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SATISFACTIONS, DISSATISFACTIONS, AND MANAGEMENT PREFERENCES OF NEW YORK STATE TURKEY HUNTERS

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OF NEW YORK STATE TURKEY HUNTERS**

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EXECUTIVE SUMMARY

STUDY PURPOSE:

- Our purpose was to provide quantitative information about New York State turkey hunters, their hunting satisfactions, and their preferences related to turkey management. This information will be used with other social and biological information to guide turkey management decisions.

STUDY OBJECTIVES:

- Characterize turkey hunters and their activities.
- Identify the key factors that influence turkey hunter satisfaction and dissatisfaction.
- Determine hunter opinions related to spring hunting and fall hunting regulations.
- Determine hunter opinions related to hunter safety, hunter density, and hunting access.

METHODS:

Sampling

- We drew a sample of approximately 2,000 people from the total population of 138,382 resident turkey hunting permit buyers during the 1992-93 hunting license year. We sampled 500 resident hunters from each of the four fall hunting zones (i.e., western, central, southeast, and northern), in proportion to 1992-93 permit sales in those zones.

The Survey Instrument

- During the spring of 1993, HDRU staff and DEC Regional and Game Bird Unit staff collaboratively designed a hunter questionnaire that examined: demographic and hunting participation characteristics, sources of turkey hunting satisfaction and dissatisfaction, and hunters' opinions on key regulatory and safety issues.
- To determine what influenced satisfaction and dissatisfaction, several aspects of turkey-hunting experience were examined using a scale of 31 satisfaction and 25 dissatisfaction questionnaire items. We assumed that people hunt turkey to fulfill achievement, appreciative, or affiliative motivations, as defined by Decker et al. (1987). Each item in the scale represents one of these motivational orientations. We also assumed that satisfactions and dissatisfactions occur year-round. Thus, we made sure that some items in the scale focused on events that occur before a turkey hunting season, while others focused on events during or after a season. Our scale is an adaptation of a 70-item satisfaction-dissatisfaction scale developed by Enck and Decker (1991) for use with deer hunters.

Implementation and Analysis

- We implemented a mail survey of turkey hunters in January, 1994. Each member of the sample was mailed a cover letter, questionnaire, and a self-addressed return postage-paid envelope. Nonrespondents received up to three follow-up mailings.
- For purposes of analysis, respondents were grouped by fall hunting zone and season hunted. Active spring and fall hunters were defined as those who hunted at least one day in spring or fall, respectively. For most analyses, hunters were assigned to a fall hunting zone based on county of residence. In a few cases, the county of hunt was used. Statewide statistics were calculated by weighting regional data to reflect hunting permit sales by region.
- An initial sample of 2,000 turkey hunting permit holders resulted in 32 undeliverables and 1,495 useable returns (76% of deliverables). Response rate by region was: 78% (western), 79% (central), 75% (northern), and 69% (southeast).

Characteristics of Turkey Hunters and Their Experiences

- Turkey hunting permit holders in 1993 averaged 43 years of age. The majority lived in rural areas (48%) or villages of under 5,000 people (19%). Few (6%) belonged to turkey hunter organizations.
- The majority (57%) had hunted turkeys one to five years (23% had hunted for six to ten years, and 20% for 11 or more years). However, most were not new to hunting generally; the average permit holder had purchased a hunting license for more than 20 years.
- The majority also hunted deer, rabbits or hares, and grouse or woodcock.
- Most had hunted turkeys every year or most years since they began. 85% had hunted at least once in 1993. Of those who had hunted in 1993, 32% hunted during the spring only, 13% hunted during the fall season only, and 55% hunted both seasons.
- Most permit holders hunted in their county of residence or an adjacent county (excluding hunters from Long Island). The majority of all spring and fall hunting days occurred on private land where no fee was charged for access.
- About 35% of fall hunters bow hunted deer and turkey at the same time and about 38% of fall hunters hunted small game and turkey at the same time. About 12% of 1993 fall hunters made at least one trip afield for the purpose of assisting another turkey hunter; 24% of spring 1993 hunters went afield at least once for this reason.
- About half had bagged at least one turkey in their lifetime.

Hunter Safety Behavior and Opinions

- Most (84%) had attended the mandatory hunter education course established in New York in 1949, but only 26% had ever attended a voluntary turkey hunting seminar of at least three hours in length.
- 25% of hunters had worn hunter orange while moving in the woods and 17% had used a hunter orange tree marker or game bag during spring season.
- 38% of those who had hunted in 1993 had used #2 shot some of the time. Those who had hunted turkeys one to five years were more likely than those who had hunted turkey longer to use #2 shot (those who had hunted one to five years were also less likely than other hunters to have ever bagged a turkey). The proportion of hunters using #2 shot decreased with hunter age.
- Most (70%) hunters felt safe in full camouflage. 44% thought wearing hunter orange would improve safety, 26% were neutral, and 30% disagreed. Only 28% would support a regulation that hunters wear hunter orange while moving in the woods.
- 58% agreed that opening a season on a weekday increases safety (22% disagreed), but only 19% believed a weekday opener was necessary to make sure hunters don't harvest too many turkeys. 31% said opening the season on a weekend would increase their enjoyment of the activity, while 39% said it would not.

Management Preferences

- **Season Lengths:** 75% were satisfied with length of spring season. Most (74%) recommended no change in spring season length. 63% were satisfied with length of the fall seasons. Most (71%) recommended no change in fall season lengths.
- **Season Dates:** 67% were satisfied with the dates of the spring season. About 66% recommended no changes in the spring season dates. 58% were satisfied with the dates of fall seasons. About 69% recommended no change in fall season dates.
- **Number of Weekends:** 66% were satisfied with the number of weekends in the spring season. 71% recommended no change in the number of weekends. 58% were satisfied with the number of weekends in the fall season. 70% recommended no change in the number of weekends.
- **Bag Limits:** 80% were satisfied with the spring bag limit. Over 80% recommended no change in the spring bag limit. About 66% were satisfied with fall bag limits. 76% recommended no change in fall bag limits.
- **Other Management Issues:** Only 12% of hunters favored a regulation that would limit the number of turkey hunting permits sold each year. Only 14% favored a regulation that would restrict an individual turkey hunter to one county or turkey management zone.

Turkey Hunting Satisfactions

- **Satisfaction With Personal Experiences:** Satisfaction with personal hunting experiences was high. 70% were satisfied, 7% were dissatisfied, and 23% were neither satisfied nor dissatisfied with their personal turkey hunting experiences in the last year they hunted turkey.
- **Satisfaction With Turkey Management:** Satisfaction with turkey management was high. About 74% of hunters were generally satisfied with DEC's current turkey management program, 18% had mixed feelings, 3% were generally unsatisfied, and 5% had no opinion.

Primary Satisfactions and Dissatisfactions

- As expected, turkey hunter satisfaction was multi-faceted. 12 of the 31 satisfaction items and five of the 25 dissatisfaction were found to be of primary importance to turkey hunters.
- All primary satisfaction involved experiences that occurred before or during the turkey hunting season.
- Primary satisfaction were a mixture of appreciative motivations (e.g., relaxing, gaining solitude, enjoying nature, seeing and hearing wildlife) and achievement-oriented motivations (e.g., making a clean kill, practicing skills). Affiliative motivations (e.g., spending time with friends and family) were of secondary importance.
- Three of five primary dissatisfaction related to seeing unsafe, unlawful, or unethical hunter behavior. Four of five primary dissatisfaction occurred during the season (one occurred year-round). All five primary dissatisfaction involved experiences that thwart the hunter's attempt to fulfill appreciative or achievement goals through the turkey hunting experience.

Single Greatest Satisfactions and Dissatisfactions

- The "single greatest" hunting satisfaction reported most often related to: seeing or hearing turkey, calling in a turkey, enjoying nature, gaining solitude, being with particular people, and helping a new hunter. Many of the single greatest satisfaction cited most frequently were related to achievement motivations and occurred during the hunting season.
- The "single greatest" hunting dissatisfaction reported most often related to: unsafe/unethical hunters, not seeing turkeys, not killing a turkey/missing a shot, not enough time to go hunting, and problems gaining access to private land. The single greatest dissatisfaction cited most frequently related to multiple hunting motivations (i.e., appreciative and achievement motivations), but occurred mainly during the hunting season. About 11% of hunters reported no single greatest hunting dissatisfaction.

Suggested Ways to Address Sources of Hunter Dissatisfaction

- Respondents suggested a range of 190 potential solutions to overcoming their single greatest dissatisfaction. No solution was suggested by more than 5% of respondents.
- The most commonly suggested solutions among hunters dissatisfied by unsafe or unethical hunters were: increase hunter education, improve hunter ethics, and create stricter law enforcement.
- The most commonly suggested solutions among hunters dissatisfied by not seeing turkeys were to stock turkeys and conduct more turkey management. About 15% of these hunters had no suggested solution for this source of dissatisfaction.
- Hunters who were dissatisfied about not getting a turkey or missing a shot at a turkey were likely to suggest personal solutions (e.g., more shooting practice). Hunters with dissatisfaction related to posted land suggested that more private land be opened to hunters.

CONCLUSIONS:

Turkey Management Issues

- The majority of New York State turkey hunters are satisfied with their own turkey hunting experiences and DEC's turkey management program.
- There was no broad-based hunter mandate for changes in regulations related to turkey season lengths, dates, and bag limits. At this time, changes in these season characteristics are not likely to significantly increase hunter satisfaction.
- There appears to be a possibility that further liberalization of turkey hunting seasons might decrease hunter satisfaction.
- A regulation that required the use of hunter orange while hunting turkey in New York State would meet substantial hunter opposition and create dissatisfaction with the turkey management program.
- Negative interaction with other hunters was identified as an important source of dissatisfaction among turkey hunters. However, most hunters would oppose efforts to mandate additional hunter education, or limit the total number or distribution of turkey hunters.
- The primary sources of hunting dissatisfaction were related to ethical and safety issues, not hunting regulations. Thus, changing any given turkey hunting regulation may not be an effective way to increase overall turkey hunter satisfaction. Communications efforts to improve hunter ethics or increase hunter understanding of turkey biology and management may be more effective as means to increase turkey hunter satisfaction.

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INTRODUCTION

The historical range of the eastern wild turkey (*Meleagris gallopavo*) included New York State south of the Adirondack region. Loss of hardwood forests to logging and agriculture, unregulated hunting, and introduction of domestic poultry diseases led to the decline and extirpation of the turkey from New York by the mid-1800's (Eaton 1964). By the 1950's, habitat conditions in New York again became favorable for turkey and remnant populations from Pennsylvania gradually became reestablished along the New York-Pennsylvania border (Eaton 1964). Beginning in 1959, the New York State Conservation Department (now the New York State Department of Environmental Conservation [DEC]) supplemented this natural migration through releases of trapped wild birds¹ (Kenamer and Kenamer 1990). By 1968, secure populations of turkeys had been established and a limited hunting season was opened in several counties. With the exception of metropolitan New York, healthy populations of turkey now occur throughout the state, allowing for regulated turkey hunting in all 55 upstate counties. Reported annual turkey harvest has exceeded 10,000 birds in recent years (Table 1).

The relatively recent development of widely distributed and abundant turkey populations has generated a growing demand for turkey hunting opportunities. Over the past decade, turkey hunting permit sales in New York have increased an average of 9% per year (Table 1). Approximately 148,000 permits were sold during the 1992-93 hunting license year.

¹DEC efforts to encourage the re-establishment of secure turkey populations also included releases of wild turkeys reared on game farms. However, game farm birds were found to make an insignificant contribution to the wild breeding population and the practice was discontinued.

Table 1. Turkey hunting permit sales, turkey harvest, and accident statistics, New York State, 1976-1992.

<u>Fall Turkey Hunting</u>						
<u>Year</u>	<u>Permits</u>	<u>Reported Take</u>	<u>Percent Success</u>	<u>Injuries</u>	<u>Injury Rate/P</u>	<u>Injury Rate/T</u>
1992	109420	4831	4	5	5	1
1991	100621	4851	5	5	5	1
1990	84584	3577	4	3	4	1
1989	80075	3125	4	5	6	2
1988	78870	3528	4	4	5	1
1987*	72095	3812	5	2	3	1
1986	67589	2573	4	1	1	0
1985	64681	2971	5	4	6	1
1984	63245	1926	3	1	2	1
1983	59873	3229	5	5	8	2
1982	62716	3728	6	4	6	1
1981	60750	3421	6	6	10	2
1980	42541	2883	7	5	12	2
1979	30481	1827	6	5	16	3
1978	25352	1123	4	3	12	3
1977	18969	1365	7	3	16	2
1976	19824	1030	5	2	10	2
<u>Spring Turkey Hunting</u>						
<u>Year</u>	<u>Permits**</u>	<u>Reported Take</u>	<u>Percent Success</u>	<u>Injuries</u>	<u>Injury Rate/P</u>	<u>Injury Rate/T</u>
1992	143101	6695	4	7	5	1
1991	122185	5251	4	7	6	1
1990	113484	3961	3	8	7	2
1989*	110335	4244	4	4	4	1
1988*	100669	3491	3	9	9	3
1987	92051	2913	3	8	9	3
1986	89745	2950	3	4	4	1
1985	83204	2724	3	4	5	1
1984	81746	2277	3	0	0	0
1983	81487	2604	3	0	0	0
1982	77512	3585	4	2	3	1
1981	56351	2544	3	5	9	2
1980	41386	1818	3	2	5	1
1979	34685	1229	3	4	12	3
1978	16905	749	2	2	12	3
1977	15618	672	4	1	6	1
1976	15747	656	4	3	19	5

*accidents included at least 1 fatality

**spring permits include the fall permits sold in the previous calendar year

P = 100,000 turkey hunting permits

T = 1,000 turkeys taken

Although many other states show similar increases in turkey hunting participation, only a few of those states have collected detailed information on turkey hunters (e.g., Missouri [Vangilder et al. 1990], Virginia [Bittner and Hite 1991]). Most research has focused on the economic impact of turkey hunting (Baumann et al. 1990, Potter et al. 1990, Cartwright and Smith 1990). Few studies have focused on turkey hunting satisfactions (Hazel et al. 1990).

No research has been done to characterize the relatively new and expanding cadre of turkey hunters in New York. Wildlife managers in the DEC Bureau of Wildlife (BOW) identified the lack of information on turkey hunters as an important impediment to informed decision making related to several aspects of turkey management (e.g., setting season lengths, dates, and bag limits). DEC game bird managers need a greater understanding of turkey hunters to maintain a management program that effectively conserves this valued wildlife species, yet considers the growing public demand for satisfying turkey hunting opportunities.

PURPOSE

The purpose of this research was to provide quantitative information about New York State turkey hunters and their preferences for turkey management. Our objectives were to: (1) characterize turkey hunters and their activities, (2) identify the key factors that influence turkey hunting satisfaction and dissatisfaction, (3) determine hunter opinions related to spring hunting and fall hunting regulations, and (4) determine hunter opinions related to hunter safety, hunter density, and hunting access. Findings from this study will be used in combination with other sources of social and biological information to guide turkey management decisions.

THEORETICAL FRAMEWORK

Defining the Satisfaction Concept

Human dimensions investigators often ask hunters how "satisfied" they are with particular wildlife-related experiences. When we ask someone to report their level of satisfaction we are asking them to provide an evaluation (i.e., an attitude) about something. Such questions are useful for this research because they provide wildlife managers with clues about the outcomes people hope to obtain through turkey hunting experiences.

For the purposes of this research, we assume that people are motivated to participate in activities that they believe will produce valued psychological outcomes. For example, people may participate in an activity to achieve a sense of security, self-worth, or group belonging. Decker et al. (1987) suggest that people are motivated to participate in hunting to meet personal performance standards (e.g., obtain psychological outcomes related to self-esteem), strengthen personal relationships (e.g., obtain outcomes related to social belonging), or appreciate nature and relax (e.g., obtain outcomes related to safety, security, or spirituality). We assume that people engage in turkey hunting because: (1) they expect that their involvement will lead to certain events (e.g., seeing wildlife, being alone, shooting a turkey), and (2) they believe that if those expected events occur, they will obtain something they value highly (e.g., a sense of personal achievement). We define satisfaction as a behavioral outcome that occurs when expectations are met and valued psychological outcomes are obtained. To the degree that expectations are not met, valued psychological outcomes are not achieved. In this case, we assume the effect will be dissatisfaction.

Evolution of Research on Hunting Satisfaction

Much of the hunting satisfactions work done to date has focused on deer hunters. The concept of satisfaction relative to deer hunting has been recognized as being important for at least two decades because managers rely on hunters to help achieve deer management objectives (Decker and Connelly 1990).

Early studies of hunting satisfaction included assessments of the number of game animals bagged or the number of days hunters spent afield (Crissey 1971). Since the mid-1970s, managers and researchers have embraced a multiple-satisfactions approach to wildlife management that recognizes that hunters seek and derive numerous types of satisfactions from hunting (Hendee 1974, Decker et al. 1980, Hammitt et al. 1990). Research into the multiple-satisfactions of hunting has undergone several important theoretical changes, and each change has improved understanding of hunting dynamics and participation. For example, Langenau et al. (1981) examined the concept of multiple-satisfactions associated with a single hunting trip. Stankey et al. (1973) studied multiple satisfactions from the perspective of an entire deer-hunting season, but limited their research to harvest-related satisfactions. Hammitt et al. (1990) examined multiple satisfactions from the perspective of an entire deer-hunting season, but included a broader range of satisfactions than had Stankey et al.

Those studies examined the level of satisfaction a group of hunters received from various aspects of the deer-hunting experience. However, they treated the hunter population as relatively monotypical with respect to the level of satisfaction obtained from a given factor. That is, no attempt was

made to determine the relative importance of each type of satisfaction to different groups of hunters in the population.

Hautaluoma and Brown (1979) and Sanyal et al. (1989) used hunters' reactions to a broad range of potentially satisfying aspects of hunting to categorize the hunter population into different segments. That approach overcame the assumption that all hunters in a population were alike with respect to satisfactions, and provided additional information for management programming based on segments of the hunter population. However, that approach was limited, too, because it examined potential satisfactions associated only with the hunting season.

Enck and Decker (1991) hypothesized that satisfactions derived from the hunting experience occur throughout the year, and that opportunities to experience year-round satisfactions may be enhanced through management programs. Their assertion that hunting satisfactions occur year-round builds from Langenau and Peyton's (1982) theory that multiple stages exist for any recreational experience. Langenau and Peyton (1982) suggested that satisfactions are obtained during three stages of the hunting experience: (1) "planning and preparation" during which the hunter "gets ready" for a hunting trip, (2) "field experience" which includes the time spent hunting afield, and (3) "recollection" which reinforces and adds to satisfactions gained during the other stages. All three stages are believed to contribute to the total recreational experience (Langenau and Peyton 1982). Enck and Decker (1991) suggested that models of hunting satisfactions should reflect that consecutive year post-season/pre-season experiences overlap to produce year-round satisfactions.

Following Enck and Decker (1991), any model of turkey hunting satisfactions should consider three stages relative to hunting aspects of an entire turkey-hunting season, not just a specific day afield or hunting trip. Within this framework, preseason aspects such as scouting for turkey, practicing with turkey calls, patterning a shotgun, and discussing hunting strategies with other hunters correspond to the planning and preparation stage. Aspects that occur during the turkey-hunting season such as seeing and bagging turkey, enjoying wildlife other than turkey, and hunting with desired companions correspond to the field experience stage. Finally, postseason aspects such as eating turkey, reminiscing about the hunt with friends, and hiking to one's favorite turkey-hunting area outside of the hunting season to relive past hunts correspond to the recollection stage.

Enck and Decker (1991) asserted that wildlife managers can enhance hunter satisfaction by better understanding reasons why hunters in different segments of the hunter population desire different experiences from a general activity such as turkey hunting (Hautaluoma and Brown 1979). Success of programs aimed at enhancing hunter satisfaction also depend, in part, on adequately understanding why different hunter segments exist. We agree that an examination of year-round experiences, rather than only experiences that occur during the hunting season, is necessary to adequately delimit segments of the hunter population and the reasons that those subgroups exist. Also, we agree with Hazel et al. (1990:391) that "...research should focus not only on the presence of particular aspects but also the absence of those aspects in order to provide a more complete picture of hunting satisfaction."

The first efforts to examine turkey hunting satisfactions were conducted in the 1980's. These studies provide some evidence of multiple hunting

satisfactions and the importance of focusing on the presence and absence of factors related to hunting satisfaction. For example, a study of Michigan turkey hunters (Hazel et al. 1990) found that turkey hunter satisfaction related to aspects of preparation, search, harvest, nature, out-group social contact, companionship, and seasonal or weather-related factors. Vangilder et al. (1990) found an association between high hunter satisfaction and indicators that turkeys were present (i.e., seeing a turkey, bagging a turkey). Hawn et al. (1987) and others (Williams and Austin 1988, Vangilder et al. 1990) have found an association between turkey hunter satisfaction and the absence of other turkey hunters (i.e., high hunter dissatisfaction has been associated with interference by other hunters).

The theoretical foundation described above led us to develop the following hypotheses: (1) most hunters will have multiple hunting satisfactions and dissatisfactions, and (2) aspects of hunting that contribute to hunter satisfaction and dissatisfaction occur year-round.

MANAGEMENT ISSUES

There are four turkey hunting zones in New York State, each with a different turkey hunting tradition and management history. Seasons were opened first in the western zone. In following years, seasons opened in the central, then southeast, and finally in the northern zone. Differences in management history and hunting opportunity (Table 2) have resulted in differing levels of hunter experience in each zone. These differences in experience may contribute to variation in attitudes and expectations. Thus, we expected variations in management preferences by hunting zone.

Table 2. Spring and fall turkey season characteristics for New York State, 1993.

<u>Season</u>	<u>Turkey Hunting Zone</u>	<u>Season Dates</u>	<u>Season Bag Limits</u>
Spring	Statewide, north of Bronx County	5/3 - 5/31 ^a	Two bearded birds/ one per day
Fall	Western	11/1 - 11/21 ^b	One bird, either sex
Fall	Central	10/11 - 11/21 ^c	One bird, either sex
Fall	Northern	10/11 - 10/21 ^d	One bird, either sex
Fall	Southeast	10/11 - 11/21 ^e	Two birds, either sex/ one bird per day

^aSpring season convention: open first weekday in May; close May 31.

^bFall season convention: open first Monday after October 25; close first Sunday after November 14.

^cFall season convention: open first Monday after October 4; close first Sunday after November 14.

^dFall season convention: open first Monday after October 4; close first Sunday after October 15.

^eFall season convention: open first Monday after October 4; close first Sunday after November 14.

Hunter Safety

Turkey hunter behaviors such as wearing complete camouflage and imitating turkey calls create special safety considerations for this type of hunting. Hunting accident records show that 90% of turkey hunting injuries in New York are "visibility-related," and most of these are cases where the injured hunter was mistaken for game. That is, the majority of accidents involve low visibility of the victim, and an error in judgment or violation of a common gun safety rule (i.e., be sure of your target and what is beyond your

target). Accident statistics from other states have documented the same pattern of a relatively high incidence of accidents among turkey hunters (Missouri Department of Conservation [MDC] 1983), and a high proportion of accidents involving a hunter who was mistaken for game (Vangilder et al. 1990, Bittner and Hite 1991).

In 1975, turkey hunting in New York State had an accident rate twice as high as other types of hunting (New York State Department of Environmental Conservation [NYSDEC] 1994). The rate of turkey hunting accidents in New York has decreased since that time (Table 1) due to increased hunter education by DEC and others. Suggested means to reduce the probability of turkey hunting accidents have included: mandating that hunters wear hunter orange, requiring additional hunter education (Bittner and Hite 1991), limiting hunting permit availability (i.e., controlling hunter density), and prohibiting use of rifles or large shot sizes. A 1994 DEC report on hunting accidents made the following recommendations to help further reduce the incidence of turkey hunting accidents.

- Inform turkey hunters that nine out of ten turkey hunting accidents are visibility related (mistaken for game). The Department can then open a dialog with hunters to form a consensus on what steps should be taken to improve turkey hunting safety.
- Continue to update current educational efforts aimed at reducing turkey hunting accidents.
- Explore the effectiveness and feasibility of either recommending or requiring the use of brightly-colored "BE SAFE" stickers on guns for turkey hunting.
- Continue to explore the effects of hunter orange on turkey hunting success, and explore the acceptability and feasibility of mandating some use of high visibility clothing to reduce turkey hunting accidents. The current level of knowledge on this topic is insufficient to warrant mandating hunter orange for turkey hunting at this time.

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A 1994 survey showed that most big game hunters in New York wear hunter orange and approve of mandatory hunter orange laws for big game hunting (NYSDEC 1994). However, that study did not explore attitudes toward use of hunter orange when turkey hunting. Research in other states has documented turkey hunter resistance to mandatory use of hunter orange clothing (Pack 1989, Cartwright and Smith 1990, Vangilder et al. 1990, Bittner and Hite 1991), due in part to hunter perceptions that use of hunter orange reduces one's chances of taking a turkey (Erikson et al. 1985, Witter et al. 1990). One state (e.g., Pennsylvania) has adopted mandatory hunter orange requirements for turkey hunters. In Pennsylvania, hunter opposition has occurred, even though hunting accidents have decreased, as well. Thus, we assumed New York turkey hunters would oppose mandatory use of hunter orange clothing.

Hunter organizations have also been resistant to the idea of additional hunter training requirements, but research in Missouri showed that nearly half of all hunters favored a mandatory hunter training course for all turkey hunters. Thus, we expected to find a plurality of hunters to support increased hunter education requirements.

We expected little support for limiting turkey hunting permit availability, given survey data that showed this to be unpopular among Missouri turkey hunters (Vangilder et al. 1990). Work in Missouri also showed that most hunters used #4 or smaller shot before use of shot was regulated. Thus, we expected a minority of hunters to use large shot sizes in New York.

Season Characteristics

Each year DEC game bird managers receive letters and telephone calls in which hunters express their preferences and concerns about characteristics of

the spring and fall turkey hunting seasons. A wide variety of concerns is voiced. Although these comments do not provide a representative picture of hunter perceptions, they provide some insights about regulatory issues that deserve careful consideration. Some of the most common suggestions that the DEC Game Bird Unit has received through unsolicited comments include: lengthen the fall or spring season; start the spring season several weeks earlier (to coincide with peak gobbling activity); start the seasons on a weekend day; increase the number of weekends in each season; and increase the season bag limits. We developed questionnaire items to assess hunter perceptions on each of these topics. We did not have enough information to develop hypotheses about the frequency with which hunters might prefer changes in these regulations.

New York State has historically had weekday openings for all turkey seasons. This has been done primarily as a safety measure to reduce hunter density on the opening day of a given season. Managers assume that the resulting opening day take of turkeys is lower than the take that would occur if the season opened on a weekend. However, it is also assumed that opening the season on a weekday has a limited effect on the total number of turkeys killed during a season (i.e., the total harvest of turkeys should be similar whether the season opens on a weekday or weekend).

In general, bag limits have been set conservatively to protect the turkey resource from overharvest. A two-bird bag limit for the fall season in the southeast zone was established due to lower hunter pressure and harvest in that area in the past.

Some hunters have expressed a desire for a longer and earlier spring season. The spring season opening date is based primarily on data from radio

telemetry studies of hen turkeys. Research in New York suggests that by the first week of May, over 50% of all hens are laying or incubating eggs (Glidden and Austin 1975, Roberts 1993). Opening the spring season at that time helps reduce the chances that hunters will accidentally take hen birds. Opening the spring season earlier would likely result in an unacceptably high illegal take of hen birds (Kimmel and Kurzejeski 1985). Extending the traditional 4-week season into June is not desirable because of the natural decline in turkey breeding activity in June and increasingly dense foliage that reduces hunter and turkey visibility.

Some hunters in both the southeast and western zones have expressed a desire for earlier fall opening dates and a longer fall season. The fall closing dates for all zones occur the day before the opening of the regular firearms season for deer. The fall season closing was set originally to prevent the potentially hazardous situation of placing fully-camouflaged turkey hunters in the field during the deer season. A secondary concern relates to potential harvest pressure on turkeys. Deer hunters commonly encounter turkeys, so if fall turkey seasons were longer, opportunistic take of turkey could significantly increase harvest. For example, in Virginia, where turkey and deer seasons have traditionally overlapped, the highest turkey harvests have occurred during the middle of the turkey season (i.e., during the first two weeks of deer season).

METHODS

Sampling Protocol

From computerized records of 1992-93 resident turkey hunting permits (n=138,382), we drew a sample of approximately 2,000 names, 500 from each hunting zone. Our goal was to obtain information from 1992-93 resident

hunters who participated in the statewide spring hunt, as well as those who participated in fall turkey hunting in one or more of the four fall hunting zones (i.e., western, central, northern, and southeast zones [the Taconic zone was considered part of the southeast zone]) (Figure 1).

Our sampling strategy assumed (based on data from prior annual hunter surveys) that most people hunted in the zone nearest to their county of residence. This sampling strategy allows a 95% level of confidence and a margin of error of $\pm 3\%$.

Instrument Development

During the spring of 1993, HDRU staff, members of the DEC Game Bird Unit, and selected DEC regional staff worked together to write study questions, define research objectives, and outline relative theoretical work on hunting satisfactions. The draft questionnaire, question by objective matrix, and analysis plan were circulated for review to two HDRU staff, DEC Game Bird Unit staff, and DEC regional staff with management responsibilities related to wild turkey. Review comments were incorporated into a revised instrument, which was redistributed to HDRU and DEC staff for final review. The revised questionnaire was pretested for face validity with a small sample of active turkey hunters. The questionnaire was revised to address pretest-related concerns and the instrument was finalized in November of 1993 (Appendix A). The questionnaire explored: demographic and hunting participation characteristics, sources of turkey hunting satisfaction and dissatisfaction, and hunters' opinions on key regulatory and safety issues. Most of the management-related items were open-ended to allow for the full range of responses and to minimize influence over question response.

Figure 1. Fall turkey hunting zones in New York State, 1993.

We assessed overall satisfaction with turkey management by asking hunters how satisfied they were with the current turkey management program delivered by DEC. The response options were: generally satisfied, mixed feelings, generally dissatisfied, and no opinion.

To measure specific influences on satisfaction and dissatisfaction, we developed 31 satisfaction and 25 dissatisfaction indicators (i.e., questionnaire items). The items we developed were based on the results and analysis of a 70-item satisfaction-dissatisfaction scale developed by Enck and Decker (1991) for use with deer hunters. We developed items to represent each of the three general motivational orientations for wildlife recreation proposed by Decker et al. (1987) (i.e., achievement, appreciative, and affiliative). Following Enck and Decker (1991), the items were also developed to collect information about experiences that may occur before, during, or after a turkey hunting season.

Implementation

We mailed a cover letter, questionnaire, and a self-addressed return postage-paid envelope to turkey hunters during the first week of January, 1994. Nonrespondents received up to three follow-up mailings (the second containing an additional questionnaire) at 7-10 day intervals as recommended by Dillman (1978).

Analysis

We coded the data utilizing the Statistical Package for the Social Sciences (SPSS) (SPSS, Inc. 1988a) software. We used SAS (SAS Institute 1988) and SPSS software (SPSS, Inc. 1988b) to analyze the data. Chi-square statistics were used to test for differences between groups. Differences between groups are reported at the $P = 0.05$ level of significance.

Some stratification was done to analyze data by hunting season or hunting zone. Active turkey hunters were defined as any permit holder who went afield to hunt turkeys at least one day in 1993. Active spring and fall hunters were defined as those who hunted at least one day in spring or fall, respectively. Hunters were assigned to a region (i.e., western zone, central zone, northern zone, or southeast zone) based on county of residence. Some analyses were based on zone or county hunted.

We sampled within regions in proportion to license sales by county. This provided representative data by region. However, the proportion of turkey hunting licenses sold differed by region (i.e., 6% of licenses were sold in the northern zone, 18% in the central zone, 38% in the western zone, and 38% in the southeast zone). In order to report findings at a statewide level, we weighted the data to reflect the true proportion of turkey hunting permit buyers in each region.

Management Preferences:

We asked hunters to describe their personal level of satisfaction with spring and fall season lengths, dates, number of weekends, and bag limits. We also asked hunters what changes, if any, they would like to see related to season lengths, dates, number of weekends, and bag limits. Respondents were instructed to respond "no change" if they didn't think any change in a regulation was necessary. These four items made no specific reference to spring or fall seasons, but we attempted to separate responses into spring and fall categories. Any generic response (e.g., "no change," "longer," "earlier") was assumed to apply to both seasons and was included in both the spring and the fall categories. Any response that made an identifiable reference to fall or spring seasons (e.g., "longer fall season," "open April

15") was recorded in that category and recoded as "missing" in the other season category. We believe this coding strategy made the data from these four items more meaningful, but caution must be used in interpreting the results as a clear separation of intent was not possible.

Satisfactions and Dissatisfactions:

Hunters were asked to rate their personal turkey hunting satisfaction on a nine-point scale, from negative four to positive four. The endpoints of the scale were labelled greatly dissatisfied (negative four) and greatly satisfied (positive four). The midpoint was labelled neutral (zero). A response of negative four, three, or two was coded as dissatisfied. A response of negative one, zero, or positive one was coded as neutral. A response of positive two, three, or four was coded as satisfied.

Each of the 56 satisfaction and dissatisfaction items was examined individually to identify aspects of primary and secondary importance to turkey hunter satisfaction (items identifying the single greatest satisfaction and dissatisfaction were used to supplement this analysis). We characterized each satisfaction and dissatisfaction within the temporal-motivational model of satisfactions described earlier.

RESULTS

An initial sample of 2,000 turkey hunting permit holders resulted in 32 undeliverables and 1,495 useable returns (76% of deliverables). Response rate by region was: 78% (western), 79% (central), 75% (northern), and 69% (southeast). No nonrespondent follow-up was conducted to measure possible nonresponse bias.

Characteristics of Turkey Hunters

Turkey hunting permit holders in 1993 averaged 43 years of age. Turkey hunters were similar to deer hunters in age structure (Enck and Decker 1991) (over 90% of turkey hunters were also deer hunters). That is, there were relatively few young turkey hunters (Appendix B).

Some turkey hunters (11%) lived in areas of 100,000 people or more, but the majority (68%) lived in rural areas or villages of under 5,000 people (Appendix C). Few (6%) belonged to turkey hunter organizations, but 36% belonged to other wildlife or environmental conservation organizations.

Hunting Participation

Licensed turkey hunting is relatively new in New York and the participation data reflected this. The majority (57%) of permit holders surveyed were relative newcomers to turkey hunting, having hunted turkeys one to five years (23% had hunted for 6-10 years, and 20% for 11 or more years). However, most were not new to hunting generally. The average permit holder had purchased a hunting license for more than 20 years (mean = 24 years, median = 23 years) (Appendix D). The majority also hunted deer (91% during gun season, 52% during bow season), rabbits or hares (59%), and grouse or woodcock (59%).

About 49% had hunted turkeys every year and 24% had hunted most years since they began turkey hunting. Eighty-five percent had hunted at least once in 1993. Of those who had hunted in 1993, 32% hunted during the spring only, 13% hunted during the fall season only, and 55% hunted both seasons. The most common reasons why hunters participated in the spring season, but not the fall season were: other hunting (32%); "too busy" (25%); preference for the spring season (8%), and unavailability of a fall season in their area (8%) (Appendix

E). The most common reasons why hunters participated in the fall season, but not in the spring season were: "too busy" (40%); conflict with work schedule (18%), and conflict with fishing interests (13%) (Appendix F).

Few people (7%) hunted the spring season with a bow. About 35% hunted deer and fall turkey at the same time and about 38% hunted small game and fall turkey at the same time. About 12% of fall 1993 hunters made at least one trip afield in the fall just to assist another turkey hunter; 24% of spring 1993 hunters went afield at least once for this reason (Appendix J).

Fifty-two percent had bagged at least one turkey in their lifetime. Hunters with six or more years of turkey hunting experience were more likely than hunters with 1-5 years of experience to have bagged a turkey (Table 3).

Most permit holders hunted in their county of residence or an adjacent county (as we had assumed when we drew our permit holder sample) (Appendix G). Excluding hunters from Long Island and New York City (i.e., hunters living in counties with no spring season), 82% of the hunt locations during the spring season were in the hunter's home county or an adjacent county. Slightly fewer (77%) who lived in a county where turkey hunting was permitted hunted in their home or an adjacent county during the fall.

The majority of all spring and fall hunting days occurred on private land where no fee was charged for access (Appendices H-I). Most turkey hunters hunted with a shotgun; a small proportion of spring turkey hunters hunted with bow and arrow. Over 15% of hunter days during the spring season were accounted for by hunters who were assisting someone else rather than hunting to harvest a bird for themselves (Appendix J). Archery hunting was more common and assisting other hunters was less common during the fall season (Appendix K).

Table 3. Comparison of lifetime turkey harvest and numbers of years experience hunting turkeys in New York State.

<u>Years</u>	<u>% ever successful</u>	<u>Average # of birds taken</u>	<u>n</u>
1 to 5	34.3%	0.9	846
6 to 10	67.3%	4.3	334
10 to 15	86.3%	7.6	153
16 or more	85.9%	12.9	142

Hunter Safety

Safety Behavior: Most (84%) had attended the mandatory hunter education course established in New York in 1949, but only 26% had ever attended a voluntary turkey hunting seminar of at least three hours in length. Twenty-five percent of hunters wore hunter orange in the woods while moving (Table 4), and 17% used a hunter orange tree marker or game bag during spring season (Table 5). Use of hunter orange was highest among hunters who had hunted 1-5 years or more than 15 years.

Thirty-eight percent of those who hunted in 1993 used #2 shot some of the time. Hunters with five years or less turkey hunting experience were more likely to use #2 shot than were hunters with 15 or more years experience (Table 6).

Safety Opinions: The most common actions that hunters suggested as ways for hunters to improve safety were: be sure of your target (37%), be more safety conscious (14%), and wear hunter orange (11%) (Table 7). The most common actions that hunters suggested DEC should take to improve hunting

Table 4. Use of hunter orange clothing while moving versus years of turkey hunting experience for New York State turkey hunters.

Frequency of use		Years of Turkey Hunting*			
		1-5	6-10	11-15	16+
Never	n	491	233	118	106
	%	71.2	82.4	86.4	80.4
Sometimes	n	57	15	8	10
	%	8.3	5.2	6.1	7.8
Often	n	42	21	6	5
	%	6.0	7.5	4.7	3.9
Every Hunt	n	100	14	4	10
	%	14.5	4.9	3.0	7.9

* $\chi^2 = 38.91$; $P < 0.001$.

Table 5. Use of hunter orange game bags or tree markers during the spring season versus years of turkey hunting experience for New York State turkey hunters.

Frequency of use		Years of Turkey Hunting*			
		1-5	6-10	11-15	16+
Never	n	531	246	112	106
	%	80.6	88.0	83.4	81.5
Sometimes	n	45	11	9	5
	%	6.8	3.8	6.4	3.9
Often	n	26	7	6	9
	%	3.9	2.5	4.7	6.9
Every Hunt	n	57	16	7	10
	%	8.6	5.7	5.5	7.8

* $\chi^2 = 12.72$; differences between groups are not significant.

Table 6. Use of #2 shot versus years of turkey hunting experience for New York State turkey hunters.

Frequency of use		Years of Turkey Hunting*			
		<u>1-5</u>	<u>6-10</u>	<u>11-15</u>	<u>16+</u>
Never	n	395	173	90	89
	%	59.7	61.8	67.0	70.4
Sometimes	n	85	42	23	18
	%	12.9	14.8	16.8	14.2
Often	n	51	24	11	8
	%	7.6	8.5	8.3	6.4
Every Hunt	n	131	42	11	11
	%	19.8	14.9	7.9	9.0

* $\chi^2 = 19.83$, $P < 0.05$.

Table 7. Actions New York State turkey hunters suggested be taken by turkey hunters to address turkey hunting safety.

Suggested Action	<u>n</u>	<u>% of Responses</u>	<u>% of Cases</u>
Be sure of your target	534	37.3	45.3
Be more safety conscious	1949	13.5	16.4
Wear hunter orange	161	11.2	13.6
Attend safety seminars	57	4.0	4.8
Know the area you are hunting	44	3.1	3.7
81 Others (<2% each)	441	30.8	28.2

safety were: hold more safety courses (21%), and require use of hunter orange (11%) (Table 8). However, these recommendations were made by minorities of hunters. Most (70%) hunters felt safe in full camouflage. Forty-four percent thought wearing hunter orange would improve safety, 26% were neutral, and 30% disagreed. Twenty-eight percent would support a regulation that hunters wear hunter orange while moving in the woods (Table 9).

Fifty-eight percent agreed that opening a season on a weekday increases safety (22% disagreed), but only 19% believed a weekday opener was necessary to make sure hunters don't harvest too many turkeys. Thirty-one percent said opening the season on a weekend would increase their enjoyment of the activity, while 39% said it would not (Table 9).

Table 8. Actions New York State turkey hunters suggested be taken by the state Department of Environmental Conservation to address turkey hunting safety.

<u>Suggested Action</u>	<u>n</u>	<u>% Responses</u>	<u>% Cases</u>
Hold more safety courses	230	21.1	23.7
Require use of hunter orange	124	11.4	12.8
Increase enforcement	43	4.0	4.5
Emphasize safety	44	4.1	4.6
Stress importance of target ID	50	4.6	5.1
Safety courses for new hunters	36	3.3	3.8
Safety literature with permit	35	3.2	3.6
Suspend licenses of unsafe hunters	28	2.6	2.9
98 Others (<2% each)	501	45.7	39.0

Table 9. Opinions of New York State turkey hunters on turkey hunting safety issues.

<u>Opinion Statement</u>	<u>n</u>	<u>Personal Agreement with Opinion Statement</u>				<u>Mean*</u>	
		<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>		<u>Strongly Disagree</u>
Opening turkey seasons on a weekday is necessary to make sure hunters don't harvest too many turkeys.	1,460	7.6	11.0	27.0	31.7	22.6	3.51
Opening turkey seasons on a weekend would make the turkey season more enjoyable for me.	1,459	16.0	14.7	30.6	20.5	18.2	3.10
Opening turkey seasons on a weekday increases the safety of turkey hunting on opening day.	1,460	33.3	25.0	19.3	13.6	8.8	2.40
I feel safe turkey hunting in full camouflage.	1,457	31.4	38.5	16.2	9.1	4.9	2.18
I would support a regulation that New York turkey hunters wear blaze-orange while moving in the woods.	1,459	13.0	15.1	22.4	19.9	29.6	3.38
Wearing blaze-orange while moving in the woods would increase the safety of turkey hunting in New York.	1,457	19.2	24.9	25.7	16.3	14.0	2.81
Using a blaze-orange tree marker while calling turkeys would hurt my chances of bagging a turkey.	1,456	17.3	20.9	31.3	19.7	10.8	2.86

Table 9. Continued

<u>Opinion Statement</u> <u>mean^a</u>	<u>Personal Agreement with Opinion Statement</u>				
	<u>n</u>	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u> <u>Strongly Disagree</u>
Turkey hunters should be required to complete safety training in addition to the standard hunter education course. 3.31	1,460	13.8	16.9	19.1	24.9 25.3
I would favor a hunting permit that only allows hunters to take a turkey in one area of New York (e.g., one county or wildlife management unit). 3.90	1,458	4.8	8.8	17.2	29.6 39.5
I would favor a regulation that limits the total number of turkey permits that are sold each year. 3.76	1,458	3.9	8.3	25.6	30.6 30.6

*Mean based on a 5-point scale: 1=strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree.

Management Preferences

Season Lengths: Seventy-five percent of hunters were satisfied with length of the *spring* season. Most (74%) recommended no changes in the spring season length; 18% recommended a longer season. Hunters in the southeast zone were most likely to want a longer spring season (Table 10).

Sixty-three percent of hunters were satisfied with the length of *fall* seasons. Most hunters (71%) recommended no changes in fall season lengths. Twenty-one percent recommended a longer fall season. Hunters in the southeast and northern zones were more likely than hunters in the central or western zones to recommend a longer fall season (Table 11).

Season Dates: Sixty-seven percent of hunters were satisfied with the dates of the *spring* season. About 66% recommended no changes in the spring season dates. Among those who recommended a change, opening the season earlier was the most common recommendation (Table 12).

Fifty-eight percent of hunters were satisfied with the dates of *fall* seasons. About 69% recommended no change in fall season dates. There was no consensus among those who recommended a change in fall season dates (Table 13).

Number of Weekends: Sixty-six percent of hunters were satisfied with the number of weekends in the *spring* season; 71% recommended not changing the number of weekends. Among those desiring a change, increasing the number of weekends was the most common recommendation (Table 14).

Fifty-eight percent of hunters were satisfied with the number of weekends in the *fall* season. Seventy percent recommended no changes in the number of weekends. Among those who recommended a change, increasing the number of weekends was the most common recommendation (Table 15).

Table 10. Spring season length satisfaction and changes desired by New York State turkey hunters by residence zone.

<u>Level of Satisfaction</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
Satisfactory	n	290	284	224	255	1,047
	%	79.0	76.3	70.9	75.2	75.1
Mixed Feelings	n	31	49	44	36	160
	%	8.5	13.2	13.9	10.6	11.5
Unsatisfactory	n	29	27	42	38	139
	%	7.9	7.3	13.3	11.2	10.0
Don't Know	n	17	12	6	10	47
	%	4.6	3.2	1.9	3.0	3.4

* $\chi^2 = 19.77$; $P < 0.05$.

<u>Desired Change</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
No Change	n	257	259	193	201	917
	%	80.6	79.2	66.6	68.8	74.1
Longer	n	43	48	71	59	227
	%	13.5	14.7	24.5	20.2	18.3
11 Others	n	16	18	22	16	77
	%	5.0	5.5	7.6	5.5	6.2
Don't Know	n	3	2	4	16	18
	%	0.9	0.6	1.4	5.5	1.4

* $\chi^2 = 19.67$; $P < 0.01$.

Table 11. Fall season length satisfaction and changes desired by New York State turkey hunters by residence zone.

Level of Satisfaction		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
Satisfactory	n	218	218	194	160	826
	%	62.5	65.5	64.2	52.0	63.1
Mixed Feelings	n	56	59	47	47	211
	%	16.1	17.7	15.6	15.3	16.1
Unsatisfactory	n	47	36	46	66	185
	%	13.5	10.8	15.2	21.4	14.2
Don't Know	n	28	20	15	35	88
	%	8.0	6.0	5.0	11.4	6.7

* $\chi^2 = 29.13$; $P < 0.01$.

Desired Change		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
No Change	n	257	259	193	201	917
	%	73.4	77.8	66.6	64.4	71.0
Longer	n	64	50	79	80	278
	%	18.3	15.0	27.2	25.6	21.5
14 Others	n	26	22	14	15	80
	%	7.4	6.6	4.8	4.8	6.1
Don't Know	n	3	2	4	16	18
	%	0.9	0.6	1.4	5.1	1.4

* $\chi^2 = 21.00$; $P < 0.01$.

Table 12. Spring season dates satisfaction and changes desired by New York State turkey hunters by residence zone.

<u>Level of Satisfaction</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
Satisfactory	n	253	254	201	224	927
	%	69.5	68.8	63.6	66.1	66.9
Mixed Feelings	n	57	54	50	50	214
	%	15.7	14.6	15.8	14.8	15.5
Unsatisfactory	n	39	44	59	52	197
	%	10.7	11.9	18.7	15.3	14.2
Don't Know	n	15	17	6	13	48
	%	4.1	4.7	1.9	3.8	3.5

* $\chi^2 = 14.48$; differences between zones not significant.

<u>Desired Change</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
No Change	n	205	210	163	182	755
	%	69.7	68.0	60.4	65.7	67.1
Earlier	n	46	62	60	47	219
	%	15.6	20.0	22.2	17.0	19.5
Later/ Longer	n	9	9	19	18	24
	%	3.1	2.9	7.0	6.5	2.2
Weekend Opener	n	20	11	10	7	55
	%	6.8	3.6	3.7	2.5	4.9
11 Others	n	8	10	8	6	35
	%	2.7	3.2	3.0	2.2	3.1
Don't Know	n	6	7	10	17	36
	%	2.0	2.3	3.8	6.1	3.2

* $\chi^2 = 21.36$; $P < 0.05$.

Table 13. Fall season dates satisfaction and changes desired by New York State turkey hunters by residence zone.

Level of Satisfaction		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
Satisfactory	n	201	199	180	158	763
	%	57.6	59.8	59.6	50.6	58.2
Mixed Feelings	n	64	63	50	57	232
	%	18.3	18.9	16.6	18.3	17.7
Unsatisfactory	n	55	45	58	64	222
	%	15.8	13.5	19.2	20.5	17.0
Don't Know	n	29	26	14	33	93
	%	8.3	7.8	4.6	10.6	7.1

* $\chi^2 = 16.35$; $P < 0.10$.

Desired Change		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
No Change	n	206	210	164	183	758
	%	65.2	71.2	60.5	65.8	64.2
Earlier	n	37	28	36	23	138
	%	11.7	9.5	13.3	8.3	11.7
Later/ Longer	n	14	13	28	26	84
	%	4.4	4.4	10.3	9.4	7.1
Avoid other Seasons	n	14	15	8	9	46
	%	4.4	5.1	2.9	3.2	3.9
Weekend Opener	n	17	7	10	6	47
	%	5.4	2.4	3.7	2.2	4.0
14 Others	n	22	15	15	14	72
	%	7.3	5.1	5.9	5.4	6.1
Don't Know	n	6	7	10	17	36
	%	1.9	2.4	3.7	6.1	3.0

* $\chi^2 = 20.77$; differences between zones not significant.

Table 14. Spring number of weekends satisfaction and changes desired by New York State turkey hunters by residence zone.

<u>Level of Satisfaction</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
Satisfactory	n	241	258	204	221	917
	%	66.0	69.4	64.2	65.6	65.8
Mixed Feelings	n	61	54	38	56	204
	%	16.7	14.5	11.9	16.6	14.6
Unsatisfactory	n	47	38	66	47	214
	%	12.9	10.2	20.8	13.9	15.4
Don't Know	n	16	22	10	13	58
	%	4.4	5.9	3.1	3.9	4.2

* $\chi^2 = 21.64$; $P < 0.05$.

<u>Desired Change</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
No Change	n	262	259	192	197	925
	%	77.1	75.1	64.4	66.3	71.3
Increase Unspecified	n	54	47	64	58	231
	%	15.9	13.6	21.5	19.5	17.8
Increase Spring	n	2	11	7	4	23
	%	0.5	3.2	2.4	1.4	17.8
30 Others	n	17	18	29	23	89
	%	5.0	5.2	9.7	7.7	6.8
Don't Know	n	5	10	6	15	29
	%	1.5	2.9	2.0	5.1	2.3

* $\chi^2 = 23.07$; $P < 0.01$.

Table 15. Fall number of weekends satisfaction and changes desired by New York State turkey hunters by residence zone.

Level of Satisfaction		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
Satisfactory	n	194	213	182	151	764
	%	55.6	64.0	60.1	49.0	58.3
Mixed Feelings	n	76	51	42	42	226
	%	21.8	15.3	13.9	13.7	17.2
Unsatisfactory	n	54	39	61	78	226
	%	15.5	11.7	20.1	25.3	17.2
Don't Know	n	25	30	18	37	96
	%	7.1	9.0	5.9	12.0	7.3

* $\chi^2 = 42.10$; $P < 0.01$.

Desired Change		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
No Change	n	262	259	192	197	925
	%	73.4	76.2	64.6	64.6	70.0
Increase Unspecified	n	54	47	64	58	231
	%	15.1	13.8	21.5	19.0	17.5
Increase Fall	n	19	4	4	12	40
	%	5.3	1.2	1.3	3.9	3.0
31 Others	n	17	15	31	23	96
	%	4.8	4.4	10.4	7.5	7.2
Don't Know	n	5	10	6	15	29
	%	1.4	2.9	2.0	4.9	2.3

* $\chi^2 = 36.08$; $P < 0.01$.

Bag Limits: About 80% of hunters were satisfied with the *spring* bag limit, with 76% recommending no change. Among those who recommended a change, the most common suggestion was to increase the bag limit. Permit holders in the southeast zone were more likely than hunters in other zones to prefer an increased bag limit during the spring (Table 16).

About 66% of hunters were satisfied with *fall* bag limits; 75% recommended no change in this regard. The most common change recommendation was an increase in the bag limit. Permit holders in the central zone were more likely than hunters in other zones to recommend an increased bag limit during the fall (Table 17). Dissatisfaction among permit holders in the central zone may stem from the fact that they have a 6-week fall season with a 1-bird bag limit, while an adjacent zone had a 6-week fall season with a 2-bird bag limit.

Comparative Importance of Season Characteristics: On average, hunters reported that changes in the spring season bag limit would have less influence on their turkey hunting enjoyment than would changes in the length, dates, or number of weekends in the spring turkey hunting season. The same pattern was expressed with regard to the fall season (Table 18).

Other Management Issues: Despite concerns about interference from other hunters, only 12% of hunters favored a regulation that would limit the number of turkey hunting permits sold each year and only 13% favored a regulation that would restrict an individual hunter to one county or management unit (Table 9).

Asked which of two regulatory options they would prefer, a slight majority (55%) of hunters chose "one or two hunting zones statewide, with the

Table 16. Spring season bag limit satisfaction and changes desired by New York State turkey hunters by residence zone.

<u>Level of Satisfaction</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
Satisfactory	n	304	297	242	272	1,110
	%	83.1	79.2	75.9	80.2	79.4
Mixed Feelings	n	32	38	40	39	150
	%	8.7	10.2	12.5	11.5	10.7
Unsatisfactory	n	20	29	30	17	102
	%	5.5	7.7	9.4	5.1	7.3
Don't Know	n	10	11	7	11	36
	%	2.7	2.9	2.2	3.2	2.6

* $\chi^2 = 10.61$; differences between zones not significant.

<u>Desired Change</u>		<u>Residence Zone*</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
No Change	n	267	240	228	244	988
	%	84.8	77.9	78.1	79.7	80.3
Increase	n	20	36	46	24	136
	%	6.3	11.7	15.8	7.9	11.0
Decrease	n	9	10	4	9	27
	%	2.9	3.2	1.4	2.9	2.2
Vary With Population	n	6	7	8	12	28
	%	1.9	2.3	2.7	3.9	2.3
16 Others	n	7	12	3	6	31
	%	2.2	3.9	1.0	2.0	2.5
Don't Know	n	6	3	3	11	20
	%	1.9	1.0	1.0	3.6	1.7

* $\chi^2 = 22.13$; $P < 0.05$.

Table 17. Fall season bag limit satisfaction and changes desired by New York State turkey hunters by residence zone.

Level of Satisfaction		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
Satisfactory	n	241	194	212	221	887
	%	69.1	57.4	69.3	71.7	66.2
Mixed Feelings	n	44	63	43	36	188
	%	12.6	18.6	14.1	11.7	14.3
Unsatisfactory	n	41	57	39	24	168
	%	11.7	16.9	12.7	7.8	12.8
Don't Know	n	23	24	12	27	76
	%	6.6	7.1	3.9	8.8	5.8

* $\chi^2 = 29.60$; $P < 0.01$.

Desired Change		Residence Zone*				Statewide
		Western	Central	Southeast	Northern	
No Change	n	271	231	237	243	1002
	%	75.7	66.8	78.0	77.7	74.9
Increase	n	69	92	49	37	248
	%	19.3	26.6	16.1	11.8	18.5
Vary With Population	n	7	8	8	12	32
	%	1.9	2.3	2.6	3.8	2.4
18 Others	n	5	12	7	10	36
	%	1.4	3.5	2.3	3.2	2.7
Don't Know	n	6	3	3	11	20
	%	1.7	0.8	1.0	3.5	1.5

* $\chi^2 = 31.31$; $P < 0.01$.

Table 18. Relative importance of season length, season dates, number of weekends and bag limits to New York State turkey hunters by residence zone.

<u>Spring Season Characteristics</u>	<u>Residence Zone</u>				
	<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	<u>Statewide</u>
Season Length	2.88*	2.77	2.67	2.75	2.77
Season Dates	2.79	2.80	2.80	2.75	2.79
# of Weekends	2.83	2.99	2.87	2.90	2.88
Bag Limits	3.30	3.16	3.15	3.14	3.21

<u>Fall Season Characteristics</u>	<u>Residence Zone</u>				
	<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	<u>Statewide</u>
Season Length	2.74	2.81	2.70	2.71	2.73
Season Dates	2.79	2.81	2.84	2.76	2.81
# of Weekends	2.78	3.01	2.95	2.92	2.89
Bag Limits	3.25	2.98	3.10	3.20	3.14

*Mean of all responses on a scale of 1-4: 1=change in season characteristic that would have the greatest impact on personal hunting enjoyment, 2=change that would have second greatest impact, 3=change that would have third greatest impact, 4=change that would have the least impact.

same bag limit," over "many different zones across the state, each with different season lengths, dates, and bag limits" (45%).

Satisfactions and Dissatisfactions

About 70% of hunters expressed satisfaction with their personal hunting experiences in the last year that they had hunted turkeys. About 7% expressed dissatisfaction and 23% described themselves as neither satisfied nor

dissatisfied with their personal turkey hunting experiences (Table 19). Those who had bagged at least one turkey in their lifetime and those who had hunted turkeys more than five years were more likely than other hunters to report satisfaction with personal experiences (Tables 20-21).

About 74% of turkey hunters were satisfied with DEC's turkey management program, 3% were generally dissatisfied, 18% had mixed feelings, and 5% had no opinion on the program (Table 22). Satisfaction with the turkey management program was highest among hunters with 6-10 years of hunting experience (Table 23) and among hunters who had bagged a turkey at least once in their lifetime (Table 24).

Primary Satisfactions and Dissatisfactions: Twelve of the 31 satisfaction items were found to be of primary importance to turkey hunters (i.e., mean score $\geq$ two on a scale of three). The remaining 19 were of secondary importance (Table 25). All primary satisfaction involved experiences that occurred before or during the turkey hunting season, not after the season or year-round. Primary satisfaction were a mixture of appreciative motivations (e.g., relaxing, gaining solitude, enjoying nature, seeing and hearing wildlife) and achievement-oriented motivations (e.g., making a clean kill, practicing skills). Affiliative motivations were of secondary importance (Table 26).

Only five of the 25 dissatisfaction items were of primary importance (Table 27). Three of the five primary dissatisfaction related to seeing unsafe, unlawful, or unethical hunter behavior. These responses refer to the potential for encounters with hunters perceived to be acting in an unsafe, unethical or illegal manner. They do not necessarily provide an index of poor hunter behavior. Four of the five primary dissatisfaction occurred during

Table 19. Satisfaction with personal turkey hunting experiences reported by New York State turkey hunters in 1993, by zone of residence.

<u>Residence Zone*</u>		<u>Level of Satisfaction</u>		
		<u>Satisfied</u>	<u>Neutral</u>	<u>Dissatisfied</u>
Western	n	263	94	23
	%	69.2	24.7	6.1
Central	n	267	87	22
	%	71.0	23.1	5.9
Northern	n	218	103	27
	%	62.6	29.6	7.8
Southeast	n	238	69	24
	%	71.9	20.8	7.3
Statewide	n	1010	337	95
	%	70.0	23.4	6.6

* $\chi^2 = 9.79$; differences between zones not significant.

Table 20. Satisfaction with personal turkey hunting experiences reported by New York State turkey hunters in 1993, among hunters who have or have not killed a turkey.

<u>Ever Killed A Turkey*</u>		<u>Level of Satisfaction</u>		
		<u>Satisfied</u>	<u>Neutral</u>	<u>Dissatisfied</u>
Yes	n	609	117	31
	%	80.4	15.5	4.1
No	n	400	217	64
	%	58.8	31.8	9.3

* $\chi^2 = 79.80$; $P < 0.001$.

Table 21. Satisfaction with personal turkey hunting experiences reported by New York State turkey hunters in 1993, by years of hunting turkey.

<u>Years of Hunting*</u>	<u>n</u>	<u>Satisfied</u>	<u>Percent</u>	
			<u>Neutral</u>	<u>Dissatisfied</u>
1 - 5	816	66.7	26.7	6.7
6 - 10	331	74.2	18.4	7.4
10 - 15	153	73.9	20.6	5.5
16 plus	139	77.4	17.3	5.3

* $\chi^2 = 14.58$; $P < 0.05$.

Table 22. Satisfaction with DEC wild turkey management reported by New York State turkey hunters in 1993, by zone of residence.

<u>Residence Zone*</u>		<u>Level of Satisfaction with Management Program</u>			
		<u>Satisfied</u>	<u>Mixed Feelings</u>	<u>Dissatisfied</u>	<u>No Opinion</u>
Western	n	283	69	8	22
	%	74.1	18.1	2.1	5.7
Central	n	294	56	8	23
	%	77.2	14.7	2.1	6.0
Northern	n	250	62	13	27
	%	71.0	17.6	3.7	7.7
Southeast	n	245	65	10	15
	%	73.1	19.4	3.0	4.5
Statewide	n	1,077	263	37	79
	%	74.0	18.0	2.5	5.4

* $\chi^2 = 8.84$; differences between zones not significant.

Table 23. Satisfaction with DEC wild turkey management reported by New York State turkey hunters in 1993, by years of hunting turkey.

<u>Years*</u>		<u>Level of Satisfaction with Management Program</u>			
		<u>Satisfied</u>	<u>Mixed Feelings</u>	<u>Dissatisfied</u>	<u>No Opinion</u>
1 - 5	n	594	161	20	61
	%	71.1	19.2	2.5	7.3
6 - 10	n	267	43	9	9
	%	81.3	13.3	2.8	2.7
10 - 15	n	106	35	4	3
	%	71.7	23.7	2.6	2.0
16 plus	n	106	24	4	6
	%	76.0	17.1	2.6	4.3

* $\chi^2 = 24.67$; $P < 0.01$.

Table 24. Satisfaction with DEC wild turkey management reported by New York State turkey hunters in 1993, among hunters who have or have not killed a turkey.

<u>Ever Killed A Turkey*</u>		<u>Level of Satisfaction with Management Program</u>			
		<u>Satisfied</u>	<u>Mixed Feelings</u>	<u>Dissatisfied</u>	<u>No Opinion</u>
Yes	n	578	133	20	20
	%	76.9	17.7	2.7	2.7
No	n	497	128	17	69
	%	70.9	18.3	2.4	8.4

* $\chi^2 = 23.73$; $P < 0.01$.

Table 25. Importance scores of various satisfaction aspects of turkey hunting given by turkey hunters (n=1,440-1,469).

<u>Aspect of turkey hunting</u>	<u>Mean Score*</u>	<u>n</u>
Primary satisfactions:		
Making a clean kill	2.70	1,458
Enjoying nature while scouting	2.50	1,463
Relaxing/getting away while hunting	2.41	1,464
Getting hunting equipment ready before the season	2.34	1,457
Hearing a gobbler respond to my calling	2.15	1,452
Practicing turkey calling before the season	2.14	1,454
Having a feeling of solitude while hunting	2.13	1,451
Having access to private land for turkey hunting	2.12	1,459
Hearing turkeys while hunting	2.10	1,456
Seeing other wildlife while turkey hunting	2.10	1,463
Seeing turkey sign while hunting	2.07	1,459
Scouting for turkeys before the season	2.01	1,458
Secondary satisfactions:		
Seeing only a few hunters other than my group	1.97	1,460
Feeling like I had a challenging hunt	1.97	1,454
Gaining sense of relaxation while scouting before season	1.90	1,460
Hunting with family/friends	1.90	1,449
Planning a hunt	1.88	1,459
Seeing turkey while hunting	1.89	1,456
Seeing turkey year around	1.86	1,459
Sharing a turkey I shot as a meal	1.78	1,449
Practicing at a shooting range	1.78	1,454
Reading books about turkey hunting	1.66	1,464
Passing on the tradition of turkey hunting all year	1.61	1,456
Teaching others about turkey hunting	1.60	1,434
Eating wild turkey	1.57	1,451
Hunting with a skilled partner	1.42	1,440
Getting together after the season to talk about turkey hunting	1.40	1,450
Getting together before the season to talk about turkey hunting	1.39	1,461
Bagging a turkey	1.25	1,455
Displaying the tail, beard, spurs of a turkey I bagged	0.98	1,447
Showing the turkey I bagged	0.90	1,433

*Mean score based on a scale where 0 = not at all important,
1 = somewhat important, 2 = very important, 3 = absolutely necessary.

Table 26. Dimensions of temporal-motivational matrix represented by primary satisfactions described by turkey hunters in New York State.

<u>Primary satisfaction aspect</u>	<u>Temporal*</u>	<u>Motivational**</u>
Making a clean kill	During	Achievement
Enjoying nature while scouting	Preseason	Appreciative
Relaxing/getting away while hunting	During	Appreciative
Getting hunting equipment ready before the season	Preseason	Combination
Practicing turkey calling before the season	Preseason	Achievement
Hearing a gobbler respond to my calling	During	Combination
Having a feeling of solitude while hunting	During	Appreciative
Hearing turkeys while hunting	During	Combination
Having access to private land for turkey hunting	During	Combination
Seeing other wildlife while turkey hunting	During	Appreciative
Seeing turkey sign while hunting	During	Combination
Scouting for turkeys before the season	Preseason	Combination

*The temporal dimension encompasses those aspects that occur preseason, during the season, postseason, or any time of year.

**The motivational dimension encompasses those aspects that are achievement-related, affiliative-related, appreciative-related, or a combination of orientations.

Table 27. Importance scores of various dissatisfaction aspects of turkey hunting given by turkey hunters.

<u>Aspect of turkey hunting</u>	<u>Mean Score*</u>	<u>n</u>
Primary dissatisfactions:		
Seeing unsafe hunters	2.88	1,458
Seeing hunters break conservation laws	2.83	1,457
Seeing unethical hunters	2.73	1,459
Not finding a turkey I wounded	2.63	1,424
Hearing negative comments about hunters from the public	2.36	1,458
Secondary dissatisfactions:		
Having a hunter try to take the turkey I am calling	1.88	1,452
Seeing other hunters scouting the area I want to hunt	1.62	1,459
Seeing very little wildlife during preseason scouting	1.61	1,463
Seeing inexperienced hunters	1.60	1,458
Not hearing gobblers while hunting	1.47	1,447
Not finding private land to hunt on	1.46	1,456
Not finding a place to hunt on public land	1.33	1,454
Feeling the state should do more turkey management on public land	1.24	1,454
Feeling the state does not do enough to open private land	1.19	1,455
Not having the equipment I'd like for turkey hunting	1.15	1,453
Encountering insects while hunting	1.12	1,464
Not hunting with someone I want to hunt with	0.98	1,458
Scouting in bad weather	0.90	1,458
Having to buy a turkey permit in addition to a hunting license	0.87	1,465
Not bagging a gobbler	0.84	1,458
Knowing the fall season overlaps others	0.83	1,451
Lack of understanding of turkey habits	0.82	1,444
Lack of understanding of the state's turkey management program	0.78	1,450
Hunting in bad weather	0.78	1,449
Not being able to visit favorite spots after the season	0.62	1,448

*Mean score where 0 = has no influence on whether I am dissatisfied, 1 = may make me dissatisfied, 2 = tends to make me dissatisfied, and 3 = absolutely makes me dissatisfied.

the season (one occurred year-round) (Table 28). All five primary dissatisfactions involve experiences that may thwart the hunter's attempt to fulfill appreciative or achievement goals through the turkey hunting experience.

Table 28. Dimensions of temporal-motivational matrix represented by primary dissatisfactions described by turkey hunters in New York State.

<u>Primary dissatisfaction aspect</u>	<u>Temporal*</u>	<u>Motivational**</u>
Seeing unsafe hunters	During	Appreciative
Seeing hunters break conservation laws	During	Combination
Seeing unethical hunters	During	Appreciative
Not finding a turkey I wounded	During	Achievement
Hearing negative comments about hunters from the public	Any	Appreciative

*The temporal dimension encompasses those aspects that occur preseason, during the season, postseason, or any time of year.

**The motivational dimension encompasses those aspects that are achievement-related, affiliative-related, appreciative-related, or a combination of orientations.

Single Greatest Satisfaction and Dissatisfactions: Hunters described a range of 31 experiences as their single greatest turkey hunting satisfaction. The following were reported by 5% or more of all respondents: seeing or hearing turkey (25%), calling in a turkey (21%), enjoying nature (19%), gaining solitude (7%), being with particular people (5%), and helping a new hunter (5%). Many of the single greatest satisfactions cited most frequently were related to achievement motivations and occurred during the hunting season (Table 29).

Table 29. The "single thing" that most satisfied hunters in the last year that they hunted turkeys, with a characterization of the temporal-motivations aspects of hunting those things represented.

<u>Single satisfaction</u>	<u>n</u>	<u>%</u>	<u>Temporal*</u>	<u>Motivational**</u>
Seeing/hearing turkeys	316	24.7	During	Combination
Calling in/fooling a turkey	268	21.0	During	Achievement
Enjoying nature	239	18.7	Any	Appreciative
Getting away/solitude	86	6.7	Any	Appreciative
The people I hunted with	67	5.2	During	Affiliative
Helping a new hunter	57	4.5	Any	Affiliative
Taking a turkey	56	4.4	During	Achievement
Having a good hunt	50	3.9	During	Combination
Seeing other wildlife	47	3.7	Any	Appreciative
22 others (<3% each)	92	7.2	-----	-----

*The temporal dimension encompasses those aspects that occur preseason, during the season, postseason, or any time of year.

**The motivational dimension encompasses those aspects that are achievement-related, affiliative-related, appreciative-related, or a combination of orientations.

Hunters described a range of 58 experiences as the single greatest dissatisfaction they encountered in the last year that they hunted turkey. The following were reported by 5% or more of all respondents: encountering unsafe/unethical hunters (18%), not seeing turkeys (14%), no single greatest dissatisfaction (11%), not killing a turkey/missing a shot (8%), not enough time to go hunting (7%), and problems gaining access to private land (6%). The single greatest dissatisfactions cited most frequently related to multiple

hunting motivations (i.e., appreciative and achievement motivations), but occurred mainly during the hunting season (Table 30).

Hunters suggested 190 potential solutions to address their single greatest dissatisfaction, but no solution was suggested by more than 5% of respondents. For purposes of analysis, suggested ways to address sources of dissatisfaction must be matched with the "single greatest" dissatisfaction for a given hunter. We analyzed the suggested solutions hunters gave related to the top five sources of hunting dissatisfaction (Table 31).

Hunters who cited unsafe or unethical hunters as their single greatest source of dissatisfaction most commonly suggested: increasing hunter education, improving hunter ethics, and creating stricter law enforcement.

Nineteen percent of hunters who were most dissatisfied by "not seeing turkeys" suggested that DEC should increase turkey stocking. An additional 15% of hunters in this subgroup suggested that DEC should conduct more turkey management. About 15% had no suggestions to address this source of dissatisfaction.

Hunters who were dissatisfied about not getting a turkey or missing a shot at a turkey suggested personal solutions (e.g., more shooting practice). Hunters with dissatisfaction related to posted land suggested that more private land be opened to hunters (Table 31).

Hunters offered mixed response about who (DEC, hunters, or others) should address the solutions they suggested. About 34% thought their primary dissatisfaction should be addressed by DEC, 18% thought it should be addressed by hunters, and 18% thought people or groups other than DEC or hunters should address the source of dissatisfaction. The remaining 29% believed the solution to their dissatisfaction should be addressed by more than one group (e.g., hunters and DEC, DEC and others).

Table 30. The "single thing" that dissatisfied hunters most in the last year that they hunted turkeys, with a characterization of the temporal-motivations aspects of hunting those things represented.

<u>Single dissatisfaction</u>	<u>n</u>	<u>%</u>	<u>Temporal*</u>	<u>Motivational**</u>
Unsafe/unethical hunters	241	17.7	During	Combination
Not seeing turkeys	184	13.5	During	Combination
Nothing	149	11.0	-----	-----
Not getting a turkey/missing	109	8.0	During	Achievement
Didn't have enough time to hunt	99	7.3	During	Unsure
Posted land/access	82	6.0	During	Combination
Season dates	67	4.9	During	Combination
Too many hunters in area	66	4.9	During	Combination
Bad weather/bugs	64	4.7	During	Appreciative
My lack of preparation	60	4.4	During	Achievement
Trespassers on posted land	46	3.4	Any	Appreciative
7 Others (<3% each)	192	14.2	-----	-----

*The temporal dimension encompasses those aspects that occur preseason, during the season, postseason, or any time of year.

**The motivational dimension encompasses those aspects that are achievement-related, affiliative-related, appreciative-related, or a combination of orientations.

Table 31. Solutions hunters suggested to address the top five "single things" that most dissatisfied them as turkey hunters in the last year that they hunted turkeys.

<u>Problem</u>	<u>Suggested Solution</u>	<u>n</u>	<u>%</u>
Unsafe/Unethical hunters	More Hunter Education	58	24.6
	Improve Hunter Ethics	41	17.4
	Stricter Law Enforcement	28	11.9
	More Private Land Access	16	6.8
	No Solution	10	4.2
	No Comment	10	4.2
	44 Others	73	30.9
Not Seeing Turkeys	More Turkey Stocking	33	19.2
	More Turkey Management	27	15.7
	Get Private Land Access	12	7.0
	No Comment/Missing	14	8.1
	Do Better Planning	9	5.2
	Practice More	8	4.7
	No Solution	7	4.1
	No Pre-Season Calling	6	3.5
	More time	6	3.5
	27 Others	50	29.1
Not Getting a Turkey/Missing	Find More Time to Hunt	20	19.7
	Get More Practice	20	19.7
	Take Better Shots	8	7.8
	Better/More Preparation	8	7.8
	Educate Myself	6	6.0
	Longer Season	5	4.9
	More Turkey Stocking	5	4.9
	15 Others	30	29.2
Not Enough Time to Hunt	Plan My Time Better/Retire	48	54.5
	Longer Season	9	10.2
	All Day Hunting	6	6.7
	No Comment	5	5.6
	20 Others	23	23.0
Posted Land/Access	Open More Private Land	45	57.7
	More Public Land	4	5.1
	18 Others	29	37.2

DISCUSSION AND CONCLUSIONS

The majority of New York State turkey hunters are satisfied with their own turkey hunting experiences and DEC's turkey management program.

Approximately 70% of all turkey hunters in New York were satisfied with their personal turkey hunting experiences. Fewer than 10% described themselves as dissatisfied with their personal turkey hunting experiences. This rate of satisfaction with personal hunting experiences is comparable to that observed in studies of deer hunters. For example, a 1990 survey by Enck and Decker (1991) found that 68% of New York deer hunters were satisfied with their personal deer hunting experiences, 18% were dissatisfied, and 14% were neither satisfied nor dissatisfied. A 1993 survey of Maryland deer hunters (Duda and Young 1993) found that 10% of Maryland deer hunters were dissatisfied with their deer hunting experiences.

Approximately 74% of all turkey hunters in New York were satisfied with DEC's turkey management program. Only 3% of hunters described themselves as dissatisfied with DEC's turkey management program (5% had no opinion and 18% had mixed feelings on the program). By comparison, in 1990, 47% of New York State deer hunters were satisfied with deer management in New York (27% had "mixed feelings", 16% were dissatisfied, and 12% had "no opinion" about the program) (Enck and Decker 1991).

High satisfaction with the state's turkey management program may be related to high and growing turkey populations. A steady increase in the turkey population over the decade previous to this survey created an increasing probability that hunters would see and hear turkeys. Turkey hunters may be enjoying a "golden age" of turkey hunting opportunity. It is important to note that hunters may have high expectations for harvest success

due to the high numbers of turkey that currently exist throughout New York State. Managers should be aware that hunter expectations may become more difficult to meet and overall hunter satisfaction may decline if turkey numbers stabilize or decline while hunter numbers remain constant or increase.

Turkey Season Characteristics

- There was no broad-based hunter mandate for season changes. At this time, changes in these season characteristics are not likely to significantly increase hunter satisfaction.***
- Further liberalization of seasons may decrease turkey hunter satisfaction.***

Most hunters prefer that regulations related to turkey season lengths, dates, and bag limits remain as they are. In every hunting zone, a majority of hunters were satisfied with the length of the spring and fall seasons, season opening and closing dates, and season bag limits. Only a small proportion of hunters were greatly dissatisfied with these characteristics of turkey hunting in New York. Nearly all unsolicited comments on questionnaires were positive ones. The only negative comments were related to other wildlife management programs (e.g., deer, small game, or pheasant management). Some hunters were dissatisfied with specific aspects of the current turkey management program. However, the data and written comments from hunters do not suggest a broad hunter mandate for any particular changes in current turkey management practices. At the most general level, these data seem to send a "don't change a good thing" message to turkey managers.

An unexpectedly high proportion of hunters who were dissatisfied with the number of turkeys they saw in the woods suggested that DEC "increase turkey stocking." DEC does not stock turkey; game farm turkeys have been found to be far less wary and less able to survive than wild birds. The

expectation that the agency will stock turkeys represents a set of hunter expectations that should be addressed through hunter education materials. Wild turkey are well-established statewide and all trap and transfer efforts related to turkey have been completed.

We found some evidence that people who lived in zones with the most liberal regulations were the least satisfied with DEC management activities. This finding raises questions about the degree to which satisfactions can be increased by further liberalization of regulations. For example, would actions by DEC to create greater understanding of turkey population dynamics or more realistic hunter expectations related to seeing and bagging a turkey lead to increased hunter satisfactions? Do liberalizations in turkey hunting regulations create unrealistic hunter expectations about seeing, hearing, or harvesting turkeys? Some turkey managers would suggest that liberalizing hunting regulations might increase an already high proportion of satisfied hunters. Others ask, if we liberalize to satisfy some hunters, will we create dissatisfaction among the majority? These questions merit further consideration among hunters and wildlife managers.

Hunter Orange

If proposed, regulations that required the use of hunter orange while hunting turkey in New York would meet substantial hunter opposition and create dissatisfaction with the turkey management program.

It is noteworthy that in 1993 25% of turkey hunters had worn hunter orange while moving in the woods, and 17% had used a hunter orange game bag or tree marker while hunting in the spring. However, most hunters had not used hunter orange and would be resistant to mandates to wear hunter orange clothing or use hunter orange game bags or tree markers. There are no current plans to mandate use of hunter orange while turkey hunting in New York. If

proposed, such a mandate would meet with substantial hunter opposition. Low regulation compliance and at least temporary reduction in turkey hunting participation could be expected if such a mandate were adopted.

Shot Size

If proposed, regulations that required the use of small shot sizes while hunting turkey in New York would meet substantial opposition and create dissatisfaction with the turkey management program.

In states that permit turkey hunting with rifles, shot placement either on the head or body of a turkey are appropriate. In states like New York, where hunters are required to use shotguns to hunt turkey, the most reliable killing shot is a head or neck shot. Shot sizes #5, #6, or #7 1/2 provide a dense pattern of small pellets that are optimal for a head/neck shot at reasonable turkey killing range. In light of this, it is surprising that a substantial minority (38%) of hunters used larger, #2 shot. There are several possible explanations for this. Turkey hunters may use larger shot in order to take body shots, or because they erroneously believe they require greater force than that offered by smaller shot sizes. Hunters may also have reported use of #2 shot because they use duplex loads that combine #2 shot with smaller pellets (e.g., #4, #6). Although our data do not allow us to document why many hunters use #2 shot, we do know from this research that relatively new turkey hunters, who are the experience group least likely to have ever bagged a turkey, are the group most likely to use #2 shot.

There are no current plans to require use of small shot sizes while turkey hunting in New York. If proposed, such a requirement would meet with substantial hunter opposition. A regulation change that prohibited use of shot sizes larger than #4 might facilitate turkey hunting safety, reduce turkey crippling, and increase successful harvest of turkeys, but would also

cause controversy and reduced satisfaction for some hunters. A regulatory change to this effect, if ever proposed, should be accompanied by information and education efforts to change hunter perceptions about the desirability of large shot sizes (i.e., there is a need to teach new hunters that a tight pattern of small shot is needed, not larger, more powerful shot).

Hunter Interaction

- ☛ If proposed, regulations that required additional hunter education or limited the total number or distribution of turkey hunters in New York would likely meet substantial hunter opposition and create dissatisfaction with the turkey management program.
- ☛ The primary sources of turkey hunting dissatisfaction were related to ethical and safety issues, not hunting regulations. Thus, changing any given turkey hunting regulation may not be an effective way to increase overall turkey hunter satisfaction. Communications efforts to improve hunter ethics or increase hunter understanding of turkey biology may be more effective as means to increase turkey hunter satisfaction.

These data provide evidence of a link between overall hunting satisfaction and interaction between hunters. For the typical turkey hunter, seeing unsafe, illegal or unethical hunter behavior will lead to dissatisfaction with the overall turkey hunting experience. About 18% of hunters reported that, in the last year that they hunted, an experience where they saw unsafe or unethical hunter behavior was their single greatest hunting dissatisfaction.

Previous studies of hunters in New York (Enck and Decker 1991, Siemer and Brown 1993a) have found that hunting dissatisfaction is often linked to negative interaction with other hunters. Concerns about unsafe, unethical, and illegal hunter behavior have also been linked to restriction of hunting access to private lands (Siemer and Brown 1993b). Together with previous

evidence, these data suggest that reducing negative interaction between hunters might be an effective way to increase the probability that any given hunter will have a satisfying turkey hunting experience.

At present, there appears to be little support for efforts that would seek to minimize negative hunter interactions through regulations limiting hunter numbers or density, or mandating additional hunter education. Nevertheless, given the influence that hunter behavior can exert over satisfaction (and access to private lands for hunting), hunters and wildlife management agencies should continue to explore ways to encourage safe, ethical, and legal hunting behavior. Communications efforts by DEC and others may offer a means to reduce some conflicts between hunters. For example, DEC or others could develop a set of information brochures that provide new turkey hunters with guidelines for ethical field behavior. Such guidelines could be helpful because many new turkey hunters may base their turkey hunting behavior on their personal experiences, ethics, and norms related to deer hunting. Communications efforts could be a useful way to minimize negative turkey hunter interactions associated with new turkey hunters who are unaware that behaviors acceptable for deer hunting may not be acceptable within the context of turkey hunting.

Understanding Hunting Satisfaction

People hold multiple motivations and satisfactions related to hunting, not all of which occur during the hunting season.

These findings provide supporting evidence of the elements of satisfaction proposed by Enck and Decker (1991), and the satisfactions items they developed to assess hunting satisfactions. That is, the findings reinforce the concept of multiple hunting satisfactions. We found evidence

that a range of satisfactions and dissatisfactions were of primary importance to turkey hunters. We also found support for the assumption that hunting satisfactions and dissatisfactions occur before and during the hunting season. However, we found little support for the notion that post-season activities play an important part in hunting satisfaction. The limited importance of post-season activities may be an artifact of weaker or less defined measurement items in this domain. Future instruments should include more items in this temporal domain to explore this issue further.

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NEW YORK STATE TURKEY HUNTER SURVEY

MICHAEL
STICKNEY '93

New York State Department of Environmental Conservation
MARIO M. CUOMO, Governor THOMAS C. JORLING, Commissioner

YOUR TURKEY HUNTING BACKGROUND

1. How many years have you purchased any hunting license in New York or other states?

_____ Years

2. How many years have you hunted turkeys in New York or other states? (Please check [✓] one response.)

_____ 1-5 years

_____ 6-10 years

_____ 11-15 years

_____ 16 or more years

3. Since you first began turkey hunting, how regular has your hunting been over the years?

I've gone turkey hunting . . .

_____ every year since I started.

_____ most years since I started.

_____ less than half the years since I started.

_____ last year was my first year of turkey hunting.

4. During the last 5 years, what has been the trend in the number of days you hunted for turkey each year in New York?

Number of days I hunted turkeys has . . .

_____ increased.

_____ remained the same.

_____ decreased.

_____ does not apply to me—I have hunted turkey fewer than 5 years.

5. Have you ever bagged a wild turkey in New York or other places?

_____ Yes → IF YES, how many turkeys have you taken since you started hunting? _____ turkeys

_____ No

YOUR TURKEY HUNTING IN NEW YORK in 1993

The questions in this section pertain to the spring and fall turkey seasons in New York during calendar year 1993.

6. Did you go hunting for turkeys at least once in New York State during 1993?

_____ Yes IF YES, CONTINUE WITH QUESTION 7

_____ No In what year did you last hunt for turkeys? 19 _____

(If you did not hunt in 1993, please skip to question 13)

7. Last year, did you hunt turkey in the spring, fall, or both?

Yes

No

_____ Spring, 1993

_____ Fall, 1993

8. If you hunted only in spring, or only in fall, why didn't you hunt in both seasons?

9. How often did you use the following hunting methods and equipment while turkey hunting in New York in 1993? *(Circle one response for each.)*

<u>Method or equipment used</u>	<u>Frequency of use during your hunts in 1993</u>			
	<u>Never</u>	<u>Sometimes</u>	<u>Often</u>	<u>Every Hunt</u>
a. wear blaze orange while moving in the woods.	1	2	3	4
b. use a blaze orange game bag or tree marker during the spring season.	1	2	3	4
c. use No. 2 shot.	1	2	3	4
d. bow hunt for deer and fall turkeys at the same time.	1	2	3	4
e. hunt for small game and fall turkeys at the same time.	1	2	3	4

10. In which New York counties did you hunt turkeys during the 1993 spring and fall seasons? (If you do not know the county name, write in a city or village near where you hunted. If you did not hunt turkey during that season, write "NA.")

Turkey hunting season _____ New York State counties hunted _____

Spring '93 _____

Fall '93 _____

11. Please indicate the number of days you hunted turkey with a shotgun and the number of days you hunted turkey with a bow and arrow during the spring and fall seasons in 1993. Then, indicate the number of days you went afield during those seasons just to help another hunter locate or call turkeys. (Please fill every space in this table. If a space does not apply to you, write "0" on that line.)

	<u>Spring '93</u>	<u>Fall '93</u>
Hunting with shotgun	_____	_____
Hunting with bow and arrow	_____	_____
Helping someone else hunt turkeys, but not trying to bag a turkey for myself.	_____	_____

12. Please indicate the number of days you hunted turkey on each of the following land types during the fall and spring seasons in 1993. Then, circle "YES" or "NO" to indicate whether you bagged a turkey on one of those land types that season. (If you hunted turkey on more than one land type in a given day, assign that day's hunting to the area where you stayed the longest. If you did not hunt a particular season or type of land, write "0" on that line.)

<u>Land Type</u>	<u>Spring '93</u>		<u>Fall '93</u>	
	<u>Days hunted</u>	<u>Did you bag a turkey?</u>	<u>Days hunted</u>	<u>Did you bag a turkey?</u>
Public land (federal, state, county, etc.)	_____	Yes No	_____	Yes No
Private land (for free)	_____	Yes No	_____	Yes No
Private land (for pay) (e.g., leased land, shooting preserves)	_____	Yes No	_____	Yes No

YOUR TURKEY HUNTING SATISFACTIONS

DEC turkey managers can develop the best management plans only when they know the types of things that contribute to turkey hunters' satisfactions and dissatisfactions. The following questions will help turkey managers better understand the types of things that affect your satisfactions and dissatisfactions with your turkey hunting experiences in New York.

13. Please indicate the degree to which each of the following aspects of turkey hunting is important for you to have a satisfying hunting experience (*Please circle one response for each aspect listed.*)

<u>Aspects of turkey hunting</u>	<u>Importance for hunting satisfaction</u>			
	<u>Absolutely Necessary</u>	<u>Very Important</u>	<u>Slightly Important</u>	<u>Not at all Important</u>
Getting my hunting equipment ready <i>before</i> the turkey season.	3	2	1	0
Practicing turkey calling <i>before</i> the season.	3	2	1	0
Seeing turkeys while hunting.	3	2	1	0
Hearing turkeys while hunting.	3	2	1	0
Feeling like I had a challenging hunt.	3	2	1	0
Showing the turkey I bagged to friends.	3	2	1	0
Teaching others about turkey hunting.	3	2	1	0
Hunting with a partner who is skilled in turkey calling.	3	2	1	0
Getting together with friends or family <i>after</i> the season to talk about turkey hunting.	3	2	1	0
Gaining a sense of relaxation while scouting for turkeys <i>before</i> the season.	3	2	1	0
Having a feeling of solitude while turkey hunting.	3	2	1	0

13. Cont.

<u>Aspects of turkey hunting</u>	<u>Importance for hunting satisfaction</u>			
	<u>Absolutely Necessary</u>	<u>Very Important</u>	<u>Slightly Important</u>	<u>Not at all Important</u>
Planning a turkey hunt.	3	2	1	0
Scouting for turkeys <i>before</i> the season.	3	2	1	0
Bagging a turkey.	3	2	1	0
Eating wild turkey.	3	2	1	0
Getting together with friends or family <i>before</i> the season to talk about turkey hunting.	3	2	1	0
Seeing only a few hunters in my hunting area other than those in my group.	3	2	1	0
Passing the tradition of turkey hunting on to others throughout the year.	3	2	1	0
Relaxing and getting away from everyday worries while hunting.	3	2	1	0
Seeing turkeys year-round.	3	2	1	0
Having access to private lands for turkey hunting.	3	2	1	0
Practicing at a shooting range with my turkey hunting gun or bow.	3	2	1	0
Seeing turkey sign while hunting.	3	2	1	0
Hearing a gobbler respond to my turkey calls.	3	2	1	0
Displaying the tail, beard, or spurs of a turkey I bagged.	3	2	1	0
Hunting with family or friends.	3	2	1	0
Sharing the turkey I shot as a meal with family and friends.	3	2	1	0
Enjoying nature while scouting for turkeys.	3	2	1	0

13. Cont.

<u>Aspects of turkey hunting</u>	<u>Importance for hunting satisfaction</u>			
	<u>Absolutely Necessary</u>	<u>Very Important</u>	<u>Slightly Important</u>	<u>Not at all Important</u>
Seeing other kinds of wildlife while turkey hunting	3	2	1	0
Reading books or magazines about turkey hunting.	3	2	1	0
Making a clean kill.	3	2	1	0

14. In the last year that you hunted for turkeys, what single thing satisfied you most about your turkey hunting experience? *(This single thing may have occurred before, during, or after a turkey hunting season.)*
-

15. Please indicate the degree to which each of the following aspects of turkey hunting is important in causing you to have a dissatisfying hunting experience *(Please circle one response for each aspect listed.)*

<u>Aspects of turkey hunting</u>	<u>Importance for hunting dissatisfaction</u>			
	<u>Absolutely makes me dissatisfied</u>	<u>Tends to make me dissatisfied</u>	<u>May make me dissatisfied</u>	<u>Has no influence on whether I'm dissatisfied</u>
Not having the equipment I would like for turkey hunting.	3	2	1	0
Encountering insects that made it difficult or uncomfortable to hunt turkeys.	3	2	1	0
Seeing other hunters scouting the same areas that I would like to hunt.	3	2	1	0
Seeing unethical hunters in the woods.	3	2	1	0
Seeing very little wildlife during preseason turkey scouting.	3	2	1	0

15. Cont.

<u>Aspects of turkey hunting</u>	<u>Importance for hunting dissatisfaction</u>			
	<u>Absolutely makes me dissatisfied</u>	<u>Tends to make me dissatisfied</u>	<u>May make me dissatisfied</u>	<u>Has no influence on whether I'm dissatisfied</u>
Not being able to visit my favorite turkey hunting spots <i>after</i> the season to recall my turkey hunting.	3	2	1	0
Having trouble finding a place to hunt turkeys on private land.	3	2	1	0
Knowing that the fall turkey season overlaps with seasons for other game I hunt.	3	2	1	0
Feeling that the state does not do enough to open private land for turkey hunting.	3	2	1	0
Feeling like I don't have a good understanding of turkey habits and natural history.	3	2	1	0
Not hearing gobblers while hunting.	3	2	1	0
Not being able to find a turkey that I wounded.	3	2	1	0
Seeing hunters breaking conservation laws.	3	2	1	0
Seeing unsafe hunters in the woods.	3	2	1	0
Encountering weather that made it difficult or uncomfortable to do preseason turkey scouting.	3	2	1	0
Hearing negative comments about hunters from the public.	3	2	1	0
Having trouble finding a good place to hunt turkeys on public land.	3	2	1	0
Feeling that the state should do more management for turkeys on public land.	3	2	1	0

15. Cont.

<u>Aspects of turkey hunting</u>	<u>Importance for hunting dissatisfaction</u>			
	<u>Absolutely makes me dissatisfied</u>	<u>Tends to make me dissatisfied</u>	<u>May make me dissatisfied</u>	<u>Has no influence on whether I'm dissatisfied</u>
Feeling like I don't have a good understanding of New York's turkey management program.	3	2	1	0
Not bagging a gobbler.	3	2	1	0
Seeing or hearing a hunter try to take the turkey I'm calling.	3	2	1	0
Seeing inexperienced hunters in the woods.	3	2	1	0
Hunting turkeys in difficult or uncomfortable weather.	3	2	1	0
Having to buy a turkey hunting permit in addition to a hunting license.	3	2	1	0
Not being able to hunt with someone with whom I wanted to go hunting.	3	2	1	0

16. In the last year that you hunted turkeys, what single thing dissatisfied you most about your turkey hunting experience? (This single thing may have occurred before, during, or after a turkey hunting season.)

17. What one thing would you suggest as a solution for the dissatisfaction you listed in question 16? (Think about things that either you could do personally, hunting groups could do, or DEC could do.)

- 17b. Who do you think should address the one solution you suggest in question 17?
(Check [✓] all that apply.)

_____ DEC

_____ Hunters

_____ Other (specify: _____)

18. Please indicate the degree to which you were satisfied or dissatisfied with your personal turkey hunting experiences in New York in the last year that you hunted turkeys. (Circle the number corresponding to your response.)

Greatly
Dissatisfied

Neutral

Greatly
Satisfied

-4 -3 -2 -1 0 1 2 3 4

YOUR OPINIONS ON TURKEY HUNTING REGULATIONS

New York State law provides DEC with the authority to set turkey hunting regulations such as season length, methods of harvest, and bag limits. Wildlife managers consider both biological factors and hunter desires when they establish these hunting regulations. The following questions are being asked so that DEC can better understand hunters' personal opinions on several current turkey hunting regulations. (NOTE: DEC is not considering any specific changes in turkey hunting regulations at this time. When changes are considered, hunters' desires must be weighed against biological concerns.)

19. How would you rate each of the following aspects of the spring and fall turkey hunting seasons in New York last year? (1 = satisfactory; 2 = mixed feelings; 3 = unsatisfactory; 4 = don't know.)

Season Characteristics	Spring	Fall
a. Length of season.	_____	_____
b. Season opening and closing dates.	_____	_____
c. Number of weekends in the season.	_____	_____
d. Bag limit per season.	_____	_____

20. What changes, if any, would you like to see in the following regulations? (If you don't think a change is necessary, write "no change" in that space.)

- a. Length of season: _____

- b. Season opening and closing dates: _____

- c. Number of weekends in the season: _____

- d. Bag limit per season: _____

21. How much would changes in the following season characteristics impact your hunting enjoyment, either positively or negatively? (For spring and fall seasons, please rank each characteristic from 1 to 4: 1 = change would have the greatest impact on you; 2 = 2nd greatest impact; 3 = 3rd greatest impact; 4 = least impact.)

Season Characteristics	<u>Spring</u>	<u>Fall</u>
a. Length of season.	_____	_____
b. Season opening and closing dates.	_____	_____
c. Number of weekends in the season.	_____	_____
d. Bag limit per season.	_____	_____

22. Season regulations can be tailored to take advantage of differing turkey population and hunter densities across the state. Which of the following regulatory options would you most prefer? (Check [✓] one.)

- _____ Many different hunting zones across the state, each with different season lengths, dates, and bag limits.
- _____ One or two hunting zones statewide, with the same bag limit across the state.

23. Please circle the response that most clearly reflects your agreement or disagreement with each statement. (1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; 5 = strongly disagree.)

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
a. Opening turkey seasons on a weekday increases the safety of turkey hunting on opening day.	1	2	3	4	5
b. Wearing blaze-orange while moving in the woods would increase the safety of turkey hunting in New York.	1	2	3	4	5
c. I would favor a regulation that limits the total number of turkey permits that are sold each year.	1	2	3	4	5
d. I feel safe turkey hunting in full camouflage.	1	2	3	4	5
e. Opening turkey seasons on a weekday is necessary to make sure hunters don't harvest too many turkeys.	1	2	3	4	5
f. Using a blaze-orange tree marker while calling turkeys would hurt my chances of bagging a turkey.	1	2	3	4	5
g. Opening turkey seasons on a weekend would make the turkey season more enjoyable for me.	1	2	3	4	5
h. I would support a regulation that New York turkey hunters wear blaze-orange while moving in the woods.	1	2	3	4	5
i. I would favor a hunting permit that only allows hunters to take a turkey in one area of New York (e.g., one county or wildlife management unit).	1	2	3	4	5
j. Turkey hunters should be required to complete turkey hunting safety training <u>in addition</u> to the standard hunter education course.	1	2	3	4	5

24. Because turkey hunters are highly camouflaged and imitate the calls of turkeys, safety issues are an important part of turkey hunting and turkey management decisions. What actions do you think hunters or DEC should take to address issues related to turkey hunting safety?

Hunters: _____

DEC: _____

25. How satisfied are you with the current turkey management program delivered by DEC? (Please check [] one.)

_____ Generally satisfied

_____ Mixed feelings

_____ Generally dissatisfied

_____ No opinion

BACKGROUND INFORMATION

To better understand your responses, we would like you to provide some background information about yourself. Please be assured that all your responses are strictly confidential; they will never be associated with your name.

26. How would you describe the area in which you lived during 1993? (Check [] one.)

_____ Rural

_____ Village of under 5,000 people

_____ City of 5,000 to 24,999 people

_____ City of 25,000 to 99,999 people

_____ City of 100,000 people or more

27. Have you attended the New York State DEC hunter safety education course?

_____ Yes

_____ No

28. Have you ever attended a turkey hunting seminar that was more than 3 hours long?

_____ Yes

_____ No

29. Do you belong to any national, state, or local organizations related to turkey hunting or turkey management?

_____ Yes (Please list the organizations: _____
_____)

_____ No

30. Do you belong to any other national, state, or local organizations related to wildlife or environmental conservation?

_____ Yes (Please list the organizations: _____
_____)

_____ No

31. Did you hunt any of the following types of game in 1993? (Check [] "Yes" or "No" for each game type.)

YES NO

_____ deer (gun)

_____ deer (bow)

_____ rabbits or hares

_____ waterfowl

YES NO

_____ pheasant

_____ grouse or woodcock

_____ squirrel

_____ other game (specify: _____)

**Please use the space below for any additional
comments you would like to add.**

THANK YOU FOR YOUR TIME AND EFFORT!

**To return this questionnaire, place it in the enclosed,
self-addressed envelope, and drop it in any mailbox
(return postage has been provided).**

Appendix B. Age distribution of New York State turkey hunters by residence zone.

<u>Age</u>		<u>Residence Zone</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
12 - 25	n	59	61	41	52	213
	%	15.3	15.7	11.9	14.3	14.4
26 - 35	n	81	79	82	83	325
	%	20.9	20.4	23.9	22.7	21.9
36 - 45	n	86	89	80	80	335
	%	22.2	22.9	23.3	21.9	22.6
46 - 55	n	76	65	63	68	272
	%	19.6	16.8	18.4	18.6	18.3
56 - 65	n	45	45	39	45	174
	%	11.6	11.6	11.4	12.3	11.7
66 plus	n	40	49	38	37	164
	%	10.4	12.6	11.1	10.2	11.1

Appendix C. Rural versus urban background of New York State turkey hunters by residence zone.

<u>Community Size (1,000s)</u>		<u>Residence Zone</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
Rural	n	178	226	141	229	702
	%	46.7	59.3	42.6	63.8	48.5
Village	n	71	75	66	70	280
	%	18.6	19.7	19.9	19.5	19.4
5 - 24.9	n	45	47	54	49	199
	%	11.8	12.3	16.3	13.6	13.7
25 - 99.9	n	36	26	23	10	110
	%	9.5	6.8	7.0	2.8	7.6
100 +	n	51	7	47	1	156
	%	13.4	1.9	14.2	0.3	10.8

Appendix D. Years of hunting license purchase of New York State turkey hunters by residence zone.

<u>Years</u>		<u>Residence Zone</u>				<u>Statewide</u>
		<u>Western</u>	<u>Central</u>	<u>Southeast</u>	<u>Northern</u>	
1 - 5	n	60	62	49	67	238
	%	15.5	16.0	14.3	18.4	16.1
6 - 10	n	32	26	33	26	117
	%	8.3	6.7	9.6	7.1	7.9
11 - 15	n	33	36	44	43	156
	%	8.5	9.3	12.8	11.8	10.5
16 - 20	n	47	57	45	49	198
	%	12.1	14.7	13.1	13.4	13.4
20 - 25	n	37	37	37	23	134
	%	9.6	9.5	10.8	6.3	9.0
26 - 30	n	42	42	36	46	166
	%	10.9	10.8	10.5	12.6	11.2
31 - 35	n	21	36	28	33	118
	%	5.4	9.3	8.2	9.0	8.0
36 - 40	n	48	30	21	27	126
	%	12.4	7.7	6.1	7.4	8.5
41 - 45	n	26	19	18	27	90
	%	6.7	4.9	5.3	7.4	6.1
46 - 50	n	23	26	16	10	75
	%	5.9	6.7	4.7	2.7	5.1
51 Plus	n	18	17	16	14	65
	%	4.7	4.4	4.7	3.8	4.4

Appendix E. Reasons why New York State turkey hunters who hunt turkeys in the spring do not hunt in the fall
(n = 409).

Reasons for Hunting Inactivity*		Residence Zone				Statewide
		Western	Central	Southeast	Northern	
Other hunting	n %	31 37.3	47 37.0	23 24.2	55 34.8	129 31.9
Too busy/no time	n %	10 12.0	31 24.4	34 35.8	42 26.6	102 25.2
Prefer spring season	n %	5 6.0	13 10.2	8 8.4	13 8.2	33 8.1
No fall season	n %	13 15.7	17 13.4	0 0.0	15 9.5	34 8.4
Work schedule	n %	4 4.8	3 2.4	7 7.4	12 7.6	23 5.6
School	n %	1 1.2	0 0.0	4 4.2	3 1.9	7 1.6
Fall hunting too hard	n %	1 1.2	0 0.0	4 4.2	0 0.0	8 1.6
Did not have permit	n %	3 3.6	1 0.8	1 1.1	0 0.0	7 1.6
39 others	n %	15 11.8	15 11.8	14 14.7	18 11.4	61 16.0

*Totals more than number of hunters responding due to multiple responses.

Appendix F. Reasons why New York State turkey hunters who hunt turkeys in the fall do not hunt in the spring (n = 165).

Reasons for Hunting Inactivity*		Residence Zone				
		Western	Central	Southeast	Northern	Statewide
Too busy/no time	n	18	21	14	22	69
	%	33.3	46.8	46.7	41.7	39.7
Work schedule	n	10	2	7	6	31
	%	18.5	4.4	23.3	12.5	17.6
Fishing	n	9	2	4	6	23
	%	16.7	4.4	13.3	12.5	13.0
Don't like spring	n	2	2	0	1	4
	%	3.7	4.4	0.0	2.1	2.2
Health reasons	n	0	2	0	2	2
	%	0.0	4.4	0.0	4.2	1.1
No permit	n	0	1	0	3	1
	%	0.0	2.3	0.0	6.3	0.8
Other hunting	n	0	3	0	1	2
	%	0.0	6.7	0.0	2.1	1.3
Safety concerns w/spring	n	1	2	1	0	5
	%	1.9	4.4	3.3	0.0	3.4
Only hunt turkey incidentally	n	2	2	0	0	4
	%	3.7	4.4	0.0	0.0	2.0
24 others	n	12	8	4	7	33
	%	22.2	17.8	13.4	14.6	16.9

*Totals more than number of hunters responding due to multiple responses.

Appendix G. Comparison of counties of residence with counties of hunt for 1993
New York State turkey hunters during the 1993 spring turkey season
(excluding hunters living in counties with no spring season).

<u>County of Residence</u>	<u>Residence County</u>	<u>Adjacent County</u>	<u>Other</u>
Albany	6	2	0
Allegheny	7	1	1
Broome	28	27	4
Cattaraugus	22	5	1
Cayuga	8	5	4
Chautauqua	22	5	1
Chemung	19	11	2
Chenango	30	8	0
Clinton	19	1	1
Columbia	9	1	0
Cortland	14	4	1
Delaware	14	3	0
Dutchess	12	5	2
Erie	32	46	12
Essex	7	3	3
Franklin	13	9	2
Fulton	19	11	12
Genessee	6	1	2
Greene	9	4	1
Hamilton	1	0	1
Herkimer	22	9	2
Jefferson	22	13	12
Lewis	12	3	3
Livingston	6	8	0
Madison	19	13	0
Monroe	7	20	21
Montgomery	6	5	2
Niagara	4	2	16
Oneida	39	21	3
Onondaga	17	18	22
Ontario	8	6	2
Orange	14	4	3
Orleans	3	3	3
Oswego	24	14	55
Otsego	15	5	2
Putnam	4	1	1
Rensselaer	10	6	4
Rockland	2	2	6
St. Lawrence	61	3	4
Saratoga	6	4	2
Schenectady	1	9	4
Schoharie	6	4	0
Schuyler	7	3	0
Seneca	1	3	2
Steuben	26	4	2

Appendix G. Cont.

<u>County of Residence</u>	<u>Residence County</u>	<u>Adjacent County</u>	<u>Other</u>
Sullivan	13	8	1
Tioga	28	10	5
Tompkins	9	9	2
Ulster	21	11	2
Warren	1	7	1
Washington	10	0	0
Wayne	2	2	10
Westchester	0	3	14
Wyoming	8	5	0
Yates	7	2	0
Total	738	392	256

Appendix H. Days hunted for turkey on private and public lands during the 1993 spring season in New York State, by hunting zone.

Zone of Hunt	Public Land				Days/ Hunter
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters ¹	
Western	477	22.6	95	32.0	5.0
Central	758	23.2	140	40.5	5.4
Southeast	469	19.4	98	30.4	4.8
Northern	516	29.0	96	44.4	5.4

Zone of Hunt	Private Land, Free Access				Days/ Hunter
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters	
Western	1,596	75.8	244	82.2	6.5
Central	2,417	74.1	299	86.4	8.1
Southeast	1,806	74.6	261	81.1	6.9
Northern	1,228	69.1	174	80.6	7.1

Zone of Hunt	Private Land, Fee Access				Days/ Hunter
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters	
Western	33	1.6	4	1.3	8.3
Central	86	2.6	10	2.9	8.6
Southeast	147	6.1	21	6.5	7.0
Northern	34	1.9	9	4.2	3.8

Differences between Zones

Days Chi Sq = 142.42 sig @ $\alpha=.01$

Hunters Chi Sq = 19.47 sig @ $\alpha=.01$

¹ Adds to more than 100% in each zone due to hunters hunting on more than one class of land.

Appendix I. Days hunted for turkey on private and public lands during the 1993 fall season in New York State, by hunting zone.

Zone of Hunt	Public Land				
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters ¹	Days/Hunter
Western	255	17.5	67	25.1	3.8
Central	483	26.4	81	30.7	6.0
Southeast	443	23.5	69	26.1	6.4
Northern	104	22.7	23	25.6	4.5

Zone of Hunt	Private Land, Free Access				
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters	Days/Hunter
Western	1,183	81.3	214	80.1	5.5
Central	1,315	71.9	200	75.8	6.6
Southeast	1,319	70.2	198	75.0	6.7
Northern	337	73.6	68	75.6	5.0

Zone of Hunt	Private Land, Fee Access				
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters	Days/Hunter
Western	18	1.2	3	1.1	6.0
Central	31	1.7	7	2.7	4.4
Southeast	116	6.2	17	6.4	6.8
Northern	17	3.7	3	3.3	5.7

Differences between Zones

Days Chi Sq = 125.7 sig @ $\alpha=.01$

Hunters Chi Sq = 13.9 sig @ $\alpha=.05$

¹ Adds to more than 100% in each zone due to hunters hunting on more than one class of land.

Appendix J. Days spent hunting for turkey with a shotgun, bow and arrow, or as a companion to assist another hunter, during the 1993 spring season in New York State, by hunting zone.

Zone of Hunt	Activity: Shotgun Hunting				Days/ Hunter
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters ¹	
Western	2,008	81.9	271	91.2	7.4
Central	2,846	80.1	324	93.6	8.8
Southeast	2,120	80.4	297	92.2	7.1
Northern	1,544	77.3	197	91.2	7.8

Zone of Hunt	Activity: Archery Hunting				Days/ Hunter
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters	
Western	77	3.1	18	6.1	4.3
Central	101	2.8	25	7.2	4.0
Southeast	101	3.8	21	6.5	4.8
Northern	87	4.4	20	9.3	4.4

Zone of Hunt	Activity: Helping Hunt				Days/ Hunter
	Effort (Days)	% Zone Effort	Hunters	% Zone Hunters	
Western	366	14.9	76	25.6	4.8
Central	605	17.0	107	30.9	5.7
Southeast	415	15.7	86	26.7	4.8
Northern	367	18.4	72	33.3	5.1

Differences between Zones

Days Chi Sq = 22.8 sig @ $\alpha = .01$

Hunters Chi Sq = 4.0 not sig

¹ Adds to more than 100% in each zone due to hunters hunting on more than one class of land.

Appendix K. Days spent hunting for turkey with a shotgun, bow and arrow, or as a companion to assist another hunter, during the 1993 fall season in New York State, by hunting zone.

<u>Zone of Hunt</u>	<u>Activity: Shotgun Hunting</u>				
	<u>Effort (Days)</u>	<u>% Zone Effort</u>	<u>Hunters</u>	<u>% Zone Hunters¹</u>	<u>Days/Hunter</u>
Western	1,022	60.9	222	83.1	4.6
Central	1,228	58.5	208	78.8	5.9
Southeast	1,268	58.7	207	78.4	6.1
Northern	332	66.9	71	78.9	4.7

<u>Zone of Hunt</u>	<u>Activity: Archery Hunting</u>				
	<u>Effort (Days)</u>	<u>% Zone Effort</u>	<u>Hunters</u>	<u>% Zone Hunters</u>	<u>Days/Hunter</u>
Western	503	29.9	81	30.3	6.2
Central	701	33.4	94	35.6	7.5
Southeast	750	34.7	99	37.5	7.6
Northern	118	23.8	21	23.3	5.6

<u>Zone of Hunt</u>	<u>Activity: Helping Another Hunt</u>				
	<u>Effort (Days)</u>	<u>% Zone Effort</u>	<u>Hunters</u>	<u>% Zone Hunters</u>	<u>Days/Hunter</u>
Western	152	9.1	42	15.7	3.6
Central	169	8.1	49	18.6	3.4
Southeast	141	6.5	35	13.3	4.0
Northern	46	9.3	14	15.5	3.3

Differences between Zones

Days Chi Sq = 33.5 sig @ $\alpha=.01$

Hunters Chi Sq = 6.9 not sig

¹ Adds to more than 100% in each zone due to hunters hunting on more than one class of land.