
**Public Attitudes About Fish and Wildlife
Programs in New York State:
Desired Programs and Acceptable Characteristics
of Funding Mechanisms**

December 2001

HDRU Series No. 01-13

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FINAL REPORT

STATE: NEW YORK
GRANT: WE-173-G

PROJECT TITLE: Public Attitudes Toward Wildlife and Its Accessibility

GOAL: 6 - To foster and maintain an organization that efficiently achieves our mission, consistent with stated values.

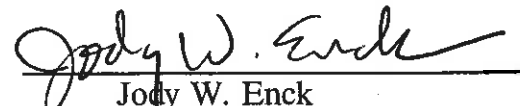
JOB NUMBER AND TITLE: 146-I-1 - Public Desires for a Comprehensive Management Program in New York


JOB OBJECTIVES:

- (1) Identify and prioritize the full range of publicly desired fish and wildlife programs, and
- (2) Determine the most acceptable combination of mechanisms for funding desired programs, based on a stakeholder-defined characteristics of those mechanisms.

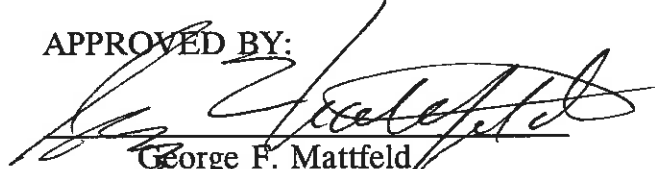
JOB DURATION: 1 April 1996 - 31 March 2002


PREPARED BY:

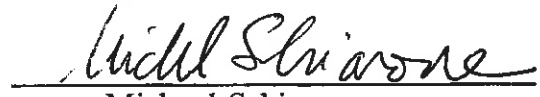

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ACKNOWLEDGMENTS

We express our thanks for insights and guidance provided by the DEC contact team of Gerry Barnhart, Russ Biss, and George Mattfeld. We also thank the Bureau Chiefs and other senior staff who worked closely with us on this study, particularly Jim Colquhoun, Gordon Colvin, John Major, Art Newell, Gary Parsons, Peg Sauer, and Doug Stang. Many other Division staff provided assistance in a variety of ways, and we thank them for their time and energy.

We thank the 60 citizens of the state who participated in focus groups, and who provided insights into the "currency" that New Yorkers use to think about and discuss fish and wildlife programs. Our special appreciation goes to the 13 Division staff who participated in focus groups in Ithaca and New Paltz. We also thank the 12 graduate students from Cornell University's Department of Natural Resources who participated in "dry-run" focus groups to help us refine the questions we used with citizens and Division staff.

Many HDRU staff contributed to the study. In particular, Hollie Hix-Small, Tina Phillips, Matt Turecek, Leen Boon, and Karlene Smith helped with focus groups or the mail survey. Margie Peech provided much administrative support and helped with the technical aspects of the final report.

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EXECUTIVE SUMMARY

The Division of Fish, Wildlife, and Marine Resources (Division) identified 2 guiding questions for this study: (1) what fish and wildlife-related programs and services are desired by the citizens of New York State, and (2) what characteristics would make a funding mechanism acceptable for each program area examined? We used a multiple-methods approach for answering the questions. First, we conducted focus groups in 5 locations across the state to identify the range of program categories desired by citizens and to identify the "currency" used by citizens when they think about and discuss categories of programs, associated management actions, and program impacts. We also used focus groups to identify the important characteristics citizens associate with mechanisms that might be used to fund different categories of programs. Second, we implemented a mail-back questionnaire with a random sample of households, stratified by 5 geographic regions, to assess current participation levels and beliefs about human-wild resource interactions, importance of and satisfaction with current programs, and desired change in program emphasis. We also used the mail survey to assess acceptability of characteristics associated with mechanisms to fund categories of programs.

Desired Categories of Programs and Services

We identified 15 categories of desired programs from focus group discussions. We used 6 of these in the mail survey to reflect the range of possible human-wild resource interactions: (1) people actively seeking wild resources, (2) people making a living from wild resources, (3) people believing that wild resources can continue to exist into the future, (4) people having concerns about nuisance problems from wild resources, (5), people having concerns about health and safety problems caused by wild resources, and (6) people having concerns about problems from other people who are actively seeking wild resources.

Of these 6 general types of programs, New Yorkers place high importance on addressing concerns about human health and safety problems caused by wild resources, and protecting wild resources. The first kind of program relates to meeting a basic human need to be safe and healthy. The second not only ensures that wild resources can continue to exist into the future, but also ensures that citizens have opportunities to interact with wild resources in a variety of desirable ways, from viewing to engaging in resource-based occupations. Across the state, many citizens who place at least moderate importance on programs to protect wild resources are satisfied with current program outcomes (except in Region 2), but want even more emphasis on this category of program. With respect to a program to address human health and safety problems, respondents indicating at least moderate importance tend to be satisfied in Regions 5-9 but dissatisfied in Regions 2-4. Specific management actions associated with these 2 categories of programs need to be tailored by geographic region, based on regional differences in human health and safety concerns and in beliefs about how wild resources

are/should be protected. Most importantly, respondents indicated that various "Division actions" (e.g., regulation, land purchase) would have a greater impact on their confidence that citizens' concerns and interests were being addressed than either "information actions" (e.g., communication to or education of citizens) or "citizen actions" (e.g., hands-on studies or opportunities for citizens to take responsibility).

The other general categories of programs should not be ignored when prioritizing program effort and associated management actions. Substantial numbers of stakeholders in each Region place at least moderate importance on the other categories of programs examined, and indicated a desire for increased emphasis on those categories of programs. Further, comparisons of importance level versus satisfaction with current program outcomes indicated a need for particular emphasis on programs to address problems caused by people actively seeking wild resources in Regions 1-6, to address nuisance concerns in Region 3, and to help people earn income from wild resources in Regions 1 and 5-6. Insights are provided in the report for management actions that might be associated with such programs.

Acceptable Characteristics of Mechanisms to Fund Program Categories

Acceptability of funding mechanisms seems to be based on a relatively small set of characteristics: (1) who should pay, (2) on what basis should the amount of payment be determined, and (3) what should people expect to get in return for paying? However, the focus group discussions revealed that there are potentially many answers to these few questions, depending on the category of program under consideration. This was confirmed in the mail survey when we found relatively low levels of consensus about the most acceptable characteristics associated with funding mechanisms.

Broad support exists for the idea that all New Yorkers should help fund the kinds of programs that are desired by the greatest numbers of citizens. In all strata, "everybody" was the most acceptable answer to the question of who should pay for programs to address concerns about human health and safety from wild resources and programs to protect wild resources. Some support existed for the notion of a user pay or pay-as-you-go approach for some program categories in some strata where "participants" was the most acceptable choice, but the level of support was not substantially greater than for other choices. Depending on whether "everybody" or "participants" should pay for a category of programs, respondents indicated that the basis of payment should be either "ability to pay" or "number of times people participate," respectively.

Clearly, the characteristics associated with federal aid and license fee funding mechanisms are not the *most acceptable* characteristics of mechanisms to pay for programs to (1) address concerns about human health and safety problems from wild resources, (2) protect wild resources, or (3) address concerns about nuisance problems from wild resources. For these 3 categories of programs, <10% of respondents in any

stratum identified federal aid and license fee *characteristics* as the *most acceptable*. As might be expected, the category of programs aimed at helping people to actively seek wild resources (e.g., in general, by enhancing access to private land, and by developing facilities on public land) had the highest percentages indicating that federal aid and license fee mechanism characteristics were most acceptable-- but these percentages were not a majority in any stratum.

Beyond those generalities, we gained little clarity about the most acceptable characteristics of funding mechanisms. There seems little likelihood that high levels of agreement can be reached among various stakeholders for "the most acceptable" set of characteristics for almost any category of program. It seems that funding mechanisms with characteristics different from those associated with federal aid and license fees would be the preferred choice for funding all categories of fish and wildlife programs. It is unlikely that these findings reflect dissatisfaction among respondents that "sportsmen's dollars" are providing the majority of current funding for fish and wildlife programs because we never identified the characteristics of federal aid and license fee mechanisms to survey respondents.

Conclusions

Even people who actively seek wild resources at higher rates than the general public want to have relatively few positive interactions with wild resources. In general, citizens want their concerns about negative interactions to be minimized, and to know that wild resources are being protected so those resources can continue to exist. Further, citizens generally expect state government to accomplish these, and citizens want to take on comparatively little personal responsibility for action.

These conclusions can be interpreted in at least 2 different ways. One interpretation is that citizens receive little personal meaning from nature, they are disconnected from it, and fear it for its potential negative impacts on human lives and livelihoods. Under this interpretation, citizens would seem to know little about the wild resources of the state or about ecological relationships among those resources, but they want the Division to take care of these things. An alternative interpretation is that citizens simply want their basic needs met first. That is, they want to be protected from harm before emphasis is placed on helping people experience positive, tangible benefits from wild resources. Under this interpretation, citizens could be intimately connected with nature and recognize it is not always kind, and citizens may want the Division to act as a buffer between them and nature.

Regardless of whether citizens want the Division to "take care of resources without much citizen involvement" or "act as a buffer between citizens and nature," specific management actions need to be tailored to each region. Different concerns and desires occur regionally, and respondents indicated that various management actions would have different levels of influence on their perceptions of Division programs.

Further, some regional differences in the most acceptable characteristics of mechanisms to pay for the various programs suggests that variations in programs from region to region might be accomplished fiscally by tapping into different sources of funding.

1. INTRODUCTION

In New York State, conservation and management of fish and wildlife fall under the purview of the Division of Fish, Wildlife, and Marine Resources (Division) within the Department of Environmental Conservation (DEC). The mission of the Division is:

To serve the interests of current and future generations of New Yorkers by using staff's collective skills in partnership with the public to describe, understand, manage, and perpetuate a healthy and diverse assemblage of fish, wildlife, marine resources, and ecosystems.

To ensure this mission can be achieved effectively and efficiently, the Division sought assistance from the Human Dimensions Research Unit (HDRU) in the Department of Natural Resources at Cornell University. Specifically, Division staff sought insights about the types of programs and services desired by the public. Division staff plan to compare the desired range of programs to the suite of programs currently provided to determine whether any programmatic gaps exist. With knowledge about possible gaps in programs, Division staff will be able to decide whether and how to respond programmatically, given existing fiscal constraints.

Three existing sources of funding provided 97% of the operating budget for the Division as of 1995 (draft Division white paper on fish and wildlife program funding reform). Slightly more than one-half (52%) came from the Conservation Fund (e.g., sporting license fees, Return-a-Gift-to-Wildlife tax check-off). About one-third (33%) came from the General Fund (e.g., state tax dollars). The bulk of the rest (12%) came from federal aid funds (i.e., Pittman-Robertson, Dingell-Johnson, Wallop-Breaux).

Legal mandates affect the kinds of programs that can be provided using the Conservation Fund and federal aid funds. Further, income from these 2 sources has been declining in recent years. Income from the General Fund depends on legislative action and thus is not necessarily stable year-to-year. Due to legal mandates and declining/unstable revenues, the Division staff recognizes that even the current suite of programs and services cannot continue to be provided without new sources of revenue.

Thus, in addition to insights about desired programs and services, the Division sought information about what the public thinks are appropriate ways of paying for existing and/or new programs. Of particular interest was information about the characteristics of funding mechanisms that would make those mechanisms acceptable to the public. Many stakeholder groups have become accustomed to having funds from certain kinds of mechanisms applied only to specific kinds of programs (e.g., license fees applied only to hunting or fishing programs). This has occurred in part because of the legal mandates mentioned above. For this reason, even generic mechanisms like "user fees" and "tax check-offs" likely have expectations associated with them in terms of what programs will be funded through these mechanisms. Knowledge about what aspects of

these mechanisms make them acceptable or unacceptable potentially would allow Division staff to develop new mechanisms not previously considered. Knowledge about these aspects also could be very useful in communication with the public about why use of specific funds would be appropriate for various programs.

1.1. Relevant Management Questions

Two management questions provided impetus for this study.

- What fish and wildlife-related programs and services are desired by citizens of New York State?
- For each program area, what characteristics would make a funding mechanism most acceptable?

1.2. Starting Assumptions

The contact team of Russ Biss, George Mattfeld, and Gerry Barnhart helped us identify several assumptions that framed the research.

- The existing suite of fish and wildlife programs do not cover the full range of publicly desired programs.
- Labels used by Division staff to describe and discuss programs are not easily understood or interpreted by the public.
- Public confidence that state government is responsive to the desires of the citizens depends on the Division understanding and using the "currency" that citizens use to think about and discuss desired programs.
- Existing funding mechanisms are not well-understood by the public, either in terms of name recognition, programs affected, or any legal constraints associated with the mechanisms.
- Lack of Division understanding about publicly desired programs and publicly acceptable characteristics of funding mechanisms decreases public satisfaction with the way funds are allocated across the spectrum of desired programs.

1.3. Study Goal and Objectives

Our goal was to determine the full array of programs and services desired by the public, and to gain insights about the characteristics of potential funding mechanisms that would make such mechanisms acceptable.

1.3.1. Specific Objectives:

- (1) Identify stakeholder-defined gaps in fish and wildlife programs and services provided by the Division.
- (2) Gain insights about why stakeholders desire more of some kinds of fish and wildlife programs and services and reduction of others.
- (3) Determine the acceptable attributes of broad strategies for allocating funds to desired sets of fish and wildlife programs and services.
- (4) Determine the criteria desired for limiting allocation of federal aid and license fees to specific programs.

2. METHODS

We used a 2-stage approach involving focus groups and a statewide mail-back survey. Because we lacked sufficient knowledge about citizens' perceptions of interactions with wild resources to develop a mail-back questionnaire initially, we used focus groups to gain important insights (Krueger 1994). Specifically, we used focus groups to determine the public "currency" associated with program descriptions and acceptable characteristics of funding mechanisms to pay for those programs. Further, we used focus groups to identify the potential range of programs and characteristics of funding mechanisms we should examine in the survey. Then we used a self-administered, mail-back questionnaire to collect quantitative data about programs and characteristics of funding mechanisms. Each of these stages is described in more detail below.

2.1. Focus Groups

A pair of focus groups was held in each of 5 locations: New York City, Levittown, Watertown, Syracuse, and Olean. The first focus group in each location was held in December 1998. The second was held in January 1999. The first meeting pertained to programs, and the second to characteristics of funding mechanisms. Prior to these meetings, pairs of focus groups were held with graduate students in the Department of Natural Resources at Cornell University and with Division staff to refine the methodology.

The same participants were invited to both focus groups in each location because the discussion in the first meeting provided a foundation for continued discussion in the second. We wanted to ensure that focus group participants knew the agency responsible for fish and wildlife programming. Thus, we identified potential participants from among persons who had telephoned Division offices near each focus group location during the previous year. We further stratified potential participants among the 4 Bureaus of the Division (Fish, Wildlife, Habitat, and Marine Resources) by assigning callers to a Bureau

- C. The degree to which specific management actions by the Division would increase participation, affect the degree to which respondents believe that resources are being protected, or affect confidence that concerns about nuisance or human health and safety concerns are being addressed.
- D. Level of importance, to respondents personally and to society, of various programs.
- E. Desired changes in amount of emphasis among program areas.
- F. Acceptable answers to funding-related questions applied to various programs.

3. RESULTS AND DISCUSSION -- FOCUS GROUPS

3.1. Desired Array of Programs

At the first focus group meeting in each location, participants identified dozens of activities/experiences relating to the fish and wildlife resources of the state (Appendix A). When results of the 5 focus groups were combined, 15 categories emerged (Table 1). These categories can be thought of as labels for desired programs. The listed activities/experiences relating to fish, wildlife, and marine resources and their habitats under each label can be thought of as a description of the program using the "currency" of focus group participants.

Some programs were identified by all 5 focus groups, although the specific label they gave a given program might have differed from place to place (e.g., programs labeled A, B, and C). Other programs were identified in only 1 or 2 focus groups (e.g., F, G, H). Of these, some may have represented unique opportunities sought by focus group participants in that geographic area (e.g., O -- shellfish harvest opportunities identified by Levittown participants). Other programs (e.g., H -- wildlife rehabilitation opportunities) may be desired by citizens across the state, but just were not listed by the small number of participants in the focus groups.

Some program descriptions seem relatively narrow or specific. For example, the idea of having access to resources (A) is fairly specific although the activities/experiences listed under it is relatively long. On the other hand, the idea of knowing that ecosystem quality is being protected (C) is rather broad and nebulous. When focus group participants were asked which 1 program they would like to see emphasized more and which 1 they would give up to allow more emphasis on the other, they seemed to recognize the discrepancy in the specificity of programs. For example, they realized that if the Division protected ecosystem quality, then other categories of activities/experiences could happen without much programmatic intervention (e.g., wildlife viewing or hunting opportunities). Similarly, they reasoned without any scientific basis that if citizens have high environmental awareness and knowledge (provided through an adequate education

Table 1. Categories of desired fish and wildlife programs identified by focus group participants in Manhattan, Levittown, Watertown, Olean, and Syracuse, New York in December 1998.

-
- A. Accessing fish and wildlife resources
 - B. Educating people about fish and wildlife resources
 - C. Protecting fish and wildlife resources and habitats
 - D. Helping people make a living from fish and wildlife resources
 - E. Addressing nuisance problems from fish and wildlife
 - F. Helping landowners conserve fish and wildlife resources
 - G. Protecting people from others who are seeking fish and wildlife resources
 - H. Helping people who want to rehabilitate fish and wildlife resources
 - I. Helping people who want to fish
 - J. Providing developed facilities for people seeking fish and wildlife resources
 - K. Helping people who want to hunt deer and other big game
 - L. Helping people who want to hunt small game
 - M. Helping people who want to hear and view wild resources
 - N. Protecting people's health and safety from wild resources
 - O. Helping people who want to harvest shellfish
-

and information program), less need will exist for a program to restore diminished populations or habitats.

To quantitatively investigate desired program areas in the mail-back questionnaire, we reduced this set of 15 programs to 6 general types. Three types were positive ways that people wanted to interact with wild resources: (1) actively seeking wild resources, (2) making a living from wild resources, and (3) believing that wild resources are being protected. Three types were negative interactions to be avoided: (1) concerns about nuisance problems from wild resources, (2) concerns about human health and safety problems from wild resources, and (3) concerns about problems from other people who are actively seeking wild resources.

Further, among the list of desired programs, we identified 3 types of management actions that would facilitate the activities/experiences. One type requires citizens to take some active role (e.g., to become more informed, educated, or experienced). A second type involves the Division or its partners informing or educating the public through communication efforts. The third type entails the Division taking actions that do not involve the public directly (e.g., managing habitats, restoring species, regulating water quality).

3.2. Acceptable Characteristics of Funding Mechanisms

At the second focus group meeting in each location, participants indicated that acceptable characteristics of funding mechanisms pertained to several important questions. Combined results from the 5 focus groups indicated 9 characteristics or funding-related questions (Table 2). Focus group participants indicated that the acceptability of answers to these questions influenced whether they would support or oppose the use of a particular mechanism to fund a particular program.

Some characteristics were identified by all 5 focus groups, although the wording of the question differed slightly from place to place (e.g., Who should contribute/pay funds? What should the amount of contribution/payment be based on? Why should people be expected to contribute/pay?) Other characteristics were identified in only a few focus groups (e.g., How voluntary should the payments be? How often should people have to pay?).

The characteristics (questions) identified in all 5 locations have a relatively wide set of possible answers (Appendix B). This indicates that acceptance of a mechanism to fund a particular program depends on characteristics with a very fine (not coarse) resolution. For example, questions about "who should pay" and "based on what" have many possible answers. The question about "how voluntary should payments be" has only 2 possible answers (i.e., voluntary or mandatory), which suggests a coarser resolution to the answer.

The possibility emerged in the focus groups that acceptability of characteristics could differ from program to program. For example, answers to questions about "who should pay," "on what basis should the payment be based," and "why should they pay" differed depending on the program being discussed. Participants could not always agree on 1 best answer for these questions for each program.

Table 2. Questions that affect the acceptability of funding mechanisms for fish and wildlife programs, as identified by focus group participants in Manhattan, Levittown, Watertown, Olean, and Syracuse, New York in January 1999.

- A. Who should pay?
 - B. How much should people pay?
 - C. On what should payment be based?
 - D. What should people expect to get back in return for payment?
 - E. How should the funds be raised?
 - F. When should the funds be raised?
 - G. Who provides input about how funds are used?
 - H. How will information be provided about how the funds are used?
 - I. When should the funds be used?
-

4. RESULTS AND DISCUSSION -- MAIL SURVEY

4.1. Response Rates and Demographic Characteristics of Respondents

Respondents cannot be assumed to reflect a representative sample of New York State citizens. *Rather, respondents are assumed to be more interested in state programs than nonrespondents.* In general, items in the questionnaire were salient enough for respondents to complete and return it. Thus, findings presented in this report reflect the opinions of interested persons.

Response rates for all 5 strata were lower than anticipated, even with up to 3 reminder letters after the initial mailing. By strata, response rates were: 24.3% for Region 1, 15.7% for Region 2, 29.3% for Regions 3-4, 31.8% for Regions 5-6, and 38.3% for Regions 7-9.

We did not conduct a nonrespondent telephone follow-up to determine whether nonresponse bias existed for specific variables. It simply was not feasible to contact a sufficient number of nonrespondents to conduct the analysis. *Although we were not able to adjust data for nonresponse bias, we did adjust data to account for gender bias because a higher percentage of males than females responded in all strata* (Table 3).

Respondents to the mail survey ranged in age from 18 to 89. Region 2 had the youngest respondents (48.7 ± 2.6 years). Region 1 and Regions 3-4 had the oldest respondents (53.1 ± 1.9 years and 53.9 ± 1.8 years, respectively). Respondents from Regions 5-6 and Regions 7-9 were intermediate in age (50.9 ± 2.1 years and 50.7 ± 1.8 years, respectively).

Educational attainment was relatively high with $\geq 30\%$ of respondents in each strata having at least some college education (Table 4). At least 47% of respondents in each strata were college graduates. About one-third (34.5%) of respondents from Region 2 had a postgraduate degree. Household income was highest in Region 1 and Regions 3-4 (Table 5). More than 35% of respondents from those strata reported pre-tax household income exceeding \$75,000.

4.2. Baseline Indicators of Human-Wild Resource Interactions

4.2.1. Days Spent Actively Seeking Wild Resources:

Almost all respondents actively seek wild resources in some way (Table 6). Activities and experiences of particular importance are eating fish or shellfish (78-89% in all strata) and viewing wild resources (50-78%). Overall, the mean number of days that respondents actively sought wild resources was similar across strata ($\bar{x} = 87$ to 92 days per year).

Table 3. Number and percent of respondents by gender, for each of 5 strata, and weighting factors used to address gender bias in a statewide survey of households in New York State in 2000.

	Geographic Strata (DEC administrative regions)				
	Region 1 169 (68)	Region 2 83 (56)	Regions 3-4 148 (70)	Regions 5-6 156 (78)	Region 7-9 195 (79)
Number male respondents (%)	81 (32)	66 (44)	63 (30)	45 (22)	52 (21)
Number female respondents (%)	11 --	3 --	4 --	6 --	11 --
Male weighting factor	0.740	0.898	0.713	0.644	0.633
Female weighting factor	1.543	1.129	1.675	2.233	2.375

Table 4. Percent of respondents in each of 5 geographic strata indicating each category as their highest level of education attained, from a statewide survey of New York State households in 2000.

	Geographic Strata (DEC administrative regions)				
	Region 1 2.8	Region 2 4.1	Regions 3-4 5.2	Regions 5-6 10.1	Region 7-9 6.5
Less than high school degree	15.2	14.2	16.7	20.2	23.7
High school or GED	25.2	18.2	22.9	19.7	22.9
Some college	30.4	29.1	31.4	30.8	31.4
BS/BA	26.4	34.5	23.8	19.2	15.5

Table 5. Percent of respondents, by geographic strata, indicating each category of pre-tax household income, from a statewide survey of New York State households in 2000.

Pre-tax household income	Geographic Strata (DEC administrative regions)				
	Region 1 4.4	Region 2 8.9	Regions 3-4 4.6	Regions 5-6 9.7	Region 7-9 9.0
<\$15,000	15.3	14.8	15.3	21.0	27.8
\$15,000-30,000	20.1	25.9	18.9	27.4	20.2
\$30,001-50,000	23.1	21.5	25.5	17.2	25.1
\$50,001-75,000	16.6	10.4	15.3	14.5	10.8
\$75,001-100,000	20.5	18.5	20.4	10.2	7.2

Table 6. Percent of respondents in each of 5 geographic strata, participating and mean days of participation in 8 activities defined as "actively seeking fish and wildlife" resources, from a survey of New York State households in 2000.

Method of actively seeking fish and wildlife resources	Region 1	Region 2	Regions 3, 4	Regions 5, 6	Region 7, 8, 9
	% seeking ≥ 1 day x days	% seeking ≥ 1 day x days	% seeking ≥ 1 day x days	% seeking ≥ 1 day x days	% seeking ≥ 1 day x days
Watched/photographed	66.5	50.0	78.2	76.5	75.3
Fed	54.2	30.4	59.1	61.6	57.8
Cared for injured/orphaned	12.4	8.0	11.1	15.8	7.7
Ate fish/shellfish I bought	88.5	78.8	87.6	79.2	84.1
Ate personally-caught fish or game	30.3	19.1	29.6	47.4	48.6
Hunted	3.4	2.6	13.2	22.4	19.2
Fished	39.2	20.4	31.5	38.6	35.4
Harvested shellfish	11.2	0.6	3.1	0.0	0.5
Total participation index*	90.9	86.6	91.6	92.2	90.3

*Total days actively seeking resources by all methods/8 methods.

Higher percentages of respondents than expected hunted, fished, and rehabilitated wildlife based on state licensing data, and applicable data from the 1996 National Survey of Fishing, Hunting and Wildlife-associated Recreation (USFWS 1997). Connelly et al. (1998) also reported higher-than-expected rates of involvement in these activities by respondents in a statewide study of citizens' expectations about Bureau of Habitat programs. As with the Connelly et al. study, our findings indicate that respondents not only are more interested in state programs than nonrespondents, but are also more likely than nonrespondents to actively seek wild resources in some way.

4.2.2. Degree to Which Respondents Believe That Wild Resources Are Being Protected:

Overall confidence that wild resources are being protected by the state was less than the middle point on a scale from 0-3 for all 5 strata (Table 7). Generally, respondents were more likely to believe that the State was keeping aquatic habitats unpolluted and ensuring that wild resources have high quality habitats, compared to other possible ways of protecting resources. Respondents were least likely to believe that the state was controlling exotic species, restoring habitats, or restoring fish and wildlife species.

Connelly et al. (1998) found that most New Yorkers (84%) believed that an agency of state government should be responsible for protecting and managing wild resources, but that an even larger percentage could not name the responsible agency in New York State. Thus, we assessed citizens' levels of overall confidence that state government (not the Division) was upholding this responsibility. We also assessed their beliefs about specific ways in which state government is protecting wild resources.

4.2.3. Types of Concerns About Nuisance Problems From Wild Resources:

Concerns about problems around homes and parks were indicated by a relatively high percentage of respondents in all strata (Table 8). Moderate percentages in each stratum indicated concerns about non-native species causing problems for native species, and fish/shellfish causing problems in lakes or bays. Respondents generally had few other concerns. However, overall confidence that the state was addressing nuisance concerns was lower than overall confidence that the state was protecting wild resources.

4.2.4. Types of Concerns About Human Health and Safety Problems From Wild Resources:

The percentage of respondents with these kinds of concerns (Table 9) was higher than the percentage with concerns about nuisance problems (see Table 8). These data support findings from Connelly et al. (1996) that among persons who called DEC offices

Table 7. Degree to which respondents in each of 5 geographic strata believed state government is protecting fish and wildlife resources in specific ways, from a survey of New York State households in 2000. Letters in columns indicate significant differences ($p < 0.05$) within Regions. Two means sharing the same letter are not different.

Ways to protect fish and wildlife	Region 1 x score ^a	Region 2 x score ^a	Regions 3, 4 x score ^a	Regions 5, 6 x score ^a	Regions 7, 8, 9 x score ^a
Making sure fish and wildlife have high quality habitat to live in.	1.6 A	1.4 A	1.7 A	1.6 A	1.6 B
Making sure streams, lakes, and bays are not polluted.	1.7 A	1.3 A	1.7 A	1.7 A	1.5 BC
Maintaining populations of many different fish and wildlife species.	1.6 A	1.3 AB	1.7 A	1.7 A	1.7 A
Restoring habitats.	1.4 B	1.2 B	1.4 B	1.4 B	1.4 C
Restoring native fish and wildlife species.	1.4 B	1.2 B	1.5 B	1.5 B	1.5 C
Controlling exotic, non-native fish and wildlife species.	1.2 C,	1.1 C	1.3 C	1.2 C	1.2 D
Overall confidence that state government is generally protecting fish and wildlife species in New York State. ^b	1.2	1.1	1.4	1.4	1.4

^aOn a 4-point scale where 0="not at all" and 3="to a great degree."

^bOn a 4-point scale where 0="not at all confident" and 3="very confident."

Table 8. Number and percent of respondents in each of 5 geographic strata indicating that specific fish and wildlife nuisance situations were a concern to them personally, from a survey of New York State households in 2000.

Possible nuisance situation	Region 1		Region 2		Regions 3, 4		Regions 5, 6		Region 7, 8, 9	
	n	%	n	%	n	%	n	%	n	%
Wildlife causing a problem to my house or another building I use.	40	16.2	16	11.3	43	20.8	37	18.6	33	13.4
Wildlife causing a problem to my yard, garden, or a local park I use.	82	33.8	30	20.8	92	44.5	58	29.6	64	26.1
Wildlife preventing trees and other plants from growing in rural forests.	21	8.9	17	11.7	22	10.5	18	9.2	12	5.1
Predators eating a lot of other animals I like to see.	23	9.5	16	11.5	18	8.7	35	18.0	43	17.7
Non-native fish or wildlife causing problems for native species.	51	21.4	27	19.3	38	18.7	48	24.9	70	29.2
Fish or shellfish causing problems in lakes or bays.	53	22.3	15	10.8	42	20.4	69	35.6	77	31.6
	\bar{x}		\bar{x}		\bar{x}		\bar{x}		\bar{x}	
Mean number of types of nuisance concerns (out of 6 listed).	1.1		0.9		1.2		1.3		1.2	
Overall confidence that state government is addressing public concerns about nuisance problems from fish and wildlife.*	1.1		1.0		1.1		1.2		1.1	

*On a 4-point scale, where 0="not at all confident" and 3="very confident."

Table 9. Number and percent of respondents in each of 5 geographic strata indicating that specific human health and safety problems from fish and wildlife were a concern to them personally, from a survey of New York State households in 2000.

Possible health and safety problems	Region 1		Region 2		Regions 3, 4		Regions 5, 6		Region 7, 8, 9	
	n	%	n	%	n	%	n	%	n	%
Being injured in a wildlife-vehicle accident.	65	26.7	36	25.0	100	48.7	92	47.3	150	61.4
Becoming sick from eating contaminated fish or shellfish.	124	50.7	87	61.6	97	46.5	57	29.0	93	38.6
Becoming sick from drinking water that was contaminated by wildlife.	79	30.2	62	43.8	55	27.0	52	26.6	53	22.1
Getting a disease from coming into contact with wildlife.	98	37.4	71	50.3	109	52.5	72	36.6	90	36.8
	\bar{x}		\bar{x}		\bar{x}		\bar{x}		\bar{x}	
Mean number of types of human health and safety concerns (out of 4 listed).	1.5		1.8		1.7		1.4		1.6	
Overall confidence that state government is addressing public concerns about human health and safety concerns from fish and wildlife.*	1.3		1.2		1.3		1.5		1.4	

*On a 4-point scale where 0="not at all confident" and 3="very confident."

for some reason, higher percentages experienced concerns about human health and safety problems than experienced concerns about nuisance problems. In each stratum, overall confidence that state government was addressing human health and safety concerns was higher than for nuisance concerns. However, confidence that health and safety concerns are being addressed still was lower than the middle point of 1.5 on a scale of 0-3.

4.3. Most Important Kinds of Fish and Wildlife Programs to Individuals and Society

Patterns of importance were consistent across all 5 strata. Respondents consistently placed highest levels of personal and societal importance on programs that (a) address concerns about human health and safety problems being caused by wild resources or (b) protect wild resources (Table 10). Lowest levels of personal and societal importance consistently were placed on programs that help people make a living from wild resources or otherwise actively seek those resources. Intermediate importance was placed on programs to address concerns about nuisance problems from wild resources or concerns about problems caused by other people actively seeking wild resources.

For 4 of the 6 programs examined, societal importance was rated higher than personal importance. Personal and societal importance was rated equally high for programs aimed at addressing health and safety concerns and aimed at protecting wild resources. A program that allows people to benefit economically from wild resources was of particularly low importance. Even societal importance of this kind of program was low compared to other programs.

The high levels of importance placed on programs to address concerns about human health and safety problems caused by fish and wildlife mirror findings from previous HDRU studies. Connelly et al. (1998) reported that a majority of New Yorkers (53%) rated "concerns about the environment and natural resources" as being just as important personally as transportation, education, crime, and welfare. Specific natural resource issues identified by >60% of respondents in the Connelly et al. study as being "extremely important" were (a) advising people about safe levels of fish to eat, (b) protecting lakes and streams from pollution, and (c) controlling PCBs and mercury contamination in fish.

Conversely, Connelly et al. (1998) identified lower levels of personal importance for programs related to protecting wild resources. Between 41-48% of their respondents identified as being "extremely important" the issues of (a) collapse of ocean fish stocks, (b) acid rain effects on biological resources, (c) protecting large, undeveloped habitats, (d) protecting habitat in general, and (e) maintaining a wide diversity of species, including rare and endangered species. Lowest levels of importance in the Connelly et

Table 10. Mean level of importance indicated by respondents in 5 geographic strata for state government to provide 6 kinds of fish and wildlife programs that (a) respondents can take advantage of personally and (b) that others in society can take advantage of, from a survey of New York State households in 2000. Letters in columns indicate significant differences (p < 0.05) within Regions. Two means sharing the same letter are not different.

Programs that...	Region 1		Region 2		Regions 3, 4	
	Importance to respondent x̄ score ^a	Importance to society x̄ score ^a	Importance to respondent x̄ score ^a	Importance to society x̄ score ^a	Importance to respondent x̄ score ^a	Importance to society x̄ score ^a
Allow people to actively seek fish and wildlife.	1.3 C	1.7 C	1.4 C	1.7 C	1.3 C	1.6 C
Address concerns about problems caused by people who actively seek fish and wildlife.	1.6 B	1.9 B	1.8 B	1.9 B	1.7 B	1.9 B
Protect fish and wildlife species and their habitats.	2.1 A	2.2 A	2.2 A	2.2 A	2.2 A	2.2 A
Address concerns about nuisance problems caused by fish and wildlife.	1.6 B	1.9 B	1.7 B	1.7 BC	1.8 B	1.9 B
Address concerns about human health and safety problems caused by fish and wildlife.	2.2 A	2.2 A	2.1 A	2.1 A	2.2 A	2.1 A
Allow people to benefit economically from fish and wildlife.	0.5 D	1.3 D	0.7 D	1.4 D	0.5 D	1.1 D

^aOn a 4-point scale from 0="not at all important" to 3="very important."

Table 10. (cont.)

Programs that...	Region 5, 6		Regions 7, 8, 9	
	Importance to respondent \bar{x} score ^a	Importance to society \bar{x} score ^a	Importance to respondent \bar{x} score ^a	Importance to society \bar{x} score ^a
Allow people to actively seek fish and wildlife.	1.7 C	1.9 C	1.5 C	1.9 C
Address concerns about problems caused by people who actively seek fish and wildlife.	1.8 B	2.0 B	1.6 B	2.0 B
Protect fish and wildlife species and their habitats.	2.1 A	2.2 A	2.1 A	2.2 A
Address concerns about nuisance problems caused by fish and wildlife.	1.8 BC	1.9 BC	1.6 BC	2.0 BC
Address concerns about human health and safety problems caused by fish and wildlife.	2.0 A	2.2 A	1.9 A	2.1 A
Allow people to benefit economically from fish and wildlife.	0.6 D	1.3 D	0.7 D	1.3 D

^aOn a 4-point scale where 0="not at all important" and 3="very important."

al. study were associated with addressing declines in (a) waterfowl populations, (b) migratory songbirds, and (c) amphibians.

4.4. Satisfaction With Various Programs

Relatively high percentages of respondents (one-quarter to more than one-half) were neutral about the job the state was doing on most programs.

Although some regional differences existed in levels of satisfaction or dissatisfaction with specific kinds of programs, several general patterns were discernable (Table 11). Highest percentages of neutral respondents generally were associated with programs that facilitate people benefiting economically from wild resources or actively seeking resources. Lowest percentages of neutral respondents were associated with a program to protect wild resources. That is, more respondents had either a positive or negative opinion about how well the state was doing with these kinds of programs.

Our satisfaction data generally support findings from Connelly et al. (1998). They found relatively high levels of dissatisfaction with the job state government was doing to protect human health and safety from problems caused by wild resources. They also reported mixed levels of satisfaction and dissatisfaction for programs aimed at protecting wild resources.

4.5. Desired Changes in Program Emphasis

With few regional exceptions, >50% of respondents in each stratum wanted more emphasis on the programs about which we asked. About 47% of respondents in Regions 3-4 and Regions 7-9 wanted an increase in a program that facilitates people "actively seeking wild resources." At least 70% of respondents in each stratum wanted increased emphasis on a program to "protect wild resources." Nearly as many wanted increased emphasis on a program that addresses concerns about "human health and safety problems from wild resources."

Most respondents desiring an increase in a program to help people actively seek wild resources were satisfied with current programs (except in Region 2 where more were dissatisfied). This may mean that respondents generally want additional opportunities of the same types they enjoy currently. Conversely, more respondents wanting an increase in a program to address problems from people seeking wild resources were dissatisfied than satisfied in all strata. Statewide results for the other 4 programs showed a mixture of those who wanted more emphasis because they were satisfied, and those who wanted more because they were dissatisfied.

Table 11. Level of public satisfaction indicated by respondents in 5 geographic strata with the job state government is doing to provide 6 kinds of fish and wildlife programs, from a survey of New York State households in 2000.

Programs that...	Region 1			Region 2		
	% satisfied	% neutral	% dissatisfied	% satisfied	% neutral	% dissatisfied
Make sure the public can <i>actively seek</i> fish and wildlife species.	31.4	55.8	12.9	15.1	37.8	26.2
Address concerns about <i>problems caused by people</i> who actively seek fish and wildlife species.	23.3	36.3	26.2	14.1	35.6	27.8
<i>Protect fish and wildlife</i> species and their habitats.	42.3	19.5	31.2	7.1	21.9	37.1
Address concerns about <i>nuisance problems</i> caused by fish and wildlife species.	29.2	36.3	25.8	8.6	33.3	26.3
Address concerns about <i>human health and safety problems</i> caused by fish and wildlife.	33.1	29.8	31.0	6.1	27.3	31.9
Allow people to <i>benefit economically</i> from fish and wildlife.	22.0	44.5	20.0	13.6	46.8	16.0

Table 11. (cont.)

Programs that...	Regions 3, 4			Regions 5, 6		
	% satisfied	% neutral	% dissatisfied	% satisfied	% neutral	% dissatisfied
Make sure the public can <i>actively seek</i> fish and wildlife species.	27.2	33.7	15.6	19.5	30.3	16.3
Address concerns about <i>problems caused by people</i> who actively seek fish and wildlife species.	21.8	27.3	34.6	16.3	25.1	29.3
<i>Protect fish and wildlife</i> species and their habitats.	40.0	18.9	32.3	8.8	14.5	20.9
Address concerns about <i>nuisance problems</i> caused by fish and wildlife species.	28.8	31.3	27.5	12.4	28.7	23.6
Address concerns about <i>human health and safety problems</i> caused by fish and wildlife.	34.7	17.0	38.3	10.0	29.7	23.5
Allow people to <i>benefit economically</i> from fish and wildlife.	19.0	42.1	15.1	23.9	40.1	17.5

Table 11. (cont.)

Programs that...	Regions 7, 8, 9			
	% satisfied	% neutral	% dissatisfied	% don't know
Make sure the public can actively seek fish and wildlife species.	30.5	38.0	13.6	17.9
Address concerns about problems caused by people who actively seek fish and wildlife species.	26.9	32.9	24.4	15.7
Protect fish and wildlife species and their habitats.	42.7	20.7	28.5	8.1
Address concerns about nuisance problems caused by fish and wildlife species.	27.1	38.1	23.2	11.6
Address concerns about human health and safety problems caused by fish and wildlife.	32.0	34.0	22.0	11.9
Allow people to benefit economically from fish and wildlife.	21.4	44.5	14.4	19.7

Despite differences in the rated importance of the various programs, relatively few respondents in each stratum wanted less emphasis for any program (Table 12). A plurality in each stratum desired no change in emphasis for programs that facilitate people benefiting economically from wild resources. About one-quarter desired less and one-quarter desired more emphasis for this kind of program.

4.6. Management Actions Associated with Changes in Program Emphasis

4.6.1. Actions to Facilitate Active Seeking of Wild Resources:

Respondents suggested that building more developed facilities in natural habitats would result in the greatest increase in the number of days that they actively seek wild resources (Table 13). Providing opportunities through which people could earn income from wild resources would have the least effect, according to respondents. Also, respondents generally did not want public education efforts and opportunities for hands-on experiences.

We did not intend to assess demand for programs aimed at facilitating active seeking of wild resources. Rather, we developed insights about the kinds of management actions that would increase participation among those who desired to participate. Although our respondents already exhibited higher than expected levels of participation, previous HDRU research indicated that a substantial pool of potential participants exists in urban areas.

Connelly et al. (1995) found that demand for future wildlife education programs was higher than past participation in such programs for urban residents. Statewide, Connelly et al. (1996) reported differences in the components of programs desired by various demographic groups. Those who were younger, from urban areas, and had less experience in wildlife-related activities wanted more basic information about how to see wild resources. Older respondents with more wildlife-related experience wanted more detailed information about wildlife identification and life histories.

4.6.2. Actions to Increase Public Confidence that Wild Resources Are Being Protected:

Regulating land uses better and buying more land (except in Regions 5-6) are 2 possible actions that would have the greatest effect on whether the public believes the Division is protecting wild resources (Table 14). According to respondents, the most effective foci of better regulation and land acquisition would be to control exotic species and their effects on native species, and to restore habitats and native species. Provision of opportunities for the public to get hands-on involvement to determine how fish and wildlife species are fairing would have the least effect, according to respondents in all strata.

Table 12. Desired change in emphasis indicated by respondents in 5 geographic strata for 6 kinds of fish and wildlife programs, from a survey of New York State households in 2000.

Programs that...	Region 1			Region 2		
	% desiring decrease	% desiring no change	% desiring increase	% desiring decrease	% desiring no change	% desiring increase
Make sure the public can actively seek fish and wildlife species.	10.4	37.9	51.7	11.0	38.9	50.1
Address concerns about problems caused by people who actively seek fish and wildlife species.	5.9	36.9	57.1	7.4	30.3	62.3
Protect fish and wildlife species and their habitats.	5.0	18.9	76.1	4.4	12.1	83.6
Address concerns about nuisance problems caused by fish and wildlife species.	6.2	36.5	57.3	10.3	33.2	56.5
Address concerns about human health and safety problems caused by fish and wildlife species.	4.0	21.3	74.7	3.6	19.1	77.1
Allow people to benefit economically from fish and wildlife.	22.6	46.0	31.4	24.0	47.9	28.2

Table 12. (cont.)

Programs that...	Regions 3, 4			Regions 5, 6		
	% desiring decrease	% desiring no change	% desiring increase	% desiring decrease	% desiring no change	% desiring increase
Make sure the public can actively seek fish and wildlife species.	14.3	38.4	47.3	11.8	35.9	52.3
Address concerns about problems caused by people who actively seek fish and wildlife species.	8.4	35.5	56.0	11.9	26.0	62.1
Protect fish and wildlife species and their habitats.	2.6	21.1	76.3	7.9	16.4	75.7
Address concerns about nuisance problems caused by fish and wildlife species.	7.8	39.7	52.4	10.1	32.9	57.0
Address concerns about human health and safety problems caused by fish and wildlife species.	4.4	26.5	69.1	9.4	25.0	65.6
Allow people to benefit economically from fish and wildlife.	27.5	48.3	24.2	27.5	46.6	25.8

Table 12. (cont.)

Programs that...	Regions 7, 8, 9		
	% desiring decrease	% desiring no change	% desiring increase
Make sure the public can actively seek fish and wildlife species.	9.1	43.7	47.1
Address concerns about problems caused by people who actively seek fish and wildlife species.	7.3	39.5	53.2
Protect fish and wildlife species and their habitats.	8.0	22.2	69.7
Address concerns about nuisance problems caused by fish and wildlife species.	4.8	44.7	50.4
Address concerns about human health and safety problems caused by fish and wildlife species.	6.8	27.8	65.3
Allow people to benefit economically from fish and wildlife.	27.3	45.3	27.4

Table 13. Degree to which various Division actions would increase the number of days respondents in 5 geographic strata would spend in "actively seeking fish and wildlife" resources, from a survey of New York State households in 2000. Letters in columns indicate significant differences ($p < 0.05$) within Regions. Two means sharing the same letter are not different.

Possible Division actions	Region 1	Region 2	Regions 3, 4	Regions 5, 6	Regions 7, 8, 9
	\bar{x} score ^a	\bar{x} score ^a	\bar{x} score ^a	\bar{x} score ^a	\bar{x} score ^a
Tell me more about the various ways I could actively seek fish and wildlife.	0.8 C	0.8 C	0.8 D	0.8 C	0.7 D
Give me hands-on training about how to actively seek fish and wildlife.	0.7 C	0.8 C	0.7 D	0.8 C	0.7 D
Tell me more about what fish and wildlife species occur in the state.	0.9 B	0.9 B	0.9 BC	1.0 B	0.9 BC
Improve access to private land where I can actively seek fish and wildlife species.	1.0 AB	0.9 B	1.0 AB	1.1 AB	1.1 A
Build more developed facilities where I could view or photograph wildlife in natural habitats.	1.2 A	1.1 A	1.1 A	1.2 A	1.1 A
Give me opportunities to personally take part in studies of fish and wildlife species to understand them better.	1.0 B	0.8 C	0.8 D	1.0 B	0.9 C
Protect me from problems caused by other people who also are actively seeking fish and wildlife.	1.0 AB	0.9 BC	0.8 CD	1.0 AB	1.0 AB
Give me more opportunities to earn income from fish and wildlife.	0.3 D	0.4 D	0.3 E	0.6 D	0.5 E

^aOn a 4-point scale, where 0=the number of days I spend "actively seeking fish and wildlife" would not change, and 3=the number of days would increase greatly.

Table 14. Degree to which respondents in each of 5 geographic strata indicated that specific Division actions would increase their confidence that state government is "protecting fish and wildlife species," from a survey of New York State households in 2000. Letters in columns indicate significant differences ($p < 0.05$) within Regions. Two means sharing the same letter are not different.

Possible Division actions	Region 1 \bar{x} score ^a	Region 2 \bar{x} score ^a	Regions 3, 4 \bar{x} score ^a	Regions 5, 6 \bar{x} score ^a	Regions 7, 8, 9 \bar{x} score ^a
Tell more about the population size of fish and wildlife species.	1.5 D	1.5 D	1.3 C	1.4 B	1.4 C
Tell more about how the state is making sure fish and wildlife species can continue to exist.	1.8 C	1.8 C	1.7 B	1.7 A	1.7 B
Let me take part in studies so I can personally see how well fish and wildlife are doing.	1.3 E	1.2 E	1.1 D	1.3 B	1.2 D
Buy more land to protect species.	1.9 B	1.9 B	1.8 B	1.4 B	1.7 B
Regulate land uses to better protect species.	2.1 A	2.1 A	2.0 A	1.7 A	1.8 A

^aOn a 4-point scale, where 0="no more confident" and 3="a lot more confident."

4.6.3. Actions to Address Concerns About Nuisance Problems From Wild Resources:

Respondents indicated that providing information about whom to contact to take care of nuisance problems is the action that would do the most to raise their confidence that the state was addressing nuisance concerns (Table 15). Creating an economic incentive for people to catch and sell nuisance wildlife would have the least effect, according to respondents.

Butler et al. (2001) suggested that New Yorkers may be becoming more interested in programs aimed at addressing concerns about wild resources. They found declining tolerance for wildlife-related problems over a 15-year time period, regardless of stakeholder type or area of residence (i.e., rural, urban). However, they also reported a decline in the amount of personal importance that non-rural residents are placing on communication/education about wild resources as a way of increasing acceptance of those resources.

Although we have no data from this study to indicate a trend in levels of interest, previous HDRU studies indicate that interest in programs to address nuisance problems is likely related to personal experience with problems (Connelly et al. 1996, Enck et al. 1996, Loker et al. 1999). As citizens' negative experiences with wild resources increase, demand for actions to deal with those problems also may increase.

4.6.4. Actions to Address Concerns About Human Health and Safety Problems From Wild Resources:

Protecting water quality to prevent contamination of fish and shellfish that might be consumed by humans is the action that would most increase respondents' confidence that the state was addressing human health and safety concerns (Table 16). Reducing populations of wild resources to prevent spread of disease to humans would have the least effect for the respondents. Any kind of communication efforts (e.g., about level of risk, about how to stay safe, or about what the state already is doing) would have an intermediate effect.

4.7. Aggregated Types of Actions Associated with an Increase in Emphasis for any Program

For each of the 4 main programs examined, we grouped possible management actions *post facto* into 3 categories. "State actions" involved regulation, land purchase, or facility construction. "Information actions" involved communication with, or education of, citizens about ecological data or about state actions associated with a program. "Citizen actions" involve opportunities for citizens to engage directly in studies or to otherwise take some action on their own.

Table 15. Degree to which respondents in each of 5 geographic strata indicated that specific Division actions would increase their confidence that state government is addressing public concerns about nuisance problems from fish and wildlife, from a survey of New York State households in 2000. Letters in columns indicate significant differences ($p < 0.05$) within Regions. Two means sharing the same letter are not different.

Possible Division action	Region 1 \bar{x} score ^a	Region 2 \bar{x} score ^a	Regions 3, 4 \bar{x} score ^a	Regions 5, 6 \bar{x} score ^a	Regions 7, 8, 9 \bar{x} score ^a
Tell me who to contact to take care of problems.	1.7 A	1.6 A	1.6 A	1.6 A	1.7 A
Give me authority to take care of my own nuisance problems.	0.9 C	1.0 B	1.2 B	1.4 B	1.2 B
Give me opportunities to catch and sell nuisance wildlife.	0.5 D	0.6 C	0.5 D	0.6 D	0.6 D
Encourage private operators to catch nuisance wildlife and give them to food banks.	1.0 B	1.1 B	1.1 B	1.0 C	1.2 B
Let me take part in studies of fish and wildlife species so I can understand them better.	1.0 BC	1.1 B	0.9 C	1.1 C	1.0 C

^aOn a scale from 0=not at all to 3=a great amount.

Table 16. Degree to which respondents in each of 5 geographic strata indicated that specific Division actions would increase public confidence that state government is addressing human health and safety concerns caused by fish and wildlife, from a survey of New York State households in 2000. Letters in columns indicate significant differences ($p < 0.05$) within Regions. Two means sharing the same letter are not different.

Possible Division action	Region 1 \bar{x} score ^a	Region 2 \bar{x} score ^a	Regions 3, 4 \bar{x} score ^a	Regions 5, 6 \bar{x} score ^a	Regions 7, 8, 9 \bar{x} score ^a
Tell me more about my actual level of health risk from fish and wildlife.	2.1 B	2.1 B	1.8 BC	1.7 B	2.0 B
Reduce populations of wildlife that may spread diseases to people.	1.9 D	1.7 D	1.5 D	1.4 C	1.7 D
Tell me more about how to be safe from fish and wildlife.	2.0 CD	1.9 C	1.7 CD	1.7 B	1.8 C
Tell me more about what the state is doing to keep me safe.	2.0 BC	2.0 BC	1.9 B	1.7 B	1.9 BC
Protect water quality to prevent fish and wildlife from being contaminated.	2.5 A	2.5 A	2.4 A	2.2 A	2.3 A

^aOn a 4-point scale where 0="no more confident" and 3="a lot more confident."

We calculated aggregated mean-influence scores for each of the 3 categories of actions (Table 18). We anticipated that mean scores for all "citizen actions" might be similar, that mean scores for all "state actions" might be similar, and that mean scores for all "information actions" might be similar--regardless of program area. However, we did not find this to be true. For example, the mean level of influence associated with "state actions" differed from program to program. Nonetheless, we found a consistent pattern of influence associated with "state actions," "information actions," and "citizen actions" within each type of program (Table 18).

Any type of possible management action (state, information, or citizen) that might be taken as part of a program to address concerns about human health and safety problems from wild resources would have a greater influence on public confidence in the state than any management action that might be taken as part of any other program (Table 17). Management actions of any type aimed at protecting wild resources had the second highest mean score. These were followed by any actions aimed at addressing nuisance concerns. Any actions that would facilitate people actively seeking wild resources would have the least influence. These findings are consistent with importance rankings for the program areas.

Not only does the public place highest emphasis on a program to address concerns about human health and safety problems caused by wild resources, but respondents indicated that any state attention to these concerns will result in a high impact. Indeed, any state actions that address these concerns will have a greater impact, on baseline indicators (i.e., reducing undesirable negative interactions with resources) according to respondents, than any actions the state might take relative to any other program.

These findings suggest that the state should prioritize program efforts in this order: address human health and safety concerns, protect wild resources, address nuisance problems, help citizens actively seek resources.

Another pattern of responses uncovered through this analysis was confirmation of our original expectation, but within each program area instead of across program areas. For 3 of the 4 program areas, the greatest influence (i.e., increase positive interactions or reduce negative interactions) will result from "state actions" (Table 18). The least impact in any program will result from "citizen actions." "Information actions" will have an intermediate impact in 3 of 4 programs. The only exception was for a program aimed at addressing nuisance problems from wild resources - "information actions" would have a greater impact than "state actions."

This latter finding is consistent with previous HDRU research. Connelly et al. (1995) reported that 31% and 39% of urban residents in Westchester County and the Syracuse area, respectively, desired information about how to handle wildlife nuisance

Table 17. Mean amount of influence* indicated by respondents in 5 geographic strata that any management actions would have on increasing respondents' perceptions that each of 4 general fish and wildlife programs were meeting their goals. Letters in columns indicate significant differences (p<0.05) within Regions. Two means sharing the same letter are not different.

Programs that...	Geographic Strata (DEC administrative regions)				
	Region 1	Region 2	Regions 3-4	Regions 5-6	Region 7-9
Address concerns about human health and safety problems caused by wild resources ^b	2.1 A	2.0 A	1.8 A	1.7 A	1.9 A
Protect wild resource ^c	1.7 B	1.7 B	1.5 B	1.5 B	1.5 B
Address concerns about nuisance problems from wild resources ^d	1.0 C	1.1 C	1.0 C	1.1 C	1.1 C
Facilitate people actively seeking wild resources ^e	0.9 D	0.8 D	0.8 D	0.9 D	0.8 D

*On a scale of 0 to 3, where 3 is the greatest influence.

^bAggregate of 5 management actions.

^cAggregate of 5 management actions.

^dAggregate of 5 management actions.

^eAggregate of 8 management actions.

Table 18. Aggregate mean influence scores for 3 types of possible management actions that could be taken to meet the goals of 4 general fish and wildlife programs, by geographic strata in New York State. Letters in columns indicate significant differences ($p < 0.05$) within Regions. Two means sharing the same letter are not different.

Programs that...	Geographic Strata (DEC administrative regions)			
	Region 1	Region 2	Regions 3-4	Region 7-9
Address concerns about human health and safety problems from wild resources				
Possible kinds of management actions				
<i>Division actions (n=2)</i>	2.2 ^a A	2.1 A	2.0 A	1.8 A
<i>Information actions (n=3)</i>	2.0 B	2.0 A	1.8 B	1.7 A
<i>Citizen actions (n=0)</i>	---	---	---	---
Protect wild resources				
Possible kinds of management actions				
<i>Division actions (n=2)</i>	2.0 A	2.0 A	1.9 A	1.5 A
<i>Information actions (n=2)</i>	1.6 B	1.7 B	1.5 B	1.5 A
<i>Citizen actions (n=1)</i>	1.3 C	1.2 C	1.1 C	1.3 B
Address concerns about nuisance problems from wild resources				
Possible kinds of management actions				
<i>Division actions (n=1)</i>	1.1 B	1.1 B	1.1 B	1.1 B
<i>Information actions (n=3)</i>	1.7 A	1.6 A	1.6 A	1.7 A
<i>Citizen actions (n=3)</i>	0.8 C	0.9 C	0.9 C	0.9 C
Facilitate people actively seeking wild resources				
Possible kinds of management actions				
<i>Division actions (n=3)</i>	1.1 A	1.0 A	1.0 A	1.1 A
<i>Information actions (n=2)</i>	0.9 B	0.9 B	0.9 B	0.9 B
<i>Citizen actions (n=3)</i>	0.7 C	0.7 C	0.6 C	0.8 C

*All numbers indicate mean responses on a scale of 0 to 3, where 3 is the greatest influence.

problems. In another study of persons who had telephoned DEC previously, Connelly et al. (1996) reported that the highest percentage of respondents (61%) wanted information about how to solve a nuisance problem. Fewer respondents sought referrals to wildlife damage specialists (51%), wanted destroy permits (46%), or wanted DEC to take action to solve the problem (36%).

5. REGIONAL IMPLICATIONS OF GAPS IN PROGRAMS AND SERVICES

Region 1 (summarized in Appendix C).

Respondents suggested that the greatest benefit could be gained by focusing on programs to (1) address concerns about human health and safety problems caused by wild resources, and (2) protect wild resources. These programs had associated with them the highest mean levels of personal and societal importance (see Table 10). Higher percentages of Region 1 respondents were dissatisfied with the job state government is doing on these programs, compared to other programs (see Table 11). Further, considering only those who wanted an increase in emphasis in programs to address concerns about human health and safety, one-third were dissatisfied with current program outcomes. Also, among those who wanted an increase in emphasis on protecting wild resources, 37% currently were dissatisfied (Table 19). Implementation of management actions associated with these programs would do more to increase public confidence that state government is doing a good job than actions associated with any other programs (see Table 18).

Respondents believed that emphasis on addressing concerns about human health and safety problems could be increased by "protecting water quality to prevent fish and wildlife from becoming contaminated." This management action would most increase respondents' confidence that health and safety concerns are being addressed is (see Table 16). This action also would directly address the type of concern held by the greatest percentage of respondents (see Table 9).

According to respondents, emphasis on protecting wild resources could be increased by (1) regulating land uses better, (2) buying more land, and (3) communicating how the state already is protecting resources (see Table 14). These actions will have the best chance of increasing respondents' confidence that the state is protecting wild resources if the actions are aimed specifically at (1) making sure streams, lakes, and bays are not polluted, (2) making sure fish and wildlife have high quality habitat to live in, and (3) maintaining populations of fish and wildlife species.

Two programs were identified by respondents as being of moderate importance: (1) address nuisance problems from wild resources, and (2) address problems from people who actively seek wild resources (see Table 10). Respondents indicated that management actions associated with these programs also would have moderate levels of influence on their confidence that state government is addressing problems and helping people to actively seek wild resources, compared to management actions associated with other programs (see Table 18).

Table 19. Comparison of Region 1 respondents' (a) satisfaction with current program outcomes and (b) desired changes in level of program emphasis for each of 6 general fish and wildlife programs. Numbers are percent of respondents in that Region.

	Programs that facilitate people actively seeking wild resources			Programs that address problems caused by people actively seeking resources			Programs that protect wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	18	8	2	12	10	2	32	8	2
Neutral	25	28	8	26	21	3	16	8	2
Dissatisfied	8	3	1	19	6	1	28	3	1

	Program that address nuisance problems from wild resources			Programs that address human health and safety concerns from wild resources			Programs that help people benefit economically from wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	18	9	2	25	6	2	9	8	5
Neutral	21	21	3	25	10	1	15	31	12
Dissatisfied	19	6	1	25	5	1	8	7	5

Respondents believed that emphasis on addressing nuisance problems from wild resources could be increased by "communicating information about who respondents can contact to take care of problems" (see Table 15). The greatest benefit can be gained by tailoring this information towards (1) wildlife causing problems in yards, gardens, or local parks, (2) fish or shellfish causing problems in lakes or bays, and (3) non-native species causing problems for native species (see Table 8). Insights about specific management actions that would address problems from people who actively seek wild resources come from the focus group in Levittown. Participants wanted to (1) be able to easily report violations, (2) know that violators are being prosecuted, and (3) know that people and pets are safe from hunters.

Respondents placed lower importance on a program to help people actively seek wild resources. Relatively few respondents were dissatisfied with current program outcomes (see Table 11). Many of those desiring an increase in emphasis were satisfied, seeming to indicate that they want more of the same kinds of opportunities they have currently. Respondents indicated that emphasis can be increased on programs to help people actively seek wild resources by (1) building more developed facilities on public land, (2) improving access to private land, (3) providing opportunities for people to understand wild resources better through hands-on studies, and (4) improving protection from other people who actively seek wild resources (see Table 13).

Region 2 (summarized in Appendix D).

Program and service gaps may be more severe in Region 2 compared to other geographic strata based on relatively low levels of satisfaction and confidence that state government is doing a good job on some programs, and low levels of participation in wild resource-related activities. However, respondents suggested that the greatest benefits can be gained by focusing on the same kinds of programs identified as most beneficial in other strata, programs that (1) address concerns about human health and safety problems caused by wild resources, and (2) protect wild resources. These programs had associated with them the highest mean levels of personal and societal importance among Regional respondents (see Table 10). Higher percentages of Region 2 respondents were dissatisfied with the job state government is doing on these programs compared to other programs (see Table 11). Also, relatively high percentages of regional respondents who want an increase in emphasis in programs to address concerns about human health and safety (33%) and to protect wild resources (39%) currently are dissatisfied with the job state government is doing (Table 20). Implementation of management actions associated with these programs would do more to increase public confidence that state government is doing a good job than actions associated with any other programs (see Table 18).

According to Region 2 respondents, emphasis on a program to address concerns about human health and safety problems from wild resources can be increased by focusing on "protecting water quality to prevent fish and wildlife from becoming

Table 20. Comparison of Region 2 respondents' (a) satisfaction with current program outcomes and (b) desired changes in level of program emphasis for each of 6 general fish and wildlife programs. Numbers are percent of respondents in that Region.

	Programs that facilitate people actively seeking wild resources			Programs that address problems caused by people actively seeking resources			Programs that protect wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	9	6	2	13	5	1	25	4	1
Neutral	24	24	7	28	21	4	26	6	0
Dissatisfied	18	8	2	21	5	3	32	2	3

	Program that address nuisance problems from wild resources			Programs that address human health and safety concerns from wild resources			Programs that help people benefit economically from wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	15	10	3	24	4	1	9	7	5
Neutral	23	18	4	28	10	1	12	37	13
Dissatisfied	18	6	3	26	5	2	6	5	6

contaminated." This action would have the greatest influence on respondents' confidence that the state was addressing health and safety concerns (see Table 16). This action also would address a concern held by 61% of Region 2 respondents that they might get sick from eating contaminated fish or shellfish (see Table 9). Other actions (about which we have no insights) would be needed to specifically address the 2 other concerns held by >40% of respondents (i.e., getting a disease from coming into contact with wild resources, and becoming sick from drinking contaminated water).

Respondents from Region 2 were less likely than respondents from other strata to believe the state is protecting wild resources in any of the ways we examined (see Table 7). Emphasis on protecting wild resources can be increased by (1) regulating land uses better, (2) buying more land, and (3) communicating how the state already is protecting resources (see Table 14). Given the low levels of active seeking and lack of confidence in state resource protection programs expressed by Region 2 respondents, communicating about what the state already is doing may be a particularly useful management action.

According to respondents in Region 2, moderate benefit can be gained by focusing on a program that addresses problems from other people who actively seek wild resources. Respondents indicated moderate levels of personal and societal importance for this program (see Table 10). Further, a moderate percentage of respondents were dissatisfied with current program outcomes (see Table 11) and a moderate percentage desired an increase in emphasis in this program (see Table 12). Unfortunately, we have no insights about specific actions to take to address problems from people actively seeking wild resources.

Lower importance was placed on programs that (1) address nuisance problems from wild resources, and (2) help people actively seek wild resources. Respondents indicated that emphasis on addressing nuisance problems can be increased by "communicating information about who respondents can contact to take care of problems" (see Table 15). In particular, contact information is needed for (1) wildlife causing problems in yards, gardens, or local parks, and (2) non-native species causing problems for native species (see Table 8). Despite respondents from Region 2 having the lowest confidence of any stratum that the state was addressing nuisance problems, these respondents had the fewest concerns on average.

Respondents indicated that the state can increase emphasis on helping people to actively seek wild resources by (1) building more developed facilities, (2) improving access to private lands, (3) communicating about what wild species exist in the state, and (4) protecting citizens from people who are actively seeking wild resources. Respondents from Region 2 generally participated fewer days in any of the listed activities than respondents from other strata (see Table 6). Although we did not assess level of unmet demand for actively seeking wild resources, respondents indicated that these

actions would increase their days of participation more than other listed management actions (see Table 12).

Regions 3-4 (summarized in Appendix E).

According to respondents in Regions 3-4, greatest benefit can be gained by focusing on programs that (1) address concerns about human health and safety problems caused by wild resources, (2) protect wild resources, and (3) address concerns about problems caused by people who are actively seeking wild resources. The need to focus also on programs to address concerns about problems from people differentiates the suite of high priority programs in this stratum from other Regions. These programs had associated with them high mean levels of personal and societal importance (see Table 10), and relatively high percentages of respondents who were dissatisfied with current program outcomes (see Table 11). Also, relatively high percentages of regional respondents who want an increase in emphasis in programs to address concerns about human health and safety (50%), protect wild resources (41%), and address concerns about problems from other people (45%) currently are dissatisfied with the job state government is doing (Table 21). Management actions associated with programs to address concerns about human health and safety and to protect wild resources would do more to increase public confidence that state government is doing a good job than actions associated with other programs (see Table 18).

Like other regions, "protecting water quality to prevent fish and wildlife from being contaminated" is the management action that would do the most to increase respondents' confidence that concerns about human health and safety problems were being addressed (see Table 16). This action would address directly concerns (see Table 9) about eating contaminated fish and wildlife (held by 46.5%) and about getting sick from drinking contaminated water (held by 27%). Other (unspecified) actions are needed to address concerns about getting a disease from coming into contact with wildlife, about being injured in a vehicle accident caused by wildlife.

According to respondents, regional staff can increase emphasis on protecting wild resources by (1) regulating land uses better, (2) buying more land, and (3) communicating how the state already is protecting resources (see Table 14). These actions may be most beneficial in increasing public confidence if they are aimed at (1) controlling exotic species, (2) restoring habitats, and (3) restoring fish or wildlife species (see Table 7). We have no insights about actions that would help address problems from people seeking wild resources.

Respondents placed moderate importance on programs to (1) address nuisance problems caused by wild resources. Specific management actions that would do the most to increase respondents' confidence that nuisance problems from wild resources were being addressed are (1) provide information about whom to contact to take care of problems, and (2) provide complainants with authority to take care of their own

Table 21. Comparison of Regions 3-4 respondents' (a) satisfaction with current program outcomes and (b) desired changes in level of program emphasis for each of 6 general fish and wildlife programs. Numbers are percent of respondents in that Region.

	Programs that facilitate people actively seeking wild resources			Programs that address problems caused by people actively seeking resources			Programs that protect wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	16	11	2	14	6	2	30	9	1
Neutral	23	23	12	17	22	4	15	11	2
Dissatisfied	9	5	1	25	8	2	31	1	0
	Program that address nuisance problems from wild resources			Programs that address human health and safety concerns from wild resources			Programs that help people benefit economically from wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	15	10	2	20	12	2	5	9	5
Neutral	16	25	2	15	11	1	9	36	18
Dissatisfied	22	5	2	35	4	1	10	4	2

problems (see Table 15). By far, the largest percentage of respondents from Regions 3-4 had concerns about wildlife causing problems to yards, gardens, or local parks (see Table 8).

Respondents placed relatively low importance on a program to help people actively seek wild resources (see Table 10), and nearly twice as many respondents were satisfied with current program outcomes as were dissatisfied (see Table 11). Similarly, about twice as many of those who wanted more emphasis on this kind of program were satisfied as were dissatisfied (Table 21). Specific management actions that would have the greatest impact on future participation are (1) building more developed facilities, and (2) improving access to private lands (see Table 13).

Region 5-6 (summarized in Appendix F).

A variety of gaps in programs and services were identified for this stratum based on program importance and levels of dissatisfaction with current program outcomes. Highest levels of personal and societal importance were placed on programs that (1) address concerns about human health and safety problems caused by wild resources, and (2) protect wild resources (see Table 10). However, compared to these 2 programs, greater percentages of respondents were dissatisfied with current outcomes associated with programs that (1) address problems from people who seek wild resources, and (2) address nuisance problems caused by wild resources (see Table 11). Also, of those who wanted more emphasis on the various programs, 27% were dissatisfied with programs to address human health and safety concerns, 43% were dissatisfied with programs to address problems from people seeking wild resources, and 36% were dissatisfied with programs to address nuisance problems caused by wild resources (Table 22). Respondents in this stratum also reported the highest levels of confidence that state government already was protecting wild resources (see Table 7) and already was addressing concerns about human health and safety problems (see Table 9), but they reported relatively high numbers of nuisance concerns (see Table 8).

According to respondents, regional staff can increase emphasis on programs to address concerns about human health and safety problems by focusing on (1) protecting water quality to prevent fish and wildlife from becoming contaminated (see Table 16) and (2) addressing concerns about injuries from wildlife-vehicle accidents (see Table 9). The state can put more emphasis on programs to protect wild resources by (1) communicating how the state already is protecting resources and (2) regulating land uses better (see Table 14). Particularly low levels of public confidence might be increased if emphasis is placed on communication or regulation pertaining to (1) controlling exotic species, (2) restoring habitats, and (3) restoring native species (see Table 7).

Respondents indicated that emphasis on programs to address concerns about nuisance problems from wild resources could be increased by (1) informing citizens about

Table 22. Comparison of Regions 5-6 respondents' (a) satisfaction with current program outcomes and (b) desired changes in level of program emphasis for each of 6 general fish and wildlife programs. Numbers are percent of respondents in that Region.

	Programs that facilitate people actively seeking wild resources			Programs that address problems caused by people actively seeking resources			Programs that protect wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	22	10	3	13	9	3	39	11	5
Neutral	19	23	7	22	17	7	17	6	1
Dissatisfied	12	2	2	26	1	2	20	0	0

	Program that address nuisance problems from wild resources			Programs that address human health and safety concerns from wild resources			Programs that help people benefit economically from wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	19	9	4	26	6	5	5	7	9
Neutral	18	21	5	22	12	4	13	35	12
Dissatisfied	21	3	1	18	6	0	9	4	4

whom to contact to take care of problems, and (2) giving authority to citizens to take care of their own problems (see Table 15). Concerns about specific problems identified by the greatest percentage of respondents were (1) fish or shellfish causing problems in lakes or bays, (2) non-native species causing problems for native species, and (3) wildlife causing problems in yards, gardens, or local parks (see Table 8).

The focus group in Watertown provided insights about actions that would address concerns about problems from people seeking wild resources. Of particular interest was the desire for landowners to feel safe on their own property when strangers were hunting on it. Also, several participants mentioned low tolerance for sharing private or public land with people using snowmobiles/ATVs.

Importance of programs to help people actively seeking wild resources was rated higher in Regions 5-6 compared to other Regions, but was of relatively low importance within this stratum (see Table 10). Like other Regions, the 2 management actions that would do the most to increase participation are (1) building developed facilities for viewing wildlife on public land, and (2) improving access to private land (see Table 13). More so than in other Regions, respondents in this stratum indicated a desire for opportunities to earn income from fish and wildlife.

Regions 7-9 (summarized in Appendix G).

Like other Regions, highest levels of importance were placed on programs that (1) address concerns about human health and safety problems from wild resources, and (2) protect wild resources (see Table 10). These programs also had associated with them the highest percentages of respondents who were satisfied with current program outcomes, and moderate to high percentages who were dissatisfied currently (see Table 11). Unlike Regions 1-4, higher percentages of respondents from this stratum wanted more emphasis on these 2 programs because they were satisfied rather than dissatisfied (Table 23).

The management action that respondents said would do the most to increase their confidence that state government was addressing concerns about human health and safety problems is protecting water quality to prevent fish and wildlife from becoming contaminated (see Table 16). However, far fewer respondents had concerns pertaining to water quality issues than had concerns about wildlife-vehicle accidents (see Table 9). Actions that would do the most to increase public confidence that wild resources are being protected are (1) regulate land uses better, (2) buy more land, and (3) communicate about what the state already is doing to protect wild resources (see Table 14). The greatest benefit likely would be realized by focusing regulation/land purchase/communication on (1) controlling exotic species, (2) restoring habitats, (3) restoring species, and (4) ensuring that streams, lakes, and bays are not polluted (see Table 7).

Table 23. Comparison of Regions 7-9 respondents' (a) satisfaction with current program outcomes and (b) desired changes in level of program emphasis for each of 6 general fish and wildlife programs. Numbers are percent of respondents in that Region.

	Programs that facilitate people actively seeking wild resources			Programs that address problems caused by people actively seeking resources			Programs that protect wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	17	13	1	14	12	1	32	10	1
Neutral	21	27	7	19	25	3	13	11	3
Dissatisfied	11	3	1	21	2	2	25	2	2
				Satisfied			Satisfied		
				Neutral			Neutral		
				Dissatisfied			Dissatisfied		
	Program that address nuisance problems from wild resources			Programs that address human health and safety concerns from wild resources			Programs that help people benefit economically from wild resources		
	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis	Increase emphasis	Keep same	Decrease emphasis
Satisfied	13	13	2	21	10	1	9	9	3
Neutral	20	27	3	25	15	5	11	33	20
Dissatisfied	18	6	0	19	3	1	7	4	4
				Satisfied			Satisfied		
				Neutral			Neutral		
				Dissatisfied			Dissatisfied		

Respondents placed moderate importance on programs to (1) address problems from people seeking wild resources, and (2) address nuisance problems caused by wild resources. Focus groups in Syracuse and Olean provided insights about management actions likely to increase public confidence that people-related problems are being addressed. Of particular importance seems to be a desire to know the parcels on which strangers are hunting and that hunters would not mistakenly shoot pets. Management actions that would do the most to increase public confidence that state government was addressing concerns about nuisance problems from wild resources are (1) informing citizens about whom to contact to take care of problems, (2) giving citizens authority to take care of their own problems, and (3) encouraging private operators to catch nuisance animals and give them to food banks (see Table 15). Additional benefit likely could be gained by focusing actions on fish/shellfish causing problems in lakes and bays and on exotic species causing problems for native species (see Table 8).

Respondents placed relatively low importance on a program to help people actively seek wild resources (see Table 10) and the percentage who were dissatisfied with current program outcomes was low (see Table 11). Management actions that would have the greatest influence on respondents' future participation are (1) building developed facilities to enhance viewing on public land, (2) improving access to private land, and (3) addressing problems from people who are seeking wild resources (see Table 13).

6. ACCEPTABLE CHARACTERISTICS OF FUNDING MECHANISMS

We asked respondents 3 funding-related questions pertaining to each of the 6 programs (plus 2 management actions dealing with access and facilities for actively seeking wild resources and 1 action pertaining to protecting wild resources on private lands). Who should pay (4 options)? What is the best basis for paying (6 options)? What should the payer expect to get back in return (5 options)? A total of 120 possible combinations of answers exist for these questions, indicating 120 possible combinations of funding-related characteristics.

Below we provide information about answers given for each of the 3 funding questions as well as information about the diversity of combinations given. Responses to the individual questions provide insights about characteristics to use when identifying the most acceptable existing mechanisms or developing new mechanisms for funding the various programs. The diversity of most acceptable combinations listed for each program or subprogram indicates the degree of consensus about how to fund the programs. Lower diversity of combinations indicates more consensus about acceptable characteristics for funding the programs.

6.1. Who should pay?

For 5 of the 9 types of programs and actions examined, the most acceptable choice at the statewide level would be for "everybody" to contribute financially (Figure

1). These programs are to (1) protect wild resources, (2) address human health and safety concerns, (3) educate citizens about wild resources, (4) address nuisance concerns caused by wild resources, and (5) address problems caused by people who actively seek wild resources. A strong plurality of respondents chose "participants" as the most acceptable source of funds for programs that enhance access to private lands so people can actively seek wild resources. For the other 3 types of programs examined, we found no clear indication of the most acceptable funding group.

6.1.1. Regional similarities and differences in "who should pay."

The degree of agreement among respondents that "everybody" should pay for some of the types of programs and actions was remarkably similar among all geographic strata (Tables 24-28). In all strata, a strong majority believed that "everybody" should pay to protect wild resources (75-84% in all strata) and to address concerns about human health and safety problems from wild resources (73-84% in all strata). A majority (54-65%) in all strata also indicated that "everybody" should pay to educate the state's citizens about native wild species and their habitat needs. About one-half or more in all strata (47-66%) also believed that "everybody" should pay to address concerns about nuisance problems from wild resources.

Somewhat fewer respondents in all strata (36-46%) believed that "everybody" should pay to address problems caused by people who actively seek wild resources (see Tables 22-26). Although this choice was not selected by a majority of respondents in any strata, "everybody" was selected as the most appropriate characteristic by twice as many respondents (in all strata) as any other choice.

Regional differences were identified for 3 of the programs and actions examined (see Tables 24-28). In Regions 5-6 and 7-9, "everybody" was the most acceptable answer to the question about who should pay to facilitate people actively seeking wild resources (46% and 42%, respectively) and to build more facilities on public land to help people actively seek wild resources (41% and 38%, respectively). In other strata, the most acceptable answers were split almost evenly between "participants" and "everybody" for these 2 programs.

Upstate respondents were split about whether "everybody," "participants," or "beneficiaries" was the most acceptable choice to help landowners protect wild resources on private land. Downstate respondents (Regions 1-2) indicated "beneficiaries" was the most acceptable choice. We defined "beneficiaries" in the questionnaire as those persons who benefit either directly (e.g., participants) and/or indirectly (e.g., business owners who benefit economically, home or land owners whose properties are enhanced in some way).

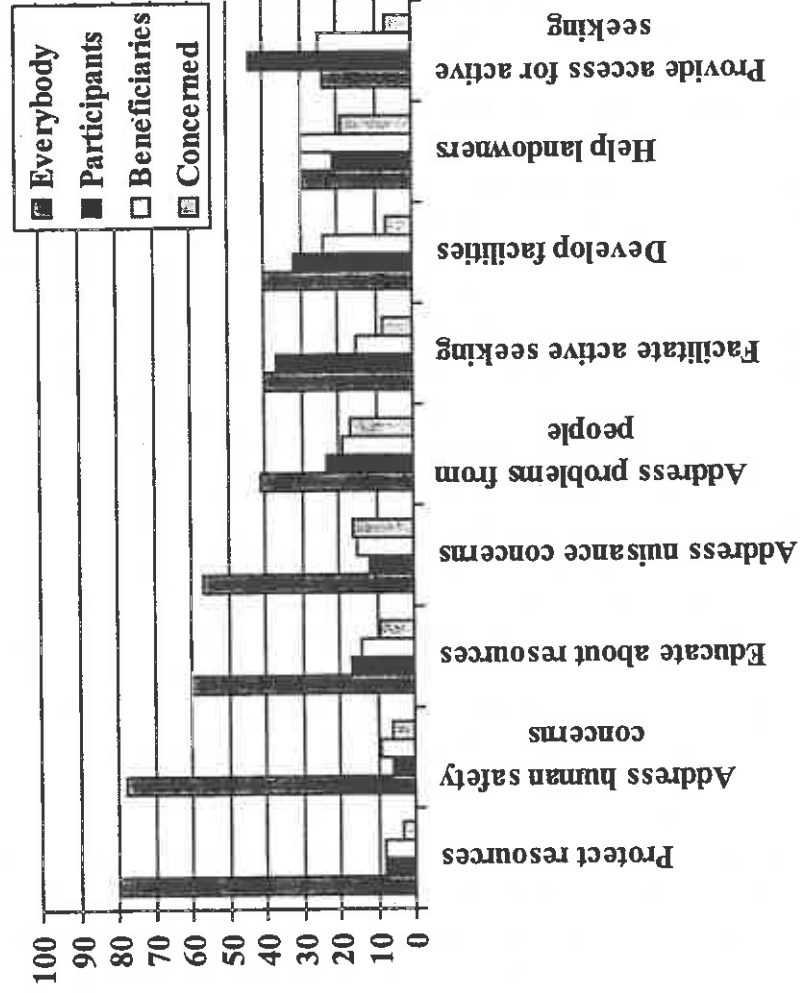


Figure 1. Percentages of respondents indicating who should pay for each of 9 kinds of fish and wildlife programs in New York State.

Table 24. Most acceptable characteristics of mechanisms to pay for each of 9 kinds of fish and wildlife programs, as identified by respondents from Region 1. Numbers in parentheses are percentages of persons indicating each response. Only responses given by ≥20% of respondents are shown, so percents total <100%.

Program	Who should pay?	Best basis for paying?	Expected return for payment?
Make sure people can actively seek wild resources.	Participants (39%) Everybody (36%)	# Times Participating (38%) Ability to Pay (27%) Interest in Program (23%)	Increased Opportunity (64%)
Increase access to private land so people can actively seek wild resources.	Participants (43%) Beneficiaries (27%) Everybody (21%)	# Times Participating (44%) Ability to Pay (26%)	Increased Opportunity (68%)
Build more developed facilities on public land to help people actively seek wild resources.	Participants (37%) Everybody (35%)	# Times Participating (45%) Ability to Pay (29%)	Increased Opportunity (61%) Personal Satisfaction (21%)
***** Protect wild species and their habitats.	Everybody (84%)	Ability to Pay (61%)	Personal Satisfaction (39%) Increased Opportunity (34%)
Educate people about wild species and their habitats.	Everybody (63%)	Ability to Pay (38%) Interest in Program (30%)	Increased Opportunity (44%) Personal Satisfaction (35%)
Help private landowners conserve wild resources on their land.	Beneficiaries (33%) Everybody (25%) Participants (22%)	Ability to Pay (37%)	Increased Opportunity (34%) Personal Satisfaction (27%)
***** Address concerns about problems caused by people who actively seeking resources.	Everybody (38%) Participants (23%) Beneficiaries (22%)	Ability to Pay (34%) #Times Participating (23%) Interest in Program (21%)	Increased Opportunity (36%) Personal Satisfaction (36%)
Address concerns about nuisance problems from wild resources.	Everybody (56%)	Ability to Pay (44%) Interest in Program (21%)	Personal Satisfaction (35%) Increased Opportunity (32%)
Address concerns about human health and safety problems caused by wild resources.	Everybody (79%)	Ability to Pay (55%)	Personal Satisfaction (40%) Increased Opportunity (27%) Info re Fund Expenditures (21%)

Table 25. Most acceptable characteristics of mechanisms to pay for each of 9 kinds of fish and wildlife programs, as identified by respondents from Region 2. Numbers in parentheses are percentages of persons indicating each response. Only responses given by $\geq 20\%$ of respondents are shown, so percents total $<100\%$.

<u>Program</u>	<u>Who should pay?</u>	<u>Best basis for paying?</u>	<u>Expected return for payment?</u>
Make sure people can actively seek wild resources.	Participants (38%) Everybody (35%)	# Times Participating (32%) Ability to Pay (25%) Interest in Program (23%)	Increased Opportunity (53%) Personal Satisfaction (24%)
Increase access to private land so people can actively seek wild resources.	Participants (48%) Beneficiaries (26%)	# Times Participating (40%) Ability to Pay (24%) Interest in Program (20%)	Increased Opportunity (63%)
Build more developed facilities on public land to help people actively seek wild resources.	Everybody (34%) Participants (30%) Beneficiaries (28%)	# Times Participating (31%) Ability to Pay (28%) Interest in Program (26%)	Increased Opportunity (56%)
***** Protect wild species and their habitats.	Everybody (75%)	Ability to Pay (55%) Interest in Program (22%)	Personal Satisfaction (42%) Increased Opportunity (24%)
Educate people about wild species and their habitats.	Everybody (61%)	Ability to Pay (43%) Interest in Program (26%)	Personal Satisfaction (40%) Increased Opportunity (35%)
Help private landowners conserve wild resources on their land.	Beneficiaries (35%) Everybody (29%) Landowners (22%)	Ability to Pay (28%) Interest in Program (28%) # Times Participating (24%)	Increased Opportunity (32%) Personal Satisfaction (25%)
***** Address concerns about problems caused by people who actively seeking resources.	Everybody (36%) Participants (23%) Beneficiaries (21%)	Ability to Pay (31%) Interest in Program (25%)	Increased Opportunity (42%) Personal Satisfaction (24%) Info re Fund Expenditures (21%)
Address concerns about nuisance problems from wild resources.	Everybody (47%) Beneficiaries (20%) Concerned People (20%)	Ability to Pay (37%) Interest in Program (25%)	Increased Opportunity (29%) Personal Satisfaction (27%) Info re Fund Expenditures (26%)
Address concerns about human health and safety problems caused by wild resources.	Everybody (73%)	Ability to Pay (53%)	Personal Satisfaction (32%) Info re Fund Expenditures (22%) Input re Fund Expenditures (21%)

Table 26. Most acceptable characteristics of mechanisms to pay for each of 9 kinds of fish and wildlife programs, as identified by respondents from Regions 3-4. Numbers in parentheses are percentages of persons indicating each response. Only responses given by $\geq 20\%$ of respondents are shown, so percents total $<100\%$.

<u>Program</u>	<u>Who should pay?</u>	<u>Best basis for paying?</u>	<u>Expected return for payment?</u>
Make sure people can actively seek wild resources.	Participants (43%) Everybody (38%)	# Times Participating (39%) Ability to Pay (29%)	Increased Opportunity (52%) Personal Satisfaction (24%)
Increase access to private land so people can actively seek wild resources.	Participants (49%) Everybody (25%) Beneficiaries (23%)	# Times Participating (37%)	Increased Opportunity (64%)
Build more developed facilities on public land to help people actively seek wild resources.	Everybody (37%) Participants (34%) Beneficiaries (25%)	# Times Participating (43%) Ability to Pay (29%)	Increased Opportunity (57%)
***** Protect wild species and their habitats.	Everybody (81%)	Ability to Pay (52%)	Personal Satisfaction (39%) Increased Opportunity (28%)
Educate people about wild species and their habitats.	Everybody (65%)	Ability to Pay (43%) Interest in Program (22%)	Personal Satisfaction (41%) Increased Opportunity (31%)
Help private landowners conserve wild resources on their land.	Everybody (29%) Participants (28%) Beneficiaries (24%)	Ability to Pay (31%) # Time Participating (28%)	Increased Opportunity (32%) Personal Satisfaction (28%)
***** Address concerns about problems caused by people who actively seeking resources.	Everybody (42%) Participants (23%) Beneficiaries (22%)	Ability to Pay (33%) # Times Participating (21%)	Personal Satisfaction (39%) Increased Opportunity (30%)
Address concerns about nuisance problems from wild resources.	Everybody (54%)	Ability to Pay (40%)	Personal Satisfaction (38%) Increased Opportunity (29%)
Address concerns about human health and safety problems caused by wild resources.	Everybody (78%)	Ability to Pay (51%)	Personal Satisfaction (45%) Increased Opportunity (25%)

Table 27. Most acceptable characteristics of mechanisms to pay for each of 9 kinds of fish and wildlife programs, as identified by respondents from Regions 5-6. Numbers in parentheses are percentages of persons indicating each response. Only responses given by $\geq 20\%$ of respondents are shown, so percents total $<100\%$.

Program	Who should pay?	Best basis for paying?	Expected return for payment?
Make sure people can actively seek wild resources.	Everybody (46%) Participants (29%)	Ability to Pay (41%) Interest in Program (24%) # Times Participating (22%)	Increased Opportunity (56%)
Increase access to private land so people can actively seek wild resources.	Participants (43%) Everybody (27%) Beneficiaries (23%)	# Times Participating (39%) Ability to Pay (33%)	Increased Opportunity (61%)
Build more developed facilities on public land to help people actively seek wild resources.	Everybody (41%) Participants (27%) Beneficiaries (25%)	# Times Participating (38%) Ability to Pay (37%)	Increased Opportunity (50%)
***** Protect wild species and their habitats.	Everybody (80%)	Ability to Pay (56%)	Personal Satisfaction (32%) Increased Opportunity (27%)
Educate people about wild species and their habitats.	Everybody (59%)	Ability to Pay (41%) Interest in Program (29%)	Personal Satisfaction (30%) Increased Opportunity (30%)
Help private landowners conserve wild resources on their land.	Everybody (35%) Beneficiaries (28%) Landowners (20%)	Ability to Pay (42%) Interest in Program (22%)	Personal Satisfaction (26%) Increased Opportunity (26%) Input re Fund Expenditures (21%)
***** Address concerns about problems caused by people who actively seeking resources.	Everybody (46%) Participants (22%)	Ability to Pay (37%) # Times Participating (21%)	Personal Satisfaction (33%) Increased Opportunity (24%)
Address concerns about nuisance problems from wild resources.	Everybody (66%)	Ability to Pay (44%)	Personal Satisfaction (32%) Increased Opportunity (23%) Info re Fund Expenditures (23%) Input re Fund Expenditures (21%)
Address concerns about human health and safety problems caused by wild resources.	Everybody (84%)	Ability to Pay (57%)	Personal Satisfaction (31%) Increased Opportunity (29%) Input re Fund Expenditures (22%) Info re Fund Expenditures (21%)

Table 28. Most acceptable characteristics of mechanisms to pay for each of 9 kinds of fish and wildlife programs, as identified by respondents from Regions 7-9. Numbers in parentheses are percentages of persons indicating each response. Only responses given by $\geq 20\%$ of respondents are shown, so percents total $<100\%$.

Program	Who should pay?	Best basis for paying?	Expected return for payment?
Make sure people can actively seek wild resources.	Everybody (42%) Participants (36%)	# Times Participating (31%) Ability to Pay (29%) Interest in Program (26%)	Increased Opportunity (55%) Personal Satisfaction (22%)
Increase access to private land so people can actively seek wild resources.	Participants (39%) Beneficiaries (27%) Everybody (26%)	# Times Participating (39%) Ability to Pay (29%)	Increased Opportunity (62%)
Build more developed facilities on public land to help people actively seek wild resources.	Everybody (38%) Participants (31%) Beneficiaries (23%)	# Times Participating (40%) Ability to Pay (25%) Interest in Program (22%)	Increased Opportunity (59%) Personal Satisfaction (23%)
***** Protect wild species and their habitats.	Everybody (79%)	Ability to Pay (52%)	Personal Satisfaction (45%) Increased Opportunity (27%)
Educate people about wild species and their habitats.	Everybody (54%) Participants (24%)	Ability to Pay (33%) Interest in Program (31%) # Times Participating (22%)	Increased Opportunity (36%) Personal Satisfaction (31%)
Help private landowners conserve wild resources on their land.	Everybody (29%) Beneficiaries (27%) Participants (26%)	Ability to Pay (30%) Interest in Program (25%) # Times Participating (23%)	Increased Opportunity (34%) Personal Satisfaction (24%)
***** Address concerns about problems caused by people who actively seeking resources.	Everybody (40%) Participants (25%) Concerned people (23%)	Ability to Pay (28%) # Concerns Addressed (23%) # Times Participating (22%)	Increased Opportunity (33%) Personal Satisfaction (27%) Info re Fund Expenditures (21%)
Address concerns about nuisance problems from wild resources.	Everybody (57%)	Ability to Pay (37%)	Personal Satisfaction (36%) Increased Opportunity (29%)
Address concerns about human health and safety problems caused by wild resources.	Everybody (77%)	Ability to Pay (43%)	Personal Satisfaction (41%) Increased Opportunity (22%) Info re Fund Expenditures (22%)

6.2. What should be the basis for payment?

Compared to the "who" question, somewhat less agreement existed as to what the basis of payment should be (Figure 2). Still, a slight majority of respondents statewide identified "ability to pay" as the most acceptable choice for protecting resources and addressing concerns about human health and safety. Further, a plurality of respondents indicated that "ability to pay" was the most acceptable choice for educating citizens about wild resources and addressing nuisance concerns.

Statewide, a pay-as-you-go approach seems most acceptable for 2 management actions aimed at facilitating active seeking of wild resources. A plurality of respondents believed that "number of times a person participates in activities made possible through a program" was the most appropriate basis for raising funds to (a) develop facilities on public land, and (b) increase access to private land (Figure 2).

6.2.1. Regional similarities and differences in "basis for payment."

A slight majority of respondents in each stratum (52-61%) indicated that payment should be based on "ability to pay" to protect wild resources (see Tables 24-28). Slightly fewer (43-57%) believed that "ability to pay" also was the most acceptable basis for raising funds to address human health and safety problems from wild resources.

Less agreement was found for other programs and actions. Between one-third and one-half of respondents in each stratum indicated that "ability to pay" was the most acceptable basis of payment for (a) addressing concerns about nuisance problems from wild resources, (b) educating people about native species and their habitat needs, and (c) addressing problems from people who actively seek wild resources. A plurality of respondents also indicated that "ability to pay" was the most appropriate basis of payment for helping landowners protect wild resources on private land, although "level of interest" was identified by about the same percentage as "ability to pay" in Region 2 (see Table 25) and Regions 7-9 (see Table 28).

In some strata, "ability to pay" and "interest" were identified as most acceptable choices by nearly the same percentage as "number of times" for various kinds of management actions aimed at helping people to actively seek wild resources. For example, in Region 2 (see Table 25) no clear agreement existed about the most acceptable basis of paying for developing facilities on public land. In Regions 5-6 (see Table 27), the 2 most acceptable choices for developing facilities on public land were "number of times" (38%) and "ability to pay" (37%). In Regions 7-9 (see Table 28), no agreement existed about the most acceptable basis to pay for making sure people can actively seek wild resources.

Respondents in Regions 7-9 showed the least agreement about the "basis" question for most of the programs and actions examined (see Table 28). For 6 of the 9

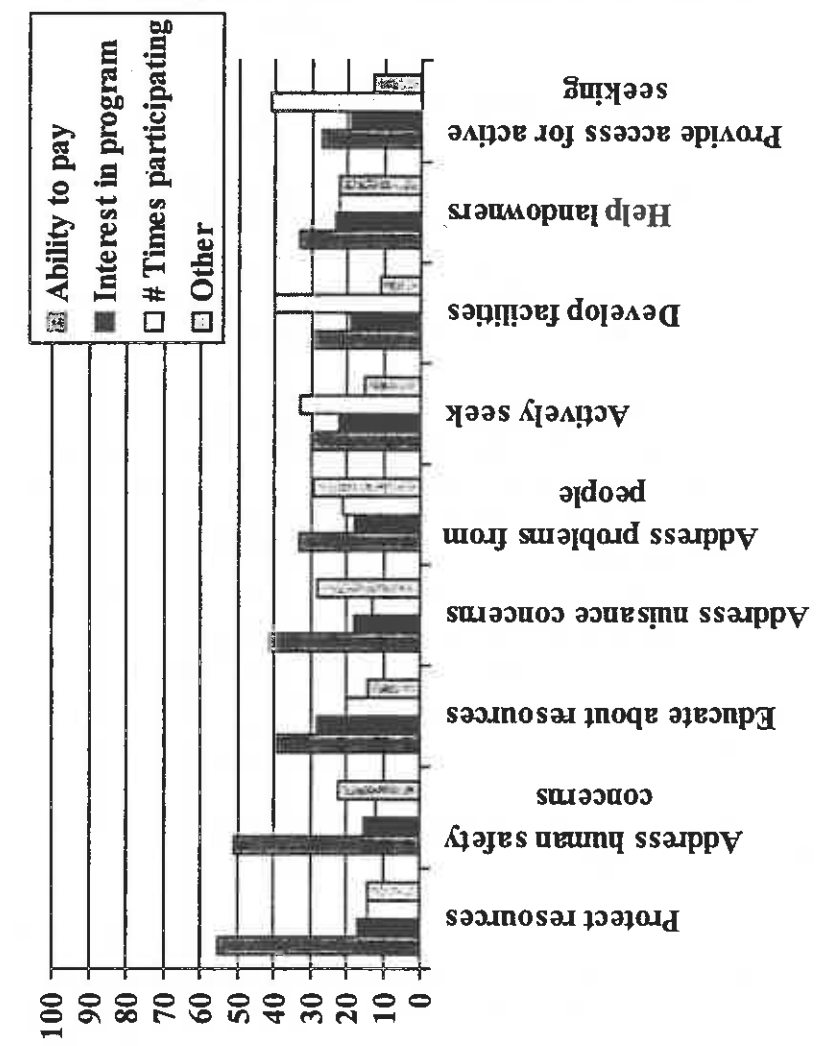


Figure 2. Percentages of respondents indicating the basis of payment that should be used to fund each of 9 kinds of fish and wildlife programs in New York State.

programs examined, this stratum had the lowest percentage of respondents indicating a given acceptable answer to the "basis" question. For 4 of the 9 programs, multiple acceptable answers were identified by about the same percentage of respondents (i.e., no clear plurality was identified). Also, this was the only stratum in which the response "number of concerns addressed" was acceptable (to address problems caused by people actively seeking wild resources).

Another regional difference was that respondents from Regions 5-6 were least likely to support the idea of paying-as-you-go, particularly for facilitating active seeking of wild resources (see Table 27). "Ability to pay" was identified as the most acceptable answer for both facilitating active seeking and building facilities on public land.

6.3. What should the payer expect to get back in return?

As noted in the section describing results from the focus groups, this question emerged out of citizens' interest in knowing what program expenditures will do for them. This is consistent with the idea that natural resource management is undertaken to provide benefits to humans (see State Mission Statement). Responses to this question can be used in communication messages about the mechanisms used to fund the various programs.

Statewide, a majority of respondents indicated "opportunity to take part in activities made possible through the program" as the most acceptable response to this question for the 3 programs related to active seeking of wild resources (Figure 3). Weak pluralities of respondents indicated "personal satisfaction that society benefits" as the most acceptable choice for programs to (a) protect wild resources and (b) address human health and safety problems from wild resources. The most acceptable choice for this question was less clear for all other types of programs. This indicates that a variety of messages may be needed to communicate with New Yorkers about why funds are being spent on these programs.

6.3.1. Regional similarities and differences about what payers should expect in return for funding programs.

In Region 1 (see Table 24), nearly as many respondents indicated "opportunity" (34%) as the most acceptable choice for programs aimed at protecting wild resources as indicated "personal satisfaction that society benefits" (39%). Here, "opportunity" may refer either to the opportunity to know that species and habitats are being protected, or the opportunity to experience those species or habitats. In Regions 5-6 (Table 27), "opportunity" (29%) was mentioned as the most acceptable choice for about the same percentage as those indicating "personal satisfaction that society benefits" (31%) for programs aimed at addressing human health and safety concerns. In this case, "opportunity" may refer to the chance to stay healthy.

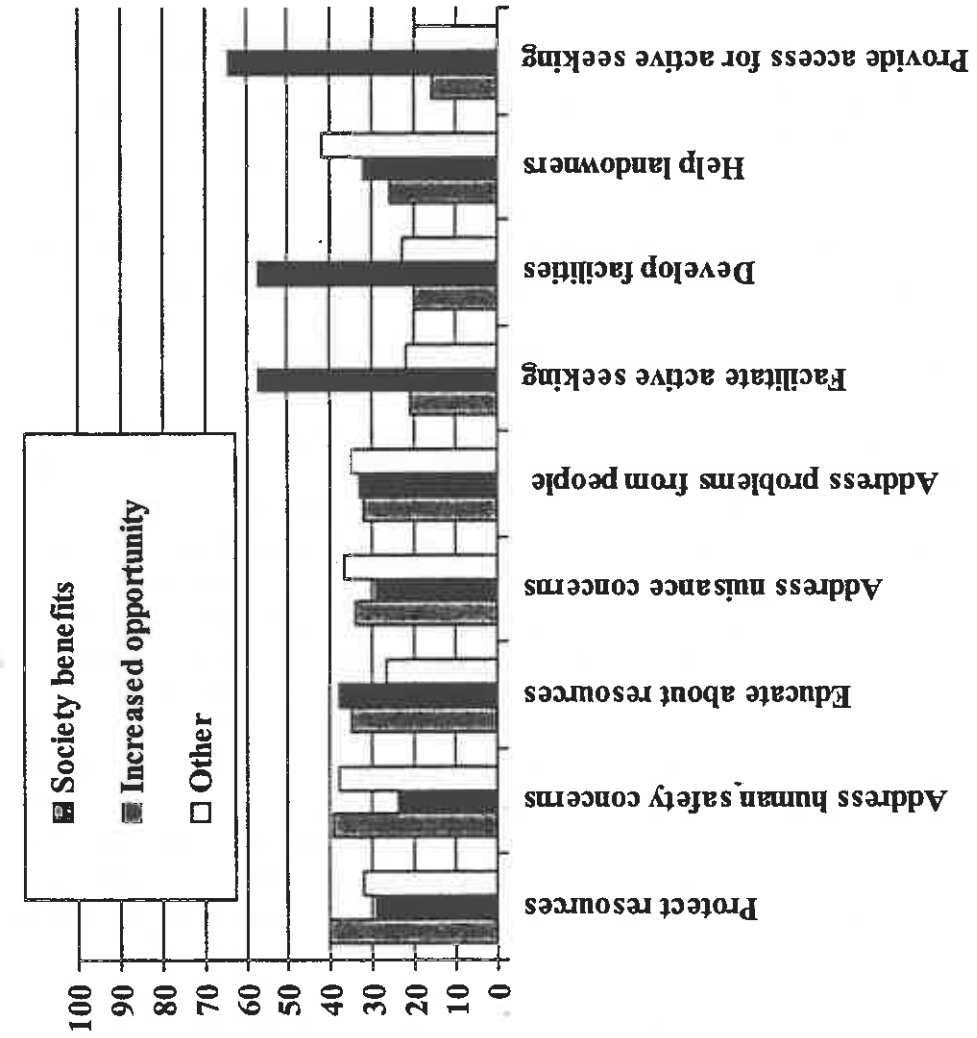


Figure 3. Percentages of respondents indicating the reason people should be willing to pay for each of 9 kinds of fish and wildlife programs in New York State.

In most strata, either "information about how funds are spent on this program" or "input into how funds are spent on this program" was the most appropriate choice for programs aimed at addressing concerns of 1 type or another. The exception was in Regions 3-4 (see Table 26), where these choices were indicated as most acceptable by very small percentages of respondents for any of the programs. These findings suggest that respondents at least want to be informed of how funds are spent specifically on programs to address concerns, and in some cases they wanted to have a say in how those funds are spent.

The lack of "input about how the funds are spent" as the most acceptable choice for programs aimed at facilitating active seeking of wild resources was somewhat surprising, given expressed interest by some stakeholder groups for providing this input in the past. Organized hunting, fishing, and birding groups have expressed a desire to provide input for these kinds of programs. Apparently, the general public is more interested in providing input into programs aimed at dealing with negative interactions with wild resources, than with programs aimed at facilitating positive interactions.

6.4. Acceptable Combinations of Characteristics for Each Program:

As noted previously, 120 possible combinations of answers existed for the 3 funding-related questions. Between 40 and 85 acceptable combinations were identified by respondents depending on the stratum and program. We first calculated the diversity of combinations mentioned for each program and stratum by dividing the number of identified combinations by the number of respondents. Because higher diversity quotients indicated lower levels of consensus, we subtracted this number from 1.00 to arrive at the consensus index (Table 29). This allowed us to compare relative degree of consensus about acceptable funding characteristics by strata and by program.

Geographically, respondents in Regions 2 had the lowest levels of consensus about acceptable characteristics of funding mechanisms for 8 of 9 programs examined (Table 29). Respondents in Regions 5-6 had a lower consensus index for only a program to educate citizens about native species and their habitats as a way of protecting those resources. Respondents in Region 1 and Regions 7-9 tended to have the highest levels of consensus about most of the programs examined.

6.4.1. Programs to address human health and safety problems caused by wild resources.

These kinds of programs had the third highest consensus index statewide and had the highest level of consensus of any program in Regions 5-6 (Table 29). In all strata, the most acceptable combination of characteristics of a funding mechanism for this kind of program would be to have all citizens pay, based on their ability to pay, and for personal satisfaction that society benefits from such a program. The second and third most acceptable combinations were the same in all strata, although the order was

Table 29. Consensus indices^a for mechanisms to pay for each of 9 kinds of fish and wildlife programs. Higher numbers indicate more agreement about the most acceptable characteristics of mechanisms to pay for programs.

Program	DEC administrative regions				
	1	2	3-4	5-6	7-9
Make sure people can actively seek wild resources.	.71	.65	.67	.67	.71
Increase access to private land for people to actively seek wild resources.	.74	.64	.71	.70	.75
Build more developed facilities on public land for people to actively seek wild resources.	.71	.60	.73	.67	.73

Protect wild species and their habitats.	.77	.67	.72	.68	.77
Educate people about wild species and their habitats.	.69	.64	.65	.62	.70
Help private landowners conserve wild resources on their land.	.61	.46	.57	.52	.61

Address concerns about problems caused by people who actively seeking resources.	.66	.53	.59	.55	.62
Address concerns about nuisance problems from wild resources.	.66	.56	.61	.63	.64
Address concerns about human health and safety problems caused by wild resources.	.73	.60	.72	.73	.73

^aCalculated as 1.00 - (number of acceptable combinations of funding mechanisms identified by respondents in that Region / number of respondents in that Region).

reversed in Regions 1 and 2 compared to the rest of the state. These combinations both included the idea that everybody should pay based on their ability, but the reasons for paying differed (to be informed about how funds are spent vs. to get additional opportunity).

The idea that "everybody" should pay for programs to address concerns about human health and safety problems is consistent with other HDRU research findings. In a study of persons who had telephoned DEC offices, 56% of respondents indicated that programs to address human health and safety problems should be paid for out of the general fund, and 15% indicated that such programs should be paid for by those who benefit directly (Connelly et al. 1996).

6.4.2. Programs to protect wild resources.

We examined a general program to protect wild resources and 2 specific actions (educating citizens about wild resources and helping landowners protect wild resources on private land). The general program had the highest statewide mean consensus index, and highest index for Region 1 and Regions 7-9 (see Table 29). The most acceptable combination of characteristics of a mechanism to pay for a general program to protect wild resources would be to have all citizens pay, based on their ability to pay, and for personal satisfaction that society benefits from such a program. The second most acceptable combination would be to have all citizens pay, based on their ability, but to increase their opportunity to take part in activities made possible through the program. In this case opportunity might be to know the resources were being protected or to experience those resources.

A specific program to help landowners protect wild resources on private lands received the lowest level of consensus of any program in any stratum (see Table 29). In addition, regional differences were identified with respondents in Regions 5-6 indicating that everybody should pay based on their ability while respondents in most other regions were split between everybody and beneficiaries as the most acceptable payers. In Region 2, people whose concerns are addressed were indicated as an acceptable payer group. A specific program to educate people about native species and their habitats had a moderate mean consensus index (see Table 29). In Regions 2-6, the most acceptable combination of funding-related characteristics for this program would be for all citizens to pay, based on their ability to pay, and for personal satisfaction that society benefits. In Regions 1 and 7-9, the most acceptable reason for payment is to get more opportunity. In addition to people's ability to pay "level of interest in the program" was an acceptable basis for a substantial percentage of respondents.

The idea that "everybody" should pay for educating citizens about wild resources is supported by other HDRU research. Connelly and Brown (1995) assessed New Yorkers' opinions about paying for "information services" provided by the Bureau of Habitat within the state. Those authors did not associate "information services" specifically with

either education programs or programs to facilitate active seeking, as we did in this study. However, they found high levels of support for the idea that all citizens should pay for information. Indeed, 82% of their respondents indicated that the general fund should be used to pay for "information services." Only 7% indicated license fees and 4% indicated that "users" of the information should pay. Similarly, Connelly et al. (1995) found that the level of user-pay fees needed for a self-supporting, urban, wildlife education program exceeded the amount that a majority of potential users were willing to pay. This suggests that most people who desired such a program wanted "the government" to subsidize or fully fund those programs.

6.4.3. Programs to address nuisance problems caused by wild resources.

The level of consensus about acceptable characteristics for this kind of program was relatively low, compared to other programs, for all strata (see Table 29). The most acceptable characteristics of a mechanism to pay for this program would be to have all citizens pay, based on their ability to pay, and for personal satisfaction that society benefits from such a program.

Connelly et al. (1996) also reported low levels of agreement about how nuisance programs should be funded. About one-half (49%) of respondents to their study indicated that nuisance programs should be funded from the state's general fund (i.e., "everybody"). However, 35% indicated that nuisance programs should be funded by those who benefit directly from them.

6.4.4. Programs that help people actively seek resources.

The 3 programs of this type examined had among the highest levels of consensus for all strata (see Table 29). For all strata except Regions 5-6, the most acceptable characteristics of a mechanism to pay for a general program would be to have participants pay, based on the number of times they actively seek wild resources, and for increased opportunity. In northern New York, the most acceptable characteristics would be for everyone to pay, based on their ability, and for increased opportunity. Results pertaining to a program to increase access so people can actively seek wild resources on private land, and a program to build developed facilities so people can actively seek wild resources on public land, generally mirrored those for the general "actively seeking" program.

6.4.5. Programs to address problems caused by people who actively seek wild resources.

We found a relatively low level of consensus about acceptable mechanisms for funding this kind of program in all strata (see Table 29). Nonetheless, some consistent patterns emerged among the strata. The most acceptable characteristics of mechanisms

to pay for this program would be to have everybody pay, based on their ability to pay, to ensure increased opportunity to have a satisfying experience.

7. DISCUSSION OF MANAGEMENT QUESTIONS AND OBJECTIVES

7.1. Management Question 1: What are the fish and wildlife-related programs and services desired by citizens of New York State?

7.1.1. Breadth of programs and services:

Insights from the focus groups helped to define the spectrum of programs and services by identifying the kinds of interactions that citizens want to have with fish, wildlife, and habitats in New York State. Fifteen types of interactions were defined, and the activities/experiences relating to wild resources that are listed under each type of interaction in Appendix A can be thought of as a description of each program or service using the "currency" of the focus group participants. Based on focus group discussions, we reduced this set of 15 types of interactions to 6 general categories of programs. Three of these were programs and services to facilitate positive interactions with wild resources: (1) people actively seeking wild resources, (2) people being able to make a living from wild resources, and (3) people believing that wild resources are being protected. Three were programs and services to prevent or address negative interactions with wild resources: (1) concerns about nuisance problems from wild resources, (2) concerns about human health and safety problems from wild resources, and (3) concerns about problems caused by other people actively seeking wild resources.

7.1.2. Priorities Among Desired Programs and Services:

Of the spectrum of desired programs, those identified as being the most important in all geographic strata were programs that either (1) address concerns about human health and safety problems being caused by wild resources or (2) protect wild resources. Least desired programs were those that either (1) help people make a living from wild resources or (2) otherwise actively seek those resources.

Insights from the focus groups suggest that programs to help people make a living from wild resources may be particularly desirable for a small set of stakeholders (e.g., commercial fishermen, guides and outfitters). The sample for our mail survey likely included few of these stakeholders. It is likely that this category of program is, and will continue to be, vitally important for persons already engaged in occupations linked to wild resources.

Also, although respondents to our mail survey participated in actively seeking wild resources at rates much higher than expected among the general public, desire for programs to help people actively seek wild resources may have been low for 2 reasons. First, participants may believe that they can participate as much, or as well, as the

focus group participants who actively sought wild resources recognized that the opportunity to seek resources depended in large part on protection of wild populations and the habitats in which they are found. Thus, protecting wild resources is a fundamental and necessary step in ensuring that people can actively seek wild resources.

7.1.3. Specific components of programs and services:

Results from our mail survey indicate that for each program area, specific management actions need to be tailored by geographic region. Addressing concerns about human health and safety might involve monitoring and advising about contaminants in shellfish in Region 1. In Regions 7-9 the same kind of program might focus on actions to reduce deer-vehicle collisions. Actions associated with protecting wild resources in Regions 1-2 might involve purchase of threatened habitats. Actions associated with the same category of program in Regions 5-6 might involve communication to the public about what the state already is doing to protect resources in a part of the Division that contains much public land.

7.2. Management Question 2: What are the characteristics that would make a funding mechanism acceptable for each program area?

Acceptability of funding mechanisms seems to be based on a relatively small set of characteristics. Focus group discussions identified 3 main questions that can be thought of as characteristics: (1) who should pay? (2) on what basis should the amount of payment be determined? and (3) what should people expect to get back from the program in return for funding it? Despite this small number of characteristics, focus group discussions suggested that acceptability may hinge on relatively fine (not coarse) resolution with respect to answers for these questions. A wide range of possible acceptable answers to the questions was identified in focus groups. However, we could only explore a subset of these in the mail questionnaire. Quantitative results from the mail survey should be interpreted with this constraint in mind.

The possibility emerged from the focus groups that acceptable funding-related characteristics might differ from program to program. This was confirmed through the mail survey. See discussion under Objective 3 below.

7.3. Objective 1: Identify stakeholder-defined gaps in fish and wildlife programs and services provided by the Division.

The mail survey provided 3 indicators of gaps in programs and services. The first indicator was the percent of respondents indicating dissatisfaction with each of the categories of current programs. Overall, the greatest dissatisfaction was associated with the category of programs aimed at protecting wild resources. Next was dissatisfaction with programs to address concerns about human health and safety. In Regions 3-4 and

5-6, a high level of dissatisfaction also was associated with programs to address concerns about problems from people actively seeking wild resources.

Specific actions that would do the most to increase public confidence that human health and safety concerns are being addressed include (1) protecting water quality to prevent wild resources from becoming contaminated, and (2) communicating to the public about their actual risk of problems, and (3) communicating to the public about what the Division already is doing. The specific action that would most increase public confidence that wild resources are being protected is regulating land uses. We did not gain insights about specific actions that would increase public confidence that concerns about problems from people actively seeking resources are being addressed.

The second indicator of a gap is the percent desiring an increase in emphasis for each type of program. We found consistencies between gaps identified with this indicator and gaps identified using level of dissatisfaction. The greatest desired increases in program emphasis are associated with programs to address concerns about human health and safety and programs to protect wild resources.

The final indicator is the percent of respondents replying "neutral" or "don't know" to questions about level of satisfaction or desired change in emphasis for programs. High percentages in these response categories suggest that citizens lack basic awareness or knowledge about what the Division already may be doing with respect to the various programs. Mail survey data suggest that the Division could benefit from communicating more with the public about existing programs in all Regions.

7.4. Objective 2: Gain insights about why stakeholders desire some kinds of fish and wildlife programs and services and reduction of others.

We developed insights by comparing desired change in program emphasis (want more vs. want less) with level of satisfaction associated with the Division's current programs. Our analysis revealed important regional differences. Overall, dissatisfaction with current programs was associated with a desire for increased emphasis for many of the categories of programs among respondents from Region 2. For example, high levels of dissatisfaction with programs that help people actively seek wild resources was the reason for a desired increase in emphasis in Region 2. In all other Regions, twice as many respondents who wanted an increase in emphasis were satisfied versus dissatisfied. Similarly, respondents from Region 2 who wanted an increase in programs to protect wild resources were much more likely to be dissatisfied with current programs compared to respondents from other Regions.

High levels of dissatisfaction with current efforts to address nuisance problems from wild resources were reasons for desired increase in program emphasis in Regions 3-4 and 7-9. The desire for an increase in emphasis on programs to address concerns

about human health and safety was associated with high levels of dissatisfaction in Regions 3-4, but with high levels of satisfaction in Regions 5-6.

In all Regions, a large majority of those desiring an increase in programs to address problems from people who actively seek wild resources were dissatisfied with current Division efforts. The relatively small number of respondents who wanted an increase in emphasis for programs to help people make a living from wild resources prevent us from gaining any meaningful insights about that kind of program.

7.5. Objective 3: Determine the acceptable attributes of broad strategies for allocating funds to desired sets of fish and wildlife programs and services.

There seems to be broad support for the idea that all New Yorkers should help fund the kinds of programs that are desired by the greatest numbers of citizens. In all strata, "everybody" was the most acceptable answer to the question of who should pay for programs to address concerns about human health and safety from wild resources and programs to protect wild resources. Also, the most acceptable choice about who should pay for programs aimed at helping people actively seek wild resources on private land was "participants." However, no clear choice emerged about who should pay for programs aimed at active seeking on public land. Depending on whether "everybody" or "participants" should pay for a category of programs, respondents indicated that the basis of payment should be either "ability to pay" or "number of times people participate," respectively. Beyond those generalities, we gained little clarity about the most acceptable characteristics of funding mechanisms.

The high diversity associated with combinations of acceptable characteristics of funding mechanisms identified in the mail questionnaire confirmed what we learned from focus group discussions. There seems little likelihood that high levels of agreement can be reached among various stakeholders for "the most acceptable" set of characteristics for almost any category of program. Citizens apparently use a very fine filter to consider what acceptability of funding mechanisms means.

7.6. Objective 4: Determine the criteria desired for limiting allocation of federal aid and license fees to specific programs.

It is important to note that we did not ask respondents about the acceptability of any specific funding mechanisms. We only asked about the acceptability of certain characteristics of funding mechanisms. Also, we do not know whether the characteristics associated with federal aid and license fees would be minimally acceptable -- we only know that they are not the most acceptable.

Using the set of options provided in the questionnaire and insights gained from focus group discussions about the characteristics that citizens associated with federal aid and license fees, we determined the basic characteristics of these 2 traditional sources of funding. First, these taxes and fees are paid by "participants" or "beneficiaries" who are either hunters or hunter associates¹ (Enck et al. 2000). Second, the basis of payment is the "number of times someone participates in activities made possible through the program" (i.e., number of licenses bought), "level of interest a person has in the program" (i.e., as indicated by either the number of licenses bought or dollar amount of equipment bought), or "types of equipment bought". Third, the expected return for paying these taxes and fees is "increased opportunity."

Clearly, the characteristics associated with federal aid and license fee funding mechanisms are not the most acceptable characteristics of mechanisms to pay for programs to (1) address concerns about human health and safety problems from wild resources, (2) protect wild resources, or (3) address concerns about nuisance problems from wild resources. For these 3 categories of programs, <10% of respondents in any Region identified federal aid and license fee *characteristics* as the *most acceptable* (Table 30). The types of programs aimed at facilitating active seeking of wild resources (e.g., in general, by enhancing access to private land, and by developing facilities on public land) had the highest percentages -- but these never exceeded 42%.

These results should be interpreted carefully. We had higher percentages of anglers and hunters than expected among our respondents, but these persons who directly pay through federal aid and license fees still only accounted for a minority of respondents in any Region (see Table 6). It seems that funding mechanisms with characteristics different from those associated with federal aid and license fees would be the preferred choice for funding all types of fish and wildlife programs. Further, it is unlikely that this finding reflects dissatisfaction among respondents that "sportsmen's dollars" are providing the majority of current funding for fish and wildlife programs because we never identified the characteristics of federal aid and license fees to survey respondents.

Table 30. Percentages of respondents from each strata (DEC administrative region) who identified *characteristics* that we reasoned are associated with federal aid and license fees as being the *most acceptable* for funding 9 categories of fish and wildlife programs in New York State.

Program category	DEC administrative regions				
	1	2	3-4	5-6	7-9
Make sure people can actively seek wild resources.	32	27	30	19	28
Increase access to private land for people to actively seek wild resources.	42	42	42	37	33
Build more developed facilities on public land for people to actively seek wild resources. *****	33	32	34	28	29
Protect wild species and their habitats.	5	6	7	6	6
Educate people about wild species and their habitats.	11	12	12	8	17
Help private landowners conserve wild resources on their land.	14	13	17	9	17

Address concerns about problems caused by people who actively seeking resources.	11	19	12	10	7
Address concerns about nuisance problems from wild resources.	7	9	7	4	7
Address concerns about human health and safety problems caused by wild resources.	5	3	7	1	3

¹Hunter associates are non-hunting family members and friends of hunters who may buy licenses or hunting equipment for hunters.

8. CONCLUSIONS

Several main conclusions emerge from our assessment of desired programs and services.

- Even people who actively seek wild resources to a greater extent than average citizens want to have relatively few kinds of positive interactions with wild resources.
- Citizens generally want concerns about negative interactions to be minimized, and they want to know that wild resources are being protected.
- Citizens expect state government to accomplish these, and they want to take on comparatively little responsibility for taking personal actions.

One interpretation of our findings is that citizens receive little personal meaning from nature, they are disconnected from it, and fear it for its potential negative impacts on human lives and livelihoods. New Yorkers seem not to know much about the wild resources of the state or about ecological relationships among those resources. Further, citizens seem not to want to know much about the resources or ecological relationships – just that the Division takes care of these things.

An alternative interpretation is that New Yorkers simply want their basic needs met first. That is, they want to be protected from harm before emphasis is placed on helping people experience positive, tangible benefits from wild resources. Under this interpretation, citizens could be intimately connected with nature and realize it is not always kind. They may be indicating that they want the Division to act as a buffer between them and nature.

We do not know which interpretation is more plausible. However, the apparently high amount of interest in programs to protect wild resources and comparatively low amount of interest in programs to facilitate active seeking of wild resources does not necessarily indicate a shift towards more preservationist or non-utilitarian attitudes. In our study this finding likely reflects a recognition by those who already actively seek resources in some way (most of our respondents) that successful seeking requires protection of wild species and their habitats. Butler et al. (2001) analyzed data from a variety of stakeholder groups collected over a 15-year period and found no evidence of an increase in preservationist or non-extractive values among the public. Instead, they found an increase over time in agreement with traditional conservation values (including use of wildlife for hunting and trapping) for male stakeholders of all types. They also found a decrease in tolerance of problems caused by wildlife, among all types of stakeholders.

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Syracuse

Olean

Watertown

Levittown

Manhattan

B-3. Quality habitats
To have more info about the impacts of zebra mussels

B-1.L. Regulation
To know that fish and wildlife managers are doing their jobs

B-2. Clean, healthy environments
To know what natural habitats exist

To have a collective understanding of the importance of discharge zones

To learn which habitats exist

B-4. Statistics and surveys
To know how estimates of fish and wildlife populations are made
To have reliable sources of statistics

To learn more about level of science that goes into DEC studies
To have detailed info about deer populations

To feel confident about the science behind fish and wildlife stocking

B-5. Opportunity for cooperation
To learn what the environmental problems are that I can help address
To personally help clean up the bay

To learn more about volunteer opportunities with DEC

To have a greater say in WMU boundaries
To have a greater say in regulations

To have more personal interactions with DEC staff through workshops

To learn more about how regs are set

Syracuse

Olean

Watertown

Levittown

Manhattan

B-6. Environmental awareness
To know whose responsibility it is to maintain streams

B-7. Educate politicians
To feel like politicians are educated about fish, wildlife, habitats

B-8. Educate public
To personally educate children about NY's resources
To feel that my neighbors are as environmentally conscious as I am

C. Quality habitat

C. Environmental awareness

C. Habitat enhancement

C. Preservation and restoration of diversity

C. Healthy ecosystems

To see extirpated wildlife restored

To not waste fish caught through the ice because they don't meet the size limits

To enjoy the outdoors without seeing trash

To see a bigger diversity of wildlife
To see a bigger diversity of freshwater species

C-1. Clean, healthy environments
To see the bottom of the bay
To not see trash in natural areas

Manhattan

To have habitats in NYS that support wildlife

To know that healthy ecosystems are being maintained

Levittown

To feel that people and wildlife are not being negatively affected by pollution and pesticides

C-2. Preservation of habitats

To enjoy wildlife in natural habitats without human domination

To find and enjoy undisturbed habitats

To see that wildlife species have continuous habitats that are not isolated

Watertown

To get help reopening drained wetlands in farmland

Olean

C-3. Game bird habitat
To see more habitat being managed for grouse

Syracuse

To fish in streams that are free-flowing and free of pollution

To observe waterfowl in natural wetland habitat

To see that native plant species are not being overtaken by exotic species

To see more habitat being managed for grouse and pheasant

D. Economic Opportunities

To make a living from commercial fishing

D. Economics

To make a living from commercial fishing

D-1. Water level management

To make a living from fishing without water being drained out from under lake ice

D-4. Furbearer management

To trap furbearers during the prime season

To make money from trapping

D-3. Nuisance wildlife mgmt

To make a living from farming without too much deer damage

D-2. Fish management

To sell perch

To not have others sell perch because I value panfishing for recreation

Manhattan

E. Nuisance Management
To not experience nuisance wildlife

Levittown

E-1. Property rights

To have more control over deer that eat crops on my property

E-2. General hunting opportunities

To not have coyotes reduce my rabbit hunting opportunities

Watertown

E. Nuisance wildlife
To not experience damage from deer

Olean

E. Nuisance wildlife mgmt
To not be bothered by coyotes (dislike)

Syracuse

E-1. Landowner privilege
To have more authority to control beaver damage on my land

E-3. Fishing management
To not be nuisanced by cormorants so I have better fishing opportunity

E. Property rights

To be able to take care of my shoreline as I see fit without needing a permit

To take care of my shore-well as I see fit without needing a permit

To improve stream and shore habitat without great personal expense

F. Landowner privilege
To clean my pond without needing a permit

Manhattan

Levittown

Watertown

Olean

Syracuse

G. Regulations
To know people and pets are safe from hunters

G. Property rights
To not be afraid on my own property because strangers are hunting there

G. Increased safety
To know where other hunters are hunting so I feel safer

G. People management
To hunt grouse on Sunday during deer season without being afraid my dog will be shot

To be able to easily report violations
To know that violators are being prosecuted

To feel more at ease about the competency of other hunters

To not see people violate fish and game laws

To not see people violate fish and game laws

G.I. Outdoor ethics

To have hunters not trespass on private property
To know who property owners are so I can seek their permission for hunting small game
To not be bothered by personal watercraft while I am fishing
To obtain information about how to be a better land steward
To be a responsible landowner

Manhattan

Levittown

Watertown

Olean

Syracuse

H. People giving assistance. H. Rehabilitation. wild resources
To have focused, hands-on interactions with wildlife and habitats
To release rehabilitated wildlife in suitable habitats
To care for wildlife properly because of better access to rehabilitation supplies

H-I. Economics
To raise orphaned wildlife without being fined

I-I. Access to resources
To fish

I-I. Public access

To fish stocked areas

I. Fishery management

To fish year-round
To catch stocked trout a couple weeks after they've been stocked

I-I. Access

To fish

To have more miles of stream in which to catch trout because riparian habitat is protected
To catch more trout in places where I used to catch many

To fish in special-regulation waters without interference from personal watercraft

Manhattan	Levittown	Watertown	Olean	Syracuse
			<u>I-2. Better quality fish</u> To catch bigger trout To do more catch and release fishing To catch desirable fish species rather than undesirable ones To catch naturally spawned fish	<u>I-3. Fishing management</u> To catch and release fish while flyfishing
		To have a high probability of catching small-mouth bass To have a higher recreational bass limit than the limit for tournaments		To bass fish

I-4. Regulations
 To trap small animals so I can use their fur for fly-tying
 To never see small animal trapping for fly-tying

J. Recreational opportunity

To have more overnight facilities along streams for large groups of canoers
 To be able to share trails with snowmobiles on WMAs
 To not be bothered by snowmobiles on WMAs
 To have access to groomed x-country ski trails on WMAs on north side of Tug Hill

J. Infrastructure maintenance



Manhattan	Levittown	Watertown	Olean	Syracuse
		To have more access to developed facilities to view wildlife on WMAs		To use public toilets on WMAs
		<u>J-1. Water level management</u> To have shoals marked so I don't hit them with my boat		

K. Recreational opportunities

To see more deer for hunting

K. Deer hunting opportunities

To see more deer while hunting in the big woods
 To shoot a doe in the Adirondacks with a muzzleloader

To have more muzzleloader opportunities in the early season

K. Deer hunting opportunities

To shoot a deer of either sex on last day of regular season without a DMP

To muzzleloader hunt in SZ prior to regular firearms deer season

To hunt deer for more days
 To use a rifle for hunting throughout the SZ
 To use a DMP throughout archery season
 To sign over my DMP to another hunter
 To not have to go through a lottery to hunt does
 To be assured of getting a DMP no matter how much land I own

K-1. Wildl. management

To hunt with a muzzleloader in the SZ before the regular gun season

To harvest wounded deer I see on my property after the close of the deer hunting season

Manhattan Levittown Watertown Olean Syracuse

K-2. Regulations
 To hunt deer with crossbows

L. Public access
 To hunt stocked pheasants
L. General hunting opportunities
 To hunt snowshoe hares
 To hunt pheasants
 To have more grouse to hunt
 To hunt geese for 6 months of the year
 To hunt turkeys for more days

L-1. Furbearer management
 To trap coyotes for a longer period of time
L-2. Other big game opportunities
 To see and hunt more bears
L-1. Regulations
 To know everyone can hunt coyotes all year round

 To know that young people are taking up hunting

M. Recreational opportunities
 To see more deer now and in the future
 To be able to watch wildlife
M. Public access
 To view wildlife
M. Birding access
 To view birds

Manhattan Levittown Watertown Olean Syracuse

N. Consumption
 To eat clams
 To be confident that I can eat what I catch
 To have fish to eat in the future
 To not eat contaminated shellfish
N-1. Information availability
 To safely eat fish I catch

O. Shellfish Harvest
 To harvest shellfish recreationally
 To clam in shallow waters
 To have more open shellfish harvesting areas

Appendix B

Characteristics of acceptable mechanisms to pay for fish and wildlife programs as identified at focus groups in Manhattan, Levittown, Watertown, Olean, and Syracuse, NY in January 1999. Characteristics are represented by lettered categories (also stated as important funding-related questions). Listed items under each category show the range of possible acceptable answers to these questions.

Manhattan	Levittown	Syracuse	Watertown	Olean
<u>A. Who should pay</u> Everyone People who use the resource	<u>A. Who pays</u> Everybody Users pay	<u>A. Who Should contribute</u> Everybody People doing the activity Potential users	<u>A. Who should pay</u> Everybody Users pay	<u>A. Who should pay</u> Taxpayers Whoever uses the resource
People who benefit from the program	All people who have a stake in the management	People who benefit from (broader than use) the resource	Non-users Anyone who benefits People who buy sporting equipment because they might benefit People who profit economically People who abuse the resource Violators Corporate sponsors	People who benefit
People who harm the resource		Individuals Corporations Good stewards Nonresidents		Lawbreakers

Manhattan	Levittown	Syracuse	Watertown	Olean
	<u>B. How much</u> Equal cost	<u>B. How much</u> The same amount	<u>B. How much should they</u>	<u>B. How muchpay</u> All pay an equal amount
	Payment should be reasonable	Contribution should be a reasonable amount	A variable amount so everybody does not pay same amount	A reasonable amount Everyone should pay a little Users pay more than nonusers
		Good stewards pay less Nonresidents pay more	People who profit economically pay a lot Violators pay a lot	

C-1. How much	C-1. How much should they contribute	C-1. How much	C. Payment should be based on what
Based on some proportion of income	Based on income	Based on ability to pay	Based on income
Based on type of resource used	Based on type of use	Based on specific use	Based on type of use
Based on type of equipment used (commercial vs. recreational)			

Manhattan	Levittown	Syracuse	Watertown	Olean
Based on amount of benefit received	Based on amount (quantity) of use	Cost proportional to amount of use Additional uses pay extra	Based on amount of resource used	Payment based on per use basis
Based on amount of time the resource is used	Based on perceived value of benefit	Cost proportional to benefit received Additional benefits pay more	Based on amount of benefit received	Based on number of days resource is used
Based on interest in the resource	Based on time (frequency) of use		Based on amount of opportunity to do activity (e.g., season length)	Based on number of different resources used
Based on amount of harm to the resource			Based on amount of impact to the resource	Based on degree of violation



Manhattan	Levittown	Syracuse	Watertown	Olean
<u>D. Why should people contribute</u> Everybody has same potential to benefit	<u>D. What's the return</u> Payers get something back Payers pay for the common good Knowledge that payers cannot monopolize benefit	<u>D. Why should I contribute</u> We all get something back For the good of all	<u>D. Why pay</u> They get something back	<u>D. Why should they contribute</u> They get something back Payments benefit the good of all
				Donators feel good because its a good cause Payers feel like their contribution is useful Payers feel like they get value for their dollar
			Because they get satisfaction	
			They have a chance to get a monetary return	

E. How is money collected
 Payment must be in universal currency, not pollution credits or other forms that are not universally available
 Method of payment must be same for everyone

E. How is money raised

Manhattan	Levittown	Syracuse	Watertown	Olean
<u>E-1. Why should people contribute</u>	<u>E-1. Why should I contribute</u>	<u>E-1. Why should I contribute</u>	User-friendly payment system	<u>E-1. Why should they contribute</u> Rewards for whistleblowers Payment is voluntary
Method is voluntary	Voluntary	Voluntary	They pay because they want to (voluntary) They pay because they have to (mandatory)	
Method is non-voluntary				
<u>E-2. How should new sources of funds be promoted</u>				
Everyone should know about mechanism so they have an opportunity to contribute				

F. When should funds be raised
 Payment should be annual
 Payment should be once in a lifetime
 Payment should be once per season

F-1. (un-named)
 Contributions need to be continuous

Manhattan	Levittown	Syracuse	Watertown	Olean
<u>G. Who decides how funds are used</u>	<u>G. Who decides how money is spent</u>	<u>G-1. Why should I contribute</u>	<u>G-1. Why pay</u>	<u>G-2. How should money be used</u>
Payers have control over where money goes	Payers have control over where money goes	Payers have control over what money is used for	They have a say in how funds are used	Disabled should decide how to use money programs that benefit the disabled Payers should have knowledge about where money goes
Payers do not control use of funds				
Everyone should know how their money is being used	Payers need to know how money is being spent			

Although the discussion focused on characteristics of an acceptable mechanism for raising funds, several issues were identified that related to allocating funds. For some people to accept certain mechanisms for raising funds, they need to find acceptable ways of allocating those funds.

Manhattan	Levittown	Syracuse	Watertown	Olean
<u>H. How are uses of funds accounted for</u> Fish and wildlife funds must go to fish and wildlife programs	<u>H. How is money spent</u> Payments must be spent on fish and wildlife programs, not general fund items Payments should be targeted at specific programs	<u>H. How are fees distributed</u> Money is used for intended use		<u>H. How should money be used</u> Money raised locally should be used in local area

I. When is money used
 Payments must be used in a predetermined amount of time (can't be stockpiled)

Appendix C: Programs for REGION 1

<u>Importance of program to public</u>	<u>Program category</u>	<u>Highest priority management actions that respondents want the Division to take</u>	<u>Outcomes that respondents want from these combinations of management actions</u>
Highest	Address concerns about human health and safety problems from fish and wildlife.	Monitor water quality. Reduce sources of contamination.	Prevent fish and wildlife from becoming contaminated so people can safely eat them.
Highest	Protect fish and wildlife populations and habitats.	Buy more land so (1) fish and wildlife have high quality habitat, and (2) "adequate" fish and wildlife populations are maintained. Regulate land uses better so (1) fish and wildlife have high quality habitats, and (2) "adequate" populations are maintained.	Help people feel confident that fish and wildlife species can continue to exist into the future. Help people feel confident that they can encounter fish and wildlife species and habitats on a regular basis.
	Tell the public what the State already is doing to protect fish and wildlife populations and habitats.	Tell the public what the State already is doing to protect fish and wildlife populations and habitats.	Increase public confidence that the State is doing the job the public expects of it.

REGION 1 (continued)

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Moderate	Address concerns about nuisance problems from fish and wildlife.	Tell the public whom to contact to take care of specific problems. Other unspecified actions also would be needed to achieve some desired outcomes.	Reduce problems in yards, gardens, and parks. Prevent less desired fish from eating other more desired fish or desired vegetation.
Moderate	Address concerns about problems caused by other people who are actively seeking fish or wildlife.	Unspecified actions would be needed to achieve desired outcomes.	Prevent mollusks from causing problems for people in lakes or bays. Prevent exotic fish or wildlife species from causing problems for native species.
Lower	Help people actively seek fish and wildlife resources.	Build developed facilities on public land. Improve access to private land.	Help people easily report violators. Let people know that violators have been prosecuted. Help people feel like they and their pets are safe from hunters.
		Provide opportunities for people to take part in studies of fish and wildlife.	Boat ramps, shooting ranges, viewing facilities, interpretive trails, access for the disabled, stock fish and wildlife.
		Protect people from other people who are actively seeking fish and wildlife.	Help people understand fish and wildlife species better. Help people feel safe when they are out actively seeking resources.

REGION 1 (continued)

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Low to most but high to commercial fishermen and related stakeholders.	Help people make a living from fish and wildlife resources.	Reduce red tape and "excessive" restrictions.	Help commercial fishermen feel like DEC supports them and is not "against them."

Appendix D: Programs for REGION 2

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Highest	Address concerns about human health and safety problems from fish and wildlife.	Monitor water quality. Reduce sources of contamination. Other unspecified actions would be needed to achieve some desired outcomes.	Prevent fish and wildlife from becoming contaminated so people can safely eat them. Allow people to safely drink water from sources that provide habitats for fish and wildlife. Help people feel safe from wildlife-related diseases.
Highest	Protect fish and wildlife populations and habitats.	Buy more land so (1) fish and wildlife have high quality habitat, and (2) "adequate" fish and wildlife populations are maintained. Regulate land uses better so (1) fish and wildlife have high quality habitats, and (2) "adequate" populations are maintained. Tell the public what the State already is doing to protect fish and wildlife populations and habitats. Provide hands-on workshops between DEC staff and the public pertaining to population estimation and habitat restoration.	Help people feel confident that habitats in the state can support fish and wildlife. Help people feel confident that healthy ecosystems are being maintained. Help people feel confident that local populations of fish and wildlife are not declining. Help people understand how fish and wildlife numbers are estimated. Help people understand which habitats are being restored. Help people know what are the <u>wild</u> species of fish and wildlife in the state.

REGION 2 (continued)

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Moderate	Address concerns about problems caused by other people who are actively seeking fish or wildlife.	Actions were not specified.	Specific desired outcomes were not identified.
Lower	Address concerns about nuisance problems from fish and wildlife.	Tell the public whom to contact to take care of specific problems. Other unspecified actions also would be needed to achieve some desired outcomes.	Reduce problems in yards, gardens, and parks. Prevent exotic fish and wildlife species from causing problems for native species.
Lower	Help people actively seek fish and wildlife resources.	Build developed facilities on public land. Improve access to private land. Tell the public what wild resources exist that they can seek, and where.	Boat ramps, shooting ranges, viewing facilities, interpretive trails, path access for the disabled.
Low to most but high to commercial fishermen and related stakeholders.	Help people make a living from fish and wildlife resources.	Protect active seekers from others who also are actively seeking resources.	Help commercial fishermen feel like DEC supports them and is not "against them."

Appendix E: Programs for REGIONS 3-4

<u>Importance of program to public</u>	<u>Program category</u>	<u>Highest priority management actions that respondents want the Division to take</u>	<u>Outcomes that respondents want from these combinations of management actions</u>
Highest	Address concerns about human health and safety problems from fish and wildlife.	Monitor water quality. Reduce sources of contamination. Other unspecified actions would be needed to achieve some desired outcomes.	Prevent fish and wildlife from becoming contaminated so people can safely eat them. Allow people to safely drink water from sources that provide habitats for fish and wildlife. Help people feel safe from wildlife diseases. Help people feel safe from the possibility of vehicle collisions with wildlife.
Highest	Protect fish and wildlife populations and habitats.	Buy more land so fish and wildlife habitats can be restored. Regulate land uses better so (1) habitats can be restored, (2) populations can be restored, and (3) exotics can be controlled. Tell the public what the State already is doing to restore habitats and populations, and to control exotics.	Specific desired outcomes were not identified.

REGIONS 3-4 (continued).

<u>Importance of program to public</u>	<u>Program category</u>	<u>Highest priority management actions that respondents want the Division to take</u>	<u>Outcomes that respondents want from these combinations of management actions</u>
Highest	Address concerns about problems caused by other people who are actively seeking fish or wildlife.	Actions were not specified.	Specific desired outcomes were not identified.
Moderate	Address concerns about nuisance problems from fish and wildlife.	Tell the public whom to contact to take care of specific problems. Provide complainants authority to take care of their own problems.	Reduce problems in yards, gardens, and parks.
Lower	Help people actively seek fish and wildlife resources.	Build developed facilities on public land. Improve access to private land.	Specific desired outcomes were not identified.
Lower	Help people make a living from fish and wildlife resources.	Management actions were not specified.	Specific desired outcomes were not identified.

Appendix F: Programs for REGIONS 5-6

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Highest	Address concerns about human health and safety problems from fish and wildlife.	<p>Monitor water quality.</p> <p>Reduce water pollution.</p> <p>Other unspecified actions would be needed to achieve some desired outcomes.</p>	<p>Prevent fish and wildlife from becoming contaminated so people can safely eat them.</p> <p>Help people feel like they are hearing "factual, nonthreatening" information about health advisories.</p> <p>Reduce vehicle collisions with wildlife.</p>
Highest	Protect fish and wildlife populations and habitats.	<p>Provide technical and monetary help to owners of private land.</p> <p>Tell people what the state already is doing to protect fish and wildlife populations and habitats.</p> <p>Regulate land uses better to prevent habitat degradation.</p>	<p>Restore drained wetlands on private land.</p> <p>Improve stream and lakeshore habitats on private land.</p> <p>Help people feel like populations and habitats are not declining in quantity and quality.</p> <p>Restore native fish and wildlife species.</p>
Highest	Address concerns about problems caused by other people who are actively seeking fish or wildlife.	<p>Actions were not specified.</p>	<p>Help private landowners feel safe on their own properties during hunting season.</p> <p>Help people feel safe from snowmobilers and jet skiers while seeking fish or wildlife on public lands.</p>

REGIONS 5-6 (continued).

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Highest	Address concerns about nuisance problems from fish and wildlife.	<p>Tell the public whom to contact to take care of specific problems.</p> <p>Give people more authority to take care of their own problems.</p> <p>Other unspecified actions would be needed to achieve some desired outcomes.</p>	<p>Reduce problems from deer on farms.</p> <p>Minimize effects of coyotes on rabbit populations.</p> <p>Prevent exotic fish or mollusks from causing problems for people in lakes or bays.</p> <p>Prevent exotic fish or wildlife from causing problems for native species.</p> <p>Reduce various nuisance problems in yards, gardens, and local parks.</p>
Lower	Help people make a living from fish and wildlife.	<p>Lower water levels in lakes before they freeze over.</p> <p>Set up trapping seasons to correspond with fur primeness.</p>	<p>Ensure that perch and other fish can be caught safely through the ice and not have the ice collapse because of low water levels.</p> <p>Ensure trappers can get top dollar from selling pelts.</p>

REGIONS 5-6 (continued).

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Lower	Help people actively seek fish and wildlife resources.	<p>Build developed facilities on public land.</p> <p>Improve access to private land.</p> <p>Provide maps and other information to sportsmen showing where to view, hunt, and fish.</p> <p>Take unspecified actions to protect and enhance riparian habitat for fish.</p> <p>Other unspecified actions would be needed to achieve some of the other desired outcomes.</p>	<p>Help people to cross private land to ice fish on public waters.</p> <p>Help people locate and have adequate parking at trail heads and on public lands.</p> <p>Help people know where fishing access sites are located.</p> <p>Allow disable sportsmen to use ATVs.</p> <p>Help people feel more confident about the science behind stocking programs for fish and wildlife.</p>
		<p>Help people feel like they have had a say in location of WMU boundaries.</p> <p>Help people feel like they have had a say in development of regulations.</p> <p>Provide more miles of stream in which anglers can catch trout.</p> <p>Increase anglers' probability of catching small mouth bass.</p> <p>Provide people with places to camp overnight along streams.</p>	<p>Help people feel like they have had a say in location of WMU boundaries.</p> <p>Help people feel like they have had a say in development of regulations.</p> <p>Provide more miles of stream in which anglers can catch trout.</p> <p>Increase anglers' probability of catching small mouth bass.</p> <p>Provide people with places to camp overnight along streams.</p>

Appendix G: Programs for REGIONS 7-9

Importance of program to public	Program category	Highest priority management actions that respondents want the Division to take	Outcomes that respondents want from these combinations of management actions
Highest	Address concerns about human health and safety problems from fish and wildlife.	<p>Monitor water quality.</p> <p>Reduce water pollution.</p> <p>Other unspecified actions would be needed to achieve some desired outcomes.</p>	<p>Prevent fish and wildlife from becoming contaminated so people can safely eat them.</p> <p>Reduce vehicle collisions with wildlife.</p>
Highest	Protect fish and wildlife populations and habitats.	<p>Regulate land uses better.</p> <p>Buy more land.</p> <p>Tell people what the state already is doing to protect fish and wildlife.</p> <p>Tell people about whose responsibility it is to maintain the quality of streams.</p> <p>Revise "illogical" ice fishing regulations.</p> <p>Provide technical and monetary assistance to private landowners.</p>	<p>Prevent exotic fish and wildlife from causing problems for native species.</p> <p>Restore "natural" habitats.</p> <p>Restore native species.</p> <p>Ensure streams, lakes, and bays are not polluted.</p> <p>Eliminate waste of fish caught through ice but which do not meet size limits.</p> <p>Help people encounter "free-flowing, unpolluted" streams.</p> <p>Help private landowners "clean" their ponds without needing permits.</p>

REGIONS 7-9 (continued).

<u>Importance of program to public</u>	<u>Program category</u>	<u>Highest priority management actions that respondents want the Division to take</u>	<u>Outcomes that respondents want from these combinations of management actions</u>
Moderate	Address concerns about problems caused by other people who are actively seeking fish or wildlife.	Inform people about the parcels on which hunters are hunting. Other unspecified actions would be needed to achieve some of the desired outcomes. Provide information about who owns various parcels so people can obtain legal access.	Help people feel safe on private and public land during hunting season. Help people feel that their pets are safe during hunting season. Help small game hunters feel like their hunting dogs are safe during deer season. Help hunters feel better about the competency of other hunters. Reduce the incidence of fish and wildlife law violations. Reduce the incidence of unintentional trespass. Help anglers to not be bothered by people on jet skis. Reduce amount of trash encountered in fields and woods.

REGIONS 7-9 (continued).

<u>Importance of program to public</u>	<u>Program category</u>	<u>Highest priority management actions that respondents want the Division to take</u>	<u>Outcomes that respondents want from these combinations of management actions</u>
Moderate	Address concerns about nuisance problems from fish and wildlife.	Tell the public whom to contact to take care of specific problems. Give people more authority to take care of their own problems. Encourage private nuisance control agents to give captured nuisance animals to food banks. Other unspecified actions would be needed to achieve some desired outcomes.	Prevent exotic fish or mollusks from causing problems for people in lakes or bays. Prevent exotic fish and wildlife species from causing problems for native species. Help anglers feel less nuisanced by cormorants. Allow private landowners to deal with their own beaver problems. Help farmers feel less nuisanced by deer. Help hunters feel less nuisanced by coyotes.
Lower	Help people actively seek fish and wildlife resources.	Build more developed facilities on public land. Improve access to private lands. Address problems caused by other people who are actively seeking wild resources. Provide more specific information about access points and parking areas.	Allow people to fish on public waters without having to pay. Provide public toilets on WMAs. Help people to more safely launch boats from access points at night. Increase year-round opportunities for people to directly interact with fish and wildlife, and to learn about them.

REGIONS 7-9 (continued).

<u>Importance of program to public</u>	<u>Program category</u>	<u>Highest priority management actions that respondents want the Division to take</u>	<u>Outcomes that respondents want from these combinations of management actions</u>
		Allow disabled hunters to hunt from ATVs and to use crossbows.	Help sportsmen feel more confident about the science behind hunting and fishing regulations.
		Allow private landowners to harvest wounded deer they see on their properties after the hunting season.	Help recreational pan fishermen to not feel threatened by commercial pan fishermen.
		Make it easier to obtain and fill DMPs by allowing (1) people who own any size parcel to get a DMP, (2) all applicants to get a DMP, (3) hunters to consign DMPs to others, and (4) allowing bowhunters to use DMPs from beginning of archery season.	Help anglers feel less nuisanced by jet skis. Allow anglers to fish year-round.
		Allow people to help with local studies of fish and wildlife.	Increase the amount of time that stocked fish persist in stocked streams. Increase opportunities to catch naturally spawned rather than stocked fish.
			Help people feel like the hunting culture is being maintained, and that youth are taking up hunting.
			Help hunters to feel like wounded animals don't have to suffer unnecessarily.
			Help sportsmen better understand how license fees are used.

REGIONS 7-9 (continued).

<u>Importance of program to public</u>	<u>Program category</u>	<u>Highest priority management actions that respondents want the Division to take</u>	<u>Outcomes that respondents want from these combinations of management actions</u>
Lower	Help people make a living from fish and wildlife.	Management actions were not specified.	Help charter boat operators feel less threatened by cormorants. Maintain opportunities for people to catch and sell panfish.