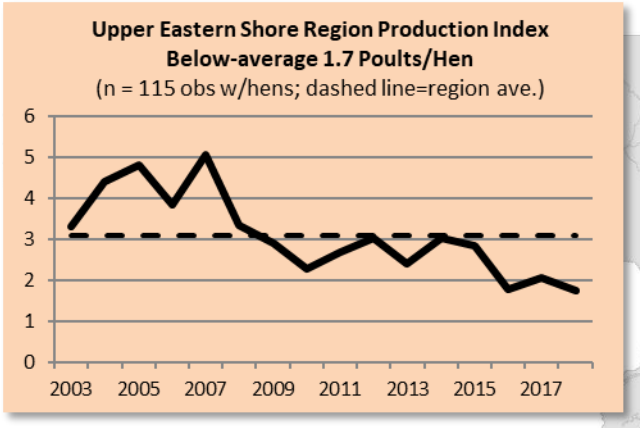


Southern Region:
Prince George's, Calvert, Charles, St. Mary's

The poult production index of 1.7 in the southern region was the lowest recorded in region since 2006. Less than 50% of hens were seen with young. This region experienced rapid population growth due to high production during the time period of 2008-2012 but appears to be stabilizing. A similar trend has been seen in other regions of the state and may be due to density-dependent factors. This year's low production will likely further slow the population growth.



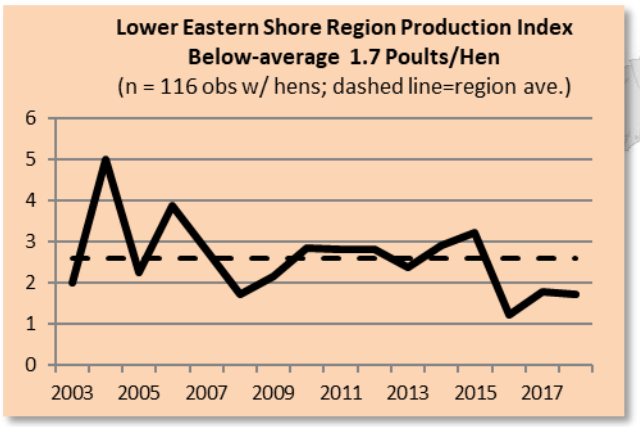
Upper Eastern Shore:
Cecil, Kent, Queen Anne's, Talbot, Caroline



In the upper eastern shore region, a record low average of 1.7 poults per hen were observed. The proportion of hens with young was exceptionally low and the number of poults per brood was below average. Although turkey populations in this region grew and expanded rapidly in the mid-2000's, the population appears to have reached its carrying capacity and lower production levels will likely continue. The last 3 years of poor production may result in a declining number of turkeys in the region.

Lower Eastern Shore:
Dorchester, Wicomico, Worcester, Somerset

Like the southern and upper eastern shore regions, an average of 1.7 poults per hen was observed in the lower eastern shore region, well below average for the region for the 3rd consecutive year. Less than half of hens were seen with poults and 3.6 poults were counted per brood hen. Data indicate that previously high turkey numbers have declined somewhat in this region. The low production documented in the last 3 years may cause additional declines.



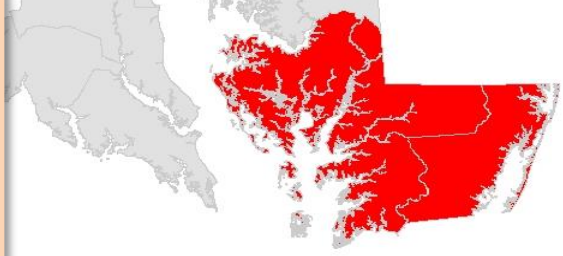


Photo Credit: National Wild Turkey Federation

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