



# Visitor and Community Survey Results for Prime Hook National Wildlife Refuge: Completion Report

By Natalie R. Sexton, Susan C. Stewart, Lynne Koontz, Phadrea Ponds, and Katherine D. Walters



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# Executive Summary

This study was commissioned by the Northeast Region of the U.S. Fish and Wildlife Service (USFWS) in support of the Comprehensive Conservation Planning at Prime Hook National Wildlife Refuge (Prime Hook NWR or Refuge). The National Wildlife Refuge Improvement Act of 1997 (Public Law 105-57, USC668dd) mandates a Comprehensive Conservation Plan (CCP) for every refuge in the system. A refuge CCP outlines goals, objectives, and management strategies for all refuge programs over the next 15 years, while providing opportunities for compatible, wildlife-dependent public uses. The plan evaluates refuge wildlife, habitat, land protection, and visitor service priorities during the planning process.

The National Environmental Policy Act (NEPA; Public Law 91-190:852-859.42, U.S.C. and as Amended (P.L. 94-52 and P.L. 94-83) 42 U.S.C. 4321-4347) mandates that the CCP for each refuge must contain an analysis of social and economic conditions (the affected environment) and evaluate social and economic results from likely management scenarios. In addition, public review and comment on alternatives for future management is required. To that end, this research was conducted by the Policy Analysis and Science Assistance Branch (PASA) of the U.S. Geological Survey/Fort Collins Science Center in order to determine how current and proposed CCP planning strategies for Prime Hook NWR could affect:

- Visitor use
- Visitor experiences
- Visitor spending
- Community residents' perceptions and opinions

Data for this study were collected using a survey administered to visitors to Prime Hook NWR and individuals living in the communities surrounding the Refuge. Surveys were randomly distributed to both consumptive and nonconsumptive use visitors over a one year period (September 2004 to September 2005) to account for seasonal variation in Refuge use. Three hundred thirty-two visitor surveys were returned for a response rate of 80 percent with a confidence interval of  $\pm 5.4$ . Surveys were also distributed to a stratified random sample of community members in adjacent and surrounding areas (Slaughter Beach, Broadkill Beach, Prime Hook Beach, Milton, Lewes, Milford, and surrounding communities). Four hundred ninety-one surveys from the overall community sample were returned for a response rate of 39 percent with a  $\pm 4.4$  confidence interval. Community member results were weighted by U.S. Census Bureau data to correct for age and gender bias, and for community proportionality.

## Key Findings

### Visitor and Community Resident Profile

Most Prime Hook NWR visitors were local to the area (72 percent). Of those local visitors, about half (56 percent) were considered consumptive users (participating in hunting, fishing, or crabbing), based on the reason for their most recent visit. About 21 percent of visitors were not



from Delaware, but from the surrounding states of Pennsylvania, Maryland, and Virginia. These visitors were classified as primarily nonconsumptive users. A small proportion of visitors were from other portions of the United States and one international visitor from Germany. There was a higher percentage of male visitors (67 percent) than female visitors (33 percent).

Residents in the Milton, Milford, and Lewes areas have lived in the area for nearly 20 years on average, and most live there year round. The average age of both visitor and community respondents was lower to mid-50's, and the average education level was four years of college or technical school with an average income of \$50,000-\$74,999.

### **Trips to Prime Hook National Wildlife Refuge**

Most visitors and community residents are repeat visitors to the Refuge. This is particularly true for consumptive use visitors. Consumptive use visitors tend to visit with friends while nonconsumptive use visitors visit the Refuge with family. Visitors come to the Refuge about once a month, on average. Residents come even more often (16 times/year). Because most visitors are local, proximity is likely key to these repeated visits. They appear to use the Refuge equally on weekends and weekdays and stay from a quarter of a day to a half day. Over half of the community has attended both of the special events coordinated with the local community (Waterfowl Festival and Horseshoe Crab/Shorebird Festival).

### **Visitor and Community Resident Experience at the Refuge**

Respondents were asked questions related to their experience at Prime Hook NWR that included participation in recreation activities at the Refuge, the importance of those activities, importance of and satisfaction with visitor services and features provided at the Refuge, attachment to the Refuge as a place, and describing experiences that would bring people back to Prime Hook NWR and enhance their experience.

Wildlife observation is the primary reason most visitor and community residents' visit the Refuge and is considered a very important activity to their visit. Being in a natural, undeveloped area and experiencing a serene environment are equally important to their Refuge experience as well as the trails that afford this opportunity. These are activities that are important to consumptive and nonconsumptive use visitors. As such, there are opportunities to engage both user groups, who visit the Refuge for quite different reasons. More visitors than community members have hunted in the last 12 months on the Refuge, and of those, more were local visitors. Visitors also tended rank each of the hunting activities at higher levels of importance. Community residents participated in driving for pleasure more than visitors.

Regarding quality of services that are offered at the Refuge, visitors and community residents say "keep up the good work!" Nearly all services are meeting their expectations. The only exception is that both groups would like to see more media coverage of the Refuge and its events.

Likely because of all of these attributes, residents and visitors are fairly emotionally attached to the Refuge as a place. They identify with the Refuge for what it symbolizes to them and they agree that it is an important place for family tradition and heritage. Visitors and community residents appear to recognize the importance of the experiences they have at the Refuge and those experiences bring them back time and again. They do not appear solely dependent upon the Refuge for the activities in which they participate. Though, consumptive use visitors are more dependent upon Prime Hook NWR as a place to hunt and fish. It is important to understand why people are attached to places such as this Refuge as these meanings are related to attitudes and preferences regarding its management.

Experiences that would bring visitors and community residents back to the Refuge reflected the importance of wildlife observation, a serene environment, and Prime Hook NWR programs and staff. Many people indicated that they would not change anything about the Refuge, but some comments did give indication that improved access, particularly for hunting, would enhance their experience.

## **Hunting and Angling Experience at the Refuge**

About 35 percent of visitors indicated that they had hunted on the Refuge, with an average of 11 years spent hunting at Prime Hook NWR. Some indicated that they had been hunting in the area before the Refuge was established. Just over half of visitors rated hunting activities as moderately to very important. Hunters were asked about the desirability of changing some hunting services or regulations, but did not appear to be very interested in making changes. The most desirable of the suggested changes was the provision of areas where individuals could set up their own waterfowl blinds and more areas where portable deer stands could be used.

About 20 percent of visitors indicated that they had fished at Prime Hook NWR and had been doing so for an average of 11 years. Some anglers, like the hunters, stated that they had been fishing in the area before the establishment of the Refuge. Most visitors who engage in hunting and angling activities feel a quality experience is being provided by the Refuge.

## **Visitor Trip Spending**

Spending associated with refuge recreational activities such as wildlife viewing and hunting can generate considerable tourism activity in the local Sussex County economy. On average non-consumptive visitors spent 2-3 days in the local area with approximately three people in their group sharing expenses. Most of the nonlocal deer hunters were from other counties in Delaware; about half spent the night locally while the other half drove home after hunting. The current level of nonconsumptive use and big game hunting nonlocal visitor days accounts for over \$983,500 of spending annually in the local communities near Prime Hook NWR. Direct and secondary effects generate over \$1.21 million in local output, \$447,700 in personal income and 19.4 jobs annually in Sussex County.

## **Preferences for Refuge Management**

Visitors and community members were asked their preferences for future potential management options at Prime Hook NWR. These included opinions about how existing features and/or services should be managed, desire for potential new services, support for fees, and agreement with hypothetical management tradeoffs.

## **Visitor Services and Features**

Both visitors and community residents appear satisfied with the level of services or features currently offered by the Refuge. There were, however, a number of respondents who would like to see increases or improvements in wildlife viewing opportunities, environmental education, interpretive exhibits, and hiking/nature trails. Residents, more than visitors, were interested in seeing an increase in hiking trails and brochures and publications about Refuge resources, activities and regulations.

Desire for more wildlife viewing opportunities is further evidenced by the support for an observation tower overlooking the marsh, additional walking trails around headquarters, and roadside pull-offs. Though likely for different reasons, these improvements were supported by both

consumptive and nonconsumptive use visitors. Many of these features were either being proposed or being built at the time of the survey. Since then, all features have been completed or are in progress of being implemented.

## Support for Fees

Currently, there is no fee to visit Prime Hook NWR. Survey results indicate residents and visitors do not feel that they should have to nor would they be willing to pay to visit the Refuge. Responses were divided among agreement, disagreement and uncertainty regarding this issue, although visitors were more willing to pay a fee than community members. While opinions regarding fees sometimes change once implemented, more study would be needed if implementation of fees were to be considered at Prime Hook NWR in the future.

## Land Management Tradeoffs

Respondents were asked about their agreement with three specific management tradeoffs identified by the Refuge as important in the CCP planning: general habitat management, land acquisition, and mosquito control. The potential for conflict associated with the tradeoffs was also determined by examining the difference across responses.

Habitat management options had high agreement and low potential for conflict. However, the idea of ceasing farming to restore drained or degraded areas to natural habitat did not receive high support overall (only around half of community members and less than half of visitors agreed with this) and has a high potential for conflict. Visitors were especially polarized on this issue, with nonconsumptive use visitors much more supportive than consumptive use visitors.

Regarding land acquisition, there appears to be high support (over 80 percent agreement on all statements from both groups) and little potential for conflict over the Refuge acquiring lands, either through conservation easements or purchasing from willing sellers. Similarly, there was little disagreement over the preservation of Refuge shoreline for horseshoe crabs and migratory shorebirds, which has acquisition implications.

Options for mosquito control and management received the least agreement and have the most potential for conflict. These options also had the most visitor and community resident respondents who simply were unsure of their opinions. It appears that controlling mosquitoes *only* during a declared public health emergency is highly polarized. The polarization for visitors appears linked to differences in opinion between consumptive and nonconsumptive use visitors, with nonconsumptive use visitors more likely to recognize mosquitoes as a natural part of a healthy wetland ecosystem and in favor of control only when numbers are excessively high or when a public health emergency has been declared.

As options are developed for the CCP, understanding the acceptability of different scenarios can be helpful in developing ecologically sound management options that are socio-politically balanced, when possible. Likewise, as alternatives are implemented, it will be important to recognize potential resistance. Because, even though the development of a CCP is a public process, it is unlikely that all stakeholders will be in agreement with all management actions.

## Communication, Civic Engagement, and Trust

Respondents were asked about their participation in natural resource decision making (civic engagement) and ways in which they commonly obtain information on these topics, as well as their level of trust in both the Refuge and the U.S. Fish and Wildlife Service. Understanding individuals'

civic engagement and their trust in the managing organization to aid in public communication efforts.

Visitors to Prime Hook NWR rely heavily on friends and neighbors for news and information about the Refuge. Local residents rely mostly on newspapers followed by friends and neighbors for news and information about the Refuge. There appears to be some emerging use of the Internet for Refuge information by both visitors and community residents. These results support the importance of targeting communication strategies and outlets to different user groups of the Refuge to convey important messages.

Community residents and visitors to the Refuge have been quite engaged in natural resource decision making in the past five years, engaging in both passive activities, such as signing a petition, and active activities, such as joining a special interest group. On average, visitors and community residents have engaged in half of the activities listed in the survey. The most common activities include attending a public meeting (59 percent of visitors and half of community residents), signing a petition (59 percent of visitors and 45 percent of community residents), and joining a special interest group (about half of visitors and 41 percent of community residents).

Another factor important in public involvement in decision making is trust in the managing agency. Visitors and community residents appear to have moderate trust in Prime Hook NWR staff and the USFWS. However, nearly a quarter are unsure about their level of trust in the agency and the Refuge. A planning process such as development of the CCP is a opportunity to build relationships and improve trust not only with visitors and community residents with whom the Refuge has established relationships but also those who are less familiar with the Refuge or have not engaged in the process due to lack of trust in the agency or uncertainty of their role in the process.

Prime Hook NWR is an important place to both visitors and community members. Some of whom have been in the area and/or have been visiting the Refuge for a long time, and do so with some frequency. People are supportive of the habitat management practices suggested and of refuge land acquisition. They are unsure, however, of their level of trust in Prime Hook NWR and the USFWS. This is a community aware of and engaged in natural resources, and information is disseminated locally by print or by word of mouth. These factors lend themselves to opportunities for continued public involvement and relationship building between the Refuge and its stakeholders.

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## Introduction

The National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service (FWS), is the largest system of lands in the world dedicated to the conservation of wildlife. There are over 547 refuges nationwide, encompassing 96.5 million acres. The mission of the National Wildlife Refuge System is to “administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” Part of achieving this mission is the goal to foster “...an understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use.” Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation. About 98 percent of the system is open to the public, attracting nearly 40 million visitors annually. More than 25 million people per year visit refuges to observe and photograph wildlife, 8 million to hunt and fish, and more than half a million to participate in educational programs (The Citizen’s Wildlife Refuge Planning Handbook).

The National Wildlife Refuge Improvement Act of 1997 (Public Law 105-57, USC668dd) is the guiding legislation for the management of these lands. The Act identifies the above six wildlife-dependent recreational uses that should be given priority and provides a process for ensuring that these and other activities do not conflict with the management purpose and goals of the refuge. The Act also requires the FWS to develop a comprehensive conservation plan (CCP) for every refuge by the year 2012. A refuge CCP outlines goals, objectives, and management strategies for the refuge for the next 15 years. It provides a vision and describes desired future conditions for the refuge. These goals and objectives have focused largely on habitat and wildlife management. Increasingly, however, refuges are including visitor services goals and objectives in their CCPs to ensure that visitor appreciation and support for fish and wildlife conservation is a part of the refuge’s long-term plan.

Regardless of specific CCP goals and objectives, the National Environmental Policy Act (NEPA; Public Law 91-190:852-859.42, U.S.C. and as Amended [P.L. 94-52 and P.L. 94-83] 42 U.S.C. 4321-4347) mandates that the CCP for each refuge must contain an analysis of social and economic conditions (the affected environment) and evaluate social and economic results from likely management scenarios. In addition, public review and comment on alternatives for future management are required. There are many reasons to obtain public input besides legal mandates, however. Public input can provide baseline data on public/visitor use, experience, preferences, and expectations. It can also provide managers with a better understanding of public acceptability of

alternatives/future changes that may be proposed in the CCP. This public participation process also facilitates the engagement of a variety of stakeholders in the refuge planning process.

There is some evidence that planning processes that include a broad array of stakeholders produce more comprehensive plans that are more likely to be implemented (Burby, 2003). The challenge is structuring public involvement in ways that are meaningful and productive for agencies and the public.

Studies of public involvement processes in environmental decisionmaking have shown that participants evaluate these processes in terms of both process and outcome. Thus, stakeholders seek qualities such as accessibility and the quality of deliberation (process components) and the extent to which their participation is satisfying (outcome) (Halvorsen, 2003). An accessible process is one that provides a comfortable and convenient setting and is respectful of participants' time. Deliberative processes include open discussion and a forum for respectful exchange of opinions; a deliberative process provides opportunities for learning. Finally, a satisfying process demonstrates that decisionmakers take public input seriously, and the results of citizen input are reflected in the final decision. Other process-focused measures of success in public involvement include the presence of learning opportunities, the development of relationships among group members, and a sense of efficacy (McCool and Guthrie, 2001).

Carr and Halvorsen (2001) drew on criteria proposed by Poisner (1996) to evaluate the effectiveness of public participation in environmental decisionmaking. One interesting finding of their research was that local participants in land-use decisions were not representative of the community. Women, young people, and those with lower income and education levels participated at a lower rate than their distribution in the community. The lesson is that public managers and planners must make special efforts to promote participation by a broad range of stakeholders.

In the CCP process, the public meeting is the forum primarily used to collect citizen input. This is problematic for visitors to a refuge. Attendance at public meetings is often inconvenient or impossible for occasional visitors to refuges who frequently live long distances from the relevant FWS offices. In addition, those visitors who most often attend meetings of this type may represent a vocal minority group that is usually not representative of the full range of visitors to a given refuge. Also, the type of scientific baseline data that can be collected through this forum is limited.

Another tool that can be used to collect baseline information and input is a visitor, community, or stakeholder survey. Conducting a survey is one way that the CCP planning team can reach out to the public and collect baseline data in support of their CCP. It is an effective supplement to a public meeting when detailed information on visitors or stakeholders is needed. Survey research applied to refuge planning can help managers characterize current visitor services and experiences. It can also help managers to understand how current and proposed management activities affect individuals in terms of their preference for services and experiences and to project potential changes in visitation patterns. Finally, high-quality public-involvement processes may increase trust in government (Burby, 2003) and provide satisfaction in terms of both process and outcome.

## **Study Objectives**

This report provides a summary of results for the community and visitor surveys conducted at Prime Hook National Wildlife Refuge (Prime Hook NWR or refuge) from the fall of 2004 through fall of 2005. This research was commissioned by the Northeast Region of the U.S. Fish and Wildlife Service in support of the Comprehensive Conservation Planning at Prime Hook NWR and conducted by the Policy Analysis and Science Assistance Branch (PASA) of the U.S. Geological Survey/Fort Collins Science Center.

The purpose of this study was to determine how current and proposed CCP planning strategies for Prime Hook NWR could affect:

- Visitor use
- Visitor experiences
- Visitor spending
- Community residents' perceptions and opinions

Through meetings with planning, visitor services, and refuge staff, PASA developed survey instruments to collect data from visitors to the refuge and citizens of the local communities near the refuge. Through guidance from PASA, refuge staff implemented the surveys "on the ground."

## **Methods**

In order to develop a survey that reflected the policy-relevant public-use management issues to be addressed in the CCP planning process, we met with refuge staff in October of 2003. Detailed discussions were held with FWS Refuge and Regional Office planning personnel. The purpose of the site visit was to better understand the refuge and the planning process so that we could design a survey that was best suited to obtain the information necessary to inform the CCP process. A second purpose of the site visit was to identify the populations to be sampled.

Based on these discussions, we developed preliminary survey instruments. The survey instruments were reviewed by FWS personnel, and their comments and suggestions were incorporated. The survey instruments were then peer reviewed and pretested for readability, clarity, and conciseness before being sent through the Office of Management and Budget (OMB) for information collection approval. Comments were reviewed and suggestions were incorporated when appropriate. The survey was approved by the DOI Generic Clearance for Customer Satisfaction Surveys for OMB (OMB Control #1040-0001).

## **Populations Sampled**

Two populations were sampled for this study: visitors to Prime Hook NWR and local community residents. These populations were chosen in order to capture the feelings of the people who were known to visit the refuge and the feelings of the communities that were most likely to be affected by any implemented management options.

### **Visitors to Prime Hook National Wildlife Refuge**

A sampling protocol was set up through discussions with refuge and regional staff to ensure that a stratified random sample of visitors, representing consumptive and nonconsumptive-users, was collected. For each stratum, specific categories of use were identified to sample. For consumptive-use visitors, this included those engaging in:

- waterfowl hunting,
- deer hunting, and
- angling /crabbing.

For nonconsumptive-user visitors, this included those engaging in:

- wildlife observation,

- canoeing/kayaking, and
- attending special events.

Sampling took place from September 2004 to September 2005. Peak sampling dates were identified separately within each season (fall through summer) for each user group on the basis of peak dates of visitation activity for each category of use. We identified key locations for survey distribution to ensure to the extent possible that visitors engaging in each of the categories of use had an opportunity to participate in the study. The refuge relied on a combination of staff, members of Friends of Prime Hook NWR, and volunteer rangers to distribute surveys to visitors. Visitors were intercepted and asked to participate in the study. A log was used to record the following:

- date of intercept,
- time of intercept,
- location,
- category of use the visitor was observed participating in,
- refusals to participate (when they existed), and
- contact information for visitors who agreed to participate.

Visitors were given the survey packet, which included the survey instrument, return envelope, and a token thank-you magnet. They were asked either to fill out the survey onsite and return it at the visitor center or to fill it out at home and mail it in.

Following the Dillman Method (a dependable process for survey sampling that maximizes the quality and quantity of responses; Dillman, 2000), nonrespondents were sent a followup mailing the beginning of the following month after they received the survey onsite, and a second followup was sent a few weeks after that. Table 1 outlines the survey distribution and response rate for visitors. The distributed surveys were nearly evenly split between visitors engaging in nonconsumptive-use and consumptive-use activities. This response rate exceeds professional standards for this type of research.

**Table 1.** Visitor survey distribution and response rate for Prime Hook National Wildlife Refuge.

	<b>Total</b>
Number of surveys distributed	429
Undeliverable addresses	15
Number of returned surveys	332
Response rate	80 percent
Confidence interval ( $\pm$ ) <sup>a</sup>	5.4

<sup>a</sup>The confidence interval is the plus-or-minus error figure related to the sample size and population size and is associated with the results. For example, for a  $\pm 5$  percent margin of error, if 55 percent of the sample chooses an answer, you can be "sure" that if you had asked the question of the entire relevant population, between 50 percent (55-5) and 60 percent (55+5) would have chosen that answer.



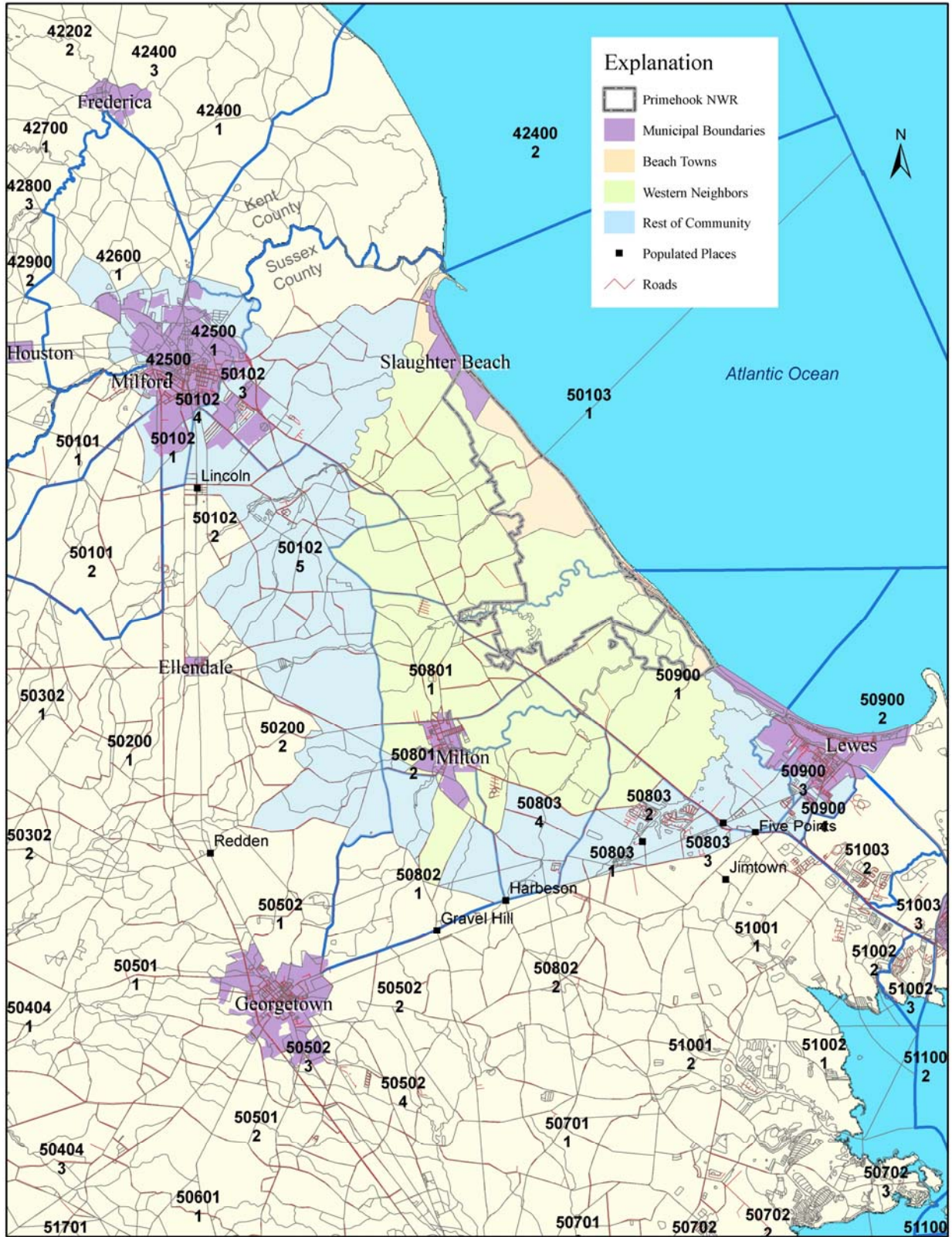
## Community Residents

To sample the local community, we used a stratified random sample. The community sampling area was identified by refuge staff, based on their knowledge of the area. The sampling polygon included towns and locations near the refuge. Once the sampling polygon was decided upon, individual communities were identified based on hypothesized differences among the areas. These were designated as individual communities so that we could investigate the existence of differences among these three areas, as was hypothesized by the refuge staff. These were broken into three strata: “beach towns,” “western neighbors,” and “rest of community” (fig. 1). The polygons for each stratum were defined through close coordination with refuge staff. “Beach town” residents included all the residents along the coast adjacent to the refuge, including Slaughter Beach, Prime Hook Beach, and Broadkill Beach. “Western neighbors” included residents in adjacent areas west of the refuge, including the town of Milton. “Rest of community” included residents beyond the “western neighbors” polygon thought to have an effect on and be affected by the refuge. This stratum included the towns of Milford and Lewes but stopped short of the beaches south of Lewes (for example, Rehoboth and Dewey Beaches). For the “western neighbors” and “rest of community” strata, a random sample of residents was purchased from Marketing Systems Group, a national marketing research firm, and consisted of individuals from a listed household database (households listed in the telephone book white pages). A limitation in the “beach town” sample was the low number of individual households that were listed in the local white pages due to the more seasonal nature of community residence. Because the population of listed households for the “beach town” residents was small (573), surveys were sent to all households with deliverable addresses, including those for which specific names were unavailable. The proportion that each community’s population contributed to the overall population within the sampling polygon was calculated in order to determine the number of people to survey in each stratum.

Following the Dillman Method, the survey packets were mailed to community respondents in the summer of 2005 with followups occurring throughout the fall of that year. Table 2 outlines the survey distribution and response rate for community residents. The overall response rate for community residents was slightly lower than expected. One reason for this may have been the unanticipated administrative glitch that occurred with the local Milton post office. This caused a significant delay in followup to nonrespondents, which according to Dillman (2000) can lower response rate. The sample size was large enough, however, to produce an acceptable margin of error. To address potential nonresponsive biases (for example, potential differences between those who responded and those who did not), we compared our demographic data to the U.S. Census data for the county and weighted our data appropriately (weighting of the community resident data is explained in greater detail herein).

**Table 2.** Community survey distribution and response rate for Prime Hook National Wildlife Refuge.

	<b>Beach towns</b>	<b>Western neighbors</b>	<b>Rest of community</b>	<b>Total</b>
Number of surveys distributed	370	520	540	1,430
Undeliverable addresses	57	38	69	164
Numbered returned surveys	178	170	143	491
Response rate	57 percent	35 percent	30 percent	39 percent
Confidence intervals	6.1	7.4	8.2	4.4



**Figure 1.** Map of three strata sampled for Prime Hook National Wildlife Refuge community survey.

## Results

Appendices A and B of this report include the survey instruments for visitor and community residents, respectively. Appendices C and D include the summary data for all of the questions in the surveys, in the order that they appear in the survey. Appendices E and F include the verbatim responses to the open-ended questions in the surveys. The body of the report focuses on the meaning of more in-depth analyses of the survey data and comparisons of the different samples. For this reason, frequency information in the appendices is, for the most part, not repeated in this portion of the report. It will be useful to reference these appendices in conjunction with the report.

### Interpreting the Data

Throughout this report, results are presented for the visitor and community surveys. Data from the visitor survey are referred to as “visitors” and data from the community survey are referred to as “community residents,” even though community residents were asked about their visitation to the refuge, and many had visited the refuge. Though our sampling design did allow for community residents to be double sampled (sent a community resident survey and then possibly asked to participate in the visitor survey when visiting the refuge during our sampling frame), this only occurred in less than 1 percent of the cases and did not affect the results.

### Visitors

The visitor sample is composed of two groups: consumptive-use and nonconsumptive-use visitors. Data were insufficient to report about specific categories of use (for example, waterfowl hunting, wildlife observation, and so forth). Steps were taken in the survey distribution process to achieve adequate subsamples of consumptive- and nonconsumptive-use visitors based on location, season, and observation. It should be noted that the categorization of consumptive- and nonconsumptive-use visitors was not based on visitor self-reporting. Regardless of *a priori* categorization, we wanted to ensure we had accurately assigned visitors into the appropriate user category for the purposes of comparing consumptive- and nonconsumptive-use visitors. In order to achieve this goal, we used the response to a question on the survey that asked visitors to identify the activity they considered their most important reason for their most recent trip. Certainly, visitors engage in other uses besides those identified on their most recent trip (for example, hunters may engage in wildlife observation or attend bird walks); however, this categorization based on most important activity allowed us to effectively compare these two groups.

The breakdown of consumptive/nonconsumptive-use respondents was 42 percent and 58 percent, respectively. Refuge estimates of the proportion of consumptive compared to nonconsumptive-users are somewhat different (roughly 10 percent and 90 percent respectively). Because these estimates could not be objectively verified, the overall visitor data were not weighted. Therefore, it is possible that the overall visitor results from this study overemphasize consumptive-users. However, consumptive and nonconsumptive-users are compared, and statistically meaningful differences<sup>1</sup> are highlighted; so where possible, we address this potential issue.

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<sup>1</sup> Meaningful differences are defined as follows for this report: While statistical differences at  $p < .05$  may exist, in some cases the differences are not practically significant. Practical significance is defined by measures of association that indicate “typical” to “substantial” statistical differences in populations as opposed to “minimal” differences due to sample size. These minimal differences, while statistically significant, have no substantive differences in regard to application to population descriptions and thus are not reported.

Visitors were also categorized as local or nonlocal, and comparisons were made between these two groups. Interestingly, the breakdown of consumptive/nonconsumptive users for local residents was similar to the overall breakdown (56 percent and 44 percent respectively). However, nonlocal visitors were primarily nonconsumptive-users (89 percent).

## **Community Residents**

For the community sample, residents from “beach town,” “western neighbors,” and the “rest of community” strata were compared. Where statistically meaningful differences exist among these groups, those differences are highlighted. Data for the community residents were weighted to account for potential sampling biases on two counts. First, data for age and gender in individual communities were compared to census data in order to check the generalizability of the sample. The community sample, in general, was older and had a greater representation of males than actually occurred in the communities according to the 2000 U.S. Census (U.S. Census Bureau, 2006). Data were weighted to reflect population age and gender proportions.

In addition, due to an overrepresentation of the “beach town” stratum because of a greater response rate, the data for the overall community were weighted to reflect the relative proportion of the three strata that comprise the community residents.

Meaningful differences between the overall visitor sample and community resident sample (for same or similar questions) are also discussed.

## **Visitor and Community Resident Profile**

Visitor and community profiles are based on questions from Section 6 of the visitor survey and Section 4 of the community survey (see Appendices C and D for frequencies).

Demographics for visitors and community residents are presented in table 3. The gender ratio of visitor and community residents differed, indicating more male visitors than male community residents. This is likely due to the high proportion of male consumptive-use visitors (97 percent) as compared to nonconsumptive-use visitors (46 percent). There were no other meaningful differences between visitor and community demographics. There were no meaningful differences in demographics among community groups.

Nearly all demographic variables measured were statistically different between consumptive and nonconsumptive-users (table 4). Consumptive-users appear to be predominantly male, younger (late 40’s as compared to 60’s for nonconsumptive-users), more likely to be employed, and less likely to be retired than nonconsumptive-users.

**Table 3.** Demographics of survey respondents [%, percent; < less than].

Demographics	Visitors	Community
Gender <sup>a</sup>	67% male/ 33% female	43% male/ 57% female
Average age	55	51
Worked full- or part-time	72%	81%
Retired	36%	28%
Average education level	Four years of college or technical school	Four years of college or technical school
Average household income	\$50, 000–74,999	\$50,000–74,999
Race <sup>b</sup>		
White	97%	96%
American Indian	1%	2%
Black or African American	2%	2%
Asian	<1%	<1%
Native Hawaiian or other Pacific Islander	0%	0%
Ethnicity Not Hispanic or Latino	99%	98%

<sup>a</sup>Meaningful statistical difference in gender,  $\chi^2 = 42.04$ ,  $p < .001$ ,  $\phi = -.23^2$ .

<sup>b</sup>Race percentages are number of responses, not number of respondents, as respondents could check more than one race.

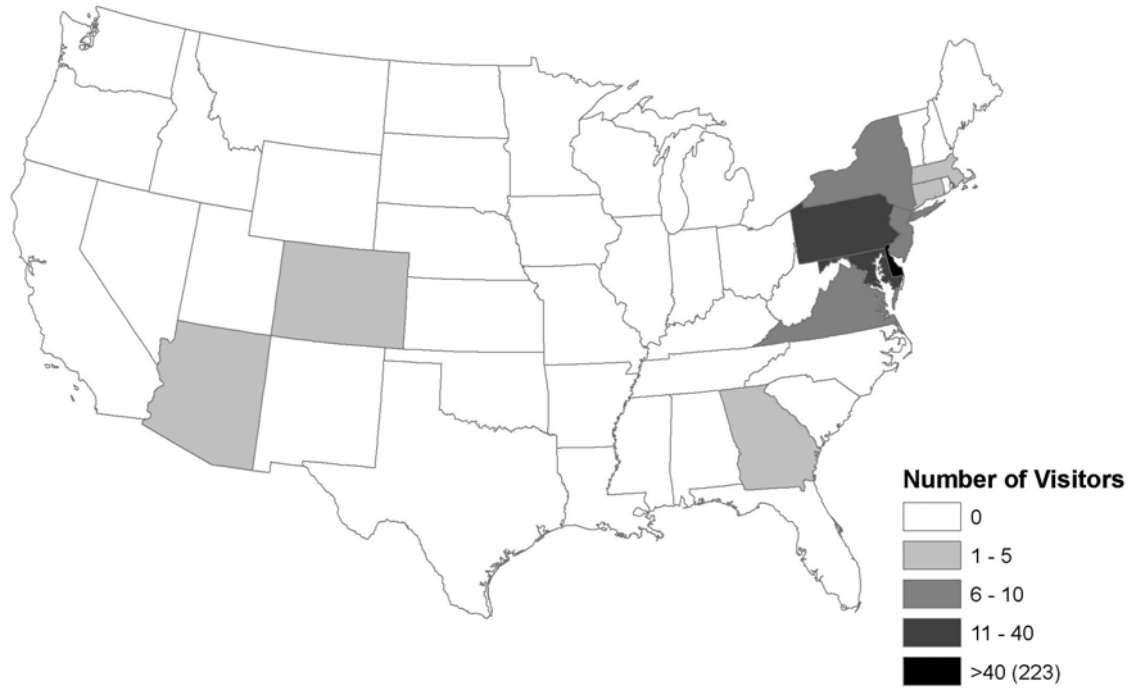
**Table 4.** Demographics of consumptive-use and nonconsumptive-use visitors where statistically meaningful differences exist.

Demographics	Consumptive-user visitors	Nonconsumptive-user visitors	Test of significant difference
Gender	97% male/ 3% female	46% male/ 54% female	$\chi^2 = 87.26$ , $p < .001$ , $\phi = -.54$
Average age	47	60	$t = 8.48$ , $p < .001$
Worked full- or part-time	83%	49%	$\chi^2 = 35.29$ , $p < .001$ , $\phi = .35$
Retired	15%	49%	$\chi^2 = 34.53$ , $p < .001$ , $\phi = -.35$
Average education level	Two years of college or technical school	Four years of college or technical school	$F = 92.53$ , $p < .001$ , $\eta = .49^3$
Average household income	\$50,000–74,999	\$50,000–74,999	No difference

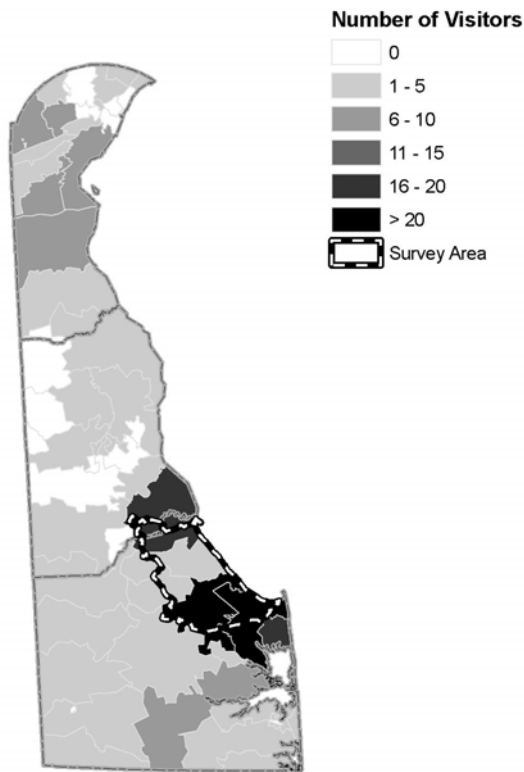
By far, the majority of visitors to Prime Hook NWR are living in the state of Delaware (72 percent; fig. 2). Nearly a quarter are living in the neighboring states of Pennsylvania, Maryland, or Virginia (21 percent). The remainder are living in other states, with one international visitor from Germany. Within Delaware, many are from areas that correspond to the community sampling area (fig. 3).

<sup>2</sup>The phi coefficient ( $\phi$ ) is a measure of the degree of association between two binary variables.

<sup>3</sup>The eta coefficient ( $\eta$ ) is a measure of the degree of mean difference between or among sample populations existing in a given dependent variable.



**Figure 2.** Residence of visitors to Prime Hook National Wildlife Refuge.



**Figure 3.** Residence of Delaware visitors to Prime Hook National Wildlife Refuge, by zip code.

Overall, nearly all community residents (95 percent) live in the area year round. About half of the “beach town” residents surveyed are part-time residents. Of the 87 community members who indicated that they were part-time residents of the Milton, Lewes, Milford area, 75 gave indication of what time of the year they resided in the area. About one-third of these individuals stated that they live part-time in the area during all seasons, and about one-third reported residing in the area only during the spring, summer, and fall. The next most common season in which part-time residents live in the area was summer.

Community residents have lived in the Milton, Lewes, Milford area for an average of 18 years; around half of residents indicated their families have lived in the area at least two generations. On average, they have lived in the area for 2½ generations, with 10 percent living in the area more than 5 generations.

Around 90 percent of community residents and 60 percent of visitors take time off from work to participate in outdoor recreation.

### **Visitor and Community Resident Trips to Prime Hook National Wildlife Refuge**

We asked respondents a series of questions regarding their trip to the refuge. Visitors were instructed to gauge their answers based on their most recent trip (when they received the survey). Community residents were asked to refer to trips made to the refuge in the past year. These trip characterizations are drawn from questions in Section 1 of the survey (see Appendices C and D).

Over three-fourths (77 percent) of visitors surveyed were repeat visitors, on average visiting 12 times per year. Visitors appear to make an equal number of trips during the week and weekend. When they visit, visitors stay a little over 4 ½ hours. For 75 percent of visitors, visiting the refuge was the primary purpose or sole destination of their trip. Seventy percent of visitors indicated they were traveling as part of a group, the majority with friends and (or) family (62 percent). A little over 50 percent of visitors travel 25 miles or less to get to the refuge. Nearly 40 percent of visitors stayed overnight within 25 miles of the refuge on their most recent trip, in private homes (likely their own; 54 percent) or a hotel/motel (28 percent).

Regarding trip differences between consumptive- and nonconsumptive-use visitors, many more consumptive-use visitors are repeat visitors (94 percent compared to 64 percent respectively;  $\chi^2 = 39.05, p < .001, \phi = -.35$ ). Visiting the refuge is also more likely to be the primary purpose of their trip (92 percent compared to 64 percent;  $\chi^2 = 32.28, p < .001, \text{Cramer's } V = .32$ )<sup>4</sup>. They also travel shorter distances to get to the refuge (around 35 minutes compared to 1 hour;  $t = 2.41, p = .02$ ). Consumptive-use visitors differ from nonconsumptive-use visitors in the type of group with which they visit the refuge. Consumptive-use visitors are more likely to visit the refuge with friends (58 percent) than were nonconsumptive-use visitors (15 percent). Nonconsumptive-use visitors are more likely to visit with family (33 percent compared to 18 percent for consumptive-use visitors) or with organized clubs or groups (20 percent compared to 0 percent for consumptive-use visitors).

For community residents, 61 percent had visited in the past 5 years, visiting an average of 16 times per year, with slightly more trips occurring during weekdays than weekends (60 percent and 40 percent respectively). The average length of stay for community residents is about 2 ½ hours, significantly shorter than for visitors ( $F = 171.02, p < .001, \eta = .33$ ). This difference could be explained by differences in activities in which visitors and community residents participate (see next section; for example, more visitors than community residents hunt, which typically involves longer visits on the refuge). Also, the questions were worded slightly differently on the two surveys—visitors were asked length of stay on their last visit while residents were asked on average

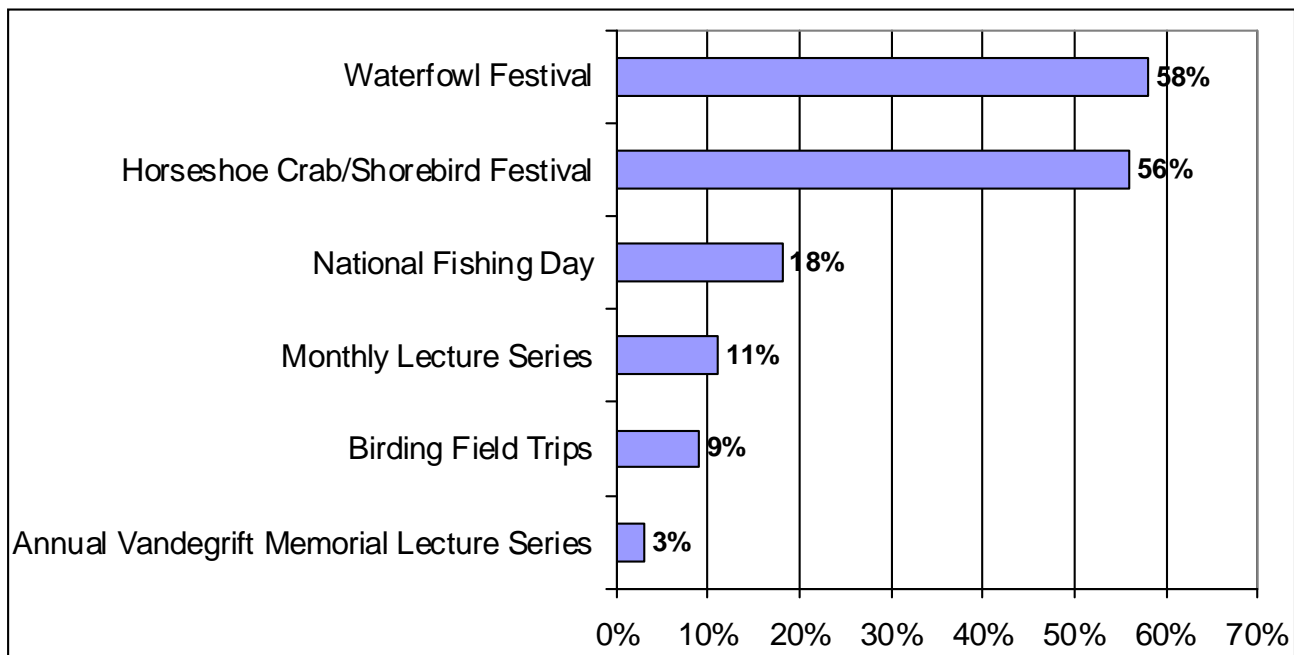
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<sup>4</sup>  $\phi$  and Cramer's  $V$  are measures of the degree of association between two nominal categorical variables.

how long they stay when they visit. Most residents have a long history of visiting—on average they have been coming to the refuge for the past 12 years, with some as long as 50 years, indicating they have been using these lands even before the refuge was established. Within the past year, attendance by community members at festival events was high (58 percent attended the Waterfowl Festival and 56 percent attended the Horseshoe Crab/Shorebird Festival). Smaller numbers of community residents attended the lecture series, birding field trips, or National Fishing Day (fig. 4).

There were meaningful statistical differences across community groups in the number who had visited in the past 5 years and average number of trips per year, with “beach town” residents having the most trip experience (82 percent visited 27 times/year on average), followed by “western neighbors” (71 percent visited 8 times/year), and then “rest of community” (58 percent visited 5 times/year).

When asked “If you have not visited Prime Hook NWR in the past 5 years, what would encourage you to visit?,” 74 respondents provided comment. Most comments were related to more information or advertising by the refuge or to the provision of certain features by the refuge, though no recurring themes related to features emerged.



**Figure 4.** Special events attended by community members at Prime Hook National Wildlife Refuge.

### **Visitor and Community Resident Experience at the Refuge**

We asked visitor and community resident respondents a series of questions related to their experience while visiting the refuge. These questions targeted five areas:

- identifying participation in recreation activities at the refuge,
- understanding the importance of those activities and the locations where they participate in them,
- understanding the importance and satisfaction regarding visitor services and features provided at the refuge,



- understanding attachment to the refuge as a place, and
- describing experiences that draw people back and aspects that would enhance the experience.

These analyses are drawn from questions in Sections 1 and 4 of the visitor survey and Section 1 and 2 of the community resident survey (see Appendices C and D).

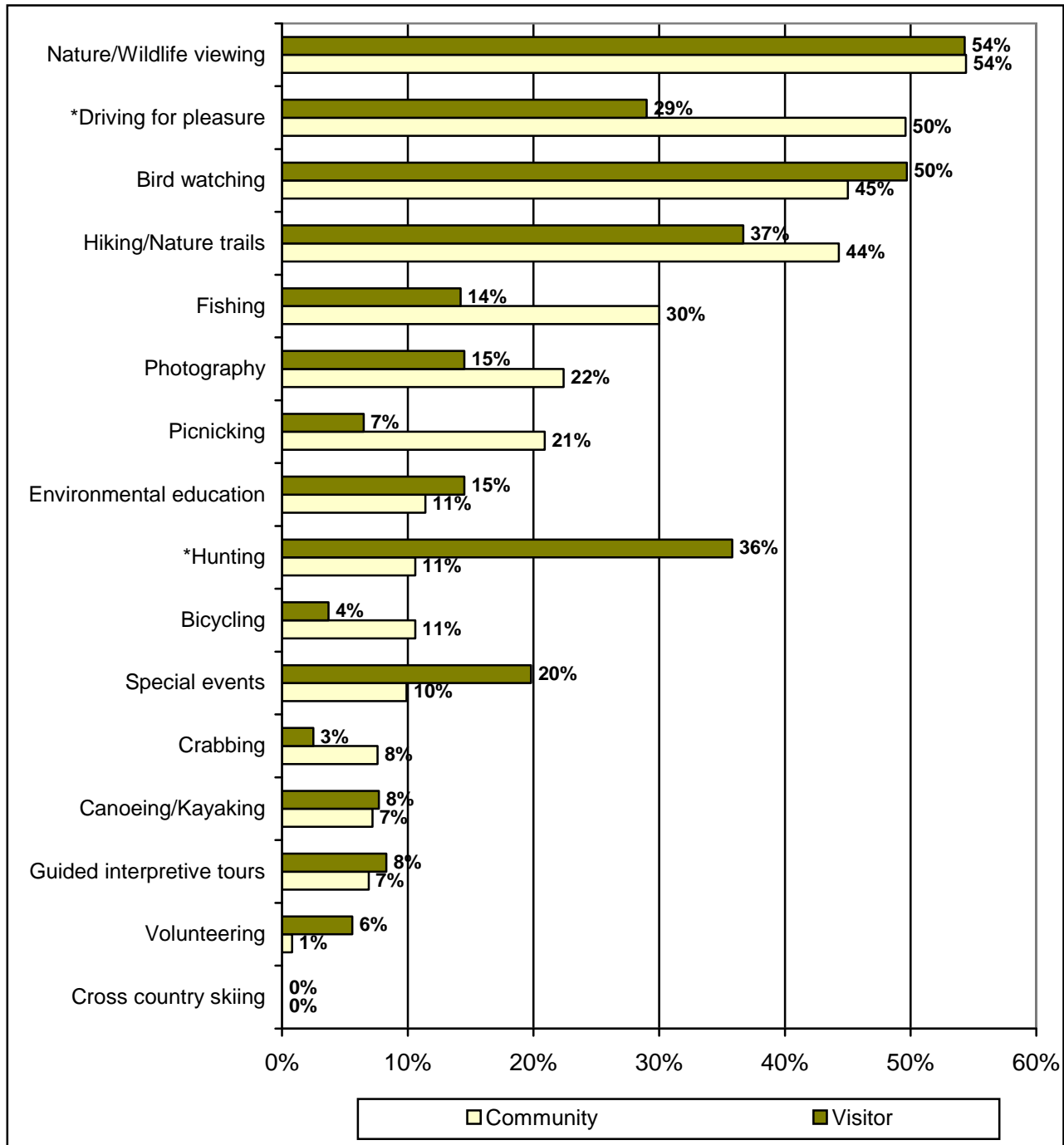
## Participation in Activities

Overall, the most frequently reported activities in which visitors participated were nature/wildlife viewing and birdwatching (fig. 5). For community residents, the activities most frequently participated in were nature/wildlife viewing and driving for pleasure, followed by birdwatching and hiking/nature trails.

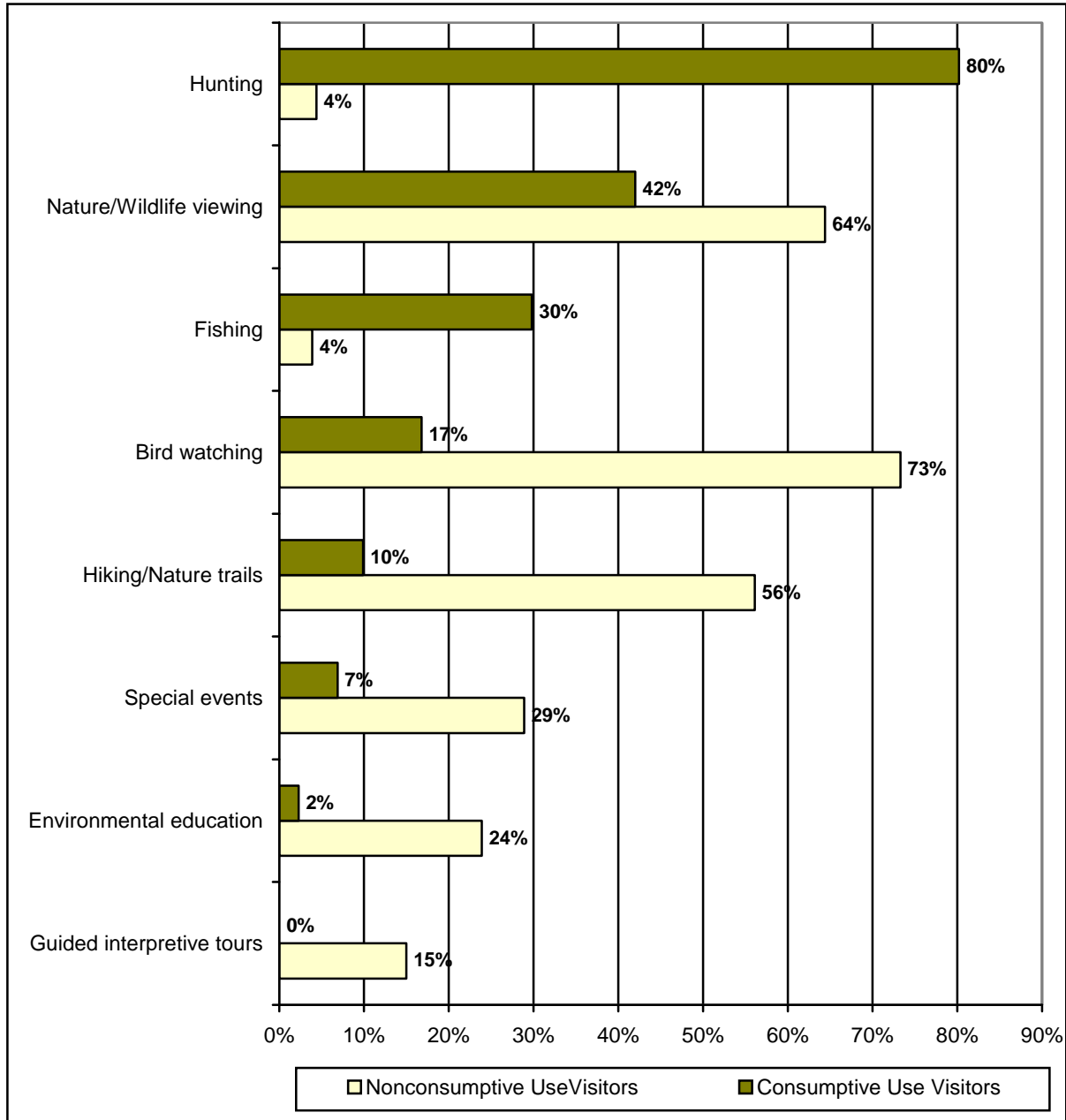
In comparing the participation in activities between community residents and visitors, there were only a few meaningful statistical differences. Significantly more visitors have hunted in the past 12 months than community residents (36 percent compared to 11 percent), with more local (48 percent) than nonlocal (7 percent) visitors hunting. Significantly more community residents drove for pleasure than did visitors during that time (50 percent compared to 29 percent).

Among community groups, “beach town” residents tend to have participated in bicycling (29 percent;  $\chi^2 = 16.25, p < .001$ , Cramer’s V = .23), canoeing/kayaking (22 percent;  $\chi^2 = 13.80, p < .001$ , Cramer’s V = .21), and special events (24 percent;  $\chi^2 = 8.67, p = .01$ , Cramer’s V = .17) more than “western neighbors” or “rest of community.” However, during the past 12 months these were activities with low participation overall.

Between consumptive- and nonconsumptive-use visitors, there were many differences in participation, with significantly more nonconsumptive visitors participating in most of the “Big 6”-related activities except hunting and fishing (fig. 6).



**Figure 5.** Activities respondents participated in during the past 12 months at Prime Hook National Wildlife Refuge. Activities with asterisks indicate meaningful statistical differences in participation between community residents and visitors. Numbers do not add up to 100 percent as respondents could select more than one activity.



**Figure 6.** Activities for which there were meaningful statistical differences in participation between visitor groups during the past 12 months at Prime Hook National Wildlife Refuge. Numbers do not add up to 100 percent as respondents could select more than one activity.

## Importance of Activities

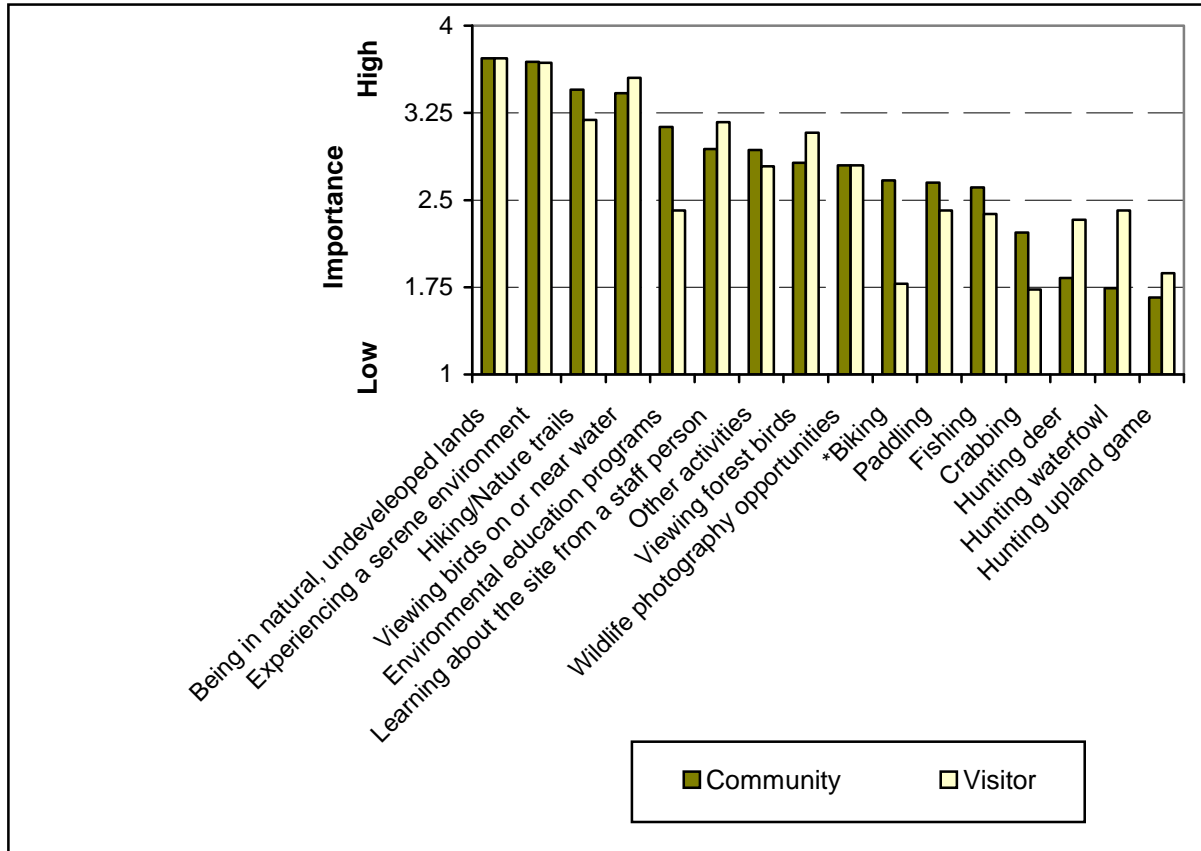
We asked respondents to rate the importance (on a scale from 1 to 4, with 1 being not important and 4 being very important) of specific priority public-use activities as identified by the Refuge Improvement Act—wildlife observation, photography, hunting, fishing, interpretation, and environmental education—and other compatible activities available at the refuge. We also asked respondents about two motivations for visiting the refuge: “experiencing a serene environment” and “being in natural and undeveloped lands.” The argument can be made that an activity such as wildlife observation can also be a motivation for other activities (such as hunting or photography). Consequently, it is best not to interpret these “importance of activity” ratings as implying that some activities are more important than others, but that some activities are more important to a larger number of respondents than others.

For visitors and community residents, “experiencing a serene environment” and “being in natural and undeveloped lands” are very important parts of their refuge experience (fig. 7). Viewing waterbirds (for example, geese, eagles, osprey, and shorebirds) is also very important both to visitors and to community residents.

Also important to visitors and community residents, but slightly less so, is learning about the site from a staff person, viewing forest birds, environmental education programs, and wildlife photography opportunities. In comparing visitors and community residents, biking is the only activity that is meaningfully different between these two groups ( $F = 61.62, p < .001, \eta = .35$ ).

In comparing consumptive- and nonconsumptive-use visitors, the mean importance of many activities differed, as would be expected (fig. 8). Not surprising, hunting waterfowl and deer is very important to consumptive-use visitors and not at all important to nonconsumptive-use visitors (for waterfowl hunting,  $F = 283.02, p < .001, \eta = .77$ ; for deer hunting  $F = 176.60, p < .001, \eta = .69$ ). As well, upland game hunting and fishing are important activities to consumptive-use visitors, but not to nonconsumptive-use visitors (for upland game hunting,  $F = 122.14, p < .001, \eta = .64$ ; for fishing,  $F = 58.72, p < .001, \eta = .44$ ). Wildlife observation of waterbirds and songbirds are more important to nonconsumptive-use visitors (for waterbirds,  $F = 36.07, p < .001, \eta = .34$ ; for songbirds,  $F = 147.97, p < .001, \eta = .62$ ). These differences are similar when comparing local to nonlocal visitors, with local visitors finding hunting and fishing more important than nonlocal visitors ( $F = 17.88\text{--}49.52, p < .001, \eta = .31\text{--}.46$ ) and nonlocal visitors finding viewing songbirds ( $F = 15.02, p < .001, \eta = .25$  and hiking ( $F = 8.44, p = .004, \eta = .20$ ) more important.

Though the differences were minimal and the means are at the lower end of importance (1.92–2.08), it is worth noting that, when comparing community groups, “western neighbors” consistently find hunting (waterfowl, upland game, and deer) more important than “beach town” residents and “rest of community” residents.



**Figure 7.** Mean importance of activities visitors and community residents participate in while visiting Prime Hook National Wildlife Refuge. Activity with asterisk indicates meaningful statistical differences between visitors and community resident ratings of importance. Responses were coded on a Likert scale from 1 (not important) to 4 (very important).

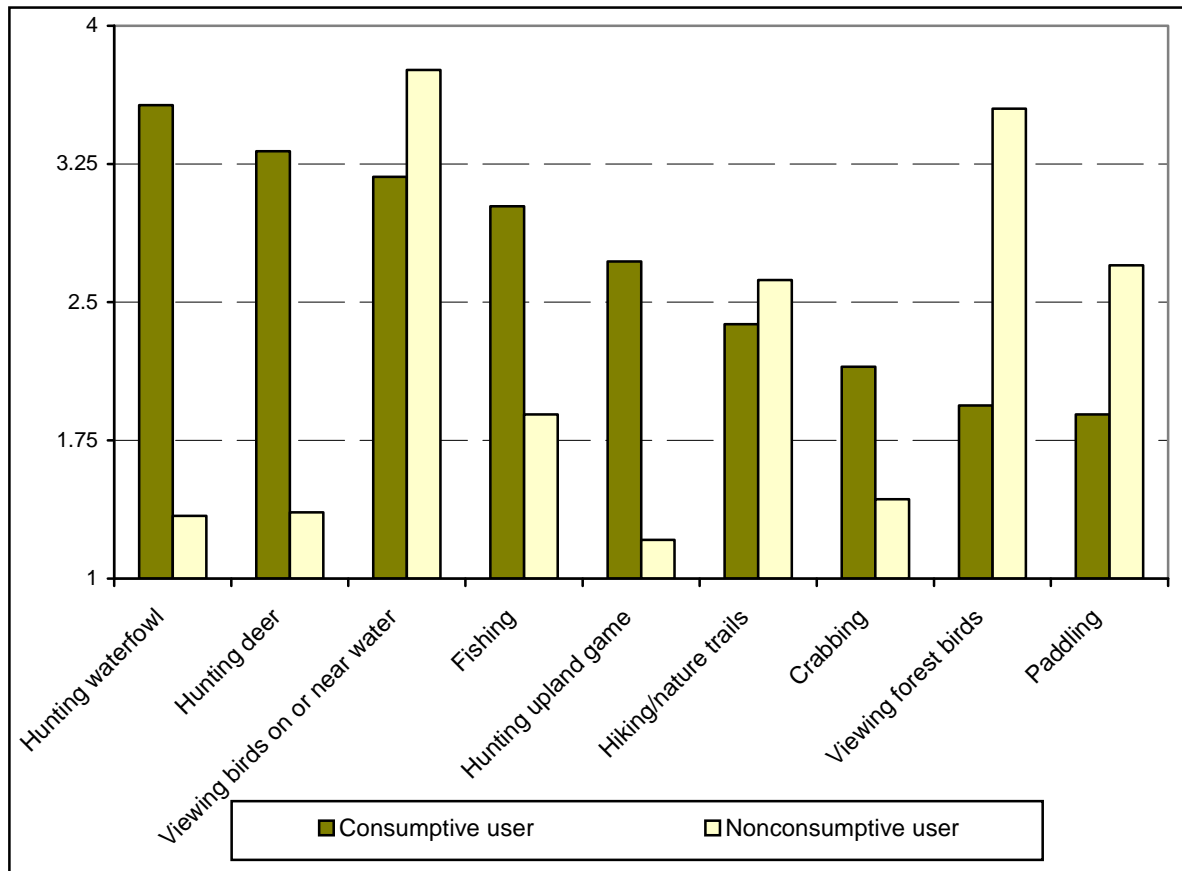
### Location of Activity

In addition to the importance of the activity, we asked respondents the general location where they usually participate in each activity. The following locations were given as choices (a map insert was provided for reference; fig. 9):

- Slaughter Beach Road
- Broadkill Beach Road
- Prime Hook Beach Road
- Fowler Beach Road

Figure 10 shows the locations where visitors participate in activities on the refuge. Figure 11 shows the same information for community residents. Both visitors and community residents appear to be participating in all activities more on Broadkill Beach Road and Prime Hook Beach Road than on Slaughter Beach Road or Fowler Beach Road. The only exception to this is the fishing trends of community residents. While Broadkill Beach Road is still the most often reported location for fishing, Slaughter Beach Road is reported by a larger percentage of residents than Prime Hook Beach Road.

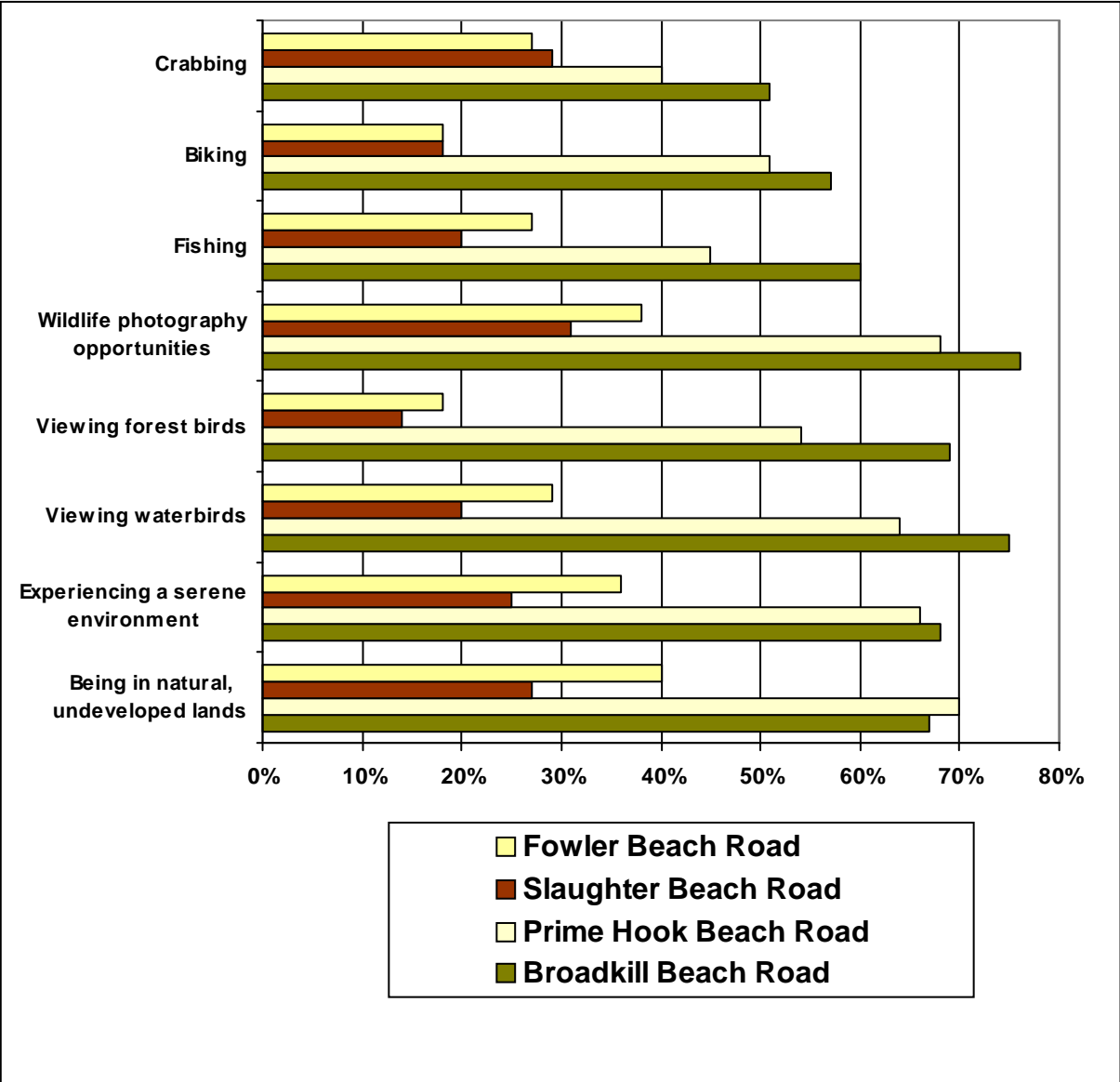
While differences in location of activities were not statistically tested between community residents and visitors, there appear to be some differences. Visitors appear to be participating in activities on Fowler Beach Road more than community residents, whereas community residents appear to be participating in activities on Slaughter Beach Road more than visitors, though as previously noted, neither of these are the most-used roads.



**Figure 8.** Activities for which there were meaningful statistical differences in importance between consumptive- and nonconsumptive-use visitors. Responses were coded on a Likert scale from 1 (not important) to 4 (very important).

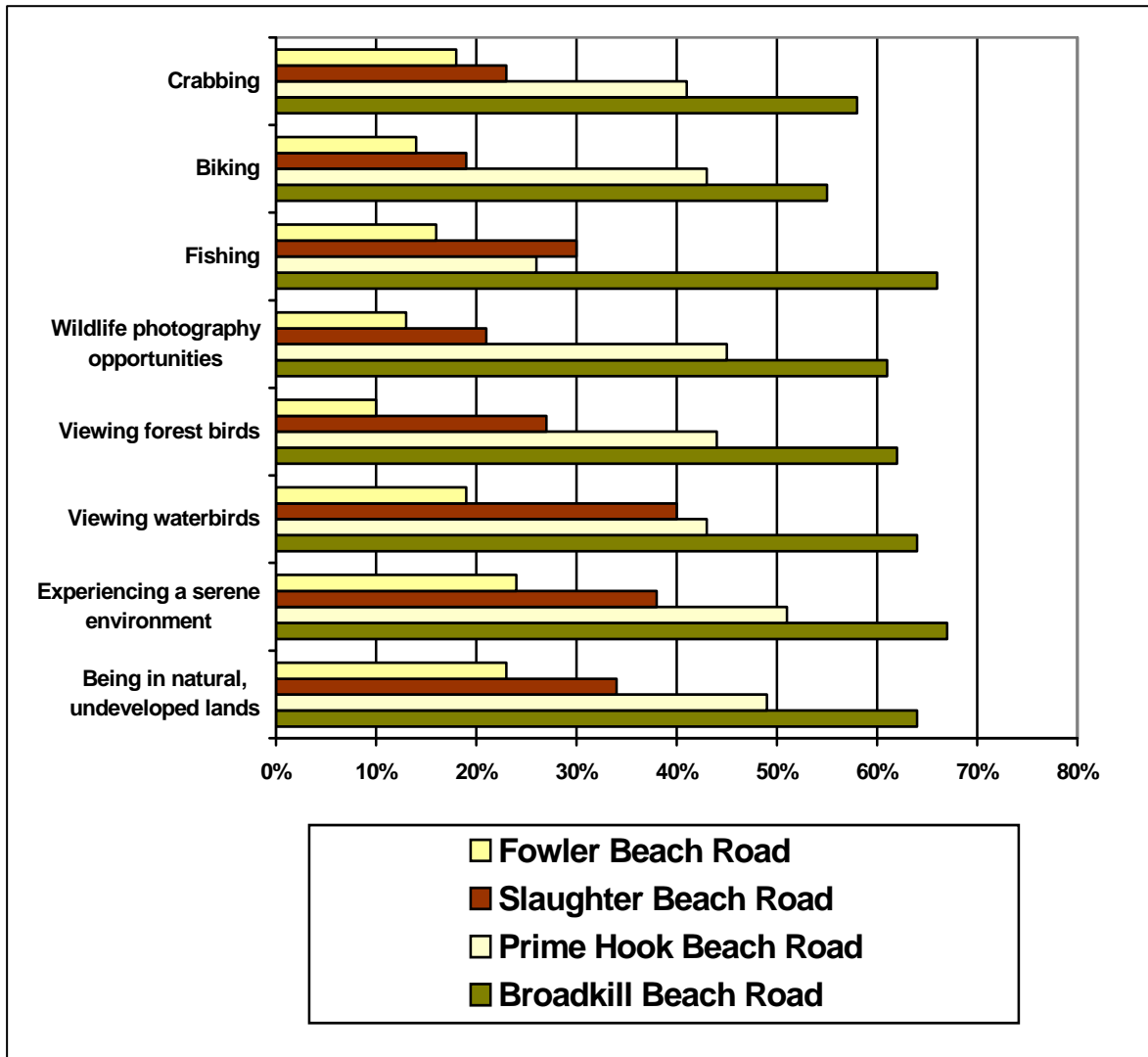


**Figure 9.** Map insert provided in survey used by respondents to identify the locations where they participate in activities on the refuge.



**Figure 10.** Location where visitors participate in activities when visiting Prime Hook National Wildlife Refuge. Numbers do not add up to 100 percent as respondents could check more than one location for each activity.

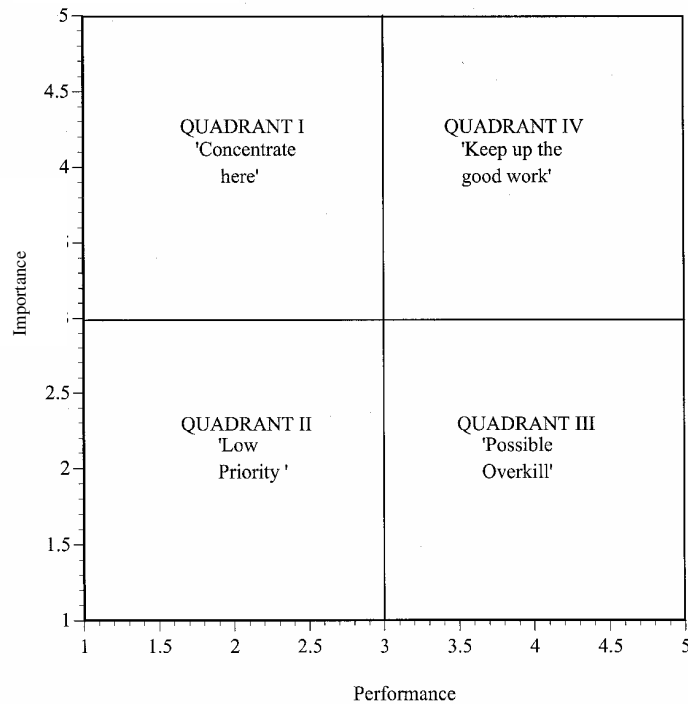




**Figure 11.** Location where community residents participate in activities when visiting Prime Hook National Wildlife Refuge. Numbers do not add up to 100 percent as respondents could check more than one location for each activity.

### Importance of and Satisfaction With Services

Respondents were asked to rate the importance of and their satisfaction with various services provided at the refuge. (Importance was rated on a scale from 1 to 4, with 1 being not important and 4 being very important, and satisfaction was rated on a scale from 1 to 5 with 1 being poor and 5 being outstanding.) Comparing the importance and satisfaction ratings for visitor services can help to identify how well the services are meeting visitor expectations. There are several ways to make this comparison. One way is through the importance-performance framework (Martilla and James, 1977; and Tarrant and Smith, 2002), where mean scores for importance and satisfaction are charted (fig. 12). This framework combines importance and satisfaction (or performance) into one model. It allows consideration of how visitors value an attribute, at the same time considering their satisfaction with the attribute. It is a tool that can be used to prioritize management decisions related to services and features. For example, a service with a “low” satisfaction rating that is very important to visitors should be given more attention than a service with a “low” satisfaction rating that is not at all important to visitors.



**Figure 12.** Importance-performance framework (Martilla and James, 1977).

As evidenced by the high mean scores for importance and satisfaction (see Appendices C and D), most of the services and features fall into the “keep up the good work” quadrant for both visitors and community residents (figs. 13 and 14).

Only one service, media coverage of the refuge, fell in the “concentrate here” quadrant, indicating high importance but low satisfaction.

Two services fell in the “possible overkill” quadrant: deer hunting and waterfowl hunting programs. The upland game hunting program also fell in this quadrant, but not definitively, bordering the “low priority” quadrant.

Similarly, availability of gift shop or bookstore items did not fall neatly in a quadrant, bordering “keep up the good work” and “possible overkill.”

Though there were virtually no differences between community residents and visitors in their importance-satisfaction ratings for services or features, there were several differences between consumptive- and nonconsumptive-use visitors and among community groups. As might be expected, consumptive-use services were rated differently by the two visitor groups, with consumptive-use visitors indicating “keep up the good work,” and nonconsumptive-use visitors indicating more attention is being paid to these services than is necessary (table 5). Again, these differences appeared to correspond to differences between local and nonlocal visitors, with local visitors identifying more with consumptive-use services than did nonlocal visitors.

**Table 5.** Importance-satisfaction rating differences between consumptive- and nonconsumptive-use visitors.

Service	Consumptive-use visitors			Nonconsumptive-use visitors		
	Importance mean	Satisfaction mean	Rating	Importance mean	Satisfaction mean	Rating
Waterfowl hunting program	4.71	3.63	Keep up the good work	1.94	3.33	Possible overkill
Deer hunting program	4.43	3.56	Keep up the good work	1.94	3.55	Possible overkill
Upland game hunting program	3.69	3.37	Keep up the good work	1.80	3.32	Possible overkill
Fishing opportunities	3.86	3.31	Keep up the good work	2.73	3.58	Possible overkill

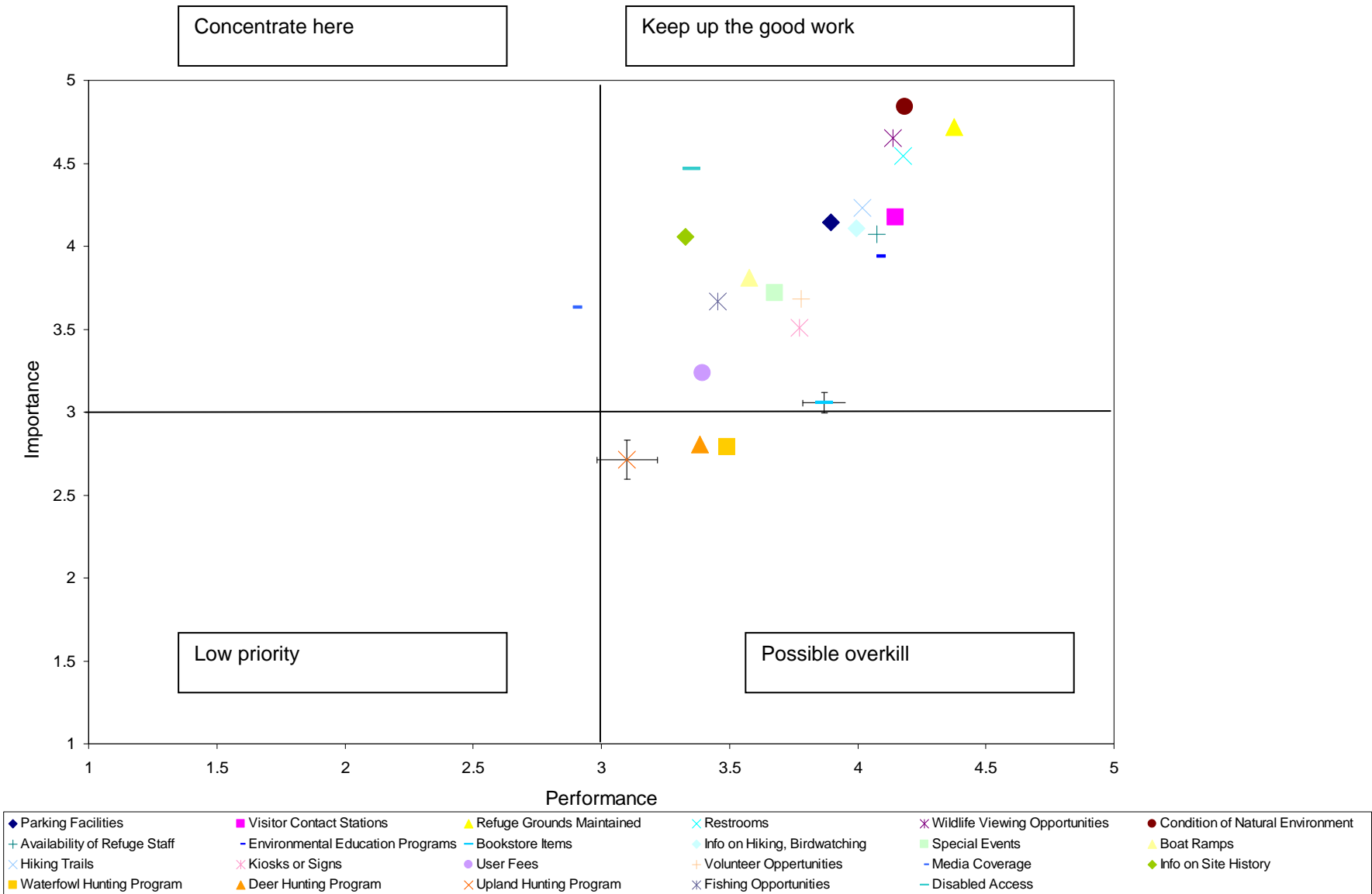
### Importance of the Refuge as a Place

With a shift from utilitarian management (management for the sole benefit and use of humans) to an ecosystem or landscape approach to public land management, there has been an effort to understand the emotional and symbolic meanings associated with natural places or landscapes and the attachments people form with these places (Williams and Stewart, 1998). This attachment or meaning may be personal or shared publicly. Williams identifies two dimensions of place attachment: “place dependence” and “place identity” (Williams and others, 1992; Jorgensen and Stedman, 2001). *Place dependence* is the functional attachment to a place, based on the activity one participates in or the goals one associates with a place. *Place identity* is the symbolic meaning one associates with a place. In addition to these two dimensions, we are testing a third dimension called *place tradition*—the importance of place to family tradition or heritage. All three aspects of place attachment were tested in these surveys. A series of statements was used to measure each of the three dimensions of place attachment (see table 33 in Appendix C), using a 5-point scale where 1 = strongly disagree and 5 = strongly agree. The statements for overall place attachment and for each of the dimensions had high internal consistency (Cronbach’s  $\alpha$ ’s ranging from .81 to .94), indicating together they effectively measure each dimension of place.

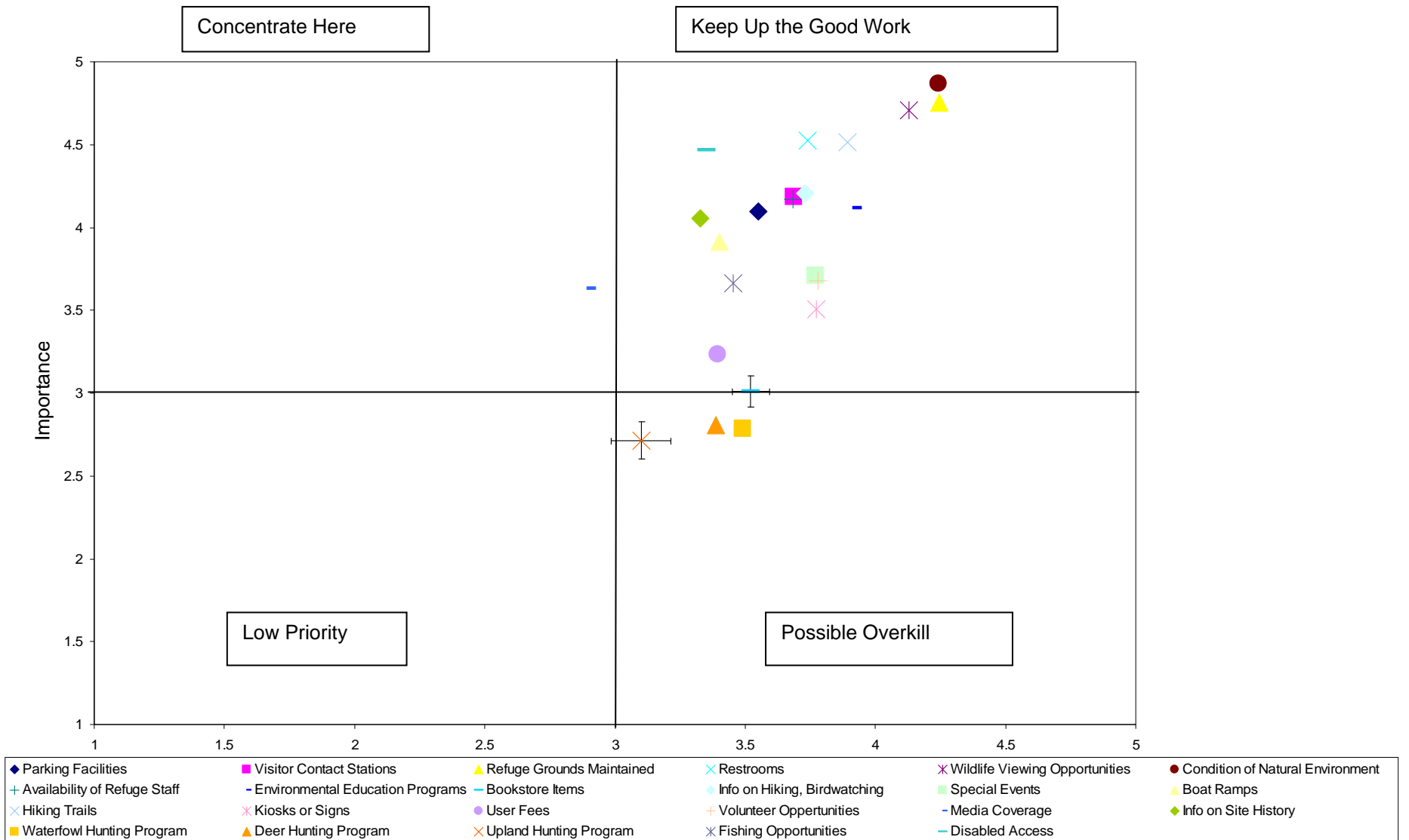
Visitors and community residents have very similar attachment to the refuge (fig. 15). They identify with the refuge as a symbolic place of meaning (0 = 3.9 for community residents and 0 = 4.1 for visitors, indicating mild agreement) and feel it is important part of family tradition and heritage (0 = 3.8 for community and 0 = 3.9 for visitors, indicating mild agreement). They are more neutral regarding their dependence on the refuge for the activities they like to do (0 = 3.4 for community and 0 = 3.6 for visitors). Though not a measure of place attachment, visitors and community residents strongly agree that because of their experiences at the refuge, they will definitely come back (0 = 4.2 for community residents and 0 = 4.7 for visitors).

Given the motivations of visits for most consumptive-use visitors (for example, hunting, angling), it follows that they would be more dependent on the refuge for the activities they like to participate in, and as such, we did see differences in the dependence dimension of place attachment between consumptive- and nonconsumptive-use visitors ( $F = 12.20, p < .001, \eta = .21$ ; fig. 16).

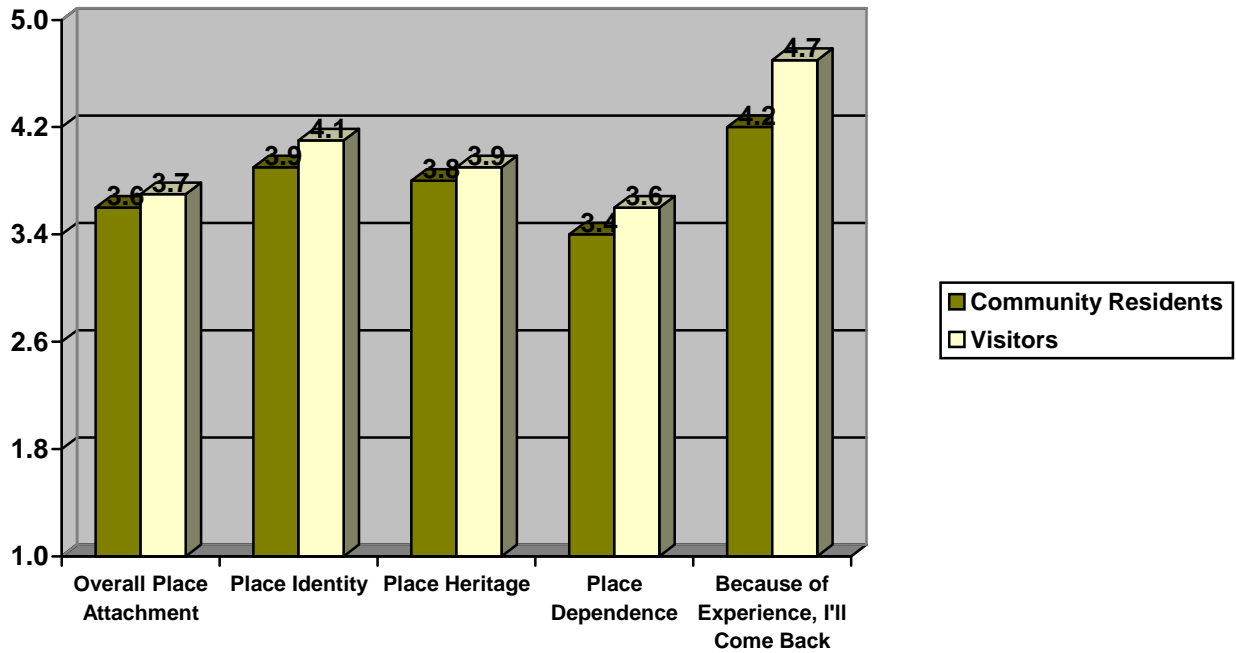
Among community groups, there were differences in place attachment as well (fig. 17), with agreement with all domains of attachment decreasing moving from “beach town” residents to “rest of community” (for identity  $F = 28.23, p < .001, \eta = .35$ ; for heritage  $F = 10.37, p < .001, \eta = .22$ ; and for dependence  $F = 22.61, p < .001, \eta = .32$ ).



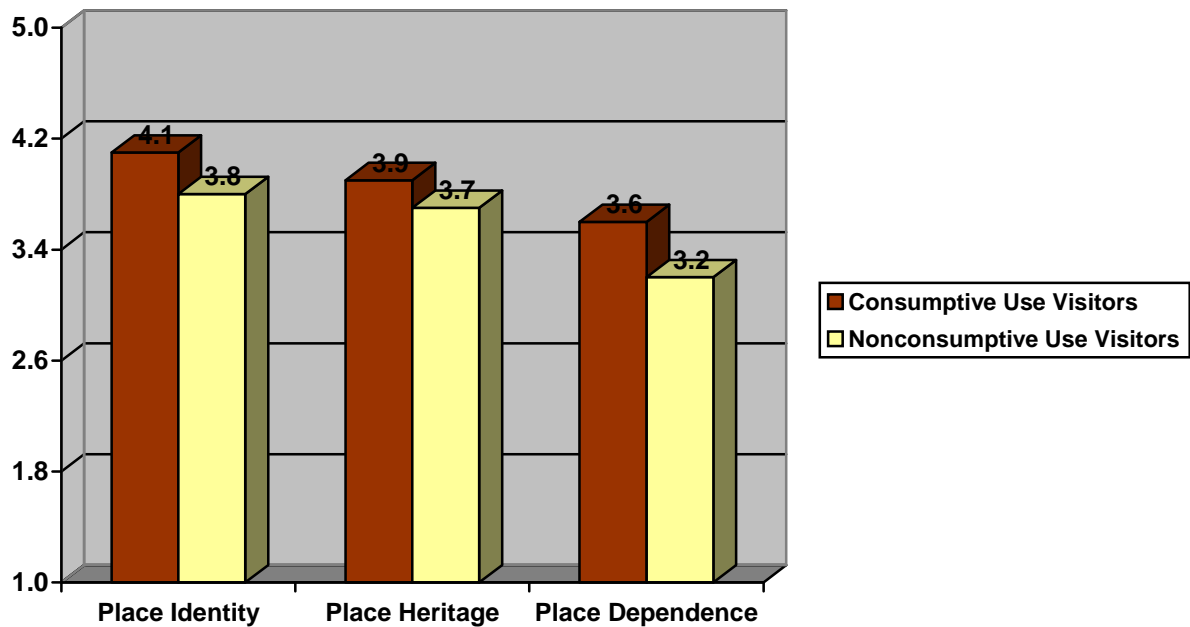
**Figure 13.** Visitors' importance-satisfaction ratings with services or features provided at Prime Hook National Wildlife Refuge. The standard error bars are shown for the services or features where the cross points do not fall fully in one quadrant.



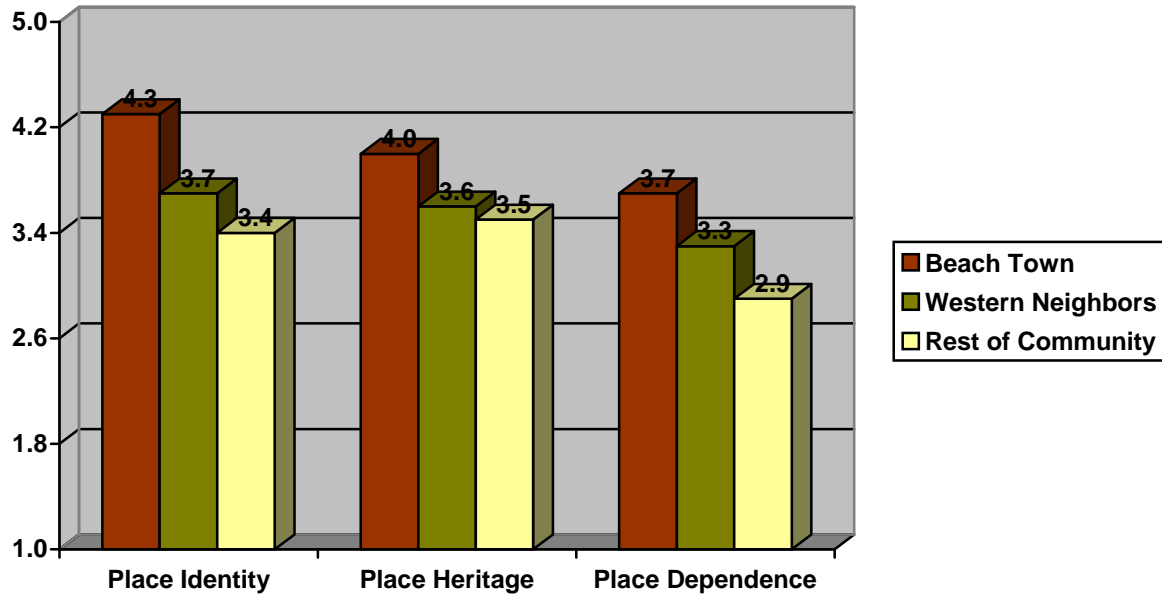
**Figure 14.** Community residents' importance-satisfaction ratings with services or features provided at Prime Hook National Wildlife Refuge. The standard error bars are shown for the services or features where the cross points do not fall fully in one quadrant.



**Figure 15.** Mean agreement with place attachment dimensions for community residents and visitors. Responses were coded on a Likert scale from 1 (strongly disagree) to 5 (strongly agree).



**Figure 16.** Mean agreement with place attachment dimensions for consumptive and nonconsumptive-use visitors. Responses were coded on a Likert scale from 1 (strongly disagree) to 5 (strongly agree).



**Figure 17.** Mean agreement with place attachment dimensions for community resident groups. Responses were coded on a Likert scale from 1 (strongly disagree) to 5 (strongly agree).

### Other Factors Affecting Experience

In an effort to enrich the results regarding refuge experience, visitors and community residents were asked to respond to two open-ended questions: “What experience have you had at Prime Hook National Wildlife Refuge that would bring you back?” and “What would enhance your experience at Prime Hook National Wildlife Refuge?” *The responses to these questions are qualitative and should be interpreted as such; however, they can inform the quantitative results of the study and provide anecdotal insight.* The categories of responses are available in Appendices C and D. The verbatim responses are available in Appendices E and F.

Regarding what would bring respondents back, many of the activities respondents rated as important were highlighted in their comments. Visitors commented most on the qualities of wildlife observation, hunting, and refuge programs and staff at the refuge. Comments capturing these sentiments include the following:

“Birding and wildlife viewing experiences and the feeling of being in a serene, undeveloped natural area.”

“Seeing bald eagles, but most importantly getting to see the thousands and thousands of snow geese in the winter. It’s why I keep coming to Prime Hook every winter.”

“Due to the hard work and efforts of the staff the waterfowl hunting is the best around!! Truly.”

“Refuge staff and volunteers that are helpful and interested in assisting Refuge visitors. Prime Hook Refuge staff and volunteers have been friendly and helpful. Thank you!”

Community residents also are drawn back by the wildlife observation opportunities. In addition, they appreciate the scenic beauty and hiking opportunities. Some of their comments include the following:

“Seeing otters come up through the ice one winter. Arrival of snow geese, shorebirds.”

“...a beautiful scenic environment where a bit of wilderness exists.”

“Walking the Prime Hook Beach. Viewing the marsh area. The marshmallows in bloom. The flocks of snow geese. Watching sunrise on bay and sunset over marsh. Looking at tiny shorebirds. Turning over horseshoe crabs. And much more.”

When asked what would enhance their experience, many visitors and community residents stated they would not change anything (12 percent of comments for residents, 10 percent for visitors). For visitors who would change something, comments focused on improved/increased access, particularly for hunting. Community residents stated improved programs and information would enhance their experience.

## Hunting and Angling Experience at the Refuge

Section 2 of the visitor survey was designed to gather information from hunters and anglers at the refuge. We wanted to be able to characterize their trip experience and assess their desire for potential future options related to hunting and fishing services.

### Hunting Experience

About 35 percent of visitor respondents indicated they hunted on the refuge and had been hunting there an average of 11 years. Some visitors have been hunting on the refuge as long as 45 years, indicating they have been using these lands since or before the refuge was established. When asked the importance of hunting activities, a little over half of responses were rated as moderately to very important (fig. 18). Dove hunting, upland game hunting, and trapping appear much less important than other hunting activities according to hunters surveyed.

When asked about desirability of changes to hunting regulations or services, ratings were not very high for most options (fig.19). Hunters do not appear to be interested in permits for stands only through a daily standby drawing (with no preseason drawing). They are also only slightly interested in adding preseason drawing for waterfowl hunting blinds (in addition to the daily standby drawing) or changing the permit issue time before shooting for waterfowl and deer to 1 ½ hours from the current 2 hours. They are more interested in the provision of more areas where portable deer stands could be used as well as areas where individuals could set up their own waterfowl blinds.

Most hunters (85 percent) feel the refuge provides a quality hunting experience. We asked them to comment on that quality experience in an open-ended response. *The responses to these questions are qualitative and should be interpreted as such; however, they can inform the quantitative results of the study and provide anecdotal insight.* The categories of responses are available in Appendices C and D. The verbatim responses are available in Appendices E and F. Ninety-two hunters responded. Numerous comments captured the positive hunting experience they have at the refuge:

“I thank you guys every time I hunt at the refuge. I don’t think I would change a thing except to get picked 1st at every lottery!!”



“It is one of the two premier duck hunting locations in Delaware. The best managed refuge within 100 miles of my residence.”

“The refuge is some of the best waterfowl hunting in our area. I look forward to many years of hunting the refuge to come.”

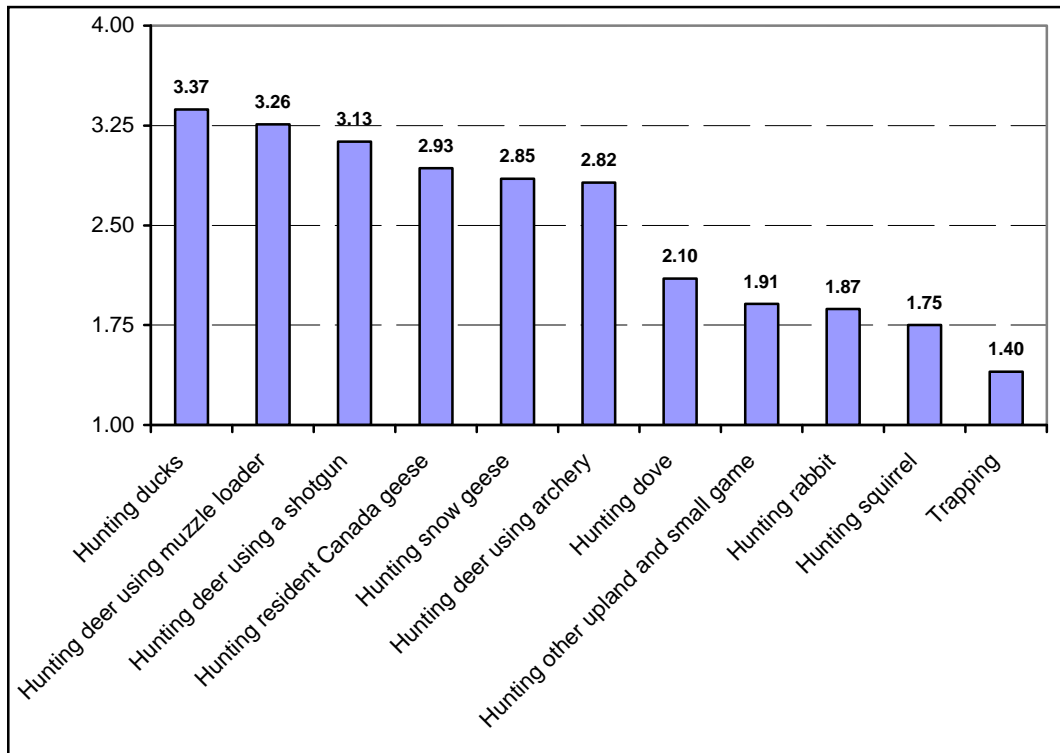
A small number of respondents mentioned crop plantings as an area that could be improved.

“Need more crops in headquarters.”

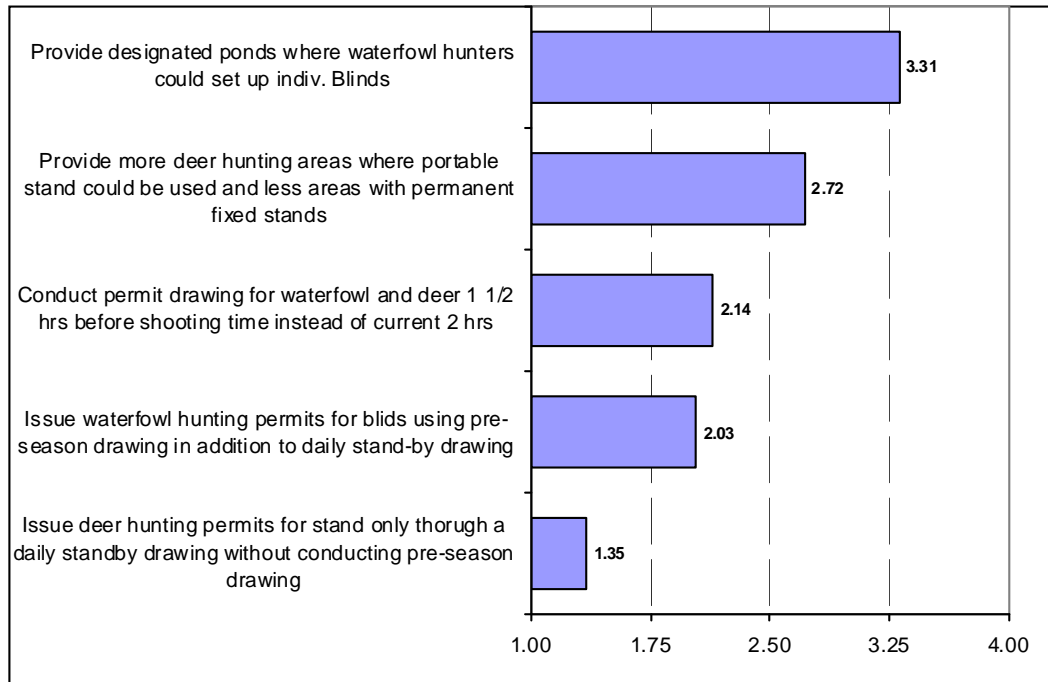
“Was better years ago when you planted crops instead of weeds, trees, and ragweed...”

“Fields need to be mowed and I will volunteer...”

“Hunting was better when land was farmed—deer were healthier.”



**Figure 18.** Mean importance of hunting activities to visitors who hunt at Prime Hook National Wildlife Refuge. Responses were coded on a Likert-type scale from 1 (not at all important) to 4 (very important).



**Figure 19.** Mean desirability of hypothetical options related to hunting on Prime Hook National Wildlife Refuge. Responses were coded on a Likert-type scale from 1 (not at all desirable) to 4 (very desirable).

### Fishing Experience

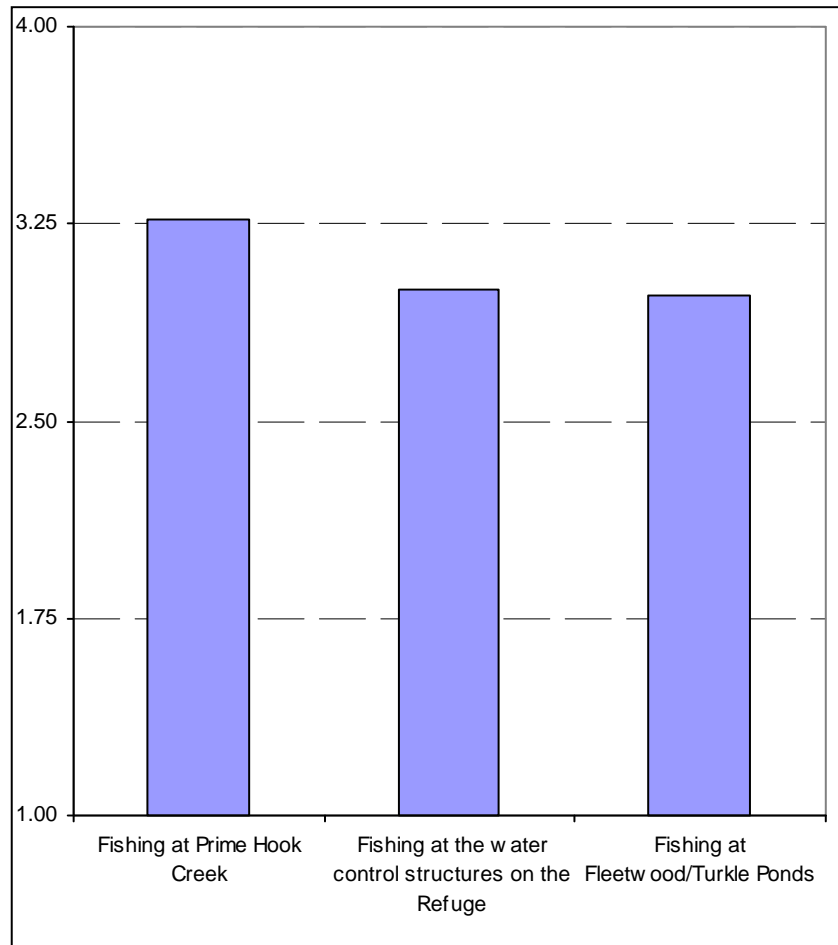
About 20 percent of visitor respondents indicated they fished on the Refuge and had been angling there an average of 11 years. Some visitors have been angling as long as 40–50 years, prior to the establishment of the refuge. When asked the importance of angling activities, all were rated as moderately important (fig. 20).

Most all anglers (89 percent) feel the refuge provides a quality fishing experience. We asked them to comment on that quality experience in an open-ended response. *The responses to these questions are qualitative and should be interpreted as such; however, they can inform the quantitative results of the study and provide anecdotal insight.* The categories of responses are available in Appendices C and D. The verbatim responses are available in Appendices E and F. Forty-seven anglers responded. Numerous comments captured the positive experience they have at the refuge:

“The ponds are excellent for fishing. Prime Hook Creek is well managed and offers excellent fishing.”

“...I take my grandkids (10 and 15) all the time and they always have a great time catching bass, perch and pickerels, great place for youngsters to spend their leisure time.”

Very few comments regarding improvements were made. A few respondents mentioned water levels and better access to some fishing areas.



**Figure 20.** Mean importance of fishing activities to visitors who fish at Prime Hook National Wildlife Refuge. Responses were coded on a Likert-type scale from 1 (not at all important) to 4 (very important).

### Visitor Trip Spending

The refuge offers a wide variety of year-round accessible recreational opportunities including wildlife viewing (on land and water), fishing, hunting, and other activities such as canoeing. Spending associated with refuge recreational activities can generate considerable economic benefits for local communities. The first step in estimating the impacts associated with visitor spending is to define the local economy surrounding the refuge. A region (and its economy) is typically defined as all counties within a 30–60 mile radius of the travel destination. Only spending that takes place within this local area is included as stimulating changes in economic activity. Prime Hook NWR is located in Sussex County, and most spending by Prime Hook visitors takes place within the local communities of Milton and Lewes. Thus, Sussex County will represent the local economic impact area for Prime Hook NWR.

## Accounting for the Number of Refuge Visitors

Annual refuge visitation estimates were based on 2005 visitation data from the FWS Refuge Annual Performance Plan (RAPP). The RAPP information is reported by refuge personnel based on several refuge statistic sources including visitors entering the visitor center/office, general observation, big game permits, as well as other methods that vary by type of visitor activity. Annual refuge visitation estimates are on a per-visit basis. Table 6 shows the RAPP refuge visitation estimates for each visitor activity.

**Table 6.** Estimated annual Prime Hook National Wildlife Refuge visitation by visitor activity. [% ,percent].

Activity	Total number of visits	Percentage of nonlocal visits	Total number of nonlocal visits	Number of hours spent at refuge	Number of nonlocal visitor days <sup>b</sup>
<b>Consumptive-use</b>					
Fishing	6,941	40%	2,776	8	2,776
Hunting: big game	749	83%	622	8	622
Hunting: migratory birds	1,271	25%	312	8	312
Hunting: upland game	42	10% <sup>a</sup>	4	8	4
<b>Nonconsumptive-use</b>					
Wildlife viewing/ photography/water use/interpretation	79,346	46%	36,839	4	18,420
Total	88,349		40,553		22,134

<sup>a</sup> Visitor percentage estimates were provided by refuge personnel when there were not enough survey respondents within a visitor activity.

<sup>b</sup> One visitor day = 8 hours.

To determine the effects of visitor spending within the local economic impact area, only spending by persons living outside the local area of Sussex County are included in the impact analysis. The rationale for excluding local visitor spending is twofold. First, money flowing into Sussex County from visitors living outside the local area (hereinafter referred to as nonlocal visitors) is considered new money injected into the local economy. Second, if residents of Sussex County visit Prime Hook NWR more or less due to the management changes, they will correspondingly change the spending of their money elsewhere in Sussex County, resulting in no net change to the local economy. These are standard assumptions made in most regional economic analyses at the local level. Based on the visitor survey results, refuge visitors were split equally between local Sussex County visitors and nonlocal visitors. Table 6 shows the percentage breakdown of refuge visitors by place of residence for each visitor activity. If there were not enough survey respondents within a visitor activity to estimate the percentage of visitors by residence, estimates were adjusted by refuge personnel.

Visitor spending typically is estimated on an average per-day (8 hours) or average per-trip basis. Refuge RAPP visitation records account for visitors on a per-visit basis. Because some visitors only spend short amounts of time on the refuge, counting each refuge visit as a full visitor day would overestimate the economic effect of refuge visitation. A deer hunter spending a full day

hunting on the refuge is counted as one visit in RAPP. Likewise, a birdwatcher spending two hours on the refuge is also counted as one visit in RAPP. In order to properly account for the amount of spending associated with each type of refuge visitor, the annual number of nonlocal refuge visits were converted to visitor days. Survey results were used to determine the average amount of time spent for each visitor activity. On average, nonlocal nonconsumptive visitors spent approximately 3 ½ hours per trip (which was rounded up to 4 hours), while nonlocal hunting and fishing visitors spent a full 8-hour day per trip. As shown in table 6, the number of nonlocal refuge visits estimated from RAPP was converted to visitor days for each visitor activity.

## Accounting for the Economic Effects of Visitor Spending

A tourist usually buys a wide range of goods and services while visiting an area. Major expenditure categories include lodging, food, supplies, and gasoline. Refuge management activities can affect the number and type of visitors. As more visitors come to an area, local businesses will purchase extra labor and supplies to meet the increase in demand for additional services. The income and employment resulting from visitor purchases from local businesses represent the *direct* effects of visitor spending within the economy. In order to increase supplies to local businesses, input suppliers must also increase their purchases of inputs from other industries. The income and employment resulting from these secondary purchases by input suppliers are the *indirect* effects of visitor spending within the local economy. The input supplier's new employees use their incomes to purchase goods and services. The resulting increased economic activity from new employee income is the *induced* effect of visitor spending. The indirect and induced effects are known as the secondary or multiplier effects of visitor spending. Multipliers capture the size of the secondary effects, usually as a ratio of total effects to direct effects (Stynes, 1998). The sums of the direct and secondary effects describe the total economic effects of visitor spending in the local economy.

The economic effects associated with spending by refuge visitors are estimated by the following equation:

$$\text{Number of refuge visitors} \times \text{average spending} \times \text{regional multiplier} = \text{Economic effect}$$

The number of nonlocal visitors (Table 6) was calculated by using the RAPP report and visitor survey results. Survey results on visitor spending will provide the average spending. Ideally, average nonlocal visitor spending profiles for each visitor activity would have been created from the visitor survey results on trip expenses. Splitting up the sample of survey respondents by visitor activity and then by local and nonlocal visitors resulted in having only a few or no respondents for some of the nonlocal visitor activities. As a result, it was only possible to create spending profiles for nonlocal visitors participating in nonconsumptive-use activities and nonlocal big game hunting.

Economic effects are typically measured in terms of number of jobs lost or gained, and the associated result for employment income. Economic input-output models are commonly used to predict the total level of regional economic activity that would result from a change in visitor spending. IMPLAN is a computerized database and modeling system that provides a regional input-output analysis of economic activity in terms of 10 industrial groups involving as many as 528 sectors (Olson and Lindall, 1999). The IMPLAN modeling system was used to derive the multipliers that capture the secondary (indirect and induced) effects needed to determine the economic effects of visitor spending. The IMPLAN Sussex County data profile for the year 2003 was used in this study. The IMPLAN employment data estimates were comparable to the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System data at the 1-digit Standard Industrial Code level for the year 2003. IMPLAN's regional purchase coefficients were adjusted to better reflect typical nonlocal visitor spending patterns.

Regional economic effects from the IMPLAN model are reported for the following categories:

- **Local output** represents the change in local sales or revenue.
- **Personal Income** represents the change in employee income in the region that is generated from a change in regional output.
- **Employment** represents the change in number of jobs generated in the region from a change in regional output. IMPLAN estimates for employment include both full-time and part-time workers, which are measured in total jobs.

In the survey, we asked respondents to “indicate the amount you and members of your group with whom you shared expenses (for example, other family members, traveling companions) spent on your most recent visit” to the refuge. Table 7 illustrates the average amount spent in Sussex County by nonlocal refuge visitors. Amounts of spending are the average expenditures nonlocal visitors reported spending in the local area near the refuge. Not every group had expenditures in every category, so the numbers reported in table 7 represent an average across all visitors within each visitor activity, including some who had no expenditure in that category. The expenditures reported in each category were divided by the number of persons in each group sharing the expenses (as shown in table 8) and then divided by the number of days spent in the local area to determine the average spending per person per day. Table 7 shows that, on average, nonlocal nonconsumptive-use visitors spent the most on hotels, restaurants, grocery stores, and gasoline in the local communities near the refuge, and nonlocal deer hunters spent the most on hunting expenses (including daily permit fee), restaurants, and gasoline. Average spending per person per day averaged \$50 for nonconsumptive-use visitors and \$87 for big game hunters.

**Table 7.** Average nonlocal visitor spending for Prime Hook National Wildlife Refuge.

Nonlocal spending in Sussex County	Nonconsumptive-use visitors		Deer hunters	
	\$ per group per trip	\$ per person per day	\$ per group per trip	\$ per person per day
Gasoline/related automobile costs	23.26	3.13	12.67	11.52
Hotels	197.08	26.54	12.44	11.31
Camping	3.45	0.46	0.23	0.21
Restaurants	77.30	10.41	17.58	15.98
Grocery stores	27.08	3.65	5.58	5.07
Supplies and souvenirs	26.54	3.57	2.67	2.43
Taxidermy	0.00	0.00	0.00	0.00
Game processing	1.32	0.00	9.42	8.56
Bait/fishing tackle	16.84	2.27	10.60	9.64
Other fishing/hunting expenses	2.37	0.32	24.69	22.44
Equipment rental	0.66	0.09	0.00	0.00
<b>Total spending</b>	<b>375.89</b>	<b>50.45</b>	<b>95.89</b>	<b>87.16</b>

On average nonconsumptive visitors spent 2 to 3 days in the local area with approximately three people in their group sharing expenses (table 8). Most of the nonlocal deer hunters were from

other counties in Delaware; about half spent the night locally, and the other half drove home after hunting.

**Table 8.** Average time spent and number sharing expenses for visitor activities at Prime Hook National Wildlife Refuge.

	<b>Nonconsumptive</b>	<b>Deer hunting</b>
Average time spent in the local area	2.75 days	1 day
Average number of people in group sharing expenses	2.7	1.1

The current level of nonconsumptive-use and big game hunting nonlocal visitor days accounts for over \$983,500 of spending annually in the local communities near Prime Hook NWR. The resulting effects of nonlocal visitor spending on the local economy are presented in table 9. As shown in table 9, it is estimated that the direct and secondary effects generate over \$1.21 million in local output, \$447,700 in personal income, and 19.4 jobs annually in Sussex County.

**Table 9.** Annual economic impacts of nonlocal deer hunter and nonconsumptive-use visitor spending in Sussex County (2005, \$,000).

<b>Prime Hook National Wildlife Refuge</b>	<b>Nonconsumptive</b>	<b>Deer hunting</b>	<b>Total</b>
<b>Direct effects</b>			
Local output (\$/year)	\$829.2	\$45.8	\$874.9
Income (\$/year)	\$321.8	\$21.5	\$343.2
Jobs	15.0	0.7	15.7
<b>Secondary effects</b>			
Local output (\$/year)	\$318.7	\$17.7	\$336.4
Income (\$/year)	\$99.0	\$5.4	\$104.4
Jobs	3.5	0.2	3.7
<b>Total effects</b>			
Local output (\$/year)	\$1,147.8	\$63.5	\$1,211.3
Income (\$/year)	\$420.8	\$26.9	\$447.7
Jobs	18.5	0.9	19.4

### **Visitor and Community Resident Preferences for Refuge Management**

In an effort to better understand visitors’ and community residents’ preferences for various potential management options, we asked respondents a series of questions related to refuge management. These included:

- opinions about how certain existing services and(or) features should be managed to maximize experience at the refuge,
- desire for the potential new services,
- support for fees,
- opinions regarding specific uses that should be and should not be allowed at the refuge, and
- agreement with habitat management tradeoffs.

These analyses are drawn from questions in Sections 4 and 5 of the visitor survey and Sections 2 and 3 of the community resident survey (see Appendices C and D).

## Management of Services

Respondents were asked how 15 features and (or) services provided at the refuge should be managed. For each feature, they were asked if it should be decreased/minimized, left as is, or increased/improved (fig. 21). This question ties closely to the “importance-satisfaction” of services ratings described earlier and is meant to further refine the results of that question. For most services or features, the majority of both community residents and visitors feel they should be *left as is*. However, there were several features where a strong contingent ( $\geq \sim 30\%$ ) of both residents and visitors feel a change in management is warranted. These features were:

- naturalness (restore more natural conditions),
- hiking trails (provide more),
- environmental education opportunities (provide more programs and activities),
- interpretive exhibits (provide more),
- wildlife observation/photography opportunities (provide more facilities such as blinds and walkways),
- restrooms/comfort stations (provide more facilities along rivers and parking areas),
- visitor numbers (encourage more visitation).

Residents and visitors were more evenly split on how to manage visitor impacts on wildlife. As can be observed from Figure 21, there were few differences in opinion between visitors and community residents. More residents than visitors would like to see an increase in

- brochures and publications ( $\chi^2 = 57.38, p < .001, \text{Cramer's } V = .30$ ), and
- hiking trails ( $\chi^2 = 22.96, p < .001, \text{Cramer's } V = .19$ ).

More visitors than residents would like to see more hunting areas ( $\chi^2 = 24.84, p < .001, \text{Cramer's } V = .20$ ). This difference appears to be driven by the preferences of the local visitors, with 49 percent wanting more hunting opportunities, as opposed to 21 percent of residents.

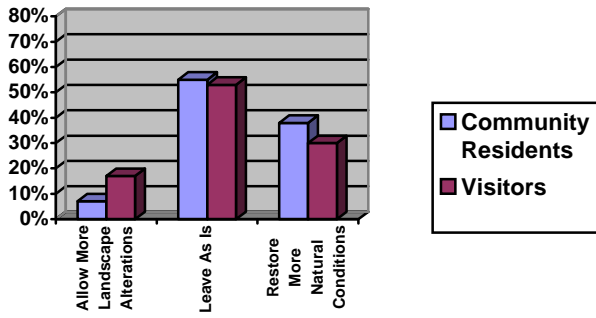
Between consumptive-use and nonconsumptive-use visitors, there were differences in opinions for management of five services (fig. 22). More nonconsumptive-use than consumptive-use visitors would like to see an increase in

- naturalness (restore more natural conditions ( $\chi^2 = 19.92, p < .001, \text{Cramer's } V = .26$ ),
- hiking trails ( $\chi^2 = 48.38, p < .001, \text{Cramer's } V = .41$ ), and
- interpretive exhibits ( $\chi^2 = 15.61, p < .001, \text{Cramer's } V = .24$ ).

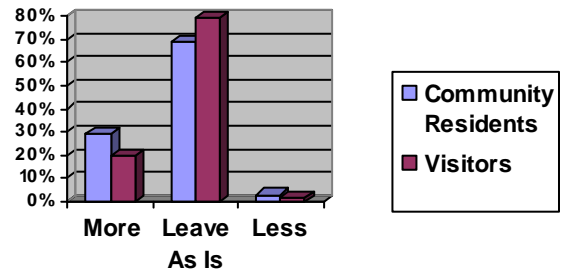
More consumptive than nonconsumptive-use visitors would like to see an increase in hunting (provide more areas;  $\chi^2 = 140.14, p < .001, \text{Cramer's } V = .73$ ) and fishing (provide more access to ponds, creeks, and shorelines;  $\chi^2 = 37.75, p < .001, \text{Cramer's } V = .37$ ). Again, these differences are similar to the differences between local and nonlocal visitors, with local visitors wanting more hunting and fishing opportunities. There were no meaningful differences in preferences for management of services among community groups.



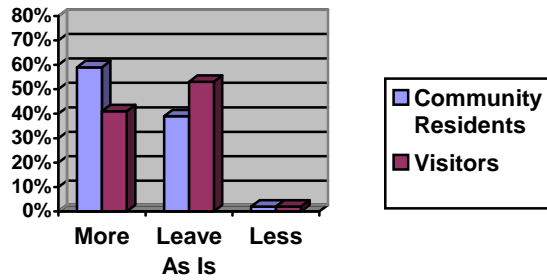
**Naturalness**



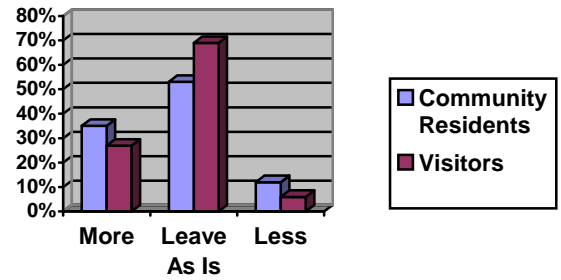
**Availability of staff**



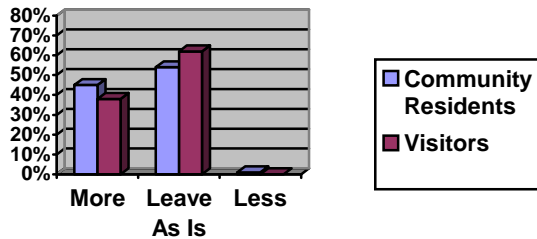
**\*Hiking trails**



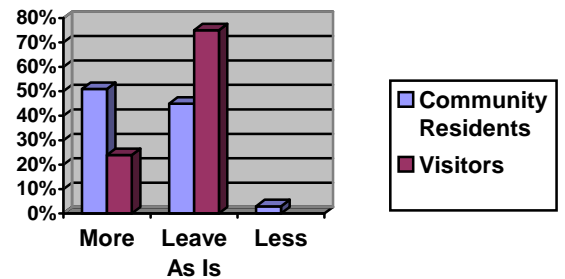
**Information signs**



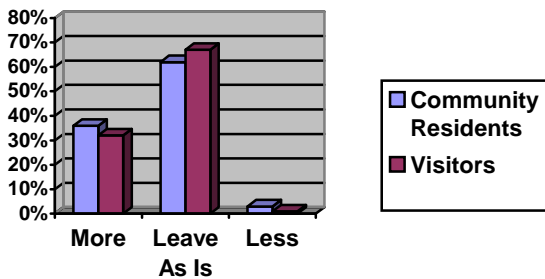
**Environmental education opportunities**



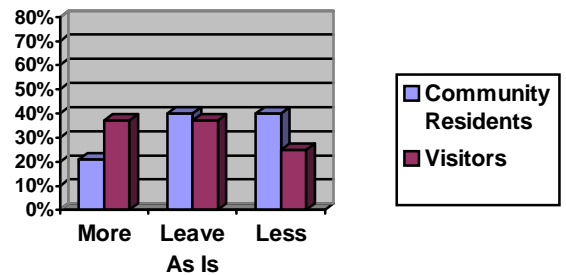
**\*Brochures/Publications**

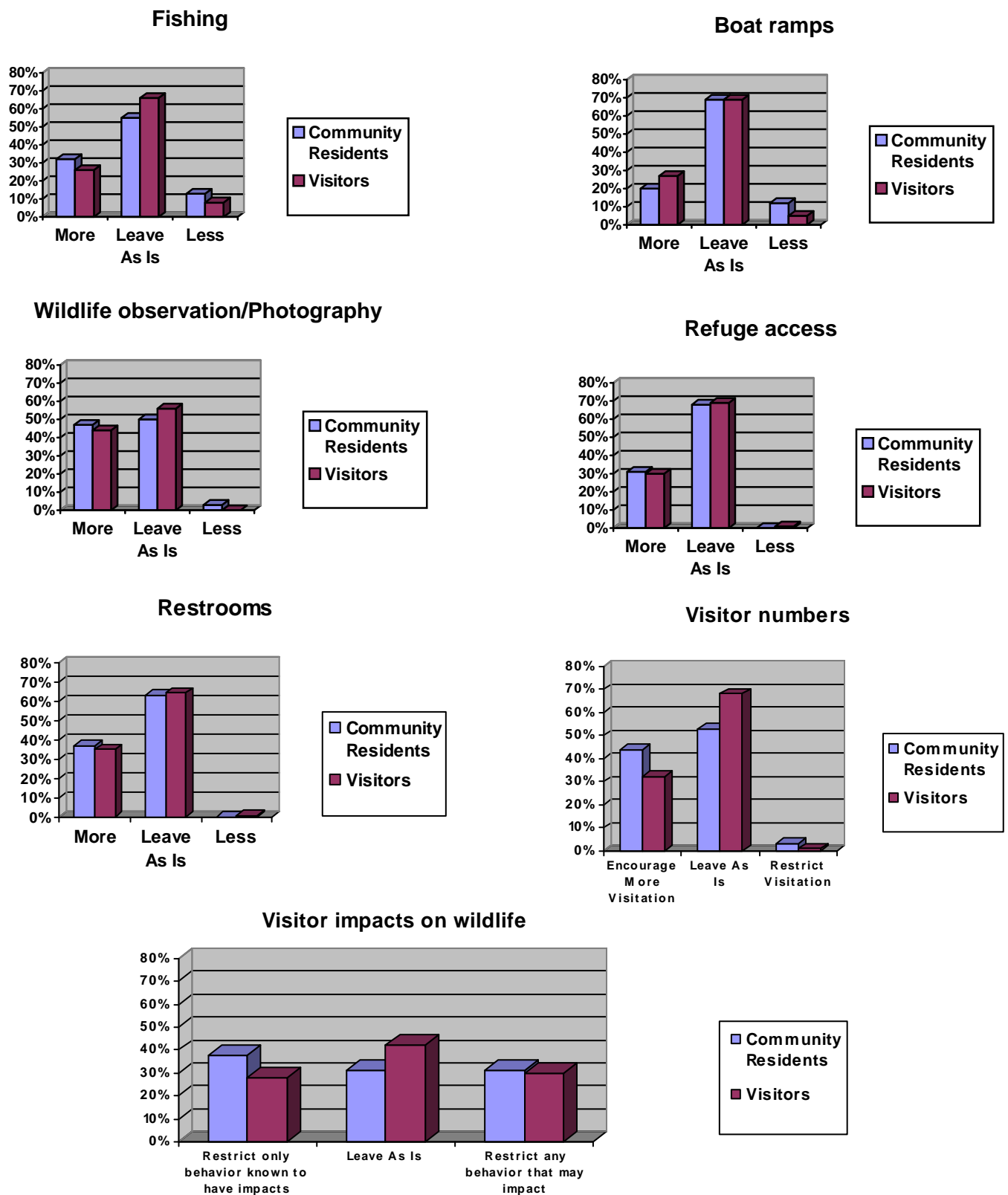


**Interpretive exhibits**

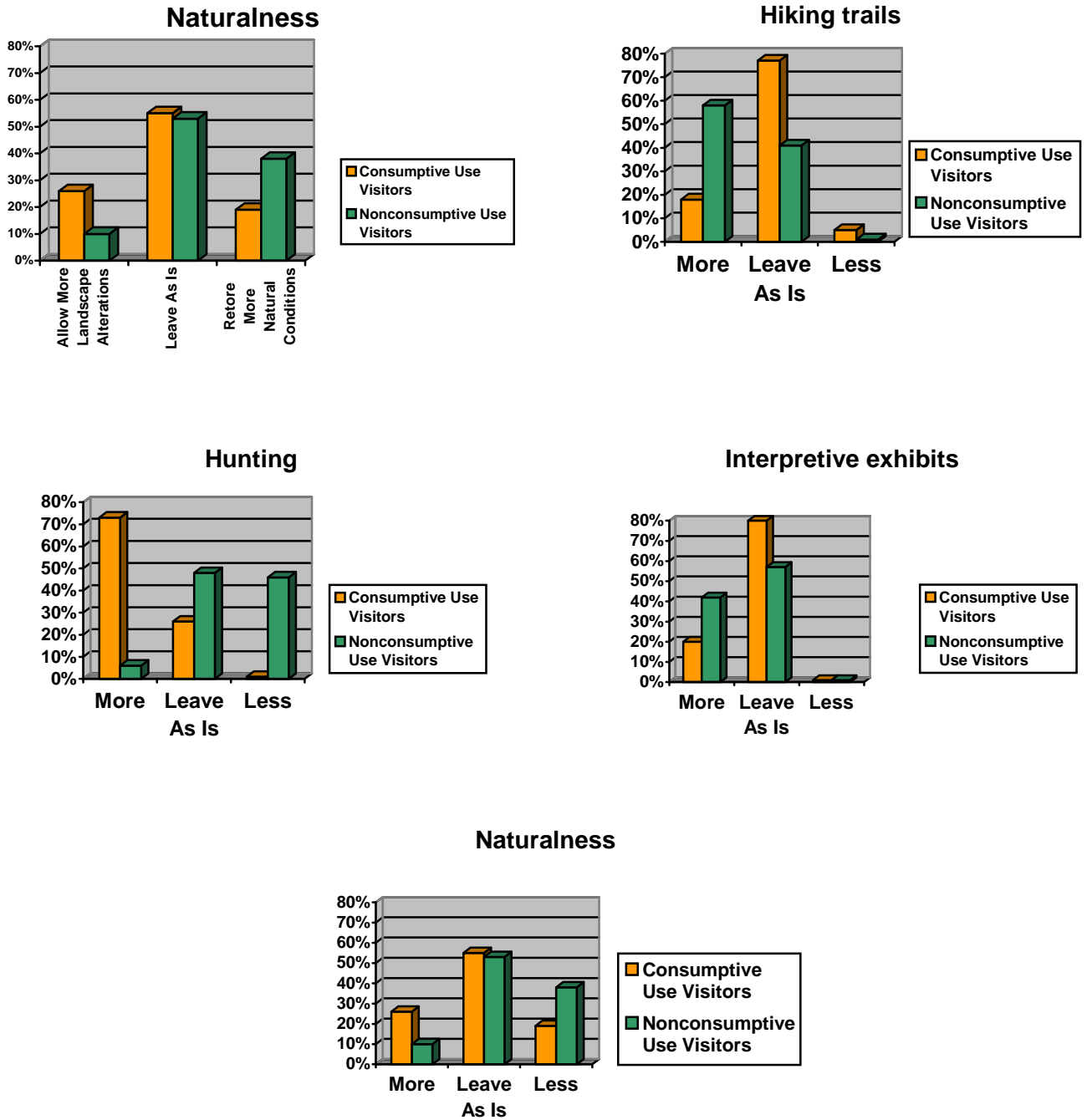


**\*Hunting**





**Figure 21.** Visitors’ and community residents’ preferences for management of services at Prime Hook National Wildlife Refuge. Services with asterisks indicate meaningful statistical differences between visitors and community resident preferences for management.



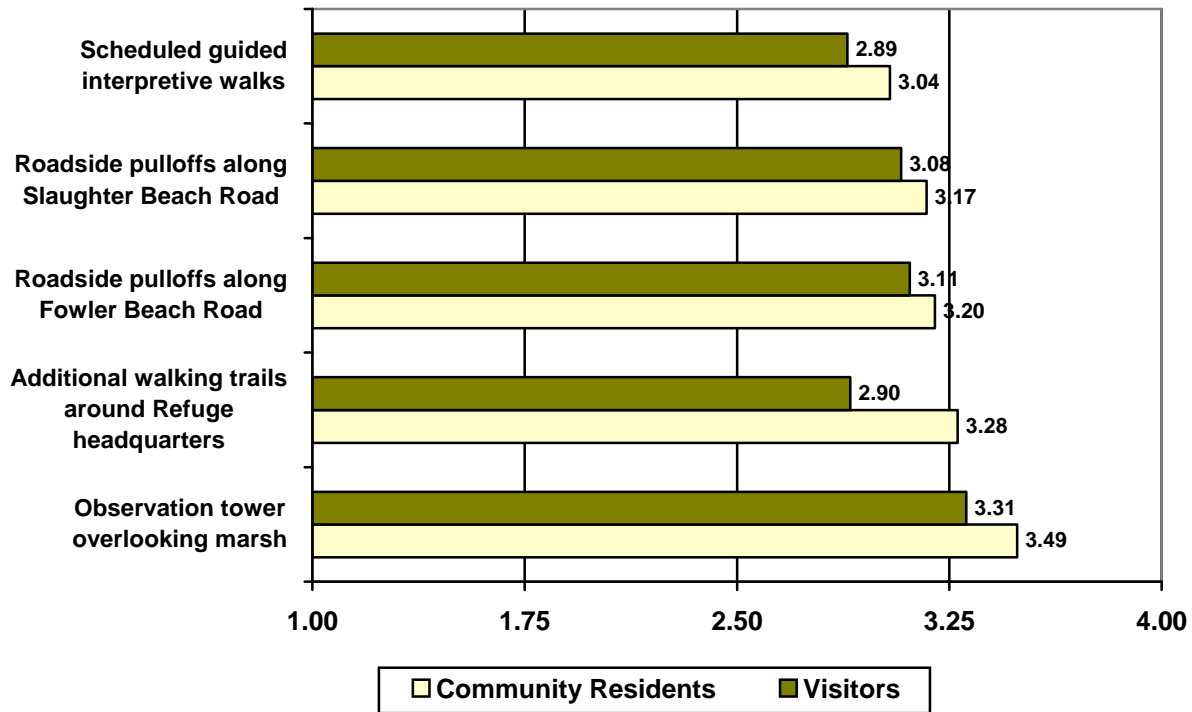
**Figure 22.** Consumptive-use compared to nonconsumptive-use visitors' preferences for management of services for those services where meaningful statistical differences exist.

## Desirability of Future Services

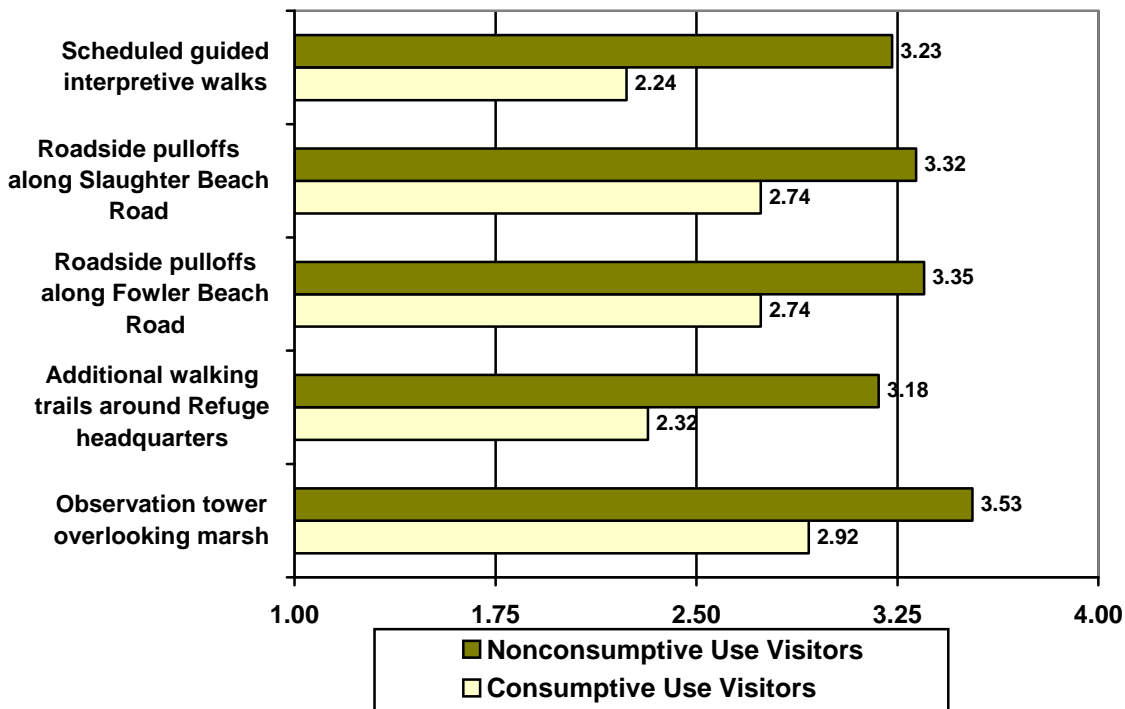
We asked respondents about their support for five potential future services on the refuge (fig. 23). They were asked to rate their desirability (on a 4-point scale with 1 = not desirable and 4 = very desirable) of the following options:

- additional walking trails around headquarters area,
- waterfowl observation tower overlooking marsh,
- regularly scheduled interpretive walks,
- roadside pulloffs for wildlife observation/photography along Fowler Beach Road, and
- roadside pulloffs for wildlife observation/photography along Slaughter Beach Road.

All five potential options were rated as desirable by both visitors and community residents. As might be expected, given the lower importance consumptive-use visitors place on wildlife observation, hiking, and environmental education and interpretation (see previous sections), there were meaningful differences in desire for all of these options between these two visitor groups (fig. 24). All options were only somewhat to generally desirable to consumptive-use visitors but were significantly more desirable to nonconsumptive-use visitors. There were no differences in desirability for options among community groups.



**Figure 23.** Visitor and community residents' mean desirability of future services at Prime Hook National Wildlife Refuge. Responses were coded on a Likert-type scale from 1 (not desirable) to 4 (Very desirable).



**Figure 24.** Consumptive-use and nonconsumptive-use visitors’ mean desirability of future services at Prime Hook National Wildlife Refuge. Responses were coded on a Likert-type scale from 1 (not desirable) to 4 (very desirable).

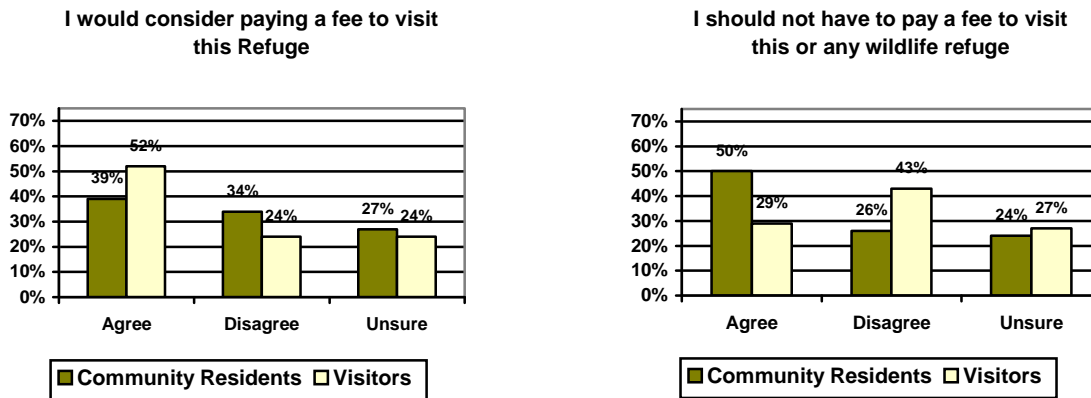
### Support for Fees

We asked respondents their opinions about paying a fee to visit the refuge (fig. 25). Currently, no fees are charged to enter the refuge. We asked their general agreement with two statements using a 5-point scale (where 1 = strongly disagree and 5 = strongly agree):

- I would consider paying a fee to visit this refuge, and
- I should not have to pay a fee to visit this or any wildlife refuge.

More visitors than community residents said they were willing to pay a fee to visit Prime Hook NWR; however, there was no meaningful difference in mean score (0 = 2.97 for community and 3.32 for visitors), indicating neutral feelings overall. More community residents than visitors feel they should not have to pay a fee to visit a wildlife refuge; however, again, mean scores were not meaningfully different and were in the neutral range (0 = 3.32 for community and 2.87 for visitors).

When comparing agreement to pay a fee to visit Prime Hook NWR and the principle of paying to visit a National Wildlife Refuge, some dichotomies existed. Five percent of respondents ( $n = 33$ ) agreed that they would be willing to pay a fee to visit Prime Hook NWR but did not agree they should *have* to pay a fee to visit a National Wildlife Refuge. Conversely, 6 percent of respondents ( $n = 44$ ) indicated they were not willing to pay a fee to visit Prime Hook NWR but felt they *should* have to pay a fee to visit National Wildlife Refuges.



**Figure 25.** Visitors’ and community residents’ feelings toward paying a fee to visit Prime Hook National Wildlife Refuge or other refuges.

### Preferences for Activities—To Allow or Not To Allow

To further gauge visitor and community residents’ opinions regarding preferences for management of the visitor experience, we asked them if there were activities or services that they feel *should be allowed* at Prime Hook NWR that currently are not allowed, or conversely *should not be allowed* that currently are allowed. *The responses to these questions are qualitative and should be interpreted as such; however they can inform the quantitative results of the study and provide anecdotal insight.* The categories of responses are available in Appendices C and D. The verbatim responses are available in Appendices E and F.

Only around 20 percent of visitors and community residents indicated there were activities that *should be allowed* that currently are not allowed. Similarly, around 25 percent said that there were activities that *should not be allowed*. Around 20–30 percent of visitors and community residents who answered this question provided additional written comments.

Regarding activities that *should be allowed*, many of the comments both from visitors and from community residents related to hunting. Community residents also discussed hiking/walking trails and hunting-related activities in their open-ended responses. Comments on hiking related to expanding opportunities, and many related to hunting, for example, “Walking the hunting land off the trails,” and “expanded walking trails to include hunting areas where hunting is not allowed.” Miscellaneous activities mentioned by visitors and community residents varied from the obscure enduro riding to ATV use, though this respondent indicated, “Riding ATV’s, but I realize that cannot happen, because some people do not know how to respect nature.”

Regarding activities that *should not be allowed*, around half of comments from both visitors ( $n = 80$ ) and community residents ( $n = 121$ ) were hunting-related. ATV use was also mentioned by a small number of visitors and residents. Comments included the following:

“Hunting! I/we have a problem with hunting on a “refuge.” Seems like a contradiction in terms.”

“Hunting of geese where people are bird watching or living. The gunshots scare off all the birds.” and

“On-beach truck access is a nuisance and deteriorates beach sand quality and quality for walking.”

## Refuge Land Management Tradeoffs

The management tradeoffs are a measure of community residents’ and visitors’ agreement with specific management options, many of which encompass the benefit and drawback associated with their implementation. These tradeoff statements were developed collaboratively with refuge staff, based on the issues identified during the CCP process (at the time the survey was developed). The three issues identified were:

- mosquito control,
- land acquisition, and
- general habitat management (including endangered species management).

Respondents were asked to rate (using a 5-point scale) whether they agreed or disagreed with a series of statements regarding these management issues. We conducted a series of analyses to better understand visitors’ and community residents’ agreement (or disagreement) with these potential management options. Below is some necessary explanation of those analyses, followed by results for each category of management tradeoff.

In an attempt to identify meaningful differences in agreement with these different management options, we used the “potential for conflict index” (PCI; Manfredo, Vaske, and Teel, 2003). The PCI shows central tendency, dispersion, and form simultaneously and thus presents a concise indication of potential conflict for the management issue in question. The PCI is the ratio of scoring on either side of a neutral point. This analysis assumes that the greatest conflict would occur when responses are distributed between two extreme values on a scale (in this case, 50 percent strongly disagreeing and 50 percent strongly agreeing). This scenario would produce a PCI value of 1. If all responses were on one side of the neutral point (for example 100 percent agreeing), a PCI value of 0 would result. Graphically, a larger bubble represents a higher potential for conflict. In addition, the graph shows the distribution of the means (that is, where they fall on the agreement scale).

For all tradeoff options there were no meaningful statistical differences between visitors and community residents. There were some differences among community groups and between consumptive-use and nonconsumptive-use visitors. Those differences are noted within each category of management tradeoff.

### Habitat Management

Five tradeoff statements were developed around habitat management:

- It is important to restore and manage refuge habitats for rare and endangered species on the refuge.
- It is acceptable to use fire as a management tool to reduce buildup of vegetation that could fuel fires.
- It is acceptable to use fire as a tool to maintain high productivity of refuge wetland, forested, and grassland habitats for the benefit of wildlife.
- It is important to eliminate non-native/invasive plant communities on the refuge.

- It is important to cease farming and strive to restore drained and (or) degraded areas to natural habitats.

There appears to be high agreement and low potential for conflict with potential management options relating to habitat management, except for one (figs. 26 and 27). There is much less agreement with the option of ceasing farming to restore drained and (or) degraded areas to natural habitats. Only around half of community residents and a little more than 40 percent of visitors agree with this option. This sentiment is supported by end-of-survey comments as well. Around one fourth of visitors and community residents are uncertain about this option. The larger PCI score (.36 for community and .50 for visitors) indicates there are polarized opinions regarding this option. There were some differences in agreement with this option among community resident groups ( $F = 7.32, p < .001, \eta = .19$ ), with “rest of community” residents being more supportive ( $M = 3.54$ , indicating mild agreement) than “western neighbors” or “beach town” residents” ( $M = 2.91$  and  $3.27$ , respectively, indicating uncertainty).

Levels of agreement with the cease-farming option also differed between consumptive-use and nonconsumptive-use visitors ( $F = 38.61, p < .001, \eta = .34$ ), with consumptive-use visitors being less supportive ( $M = 2.63$ ) than nonconsumptive-use visitors ( $M = 3.55$ ). Similarly, local visitors were much less supportive ( $M = 2.99$ ) of this option than were nonlocal visitors ( $M = 3.69$ ).

#### Land Acquisition

Three tradeoff statements were developed around land acquisition:

- It is acceptable to purchase land within the refuge boundary from willing sellers at market value for the benefit of wildlife.
- It is acceptable for the refuge to purchase conservation easements on land outside the current boundary to manage the area’s wildlife resources.
- It is acceptable to maintain and preserve refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds.

There appears to be high agreement and low potential for conflict with all potential management options related to land acquisition (figs. 28 and 29). There were no meaningful differences among community groups or between visitor groups regarding these options.

#### Mosquito Control

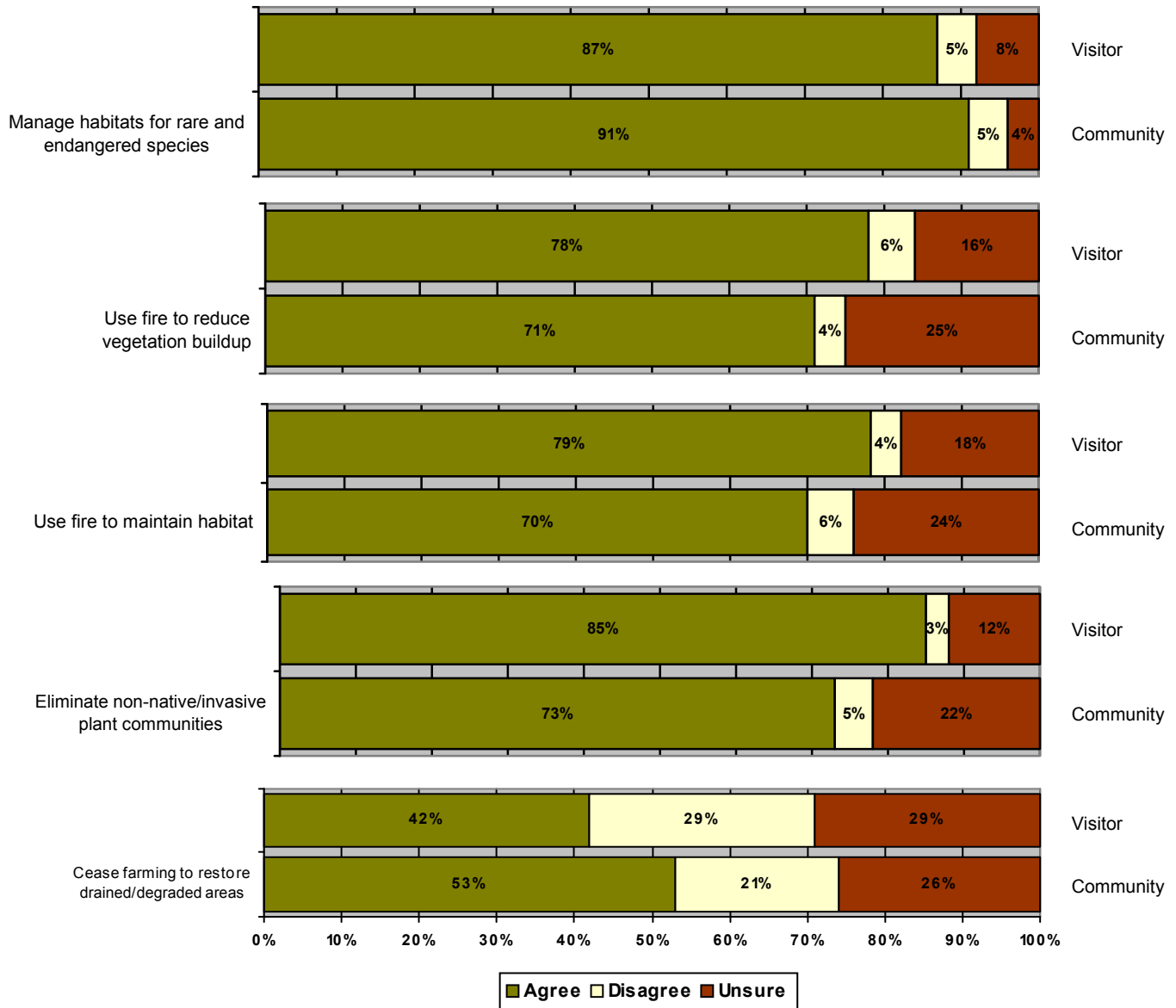
Three tradeoff statements were developed around mosquito control:

- Mosquitoes are a natural component of healthy and functional wetland ecosystems.
- Mosquito control activities on the refuge should only occur during a declared public health emergency.
- The use of chemicals to control mosquitoes on refuge lands should only occur when field data show high numbers of breeding mosquitoes.

There is less agreement and more potential for conflict with the options related to mosquito control than with any of the other management options (figs. 30 and 31). These options received some of the lower mean scores and highest PCI values. These options also had the highest percentages of visitors and community residents who indicated they were unsure about the options (25–30 percent). The option of controlling mosquitoes *only* during public health emergencies appears

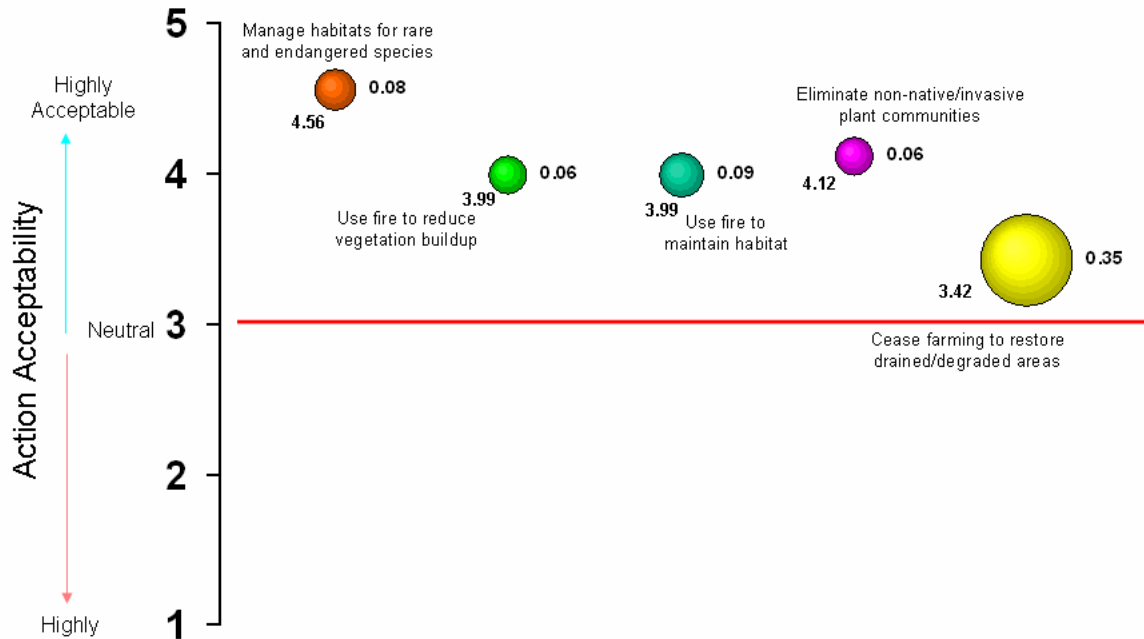


especially to have potential for conflict (PCI = .49 for community residents, .53 for visitors). The option of using chemicals only when high numbers of breeding mosquitoes appears a more acceptable management action than limiting activities to public health emergencies. There is neutral to mild agreement with the statement mosquitoes are a natural part of a healthy ecosystem, though there are some differences in opinions on this. Consistently, nonconsumptive-use visitors are more supportive of these mosquito control options than consumptive-use visitors.

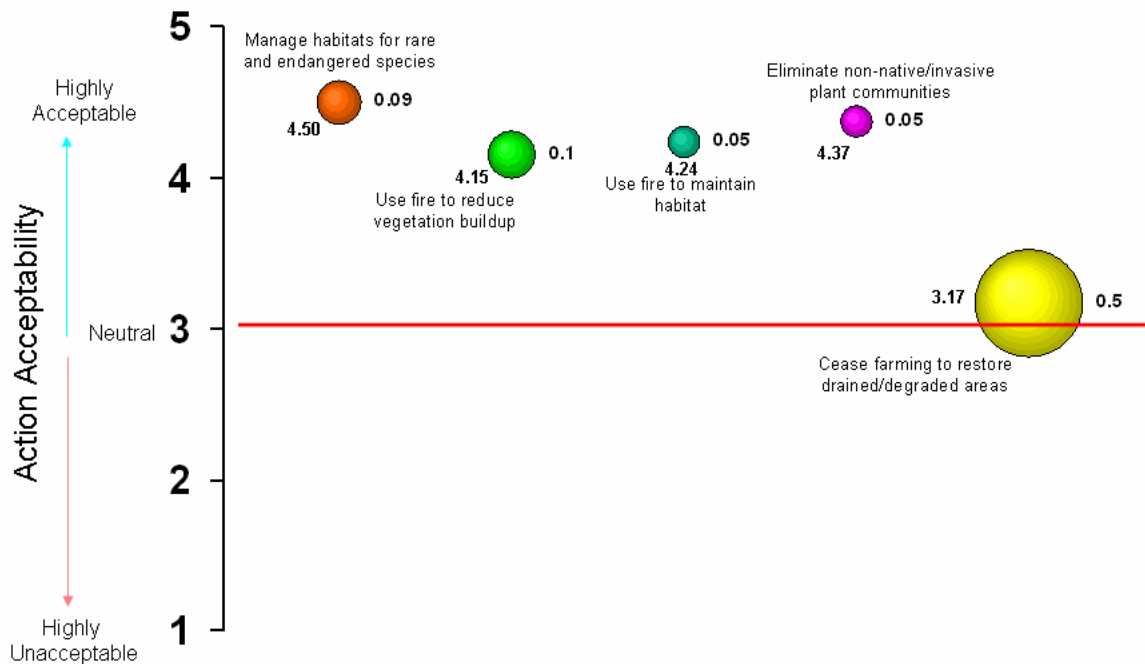


**Figure 26.** Visitors and community residents’ agreement with management tradeoff statements regarding habitat management.

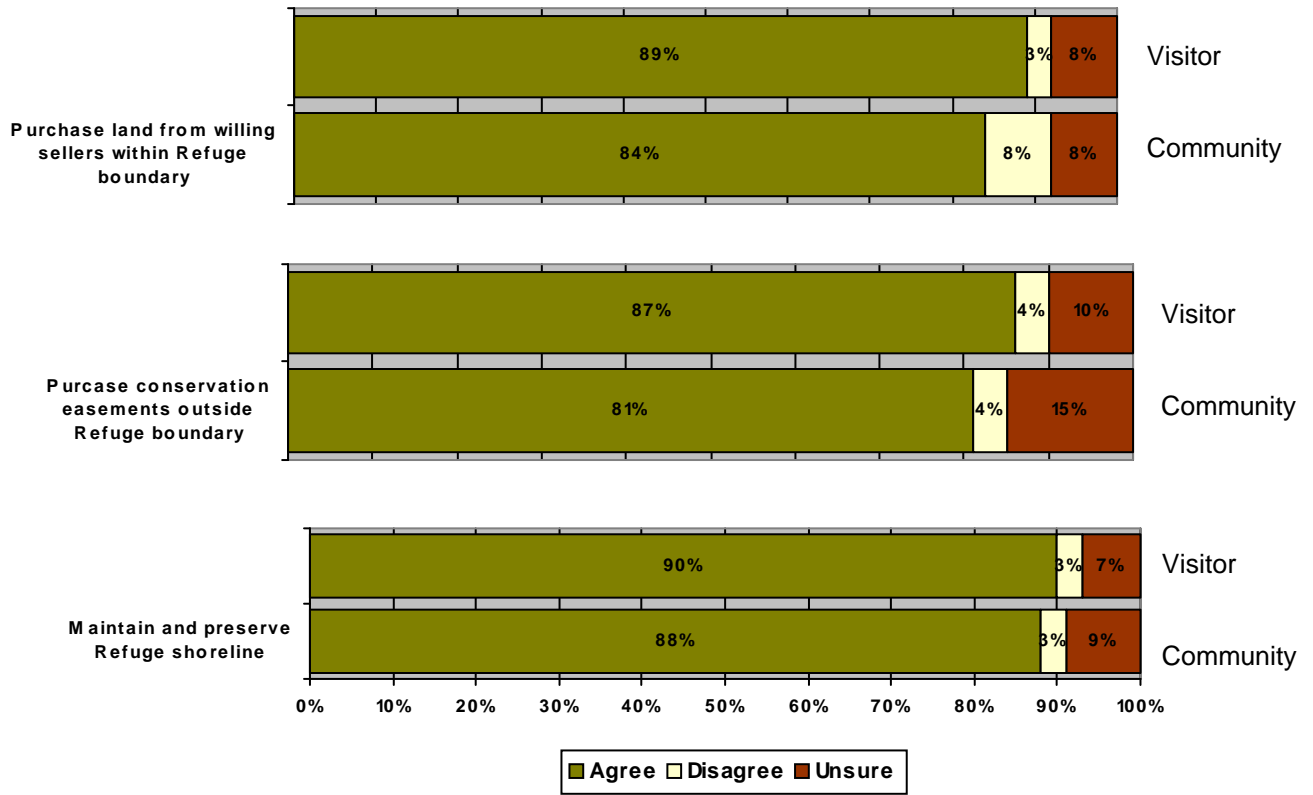
## Community: Habitat Management



## Visitor: Habitat Management

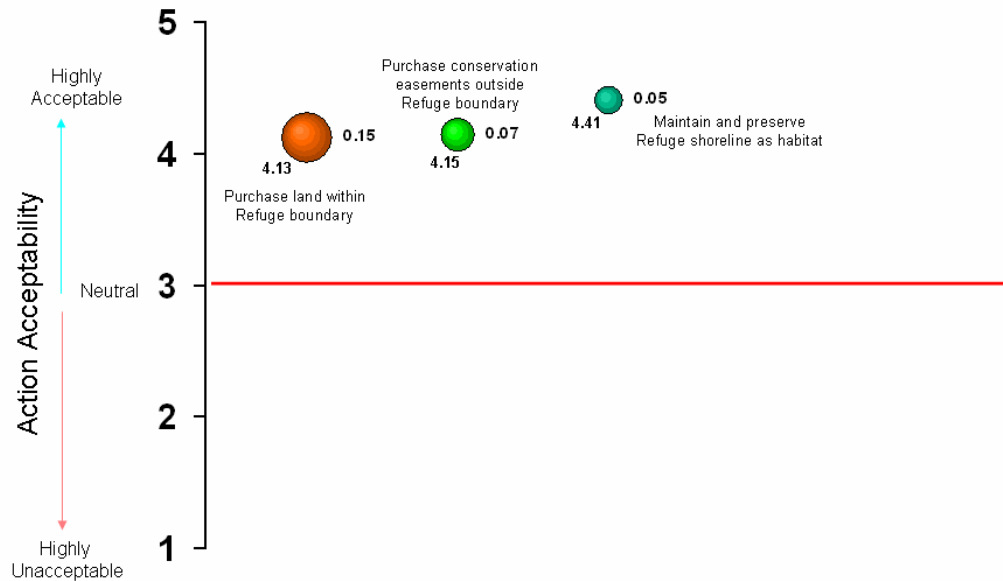


**Figure 27.** “Potential for Conflict Index” graphs for *habitat management* tradeoff statements for community residents and visitors. Numbers to the left of the bubbles are mean agreement scores. Numbers to the right are PCI scores, ranging from 0 to 1, where 0 indicates no conflict and 1 indicates maximum potential for conflict.

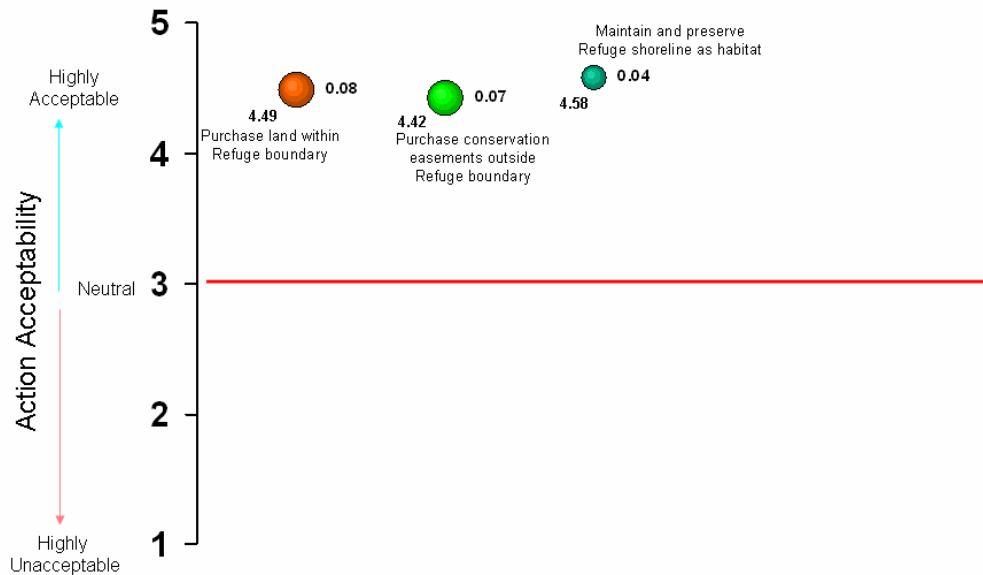


**Figure 28.** Visitors’ and community residents’ agreement with management tradeoff statements regarding land acquisition.

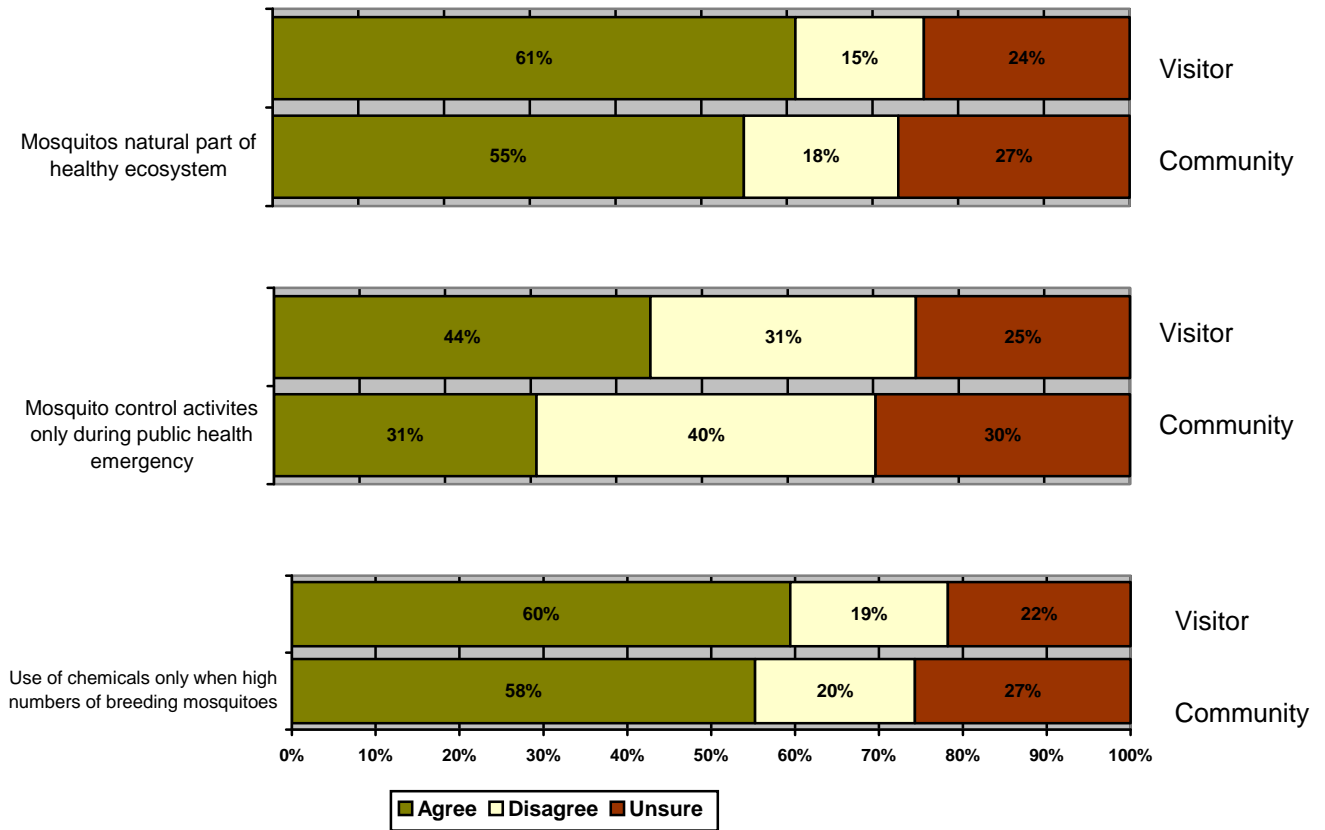
## Community: Land Acquisition



## Visitor: Land Acquisition

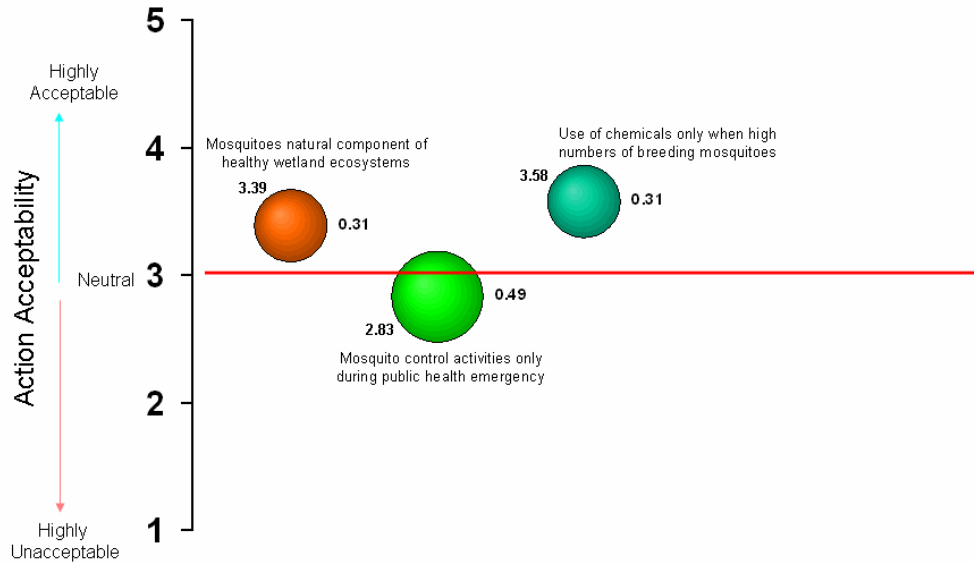


**Figure 29.** “Potential for Conflict Index” graphs for *land acquisition* tradeoff statements for community residents and visitors. Numbers to the left of the bubbles are mean agreement scores. Numbers to the right are PCI scores, ranging from 0 to 1, where 0 indicates no conflict and 1 indicates maximum potential for conflict.

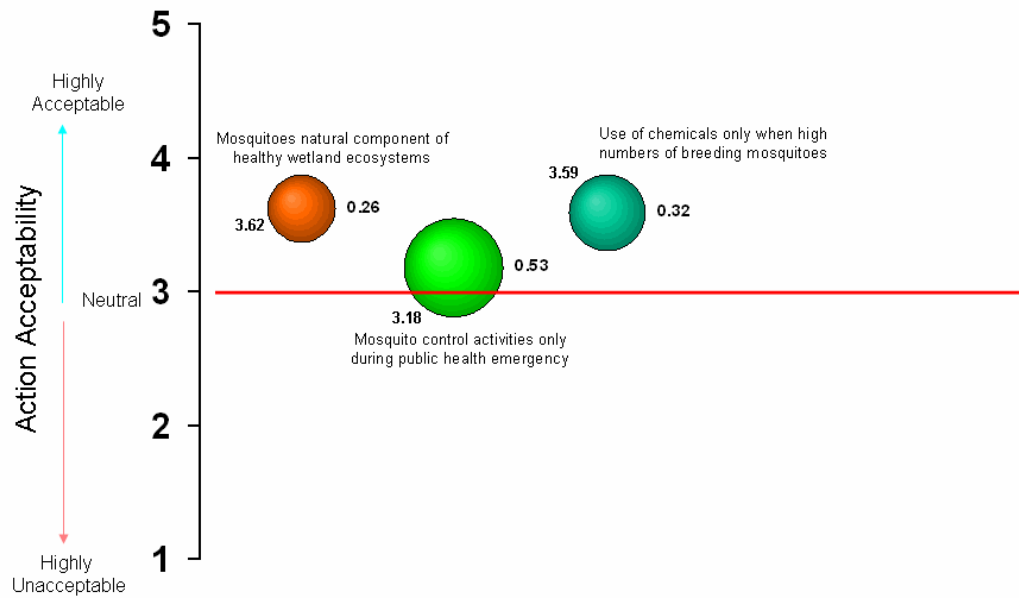


**Figure 30.** Visitors’ and community residents’ agreement with management tradeoff statements regarding mosquito control.

## Community: Mosquito Management



## Visitor: Mosquito Management



**Figure 31.** “Potential for Conflict Index” graphs for *mosquito control* tradeoff statements for community residents and visitors. Numbers to the left of the bubbles are mean agreement scores.

## Other Opinions on Management

In addition to the specific questions focusing on refuge management, respondents had the opportunity to provide written comment on the refuge at the end of the survey. Around 150 visitor respondents and 100 community respondents provided comments. More than half of these comments were positive in nature. *The responses provided to questions are qualitative and should be interpreted as such; however, they can inform the quantitative results of the study and provide anecdotal insight.* The categorized verbatim responses are available in Appendices E and F.

Many comments were related to the refuge and its management, which included suggestions and expectations for refuge management, ideas for improvement, and an interest in future plans and programs. Responses seem indicative that local residents and visitors have an interest in striking a balance between keeping the area remote and natural while at the same time maintaining a professional approach to understanding the needs of the community.

Community residents and visitors stressed the importance of habitat management on the refuge. Many respondents recognize that the protection of wildlife and habitat as the single most important priority in managing a wildlife refuge:

“Management of the Prime Hook National Wildlife Refuge should be geared toward a moderate amount of human recreation and a large amount of preservation of the lands and the wildlife.”

“I support efforts to maintain and restore biodiversity on our National Wildlife Refuges.”

“We always support as much ‘naturalness’ as possible, but we recognize that Refuge management objectives preclude a complete restoration to natural conditions.”

Some members of the community would like to understand the short- and long-range wildlife and habitat management goals of the refuge:

“... the refuge needs to do a better job in educating the public about allowing land to go fallow in order to increase species diversity. If we are only promoting a few species, such as deer and geese, we are limiting the value of this refuge as a true land of opportunity for increasingly marginalized species.”

“I think that it is important to know and realize the community of owners and visitors year round are here because PHNWR is here. Not the other way around. Thank you for your presence!”

Management alternatives to hunting and fishing encompassed several comments, both positive and negative:

“I am not anti-hunting. However, I do feel that a National Refuge should be just that - a refuge, a safe haven for nature to live naturally and a public who funds it to have access to enjoy, observe and preserve it as primitively as possible. Hunting and bird watching do not go together well. Hunting should take place outside the refuge; otherwise it is not a refuge, is it? Trails like the one at Wolf Neck are the best way to allow maximum public access with little impact on habitat.”

The relationship among land acquisition, farming, and development was a theme that was recognized by the respondents with varying viewpoints. Many suggested they are satisfied the area

is being protected from further development and wish to have additional lands preserved, while others suggest that the government should stop the practice of selling refuge land and using the refuge as farmland. One individual suggests,

“If we are going to allow farming on the refuge under the guise of food for waterfowl some of the crop should be left in the fields at harvest time. The new harvesting equipment is so efficient that it leaves nothing in the fields for the animals to feed on. The farmers that lease the fields should also pay the same per acre for refuge field that they pay for local acreage. We should not lease for less than local fields are leased for and cause bad feelings with neighbors that also lease.”

Another concern was about too much land going to farmers.

“My family and I are greatly concerned about the sale of refuge land to farmers. It is our strong opinion that this land should continue to be part of PHNWR.”

One respondent related the topic of farmland acquisition to a personal experience.

“I have always been somewhat disgruntled about the refuge. I have stated my home was located next to Turkle Pond when I was young and I did not agree with the government basically forcing my parents from our home. However, in all honesty - good job in preserving habitat, wildlife and recreation. I at least can enjoy this area along with thousands of others.”

Many respondents expressed concerns for effects of development on habitat and the need for more protection,

“[Prime Hook NWR] is one of Delaware's greatest remaining natural resources. It is my opinion that everything the United States can do to preserve, enhance and protect it should be done. Poor planning on the part of Sussex County and overdevelopment in the area has resulted in increased air and water pollution that will only degrade and destroy this environmental wonder unless stringent methods are taken to lessen the impact. I would support any initiatives taken to expand the area, establish buffers, no growth zones, etc. Habitat for migratory waterfowl and shorebirds will be non-existent in another 100 years on the Atlantic flyway with the exception of these wildlife refuges. The animal and plant life must be considered above all in these refuges, not the tourist and visitors. That being said anything done to enhance the quality of visitation experience for this and future generations are highly commendable and greatly appreciated by those of us who frequent these marvelous places.”

Open-ended comments support survey data that indicate visitors and residents support and are pleased with the refuge and its management. Staff and volunteers were recognized and praised for their dedication, devotion, and enthusiasm for the refuge. The visitors were especially grateful for the maintenance of the property, the activities and lectures, and “great leadership.” Others replied that they were confident in their decisionmaking, adding that the staff are “helpful, friendly, and competent.” According to the visitors, the staff make for a more enjoyable visit, are a pleasure to talk with, and show interest in answering their questions. In many instances respondents simply wrote “keep up the good work!” Overall, there was a sense that visitors are impressed by the staff.



## Communication, Civic Engagement, and Trust

In communicating with the public, it is important to understand how individuals participate in natural resource decisionmaking and ways in which they commonly obtain information on these topics. It is also important to understand their trust in the managing organization. In an effort to better understand these issues, we asked respondents about their engagement in natural resource issues and the sources of information they rely on to learn about Prime Hook NWR, and their trust both in the refuge and the U.S. Fish and Wildlife Service.

### Communication

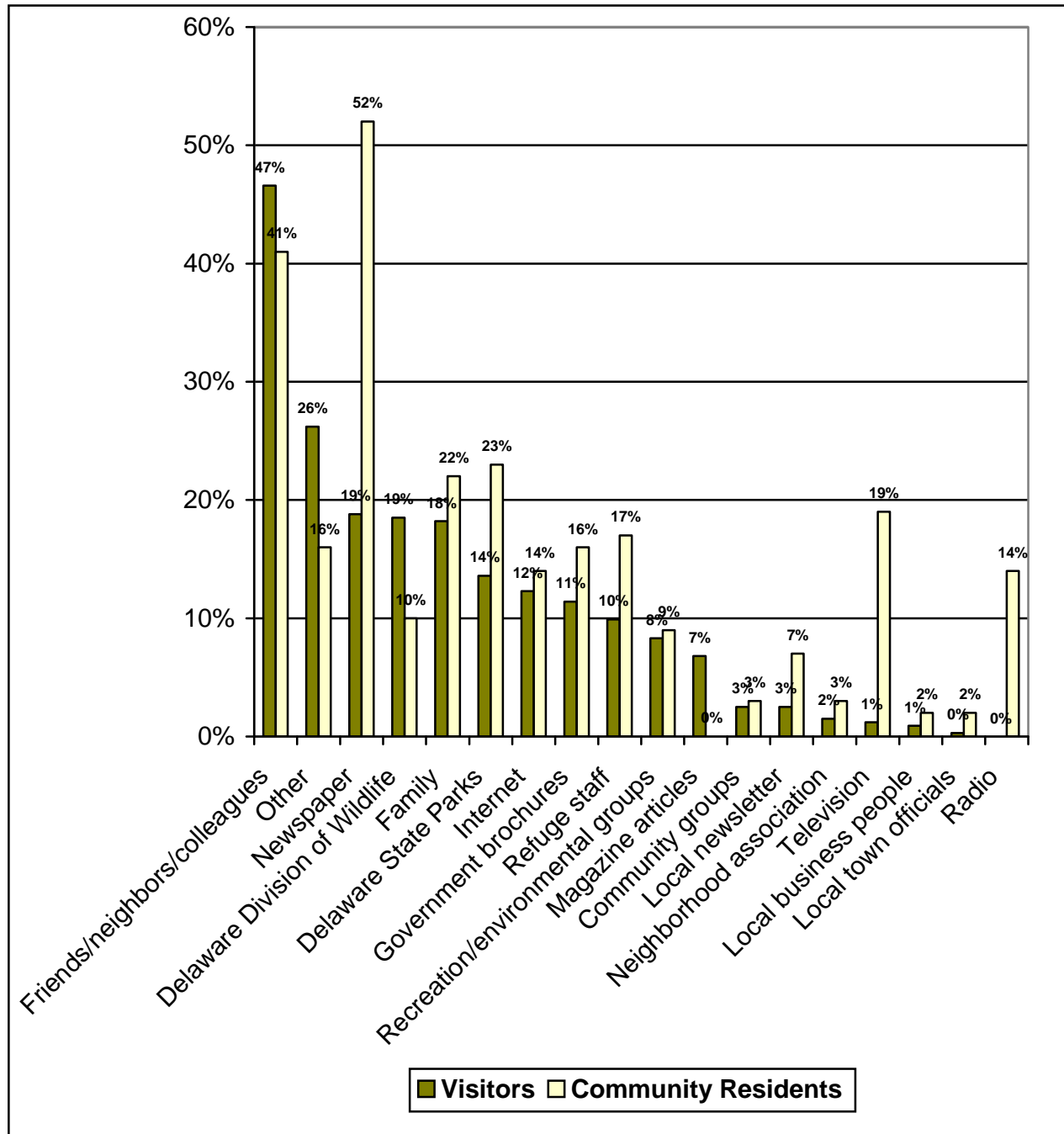
Both community residents and visitors get much of their news and information about the refuge from friends and neighbors (fig. 32). The largest proportion of community residents indicated they rely on newspapers (52 percent). This is much different than for visitors (19 percent;  $\chi^2 = 82.97, p < .001, \phi = -.34$ ). Residents cited *The Cape Gazette*, *News Journal*, and *Delaware Coast Press* for newspapers they rely upon. Residents also use radio (14 percent) and television (19 percent) to a greater extent than do visitors (0 percent for radio,  $\chi^2 = 50.81, p < .001, \phi = -.27$ ; 1 percent for television,  $\chi^2 = 58.13, p < .001, \phi = -.29$ ).

There are some differences in information use between consumptive-use and nonconsumptive-use visitors. Consumptive-users rely more heavily on friends (70 percent compared to 27 percent;  $\chi^2 = 53.38, p < .001, \phi = .43$ ); family (31 percent compared to 10 percent;  $\chi^2 = 22.68, p < .001, \phi = .27$ ); and the Delaware Division of Fish & Wildlife (37 percent compared to 7 percent;  $\chi^2 = 40.25, p < .001, \phi = .36$ ). Nonconsumptive-use visitors appear to use more varied sources than consumptive-use visitors.

Use of a neighborhood association was the only meaningful difference in information sources among community groups ( $\chi^2 = 68.47, p < .001, \phi = .41$ ), with “beach town” residents using this source more often.

“Other” sources mentioned in the open-ended option included, for visitors, AAA, Elderhostel, and road signs. “Other” sources mentioned by community residents included a billboard, Friends of Prime Hook, and road signs.

When asked what sources of information they *rely on most* for news and information about the refuge, visitors and community residents indicated friends and neighbors and newspapers. Interestingly, 12 percent of visitors and 6 percent of community residents rely on the Internet most for this information. Also, 8 percent of residents and 6 percent of visitors rely on refuge staff the most for refuge happenings.

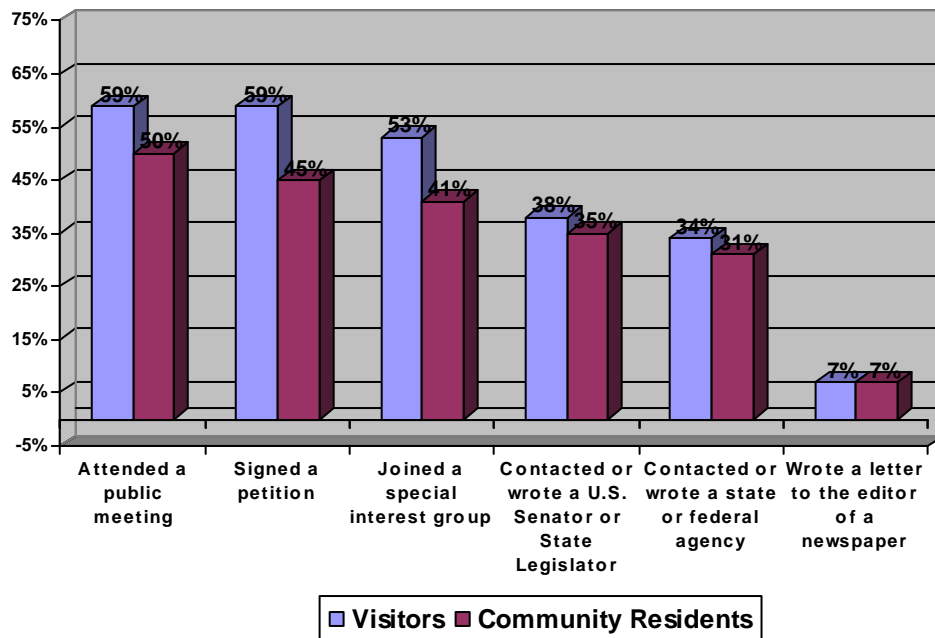


**Figure 32.** Sources of news and information about Prime Hook National Wildlife Refuge used by visitors and community residents.

## Civic Engagement in Natural Resource Decisionmaking

Community residents and visitors have been quite participatory in natural resource and environmental decisionmaking activities within the last 5 years (fig. 33). The largest percentage of respondents indicated that they have attended a public hearing or meeting, followed by signing a petition. There was some difference between community members and visitors in civic engagement activities. Visitors were more likely to have signed a petition and joined a special interest group than community members ( $\chi^2 = 10.94, p = .001; \phi = .15; \chi^2 7.04, p = .008, \phi = .12$ ). Among community groups, “beach town” residents are more likely to have contacted a U.S. Senator, Member of Congress, or State Legislator (48 percent “beach,” 26 percent “western neighbors,” 37 percent “rest of community;”  $\chi^2 = 9.01, p < .001, \text{Cramer’s } V = .19$ ) “Western neighbor” residents were more likely to have attended a public hearing or meeting (69 percent “western neighbor”, 61 percent “beach”, 46 percent “rest of community”;  $\chi^2 = 8.80, p = .01, \text{Cramer’s } V = .19$ ). Additionally, an index of total civic engagement was created for each respondent. This was accomplished by summing the total number of activities in which community residents and visitors had participated. The score ranged from 1 to 6 (one activity to all six activities). The average number of activities in which both visitors and community residents had participated in was three. Among community groups, residents of the beach towns participated in an average of three activities, while people in the “western neighbors” and “rest of community” groups participated in an average of two.

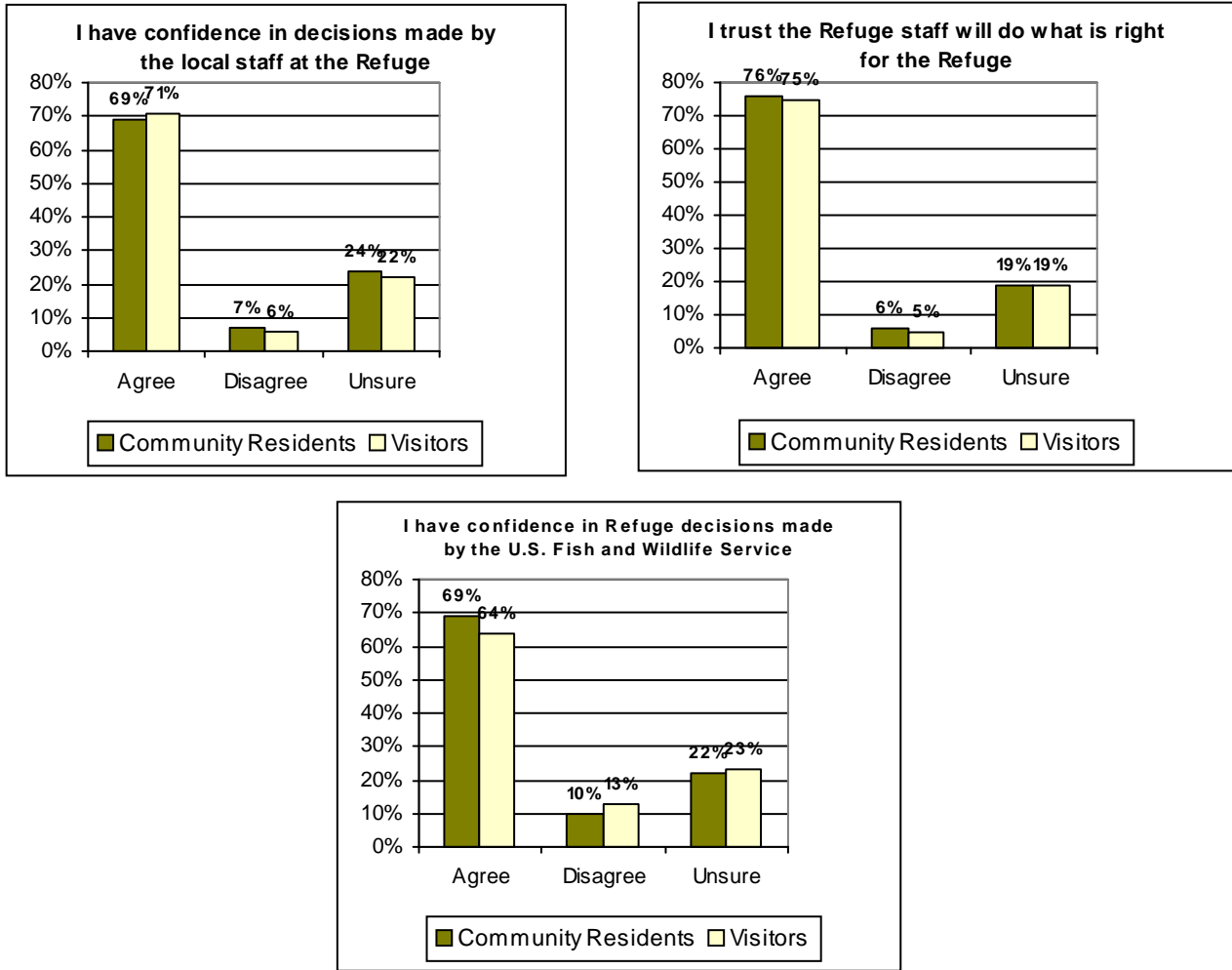
Regarding receiving information from the refuge, most respondents indicated they would like to receive results from this study (66 percent for residents and 58 percent for visitors) and information about future refuge planning activities (around 70 percent for residents and visitors). Fewer respondents were interested in information about the Refuge Friends group (29 percent for community and 20 percent for visitors) or volunteer opportunities (around 30 percent for both groups).



**Figure 33.** Visitor and community resident participation in natural resource decisionmaking.

## Trust in the Refuge and U.S. Fish and Wildlife Service

Community residents and visitors were asked to rate their agreement (on a 5-point scale, where 1 = strongly disagree and 5 = strongly agree) with three statements related to trust in the agency and the refuge (fig. 34). The mean scores for these statements indicate moderate trust with both the refuge and the U.S. Fish and Wildlife Service. Interestingly, though, almost one fourth of respondents are unsure about their trust in the agency and in the refuge.



**Figure 34.** Community resident and visitor agreement with statements related to confidence/trust in refuge staff and the U.S. Fish and Wildlife Service.

## Refuge Benefits and Impacts to the Local Community

In an effort to better understand the importance of the refuge to the local community, we asked community residents two open-ended questions:

- What is the biggest benefit to the local community from Prime Hook NWR, and
- Do you see any negative impacts to the local community?

*The responses to these questions are qualitative and should be interpreted as such; however, they can inform the quantitative results of the study and provide anecdotal insight.* The categories of responses are available in Appendices C and D. The verbatim responses are available in Appendices E and F.

### Benefits

Eighty-two percent of respondents ( $n = 399$ ) answered the open-ended question that asked, “Please tell us what you see as the biggest benefit to the local community from Prime Hook National Wildlife Refuge.” First and foremost, residents appreciate the place for wildlife offered by the refuge and also the environmental benefits provided. Thirty-two percent of respondents relayed thoughts on this topic:

“I think people really enjoy watching the wildlife and knowing it is there and being protected.”

“Natural filtration system to protect Bay from pollution-refuge is a great place to protect open space and habitat.”

“Preserves a natural habitat where children can see and learn about nature and animals.”

“Prime Hook is essential to the preservation of the marshes, ecological habitats and for its contribution to climate control and its role as a haven from regional development.”

Over 100 respondents (23 percent) commented on protection from development offered by the existence of the Refuge. They value the fact that this land will remain undeveloped into the future:

“A beautiful environment protected from the building growth occurring throughout the state of Delaware.”

“A place for people to go and still be able to enjoy nature and open country as it should be. The natural environment is a victim of developers in the once beautiful state of Delaware.”

“It’s nice to see birds and not housing developments.”

They also recognize the aesthetic value of the refuge:

“Being able to go to a natural, unstressful, beautiful area for relaxation.”

“Having a serene place for a refuge for wildlife and to remind us of the importance of our environment.”

“I see it as a natural wild refuge and buffer for people and wildlife to escape from the pressures of daily life.”

“Nature brings peace and serenity to the soul. It teaches us about life in every aspect. The refuge allows us to go and see this firsthand.”

“The biggest benefit to the local community is the ability to view a pristine natural habitat for animals and birds in close proximity to where I live.”

## Impacts

Only around 10 percent of community respondents see any negative impacts to the local community from the refuge. A few themes could be extracted from the 56 responses, though each one only had a small number of comments. Mosquito control was mentioned as well as hunting noise and safety. On a positive note, one resident stated,

“Due to communication, if we initially felt any negativity, we soon felt otherwise, once we learned the "whys" behind the actions of the refuge that seemed to affect us.”

## Discussion of Key Findings

### Visitor and Community Resident Profile

Nearly all visitors are local to the area, likely explaining why there is little meaningful statistical difference in profile and demographic variables between these two groups. However, there are many differences between consumptive- and nonconsumptive-use visitors. These differences are closely aligned with differences between local and nonlocal visitors, with 56 percent of local visitors being classified as consumptive-users and 89 percent of nonlocal visitors being classified as nonconsumptive-users.

Community residents have a long history in the Milton, Milford, Lewes area. Most have lived in the area for nearly 20 years, and nearly all live there year round. There is no meaningful difference in profile and demographic variables among the community groups (“beach town,” “western neighbors,” “rest of community”). Understanding the profile of visitors and community residents involved in a public participatory process can be informative in communicating with those groups.

### Trips to Prime Hook National Wildlife Refuge

Most all visitors and community residents are repeat visitors to the refuge. This is particularly true for consumptive-use visitors. Visitors come to the refuge on an average of once a month. Residents come even more often (16 times/year). Because most visitors are local, proximity is likely key for the repeated use demonstrated by both groups. They appear to use the refuge equally on weekends and weekdays and stay from a quarter of a day (2 hours) to a half day (4 hours)—a significant amount of time when thinking about opportunities for visitor contacts from staff and opportunity to engage in programs onsite. Over half of the community has attended both of the special events coordinated with the local community (Waterfowl Festival and Horseshoe Crab/Shorebird Festival). This is a premier opportunity for relationship building in a larger context and environmental education with a larger proportion of the local community. These events may provide future opportunities to engage the public in the CCP planning process in a nonthreatening,

positive way in the coming year. They may also provide opportunities to expand a mailing list of interested individuals, further gauge public sentiment on key issues anecdotally, and gain trust and build relationships.

### **Visitor and Community Resident Experience at the Refuge**

Wildlife observation is an important priority public use at Prime Hook NWR and one that the refuge is known for. It is the primary reason for most visitors' and community residents' visits to the refuge and is considered very important to their visit by both groups. Being in a natural, undeveloped area and experiencing a serene environment are equally important to their refuge experience as are the trails that afford this opportunity. These are activities that are important to consumptive- and nonconsumptive-use visitors. As such, there are opportunities to engage both user groups, who visit the refuge for quite different reasons.

Regarding quality of services that are offered at the refuge that contribute to their positive experience, visitors and community residents say "keep up the good work!" Nearly all services are meeting their expectations. The only exception is that both groups would like to see more media coverage of the refuge and its events.

Likely because of all of these attributes, residents and visitors are fairly emotionally attached to the refuge as a place. They identify with the refuge for what it symbolizes to them, and they agree that it is an important place for family tradition and heritage. Visitors and community residents do appear to recognize the importance of the experiences they have at the refuge, and those experiences bring them back time and again. They do not appear solely dependent upon the refuge for the activities in which they participate, although, consumptive-use visitors are more dependent upon Prime Hook NWR as a place to hunt and fish. Several comments were made regarding the unique waterfowl hunting experience provided at the refuge that is not available in many other places in the State. It is important to understand why people are attached to places such as this refuge as these meanings are related to attitudes and preferences regarding its management.

### **Hunting and Angling Experience at the Refuge**

Most visitors who engage in hunting and angling activities feel a quality experience is being provided by the refuge. Hunters and anglers have a long history at Prime Hook NWR, engaging in those activities on average for the past 11 years, with some doing so since before the refuge was established. This group of users is unique—nearly all aspects of visitor experience were different between consumptive- and nonconsumptive-use visitors. They also differ demographically. It is important to understand those differences and to recognize the opinions of these interest groups (as well as others) as planning and potential changes to management are discussed.

### **Visitor Trip Spending**

Spending associated with refuge recreational activities such as wildlife viewing and hunting can generate considerable tourism activity in the local Sussex County economy. On average, nonconsumptive visitors spent 2–3 days in the local area with approximately three people in their group sharing expenses. Most of the nonlocal deer hunters were from other counties in Delaware; about half spent the night locally, and the other half drove home after hunting. The current level of nonconsumptive-use and big game hunting nonlocal visitor days accounts for over \$983,500 of spending annually in the local communities near Prime Hook NWR. Direct and secondary effects generate over \$1.21 million in local output, \$447,700 in personal income, and 19.4 jobs annually in Sussex County.

## Preferences for Refuge Management

Understanding public attitudes and preferences for potential changes to management can allow more effective communication about those changes during development and implementation.

## Visitor Services and Features

As mentioned previously, visitors and community residents appear pleased with current management of services. While satisfied, however, there are some services a considerable contingent ( $\geq 30$  percent) would like to see increased or improved. These include wildlife viewing opportunities such as blinds and walkways, environmental education, interpretive exhibits, and hiking/nature trails. This is especially true of nonconsumptive-use visitors and community residents. In addition to these improvements, consumptive-use visitors would also like to see increases in hunting and fishing areas and access.

Desire for more wildlife viewing opportunities is further evidenced by the support for an observation tower overlooking the marsh, additional walking trails around headquarters, and roadside pulloffs. Though likely for different reasons, these improvements were supported by both consumptive- and nonconsumptive-use visitors. Many of these features were either being proposed or being built at the time of the survey. Since then, all features have been completed or are in the process of being implemented. There may be an opportunity to showcase these improvements and their ability to meet the needs of many different visitors.

Visitors and community residents do not feel strongly that they should have to, or would be willing to pay for these services. Responses were divided among agreement, disagreement, and uncertainty regarding this issue. Interestingly, Vaske, Donnelly, and Taylor (1999) found that for eight refuges where fees were being charged, about 88 percent of visitors felt that the price was about right. While opinions regarding fees sometimes change once implemented, more study would be needed if implementation of fees were to be considered at Prime Hook NWR in the future.

## Land-Management Tradeoffs

We measured respondents' agreement with specific management options related to three issues identified by the refuge as important in the CCP planning: general habitat management, land acquisition, and mosquito control. There appears to be high agreement and low potential for conflict with possible management options related to habitat management, with one exception. The idea of ceasing farming to restore drained or degraded areas to natural habitat did not receive high support overall and has a high potential for conflict. Visitors were especially polarized on this issue, with nonconsumptive-use visitors much more supportive than consumptive-use visitors.

Regarding land acquisition, there appears to be high support and little potential for conflict over the refuge acquiring lands, either through conservation easements or purchasing from willing sellers. Similarly, there is little disagreement over the preservation of refuge shoreline for horseshoe crabs and migratory shorebirds, which has acquisition implications.

Options for mosquito control and management received the least agreement and have most potential for conflict. These options also had the most visitor and community resident respondents who simply were unsure of their opinions regarding mosquito management. It appears that controlling mosquitoes *only* during a declared public health emergency is highly polarized. The polarization for visitors appears linked to differences in opinion between consumptive- and nonconsumptive-use visitors, with nonconsumptive-use visitors more likely to recognize mosquitoes as a natural part of a healthy wetland ecosystem and in favor of control only when numbers are excessively high or when a public health emergency has been declared. It is not clear



what is driving the polarization within community residents regarding mosquito control. There were no meaningful differences among community groups, so it is not related to where people live in relation to the refuge.

As options are developed for the CCP, understanding the acceptability of different scenarios can be helpful in developing ecologically sound management options that are sociopolitically balanced, when possible. It will also be helpful to know where opposition may occur as the public participation process continues. Likewise, as alternatives are implemented, it will be important to recognize potential resistance; even though the development of a CCP is a public process, it is unlikely that all stakeholders will be in agreement with all management actions.

## **Communication, Civic Engagement, and Trust**

In communicating with the public, it is important to understand how individuals participate in natural resource decisionmaking (civic engagement) and ways in which they commonly obtain information on these topics. It is also important to understand their trust in the managing organization.

Visitors to Prime Hook NWR rely heavily on friends and neighbors for news and information about the refuge. Even though most visitors are local, they do not rely heavily on newspapers. This is contrary to local residents, who rely mostly on newspapers, followed by friends and neighbors, for news and information about the refuge. There appears to be some emerging use of the Internet for refuge information by both visitors and community residents. These results support the importance of targeting communication strategies and outlets to different user groups of the refuge to convey important messages.

Community residents and visitors to the refuge have been quite engaged in natural resource decisionmaking in the past 5 years, engaging in both passive activities, such as signing a petition, and active activities, such as joining a special interest group. On average, visitors and community residents have engaged in half of the activities listed in the survey. Interestingly, while community residents rely heavily on newspapers to receive refuge information, they do not use this outlet much to engage in civic dialogue about natural resource issues—only a very small portion of residents have ever written a letter to the editor of a newspaper.

Results show that visitors to Prime Hook NWR and local community residents are well educated and are relatively highly involved in natural resource decisionmaking. Many studies have shown that the more education people have, the more likely they are to engage in civic decisionmaking activities (see Verba, Lehman Schlozman, and Brady, 1995). When asked, around 70 percent of residents and visitors indicated they would like more information about future refuge planning activities, and nearly as many requested results from this study. To that end, it is likely that local visitors and residents will continue their involvement and will desire to be actively involved in the CCP planning process for Prime Hook NWR.

Another factor important in public involvement in decisionmaking is trust in the managing agency. Visitors and community residents appear to have moderate trust in Prime Hook NWR staff and the FWS. There is nearly a 25-percent contingent, however, that is unsure about their level of trust in the agency and the refuge. A planning process such as development of the CCP is an opportunity to build relationships and improve trust not only with visitors and community residents with whom the refuge has established relationships, but also with those who are less familiar with the refuge or have not engaged in the process due to lack of trust in the agency or uncertainty of their role in the process.

## Benefits of the Refuge to the Local Community

Based on qualitative responses, visitors and community residents recognize the value the refuge provides to the local community. They feel the refuge is providing an important function in protecting and preserving valued natural resources. They also recognize that refuge lands are protected from development and value the long-term implications of this protection in regard to future growth in the surrounding area and in the State.

## References

- Burby, R.J., 2003, Making plans that matter: Citizen involvement and government action: *Journal of the American Planning Association*, v. 69, no. 1, p. 33–49.
- Carr, D.S., and Halvorsen, K., 2001, An evaluation of three democratic, community-based approaches to citizen participation—Surveys, conversations with community groups, and community dinners: *Society and Natural Resources*, v., p. 107–126.
- Dillman, D.A., 2000, *Mail and internet surveys—The tailored design method (2d ed.)*: New York, John Wiley and Sons, 464 p.
- Halvorsen, K.E., 2003, Assessing the effects of public participation: *Public Administration Review*, v. 63, no. 5, p. 535–543.
- Jorgensen, B.S., and Stedman, R.C., 2001, Sense of place as an attitude—Lakeshore owners' attitudes toward their properties: *Journal of Environmental Psychology*, v. 21, p. 233–248.
- Manfredo, M.J., Vaske, J.J., and Teel, T.L., 2003, The potential for conflict index— A graphic approach to practical significance of human dimensions research: *Human Dimensions of Wildlife*, v. 8, p. 219–228.
- Martilla, J.A., and James, J.C., 1977, Importance-performance analysis: *Journal of Marketing*, v. 41, p. 77–79.
- McCool, S.F., and Guthrie, K., 2001, Mapping the dimensions of successful public participation in messy natural resources management situations: *Society and Natural Resources*, v. 14, p. 309–323.
- Olson, D. and Lindall, S., 1999, *IMPLAN Professional Software, Analysis and Data Guide*: Minnesota IMPLAN Group, Inc.
- Poisner, J., 1996, A civic republican perspective on the National Environmental Policy Act's process of citizen participation: *Environmental Law*, v. 26, p. 53–94.
- Stynes, D., 1998, *Guidelines for measuring visitor spending*: Ann Arbor, Department of Parks, Recreation and Tourism Resources, Michigan State University.
- Tarrant, M.A., and Smith, E.K., 2002, The use of a modified importance-performance framework to examine visitor satisfaction with attributes of outdoor recreation settings: *Managing Leisure*, v. 7, p. 69–82.
- The citizen's wildlife refuge planning handbook: Charting the future of conservation on the National Wildlife Refuge near you. Accessed May 15, 2006 online: <http://www.defenders.org/pubs/refuge00.html>
- U.S. Census Bureau, 2006, *2000 Census of population and housing*, Washington, D.C.: U.S. Census Bureau.
- Vaske, J. J., Donnelly, M. P., and Taylor, J. G., 1999, The price is “about “ right: National Wildlife Refuge visitors' evaluations of the fee demonstration program: *Human Dimensions of Wildlife*, v. 4, p. 62–72.
- Verba, S., Lehman Schlozman, K., and Brady, H., 1995, *Voice and equality— Civic voluntarism in American politics*: Cambridge, Harvard University Press, 640 p.

Williams, D.R., Patterson, M.E., Roggenbuck, J.W., and Watson, A.E., 1992, Beyond the commodity metaphor—Examining emotional and symbolic attachment to place: *Leisure Science*, v. 14, p. 29–46.

Williams, D.R., and Stewart, S.I., 1998, Sense of place—An elusive concept that is finding a home in ecosystem management: *Journal of Forestry*, v. 96, no. 5, p. 18–23.

# **Appendix A: Prime Hook National Wildlife Refuge Visitor Survey**

# Prime Hook National Wildlife Refuge Visitor Survey



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**SECTION 1 – Please tell us about your visit to Prime Hook National Wildlife Refuge.**

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1. How many times have you visited Prime Hook National Wildlife Refuge in the last 12 months?  
 This is my first visit to the Refuge \_\_\_\_\_ # trips
  
2. Of your trips to the Refuge, how many occurred during the week/weekend?  
\_\_\_\_\_ # trips during weekdays \_\_\_\_\_ # trips during weekends
  
3. Please check the activities you have participated in during the last 12 months at Prime Hook National Wildlife Refuge. *Please check all that apply.*

<input type="checkbox"/> Bird watching	<input type="checkbox"/> Nature/Wildlife viewing	<input type="checkbox"/> Driving for pleasure
<input type="checkbox"/> Environmental education	<input type="checkbox"/> Bicycling	<input type="checkbox"/> Volunteering
<input type="checkbox"/> Fishing	<input type="checkbox"/> Crabbing	<input type="checkbox"/> Guided interpretive tours
<input type="checkbox"/> Picnicking	<input type="checkbox"/> Photography	<input type="checkbox"/> Special events
<input type="checkbox"/> Hiking/Nature trails	<input type="checkbox"/> Canoeing/Kayaking	<input type="checkbox"/> Other ( <i>please specify</i> ) _____
<input type="checkbox"/> Hunting	<input type="checkbox"/> Cross country skiing	_____
  
4. Which of the activities that you checked above was the most important reason for your **most recent visit**?  
Most Important Activity \_\_\_\_\_
  
5. For your most recent visit to Prime Hook National Wildlife Refuge, was it (*please check only one*):  
 the primary purpose or sole destination of your trip?  
 one of many equally important reasons or destinations for your trip?  
 just an incidental or spur of the moment stop on a trip taken for other purposes or to other destinations?
  
6. What was your one-way **travel time** and **travel distance** from home to Prime Hook National Wildlife Refuge on this most recent trip?  
Travel time: \_\_\_\_\_ # hours \_\_\_\_\_ # minutes      Distance: \_\_\_\_\_ # one-way miles
  
7. What was the amount of time you spent at Prime Hook National Wildlife Refuge on this most recent trip?  
\_\_\_\_\_ # hours
  
8. If you were part of a group on your most recent visit to the Refuge, which of the following best describes that group? *Please check only one.*

<input type="checkbox"/> Family	<input type="checkbox"/> Commercial tour group	<input type="checkbox"/> Other ( <i>please specify</i> ) _____
<input type="checkbox"/> Friends	<input type="checkbox"/> Organized club or group	_____
<input type="checkbox"/> Friends and family	<input type="checkbox"/> School group	
  
9. Did you or do you plan to stay overnight within 25 miles of the Refuge as part of **this** most recent trip to the Refuge?  
 No → If No, please skip to Section 2 on the next page.  
 Yes

10. What type of overnight accommodations did you use or do you plan to use? *Please check all that apply.*

- Hotel/motel
  Private home  
 Public campground
  Other (*please specify*) \_\_\_\_\_  
 Bed & Breakfast

11. How many nights did you or will you be staying overnight? \_\_\_\_\_ # nights

**SECTION 2 - If you hunt or fish on the Refuge, please tell us about those experiences below. If you do not hunt or fish on the Refuge, please skip to Section 3.**

1. How many years have you been hunting or fishing at Prime Hook National Wildlife Refuge?

\_\_\_\_\_ # years hunting \_\_\_\_\_ # years fishing

2. Please tell us how important the following hunting/fishing activities are in terms of your decision to take hunting/fishing trips to Prime Hook National Wildlife Refuge. *Please circle one number for each item.*

Activity	Importance for your recreation at Prime Hook NWR				
	Not at all Important	Somewhat Important	Moderately Important	Very Important	No Opinion
Hunting deer using archery	1	2	3	4	<input type="checkbox"/>
Hunting deer using muzzle loader	1	2	3	4	<input type="checkbox"/>
Hunting deer using shotgun	1	2	3	4	<input type="checkbox"/>
Hunting dove	1	2	3	4	<input type="checkbox"/>
Hunting rabbit	1	2	3	4	<input type="checkbox"/>
Hunting squirrel	1	2	3	4	<input type="checkbox"/>
Hunting other upland and small game (e.g., quail)	1	2	3	4	<input type="checkbox"/>
Hunting snow geese	1	2	3	4	<input type="checkbox"/>
Hunting resident Canada geese	1	2	3	4	<input type="checkbox"/>
Hunting ducks	1	2	3	4	<input type="checkbox"/>
Trapping	1	2	3	4	<input type="checkbox"/>
Fishing in Prime Hook Creek	1	2	3	4	<input type="checkbox"/>
Fishing in Fleetwood/Turkle Ponds	1	2	3	4	<input type="checkbox"/>
Fishing at the water control structures on the Refuge	1	2	3	4	<input type="checkbox"/>

3. Do you think the Refuge provides a quality hunting experience?

No  Yes → *Please comment on your answer below.* \_\_\_\_\_

4. Do you think the Refuge provides a quality fishing experience?

No  Yes → *Please comment on your answer below.* \_\_\_\_\_

5. How desirable are the following hypothetical options related to hunting on the Refuge? *Please circle the number that best represents your opinion.*

Options	Not at all Desirable	Somewhat Desirable	Moderately Desirable	Very Desirable	No Opinion
Provide more deer hunting areas where portable stands could be used and less areas with permanent fixed stands.	1	2	3	4	<input type="checkbox"/>
Provide designated ponds where waterfowl hunters could set up individual blinds (in boat or on edge of pond). It would be the hunter's responsibility to choose their hunting location and set up and remove a blind within the designated pond.	1	2	3	4	<input type="checkbox"/>
Conduct a drawing to issue permits for waterfowl and deer hunting 1½ hours before shooting time as opposed to the current 2 hours before shooting time.	1	2	3	4	<input type="checkbox"/>
Issue waterfowl hunting permits for blinds using a pre-season drawing in addition to a daily standby drawing.	1	2	3	4	<input type="checkbox"/>
Issue deer hunting permits for stands only through a daily standby drawing without conducting a pre-season drawing.	1	2	3	4	<input type="checkbox"/>

**SECTION 3 – Please tell us about your trip expenditures.**

1. Please indicate the amount you and members of your group with whom you shared expenses (e.g., other family members, traveling companions) spent on **your most recent visit** to Prime Hook National Wildlife Refuge. *Please enter the amount for each category.*

Category	Amount Spent Locally in Sussex County ( <i>within 25 miles of the Refuge</i> )	Amount Spent Elsewhere in Delaware En Route to Prime Hook National Wildlife Refuge
Gasoline/Related automobile costs	\$ _____	\$ _____
Hotels/Motels/Bed and Breakfast	\$ _____	\$ _____
Campground/RV park fees	\$ _____	\$ _____
Food/drink: restaurants	\$ _____	\$ _____
Food/drink: groceries	\$ _____	\$ _____
Taxidermy	\$ _____	\$ _____
Game processing	\$ _____	\$ _____
Supplies/Souvenirs/Other retail	\$ _____	\$ _____
Car rental	\$ _____	\$ _____
Equipment rental (for example, canoe/kayak)	\$ _____	\$ _____
Hunting/Fishing license	\$ _____	\$ _____
Hunting/Fishing supplies	\$ _____	\$ _____

2. Including yourself, how many people in your group shared these expenses on this most recent trip?  
 \_\_\_\_\_ # of persons in your group sharing expenses



**SECTION 4 – Please tell us about your experience at Prime Hook National Wildlife Refuge.**

1. For each activity listed in the middle column, please tell us **how important** that activity is to you when visiting Prime Hook National Wildlife Refuge (numbers on left). Then, tell us **the general location** where you usually participate in each activity (numbers on right).

Importance (Please circle only one.)					Activity	Location (See map insert; please circle all that apply.)			
Not at all Important	Somewhat Important	Moderately Important	Very Important	No Opinion		Slaughter Beach Road	Broadkill Beach Road	Prime Hook Beach Road	Fowler Beach Road
1	2	3	4	5	Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	1	2	3	4
1	2	3	4	5	Viewing forest birds (songbirds)	1	2	3	4
1	2	3	4	5	Experiencing a serene environment	1	2	3	4
1	2	3	4	5	Being in natural, undeveloped lands	1	2	3	4
1	2	3	4	5	Fishing	1	2	3	4
1	2	3	4	5	Biking/Mountain biking	1	2	3	4
1	2	3	4	5	Wildlife photography opportunities	1	2	3	4
1	2	3	4	5	Crabbing	1	2	3	4
1	2	3	4	5	Environmental education programs	Not applicable			
1	2	3	4	5	Paddling (canoeing or kayaking)	Not applicable			
1	2	3	4	5	Hiking/Nature trails	Not applicable			
1	2	3	4	5	Hunting waterfowl	Not applicable			
1	2	3	4	5	Hunting upland game	Not applicable			
1	2	3	4	5	Hunting deer	Not applicable			
1	2	3	4	5	Learning about the site from a staff person	Not applicable			
1	2	3	4	5	Other activities (Please list) _____	1	2	3	4

2. Are there activities or services that you think **should be** allowed at Prime Hook National Wildlife Refuge that currently are not allowed?

No       Yes → *If yes, please list these activities below.*

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3. Are there activities or services that you think **should not be** allowed at Prime Hook National Wildlife Refuge that are currently allowed?

No       Yes → *If yes, please list these activities below.*

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4. This question has two parts. **First** rate **how important** the item is to your satisfaction during your last visit to Prime Hook National Wildlife Refuge. **Then** rate **how satisfied** you are with the way the Refuge is managing for each item.

Importance						Satisfaction					
Not at all Important	Somewhat Important	Moderately Important	Very Important	Does Not Apply		Poor	Adequate	Average	Good	Outstanding	Does Not Apply
1	2	3	4	DA	Parking facilities	1	2	3	4	5	DA
1	2	3	4	DA	Visitor contact station	1	2	3	4	5	DA
1	2	3	4	DA	Refuge grounds maintained (such as litter pick-up)	1	2	3	4	5	DA
1	2	3	4	DA	Restrooms/Comfort stations	1	2	3	4	5	DA
1	2	3	4	DA	Wildlife viewing opportunities	1	2	3	4	5	DA
1	2	3	4	DA	Condition of the natural environment	1	2	3	4	5	DA
1	2	3	4	DA	Availability of Refuge staff	1	2	3	4	5	DA
1	2	3	4	DA	Environmental education programs	1	2	3	4	5	DA
1	2	3	4	DA	Gift shop or bookstore items	1	2	3	4	5	DA
1	2	3	4	DA	Availability of information on hiking, bird watching, or wildlife photography	1	2	3	4	5	DA
1	2	3	4	DA	Refuge special events	1	2	3	4		DA
1	2	3	4	DA	Boat ramps	1	2	3	4	5	DA
1	2	3	4	DA	Hiking trails	1	2	3	4	5	DA
1	2	3	4	DA	Kiosks or signs with information about the Refuge and its wildlife	1	2	3	4	5	DA
1	2	3	4	DA	User fees to support services provided	1	2	3	4	5	DA
1	2	3	4	DA	Volunteer opportunities	1	2	3	4	5	DA
1	2	3	4	DA	Media coverage of Refuge	1	2	3	4	5	DA
1	2	3	4	DA	Access for people with disabilities	1	2	3	4	5	DA
1	2	3	4	DA	Availability of information on the history of the site	1	2	3	4	5	DA
1	2	3	4	DA	Waterfowl hunting program	1	2	3	4	5	DA
1	2	3	4	DA	Deer hunting program	1	2	3	4	5	DA
1	2	3	4	DA	Upland game hunting program	1	2	3	4	5	DA
1	2	3	4	DA	Fishing opportunities (e.g., piers, parking areas)	1	2	3	4	5	DA

5. Please indicate how you feel the features listed below should be managed to maximize your experience at Prime Hook National Wildlife Refuge. *Please check one answer for each feature.*

Naturalness	<input type="checkbox"/> restore more natural conditions	<input type="checkbox"/> leave as is	<input type="checkbox"/> allow more landscape alterations
Information services	<input type="checkbox"/> Refuge staff less visible and available	<input type="checkbox"/> leave as is	<input type="checkbox"/> Refuge staff more visible and available
Hiking trails	<input type="checkbox"/> provide fewer trails	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more trails
Information signs	<input type="checkbox"/> limit the number of signs	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more signs
Environmental education opportunities	<input type="checkbox"/> reduce programs and activities	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more programs and activities
Brochures/Publications	<input type="checkbox"/> provide fewer brochures/publications about Refuge resources, activities, and regulations	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more brochures/publications about Refuge resources, activities, and regulations
Interpretive exhibits	<input type="checkbox"/> provide fewer interpretive exhibits	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more interpretive exhibits
Hunting	<input type="checkbox"/> provide fewer hunting areas	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more hunting areas
Fishing	<input type="checkbox"/> restrict access to ponds, creeks, and shorelines	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more access to ponds, creeks, and shorelines
Boat ramps	<input type="checkbox"/> provide fewer boat ramps	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more boat ramps
Wildlife observation/photography opportunities	<input type="checkbox"/> provide fewer facilities (such as viewing blinds and walkways)	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more facilities (such as viewing blinds and walkways)
Access to Refuge	<input type="checkbox"/> provide fewer parking areas and access points	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more parking areas and access points
Restrooms/Comfort stations	<input type="checkbox"/> provide fewer facilities along rivers and parking areas	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more facilities along rivers and parking areas
Visitor numbers	<input type="checkbox"/> restrict visitation to Refuge	<input type="checkbox"/> leave as is	<input type="checkbox"/> encourage more visitation to Refuge
Visitor impacts on wildlife	<input type="checkbox"/> restrict any visitor behavior that <i>may</i> negatively impact wildlife	<input type="checkbox"/> leave as is	<input type="checkbox"/> restrict <i>only</i> visitor behavior that is <i>known</i> to have negative impacts to wildlife

6. What would enhance your experience at Prime Hook National Wildlife Refuge? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. What experience have you had at Prime Hook National Wildlife Refuge that would bring you back?

\_\_\_\_\_

\_\_\_\_\_

8. Please indicate the extent to which each statement below describes your general feelings about Prime Hook National Wildlife Refuge. *Please circle the number that best describes how you feel about each statement.*

Statements	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
It is important to me that my children and my children's children will be able to visit the Refuge.	1	2	3	4	5
I am very attached to the Refuge.	1	2	3	4	5
Coming to places like this Refuge is an important part of my family tradition.	1	2	3	4	5
This area is the best place for what I like to do.	1	2	3	4	5
Because of my experiences at this Refuge I will definitely come back.	1	2	3	4	5
I feel this Refuge is a part of me.	1	2	3	4	5
This place is special because it is where my family and I spend time.	1	2	3	4	5
Everything considered, I trust the Refuge staff will do what is right for the Refuge.	1	2	3	4	5
I get more satisfaction out of visiting this place than visiting any other.	1	2	3	4	5
This Refuge means a lot to me.	1	2	3	4	5
Doing what I do at this Refuge is more important to me than doing it in any other place.	1	2	3	4	5
I have confidence in decisions made by the local staff at the Refuge.	1	2	3	4	5
The Refuge provides me with a sense of connection to past and future generations.	1	2	3	4	5
No other place can compare to this area.	1	2	3	4	5
I identify strongly with the Refuge.	1	2	3	4	5
Coming to places like this Refuge was an important part of my childhood.	1	2	3	4	5
I wouldn't substitute any other place for doing what I do here.	1	2	3	4	5
This place is special because it is where my friends and I spend time.	1	2	3	4	5
In general, I have confidence in the decisions that the U.S. Fish and Wildlife Service makes about managing this Refuge.	1	2	3	4	5
I would consider paying a fee to visit this Refuge.	1	2	3	4	5
I should <i>not</i> have to pay a fee to visit this or any wildlife Refuge.	1	2	3	4	5
If I could, I would volunteer my services to the Refuge.	1	2	3	4	5
I would consider participating in a Refuge Friends group.	1	2	3	4	5

**SECTION 5 – Please tell us your opinion about different management issues on Prime Hook National Wildlife Refuge.**

1. The Refuge manages a unique mosaic of wetland habitat types that fulfills its primary purpose of providing food and cover resources for migratory birds. Historically, marsh and upland ecosystems were exposed to dynamic processes such as fire, flood, drought and grazing. In the past, Refuge managers used burning, mowing, water level management, farming and salt marsh ditching (open marsh and water management) activities to manage its wildlife habitats. In the future, greater efforts may be employed to restore and maintain important habitat for endangered and protected species. *Please read each statement below and circle the number that best represents your level of agreement.*

Management Issues	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
It is important to restore and manage refuge habitats for rare and endangered species on the Refuge.	1	2	3	4	5
Mosquitoes are a natural component of healthy and functional wetland ecosystems.	1	2	3	4	5
Mosquito control activities on the Refuge should only occur during a declared public health emergency.	1	2	3	4	5
The use of chemicals to control mosquitoes on Refuge lands should only occur when field data show high numbers of breeding mosquitoes.	1	2	3	4	5
It is acceptable to use fire as a management tool to reduce buildup of vegetation that could fuel fires.	1	2	3	4	5
It is acceptable to use fire as a tool to maintain high productivity of Refuge wetland, forested, and grassland habitats for the benefit of wildlife.	1	2	3	4	5
It is important to eliminate non-native/invasive plant communities on the Refuge.	1	2	3	4	5
It is important to cease farming and strive to restore drained and/or degraded areas to natural habitats.	1	2	3	4	5
It is acceptable to purchase land within the Refuge boundary from willing sellers at market value for the benefit of wildlife.	1	2	3	4	5
It is acceptable for the Refuge to purchase conservation easements on land outside the current boundary to manage the area's wildlife resources.	1	2	3	4	5
It is acceptable to maintain and preserve Refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds.	1	2	3	4	5

2. As a visitor to Prime Hook National Wildlife Refuge, how desirable are the following hypothetical options related to visitation to the Refuge? *Please circle the number that best represents your opinion.*

Options	Not Desirable	Somewhat Desirable	Generally Desirable	Very Desirable	No Opinion
Additional walking trails around the Refuge Headquarters area	1	2	3	4	<input type="checkbox"/>
Observation tower overlooking marsh for viewing waterfowl and other wildlife	1	2	3	4	<input type="checkbox"/>
Regularly scheduled interpretive walks by a guide	1	2	3	4	<input type="checkbox"/>
New roadside pulloffs for wildlife observation or photography along Fowler Beach Road	1	2	3	4	<input type="checkbox"/>
New roadside pulloffs for wildlife observation or photography along Slaughter Beach Road	1	2	3	4	<input type="checkbox"/>

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**SECTION 6 – Please tell us something about yourself.**

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*These last few questions will help us in evaluating how well our sample represents visitors to the area. Your answers will be kept strictly confidential. You will not be identified in any way.*

1. How did you learn about Prime Hook National Wildlife Refuge? *Please check all that apply.*

- |  |   |
|--|---|
| <input type="checkbox"/> Radio   | <input type="checkbox"/> Delaware State Parks                   |
| <input type="checkbox"/> Newspaper ( <i>please specify which you read most</i> ) _____ | <input type="checkbox"/> Television                             |
| <input type="checkbox"/> Family  | <input type="checkbox"/> Magazine articles                      |
| <input type="checkbox"/> Friends/Neighbors/Work colleagues                             | <input type="checkbox"/> Internet/websites/email                |
| <input type="checkbox"/> Refuge staff  | <input type="checkbox"/> Local town officials                   |
| <input type="checkbox"/> Recreation/Environmental group                                | <input type="checkbox"/> Community groups                       |
| <input type="checkbox"/> Neighborhood association                                      | <input type="checkbox"/> Local newsletter                       |
| <input type="checkbox"/> Local business people   | <input type="checkbox"/> Government brochures/printed materials |
| <input type="checkbox"/> Delaware Division of Fish and Wildlife                        | <input type="checkbox"/> Other ( <i>please specify</i> ) _____  |

2. From the list of information sources in Question 1 (above), please state which single source you rely on most. *Please write the **one source** from above in the blank provided.* \_\_\_\_\_

3. We would like to understand how Refuge visitors participate in local or regional natural resource or environmental issues. Please indicate which of the activities you have participated in within the last 5 years related to environmental or natural resource issues. *Please check all that apply.*

- Attended a public hearing or meeting
- Contacted or wrote a state/federal agency
- Contacted or wrote a U.S. Senator, member of Congress, or State Legislator
- Wrote a letter to the editor of a newspaper
- Signed a petition
- Joined a special interest group (such as an environmental, sportsman's, animal rights, agriculture, or resource use organization)

4. Are you?  Male  Female
5. In what year were you born? \_\_\_\_\_ (yyyy)
6. Are you employed?  Yes → *(Please check one)*  Full time  Part time  
 No → Are you retired?  Yes  No
7. If you are employed, do you take time off from work to participate in outdoor recreation?  
 Yes  No
8. What is your highest year of formal schooling? *Please circle one.*
- |              |   |   |   |   |   |                      |   |   |               |    |    |                               |    |    |    |                                   |    |    |    |
|--------------|---|---|---|---|---|----------------------|---|---|---------------|----|----|-------------------------------|----|----|----|-----------------------------------|----|----|----|
| 1            | 2 | 3 | 4 | 5 | 6 | 7                    | 8 | 9 | 10            | 11 | 12 | 13                            | 14 | 15 | 16 | 17                                | 18 | 19 | 20 |
| (elementary) |   |   |   |   |   | (jr. high or middle) |   |   | (high school) |    |    | (college or technical school) |    |    |    | (graduate or professional school) |    |    |    |
9. What ethnicity do you consider yourself? *Please select one.*  
 Hispanic or Latino  Not Hispanic or Latino
10. What racial origin do you consider yourself? *Please select all that apply.*
- American Indian or Alaska Native  Asian  
 White  Native Hawaiian or other Pacific Islander  
 Black or African American
11. How many members are in your household? \_\_\_\_\_ persons
12. Including these people, what was your approximate household income from all sources (before taxes) last year?
- |   |  |  |
|---|--|--|
| <input type="checkbox"/> less than \$10,000 | <input type="checkbox"/> \$10,000-\$14,999   | <input type="checkbox"/> \$15,000-\$24,999 |
| <input type="checkbox"/> \$25,000-\$34,999  | <input type="checkbox"/> \$35,000-\$49,999   | <input type="checkbox"/> \$50,000-\$74,999 |
| <input type="checkbox"/> \$75,000-\$99,999  | <input type="checkbox"/> \$100,000-\$149,999 | <input type="checkbox"/> over \$150,000    |
13. Would you like more information on any of the following?
- Refuge Friends Group  Results from this study  
 Refuge Volunteer opportunities  Information about future Refuge planning activities

**Thank you for completing the survey. There is space for any additional comments you may have on the next page.**

## Comments?

*Please write any additional comments about Prime Hook National Wildlife Refuge below.*

---



# **Appendix B: Prime Hook National Wildlife Refuge Community Resident Survey**

# Prime Hook National Wildlife Refuge Community Survey



---

**SECTION 1 – Please tell us about your visit to Prime Hook National Wildlife Refuge.**

---

1. Have you visited Prime Hook National Wildlife Refuge in the past 5 years? *Please check one.*

No → If no, what would encourage you to visit? \_\_\_\_\_

---

IF NO, PLEASE SKIP NOW TO QUESTION 8 ON THE NEXT PAGE.

Yes

2. About how many years have you been visiting Prime Hook National Wildlife Refuge?

I have been visiting the Refuge for \_\_\_\_\_ years.

3. On average, how many times per year do you visit Prime Hook National Wildlife Refuge?

I visit the Refuge \_\_\_\_\_ times per year.

4. Of your trips to the Refuge, how many occurred during the week/weekend?

\_\_\_\_\_ # trips during weekdays      \_\_\_\_\_ # trips during weekends

5. When you visit the Refuge, what is the average length of your stay?

\_\_\_\_\_ # of hours

6. Please check the activities you have participated in during the last 12 months at Prime Hook National Wildlife Refuge. *Please check all that apply.*

Bird watching

Nature/Wildlife viewing

Driving for pleasure

Environmental education

Bicycling

Volunteering

Fishing

Crabbing

Guided interpretive tours

Picnicking

Photography

Special events

Hiking/Nature trails

Canoeing/Kayaking

Other (*please specify*)

Hunting

Cross country skiing

\_\_\_\_\_

7. Did you attend any of the following special events at Prime Hook National Wildlife Refuge? *Please check all that apply for the past year.*

Horseshoe Crab/Shorebird Festival (May)

National Fishing Day (June)

Waterfowl Festival (October)

Monthly Lecture Series

Birding Field Trips

Annual Vandegrift Memorial Lecture Series

8. For each activity listed in the middle column, please tell us **how important** that activity is to you when visiting Prime Hook National Wildlife Refuge (**numbers on left**). Then, tell us **the general location** where you usually participate in each activity (**numbers on right**).

Importance (Please circle only one.)					Activity	Location (See map insert; please circle all that apply.)			
Not at all Important	Somewhat Important	Moderately Important	Very Important	No Opinion		Slaughter Beach Road	Broadkill Beach Road	Prime Hook Beach Road	Fowler Beach Road
1	2	3	4	5	Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	1	2	3	4
1	2	3	4	5	Viewing forest birds (songbirds)	1	2	3	4
1	2	3	4	5	Experiencing a serene environment	1	2	3	4
1	2	3	4	5	Being in natural, undeveloped lands	1	2	3	4
1	2	3	4	5	Fishing	1	2	3	4
1	2	3	4	5	Biking	1	2	3	4
1	2	3	4	5	Wildlife photography opportunities	1	2	3	4
1	2	3	4	5	Crabbing	1	2	3	4
1	2	3	4	5	Environmental education programs	Not applicable			
1	2	3	4	5	Paddling (canoeing or kayaking)	Not applicable			
1	2	3	4	5	Hiking/Nature trails	Not applicable			
1	2	3	4	5	Hunting waterfowl	Not applicable			
1	2	3	4	5	Hunting upland game	Not applicable			
1	2	3	4	5	Hunting deer	Not applicable			
1	2	3	4	5	Learning about the site from a staff person	Not applicable			
1	2	3	4	5	Other activities (Please list) _____ _____	1	2	3	4

9. From the list of activities in Question 8 (above), what is your **primary reason** for visiting Prime Hook National Wildlife Refuge? Please write the **one activity** from above in the blank provided.

---

10. Are there activities or services that you think **should be** allowed at Prime Hook National Wildlife Refuge that currently are not allowed?

No       Yes → *If yes, please list these activities below.*

---

---

11. Are there activities or services that you think **should not be** allowed at Prime Hook National Wildlife Refuge that are currently allowed?

No       Yes → *If yes, please list these activities below.*

---

---

---

**SECTION 2 - Please tell us about the importance of the Refuge to you and the local community.**

---

1. Please tell us what you see as the biggest benefit to the local community from Prime Hook National Wildlife Refuge. *Please write your response below.*

---

---

2. Do you see any negative impacts to the local community from Prime Hook National Wildlife Refuge?

No       Yes → *If yes, please write your response below.*

---

---

---

---



3. Please indicate the extent to which each statement below describes your general feelings about Prime Hook National Wildlife Refuge. *Please circle the number that best describes how you feel about each statement.*

Statements	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
It is important to me that my children and my children's children will be able to visit the Refuge.	1	2	3	4	5
I am very attached to the Refuge.	1	2	3	4	5
Coming to places like this Refuge is an important part of my family tradition.	1	2	3	4	5
This area is the best place for what I like to do.	1	2	3	4	5
Because of my experiences at this Refuge I will definitely come back.	1	2	3	4	5
I feel this Refuge is a part of me.	1	2	3	4	5
This place is special because it is where my family and I spend time.	1	2	3	4	5
Everything considered, I trust the Refuge staff will do what is right for the Refuge.	1	2	3	4	5
I get more satisfaction out of visiting this place than visiting any other.	1	2	3	4	5
This Refuge means a lot to me.	1	2	3	4	5
Doing what I do at this Refuge is more important to me than doing it in any other place.	1	2	3	4	5
I have confidence in decisions made by the local staff at the Refuge.	1	2	3	4	5
The Refuge provides me a sense of connection to past and future generations.	1	2	3	4	5
No other place can compare to this area.	1	2	3	4	5
I identify strongly with the Refuge.	1	2	3	4	5
Coming to places like this Refuge was an important part of my childhood.	1	2	3	4	5
I wouldn't substitute any other place for doing what I do here.	1	2	3	4	5
This place is special because it is where my friends and I spend time.	1	2	3	4	5
In general, I have confidence in the decisions that the U.S. Fish and Wildlife Service makes about managing this Refuge.	1	2	3	4	5
I would consider paying a fee to visit this Refuge.	1	2	3	4	5
I should <i>not</i> have to pay a fee to visit this or any wildlife Refuge.	1	2	3	4	5

**SECTION 3 – Please tell us your opinions about the Refuge and its management.**

1. This question has two parts. **First** rate **how important** the item was to your satisfaction during your last visit to Prime Hook National Wildlife Refuge. **Then** rate **how satisfied** you are with the way the Refuge is managing for each item.

Importance						Satisfaction					
Not at All Important	Somewhat Important	Moderately Important	Very Important	Does Not Apply		Poor	Adequate	Average	Good	Outstanding	Does Not Apply
1	2	3	4	DA	Parking facilities	1	2	3	4	5	DA
1	2	3	4	DA	Visitor contact station	1	2	3	4	5	DA
1	2	3	4	DA	Refuge grounds maintained (such as litter pick-up)	1	2	3	4	5	DA
1	2	3	4	DA	Restrooms/Comfort stations	1	2	3	4	5	DA
1	2	3	4	DA	Wildlife viewing opportunities	1	2	3	4	5	DA
1	2	3	4	DA	Condition of the natural environment	1	2	3	4	5	DA
1	2	3	4	DA	Availability of Refuge staff	1	2	3	4	5	DA
1	2	3	4	DA	Environmental education programs	1	2	3	4	5	DA
1	2	3	4	DA	Gift shop or bookstore items	1	2	3	4	5	DA
1	2	3	4	DA	Availability of information on hiking, bird watching, or wildlife photography	1	2	3	4	5	DA
1	2	3	4	DA	Refuge special events	1	2	3	4	5	DA
1	2	3	4	DA	Boat ramps	1	2	3	4	5	DA
1	2	3	4	DA	Hiking trails	1	2	3	4	5	DA
1	2	3	4	DA	Kiosks or signs with information about the Refuge and its wildlife	1	2	3	4	5	DA
1	2	3	4	DA	User fees to support services provided	1	2	3	4	5	DA
1	2	3	4	DA	Volunteer opportunities	1	2	3	4	5	DA
1	2	3	4	DA	Media coverage of the Refuge	1	2	3	4	5	DA
1	2	3	4	DA	Access for people with disabilities	1	2	3	4	5	DA
1	2	3	4	DA	Availability of information on the history of the site	1	2	3	4	5	DA
1	2	3	4	DA	Waterfowl hunting program	1	2	3	4	5	DA
1	2	3	4	DA	Deer hunting program	1	2	3	4	5	DA
1	2	3	4	DA	Upland game hunting program	1	2	3	4	5	DA
1	2	3	4	DA	Fishing opportunities (e.g., piers, parking areas)	1	2	3	4	5	DA

2. Please indicate how you feel the features listed below should be managed to maximize your experience at Prime Hook National Wildlife Refuge. *Please check one answer for each feature.*

Naturalness	<input type="checkbox"/> restore more natural conditions	<input type="checkbox"/> leave as is	<input type="checkbox"/> allow more landscape alterations
Information services	<input type="checkbox"/> Refuge staff less visible and available	<input type="checkbox"/> leave as is	<input type="checkbox"/> Refuge staff more visible and available
Hiking trails	<input type="checkbox"/> provide fewer trails	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more trails
Information signs	<input type="checkbox"/> limit the number of signs	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more signs
Environmental education opportunities	<input type="checkbox"/> reduce programs and activities	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more programs and activities
Brochures/Publications	<input type="checkbox"/> provide fewer brochures/publications about Refuge resources, activities, and regulations	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more brochures/publications about Refuge resources, activities, and regulations
Interpretive exhibits	<input type="checkbox"/> provide fewer interpretive exhibits	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more interpretive exhibits
Hunting	<input type="checkbox"/> provide fewer hunting areas	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more hunting areas
Fishing	<input type="checkbox"/> restrict access to ponds, creeks, and shorelines	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more access to ponds, creeks, and shorelines
Boat ramps	<input type="checkbox"/> provide fewer boat ramps	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more boat ramps
Wildlife observation/photography opportunities	<input type="checkbox"/> provide fewer facilities (such as viewing blinds and walkways)	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more facilities (such as viewing blinds and walkways)
Access to Refuge	<input type="checkbox"/> provide fewer parking areas and access points	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more parking areas and access points
Restrooms/Comfort stations	<input type="checkbox"/> provide fewer facilities	<input type="checkbox"/> leave as is	<input type="checkbox"/> provide more facilities
Visitor numbers	<input type="checkbox"/> restrict visitation to Refuge	<input type="checkbox"/> leave as is	<input type="checkbox"/> encourage more visitation to Refuge
Visitor impacts on wildlife	<input type="checkbox"/> restrict any visitor behavior that <i>may</i> negatively impact wildlife	<input type="checkbox"/> leave as is	<input type="checkbox"/> restrict <i>only</i> visitor behavior that is <i>known</i> to have negative impacts to wildlife

3. What would enhance your experience at Prime Hook National Wildlife Refuge? \_\_\_\_\_  
 \_\_\_\_\_

4. What experience have you had at Prime Hook National Wildlife Refuge that would bring you back?  
 \_\_\_\_\_  
 \_\_\_\_\_



5. The Refuge manages a unique mosaic of wetland habitat types that fulfills its primary purpose of providing food and cover resources for migratory birds. Historically, marsh and upland ecosystems were exposed to dynamic processes such as fire, flood, drought and grazing. In the past, Refuge managers used burning, mowing, water level management, farming and salt marsh ditching (open marsh and water management) activities to manage its wildlife habitats. In the future, greater efforts may be employed to restore and maintain important habitat for endangered and protected species. *Please read each statement below and circle the number that best represents your level of agreement.*

Management Issues	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
It is important to restore and manage Refuge habitats for rare and endangered species on the Refuge.	1	2	3	4	5
Mosquitoes are a natural component of healthy and functional wetland ecosystems.	1	2	3	4	5
Mosquito control activities on the Refuge should only occur during a declared public health emergency.	1	2	3	4	5
The use of chemicals to control mosquitoes on Refuge lands should only occur when field data show high numbers of breeding mosquitoes.	1	2	3	4	5
It is acceptable to use fire as a management tool to reduce buildup of vegetation that could fuel fires.	1	2	3	4	5
It is acceptable to use fire as a tool to maintain high productivity of Refuge wetland, forested, and grassland habitats for the benefit of wildlife.	1	2	3	4	5
It is important to eliminate non-native/invasive plant communities on the Refuge.	1	2	3	4	5
It is important to cease farming and strive to restore drained and/or degraded areas to natural habitats.	1	2	3	4	5
It is acceptable to purchase land within the Refuge boundary from willing sellers at market value for the benefit of wildlife.	1	2	3	4	5
It is acceptable for the Refuge to purchase conservation easements on land outside the current boundary to manage the area's wildlife resources.	1	2	3	4	5
It is acceptable to maintain and preserve Refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds.	1	2	3	4	5



6. As a resident of the local community, how desirable are the following hypothetical options related to visitation to the Refuge? *Please circle the number that best represents your opinion.*

Options	Not Desirable	Somewhat Desirable	Generally Desirable	Very Desirable	No Opinion
Additional walking trails around the Refuge Headquarters area	1	2	3	4	<input type="checkbox"/>
Observation tower overlooking marsh for viewing waterfowl and other wildlife	1	2	3	4	<input type="checkbox"/>
Regularly scheduled interpretive walks by a guide	1	2	3	4	<input type="checkbox"/>
New roadside pulloffs for wildlife observation or photography along Fowler Beach Road	1	2	3	4	<input type="checkbox"/>
New roadside pulloffs for wildlife observation or photography along Slaughter Beach Road	1	2	3	4	<input type="checkbox"/>

**SECTION 4 – Please tell us something about yourself.**

1. Where do you get most of your news and information about Prime Hook National Refuge? *Please check all that apply.*

- |  |  |
|--|--|
| <input type="checkbox"/> Radio   | <input type="checkbox"/> Television                                      |
| <input type="checkbox"/> Newspaper ( <i>please specify which you read most</i> ) | <input type="checkbox"/> Internet/Websites/Email                         |
| <input type="checkbox"/> _____   | <input type="checkbox"/> Local town officials                            |
| <input type="checkbox"/> Family  | <input type="checkbox"/> Local newsletter                                |
| <input type="checkbox"/> Friends/Neighbors/Work colleagues                       | <input type="checkbox"/> Government brochures or other printed materials |
| <input type="checkbox"/> Neighborhood association                                | <input type="checkbox"/> Civic group or organization                     |
| <input type="checkbox"/> Recreation/Environmental group                          | <input type="checkbox"/> Local business people                           |
| <input type="checkbox"/> Prime Hook Refuge staff                                 | <input type="checkbox"/> Community groups                                |
| <input type="checkbox"/> Bombay Hook Refuge Staff                                | <input type="checkbox"/> Other ( <i>please specify</i> ) _____           |
| <input type="checkbox"/> Delaware Division of Fish and Wildlife                  |  |
| <input type="checkbox"/> Delaware State Parks                                    |  |

2. From the list of information sources in Question 1 (above), please state which single source you rely on most. *Please write the **one source** from above in the blank provided.* \_\_\_\_\_

3. We would like to understand how Refuge visitors participate in local or regional natural resource or environmental issues. Please indicate which of the activities you have participated in within the last 5 years related to environmental or natural resource issues. *Please check all that apply.*

- Attended a public hearing or meeting
- Contacted or wrote a state/federal agency
- Contacted or wrote a U.S. Senator, member of Congress, or State Legislator
- Wrote a letter to the editor of a newspaper
- Signed a petition
- Joined a special interest group (such as an environmental, sportsman’s, animal rights, agriculture, or resource use organization)

These last few questions will help us in evaluating how well our sample represents local community members. These questions are necessary to ensure the results are statistically valid. Know that your answers will not be associated with you individually in any way.

4. How would you describe your residency at the address you were contacted?

Year-round resident

Part-time resident → If part-time resident, what time of year do you live there?

Spring

Summer

Fall

Winter

5. How long have you lived in the Milton, Lewes, Milford area? \_\_\_\_\_ years

6. How many generations has your family lived in the Milton, Lewes, Milford area? \_\_\_\_\_ generations

7. Are you?  Male  Female

8. In what year were you born? \_\_\_\_\_ (YYYY)

9. Are you employed?  Yes → (Please check one)  Full-time  Part-time

No → Are you retired?  Yes  No

10. If you are employed, do you take time off from work to participate in outdoor recreation?

Yes

No

11. What ethnicity do you consider yourself? *Please select one.*

Hispanic or Latino  Not Hispanic or Latino

12. What racial origin do you consider yourself? *Please select all that apply.*

American Indian or Alaska Native  Asian

White  Native Hawaiian or other Pacific Islander

Black or African American

13. What is your highest year of formal schooling? *Please circle one.*

1 2 3 4 5 6  
(elementary)

7 8 9  
(jr. high or  
middle)

10 11 12  
(high school)

13 14 15 16  
(college or  
technical school)

17 18 19 20  
(graduate or  
professional school)

14 How many members are in your household? \_\_\_\_\_ persons

15. Including these people, what was your approximate household income from all sources (before taxes) last year?

less than \$10,000

\$25,000-\$34,999

\$75,000-\$99,999

\$10,000-\$14,999

\$35,000-\$49,999

\$100,000-\$149,999

\$15,000-\$24,999

\$50,000-\$74,999

over \$150,000

16. Would you like to receive information on any of the following?

Refuge Friends Group

Refuge volunteer opportunities

Results from this study

Information about future Refuge planning activities

**Thank you for completing the survey. There is space for any additional comments you may have on the next page.**

## **Comments?**

*Please write any additional comments about Prime Hook National Wildlife Refuge below.*

---

## Appendix C: Visitor Survey Frequency Results

This appendix contains the information obtained from frequency counts of the raw data from the Prime Hook National Wildlife Refuge visitor survey. The order of the tables follows that of the questions in the survey, section by section. Open-ended questions contained in the survey have been categorized based on responses. Verbatim responses are provided at the end of the appendix.

### Section 1: In this section we asked the visitor to tell us about their visit to Prime Hook National Wildlife Refuge.

Question 1. How many times have you visited Prime Hook National Wildlife Refuge in the last 12 months?

**Table 1.** Number of trips per year taken to Prime Hook National Wildlife Refuge by visitors.

Number of trips per year to Prime Hook National Wildlife Refuge <sup>a</sup>	<i>n</i>	Percent (%)
This is my first trip to Prime Hook National Wildlife Refuge	78	23
1	11	5
2	30	12
3	27	11
4	17	7
5	17	7
6–10	57	23
11–20	53	22
21–30	18	7
31–40	6	2
41–50	5	2
> 50	5	2

<sup>a</sup> *n* = 319

Average number of trips = 12

**Question 2.** Of your trips to the refuge, how many occurred during the week/weekend?

**Table 2.** Number of trips taken to Prime Hook National Wildlife Refuge during the week/weekend.

Number of trips taken during weekdays <sup>a</sup>	Percent (%)		Number of trips taken during weekends <sup>b</sup>	Percent (%)
1	30		1	25
2	14		2	18
3	8		3	8
4	8		4	7
5	10		5	9
6-10	15		6-10	19
11-20	11		11-20	10
21-30	2		21-30	2
31-40	1		31-40	1
> 40	1		> 40	1

<sup>a</sup> n = 259; Mean = 6.08; SD=8.3

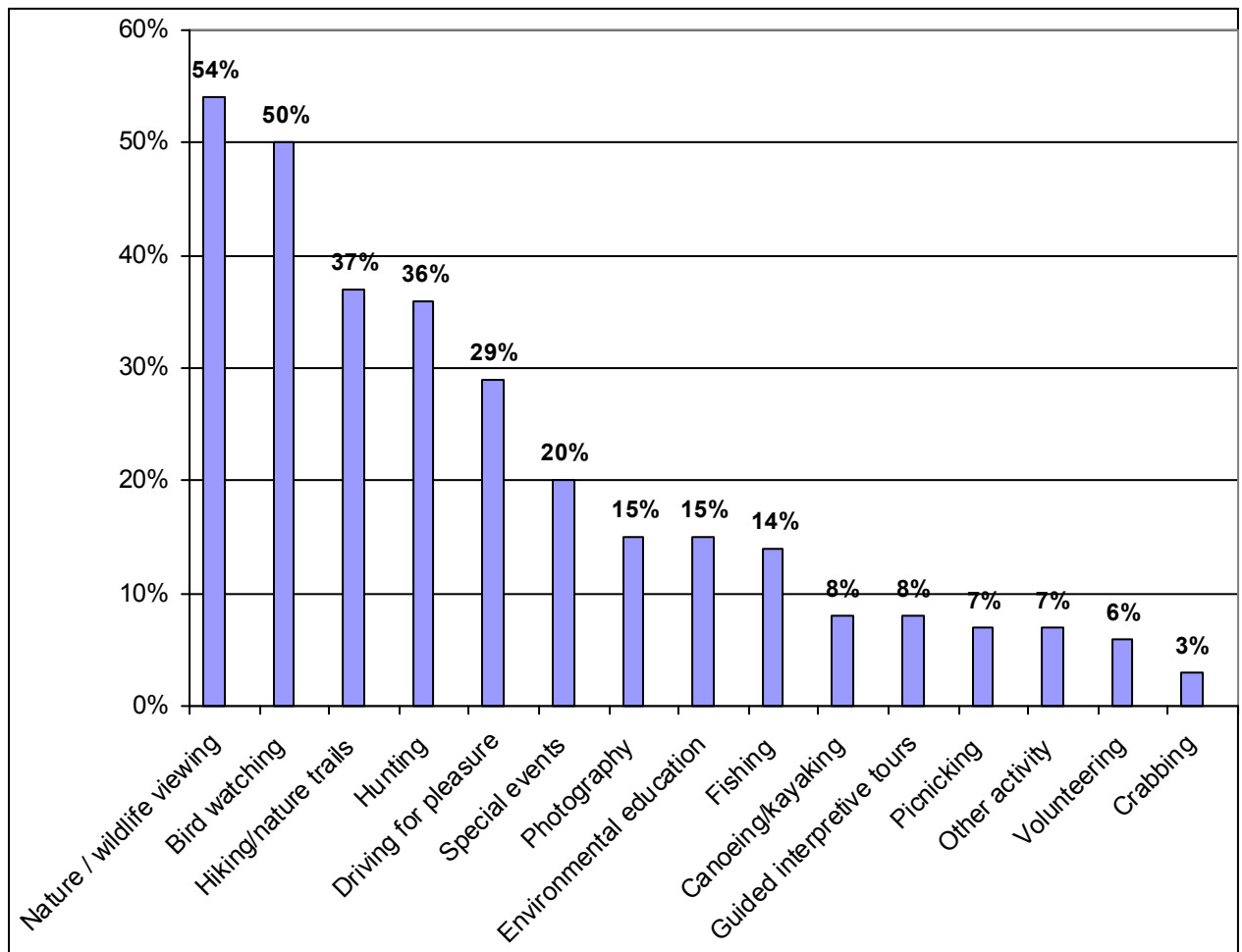
<sup>b</sup> n = 233; Mean = 6.26; SD=8.27

**Question 3.** Please check the activities you have participated in during the last 12 months at Prime Hook National Wildlife Refuge.

**Table 3.** Activities participated in during the last 12 months at Prime Hook National Wildlife Refuge.

Activity	Participated (%)
Nature/wildlife viewing	54
Birdwatching	50
Hiking/nature trails	37
Hunting	36
Driving for pleasure	29
Special events	20
Environmental education	15
Photography	15
Fishing	14
Canoeing/kayaking	8
Guided interpretive tours	8
Picnicking	7
Volunteering	6
Bicycling	4
Crabbing	3
Cross-country skiing	0
Other	7
<i>(responses included: birding/ bird Club, lectures, Red Hat Club, Scouting for deer, to relax, walking dog on beach swimming/vacationing)</i>	

n = 324



**Figure 1.** Activities visitors participated in during last 12 months at Prime Hook National Wildlife Refuge.



**Question 4.** Which of the activities that you checked above was the most important reason for your most recent visit?

**Table 4.** Categories of most important activities of visitor respondents.

<b>Categories developed from open-ended responses</b>	<b>n</b>	<b>%</b>
Birdwatching (responses included: bird club, birding, birds, and guided bird tour/walks, photography)	77	23.1
Hunting (responses included: hunting waterfowl, deer & duck hunting)	102	30.6
Environmental education (responses included: Environmental education w/birding emphasis, special event lectures, bug facts, Thursday evening lectures, learning about horseshoe crabs, guided interpretive tours, seed dispersal seminar)	25	7.5
Fishing and crabbing (responses included: fishing w/dad)	30	9
Non-motorized Recreation (responses included: canoeing, walking, hiking, biking, kayaking)	26	7.8
Nature and wildlife viewing (responses included: just relaxing with pleasant view)	29	8.7
Miscellaneous (responses included: Special events volunteering, relaxing, driving for pleasure, festival, first visit to check out the facilities, Chamber of Commerce member)	27	8.1

n = 289

**Question 5.** For your most recent visit to Prime Hook National Wildlife Refuge, was it:

**Table 5.** Reason for visiting Prime Hook NWR during the most recent visit.

<b>Reason for visiting</b>	<b>Visitors (%)</b>
Primary purpose or sole destination	75
One of many equally important destinations	19
Incidental stop	6

n = 333

**Question 6.** What was your one-way travel time and travel distance from home to Prime Hook National Wildlife Refuge?

**Table 6.** Travel time (in hours) from visitors' home to Prime Hook National Wildlife Refuge.

<b>Travel time</b>	<b><i>n</i></b>	<b>Percent (%)</b>
1	70	55
2	22	17
3	16	13
4	5	4
5	4	3
6	2	2
7	3	2
8	1	1
9	1	1
24	1	1
38	1	1
45	1	1

Average travel time to Prime Hook National Wildlife Refuge = 47 minutes.

**Table 7.** Distance traveled from home to Prime Hook National Wildlife Refuge.

<b>Distance in miles</b>	<b><i>n</i></b>	<b>Percent (%)</b>
2	6	2
3	5	2
4	8	3
5	12	4
6	7	3
7	7	3
8	8	3
9	1	1
10	24	9
11	3	1
12	11	4
13	1	< 1
14	2	1
15	22	8
16	1	< 1
17	3	1
18	5	1
20-40	40	15
42-60	18	7
62-80	29	11
82-100	20	6
106-125	8	4
130-150	5	3
160-200	11	4
215-500	11	4
1800	1	< 1
2023	1	< 1
4000	1	< 1

*n* = 275; Mean = 83.5; SD = 294.52

**Question 7.** What was the amount of time you spent at Prime Hook National Wildlife Refuge on this most recent trip?

**Table 8.** Length of visit to Prime Hook National Wildlife Refuge.

Number of hours spent at Prime Hook National Wildlife Refuge	Percent (%)
.3	.3
.5	.3
1	6
1.5	10
2	16
2.5	4
3	12
3.5	1
4	12
4.5	< 1
5	8
5.5	< 1
6	9
7	3
8	7
10	2
11	1
12	2
13	< 1
14	2
15	2
16	1

$n = 312$ ; Mean = 4.6; SD = 3.5

**Question 8.** If you were part of a group on your most recent visit to the refuge, which of the following best describes that group?

**Table 9.** Type of group with which visitors traveled on their most recent trip to Prime Hook National Wildlife Refuge.

Description of group	%
Friends	35
Family	27
Organized club or group	11
Friends and family	9
School group	2
Commercial tour group	1
Other (responses included: alone, birdwatchers group, Birds & Bill Fintel, DNA, DTCC-Elderhostel, just a couple, Red Hatters, volunteer groups)	17

$n = 236$

**Questions 9 and 10.** Did you or do you plan to stay overnight within 25 miles of the refuge as part of this most recent trip to the refuge? What type of overnight accommodations did you use or do you plan to use?

**Table 10.** Type of overnight accommodation used by visitors to Prime Hook National Wildlife Refuge<sup>b</sup>

Overnight accommodation	%
Stayed within 25 miles of the refuge <sup>a</sup>	37
Hotel/motel	13
Public campground	2
Bed & Breakfast	2
Private home (includes 10 responses from other category: I live here, my home, my home residence, home (summer), new condo we bought, uncle, we live in Lewis)	25
Other (responses included: 1955 trailer, beach house, condo, cottages Indian river, rental house/condo/cottage)	7

<sup>a</sup> n = 311

<sup>b</sup> n = 265

**Question 11.** How many nights did you or will you be staying overnight?

**Table 11.** Number of nights stayed during most recent visit to Prime Hook National Wildlife Refuge.

Number of nights	Visitors (%)
1	12
2	17
3	19
4	8
5	13
6	7
7	8
9	4
14	2
60	2
90	1
350	1
365	4

n = 83; mean = 23.66; SD = 77.52

**Section 2 – if you hunt or fish on the refuge, please tell us about those experiences below.**

\*\*\* Note: Responses in this section are only included for those who indicated they hunted or fished for any amount of time greater than 0 years.

Question 1. How many years have you been hunting or fishing at prime Hook National Wildlife Refuge?

**Table 12.** Number of years visitors have been hunting or fishing at Prime Hook National Wildlife Refuge.

<b>Number of years hunting <sup>a</sup></b>	<b><i>n</i></b>	<b>%</b>	<b>Number of years fishing <sup>b</sup></b>	<b><i>n</i></b>	<b>%</b>
1	12	10	1	9	15
2	11	11	2	8	13
3	7	6	3	6	10
4	6	5	4	9	15
5	7	6	5	3	5
6–10	27	23	8	2	3
11–15	17	15	10	4	7
16–20	14	12	12–15	5	8
21–25	8	7	16–20	6	10
26–35	7	6	25–35	6	10
45	1	1	40–50	4	7

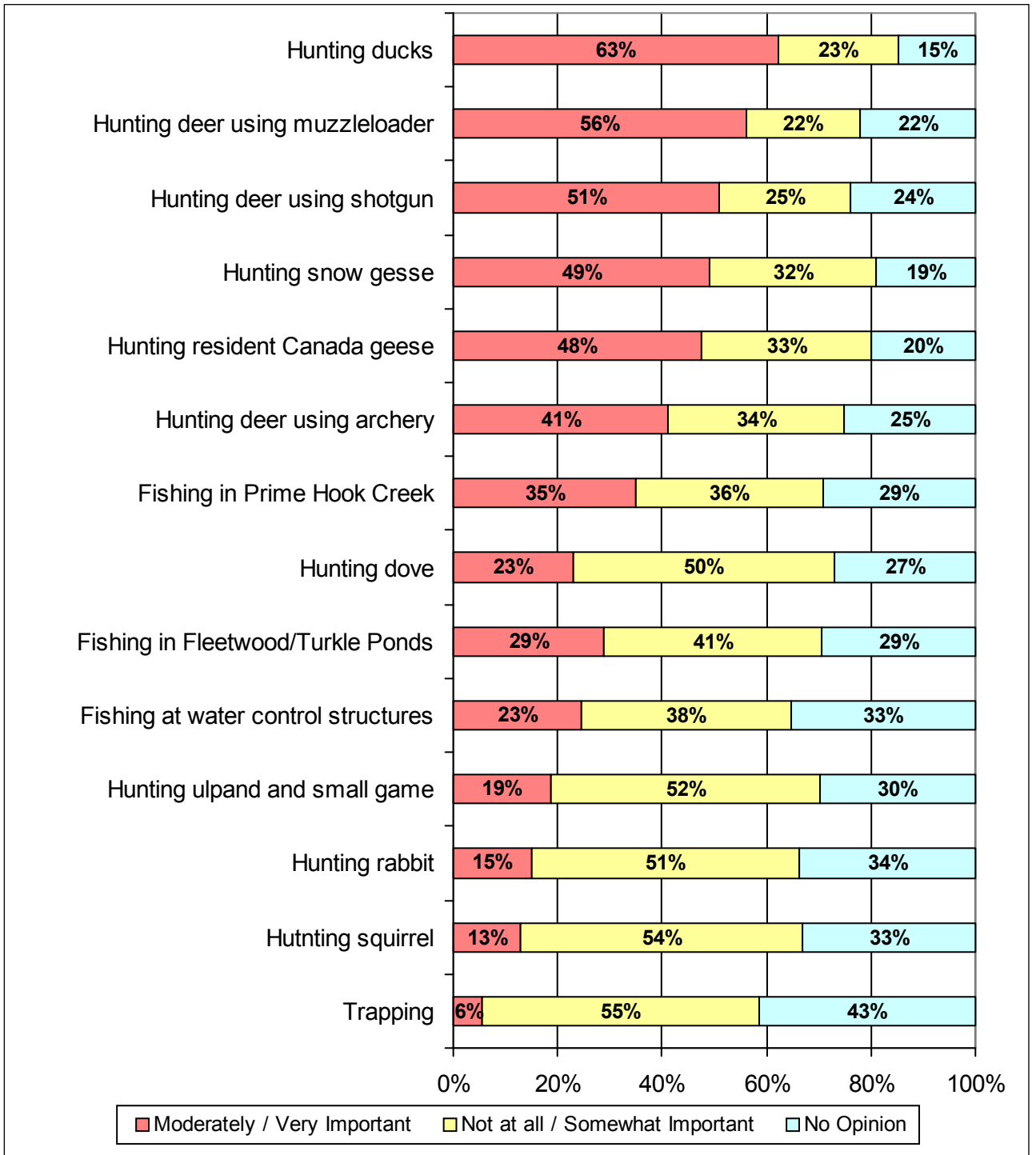
<sup>a</sup> *n* = 117; mean = 11.29; SD = 9.37

<sup>b</sup> *n* = 62; mean = 10.87; SD = 12.16

**Question 2.** Please tell us how important the following hunting/fishing activities are in terms of your decision to take hunting/fishing trips to Prime Hook National Wildlife Refuge.

**Table 13.** Mean importance of types of hunting or fishing at Prime Hook National Wildlife Refuge.

<b>Activity</b>	<b>mean</b>	<b>SD</b>	<b>n</b>
Hunting ducks	3.37	1.43	111
Hunting deer using muzzle loader	3.26	1.24	109
Hunting deer using a shotgun	3.13	1.26	109
Hunting resident Canada geese	2.93	1.27	108
Hunting snow geese	2.85	1.28	110
Hunting deer using archery	2.82	1.22	102
Fishing at Prime Hook Creek	3.27	1.27	107
Fishing at the water-control structures on the refuge	3.00	1.28	102
Fishing at Fleetwood/Turkle Ponds	2.98	1.21	106
Hunting dove	2.10	1.07	99
Hunting other upland and small game	1.91	1.01	95
Hunting rabbit	1.87	.97	92
Hunting squirrel	1.75	.99	91
Trapping	1.40	.84	78



**Figure 2.** Collapsed levels of importance for types of hunting or fishing at Prime Hook National Wildlife Refuge.



**Questions 3 and 4. Do you think the refuge provides a quality hunting experience? Fishing experience?**

**Table 14.** Visitor perceptions of quality hunting or fishing experiences on Prime Hook National Wildlife Refuge.

<b>Quality hunting experience<sup>a</sup></b>	<b>%</b>	<b>Quality fishing experience<sup>b</sup></b>	<b>%</b>
No	17	No	11
Yes	83	Yes	89

<sup>a</sup> n = 123

<sup>b</sup> n = 84

**Table 15.** Categorized responses of visitor opinion of hunting experience.

<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b>Count</b>
enjoyable experience/praise	23	30
bring back crops	14	18
don't know/don't hunt	13	17
blind maintenance	11	14
refuge staff/management	11	14
improved hunting opportunity	10	13
access	8	10
water level/ditch management	5	7
other	5	6

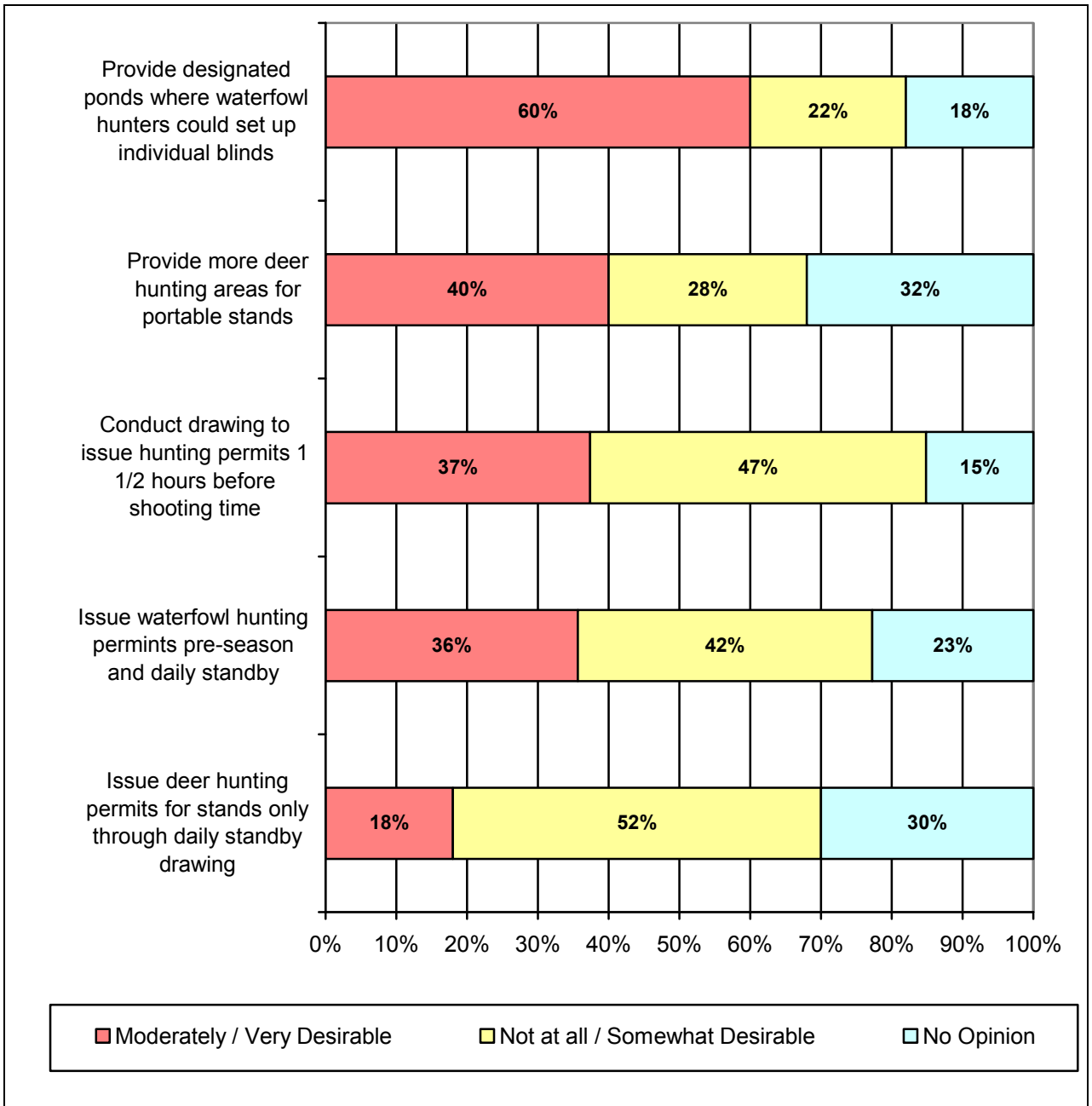
**Table 16.** Categorized responses of visitor opinion of fishing experience.

<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b>Count</b>
don't fish/don't know	41	32
quality fishing experience	35	28
access	13	10
limited fish	8	6
water levels	4	3

**Question 5.** How desirable are the following hypothetical options related to hunting on the refuge?

**Table 17.** Mean desirability of hypothetical hunting options on Prime Hook National Wildlife Refuge.

<b>Option</b>	<b>mean</b>	<b>SD</b>	<b><i>n</i></b>
Provide designated ponds where waterfowl hunters could set up individual blinds (in boat or edge of pond). It would be the hunter's responsibility to choose their hunting location and set up and remove a blind within the designated pond.	3.00	1.24	127
Provide more deer hunting areas where portable stands could be used and less areas with permanent fixed stands.	2.56	1.28	110
Issue waterfowl hunting permits for blinds using a preseason drawing in addition to a daily stand-by drawing.	2.35	1.30	117
Conduct a drawing to issue permits for waterfowl and deer hunting 1 ½ hours before shooting time as opposed to the current 2 hours before shooting time.	2.26	1.36	125
Issue deer hunting permits for stands only through a daily standby drawing without conducting a pre-season drawing.	1.72	1.18	108



**Figure 3.** Level of visitor desirability for hypothetical options related to hunting on Prime Hook National Wildlife Refuge.

### Section 3 – Please tell us about your trip expenditures.

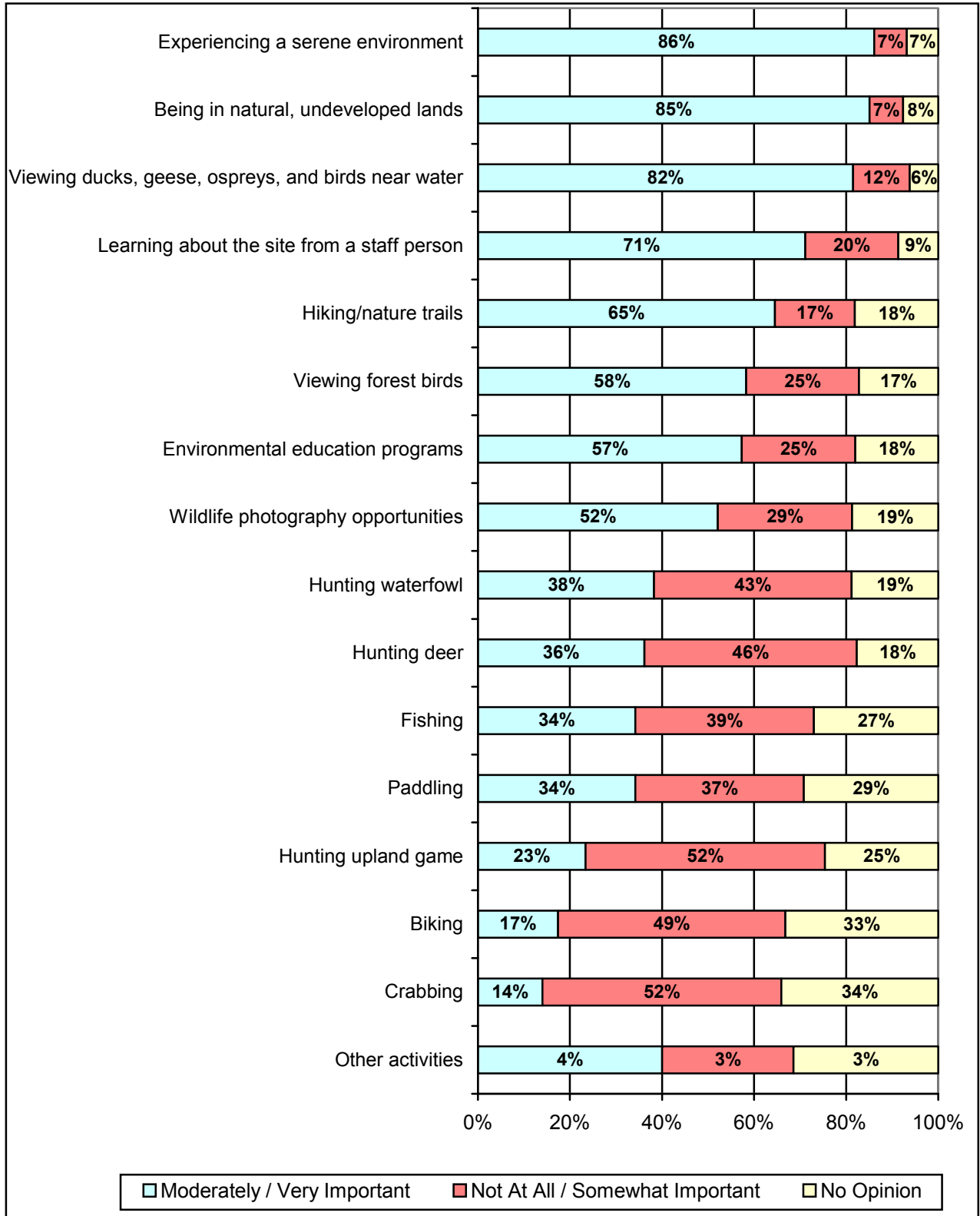
The data in this section requires more in-depth analysis, and will be provided at a later date.

### Section 4 – Please tell us about your experience as Prime Hook National Wildlife Refuge

Question 1. For each activity listed...please tell us *how important* that activity is to you when visiting Prime Hook National Wildlife Refuge. Then, tell us the **general location** where you usually participate in each activity.

**Table 18.** Importance of activities to visitors when visiting Prime Hook National Wildlife Refuge.

Activity	Importance					n
	Very Important (%)	Moderately important (%)	Somewhat important (%)	Not at all important (%)	No opinion (%)	
Being in natural, undeveloped lands	77	8	4	4	8	303
Experiencing a serene environment	75	11	2	5	7	296
Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	68	13	8	4	6	308
Viewing forest birds (songbirds)	46	13	10	14	17	302
Hiking/nature Trails	45	19	5	13	18	276
Learning about the site from a staff person	42	29	13	7	9	263
Environmental education programs	35	23	14	11	18	267
Hunting waterfowl	35	4	3	40	19	256
Hunting deer	33	4	4	42	18	254
Wildlife photography	30	22	12	17	19	267
Fishing	23	11	9	30	27	263
Paddling (canoeing or kayaking)	20	14	11	25	29	257
Hunting upland game	11	12	7	45	25	248
Biking/mountain biking	9	9	9	41	33	259
Crabbing	9	5	11	41	34	258
Other	37	3	6	23	31	35



**Figure 4.** Importance of activities to visitors when visiting Prime Hook National Wildlife Refuge.

**Table 19.** Mean importance of activities to visitors at Prime Hook National Wildlife Refuge.

<b>Activity</b>	<b>mean</b>	<b>SD</b>
Being in natural, undeveloped lands	3.72	.72
Experiencing a serene environment	3.68	.76
Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	3.55	.82
Hiking/nature trails	3.19	1.10
Learning about the site from a staff person	3.17	.94
Viewing forest birds (songbirds)	3.08	1.17
Environmental education programs	2.99	1.07
Wildlife photography	2.80	1.15
Paddling (canoeing or kayaking)	2.41	1.24
Hunting waterfowl	2.41	1.45
Fishing	2.38	1.30
Hunting deer	2.33	1.43
Hunting upland game	1.87	1.16
Biking/mountain biking	1.78	1.10
Crabbing	1.73	1.08
Other	2.79	1.41

**Table 20.** Location where community members participate in activities when visiting Prime Hook National Wildlife Refuge.

<b>Activity</b>	<b>Location</b>				<b>n</b>
	<b>Slaughter Beach Road (%)</b>	<b>Broadkill Beach Road (%)</b>	<b>Prime Hook Beach Road (%)</b>	<b>Fowler Beach Road (%)</b>	
Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	20	75	64	29	226
Viewing forest birds (songbirds)	14	69	54	18	155
Experiencing a serene environment	25	68	66	36	201
Being in natural, undeveloped lands	27	67	70	40	201
Fishing	20	60	45	27	232
Biking/mountain biking	18	57	51	18	257
Wildlife photography	31	76	68	38	128
Crabbing	29	51	40	27	270
Other	36	57	57	50	14

**Question 2.** Are there activities or services that you think **should be allowed** at Prime Hook National Wildlife Refuge that currently are not allowed?

**Table 21.** Percent respondents indicating activities should be allowed.

	Percent (%)
No	78
Yes	23

*n* = 285

**Table 22.** Categories of activities/services that should be allowed at Prime Hook National Wildlife Refuge.

Categories developed from open-ended responses	Percent (%)	Count
hunting related	32	25
miscellaneous	21	16
access	10	8
don't know/unsure/no opinion	9	7
kayak/canoe	6	5
horseback riding	5	4
camping	4	3
hiking/walking trails	4	3
crabbing/fishing	4	3
picnic areas/benches	4	3

*n* = 72. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 3.** Are there activities or services that you think **should not be allowed** at Prime Hook National Wildlife Refuge that currently are not allowed?

**Table 23.** Percent respondents indicating activities should be allowed.

	Percent (%)
No	74
Yes	26

*n* = 273

**Table 24.** Categories of activities that should not be allowed at Prime Hook National Wildlife Refuge.

<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b>Count</b>
hunting	51	43
miscellaneous	15	13
ATV's/driving on beach	8	7
unsure/don't know/no opinion	8	7
limit on hunting	5	4
bikes (mountain & motor)	5	4
fishing	4	3
farming	4	3

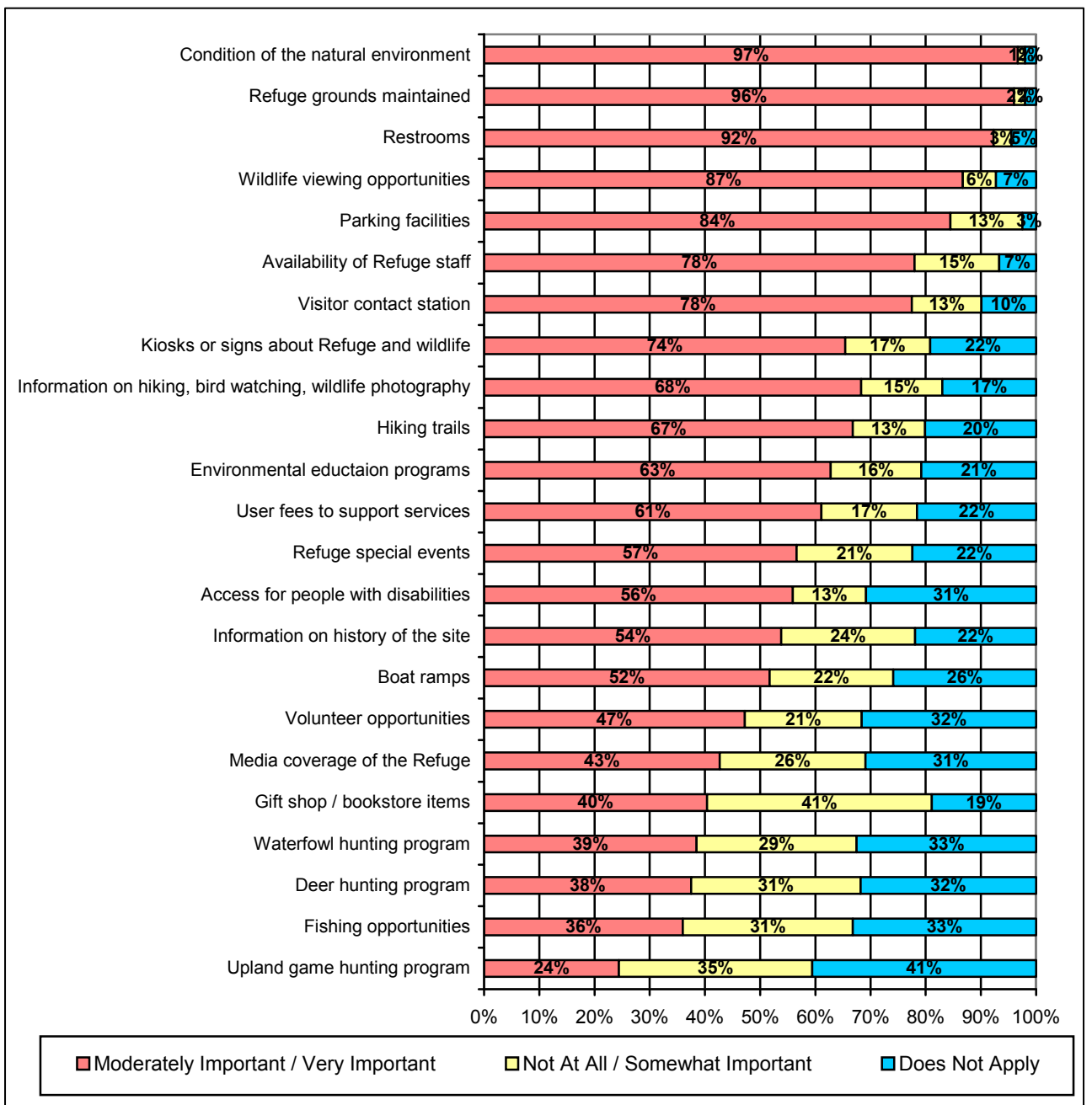
*n* = 80. Totals may be greater than *n*, as some respondents listed more than one response.



**Question 4.** Rate how important the item is to your satisfaction during your last visit...then rate how satisfied you are with the way the refuge is managing for each item.

**Table 25.** Visitors' ratings of importance of services offered at Prime Hook National Wildlife Refuge.

Service	Importance					n
	Very important (%)	Moderately important (%)	Somewhat important (%)	Not at all important (%)	Does not apply (%)	
Conditions of the natural environment	87	10	1	---	2	301
Refuge grounds maintained (litter pickup)	78	18	2	---	2	305
Wildlife viewing opportunities	74	13	5	1	7	224
Restrooms/comfort stations	65	28	3	1	5	310
Hiking trails	50	17	7	6	20	298
Parking facilities	47	38	10	3	3	315
Visitor contact stations	47	31	9	4	10	302
Availability of information on hiking, bird watching or wildlife photography	44	24	9	6	17	300
Availability of refuge staff	41	37	13	2	7	300
Kiosks or signs with information about the Refuge and its wildlife	40	33	9	5	13	295
Boat ramps	39	13	10	13	26	390
Access for people with disabilities	37	19	8	5	31	286
Environmental education programs	34	29	11	6	21	298
User fees to support services provided	34	28	11	7	22	283
Waterfowl hunting program	32	7	4	26	33	286
Deer hunting program	31	7	4	27	32	283
Refuge special events	28	29	12	9	22	290
Volunteer opportunities	28	19	12	3	32	288
Availability of information on the history of the site	24	30	18	6	22	292
Fishing opportunities (for example, piers, parking areas)	21	15	12	19	33	292
Media coverage of refuge	18	25	13	13	31	288
Gift shop or bookstore items	15	26	22	19	19	302
Upland game hunting program	12	12	6	29	41	283



**Figure 5.** Collapsed visitor ratings of importance of services offered at Prime Hook National Wildlife Refuge.

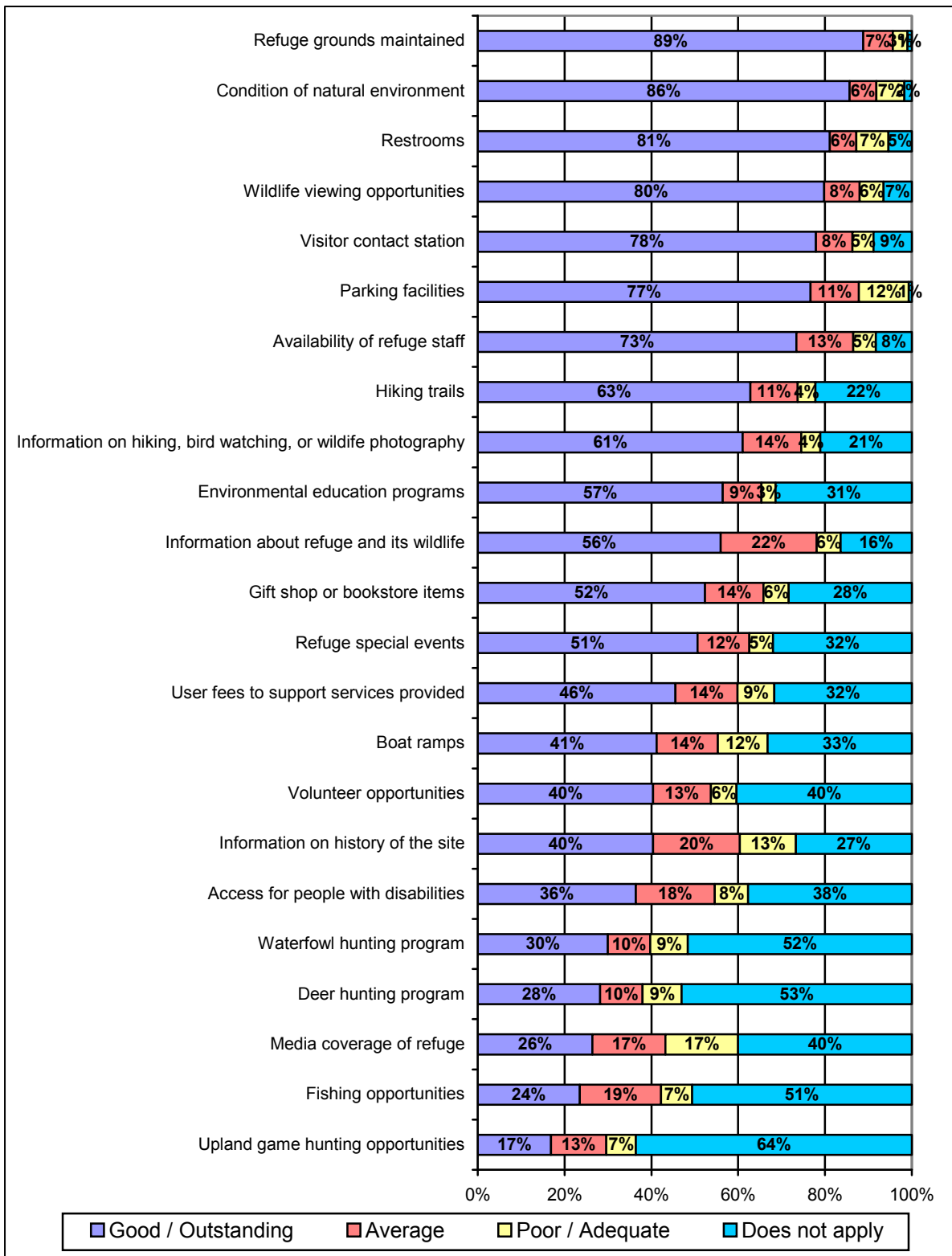
**Table 26.** Mean importance rating for services offered.

<b>Service <sup>1</sup></b>	<b>mean</b>	<b>SD</b>
Conditions of the natural environment	3.87	.37
Refuge grounds maintained (litter pick up)	3.78	.46
Wildlife viewing opportunities	3.72	.62
Restrooms/Comfort stations	3.64	.57
Hiking trails	3.39	.93
Visitor contact stations	3.34	.82
Parking facilities	3.32	.79
Availability of information on hiking, birdwatching or wildlife photography	3.29	.92
Availability of refuge staff	3.26	.78
Access for people with disabilities	3.26	.94
Kiosks or signs with information about the refuge and its wildlife	3.25	.85
Environmental education programs	3.15	.91
User fees to support services provided	3.12	.95
Boat ramps	3.05	1.15
Refuge special events	2.97	.99
Volunteer opportunities	2.96	1.06
Availability of information on the history of the site	2.92	.93
Media coverage of refuge	2.68	1.05
Waterfowl hunting program	2.66	1.39
Deer hunting program	2.60	1.39
Fishing opportunities (for example, piers, parking areas)	2.56	1.20
Gift shop or bookstore items	2.44	1.04
Upland game hunting program	2.12	1.22

<sup>1</sup> Responses were coded on a Likert-type scale from 1 (not at all important) to 4 (very important).

**Table 27.** Visitors' satisfaction with services offered at Prime Hook National Wildlife Refuge.

Service	Satisfaction						n
	Outstanding (%)	Good (%)	Average (%)	Adequate (%)	Poor (%)	Does not apply (%)	
Refuge grounds maintained (litter pickup)	52	37	7	2	2	1	296
Conditions of the natural environment	41	45	6	2	4	2	294
Restrooms/comfort stations	41	40	6	4	4	5	297
Wildlife viewing opportunities	35	45	8	2	3	7	292
Availability of refuge staff	34	40	13	2	3	8	289
Visitor contact stations	32	46	8	4	1	9	285
Parking facilities	26	51	11	9	2	1	305
Availability of information on hiking, birdwatching or wildlife photography	23	38	14	3	2	21	275
Environmental education programs	22	35	9	2	1	31	271
Hiking trails	21	42	11	4	< 1	22	266
Kiosks or signs with information about the refuge and its wildlife	16	40	22	4	2	16	275
Gift shop or bookstore items	16	36	14	5	1	28	275
User fees to support services provided	15	31	14	7	2	32	259
Access for people with disabilities	14	22	18	6	2	38	247
Volunteer opportunities	13	27	13	5	1	40	255
Boat ramps	12	29	14	8	3	33	262
Deer hunting program	12	16	10	4	5	53	245
Availability of information on the history of the site	10	31	20	11	2	27	255
Waterfowl hunting program	9	21	10	5	4	52	244
Fishing opportunities (for example, piers, parking areas)	7	17	19	4	3	51	251
Media coverage of refuge	5	21	17	8	9	40	250
Upland game hunting program	5	12	13	4	3	64	236
Refuge special events	3	48	12	3	2	32	259



**Figure 6.** Collapsed visitor ratings of satisfaction with services offered at Prime Hook National Wildlife Refuge.

**Table 28.** Mean satisfaction rating for services offered.

<b>Service <sup>1</sup></b>	<b>mean</b>	<b>SD</b>
Parking facilities	3.89	.97
Visitor contact stations	4.15	.83
Refuge grounds maintained (litter pickup)	4.38	.83
Restrooms/comfort stations	4.18	.99
Wildlife viewing opportunities	4.14	.92
Conditions of the natural environment	4.18	.96
Availability of refuge staff	4.08	.95
Environmental education programs	4.08	.85
Gift shop or bookstore items	3.87	.88
Availability of information on hiking, birdwatching or wildlife photography	4.00	.89
Refuge special events	3.68	.78
Boat ramps	3.58	1.07
Hiking trails	4.02	.81
Kiosks or signs with information about the refuge and its wildlife	3.77	.88
User fees to support services provided	3.73	.98
Volunteer opportunities	3.78	.95
Media coverage of refuge	3.10	1.19
Access for people with disabilities	3.66	1.03
Availability of information on the history of the site	3.48	1.00
Waterfowl hunting program	3.55	1.15
Deer hunting program	3.55	1.26
Upland game hunting program	3.34	1.10
Fishing opportunities (for example, piers, parking areas)	3.41	1.02

<sup>1</sup> Responses were coded on a Likert-type scale from 1 (poor) to 5 (outstanding).

**Question 5.** Please indicate how you feel the features listed below should be managed to maximize your experience at Prime Hook National Wildlife Refuge.

**Table 29.** Community members' ratings about how certain features should be managed at Prime Hook National Wildlife Refuge.

<b>Feature</b>	<b>More features</b>	<b>Leave as is</b>	<b>Less features</b>	<b>n</b>
Naturalness				310
Allow more landscape alterations	17			
Leave as is		53		
Restore more natural conditions			30	
Information services				312
Refuge staff more visible and available	20			
Leave as is		79		
Refuge staff less visible and available			2	
Hiking trails				309
Provide more trails	41			
Leave as is		53		
Provide fewer trails			2	
Information signs				312
Provide more signs	27			
Leave as is		67		
Limit the number of signs			6	
Environmental education opportunities				294
Provide more programs and activities	38			
Leave as is		62		
Reduce programs and activities			< 1	
Brochures/Publications				311
Provide more brochures/publications about Refuge resources, activities, and regulations	24			
Leave as is		75		
Provide fewer brochures/publications about Refuge resources, activities, and regulations			2	
Interpretive Exhibits				298
Provide more interpretive exhibits	32			
Leave as is		67		
Provide fewer interpretive exhibits			1	
Hunting				278
Provide more hunting areas	37			
Leave as is		37		
Provide fewer hunting areas			25	
Fishing				287
Provide more access to pond, creek, and shoreline	26			
Leave as is		66		
Restrict access to pond, creek, and shoreline			8	
Boat ramps				291
Provide more boat ramps	27			
Leave as is		69		
Provide fewer boat ramps			5	
Wildlife Observation/photography opportunities				301
Provide more facilities along rivers and parking areas	44			
Leave as it		56		
Provide fewer facilities (such as viewing blinds and walkways)			< 1	

<b>Feature</b>	<b>More features</b>	<b>Leave as is</b>	<b>Less features</b>	<b>n</b>
Table 29, continued.				
Feature	More features	Leave as is	Less features	n
Access to Refuge				307
Provide more parking areas and access points	30			
Leave as is		69		
Provide fewer parking areas and access points			1	
Restrooms and comfort stations				312
Provide more facilities along rives and parkways	35			
Leave as is		64		
Provide fewer facilities along rivers and parkways			1	
Visitor numbers				308
Encourage more visitation to refuge	32			
Leave as is		68		
Restrict visitation to refuge			1	
Visitor impacts on wildlife				311
Restrict any behavior that <i>may</i> negatively impact wildlife	30			
Leave as is		42		
Restrict <i>only</i> behavior that is <i>known</i> to have negative impacts on wildlife			28	

**Question 6. What would enhance your experiences at Prime Hook National Wildlife Refuge?**

**Table 30. Categorized responses of what would enhance experience at Prime Hook National Wildlife Refuge.**

<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b>Count</b>
improved hunting opportunities/access	18	49
improved access	10	28
nothing	10	27
more crops for wildlife	8	22
improved programs/information/staff	8	21
more wildlife viewing opportunities	7	19
improved trails	7	18
improved boating/kayak/boating opportunities	6	15
improved parking/restrooms/cleanup, and so forth	6	16
more personal time to visit	4	12
miscellaneous	9	23
limiting hunting	2	5
keep/improve naturalness	2	6
improved hiking/walking opportunities	1	3
improved fishing opportunities	1	3



**Question 7.** What experience have you had at Prime Hook National Wildlife Refuge that would bring you back?

**Table 31.** Categorized responses to what experience would bring visitors back.

Categories developed from open-ended responses	Percent (%)	Count
wildlife observation	26	89
hunting	22	76
refuge programs/events/facilities/staff	13	44
scenery/beauty/intrinsic value	11	36
hiking/trails	9	32
fishing	8	28
miscellaneous	5	17
canoeing/kayaking	3	9
everything	2	8
nothing	1	3

*n* = 266. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 8.** Please indicate the extent to which each statement below describes your general feelings about Prime Hook National Wildlife Refuge.

**Table 32.** Visitors' agreement or disagreement with statements regarding their feelings towards Prime Hook National Wildlife Refuge.

Statement	mean	SD
Overall place attachment	3.71	.80
Place heritage	3.94	.81
It is important to me that my children and my grandchildren will be able to visit the refuge.	4.81	.51
Coming to places like this refuge is an important part of my family tradition.	4.19	1.00
The refuge provides me a sense of connection to past and future generations.	3.80	1.00
This place is special because it is where my family and I spend time.	3.65	1.24
This place is special because it is where my friends and I spend time.	3.47	1.34
Coming to places like this refuge was an important part of my childhood.	3.07	1.42
Place identity	4.11	.84
I am very attached to the refuge.	4.19	.86
This refuge means a lot to me.	4.13	.99
I feel this refuge is a part of me.	3.83	1.09
I identify strongly with the refuge.	3.54	1.13
Place dependence	3.60	.92
This is the best place for what I like to do.	4.04	1.00
Doing what I do at this refuge is more important to me than doing it in any other place.	3.34	1.16
I get more satisfaction out of visiting this place than visiting any other.	3.32	1.14
No other place can compare to this area.	3.16	1.15
I wouldn't substitute any other place for doing what I do here.	2.97	1.22
Trust	3.60	1.18
Everything considered, I trust the refuge staff will do what is right for the refuge.	4.15	1.01
I have confidence in decision made by the local staff at the refuge.	3.97	1.00
In general, I have confidence in the decisions that the U.S. Fish and Wildlife Service makes about managing this refuge.	3.75	1.11
Because of my experiences at the refuge I will definitely come back.	4.67	.62

**Table 33.** Mean ratings for visitors' feelings about Prime Hook National Wildlife Refuge.

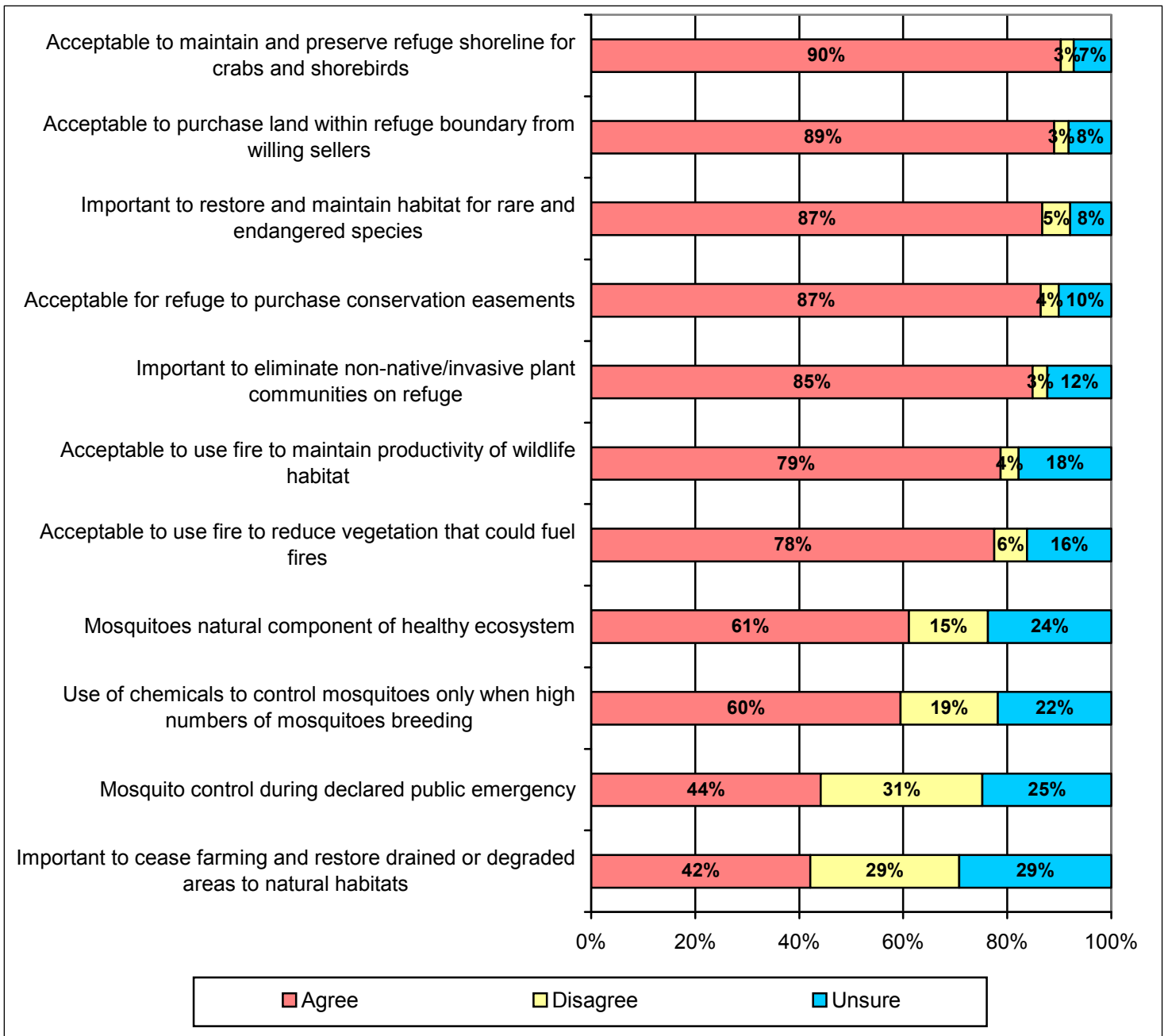
<b>Statement</b>	<b>Strongly/ mildly agree (%)</b>	<b>Strongly/ mildly disagree (%)</b>	<b>Unsure (%)</b>	<b>n</b>
Place heritage				
It is important to me that my children and my grandchildren will be able to visit the refuge.	96	< 1	4	312
Coming to places like this refuge is an important part of my family tradition.	79	7	15	303
The refuge provides me a sense of connection to past and future generations.	65	10	26	305
This place is special because it is where my family and I spend time.	60	18	22	301
This place is special because it is where my friends and I spend time.	58	26	16	293
Coming to places like this refuge was an important part of my childhood.	44	34	21	282
Place identity				
I am very attached to the refuge.	83	4	13	307
This refuge means a lot to me.	79	7	14	308
I feel this refuge is a part of me.	66	10	24	301
I identify strongly with the refuge.	58	19	23	293
Place dependence				
This is the best place for what I like to do.	78	9	13	307
Doing what I do at this refuge is more important to me than doing it in any other place.	50	24	26	305
I get more satisfaction out of visiting this place than visiting any other.	48	23	29	302
No other place can compare to this area.	43	29	29	301
I wouldn't substitute any other place for doing what I do here.	33	34	33	294
Trust				
Everything considered, I trust the refuge staff will do what is right for the refuge.	78	7	16	310
I have confidence in decisions made by the local staff at the refuge.	72	6	23	310
In general, I have confidence in the decisions that the U.S. Fish and Wildlife Service makes about managing this refuge.	64	13	23	308
Because of my experiences at the refuge I will definitely come back.	94	1	5	312

## Section 5 – Please tell us your opinion about different management issues on Prime Hook National Wildlife Refuge.

### Question 1. Agreement with management options

**Table 34.** Visitors’ agreement or disagreement with statements about wetland management issues on Prime Hook National Wildlife Refuge.

Action	Strongly agree (%)	Mildly agree (%)	Unsure (%)	Mildly disagree (%)	Strongly disagree (%)	<i>n</i>
It is important to restore and manage refuge habitats for rare and endangered species on the refuge.	72	15	8	3	3	317
It is acceptable to maintain and preserve refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds.	71	19	7	1	1	320
It is acceptable to purchase land within the refuge boundary from willing sellers at market value for the benefit of wildlife	66	23	8	---	3	318
It is acceptable for the refuge to purchase conservation easements on land outside of the current boundary to manage the area’s wildlife resources.	61	26	10	2	2	318
It is important to eliminate non-native/invasive plant communities on the refuge.	56	29	12	2	1	316
It is acceptable to use fire as a tool to maintain high productivity of refuge wetland, forested, and grassland habitats for the benefit of wildlife.	50	29	18	3	1	315
It is acceptable to use fire as a management tool to reduce buildup of vegetation that could fuel fires.	47	31	16	4	3	315
The use of chemicals to control mosquitoes on refuge lands should only occur when field data show high numbers of breeding mosquitoes.	29	30	22	7	11	316
Mosquitoes are a natural component of healthy and functional wetland ecosystem	24	37	24	7	8	316
Mosquito control activities on refuge lands should only occur when field data show high numbers of breeding mosquitoes.	23	22	25	14	18	315
It is important to cease farming and strive to restore drained and/or degraded areas to natural habitats.	21	21	29	11	18	318



**Figure 7.** Collapsed importance rating of hypothetical options for managing wetlands at Prime Hook National Wildlife Refuge.

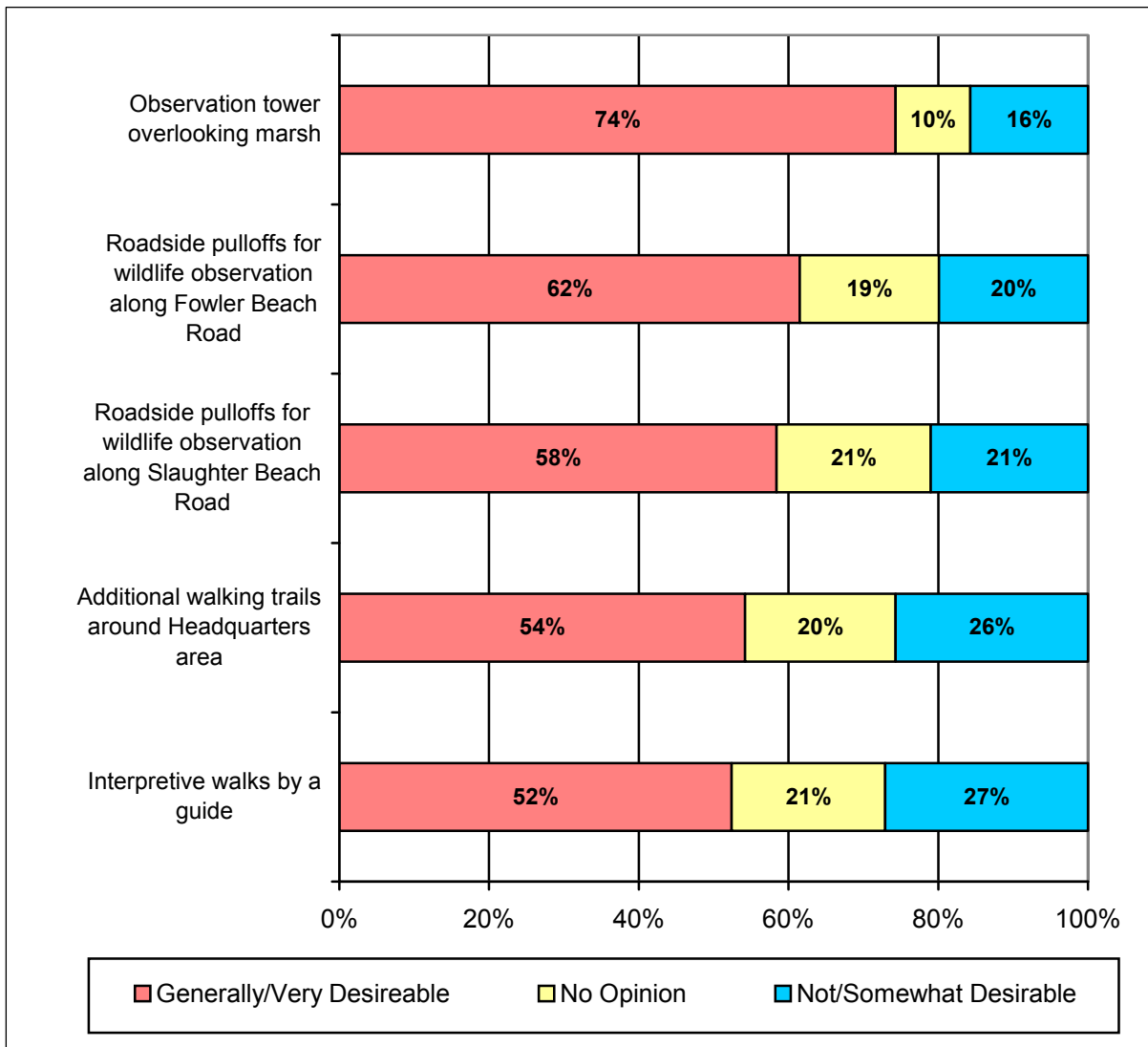
**Table 35.** Mean importance rating of hypothetical options for wetland management at Prime Hook National Wildlife Refuge.

<b>Management issue</b>	<b>mean</b>	<b>SD</b>
It is important to restore and manage refuge habitats for rare and endangered species on the refuge.	4.5	.94
Mosquitoes are a natural component of healthy and functional wetland ecosystem	3.62	1.17
Mosquito control activities on refuge lands should only occur when field data show high numbers of breeding mosquitoes.	3.18	1.39
The use of chemicals to control mosquitoes on refuge lands should only occur when field data show high numbers of breeding mosquitoes.	3.59	1.29
It is acceptable to use fire as a management tool to reduce buildup of vegetation that could fuel fires.	4.15	1.00
It is acceptable to use fire as a tool to maintain high productivity of refuge wetland, forested, and grassland habitats for the benefit of wildlife.	4.24	.90
It is important to eliminate non-native/invasive plant communities on the refuge.	4.37	.85
It is important to cease farming and strive to restore drained and (or) degraded areas to natural habitats.	3.17	1.36
It is acceptable to purchase land within the refuge boundary from willing sellers at market value for the benefit of wildlife.	4.49	.87
It is acceptable for the refuge to purchase conservation easements on land outside of the current boundary to manage the area's wildlife resources.	4.42	.87
It is acceptable to maintain and preserve refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds.	4.58	.78

**Question 2.** As a visitor to Prime Hook National Wildlife Refuge, how desirable are the following hypothetical options related to visitation to the refuge?

**Table 36.** Visitors' desirability of hypothetical options related to visitation on Prime Hook National Wildlife Refuge.

<b>Option</b>	<b>Very desirable (%)</b>	<b>Generally desirable (%)</b>	<b>Somewhat desirable (%)</b>	<b>Not desirable (%)</b>	<b>No opinion (%)</b>	<b>n</b>
Observation tower overlooking marsh for viewing waterfowl and other wildlife	50	25	10	6	10	319
New roadside pulloffs for wildlife observation or photograph along Fowler Beach Road	35	27	14	6	19	317
New roadside pulloffs for wildlife observation or photograph along Slaughter Beach Road	34	25	15	6	21	315
Additional walking trails around the refuge Headquarters area	28	26	15	11	20	319
Regularly scheduled interpretive walks by a guide	26	26	19	8	21	317



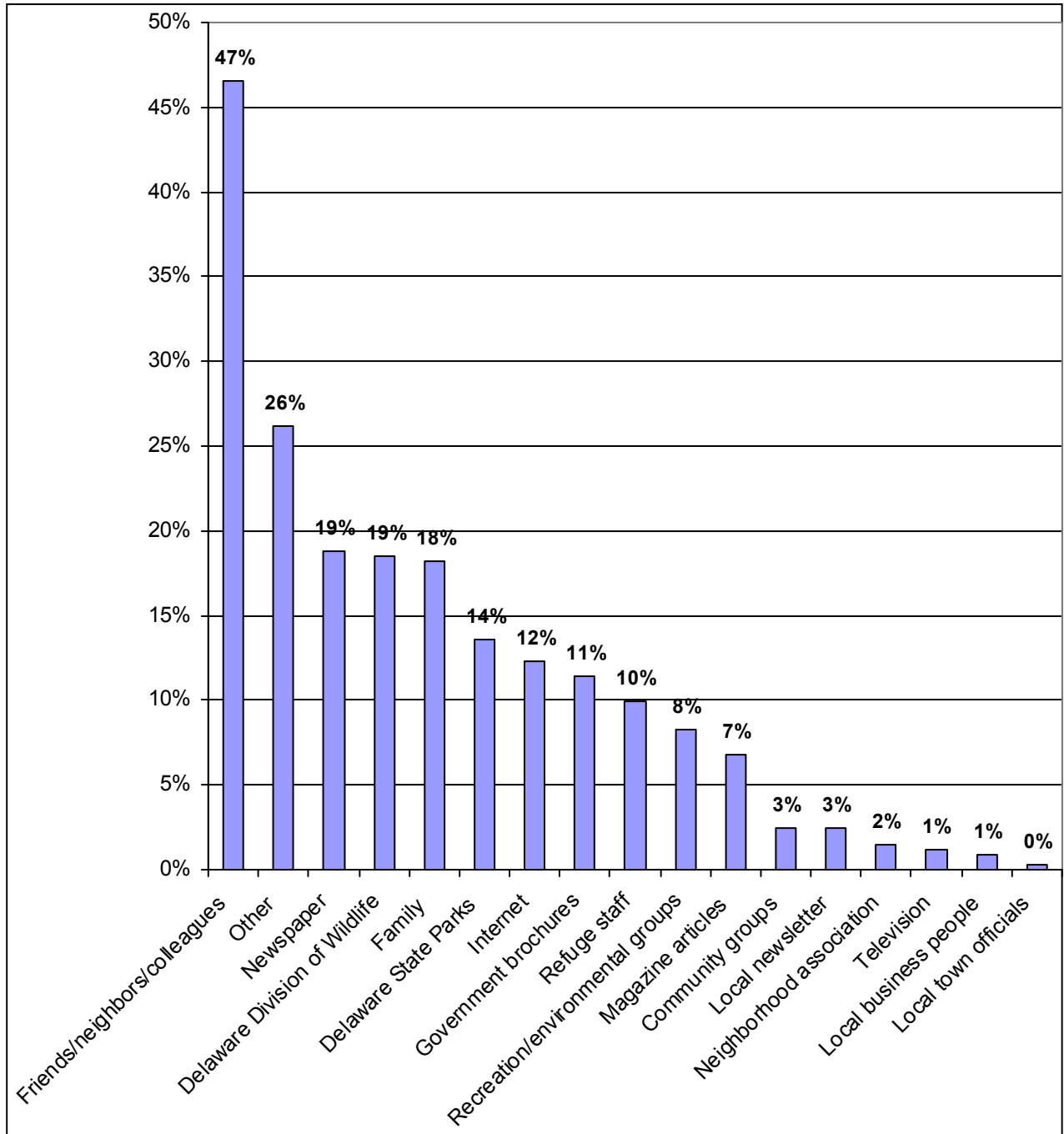
**Figure 8.** Collapsed desirability of hypothetical options related to visitation on Prime Hook National Wildlife Refuge.

**Table 37.** Mean desirability of hypothetical options.

Options	mean	SD
Observation tower overlooking marsh for viewing waterfowl and other wildlife.	3.31	.90
New roadside pull-offs for wildlife observation or photograph along Fowler Beach Road.	3.11	.95
New roadside pull-offs for wildlife observation or photograph along Slaughter Beach Road.	3.08	.96
Additional walking trails around the refuge Headquarters area.	2.90	1.03
Regularly scheduled interpretive walks by a guide.	2.89	.98

**Section 6. Please tell us something about yourself.**

**Question 1. How did you learn about Prime Hook National Wildlife Refuge?**



**Figure 9.** Sources from which visitors learned about Prime Hook National Wildlife Refuge.

**Question 1a.** Please specify which newspaper you read most.

**Table 38.** Newspapers read most by visitors

<b>Source</b>	<b><i>n</i></b>
The Cape Gazette	31
News Journal	6
Delaware Coast Press	5
The Wave	5
Local papers	2
Milford Beacon	2
Milford Chronicle	2
Individual articles	2
Beachcomber	1
Internet	1
State news	1
Washington Post	1
Wilmington Morning News	1

**Question 2.** From the list of information sources, please state which single source you rely on most.

**Table 39.** Source from which visitors rely on most to learn about Prime Hook National Wildlife Refuge.

<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b>Count</b>
Travel guide/organization, that is, AAA, Elderhostel	2	8
Newspaper	16	55
Magazine	16	55
Delaware Division of fish and Wildlife	6	22
Family	7	24
Internet/email	10	36
Friends/neighbors	20	67
Refuge staff	5	18
Radio	1	3
Delaware State Parks	2	6
Recreation/environmental group	5	16
Government brochures	2	8
Miscellaneous	5	16
Maps/signs	2	6
Other State government agencies	1	3

*n* = 287. Totals may be greater than *n*, as some respondents listed more than one response.



**Question 3.** Which of the activities have you participated in within the last 5 years related to environmental or natural resource issues?

**Table 40.** Participation in natural resource decision making.

Activity	Participation (%)
Attended a public hearing or meeting	59
Signed a petition	59
Joined a special interest group	53
Contacted or wrote a U.S. Senator or State Legislator	38
Contacted or wrote a State or Federal agency	34
Wrote a letter to the editor of a newspaper	7

*n* = 244

**Question 4.** Are you male/female?

**Table 41.** Gender of respondents

Gender	Respondents (%)
Male	67
Female	33

*n* = 321

**Question 5.** In what year were you born?

**Table 42.** Percentage of visitors by age category.

Age category	Respondents (%)
18-24	1
25-34	10
35-44	12
45-54	21
55-64	26
65-74	22
75-84	8
85 and above	< 1

*n* = 320; mean age = 55.24

**Question 6.** Are you employed?

**Table 43.** Employment status of visitors.

<b>Work<sup>a</sup></b>	<b>%</b>	<b><i>n</i></b>	<b>Retired</b>	<b>%</b>	<b><i>n</i></b>
Yes	62	194	Yes	62	113
Full-time	88	170	And work part-time	1	1
Part-time	12	24	No	38	69
No	38	119			

<sup>a</sup>Percentage of full-time and part-time workers represent those respondents who answered the question “Do you work full- or part-time?”

**Question 7.** If you are employed, do you take time off from work to participate in outdoor recreation?

**Table 44.** Percentage of respondents who take time off from work to participate in outdoor recreation.

<b>Take time off</b>	<b>Percent (%)</b>
Yes	59
No	41

*n* = 301

**Question 8.** What is your highest year of formal schooling?

**Table 45.** Level of education of respondents.

<b>Level of education</b>	<b>Respondents (%)</b>
Less than high school	2
High school	23
Some college	24
College	23
Advanced degree	28

*n* = 316; mean = 3.52; SD = 1.17

**Questions 9 and 10:** What ethnicity do you consider yourself? What racial origin do you consider yourself?

**Table 46.** Race and ethnicity of respondents.

<b>Ethnicity<sup>a</sup></b>	<b>Percent (%)</b>
Hispanic or Latino	1
Not Hispanic or Latino	99
<b>Race<sup>b</sup></b>	
White	97
Black or African American	2
American Indian or Alaska Native	1
Asian	< 1
Native Hawaiian or other Pacific Islander	0

<sup>a</sup> *n* = 309

<sup>b</sup> *n* = 319

**Question 11 and 12:** How many members are in your household? Including these people, what was your approximate household income from all sources (before taxes) last year?

**Table 47.** Income and household size of respondents.

<b>Income</b>	<b>Percent (%)</b>
Less than \$10,000	1
\$10,000 to \$14,999	2
\$15,000 to \$24,999	4
\$25,000 to \$34,999	9
\$35,000 to \$49,999	18
\$50,000 to \$74,999	24
\$75,000 to \$99,999	19
\$100,000 to \$149,999	16
Over \$150,000	8
Median income	\$50,000– \$74,999
Mean number of persons in household	2

**Question 13:** Would you like more information on any of the following?

**Table 48.** Visitor interest in more information.

<b>Information about:</b>	<b>Yes (%)</b>
Results from this study	72
Information about future refuge planning activities	58
Refuge Friends Group	20
Refuge volunteer opportunities	33

*n* = 20

## Appendix D: Community Survey Frequency Results

This appendix contains the information obtained from the Prime Hook National Wildlife Refuge community survey. The data has been weighted to account for potential sampling biases on two counts. First, data for age and gender in individual communities were compared to census data in order to check the generalizability of the sample. The community sample, in general, was older and had a greater representation of males than actually occurred in the communities according to the 2000 U.S. Census (U.S. Census Bureau, 2006). Data were weighted to reflect population age and gender proportions. In addition, due to an over-representation of the beach strata (more “beach town” residents returned surveys), the data for the overall community were weighted, to reflect the relative proportion of the three strata that comprise the community residents.

The order of the tables follows that of the questions in the survey, section by section. Open-ended questions contained in the survey have been categorized based on responses. Verbatim responses are provided at the end of the appendix.

### Section 1: Please tell us about your visit to Prime Hook National Wildlife Refuge.

#### Question 1. Have you visited Prime Hook National Wildlife Refuge in the past 5 years?

**Table 1.** Visitation to Prime Hook National Wildlife Refuge.

	<i>n</i>	Percent (%)
0 no	175	39
1 yes	269	61

*n* = 444

#### Question 1a. If you have not visited Prime Hook National Wildlife Refuge in the past 5 years, what would encourage you to visit?

**Table 2.** Categories of what would encourage community residents to visit Prime Hook National Wildlife Refuge.

Categories developed from open- ended responses	Percent (%)	Count
more information/more advertising	23	17
change something/provide something at refuge (for example, kill mosquitoes, more accessible for disabled)	20	15
miscellaneous	14	10
no time	11	8
don't know/unsure/no opinion	8	6
no interest	7	5
new to area	7	5
medical problems/age/health	5	4
nothing	5	4

*n* = 74

**Question 2.** About how many years have you been visiting Prime Hook National Wildlife Refuge?

**Table 3.** Number of years spent visiting Prime Hook National Wildlife Refuge.

Number of years	<i>n</i>	Percent (%)
< 1	0	< 1
1	16	6
2	33	13
3	42	17
4	14	6
5	35	14
6–10	54	22
11–15	12	5
16–20	14	5
21–30	25	10
31–40	6	3
41–50	0	0
> 50	1	< 1

*n* = 252

Average years visiting = 12

**Question 3.** On average, how many times per year have you been visiting Prime Hook National Wildlife Refuge?

**Table 4.** Number of times per year respondent visits Prime Hook National Wildlife Refuge.

Number of times	<i>n</i>	Percent (%)
1	94	37
2	48	19
3	28	11
4	14	6
5	7	3
6	9	4
7	4	2
8	1	<1
9	0	< 1
10	15	6
11–15	20	8
16–20	3	1
21–30	6	3
31–40	1	<1
41–50	2	1
> 50	4	2

*n* = 258

Average number times per year visiting = 16

**Question 4.** Of your trips to the refuge, how many occur during the week/weekend?

**Table 5.** Number of trips taken to Prime Hook National Wildlife Refuge during the week/weekend.

<b>Weekday trips</b>	<b><i>n</i></b>	<b>Percent (%)</b>	<b>Weekend trips</b>	<b><i>n</i></b>	<b>Percent (%)</b>
.5	1	1	.5	1	4
1.0	68	39	1.0	48	30
1.5	3	2	1.5	2	2
2.0	39	22	2.0	24	15
2.5	0	0			
3.0	21	5	3.0	26	16
3.5	3	2	3.5	3	2
4.0	7	4	4.0	23	14
5.0	2	1	5.0	5	3
6-10	15	10	6-10	25	15
11-15	4	2	11-15	5	3
16-20	4	2	16-20	3	2
21-30	4	2	21-30	0	3
31-40	0	<1	31-40	0	1
41-50	1	<1	41-50	0	1
> 50	2	1	> 50	0	1

*n* = 174 for weekday, 165 for weekend

Average number of weekday trips = 8, average number of weekend trips = 6

Question 5. When you visit the refuge, what is the average length of your stay?

**Table 6.** Length of visit to Prime Hook National Wildlife Refuge.

Length of refuge visit (in hours)	Percent (%)
.2	0
.3	<1
.5	3
.6	< 1
1	18
1.3	0
1.5	9
2	36
2.5	4
3	11
3.3	< 1
3.5	0
4	10
4.5	< 1
5	2
5.5	< 1
6	1
8	2
13	< 1
24	2
40	< 1

$n = 256$

Average length of stay = 2.6 hours

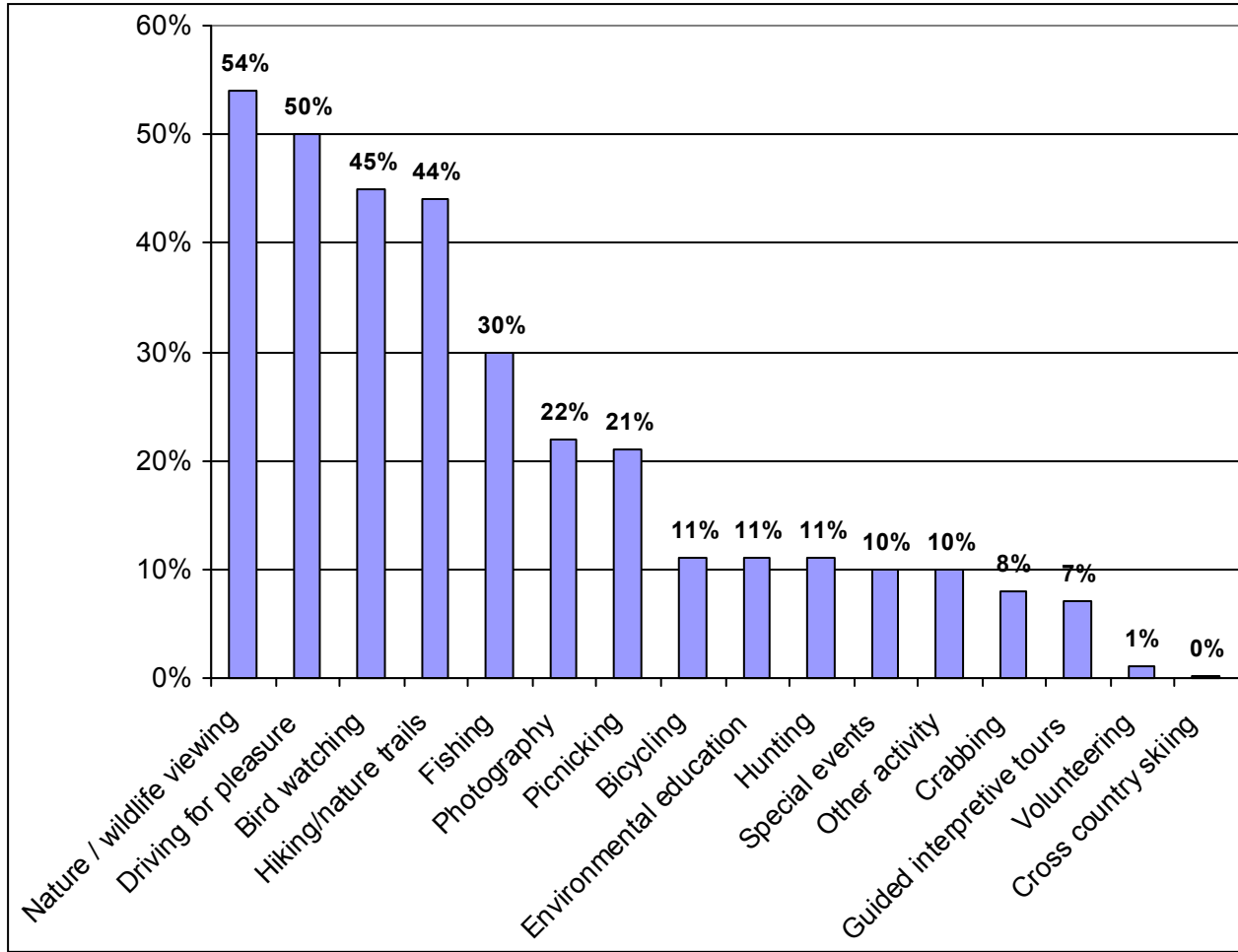
**Question 6.** Please check the activities you have participated in during the last 12 months at Prime Hook National Wildlife Refuge.

**Table 7.** Activities participated in during last 12 months at Prime Hook National Wildlife Refuge by community members.

<b>Activity</b>	<b>Participated (%)</b>
Nature/wildlife viewing	54
Driving for pleasure	50
Birdwatching	45
Hiking/nature trails	44
Fishing	30
Photography	22
Picnicking	21
Bicycling	11
Environmental education	11
Hunting	11
Other activity	10
Special events	10
Crabbing	8
Canoeing/kayaking	7
Guided interpretive tours	7
Volunteering	1
Cross-country skiing	<1

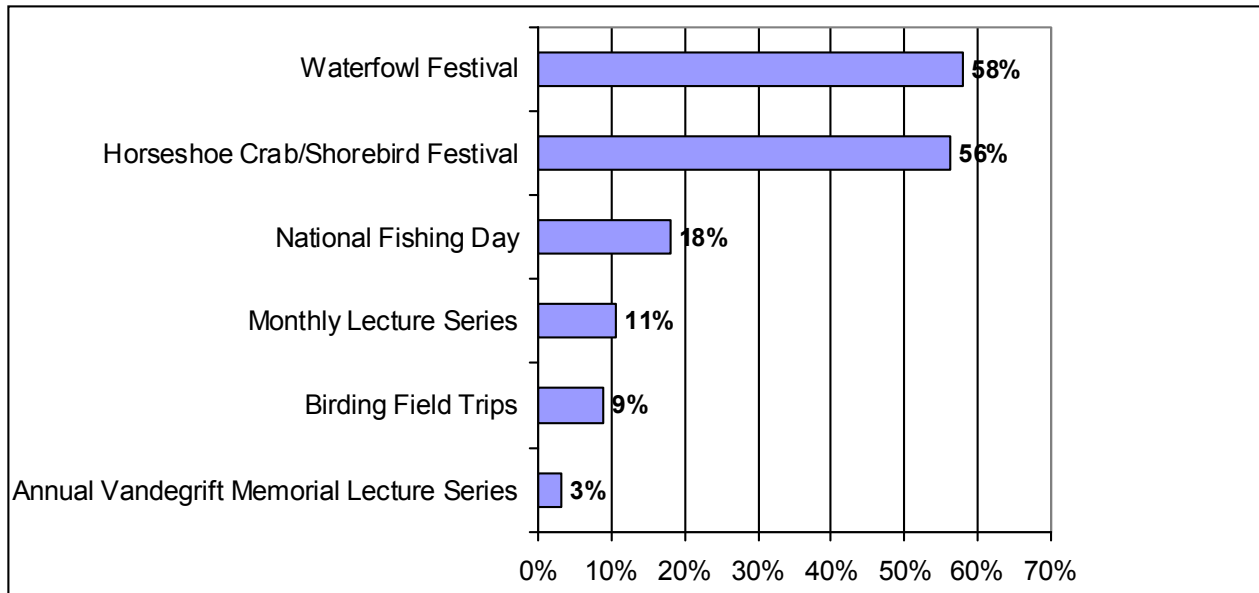
*n* = 262





**Figure 1.** Activities participated in during last 12 months at Prime Hook National Wildlife Refuge.

Question 7. Did you attend any of the following special events at Prime Hook National Wildlife Refuge?

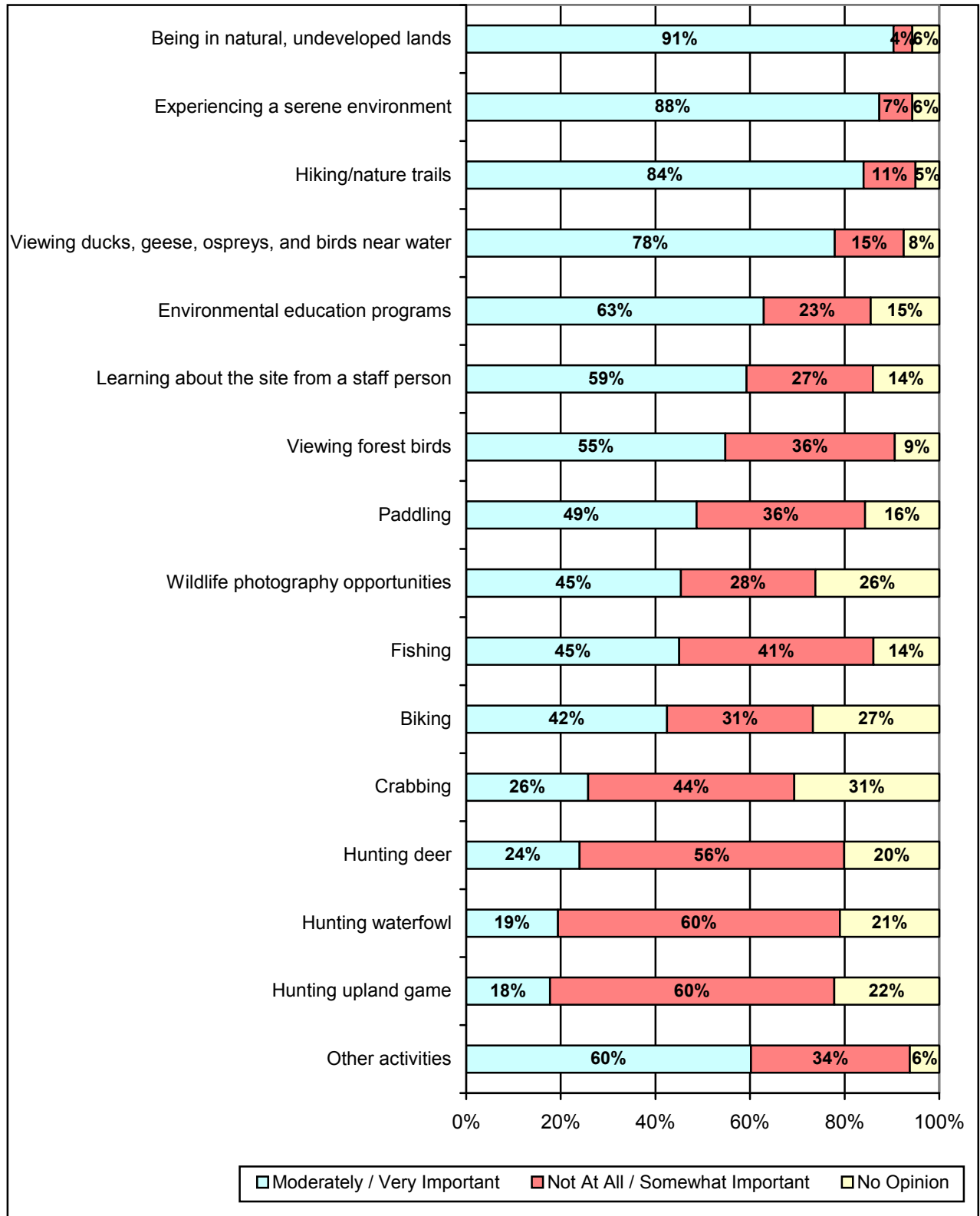


**Figure 2.** Special events attended by community members at Prime Hook National Wildlife Refuge.

**Question 8.** For each activity listed, please tell us how important that activity is, then tell us the general location where you usually participate in each activity.

**Table 8.** Importance of activity to community members when visiting Prime Hook National Wildlife Refuge.

Activity	Importance					<i>n</i>
	Very Important (%)	Moderately important (%)	Somewhat important (%)	Not at all important (%)	No opinion (%)	
Being in natural, undeveloped lands	74	16	1	2	6	400
Experiencing a serene environment	74	14	5	2	6	386
Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	57	21	11	3	8	405
Hiking/nature trails	59	24	5	6	5	378
Other activities	60	1	1	33	6	50
Viewing forest birds	28	26	27	9	10	393
Environmental education programs	39	24	17	5	15	373
Wildlife photography opportunities	28	17	14	15	26	382
Learning about the site from a staff person	32	27	16	10	14	359
Fishing	30	15	18	23	14	378
Biking	26	17	12	19	27	370
Canoeing or kayaking	21	27	20	15	16	374
Crabbing	14	12	19	25	31	391
Hunting deer	15	8	4	52	20	381
Hunting waterfowl	13	6	7	53	21	378
Hunting upland game	12	6	4	56	22	375



**Figure 3.** Importance of activities to community members when visiting Prime Hook National Wildlife Refuge.

**Table 9.** Mean importance of activities to community members when visiting Prime Hook National Wildlife Refuge.

<b>Activity</b>	<b>mean</b>	<b>SD</b>
Being in natural, undeveloped lands	3.72	.62
Experiencing a serene environment	3.69	.67
Hiking/nature trails	3.45	.86
Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	3.42	.83
Environmental education programs	3.13	.95
Learning about the site from a staff person	2.94	1.02
Other activities	2.93	1.44
Viewing forest birds	2.82	.99
Wildlife photography opportunities	2.80	1.15
Biking	2.67	1.21
Canoeing or kayaking	2.65	1.05
Fishing	2.61	1.21
Crabbing	2.22	1.14
Hunting deer	1.83	1.22
Hunting waterfowl	1.74	1.16
Hunting upland game	1.66	1.13

<sup>1</sup> Responses were coded on a scale from 1 (not at all important) to 4 (very important).

**Table 10.** Location where community members participate in activities when visiting Prime Hook National Wildlife Refuge.

<b>Activity</b>	<b>Location</b>				<b>n</b>
	<b>Slaughter Beach Road (%)</b>	<b>Broadkill Beach Road (%)</b>	<b>Prime Hook Beach Road (%)</b>	<b>Fowler Beach Road (%)</b>	
Experiencing a serene environment	38	67	51	24	256
Being in natural, undeveloped lands	34	64	49	23	241
Viewing ducks, geese, eagles, osprey, shorebirds, and other birds on or near the water	40	64	43	19	280
Viewing forest birds	27	62	44	10	203
Wildlife photography opportunities	21	61	45	13	162
Fishing	30	66	26	16	159
Biking	19	55	43	14	140
Crabbing	23	58	41	18	138
Other activities	37	43	48	34	30

**Question 9.** From the list of activities, what is your primary reason for visiting Prime Hook National Wildlife Refuge.

**Table 11.** Categories of primary reason for community residents visiting Prime Hook National Wildlife Refuge.

<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b><i>n</i></b>
viewing birds	17	73
experiencing a serene environment	16	69
being in natural, undeveloped lands	14	57
hiking/nature trails	10	40
fishing	8	33
wildlife observation, nonspecific or other than birds	5	20
miscellaneous	4	16
biking/mountain biking	3	11
wildlife photography	3	14
hunting deer	3	11
do not visit	3	12
being a local homeowner	3	12
crabbing	2	9
paddling	2	9
hunting, nonspecific	2	7
environmental education programs	1	6
hunting waterfowl	1	6
hunting upland game	1	4
learning about the site from a staff person	1	5
driving	1	6

*n* = 395. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 10.** Are there activities or services that you think *should be allowed* at Prime Hook National Wildlife Refuge currently are not allowed?

**Table 12.** Categories of activities that should be allowed at Prime Hook National Wildlife Refuge.

Categories developed from open-ended responses	Percent (%)	<i>n</i>
don't know/unsure/no opinion	21	20
miscellaneous	15	14
hiking/walking trails	14	13
Hunting-related	13	12
camping	5	5
dog walking/run area	5	5
horseback riding	4	4
bicycling/bike trails	4	4
kayaking	4	4
beach cleanup	4	4
observation towers	3	3
more kids' activities	3	3
crabbing/fishing	3	3

*n* = 84. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 11.** Are there activities or services that you think *should not be allowed* at Prime Hook National Wildlife Refuge are currently allowed?

**Table 13.** Categories of activities that should not be allowed at Prime Hook National Wildlife Refuge.

Categories developed from open-ended responses	Percent (%)	<i>n</i>
hunting	44	56
unsure/don't know/no opinion	13	16
miscellaneous	13	17
ATV's/driving on beach	7	9
reckless behavior (e.g., partying/drinking/ bonfires/speeding)	6	8
limit on hunting	3	4
boating	3	4
fishing	2	3
farming	2	3
development	2	3
crabbing	2	3

*n* = 121. Totals may be greater than *n*, as some respondents listed more than one response.

**Section 2: Please tell us about the importance of the refuge to you and the local community.**

**Question 1.** Please tell us what you see as the biggest benefit to the local community from Prime Hook National Wildlife Refuge.

**Table 14.** Categorized benefits to the local community from Prime Hook National Wildlife Refuge.

<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b><i>n</i></b>
having a place for wildlife, view wildlife	32	140
protecting habitat from development	23	100
aesthetic value--get away, serene environment	20	90
a place to go with family/future generations	7	30
Recreation opportunities	7	33
environmental education opportunities	5	21
don't know, no opinion	2	9
miscellaneous	2	11
tourism benefit	1	6
none	1	4

*n* = 399. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 2.** Do you see any negative impacts to the local community from Prime Hook National Wildlife Refuge?

**Table 15.** Do you see any negative impacts to the local community from Prime Hook National Wildlife Refuge?

<b>See impact</b>	<b>Percent (%)</b>
No	92
Yes	8

*n* = 394



**Table 16.** Categorized negative impacts to local community from Prime Hook National Wildlife Refuge.

<b>Categories developed from open-ended comments</b>	<b>Percent (%)</b>	<b><i>n</i></b>
No negative impacts	24	16
mosquitoes	12	8
hunting related	9	6
don't know/unsure/no opinion	6	4
access/restrictions	11	7
development related	9	6
crop management	8	5
wildlife related	9	6
traffic related	6	4
miscellaneous	6	4

*n* = 72. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 3.** Please indicate the extent to which each statement below describes your general feelings about Prime Hook National Wildlife Refuge.

**Table 17.** Mean ratings for community members' feelings about Prime Hook National Wildlife Refuge.

Statement	mean	SD
Place heritage	3.77	.92
It is important to me that my children and my grandchildren will be able to visit the refuge.	4.74	.59
The refuge provides me a sense of connection to past and future generations.	3.68	1.17
Coming to places like this refuge is an important part of my family tradition.	3.66	1.18
This place is special because it is where my family and I spend time.	3.33	1.28
This place is special because it is where my friends and I spend time.	2.83	1.18
Coming to places like this refuge was an important part of my childhood.	2.98	1.26
Place identity	3.90	1.01
This refuge means a lot to me.	3.60	1.04
I am very attached to the refuge.	3.70	.98
I feel this refuge is a part of me.	3.34	1.15
I identify strongly with the refuge.	3.16	1.07
Place dependence	3.39	1.00
This is the best place for what I like to do.	3.51	1.05
No other place can compare to this area.	3.02	1.09
I get more satisfaction out of visiting this place than visiting any other.	2.93	1.05
Doing what I do at this refuge is more important to me than doing it in any other place.	2.87	1.00
I wouldn't substitute any other place for doing what I do here.	2.74	1.01
Trust	4.03	.96
Everything considered, I trust the refuge staff will do what is right for the refuge.	4.11	.97
I have confidence in decisions made by the local staff at the refuge.	3.88	.97
In general, I have confidence in the decisions that the U.S. Fish and Wildlife Service makes about managing this refuge.	3.85	1.06
Because of my experiences at the refuge I will definitely come back.	4.24	.98

*n* = (listwise) 300

<sup>1</sup> Responses were coded on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

**Table 18.** Community members’ agreement or disagreement with statements regarding their feelings towards Prime Hook National Wildlife Refuge.

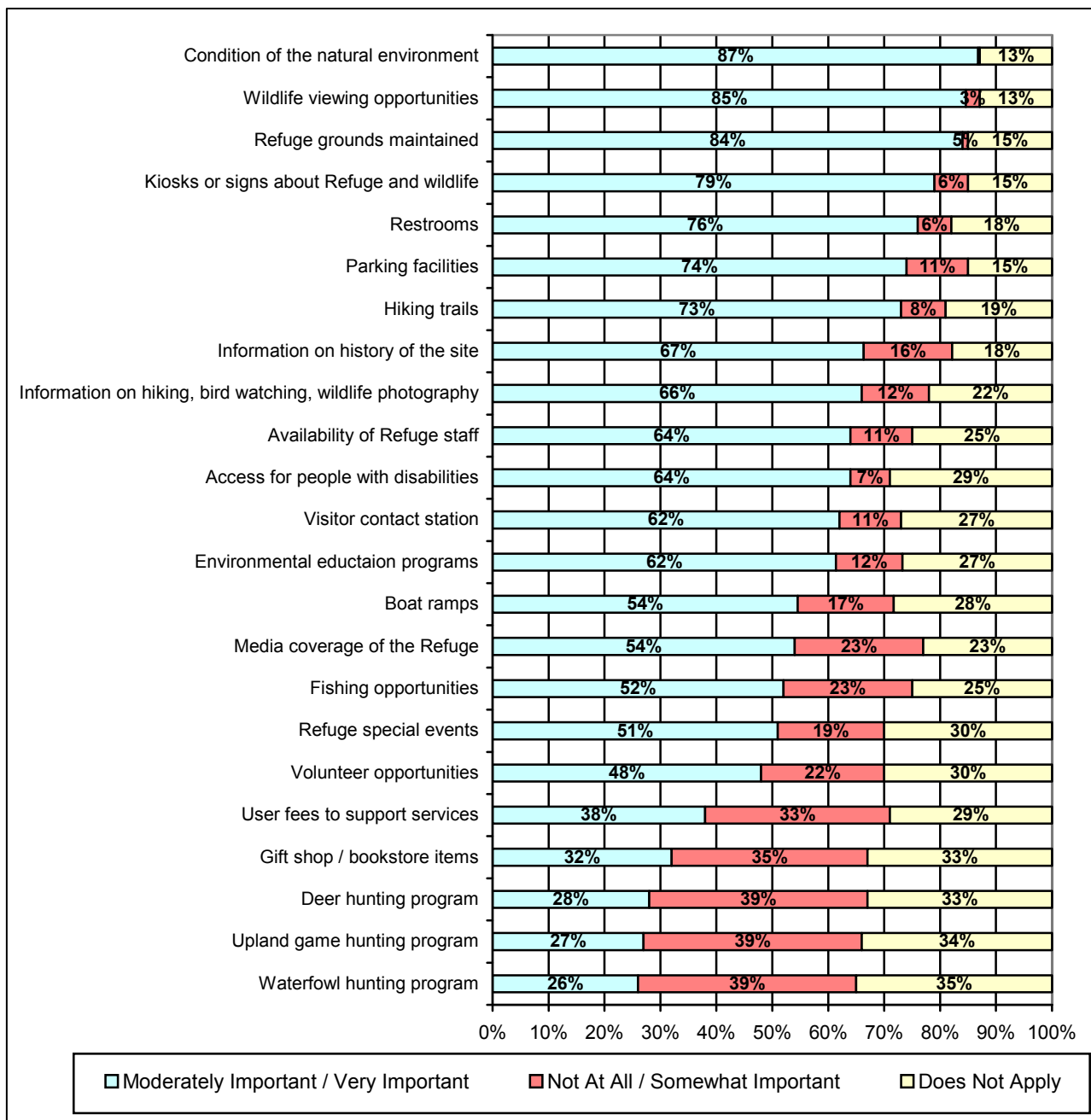
<b>Statement</b>	<b>Strongly/ mildly agree (%)</b>	<b>Strongly/ mildly disagree (%)</b>	<b>Unsure (%)</b>	<b><i>n</i></b>
<b>Place heritage</b>				
It is important to me that my children and my grandchildren will be able to visit the refuge.	95	1	5	408
The refuge provides me a sense of connection to past and future generations.	63	16	22	388
Coming to places like this refuge is an important part of my family tradition.	66	17	17	401
This place is special because it is where my family and I spend time.	50	25	26	378
This place is special because it is where my friends and I spend time.	28	37	36	381
Coming to places like this refuge was an important part of my childhood.	37	34	29	371
<b>Place identity</b>				
This refuge means a lot to me.	60	15	25	399
I am very attached to the refuge.	61	10	29	395
I feel this refuge is a part of me.	44	21	35	392
I identify strongly with the refuge.	36	24	41	377
<b>Place dependence</b>				
This is the best place for what I like to do.	52	15	33	394
I get more satisfaction out of visiting this place than visiting any other.	26	32	43	386
Doing what I do at this refuge is more important to me than doing it in any other place.	26	32	42	377
No other place can compare to this area.	30	25	45	379
I wouldn’t substitute any other place for doing what I do here.	19	37	44	377
<b>Trust</b>				
Everything considered, I trust the refuge staff will do what is right for the refuge.	76	6	19	400
In general, I have confidence in the decisions that the U.S. Fish and Wildlife Service makes about managing this refuge.	69	10	22	399
I have confidence in decisions made by the local staff at the refuge.	69	7	24	398
Because of my experiences at the refuge I will definitely come back.	79	17	4	370

### Section 3: Please tell us your opinions about the refuge and its management.

Question 1. Please rate how important the item is to your satisfaction during your last visit to the refuge then rate how satisfied you are with the way the refuge is managing for each item.

**Table 19.** Community members' ratings of importance of services offered at Prime Hook National Wildlife Refuge.

Service	Importance					n
	Very important (%)	Moderately important (%)	Somewhat important (%)	Not at all important (%)	Does not apply (%)	
Condition of the natural environment	79	8	<1	<1	13	290
Refuge grounds maintained	70	14	1	<1	15	287
Wildlife viewing opportunities	70	15	2	<1	13	289
Restrooms/comfort stations	58	18	6	1	18	289
Hiking trails	59	14	7	1	19	288
Kiosks or signs with information about the refuge and its wildlife	50	29	5	1	15	288
Access for people with disabilities	51	13	4	3	29	287
Availability of information on hiking, bird watching, or wildlife photography	44	22	8	4	22	288
Visitor contact station	40	23	8	3	27	290
Availability of information on the history of the site	40	26	11	5	18	288
Environmental education programs	36	26	9	3	27	285
Parking facilities	36	38	10	1	15	297
Availability of refuge staff	38	25	10	2	25	286
Boat ramps	32	22	12	6	28	287
Fishing opportunities	30	22	10	13	25	289
Media coverage of the refuge	29	25	9	14	23	290
Refuge special events	20	31	15	4	30	281
Volunteer opportunities	23	25	17	5	30	293
Waterfowl hunting program	18	8	10	29	35	286
Deer hunting program	18	11	9	30	33	287
Upland game hunting program	15	12	9	30	34	287
User fees to support services provided	18	20	19	14	29	289
Gift shop or bookstore items	12	19	19	17	33	287



**Figure 4.** Collapsed community member importance ratings for services offered at Prime Hook National Wildlife Refuge.

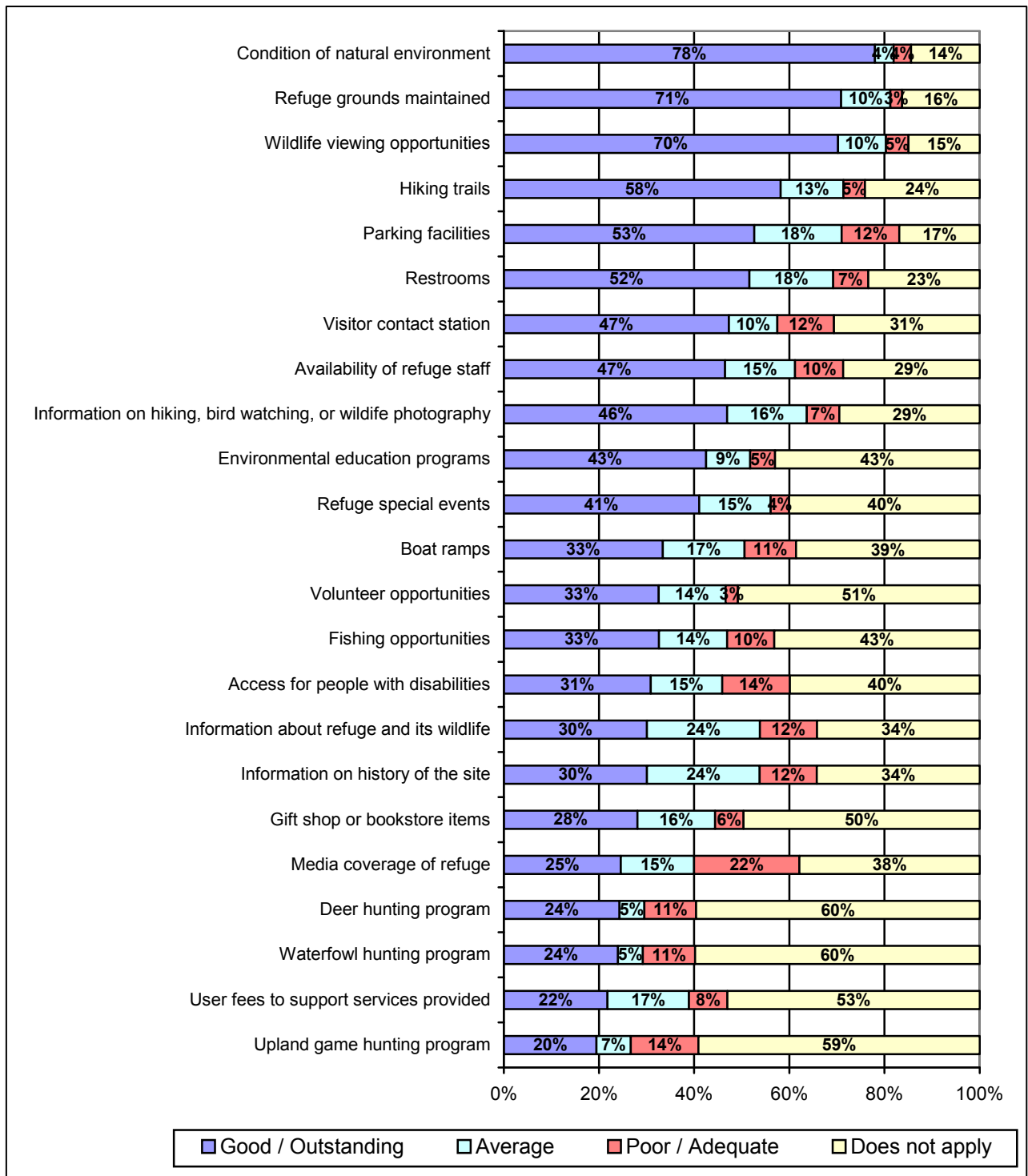
**Table 20.** Mean importance rating for services offered.

<b>Service <sup>1</sup></b>	<b>mean</b>	<b>SD</b>
Condition of the natural environment	3.90	.33
Refuge grounds maintained	3.80	.44
Wildlife viewing opportunities	3.77	.51
Restrooms/comfort stations	3.62	.65
Hiking trails	3.61	.70
Access for people with disabilities	3.57	.79
Kiosks or signs with information about the refuge and its wildlife	3.51	.67
Availability of information on hiking, bird watching, or wildlife photography	3.37	.85
Visitor contact station	3.35	.827
Availability of refuge staff	3.34	.79
Environmental education programs	3.30	.83
Parking facilities	3.28	.72
Availability of information on the history of the site	3.24	.89
Boat ramps	3.13	.95
Refuge special events	2.97	.84
Volunteer opportunities	2.94	.92
Fishing opportunities	2.93	1.10
Media coverage of the refuge	2.90	1.10
User fees to support services provided	2.59	1.07
Gift shop or bookstore items	2.41	1.06
Deer hunting program	2.25	1.27
Waterfowl hunting program	2.23	1.28
Upland game hunting program	2.17	1.23

<sup>1</sup> Responses were coded on a Likert-type scale from 1 (not at all important) to 4 (very important).

**Table 21.** Community members’ satisfaction with services offered at Prime Hook National Wildlife Refuge.

Service	Satisfaction						n
	Outstanding (%)	Good (%)	Average (%)	Adequate(%)	Poor (%)	Does not apply (%)	
Refuge grounds maintained	37	34	10	2	1	17	289
Condition of the natural environment	33	45	4	3	1	14	294
Wildlife viewing opportunities	31	40	10	4	<1	15	293
Restrooms/comfort stations	15	36	18	5	3	23	291
Availability of refuge staff	15	32	15	8	2	29	287
Hiking trails	15	44	13	4	1	24	284
Availability of information on hiking, birdwatching, or wildlife photography	12	36	16	6	1	29	285
Refuge special events	9	32	15	4	<1	40	281
Visitor contact station	13	34	10	11	1	31	287
Kiosks or signs with information about the refuge and its wildlife	14	42	20	5	1	18	285
Environmental education programs	15	28	9	5	<1	43	284
Parking facilities	7	46	18	11	2	17	292
Volunteer opportunities	9	24	14	2	1	51	273
Availability of information on the history of the site	5	25	24	10	2	34	278
Gift shop or bookstore items	5	24	16	6	<1	50	276
Boat ramps	4	30	17	9	2	39	276
Fishing opportunities							
Access for people with disabilities	7	24	15	12	2	40	271
Deer hunting program	6	18	5	7	4	60	270
Waterfowl hunting program	7	17	5	5	3	62	270
User fees to support services provided	6	16	17	7	2	53	267
Upland game hunting program	4	16	7	9	5	59	270
Media coverage of the refuge	1	23	15	11	11	40	275



**Figure 5.** Collapsed community member satisfaction ratings for services offered at Prime Hook National Wildlife Refuge.



**Table 22.** Mean satisfaction rating for services offered.

<b>Service <sup>1</sup></b>	<b>mean</b>	<b>SD</b>
Condition of the natural environment	4.24	.78
Refuge grounds maintained	4.24	.82
Wildlife viewing opportunities	4.13	.84
Environmental education programs	3.91	.89
Hiking trails	3.89	.79
Volunteer opportunities	3.78	.84
Refuge special events	3.77	.81
Kiosks or signs with information about the refuge and its wildlife	3.77	.843
Restrooms/comfort stations	3.74	.97
Availability of information on hiking, birdwatching, or wildlife photography	3.73	.88
Visitor contact station	3.69	1.00
Availability of Refuge staff	3.68	1.02
Parking facilities	3.55	.88
Gift shop or bookstore items	3.52	.83
Waterfowl hunting program	3.49	1.19
Fishing opportunities	3.45	1.06
Boat ramps	3.40	.92
Deer hunting program	3.39	1.23
User fees to support services provided	3.39	1.00
Access for people with disabilities	3.35	1.03
Availability of information on the history of the site	3.33	.93
Upland game hunting program	3.10	1.21
Media coverage of the refuge	2.89	1.16

<sup>1</sup> Responses were coded on a Likert-type scale from 1 (poor) to 5 (outstanding).

**Question 2.** Please indicate how you feel the features listed below should be managed to maximize your experience at Prime Hook National Wildlife Refuge.

**Table 23.** Community members' ratings about how certain features should be managed at Prime Hook National Wildlife Refuge.

Feature		More features	Leave as is	Less features	<i>n</i>
Naturalness					324
	Allow more landscape alterations	7			
	Leave as is		55		
	Restore more natural conditions			38	
Information services					314
	Refuge staff more visible and available	29			
	leave as is		69		
	Refuge staff less visible and available			3	
Hiking trails					339
	Provide more trails	59			
	Leave as is		39		
	Provide fewer trails			2	
Information signs					335
	Provide more signs	35			
	Leave as is		53		
	Limit the number of signs			12	
Environmental education opportunities					331
	Provide more programs and activities	45			
	Leave as is		54		
	Reduce programs and activities			1	
Brochures/publications					337
	Provide more brochures/publications about refuge resources, activities, and regulations	51			
	leave as is		45		
	Provide fewer brochures/publications about refuge resources, activities, and regulations			3	
Interpretive Exhibits					318
	Provide more interpretive exhibits	36			
	leave as is		62		
	Provide fewer interpretive exhibits			3	
Hunting					321
	Provide more hunting areas	21			
	Leave as is		40		
	Provide fewer hunting areas			40	

Feature		More features	Leave as is	Less features	n
Fishing					323
	Provide more access to pond, creek, and shoreline	32			
	Leave as is		55		
	Restrict access to pond, creek, and shoreline			13	
Boat ramps					317
	Provide more boat ramps	20			
	Leave as is		69		
	Provide fewer boat ramps			12	
Wildlife Observation/photography opportunities					318
	Provide more facilities along rivers and parking areas	47			
	Leave as is		50		
	Provide fewer facilities (such as viewing blinds and walkways)			3	
Access to refuge					323
	Provide more parking areas and access points	31			
	Leave as is		68		
	Provide fewer parking areas and access points			<1	
Restrooms and comfort stations					328
	Provide more facilities along rivers and parkways	37			
	Leave as is		63		
	Provide fewer facilities along rivers and parkways			<1	
Visitor numbers					325
	Encourage more visitation to refuge	44			
	Leave as is		53		
	Restrict visitation to refuge			3	
Visitor impacts on wildlife					328
	Restrict any behavior that <i>may</i> negatively impact wildlife	38			
	Leave as is		31		
	Restrict <i>only</i> behavior that is <i>known</i> to have negative impacts on wildlife			31	

**Question 3.** What would enhance your experience at Prime Hook National Wildlife Refuge?

**Table 24.** Categorized responses of what would enhance your experience at Prime Hook National Wildlife Refuge.

<b>Categories of what would enhance experience</b>	<b>Percent (%)</b>	<b><i>n</i></b>
improved programs/information/staff	12	35
Nothing/ok as is	12	34
don't know/unsure/no opinion	11	31
improved hiking/walking opportunities	10	30
more wildlife viewing opportunities	8	22
keep/improve naturalness	6	17
insect control	5	13
improved boating/kayak/boating opportunities	5	14
improved parking/restrooms/cleanup, etc.	5	15
miscellaneous	5	14
improved access	4	11
improved hunting opportunities/access	4	12
improved fishing opportunities	4	11
limiting hunting	3	8
more personal time to visit	3	8
improved bike trails	1	4
improved signage/maps	1	4
more crops for wildlife	1	4

*n* = 254. Totals may be greater than *n*, as some respondents listed more than one response.

Question 4. What experience have you had at Prime Hook National Wildlife Refuge that would bring you back?

**Table 25.** Categorized responses of what would bring residents back to Prime Hook National Wildlife Refuge.

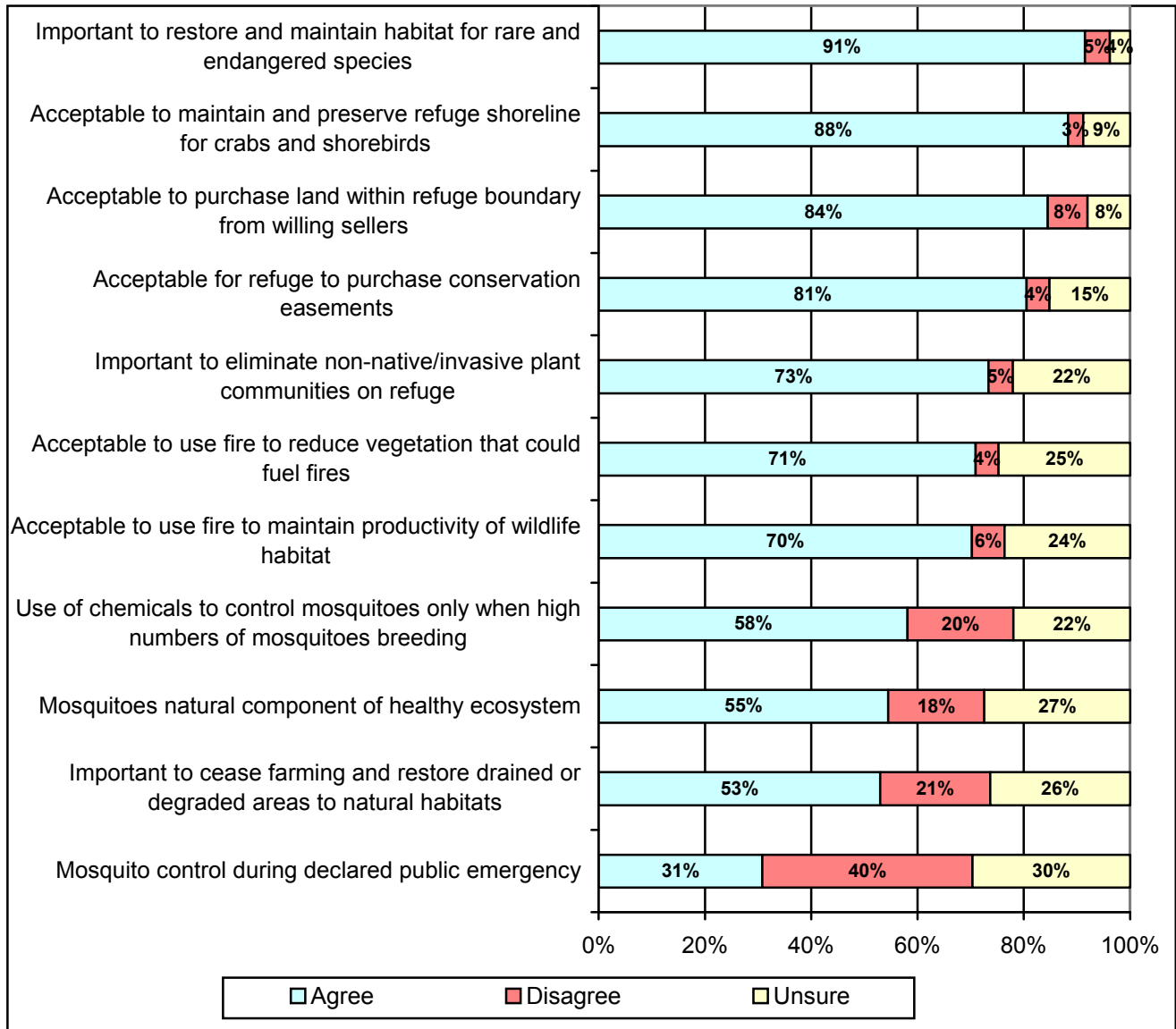
<b>Categories developed from open-ended responses</b>	<b>Percent (%)</b>	<b><i>n</i></b>
wildlife observation	26	92
scenery/beauty/intrinsic value	19	68
hiking/trails	10	36
fishing	8	28
hunting	6	21
don't know/unsure/no opinion	6	21
refuge programs/events/facilities/staff	5	19
everything	4	14
canoeing/kayaking	4	13
nothing	4	13
family heritage	3	12
biking	2	6
wildlife photography	2	8
miscellaneous	2	8

*n* = 288. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 5. Agreement with management options.**

**Table 26.** Community members’ agreement or disagreement with statements about management issues on Prime Hook National Wildlife Refuge.

<b>Action</b>	<b>Strongly agree</b>	<b>Mildly agree</b>	<b>Unsure</b>	<b>Mildly disagree</b>	<b>Strongly disagree</b>	<b>n</b>
It is important to restore and manage refuge habitats for rare and endangered species on the refuge.	73	19	4	3	3	398
It is acceptable to maintain and preserve refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds.	57	31	9	1	2	396
It is important to eliminate non-native/invasive plant communities on the refuge.	43	30	22	4	<1	393
It is acceptable to purchase land within the refuge boundary from willing sellers at market value for the benefit of wildlife.	43	41	8	1	7	392
It is acceptable to use fire as a tool to maintain high productivity of refuge wetland, forested, and grassland habitats for the benefit of wildlife.	35	35	24	5	1	394
It is acceptable to use fire as a management tool to reduce buildup of vegetation that could fuel fires.	34	37	25	3	1	395
It is acceptable for the refuge to purchase conservation easements on land outside the current boundary to manage the area’s wildlife resources.	41	39	15	2	2	389
The use of chemicals to control mosquitoes on refuge lands should only occur when field data show high numbers of breeding mosquitoes.	26	32	22	14	6	396
It is important to cease farming and strive to restore drained and/or degraded areas to natural habitats.	20	33	26	10	10	386
Mosquitoes are a natural component of healthy and functional wetland ecosystems.	13	42	27	8	10	395
Mosquito control activities on the refuge should only occur during a declared public emergency.	12	19	30	20	20	389



**Figure 6.** Collapsed community member agreement and disagreement with statements about management issues on Prime Hook National Wildlife Refuge.

**Table 27.** Mean agreement with management issues on Prime Hook National Wildlife Refuge.

Action <sup>1</sup>	mean	SD
It is important to restore and manage refuge habitats for rare and endangered species on the refuge.	4.56	.88
It is acceptable to maintain and preserve refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds.	4.41	.84
It is important to eliminate non-native invasive plant communities on the refuge.	4.12	.92
It is acceptable to purchase land within the refuge boundary from willing sellers at market value for the benefit of wildlife.	4.13	1.07
It is acceptable to use fire as a tool to maintain high productivity of refuge wetland, forested, and grassland habitats for the benefit of wildlife.	3.99	.94
It is acceptable to use fire as a management tool to reduce buildup of vegetation that could fuel fires.	3.99	.90
It is acceptable for the refuge to purchase conservation easements on land outside the current boundary to manage the area's wildlife resources.	4.15	.91
The use of chemicals to control mosquitoes on refuge lands should only occur when field data show high numbers of breeding mosquitoes.	3.58	1.19
Mosquitoes are a natural component of a healthy and functional wetland ecosystem.	3.39	1.12
It is important to cease farming and strive to restore drained and/or degraded areas to natural habitats.	3.42	1.21
Mosquito control activities on the refuge should only occur during a declared public health emergency.	2.83	1.28

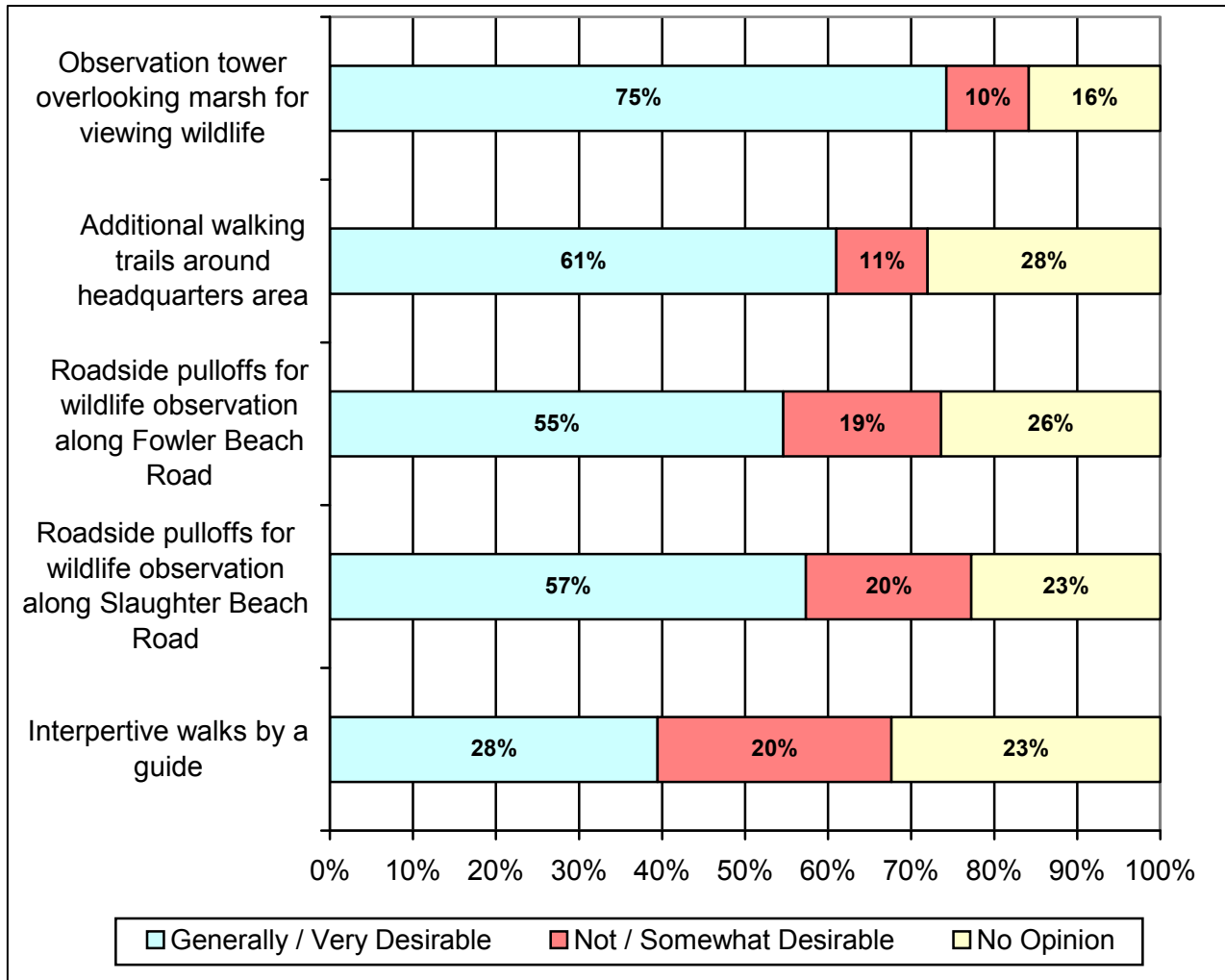
<sup>1</sup>Statements were coded on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

**Question 6.** As a visitor to Prime Hook National Wildlife Refuge, how desirable are the following hypothetical options related to visitation to the refuge?

**Table 28.** Community members' desirability of hypothetical options related to visitation on Prime Hook National Wildlife Refuge.

Option	Very desirable	Generally desirable	Somewhat desirable	Not desirable	No opinion	<i>n</i>
Observation tower overlooking marsh for viewing waterfowl and other wildlife	56	19	6	4	16	397
New roadside pulloffs for wildlife observation or photography along Fowler Beach Road	38	16	15	4	26	391
New roadside pulloffs for wildlife observation or photography along Slaughter Beach Road	39	19	14	6	23	396
Additional walking trails around the refuge headquarters area	35	26	8	3	28	400
Regularly scheduled interpretive walks by a guide	27	31	15	4	23	398





**Figure 7.** Collapsed desirability of hypothetical options related to visitation on Prime Hook National Wildlife Refuge.

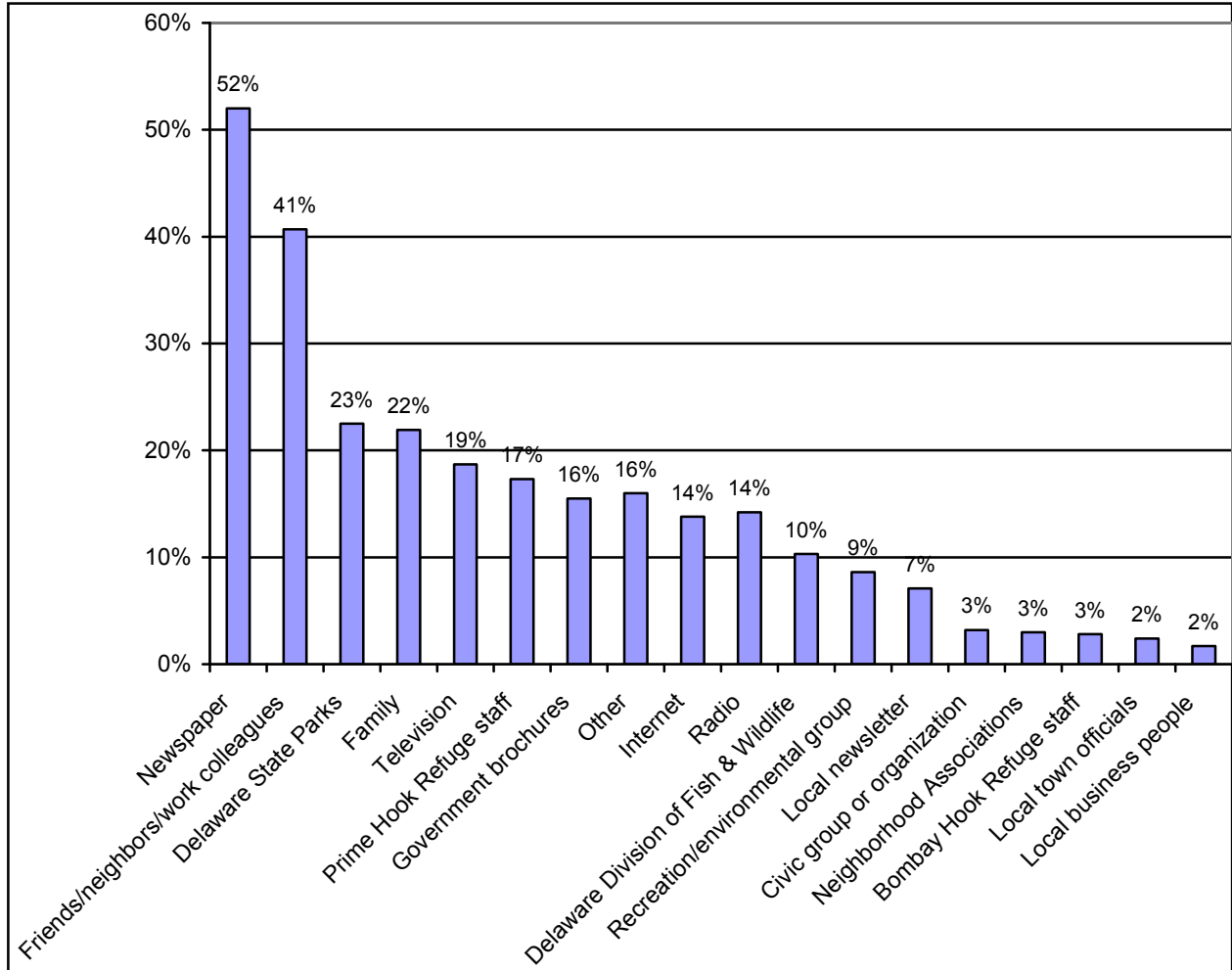
**Table 29.** Mean desirability of hypothetical options.

Option <sup>1</sup>	mean	SD
Observation tower overlooking marsh for viewing waterfowl and other wildlife	3.49	.83
Additional walking trails around the refuge headquarters area	3.28	.84
New roadside pull offs for wildlife observation or photography along Fowler Beach Road	3.20	.96
New roadside pull offs for wildlife observation or photography along Slaughter Beach Road	3.17	.97
Regularly scheduled interpretive walks by a guide	3.04	.88

<sup>1</sup> Statements were coded on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

**Section 4. Please tell us something about yourself.**

**Question 1.** Where do you get most of your news and information about Prime Hook National Refuge?



**Figure 8.** Community member sources for news and information about Prime Hook National Wildlife Refuge.

**Question 2.** From the list of information sources, please state which single source you rely on most.

**Table 30.** Categories of information sources community residents rely on most.

Categories developed from open-ended responses	Percent (%)	<i>n</i>
newspaper	33	123
friends/neighbors	13	49
refuge staff	8	31
internet/email	6	21
neighborhood association	6	21
TV	5	17
family	4	14
radio	4	16
Delaware State Parks	4	14
local newsletter	4	15
miscellaneous	4	15
Delaware Division of Wildlife	2	8
Delaware State News	2	7
recreation/environmental group	2	6
government brochures	2	8
community groups	1	5

*n* = 373. Totals may be greater than *n*, as some respondents listed more than one response.

**Question 3.** Which of the activities have you participated in within the last 5 years related to environmental or natural resource issues?

**Table 31.** Participation in natural resource decisionmaking.

Activity	Participation (%)
Attended a public hearing or meeting	50
Signed a petition	45
Joined a special interest group	41
Contacted or wrote a U.S. Senator or State Legislator	35
Contacted or wrote a State or Federal agency	31
Wrote a letter to the editor of a newspaper	7

*n* = 250

**Question 4.** How would you describe your residency at the address you were contacted?

**Table 32.** Type and time of residency.

Time of residency	<i>n</i> <sup>1</sup>	Percent (%)	<i>n</i> <sup>2</sup>	Percent (%)
Year-round	428	95		
Part-time	24	5		
Spring			12	83
Summer			11	77
Fall			12	82
Winter			6	45

<sup>1</sup> *n* = 452

<sup>2</sup> *n* = 14

**Questions 5 and 6.** How long have you lived in the Milton, Lewes, Milford area? How many generations has your family lived in the Milton, Lewes, Milford area?

**Table 33.** Amount of time respondents have lived in the Milton, Lewes, Milford area.

Years lived in Milton, Lewes, Milford area	<i>n</i>	Generations family lived in Milton, Lewes, Milford area <sup>1</sup>	<i>n</i>
0–5	196	1	82
6–10	67	2	40
11–15	21	3	60
16–20	38	4	25
21–30	50	5	8
31–40	16	> 5	22
41–50	16		
51–60	16		
61–70	8		
71–80	4		
> 80	3		

<sup>1</sup> Outliers to this variable included the responses 11, 20, 25, 34, 45, and 100 generations.

Average years lived in area = 18 years, SD = 20; average number of generations = 2.5

**Question 7.** Are you male/female?

**Table 34.** Gender of respondents

Gender	Respondents (%)
Male	44
Female	57

*n* = 452

**Question 8.** In what year were you born?

**Table 35.** Percentage of respondents by age category.

Age category	Respondents (%)
18–24	3
25–34	17
35–44	21
45–54	15
55–64	20
65–74	16
75–84	5
85 and above	3

*n* = 452

Average age = 51

**Question 9.** Are you employed?

**Table 36.** Employment status of community members.

Work <sup>a</sup>	Percent (%)	<i>n</i>	Retired	Percent (%)	<i>n</i>
Yes	66	298	Yes	81	131
Full-time	53	242	And work full-time	<1	1
Part-time	16	48	And work part-time	11	15
No	34	153	No	19	31

<sup>a</sup>Percentage of full-time and part-time workers represent those respondents who answered the question “Do you work full- or part-time?”

**Question 10.** If you are employed, do you take time off from work to participate in outdoor recreation?

**Table 37.** Percentage of respondents who take time off from work to participate in outdoor recreation.

Time off	Percent (%)
Yes	85
No	15

*n* = 298

Questions 11 and 12. What ethnicity do you consider yourself? What racial origin do you consider yourself?

**Table 38.** Race and ethnicity of respondents.

<b>Ethnicity<sup>a</sup></b>	<b>Percent (%)</b>
Hispanic or Latino	1
Not Hispanic or Latino	99
Race <sup>b</sup>	
White	93
American Indian or Alaska Native	3
Black or African American	3
Asian	1
Native Hawaiian or other Pacific Islander	0

<sup>a</sup>  $n = 430$

<sup>b</sup>  $n = 457$

Question 13. What is your highest year of formal schooling?

**Table 39.** Level of education of respondents.

<b>Level of education</b>	<b>Respondents (%)</b>
Less than high school	2
High school	13
Some college	29
College	23
Advanced degree	33

$n = 445$

**Questions 14 and 15.** How many members are in your household? Including these people, what was your approximate household income from all sources (before taxes) last year?

**Table 40.** Income and household size of respondents.

Income	Percent (%)
Less than \$10,000	2
\$10,000 to \$14,999	5
\$15,000 to \$24,999	8
\$25,000 to \$34,999	9
\$35,000 to \$49,999	21
\$50,000 to \$74,999	19
\$75,000 to \$99,999	15
\$100,000 to \$149,999	13
Over \$150,000	10

**Question 16.** Would you like to receive information on any of the following?

**Table 41.** Respondents desire for information regarding the refuge.

Information	Yes (%)
Information about future refuge planning activities	73
Results from the study	66
Refuge volunteer opportunities	31
Refuge Friends Group	29

*n* = 306

# Appendix E: Verbatim Responses to Open-ended Questions for Visitor Survey

## Section 1, Question 3: Comments on “Do you think the Refuge provides a quality hunting experience?”

### Blind maintenance

- Blinds need doors & more cover on roof
- Didn't see any deer at Stand #33, fields weren't set up for hunting
- In early season, after the hunters abuse the blinds and no effort is put forth to recamo blinds
- Poor channels, poorly reeded blinds, gets worse by the year
- duck blinds are nice
- Having well kept duck blinds is greatly appreciated
- The numbers of deer are good and for the most part, stands and access to them are good. However, more planting needs to be done in headquarters area.

### Improved hunting opportunity

- But it is very hard to get to duck blinds
- clean out the ditches to duck blinds
- Clear out better shooting lanes around stands.
- Do not require hunters to be in stands after 9:00am
- I would like to see more deer hunting days for shotgun.
- Very prejudiced
- When you get picked in lottery, which is rare!
- but I do not feel that hunters are welcome, respected visitors to the refuge.
- Friends & family can hunt together with the pre lottery picks & the daily lotteries. Plus you have many deer stands & beautiful scenery.
- To help control the deer herd
- While I think the quality of hunting has diminished over the past 5-7 years (water fowl hunting especially), it is still enjoyable place to hunt and well worth time spent there.
- Yes, but over the last 5 or so years the duck hunting has decreased. I understand the food has increased, but the open water has decreased.
- Yes. But weekday hunts for deer would be good in Nov. shotgun. I'm on vac. All that week. Would be nice.

### Bring back crops

- but you need to plant crops in the fields again and put goose pits into hunt Canada and snow geese and deer. Also open more areas besides what you have open now for water fowl hunting.
- crops need to be planted on the office area, like it use to be. Weeds on regular area need to be mowed. You can't see the deer.
- Hunting was better when land was farmed-deer were healthier
- It needs more mowing to & around stands. Need to plant more crops. "Jefferson Track" new stands need to be bigger to take "youth hunters" "turkey hunting"
- Need more crops in headquarters
- Should plant headquarters area
- Should plant more food plots for deer-clover, etc.
- The fields that are not farmed are overgrown to the extent it is almost impossible to see deer, many are shot and lost for this reason
- Was better years ago when you planted crops instead of weeds, trees, and ragweed. Even the state plants clover on the section of Prime Hook.
- With crop lands going away so does the quality hunting and nature/wildlife viewing
- would like to see more crops in fields
- Yes and no. Too many weed cannot see game no feed for ducks and geese in open land
- Your natural habitat is out of control-you don't even have path clear so you can get to the deer stand. It's to the point you can't even see the deer in the fields
- But it could be better bring back the crops
- fields need to be mowed and I will volunteer, open more day during the week



## Refuge staff/Management

- Because \_\_\_\_\_ does not know how to run hunts
- Deer hunting should be managed under QDM principals
- I feel like an unwanted visitor. The current is aloof and unfriendly.
- It's ok but seems a little unorganized and not enough help from F&WS. Bring back drop off boxes stands could use some realignment i.e. 56 57 58
- A place to hunt that wouldn't be available to me otherwise; friendly and professional staff (restart mail out applications).
- Although management strategies have changed over the years; it is the (naturally) best game around
- Always, well managed
- Contrary to several of my friends views of you present rules, I see little room for improvement. Most of these friends used to be as I call them Prime Hook Crony's.
- I think Prime Hook NWR is well managed.
- Enjoy the safety of strict adherence to rules-- However much prefer the previous management and \_\_\_\_\_ style!!
- I think refuge policies on hunting have changed from years past. Some good, some not so good.
- The drawing fair, deer stands pretty good, need to let hunters to help refuge maintain stands and other things at the refuge
- Yes, but due to increased demands more duck hunting blinds need to be constructed. Management of the marsh/hunting is well done

## Water level/Ditch management

- Average but low water levels in channels make travel hard
- But it needs more water in the early hunting seasons instead of just the later seasons
- But since the dams for water control have been put in the water has been a lot lower. Even worse than low tide before. With no tide the bottom has no end. The muck turned up by the go devils just sits there.
- To improve this experience, I'd like to see the ditches cleaned out to better access blinds and the fields put back in crops for all wild life
- Water level needs to be regulated(more water) Allow evening hunts for ducks until sunset with a reasonable time to get from blind to ramp
- Only because a lot of ducks/geese frequent the area. The water is always too shallow and the blinds are in the open too much
- There are a lot of birds. However water is too low, blinds are not grassed well, and too many hunters "sky busting."

## Access

- Would like to see more antler restrictions; such as Woodland Beach
- Areas are easily found and clean
- Because I'm in a wheel chair and they make things a lot easier. Thank you.
- I am a spinal cord injured veteran using a wheelchair for mobility. Prime has a wonderful disabled hunting program. Without Prime Hook there would be nowhere for me to continue hunting with the quality they have to offer.
- Blinds are outstanding. Note-state access needs dredging.

## Enjoyable experience/Praise

- I always have a fine experience
- I enjoyed the experience seeing all the wildlife in my deer stands.
- I like hunting from stands and having the area around the stand that is restricted to me
- I thank you guys every time I hunt at the Refuge. I don't think I would not change a thing except to get picked 1st at every lottery!!
- I think it is a safe place to hunt
- I'm non ambulatory (wheelchair)and what I have seen was great.
- It is one of two primer duck hunting locations in DE. The best managed refuge within 100 miles of my residence.
- It's the only place in Delaware that I've seen deer
- Lots of things to kill

- Many deer stands available, good locations for deer stands, good information on deer stand locations
- Outstanding resource for DE. Continue to manage for hunting not hunters, maintaining good population of birds in area effects local hunting too.
- Great spot for duck and goose hunting
- Plenty of stands, clean, not overcrowded.
- Safe & relaxing experience
- The blinds are well kept, the hunters are well informed from D.N.R.
- The refuge is some of the best waterfowl hunting in our area. I look forward to many years of hunting the refuge to come.
- The refuge maintains a good concentration of waterfowl
- Usually good opportunity to see variety of waterfowl
- Very good duck hunting.
- Very well maintained

#### Other

- Don't know its hunting season & I am afraid to go if hunters are shooting at you
- Saw deer heard deer before daybreak did not get a shot at one out of range didn't want to injure one wanted a clean shot.

#### Don't know/Don't hunt

- Can't comment as I no longer hunt
- Do not hunt
- Do not know
- Don't hunt
- Don't know
- Have no idea
- Haven't experienced hunting in refuge
- I do not hunt

- Yes, good duck hunting and deer.
- Best hunting in state. However lack of enforcement of hunting laws in last 3 years has been a major disappointment.
- Blinds are in good condition although I'm 6' 4" and they are a bit short.
- Deer are in good numbers, however 75% are very small.
- Duck blinds always seem to be in good condition; however, several of the blinds are extremely difficult to get to due to extreme shallow water and grass
- I like the stands you have. It would be nice to have a roof on the stands. But if not I will still come back to hunt.
- Most of the tree stands are in good spots-we need to move a few

- Although I've never hunted Prime Hook I hear the hunting is great, and would like to partake.
- Excellent opportunity for the most part
- Good access, good food source loads of ducks

- I don't hunt
- I don't hunt
- I don't hunt
- I don't hunt
- Not a hunter
- Not interested in this
- Unsure
- Yes and no. Reasons on the back of this survey

## Section 1, Question 4: Comments on “Do you think the Refuge provides a quality fishing experience?”

### Water levels

- Fishing is limited due to water levels which I understand must be changed to help other things such as weed control, aquatic plants, etc.

### Access

- good public access
- Except ponds are closed to public without notice
- It would be nice to open the other side of the water where the levy is at the bridge (Peters Field Ditch)
- Need more fishing areas
- Need more walkways for fishermen
- Some areas leading from one pond to another are getting overgrown and need to be thinned out in order to access.
- Would be better if there were more fishing piers.
- You should be able to fish all year except days where there is duck hunting, now you close the ramp during hunting season even on days you can't hunt
- need to let more fishing in areas. Thank you for what you have open

### Quality fishing experience

- Fishing is excellent, but I wish the water level was not lowered in summer, I question the reason for this, I would think this would increase mosquito population.
- Fishing is ok
- good fishing
- Good quality fish, very nice setting for ponds. The ponds should be made catch and release only.
- good water quality plenty of fish and not crowded
- I fish on the bay/beach and if I catch nothing that is ok also
- I have a great time there
- I look forward to finding this out when Spring arrives
- I would say quiet and relaxed atmosphere
- Again not room for much improvement, It's up to the fish. Hqts boat ramp needs to be concrete, no stones
- Don't have to be bothered by anyone
- Excellent white perch run early spring-good bass/otherwise rest of spring too many mosquitoes in the summer
- It has in the past for me, but it has been several years since I fished there.
- It is a beautiful place to visit and spend some time
- Large perch in and about water control structures, large trout in Broadkill River/Beach Plum Island
- Lots of variety in fish species
- Never crowded, launch areas are generally clean, secluded
- OK
- Quality fishing and of the fish
- Quiet fishing experience pristine ponds
- The one time I went we had a good time.
- The ponds are excellent for fishing. Prime Hook creek is well managed and offers excellent fishing.
- To keep in touch with nature
- Variety of fish is good. Fishing from a canoe gives you better accessibility due to structure & low water in some areas of the creek & ponds
- Various locations offer a variety of fishing
- Very much so. I take my grandkids(age 10 & 15)all the time and they always have a great time catching bass, perch and pickerels, great place for youngsters to spend their leisure time.
- Very quiet and looks great!
- White perch fishing in Peterfield Ditch is excellent in spring. Cat fishing later on

### Limited fish

- I like it the way it is, maybe stock some bass or other fish without much public knowing about it!
- It is very limited
- Talked to many people about your place but have not fished there yet will be there in the spring with my son. Had a this year with boy scouts and didn't get a chance to bow hunt there
- The fishing used to be great for white perch and catfish. Does the dam affect that!
- Never caught a fish.
- never caught many fish

### **Don't fish/Don't know**

- Do not fish
- Does not apply
- Don't fish
- Don't fish
- Don't fish the refuge.
- Don't know
- Don't know
- don't know looks like it would be good
- don't know looks like it would be good
- have not fished here
- Haven't fished in a while
- I can fish at a lot of different spots.
- I do not fish
- I don't fish
- never fish there, but have plans for the future to do so.
- never fished
- never fished
- Never fished
- Never fished at the refuge.
- Never fished but from seeing the ponds and ramps everything seems pretty easy to get to
- never fished here
- no comment
- no comment
- No opinion
- No opinion
- Not a fisher
- Not sure, I have never fished there, but would like to try
- Plan on fishing in future
- But I don't travel there to fish
- I don't know. I don't fish the refuge.
- I have not fished here but from what I hear it is good
- I never fished their

**Section 3, Question 2: Are there activities or services that you think *should be allowed* at Prime Hook National Wildlife Refuge that currently are not allowed?**

**Camping**

- Camping
- Tent camping

**Horseback riding**

- Horseback riding
- Horseback riding
- Horseback riding, cross country skiing, snow-shoeing(limited camping or camping-educational programs)(as applicable)
- horseback riding, gathering shedded deer antlers

**Hunting related**

- Add more days to deer hunt-add 1 or 2 more Sundays during the hunting season.
- Hunt snow geese on the Broadkill Beach Ponds
- Hunting deer in Nov. weekdays too.
- hunting from boat or portable blinds because other hunters damage the reeds on the blinds and they are too in the open.
- Hunting teal during the "teal" season. 2. More access to hunt snow geese during the early and late seasons. 3. Open more of the refuge up ( North and South
- I think they should open up new area's for ducks there used to be more blinds and the ducks and geese know what ponds we need to bounce the birds to break u
- I think when you are hunting and you have bad weather cancellations you should be able to go back to your car or truck and not have to stay with your stand
- Increased hunting in a friendly environment.
- Open dove hunting fields
- open up more area and time for snow goose hunting
- Put field blinds in so we can hunt geese in fields like Bombay Hook
- should not be hunting
- Snow goose hunting from deer stands
- spring snow goose season
- Sunday waterfowl hunts, waterfowl season is very short especially for the working man, we are the ones footing the bills.
- Turkey hunting
- turkey hunting goose pit hunting more office deer hunting
- Turkey hunting; let more areas be hunted for small game
- Wheelchair Snow & Canada goose hunting on the Island Farm
- goose hunting in field planted with crops and deer hunting in fields planted with crops
- more opportunities for snow goose hunting
- Would like to be able to scout year round.
- could make portable blinds take down at end of hunt
- deer shed antler hunting. The few antlers that would be found would not impact the other wildlife

**Hiking/Walking trails**

- More hiking trails
- More walking trails
- Picnic places with fine hearths-more places to walk

**Kayak/Canoe**

- Canoe trail should be open some days in the fall. That is the best time for paddling and people who are not shooting animals deserve equal access.
- Hose at boat launch ramp to clean boat hulls when leaving
- Rent canoes or kayaks
- I think kayakers & canoeists should be allowed to canoe on the canoe trail year round. I think the hunting blinds should be converted to photography blinds
- Kayak rental

### **Crabbing/Fishing**

- More fishing areas

- More fishing room

### **Access**

- Access to more areas that are currently off limits.
- Birding access to Island Farm
- Complete access to entire refuge

- More access to closed areas
- When availability exists, open handicap accessible areas to everyone

### **Picnic areas/Benches**

- A few more benches for older folks like me
- A modest picnic area would be nice

- Picnic areas-covered areas for group events placed around the reserve-concerts-

### **Don't know/Unsure/No opinion**

- Don't really know
- It seems (by this survey) you are already considering them
- No knowledge

- No opinion
- No opinion
- Not specifically

### **Miscellaneous**

- Mountain biking along the hiking trails.
- Controlled biking areas on bike paths
- More family activities-things for elementary school age children in family
- Doing a great job as is
- Farming
- There should be a separate room or area to display mounted animals & birds & other species that live here.
- Be treated as a citizen and not a black man-we also pay taxes.

- Bird & Rescue
- Full time law enforcement
- More farming
- Open up other side of waterway off Broadkill Rt 16. Put litter signs up stating fines and a # to call if someone does litter.
- Peace and quiet and solitude
- Photography lessons
- More education sessions on weekends instead of Thursday nights



### **Limit on hunting**

- Closing Jefferson-Loffland areas to hunting in January because of fox squirrels. Hunters have no impact on them being in woods for what little shooting that is done.
- kayaking during duck season walking nature trails during deer season
- Limiting the amount of fawns taken per hunter. Maybe certain areas with QDM or alternative areas each year
- Youth hunt should not proceed the Nov. shotgun season. It should be held \_\_\_\_\_ the season

### **Bikes (mountain & motor)**

- Motorbikes
- Mountain bikes and ATVs, cross-country skiers, hunting
- Mountain biking
- Snowmobiles, off road bikes, etc

### **Miscellaneous**

- development and food, gas and t-shirt stands
- Camping-loud music
- Drinking alcoholic beverages
- Boats should be restricted to paddles & electric motors only-hunting should be restricted to culling purposes only
- Gas powered trips through the wilderness
- As much as reasonably possible, anything that interferes with #2 above.
- motorized \_\_\_ horses
- Cross country/track practice
- I enjoy being in a wildlife refuge, but wildlife refuge is its purpose, not entertaining vacationers.
- Racism
- Restricted canoeing during hunting season-some areas should be reserved for canoeing/kayaking year round
- No dogs
- Pets on trails.

### **Unsure/Don't know/No opinion**

- Don't know
- I have no opinion
- No opinion
- Allowed activities seem nicely balanced for the area as far as I could tell in my brief visit.



### Section 3, Question 6: What would enhance your experience at Prime Hook National Wildlife Refuge?

#### Nothing—Good as is

- Can't think of anything-wish we had more rain!
- Enjoy as is, maybe more restrooms
- Great place
- Have been very good
- I always enjoy myself here
- I had a very positive experience here. Love, the volunteer, was so knowledgeable and helpful.
- I like it the way it is.
- I'll come back anyway, It's like a second home. So I'd leave it as it is.
- It is a good experience every time I visit
- It is a wonderful place now
- It was great
- Leave as is
- Like it as is, don't mess with a good thing
- Not much to enhance! Beautiful refuge and helpful people.
- Not sure-we had a wonderful visit.
- Nothing
- Nothing
- Nothing it was great
- Only been there 3 times, so far so good
- Prime Hook great as is
- Satisfied
- Since our trip was with 2 outstanding and knowledgeable guides- nothing additional was needed
- To keep the refuge moving as it is.
- Too soon to tell
- Unknown
- Well satisfied with refuge at present time
- You are doing a wonderful job. Just the way it is everyone is nice friendly and knowledgeable.

#### Improved programs/Information/Staff

- A return to Prime Hook with a program by naturalist
- By having more programs
- I didn't know about the other roads and areas of the park
- Informational film
- I've been there once but most important was the volunteer who took us into the area, explained what was there
- Knowing more about the area, and how far does the refuge reach
- More accurate maps
- More educational programs, opportunities (guided) hiking trips & refuge staff/volunteers (guided) canoeing & refuge staff/volunteers. Research-library-videos (on site) archive information about Native American Indians & settlers related to refuge area!
- More hands on
- More interpretative programs on weekends; expand the gift shop to include more artisan's work. Have a ranger in the field.
- More knowledge-I was unaware that the beach was part of the park. Always headed to beach & never visited the park-just found out in this survey info
- More outdoor activities and more, more interesting learning activities
- More signs leading to blinds
- More staff available for questions
- New manager
- Should have activities other than Sundays-most events are scheduled Sunday at noon-handicap accessible boat ramps.
- Some waterfowl seminars (duck/goose calls, decoy setups, etc./How to programs
- Would feel more comfortable when walking alone to see more staff visible

#### Insect control

- Fewer biting bugs?

#### More wildlife viewing opportunities

- Get more birds!
- I would like to see the African birds that come here in season to photograph.
- More animals and ability to interact with them (if possible). Rescue programs
- more bird species
- More Ducks
- More ducks and geese in fields-seeing more wildlife
- More viewing sites for birders
- More viewing stands on the saltwater pools.
- More wildlife

- Open swaths through overgrown fields so we can see wildlife better
- See more quality deer. Deer checking station that also weighs deer. Higher stands. Maybe the food cart more often
- See the geese in the fields

### Improved access

- Access to Island Farm
- Access to Island Farm Road, parking at Broadkill Impoundment
- Acquire and manage a portion of beach on Delaware Bay
- Being able to walk in areas currently off-limits, in small groups rather than individuals wreak havoc.
- Being able to walk on the many paths that are closed to visitors which the refuge opens to Hunters (off season of course).
- Better access for non ambulatory disabilities
- Better access to duck hunting blinds(more water-less silt/grass
- Better access to upper area by Deep Branch Rd., and leaving water level up in the summer months
- Dredge-open up-state access & fed. Access to get to the creeks & ponds
- Extension of the vehicle pull over areas for bird watching along Rt. 16 (Broadkill Beach Road)

### Improved trails

- More "groomed" walkways-trails
- More & longer hiking trails.
- More bike trails
- More hiking trails
- More hiking trails
- More hiking trails & safer pull offs along Broadkill Road & Prime Hook Road.
- More hiking trails around ponds. Trailside signs about wildlife identification.
- More hiking trails.
- More nature trails and observation points
- More trails
- More trails and observation platforms.

### Improved hunting opportunities/Access

- (1) Food plots-fields; (2) Goose blinds; (3) Less rigid enforcement of minor rules and regulations.
- A monthly planner that was sent to your home with pictures and descriptions of blinds that can be seen that month.-migratory information for each month. This would help the new birder.
- Add more water for easier access to blind sites. Place a shell limit to discourage "sky busting" ducks

- Seeing more birds
- Whatever can be done to increase the numbers of wildlife to the area-is it possible to increase the food for them?

- More access to more sites, observation areas, blinds, etc. Less ticks & mosquitoes.
- More access to ponds, creeks and shoreline
- More areas open to hiking & kayaking
- More parking shoulders along wetland roads. Better trail signage.
- More pull offs on Prime hook Beach Rd.
- My freedom to move about with less restrictions
- Open other side of waterway at the levy on Rt. 16
- Provide more access along Broadkill- (Peters field Ditch) to water for fishing(platform or walkway)
- Restrict disabled hunting on the Island Farm to wheelchair dependent hunters only
- Somewhat easier access to duck blinds.
- Take time to clean ditches for better access to duck blinds.
- Walk to duck blinds.

- More walking trails-especially longer ones
- More walkways at Peter Field ditch
- More well maintained trails, auto pull outs & observation platforms for major impoundments
- Pathed/paved bike trails
- This was my first visit to Prime Hook. I honestly don't know much about the refuge or what is available to a visitor. I would like to see a longer boardwalk or trail for nature & bird watching.
- Wider shoulders on Broadkill Beach Road for safer pull off & observation; bike path on Broadkill Beach Road.

- Allow waterfowl hunting until sunset on Saturdays as opposed to 3:00 PM
- be allowed to transfer hunting stands using the original fee paid in the morning
- Being able to have access to the refuge on some days during hunting season without having to hear guns
- Being picked for headquarters hunt
- Better quail hunting opportunities
- Bigger duck blinds

- Breakfast served in duck blind
- Canada goose field blinds available-preseason draw and/or daily lottery
- Changing drawing time from 2 hrs to 1 1/2 hrs for deer hunting
- Clear out the ditches going to the duck blinds easier access to blinds
- Create more water flow; hunting opportunities
- Either place water fowl blinds on the shore or allow more hunters to use boat or portable blinds. Limit amount of shotgun shells per person
- Feeling more welcome as a hunter
- Getting picked more often, & more ducks. What you may not understand public places are the only places left!
- Having more blind selections to choose from. And to keep hunting pressure down, go to Tuesday, Thursday, and Saturday.
- having more duck blinds available
- Hotline to know when large numbers of birds are moving through
- I believe the deer stands could be placed a bit better
- I would like to scout for hunting anytime. I feel fees are a bit high to hunt and strongly oppose raising them. I'd like the opportunity to hunt more days.
- Longer hunting (waterfowl)season
- make all boat ramps, ponds, and access to blinds for hunting truly accessible
- make another H.C. duck blind on the big pond
- make it easier to get to duck blinds
- More days to deer hunt
- more duck blinds
- More duck blinds-- It's very discouraging to get up at 2:am and not get drawn--also reopen #22 w/access from the deer hunting parking area to keep from hindering traffic on Prime Hook Rd.
- More duck hunting blinds. Add more and rotate open/close
- More hunting area's for the hunters to be treated as a asset to the refuge and not another expense, also to have more programs for the youth.
- More hunting on holiday weekends. Weekend are the only time most hunters have
- more water during duck hunting season
- More waterfowl hunting area. Too many hunters with not enough blinds/blind sites. It is discouraging to wake up @ 3:30am and not get picked or bring someone for their first hunt and not get picked.
- more chances to hunt
- Open more ground to hunting
- Possibly a few well placed stationary scopes-if that is even a feasible idea-particularly where waterfowl is generally seen at a great distance.
- Provide more hunting for deer. But don't hunt same area everyday.
- purchase, rent or borrow an annual "cookie cutter" machine to clear vegetation and silt from main and duck blind access ditches prior to the season start.
- quality deer management stop shooting button bucks shoot more does
- Take hunters to stand so they won't get lost. A lot more habitat, move stands
- Turkey hunting
- Weekday deer hunting in Nov.-open Ock Iln. That week

### **Improved hiking/Walking opportunities**

- Walking/hiking tour.
- We are new to the area. In the spring we are looking forward to hiking and kayaking.

### **Improved boating/Kayak/Boating opportunities**

- A deeper water from the HQ ramp toward the ditch, silt build up restrict even with small boat from going through.
- Better boat ramps & more ramps
- Canoe/kayak rentals/children's exhibits/recreational opportunities
- Clear logs from ditches, so mud motors aren't mandatory!
- Guided kayak tours
- If we had more time-I would like to see more from the water if renting kayaks or small boats were available
- Improve boat ramps. More/better use of "cookie cutter" to improve passage of ditches and ponds during hunting season
- Kayak rental
- more water
- more water making for easier boat ride to duck blinds
- Rental canoes/kayaks. Maybe you have them, but we didn't visit long enough to find out.
- Restrict motorboats-too much pollution.
- Since the dam has been in the water cannot flow the muck out so it just pieces up. The channel needs to be cleaned up! You should be able to run outboard motors as you could years past. The refuge will be a mud flat in years to come?

### **Improved fishing opportunities**

- Catching bigger fish
- Maybe a little bit of stocking of fish with little or no publicity
- More room to fish the beaches

### **Limiting hunting**

- Eliminate hunting
- Knowing that hunting was not allowed
- no hunting
- No hunting

### **Improved parking/Restrooms/Cleanup, etc.**

- Better lighting in parking area
- better parking at boat ramp locations
- Do more to discourage people from littering. Cans & bottles are particularly bad in area of Fowler Beach.
- Fewer loud radios and beer bottles
- Frost free hand pumps for drinking water at sites
- Lower the speed limits especially going into Broadkill Beach. People are fishing, crabbing or watching birds & cars are doing 50 around curves.
- More parking & viewing areas
- More parking on Broadkill & Prime Hook Beach Roads-viewing platforms on Broadkill Beach Road
- More rest facilities.
- More roadside parking especially Prime Hook Beach Road
- Please put lights in your parking area-come out at night-hard to find your car!
- Restrooms/comfort stations; rain shelters.
- To have cars to slow down at Peters Field ditch to have to chain down at Beach Plum Island
- Trash cans to reduce litter.

### **More personal time to visit**

- A little closer to home
- First visit-had good time w/son not there long enough to answer
- More frequent visits
- More guided tours & photography classes
- More of my own free time!
- More time
- More time to go there
- More time to visit all the sites
- More time(personal restriction)
- Plan to visit more-enjoy the lectures
- To be able to make a return visit and be in a smaller group
- Would have loved to stay longer and explore more of the nature trails.

### **Keep/Improve naturalness**

- Convert corn fields into areas with native vegetation. Get rid of phragmites & nutria. Fix Purple Martin houses at Visitor Center & Black Farm Trail. Ensure the survival of the Delmarva Fox Squirrel.
- Its continued growth and development as a wildlife refuge first and foremost. Impact by people should be minimized.
- Let nature take over
- More natural landscapes And more duck blinds
- To see cultivated land restored to forest and grasslands. Entering Prime Hook through the forest and then seeing farmland lessens the feeling of a wildlife refuge.

### **More crops for wildlife**

- Better feeding fields for deer
- Bring back crops in the fields.
- Clear fields up

- crops placed back in fields to attract wildlife especially deer and Canadian geese.
- Cut the fields!!! Plant food crops. There is suppose to be a lot of deer in Prime Hook, but they're not staying due to no crops to eat.
- Find a way to restore agricultural/crops to hunting areas
- Get rid of weed fields-be fair to all hunters-stop giving special privileges to people in Sussex County
- Having more areas to hunt deer and waterfowl, such as fields planted with crops and more spots in the marsh. Also need a decoy carving competitions during water fowl festival.
- I would like to see a lot more crops planted. Also more hunt days per each season.
- If fields were cut and crops planted you would be able to view more wildlife.
- In some areas more food plots to encourage the deer out to the fields.
- More crops in headquarters
- more farming on available fields which would attract more animals and water fowl
- Open the croplands for viewing and feeding wildlife.
- plant crops for the wildlife
- Planting more crops or wildlife attracting plants/foilage in areas that are overgrown or not used at all.
- Planting your weed fields in crops. (you would make money)
- Put crops back in field
- Put fields back in crops. That's one of the largest viewing opportunities. Plus it has a very positive impact on all the wildlife.
- returning the fields to farming so there would be a better source for the wildlife and water fowl and better viewing opportunity
- Returning to filling fields available for farming. Use money for managing projects-leave food available for game.

### **Miscellaneous**

- Being able to see the stars at nighttime
- Better luck with rainfall! (Park was very dry)!
- Educational programs; perhaps volunteer opportunities when we can spend more time in Delaware
- Going in a group
- If black people were treated equally
- To get there at sunrise
- To share it with more people
- Bathrooms and bait & tackle store or even food in store
- Better weather!!! More access to drinking water/frost free pumps
- Concession stands, bait & tackle-hunting & fishing license at office.
- Covered areas to escape the heat when viewing-built to also provide bats a shelter or a nesting area for the birds
- Food-but that gets trashy
- Some benches or other seating opportunities along trail
- Working water/soda/juice machines. Better marked trails & observation sites.

### Section 3, Question 7: What experience have you had at Prime Hook National Wildlife Refuge that would bring you back?

#### Wildlife observation

- Always an enjoyable time, especially when the coyote makes an appearance
- Being out with nature and seeing a lot of wildlife as well as hunting it.
- Bird watching
- Bird watching
- Bird watching, the bird club, I plan to enter the photography contest this year!
- Bird watching, the snow geese in Fall & Winter.
- Birding and wildlife viewing experiences & the feeling of being in a serene, undeveloped natural area
- Birds to photograph-heron & egret
- Bird watching
- Bird watching trips with friends and SDALL classes
- Bird watching was very good
- Bird watching, lecture series, special events
- Bird-wildlife viewing
- Catching lots of big perch-peaceful wildlife observations
- Enjoy deer hunting & bird watching
- Excellent birding and interaction with great people
- Excellent wildlife viewing opportunities
- Good birding
- Good birding in varied habitats
- Good birding opportunities
- Good birding opportunities-saw a Marsh Hawk hunting...
- Good birds
- Good habitat for birding & nice facility
- Great birds-get more (smiley face)
- Great spot-great birds
- Hiking & birding
- Hiking, wildlife viewing & hunting.
- Hunting and wildlife viewing, also waterfowl festival.
- I am a wildfowl caver and a fisherman, love watching wildfowl and fishing great, my grandkids enjoyed visiting the area all the time.
- I went there to see birds. Therefore, I would like to see the same type of birds in a different season.
- Interesting wildlife
- It was a wonderful look at shorebirds and waterfowl. However if scopes had not been available to us they would have been largely unidentifiable.
- Just seeing the many species of birds that reside there.
- Listening to the birds and all quietness the refuge provided.
- Migrating water birds--sparrows, hawks, songbirds.
- More birding trips; more interesting lectures on nature
- More birds
- Opportunity to bird watch
- Organized bird walks
- Organized bird walk; viewing horseshoe crabs; independent bird watching
- Perhaps another bird watching trip
- Rare bird sightings
- saw a lot of ducks
- Saw the Northern Shrike, found American Pipits, watched Bald Eagle feed on deer carcass. Enjoyed Prothonotary and Pine Warbler antics.
- Seeing and hearing wildlife (snakes, birds, mammals)that we don't see anywhere else. Interesting information from the refuge staff and volunteers.
- Seeing Bald Eagles, but most importantly getting to see the thousands & thousands of snow geese in the winter. It's why I kept coming to Prime Hook every winter. And the otters in Prime Hook Creek are great
- Seeing birds i.e. Cooper's Hawk Osprey Turkey & babies & resident lady coyote
- Seeing eagles, hawks, geese in natural environment; wildlife viewing, would like to kayak there, serene marsh and wetland environment; trails through woods.
- Seeing lots of deer
- Seeing rare birds accompanied by naturalist leaders
- Seeing the wildlife-in a natural setting-peaceful
- Seeing the turkeys strutting about-the deer and hope to see more.
- Seeing wildlife more often
- Snow geese, trails
- The ducks which are there! They just weed to be moved around. I've hunted there for a long time with this being the worst opening season yet!
- The large # of ducks as well as all the different species of ducks.
- The many years of duck hunting
- The natural habitat for birding and the trail that was safe and easy to follow.
- The warblers moving through in Spring & Fall.
- Viewing birds
- viewing shorebirds
- Viewing the many species of waterfowl
- viewing the shorebirds during migration times at several sites in the refuge. I come every year.

- Viewing the thousands of snow geese near Broadkill Beach Road
- Viewing wildlife, walk-trails, the Annual Prime Hook Day
- Watching birds
- Waterfowl hunting
- Waterfowl hunting, nature trails, canoeing
- We went to areas usually off limits thanks to the group (Sussex Bird Club) inviting us along, and so

## Fishing

- Being able to fish Fowler Beach
- Big perch, large trout
- Catching fish
- Excellent fishing!
- Excellent fishing-would hate to see anything change
- Fishing
- Fishing
- Fishing
- Fishing & beautiful scenery

## Hiking/Trails

- Adequate trails through natural areas
- Bird walks
- Bird walks, good nature trails, wildlife along all the roads into and along the refuge.
- Clean hiking trails; easy to get to
- Good experience-would return to hike more in different seasons
- Hiking and paddling-listening to volunteer interpretations
- Hiking the trails and viewing the diverse bird population
- Hiking trails, guides to birding, serene environment
- Hiking, bird watching
- Hiking, canoeing

## Hunting

- A great hunting experience
- All my hunting and fishing experiences
- Average to good duck hunting
- Deer & duck hunting
- Deer and waterfowl hunting and observation.
- deer hunting
- Deer hunting
- Deer hunting all 3 methods-hands down!(Archery-muzzle loader-shotgun)
- Deer hunting I wait all year for deer season
- Deer hunting no success but plenty of wildlife, beautiful scenery
- Deer hunting-the people who are running the hunt program do not know what they are doing

saw more birds. We'd come back if we could expand our own viewing range.

- Wildlife viewing & pictures
- Wildlife viewing, especially birds.
- Wildlife viewing, paddling, hiking
- Would like to come back in spring or fall during early am or at dusk to view more wildlife. Didn't see much but it was our fault-92 degrees at midday.

- Fishing & natural
- fishing and hunting
- Good crabbing
- Good fishing
- Good fishing experiences, nice scenery
- Good perch fishing and crabbing
- Great fishing
- Great fishing, crabbing, hunting, beautiful area.
- We enjoy fishing and tours about shorebirds

- Hiking, nature viewing
- Hiking-deer hunting
- Lots of good trails to hike & lots of good scenery.
- Marked trails w/mileage marked; observation of several migratory birds
- New hiking trails
- Trails and hunting opportunities and staff is wonderful
- Walking
- Walking the trails.
- Walking, viewing nature, lecture series-how about something on the German submarine captured
- Walks on trails-lecture series

- Duck and Goose hunting
- Duck and goose hunting
- Duck hunting success
- ducks deer
- Due to the hard work and efforts of the staff the waterfowl hunting is the best around!! Truly
- Early season hunting
- Excellent duck hunting in safe comfortable blinds.
- Fishing anytime/deer hunting never. Depends on who you know to get a good stand and what color you are
- good deer hunting
- Good duck hunting
- good duck hunting

- good duck hunting
- Good duck hunting
- Good duck hunting!
- good duck hunts
- Good hunting
- Good hunting
- great duck hunting
- Great hunting trips with my son. Also the pre-season lottery. It allows us to apply for the same days & hunt those days together.
- Great hunting-lots of ducks
- Great time w/friends doing what I love-hunting. I rely solely on public lands since I cannot afford to lease land anywhere.
- Great waterfowl hunting
- hunting
- hunting
- hunting
- hunting
- Hunting
- Hunting
- Hunting & fishing
- Hunting and fishing look at wildlife in open fields which are now tamber weeds look very bad
- Hunting and fishing, nature itself, the comradeship
- hunting and seeing old friends
- Hunting deer
- hunting They take very good care of volunteers
- Hunting, fishing, Prime Hook Day
- Hunting, fishing, walking trails with friends. (Would like to hunt geese in fields with my grandsons.)
- I harvested my 1st deer at Pine Hook, lots of memories. Thanks
- I like hunting the refuge. It holds a lot of birds and the habitat is well maintained
- It's the only place in Delaware that I've seen deer while deer hunting
- Its waterfowl hunting
- I've had outstanding waterfowl hunts.
- I've taken a few nice deer and think it is a different scenery then other areas
- Just good hunting times. I really enjoy hunting there.
- More shooting space, a fresh hunting area
- Quality and safe hunting
- Usually have an enjoyable hunt, if drawn.
- Very enjoyable hunting experiences!
- Very good duck hunting and enjoyable biking.
- Very good waterfowl hunting
- Very helpful people and wonderful hunting opportunity
- waterfowl hunting, the location does draw waterfowl
- Wheelchair hunting opportunities-more volunteer opportunities

### Everything

- All
- All experiences
- All of it
- All that apply to me.
- All-going with volunteer leaders for bird watching into areas normally closed to the public
- Every experience I've had there, so far.
- Just being near
- Just being relaxed

### Scenery/Beauty/Intrinsic value

- A beautiful scenic environment where a bit of wilderness exists
- Beauty & solace in all seasons
- Good fishing, very nice natural setting for ponds, good wildlife viewing
- It is a beautiful setting. I am a landscape painter and would enjoy painting here.
- It is quiet and not crowded. Leave undeveloped areas the way they are. Increased parking and access will spoil Prime Hook.
- It was a nice & beautiful environment
- It was peaceful. Keep it quietly beautiful.
- It's a great experience even if I don't get picked
- Its beauty & peacefulness
- Its beauty as a natural site-its friendly staff
- Its natural wonders & wildlife & scenery
- It's very peaceful-you can really enjoy nature.
- Keep it natural with little publicity
- Leave as is
- Natural beauty
- Nature is beautiful at Prime Hook.
- Nice place to just look around
- Peace and quiet-absence of roads
- Peace, solitude, and viewing of birds & animals
- Peaceful
- Serene environment & the ability to see & enjoy all the game & other residents of the refuge
- The beauty
- The beauty & quiet-the variety of hiking & boating opportunities
- The beauty, the trails, the staff, the programs
- The serenity & beauty of the undisturbed environment.
- The views, scenery, hiking trails



- Tranquil & peaceful, wildlife viewing

### **Canoeing/Kayaking**

- All-canoeing & education
- Good kayaking with lots to see

### **Refuge programs/Events/Facilities/Staff**

- Educational lectures
- Educational, kayaking
- Environmental Day
- Environmental education, hiking trails.
- Environmental education, seasonal bird migrations, bird club meetings
- Evening @ the Hook presentation
- Evening lecture series is particularly good.
- Excellent lectures; hay rides; Horseshoe Crab Festival
- Experienced & helpful staff. I love learning about nature!
- Friendliness of staff; very good conditions of visitor center & trails
- Friendly staff; peace & quiet
- Friendly, well informed, helpful staff-It's a great place w/plenty of wildlife.
- Good programs
- I appreciate \_\_\_\_\_ approach to his job. He takes his responsibilities seriously.
- I like the people there. \_\_\_\_\_ is an outstanding person.
- Lecture
- Lectures
- Lectures/bird walks

### **Nothing**

- No answer at this time.
- No special experience I can think of.

### **Miscellaneous**

- Bike riding (did not have)
- To picnic again w/my family
- Adjust habits of some of old staff
- Didn't realize it was so interesting there. I will be back.
- I am a regular visitor now
- Many, many good times
- More water in impoundments(not your fault, I know)
- Not many people
- put a ---- management on deer
- Same
- Several years ago the fields were planted, deer were abundant, and the staff was friendly but efficient.

- Tranquility of the refuge

- The experience of being able to try out a kayak for the 1st time with experts helping.- I could try it without fear.- I'd like to try it again.

- Natural facilities available for nature viewing especially bird watching)without crowds of people.
- Our first visit was 10/9/04 for the Waterfowl Festival. We enjoyed this event enough that we would want to return.
- Refuge staff and volunteers that are helpful and interested in assisting refuge visitors. Prime Hook Refuge staff and volunteers have been friendly and helpful. Thank you!
- Some of the staff were friendly and courteous to hunters and seem to very interested in the hunters needs.
- The good people who work there-very nice. Killed my first goose there.
- The hayride at the Horseshoe Crab Festival was most enjoyable
- The professionalism of the refuge staff.
- The programs & the general area
- The speakers at the Lecture Series are great-and we get a snack!
- Waterfowl Festival
- When \_\_\_\_\_ was there I would come all the time
- Courteous, knowledgeable staff and natural environment

- Probably have better sites near home

- Still waiting
- This was our first trip
- A good time.
- First visit but would return
- good days a field

## **End-of-Survey Comments:**

**(each comment appears only once under the heading it most closely addresses)**

### **Habitat/Harvest management**

- Deer stand #33, corn field was totally plowed under, no corn at all left for deer to feed on, thus they moved to different area.
- The HQ hunt used to be much better when the fields were planted. Now if you don't get one of the 15-20 good stands, mostly around the [?] bean field or drawings [?] area. You don't even take the stand. All fields should be planted to allow for a better harvest.
- Clear the fields up.
- Need to do something different with weed fields.
- I love the Refuge. I do want to see the plowed fields restored to native vegetation. I do not want to see it overdeveloped. I think hunting should be for deer only, on a limited basis. [?] Should be trapped out. I think the fishing is wonderful and should not be developed anymore than it is, as that would spoil it. First and foremost Prime Hook Wildlife Refuge should be for the protection of wildlife. Coddling hunters is very apparent under the current rules at Prime Hook.
- Fields look like trash! Plant them back like they where suppose to be when the Refuge took over the land. A place to call home if you're a year-round bird watcher.
- When I first started using the Refuge there was no sloth catch on the creek. It seamed like there was a greater variety of fish. Hearing and crabs made it all the way to the falls at Wapples pond. I know they don't now. I think this was an important breeding ground for some fish that can't make it there now. I'm also concerned that this was food for some other wildlife that may not even be there now. I have been fishing at Prime Hook for about 50 years. I know the water how it was and how it is. Any help I can be in restoring this to its natural state. Please call or write.
- I am handicapped to some extent. I use a canoe with an electric motor at times to fish and travel to blinds for duck hunting. The state access to the ponds and creek need to deepened and opened some. Some at the FED. During low water periods. The creek seems to be developing an aquatic vegetation build up. This vegetation in some places is getting very heavy from top to bottom in the creek and some accesses to the pond. Some control might be necessary (i.e. grinding up or chemicals - vegetation specific). Thank you.
- Please Note: Open up brush around deer stands for shooting lane.
- I understand spraying for "bugs" is not totally desirable, but a little makes using the park year around more feasible. I guess you are aware of the horrible vine problem that is fast taking over the lovely flowers that line the road to Broadkill. All road side vegetation is being completely covered. By and large DE has done a great job of protecting its shoreline. Much better than most states.

### **Management alternatives: Hunting & fishing**

- 4.3: Hunting area should stay calm all day of the hunt. Hunter should only be able to search for a wounded deer. Not wander through the fields and woods from 9 to 3, walking through others hunting areas. I love hunting at Prime Hook. Friends and family are very happy when we get our pre-season lottery cards back in the mail and find that we have been selected. Thank you.
- It would be nice of the fields at Jefferson [?] tract were corn or beans or clover. The deer need more food in that area. When replacing old or building new deer stands, could you make them a few feet higher? This is my first year hunting at Prime Hook and I plan on returning many more times in the future. Keep up the good work!
- I would truly like to see Prime Hook stay as is had been in past years. The fields planted with crops and the staff to be friendly (but firm) with those that hunt there. In the past two years, I have heard many complaints from many people about over zealous enforcement of even minor rules and regulations. I have personally experiences two such incidents. I have hunted for over 40 years without any problems, but had two, in on year, at Trime [?]. Recently, a group of hunters were charged \$10 each to hunt fields that were overgrown with weeds and impossible to hunt. Other hunters turned away after arriving late for the drawing, even though it would only take the Ranger 5 minutes to allow them to sign up. In one case the hunter was there in plenty of time but hadn't signed the list. Without a last call - he was turned away. This is bad public relations. I'm sure late comers aren't turned away from the evening lectures. The quality of the staff seems good - I can't understand the resentment toward hunters.

- Drawing time for waterfowl must remain at two hours before shooting time. Rarely do we get to the blind and be setup and waiting a half hour early. Little Creek recently followed making their drawing time two hours before shooting time. I think it makes for a more relaxed morning with less tempers rushing at the boat ramp while waiting for others to launch. - A preseason draw for waterfowl blinds would be hurtful to the overall experience. It would only guarantee the better blinds would not be available. Showing up to the drawing and having the better blinds taken would deter me from coming to the Refuge. Also, picking the blind we want is part of the fun and important because not all blinds are accessible to all boats, especially early season with low water and weeds. A preseason draw may be useful for the 3 opening days where the numbers of parties exceed over seventy-five. I would hunt if I got pre-selected but definitely would not go for a no-show drawing. I applaud allowing hunters to hunt anywhere within the ponds. It gives more options and will make some of the blinds like one and two more appealing to hunt. I do support the preseason drawings for deer hunting due to the large numbers of hunters on opening days, when most of the deer are taken. It's important to scout and find the stand ahead of time instead of the morning of the hunt. Although I love bow hunting, I believe archery should be limited immediately prior to gun seasons. I feel if I get picked for opening day and pay \$3 for the application and \$10 for the hunt, I should get a stand that wasn't hunted the night before. Either stop archery hunting a week or more before opening days or eliminate those stands from the preseason lottery (specifically muzzleloader season). I believe more of the fields need to be planted in crops. Large overgrown fields of weeds seem very wasteful. In visiting/hunting other areas such as Bombay and Assawoman, the warm season grasses along the edge of the woods leads to seeing more rabbits, quail, hawks, etc. Weed fields should be farmed or reforested. I would enjoy hunting snow geese on the water in the late season. When nothing else is open, hunters target snows. Providing a Refuge during that time is counter productive. The geese fly out in the morning and destroy the local wheat fields and the weekends when they get shot and they fly back to the Refuge and sit in huge flocks. Putting hunters in the Refuge would help spread the birds out and help shooting outside the Refuge. Perhaps a pre-season draw for the north fields for Canada goose hunting. Many hunters have layout blinds and can hunt designated spots in fields. Even a "Saturdays-only hunt" with a pre-season draw would help take off some of the pressure from the weekend duck drawing and provide a different type of hunting. While I'm writing, I'd like to say good job to the gentleman working the booth the last day of headquarters. An incident with a hunter and his son, hunting together and still putting his son in the drawing for his own stand. These guys know the rules and were only cheating the others that showed up just for the no who drawing. Taking the stand and putting it back the drawing was a good/necessary move. Thanks! These are just a few suggestions/ideas. I think the Refuge is well managed and well taken care of. I enjoy visiting very much.
- The sign leading into the Refuge said "Caution, endangered squirrels." We took this as a warning to be careful driving through as not to run over the squirrels. Then in this survey, I see that squirrel hunting is allowed.
- Re: Hunting & Fishing I understand the need to keep populations in balance. I just don't like to go to a "Refuge" and see animals being killed - especially the "best" of the lot. Hunting/fishing, like natural predation, should serve the purpose of ensuring the diversity and strength of a species. Predators take weak and sick prey. Humans take trophies. It disturbs my nature experience to hear gunshots while I am enjoying the peace of the woods. This visit I didn't experience hunting thankfully. A fisherman was catching skates and leaving them to die on the beach, they wouldn't keep getting hooked on hi line. That seemed cruel and wasteful/disrespectful. Re: My experience at Prime Hook. I had a great bird-watching experience. I saw 2 bald eagles in a talon lock, N. Harriers gliding over the marsh, red-tailed hawks, snow geese, Canada geese, sandpipers and woodland birds. It was some of the best bird-watching I have done. I have been to Blackwater NWR, Bombay Hook NWR, and now Prime Hook. It was a beautiful day; the staff in the office was helpful; the trials and pull offs allowed me to see more; and I will be back. I thank the eagles and waterfowl for the spectacular show.
- Waterfowl program should add more blinds. You could only hunt 25 per day by rotating some open or closed each day. This would prevent blinds from getting "shot out." Where needed, move blinds back to marsh in [line?] in ponds where the marsh [line?] has receded (i.e. 15, 24, 31, 23, etc). On selected days, allow hunting until sunset. Put wooden doors on all blinds. Burlap/cloth doors are gone by mid-season. Post weekly harvest results by blind at the check station. Manage the water level for ducks. Get the feeling that #1 priority is plenty of water so outboards can run. Thanks for everything you do \_\_\_\_\_! Just a few ideas.
- It appears very unnatural to maintain channels for high pollution motor boats to enter into the heart of the Wildlife Refuge. With our disappearing wetlands. These are the only Refuges for migrating birds. If you must in your policies, continue to allow hunting in the middle at least use electric motors. But I oppose hunting in Refuges as it disturbs not just the hunted but all the wildlife in the area.
- Maybe stock a little more fish and have fisherman practice catch and release with only limited amount of fish to keep for trophies or eating! Very important to me! Thank you!

- I am wondering if it is possible to put some kind of lighting at Fowler Beach Road Bridge and Petensfield Ditch. It would be great to have those areas open in the evening because I like to go fishing and crabbing there after work and by the time I get there is not much sunlight left. I think that would bring more tourists and benefit a lot of fishermen.
- (1) I'd like to thank \_\_\_\_\_ and \_\_\_\_\_ for the wonderful experiences I had at Prime Hook in the 90's. I truly understand that it was there strict enforcement of the rules that made it such a wonderful place. (2) Your deer stands are not safe for your youth and buddy hunts. Not set up for 2 people in stands. We should teach young hunters safety first. (3) Your (management) use to know exactly how many deer were killed on Prime Hook. Now you have very little idea. (4) Why do you close automobile access to [Tumble?] and Fleetwood ponds in the prime fishing season? Late winter and early spring. (5) If you want to go back to the real old days and have weeds and trees for deer habitat, you should try going back and running the Refuge with 3 or 4 employees.
- Comment: Hunting is allowed on this property and your magnet shows wildlife of the area with a slogan of "a place to call home." Personally - I wouldn't want someone hunting me at my home! Hunting at a Refuge is just wrong! Please explain to me how you can encourage people and children (especially the children) to come and enjoy the wildlife and then sell permits for hunters to come and kill them? The Refuge visit was very enjoyable - the volunteer staff at the welcome center were extremely helpful with maps and info - even finding us info about our injured moth that my four year old found. I didn't get her name - but thanks to the dark-haired new volunteer (with the crab necklace) - She was so very helpful with our many questions.

### **Member of community**

- I live in Lewes
- House on the beach of Prime Hook
- Permanent residence
- I bought a home in Broadkill just because of the Refuge. I come down on weekends all year round as the Refuge is constantly changing.
- Sorry this is so late - I have been dealing with family health problems. My family has had a cottage at Prime Hook for over 50 years. I value the Wildlife Refuge. I grew up around it and it is a spiritual home to me. I hope to see, hear and experience the beauty of the wetlands for many more years.
- I enjoyed my visit to the Refuge. I really never realized that the Refuge offered so much and right in my own back yard (almost). I think it is very important that we have places like this because so much of Sussex County is becoming so overwhelmed with growth that we need to set aside lots of acreage for the natural habitat to survive. So many of the wetlands and farm lands have been turned into developments and roads. Our ecosystem needs to stay in tact and never changed up to make room for developments. So thank you for an enlightening experience today. Keep up the good work!
- I moved to Lewes 2 years ago. The presentation about rainforests was my first visit to PHNWR. However, I have walked on Broadkill Beach many times. I frequently go to the Cape Henlopen State Park but will visit PHNWR more often now that I have had my first experience there.
- Live 20 minutes away in Lewes.
- Prime hook resident.
- Live locally.
- Live within 5 miles of the Refuge.
- I have a house in Broadkill Beach. I have been visiting the Refuge for about 20 years. I recently inherited property at Broadkill Beach from someone who originally selected the property after I introduced her to the Refuge. I come to the area from Washington D.C. several times a month, but would not come so often if the Refuge were not here. I bring young people from my inner city neighborhood to Prime Hook so that they can connect with nature. I come all year round. The Refuge is a huge part of my life! Thank you!
- Local resident.
- We have a second home in Rehoboth.
- DE resident (Sussex County)
- I live within 25 miles.
- Since purchasing a vacation home in Rehoboth Beach in 1988 and bird watch in Chincoteague seriously since 1993, Prime Hook has become the natural area that I visit the most in this area. The habitat makes an outstanding

bird watching in Chincoteague are during all seasons. Birders from my home area, Lancaster, PA, often take trips to Bombay Hook and continue south to Chincoteague with stops at Cape Henlopen and Indian River. They are not familiar with Prime Hook, but admit seeing the sign. I'm helping to change my favorite Delaware birding sites. Keep up the good work.

- The staff and volunteers I have encountered have been very helpful, friendly, and competent.
- Live nearby.

### **Miscellaneous**

- 3.2: Note - Not sure of costs since I was coordinating an Elderhostel group of birding students for DTCC.
- Thanks for keeping the wet lands wet!
- Unfamiliar with area.
- We stopped off at the Refuge on the way to Rehoboth to spend some time before checking in at the motel. It was cool and rainy but we were able to get a walk in between showers.
- Unfamiliar with area.
- Thank you so much for the magnet - I love it!! It will hold my granddaughters pictures on the refrigerator.
- Please let speakers use microphones so air condition unit is kept on.
- 6.13: I took friends info today; no need to send any.
- I was only there three or four hours one time.

### **Permits/Fees/License**

- Did not purchase hunting/fishing licenses or supplies on most recent trip.
- A National Wildlife Refuge like Prime Hook should not provide activities that require a visitor to have a license from the local state. For instance, hunting should not be allowed because it requires a hunting license from the local state. National Refuges get Federal tax money which comes from all states, not just from the local state. I feel it is wrong for an out-of-state individual to be required to purchase a license from the local state to pursue an activity that his tax money helps operate. Either stop the particular activity or be able to get some of the local state money from the licensing activity, such as requiring the hunter, for instance, to purchase a stamp to allow him to hunt on the federal land!
- It seems hunting license fees and hunting daily costs have increased precipitously these past few years. I would like to see a decrease in hunting fees and would like to see a more consistent Refuge management. I mean all state Refuges should be managed under one umbrella. This would allow a better overall hunting experience. I do feel \_\_\_\_\_ would make an ideal statewide Refuge manager. He is doing a good job at Prime Hook.
- As far as pre-season permits - most of the time people get pre-season passes and never use them, then people that are there miss the opportunity for blinds plus it takes even more time.
- I feel if they know the Refuge is unsafe to hunt. They should close it instead of taking all the money at drawing time. And already knowing the ice won't let you out. I'm poor and can't afford to keep paying and assuming I can hunt. Then finding out it is not accessible.
- The Refuge seems to be headed in a direction in which was not intended. This property was paid for through duck stamp moneys and mostly supported my hunting/fishing license taxes on gear and supplies. Now it seems to favor weed fields and bird watchers. These groups have the most time use and contribute the least. The croplands have always been one of the biggest assets this Refuge has had in the past. This asset I believe is very important for every visitor and user alike. Mostly for the wildlife. Let's bring the croplands back. Thanks.
- 4.4: I am against these programs, so I am not rating them (hunting and fishing); 4.8: Doing what I do at this Refuge is more important to me than doing it at any other place - It is equally important with other places; Other Refuges are comparable; Of course there are other places that would substitute Prime Hook; I would consider paying a fee to visit this Refuge - How could this be done since much of the Refuge is visited by public road?; Don't mind a fee if Refuge is within area not accessible by public road (I.e. Chincoteague, Bombay Hook, Blackwater); I did volunteer my services for a while - now no time; however, not during hunting season which is when volunteers are needed in the center because staff is involved with hunting activities!! Comments: I have considerable concerns regarding wildlife Refuges permitting hunting on Refuge lands. According to my American Heritage dictionary, Refuge means "a place providing protection or shelter; haven or sanctuary." I might possibly be persuaded to condone the hunting of deer or snow geese (and resident Canada geese) because of their very high numbers on

Delmarva Refuge land until/unless they become much more abundant than at present time. I also would like to comment Prime Hook "Refuge" for designating fields to revert to grasslands and to native species rather than planting them in agricultural crops. Grasslands and open areas are being depleted at an alarming rate in Delaware, which will result in birds and animals being adversely affected. I hope Prime Hook will continue this practice of providing habitat for all the wildlife of the area.

- 3.2: All our basic expenses for room, meals and transportation were covered in this trip; 4.1: Paddling - normally this would be a nice enhancement, but not on this trip; 4.4: Condition of natural environment - drought related; don't recall signs/kiosks; I don't object to minor fees but fear excluding some populations; don't recall seeing history of site; 4.5: This is a Refuge, it needs to be a safe haven for wildlife; 4.8: When fees are charged where tax monies are already used it creates the possibility of excluding some populations not able to pay the fee - to me that would be wrong. They should be safe refuges for wildlife and as free to the public as possible.

### **Personal experience**

- I enjoy my time spent here - Prime Hook
- Thanks for allowing the input of the people who utilize the Hook. Though I don't do much other than hunt at the Refuge, these places provide something for everyone. Hopefully the answers that you compile lead to a place that everyone can enjoy. Thanks again.
- My husband and I stopped in route from MD to NY - found the Refuge on the map - I was close to not we selected to get to NY wanted to photograph anything interesting - found the area a good location for photography
- My family and I enjoyed our stay at Prime Hook National Wildlife Refuge. It was fun to picnic and to be educated.
- Great place - proud of US government for it. Love the USGS ID on the front. I'm retired USGS. Wish state of Delaware would operate Assawoman Wildlife Preserve like Prime Hook. Traffic on Hwy 1 precludes too many trips up here in summertime from Bethany.
- I thoroughly enjoyed my visit to Prime Hook. If I am ever able to visit Delaware again I would certainly plan on revisiting it on my own. I do feel strongly that if we want future generations to be concerned about/and with refuges and the wildlife they protect the public of all ages needs reasonably free and easy access to these environments. It is difficult to care deeply about something you have never experienced.
- Enjoyed my visit! (We usually visit Chincoteague NWR about twice per year). Thanks for providing habitat for migratory birds.

### **Programs/Activities**

- 4.4 Not aware that Broadkill Beach was part of park - use it all the time. Information - hard to get in Decliner VA.; Boat ramps - not aware of them; Hiking trails - never used; Volunteer opportunities - need info; Media coverage of Refuge - no local TV/radio; Hunting program - afraid of danger, when is it?
- I would like information on all the events going on, and I am willing to volunteer on some things.
- This was our first visit. Based on experiences, we will come again. (2) We took the Friday morning Shorebird/Horseshoe crab walk and found it very informative. The leaders were great - making sure everyone saw the birds and all questions were answered. (3) We have no interest in hunting, fishing, or boating. We presume those activities are handled responsibly on the Refuge, without long-term negative impact on any species. (4) The Refuge staff and volunteers were enthusiastic and helpful in sharing their knowledge. (5) Section 4, question 8 of this questionnaire was too nebulous/subjective. This is a wonderful place to visit. Questions like "no other place can compare to this area" are ludicrous. It compares favorably with other nearby Refuges - Bombay Hook and Blackwater, for example.
- Environmental education opportunities - provide more programs and activities for visiting groups, such as Elderhostel.
- 4.4: Gift shop and bookstore items - over priced; Refuge special events - not promoted locally, found out about the last event by picking up a flyer in the rest stop; Volunteer opportunities - don't participate, always scheduled for Sunday. 4.5: Environmental education opportunities - provide more programs and activities at different times; Brochures/publications - provided more locally; Interpretive exhibits - provide more at different times; Boat ramps - provide more handicap accessible boat ramps.

## Property concerns

- Just an observation: We bought lunch at the Refuge, including cans of soda. We looked around for some kind of container for the cans for recycling and didn't see any. We thought of all places there would be an opportunity for recycling. Everything else was well done and made for an enjoyable day. We now live on Broadkill Beach and look forward to more programs.
- My grandparents had property along Prime Hook Road that was more or less taken for the Refuge. Now over the last few years it's not being taken care of like it was supposed to.
- Carry in carry out trash - should provide litter bags at the entrance.
- Development of the Refuge - should concentrate on expanding marsh areas first since (in my opinion) it is the most critically endangered habitat on the U.S. East Coast. As much adjacent land as possible should be acquired for expansion of the Refuge. This may call for some unusual agreements in the short term but acquiring the land for the long term is critical. The larger the Refuge the more viable it becomes.

## Refuge agenda

- I feel that the Refuge staff would always like to do what is right for the Refuge. However, because it is part of the federal government; the Refuge staff may have to do things for political reasons, etc. Which may not be in best interests of the Refuge; Volunteering - should meet the requirements! If I didn't have to pay a fee to join, I would participate in a Refuge Friends group; Confidence in decisions - I believe that you do your best; Importance of having children visit the Refuge - I have no children, but future generations
- I support efforts to maintain and restore biodiversity on our National Wildlife Refuges. Waterfowl are an important part of the natural biota, but the "success" of a Refuge can't be measured solely by duck production. In general, I think the Refuge has done an excellent job of balancing goals. Keep up the good work!
- It is acceptable to maintain and preserve Refuge shoreline as habitat for spawning horseshoe crabs and migratory shorebirds - strongly agree - most important. Sign on BBR is good idea. Would like to see BBR more bike-friendly. Would like to see more room for vehicles to pull off on BBR. Refuge should emphasize birds and horseshoe crabs.
- Prime Hook has gone from excellent and now has gone to hell, beside the weed fields you have the worst maintenance crew I have ever seen. What happened to the CCP? That was supposed to happen back in 1997? There is also consideration of some legal action against Prime Hook regarding the screw up by your staff. This is also violation of our rights for not allowing the public there for the drawing. What is your staff hiding from the public? If things don't change we the people will start making phone calls, to Washington and Massachusetts, and letters. See how you like it you remember one thing this Refuge belongs to the people not you staff. You are supposed to be the care taker. Get it done, if you can't I know there somebody who can. P.S. There is a duck I.D. class coming up in Dover maybe your law enforcement should take it.
- 1.5: We also bird in Cape Henlopen State Park when we visit the Lewes area. 3.2: The second person was a spouse. 4.1: We have only explored the Broadkill and Prime Hook beach road areas so far. 4.2-3: We aren't fully aware of all the activities that are allowed or prohibited at Prime Hook or other federal wildlife refuges. We haven't felt impeded in any important way, and we support area closures, hunting, and other regulations that further the mission of Refuges. 4.4: Parking facilities are good at refuge headquarters, but poor (Prime Hook beach road) or barely adequate (Broadkill Beach Road) along roads through wetland areas. Not quite sure what "refuge grounds maintained" encompasses. The headquarters area is attractive and control of human litter is good, but some foot paths are difficult to find or follow. The restrooms at refuge headquarters are fine and have been adequate for our needs so far; don't think you need to scatter porta-potties around. Wildlife viewing opportunities are good along the Boardwalk trail near headquarters but poor in the wetlands because safe parking places are rare. (However, just noticed the announcement on your web site of a new observation platform and photography blind. Good!) We didn't go into the Refuge office this time (except to use the restrooms), but I presume that between staff and printed materials, information on hiking, etc., is at least adequate. Because we visit Refuges for wildlife and not for serious exercise, trails for hiking per se are unimportant to us. However trails providing access to a variety of habitats are very important to us. Hence the dual answer. Pick the one that suits you. The boardwalk trail is very good, but others that we've sampled are not well marked. Most outdoor signs and displays in public parks and reserves aren't worth the time and money needed to create them. Better to have a few good displays than lots of trivial ones. We would value things like: a good pictorial description of the Refuge's water management system and schedule; trail maps at trailheads; low-maintenance arboretum-type tree and shrub identifications; labeled photographs of key birds and marsh plants mounted on the boardwalk railing. We have Golden passports, so a Refuge user fee would be irrelevant to us. In general, we don't object to modest user fees. However, to the extent

that user fee revenue is offset by reductions in basic appropriations, this would amount to double taxation. We're too far away to volunteer at Prime Hook. We have other volunteer opportunities closer to home. 4.5: Naturalness. We always support as much "naturalness" as possible, but we recognize that Refuge management objectives preclude a complete restoration to natural conditions. In general, recognizing that federal Refuges are chronically underfunded, we urge that wildlife and habitat management receive budgetary priority over visitor amenities. 5.1: Mosquito control. High numbers of breeding mosquitoes are not necessarily associated with public health emergencies. We oppose applying chemicals simply to reduce numbers of the bugs. If control has to be used for public health purposes, we'd prefer that it be achieved through water management (if possible and if this will not thwart Refuge objectives) rather than via chemicals). Fire. It would be good if burning cycles could approximate the pre-settlement frequency, if this has been estimated. Invasive species. Removing non-native species is desirable, but you will not have the resources to eliminate them all. Concentrate on those that most seriously distort the habitats you're trying to protect for migratory birds and endangered species. Native North American species that invade the Refuge because of climate change should not be controlled. Restoration. Not sure what is intended here, because agricultural crops and wetland drainage (and flooding) are standard Refuge management tools. If the intent is to restore degraded lands already on the Refuge and to restore degraded and drained lands and wetlands that may be acquired through purchases and easements in the future, then we strongly agree with the statement. 5.2: Our preference for trails is for them to sample (collectively) as broad a range of habitat types as possible. The headquarters area already has the wonderfully diverse boardwalk trail. If other habitats can be reached by new trails in the vicinity, sure, build them there; they'll be that much easier to maintain. Otherwise, spread new trails throughout the Refuge. Guided walks. Circling "not desirable" simple means that we are unlikely to get to Prime Hook often enough to participate in them. They have intrinsic merit, especially if they can be conducted by volunteers instead of by the few staff available. We've not been along the Fowler Beach or Slaughter Beach roads, but presumably they are as short of pull-offs as is Prime Hook road.

## Survey

- Too long!
- You really shouldn't waste taxpayer money on this survey - I have to say, getting a second copy of this in the mail really pissed me off. I'm only sending this back to you so you don't waste even more money sending me yet another of these silly things - which USGS probably contracted out to a private p.r. polling company Grrrrrrr! [Arrow pointing to PAPERWORK REDUCTION ACT STATEMENT] - Are you kidding???
- Survey is too long.
- I'd prefer not to participate in this survey. I only went to Prime Hook once with a friend and spent almost all of my time at Cape Henlopen State Park.
- This was my first visit and we were there about 3 hours, so I did not have enough information to answer all the questions.
- Stop asking same thing.
- Redundant!



## Appendix F: Verbatim Responses to Open-ended Questions for Community Survey

**Section 1, Question 1a: If you have not visited Prime Hook National Wildlife in the past 5 years, what would encourage you to visit?**

### More information/More advertising

- Advertising its beauty
- I did not know the place existed
- Information on the refuge
- Information on the refuge & what it would offer my family.
- Information-how to get there & what the Park offers
- Knowing more information about it
- Learning more about programs
- More advertisement on any upcoming events
- More information
- More information about it-I don't know anything about it.
- More information on activities
- More information on the refuge
- More reminders of what is going on there. Canoe trips maybe
- Need better advertising
- Need to make the public more aware of your programs & activities
- Your reminder, we just moved here last 2 years
- Didn't know it was open to visitors

### Medical problems/Age/Health

- Due to medical problems in the family we are not able to visit these areas like we used to. I can enjoy remembering them!
- I am 88 years old, and just stay in Milford
- Nothing can-too old
- Younger age and better health

### No interest

- I have been just once. I did not like it & never came back.
- I have no interest in fishing or wildlife observation
- I have no interest.
- Not an outdoor person, though I realize importance of refuge
- Not Interested

### No time

- I just don't have the time
- I just don't have the time right now, unless you can do all the repair work @ my house, I won't have the time. Which I would love to have the time to bring my kids to the refuge for learning
- I think what you have done is enough-I just don't have the time
- No desire to-allergic to mold
- Time
- Time
- Time & information
- Time in the fall

### Refuge change or provide something

- fishing places
- I would be encouraged if there was a community event or program being held there.
- If I didn't have a handicapped son
- Is it handicapped accessible?
- Kill the mosquitoes
- Knowing that once I park I don't have far to walk as I use a cane

- More active learning spots close to Slaughter Beach
- Nature Center-restrooms
- Never visited-more planned activities
- New management
- Open up more upland hunting areas
- Posted no trespassing at Slaughter Beach

### **New to area**

- Curiosity-we are new residents to the state of Delaware
- I just recently bought the home in Milford and have not yet moved to Delaware. But it is at the top of my activity list when I do!

- Revised deer hunting regulations, more accessible boat facilities
- Special events (music)
- Special outdoor events such as retriever trials, wildlife presentations, etc.

- Wasn't aware it was there. Basically new to area
- We are new residents to the area-4 years
- We are new to the area & plan on visiting

### **Don't know/Unsure/No opinion**

- Do not know at this time
- I don't know
- No opinion really

- Not sure
- Not sure
- unsure

### **Nothing**

- Not much
- Nothing

- nothing
- Nothing really

### **Miscellaneous**

- A friend saying, "Let's go".
- I am a 69 year old avid fisherman & deer hunter. I have my fishing & hunting areas set. Your area (PHNWR) is wonderful and much needed, and I have been there many times in the past.
- I have been out of state for past 5 years
- I have never visited Prime Hook National Wildlife Refuge.

- I have only been to the refuge one time in past 10 years-don't feel that I could give a fair evaluation.
- I need to motivate myself to go
- It's very nice
- The wish of our children and theirs to visit
- We live on East side of road (Bay Avenue)
- We should visit-I am sure that we are missing a nice park.

**Section 1, Question 10: Are there activities or services that you think *should be allowed* at Prime Hook National Wildlife Refuge that currently are not allowed?**

**Camping**

- Camping
- Camping
- Camping on beach overnight
- Camping overnight in the refuge
- Swimming, camping, school day trip

**Horseback riding**

- Horseback riding
- Horseback riding
- Horseback riding, camping
- Horseback riding, stables would be nice

**Hunting related**

- Going back to all day waterfowl hunting, instead of ending at 3:00.
- Hunting the marsh the full snow geese season-not just during duck season.
- Hunting turkey
- I think there should be more time for hunting and a smaller fee for waterfowl hunting. And it should be easier access to waterfowl blinds.
- Skeet shooting
- Spot light deer, to a certain time to see mature bucks in natural habitat
- Trap & skeet shooting
- Turkey hunting, resident goose hunting
- Bow hunting for deer in the headquarters area
- Elevated wildlife observation platforms

**Bicycling/Bike trails**

- More bike trails
- Would like to see a network of single-track off-road bicycle trails to be used off season-Sept-May
- Bike & walking paths thru the refuge.

**Dog walking/Run area**

- Dog area-running
- Let my dogs run-your skunks and coons & foxes trespass & I allow that!
- off leash dog area (dedicated) that are fishing free areas
- Running & training rabbit dogs
- Walk your dog

**Hiking/Walking trails**

- Expanded walking trails to include hunting areas where hunting is not allowed
- Fishing-hiking-nature trails-crabbing-kayaking-special events
- Hiking and nature trails
- Hiking/kayaking
- Hiking/walking(only)trails-there is a real lack
- More trails & bike paths
- Nature trails-perhaps only when taken in the presence of a refuge worker or volunteer. Offered certain days & times. Needs oversight of refuge personnel to prevent damage to habitat.
- Walking the hunting land off the trails
- Walking trail
- Add more trails for hiking, plant some fields for food to help keep the turkeys, deer, etc.





## **Fishing**

- Fishing

## **Farming**

- Commercial farming

- Expansion for farming/clearing

## **Development**

- Development

- Development; any kind of activity that changes the natural habitat; duck blinds

## **Limit on hunting**

- Keep hunting extremely supervised and limited to population control for all resident species.
- Less hunting
- Less hunting

- Some people might be scared off by deer hunting close to some of the trails.

## **Reckless behavior (e.g., partying/drinking/bonfires/speeding)**

- Drinking parties with loud noise
- Drinking-litter by careless people
- No alcohol
- No partying on the beach & trashing it. We've noticed Fowler's has been cleaned up & we were excited to see that.
- People shoot guns on the beach/people shot firecrackers constantly on beach

- We all love bonfires, however, we trust our laws, when they're unsafe, we cooperate 100%
- Speeding on "Broadkill Road"-DE, Route 16, leading to "road kill"; especially bad during tourist season
- Don't have big buses full of strangers stopping out on Route 16, walking in the middle of the road, littering, etc....

## **Crabbing**

- Crabbing from roadside bridges-a real eyesore-gaming should only be for population control-not sport
- Mexicans pulling conch off Beach without limit, and crabbing at Fowlers off bridge taking every crab caught

- When we moved here 10 years ago I was very surprised that a refuge (a sheltered or protected state, safe from something threatening/harmful....) offered so much hunting. We have also rescued many dogs the hunters leave behind. Can the refuge limit horseshoe crabbing? I walk the beach to save them at the same time the crabbers are catching them.

## **Boating**

- Avoid possible conflict between activities such as paddling & waterfowl hunting (paddling for recreation only).
- Boating, anything that allows a high level of noise

- Kayak/canoe during hunting season
- Motorboats-extra noise

## **Miscellaneous**

- Anything that harms &/or interferes with the wildlife
- Farm the fields again
- Government controls on adjacent lands
- I don't think the refuge should be altered to allow easy access to birdwatchers

- I would love to take an airboat ride thru the refuge; however, you cannot open this to the general public
- It provides a nurturing environment for plants, animals and birds.
- No smoking!

- Other activities other than hunting during hunting seasons
- perhaps some camping like at Assateague Wildlife National Park
- Residents "dumping" brush & trash on West side Bay Avenue
- See above

- Send us a list of any other activities or services you propose-other than on page 8-so we can give you an opinion
- Shooting with guns
- Smoking
- Solitude, peace, nature, exercise, sunlight, views.
- They should keep the deer away from all houses. They carry ticks & eat all bushes & plants.
- Would like to see it like it was 60 years ago.

**Unsure/Don't know/No opinion**

- "No opinion"
- Don't know
- Don't know
- Don't know
- Don't know of any. I am not inspired to drive to Prime Hook/Milton to enjoy the birds & animals that inhabit my "backyard."
- I do not know
- I've never visited so I don't know
- No opinion

- No opinion
- No opinion
- No opinion
- no opinion
- No opinion
- No opinion
- Not familiar
- Not sure

**Section 2, Question 1: Please tell us what you see at the biggest benefit to the local community from Prime Hook National Wildlife Refuge.**

**Tourism benefit**

- (1)Local/regional tourism benefit (2) Protected open space vs. development encroachment everywhere around us!
- Birdwatchers come from all around and eat/shop in Milton.
- Great eco-tourist attraction
- Helps improve the status of our locality
- Provides a major attraction that brings locals and visitors to the area. Many friends from Pennsylvania have mentioned the refuge.
- The refuge brings visitors and locals to the area

**Protecting habitat from development**

- Natural environment-in nature-undeveloped
- (1)Allow local community access to a natural habitat (2)Financial gain due to tourist activities
- A beautiful environment protected from the building growth occurring throughout the state of Delaware.
- A natural place that cannot be developed
- A place for people to go and still be able to enjoy nature and open country as it should be. The natural environment is a victim of developers in the once beautiful state of Delaware.
- A place for wildlife left undisturbed by all the encroaching overdevelopment that is going on in and around the beach
- a place to visit with nature
- An area that is natural & set aside so that no development will occur there.
- Beautiful, peaceful, natural environment for families to go. It is great for school children who may not get the chance to go
- Being able to keep this area undeveloped & in its natural state
- Ecosystem & non-development use
- Having a natural area left within a developed area.
- Having a place to visit that isn't developed and not jammed with people
- Having a place undeveloped with wildlife for hiking & canoeing has a tremendous value
- Having the land undeveloped and a sanctuary for the wildlife is very important
- It is a large(but not large enough)natural buffer to all the development that's taking over
- It protects the area from overdevelopment and offers all the natural wildlife to be seen and enjoyed. The quality of life at Slaughter Beach is much enhanced.
- It will always be there and can never be developed for wildlife purposes. Wildlife need a place to live also.
- It's nice to see birds and not housing developments
- Keeping land free from development & providing a nearby place to get away from it all.
- Keeping open space that is dwindling so rapidly
- Keeping the land in its natural state, no further development, protecting wildlife
- Knowing that it will not be developed
- Land that cannot be developed
- Limiting development
- Maintaining an undeveloped nature preserve
- Maintaining wild/natural areas, controlling development
- Maintains a rural atmosphere-no development
- Natural & undeveloped land
- Animals-keeps more housing out
- Environment, undevelopment, buffer from traffic
- Natural area/open space in county under pressure for development
- Natural refuge-due to overpopulation of Sussex County
- Natural setting-no development
- Natural surroundings-keep the human population down/developing
- Natural undeveloped area
- Nature-no building
- No development allowed!
- No development of land
- No development of wild lands.
- No developments
- non-commercialized land
- Open land.
- Open space
- Open space
- Open space
- Open space protection
- Open space to visit
- Open space; natural habitat
- Preservation of natural, undeveloped lands to be used as a refuge for wildlife, native plants, etc.
- Preservation of wetlands from "development"
- Preserved & undeveloped land; the ability to enjoy unspoiled land safely.
- Protected and undeveloped land
- Provides some protection from continued development.



- Providing a green buffer zone against overdevelopment
- Puts a halt to development
- Quiet and clean. Prohibits too much development. Saves many species of wildlife.
- Relief from human development
- Relief from overdevelopment
- Saves land from development
- Saving the land from development
- Saving the land from development not just for the animals but for people to enjoy.
- Some land that can't be developed and a place for wildlife.
- That the construction stops at its door.
- The area is being built on everywhere, the park will hopefully always be exactly what it is-a park(refuge)
- The fact that it will eventually be the only undeveloped parcel of waterfront, along with Bombay Hook in all of Delaware and the importance of this to migratory waterfowl and the environment.
- To visit and see undeveloped land
- Undeveloped land
- Undeveloped land
- Undeveloped land for public use
- Undeveloped land, open space
- Undeveloped land-important to wildlife.
- undeveloped lands in an overdeveloped community
- Undeveloped natural area for wildlife.
- Undeveloped wildlife refuge
- Undeveloped, basically undisturbed wildland that provides habitat for wildlife that gives the community an opportunity to view this wildlife in a natural environment.
- Undeveloped, natural lands that are protected and cared for
- Undeveloped, serene atmosphere where wild critters can be observed and education about these critters & plants
- Unspoiled area
- Unspoiled environment/wildlife/nature as opposed to city/suburban life.
- Unspoiled open space, wildlife, birds, beautiful scenery & no development
- Unspoiled wildlife & views
- Unspoiled, non-developed, true natural settings.
- Untouched nature
- We don't have to worry about a development coming in and ruining nature and wildlife.
- With all the building it is important to have undeveloped land for wildlife viewing
- With all the development going on-nice to have a place nearby to enjoy nature
- With all the development it is one of the few natural places of beauty left
- With the overdevelopment in Sussex County, PHNWR is a place for wildlife & people to find refuge.

### **Aesthetic value—Get away/Serene environment**

- A place to spend time outdoors in a relatively pristine and natural environment.
- A place to visit an undeveloped area
- Just that it's there to do whatever, and to enjoy the open space
- A quiet place to go
- A quiet place to go-it is unspoiled park land-a retreat environment-the staff do a great job.
- A quiet place to spend some time
- A quiet rather untouched community out of the tourist section.
- A serene environment
- an area that is both peaceful and productive love the fishing areas
- Beauty of the environment-peace/quiet
- Beauty, education, serenity, sharing
- Being able to enjoy nature in its natural environment
- Being able to experience the beauty of nature in this increasingly developed area.
- Being able to go to a natural, unstressful, beautiful area for relaxation.
- Buffer between modern life(traffic)& Broadkill Beach and providing quiet place for contemplation.
- Experiencing a serene environment
- Having a serene place for a refuge for wildlife and to remind us of the importance of our environment
- I live @ Prime Hook Beach. The serenity/isolation, issue applies to both
- Just having it there and knowing it can be experienced is wonderful.
- A place to enjoy away from the crowds at Delaware State Park at Seashore
- A place to get away from noise, traffic, etc. and a place that the animals are safe.
- A place to get away from the building boom
- A place to get away from tourists.
- A place to get away, to relax, to recharge your thoughts, enjoy nature
- A place to go
- a place to go and find serenity and be at one with nature without having to drive very far.
- A place to go that's peaceful and undeveloped
- A place to go to enjoy the environment.

- A place to go, close to home, where you can be with nature.
- A natural, peaceful environment that allows for introspection and relaxation
- A place for people to go & enjoy nature
- A place to see nature at work and the positive results of man's intervention
- Being able to see all the neat and interesting things
- A free place to visit for nature
- allow to appreciate nature
- Chance to see nature as it was and should be.
- Chance to see nature in its natural environment
- Enjoying nature in an unspoiled way
- Enjoying undeveloped lands & nature
- Experiencing an environment that is very natural
- Good nature area-good place to visit
- I see it as a natural wild refuge and buffer for people and wildlife to escape from the pressures of daily life
- It is a natural way to enjoy life
- It is a well managed and protected refuge and reasonably controlled and available
- It is nice to have this available for people who want it.
- It's a great place to come and see nature, and a great place to hunt
- A place where natural beauty can still be found w/o interference by man
- A protected natural environment full of wildlife
- An undeveloped natural environment as well as for us to enjoy.
- Clean, untouched environment
- A natural place to go to enjoy wildlife, natural beauty and a place to walk.
- Being able to view the refuge looking west from our bay house
- Gives city folks place to enjoy nature.
- I think it's great that people that have interest in Prime Hook have a place to go.
- It's beautiful
- It's important for everyone to have nature
- Just like going there
- Keeping nature alive
- Keeping nature alive in its natural state
- Natural beauty
- Natural beauty
- Natural beauty and outdoor activities
- Natural environment-and the animals
- Nature brings peace and serenity to the soul. It teaches us about life in every aspect. The refuge allows us to go and see this firsthand.
- Nice, quiet, clean, Godlike environment
- Peace
- Peaceful co-existence/w nature
- Place to relax and enjoy life
- Quietness!
- Relax & view nature
- rest & enjoying the beauty of nature and nature's wildlife
- Serene environment-limited development near the shore
- Serene, open space w/wildlife in what is an otherwise busy, busy area
- Serenity & wildlife preservation
- Serenity-wildlife-love of the natural habitat
- The ability to get away from the hubbub of a city environment
- The ability to go to an natural area--undeveloped
- The beauty of the marsh & wildlife
- The beauty of the open space, the wildlife, the changing environment
- The calm serenity-watching the birds
- The closeness in miles to the community as compared to Delaware State Parks & no entrance fees.
- The natural beauty & serene environment
- The protection of this beautiful natural environment where one feels safe and able to connect with nature.
- The refuge is a place to go for peace & solitude, with no houses to look at.
- The scenic beauty
- To unwind and feel the real life-see how lucky to see and feel and walk with life
- Wonderful for the environment-a refuge from the day to day rush

### **Environmental education opportunity**

- Beneficial to all the local school districts allowing the students to visit this great nature center!
- Educating our children as to the importance of nature so that a balance will be maintained.
- Educational experience for school children.
- educational for children
- Environmental education
- Environmental education-re: wildlife/ecology.
- Festivals/Education
- Field trips for school children
- Field trips for schools
- Good for school children
- A place to learn about and respect nature
- As an educational benefit protecting the wildlife
- Teach nature
- The biggest benefit to the local community from the refuge is to educate the younger generations, and also to allow for serene/undeveloped areas for community members/tourists to visit.

- The education & encouragement of all (especially children) to value & protect our natural resources and natural beauty.
- We need to provide environmental education to students
- Wildlife education. It's easier to care about something once you've experienced it.

### **A place to go with family/Future generations**

- A family place
- A healthy environment for the future generation and our nature wildlife view. It helps release stress.
- An area to take children for enjoyment and appreciation of nature.
- Children are able to watch nature in wildlife
- Children seeing birds, snakes, & other animals in the wild.
- Encouraging young people to experience this area
- family gatherings, fishing
- Family pleasure rides to sightsee
- Great experience for children & families
- It's a place to go to relax and your children can learn more about natural environment
- A glimpse of the past.
- A venue that will not change over time, so it is a link to the past.
- Availability of nature for adults and children
- Our family and friends love to come here to enjoy all it has to offer especially the scenery
- Place for families to interact with nature
- Preservation of habitat so that young people have a place to hunt & shoot
- The opportunity for our descendants to view & learn about our environment
- The opportunity to be involved in environmentally sensitive & important activities
- The refuge allows children, working people and retirees moments of peace and calm in an otherwise frenetic world.
- To let people know & see what nature is all about.
- Where families can go and enjoy nature, birds & animals & the land is preserved.

### **Recreation**

- A nice fishing & recreational place-it is a place where local birds & wildlife can find refuge
- Ability to use the area anytime
- Access to fishing & hunting
- being able to enjoy activities outdoors
- Enhances the enjoyment of living in the area. Improves recreational opportunities.
- Fishing our environment
- Good hunting
- Good place to fish
- Hunting helps limit the geese
- Hunting/fishing for pleasure
- I think the recreational opportunities are of greatest benefit to the community.
- It provides recreational facilities and provides safer outings. You feel much safer on the refuge.
- Continue tradition of waterfowl hunting and habitat
- Open lands, serene area, an area that can be used for hunting & fishing
- PHNW provides an area for those who don't have access to hunting, fishing and nature activities
- Prime Hook Refuge enables our locals to enjoy great waterfowl & deer hunting.
- Protect open land for game, plants and open space
- Provides a hunting area in Sussex County where good hunting grounds are becoming limited
- Providing natural area in which humans can interact with wildlife, including: observation, hunting, fishing, etc.
- Recreation, education, connecting to nature
- recreational serene environment in a natural setting
- Refuge provides natural habitat for recreation & an opportunity for the local community to learn about the importance of wildlife & habitat.
- The ability to observe and participate in outdoor activities, especially hunting
- The fact that you still allow hunting! Waterfowl & deer hunting dollar for dollar have the biggest impact for the state or local community.
- The nature hikes, close to home, tranquility
- This has been a good hunting area for many of the locals.
- This seems to be a nice facility for those with an interest in this type of activity
- To give hunters a place to go hunting who have no place to go

## Having a place for wildlife/View wildlife

- Being able to review our wildlife as they actually live, and to see how beautiful life is within our wildlife refuges.
- It gives a view of natural habitats.
- An open space that is large enough to house a whole variety of wildlife (unspoiled, natural)
- Conservation
- Conservation of our natural habitats
- Controlled natural environment for wildlife
- Having such a unique and pristine environment so close is a blessing to all, especially to children who may not be able to enjoy wildlife and the outdoors anywhere else.
- I feel the Refuge is necessary to preserve a wildlife environment and open spaces
- I think that the wildlife refuge is a great asset in keeping a natural shore environment
- A natural area for waterfowl and game
- A place for wildlife to live
- All birds. The heron are the most beautiful-they do not harm anything like the deer do.
- Animals and peace that is serene
- Attracting & holding migratory waterfowl
- Being able to see many species of wildlife in a natural environment
- Birds
- Getting to see all the wildlife and different birds. And how they are changing over the years.
- I think people really enjoy watching the wildlife & knowing it is there and being protected
- It is a nice, peaceful area to visit/bird watching/photography/wildlife/flowers/especially waterfowl
- It should be a SANCTUARY for wildlife
- It's important for wildlife to have a refuge
- Keeps some snow geese out of private fields
- learning to protect the animals and enjoying nature
- A flyway
- Environmental
- Gives wildlife safe haven. Gives Sussex County large "green" area of no-building. Hope it is never lessened or changed.
- Land conservation, wildlife refuge, environmental education
- Maintaining ecosystems
- Maintaining natural resources of the area.
- Mosquito & water level control
- Natural environment
- Natural environment as rest of county explodes w/development
- Natural filtration system to protect Bay from pollution-refuge is a great place to protect open space & habitat.
- Natural open space
- Natural protected area for animals & environment
- Nature preservation
- Nature preserve
- Nature reserve; a place for wildlife to exist alongside development without clashing
- Nature, fishing, beaches, hunting, wildlife, hiking, biking
- Nearby open space with wildlife...
- Open wetlands, wildlife in its natural form & habitat
- Opportunity to enjoy seashore life
- Opportunity to view wildlife in a natural setting
- PH is essential to the preservation of the marshes, ecological habitats & for its contribution to climate control & its role as a haven from regional development
- PHNWR is a haven for wildlife & human life. It has become increasingly more valuable as developments encroach upon our Sussex County lives.
- Preservation of environment
- Preservation of fauna and flora for future generations
- preservation of green space & environment
- Preservation of green space, protection of coastal area for wildlife & land migration
- Preservation of land
- Preservation of land & wildlife for future generations to enjoy
- Preservation of natural environment
- Preservation of natural habitat
- Preservation of natural habitat & land from development for future generations to enjoy(animals as well as humans).
- Preservation of natural habitat. An opportunity for all to enjoy nature.
- Preservation of natural resources
- Preservation of shorebirds, osprey, eagles, muskrats, beavers, deer, etc.
- Preservation of the environment
- Preservation of undeveloped land for natural habitat
- Preserved natural wetlands
- Preserves a natural habitat where children can see and learn about nature and animals
- Preserving and maintaining a wildlife area
- Preserving land and the animals that run on it
- Preserving lands for wildlife
- Preserving natural environment
- Preserving natural habitats-encouraging public appreciation of natural habitats
- Preserving natural wetlands and wildlife
- Preserving nature
- Preserving nature for next generations
- Preserving open natural habitat for wildlife

- Prime Hook lets people explore the natural habitat of all different kinds of creatures
- Protected environment, natural beauty
- Protected land
- Protected land for wildlife
- Protected native land. Protected natural habitats.
- Protected nature area. Open for public use offering recreational activities
- Protected nature preserve that contributes to an atmosphere that is peaceful and close to nature. Opportunities for walks and viewing wildlife
- Protecting our wildlife and nature
- Protecting the land
- Protecting waterfowl
- Protection of land and wildlife.
- Protection of natural wildlife & land
- Protection of the environment.
- Protection of wildlife
- Provides open space and a place to both view and experience nature.
- Providing a place of nature
- Providing green space and recreational opportunity
- Providing protected area for our wildlife
- Providing some natural open space and a chance to see the wildlife that is native to the area
- Refuge for birds
- Retention, wildlife & marsh preservation
- Seeing nature and wildlife
- Sustaining natural ecosystems and educating the public through this
- Sustaining open space, wildlife habitat and supporting environmental education.
- The animals & birds
- The biggest benefit is the opportunity to view wildlife and learn about environmental preservation
- The biggest benefit to the local community is the ability to view a pristine natural habitat for animals and birds in close proximity to where I live
- The ecosystem of the Delaware Bay
- The enjoyment of a natural habitat
- The green space that is needed for wildlife and the viewing of wildlife. It's beautiful and should remain that way.
- The joy of walking in a special place, and enjoying the animals, birds, trees, plants
- The natural habitats of shore animals is shrinking!! I want to let my son enjoy it as he grows.
- The nature of Prime Hook is something you cannot get anywhere else, I really like the snow geese
- The protection of waterfowl-this was the original intention of the refuge. If the prior owners knew what the refuge would have become they would not have sold their ground
- The refuge keeps part of the natural environment of this area. It preserves the habitat.
- The refuge provides a place to view nature at its best. We need undeveloped land to keep air quality & wildlife.
- The refuge provides national high quality environmental natural resources to the community. It provides a setting that is becoming less and less of our everyday landscape. We come to the refuge to leave the cityscape behind.
- There must be places undisturbed, or at least mildly disturbed, by man. Animal habitats are being ruined everywhere.
- These areas need to be preserved-it is important to have wildlife refuges
- To be able to watch wildlife
- To preserve the natural integrity of the land & give residents an opportunity to enjoy the beauty & serenity.
- To preserve wildlife and the environment-land in Sussex is disappearing!
- Undisturbed open space-habitat for wildlife
- Viewing wildlife in a natural setting
- Viewing wildlife in natural environment
- Water source recharge & natural beauty
- Waterfowl resting, upland game
- Wild areas are very important to me, more every year as I age
- Wildlife
- Wildlife
- Wildlife habitat/migratory bird feeding & resting area
- Wildlife observation & education-wonderful community spirit
- Wildlife preserve
- Wildlife refuges are important
- Wildlife sanctuary
- Wildlife viewing, walking, water activities
- Wonderful natural environment open to public and well maintained

### None

- At the moment none. In the past a true treasure.
- None
- Slaughter Beach-None: no access allowed
- Waste of taxes

### **Don't know/No opinion**

- Do not know
- don't really know anything about it
- Hard to say
- I have no idea
- I really don't know

- "No opinion"
- No opinion
- No opinion
- We have not been. This will influence us to plan a day outing.

### **Miscellaneous**

- Convenience- it is the closest beach in Milton
- In the early years I thought it was bad for the owners to lose their land-in the later years, I have understood
- It's a "national" refuge
- \_\_\_\_\_ was the one & only refuge person to make such an impression on us of blending our community & the refuge. We feel that he has the best interests of both nature & residents in mind in present & future planning
- Lovely setting to nearby Milton

- Occasional visits
- Prime Hook National Wildlife borders the Marvel Conservation Tract in Slaughter/Cedar Beach
- Proximity
- Something for almost everyone
- We live in Slaughter Beach 9 years-we love the drinking water, little cruise
- You appear to have good programs, should advertise a little more.

## Section 2, Question 2: do you see any negative impacts to the local community from Prime Hook National Wildlife Refuge?

### None

- Absolutely not!
- Absolutely not.
- Due to communication, if we initially felt any negativity, we soon felt otherwise, once we learned the "whys" behind the actions of the refuge that seemed to affect us.
- I can't see where it would have any negative impact on the local community-more than likely-the other way around as people continue to move here and housing expands.
- It may seem to builders that it's a waste not to build houses on the refuge, but why do it? It's a natural habitat.
- It will be a wonderful benefit
- Just the opposite!
- No
- None
- None at all
- None that I am aware of
- None whatsoever
- None!
- The balance of existing development & wildlife are perfect.
- This is certainly a "selling point" for homeowners but bears positively no negatives because it is a "refuge" preserving natural lands that are our heritage & our legacy
- Although I'm sure those only self-interested, & obsessed re: profit, would have many reasons to question the economic wisdom of a wildlife refuge!

### Mosquitoes

- Absolutely no mosquito/insect control.
- Bugs & odor
- Flooding the wetlands during mosquito breeding season
- Mosquitoes, ticks, biting flies, etc.
- No-except maybe it draws more bugs to the area-but that's something we, as interloping humans, need to deal with without destroying!
- Proliferation of mosquitoes
- Ticks and mosquitoes

### Hunting related

- An indirect one. We are often woken up by gunshots at 6-8 am in the Fall/Winter. It's a bit scary.
- Hunting before and after sunrise/sunset
- Hunting noise
- It's wonderful to have areas set aside for wildlife viewing and photography. Hunting is a safety issue for hikers and seems an oxymoron when talking about wildlife preservation.
- Not really-other than the hunting that goes on literally next door.
- The unfair killing of wildlife.

### Access/Restrictions

- Delaware fox squirrel area-restrictions outside refuge
- Less restrictions
- Limited access to streams & beach
- More areas restricted from people
- Too many controls on adjacent land owners
- Very limited access road upkeep. Allowed \_\_\_\_\_ to close alternate access for fire, emergencies, and your H/A goose blind.
- Picnic area by office only during times staff there. Have lightweight tables & benches put away & picnic area sign taken down when no staff so "uneducated" won't leave food & trash.

### Development related

- Building on adjacent properties to refuge as in Clifton Shores area
- No more development
- Some redistribution of growth of beach areas
- Trucks, Development on or near the primary dune (and secondary too.
- Your place of refuge may become overcrowded with birds and other animals forced from their

habitat by the many developments that are replacing nearby farms. This is a problem

- overlooked by greedy people.
- Development potential

### Crop management

- Deer and geese reside on Prime Hook Refuge throughout the year and due to reduced farming go off the refuge and raid the local farmers fields for foods that should be available on the refuge.
- lot of fields not used for anything. Better planning should be used. If farming was the original use go back to it. Possibly one of the local 4-h clubs or high schools could utilize these fields
- Refuge allows fields to grow into weeds-the geese have to go to farmers fields to eat.
- Removing farmland from crops that feed waterfowl & deer. Imposing restrictions on

landowners within a 5 mile radius of the refuge. The restriction has been for an endangered species introduced to the area.

- This refuge was purchased with the intent of managing Canada geese. Allowing the largest agricultural fields to go fallow does not serve this purpose.(However it does help local hunting.) Put the large fields back in production and let the smaller ones go fallow. Everybody is happy!

### Wildlife related

- Often wildlife encroach on the beach property
- Only if some of the unattractive small animals start migrating out of the refuge.
- Overrun with deer. They eat our bushes. Overrun with skunk. They dig and try to come in our garage. They need to put in some drainage pipes

in bay area. The water stands still in spots & then we have loads of mosquitoes & snakes.

- Please pick up your dead animals from Route #16
- Migratory birds that don't migrate.

### Traffic related

- (1)No posted speed limits (2)When posted-people sped, killed ducks, geese, deer-I thought this area was supposed to be protected?! (3) I called 5 years ago about a beached seal-nobody came out-put off.

- So many car accidents involving deer along Broadkill Road(Route 16)-car insurance rates have been affected negatively.
- Too much traffic?--too much speeding on 16

### Miscellaneous

- But they are trying hard to change it so there is negative impact to the local community
- I wish it was larger
- Just because they have money don't mean I want them around. Many however are nice-I just wish we could weed them out.
- Just dumb things dumb people do in the center and people looking at the wildlife.
- Too many do-gooders
- The "big brother" attitude that exists on the refuge. This is mostly seen by adjoining land owners. The bad feelings that have been created have been building for years and can be traced to one man-
- The pompous asses who work there & institute & enforce regulations which make the refuge a JOKE! It has become a haven for a handful of do-gooder bird watchers at the expense of the entire community, not to mention visitors from all over the country.

- Too many people and traffic.
- Tourists are a pain, but we love living here, it's beautiful, the bay, the beach, everything we love in Slaughter Beach, it's quite less comparable to the city
- You do not open the floodgates open which leads to flooding on our lot since has no place to go when it rains. And the mosquitoes are AWFUL! My children cannot go outside & play. We have been told by mosquito control that they are so bad because the refuge refuses to allow them to spray!!
- The only negative impact, to me, is the overgrowth of foreign species of plants & animals. I wish there was more we could do to prevent this.
- Non-native species(plants & animals)and the proliferation of feral domestic animals



**Don't know/unsure/no opinion**

- Do not know anything about refuge
- Don't know
- "No opinion"
- No opinion

### Section 3, Question 3: What would enhance your experience at Prime Hook National Wildlife Refuge/

#### Nothing

- Basically, I am very satisfied w/the refuge.
- Can't think of anything
- Continue as is
- Don't change anything!
- Everything is fine as it is.
- Fine as is
- Good
- Good as is
- Good as is
- Hard to say-I like the naturalness of the area and hope that a lot signs & other creature comforts do NOT appear to keep it that way
- I do not need to visit it, I want to leave it alone.
- I enjoy it as it is. Would like the interpretative programs to be open longer hours/weekends.
- I enjoy riding through so leave as is.
- I like it as it is(thanks)
- I think considering everything it meets the public needs
- I'm happy the way it is. Why anything has to change is beyond me.
- I'm satisfied
- I'm satisfied. Little more parking
- It all seems to work
- Its o.k.
- Leave as is
- Leave as is
- leave as it
- Let it be. Allow nature to balance itself instead of so much control issues of the people
- None
- Nothing
- nothing
- Nothing
- Nothing
- Nothing really comes to mind-I like it the way it is
- Ok as is.
- Perfect in its simplicity!
- We live on Broadkill Beach and wouldn't change a thing
- We love it as is

#### Improved programs/Information/Staff

- A book available of the history of the people, animals & whole refuge/better road maintenance
- Knowing more
- Knowing more about PHNWR
- Knowing more about the refuge's available activities
- Knowledge of the refuge
- More educational materials-in particular for elementary school age children-history for adults
- More environmental education programs and more advertised volunteer opportunities.
- More friendly educational interaction with staff & visitors.
- More information about Prime Hook, the area it covers and goals for wildlife for the public
- More information about the wildlife, etc.
- More information and scheduled activities-hikes, bike rides, etc. scheduled with picnic lunches and guides
- More information on all wildlife at the refuge
- More information on migratory patterns by month/season. Also patterns of changes in Bay for mating of horseshoe crabs, dogfish, etc.
- More information on species: history, present & future
- More information on the options there(I learned a lot through this survey).
- More information on these areas
- More information provided, accessibility to view
- More nature programs-more educational programs for the public
- More outreach to neighboring communities to encourage visitation by older or younger folks
- More programs, trails, & information
- More public announcements on events at schools
- More summer & fall programs and exhibits
- Programs for over 50 crowd-active but slower
- Refuge staff more visible
- Staff for guided tours on trails to identify wildlife.
- To be able to talk with someone knowledgeable about my interests.
- To have a tour guide on trails & nature walks
- When can I use the part of the refuge behind my house? No information furnished.
- Friendly guides
- More things to do-more restrooms-more trails-clean beaches.

## **Insect control**

- Fewer bugs/insects
- fewer mosquitoes
- Get rid of mosquitoes
- Getting a little help controlling the mosquitoes
- Insect control(spray), increase bat population(in all parks), (crack down on the vandalism)
- Less bugs
- Less bugs-horseflies in general-1 jeep trail for viewing habitat
- Less tabanid flies-more driving/biking trails for wildlife observation
- Mosquito control in visitor use areas
- Mosquito control!!! Black fly control!! Good bird habitat will help. Bats too!!
- No mosquitoes
- Reduce bug population

## **More wildlife viewing opportunities**

- Be able to view more wildlife
- Being able to see more wildlife.
- Bird observation points at Slaughter Beach & Argos Central-SB Rd. Allow access by foot along Bay Av.
- Butterflies
- I visit Prime Hook & Fowlers more than Broadkill. No real place to view wildlife except pulling off in 1 or 2 spots.
- More areas that have access to viewing wildlife. With planting of areas w/trees etc. you have eliminated wildlife viewing from Turtle Pond Road.
- More places to view nature in the wild
- More viewing areas
- More viewing opportunities (open cropland where it once existed)
- More visible wildlife!
- More wildlife-quail
- Observation towers for hawk/bird watching
- Provide, if funds are available, more viewing blinds & walkways.
- Putting photo blinds in areas where waterfowl actually use, and with easy access. Also, the ability to check out a blind and duck hunt the rest of the afternoon, to state wide shooting time.
- See more wildlife
- Site where wildlife is
- Tower to overlook marsh
- Viewing tours
- Viewing wildlife
- Better treatment of water areas along Prime Hook Road, including more support of wildlife along the road. It is wonderful to watch life around you.

## **Improved access**

- Being handicapped-a fall rabbit hunt from wheelchair etc
- More access & trails-experience is now mostly from roads...
- More access to remote areas-designated trails either bike or canoe/kayak
- Several times the refuge was closed except hunting after we brought friends there to hike. I think it would be good to have more parts open for hikers all of the time. Have away from hunting areas(could move around).
- I love fall. No hunting-afraid to go near around hunting season. Hunting season is best season for me to experience nature
- Leaving gate open 1/2 hr longer
- More access points with parking near Slaughter Beach-canoe & kayak rentals.

## **Improved bike trails**

- Bike trails
- Bike trails, more walking trails, more signage(Slaughter Beach area)

## **Improved hunting opportunities/Access**

- Additional waterfowl blinds for hunting.
- Better job of managing upland game areas-rotate hunting on all sites-will improve stock. Provide one area to upland hunt during doe season!
- Easier access to duck blinds
- I would welcome having access to more areas of the refuge for bow hunting.
- Improved hunting

- More fishing & hunting opportunities, more parking & access points, but limit disturbance of natural areas as much as possible.
- More hunting
- More hunting allowed on office area.
- More hunting opportunities
- more hunting time
- The deer stands could be larger to accommodate two people. I hunt with my son all the time who is

now sixteen. It's hard to do this from the small stands.

- Put boxes out for the end of each hunt to put card in so you don't have to drive all the way back to refuge like it was before. How are you supposed to get your deer out of woods and back to refuge by dark?

### **Improved hiking/Walking opportunities**

- Additional access to hiking & fishing opportunities
- Additional hiking trails & walks over the marshes & wetlands
- Better trails to walk with my dogs.
- Building a boardwalk for a multi-use path to connect Prime Hook and Broadkill
- It would be nice to have a path around one of the lakes.
- Maybe to add more trails for walking or biking.
- More choices of hiking trails. More signs.
- More hiking trails
- More hiking trails
- More hiking trails
- More trails
- More trails
- More trails and observation sites
- More trails and parking areas to get into other areas of the refuge.

- More trails in more places throughout the refuge
- More trails through forest, and make them lower impact trails with turns, and curves, follow the natural landscape, trails should be only wide enough to walk down, instead of trails cars can drive down
- More trails/rest areas & restrooms
- More trails; access to areas now denied to the public; more observation posts w/interpretative information
- More visible hiking trails
- More walking trails
- More walking trails
- More walking/hiking trails
- To be able to walk the woods
- Walking trails designed more for physical disabilities

### **Improved boating/Kayak/Boating opportunities**

- Better boat ramps
- Better boat ramps & more programs for children.
- Better boat ramps-let fishermen use trolling motors only in the ponds, even if they have a large gas motor.
- Boat or canoe rental
- Canoe rental
- I would have liked to have taken a canoe out but do not own one, therefore was not able to do that.
- I would like to use the canoe trail in the fall after October 1. I understand that it is off-limits due to

hunting. Getting hunters to pick up their shells. Getting hunters to start shooting later in the day.

- Improve canoe viewing of area in general
- Kayak rental-more picnic areas(tables)-enlarge gift shop
- More boat ramps-more crabbing areas-this is what kids want to enjoy
- Airboat trips to marshes

### **Improved signage/Maps**

- Detailed maps for canoeing
- Better signage through waterways and/or detailed maps. Access for canoes, kayaks from more spots, e.g., by the maintenance shed, and improved

- access in the channel by the headquarters, e.g., "dredging" the invasive plants clogging the channel

### **Improved fishing opportunities**

- Being able to access at night, both for fishing and walking and to have boat access more easily with parking in mind
- Fishing
- Fishing piers
- Good crabbing
- More access to certain areas for fishing
- More bank fishing areas, picnic area
- Perhaps some novice fishing or crabbing classes.
- Opening areas now closed to fishing

### **Limiting hunting**

- Less hunting & fishing
- Less hunting, more natural conditions, less farming, more hiking/walking areas
- No hunting
- No hunting ever
- No hunting of birds
- Provide more hunting blinds and more hunting days.
- Stop letting people hunt at the refuge center.

### **Improved parking/Restrooms/Cleanup, etc.**

- Bathroom facilities more accessible
- More parking in natural areas
- More parking, visitor snack shop.
- Picnic tables/appropriate trash receptacles-viewing spots for specific wildlife-mosquito control
- Provide additional pullover locations in areas away from contact station.
- Pull-offs and observation platforms
- Having trash receptacles available(next to comfort stations)
- Impress upon fishermen the importance of "cleaning-up" after their fun-i.e.,: don't leave old bait, lines & hooks on the beach
- Keeping up with trash
- Large lodge to rent for overnight like Redden State Forest.
- More fish, trash barrels, parking, boat ramps.

### **More personal time to visit**

- More time in my life to go
- More time off from work
- More time to go!
- More time to spend there
- We need to visit more often to appreciate Prime Hook more
- We work fulltime and are taking classes, which have kept us from recent participation w/PHNWR activities. So-more time!
- Having more time to go there
- More personal time to allot to visiting

### **Keep/Improve naturalness**

- If the bay were cleaned!
- Keep as natural a possible
- Keep it natural
- Keep it wild
- Keeping it natural
- Knowing that the refuge is trying to enhance wildlife diversity rather than serving primarily as a hunting site for selected geese & deer
- Major emphasis on eliminating invasive species, e.g., phragmites, nutria, etc.
- Make it larger
- Make more remote areas available
- More nature-less tourist trap
- More protected space for peace & quiet/natural environment
- More representation of the aquatic component. I feel it is not given the attention it deserves.
- Naturalness of nature
- Providing an experience of nature that is less disturbed and more pristine.
- Restoration of more natural conditions
- Restore more natural conditions
- Shuttle service between Waples Pond & refuge headquarters for canoeing.

### More crops for wildlife

- Maybe some open areas with corn to attract birds.
- More fields released to farming or at least thinning some of the growth on the fields to give visitors the chance to view wildlife hidden in the fields.
- Plant more crops that would attract more wildlife
- To see crops planted to promote visibility of deer

### Miscellaneous

- A new boat
- A place to camp or swim
- dog friendly policies for locals who need places to let their dogs play off leash
- Having a beach area
- If I found a treasure chest full of gold
- If it would close forever give land back
- If it's Route 16, Prime Hook Road, Slaughter Road, people speed in autos-because of real estate selling rapidly at beaches, newcomers have no regard for wildlife they kill with cars.
- Removal of telephone poles-put underground
- Remove policy makers & enforcers
- taking a tour in a cart (open) with a guide
- The refuge is fine, just the tourists have no respect for our environment. Litter is a major problem.
- We would love to live there, but we are worried flooding
- Wildflower plantings
- Younger age

### Don't know/Unsure/No opinion

- Don't know
- Don't know
- Don't know
- Don't know
- don't know-have never been there
- Have never been there
- Have no opinion
- Have not visited
- I cannot answer these questions, as have never visited. My answers are based on living at Slaughter Beach, across from part of the refuge.
- I cannot answer this question honestly at this time.
- I don't feel I can adequately answer the above because we almost live right on the refuge & are attached to it but we haven't been able to visit as we would like lately so don't have enough information to answer.
- I don't have the time to enjoy the refuge
- I don't know anything about the refuge
- I don't know-never been there
- I haven't visited your facilities to answer the above
- I live here
- I really don't know; but restricting anything that would take away from its undeveloped status.
- I've(we)have only driven through some areas-we haven't visited all so we can't really comment.
- Never been
- No idea
- No opinion
- No opinion
- not sure
- Not sure
- Not sure
- Not sure!
- Not visited
- unknown
- Unsure
- Unsure
- unsure

### Section 3, Question 4: What experience have you had at Prime Hook National Wildlife Refuge that would bring you back?

#### Everything

- All experiences have been very positive-bird migration viewing has been a highlight
- All have been very educational and rewarding
- All my experiences at Prime Hook bring me back.
- All of them
- All of them
- As a year round resident of Broadkill I am able to take advantage of many experiences anytime!
- Enjoyed every visit
- Every one-it's a great place
- Every time there is something wonderful and new to see.
- Everything-all experiences
- It's all good
- My experiences have been favorable and I will come back
- PHNWR has become a vital part of my life
- I'll always come back

#### Wildlife observation

- Seeing wildlife, hunting, fishing
- Site seeing, wildlife, canoeing, fishing
- I most enjoy observing the wildlife, particularly the waterfowl. I have fished all the beaches.
- Ability to view wildlife and hiking trails
- Bird watching, deer, trails
- Bird watching; hiking
- Seeing real wildlife, beautiful scenery.
- Shorebird viewing, especially osprey and the feeling of remoteness.
- Watching wildlife and quiet time
- Walking/canoeing
- Especially enjoy seeing wildlife & photo opportunities
- (1)Seeing flocks of waterfowl in fall/winter
- (2)Viewing ospreys at nest sites-the whole refuge!
- Animal sightings
- Bird viewing
- Birding
- Birds(year round), the beauty(year round), the people
- Bird watching
- Bird watching
- Close encounters with wildlife
- Every year to watch the new hatchlings, fox cubs, etc.
- Hawk watching
- I like it-best for viewing waterfowl-once saw wild turkeys.
- Looking for deer in evening
- Observing area & wildlife
- Observing the birds and animals
- Observing wildlife
- Saw a deer only 2-3 feet away from me
- Saw turtles hatching, my first eagle sighting
- See more deer, turkey & wildlife
- See more wildlife, such as deer & rabbits
- Seeing 30 deer in one field to look at
- Seeing all of the wildlife & the natural beauty of the grounds.
- Seeing birds in natural habitat close up.
- Seeing deer grazing along road in soybean fields
- Seeing eagles
- Seeing flocks of wild turkeys
- Seeing lots of wildlife
- Seeing more animals
- Seeing osprey nests, bald eagles, and migratory fowl.
- Seeing otters come up through the ice one winter. Arrival of snow geese, shorebirds.
- Seeing quail by the thousands. They are no longer seen in this area per over hunting & building
- Seeing the animals and hiking the trails.
- Seeing the birds & animals in their natural habitat!
- Seeing the wild turkeys.
- Seeing the wildlife
- Seeing the wildlife in its natural habitat
- Seeing wildlife in its natural habitat
- Site seeing
- The animals
- The birding
- The geese in spring, horseshoe crabs.
- The wildlife! I've seen all sorts of birds-osprey, eagle, heron, egret & more...plus fox, raccoon, skunk, deer
- Upon leaving, having to stop for baby foxes in road
- Viewing of wildlife
- Viewing wildlife
- Viewing wildlife, I have learned a great deal
- Views of wildlife
- Watching birds & animals
- watching birds soar & turtles hatch
- Watching otters, eagles, fox & osprey
- Watching snow geese in the winter
- Watching wildlife in a natural setting not being forced to move elsewhere.

- Watching wildlife in undeveloped areas.
- Waterfowl we have seen on our visits
- Wildlife
- Wildlife
- Wildlife observation

- Wildlife viewing
- Availability of waterfowl
- I own property in Slaughter Beach & enjoy my view from that side very much!

## Fishing

- Fishing, watching wildlife
- Fishing, wildlife
- Fishing at Turkle Pond and, I believe, Gordon Pond? And deer hunting at Prime Hook excluding the lottery
- Fishing, hunting, bike trails
- Fishing-hunting
- Fishing and kayaking in Slaughter Beach
- Fishing & boating
- Bay surf fishing
- Better fishing-weak fish
- Catching fish
- Catching fish
- Catching fish

- Fishing
- Fishing
- Fishing
- Fishing
- Good fishing
- Good hunting
- Great fishing
- I only have been to the refuge a couple of times to fish
- While fishing at Petersville Ditch I run into friendly rangers and volunteers.

## Hiking/Trails

- Hiking, walking, biking & fishing
- Walks, viewing wildlife and occasional bikes & canoe outings
- The trails, quiet surroundings, pleasant staff
- hiking and viewing nature teaching my children about nature and protection of animals
- Hiking, bird watching, biking
- I enjoy walking on Prime Hook Beach Road and watching the wildlife.
- On a hike I came across a field loaded with beautiful colored frogs-a sign of a healthy environment.
- Walking the Prime Hook Beach. Viewing the marsh area. The marshmallows in bloom. The floats of snow geese. Watching sunrise on bay and sunset over marsh. Looking at tiny shorebirds. Turning over horseshoe crabs. And much more.
- Walking the trails & observing the animals in their natural habitat
- Walking the trails over the marsh and to graveyards and seeing the wildlife.
- Hiking and canoeing
- nature walks with my children

- Paved road to walk and bike with my children
- Hiking the trails; seeing the Nature Center exhibits; hearing weekend talks on weekends(Sundays)
- Pleasant trail hike/interesting exhibits & visitor station
- Hiking & biking trails
- enjoy walking the trails
- Hiking
- Hiking
- Hiking in serenity
- I enjoy the boardwalk section of the nature hike. I would like to have paths cleared a little to lessen probability of ticks.
- I'll be back to walk around trails.
- Being able to walk into a variety of areas
- long walks on the beach w/dog
- More trails
- Nice hikes!
- Take a hike on one of your paths
- Trails
- Walking trails, exploring old cemetery

## Hunting

- Hunting, fishing & kayaking
- Hunting opportunities, habitat & wildlife viewing.
- Outstanding hunting & fishing
- Hunting and hiking
- Good duck hunting & photo opportunities.

- The enjoyment of hunting w/father, brother, & sons.
- Better upland game hunting.
- Bow hunting in September



- Getting my limit on ducks
- Hunting
- hunting
- Hunting waterfowl
- I love to waterfowl hunt with my son, but sometimes the water level is too low for our setup.

- The water level at six inches higher during season would help a lot of us out.
- Improved waterfowl, deer and upland game hunting
- The great times spent hunting and fishing-hunting deer on the food plots(Fowler's)
- Trap shooting

### **Scenery/Beauty/Intrinsic value**

- I've(we)have enjoyed Fowler's Beach-the peace & serenity!
- Its peacefulness-a chance to see birds that are not generally in a city
- The beaches, bird watching, nature trails, Horseshoe Crab Festival.
- Absolutely beautiful scenery and unbelievable bird watching opportunities
- The atmosphere is serene and peaceful and I greatly enjoyed observing wildflowers and wildlife.
- The colors, birds, serenity-I love it-I was raised here.
- The serene view-seeing wildlife in a safe, protected environment where they can rest, live & feed.
- The serenity and the birds.
- Viewing the serene environment/bird watching/wildflowers/wildlife in general
- Nature & walking
- I do not need any particular experience to enjoy it-just being in the naturalness it affords thrills me.
- It's nice & quiet
- just enjoy as is - rustic and natural
- Just the beauty of it.
- Just the calmness of being at one with nature
- Just the naturalness of the area-peaceful
- I love it here
- I love that the refuge is there.
- It's just a neat place to visit!
- Just a great place
- Just knowing it's there will bring me back
- Just the fact that we can use them all the time
- Beauty, education, serenity, sharing
- Being alone to experience total solitude
- Breathtakingly beautiful bay
- Enjoying nature
- Getting away from civilization
- I come back because it is undeveloped. I am an artist - I like to paint there.
- Natural habitat

- Natural undisturbed wildlife areas-night patrols are needed with enforcement powers
- Natural, unspoiled environment
- Nature
- Nature as it should be.
- Nature as it should be.
- Peace
- Peace & serene environment
- Peace and quiet
- Peace and quiet/natural environment
- Peace and tranquility while wandering the trails & viewing the wildlife.
- Peace/quiet/safety
- Peaceful environment
- Quietness, peacefulness, seeing God's creation
- Relaxing and being alone
- Relaxing-seeing & hearing the wildlife around you.
- Serenity
- Sitting on the bench of Fleetwood Pond in the sunshine
- The beauty & serenity of the area
- The beauty and calmness of nature
- The feeling of serenity & being with nature when visiting the refuge
- The land, the views
- The natural beauty
- The natural beauty
- the nice views
- The peace and quiet
- The peace and quiet
- The quietness & natural surroundings
- The serenity of the natural experience
- The wonder of nature
- The yearly changes in the environment. Every year it becomes more beautiful.
- Very serene, natural setting
- We come here for the beach, nature, peace and quiet
- Environment, animals, birds, quietness

### **Canoeing/Kayaking**

- Canoeing, hiking
- More kayaking & birding
- Area is very conducive to canoeing

- I enjoy canoeing on the waterways of the refuge
- The canoe trail

## Biking

- Biking & nature trails

- Bike riding with family & nature walks

## Wildlife photography

- Photography contest, special events
- Photographic opportunities
- Photographic opportunities

- Photography opportunities
- Snow geese photos

## Family heritage

- Having a place to take my grandchildren & great-grandchildren to enjoy nature
- Its availability to family-more great grandchildren
- Many pleasant memories with family
- Maybe when grandkids get bigger

- Memories
- Viewing migratory birds
- Volunteering with kids
- Ability to take family & visitors to the refuge

## Refuge programs/Events/Facilities/Staff

- Visitor's Center; surf fishing; resident(part-time); family reunions; bird watching; photography; kayaking; horseshoe crabs
- Airboat ride-guided bird watching
- The outstanding educational programs, the unique character of PHNWR, the awesome beauty & spiritual satisfaction
- Information I learned at the visitor center about wildlife in the area, and information about potential stressors (development, oil tankers on the bay, etc.) on wildlife.
- Lecture series
- More lectures on different nights

- Prime Hook Refuge Center is peaceful and has lots of nature, that's why I like it.
- Staff very nice/helpful; quietness & safety; information available
- The waterfowl festival
- Educational seminars
- Friendly staff
- I was very impressed by the friendliness and helpfulness of the volunteers and the professional staff members.
- Meeting the refuge manager \_\_\_\_\_. He's a pretty nice person-always looking for feedback.
- Provide airboat rides

## Nothing

- None
- None
- None
- None
- None
- None
- None
- None

- None, yet. Going this weekend(10/8/05)
- Not one damn thing/Sick of all the people that work back there. Such a waste!
- nothing
- Nothing comes to mind.
- I live here.

## Don't know/Unsure/No opinion

- Can't say
- don't know-have never been there
- Hard to say
- Have had limited time so far to explore
- Have never been there
- Have no opinion
- Have not visited
- I have never visited the Refuge but will in the coming months so the next time that I fill out one

- of these I will know & answer the questions a lot better
- N/A
- N/A
- Never been
- Never been there
- Never been there
- No opinion
- No opinion

- Not familiar with the refuge.
- Not visited
- Unknown
- Unsure
- Unsure
- unsure

### **Miscellaneous**

- Live adjacent to refuge. Biking/kayaking and maintaining the traditional uses-more people coming/using facility causes additional problems of all types.
- Does this include Broadkill Beach-if so, I love it in dead of winter. During tourist season we have traffic jams & gross running of stop sign @ 4 way stop @ Georgia Avenue!
- Firearm safety.
- I'm here all the time.
- So glad to live across road from refuge
- Turn clock back 20 years
- User friendly, not too many people at the time
- Visiting on a day that had no large groups touring

**End-of-Survey Comments:**  
**(each comment appears only once under the heading it most closely addresses)**

**Development**

- Beautiful area. Frankly I am surprised you allow any residential construction at all I consider myself lucky to reside at PH.
- The most important parts of the Refuge are the areas of no human activities. Control non-native plants and animals (esp. cats). Expand Refuge into farms, forest, and beach. Encourage donation of private beach property at Fowler Beach. Do not develop Fowler Beach Road for more uses. Wildlife Refuge is not for human recreation.
- I am happy to be living near the refuge so there won't be any big developments going in near us. When we moved here we really didn't get much information about what the refuge was and what activities were available there
- I feel there is a need for a place that wildlife can go to "be wild." Areas in Delaware that are still wild are disappearing fast. It seems that the Refuge is also following this course. The more you open areas to the public the more the wildlife will suffer. Most adjoining landowners to the Refuge had their lands taken away for its construction. These same people oppose any construction easements. Once you let the Refuge get their toe in the door suddenly you have lost your ground and all your rights. (more... personal issues with refuge staff - particularly - \_\_\_\_\_)
- PH is one of Delaware's greatest remaining natural resources. It is my opinion that everything the United States can do to preserve, enhance and protect it should be done. Poor planning on the part of Sussex County and overdevelopment in the area has resulted in increased air and water pollution that will only degrade and destroy this environmental wonder unless stringent methods are taken to lessen the impact. I would support any initiatives taken to expand the area, establish buffers, no growth zones, etc. Habitat for migratory waterfowl and shorebirds will be non-existent in another 100 years on the Atlantic flyway with the exception of these wildlife refuges. The animal and plant life must be considered above all in these refuges, not the tourist and visitors. That being said anything done to enhance the quality of visitation experience for this and future generations are highly commendable and greatly appreciated by those of us who frequent these marvelous places.
- I'm not sure why, but I feel sad when I see a new housing development. Rt1 is being built up so fast. That's why we have to save land for future generations. They will appreciate it. We all like the prosperity that growth brings but it needs to be at a steady slow pace. I feel so "high" when I see the snowy egret, blue heron geese and foxes, etc. Let's help them prosper too.

**Habitat/Wildlife Concerns--Positive**

- We are new to Delaware and have not been to PH. Although we do intend to visit soon. I have answered some info however, not visiting the refuge to date I feel that I can't answer many of the questions asked. P.S. My family is in favor of wildlife.
- I have observed some of the mosquito control, phragmites control, water level control for wildfowl food and am very impressed favorably. I personally am a conservationist not a preservationist. I believe that the future is best for the environment and wildlife. If man practices thoughtful scientific intervention. Many of our problems are industrial and technological and solutions will be best if scientifically employed. I personally do not like and trust single agenda activists and feel this is adverse to progress. Keep up the good work.
- PH has been a big selling point for being in the area. I am pleased at the current expansion and protection of the horse shoe crabs and shorebirds. Continue to do excellent work.
- More stocking of fish in the ponds
- I would love to know more about PH.
- Please strive to keep things the way they are. PH is an amazing treasure for the whole community to share.
- adding bike paths through the refuge would be great
- You are doing a good job

- Do not view it as a "preserve" where nothing is done but let nature take its course. Rather, see need for good management to focus on goals of the Refuge. Need to have a near balance btw plants, animals, & people. We're concerned about the drying up of ponds on Prime Hook Beach Road. We've seen over last 3 years more & more drying up with fewer herons & egrets. Are you able to regulate the flow of water?

### **Habitat/Wildlife Concerns--Negative**

- Amount of road kill in RT16. Broadkill extension. No signs on this road. Watching for bikers and joggers; which during the summer months lately have increased. I believe the speed limit is 50 mph until Bridge on/before Bay Shore Drive. Immediately before the bridge entering BBB is a popular deer crossing - often it is noted cars are speeding up to the point that they are about to become airborne.
- NO MORE HUNTING
- Overprotection can be as out of balance as under protection. Nature balances itself. Over protection of a species can be as detrimental as extinction
- I am not anti-hunting. However, I do feel that a National Refuge should be just that - a refuge, a safe have for nature to live naturally and a public who funds it to have access to enjoy, observe and preserve it as primitively as possible. Hunting and bird watching do not go together well. Hunting should take place outside the refuge; otherwise it is not a refuge, is it? Trails like the one at Wolf Neck are the best way to allow maximum public assess with little impact on habitat.
- I think the refuge needs to do a better job in educating the public about allowing land to go fallow in order to increase species diversity. If we are only promoting a few species, such as deer and geese, we are limiting the value of this refuge as a true land of opportunity for increasingly marginalized species.
- It is such a waste land. Such a shame
- 1) They don't seem to be much in control of the mountain bike people they just seem to go any where they please! Most roads and trails show slide marks from the people jamming on the brakes. 2) The Japanese Knox weed is getting out of control I know it's very hard to kill! 3) We started coming in to the parks 1996.
- Initially 40 years ago there was a plan to build a marina on Broadkill beach what happened to that plan? For people who boat, fish and crab this is something we need. For a community that lives off of the progress, where do you leave those fishermen families who stuck it out over the years? We need a marina at Broadkill with docks

### **Have Never Visited or Not Visited Lately**

- We are new to Delaware and have not been to PH. Although we do intend to visit soon. I have answered some info however, not visiting the refuge to date I feel that I can't answer many of the questions asked. P.S. My family is in favor of wildlife.
- Although I never actually visited the refuge I walk and bike along Slaughter Beach and Bay Ave. I appreciate the beauty of the Refuge and the wildlife especially the horseshoe crabs and visiting birds. From what I see from the road the Refuge is maintained and seems to look nicer than it did years ago. Keep up the good work and please don't allow any development. The peace and serenity is what makes Slaughter Beach special and I would like it to remain that way.
- We used to go there a lot when my kids were small. Would like to go there more often in the future
- We haven't been to the Refuge yet, but plan to visit this weekend 10-8-05. Hope to have a great time.
- Some of the questions I could not answer because I have not visited any of the wildlife Refuges in years. I found then it was not accessible for wheelchairs persons. So it left us (my husband was handicapped for 25 years) out of the loop to be able to enjoy the activity. To be truthful we never went back.
- Have never visited PH but looks like a nice place - hope to visit
- PHNWR is a significant asset to Delaware and the beach community. It is a primary reason we plan to retire in this area. We drive 2 hours from DC to spend our weekends here year round.
- Although we live almost directly adjacent to the refuge, we haven't actually visited to hike, etc in a while. We hope this will change soon and we will be able to picnic/hike more often. We drive

through the refuge everyday to and from work and it is the beautiful environment that we enjoy the most. We try to keep up with refuge happenings and we are members of the Friends of PH. We think the refuge is a wonderful place and often say we live in one of the most beautiful areas of the world. I regret that I not more familiar with the management/facilities to better fill out this survey.

- We visited the refuge when our children were young but they are grown now. Our interest in the refuge is in preserving rather than viewing
- I am happy to be living near the refuge so there won't be any big developments going in near us. When we moved here we really didn't get much information about what the refuge was and what activities were available there.
- I really don't know much about the refuge. Even though I read DE State News daily and News Journal Sunday I don't really see much written about it.
- I don't feel that I was able to answer many of these questions as I have never visited the refuge. Perhaps in the future I can slow down and take advantage of some of the programs you offer.
- The main reasons we don't use the refuge are - we love being on the waterfront and the "quiet" after living all winter in suburban Wilmington. Another reason is the mosquitoes - my husband is very tasty to them and gets really big welts from the bites, even with insect repellent on. Plus the ticks. I attract them just taking photo from the edge of the road. For the record we are both 75 and owned out cottage since 2000. It's been my husband's parent's property since 1960. We really hate to see all those huge houses going up all over the place. Some are in wetland areas and should have never gotten a permit. It appears that you are doing a good job keeping up the refuge. Except for the phragmites! We enjoy looking for the Ospreys.
- I have never been to the refuge
- We haven't been to the Refuge yet, but plan to visit this weekend 10-8-05. Hope to have a great time.
- We do not live at Slaughter Beach full time & have never visited Prime Hook in the 18 years we have been visiting Delaware.
- We feel we wouldn't be of help in your survey. We are both retired and have busy lives that do not involve the refuge. Our place in Slaughter is a summer residence.
- I do not feel I am able to answer any question about Prime Hook--I have never been there, or any or the others associated with it. I generally go Cape Henlopen State Park for all of these activities
- Jonathan, I owe an apology. I have been coming to Milton for more years than you want to know. I have never been to the Refuge except to drive to Broadkill and visit friends. I appreciate your efforts and the wetlands. Both serve a need for the area. Again, I apologize.
- Comprehensive survey! I regret that although I live here and drive within the Refuge daily, my experience visiting the refuge has been quite limited.
- Although we live almost directly adjacent to the refuge, we haven't actually visited to hike, etc in a while. We hope this will change soon and we will be able to picnic/hike more often. We drive through the refuge everyday to and from work and it is the beautiful environment that we enjoy the most. We try to keep up with refuge happenings and we are members of the Friends of PH. We think the refuge is a wonderful place and often say we live in one of the most beautiful areas of the world. I regret that I not more familiar with the management/facilities to better fill out this survey.
- To date ... have not participated in any activities. Enjoy the trip - Rt 16 - home through the Refuge.
- Some of the questions I couldn't answer because I haven't been there (only driven through) I do plan on visiting and want my daughter to grow up knowing and experiencing the refuge.
- My wife and I had the pleasure of riding these areas but that is "all". My wife was not compatible because of leg sickness for the pass seven years now is deceased. Now I'm not capable of moving around that much. This is why my answers are such.

#### **I live here because...**

- We are summer residents of Slaughter Beach and have been for 32 years. We have always loved the area and consider ourselves very fortunate that the area has remained pretty much the same all these years. Although there have been many new homes on the beach and in the Milford area - things have

not changed to much, but can see that this will not always be the case for the beach and the serenity and wild life we have always enjoyed for years will be threatened.

### **Miscellaneous Issues**

- It is a shame to spend much more money on our criminals in jail. Then we allocate minimal funds for our citizens to enjoy the parks and refuges that are so important to our environment.
- There should be a refuge for: 1) natural wildlife and not taken over by developers/development, 2) our children and their children and so on; to see the birds and other animals not lost to extension, 3) a place of quietness, 4) a place to be at one with nature, 5) a place of contemplation. Hopefully I can come to see the refuge by next spring.
- Thank you for all that the Refuge has been doing during these recent years. Does the Refuge offer any help or classes on planting beach grass? Landscaping with natural plants?
- I consider myself blessed to live in close proximity of a wildlife refuge presently and in past years to have lived very near Grand Teton NP, Yellowstone NP, The Badlands, Paradise Valley in Montana, and the Arizona desert. The natural environments are so very vital to my well being! Thanks for the fridge magnet.
- I am already a member of the Friends of the Refuge
- Living in the area and visiting the majority of the parks and preserves in the area, I can't help but recall the places that were in a natural state that have now changed to a people environment. I realize that with all the people and crowds we now have are looking for a place to go - so far away that that the natural environment we have remaining has to be controlled and kept if we are to have any place left to go. As things are going this may present a problem from a financial stand point. Do what you can.

### **Personal Experiences and Visitation**

- I no longer live in Delaware (was there 8 months doing Americorps). However, PH was a great asset to the area and I enjoyed hiking there very much. The lady at the information station was very friendly and knowledgeable, as a new resident to Delaware in the fall. I was very appreciative of her willingness to inform me of activities. While working at a State Park, I spoke with many visitors about the Refuge and wildlife viewing opportunities there. It was a great resource for education, recreation and wildlife habitat.
- I grew up in the area and I spent a lot of time hunting, fishing and canoeing in PH and have always enjoyed the atmosphere of the Refuge. I think the staff does a great job.

### **Recreational Activities**

- I started kayaking at PH about 10 years ago. Being familiar with PH influenced my decision to buy a retirement home in Milford. I recommend PH to everyone possible
- I grew up in the area and I spent a lot of time hunting, fishing and canoeing in PH and have always enjoyed the atmosphere of the Refuge. I think the staff does a great job.
- While filling out the survey last year I commented on Turkle and Flatwood Ponds roads access being closed during the prime fishing times. I noticed the road was open for traffic a lot earlier this year THANKS. My wife and I and our grandson had many great fishing trips there this year. It was on these trips I taught my grandsons to clean up the mess they make and also the mess other less considerate people make. It truly was a pleasant spring this year thanks to PH. I don't think they will ever forget it.
- I would like to see camping at PH - tents only and a swimming pond and more information about things going on. We have missed events because we didn't know until after they were over.

### **Refuge Management**

- I don't want to see anything happen to the Refuge. My grandfather was \_\_\_\_\_ and the refuge brought some of his property in 1963. I would like to see where we grew up. It is not a part of the Refuge that you can get to.

- I am not anti-hunting. However, I do feel that a National Refuge should be just that - a refuge, a safe have for nature to live naturally and a public who funds it to have access to enjoy, observe and preserve it as primitively as possible. Hunting and bird watching do not go together well. Hunting should take place outside of the refuge; otherwise it is not a refuge, is it? Trails like the one at Wolf Neck are the best way to allow maximum public access with little impact on habitat.
- Consider looking at what MD has done at Fishing Bay WMA
- Speed limit is too high. Should be 35-40 mph into the beach. More areas for bicycling and walking safely.
- The refuge is an important asset to us. The changes in this last year have been extraordinary and we applaud those responsible. Mosquito control remains a problem. We have no problems with the refuge management or management staff; they seem open and are helpful.
- I think that it is important to know and realize the community of owners and visitors year-round are here because PHNWR is here. Not the other way around. Thank you for your presence! Keep up your great work.
- South end of Slaughter Beach is very fortunate to have a Refuge across the road - surely enhances property values - we should respect and avoid disposal of trash. Maybe a volunteer group could assist in maintenance issues.
- Some of the questions I could not answer because I have not visited any of the wildlife Refuges in years. I found then it was not accessible for wheelchair persons. So it left us (my husband was handicapped for 25 years) out of the loop to be able to enjoy the activity. To be truthful we never went back.
- Focus on the primary mission of the NWRs and that is to maintain habitat. Thank you for the opportunity to express my views.
- PHNWR is a beautiful, well managed, friendly place to visit. I am happy to have them as a neighbor.
- PHNWR is a significant asset to Delaware and the beach community. It is a primary reason we plan to retire in this area. We drive 2 hours from DC to spend our weekends here year-round.
- We live part-time in the PH Beach community so the refuge surrounds us and we feel like we are a part of the refuge. Our weekends here are quite special and provide much-needed relief from the suburbs. Although this may contradict earlier responses I would like to see a boardwalk-like trail that connects PH Road to the Broadkill area or visitor center. This would provide for an extended trail walking or biking opportunity. I realize this means more access and more impact on the refuge but it may help increase visitation and increase the value of the refuge to more members of the Del Marva community. Hunters are bothersome when they start shooting in the early AM. It would be nice if they started later. The refuge staff is knowledgeable, friendly and committed to doing the best for the refuge with what I am sure are limited and for now dwindling resources. Of utmost importance is the protection of natural habitat for populations of wildlife. We are willing to give up some of our wants to protect these resources.
- I have found refuge staff to be helpful and knowledgeable. Under the new director the refuge has been more prominent in the news and seems to have a broader range of activities and more outreach to the community. I have one bone to pick with him however. Shortly after he started, I read in the paper that he claimed to have visited and/or spoke with every community resident whose property borders the Refuge. That is not true. We border the Refuge at the end of Florida Ave. in Broadkill and were not contacted. One concern that we have is the management of the water level, especially how it affects flooding on our property, so we would like to discuss that. One suggestion I have is better signage to lead visitors to the proper entrance to the visitor center for information, restrooms and gift shops.
- I no longer live in Delaware (was there 8 months doing Americorps). However, PH was a great asset to the area and I enjoyed hiking there very much. The lady at the information station was very friendly and knowledgeable, as a new resident to Delaware in the fall. I was very appreciative of her willingness to inform me of activities. While working at a State Park, I spoke with many visitors about the Refuge and wildlife viewing opportunities there. It was a great resource for education, recreation and wildlife habitat.
- The most important part of the Refuge is the areas of no human activities. Control non-native plants and animals (esp. cats). Expand Refuge into farms, forest, and beach. Encourage donation of private



beach property at Fowler Beach. Do not develop Fowler Beach Road for more uses. Wildlife Refuge is not for human recreation.

- The word refuge is defined as a sanctuary - a place of safety, hunting and fishing are not activities conducive of a safe environment. If PH is a killing ground change the name.
- My family and I are greatly concerned about the sale of Refuge land to farmers. It is our strong opinion that this land should continue to be part of PHNWR
- It is a pleasure to live next to the Refuge.
- I think that the wildlife refuge is a great asset. I hope that the refuge will continue to implement policies that are compatible with my ownership and enjoyment of my beach home at PH Beach. The refuge adds to my enjoyment of PH Beach. It is wonderful and has a natural shore area that is not over developed.
- If we are going to allow farming on the refuge under the guise of food for waterfowl some of the crop should be left in the fields at harvest time. The new harvesting equipment is so efficient that it leaves nothing in the fields for the animals to feed on. The farmers that lease the fields should also pay the same per acre for refuge field that they pay for local acreage. We should not lease for less than local fields are leased for and cause bad feelings with neighbors that also lease. The deer hunting program for the office area should return to the procedure as it was in the past where hunters were taken in by truck by volunteers and all vehicles were kept off refuge. This keeps the disturbance of the deer on the refuge to and surrounding neighbor farms to a minimum. The hunting program both deer and waterfowl should be administered by one individual who is hired during the season for that purpose only and should not have any other duties. The refuge full time personnel should not have to perform these duties along with their regular job.
- I have always been somewhat disgruntled about the Refuge. I have stated my home was located next to Turkle Pond when I was young and I did not agree with the government basically forcing my parents from our home. However, in all honesty - good job in preserving habitat, wildlife and recreation. I at least can enjoy this area along with thousands of others.
- I love this refuge and feel you all are doing a great job. I like the Fowler Beach area due to its isolation so I have mixed feelings about improving the parking to encourage more people. I think you should be more sensitive to the farmer's plight and try to compromise. Geese like corn and soybeans too. This will be one of the few open spaces left in Delaware and we need to acquire as much of the land as possible to save it from development. Thank you for all you do.
- While filling out the survey last year I commented on Turkle and Flatwood Ponds roads access being closed during the prime fishing times. I noticed the road was open for traffic a lot earlier this year THANKS. My wife and I and our grandson had many great fishing trips there this year. It was on these trips I taught my grandsons to clean up the mess they make and also the mess other less considerate people make. It truly was a pleasant spring this year thanks to PH. I don't think they will ever forget it.
- Do not view it as a "preserve" where nothing is done but let nature take its course. Rather, see need for good management to focus on goals of the Refuge. Need to have a near balance btw plants, animals, & people. We're concerned about the drying up of ponds on Prime Hook Beach Road. We've seen over last 3 years more & more drying up with fewer herons & egrets. Are you able to regulate the flow of water?
- After perusing through this survey, I decided not to continue filling out the remainder of this questionnaire because of Section 4 "Tell me something about yourself," numbers 11 and 12. There is no logical reason to inquire about the person's race. I am surprised you did not ask their religion! Having wildlife refuges is wonderful & I am a supporter of many organizations which protect all wildlife throughout the world!! There is always room for improvement no matter what area in Delaware you specified. I hope I have made my point regarding wildlife.

### **Specific sites or locations**

- South end of Slaughter Beach is very fortunate to have Refuge across the road - surely enhances property values- we should respect and avoid and disposal of trash. Maybe a volunteer group could assist in maintenance issues

- Amount of road kill in RT16. Broadkill extension. No signs on this road. Watching for bikers and joggers; which during the summer months lately have increased. I believe the speed limit is 50 mph until Bridge on/before Bay Shore Drive. Immediately before the bridge entering BBB is a popular deer crossing - often it is noted cars are speeding up to the point that they are about to become airborne.
- I am not anti-hunting. However, I do feel that a National Refuge should be just that - a refuge, a safe have for nature to live naturally and a public who funds it to have access to enjoy, observe and preserve it as primitively as possible. Hunting and bird watching do not go together well. Hunting should take place outside the refuge; otherwise it is not a refuge, is it? Trails like the one at Wolf Neck are the best way to allow maximum public access with little impact on habitat.
- I enjoy the refuge twice or more each day going and coming home from Broadkill.
- We haven't been involved in any activities the refuge provides. We have taken drives; bike rides, and walks on the beach and some fishing. We love the serenity and nature we have experienced. We will eventually expand our horizons and become more involved as time allows. We move here in Dec. of 03 and fell in love with the area. Our only concern was people partying at Fowler's Beach and leaving trash. We recently noticed how Fowler's has been cleaned up and is more appealing. It is great! Is there any way gates can be closed at night to Fowler's to keep parties out?
- The most important thing in my mind is cleaning the bay, which is in shocking condition and sadly has been neglected. It influences all the things such as wildlife that have been mentioned here, in a dramatic way. I would donate money toward this. Access by Slaughter Beach Road would be wonderful (for Slaughter Beach and Milford, etc.)
- We live on Lewes Beach. We are concerned about the beach. And since we have a large family with many grandchildren, we bike, hike, camp, and visit many different areas from New England throughout the mid-Atlantic states. We go where the children decide
- South end of Slaughter Beach is very fortunate to have Refuge across the road - surely enhances property values- we should respect and avoid and disposal of trash. Maybe a volunteer group could assist in maintenance issues.
- While filling out the survey last year I commented on Turkle and Flatwood Ponds roads access being closed during the prime fishing times. I noticed the road was open for traffic a lot earlier this year THANKS. My wife and I and our grandson had many great fishing trips there this year. It was on these trips I taught my grandsons to clean up the mess they make and also the mess other less considerate people make. It truly was a pleasant spring this year thanks to PH. I don't think they will ever forget it.
- Jonathan, I owe an apology. I have been coming to Milton for more years than you want to know. I have never been to the Refuge except to drive to Broadkill and visit friends. I appreciate your efforts and the wetlands. Both serve a need for the area. Again, I apologize.

### **Staff and Manager**

- I have found refuge staff to be helpful and knowledgeable. Under the new director the refuge has been more prominent in the news and seems to have a broader range of activities and more outreach to the community. I have one bone to pick with him however. Shortly after he started, I read in the paper that he claimed to have visited and/or spoke with every community resident whose property borders the Refuge. That is not true. We border the Refuge at the end of Florida Ave. in Broadkill and were not contacted. One concern that we have is the management of the water level, especially how it affect flooding on our property, so we would like to discuss that. One suggestion I have is better signage to lead visitors to the proper entrance to the visitor center for information, restrooms and gift shops.
- I would like to help out but the only people I ran into were revenueurs and snooty people.
- I think that it is important to know and realize the community of owners and visitors year round are here because PHNWR is here. Not the other way around. Thank you for your presence! Keep up your great work.
- The refuge is an import asset to us. The changes in this last year has been extraordinary and we applaud those responsible. Mosquito control remains a problem. We have not problems with the refuge management or management staff they seem open and are helpful

- I no longer live in Delaware (was there 8 months doing Americorps). However, PH was a great asset to the area and I enjoyed hiking there very much. The lady at the information station was very friendly and knowledgeable, as a new resident to Delaware in the fall. I was very appreciative of her willingness to inform me of activities. While working at a State Park, I spoke with many visitors about the Refuge and wildlife viewing opportunities there. It was a great resource for education, recreation and wildlife habitat.
- \_\_\_\_\_ is an excellent refuge manager and very effective in community relations. He should be supported and is to be commended for his conscientiousness.
- PH has been a big selling point for being in the area. I am pleased at the current expansion and protection of the horse shoe crabs and shorebirds. Continue to do excellent work.
- I grew up in the area and I spent a lot of time hunting, fishing and canoeing in PH and have always enjoyed the atmosphere of the Refuge. I think the staff does a great job.
- Keep up the good work
- The refuge staff does a great job. We have watched the area progress positively over the years we've lived here. Sensible Control is appreciated.
- Anytime we have had a problem with people doing something wrong in the park, \_\_\_\_\_ is always just a cell phone call away no matter what time of day or night. The refuge staff has always been professional and knowledgeable about different things. It's great to have you as my neighbor.
- Keep up the good work

### **Survey**

- It is a good thing to have a section of the government to be concerned about the environment. This is very important to our future. Thank you for allowing my comments and opinions to be viewed.
- My wife and I are both firm believers in wildlife refuge areas. We applaud you in taking time to survey residents. Unfortunately, we have been by your area only twice and never took time to visit. I don't believe that I am qualified to evaluate.
- This survey has given me a deeper appreciation of PHNWR. We will visit and explore the opportunities more in the future.
- Thank you for giving me a chance to thank you and the state of Delaware for the Great State Parks and wildlife areas made accessible to me.
- Spend less money on over mailing and more money on the refuge
- You want too much personal information for this survey

### **Traffic**

- Amount of road kill in RT16. Broadkill extension. No signs on this road. Watching for bikers and joggers; which during the summer months lately have increased. I believe the speed limit is 50 mph until Bridge on/before Bay Shore Drive. Immediately before the bridge entering BBB is a popular deer crossing - often it is noted cars are speeding up to the point that they are about to become airborne.
- Speed limit is too high. Should be 35-40 mph into the beach. More areas for bicycling and walking safely