

Poster

**Effect of Weekly Hunting Frequency on Waterfowl Harvest, Abundance, and Hunting Quality in Mississippi**

**Elizabeth A. St. James**, Department of Wildlife and Fisheries, Mississippi State University, Box 9690, Mississippi State, Mississippi, 39762, USA *E-mail:* [estjames@cfr.msstate.edu](mailto:estjames@cfr.msstate.edu)

**Michael L. Schummer**, Department of Wildlife and Fisheries, Mississippi State University, Box 9690, Mississippi State, Mississippi, 39762, USA *E-mail:* [mschummer@cfr.msstate.edu](mailto:mschummer@cfr.msstate.edu)

**Richard M. Kaminski**, Department of Wildlife and Fisheries, Mississippi State University, Box 9690, Mississippi State, Mississippi, 39762, USA *E-mail:* [rkaminski@cfr.msstate.edu](mailto:rkaminski@cfr.msstate.edu)

**Edward J. Penny**, Department of Wildlife, Fisheries, and Parks, 1505 Eastover Drive, Jackson, Mississippi, 39211, USA *E-mail:* [edp@mdwfp.state.ms.us](mailto:edp@mdwfp.state.ms.us)

**Kevin D. Brunke**, Department of Wildlife, Fisheries, and Parks, 1505 Eastover Drive, Jackson, Mississippi, 39211, USA *E-mail:* [kevinb@mdwfp.state.ms.us](mailto:kevinb@mdwfp.state.ms.us)

**James H. Havens**, Department of Wildlife, Fisheries, and Parks, 1505 Eastover Drive, Jackson, Mississippi, 39211, USA *E-mail:* [houston\\_havens@yahoo.com](mailto:houston_havens@yahoo.com)

*Extended Abstract:* Waterfowl hunting is important historically, culturally, and economically in Mississippi and elsewhere. Public and private landowners often manage waterfowl habitat and daily or weekly hunting frequency, with the goal of hunters experiencing quality hunting. Herein, we define quality hunting as conditions when waterfowl harvest rates, abundance, and hunter satisfaction are concurrently maximized at public Wildlife Management Areas (WMAs) of the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP).

Previously, managers have relied on expert opinions and comparisons of hunting pressure and success from previous years to make management decisions. The lack of information regarding the effect of hunt frequency on waterfowl harvest, abundance, and hunter satisfaction warrants scientific investigations to assist managers in decision making regarding hunt management and promoting maximum quality hunting opportunities. Our study will provide guidelines for managing weekly hunting frequency on public lands managed by MDWFP that will optimize waterfowl hunting opportunity and harvest, while sustaining

waterfowl abundance and hunter satisfaction and retention in Mississippi. Our study objectives are to determine (1) the effect of weekly hunting frequency on waterfowl harvest and hunter satisfaction, and (2) the effect of hunting frequency on waterfowl use of hunted and sanctuary areas on the WMAs.

We initiated our study in 2008 on 3 WMAs in Mississippi: Howard Miller, Muscadine Farms, and Trim Cane WMAs. All are managed for waterfowl hunting and traditionally hunted < 4 days/week. During the 2008-2009 waterfowl hunting seasons, we will divide each WMA into 2 zones with different weekly hunting frequency, one allowing hunting 2 days/week and the other 4 days/week. By dividing each WMA, we minimize confounding of hunt treatments with potential differences within WMAs (e.g., habitat type, management, environmental factors, etc.).

Muscadine Farms and Trim Cane WMAs are managed primarily as moist-soil wetlands. However, supplemental plantings of corn, grain sorghum, and Japanese millet exist in moist soil units at these areas. Howard Miller WMA primarily consists of flooded rice fields,

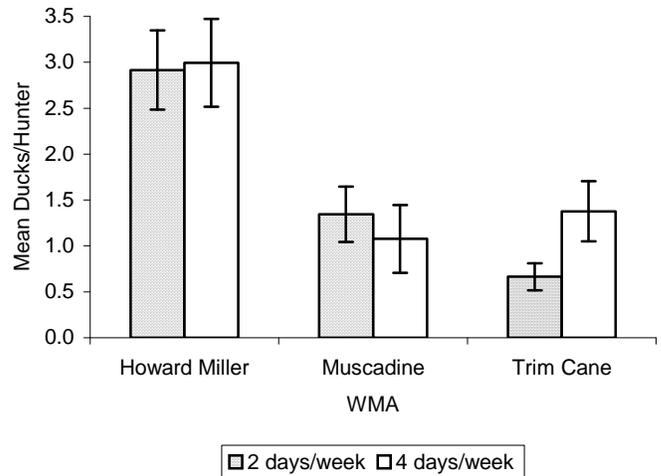
with some moist soil wetlands (~25%). At all WMAs, daily use of hunting units by hunters is designated by preseason lottery and morning draws.

In December 2008-January 2009, we determined waterfowl harvest rates by checking hunters' harvested birds as they departed the WMA. For each harvested duck, we recorded species, sex, age, and mass and asked hunters their hunting location, number of people in their party, time spent hunting, and number of shots fired. We also asked hunters to complete a MDWFP questionnaire to assess their level of satisfaction in the hunting experience.

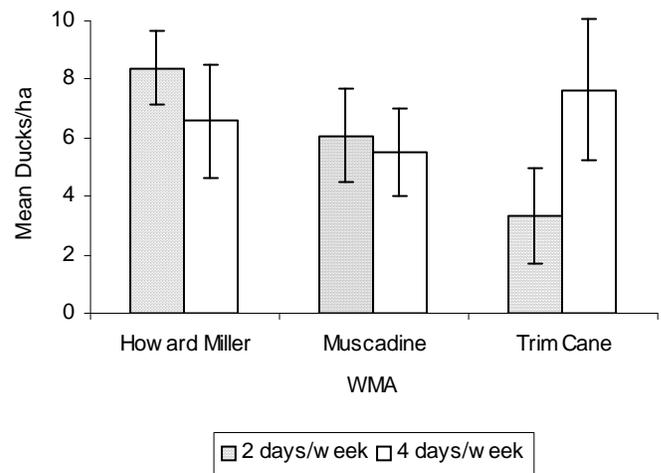
We conducted ground surveys to assess the effect of hunting frequency on waterfowl abundance in sanctuaries and hunt units in the WMAs. We conducted surveys of sanctuaries from a stationary blind, starting 15 min before sunrise and continuing for 1.5 hrs. We identified and counted waterfowl using the sanctuary every 15 min. We conducted flush counts on a sub-set of hunt units twice weekly at 1000 hrs on non-hunt days.

Our preliminary analyses suggest that 4 hunts per week neither decreased total duck harvest rates nor duck abundance on the WMAs during the 2008 waterfowl hunting season (Figs. 1 and 2). We will conduct and present results of additional analyses to confirm preliminary results and determine if species-specific differences may exist.

Studies indicate hunter satisfaction is primarily determined by appreciative-oriented values (e.g., opportunity to see waterfowl) rather than achievement-oriented values (e.g., harvesting their limit of ducks; Enck et al. 1993). We will analyze hunter satisfaction data in relation to these theoretical frameworks.



**Figure 1.** Mean (SE) number of ducks/hunter in relation to hunt frequency (2 or 4 days/week) on Wildlife Management Areas (WMA) in Mississippi during the December 2008-January 2009 waterfowl hunting season.



**Figure 2.** Mean (SE) number of ducks/ha in relation to hunt frequency (2 or 4 days/week) on Wildlife Management Areas (WMA) in Mississippi during the December 2008-January 2009 waterfowl hunting season.

Enck, J. W., B. L. Swift, and D. J. Decker. 1993. Reasons for decline in duck hunting: insights from New York. *Wildlife Society Bulletin* 21: 10-21