

**GENDER DIFFERENCES AND CITIZEN PARTICIPATION
IN WILDLIFE-RELATED DECISION-MAKING PROCESSES**

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EXECUTIVE SUMMARY

Introduction

Wildlife agencies have demonstrated an interest in serving the needs of diverse stakeholders, through the use of citizen participation efforts to incorporate various stakeholders' viewpoints into management decisions. Although wildlife-related decision-making processes originally focused on activities which have been dominated by men's participation, namely hunting and hunting-related issues, the range of stakeholders now interested and involved in wildlife-related decision-making processes is expanding.

Wildlife-related citizen participation processes are rooted in the interactions that managers have had with predominantly male constituencies. Consequently, program elements and techniques designed for predominantly male populations may not provide a broad enough foundation on which to base programs that are aimed at more gender-balanced audiences.

Women are becoming key players in wildlife management, and research has demonstrated that women have wildlife attitudes and values that are significantly different than men's. The primary objective of this study was to understand whether gender differences exist in the attitudes, preferences, and needs of male and female participants in wildlife-related decision-making processes, based on an investigation of the following six hypotheses:

- H₁: Men and women have different reasons for choosing to participate in a wildlife-related decision-making process.
- H₂: Men and women participants have different preferences for the characteristics of wildlife-related decision-making processes.
- H₃: Men and women participants evaluate the success of wildlife-related decision-making processes with different criteria.
- H₄: Men and women participants have different levels of trust in sources of information during wildlife-related citizen participation processes.
- H₅: Men and women participants have different preferences for the types of information they would like to receive during wildlife-related citizen participation processes.
- H₆: Men and women participants have different preferences for the ways in which information is presented during wildlife-related citizen participation processes.

Methods

Data were collected via a quantitative survey instrument mailed to 722 male and female participants in 32 completed, wildlife-related citizen participation processes held by the New York State Department of Environmental Conservation (NYSDEC) between 1992-1999.

Statistically significant differences between men and women were determined using multiple regression analyses. In all analyses, data were weighted by gender and by type of process from which the respondent was sampled. Each regression analysis included factors to control for the respondent's gender, age, highest level of education attained, type of process in which he/she had participated, wildlife use/hunting attitude, as well as factors controlling for conditional interactions between gender and age, gender and education level, and gender and pro-wildlife/hunting attitude.

Results

The survey response rate was 62.91% (adjusted). We found several significant gender differences in responses to our survey questions.

We found that men were more likely to indicate that their participation was motivated by the request of DEC or Cooperative Extension staff.

In terms of preferred process characteristics, we found that men placed a higher level of importance on the process using scientific information to make decisions. Women placed a higher level of importance on the process being facilitated by a neutral party, providing an opportunity for open interaction with the agency and others, and giving more weight to the concerns of citizens most directly affected by management actions.

When evaluating whether a process is successful, men were more likely to consider whether the wildlife issue was well-researched by DEC staff and whether appropriate amounts of time and money were spent gathering citizen input. Men also placed more importance on relationships improving as a result of the process. Women felt it was more important to consider whether citizens were denied the opportunity to be heard.

Men rated higher their level of trust in national clubs and organizations, and public opinion surveys as sources of information compared to women's ratings.

Men with lower levels of education placed a higher level of importance on receiving information about NYSDEC programs and opportunities and process logistics. Women placed a higher level of importance on receiving information about the purpose and role of the participation process in decision-making.

Both women and men rated visual, interpersonal, and non-technical opportunities to receive information most helpful. For both women and men, technical opportunities were rated least helpful. Women rated the availability of written documents for their review as more helpful than men did.

Management Implications

Bringing women into processes

- ◆ Wildlife-related agencies, organizations, and Cooperative Extension need to actively recruit women members and clients to participate in wildlife-related citizen participation processes.

- ◆ Agencies may benefit from inviting members of organizations that are not explicitly involved with wildlife, such as community groups, public service organizations, or parent-teacher associations.
- ◆ Agencies may achieve greater involvement from women if, in the solicitation of participants, they acknowledge that participation is desired from people with all levels of wildlife-related experience and knowledge.

Process design to address women's needs

- ◆ Designing processes where participants with all levels of knowledge are solicited, and where the value of different types of knowledge to the process is formally acknowledged, may improve women's ability to contribute to wildlife-related decisions.
- ◆ Women recognize that they have unique and important wildlife viewpoints and want to be heard, although they may have a lack of perceived efficacy in making their viewpoints known. Our results suggest that perhaps, for women, when faced with the challenge of participating in the traditionally "male" world of wildlife issues, being heard becomes more important than preserving harmony.
- ◆ Women consistently placed an emphasis on unbiased mediation during processes. Whenever possible, a trained moderator will better serve the needs of all involved in a wildlife-related citizen participation process.
- ◆ Agencies should recognize that the credibility of "outside" sources of wildlife information may be perceived differently by citizens with different viewpoints. Efforts to include wildlife information from a wide variety of identified sources will allow participants to evaluate the usefulness of information for themselves.

Addressing women's information needs

- ◆ Agencies should be up front with participants about the purpose of citizen participation efforts, how input will be incorporated into management decisions, and where wildlife-related information comes from.
- ◆ Transparency in information may be of particular importance to women, and agencies may be better able to communicate with women if they are consistent in identifying the facts or opinions on which the information they are disseminating is based.
- ◆ Agencies need to be aware that the complexity of scientific information can be unfamiliar to participants, and should make efforts to convey information in non-technical ways. Conveying information through visual, interpersonal, and non-technical means were the styles of presentation most supported by the respondents in our study.

- ◆ A lower level of trust in public surveys among women may be due to a lack of trust in the accuracy of survey measures, in the interpretation of survey data, or in the agency which has conducted or commissioned the survey. Agencies should consider that part of the process may be to ask participants what methods of incorporating the viewpoints of others would be most informative and trustworthy.
- ◆ Participatory action research, where participants are involved in the collection and interpretation of information relevant to the upcoming decision, has the potential to reduce uncertainty and create a mutually acceptable knowledge base.

Long-term investments

Agencies should be conscious of the need to foster relationships and build communication channels with women constituents. Designing programs that are specifically targeted at women and that emphasize various types and levels of wildlife-related activities (such as the *Becoming an Outdoorswoman* program) will provide opportunities for agencies to build relationships with women constituents. That women's responses to our study indicate that they are looking for opportunities to build relationships with agencies may be evidence of the likelihood of the success of such programs.

An understanding of gender differences in attitudes, needs, and preferences toward citizen participation in wildlife-related decision-making has two significant benefits. The first is the agency's ability to apply such an understanding to future citizen participation efforts with the potential benefit of involving a more gender-balanced constituency in the process. The second is that understanding and working to cater to the needs of more than one demographic group (i.e. women as well as men) can lay the groundwork to improve the participation of other demographic or interest groups. Increased diversity in citizen participation efforts has great potential to lead to more acceptable, executable, and creative management decisions through increased diversity in issue-related information perspectives on management.

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Gender and citizen participation in wildlife management decision-making

Abstract

We compared the motivations and preferences of men and women toward citizen participation in wildlife-related decisions. Data were collected via a mail survey of past participants in New York State Department of Environmental Conservation citizen participation processes completed between 1992-1999. We explored gender differences in motivations for participation, preferred process characteristics, and criteria used to evaluate process success. Men's participation was more often motivated by a request from a wildlife-related entity. Women placed more importance on processes having unbiased facilitation and the opportunity for open exchange of ideas and information with the agency. Men placed more importance on the use of scientific information in decision-making. Attained education level played an important role in observed gender differences. Different strategies are needed to fully engage both women and men in wildlife-related decision-making processes.

Introduction

Historically, wildlife agencies were concerned primarily with anglers, hunters, and trappers (Decker et al. 1996), the majority of whom were men (Connelly et al. 1996). However, women are becoming very important players in wildlife issues. Women are involved largely in non-consumptive uses of wildlife, such as bird watching and wildlife viewing (Kellert and Berry 1987; McCarty and Kelley 1985; Mertig and Matthews 1999). Women make up a majority of animal-rights and animal-welfare organizations (Kellert and Berry 1987), and the majority of wildlife rehabilitators are women (Siemer and Brown 1992). In 1996, 8.5% of all hunters were women (Pullis 2000), a number that continues to increase (McCarty and Kelley 1985; Thomas et al. 1999). The numbers of women entering collegiate wildlife programs and entering wildlife-related professions are also on the rise (Leffler and Mathews 1998).

Past studies have shown differences in how men and women relate to wildlife and its management. Overall, men are more likely to be accepting of wildlife management and hunting, whereas women are more likely to express anti-hunting attitudes (Kellert and Berry 1987). Women perceive greater risk from contact with wildlife (Kellert and Berry 1987). Gender differences have been demonstrated in attitudes toward animal rights and animal welfare; women demonstrate greater opposition to activities in which there is potential for harm to animals (Kellert and Berry 1987; Sanborn and Schmidt 1995). Women have demonstrated greater concern for the secondary impacts of wildlife management on their local communities and environments (Lauber et al. 2001).

Given these gender differences in wildlife-related behaviors and attitudes, women need to be recognized as a unique and critical stakeholder group in wildlife-related decisions. The inclusion of diverse stakeholders in decision-making has great potential to lead to more acceptable, executable, and creative management decisions through increased diversity in issue-related information and perspectives on management issues (Lauber and Knuth 2000; Zanetell 2001). Wildlife agencies have demonstrated an interest in serving the needs of diverse stakeholders, through the use of citizen participation efforts to incorporate various stakeholders' viewpoints into management decisions (Decker and Enck 1996).

We hypothesized that differences may exist in men's and women's perceptions of and needs as participants in wildlife-related citizen participation processes. In this study, we explored whether gender differences exist in perceptions of citizen participation in New York State through three measures: motivations for participation, preferred participation process characteristics, and criteria used to evaluate the outcome of a participation process.

Theoretical Background

Gender and Motivation for Participation

In spite of a consistently higher level of concern about environmental issues among women (Blocker and Eckberg 1989; Brody 1984; McStay and Dunlap 1983; Mohai 1992; Ozanne et al. 1999; Stern et al 1993; Stout-Weigand and Trent 1983), men are more likely to

participate in activities that influence environmental policies (Mohai 1992; Ozanne et al. 1999). Gender differences in “political engagement” – knowledge, interest, and perceived efficacy in politics – in conjunction with gender differences in access to resources, may explain gender differences in political citizen participation (Schlozman et al. 1995, Verba et al. 1997). A lack of perceived efficacy may be an important barrier to women’s political participation (Conway et al. 1997, 87) and women’s success in conflict resolution situations (Kolb and Coolidge 1991), as well as women’s participation in resource-based recreation (Connelly et al. 1996; Mertig and Matthews 1999).

When women do participate, their participation may be motivated differently than men’s. Women may be more aware of their own impacts on the environment and consequently feel motivated by responsibility to help address issues resulting from this impact (Zelezny et al. 2000). Women’s concern for the environment may be a reflection of their intent to “protect” the public (Shapiro and Mahajan 1986). The suggested motivations of “care” and “protection” are ideas echoed in many studies of gender and natural resource issues (Blocker and Eckberg 1989; Brody 1984; Kellert and Berry 1987; Stern et al. 1993).

The reference to “caring” as an explanation for gender differences stems from Feminist Moral Theory, which suggests that women are socialized into an “ethic of care” (Gilligan 1982). When women make moral decisions, their decisions are “connected” to a context of feelings, needs, the unique situation and its conditions (Noddings 1984). Men’s moral decisions are more often based primarily on “objective” criteria (Tronto 1994, 79), such as existing standards, laws, and regulations. Consequently, those who engage in caring see the world in terms of people’s needs and pleasures as well as the needs and pleasures of any animal or plant (Ruddick 1995).

These differences in motivations and barriers to political and environmental participation led to our first hypothesis:

H₁: Men and women have different reasons for choosing to participate in wildlife-related decision-making processes.

Gender and Process Characteristics

We also considered that if men and women make decisions differently, they might prefer different characteristics of decision-making processes. Stakeholder experiences, interests, and preferences are important factors in designing an effective process, and stakeholder groups may differ in what these preferences are (Chase et al. 1999). Wildlife values and preferences may have implications for stakeholders' preferences for the design of citizen participation processes (Chase et al. 1999). Those with "traditional" wildlife values and attitudes tend to prefer "traditional" citizen participation methods, such as public meetings, and vice versa (Chase et al. 1999). Non-traditional elements of citizen participation processes, such as interpreters, transportation to meetings, or child care during participation events may be necessary to make participation effective for multiple audiences (Hampton 1999).

Negotiation literature suggests that women's unique styles of negotiation and needs during negotiation situations may lead to a need for different characteristics in a decision-making context. Women, more so than men, rely on communication and interaction with others in order to frame an issue and come to a resolution (Kolb and Coolidge 1991). Women, whether due to their "care" for others or their lack of power, are often silenced in negotiations due to a tendency to talk less, to be interrupted more easily, and to emphasize the needs of others over their own (Kolb and Coolidge 1991). Women may perceive negotiation "as a context in which conflict and competition are important, [and therefore] may not be a comfortable place for many women," (Kolb and Coolidge 1991). Social roles create the perception that men are more assertive, competitive, and confident than women, and men are consequently more influential and influenced less easily than women (Eagly 1987, 98). Women's tendency to be concerned with preserving group harmony and relationships may affect how women tend to be influenced by and thus agree more readily with other's opinions (Eagly 1987, 98). These studies led to our second hypothesis:

H₂: Men and women participants have different preferences for the characteristics of wildlife-related decision-making processes.

Gender and Evaluation

We also considered that there may be differences in the criteria men and women use to evaluate whether the outcome of a citizen participation process is successful. Although there is a logical overlap between the types of process characteristics participants prefer and the criteria they use to evaluate outcomes, the two can differ. Previous studies of public participation have noted that success can be defined in terms of the participatory process itself, as well as in terms of the outcome goals (Chess and Purcell 1999).

A few studies have been conducted to understand how participants in natural resource decision-making evaluate citizen participation processes. Tuler and Webler (1999) identified seven categories of principles upon which good processes are based: access to the process, power to influence the process and its outcomes, process characteristics that promote constructive social interactions, facilitation of constructive personal behaviors, access to information, adequate analysis, and enabling of future processes. Lauber and Knuth (1999) found nine criteria related to citizens' perceptions of a moose management citizen participation process: adequate participation, agency receptivity, influence, agency knowledge/reasoning, citizen knowledge, time, cost, stability of the decision, and relationships between stakeholders.

Feminist Moral Theory suggests potential differences in how men and women evaluate outcomes. Men are more "task oriented" or "agentic" (i.e. concerned with accomplishing the assigned group task) and women are more "socially-emotionally oriented" or "communal" (i.e. concerned with maintaining satisfactory morale and interpersonal relations) in small group activities (Eagly, p.108, 1987). Women considered a negotiation "successful" if their interactions were pleasant, regardless of whether the main point of conflict had been discussed (Watson and Kasten 1988). Consequently, in evaluating a process, women may be more attuned to group dynamics and men to issue-related outcomes.

These studies led to the development of our third hypothesis:

H₃: Men and women participants evaluate the success of wildlife-related decision-making processes with different criteria.

Methods

Survey Development

The data presented in this study were collected as part of a quantitative survey instrument designed to measure gender differences in attitudes, needs, and perceptions of citizen participation in wildlife management decision-making. Development of the survey instrument was informed both by a literature review and qualitative interviews with New York State Department of Environmental Conservation (NYSDEC) staff (n=3), and male and female participants (n=15) in three different NYSDEC citizen participation processes. Interview participants were chosen purposefully for maximum variation in types of experiences and stakes in the issues so that emergent themes in the data would be likely to capture attitudes, needs, and preferences that were common to most participants (Patton 1990, 172).

Survey Measures

Our quantitative instrument included four questions to address our three topics of interest. We used an eight-item measure to determine reasons for participation of male and female respondents. Participants were asked to indicate all reasons that applied to their decision to participate in a past citizen participation process. These items were analyzed for gender differences as single-item measures. A second, single-item measure was included to determine which of the reasons was most important to respondents in choosing to participate in the citizen participation process.

Our instrument also included 14 items to determine how important various process characteristics were to respondents. Each item was rated using a 5-point scale (“Not at all Important” to “Very Important”). A confirmatory factor analysis was conducted on these items to group them into scales measuring process preferences.

Finally, 15 items were used to determine which criteria respondents feel are important to consider when evaluating whether a participation process is successful. These items were also rated on a 5-point scale (“Not at all Important” to “Very Important”), and a confirmatory factor analysis was conducted on these items.

In addition to measures of reasons for participation, process characteristic preferences, and evaluative criteria, certain demographic and attitude measures were included in our instrument. Demographic information was obtained using single-item measures to determine respondents' gender, age, and highest level of education attained. A seven-item measure was used to determine the type of processes in which participants had been involved. Finally, we measured respondents' wildlife value orientation using a 16-item measure based primarily on scales developed by Fulton et al. (1996). Selected items were included from the following dimensions identified by Fulton et al. (1996): wildlife use; wildlife rights; bequest and existence; hunting/anti-hunting; and residential wildlife experience. Two additional items were included to represent a nuisance tolerance dimension.

Survey Implementation

The quantitative survey instrument was reviewed by Cornell University research specialists and NYSDEC staff prior to distribution. The survey was mailed to 395 participants in 31 completed, wildlife-related citizen participation processes held by the NYSDEC between 1994-1999. Surveys were mailed to all women involved in these processes (n=118), all persons whose gender was unidentifiable based on participant lists (n=41), and twice as many men as women from each process (n=236). In an effort to increase the number of women sampled, a process conducted in 1992 was also included due its large proportion of women participants. For this process, men and women were sampled in equal proportions (n=152 men and n=152 women), as well as all persons of unidentifiable gender (n=23).

We followed Dillman's (2000) survey implementation methods. Questionnaires were preceded by a letter notifying participants that they would be receiving a survey shortly. The survey was mailed in early May 2000, and was followed by two reminder letters. A replacement questionnaire was included with the second reminder letter. All letters were hand-signed to increase survey response rate.

Statistical Analyses

Data from the mail survey were recorded using SPSS Data Entry II. Analyses were conducted using SPSS 10.0.1 for Windows and Intercooled Stata version 6 for Windows. Pearson's chi-square analyses were used to test for differences related to participation in citizen involvement efforts. Statistically significant differences between men and women were determined using *t* test comparisons of the variables in gender-specific multiple regression equations. In all analyses, individuals' responses were weighted according to the number of individuals (men or women) in their process they were representing. Separate regression equations were run for each gender on each factor scale, as well as on single items not loading significantly on any factor scale.

The multiple regression equations we obtained included variables representing the type of process in which respondents had participated, the respondents' age, the highest level of education attained, and pro-wildlife use/hunting attitude. Gender differences were identified by conducting *t* tests for differences between the regression constants of the men's and women's regression equations for each scale/item. Additional *t* tests were conducted on the coefficients representing age and highest level of education to determine how these factors influenced gender differences. Midpoint and extreme factor values were then tested in the regression equations to interpret gender differences in responses.

Results

Response

A total of 348 completed surveys were returned, for a 62.9% (adjusted) response rate. The undeliverable rate was 16.2%. We determined that the majority of undeliverable responses were from the process conducted in 1992, most likely due to a higher proportion of these participants having changed their address since their participation. The response rate was high enough that we determined that a nonrespondent survey was unnecessary (Dolsen and Machlis 1991).

Respondent Characteristics

Overall, 124 women and 224 men responded to our survey. The average respondent age was 54.2 years, and was not significantly different between men and women ($p = 0.353$). The average respondent had completed at least 1-3 years of college education, with women having a slightly but significantly higher average level of completed education ($p < 0.05$).

A test of the correlation between gender and our regression variables revealed a fairly strong correlation between gender and attitude toward wildlife use and hunting, where $r = -0.3805$. For this scale, men's pro-wildlife/hunting value score was significantly higher than women's ($p < 0.05$). Given this correlation, we felt an investigation of the effect of wildlife use/hunting attitude on gender differences would not be appropriate.

A Pearson's chi-square analysis showed gender differences in the likelihood of participating in different types of processes, $X^2(2, N = 350) = 7.3, p = 0.026$. Men had a higher relative incidence of participation in a small-group type process, such as a task force or focus group. Women had a higher relative incidence of participation in a large, impersonal type process, such as a mailed comment solicitation. The effect of process type on gender differences was not investigated in this paper, because we were not evaluating experiences of participants with specific events.

Most important reason for participation

A Pearson's chi-square analysis showed no differences in the reason for participation indicated as most important by men and women, $X^2(7, N = 286) = 7.8, p = 0.348$. The reasons indicated most often by respondents were to make their viewpoint about an issue heard (34.3% of all responses) and to contribute to a successful solution of a wildlife problem (32.2% of all responses) (Figure 1.1).

Motivation for participation

Tests for gender differences in values predicted by our regression equations showed only one reason for participation was significantly different between men and women when all factors were held at their midpoints. A significantly higher percentage of men indicated they

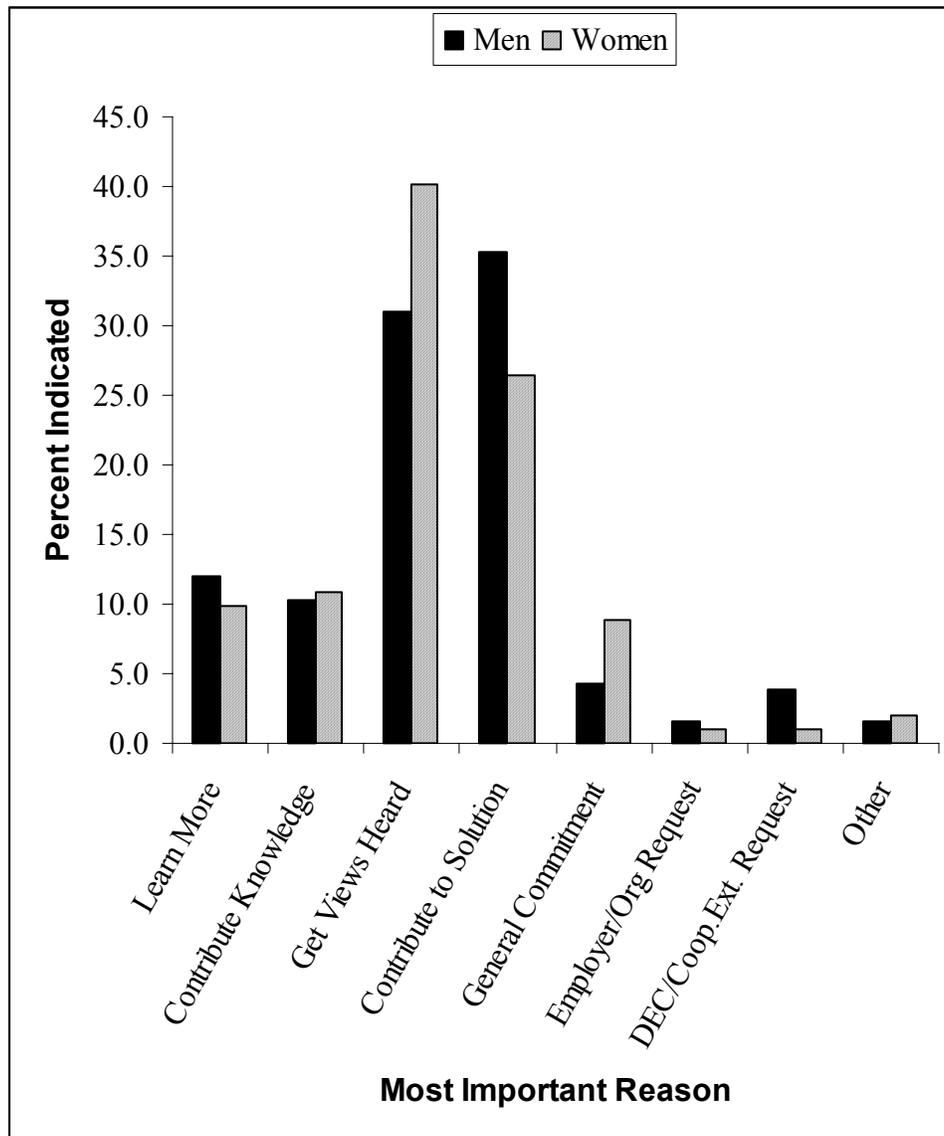


Figure 1. Most important reason for choosing to participate in a citizen participation process. ^a

^a Gender differences not significant; Pearson Chi-square = 7.834, with 7 degrees of freedom, p = 0.348

participated at the request of the NYSDEC or Cooperative Extension staff ($p < 0.05$) (Table 1.1). Additionally, age ($p < 0.01$) and education ($p < 0.05$) were significant factors in whether men and women indicated this reason for participation (Table 1.1).

Importance of process characteristics

Women placed greater importance on the process being moderated by an unbiased facilitator ($p < 0.01$). At lower levels of education, this difference persisted; however, at higher levels of education, men rated the importance of this characteristic higher than did women ($p < 0.01$) (Table 1.2). Women also placed greater importance on there being opportunity for the open exchange of ideas with the agency and others ($p < 0.05$). At higher levels of education, this item continued to be rated higher by women, but at lower levels of education, this characteristic was more important to men ($p < 0.05$) (Table 1.2). Women placed greater importance on the process giving more weight to the concerns of citizens who would be most directly affected by management decisions ($p < 0.05$). At lower levels of education this gender difference was more pronounced ($p < 0.05$) (Table 1.2). The only process characteristic rated higher by men when all other factors were held at their midpoints is that scientific information is used to make decisions ($p < 0.05$). This difference persisted at higher levels of education, but at lower levels, this characteristic was more important to women participants ($p < 0.05$) (Table 1.2).

Criteria important in evaluating success

Several criteria showed significant gender differences when all regression factors were held at their midpoints. Men rated the importance of the wildlife issue having been well researched by DEC staff higher than did women ($p < 0.05$) (Table 1.3). Men rated the importance of an appropriate amount of money having been spent to gather citizen input as higher ($p < 0.05$), a difference that persisted at lower levels of education but reversed at higher levels of education ($p < 0.05$) (Table 1.3). Men also rated the importance of an appropriate amount of time having been spent to gather citizen input higher ($p < 0.10$), a difference that persisted at lower age ($p < 0.10$) and lower education ($p < 0.05$), but reversed at higher age and

Table 1. Reasons men and women chose to participate in a citizen participation processes.

Reason for participation	Percent indicating reason ¹									
	Factors Held at Midpoints		High Age (Age = 78)		Low Age (Age = 30)		High Education (5+ years college)		Low Education (9-11 years school)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
My participation was requested by NYSDEC or Cooperative Extension staff ^{2,3,4}	7%	3%	6%	5%	9%	12%	8%	4%	8%	1%

¹ Factors included in logistic regression model included age, education, participation process type, and wildlife attitude

² Regression constant significantly different between gender models, $p < 0.05$

³ Age factor significantly different between gender models, t-test, $p < 0.01$

⁴ Education factor significantly different between gender models, t-test, $p < 0.05$

Table 2. Importance of process characteristics to men and women participants in citizen participation processes.

Process Characteristic	Importance of Characteristic ^{1,2}									
	Factors Held at Midpoints		High Age (Age = 78)		Low Age (Age = 30)		High Education (5+ years college)		Low Education (9-11 years school)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
The process is facilitated by a neutral party ^{3,4}	3.37	3.71	3.58	3.93	3.16	3.49	3.68	3.55	2.91	3.96
There is the opportunity for the open exchange of ideas with the agency and others ^{5,6}	4.38	4.47	4.30	4.43	4.46	4.50	4.18	4.39	4.69	4.59
The process give more weight to the concerns of citizens who would be most directly affected by management decisions ^{9, 10}	3.58	3.92	3.57	3.89	3.60	3.94	3.26	3.36	4.07	4.76
Scientific information is used to make decisions ^{7, 10}	4.32	4.20	4.33	4.08	4.31	4.32	4.61	4.26	3.90	4.10

¹ Importance of characteristic rated on 5-point Likert scale: 1 = Not at all important; 2 = Slightly important; 3 = Moderately important; 4 = Important; 5 = Very important

² Factors included in linear regression model included age, education, participation process type, and wildlife attitude

³ Regression constant significantly different between gender models, t-test, p < 0.01

⁴ Education factor significantly different between gender models, t-test, p < 0.01

⁵ Regression constant significantly different between gender models, t-test, p < 0.05

⁶ Education factor significantly different between gender models, t-test, p < 0.05

Table 3. Importance of criteria to men and women in evaluating whether a citizen participation process is successful.

Outcome Criterion	Importance of Criterion ^{1,2}									
	Factors Held at Midpoints		High Age (Age = 78)		Low Age (Age = 30)		High Education (5+ years college)		Low Education (9-11 years school)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
The wildlife issue was well-researched by NYSDEC staff ³	4.65	4.58	4.78	4.53	4.52	4.62	4.74	4.73	4.52	4.35
An appropriate amount of money was spent to gather citizen input ^{13, 4}	3.16	3.09	3.03	3.45	3.29	2.72	2.83	3.09	3.64	3.08
The NYSDEC took an appropriate amount of time to gather citizen input ^{8, 5, 6}	4.09	4.01	3.96	4.20	4.23	3.82	3.87	3.96	4.43	4.09
Relationships between participants improved as a result of the process ^{7, 18}	3.67	3.25	3.89	3.36	3.44	3.14	3.24	3.21	4.23	3.31
No citizens were denied the opportunity to be heard ^{16, 17, 8}	3.94	4.16	3.82	4.46	4.07	3.86	3.62	4.12	4.43	4.24

¹ Importance of criterion rated on 5-point Likert scale: 1 = Not at all important; 2 = Slightly important; 3 = Moderately important; 4 = Important; 5 = Very important

² Factors included in linear regression model included age, education, participation process type, and wildlife attitude

³ Regression constant significantly different between gender models, t-test, $p < 0.05$

⁴ Education factor significantly different between gender models, t-test, $p < 0.05$

⁵ Regression constant significantly different between gender models, t-test, $p < 0.10$

⁶ Age factor significantly different between gender models, t-test, $p < 0.10$

⁷ Education factor significantly different between gender models, t-test, $p < 0.01$

⁸ Regression constant significantly different between gender models, t-test, $p < 0.01$

higher education (Table 1.3). Men placed a higher level of importance on relationships between participants improving as a result of the process ($p < 0.01$), a difference that was more pronounced at lower levels of education than at higher levels ($p < 0.01$) (Table 1.3). Women placed higher importance on the criterion that no citizens were denied the opportunity to be heard ($p < 0.01$), a difference that persisted at higher age ($p < 0.10$) and higher education ($p < 0.01$), but was reversed at lower age and lower levels of education (Table 1.3).

Discussion

Wildlife Attitude Differences

The gender differences in attitudes toward wildlife use and hunting measured by our pro-wildlife use/hunting scale, showing men with a stronger agreement on pro-wildlife use/hunting issues, are consistent with the findings of other studies. Kellert and Berry (1987) developed an attitude typology scale, identifying types of human attitudes toward animals. Women demonstrated higher “humanistic” (anthropomorphic) attitude scale scores, higher “moralistic” (opposition to cruelty) scores and higher “negativistic” (avoidance) scores than men did (Kellert and Berry 1987). Their “moralistic” scale measures demonstrated that women showed greater opposition to activities in which there is potential for harm to animals, including lab experimentation, rodeos, hunting, and trapping. Men were more willing to endorse animal exploitation and the appropriation of wildlife habitat for material gains to society, and showed a greater tendency to derive personal satisfaction from the mastery and control of animals (Kellert and Berry 1987). Other studies have found similar gender differences in attitudes toward wildlife use and hunting (Sanborn and Schmidt 1995; Siemer and Brown 1992; Westervelt 1988).

Most important reason for participation

We had expected that there would be differences in the most important reason for participation among men and women respondents. Although the most important reason for men overall was to contribute to the successful solution of a wildlife-related problem and the most

important reason for women overall was to make their viewpoint heard, these differences were not significant.

Motivation for participation

Men were more likely to indicate that their participation was motivated by a request from NYSDEC or Cooperative Extension staff. Although men are more likely to be employed by or involved with such wildlife-related entities, women's membership is on the rise (Leffler and Mathews 1998). Our finding that younger women more often indicated that their participation was at the request of such agencies may be a reflection of this change.

Importance of process characteristics

Women indicated that it was more important to them that a neutral party facilitates the process. This may show that women are more concerned about their efficacy as participants in wildlife-related decisions. Perceived efficacy was cited as a barrier to women's political involvement (Conway et al. 1997, 87; Verba et al. 1997), success in negotiation (Kolb and Coolidge 1991), and participation in natural resource recreation (Connelly et al. 1996; Mertig and Matthews 1999). Given that this process characteristic was more important to women at lower levels of education, a lower level of personal wildlife-related knowledge or expertise among women (Kellert and Berry 1987; Pifer 1996) may also contribute to women's greater interest in facilitation.

Women also indicated that the opportunity for the open exchange of ideas, particularly between citizens and the overseeing agency, was more important to them than it was to men. Because much of the agency interaction is the dissemination of wildlife- and issue-related information, and studies have shown that women have lower levels of these types of knowledge (Kellert and Berry 1987; Pifer 1996), women may be more interested in these interactions because they need more wildlife-related information to make decisions.

However, given that at lower levels of education, men placed more importance on this characteristic, an alternative explanation should be considered. This explanation centers on women being more interested in citizen-agency interactions because they have not interacted

with the agency before. Because citizen participation processes originally focused on hunting and hunting-related issues (Enck and Brown 1996), and women have historically had a lower level of participation in hunting (Thomas et al. 1999), men have had more opportunities to communicate with wildlife agencies in the past. Consequently, the importance to women of interaction with an agency may be more related to relationship building than to knowledge. Further studies would be useful in understanding why an open exchange of information between citizens and the agency is of particular importance to women.

We were not surprised that men were more likely to place importance on the use of scientific information to make decisions, given men's higher level of personal wildlife-related knowledge or expertise (Kellert and Berry 1987; Pifer 1996). This characteristic was particularly important to men at higher levels of education. Again, this may reflect men's greater experience and comfort with the use of wildlife-related knowledge (Kellert and Berry 1987; Pifer 1996). Finally, women, especially those with lower levels of education, felt it was more important that the process gives more weight to the concerns of citizens who would be more affected by management decisions. Chase et al. (1999) found this process characteristic to be less important overall to participants as compared to the importance of treating all citizens equally. The gender difference we observe here may reflect differences in perceptions of who will be more affected by management decisions. Further studies may clarify how men and women perceive the impacts of wildlife management decisions on various stakeholders.

Criteria important in evaluating success

Men felt that the appropriateness of time and money spent on the process were more important criteria than women felt they were; Lauber et al. (2001) found no gender differences in these types of decision-related criteria. We considered that our results might reflect men's emphasis on achieving the task at hand (Eagly 1987). Perhaps men consider appropriate amounts of time and money spent to be necessary to achieve an assigned task. Alternatively, since we did not specify whose time and money were being spent, e.g. the agency's, or the

participants', perhaps men and women differed in their interpretation of our questions. Again, further research can help clarify gender differences regarding these issues.

Men felt that whether the issue was well researched by NYSDEC staff was a more important evaluation criterion. This supports our finding that men emphasized the use of scientific information to make decisions, again reflecting what may be a higher level of comfort with technical, wildlife-related information.

The only criterion rated higher by women when all factors were held at their midpoints was that no citizens were denied the opportunity to be heard. This finding supports our earlier finding that facilitation is particularly important to women. Again, this reflects women's attention to group dynamics in process evaluation, as suggested in studies of gender and small group behavior by Eagly (1987) and Watson and Kasten (1988).

Although these findings were supported by earlier gender studies, other findings were seemingly contradictory. A particularly interesting finding was that men found it more important that relationships between participants improved as a result of the process, especially among men with lower levels of education. According to our literature review, we expected that women would be more concerned with agreement and group harmony (Eagly 1987; Kolb and Coolidge 1991). However, when considering that context of wildlife issues, women may find themselves in a different situation. We considered that perhaps, when women are faced with the challenge of participating in the traditionally "male" world of wildlife issues, being heard becomes more important than preserving harmony.

Conclusion

In some ways, the women in our study reflected the themes of care (Gilligan 1982) and harmony (Eagly 1987; Kolb and Coolidge 1991) we anticipated through our review of existing literature. For example, women de-emphasized the use of scientific information to make decisions, and felt a well-researched issue was less important in evaluating the success of a process. Additionally, women placed greater emphasis on the opportunity for the open exchange

of ideas between the agency and its citizens, a finding which suggests that women place importance on relationship-building with a wildlife-related agency. Agencies should advertise their interest in women's stakes and views regarding wildlife, not only through inviting their participation in citizen participation processes, but also through wildlife programs targeted specifically at women. An example of this is the Becoming an Outdoors-Woman program, which since 1991 has worked to address the problem that women have not been exposed to outdoor skills in the same ways that men have (Thomas et al. 1999). Programs such as this one provide the opportunity for agencies to build relationships with women constituents.

However, in other ways women expressed less concern with care and harmony than we had anticipated. Women were less interested in improved relationships between citizen participants. Women also felt it was more important that a process weigh citizens' input based on their stake in the outcome, a proposition that is likely to have much more potential for causing contention than preserving harmony. Given that wildlife programs have been targeted traditionally at men (McCarty and Kelley 1985), we feel these inconsistencies may be a reflection of women's prioritization of finally having their voices regarding wildlife-related issues heard over maintaining or preserving relationships.

Our study suggests that the relative level of wildlife knowledge that men and women have may have important bearing on both the elements of process that participants find important and the criteria they use to evaluate process success. Additionally, these findings suggest that facilitation by an unbiased facilitator may be important in serving the needs of participants with varied levels of wildlife education or experience. In some processes, agency personnel assume the role of facilitator or moderator, which can jeopardize the credibility of the process for participants (Decker and Richmond, 1995). As explained by Chase et al. (1999):

Agencies may need to choose which roles to play in any given stakeholder involvement process so they can avoid simultaneously trying to serve multiple roles including scientist, educator, agency representative, involvement process coordinator, meeting facilitator, and advocate.

The quality of facilitation has been demonstrated to be critical to the success of citizen participation efforts (Pelstring et al. 1999). We feel it would be worthwhile to focus future investigations on how gender differences are affected by actual wildlife knowledge or experience, and how facilitation can support knowledge differences.

The finding that men were more likely to have participated at the request of the NYSDEC or Cooperative Extension suggests an opportunity for agencies interested in involving women. Agencies may find success in actively recruiting women members and clients of wildlife-related agencies and organizations to participate in participation processes. However, while this study investigated why men and women who choose to participate, do, we do not know why those who choose not to participate do not. As suggested by political participation and conflict resolution studies (Conway et al. 1997, 87; Kolb and Coolidge 1991), a lack of perceived efficacy may be a significant barrier to participants in wildlife-related decision-making processes. Future studies of individuals who have chosen not to participate in these types of processes can lead to the development of initiatives that elicit their participation.

Finally, our study leaves us with some outstanding questions. It is important to look more closely at gender differences as they interact with other demographic factors, such as age and education level. Although this paper reported information about such effects, space did not allow a thorough investigation of their importance and the interpretation of these effects was not always intuitive. In addition, because of the correlation between gender and wildlife attitude, this study did not allow us to investigate how such attitudes influence participants' viewpoints and needs in wildlife-related processes. A more exhaustive analysis of these types of interactions will result in a deeper understanding of the similarities and differences among participants.

We hope that this study contributes to an understanding of women's place in wildlife-related natural resource issues, and can lay the groundwork to improve the participation of other demographic or interest groups. As projected by Zelezny et al. (2000), "collectively females will

be influential in future environmental activism, policy development, and political leadership.”

We expect this holds true for women in wildlife-related issues as well.

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Effect of gender on perceptions of information in wildlife-related citizen participation processes

Abstract

We compared the perceptions men and women have toward information in wildlife-related decision-making processes. Data were collected through qualitative interviews and a mail survey of men and women who had participated in New York State Department of Environmental Conservation citizen participation processes between 1992-1999. We explored whether gender differences exist in three measures: trust in information sources; types of information important to decision-making; and preferred styles of information presentation. Men indicated higher levels of trust in national clubs and organizations and in public opinion surveys. Women placed greater importance on information about the role and purpose of the citizen participation process. Few gender differences were found in preferences for styles of information presentation. Different strategies are needed to communicate effectively with men and women participants in wildlife-related decision-making processes.

Introduction

In the pursuit of improved wildlife management decisions, incorporating stakeholder input into decision-making has become common practice among wildlife managers. Stakeholder input is obtained through the use of citizen participation processes such as surveys, comment solicitations, public meetings, and Citizen Task Forces (Stout et al. 1996). A major element of these processes is communication between the agency and the citizen participants (Loker et al. 1999; Stout and Knuth 1995). Communication with and education of citizen participants is essential in enabling participants to make informed decisions (Beierle and Konisky 2000; Decker and Richmond 1995; Landre and Knuth 1993; Loker et al. 1999). Participants have cited effective communication and access to information have been cited by participants as indicators of success in citizen participation efforts (Pelstring et al. 1999; Tuler and Webler 1999). As wildlife management has shifted to broader issues that affect citizens who have an interest in wildlife but are not involved in consumptive recreation (Decker et al. 1996), the wildlife

management profession has been expanding its approach to include the interests of a broader base of stakeholders in management decisions.

Recently, wildlife-related citizen participation processes in New York State have been shifting from hunting-based issues to more community-based issues (Enck and Brown 1996). Participation is dominated by men; of participants between 1992-1999, at most 15.1% were women ¹ (Anthony 2001).

Women, however, are an important demographic to wildlife management. Although women make up a relatively small percentage of consumptive wildlife users – in 1996, 8.5% of all hunters were women (Pullis 2000) – women’s value to wildlife management and the need to address gender differences have been recognized in the development of programs that encourage women’s participation in consumptive uses of fish and wildlife (Connelly et al. 1996; Mertig and Matthews 1999; Thomas et al. 1999). Gender differences in communication needs are often cited as a major element of programs targeted at women (Connelly et al. 1996; Jackson et al. 1989; McCarty and Kelley 1985; McConnell 1995; Mertig and Matthews 1999; Thomas et al. 1999). The importance of women to wildlife agencies has been explained by Jackson et al. (1989):

That conservation agencies have neglected women is rather remarkable. Across the nation, wildlife agencies have recognized the decline in hunters, the growth in anti-hunting sympathy, and the great need to better sell wildlife programs to the public. The majority of the non-hunters, the majority of the ‘anti-hunters’ and the majority of the public are women.

However, the wildlife management community has not addressed how gender may affect participants’ perceptions of information in citizen participation processes. A recent study by Lauber et al. (2001) investigated whether gender differences exist in how citizens make decisions about deer management strategies in their local community. The study suggested that women

¹ This figure only includes processes in which women were involved. Processes in which there were no female participants were excluded from the study sample. Between 1992-1999, New York State Bureau of Wildlife engaged 1810 participants in processes including at least one woman. Overall, 273 participants were women.

relied on more and different types of information when making such decisions (Lauber et al. 2001). Based on this study and a review of related literature addressing gender differences, we hypothesized that current citizen participation processes in wildlife management decision-making may not appeal to the unique informational needs and preferences of women to the degree they appeal to men.

In this study, we explored gender differences in perceptions of informational needs among participants in New York State wildlife-related decision-making processes, through three measures: differences in trust in information sources; differences in types of information important to participants for decision-making; and differences in preferred styles of information presentation.

Theoretical Background

Gender and Trust

Trust in information sources has become an important issue in science- and government-related disciplines. The American public's trust in government has declined dramatically through the last three decades (Beierle and Konisky 2000). Trust in information sources is necessary to obtain quality wildlife management decisions (Decker and Richmond 1995; Stout and Knuth 1995) and to solve environmental problems (Beierle and Konisky 2000). Decker and Richmond (1995) noted:

Essentially, what a manager or biologist may present as 'objective' biological facts may not be so viewed by others. New stakeholder audiences...may question some longstanding assumptions of wildlife managers, especially as they affect interpretation of data.

Several studies have demonstrated gender differences in trust in science and government. Women indicate lower levels of trust than men do in scientific leaders and institutions (Fox and Firebaugh 1992). Davidson and Freudenburg's (1996) synthesis of gender and environmental risk concerns found lower levels of trust in science and government by women across many studies. We expected that men would be more trustful than women of many of the traditional sources of wildlife-related information. This led to our first hypothesis:

H₁: Men and women participants have different levels of trust in sources of information during wildlife-related citizen participation processes.

Gender and Information for Decision-Making

Prior citizen participation studies have emphasized the need to provide participants with the appropriate types of information for decision-making (Decker and Richmond 1995; Loker et al. 1999; Stout and Knuth 1995). This information often includes species' biological and ecological information (Chase et al. 2000), the history of the wildlife issue (Decker and Richmond 1995), risk assessments (Stout and Knuth 1995), and legal and practical considerations for management (Curtis et al. 1995).

Studies have demonstrated differences in knowledge and informational needs of men and women in the context of wildlife issues. Girls age 10-12 were less knowledgeable than boys about facts concerning wildlife (Westervelt 1988). Young adult women were less likely than young men to be scientifically literate (Pifer 1996). Adult women scored significantly lower than adult men on several wildlife knowledge measures, including measures indicating knowledge about wildlife species and issues (Kellert and Berry 1987). Consistent gender differences in knowledge about various other environmental issues have also been found (Arcury and Johnson 1987; Arcury et al. 1987; Davidson and Freudenburg 1996). Consequently, we expected women to be more interested than men in obtaining wildlife species and issue knowledge during a citizen participation process.

Although some professionals urge that participants make wildlife decisions "based on science rather than personal values" (Curtis et al. 1995), others recognize that such decisions require weighing in human attitudes and preferences (Chase et al. 2000; Decker and Richmond 1995), and the need to consider the ethics of management strategies (Lauber et al. 2001). Feminist moral theory suggests that when faced with moral and ethical dilemmas, women rely on a unique "ethic of care" (Gilligan 1982).

The ethic of care theory suggests that moral development for men is defined largely in terms of fairness, logic, and hierarchy; alternatively, moral development for women stresses

interpersonal responsibility and concern for others (Gilligan 1982; Noddings 1984; Ruddick 1989; Tronto 1994). As explained by Noddings,

faced with a hypothetical moral dilemma, women often ask for more information, in order to form a picture. Ideally, they need to talk to the participants, to see their eyes and facial expressions, to size up the whole situation (Noddings 1984).

Consequently, women may feel the need for an understanding of the context of a dilemma in order to make a decision about an appropriate solution.

The ethic of care was used by Lauber et al. (2001) to help explain gender differences in the types of contextual information men and women want when making wildlife-related decisions. When faced with choosing an appropriate deer management strategy for their community, women rated a larger number and wider variety of factors as important to consider when making decisions (Lauber et al. 2001). Particularly important to women were the impacts of management actions on aspects of their community besides deer-related problems (Lauber et al. 2001). These studies led to our second hypothesis:

H₂: Men and women participants have different preferences for the types of information they would like to receive during wildlife-related citizen participation processes.

Gender and Learning Styles

The way in which information is presented is important in designing effective communication strategies. Wildlife education strategies should be developed to fit the specific needs of target audiences (Loker et al. 1999). Suggestions for presenting wildlife and other environmental information to target audiences include teaching wildlife-related information as conceptual rather than factual knowledge (Westervelt 1988), including female role images (Jackson et al. 1989), and imposing a narrative structure on information (Hampton 1999).

Gender differences occur in preferred styles of information presentation, with men learning best in settings where information was organized, theories were constructed, and experiments were tested (Philbin et al. 1995). Women learned best in settings where lessons

were hands-on and focused on practical applications of ideas and theories (Philbin et al. 1995). Women may absorb information better when its relationship to women's lives is demonstrated (Belenky 1996; Jackson et al. 1989; Westervelt 1988). Based on these studies, we developed our third hypothesis:

H₃: Men and women participants have different preferences for the ways in which information is presented during wildlife-related citizen participation processes.

Methods

Survey Development

The data presented in this study were collected as part of a quantitative survey instrument designed to measure gender differences in attitudes, needs, and perceptions of citizen participation in wildlife management decision-making. Development of the survey instrument was informed both by a literature review and qualitative interviews with New York State Department of Environmental Conservation (NYSDEC) staff (n=3), and male and female participants (n=15) in three different NYSDEC citizen participation processes. Interview participants were chosen purposefully for maximum variation in types of experiences and stakes in the issues so that emergent themes in the data would be likely to capture attitudes, needs, and preferences that were common to most participants (Patton 1990, 172).

Survey Measures

Our quantitative instrument included three questions to address the information preferences of male and female respondents. We used a nine-item measure to determine levels of trust in information sources during decision-making processes. These items were rated on a 5-item scale ("Strongly Distrust" to "Strongly Trust"), and were analyzed as single-item measures.

Our instrument also included 34 items to determine which topics participants feel it is important to receive information about during a decision-making process. Each item was rated using a 5-point scale ("Not at all Important" to "Very Important"). A confirmatory factor analysis was conducted on these items to group them into scales measuring information preferences.

Finally, 11 items were used to determine which styles of information presentation are most helpful to participants in a decision-making process. These items were rated on a 5-point scale (“Not at all Helpful” to “Very Helpful”), and a confirmatory factor analysis was conducted on these items.

In addition to measures of reasons for participation, process characteristic preferences, and evaluative criteria, certain demographic and attitude measures were included in our instrument. Demographic information was obtained using single-item measures to determine respondents’ gender, age, and highest level of education attained. A seven-item measure was used to determine the type of processes in which participants had been involved. Finally, we measured respondents’ wildlife value orientation using a 16-item measure based primarily on scales developed by Fulton et al. (1996). Selected items were included from the following dimensions identified by Fulton et al. (1996): wildlife use; wildlife rights; bequest and existence; hunting/anti-hunting; and residential wildlife experience. Two additional items were included to represent a nuisance tolerance dimension.

Survey Implementation

The quantitative survey instrument was reviewed by Cornell University research specialists and NYSDEC staff prior to distribution. The survey was mailed to 395 participants in 31 completed, wildlife-related citizen participation processes held by the NYSDEC between 1994-1999. Surveys were mailed to all women involved in these processes (n=118), all persons whose gender was unidentifiable based on participant lists (n=41), and twice as many men as women from each process (n=236). In an effort to increase the number of women sampled, a process conducted in 1992 was also included due its large proportion of women participants. For this process, men and women were sampled in equal proportions (n=152 men and n=152 women), as well as all persons of unidentifiable gender (n=23).

We followed Dillman’s (2000) survey implementation methods. Questionnaires were preceded by a letter notifying participants that they would be receiving a survey shortly. The survey was mailed in early May 2000, and was followed by two reminder letters. A replacement

questionnaire was included with the second reminder letter. All letters were hand-signed to increase survey response rate.

Statistical Analyses

Data from the mail survey were recorded using SPSS Data Entry II. Analyses were conducted using SPSS 10.0.1 for Windows and Intercooled Stata version 6 for Windows. Pearson's chi-square analyses were used to test for differences related to participation in citizen involvement efforts. Statistically significant differences between men and women were determined using *t* test comparisons of the variables in gender-specific multiple regression equations. In all analyses, individuals' responses were weighted according to the number of individuals (men or women) in their process they were representing. Separate regression equations were run for each gender on each factor scale, as well as on single items not loading significantly on any factor scale.

The multiple regression equations we obtained included variables representing the type of process in which respondents had participated, the respondents' age, the highest level of education attained, and pro-wildlife use/hunting attitude. Gender differences were identified by conducting *t* tests for differences between the regression constants of the men's and women's regression equations for each scale/item. Additional *t* tests were conducted on the coefficients representing age and highest level of education to determine how these factors influenced gender differences. Midpoint and extreme factor values were then tested in the regression equations to interpret gender differences in responses.

Results

Response

A total of 348 completed surveys were returned, for a 62.9% (adjusted) response rate. The undeliverable rate was 16.2%. We determined that the majority of undeliverable responses were from the process conducted in 1992, most likely due to a higher proportion of these participants having changed their address since their participation. The response rate was high

enough that we determined that a nonrespondent survey was unnecessary (Dolsen and Machlis 1991).

Respondent Characteristics

Overall, 124 women and 224 men responded to our survey. The average respondent age was 54.2 years, and was not significantly different between men and women ($p = 0.353$). The average respondent had completed at least 1-3 years of college education, with women having a slightly but significantly higher average level of completed education ($p < 0.05$).

A test of the correlation between gender and our regression variables revealed a fairly strong correlation between gender and attitude toward wildlife use and hunting, where $r = -0.3805$. For this scale, men's pro-wildlife/hunting value score was significantly higher than women's ($p < 0.05$). Given this correlation, we felt an investigation of the effect of wildlife use/hunting attitude on gender differences would not be appropriate.

A Pearson's chi-square analysis showed gender differences in the likelihood of participating in different types of processes, $X^2(2, N = 350) = 7.3, p = 0.026$. Men had a higher relative incidence of participation in a small-group type process, such as a task force or focus group. Women had a higher relative incidence of participation in a large, impersonal type process, such as a mailed comment solicitation. The effect of process type on gender differences was not investigated in this paper, because we were not evaluating experiences of participants with specific events.

Trust in Information

Two sources of information were rated as significantly more trusted by men when all regression factors were held at their midpoints (Table 2.1). The first source of information more trusted by men was national clubs and organizations ($p < 0.05$), a difference that persisted at lower levels of education but reversed at higher levels of education ($p < 0.01$) (Table 2.1). The other source of information rated as more highly trusted by men was public opinion surveys ($p < 0.05$), a difference that persisted at low ages ($p < 0.05$), but reversed at higher ages (Table 2.1).

Table 1. Trust in wildlife information sources by men and women participants in citizen participation processes.

Information source	Level of trust ^{1, 2}									
	Factors Held at Midpoints		High Age (Age = 78)		Low Age (Age = 30)		High Education (5+ years college)		Low Education (9-11 years school)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
National clubs and organizations ^{3, 4}	3.14	2.86	2.84	2.63	3.45	3.08	3.06	3.13	3.27	2.45
Public opinion surveys ^{22, 5}	2.95	2.83	2.78	3.00	3.13	2.66	2.53	2.56	3.59	3.24
Other participants ^{24, 6}	2.06	2.18	1.73	2.36	2.39	2.00	2.04	1.92	2.09	2.25
NYSDEC ²⁴	3.82	3.67	3.81	3.27	3.84	4.09	3.99	3.89	3.58	3.35
Universities ²⁴	3.40	3.52	3.24	3.02	3.56	4.02	3.69	3.79	2.96	3.10

¹ Level of trust rated on 5-point Likert scale: 1 = Strongly distrust; 2 = Distrust; 3 = Neutral; 4 = Trust; 5 = Strongly trust

² Factors included in linear regression model included age, education, participation process type, and wildlife attitude

³ Regression constant significantly different between gender models, t-test, $p < 0.05$

⁴ Education factor significantly different between gender models, t-test, $p < 0.01$

⁵ Age factor significantly different between gender models, t-test, $p < 0.05$

⁶ Education factor significantly different between gender models, t-test, $p < 0.10$

At high and low ages, differences also existed between men's and women's trust in information sources. At higher ages, men were more trustful of both the NYSDEC ($p < 0.05$) and universities ($p < 0.05$), while women were more trustful of other participants ($p < 0.05$) (Table 2.1). At lower ages, these differences reversed (Table 2.1).

Importance of Information

Women rated one scale as more important to receive information about during a decision-making process when all regression factors were held at their midpoints (Table 2.2). The scale (Cronbach's $\alpha = 0.8578$) represented information about the purpose and role of the participation process in decision-making. When all factors were held at their midpoints, women rated this type of information as more important than men rated it ($p < 0.05$) (Table 2.2). This gender difference persisted at higher ages ($p < 0.05$) and higher levels of education ($p < 0.01$), but reversed at lower ages and lower levels of education (Table 2.2).

Gender differences in types of important information were also found at high and low levels of education. Men with higher levels of education were more interested in scientific background information ($p < 0.01$), a difference that reversed at lower levels of education (Table 2.2). Additionally, men were more interested in information about other DEC programs and opportunities ($p < 0.05$), and information about the logistics of the participation process ($p < 0.10$), differences that were particularly strong at lower levels of education (Table 2.2).

Helpful Styles of Information Presentation

The only style of information presentation showing a significant gender difference was having written documents available for review, which was rated as significantly more helpful by women than by men when all regression factors were held at their midpoints ($p < 0.05$) (Table 2.3). This gender difference persisted at lower ages but reversed at higher ages ($p < 0.05$) (Table 2.3).

At higher ages, men found technical tools for information presentation, such as computer simulations and statistics, as more helpful ($p < 0.05$). However, this style of presentation was more helpful to women at lower ages (Table 2.3).

Table 2. Types of information important to men and women participants during wildlife-related citizen participation processes.

Type of information	Importance of information ^{1,2}									
	Factors Held at Midpoints		High Age (Age = 78)		Low Age (Age = 30)		High Education (5+ years college)		Low Education (9-11 years school)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Process Purpose and Role ^{3,4,5}	4.04	4.17	3.87	4.28	4.21	4.05	3.90	4.29	4.25	3.98
Scientific background ³⁰	4.83	4.17	4.97	3.96	4.68	4.38	4.76	4.32	4.93	3.95
NYSDEC programs and opportunities ⁶	3.87	3.49	3.92	3.57	3.81	3.41	3.66	3.52	4.18	3.44
Process logistics ⁷	3.82	3.42	3.83	3.48	3.81	3.36	3.50	3.30	4.30	3.59

¹ Importance of items rated on 5-point Likert scale: 1 = Not at all important; 2 = Slightly important; 3 = Moderately important; 4 = Important; 5 = Very important

² Factors included in linear regression model included age, education, participation process type, and wildlife attitude

³ Regression constant significantly different between gender models, t-test, $p < 0.05$

⁴ Age factor significantly different between gender models, t-test, $p < 0.05$

⁵ Education factor significantly different between gender models, t-test, $p < 0.01$

⁶ Education factor significantly different between gender models, t-test, $p < 0.05$

⁷ Education factor significantly different between gender models, t-test, $p < 0.10$

Table 3. Information presentation styles helpful to men and women participants in wildlife-related citizen participation processes.

Presentation style	Helpfulness of presentation style ^{1,2}									
	Factors Held at Midpoints		High Age (Age = 78)		Low Age (Age = 30)		High Education (5+ years college)		Low Education (9-11 years school)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Written documents are available for review ^{3, 4}	4.02	4.17	4.07	3.85	3.96	4.51	4.09	4.22	3.90	4.10
Technical tools ³⁶	3.44	3.35	3.35	2.96	3.54	3.75	3.62	3.53	3.17	3.08

¹ Helpfulness of presentation style rated on 5-point Likert scale: 1 = Not at all helpful; 2 = Slightly helpful; 3 = Moderately helpful; 4 = Helpful; 5 = Very helpful

² Factors included in linear regression model included age, education, participation process type, and wildlife attitude

³ Regression constant significantly different between gender models, t-test, $p < 0.05$

⁴ Age factor significantly different between gender models, t-test, $p < 0.05$

Discussion

Differences in wildlife attitude

The gender differences in attitudes toward wildlife use and hunting measured by our pro-wildlife use/hunting scale, showing men with a stronger agreement on pro-wildlife use/hunting issues, are consistent with the findings of other studies. Kellert and Berry (1987) developed an attitude typology scale, identifying types of human attitudes toward animals. Women demonstrated higher “humanistic” (anthropomorphic) attitude scale scores, higher “moralistic” (opposition to cruelty) scores and higher “negativistic” (avoidance) scores than men did (Kellert and Berry 1987). Their “moralistic” scale measures demonstrated that women showed greater opposition to activities in which there is potential for harm to animals, including lab experimentation, rodeos, hunting, and trapping. Men were more willing to endorse animal exploitation and the appropriation of wildlife habitat for material gains to society, and showed a greater tendency to derive personal satisfaction from the mastery and control of animals (Kellert and Berry 1987). Other studies have found similar gender differences in attitudes toward wildlife use and hunting (Sanborn and Schmidt 1995; Siemer and Brown 1992; Westervelt 1988).

Differences in trust in information

As expected, we found several differences in men’s and women’s levels of trust in information coming from various sources during a citizen participation process. Men rated higher their level of trust in information coming from national clubs and organizations. Levels of membership in such organizations may affect this finding. Although we did not measure club membership in our study, other studies have demonstrated significantly higher numbers of males in wildlife organization memberships (Leffler and Mathews 1998; Sanborn and Schmidt 1995). As women’s level of education increased, their trust in such organizations increased, perhaps reflecting greater membership in or comfort with such organizations among more educated women.

Men, and in particular younger men, had a higher level of trust in public opinion surveys. Public opinion surveys are often administered during citizen participation efforts to provide information about citizens' positions on wildlife issues (Johnson et al. 1993; Stout et al. 1996) and we considered that a lower level of trust in public surveys among women could be due to a lack of trust in the accuracy of survey measures, in the interpretation of survey data, or in the agency which has conducted or commissioned the survey.

Older men and younger women rated their level of trust in information coming from the NYSDEC and universities significantly higher. Academic representatives are sometimes invited to participate in citizen participation efforts to provide technical information about the wildlife species and its management (Chase et al. 2000). Given that the types of information provided by universities and the NYSDEC are likely to include scientific and technical facts, the observed gender differences may be a reflection of younger men's and older women's lack of comfort and experiences with such information.

Not only did older women and younger men trust information from universities and the NYSDEC less, they trusted information coming from other participants more. Other items in our survey indicated that older women and younger men were more likely to consider whether citizens were denied the opportunity to be heard as an important criterion in evaluating the success of a participation process (Anthony et al., in review). Consequently, there may be a particular interest among these groups in incorporating the views of others into the process. Further studies can help clarify the roles of trust and communication among participants in participation processes.

Differences in information important to men and women

Women, especially older women and those with higher levels of education, put more importance than men on receiving information about the purpose and role of the participation process in decision-making. We expected this result, as a reflection of women's "ethic of care." We expected that women would need an understanding of the role of their particular participation effort in the larger "context" of wildlife decision-making in order to make an ethical

decision. The purpose and role measure, which included items such as why the agency is using the citizen participation process, who selects which citizens will participate, and how citizens' input will affect the outcome of the process, also could provide participants with insight into the authenticity of the agency's efforts. Additionally, analysis of other survey items indicated that women are particularly interested in the open exchange of information between the citizen and the agency, a finding we were able to link to an interest among women in building relationships with the agency (Anthony et al., in review). Therefore, the important women place on information about the purpose and role of the process may be further support for the interpretation that women wish to forge relationships with the agency.

Although men at all levels of education put more importance on receiving scientific background information on the wildlife species and issue, as women's education increased, they placed more importance on this type of information. If women know less about wildlife and wildlife issues to begin with, as suggested in other studies (Kellert and Berry 1987; Pifer 1996; Westervelt 1988), they may put less emphasis on species and issue information because they find scientific information complex and potentially difficult to understand. As their education increases, they are more comfortable with scientific information. Agencies need to be aware that the complexity of scientific information can be unfamiliar to participants, and should make efforts to convey information in non-technical ways.

A greater interest in information about NYSDEC programs and opportunities among men is logical given their greater support of and participation in hunting activities (Kellert and Berry 1987; Pullis 2000). Yet given this difference was exaggerated at lower levels of education, agencies may consider that information may not be effectively distributed to this demographic group. Designing diverse approaches to communicating about agency programs and opportunities may more effectively reach broader audiences. Pelstring et al. (1999) suggest the media and task force members themselves may be particularly effective avenues to distribute information about agency activities.

Lauber et al. (2001) found that men and women were similarly interested in information about the logistics of the participation process and of management actions. Our results showed an exaggerated gender difference among men at lower levels of education. Again, this may reflect a need for diversity in communication approaches to reach audiences with differing education levels.

Differences in preferred styles of information presentation

We found little difference in how men and women rated the helpfulness of information presentation styles. The only significant difference we found, that women, particularly younger women, find written documents more helpful than men find them, may again be explained by women's lack of experience with the overseeing agency – perhaps by reviewing documents for themselves, women feel better able to come to conclusions about the effects of management decisions.

Additionally, the use of technical tools to present information, such as computer simulations, was rated less helpful by older participants, particularly older women. Although such tools may be particularly helpful among agency personnel, it is important to recognize that participants without experience with such technological tools may find them difficult to understand or interpret.

That no other significant differences were found may simply reflect that men and women participants are generally similar in how they prefer to receive information, and that gender differences are more important in terms of what types of information they receive and where it comes from. Alternatively, our measures – asking respondents for their stated preferences – may be less robust than methods that would provide participants with hands-on experiences with different styles (e.g. videos, graphics, text) and then ask respondents to rate effectiveness of each style for them personally.

Conclusion

Our results demonstrate that significant differences exist in how men and women perceive information in wildlife-related decision-making contexts. An examination of our results

suggests that experience with the overseeing agency may be an important factor affecting the perceptions of information by men and women participants in wildlife-related participation processes. Additionally, our results reinforced the importance of trust in the acceptance of communication messages, as supported by others (Beierle and Konisky 2000; Decker and Richmond 1995; Slovic 1993; Stout and Knuth 1995). Indeed, according to Slovic (1993), “numerous studies clearly point to *lack of trust* as a critical factor underlying the divisive controversies that surround the management of technological hazards” [italics in original].

Although relationship- and trust-building is a complex and long-term endeavor (Slovic 1993), several immediate steps can be taken by agencies in the design of citizen participation efforts to address trust-in-information issues. Agencies can be proactive in sharing with participants information about the purpose of citizen participation efforts and how their input will be incorporated into management decisions. They also can be consistent in providing participants with information about where wildlife-related information comes from, and they can make efforts to bring in diverse sources of information. A technique recommended in environmental problem solving (Hampton 1999) and recently incorporated in a deer management Citizen Task Force in New York State (Chase et al. 2000) is participatory action research, where participants are involved in the collection and interpretation of information relevant to the upcoming decision.

As demonstrated by our results, it is important for agencies to provide a breadth of species-, issue-, and decision-related information to participants. In addition, processes should create opportunities for participants to request information, and agencies should be willing to help participants access the information they feel is relevant to their decisions. Designing a process that allows participants to access information through a variety of means and sources will improve participants’ abilities to make informed decisions, thus improving the likelihood that those decisions will be executable and long-lasting.

Our study also raises some questions. Our results are limited to the scope of our sample, and gender differences in perceptions of information among individuals who have participated in

NYSDEC citizen participation efforts may or may not reflect the experiences of others involved in other wildlife-related citizen participation efforts. Indeed, we are led to wonder how these gender differences would compare to men and women who have not yet been involved in NYSDEC processes.

Although our study raises many questions, we feel that it also raises an awareness for the importance of understanding and working to address the needs of unique stakeholder demographics. This can lay the groundwork to improve the participation of other demographic or interest groups. Through increased diversity in citizen participation efforts, wildlife managers have the opportunity to achieve more acceptable, executable, and creative management decisions.

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Implications and Questions for the Future

Study Purpose, Revisited

The purpose of this project was to investigate the effect of gender on the experiences of citizen participants in wildlife-related decision-making processes. The project was motivated by a concern that current citizen participation processes in wildlife-related decision making may not appeal to the unique attitudes, needs, and perceptions of women participants, particularly since citizen participation processes originally focused on hunting and hunting-related issues (Enck and Brown 1996), and women have historically had a lower level of participation in hunting (Thomas et al. 1999). The papers included in this project report focused on aspects of citizen participation processes for which, based on existing literature, we expected to find gender differences in attitudes, needs, and preferences. Chapter Two investigated gender differences in perceptions of three aspects of citizen participation processes - motivations for participation, preferences for process characteristics, and criteria with which outcomes are evaluated. Chapter Three investigated gender differences in perceptions of three elements of information in citizen participation processes - trust in information sources, types of information important to decision making, and preferred styles of information presentation. In each of these chapters, the implications of our findings for women's experiences in citizen participation processes were explored.

Given that governmental wildlife management agencies have the responsibility, and in some cases the mandate (*Environmental Conservation Law of New York* 2000), to incorporate citizen input into management decisions, there is a compelling need to understand and incorporate the results of our investigations. This study showed that there are, indeed, differences in the attitudes, perceptions, and needs of men and women who participated in

wildlife-related citizen participation processes. All six of our original research hypotheses were accepted:

H₁: Men and women have different reasons for choosing to participate in wildlife-related decision-making processes.

H₂: Men and women participants have different preferences for the characteristics of wildlife-related decision-making processes.

H₃: Men and women participants evaluate the success of wildlife-related decision-making processes with different criteria.

H₄: Men and women participants have different levels of trust in sources of information during wildlife-related citizen participation processes.

H₅: Men and women participants have different preferences for the types of information they would like to receive during wildlife-related citizen participation processes.

H₆: Men and women participants have different preferences for the ways in which information is presented during wildlife-related citizen participation processes.

The following sections highlight the overall implications of our findings as well as make some suggestions for how agencies can address differing attitudes, needs, and perceptions of men and women in future processes.

Implications for Future Citizen Participation Efforts

Wildlife value orientation

Although the wildlife management arena has been dominated traditionally by men's involvement (Thomas et al. 1999), women are becoming very important players. Women are largely involved in bird watching and wildlife viewing (Kellert and Berry 1987; McCarty and Kelley 1985; Mertig and Matthews 1999), animal-rights and animal-welfare organizations

(Kellert and Berry 1987), and wildlife rehabilitation (Siemer and Brown 1992). In addition, the number of women hunters and wildlife professionals are on the rise (McCarty and Kelley 1985; Leffler and Mathews 1998).

Our study showed that there are strong gender differences in the value orientations of men and women toward the appropriate management and uses of wildlife. The survey measures showed that women were significantly less likely to agree that wildlife should be managed and hunted. These findings are consistent with prior studies, in which men have shown greater support for hunting and wildlife management (Kellert and Berry 1987), and women have demonstrated greater anti-hunting attitudes (Kellert and Berry 1987) and greater interest in the humane treatment of animals through larger membership in animal rights and animal welfare organizations (Kellert and Berry 1987) and greater opposition to wildlife management strategies that involve lethal techniques (Lauber et al. in press; Sanborn and Schmidt 1995).

Women's unique attitudes toward wildlife have significant implications for the design of wildlife-related programs (Jackson et al. 1989). If women's attitudes are not incorporated effectively into wildlife-related decisions, agencies face the reality that decisions will be unrepresentative of the range of viewpoints of their constituents. Consequently, agencies must pursue women's input into wildlife-related decisions in order to maintain the integrity of their participation processes.

Motivation for participation

Agency invitation

Our study showed that men were more likely to participate at the request of DEC or Cooperative Extension staff. Although men are more likely to be employed by or involved with wildlife-related entities, women's membership is on the rise (Leffler and Mathews 1998). Such

change may be reflected by our finding that younger women were more likely to indicate participation for this reason than were older women. Still, we found that at most 15.1% of NYSDEC participants in wildlife-related citizen participation processes between 1992-1999 were women (Anthony 2001). Wildlife-related agencies, organizations, and Cooperative Extension need to actively recruit women members and clients to participate in wildlife-related citizen participation processes. Lauber and Knuth (2000) noted that wildlife agencies have difficulty recruiting non-hunters in citizen participation efforts, and that this is related to the ease of access agencies have to individuals with consumptive interests in wildlife. Asking organized groups to select representatives is a strategy that has been suggested to involve underrepresented groups in citizen participation efforts (Enck and Brown 1996). Agencies may benefit from inviting members of organizations which are not explicitly involved with wildlife, such as community groups, public service organizations, or parent-teacher associations.

Process characteristics and evaluation of outcomes

Outside mediation

Our results showed that women found it more important that a process is moderated by an unbiased facilitator. Additionally, women placed more emphasis on the opportunity of citizens to be heard as a criterion for a successful process.

We contend that these findings offer support for the use of an outside mediator during a wildlife-related decision-making process. In some processes, agency personnel assume the role of facilitator or moderator, which can jeopardize the credibility of the process for participants (Decker and Richmond 1995). The quality of facilitation has been demonstrated to be critical to the success of citizen participation efforts (Pelstring et al. 1999). We recommend that whenever possible, a trained moderator will better serve the needs of all involved in a wildlife-related

citizen participation process. Pelstring et al. (1999) included a useful appendix of New York State Dispute Resolution Centers.

Citizen-Agency relationship building

Our study indicated that it is particularly important to women that there are opportunities for citizen-agency interactions. Although we considered that this might be related to women's greater interest in obtaining wildlife-related knowledge, we believe that the emphasis on such opportunities is more related to relationship-building. Since citizen participation processes originally focused on hunting and hunting-related issues (Enck and Brown 1996), and women have historically had a lower level of participation in hunting (Thomas et al. 1999), men have had more opportunities to communicate with wildlife agencies in the past. Therefore, the opportunity to communicate with the agency is not as new to men as it is to women. An earlier study in New York State found that nontraditional stakeholders are more difficult to involve in participation processes due to their lack of established communication channels with the agency (Lauber and Knuth 1996).

Agencies should be conscious of the need to foster relationships and build communication channels with women constituents. Lauber and Knuth (2000) noted that agencies should consider making efforts toward relationship-building in geographic areas where wildlife management issues are anticipated. We believe this should be expanded to include relationship-building based not only on geographic criteria, but also on demographic criteria. Designing programs specifically targeted at women, such as the Becoming an Outdoorswoman program which exposes women to outdoor skills (Thomas et al. 1999), will provide opportunities for agencies to build relationships with women constituents. We believe that agencies and

women will benefit from the introduction of more programs that are targeted at women and that emphasize various types and levels of wildlife-related activities.

Harmony versus being heard

We found that men were more concerned than women that relationships between participants improved as a result of the process. Although we expected that women would be more concerned with group harmony, as found in other studies (Eagly 1987; Kolb and Coolidge 1991), we feel that our results may reflect the degree to which women are concerned about their ability to make their viewpoints heard in a citizen participation process. Perhaps, for women, the challenge of making their voice heard in the traditionally “male” world of wildlife issues supercedes any tendency to feel responsible for relationships and group agreement. Again, we feel that this emphasizes the importance of involving trained, outside mediators in citizen participation processes.

Time and Money

Men placed more emphasis on the appropriateness of time and money spent as criteria for evaluating process success. Our results might reflect men’s emphasis on achieving the task at hand (Eagly 1987); however, since we did not specify whose time and money were being spent, e.g. the agency’s, or the participants’, perhaps men and women differed in their interpretation of our questions. Further research can help clarify gender differences regarding these issues.

Trust in information sources

Clubs and organizations

Our study suggested several important differences in the trust men and women have in sources of wildlife information. Men rated their levels of trust in national clubs and organizations as higher than women rated them. This may be affected by levels of membership

in such organizations. Although we did not measure club membership in our study, other studies have demonstrated significantly higher numbers of males in wildlife organization memberships (Leffler and Mathews 1998; Sanborn and Schmidt 1995). Agencies should consider the credibility of “outside” sources as wildlife information is introduced into citizen participation processes, and make efforts to include information from a wide variety of sources.

Other participants and the public

We found that men, and in particular young men, had a higher level of trust in public opinion surveys. Public opinion surveys are often administered during citizen participation efforts to provide information about citizens’ positions on wildlife issues (Johnson et al. 1993; Stout et al. 1996). Young men, along with older women, were also more trustful of information coming from other participants. Additionally, these groups were less trustful of information coming from universities and the NYSDEC. These results may reflect a preference for information coming from sources that have less technical, but perhaps more practical, knowledge of how an issue affects various groups. In addition, these results may suggest that these groups are particularly interested in incorporating the views of others into the process. Further study into the types of information different sources can best provide may encourage trust in information from various sources.

Building trust

The importance of trust to participants echoes what other researchers have suggested, that trust is a critical factor underlying the acceptance of communication messages (Beierle and Konisky 2000; Decker and Richmond 1995; Slovic 1993; Stout and Knuth 1995). We believe that trust can be addressed by agencies in both the short- and long-term.

Several immediate steps can be taken by agencies in the design of citizen participation efforts to address trust-in-information issues. Agencies can be up front with participants about the purpose of citizen participation efforts, how input will be incorporated into management decisions, and where wildlife-related information comes from. Information about the citizen participation process itself has been deemed important in other studies in New York State (Lauber and Knuth 2000). In addition, results of the LOIWMA study suggested that the agency can address trust-related concerns by better advertising what opportunities for involvement exist, and making known their responses to issues and actions taken (Schusler and Decker 2000). Finally, past studies have shown that the New York State Department of Environmental Conservation's (NYSDEC) expressed concern and their willingness to listen and to dialogue can improve perceptions that a process is fair (Lauber and Knuth 2000). A quality, deliberative process has been highly related to trust in public agencies (Beierle and Konisky 2000).

As suggested earlier, involving an outside facilitator can improve perceptions that the process is unbiased (Pelstring et al. 1999). Another technique recently suggested for use in New York State is participatory action research, where participants are involved in the collection and interpretation of information relevant to the upcoming decision (Chase et al. 1999). This method of information gathering has the potential to reduce uncertainty and create a mutually acceptable knowledge base (Chase et al. 1999). Also, the NYSDEC's use of a search conference in the LOIWMA was recognized by some participants as a demonstration of the agency's recent growth as a more open and out-reaching agency (Schusler and Decker 2001).

In the long-term, trust is built through numerous positive experiences (Slovic 1993). Consequently, we believe that the development of wildlife programs specifically targeted at women will create opportunities for positive, trust-building experiences. That women's

responses to our study indicate that they are looking for opportunities to build relationships with agencies may be evidence of the likelihood of the success of such programs.

Information important to decision-making and preferred presentation styles

Scientific background

We found that men put more importance on receiving scientific background information on the wildlife species and issue, and on the use of scientific information to make decisions. This result was somewhat surprising, given our expectation that women would have lower levels of wildlife knowledge (Kellert and Berry 1987; Pifer 1996; Westervelt 1988). However, the interaction effect we observed between gender and education suggests that women may put less emphasis on species and issue information because they find scientific information complex and potentially difficult to understand. As women's education increased, they placed more importance on scientific information. Agencies need to be aware that the complexity of scientific information can be unfamiliar to participants, and should make efforts to convey information in non-technical ways. Conveying information through visual, interpersonal, and non-technical means were the styles of presentation most supported by the respondents in our study.

We also considered that because we asked participants about the types of information they feel it is important to receive *during* a process, our results may actually be a reflection of women's lack of trust in the *sources* of species- and issue-related information provided during a citizen participation process. Hence, women may be equally or more interested in this type of information, but are not interested in receiving it during the participation process, as provided under the agency's control. In support of this explanation, we found that men placed greater importance on NYSDEC staff's research of the issue as a criterion for evaluating process

success. Our findings suggest that agencies may benefit from incorporating alternative sources of information and methods of information gathering into their processes

The purpose and role of the process

Women put more importance than men on receiving information about the purpose and role of the participation process in decision-making. This measure included items such as why the agency is using the citizen participation process, who selects which citizens will participate, and how citizens' input will affect the outcome of the process. Information about the citizen participation process itself has been identified as important to participants in other studies in New York State (Lauber and Knuth 2000). We feel that this information could provide participants with insight into the authenticity of the agency's efforts, and that agencies will benefit by providing this information during processes.

The viewpoints of the agency and others

An important finding related to trust in information was that men and women felt similarly about the importance of information about DEC staff views regarding which proposed management actions are best. Although women's lower levels of trust in the agency affects their interest in information provided by the agency, we felt that this item demonstrated that women are interested in the agency's viewpoint when it is communicated as a distinct piece of information, rather than when it influences the other information provided to participants. Therefore, we believe that transparency in information may be of particular importance to women, and agencies may be better able to communicate with women if they are consistent in identifying the facts or opinions on which the information they are disseminating is based.

Although a prior study found that women were more concerned about public support in making management decisions (Lauber et al. in press), our analyses showed that men and women

were similar in the level of importance they placed on information about others' viewpoints. This may be explained by the differences in study samples, in that Lauber et al. (in press) sampled the general population, whereas we sampled past participants in citizen participation processes. Alternatively, given that we found women had lower levels of trust in public opinion surveys, any differences between women and men in perceived importance about the views of others may be offset. We suggest that future efforts should be made to consider which means of obtaining information about the views of others are acceptable to participants.

Presentation styles

We found little difference in how men and women rated the helpfulness of information presentation styles. Both women and men rated visual, interpersonal, and non-technical opportunities to receive information most helpful, and technical opportunities were rated least helpful. The only significant difference we found, that women find written documents more helpful than men find them, may again be related to trust in the overseeing agency – perhaps by reviewing documents for themselves, women feel better able to come to conclusions about the effects of management decisions. That no other significant differences were found may simply reflect that men and women participants are generally similar in how they prefer to receive information, and that gender differences are more important in terms of what types of information they receive and where it comes from.

Questions for Future Research

The outcomes of this project suggest several questions for future research. The first question is *how generalizable are the results?* The results of this inquiry only reflect the responses of individuals who have had experience as a participant in a New York State Department of Environmental Conservation-sponsored citizen participation process. Future

studies can be used to assess whether the results are generalizable to people who have participated in processes in other regions, and have faced other types of wildlife-related issues.

The issue of generalizability is also related to the second question this research raises, specifically, *which “women” have we studied?* Tronto (1994) remarked that most of the gender research conducted within the United States has focused on a narrow definition of who “women” are:

Most of the theorizing done by feminists has used the experiences and ideas of upper middle-class, white, professional, heterosexual women as the standard for “women” in making these arguments, thereby abandoning women of different races, ethnic groups, religious backgrounds, sexual orientations, and class backgrounds (Tronto 1994, 15).

Although research has shown that most participants in government, recreation, and conservation are well-educated and upper middle class (Johnson et al., 1993), it has been predicted that changes in immigration, migration patterns, diversification, and the aging of the American population will have important effects on patterns of and demand for recreation (Sheaffer 1999). Consequently, gender differences that we found may change as more diverse groups become involved in natural resource issues. Similarly, given that we found many interaction effects between gender and age, and gender and education, we feel that research would benefit from a closer look at the implications of such effects.

We also feel it is important to consider *what is the effect of differences in wildlife value orientation on the effectiveness of participation efforts?* Given that we have argued that wildlife-related issues often require ethical judgments, we must consider the importance of value differences to agreement on decisions. As noted by Zanetell (2001), when conflicts over natural resources arise due to differences in stakeholder values, collaborative efforts may be inappropriate and ineffective. At the same time, attempting to collaborate rather than excluding stakeholders due to deeply-rooted value differences may enhance agency credibility (Zanetell

2001). We feel future study regarding appropriate strategies to handle value differences would benefit wildlife agencies.

Another question raised by this research is *what are the differences between individuals who participate and those who do not?* This reflects the concern that our sample consisted of people who had, in the past, chosen to participate in a process. McComas (2001) found that participants in New York State citizen participation processes were likely to have lower levels of trust than non-participants in the credibility of sources of issue-related information. In addition, this study found discrepancies in the perceptions of risk among participants and non-participants (McComas 2001). Johnson et al (1993) found that hunters who attended public meetings expressed stronger opinions than the general hunting population. We believe that future research would benefit from studying gender differences in individuals who have had not experiences as participants in wildlife-related citizen participation processes.

Tied to the question of differences between participants and non-participants is *what are the antecedents to participation in a citizen participation process?* Although we were able to measure motivations for participation, and we were able to identify differences in why men and women choose to participate, our study did not address why men and women choose not to participate and whether there are gender differences in antecedents to participation. Some studies have suggested that women, in particular, are less able to allocate resources such as time and money to participation in both environmental behaviors (Mohai 1992) and political activities (Schlozman et al. 1995; Verba et al. 1997). We feel it would be valuable to focus future studies on individuals and groups who have had no past experience with a citizen participation process, to gain a better understanding of how their future participation can be encouraged.

Another question raised by our study is *how can agencies foster relationships and build trust with women constituents?* A earlier study in New York State demonstrated lower levels of satisfaction with NYSDEC among women. Women were found to have significantly lower levels of satisfaction with the job NYSDEC is doing conserving and managing wildlife,

preserving and protecting fish and wildlife habitat, and communicating with people about fish consumption advisories (Connelly et al. 1998). Stakeholders' perceptions of the agency have also been an issue in another recent case study in New York. In the LOIWMA, stakeholders have expressed concerns regarding NYSDEC's responsiveness to the issue, trustworthiness, and understanding of local concerns (Schusler and Decker 2000). However, some stakeholders who participated in a search conference reported that they came away from the event with a more positive view of the agency (Schusler and Decker 2001). This suggests that the NYSDEC is moving positively toward building better relationships with stakeholders. However, Decker et al (2000) suggest that this is just the beginning:

We need a new premise for wildlife management, one reflecting the changing management environment, the evolution of the wildlife profession *and needed relationships between agencies and their stakeholders* to meet the needs for contemporary wildlife management. [emphasis added]

Finally, there would be a benefit to future research that considers *how men and women will interact within the changing arena of wildlife management?* The number of women entering collegiate wildlife programs and entering wildlife-related professions is on the rise (Leffler and Mathews 1998), and studies have shown important differences between men and women in wildlife-related professions. Men and women employed by fish and wildlife agencies have noted different reasons for entering their profession (Angus 1995), and differences have been shown in support for various wildlife management techniques, as well as in perceptions of funding issues (Sanborn and Schmidt 1995). Consequently, it is likely that agency attitudes toward wildlife management will continue to evolve. Verba et al. (1997) found that in states where women held high-level political positions, women citizens held higher levels of political knowledge and perceived efficacy. Consequently, they suggest that as women's involvement in higher levels of politics increases, their involvement in participation may also increase (Verba et al. 1997).

We are already seeing changes to the types of citizen participation strategies and levels of citizen involvement used by wildlife agencies (Chase et al. 2000). Chase et al. (2000) discussed that wildlife management has evolved from an authoritative approach, where agencies do not involve citizens in decision-making or actions taken, to approaches where agencies are open to citizen input (passive-receptive approach), invite citizen input (inquisitive approach), and involve citizens in decision-making (transactional approach). The NYSDEC has been employing the transactional approach for some time via their use of citizen task forces in the management of white-tailed deer (Chase et al. 2000). However, recent studies suggest that the future of citizen participation lies in co-management, where stakeholders are involved at any and all levels of management, including setting goals, carrying out actions, and evaluating outcomes (Chase et al. 2000; Decker et al. 2000). Perhaps this evolution of management will affect the attitudes, needs, and perceptions men and women have regarding wildlife-related issues, and therefore we believe future research would benefit from an understanding of how gender differences evolve with participation processes.

Conclusion

In 1987, Kellert and Berry asserted that

...gender is among the most important demographic influences on attitudes toward animals in our society...Major efforts to broaden the scope and effectiveness of wildlife management should...consider and understand the influence of gender.

This project begins to consider and understand the importance of gender differences to wildlife-related issues. An understanding of gender differences in attitudes, needs, and preferences toward citizen participation in wildlife-related decision-making has two significant benefits. The first is the agency's ability to apply such an understanding to future citizen participation efforts with the potential benefit of involving a more gender-balanced constituency in the process. The

second is that understanding and working to cater to the needs of more than one demographic group (i.e. women as well as men) can lay the groundwork to improve the participation of other demographic or interest groups. Increased diversity in citizen participation efforts has great potential to lead to more acceptable, executable, and creative management decisions through increased diversity in issue-related information perspectives on management issues (Lauber and Knuth 2000; Zanetell 2001).

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APPENDIX A

Qualitative Interview Guide (Citizen Participants)

I. Introduction

I'm a graduate student at Cornell University and I'm doing research on some of the processes the New York State Bureau of Wildlife uses to involve the public in wildlife management decisions. I'm interested in what people who participated in those processes thought were the strengths and weaknesses. So my particular interest is not in your position on the [deer/ cormorant/ pheasant] management issue itself, but rather in your perceptions about the [citizen task force/ open house/ comment solicitation] **process** the Bureau used to involve citizens in the management decision. I will summarize the comments of people I interview and make recommendations to the Bureau of Wildlife about how to improve future programs.

Your answers and anything else we talk about in this interview will be completely confidential. I might report a verbatim comment, but I would only identify that comment as coming from a participant in a [open house/public comment/CTF] process, not from any named individual. Do you have any questions before we begin?

If it's alright with you, I would like to tape record the interview. This will allow me to check my notes later to make sure I didn't miss anything you said or inadvertently change your words. Do you mind if I tape the interview?

Great, let's start the interview now.

II. Involvement in the Process and Context

I'd like to begin by asking you to recall how you first became involved in the process

- ⇒ How did you become involved in the process? Where did you first learn about the opportunity for involvement?
- ⇒ Why did you become involved in the process? What did you want to get out of the process? Did you achieve this?
- ⇒ What kinds of things were you asked to do as a participant in the process?
- ⇒ As a participant in the process, were you representing other people? Who?
- ⇒ What did you observe about the types of people participating? What different [ages, genders, occupations, interests, etc.] were represented?
- ⇒ Were there any [ages, genders, occupations, interests, etc.] that were not represented?

III. Perceptions of the Process

I'd like to move on now to a discussion of the merits and/or shortcomings of the [open house/public comment/CTF] process in which you were involved.

- ⇒ In general, how well do you think this process worked as a way to involve citizens in decision making?
- ⇒ What about the process worked well? What made these aspects of the process work well?
- ⇒ What about the process did not work well? What made these aspects of the process not work well?
- ⇒ Probe: Some other people mentioned [time, size, method of invitation, fairness, level of agency involvement, timing, decision-making power] as an important aspect of the process. Do you agree? If yes, in what way was this important to the process?

IV. Information Provided During the Process

One particular aspect of the process I'm interested in is the information provided by the Bureau of Wildlife. I'd like to ask you a few questions about the types of information participants were provided with and the ways in which it was presented.

- ⇒ What kinds of information were provided to you during the process? Who provided this information? Did you trust the information that was presented?
- ⇒ How do you feel about the type of information that was provided to help you make decisions? Were all the important topics addressed? Was there information that you would have liked to have had that was not provided?
- ⇒ How did you feel about the amount of information that was provided? Was enough information provided about each topic? Were there any topics that you would have liked more information about? Which topics were these?
- ⇒ How was the information presented? How well do you think it worked for the information to be presented in those ways? Are there any other ways you think it would have been helpful to present information?
- ⇒ Did you seek out any information in addition to what was provided during the process? What kinds? How?

V. Perceptions About Process Outcome

Finally, I'm interested in how you feel about the outcome of the process. These next few questions are aimed at understanding your perceptions about the outcome.

- ⇒ Overall, how successful would you say the outcome of the process was?
- ⇒ What was successful about the outcome?
- ⇒ What was unsuccessful about the outcome?
- ⇒ To what extent did you get what you personally wanted to achieve out of the citizen participation process? [check earlier responses about reasons for involvement]
- ⇒ Probe: What does [a "successful process", other terms used by interviewee] mean to you?
- ⇒ In retrospect, how would you have improved the process?

VI. Conclusion

Thank you. At this point we have discussed all of the points I had hoped to cover during the interview, and I appreciate all of your comments and ideas. Before we end the interview,

- ⇒ Is there anything else you would like to say about the process?

Qualitative Interview Guide (NYSDEC staff members)

I. Introduction

I'm a graduate student at Cornell University and I'm doing research on some of the processes the New York State Bureau of Wildlife uses to involve the public in wildlife management decisions. I'm interested what people who participated in those processes thought were the strengths and weaknesses. So my particular interest is not in your position on the [deer/ cormorant/ pheasant] management issue itself, but rather in your perceptions about the [citizen task force/ open house/ comment solicitation] **process** the Bureau used to involve citizens in the management decision. I will summarize the comments of people I interview and make recommendations to the Bureau of Wildlife about how to improve future programs.

Your answers and anything else we talk about in this interview will be completely confidential. I might report a verbatim comment, but I would only identify that comment as coming from an [agency staff member/other] involved in a [open house/public comment/CTF] process, not from any named individual. Do you have any questions before we begin?

If it's alright with you, I would like to tape record the interview. This will allow me to check my notes later to make sure I didn't miss anything you said or inadvertently change your words. Do you mind if I tape the interview?

Great, let's start the interview now.

II. Background on the Process and Context

I'd like to begin by asking you to give me some background on the process and your involvement in it.

⇒ Could you tell me how citizens were involved in the decision making process?

PROBES:

⇒ For this process, what was the decision to be reached by the agency?

⇒ What was the purpose of the citizen participation effort? How did BOW decide to use this type of process for this issue?

⇒ How were citizens encouraged to participate in this process? At what point in the decision-making was the participation solicited? Who encouraged citizens to participate?

- ⇒ What were participants asked to do? How much decision-making power did citizens have?
- ⇒ How many people participated in the process? Were they mostly individuals or did they represent groups?
- ⇒ What did you observe about the types of people participating? What different [ages, genders, occupations, interests, etc.] were represented? Were there any [ages, genders, occupations, interests, etc.] that were not represented?
- ⇒ What was your role in the process? How involved in the process were you? How did you personally become involved in the process?

III. Perceptions of the Process

I'd like to move on now to a discussion of the merits and/or shortcomings of the [house/public comment/CTF] process in which you were involved.

- ⇒ In general, how well do you think this process worked as a way to involve citizens in decision making?
- ⇒ What about the process worked well? What made these aspects of the process work well?
- ⇒ What about the process did not work well? What made these aspects of the process not work well?
- ⇒ To what extent do you think each of the individuals had sufficient ability to contribute to the discussion? Did you observe any differences based on the type of person (age, gender, occupation, interests, etc.)? What were those differences?
- ⇒ Probe: Some other people mentioned [time, size, method of invitation, fairness, level of agency involvement, timing, decision-making power] as an important aspect of the process. Do you agree? If yes, in what way was this important to the process?

IV. Information Provided During the Process

One particular aspect of the process I'm interested in is the information provided by the Bureau of Wildlife. I'd like to ask you a few questions about the types of information participants were provided with and the ways in which it was presented.

- ⇒ What kinds of information were provided to participants during the process? Who provided this information?
- ⇒ Why was this information provided? Who decided which information was necessary?
- ⇒ How appropriate do you feel the type of information was for participants? Did you notice any differences in the interest of different kinds of people in the types of information they were concerned with, based on [age, gender, occupation, interests, etc.]? What were those differences?
- ⇒ How appropriate do you feel the amount of the information for participants? Did you notice any differences in the interest of different kinds of people in the amount of information they presented with, based on [age, gender, occupation, interests, etc.]? What were those differences?
- ⇒ How was the information presented? How well do you think it worked for the information to be presented in that way? Did you notice any differences how receptive different kinds of people were to the way information was presented, based on [age, gender, occupation, interests, etc.]? What were those differences?
- ⇒ Did any of the participants request information that wasn't (or couldn't be) provided? What kinds of information? What types of participants made such requests?

V. Perceptions About Process Outcome

Finally, I'm interested in how you feel about the outcome of the process. These next few questions are aimed at understanding your perceptions about the outcome.

- ⇒ To what extent was the purpose of the citizen participation effort achieved? [check earlier response about purpose]
- ⇒ Following the citizen participation effort, to what extent was a decision reached? [check earlier response about decision]
- ⇒ Overall, how successful would you say the outcome of the process was?
- ⇒ What was successful about the outcome?
- ⇒ What was unsuccessful about the outcome?

- ⇒ Probe: What does [a “successful process”, other terms used by interviewee] mean to you?
- ⇒ In retrospect, how would you have improved the process?

VI. Conclusion

Thank you. At this point we have discussed all of the points I had hoped to cover during the interview, and I appreciate all of your comments and ideas. Before we end the interview,

- ⇒ Is there anything else you would like to say about the process?

APPENDIX B

Quantitative Survey Instrument

**CITIZEN PARTICIPATION
IN
WILDLIFE MANAGEMENT
DECISION MAKING:**

A SURVEY OF CITIZENS

**Human Dimensions Research Unit
Department of Natural Resources
College of Agriculture and Life Sciences
Cornell University, Ithaca, NY 14853**

CITIZEN PARTICIPATION
IN
WILDLIFE MANAGEMENT
DECISION MAKING;

A SURVEY OF CITIZENS

**Research conducted by the
Human Dimensions Research Unit
in the
Department of Natural Resources
College of Agriculture and Life Sciences
Cornell University**

**Sponsored by
the Bureau of Wildlife
in
the New York State Department of Environmental Conservation**

Please complete this questionnaire at your earliest convenience, seal it, and drop it in any mailbox (no envelope needed); return postage has been provided. Your responses will remain confidential and will never be associated with your name.

THANK YOU FOR YOUR ASSISTANCE!

**Printed on recycled paper
(This paper will be recycled again after results are tabulated.)**

The New York State Department of Environmental Conservation (DEC) incorporates citizen input into decisions about wildlife management. The DEC does so primarily through the use of “citizen participation processes” – events such as public meetings, citizen task forces, focus groups, and mailed comment solicitations. You were selected for this survey based on your past involvement in one or more DEC-sponsored citizen participation processes.

Your Participation in a Citizen Participation Process

1. Please check all DEC-sponsored citizen participation processes in which you have participated *in the last ten years*:

- I was on a committee or task force of citizens representing a variety of interests who worked together to resolve differences or to make recommendations about a specific topic.
- I attended a small group or focus group meeting open to invited individuals and groups.
- I attended a public meeting or presentation open to all.
- I submitted written comments about a DEC document.
- I contacted DEC on my own.
- Other _____

- I did not participate in a DEC-sponsored citizen participation process in the last ten years. **If this is true, stop here. Please return this questionnaire in the mail so we don't bother you with additional mailings. Thank you.**

2. People choose to participate in processes that involve citizens in decisions about wildlife management for a variety of reasons. Which of the following were reasons you chose to participate in a citizen participation process? (Circle all that apply.)

- 1 I wanted to learn more about a wildlife-related issue/problem.
- 2 I wanted to contribute personal knowledge/expertise toward solving a wildlife-related problem.
- 3 I wanted to make my viewpoint about wildlife or a wildlife-related issue/problem heard.
- 4 I wanted to contribute to a successful solution of a wildlife-related problem.
- 5 I have a general commitment to citizen involvement in government, and try to participate whenever I have the opportunity.
- 6 My participation was requested by my employer or by an organization to which I belong.
- 7 My participation was requested by DEC or Cooperative Extension staff.
- 8 Other _____

Of these reasons, which was the most important to you in choosing to participate in a citizen participation process?

_____ (Please write the number here.)

Characteristics of Citizen Participation Processes

3. Processes that involve citizens in decisions about wildlife management can be conducted in a variety of ways. When you consider a citizen participation process, how important is each of the following to you? (Please circle one number for each item.)

1 = Not At All Important
 2 = Slightly Important
 3 = Moderately Important

4 = Important
 5 = Very Important
 0 = Don't Know

How important is it to you that a citizen participation process...	1	2	3	4	5	0
	Not At All Important			Very Important	Don't Know	
a. uses the best scientific information to make decisions?	1	2	3	4	5	0
b. promotes communication between the wildlife agency and citizens?	1	2	3	4	5	0
c. improves relationships between the wildlife agency and citizens?	1	2	3	4	5	0
d. is administered by a neutral party?	1	2	3	4	5	0
e. provides an opportunity to learn about others' viewpoints?	1	2	3	4	5	0
f. requires unanimous agreement to make decisions?	1	2	3	4	5	0
g. gives more weight to the concerns of citizens who would be most directly affected by management alternatives?	1	2	3	4	5	0
h. is moderated by an unbiased facilitator?	1	2	3	4	5	0
i. improves relationships between citizens with differing viewpoints?	1	2	3	4	5	0
j. is at least partially designed and controlled by the citizen participants?	1	2	3	4	5	0
k. seeks a solution that is approved by all participants?	1	2	3	4	5	0
l. considers all viewpoints as having equal importance?	1	2	3	4	5	0
m. uses information based on research?	1	2	3	4	5	0
n. allows citizen participants to request specific information?	1	2	3	4	5	0

Information Provided During the Citizen Participation Process

4. During a citizen participation process, participants are provided with information about the wildlife species and its management, as well as information about the citizen participation process itself. Think about participating in a process to consider the management of a particular wildlife species. When participating in this process, how important would it be for you to receive information about each of the following? (Please circle one number for each item.)

- | | |
|--------------------------|--------------------|
| 1 = Not At All Important | 4 = Important |
| 2 = Slightly Important | 5 = Very Important |
| 3 = Moderately Important | 0 = Don't Know |

Question 4, Part 1: Information about the wildlife species and its management

How important would it be <u>during the process</u> to receive information about...	Not At All Important		Very Important			Don't Know
a. the biology and life history of the wildlife species?	1	2	3	4	5	0
b. whether management actions pose a threat to human health and safety?	1	2	3	4	5	0
c. whether management actions pose a risk to the health and safety of other animals?	1	2	3	4	5	0
d. the views of other citizen participants regarding the wildlife issue?	1	2	3	4	5	0
e. how proposed management actions will affect other DEC programs?	1	2	3	4	5	0
f. the views of the local community in the affected area regarding the wildlife issue?	1	2	3	4	5	0
g. the views of the general public in the state regarding the wildlife issue?	1	2	3	4	5	0
h. the habitat needs of the wildlife species?	1	2	3	4	5	0
i. recreational opportunities associated with the wildlife species?	1	2	3	4	5	0

How important would it be <u>during the process</u> to receive information about...		Not At All Important			Very Important		Don't Know
j.	whether proposed management actions will affect wildlife recreation opportunities?	1	2	3	4	5	0
k.	the history of the wildlife issue?	1	2	3	4	5	0
l.	whether the wildlife species itself poses a risk to the health and safety of humans?	1	2	3	4	5	0
m.	whether proposed management actions violate existing governmental laws and regulations?	1	2	3	4	5	0
n.	how well management actions have worked on wildlife in other areas?	1	2	3	4	5	0
o.	how proposed management actions could be funded?	1	2	3	4	5	0
p.	the humaneness of proposed management actions?	1	2	3	4	5	0
q.	whether management actions for this species will affect the habitat for other animals?	1	2	3	4	5	0
r.	DEC staff views regarding which proposed management actions are best?	1	2	3	4	5	0

Question 4, Part 2: Information about the citizen participation process itself

How important is it to you that <u>during the process</u> you are provided with information about...	Not At All Important		Very Important			Don't Know
a. how citizens' input will be factored into the final decision?	1	2	3	4	5	0
b. how public involvement processes are used by the DEC?	1	2	3	4	5	0
c. other opportunities that exist for citizens to become involved?	1	2	3	4	5	0
d. who will make the final decision about management actions?	1	2	3	4	5	0
e. whose input has been solicited on this issue?	1	2	3	4	5	0
f. why the DEC is using a citizen participation process?	1	2	3	4	5	0
g. which agency personnel are overseeing the process?	1	2	3	4	5	0
h. how citizens' input will affect the outcome of the process?	1	2	3	4	5	0
i. who else (besides citizens) the DEC must satisfy with the final decision?	1	2	3	4	5	0
j. who selects which citizens will participate?	1	2	3	4	5	0
k. how long the process will take?	1	2	3	4	5	0
l. how much the process will cost each participant?	1	2	3	4	5	0
m. the responsibilities of each participant?	1	2	3	4	5	0
n. who will facilitate the process?	1	2	3	4	5	0
o. how much the process will cost the government?	1	2	3	4	5	0
p. who has provided the scientific information that is presented to citizen participants?	1	2	3	4	5	0

5. During citizen participation processes, the DEC uses many different ways to present information about wildlife management. How helpful are each of the following to you when you receive information about wildlife management? (Please circle one number for each item.)

1 = Not At All Helpful
 2 = Slightly Helpful
 3 = Moderately Helpful

4 = Helpful
 5 = Very Helpful
 0 = Don't Know

When receiving information about wildlife management, how helpful is it when...	Not At All Helpful			Very Helpful		Don't Know
	1	2	3	4	5	0
a. management alternatives are explained using non-technical language?	1	2	3	4	5	0
b. important information is summarized?	1	2	3	4	5	0
c. slide shows, videos, or other visual materials are provided?	1	2	3	4	5	0
d. pamphlets, brochures, or other written materials are provided?	1	2	3	4	5	0
e. agency staff is there to provide information in person?	1	2	3	4	5	0
f. computer simulations are used to portray effects of alternative decisions?	1	2	3	4	5	0
g. statistical analysis is used to interpret results?	1	2	3	4	5	0
h. written documents are available for review?	1	2	3	4	5	0
i. information is presented using everyday words?	1	2	3	4	5	0
j. graphs and charts are used to present data?	1	2	3	4	5	0
k. experts are available to answer questions?	1	2	3	4	5	0

6. Citizen participation processes may bring in information from many different sources. How much would you trust the information you receive about wildlife and wildlife management from each of the following sources? (Please circle one number for each item.)

	Strongly Distrust		Neutral		Strongly Trust	Don't Know
a. New York State Department of Environmental Conservation (DEC)	1	2	3	4	5	0
b. U.S. Fish & Wildlife Service	1	2	3	4	5	0
c. County/Town Governments	1	2	3	4	5	0
d. Local/regional clubs and organizations	1	2	3	4	5	0
e. National clubs and organizations	1	2	3	4	5	0
f. Universities	1	2	3	4	5	0
g. Public opinion surveys	1	2	3	4	5	0
h. Mass media	1	2	3	4	5	0
i. Other participants	1	2	3	4	5	0

Success of the Citizen Participation Processes

7. The success of citizen participation processes can be evaluated in many different ways. How important do you think each of the following is to evaluate the success of a citizen participation process? (Please circle one number for each item.)

- | | |
|--------------------------|--------------------|
| 1 = Not At All Important | 4 = Important |
| 2 = Slightly Important | 5 = Very Important |
| 3 = Moderately Important | 0 = Don't Know |

When thinking about whether a citizen participation process was successful, I think it is important to consider whether ...

	Not at all Important				Very Important	Don't Know
a. DEC was willing to consider all citizens' viewpoints.	1	2	3	4	5	0
b. the process led to a decision based upon good reasoning.	1	2	3	4	5	0

When thinking about whether a citizen participation process was successful, I think it is important to consider whether ...		Not at all Important				Very Important	Don't Know
c.	the wildlife issue was well-researched by DEC staff.	1	2	3	4	5	0
d.	an appropriate amount of money was spent to gather citizen input.	1	2	3	4	5	0
e.	decisions that came out of the process resulted in actions that were carried out.	1	2	3	4	5	0
f.	I was able to increase my own understanding of how wildlife management decisions are made.	1	2	3	4	5	0
g.	I felt comfortable participating in the process.	1	2	3	4	5	0
h.	the decision resulting from the process was the one which I personally prefer.	1	2	3	4	5	0
i.	the DEC took an appropriate amount of time to gather citizen input.	1	2	3	4	5	0
j.	no citizens were denied the opportunity to be heard.	1	2	3	4	5	0
k.	relationships between participants have improved as a result of the process.	1	2	3	4	5	0
l.	the process was moderated by an unbiased facilitator.	1	2	3	4	5	0
m.	the process resulted in an informed decision.	1	2	3	4	5	0
n.	decisions that came out of the process were challenged soon after the process was over.	1	2	3	4	5	0
o.	the way the process was run made it easy for me to participate.	1	2	3	4	5	0

Your Attitudes About Wildlife

8. People have many different feelings about wildlife and people's interactions with wildlife. Please indicate how you feel about the following by indicating how strongly you agree or disagree with each of the following statements. (Circle one number for each statement.)

	Strongly Disagree	1	2	Neutral	3	4	Strongly Agree	5	Don't Know	0
a. I notice the birds and wildlife around me every day.	1		2		3		4		5	0
b. Whether or not I get out to see wildlife as much as I'd like, it's important to know that they exist in New York State.	1		2		3		4		5	0
c. Humans should manage wild animal populations so that humans benefit.	1		2		3		4		5	0
d. The rights of wildlife are more important than human use of wildlife.	1		2		3		4		5	0
e. I tolerate most wildlife nuisance problems.	1		2		3		4		5	0
f. Hunting is cruel and inhumane to the animals.	1		2		3		4		5	0
g. It's important to me to know that there are healthy populations of wildlife in New York State.	1		2		3		4		5	0
h. If animal populations are not threatened, we should use wildlife to add to the quality of human life.	1		2		3		4		5	0
i. Having wildlife around my home is important to me.	1		2		3		4		5	0
j. Hunting helps people appreciate natural processes.	1		2		3		4		5	0
k. Animals should have rights similar to the rights of humans.	1		2		3		4		5	0
l. An important part of my community is the wildlife I see there from time to time.	1		2		3		4		5	0
m. Hunting makes people insensitive to suffering.	1		2		3		4		5	0

	Strongly Disagree	1	2	3	4	5	Strongly Agree	Don't Know
n. We should be sure future generations of New York State will have an abundance of wildlife.	1	2	3	4	5	0		
o. It is important for humans to manage the populations of wild animals.	1	2	3	4	5	0		
p. I tolerate most levels of property damage due to wildlife.	1	2	3	4	5	0		

Learning About Opportunities for Involvement
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9. Opportunities for citizen participation in wildlife management decision- making processes are publicized through various means. Through which of the following are you interested in receiving notice of such opportunities for involvement? (Circle all that apply).

- 1 Local TV news
- 2 Local newspaper
- 3 Direct mailings to the home
- 4 E-mail notification
- 5 Special interest magazines
- 6 Postings in public places (e.g. Town Hall, post office)
- 7 Postings on the internet
- 8 Notices distributed to wildlife-related interest groups
- 9 Notices distributed through public schools
- 10 By request
- 11 Other (Please specify): _____

Background Information

10. In what year were you born?

19 _____

11. Are you male or female?

_____ male
_____ female

12. What is your highest level of formal education? (*Check one.*)

- _____ 8 years or less
- _____ 9-11 years
- _____ High school diploma (or G.E.D.)
- _____ 1-3 years of college
- _____ 4 years of college
- _____ 5 or more years of college

Please use the space below for any additional comments you may wish to make.

Thank you for Your Time and Effort!

To return this questionnaire, simply seal it (postage has been provided) and drop it in the nearest mailbox.