

The Application of Hunter Observations and Brood Survey Estimates to Determine Gobbling Activity of the Wild Turkey throughout Mississippi

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Abstract: The Mississippi Department of Wildlife Fisheries and Parks (MDWFP) relies on data from turkey hunter observations and brood surveys from across the state to effectively manage wild turkey (*Meleagris gallopavo*) populations. Our objective was to use this data to determine if gobbling intensity and frequency were related to nest success and jake recruitment throughout the state. The MDWFP has divided the state into five turkey management regions based on physiographic characteristics and optimization of logistical resources. We used hunter observations to calculate the mean number of jakes seen per hour of hunting from 1995–2008 for each management region and statewide. We assumed that this sighting rate would index recruitment from the year 1 age class to the year 2 age class, when gobblers are typically the most vocal. We used the brood survey data to index nest success by calculating the total poults per total hens observed for each region and statewide from 1995–2008. Previous research in Mississippi indicated a high correlation between nest success of radio-collared hens two years prior to the number of gobblers heard. Therefore, we regressed the mean number of calls and gobblers heard per hour of hunting to the number of poults per hen two years prior and the mean number of jakes seen per hour of hunting the previous year at regional and statewide scales. Our regional regression models explained from 4% to 48% of the variation in mean number of gobblers heard, and from 6% to 32% of the variation in the mean number of calls heard. Our statewide models only explained 9% and 6% of the variation in mean number of gobblers heard and mean number of calls heard, respectively. This analysis assessed the potential for determining gobbling activity from data sources the MDWFP currently collects. However, the large amount of variation observed warrants caution as to the current application of managers forecasting gobbling activity. Further investigation into the potential sources of the observed variation (i.e., observer, habitat, hunter effort, brood survey effort, weather conditions) may begin to better partition differences so that more accurate relationships can be determined.

Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 63:224