North Carolina Deer Hunter Observation Survey Results 2014-2020

Thank you! - To all the deer hunters from across the state for taking an active part in wildlife conservation and filling out the observation survey! This information provides valuable trend data that supplement other survey, reported harvest, and biological data collected by the NCWRC to monitor wildlife and evaluate management actions.

The following is a short summary of statewide results from the North Carolina Deer Hunter Observation Survey (DHOS) that was conducted annually during the 2014-2020 hunting seasons. To view more detailed survey results, please go to our deer webpage, www.ncwildlife.org/deer , and click on Deer Cooperator Programs for a full report. This survey documents where species occur and can provide an index of how wildlife populations can change over time (increase, decrease, or remain stable). A few highlights from the past seven years of the survey are noted below:

- Within each hunting season over the past 7 years, approximately 1,500 deer hunters recorded the wildlife they saw on ~25,000 hunting trips encompassing ~100,000 observation hours per year.
- Hunters recorded an average of 18.6 hunts per year, averaging 3.4 hours per hunt.
- Deer and gray squirrels were the most commonly sighted species (Table 1). Nocturnal furbearers (e.g. raccoon, fox, and coyote) had relatively lower observation rates.
- Hunters averaged seeing 0.8 deer per hour, but rates varied across the state (Figures 1 & 2). Deer were seen at higher rates on private lands than game lands, and on baited sites than non-baited sites (Table 2).
- Male to female or adult to young ratios help biologists understand annual reproductive success of some species like deer and turkey.
    - Hunters observed 2.45 adult does to every 1 antlered buck, and 0.51 fawns per every 1 doe, however seasonal variation existed throughout the fall hunting season (Figures 3 & 4).
- Statewide coyote observation trends were stable over the past 7 years and populations appear to be fully distributed across the state (Figure 5).

Table 1. Statewide mean observation rates by species group listed in descending order, North Carolina Deer Hunter Observation Survey, 2016-2020. Estimates were limited to the most recent 5-year timeframe.

Animal Type	Animals seen per 1,000 hours
All Deer *(including unknown age/sex)*	802.1
Gray Squirrel	783.7
Doe Deer	383.7
All Turkey *(including unknown beard status)*	340.9
Non-Bearded Turkey	177.6
Fawn Deer	174.7
Antlered Buck	160.5
Bearded turkey	66.1
Raccoon	25.7
Fox Squirrel	17.2
Coyote	13.0
Adult Bear	12.1
Gray Fox	6.7
Cub Bear	6.2
Bobcat	3.3
Red Fox	2.9
Swine	2.7
Doe/Buck	2.45
Fawn/Doe	0.51
Bearded/Non-Bearded Turkey	0.48
Fox Squirrel/Total Squirrel	0.04

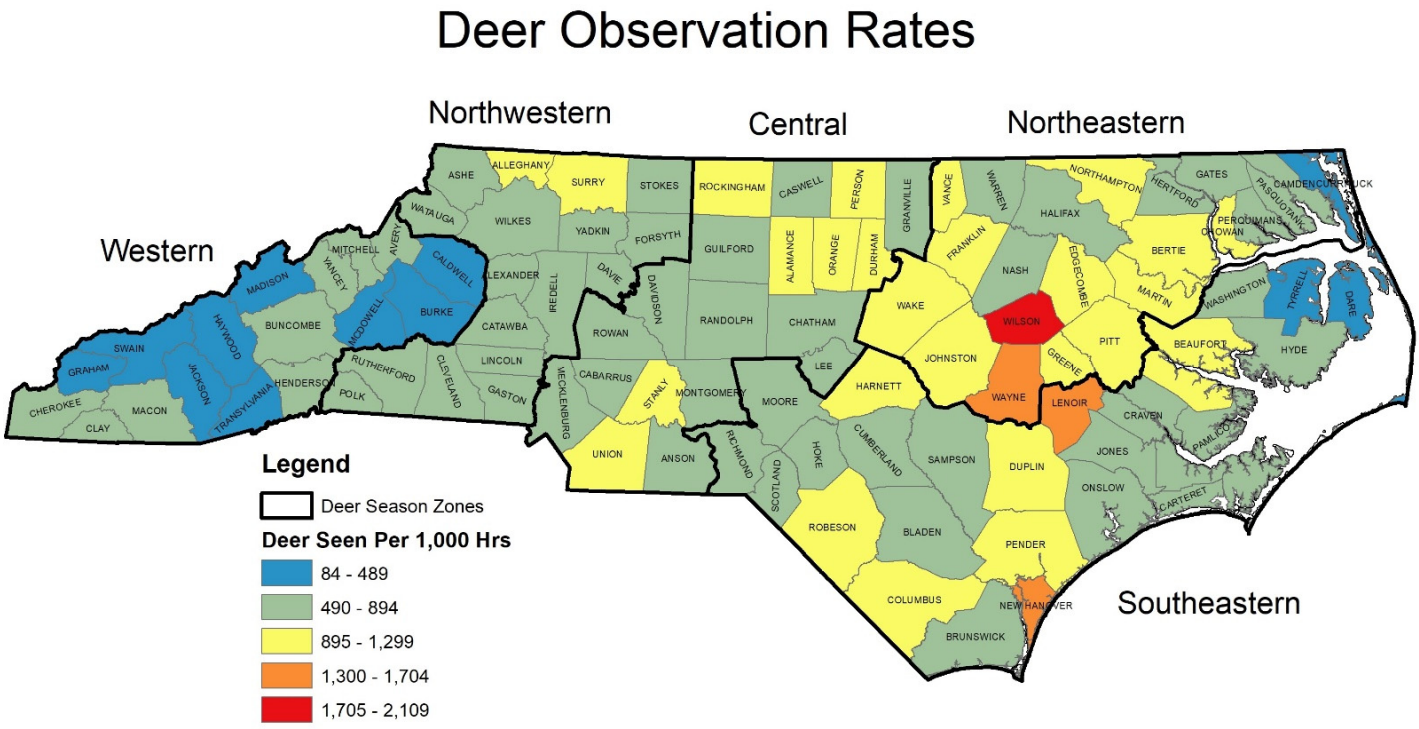

Figure 1. Deer observation rates by county (number of deer seen per 1,000 hours), North Carolina Deer Hunter Observation Survey, 2016-2020. The highest observation rates for deer occurred in the Northeastern season zone (1,054.5 deer per 1,000 hours) and were lowest in the Western season zone (540.9 deer per 1,000 hours).

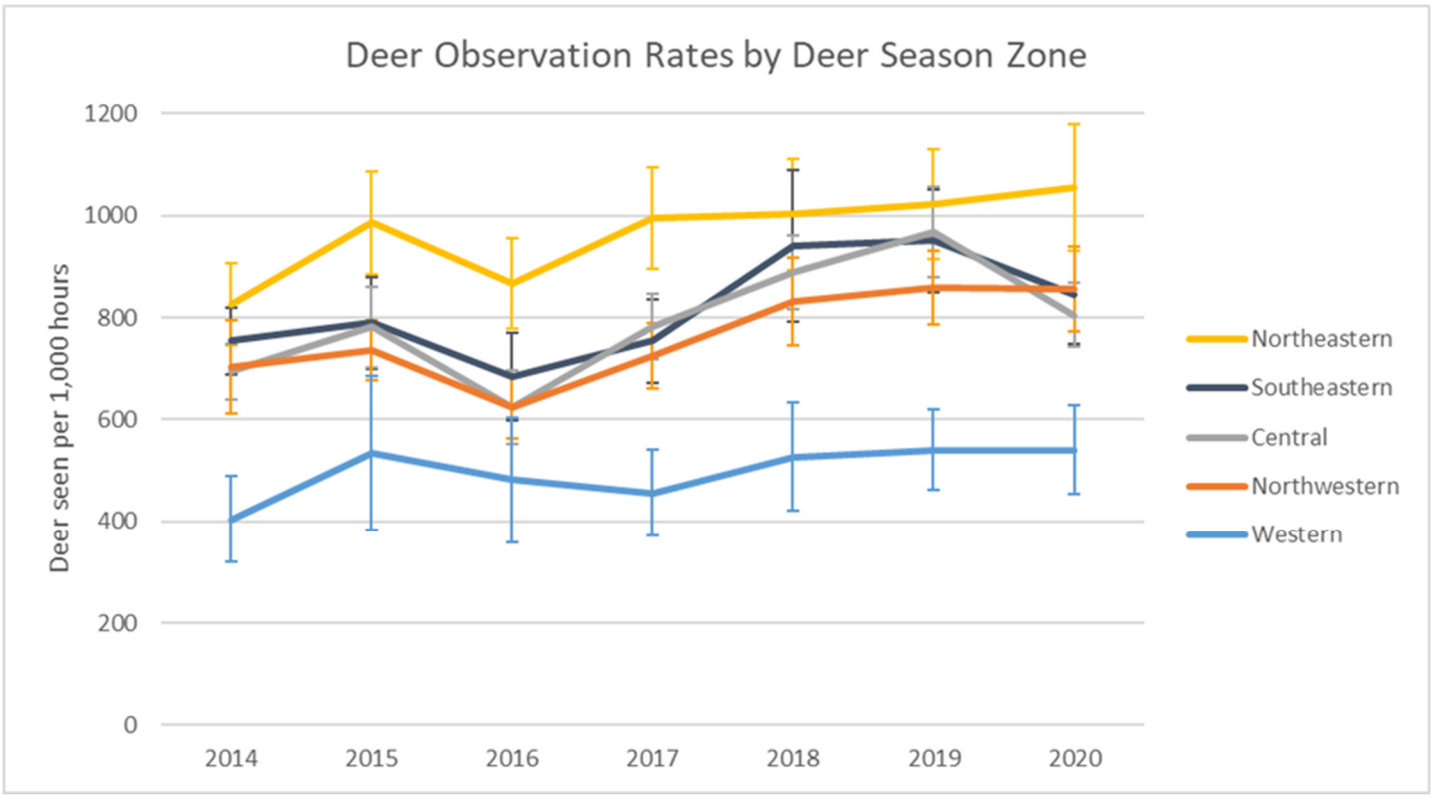

Figure 2. Annual deer observation rates by season zone (deer seen per 1,000 hours), North Carolina Deer Hunter Observation Survey, 2014-2020. Within the past 7 years, there is evidence that observation rates have increased over time in all five season zones. The rate increase has appeared to be very similar across all 5 season zones with the highest number of total deer observed during the most recent season.

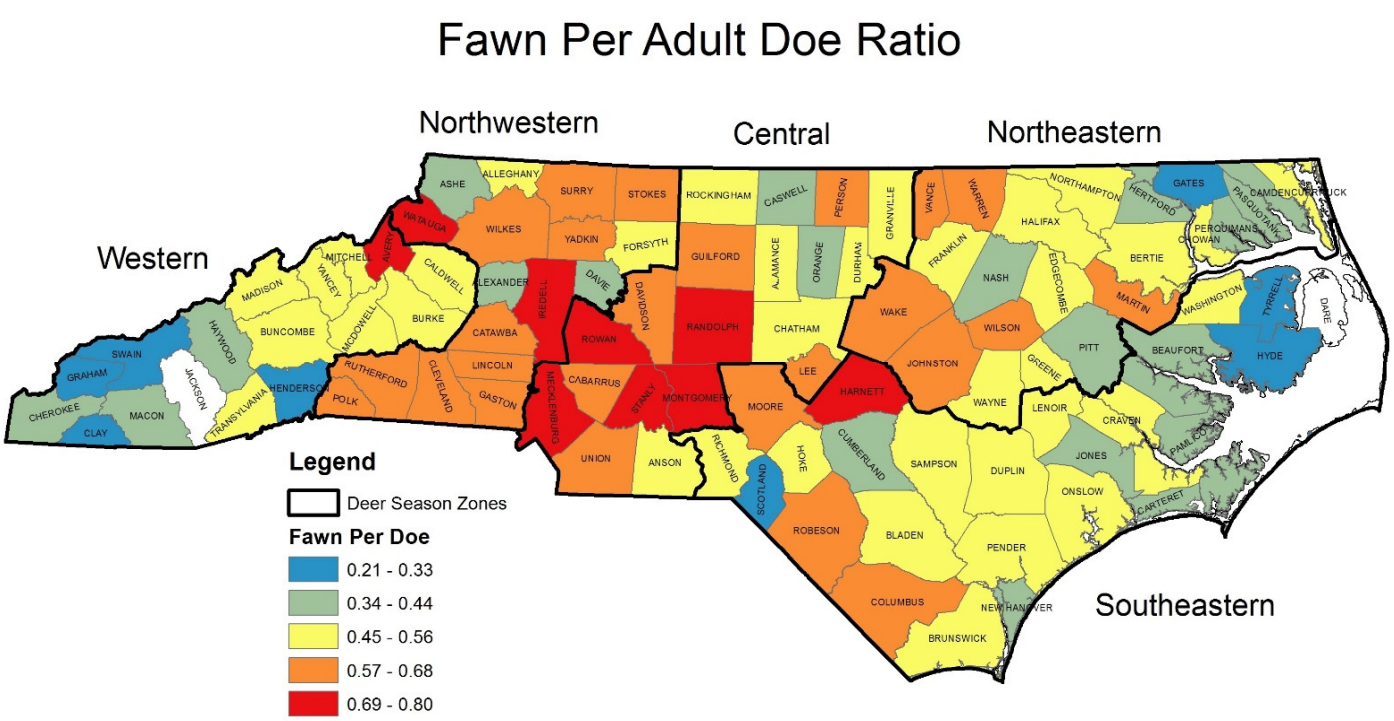

Figure 3. Fawn per adult doe deer observation ratio by county, North Carolina Deer Hunter Observation Survey, 2016-2020. This ratio offers insight into deer population recruitment. The two main influences on this ratio are doe reproductive output and fawn mortality. Counties with no shading indicate insufficient sample sizes for estimation purposes.

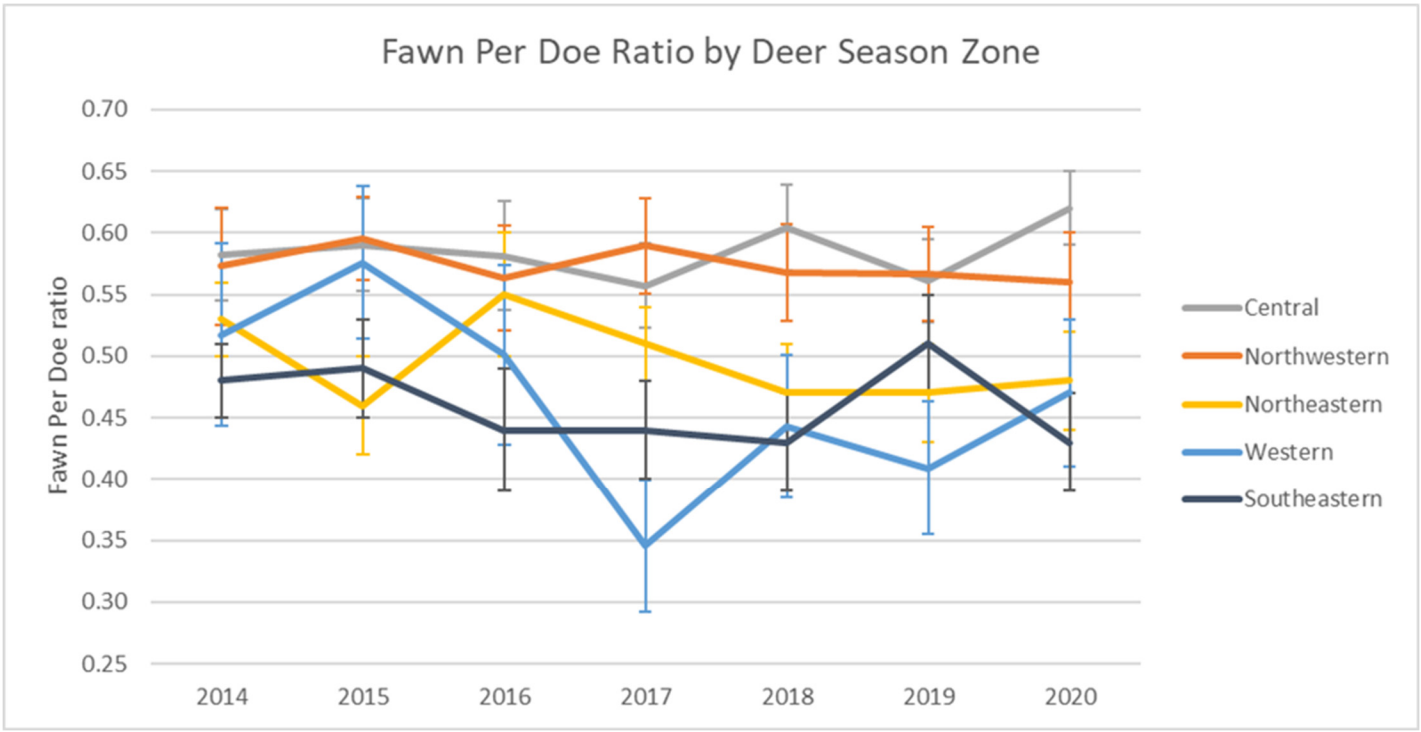

Figure 4. Annual fawn per doe observation rates by deer season zone with 95% confidence intervals, North Carolina Deer Hunter Observation Survey, 2014-2020. When changes in the ratio are observed over time, it will never be entirely known which factors might be responsible, i.e. habitat quality, doe age/health, predation, and/or weather events. Considerable annual variation existed in the Western season zone, most notably a low ratio in 2017. Weather and mast likely influence reproductive output and fawn mortality, but the relationship is complex and currently unclear.

Table 2. Statewide observation rates for species with significant differences between use of bait and no bait, North Carolina Deer Hunter Observation Survey, 2016-2020. Statewide median estimates and comparisons were derived from annual county averages and were limited to the most recent 5-year timeframe. Significance differences based on 95% confidence level. For most species where significant differences were identified, baiting increased observation rates, except for coyote where the use of bait made observations less likely.

	Animals seen per 1,000 hours	
Animal Type	Bait	No Bait
Gray Squirrel	874.0	610.0
All Deer (including unknown age/sex)	870.2	715.9
Doe Deer	404.9	332.6
All Turkey (including unknown beard status)	296.5	229.3
Fawn Deer	209.6	128.3
Antlered Buck	177.1	140.1
Non-Bearded Turkey	144.1	104.9
Bearded turkey	51.4	40.1
Raccoon	21.6	8.8
Coyote	7.2	10.6
Gray Fox	3.5	1.9
Doe/Buck	2.22	2.33
Fawn/Doe	0.58	0.44
Bearded/Non-Bearded Turkey	0.30	0.36

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*Online/mobile data entry access now available to participants:

Observers now have the option to enter their observations online at: www.ncwildlife.org/HunterObservationSurvey.

Users can save this survey link to the home screen on their mobile phone for easy access to enter their observations real-time, instead of recording observations on the paper forms.