

HUNTER DEMAND FOR ACCESS TO PUBLIC AND PRIVATE LAND IN NEW YORK

by

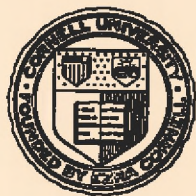
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HDRU Series No. 93-5

October 1993



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ACKNOWLEDGMENTS

We express our appreciation to the hunters of New York State who made this research possible through their participation in the hunter access mail survey. We gratefully acknowledge the contributions that staff in the New York State Department of Environmental Conservation (DEC), Bureau of Wildlife made at various points in this research. For their various contributions to study design, sample collection, instrument review, and manuscript review, we thank Donna Griffiths, Daryl Jenks, Wayne Jones, George Mattfeld, Kathy O'Brien, John O'Pezio, Gary Parsons, Tom Sutter, Pat Vissering, and Dave Woodruff.

Members of the Human Dimensions Research Unit assisted in a variety of ways during the course of this study. Annie Adams and Heidi Christoffel assisted with sample collection and data processing. Jody Enck and Larry Gigliotti provided instrument reviews. Heidi Christoffel and Nancy Connelly assisted with data analysis. Margie Peech provided word-processing support. This report is a contribution of New York Federal Aid in Wildlife Restoration Grant WE-173-G, Job 146-06-02.

INTRODUCTION¹

Private nonindustrial landowners and hunters are 2 key stakeholder groups that DEC consider as they develop and implement access-related actions within the state's wildlife management program. Private nonindustrial landowners control the majority of all rural land in New York. Because of this, their land management decisions play a key role in the conservation of wildlife habitat and the provision of public access for hunting and other wildlife-related recreation. Addressing landowner interests (e.g., relief from wildlife user problems, technical assistance with land management) is necessary for conservation of wildlife and maintenance of hunting opportunities on private lands.

A substantial demand for access to public and private lands is created by approximately three-quarters of a million state residents who seek hunting opportunities each year. Access to suitable lands for hunting is a minimum requirement for these individuals to pursue their wildlife-related interests. The availability of hunting access has other important implications for wildlife managers. Hunting access to private lands is a key to successful use of regulated hunting as a tool to manage white-tailed deer. Moreover, to the degree that access restriction contributes to reduced hunter participation and license sales, reduced hunting access may also contribute to a decline in dollars available to DEC for the wildlife program. Such a decline could reduce the agency's ability to meet the full scope of public desires for wildlife-related benefits in New York.

Because changes in hunting access can have far-reaching implications for wildlife management, it is important that DEC periodically monitor the supply of private lands available for hunting, and the demand for access to such lands. DEC has sponsored several

¹This report is a summary of HDRU Series Publication 93-5, which describes in fuller detail the information gained through this study.

studies of private landowners (Waldbauer 1966, Brown and Thompson 1976, Brown et al. 1983, Siemer and Brown 1993) and one study of hunters (Decker and Brown 1979) to obtain information on landowner attitudes toward hunting, recreationist-landowner conflicts, access to private lands for hunting, and demand for hunting on public and private lands.

In 1991, DEC formed a steering committee on access and identified funding to update New York's data base on the use of private lands for recreation. Staff in the Human Dimensions Research Unit (HDRU) worked with the DEC Access Committee to establish 2 studies on access. A private landowner survey was developed to obtain information about posting, access policies, and wildlife recreation on private lands (i.e., access supply) (Siemer and Brown 1993). A second study was designed to collect information from New York hunters on their use of and interest in private lands, perceived access problems, and willingness to pay for access (i.e., access demand). The purpose of this manuscript is to report findings from the 1991 hunter survey and compare them to those obtained in a similar study of 1976 hunters (Decker and Brown 1979).

STUDY PURPOSE AND OBJECTIVES

We conducted the 1991 hunter study to provide current indices of hunter use of and preferences for public and private land, and provide information that managers, hunters, and landowners could use to evaluate hunting access and hunter-landowner relations. Within this study our objectives were to determine: (1) the social profile of those who hunt on public and private land; (2) the access arrangements preferred and site selection criteria used by hunters; (3) the degree to which hunters want additional access to public and private lands; and (4) the effects of access on regional hunting pressure and frequency of hunting activity.

METHODS

Sampling Procedure

The DEC Access Committee established to oversee design of this research requested that the study produce information at a statewide and regional level. We chose to address this request by stratifying hunters by DEC administrative region. To obtain samples representative of each DEC Region, we drew a systematic sample of license receipts ($n=6,048$) in proportion to license sales by county in the previous year (the latest year for which information was available). Our sample population included buyers of all resident license types (i.e., sportsman, hunting and fishing, hunting and big game, small game, big game, and archery). We excluded nonresident hunters from the sample population, as was done in the 1976 hunter study (Decker and Brown 1979). Our sampling strategy allowed for an 80% level of confidence and a 95% level of accuracy for the response strata.

The Hunter Access Questionnaire

Data were collected through the use of an 8-page, self-administered, mail-back questionnaire containing 19 items (179 variables). Items were developed to address 6 topic areas: (1) hunter characteristics; (2) hunting effort by land type; (3) land-use preferences; (4) access concerns; (5) latent hunting demand; and (6) hunter interest in fee-access hunting opportunities.

We examined actions and preferences for 3 public and 3 private land types: state forests or parks, wildlife management areas, "other" state lands, private land with free access, private land with fee access, and cooperative hunting areas established through DEC agreements with private landowners (i.e., FWMA cooperative areas). The questionnaire explored statewide and regional hunting for 8 species groups: big game, ducks, geese, turkey, pheasant, and "other" small game. Funding limitations dictated that we analyze

hunting by species on a regional basis rather than on a county-by-county basis, as was done in the study of 1976 hunters (Decker and Brown 1979).

Implementation and Analysis

We implemented the hunter access survey in November, 1992, utilizing the four-wave mailing approach suggested by Dillman (1978). HDRU staff completed data coding and analysis using the Statistical Package for Social Sciences software (SPSS Inc. 1986, 1988). Regional data were calculated based on the respondents' county of residence. Chi-square and Student's *t* statistics were used for comparisons between groups. Between group differences were tested at the $P < 0.05$ level of significance.

We estimated statewide total days of big game, waterfowl, and small game hunting statewide based on total resident hunting license sales in 1991-92 (i.e., 726,582 licenses, John O'Pezio, NYSDEC, personal comm.), and the mean number of days hunted by those who pursued big game, small game, or waterfowl at least one day in 1991-92. We used a similar procedure to estimate latent hunting demand (i.e., we multiplied the number of days hunters would have hunted if access had been less restrictive by an estimate of the number of active big game, small game, or waterfowl hunters). Statewide estimates are based on an assumption that nonrespondents were nonparticipants and would remain so. We expanded the data in this fashion to provide conservative estimates of hunter days, and to develop estimates that could be compared to those generated for the 1976 hunter study (Decker and Brown 1979).

We conducted follow-up telephone interviews with 100 nonrespondents to estimate nonresponse bias on key items. Unweighted data from returned questionnaires was compared to that from telephone interviews with nonrespondents. Nonrespondents were found to be somewhat younger and had fewer years of hunting experience than respondents.

Nonrespondents were also more likely to be small game hunters. On average, nonrespondents hunted fewer days and experienced fewer problems related to hunting access on private lands. These differences suggest that nonrespondents may have encountered fewer access problems because they were less active hunters. We adjusted estimates of the proportion of hunters experiencing 7 access-related problems to minimize possible nonresponse bias.

RESULTS

Contact with a sample of 6,048 hunters resulted in 168 undeliverable questionnaires and contacts with 57 people outside the sample frame (e.g., nonresident hunters or fishing license holders). An adjusted sample of 5,823 yielded 3,681 useable returns (63% response). Response rate by region was approximately proportional to the sampling rates by region.

Land Use, Land-Use Preferences, and Hunting Participation

- 92% of all active hunters hunted at least one day on private land where no fee was charged in 1991; 43% hunted exclusively on private free land. Private lands were the site of 60% of big game, waterfowl, and small game hunter days. Those who preferred private land usually cited many reasons, including: guaranteed access to the place they hunted, convenience, quality of habitat, and control over hunter density.
- 57% of all active hunters spent at least one day hunting on public land in 1991, but less than 9% hunted exclusively on public land. Approximately 34% of all hunter days occurred on public lands. "Knowing I have a place to hunt there" was the most common reason why hunters preferred public land.
- Fee hunting areas accounted for just 5% of hunter days, while FWMA cooperative hunting areas were the site of only 1% of hunter days.
- A majority of hunters had hunted on the land type they most preferred (i.e., 35% of active hunters preferred private free land and hunted there exclusively; an additional 20% preferred public land and hunted there exclusively). About 31% of hunters hunted a mix of public and private land, but preferred private land. About 3% of active hunters preferred private land, but were unable to hunt private land in 1991-92.

Preferred Land Ownership Types

- 87% of hunters expressed moderate to strong interest in hunting private lands; 63% preferred private lands with free access above all other land ownership types.
- 75% of hunters expressed interest in hunting on public lands, but only 26% preferred public over private land.
- 35% of hunters expressed interest in fee hunting areas, but only 6% preferred privately owned fee areas over other landownership types.

Hunting Access Problems

- The majority (75%) of active hunters had encountered one or more access-related problems in 1991-92. Among those who reported problems, 71% found land they wanted to hunt posted; 57% could not locate the owner of a posted property, and 56% had to travel a long distance to find hunting areas.
- Further questioning indicated that 64% of active hunters held some interest in gaining access to new or additional private lands that were posted (36% said the question did not apply because they already had places to hunt).
- Upon encountering posted land that looked desirable for hunting, 64% of those interested in the land attempted to find the landowner, 34% drove on, and 2% hunted without permission. By comparison, in 1976 71% of interested hunters stopped and asked permission when they encountered posted lands.
- 64% of hunters perceived posted land as a problem that reduced their ability to find hunting areas as opposed to 32% of hunters who had perceived such a problem in 1976. Posted land was reported as a problem in the majority of New York counties, and for 24-37% of hunters pursuing particular species groups. The proportion of hunters who had difficulty finding places to hunt in 1991 because of posting was highest (37%) among deer hunters.
- Despite whatever obstacles posted land may have presented, hunters who defined posted land as a personal hunting impediment still hunted more days in 1991-92 than did those who did not perceive posting as a problem.
- Finding information about public lands, locating public hunting areas, and accessing public lands by road were seldom a problem for the majority of active hunters.

Latent Hunting Demand From Active Hunters

- 59% of hunters would have hunted more often if they could have found more land available for hunting, compared to 65% of hunters in 1976. Interest in hunting additional days was particularly high among waterfowl hunters.

- Across species groups, the proportion of hunters who would hunt more if access were available was highest in southeastern New York, where access is most restrictive. The potential increase in hunter demand was lowest in Region 6, where the proportion of posting landowners is relatively low.
- A conservative expansion of these data on potential increase in hunter days, if access had been more open in 1991, suggests a substantial latent demand for hunting opportunities: approximately 1.6 million additional days for big game, 2.9 million additional days for small game, and 0.5 million additional days for waterfowl.

Willingness of Hunters to Pay For Access to Private Lands

- Very few hunters (4%) had paid a fee to hunt on private land. Other fee-related hunting activity was slightly more common in 1991. About 12% of active hunters had paid dues to a private hunting club that owned or leased land for hunting; 17% had provided goods or services to a private landowner in exchange for hunting privileges.
- Approximately 38% of waterfowl hunters, 29% of big game hunters, and 19% of small game hunters were willing to pay an access fee to hunt big game, waterfowl or small game in the county of their choice. On average, they were willing to pay a daily use fee of \$11, \$10, and \$7, respectively.

Preferences for Access-Related Management Actions

- When asked to allocate a \$100 program budget to one of 8 potential management activities, a majority of hunters allocated some funds to 7 of 8 potential program areas described.
- 70% of active hunters allocated dollars toward promoting a positive hunter image to landowners. 60% allocated dollars to help hunters identify private landowners, create hunter training on building a positive relationship with private landowners, and create additional public hunting areas. Active hunters interested in additional public lands were likely to allocate the largest portion of their budget to this activity (mean = \$32.00).
- Slightly fewer hunters (55%) allocated money to providing better maps and signs marking public lands. The majority (64%) did not allocate money to improving roads and trails on public lands.
- Improving hunter-landowner relations was most important to hunters who had experienced access-related problems and those who hunted exclusively on private lands. A perceived need for additional public lands was particularly important to hunters from DEC Regions 1-3, and those who hunted exclusively on public lands.

DISCUSSION

Private rural lands continue to play an important role in the supply of hunting opportunities in New York. Most hunters (over 90%) spend some time hunting on private land, the majority of hunters prefer to hunt on private land, and private land continues to account for the majority of all hunter days expended each year. But public lands also continue to play a key role in hunting opportunity. Municipal, state, and federal public lands represent only 15-20% of all nonindustrial rural land, but about 34% of all hunter days occur on public lands.

These data also evidence a shift in relative importance of big game and small game hunting in New York that has transpired since the 1976 hunter access study. Changes in populations of several game species may partially explain this shift. A larger white-tailed deer population and liberalized deer harvest regulations have created big game hunting opportunities that were not available to hunters in 1976. The increase in big game hunter days documented in this study is probably a reflection of those changes in deer hunting opportunity. Declines in populations of several duck species and other small game (i.e., pheasant, woodcock) have occurred since that time and are probably an important factor contributing to the long-term decline observed in sales of New York State small game hunting licenses. The decrease in small game hunter days that we found should not be surprising, given a population of approximately 100,000 fewer licensed small game hunters in 1991 than in 1976. Given the increased level of land posting documented in the companion study of private rural landowners (Siemer and Brown 1993), we expected the majority of 1991 hunters to report problems related to hunting access. Our finding that the majority of 1991 hunters had experienced posting as a potential constraint on their personal hunting activity also corresponds well with findings from private landowner surveys showing an increase in

proportion of posting landowners from 42% in 1972 (Brown and Thompson 1976) to 63% in 1991 (Siemer and Brown 1993). However, these data suggest access constraints that are less severe than we anticipated among the majority of active hunters in New York. Thirty-nine percent of active hunters had obtained all of the hunting access they wanted for hunting in 1991. Most hunters who preferred hunting on private land were able to hunt on such lands at least once in 1991. Moreover, the statewide proportions of respondents who said posting was a problem, specifically for the species they hunted, were comparable to 1976 figures.

We also expected to find that hunters who encountered access-related problems of some kind would hunt less than those who did not encounter such problems. A possible explanation of the finding that hunters with access problems hunt more is that the most active hunters are more likely to encounter access problems, but they have enough interest in hunting to find places to hunt anyway.

It is important to note that this study did not fully explore issues related to the quality of hunting access in New York State. A study of New York deer hunters (Enck and Decker 1991) documented a strong association between hunting dissatisfaction and hunter behavior. Enck and Decker (1991) also found that dissatisfying interactions with other hunters were major reasons why most (75%) responding hunters preferred to hunt on private land. Open-ended comments from our survey revealed the same types of concerns about poor hunter behavior (e.g., littering, trespassing, consuming alcohol while hunting, taking dangerous shots, violating conservation laws). Such concerns would explain the preference many hunters had toward private land, especially private lands where mechanisms are in place to limit hunter density (e.g., some FWMA lands and Wildlife Management Areas but mostly private lands where the owner allows only a few people to hunt).

Our data make it clear that some hunters perceive an "access problem," but conflicting data from different items in the hunter survey make it difficult to precisely quantify the proportion of hunters who experienced hunting-access problems to a degree that inhibited their hunting participation. For example, 49% of Region 1-2 hunters said the question about "what do you do when you encounter posted land" did not apply to them because "[I] already have access to all the lands I need for hunting." On the other hand, some of these same hunters said they sometimes found "the private land that I wanted to hunt was posted." Some of these hunters also said they would hunt more often if they could "find more land open to go hunting." Potential explanations exist for these incongruities. It is plausible, for example, that even hunters who have access to some parcel of private property could still encounter some kind of access problems (e.g., long travel distance, identifying who owns a particular parcel of private land). It is also possible that hunters with some access to private land encounter problems gaining access to additional private land (places with different/better habitat, more abundant game, or other desirable characteristics). When interpreting these data, it is important to remember that we looked at active hunters—the people who stuck with hunting, despite the access obstacles they may have faced. Access obstacles did not keep these hunters from going afield, but many of them would hunt more if they could find additional access opportunities.

While the majority of active hunters are constrained in where they may hunt, not all hunters experience such problems at a level that calls for expanded programming. We found that most hunters had hunted on the land type they most preferred at least one time in 1991. Fifty-five percent of hunters hunted exclusively on the type of land they preferred. Wildlife managers should find these figures encouraging—by these estimates, over half of all active

hunters have at least limited access of the type they desire. Little or no change in current management activities seems necessary to serve the needs of these hunters.

However, approximately 45% of active hunters encountered access-related problems at a level that may significantly reduce their overall hunting enjoyment and participation. These hunters could be considered the primary audience for changed DEC program activities related to access. The largest subgroup within this audience are those hunters who use public and private land, but would prefer to hunt on private land (31% of active hunters). These hunters would hunt more and would enjoy hunting more if they could find more, better, or closer access privileges. Frustrated public land users (i.e., the 21,000 hunters who used public land exclusively in 1991, but preferred to hunt on private land) represent another target audience that is likely to benefit from additional program activity by DEC.

Parting Comments

The hunter access study produced a range of baseline data that should be useful to DEC in making program decisions related to hunting access. However, this study does not provide a simple, clearcut, or finely detailed definition of hunting access in New York. These data raise as many questions as they answer. How do we explain the finding that hunters who encounter access problems most frequently also hunt more days than other hunters? Why do some hunters simply drive on when they encounter posted signs rather than locating a landowner and attempting to obtain permission to hunt? How many hunters enjoy exclusive access privileges to private land, and how did they attain these privileges? Which hunters need access-related assistance the most, where do they live, and what types of assistance would help them the most? Additional analysis of the 1991 hunter access study may provide partial answers to these questions.

This study provides evidence that a range of access-related concerns posed some problem to many 1991 hunters and probably limited hunting participation overall (these data suggest that hunting participation in 1991 might have been greater by 30% if additional access opportunities had been available). However, unanswered questions remain about the degree to which the quality of hunting access opportunities is depressing hunter recruitment and retention. Outdoor recreationists who perceive a site to be crowded have been shown to cope with crowding by avoiding other recreationists (Hammit and Patterson 1991), moving to a different part of the same location (Anderson and Brown 1984), or going to a different location (Shelby et al. 1988). It is reasonable to assume that some recreationists stop participating or never begin participating in given activities because of crowding and other factors that reduce the quality of recreational experiences, but little research has been conducted to test this assumption. Longitudinal studies of hunter safety course participants and new hunters are needed to address questions about the contribution of hunting access to hunter recruitment and retention.

Continuing Research Activities

This study complements an HDRU/DEC companion study of 1991 private rural landowners (Siemer and Brown 1993). In combination, these studies provide a useful update on both the supply of and demand for access to private lands, and the concerns of private landowners and hunters related to access. As a follow-up to these studies, HDRU will conduct a further evaluation of access programs in New York State. HDRU will continue to assist the DEC Access Steering Committee to recommend program actions that might address the challenge of maintaining access to private lands for wildlife-related recreation.

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