

## Research Note

# Evaluating Deer Hunters' Support for Hunting Deer with Dogs

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*Hunting deer with dogs (dog hunting) has a long tradition in the United States but has created conflict among deer hunters. Our objectives were to determine factors predicting support for dog hunting in North Carolina. Using a 2006 survey of North Carolina deer hunters, we evaluated factors that potentially influenced support for dog hunting (e.g., geographic region, hunting method, perceptions about deer populations and hunter participation, leasing practices). Nearly half (46%) of the deer hunters (n = 5,005) believed dog hunting should be illegal. Most deer hunters who opposed dog hunting neither dog hunted nor hunted in regions where dog hunting had a strong history. Concerns among non-dog hunters mostly focused on competition for deer hunting opportunities. Our results indicate a need to promote greater awareness among the diverse hunting groups and suggest dog hunters may be important allies in efforts to acquire large contiguous tracts of hunting land.*

**Keywords** deer hunting, dog hunting, hunting, hunting tradition, North Carolina

## Introduction

In the southeastern United States, hunting white-tailed deer (*Odocoileus virginianus*) with dogs (hereafter, dog hunting) emerged as a response to cultural and environmental conditions in Colonial America (1492–1763 AD; Samuel, 2005). A large portion of the southeastern Atlantic Coastal Plain, from Virginia to northern Florida, consisted of pocosin wetlands (Sharitz & Gibbons, 1982), which are characterized by dense vegetation. Hunters adapted to this environment by using dogs to chase deer from the dense vegetation

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into the open (Samuel, 2005). In the mid-1700s, dog hunting was further embraced by the Scottish-Irish immigrants who settled in North Carolina, South Carolina, Kentucky, Tennessee, and western Virginia (Hound-Hunting Technical Committee, 2008). Today, dog hunting continues to contribute to the community identity in some rural areas in the Southeast (Chitwood, Peterson, & DePerno, 2011).

Despite the deep cultural roots of dog hunting, the practice often faces opposition from both hunters and non-hunters. This opposition has led to conflicts that have been associated with the declining property size (Samuel, 2005). In 1990, the Texas Parks and Wildlife Department prohibited dog hunting in response to conflicts (e.g., trespassing and disturbing other hunters) between landowners and dog hunters (Campo & Spenser, 1991; Hound-Hunting Technical Committee, 2008). Additionally, permit or registration systems for hunters who hunt deer with dogs and accountability requirements for deer hunting clubs using dogs have been created in Florida (1979), Alabama (1995), and Georgia (2003) (Alabama Administrative Code, 2012; Espey, 2008; Florida Administrative Code, 2010; Hound-Hunting Technical Committee, 2008; Rabb, 2010). Although conflicts with landowners and other stakeholder groups have contributed to restrictions on dog hunting in the Southeast (Hound-Hunting Technical Committee, 2008), some dog hunters consider the conflicts with other hunters the primary threat to the future of dog hunting (Chitwood et al., 2011).

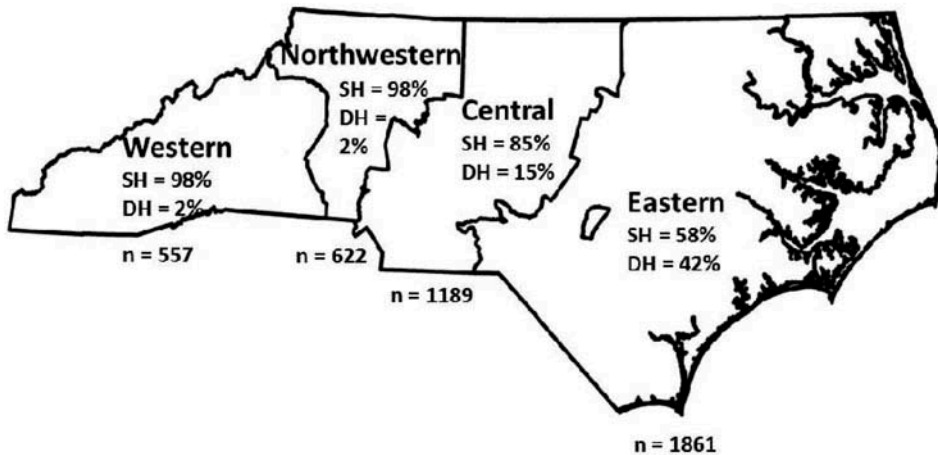
To effectively manage dog hunting in the future, wildlife management agencies must gain a clear understanding of how deer hunters view the practice of dog hunting and how perceptions of dog hunting can be influenced, especially among groups that share an interest in the same game species (Dalrymple et al., 2010). In this article, we evaluated factors that potentially influence deer hunters' perspectives on whether dog hunting should remain legal, and how those beliefs are influenced by geographic region, hunting method, perceptions about hunting opportunity, participation in dog hunting, and leasing practices.

North Carolina is an ideal place to study deer hunter perspectives on dog hunting because it has a strong tradition of dog hunting (e.g., Chitwood et al., 2011), the practice has fewer regulations relative to other states, and political pressure to restrict the practice has increased (Rabb, 2010; Way, 2011). Strong dog hunting traditions are evident due to the expansive area of the state where the practice is allowed, as it is legal in most of the state's eastern deer hunting region (the largest region) and some of the central region (Figure 1). Additionally, North Carolina's state dog is the Plott hound, which has a 200-year history in the state and was originally bred in the mountains for hunting black bear (*Ursus americanus*; American Kennel Club, 2010). The fact that a dog hunting breed is honored by North Carolina demonstrates the historical and cultural importance of the activity (Chitwood et al., 2011). However, with few regulations in place to create accountability among dog hunters, conflicts with other hunters (e.g., trespassing) has created animosity. Because dog hunters have identified non-dog hunters (i.e., still-hunters) as an important source of conflict (Chitwood et al., 2011), understanding factors that explain support for dog hunting is relevant culturally and with respect to deer management.

## Hypotheses

We examined five hypotheses regarding support for dog hunting. We hypothesized that deer hunters of North Carolina would be more supportive of dog hunting if they:

H1: Hunted more frequently in eastern North Carolina, where the practice is more common.



**Figure 1.** Hunting region map indicating percentage of still-hunters (SH) and dog hunters (DH) for each region, 2005–2006. Region boundaries are based on 2005 North Carolina deer season zones.

H2: Participated in dog hunting in the previous three years.

H3: Perceived deer hunting opportunities to be adequate (either due to overall deer population increases or deer hunter participation decreases).

H4: Did not lease land for the purpose of hunting deer during the previous three years.

H5: Hunted over bait during the previous three years.

If respondents live in a region where dog hunting is part of the social fabric (eastern North Carolina), the norm activation model (Schwartz, 1977) suggests they would be more supportive than respondents from regions where dog hunting is rare (H1). H2–H4 may be explained by the rational choice model of behavior because in each case the continuation of dog hunting provides a benefit to respondents or avoids any negative consequences such as competition for the same resource (Ajzen, 1991). Cognitive dissonance theory (McLeod, 2008; Rollins & Romano, 1989) provides theoretical grounding for H5 because baiting deer has been cast in a negative light (e.g., Brown & Cooper, 2006) similar to dog hunting.

## Methods

The data were collected from a statewide survey created by the North Carolina Wildlife Resource Commission (NCWRC) to examine the views of North Carolina deer hunters about deer hunting and management. The NCWRC developed a self-administered mail questionnaire related to deer hunting experiences, background, and demographic information. Specific questions examined current season structures, deer population trends, barriers to deer hunting, Quality Deer Management, deer harvest reporting, and hunting techniques. The questionnaire was mailed to 9,600 randomly selected hunters who had valid Big Game Harvest Report Cards during the 2005 deer season.

Survey recipients were sent up to four mailings. All respondents were entered into a lottery drawing for a \$50 Conquest fixed blade knife. The first full survey mailing (survey instrument and Business Reply return envelope) was mailed on October 16, 2006, and a reminder postcard was mailed on October 23. Non-respondents were sent a follow-up mailing on November 13 and December 18.

We modeled factors that influenced hunters' perspectives on whether dog hunting should remain legal. The dependent variable was: "How strongly do you agree or disagree that hunting deer with dogs should be legal?" The variable was coded on a 5-point scale ranging from 1 = *strongly agree* to 5 = *strongly disagree*. We used six independent variables: (a) hunting region, (b) personal experience as a dog hunter, (c) perception of deer populations, (d) perception of hunter participation, (e) past experience hunting deer with bait, and (f) leasing land for the purposes of hunting deer. We used a multiple linear regression analysis to estimate parameters and calculate statistical relationships (Boone & Boone, 2012).

For H1, we asked: "Using the map below (Figure 1), please indicate the region (deer season) in which you spent the most time hunting deer during the last three years," where 1 = *spent the most time hunting in the Western Deer Season*, 2 = *spent the most time hunting in the Northwestern Deer Season*, 3 = *spent the most time hunting in the Central Deer Season*, and 4 = *spent the most time hunting in the Eastern Deer Season*. For H2, we used a 5-point scale ranging from 1 = *never hunted with dogs* to 5 = *always hunted with dogs* to investigate how often participants used dogs to hunt deer.

To analyze the hunters' perceptions related to deer-hunting opportunities, we assessed respondents' opinions about the status of current deer populations in their hunting region using a 5-point scale ranging from 1 = *much too low* to 5 = *much too high*. Concerning hunter numbers, we asked: "How have the numbers of other deer hunters changed in the region in which you spent the most time hunting deer during the last three years?" Response was on a 3-point scale ranging from 1 = *the number of deer hunters has decreased* to 3 = *the number of deer hunters has increased*.

To evaluate H4 (leasing land), we asked the question: "Did you lease any land in North Carolina during the last three years for the primary purpose of hunting deer?" (1 = *yes*, 2 = *no*). For H5 (bait), we used the following question: "When hunting deer in North Carolina during the last three years, did you primarily hunt with or without the use of bait?" Response was on a 5-point scale ranging from 1 = *never hunted with bait* to 5 = *only hunted with bait*.

## Results

The adjusted survey response rate was 59% ( $n = 5,005$ ). Most respondents (95%) had hunted deer in North Carolina. Forty-six percent ( $n = 1,842$ ) of the respondents reported they thought dog hunting should be illegal, 36% ( $n = 1,446$ ) reported they supported dog hunting, and 18% ( $n = 730$ ) were neutral. Of the respondents, 24% had experienced hunting deer with dogs.

Our model indicated region, participation in dog hunting, perceptions of hunter and deer numbers, and use of bait for deer hunting all predicted whether deer hunters believed dog hunting should be legal (Table 1). Respondents who hunted deer primarily in the eastern region (Figure 1) were more likely to support dog hunting (50%;  $M = 3.22$ ;  $SE = .04$ ). The eastern region was the baseline to compare with other regions. We determined that hunters who primarily hunted deer in the northwestern (22%,  $M = 2.38$ ;  $SE = .06$ ) and western (15%,  $M = 2.08$ ;  $SE = .06$ ) regions demonstrated lower support than the eastern region. Support from the central region (31%,  $M = 2.72$ ;  $SE = .04$ ) was not statistically different from the eastern region (Table 1).

How often the respondent dog hunted in the past was the strongest predictor of whether they believed dog hunting should be legal (Table 1). Ninety-five percent of respondents who only hunted deer with dogs believed the practice should be legal ( $M = 4.78$ ;  $SE = .08$ ).

**Table 1**

Multiple linear regression results for the support of legally hunting deer with dogs (dog hunting), including standardized coefficients ( $\beta$ ) according to licensed North Carolina deer hunters, 2005–2006

Model	Standard error	Standardized coefficients	<i>t</i>	<i>p</i> -value
(Constant)	.131		10.602	<.001
*Western Region	.081	−0.080	−4.484	<.001
*Northwestern Region	.074	−0.044	−2.623	.009
*Central Region	.058	−0.015	−0.875	.382
Dog Hunting Frequency	.028	0.512	30.478	<.001
Perception of Deer Numbers	.025	0.081	5.135	<.001
Perception of Deer Hunter Numbers	.032	−0.044	−2.94	.003
Deer Hunting Lease	.052	−0.030	−1.874	.061
Frequency of Deer Hunting over Bait	.018	0.068	4.311	<.001

Dependent Variable: How strongly do you agree or disagree that the following deer hunting techniques should be legal? (1 = *strongly disagree* to 5 = *strongly agree*).

\*Coefficients acquired by using Eastern Region as the reference category.

Most respondents (79%) who had dog hunted in the previous three years believed the practice should be legal ( $M = 4.19$ ;  $SE = .04$ ), whereas only 29% of those who had not dog hunted in the previous three years believed the practice should be legal ( $M = 2.36$ ;  $SE = .02$ ).

Perceptions of deer population trends and hunter numbers were also strong predictors of support for dog hunting (Table 1). Respondents who believed the number of deer had increased showed the greatest support for dog hunting (41%,  $M = 2.95$ ;  $SE = .06$ ), followed by those who thought the deer herd was stable (39%,  $M = 2.92$ ;  $SE = .04$ ) and those who thought the herd was decreasing (31%,  $M = 2.59$ ;  $SE = .04$ ). Similarly, respondents who thought the number of hunters were decreasing had the highest support for dog hunting (41%,  $M = 2.99$ ;  $SE = .07$ ), followed by those who thought the number of hunters was stable (37%,  $M = 2.88$ ;  $SE = .04$ ) and those who thought the number of hunters were increasing (35%,  $M = 2.72$ ;  $SE = .04$ ). Using bait was a predictor of dog hunting support (Table 1): 38% of those who had some experience hunting deer with bait believed dog hunting should be legal ( $M = 2.86$ ;  $SE = .03$ ), 35% of respondents who had only hunted deer with bait believed the practice should be legal ( $M = 2.77$ ;  $SE = .10$ ), and 33% of respondents who had never hunted deer with bait believed dog hunting should be legal ( $M = 2.71$ ;  $SE = .04$ ). Contrary to our hypothesis, leasing land was not a predictor of dog hunting support (Table 1).

## Discussion

Our results supported the hypothesis that familiarity with dog hunting was related to support for the practice and that frequency of participation was a strong predictor of whether deer hunters thought dog hunting should be legal. Our results reflect self-interest in the case of dog hunters protecting their own preferred mode of hunting. However, it may reflect

appreciation of the profound cultural meaning of dog hunting among hunters who had participated in the past (Chitwood et al., 2011). Support was highest in the eastern region where dog hunting evolved in response to cultural and environmental conditions (Sharitz & Gibbons, 1982) and helped shape hunting culture (Chitwood et al., 2011; Samuel, 2005). Future research that delineates between current dog hunters and those with only past experience could elucidate how past experience shapes current support. Similarly, household research (e.g., Chitwood et al., 2011; Mackenzie, 1990; Peterson, Hull, Mertig, & Liu, 2008) could illuminate the degree to which participation by one household member shapes acceptance by other people in the household.

Our results support the hypothesis that perceived competition for deer (due to either increasing deer hunter participation or decreasing deer populations) was negatively related to support for dog hunting. In our study, deer hunters who perceived declining deer numbers or increasing hunter participation were more opposed to dog hunting. Research has shown dog hunting can be a more efficient form of hunting (in terms of killing deer; compared to still-hunting) and could lead to overexploitation in some deer populations (Brooks and Abbott, 1986, cited in Florida Game and Fresh Water Fish Commission, 1991; Hound-Hunting Technical Committee, 2008; Nelson, 1989; Novak, Scribner, DuPont, & Smith, 1991; Peery & Coggin, 1978). Some of these concerns could be alleviated by agencies through outreach efforts highlighting how white-tailed deer numbers are increasing or stable in most areas (South Carolina Department of Natural Resources, 2012; Taverna, Peet, & Phillips, 2005) and the number of U.S. deer hunters have been stable or slightly declining since 1991 (Aiken & Harris, 2011).

The slight positive relationship between hunting deer over bait and support for dog hunting may be explained by the cognitive dissonance theory (McLeod, 2008; Rollins & Romano, 1989). Specifically, it may be psychologically difficult for hunters who gain an advantage over game through baiting to oppose dog hunting on the grounds that it provides hunters an unfair advantage over deer (e.g., Brown & Cooper, 2006). Future research should explore how the use of other potentially contentious hunting aides (e.g., electronic calls, night vision or thermal imaging, hearing enhancers) influences hunters' tolerance of controversial hunting practices.

Opposition to dog hunting may be related to urbanization, which promotes fragmentation of the landscape and less tolerance for utilitarian uses of wildlife in the Southeast (Hound-Hunting Technical Committee, 2008; Samuel, 2005; Siemer, Brown, & Decker, 1990). If state agencies want to preserve the culture and heritage of dog hunting (Chitwood et al., 2011), rather than ban the practice, they will need to contend with opposition among key segments of the deer hunting population, including those who: (a) have never dog hunted, (b) hunt in regions where dog hunting lacks a strong history, (c) are concerned about competition for deer hunting opportunities, and (d) believe fair chase excludes most tools and techniques that lend an advantage to hunters.

One way to alleviate many of these concerns relies on creating accountability for dog hunters. Dog hunting registration systems like those adopted in some southeastern states (Alabama Administrative Code, 2012; Espey, 2008; Florida Administrative Code, 2010; Hound-Hunting Technical Committee, 2008; Rabb, 2010) are a likely place to start. Additionally, Georgia and Alabama require dog hunting clubs to have a minimum acreage of land and to affix permit numbers to their vehicles and dogs (Georgia General Assembly, 2003; Hound-Hunting Technical Committee, 2008; Samuel, 2005). The increased accountability has resulted in a reduction in opposition to dog hunting clubs and has resulted in very few permit revocations in the first few years of the program (Espey, 2008; Samuel, 2005). Further, the accountability may help alleviate non-dog hunters' fears of competition, while serving to educate them about the cultural importance of dog hunting to its participants.



In addition to increasing accountability for dog hunters, state agencies might help reduce hunting conflicts by providing more land with dog hunting access and through public relations campaigns focused on the cultural heritage linked to dog hunting. Agencies can counter concerns about competition for limited opportunity by securing public access for dog hunting through land purchases or lease agreements. Moreover, agencies may find that dog hunters can be valuable partners for acquiring and conserving large tracts of land because dog hunters recognize the vulnerability of their activity as landscapes become increasingly fragmented (Chitwood et al., 2011). Although public relations are often viewed as outside the purview of game management agencies, outreach to the public is critical to creating understanding among the hunting and non-hunting public. These efforts should highlight the cultural value and heritage associated with dog hunting in the Southeast (e.g., Chitwood et al., 2011). Unfortunately, values are slow to change (Fulton, Manfredo, & Lipscomb, 1996; Inglehart, 1990), so deep divides over the meaning of fair chase will likely persist regardless of how wildlife managers address dog hunting. Hopefully, increased understanding among hunting groups will allow tolerance of dog hunting even if values and opinions differ among hunters.

## Note

1. In North Carolina, "bait" for deer hunting is any processed or unprocessed food item placed in an area to attract deer (M. Nunnery, North Carolina Wildlife Resources Commission, personal communication, September 23, 2014).

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