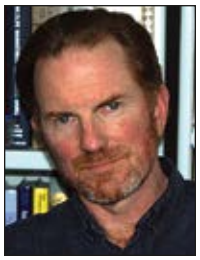
STUDYING HUNTERS LIKE WE STUDY DEER: USING WILDLIFE SCIENCE TO INCREASE THE HUNTER POPULATION



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My column in the Summer 2016 issue of *Fair Chase* talked about the importance of the Boone and Crockett Quantitative Wildlife Center directed by Professor Bill Porter at Michigan State University. I briefly traced the evolution of wildlife science, particularly the science behind understanding the dynamics of wildlife populations. A great deal of concern in recent decades has been focused on the trends in the populations of hunters in the United States. The U.S. Fish and Wildlife Service, in cooperation with the U.S. Department of Commerce, conducts a national survey of hunting, fishing, and wildlife-associated recreation every five years. This has been ongoing since 1955. Long-term survey data show a steady decline in the number of hunters. Data on hunting license sales show a similar trend. The Wildlife Management Institute, National Shooting Sports Foundation, state fish and wildlife agencies, and many other conservation organizations are collaborating in efforts to enhance the recruitment, retention, and reactivation of hunters to stall or reverse this trend. The implications of a declining hunter population are ominous. Hunters—who have a vested interest in healthy wildlife populations and wildlands—are staunch advocates for conservation, and their license fees and purchases of firearms, ammunition, and archery equipment represent the bulwark of state-based wildlife funding.

Given the concern we have over trends in the population of hunters and the expertise we have in understanding and managing wildlife populations, why don't we try to merge the two? That's exactly what is happening in Alabama. Dr. Conor McGowan, Dr. Steve Ditchkoff, and graduate student Jennifer Price Tack are developing modeling approaches that can help state fish and wildlife agencies "recover" and "manage" their hunter populations. McGowan is the assistant leader of the Alabama Cooperative Fish and Wildlife Research Unit, and Ditchkoff is the William R. and Fay Ireland distinguished professor in the School of Forestry and Wildlife Sciences at Auburn University. Tack is a doctorate candidate at Auburn examining factors that affect whitetail deer fawn recruitment and identifying characteristics that potentially predispose areas to low fawn recruitment. Tack will establish baseline herd demographic information and create predictive models to assess the impacts of different management actions aimed at improving fawn recruitment. Further, she is quantifying the socio-economic impacts of management alternatives, including management costs and impacts on hunter satisfaction. She is working across 16 diverse wildlife management areas throughout Alabama and will ultimately provide data and analyses to Alabama's Department of Conservation and Natural Resources to support science-based decision making in the development of a statewide adaptive management plan for whitetail deer.

These three wildlife researchers have pooled their expertise to study hunters. Part of the reasoning behind their work is that to sustain funding, wildlife management agencies might benefit by setting objectives for and managing hunter populations. In order to address options to bolster hunter participation and evaluate the potential to sustain or increase hunter populations, they developed a hunter population model with different categories (stages) of hunters that account for unpredictable random events that might affect the hunter population—what population biologists term a "stage-based stochastic population model." They chose this approach as a means to predict trends over the next 50 years. The model includes the stages youth, potential hunter, annual hunter, and lifetime hunter, and allows for transitions between stages. They then

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modeled the outcome of several management scenarios (changes in license cost, outreach program, and changes in game density) in order to help guide state agencies interested in boosting recruitment and retention rates. Finally, they'll use license sale data obtained from the Alabama Department of Conservation and Natural Resources to fine-tune the model (parameterize). Using their model as the core of a decision analysis, state agencies can set hunter population or license revenue targets and evaluate management actions to achieve those objectives. The model could be directly linked to a game species population model to account for the effects of hunters on game species and the effect of game species abundance on hunter populations. A fundamental objective of this effort is to help state agencies maximize their annual hunting license sales while minimizing the cost of the efforts they take to increase sales.

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Science has been a major factor in the restoration of our wildlife populations in America. Maybe it will help us restore our hunter populations as well. ■