

# A STUDY OF THE RELATIONSHIPS OF DEER HUNTERS PARTICIPATION INTENSITY AND CONSTRAINTS

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**Abstract.**—Declines in hunting participation are of concern to wildlife agencies and their ability to fund and manage wildlife populations as well as sustain local hunting traditions. To understand declines in participation, it is important to understand current hunters' perceptions of barriers and constraints that could lead to hunting desertion. This study examined hunting participation with respect to hunters' overall perceptions of constraints, hunting participation intensity rates, demographics, and social-psychological data. In addition, differences between male and female hunters were examined to determine whether constraints varied based on hunting intensity rates that differ by gender.

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## 1.0 INTRODUCTION

Leisure constraints have been widely researched across a broad spectrum of issues related to participation and non-participation (Crawford et al. 1991). Constraints are defined by Jackson (1988, p. 203) as "factors that inhibit people's ability to participate in leisure activities, to spend more time doing so, to take advantage of leisure services, or to achieve a desired level of satisfaction." Though the literature has examined constraints extensively (e.g., Crawford et al. 1991, Goodale & Witt 1989), they have rarely been examined in outdoor consumptive behavior.

Recent trends indicate a steady decline in hunting participation (President's Commission on Americans Outdoors 1987). The *National Survey of Fishing,*

*Hunting, and Wildlife-Associated Recreation*, which measured hunting participation in 1991, 1996, and 2001, exhibits an overall decline of just over 1 million hunters between 1991 and 2001. A study conducted by Responsive Management (1995) of inactive hunters found that lack of time, work obligations, and family obligations were the main reasons that they stopped hunting. Changing demographic trends and a variety of factors influencing hunters' participation, such as increased urbanization, competition with other leisure activities, and lack of available opportunities, are important to understand for the future of hunting (U.S. Fish and Wildlife Service 2001, Wright et al. 2001) so the benefits derived from participation are not lost (Barro & Manfredo 1996). Potential benefits lost from lack of participation include the loss of strong hunting traditions in rural communities (Heberlein & Thomson 1996, Li et al. 2003), cultural traditions and economic stability of areas that depend on hunting (Bishop 2004, Heberlein 2004, Needham et al. 2004), and the reduction of wildlife agencies' revenues from license sales resulting in the lack of funds to manage wildlife populations (Needham et al. 2004). Therefore, it is important to understand the variety of factors influencing hunters' participation, or lack thereof, so the benefits derived from the participation are not lost (Barro & Manfredo 1996).

Beyond examining the total sample of deer hunters' constraints, the study also focused on the constraints for female deer hunters, which has received even less attention in the literature. Females compose 51 percent of the general population in the United States, but are only 2.3 percent of those participating in hunting activities. Though male hunting participation has decreased over the last decade, female participation in hunting has nearly doubled and can be attributed to changing attitudes and roles in society (Responsive Management 2002, Johnson et al. 2001).

A study conducted by Adams and Steen (1997) examining Texas females' initiation, motivation, and constraints found significant differences between male and female initiation ages and hunting instruction as

well as structural and interpersonal constraints. The majority of women ranked “not enough time due to work” as the most important constraint limiting participation. Other constraints in respective order were high costs, too many unethical hunters, not enough time because of children, and travel distance (Adams & Steen 1997). All three types of constraints limited hunting participation, but structural constraints contributed more to nonparticipation than interpersonal and intrapersonal constraints.

Women who participate in outdoor activities are often socialized into the activity by a spouse or possibly a male relative (Toth & Brown 1997). Adams and Steen (1997), as well as Culp (1998), reported that with hunting, men typically begin in childhood and learn from their fathers or other male relatives. However, for women this process often starts at an older age than for men (Adams & Steen 1997).

In an attempt to understand overall deer hunters’ constraints, as well as differences for male and female hunters, the following study was conducted. A random sample of 5,000 (2%) Virginia hunters were drawn from the license records maintained by the Department of Game and Inland Fisheries. We examined demographics and social-psychological data, along with hunting participation intensity rates, with regard to hunters’ overall perceptions of constraints.

## 2.0 METHODS

All individuals who purchased a general Virginia state resident hunting license, a county/city license, or a senior (65+) license for the 1995-96 season (N=282,492) composed the eligible population. Procedures outlined by Dillman (1978; 2000) were employed to collect survey data. A total of 2,766 usable questionnaires were received, resulting in an effective response rate of 63.5 percent (effective n=4,354).

### 2.1 Sample

A stratified random sample of 5,000 Virginia hunters was drawn from license records maintained by the Administrative Services Division of the Virginia Department of Game and Inland Fisheries. All persons who purchased a general state resident hunting

license, a county-city license, or a senior license for the 1995-96 season were eligible to be drawn (n=282,492). The sample was stratified by type of license purchased. Consideration was also given to ensure the representativeness of the sample geographically, although there was no way to determine *a priori* where subjects hunted. Therefore, the most feasible strategy was to also stratify the sample by where the individuals purchased their licenses.

### 2.2 Questionnaire

Using data from a larger study on Virginia hunters, the focus of this article is on the measurement of multiple aspects of hunters’ participation within the state of Virginia, including constraints to participation. Also included in the questionnaire were a number of demographic questions that were used as background information and for profiles of study participants. Demographic variables such as parental status and marital status were deemed highly relevant in light of the specific focus on the differences between male and female hunters.

Constraints to hunting were measured by asking hunters to respond to 29 possible barriers through the use of a 5-point Likert-type scale (1=strongly disagree, 5=strongly agree). Examples of items included “Work commitments leave little time for hunting,” “Public hunting lands are too crowded,” and “None of my family or friends hunt, therefore I have no one to hunt with.”

In order to profile hunters, respondents were asked to answer questions pertaining to types of animal hunted, location in which they hunt, and opinions of regulations on hunting. Demographic variables included marital status, gender, parental status, age at first hunt, resident status (urban vs. rural), and questions about family and friends’ experiences with hunting.

### 2.3 Data Analysis

Two types of data analyses were used to examine the data. Using a statistical software program, SPSS, analysis of variance (ANOVA) and multiple regressions were run to test for differences between male and female hunters’ satisfaction with hunting, and their perceptions of constraints while hunting. Additionally, regression

was used to determine correlations between the battery of independent variables, dependent variable(s), and demographic variables among females.

### 3.0 RESULTS

The average hunter's age was 42.3 years (males=42 and females=38). Males were 97 percent of the sample. The average age of males when they first hunted was 12, while the average age for females was 17. Independent t-tests found significant differences between males and females with regard to age first hunted ( $t=(-8.63)$ ,  $p<0.01$ ) as well as spouses' ( $t=3.09$ ,  $p<0.01$ ) and friends' attitudes toward hunting ( $t=(-5.74)$ ,  $p<0.01$ ). However, no significant differences were found among the various categories of constraints. Males learn to hunt at an earlier age than females and are introduced to the sport mainly by their father (59%). Further examination using ANOVA unraveled numerous differences when accounting for participation intensity. There were statistically significant differences among intensity groups (low, moderate, to high participation indicated by days hunted) regarding statements such as, "I do not perceive any barriers to my hunting activities" ( $F=15.0$ ,  $p<0.01$ ), "family activities leave me little time for hunting" ( $F=25.3$ ,  $p<0.01$ ), and "work commitments leave little time for hunting" ( $F=23.1$ ,  $p<0.01$ ). Hunters with high participation (number of days hunted) perceived fewer barriers and fewer family and work commitments than low intensity hunters. Interestingly, female hunters perceived no barriers to hunting when factoring for participation intensity.

### 4.0 CONCLUSIONS

The study reveals differences regarding perceptions of constraints when examined in light of different demographic groupings, social-psychological data, and hunting participation intensity. Results suggest men tend to perceive more constraints than women, particularly when it involves family and work commitments for low to moderate deer hunting participants. Study results identify barriers to participation that could lead to declining hunting participation. Declines in hunter numbers could reduce the ability of wildlife management agencies to control wildlife populations, have an adverse economic impact on job availability, and reduce tourism

associated with hunting as well as recreational benefits tied to hunting. To attempt to revitalize outdoor consumptive activities, it is important to understand constraints that may impinge on hunter participation.

### 5.0 ACKNOWLEDGMENTS

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