CHARACTERISTICS, MOTIVATIONS AND INVOLVEMENT OF TRAPPERS IN NEW YORK

by

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HDRU Series 91-1

July 1991

Human Dimensions Research Unit
Department of Natural Resources
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, N. Y.

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Keywords: motivations, trap ownership, trap testing, trap use, trappers, trapping

ACKNOWLEDGMENTS

We would like to extend our appreciation to Ben Tullar (New York State Department of Environmental Conservation, Division of Fish and Wildlife), Kenny Peck, and members of the New York State Trappers Association for their review and comments on the draft questionnaire instrument for this study. We also would like to thank the trappers of New York State who cooperated in this study.

Nancy Connelly, Jody Enck, and Renée Shiffler, in the Human Dimensions Research Unit (HDRU), assisted in a variety of ways during the course of this study. Margie Peech provided word-processing support.

This project was funded jointly by the New York State College of Agriculture and Life Sciences at Cornell University (Hatch Project # 8304-347), New York State through Federal Aid in Wildlife Restoration Project W-164-R (Job IV-1) and 146-R (Job I-2), and the U.S. Forest Service Northeastern Forest Experiment Station.

*** STUDY HIGHLIGHTS ***

STUDY PURPOSE:

- To provide a better understanding of trappers and their activities, and foster informed decisions on trap testing, trap regulation, trapper education, and public education.

STUDY OBJECTIVES:

- Provide a quantitative, representative description of trappers and trapping participation in New York.
- Determine the degree to which pelt prices and other socioeconomic variables influence demand for trapping opportunities.
- Identify the equipment and methods used by New York State trappers to trap 12 furbearer species in New York.

METHODS

- Based on a review of hunting and trapping research, we developed a mail questionnaire to assess: trapper initiation, trap ownership, trapping activities and involvement, disincentives to setting traps, motivations to trap, and trapper characteristics.
- In February, 1990, a mail survey was implemented with a statewide random sample of 1,000 trapping license holders.

RESULTS AND DISCUSSION

- Four mailings yielded a 73.6% response (n=718). Because the return rate was acceptably high, nonresponse bias was not assessed. Respondents were assumed to be representative of the total population of trappers.

SECTION 1: TRAPPING INVOLVEMENT

Trapper Characteristics:

- Nearly all (98.7%) trappers were male. The median trapper age was 40 years. About half were 21 to 49 years old, and about a third were under 30. Nearly all lived in a rural area or a small village. The majority of adult trappers completed their formal education at the high school level; about 1 out of 3 trappers had attended 1 or more years of college or other technical training. Most adult trappers earned a household income of $39,999 or less. About 1 out of 3 earned less than $20,000.
- Trappers were likely to participate in hunting (90%), fishing (91%), and nonconsumptive wildlife-related recreation (68%). About 30% belonged to a trapper organization.

Trapping Initiation:

- About half of the respondents were introduced to trapping by a father (64%), uncle (45%), brother (22%), and/or other family members. Family-initiated trappers generally started trapping at an earlier age than nonfamily initiates (i.e., mean age 16), and most (83%) had accompanied another trapper before they began trapping on their own.

- Nonfamily trappers were more likely (57% vs. 22%) to begin trapping alone, or with a male friend (51% vs. 32%). They also were more likely to start trapping at an older age (mean age 21). About 1 in 5 nonfamily trappers did have a family member who had trapped, though they weren't introduced to trapping by that person.

Trapping Involvement Disincentives:

- About 49% of all respondents set no traps in 1989-90, though most (94%) believed they would trap again some time in the future. Pelt price was the only factor that a majority (85%) of inactive trappers identified as an important contribution to their decision not to set traps. Nonmarket factors were important disincentives for small minorities of trappers.

Trapping Motivations:

- Based on a review of trapping literature and internal peer review we developed 26 items to assess trapping motivations. Most respondents had a broad range of motivations underlying their trapping involvement. Factor analysis suggested that motivation items could be grouped into 6 dimensions which were labelled: (1) escape and relaxation; (2) appreciation of nature; (3) personal achievement; (4) utilitarian incentives; (5) personal health and fitness; and (6) affiliation with other people. Sample group means indicated that the strongest dimensions of trapping motivation related to nature appreciation and personal achievement. Motivations related to socialization and affiliation were less important. A comparison of motivation factor score means confirmed motivational variation across trapper subgroups.

SECTION 2: TRAPPING ACTIVITIES

Trap Ownership and Use:

- The average number of traps owned was about 147. Most owned at least 3 types of traps: # 1.5 coil-spring foothold, # 2 coil-spring foothold, and # 110 body-gripping traps. Very few owned padded foothold traps. A variety of trap types and sizes are currently available and are used by some individuals, but most trappers appear to rely primarily on 3-6 trap types overall, and 1-5 trap types for any given furbearer species.

Trapping Involvement in 1989-90:

- The majority (62%) of active license holders trapped 30 days or less (mean number of trapping days was 52). The highest levels of trapping effort were expended on muskrat, raccoon, red fox, mink, and beaver. Total participation in mink, raccoon, muskrat, red fox, and gray fox trapping was lower than in the previous year.

- Most trappers (90%) used private land. About 39% also trapped on public land, though on average they spent fewer days on such land. Very few trappers (5%) paid a land-access fee to set traps, or indicated a willingness to pay an access fee for any reason. The majority of respondents trapped in the places they did because they were familiar, close by, and offered high furbearer populations, low trapper density, and trap security.

- About 20% of active trappers earned a trapping income that exceeded their expenditures; 21% broke even; 48% earned less than they spent. Over the last 3 seasons most (68%) declared a "negligible" trapping income; about 30% reportedly earned a supplemental income. Very few (2%) called trapping a primary source of household income.

- About half of those who harvested furbearers retained some pelts for personal use, or stored them for later sale at a higher pelt price. Many trappers consumed furbearer meat (28%), sold parts other than pelts (21%), or produced handicrafts from pelts (24%).

SUMMARY AND IMPLICATIONS

Trapping Disincentives and Motivations:

- A strong association between low pelt prices and trapper inactivity was documented in this study. Relatively low trapping license sales and reduced effort by license holders can be expected if pelt prices remain depressed. On the other hand, the wide range of motivations displayed, and the fact that 4 out of 5 participants did not profit financially by trapping, suggest that for most participants trapping involvement is based on a variety of personal rewards, many of which are nonmonetary.

Trap Testing:

- Though a variety of trap types and sizes are currently available and are used by some individuals, most trappers appear to rely primarily on 3-6 trap types overall, and 1-5 trap types for any given furbearer species. These traps should continue to receive high priority in trap testing activities.

Trap Regulation:

- Few trappers were found to own padded traps. If legislation or regulations are enacted that make use of padded traps mandatory,

reduction in trapping participation is likely to occur due to the economic disincentive associated with purchasing new traps.

- Large traps (i.e., #4 coil-spring, #4 long-spring) [redacted] are used infrequently for species other than beaver or otter. This suggests that more restricted use of these traps may have a minimal impact on trapper effectiveness and participation for all other species.

Trapper Education:

- The best indicator of trapping recruitment (i.e., enrollment in trapper training courses) suggests that the total population of New York trappers will continue to decline over the near-term future. Low trapper recruitment is probably the result of a combination of factors, including: low pelt prices, reduced availability of trapping sites, and a social climate that has become less supportive of trapping. Despite low recruitment, however, public demand for the opportunity to trap wild furbearers will continue to be expressed in New York in coming years. Trapper education courses will continue to offer an important opportunity to teach potential trappers how to obtain the benefits of this activity while emphasizing safe and humane trapping methods, and trapping ethics. This emphasis will be needed to sustain trapping as an activity.

- This study documented the fact that most trappers rely on a few trap types, and likely, a small set of familiar trapping techniques. Thus, trappers may be slow to accept new techniques or traps that are developed or adopted to meet humane trapping standards. Instruction on the effective use of new traps or trapping techniques in future trapper training will be necessary to hasten the adoption of those tools and techniques.

- Wildlife managers also will be challenged to inform and educate trappers through means other than formal training courses (e.g., newsletters, seminars, convention presentations). Mandatory completion of a trapper training course only has become necessary for license purchase within the last 10 years, so few (22%) trappers have attended such a course. Direct information exchange with trapper organizations will reach some trappers, but other means will be necessary to reach the majority (about 70%) who are not organization members.

Information for Nontrapping Publics:

- This study provides valuable baseline information on the activities and motivations of the trappers of New York State. Communication of these findings to nontrapping publics will help clarify potential misconceptions or misunderstandings about trappers, and may in this way facilitate informed, considered involvement of these stakeholders in the process of furbearer management.

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BACKGROUND

Historically, trapping has been accepted as a means of supplying furs, as well as providing a source of income and recreation opportunities in New York State. Trapping also has been used as a furbearer management tool, as prescribed by the New York State Environmental Conservation Law (ECL 11-0701, 11-1103). In recent years, various organized groups and individuals have objected to this activity. In 1985 a coalition of anti-trapping organizations brought suit against the state of New York in an attempt to effect a statewide ban on trapping (Boggess et al. 1990). Organized groups also have pressed for legislative action to prohibit trapping or drastically modify the manner in which trapping is conducted. In the last 2 decades over 350 anti-trapping bills have been introduced in the U.S. (Gentile 1987). Legislation that would ban foothold traps (erroneously referred to as "steel-jawed leghold traps") has been regularly introduced to the New York State Legislature in recent years, but that legislation has been held in the Environmental Conservation Committee of the Assembly. These activities reflect growing societal concerns about furbearer trapping, and wildlife management professionals in New York State and across North America (Boggess et al. 1990; Bishop 1990; Duda 1990; and Schmidt 1990) recognize that they must take actions to be responsive to those concerns.

Wildlife professionals also have recognized that they must develop a fuller understanding of trappers and trapping to make management decisions that are responsive to the concerns of people (Bishop 1990). Anti-trapping concerns and a variety of other factors have contributed to a reduction in trapping opportunities, and perhaps, the desire of people to engage in trapping. Pelt prices have fallen for most species in recent years. Trapping

opportunities may have been diminished by residential and commercial development, and changing land ownerships. Further, there has been a steady decline in trapping license sales over the past 10 years (Figure 1). All of these things suggest that trapping involvement may be undergoing a period of rapid change that could have important implications for wildlife program development, but little has been done to document the magnitude of such changes or the relative importance of factors that may be driving changes in trapping participation. Though some efforts have been made to characterize trapping participation outside the state (Clark 1985; Todd and Boggess 1987), research in New York has been limited to monitoring trapping effort, license sales, and furbearer harvest. The ability of wildlife managers to be socially responsive is hindered by a lack of information in these areas. Boggess et

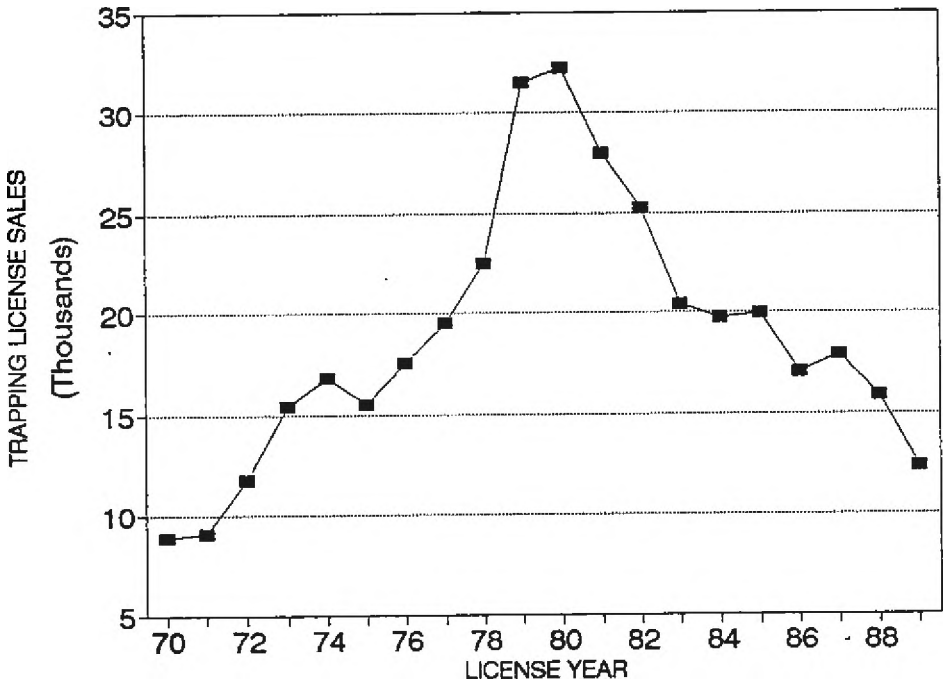

Figure 1. Trapping license sales in New York State, 1970-1989.

al. (1990) have articulated the need for information on trappers and other stakeholders in furbearer management:

> Carefully designed and implemented omnibus surveys would be valuable in providing quantitative data on trappers, trapping methods, public and advocacy group attitudes, and other furbearer management related issues, both in North America and abroad. Lack of geographically representative information on many facets of the trapping/furbearer management issue contributes to the controversy and hinders enlightened decision-making by governments.
>
> (Boggess et al., 1990:20)

STUDY PURPOSE AND OBJECTIVES

The purpose of this study was to gain a better understanding of trappers and trapping participation in New York State. The study had 3 objectives: (1) to identify the equipment and methods used for 12 furbearer species; (2) to determine the underlying socioeconomic variables that influence demand for trapping opportunities, and (3) to provide a quantitative, representative description of trappers and trapping participation in New York. We were interested in characterizing trappers statewide, and as members of several subgroups (i.e., strata). Subgroups of interest included: active and inactive license holders; family supported and nonsupported participants; those with and without social support and apprenticeship experiences; and those who paid for access and those who did not.

The study objectives were designed to address information needs of a "Joint Trapping Initiative" (JTI) developed by the New York State Department of Environmental Conservation (DEC) and the New York State Trappers Association (NYSTA). The overall goal of the JTI is to sustain trapping in New York for the wildlife management, recreational, and economic benefits which it provides. The initiative contains 3 components: trap testing and

regulation, trapper education, and public education. A fuller understanding of trappers and trapping is needed before each of these components can be fully implemented (Bishop 1990).

METHODS

Based on a review of literature on hunting and trapping research, we developed a mail questionnaire to assess: trapper initiation, trap ownership, trapping activities and involvement, disincentives to setting traps, motivations to trap, and trapper characteristics. Instrument development was a joint effort of the Human Dimensions Research Unit (HDRU), the DEC Bureau of Wildlife, and the Northeastern Forest Experiment Station (NEFES). The Decker et al. (1987) model of wildlife recreation involvement was used as a conceptual framework for development of items to assess trapping involvement.

In February 1990, the addresses of 4,500 1989-90 trapping license holders were randomly selected by DEC to conduct an annual telephone survey of trappers. A subsample of approximately 1,000 was drawn by DEC as the sample population for this study. Included in the sample were individuals who purchased a license, but did not set a trap in the 1989-90 season. The first mailing of questionnaires was implemented on 18 April. Up to 3 follow-up reminder letters were mailed to nonrespondents (Dillman 1978). Data coding and analysis were conducted by HDRU staff using the Statistical Package for Social Sciences software (SPSS Inc. 1986, 1988). Chi-square (X^2) statistics were used for group comparisons.

RESULTS AND DISCUSSION

Questionnaires were returned by 718 people, yielding a 73.6% response rate after exclusion of nondeliverables (n=15) and nonusables (n=10). Because

the return rate was acceptably high, nonresponse bias was not assessed. Age and area of residence (as recorded on license receipts) were similar between respondents and the total sample population. Respondents were assumed to be similar in demographics to nonrespondents, thus responses were not weighted.

Results are reported in a format that reflects the major subsections of the questionnaire: (a) demographic characteristics, (b) trapping initiation, (c) trapping motivations, (d) participation disincentives, (e) trap ownership, and (f) trapping activities in 1989-90. In Section 1, we address a number of questions regarding trapping participation. We describe New York's trappers, how and why they participate in trapping, and the factors that affect their participation. In Section 2 we explore trapping activities, focusing on trap ownership and use, and the degree to which respondents were involved in trapping in the 1989-90 license year. Where possible, existing information on trapping activities over the past 8 years is used to provide additional insights on trappers and trapping participation.

SECTION 1: TRAPPER CHARACTERISTICS, MOTIVATIONS AND DISINCENTIVES

Who Are New York's Trappers?

Nearly all respondents (98.7%) were male. Median trapper age was 40 years. Respondents ranged in age from 10 to 89 years, but about half were 21 to 49 years old, and about a third were under 30. Nearly all lived in a rural area or a small village. Only 5% lived in a city of 25,000 or more. About 19% of adults had not completed high school; 45.9% had completed high school; about 1 out of 3 had attended 1 or more years of college or technical school. They came from a variety of occupational backgrounds, the most common of which were student/self-employed (14.3%), craftsman (14.1%), retired/unemployed (13.8%), machine operator (13.7%), laborer (12.6%) and professional (12.1%).

The least common occupations were military/service worker (7.6%), manager/official (5.0%), farmer (4.3%), or clerical/sales (2.5%). Most adults had earned a household income of less than $40,000. About 1 out of 3 trappers earned less than $20,000.

Trapping appears to be just one aspect of a lifestyle that includes many wildlife-related or outdoor activities. Most trappers hunted (90%), fished (91%), and engaged in nonconsumptive wildlife-related recreation (68%) (e.g., feeding birds, taking trips to see or photograph wildlife).

About 30% belonged to a trapper organization; about 20% of those who were organization members belonged to the New York State Trappers Association (20.4%), and about 12% belonged to the National Trappers Association. Rates of membership in other trapper organizations was below 10%. Membership in a trapping organization was more common among active (set at least one trap) trappers than among inactive trappers (37.2% vs. 20.8%).

About 39% belonged to other wildlife, conservation, outdoor, or environmental organizations. Membership in local fish and game clubs (22%) or the National Rifle Association (16%) were cited most often. A small number of trappers (fewer than 7% per organization) belonged to various organizations representing a diversity of interests (e.g., wildlife damage control specialists, professional hunting guides, hunter trainers, taxidermists, wildlife rehabilitators, farmers, Boy Scouts, or specialized recreationists).

Why Do They Trap?

One of the most fundamental questions one can ask about trapping is, why do people participate? Decker et al. (1987) developed a model of wildlife recreation involvement that provides a useful framework for addressing this basic question. The model combines elements of existing social-psychological

theory (Reeder 1973; Fishbein and Ajzen 1975) and innovation-adoption theory (Rogers and Shoemaker 1971) to provide a general, but comprehensive model for research on wildlife recreation involvement. It assumes that involvement in wildlife recreational activities is psychologically motivated and socially mediated. Personal beliefs, values, abilities, and motivations are believed to form a set of internal psychological factors that influence whether a person participates in trapping. The theoretical model also suggests trapping participation is strongly influenced by social factors. These include custom, tradition, the expectations of family and friends, and the degree of support offered from others. Previous use of the model to explore hunting involvement has demonstrated that much can be revealed through the exploration of 3 key elements: apprenticeship experiences, social support, and motivations (Brown et al. 1981; Applegate and Otto 1982; Purdy et al. 1985, 1989; Purdy and Decker 1986). In the next 2 sections we describe how these 3 social and psychological factors influence trapping involvement.

Social Factors Affecting Involvement

Studies of hunting participation have shown that family and nonfamily hunting initiates often experience different social support and apprenticeship experiences (Decker and Mattfeld 1988). Apprenticeship is defined as a set of pretrapping (i.e., prior to licensed participation) or early trapping experiences shared over time with a role model or mentor (Enck et al. 1988). Social support is defined as the companionship or encouragement of friends and family. Apprenticeship experiences and social support are important contributors to long-term involvement in wildlife-related recreation (Applegate and Otto 1982; Purdy and Decker 1986; Enck et al. 1988). We assumed apprenticeship and social support were important factors in trapping

involvement, so we structured our survey to document these experiences for family-initiated and nonfamily-initiated trappers. The differences we documented between these 2 types of trappers were consistent with patterns revealed for similar types of hunting initiates.

About half of the respondents were family-initiated trappers; they were introduced to and educated about trapping by their father (64%), uncles (45%), brothers (22%), or other relatives. Family-initiated trappers generally started trapping at an earlier age than nonfamily initiates (i.e., mean age of initiation was 16), and most (83%) had accompanied another trapper afield before they began trapping. Nonfamily trappers were more likely (57% vs. 22%) to begin trapping alone, or with a male friend (51% vs. 32%). They were more likely than family initiates to learn about trapping by trial and error (68% vs. 57%), or from friends who trapped (59% vs. 37%). They also were more likely to start trapping at an older age (mean age of initiation was 21).

Nonfamily trappers were less likely (20% vs. 72%) to have a family member who trapped when they were growing up. Across initiation types only about 7% had a family member opposed to trapping when they began the activity. The groups also were similar in that only 1 out of 5 said they had learned about trapping through a trapper training course (most license holders began trapping before completion of a trapper education course was mandatory in New York State).

Trapping Motivations

Critical to understanding why people become and remain involved in trapping is developing a clear understanding of their underlying motivations. For purposes of this study, motivations are defined as psychological drives

that cause people to attempt to achieve certain goals or end states (Maehr and Braskamp 1986).

Based on a review of trapping literature and internal peer review we developed 26 items to assess trapping motivations. All responses were measured on a 5-point Likert-type scale: a value of +2 indicated strong agreement that the item reflected a personal trapping motivation; 0 indicated no opinion about an item; and -2 indicated strong disagreement that the item reflected a personal trapping motivation.

Responses to the 26-item motivation scale confirmed that most trappers have a broad range of motivations underlying their trapping participation. A majority of trappers strongly agreed that experiencing wildlife and the outdoors were personal motivations (Table 1). The least common motivations were those related to: being with family members; maintaining family traditions; obtaining meat; competing with other people; and being with other people (Table 1).

To determine the dimensionality of the trapping motivations scale, responses to the 26-item scale were subjected to principal components factor analysis with varimax rotation (alpha = 0.8754). One item ("to compete with other people") was deleted from the scale because it received a low factor loading and its deletion did not detract from scale reliability. Two items ("to get income"; "to be with other people") were dropped to improve overall scale reliability. Despite a low factor loading (less than the 0.4 commonly recommended as a criteria for retention of items within a scale [Christensen 1985]) one item was retained to maximize overall scale reliability (alpha = 0.8800).

Table 1. **Motivations for trapping involvement by licensed New York State trappers.**

Possible Trapping Motivations	n	Agreement/Disagreement With Statement as a Personal Trapping Motivation (%) SA[a]	A[b]	NO[c]	D[d]	SD[e]
Spending time outdoors	648	65.3	32.6	1.5	0.3	0.3
Experiencing/enjoying nature	636	58.0	39.3	1.9	0.6	0.2
Learning about wildlife	648	53.4	39.7	5.6	0.9	0.5
Observing wildlife	625	53.1	43.2	3.2	0.5	0.0
Doing something challenging	613	43.4	48.6	5.2	2.3	0.5
Testing my skills and abilities	615	41.5	49.8	6.3	2.1	0.3
Relaxing/relieving stress	612	38.9	43.6	12.3	4.9	0.3
Feeling like I am part of nature	625	36.6	45.9	13.6	3.2	0.6
Getting a chance to spend time alone	646	36.4	44.1	12.8	5.3	1.4
Controlling nuisance animals	620	34.2	38.7	18.1	7.3	1.8
Controlling predators	619	33.3	40.9	17.0	7.1	1.8
Getting a sense of accomplishment	613	33.6	46.7	15.5	3.4	0.8
Doing something exciting	615	30.7	46.7	14.6	6.0	2.0
Getting exercise	632	29.4	52.7	11.4	5.2	1.3
Getting a change of routine	623	28.7	46.5	16.1	7.1	1.6
Staying in shape	614	24.1	56.0	14.0	4.9	1.0
Teaching/sharing skills with others	629	22.9	44.2	23.5	7.9	1.4
Getting away from everyday problems	608	22.7	41.6	25.5	8.7	1.5
Getting some time to think	601	20.5	48.3	23.5	6.5	1.3
Getting a sense of self-sufficiency	595	15.5	40.5	28.6	12.1	3.4
Being with family members	608	14.0	21.9	42.4	16.4	5.3
Obtaining income	605	13.1	40.3	21.7	18.5	6.4
Maintaining family tradition	614	11.1	17.6	45.6	19.7	6.0
Obtaining meat for myself and family	605	5.3	13.2	38.7	30.4	12.4
Competing with other people	597	3.2	7.5	37.2	30.2	21.9
Being with other people	596	3.9	14.6	43.5	27.5	10.6

[a]Strongly Agree
[b]Agree
[c]No Opinion
[d]Disagree
[e]Strongly Disagree

Factor analysis suggested that trapping motivations could be grouped into 6 dimensions. Based on the items they contained, we labeled these dimensions as: (1) escape and relaxation; (2) appreciation of wildlife, nature, and the outdoors; (3) personal accomplishment or achievement; (4) economic incentives (e.g., obtaining meat, nuisance or damage control); (5) personal health and fitness; and (6) affiliation with other people, especially family members (Table 2). Sample group means indicated that the strongest dimensions of trapping motivation related to nature appreciation and personal achievement, while motivations related to socialization and affiliation were less important (Table 3).

It was hypothesized that trappers become involved in trapping in different ways and at different levels because of differences in underlying motivations. Thus, we expected motivational differences to exist among trapper subgroups. To identify possible differences we compared motivation factor score means for subgroups of interest, including: active and inactive trappers; family and nonfamily initiates; and junior, regular, and senior license holders. These groups are not mutually exclusive, but their comparison yields some insight on how motivations vary across individual trappers.

By comparison, active trappers were found to have strong scale means related to achievement (0.96 vs. 1.13; $P < 0.01$) and affiliation (0.31 vs. 0.50; $P < 0.01$) motivations. This may explain why they remained active in 1989-90. Expected satisfactions from personal challenge and maintaining traditional activities may have given these trappers enough incentive to be active in 1989-90, despite low pelt prices.

Table 2. Factor loadings for 23-item trapping motivation scale.

Scale Item[a]	Factors					
	Nature Appreciation[b]	Escape[c]	Personal Achievement[d]	Affiliation/ Socialization[e]	Economics[f]	Health/ Fitness[g]
To learn about wildlife	.6829					
To spend time outdoors	.5406					
To observe wildlife	.7358					
To experience, enjoy nature	.8197					
To feel like part of nature	.5080					
To get a change from my routine		.3895				
To get chance to spend time alone		.5853				
To relax and relieve stress		.6198				
To get away from everyday problems		.7030				
To get some time to think		.6883				
To do something exciting			.4275			
To do something challenging			.5335			
To get a sense of accomplishment			.6030			
To test my skills and abilities			.5892			
To get a sense of self-sufficiency			.5072			
To be with family members				.5496		
To maintain family tradition				.6239		
To teach or share my skills				.4916		
To control predators					.7647	
To control nuisance animals					.8120	
To obtain meat for myself, family					.5435	
To get exercise						.7982
To stay in shape						.5264
Percentage of variance (total=51.4) (alpha = .8800)	28.8	6.1	5.9	4.3	3.4	3.0

Table 2 (cont.).

[a]Item preface: "One of the reasons I am involved in trapping is:"

[b]Observing, experiencing, feeling like part of nature.

[c]Change of routine, personal time, stress release.

[d]Excitement, challenge, accomplishment, self-sufficiency, development of personal skills.

[e]Being with family members, maintaining traditions, passing on trapping skills to others.

[f]Nuisance and predator control, obtaining meat.

[g]Getting exercise, staying in shape.

Table 3. **Mean summed item scores for trapping motivation factors.**

Motivation Factor	n	Mean Factor Score
Nature Appreciation	681	1.46
Personal Achievement	651	1.06
Escape	659	0.97
Economics	635	0.58
Health and Fitness	647	0.58
Affiliation/Socialization	644	0.42

Family and nonfamily trappers had similar motivation scale means, with the exception of motivations related to spending time with family or carrying on family tradition (0.28 vs. 0.55; $P < 0.01$).

Compared to other license holders, junior trappers were relatively achievement-oriented and were not involved in trapping primarily as a means of escape, obtaining meat, or controlling wildlife damage. Conversely, the senior trappers appeared to have a broad set of motivations, and placed more importance on personal achievement (Table 4).

What Factors Affect Their Involvement?

Furbearer harvest surveys indicate that each year as many as half of all trapping license holders do not actually go trapping in New York (DEC, Bureau of Wildlife, Furbearer/Small Game Mammal Unit, unpubl. data). Most respondents (63.5%) had been inactive at least 1 year over the course of their trapping involvement, but 94% also believed they would continue their trapping involvement in the future. In 1989-90, about 49% of all license holders were

Table 4. A comparison of mean summed item scores for trapping motivation factors by junior, regular and senior trapping license holders in 1989-90.

Motivation Factor	n	Sample Group	Mean Factor Score
Nature Appreciation			
	32	Junior license	1.45
	576	Regular license	1.47[a]
	46	Senior license	1.28[a]
Escape or Relaxation			
	32	Junior license	0.65[b]
	564	Regular license	0.99[b]
	38	Senior license	0.90
Personal Achievement			
	32	Junior license	1.09[c]
	559	Regular license	1.09[a]
	36	Senior license	0.75[a,c]
Affiliation/ Socialization			
	32	Junior license	0.25[c]
	549	Regular license	0.41
	39	Senior license	0.67[c]
Economics			
	30	Junior license	0.30[c]
	545	Regular license	0.55[a]
	36	Senior license	0.97[a,c]
Health and Fitness			
	32	Junior license	0.75
	550	Regular license	1.02
	40	Senior license	0.97

[a]Significant difference ($P < 0.05$) between regular and senior trapping license holders.

[b]Significant difference ($P < 0.05$) between regular and junior trapping license holders.

[c]Significant difference ($P < 0.05$) between junior and senior license holders.

inactive. Low pelt prices were identified as the single most important factor leading to inactivity (Table 5). Most also indicated they were "too busy" to go trapping, suggesting that they may have placed low personal priority on trapping, given low pelt prices or other factors. Disincentives related to trapping regulations, access, furbearer abundance, social influences, and personal considerations contributed to inactivity for minorities of respondents (Table 5).

SECTION 2: TRAPPING ACTIVITIES

What Types of Traps Do They Own and Use?

Trapping participation varies widely among individuals, as reflected by a wide range of trap ownership patterns (Appendix A). Though some individuals had more than 1,000 traps, the mean number of traps owned was about 147 (Table 6). Documenting trap ownership revealed several commonalities. The majority of respondents owned at least 3 trap types: # 1.5 coil-spring foothold, # 2 coil-spring foothold, and # 110 body-gripping traps. Conversely, very few respondents owned padded foothold traps. Though a variety of trap types and sizes are currently available and are used by some individuals (Appendices 2-4), most trappers appear to rely primarily on 3-6 trap types overall, and 1-5 trap types for any given furbearer species (Table 7).

How Active Were Trapping License Holders In 1989-90?

In 1989-90 about half of all trapping license holders engaged in some trapping activity. The majority (62%) of those trapped 30 days or less (the mean number of trapping days was 52). The highest levels of trapping effort were expended on muskrat, raccoon, red fox, mink, and beaver (Table 8). Few trappers pursued bobcat, opossum, skunk, or marten.

Table 5. Importance of various factors as reasons why licensed New York State trappers did not set any traps in 1989-90.

Potential Reasons Why No Traps Were Set	n	Personal Importance as Reasons Why No Traps Were Set in 1989-90 (%)					
		NI[a]	SI[b]	MI[c]	VI[d]	EI[e]	DK[f]
Pelt prices too low	295	13.9	5.1	16.3	18.0	45.4	1.4
Too busy	269	24.9	8.9	14.1	23.0	27.9	1.1
Furbearer populations too low	245	58.0	9.8	12.2	7.3	7.3	5.3
Family/personal health reasons	275	67.3	4.4	4.4	7.3	15.3	1.5
Season dates inappropriate	250	72.4	7.6	8.0	4.8	4.8	2.4
Couldn't find a place to trap	237	72.6	5.9	11.4	3.8	4.2	2.1
It would have cost too much money to go trapping	249	72.9	7.6	6.8	8.4	3.6	0.8
Places I wanted to trap were too crowded	245	76.7	7.3	6.9	2.9	4.5	1.6
Would have had to travel too far to set traps	244	78.7	9.8	6.1	2.5	2.5	0.4
Lost interest in trapping	243	80.2	7.4	2.5	2.9	3.3	3.7
Trapping regulations were too complicated	246	80.5	8.5	3.7	1.6	4.9	0.8
I don't like killing animals	242	86.4	5.8	3.3	0.0	4.1	0.4
No one to go trapping with	244	88.1	4.9	4.1	1.2	1.2	0.4
Didn't want to get into conflicts with people opposed to trapping	245	91.0	2.9	2.4	1.6	1.6	0.4
Didn't have enough equipment	243	91.4	2.5	4.1	1.2	0.4	0.4
Had family or friends opposed to trapping	243	94.2	0.8	1.2	0.4	0.4	2.9
Other reason	17	00.0	11.8	00.0	29.4	58.8	00.0

[a]Not Important; [b]Slightly Important; [c]Moderately Important; [d]Very Important; [e]Extremely Important; [f]Don't Know.

Table 6. Trap ownership patterns of all respondents (n=618).

Trapper Group	n	Number of Traps Owned				
		Mean	Median	Mode	Minimum	Maximum
All	618	146.6	92.0	36.0	1	1395
No Trapping Income	423	124.2[a]	83.0	54.0	1	1395
Trapping Income 1-10% of Total Household Income	94	220.6	141.5	----	19	962
Trapping Income 11% or more of Total Household Income	28	222.8	141.5	----	2	1059

[a]Means significantly different ($P < 0.05$) for trappers with and without any household income from trapping.

Table 7. Traps used most frequently[a] in 1989-90 by furbearer species.

Furbearer species	% Active Trappers Pursuing Species	Trap Type		
		Coil-spring	Long-spring	Body-gripping
Muskrat	59.3	#1, 1.5	#1, Stop-loss	#110
Raccoon	53.6	#1.5, 2	---	#220
Mink	48.6	#1, 1.5	#1 Stop-loss, 1.5	#110
Fox (both)	46.7	#1, 1.5, 1.75, 2	---	---
Beaver	43.9	---	#4	#220, 330
Coyote	42.3	#1.75, 2	---	---
Fisher	10.4	#1.5, 2	---	#220
Otter	10.1	---	---	#220, 330
Bobcat	6.5	#2, 3	---	#220
Opossum	5.2	#1 Padded	---	#160
Skunk	2.7	#1.5, 1.5 Padded, 1.75, 2	#1	#220
Marten	0.2	#1 Padded	---	---

[a]Trap types used by 20% or more of those who pursued the species listed.

Table 8. Days of trapping effort by furbearer species, by active New York State trappers in 1989-90.

Furbearer Species	Active Trappers Pursuing Species (%)	Trap Days By Species				
		Mean	Median	Mode	Minimum	Maximum
Muskrat	59.3	24.0	15.0	10.0	2	180
Raccoon	53.6	23.0	17.0	30.0	2	110
Red Fox	50.0	22.0	15.5	14.0	3	70
Mink	48.6	23.8	15.0	30.0	1	180
Beaver	43.9	22.6	14.0	10.0	2	120
Gray Fox	37.7	22.8	18.0	14.0	3	100
Coyote	42.3	21.9	19.0	10.0	1	100
Fisher	10.4	15.7	20.0	30.0	1	120
Otter	10.1	26.7	20.0	30.0	1	20
Bobcat	6.5	14.7	12.0	5.0	1	40
Opossum	5.2	13.8	10.0	10.0	1	60
Skunk	2.7	21.6	10.0	3.0	1	100
Marten	0.2	7.0	7.0	7.0	7	7

Most trappers (89.5%) used private land. About 1 out of 3 trapped on land owned by themselves or a parent. About 39% also trapped on public land, though on average they spent fewer days on such land (mean days 15.5 vs. 78.0). Very few (5%) paid a land-access fee to set traps. When asked why they trapped in the places they did, a majority cited access to familiar land, minimal travel distance, high furbearer populations, low trapper density, and trap security (Table 9). Very few said they would be willing to pay an access fee to trap on land with those characteristics (Table 10), indicating a very limited demand for fee-access trapping activities in New York State.

In 1989-90 about 20% of all active trappers earned an income that exceeded their trapping expenditures. Another 21% broke even financially, while 48% had expenditures that exceeded trapping income. Over the last 3 seasons the majority (68%) said their trapping income was "negligible." Though about 30% reported that trapping had supplemented their income over the past 3 years, very few (2%) called trapping a primary source of household income.

Nearly all of those who harvested furbearers sold some pelts to a local buyer (93.6%); a majority (53.6%) also sold pelts at local, state, regional, national, or international auctions. About half (53.9%) of those who harvested furbearers also kept some pelts for personal use or stored them for later sale at a higher pelt price. Some trappers also consumed furbearer meat (28%), sold parts other than pelts (21%), or produced handicrafts from pelts (24%).

Table 9. Reasons why active trappers decided to trap in the places they did in 1989-90.

Reasons for Choosing Property Type	Percent of Active Trappers Who Said Incentive Was an Important Influence on Their Land Choice (n=356)
To trap where furbearer populations were high	67.7
To work the same area I had trapped before	65.7
To reduce the likelihood of trap tampering or theft	59.0
To avoid other trappers	51.1
To stay close to home	50.3
To secure a guaranteed place to trap	39.9
To secure a place to set a trapline easily accessible by road	25.3
To avoid hunters	22.8
To avoid conflict with people opposed to trapping	21.5
Other	14.3

Table 10. Reasons why active trappers would pay a land-access fee to set traps.

Reasons Trappers Would Pay For Access	Percent of Trappers (n=356)
To trap where furbearer populations are high	22.7
To reduce the likelihood of trap tampering or theft	21.3
To secure a guaranteed place to trap	15.2
To avoid other trappers	9.1
To work the same area I have trapped before	7.5
To avoid conflict with people opposed to trapping	6.4
To stay close to home	4.7
To avoid hunters	3.9
To secure a place to set a trapline easily accessible by road	3.6
Other	1.7

IMPLICATIONS FOR TRAPPER AND FURBEARER MANAGEMENT

Trapper Motivations and Participation

Annual attendance in trapper training courses (the best indicator of trapping recruitment) declined 90% over the past 10 years (Figure 2). Trapping license sales (Figure 1) and trapping effort (Figure 3) are also declining. Our study was not designed to fully explore the factors that may be driving a decline in trapper recruitment, but several potential factors have been implicated in studies of hunting recruitment (Brown et al. 1981, 1987; Applegate and Otto 1982; Purdy et al. 1985; Purdy and Decker 1986), which also has been declining in New York State since 1982 (Figure 4).

Reduced availability of trapping sites and decline in the prevalence of traditional nuclear families are two factors that may be contributing to lower trapper recruitment. Our findings confirmed that trapping participation is most commonly associated with persons who reside in rural areas. For many

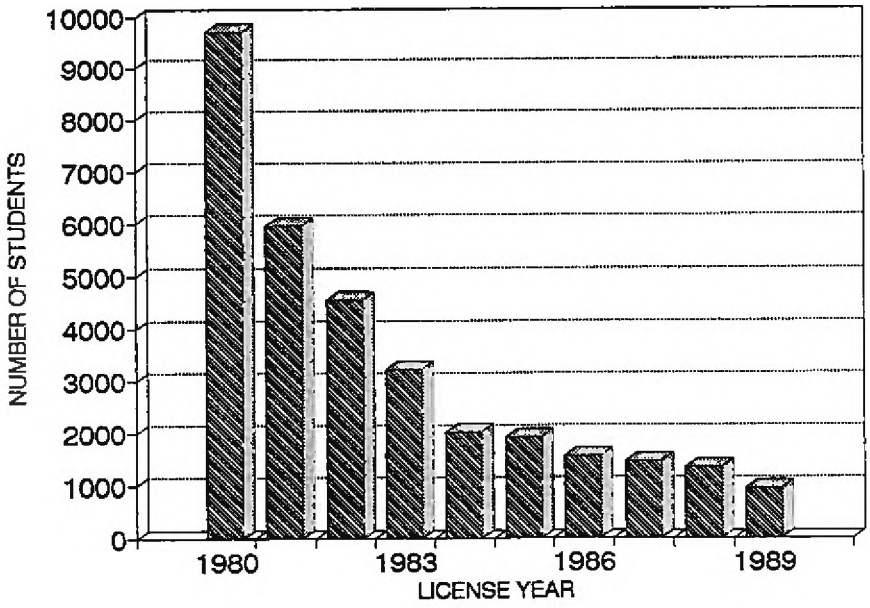

Figure 2. Total enrollment in New York State trapper training courses, 1980-1989.

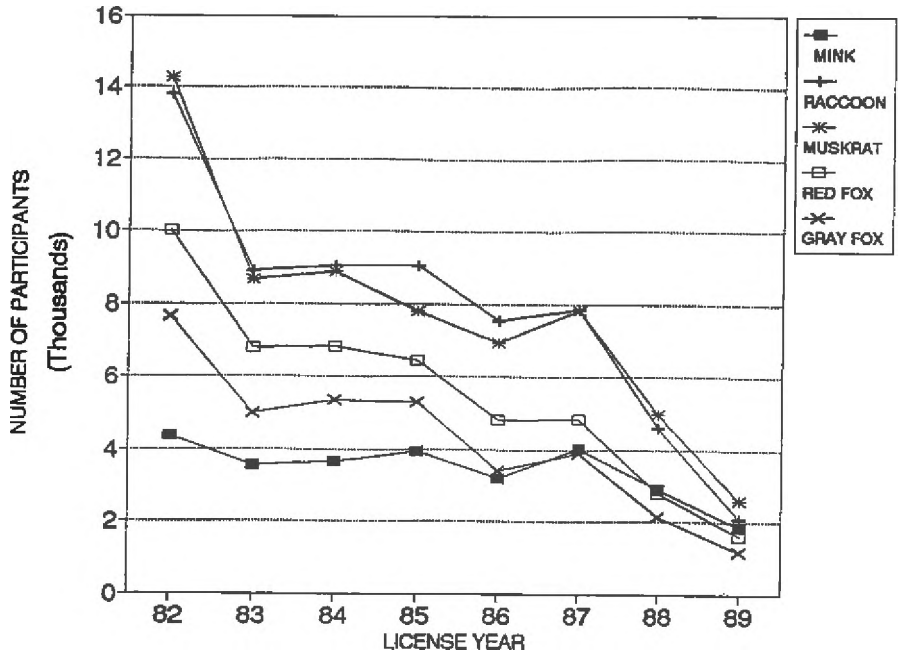

Figure 3. New York State trapping participation levels for several selected furbearers, 1982-1989.

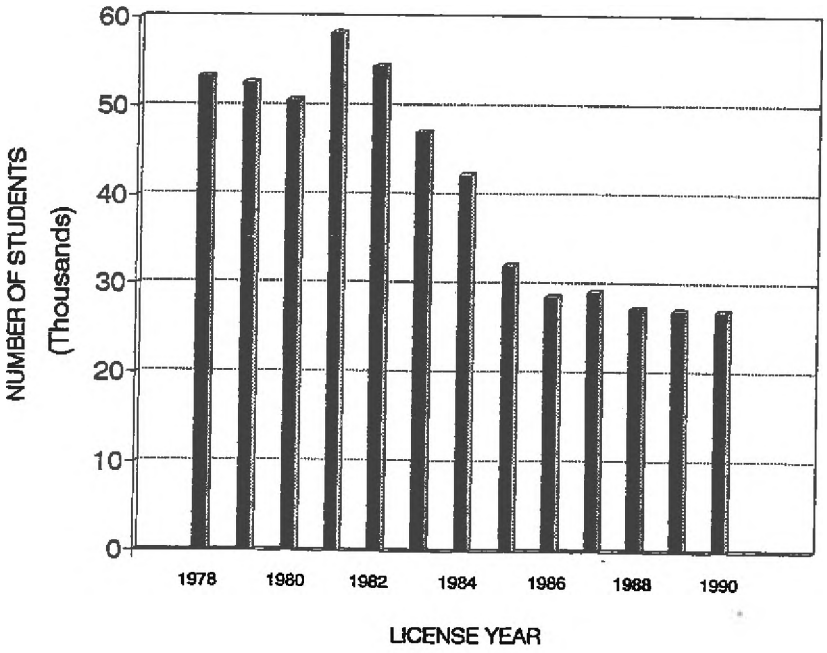

Figure 4. Total enrollment in New York State hunter training courses, 1978-1990.

individuals, trapping is a traditional family activity passed on to young men by their fathers or other male role models. Increasing development and changes in land ownership in rural areas have the potential to reduce trapping activity as access grows more restrictive. Continued erosion of the traditional nuclear family also may diminish trapping involvement, due to the absence of male role models who traditionally have been important vectors for the transmittal of trapping beliefs, values, and skills.

Limited social support from nontrappers also may be contributing to low trapper recruitment. A national survey conducted in 1978 (Kellert and Berry 1980) indicated that most people in the U.S. have little knowledge about wildlife, furbearer management policies in general, or trapping specifically. Moreover, the study suggests that public support for trapping may be low. For example, 62% of those responding had little or no knowledge of the use of foothold traps to catch furbearers (Kellert and Berry 1980). Yet, 78% believed it was wrong to use foothold traps to capture wild animals, and 57% objected to killing animals for fur, even when this would not endanger a species (Kellert and Berry 1980).

Our findings documented a strong association between low pelt prices and trapper inactivity in 1989-90, suggesting that pelt prices also conribute to reductions in trapper recruitment and participation. Continued attrition in trapping license sales and reduced effort by license holders can be expected if pelt prices remain low.

Despite low recruitment and reduced effort, however, public demand for the opportunity to trap wild furbearers will continue to be expressed in New York in coming years. The majority of trapping license holders in 1989-90

believed that trapping offered a wide variety of personal rewards and they intended to continue to participate in trapping in the future. For these individuals trapping appears to be not merely an income-producing activity, but rather, one important component of a lifestyle that includes a variety of outdoor activities (e.g., fishing, hunting, wildlife watching).

Trap Testing and Regulation

The majority of trappers owned at least 3 trap types: # 1.5 coil-spring foothold, # 2 coil-spring foothold, and # 110 body-gripping traps. Moreover these same trap types appear to be those used most frequently by trappers for several furbearer species. These findings are consistent with figures that show that sales of # 3 and # 4 long-spring traps are very low in New York (Bishop 1990).

In addition to the fact that trappers rely on small coil-spring traps (# 2 or smaller) so heavily, some evidence suggests that coil-spring traps may cause less injury than their long-spring counterparts (Olsen et al. 1986). This suggests that comparing the efficacy of the larger traps to those of size 2 or smaller, and comparing the injuries caused by coil-spring and long-spring traps may be fruitful areas for additional trap testing. Further trap research in these areas may reveal a regulatory scenario that addresses concerns about trap-related injuries to animals with minimal impact on trapper effectiveness and participation.

Documentation of the fact that so few trappers owned or used padded traps also is important. Padded traps are approximately double the cost of standard foothold traps. A requirement, through law or regulation, to use padded traps could affect trapping participation and harvest. Given current low pelt prices, the cost associated with the purchase of a large number of

new traps would likely exceed trapping income for many individuals. To the degree that this occurred, at least a temporary reduction in trapping participation and furbearer harvest could result.

Some studies have suggested that use of padded traps may reduce injury rates for some species, including red fox, gray fox, bobcat, and coyote (Rowsell et al. 1981; Tullar 1984, 1988; Olsen et al. 1986, 1988; Saunders et al. 1988; Onderka et al. 1990). Evaluations of comparative trap efficiency have produced equivocal results. Some studies have suggested padded traps have efficiency rates comparable to conventional traps (Tullar 1984; Linscombe and Wright 1988); other studies have indicated padded traps are less efficient (Linhart et al. 1986). Continued research is needed to guide clear decision making related to the use of padded traps.

Trapper Education

Trapper education courses will continue to offer an important opportunity to teach potential trappers how to obtain the benefits of this activity while emphasizing safe and humane trapping methods, and trapping ethics. This emphasis is needed to sustain trapping as an activity. Training courses may be especially valuable in passing on innovations in trapping techniques or tools. This study documented the fact that most trappers rely on a few trap types, and likely, a small set of familiar trapping techniques. Thus, trappers may be slow to adopt any new techniques or traps that are developed to meet humane trapping standards. Education on the effective use of new traps and trapping techniques can hasten the adoption of trapping methods that are revealed through trap testing to meet standards for efficiency and humane capture.

Furbearer managers also will be challenged to inform and educate trappers through means other than formal training courses (e.g., newsletters, seminars, convention presentations). Mandatory completion of a trapper training course only has become necessary for license purchase within the last 10 years, so few (22%) trappers have attended such a course. Direct information exchange with trapper organizations will reach some trappers, but other means will be necessary to reach the majority (about 70%) who are not organization members.

Nontrapper Information

Most of New York State's 18 million residents are nontrappers. They represent a diversity of interests and are important audiences for furbearer managers. In the wake of increasing public visibility of furbearer management issues (e.g., coyote damage, beaver damage, disease transmission by furbearers, animal welfare, animal rights), a growing portion of the nontrapping public may become interested in furbearer management. The wildlife profession will be challenged to encourage informed decisions by these publics. Given the infrequency with which they encounter trappers or furbearers, it is likely that many nontrappers will become interested in furbearer management issues before they have a broad understanding of those issues. Wildlife management professionals can play an important role in providing nontrappers with the range of information they need to form, evaluate, and act on their own beliefs and values.

Among the information nontrappers will need to make decisions is an understanding of the social, psychological, and cultural aspects of trapping involvement. In coming years it will become increasingly important that information from studies such as this are communicated through popular written

media or other appropriate outlets. Such communication will be of value to wildlife managers because it will help them to address a growing public demand to understand trappers and trapping. Exchange of accurate information on trappers and trapping may help clarify potential misconceptions or misunderstandings of trapping involvement, and thus facilitate dialogue among trappers, nontrappers, and wildlife managers. Ultimately, sustained mechanisms for informed dialogue among groups should allow all people to make informed, considered choices on trapping and furbearer management.

LITERATURE CITED

Applegate, J.E., and R.A. Otto. 1982. Characteristics of first-year hunters in New Jersey. New Jersey Agric. Exp. Stn. Publ. No. R-12381-(1)-82.

Bishop, P.G. 1990. Traps, trapping and furbearer management in New York State. Bureau of Wildlife. New York State Department of Environmental Conservation, Albany, N.Y. 23pp.

Boggess, E.K., G.R. Batcheller, D.W. Erickson, J.W. Greer, D. Juve, S.B. Linhart, R.G. Linscombe, M. Novak, A.W. Todd, and D.A. Wade. 1990. Traps, trapping, and furbearer management: a review. Technical Review 90-1. Wildl. Soc. Tech. Rev. 90-1. 31pp.

Brown, T.L., D.J. Decker, and D.L. Hustin. 1981. 1978 hunter training course participant study. Outdoor Recreation Research Unit Publ. No. 81-1, Dept. of Nat. Resour., N.Y.S. Coll. of Agric. and Life Sci., Cornell, Univ., Ithaca N.Y. 152pp.

_____, _____, K.G. Purdy, and G.F. Mattfeld. 1987. The future of hunting in New York. Trans. North Am. Wildl. and Nat. Resour. Conf. 52:553-566.

Christensen, J.E. 1985. "Interpretational confounding" and canonical correlation in leisure research. Leisure Sciences 7(2):189-203.

Clark, A.G. 1985. Characteristics of trappers in Maine, 1976 to 1980. Master's Thesis. Dept. of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Va. 156pp.

Decker, D.J., T.L. Brown, B.L. Driver, and P.J. Brown. 1987. Theoretical developments in assessing social values of wildlife: toward a comprehensive understanding of wildlife recreation involvement. Pages 76-95 *in* D.J. Decker and G.R. Goff (eds.), Valuing wildlife: economic and social perspectives. Westview Press, Boulder, Colo. 424pp.

_____, and G.F. Mattfeld. 1988. Hunters and hunting in New York. Human Dimensions Research Unit Series Publ. No. 88-7. Dept. of Nat. Resour., N.Y.S. Coll. of Agric. and Life Sci., Cornell, Univ., Ithaca N.Y. 28pp.

Dillman, D.A. 1978. Mail and telephone surveys: the total design method. Wiley, New York. 325pp.

Duda, M.D. 1990. The hunting-anti-hunting conflict in Florida: analysis, policy implications and recommendations. Responsive Management, Tallahassee, Fla. 12pp.

Enck, J.W., G.A. Pomerantz, and D.J. Decker. 1988. Impediments to youth participation in hunting: a progress report and evaluation of program development efforts. Human Dimensions Research Unit Series Publ. No. 88-4. Dept. of Nat. Resour., N.Y.S. Coll. of Agric. and Life Sci., Cornell, Univ., Ithaca N.Y. 64pp.

Fishbein, M., and I. Ajzen. 1975. Belief, attitude, intention, and behavior: an introduction to theory and research. Addison-Wesley Publishing Co., Reading, Mass. 578pp.

Gentile, J.R. 1987. The evolution of antitrapping sentiment in the United States: a review and commentary. Wildl. Soc. Bull. 15:490-503.

Kellert, S.R., and J.K. Berry. 1980. Knowledge, affection, and basic attitudes towards animals in American society. U.S. Govt. Printing Office #204-101-00-625-1, Washington, D.C. 162pp.

Linhart, S.B., G.J. Dasch, C.B. Male, and R.M. Engeman. 1986. Efficiency of unpadded and padded steel foothold traps for capturing coyotes. Wildl. Soc. Bull. 14:212-218.

Linscombe, R.G., and V.L. Wright. 1988. Efficiency of padded foothold traps for capturing terrestrial furbearers. Wildl. Soc. Bull. 16:307-309.

Maehr, M.L., and L.A. Braskamp. 1986. The motivation factor: a theory of personal investment. D.C. Heath Company, Lexington, Mass. 281pp.

Olsen, G.H., S.B. Linhart, R.A. Holmes, G.J. Dasch, and G.B. Males. 1986. Injuries to coyotes caught in padded and unpadded steel foothold traps. Wildl. Soc. Bull. 14:219-223.

_____, R.G. Linscombe, V.L. Wright, and R.A. Holmes. 1988. Reducing injuries to terrestrial furbearers by using padded foothold traps. Wildl. Soc. Bull. 16:303-307.

Onderka, D.K., D.L. Skinner, and A.W. Todd. 1990. Injuries to coyotes and nontarget species caused by four models of footholding devices. Wildl. Soc. Bull. 18:175-182.

Purdy, K.G., and D.J. Decker. 1986. A longitudinal investigation of social-psychological influences on hunting participation (study I: 1983-1985). Human Dimensions Research Unit Series Publ. No. 86-7. Dept. of Nat. Resour., N.Y.S. Coll. of Agric. and Life Sci., Cornell, Univ., Ithaca N.Y. 126pp.

_____, _____, and T.L. Brown. 1985. New York's 1978 hunter training course participants: the importance of social-psychological influences on participation in hunting from 1978-1984. Human Dimensions Research Unit Series Publ. No. 85-7. Dept. of Nat. Resour., N.Y.S. Coll. of Agric. and Life Sci., Cornell, Univ., Ithaca N.Y. 127pp.

_____, _____, and _____. 1989. New York's new hunters: influences on involvement from beginning to end. Human Dimensions Research Unit Series Publ. No. 89-3. Dept. of Nat. Resour., N.Y.S. Coll. of Agric. and Life Sci., Cornell Univ., Ithaca N.Y. 25pp.

Reeder, W.W. 1973. Beliefs, disbeliefs and social actions. Cornell Univ. Agr. Exp. Stn. Bull. No. 74. 33pp.

Rogers, M., and F.F. Shoemaker. 1971. Communication of innovations--a cross-cultural approach. 2nd Edition. Free Press, New York. 476pp.

Rowsell, H.C., J. Ritcey, and F. Cox. 1981. Assessment of effectiveness of trapping methods in the production of a humane death. Proc. Worldwide Furbearer Conf. 3:1647-1670.

Saunders, B.P., H.C. Rowsell, and I.W. Hatter. 1988. A better trap, the search continues. Can. Trapper. Winter. pp. 8, 16.

Schmidt, R.H. 1990 Why do we debate animal rights? Wildl. Soc. Bull. 18(4):459-461.

SPSS, Inc. 1986. Statistical package for the social science user's guide. 2nd ed. McGraw-Hill, Chicago. 988pp.

_____. 1988. SPSS data entry II for the IBM PC/XT/AT. McGraw-Hill, Chicago.

Todd, A.W., and E.K. Boggess. 1987. Characteristics, activities, lifestyles and attitudes of trappers in North America. Pages 59-76 *in* M. Novak, J. A. Baker, M. E. Obbard, and B. Malloch (eds.), Wild furbearer management and conservation in North America. Ont. Minst. Nat. Resour., Toronto, and Ontario Trappers Assoc., North Bay, Can. 1150pp.

Tullar, B.F., Jr. 1990. New York's trap research. New York State Furbearer Management Newsletter 1(2):3. Div. Fish and Wildl., New York State Dept. of Environ. Conserv., Albany, N.Y.

_____. 1984. Evaluation of a padded leg-hold trap for capturing foxes and raccoons. N.Y. Fish and Game J. 31:97-103.

Appendix A. Trap types owned by New York State trappers (n=618).

Trap Type	% of Trappers Who Own Trap Type	Number of Traps Owned[a] Mean	Median	Mode	Minimum	Maximum
Coil-spring Foothold Traps						
# 1 1/2	71.8	28.6	20.0	12.0	1	500
# 2	61.2	22.3	12.0	12.0	1	300
# 1	33.8	15.7	12.0	12.0	1	70
# 1 3/4	29.3	21.0	12.0	12.0	1	250
# 3	20.1	10.2	6.0	12.0	1	90
# 4	14.4	12.4	9.0	12.0	1	100
# 1 1/2 padded	0.8	14.1	12.0	12.0	1	100
# 3 padded	0.9	22.2	9.0	12.0	1	100
# 1 padded	0.8	6.8	2.0	2.0	1	24
Long-spring Foothold Traps						
# 1	47.6	24.0	15.0	12.0	1	200
# 1 1/2	42.0	17.2	10.0	6.0	1	250
# 1 stop-loss	36.6	25.1	12.0	6.0	1	400
# 2	25.0	12.5	6.0	12.0	1	100
# 4	21.0	11.9	6.0	12.0	1	150
# 3	12.8	11.5	6.0	6.0	1	100
# 11	5.7	11.0	6.0	2.0	1	50
Body-gripping Traps						
# 110	85.0	42.9	24.0	24.0	1	888
# 330	46.6	12.1	7.5	12.0	1	100
# 120	21.0	11.5	6.0	12.0	1	144
# 280	4.9	12.9	5.5	2.0	1	144
# 160	4.4	18.4	12.0	2.0	1	160
# 220	3.4	21.7	12.0	12.0	1	280
Box Traps						
All	37.7	4.1	2.0	1.0	1	50
Other Traps						
All	10.5	15.3	12.0	12.0	1	100
Total	100.0	146.6	92.0	36.0	1	1395

[a]Statistics for trappers who own at least 1 trap of the type listed.

Appendix B. Coil-spring foothold trap types used to trap furbearer species in 1989-90.

Species and % of Active Trappers Who Pursued That Species	Percent of Trappers Using Specified Coil-Spring Trap Type								
	#1	#1 P[a]	#1.5	#1.5 P	#1.75	#2	#3	#3 P	#4
Muskrat (59.3)	22.2	1.4	17.1	0.4	0.9	3.2	0.4	0.0	0.0
Raccoon (53.6)	17.4	1.5	63.6	6.2	16.9	28.2	1.0	0.0	0.5
Mink (48.6)	26.0	1.1	45.8	3.4	6.2	14.7	0.0	0.0	0.0
Fox (both) (46.7)	58.8	0.5	67.1	9.4	35.3	53.0	3.0	0.0	0.0
Beaver (43.9)	0.6	0.0	1.3	0.0	1.9	5.0	15.6	3.1	9.4
Coyote (42.3)	0.6	1.4	15.6	1.9	23.4	27.3	17.5	0.6	3.9
Fisher (10.4)	0.0	0.0	23.7	2.6	15.8	21.0	2.6	0.0	0.0
Otter (10.1)	0.0	0.0	5.4	2.7	2.7	5.4	10.8	2.7	2.7
Bobcat (6.5)	4.2	0.0	16.7	0.0	0.0	45.8	33.3	0.0	4.2
Opossum (5.2)	0.0	21.0	5.2	10.5	15.8	0.0	0.0	0.0	15.8
Skunk (2.7)	10.0	0.0	20.0	20.0	30.0	30.0	0.0	0.0	0.0
Marten (0.2)	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

[a]Padded

Appendix C. Long-spring foothold traps types used to trap furbearer species in 1989-90.

Species Type	% Active Trappers Pursuing Species	% of Participants Using Specified Long-Spring Trap						
		#1	#11	#1 SL[a]	#1.5	#2	#3	#4
Muskrat	59.3	35.2	3.2	35.2	16.6	1.4	0.4	0.9
Raccoon	53.6	5.1	6.1	2.6	14.4	12.3	1.0	0.5
Mink	48.4	19.2	5.6	20.9	22.5	5.1	0.0	2.8
Fox (both)	46.7	0.0	0.0	0.0	3.0	4.7	3.0	1.2
Beaver	43.9	0.6	1.3	0.0	0.6	1.9	14.4	32.5
Coyote	42.3	0.0	0.0	0.0	0.0	1.3	8.4	3.9
Fisher	10.4	0.0	0.0	0.0	0.0	2.6	5.3	2.6
Otter	10.1	0.0	0.0	0.0	0.0	2.7	8.1	10.8
Bobcat	6.5	0.0	0.0	0.0	0.0	4.2	12.5	0.0
Opossum	5.2	5.2	5.2	15.8	10.5	5.2	0.0	0.0
Skunk	2.7	20.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

[a]Stop-loss

Appendix D. Body-gripping trap types used to trap furbearer species in 1989-90.

Species	% Active Trappers Pursuing Species	Percent of Participants Using Specified Body-gripping Trap Type					
		#110	#120	#160	#220	#280	#330
Muskrat	59.3	95.8	9.7	5.6	16.2	0.4	1.9
Raccoon	53.6	1.5	4.1	6.6	51.3	1.0	1.0
Mink	48.6	65.5	18.1	1.1	7.9	0.0	0.0
Gray Fox	46.7	0.0	0.0	0.0	6.5	0.0	3.0
Beaver	43.9	0.6	0.6	0.6	23.8	13.1	89.4
Coyote	42.3	0.0	0.0	0.0	0.0	0.6	1.9
Fisher	10.4	2.6	0.0	5.3	63.2	2.6	2.6
Otter	10.1	0.0	0.0	0.0	67.8	16.2	54.0
Bobcat	6.5	0.0	8.3	0.0	20.8	0.0	8.3
Opossum	5.2	0.0	5.2	31.5	0.0	0.0	0.0
Skunk	2.7	0.0	0.0	0.0	30.0	0.0	0.0
Marten	0.2	0.0	0.0	0.0	0.0	0.0	0.0