

**DEVELOPMENT OF A COMMUNITY EDUCATION PLAN FOR URBAN  
WHITE-TAILED DEER MANAGEMENT**

by

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## ABSTRACT

Rising white-tailed deer populations throughout the United States are a concern to wildlife managers and the public. The greatest controversy is the conflict between people and deer in urban areas. This problem is further compounded by the fact that some people do not understand or care about the importance of maintaining urban deer populations. It is important to find out how to best educate communities about urban deer and urban management. The objectives of this study were to 1) Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point, 2) Determine what combination of communication modes to use to reach a large percentage of the population in Stevens Point, and 3) Develop a community education plan to educate community residents about deer population management and the different management options available.

Five hundred randomly selected residents of Stevens Point, Wisconsin were surveyed (59.8% response rate) to discover how they felt about the city's urban deer population. Residents had mixed opinions about the sight of deer in their yards; however, most residents (73%) were concerned about getting into a deer-vehicle accident. Sixty-five percent of residents agreed with the use of urban bow hunting by recreational hunters in Stevens Point, significantly more than other management techniques. Residents also reported what modes of communication they preferred to learn about deer through. Printed materials, newsletters, television news/commercials, and websites were the most preferred modes and as such, examples of each were included in the Urban Deer Management Community Education Plan. Information that residents wanted to see

included in the community education plan varied so all deer-related information was included with the exception of the one topic that residents were really not interested in learning about: deer reproductive biology. The purpose of the Education Plan is to create a more informed citizenry that will be capable of assisting urban wildlife managers in making accurate decisions about the city's deer herd. The Urban Deer Management Community Education Plan could easily be modified and implemented in other communities living with urban deer populations.

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# **CHAPTER 1**

## **INTRODUCTION**

### **Problem Statement**

The purpose of this study was to investigate the attitudes and opinions of Stevens Point, Wisconsin residents regarding the city's urban white-tailed deer (*Odocoileus virginianus*) population, and to develop a community education plan on urban white-tailed deer management based upon the residents' responses.

### **Objectives**

1. Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point.
2. Determine what combination of communication modes to use to reach a large percentage of the population in Stevens Point.
3. Develop a community education plan to educate community residents about deer population management and the different culling options available.

### **Hypotheses**

1. A majority of Stevens Point residents will support urban deer culling within the city limits.
2. Archery hunting will be the most preferred deer culling technique by residents.
3. Stevens Point residents will not support urban deer culling in Schmeckle Reserve.

4. Stevens Point residents will prefer several different types of communication modes for learning more about deer and urban deer culling.

5. Stevens Point residents will be interested in learning about a diverse array of deer-related topics.

### **Limitations**

The study was limited to residents of Stevens Point, Wisconsin.

The study was limited in that it only determined residents' concerns about the deer population in Stevens Point, not other urban communities.

The study did not determine which particular mode of communication worked best. Instead, it focused on developing an array of different communication modes in the hopes of reaching the largest percentage of the resident population.

The study was limited in that the community education plan was not implemented and tested for effectiveness.

### **Definition of Terms**

Community Education Plan. A community education plan is a package of information that incorporates several different modes of communication (TV, radio, newspaper, brochures, etc.) to educate residents about what urban deer population management is and its importance. The community education plan will incorporate concerns voiced by Stevens Point residents.

Overabundant. An overabundant urban wildlife population is one that has grown beyond city residents' tolerance level. An overabundant urban wildlife population can

lead to conflicts with humans, as well as severe habitat degradation to the point of endangering not just that population, but all surrounding plant and animal life.

Schmeeckle Reserve. Schmeeckle Reserve is a 275-acre natural area owned and operated by the University of Wisconsin-Stevens Point, and is located within the city limits of Stevens Point (pop. ~25,000). Schmeeckle Reserve is a forested area with a 24-acre lake, and is a place for walking, jogging, biking, fishing, and wildlife watching.

Urban Deer Culling. Urban deer culling entails reducing deer population numbers within city limits to an acceptable level for the residents of that city. An acceptable level is often determined by assessing the number of deer-vehicle accidents or the amount of deer damage done within city limits.

### **Assumptions**

1. An effectively implemented community education plan will successfully convey the importance of deer population culling to the community.
2. Several different modes of communication will be more effective than a single communication mode in reaching a large number of community members.
3. Increased awareness of the need for deer population culling will help residents understand the importance of urban deer culling as a management tool for maintaining appropriate numbers of deer in urban areas.
4. Other urban communities living with urban deer populations will want to implement a community education plan on deer population management.

## **The Importance of the Study**

Rising white-tailed deer populations throughout the United States are a concern to wildlife managers and the public. The greatest controversy with high deer populations is conflict between people and deer in urban areas. High urban deer populations usually lead to increased deer depredation on gardens and ornamental plants, more vehicle/deer collisions, higher incidences of Lyme disease, and poorer quality habitat for deer and other wildlife (Augustine & deCalesta 2003, Diamond 1992, Povilitis 1989, Sayre et al. 1992, Siemer et al. 1992, and Stout et al. 1993).

This problem is further compounded by the fact that some people do not understand the interactions between humans and wildlife. Mankin et al. (1999) found that about 30% of respondents incorrectly thought that a particular habitat could support unlimited numbers of wildlife. Nearly 30% falsely believed that hunting contributed more to species extinction than destruction of habitat (Mankin et al. 1999).

With so many misconceptions about hunting and wildlife ecology, it is increasingly important to educate urban citizens about the purpose of wildlife population management. A community education plan could effectively communicate to the public about deer biology and the effects of urban deer culling. If people understood why urban deer culling is used and how it benefits them, they may be more willing to support urban deer culling programs. If white-tailed deer populations keep increasing, urban deer culling programs will probably continue to rise as well. It is important to discover now how to best include the public in making informed management decisions regarding the deer in their communities.

Kilpatrick and LaBonte (2003) found that two out of every three residents who did not support hunting in their community before an urban hunt indicated afterward that they would support hunting in their community in the future. Many of the negative perceptions of hunting that residents may have had were not supported. Residents changed their attitudes because the hunt was safe and effective (Kilpatrick & LaBonte (2003). This demonstrated that the sharing of factual information has proven successful in changing the attitudes and perceptions of community residents.

Schmeeckle Reserve Director, Ron Zimmerman, said, “the deer herd population at Schmeeckle Reserve is very controversial because many of our users enjoy seeing abundant deer, but the deer are destroying habitat and rare plant species throughout the Reserve. They are also impacting gardens and shrubbery in neighboring subdivisions. Therefore, we are interested in the attitudes of our users and the community in regard to the deer population and urban hunting.” An urban hunt in land adjacent to Schmeeckle Reserve may soon become an annual event. With that mind, it is increasingly important to inform the residents of Stevens Point about the reasons why the Schmeeckle Reserve Director is interested in having hunters reduce the city’s deer population. This study was used to develop a community education plan that could be implemented in this and other communities to educate the public about the facts of urban deer population management.

## **CHAPTER 2**

### **LITERATURE REVIEW**

The focus of this project was to develop a community education plan that could inform Stevens Point residents about their urban deer herd and urban deer population reduction techniques. To accomplish this, the following areas of the literature were reviewed;

- Natural History of White-tailed Deer
- Concern with Rising White-tailed Deer Populations
- Public Attitudes Toward Rising White-tailed Deer Populations
- Urban Deer Culling Techniques
- Public Attitudes Toward Lethal Control
- The Importance of Information and Communication
- Communication Strategies Used to Educate About Environmental Issues
- The Deer Population in Stevens Point, Wisconsin

A possible solution for addressing concerns of residents is also discussed.

#### **Natural History of White-tailed Deer**

White-tailed deer are a common sight in Stevens Point, Wisconsin. In fact, they are the most common big-game mammal in the United States. White-tailed deer are found in most of the continental United States, with the exception of a couple of southwestern states. These deer are extremely adaptable and live in a variety of habitats, including: deciduous forests, conifer forests, rainforests, grasslands, farm land, marshes,

deserts, and even urban areas. White-tailed deer are herbivores that eat leaves, grass, bark, acorns, and other plant materials. The average white-tailed deer consumes six to eight pounds of forage each day (Hillstar Editions L.C. 2004).

### **Concern with Rising White-tailed Deer Populations**

McCullough (1984) found that white-tailed deer populations may increase rapidly with suitable habitat and low mortality rates. This makes urban communities very attractive to deer since they can provide suitable food and shelter, while minimizing mortality from predators (including deer hunters). White-tailed deer populations are increasing in urban communities, especially where forest and park lands are interspersed with residential neighborhoods (Decker & Gavin 1987, Curtis & Richmond 1992, Grandy 1993, Conover 1995). Conover and Decker (1991) indicate that biologists began to notice that deer damage had greatly increased throughout the eastern United States between 1957 and 1987. They also found that the public tolerance for deer damage decreased during that same time period.

Conover (1995) surveyed state wildlife agencies throughout the country to determine how many urban deer populations were in each state. The state wildlife agencies reported at least 195 distinct urban deer populations. Thirteen of the 195 urban deer populations were reported in the state of Wisconsin. Conover (1995) proclaimed that most of these populations were established during the twentieth century.

Wildlife managers and the public are concerned about the rising white-tailed deer populations for several reasons. Overabundant white-tailed deer herds can increase the risk of deer-vehicle accidents (Stout et al. 1993), damage gardens and ornamental plants

(Povilitis 1989, Diamond 1992, Sayre et al. 1992), increase occurrences of Lyme disease (Siemer et al. 1992), and reduce habitat quality for themselves and other wildlife species (Augustine & deCalesta 2003). Increasing deer-human conflicts are caused by many factors, including urban expansion, the withdrawal of public lands from the public hunting domain, deer population growth, and changes in human attitudes toward deer (Conover 1995, Decker & Gavin 1987, Kirkpatrick & Turner 1995). Augustine and deCalesta (2003) identified changes in habitat and reduction in predation and hunting pressure as the two primary causes of high-density white-tailed deer populations in many areas of the eastern United States.

### **Public Attitudes Toward Rising White-tailed Deer Populations**

It is important to determine attitudes of residents to effectively manage deer populations. Since urban deer culling has proven to be such a controversial issue throughout the country, it is important to discover exactly what residents believe. If wildlife managers are aware of residents' attitudes and opinions about urban deer management, they will be better able to address residents' concerns.

Wildlife managers also need to determine resident attitudes in order to make accurate estimates of how many deer residents are willing to tolerate (West and Parkhurst 2002). Several studies have delved even deeper to ascertain not only how residents feel about the deer populations, but also what factors may have contributed to those feelings (Dougherty et al. 2003, Lauber & Knuth 2004, McNeil 1970, Stout et al. 1997, West & Parkhurst 2002).

In Virginia, West and Parkhurst (2002) found that seventy-six percent of respondents accepted that deer caused problems, but enjoyed having them around. Only a few respondents (7%) thought that deer were not responsible for any problems. Most respondents (70%) wanted the deer populations to decrease. West and Parkhurst (2002) also found that an individual's opinion about deer population size was influenced by their experience with deer damage. Even so, 53% of respondents who did not incur deer damage wanted to see a reduction in deer population. Most homeowners see deer as a valuable resource, but are not willing to tolerate severe deer damage despite the benefits they may derive from deer (West & Parkhurst 2002). The data of West and Parkhurst (2002) suggest that homeowners can and will develop strong negative attitudes about deer when continually faced with deer damage. West and Parkhurst (2002) also found that an individual's opinion about deer population size may not just reflect his/her experience with deer, but also incorporate information taken from relatives, friends, and acquaintances as well as the mass media.

In Cuyahoga Valley National Park, Dougherty et al. (2001) asked the public what they thought would happen if the park took no action regarding their overabundant deer population. Cuyahoga Valley National Park is located near Cleveland, Ohio. Most respondents "strongly agreed" that an unmanaged deer herd would lead to: too many car collisions; too much damage to shrubs, crops, and gardens; an increased risk of Lyme disease; increased damage to native plant species; and a decrease in the diversity of plants and animals. However, a majority of respondents also "strongly agreed" that if the deer population was left unmanaged, there would still be many opportunities to see deer in the park. When asked how much they personally cared about the deer issue at Cuyahoga

Valley National Park, about 56 % of local residents indicated that the issue was “very important” to them (Dougherty et al. 2001).

Overall, it appears that wildlife managers are finding out that if there is enough deer damage in any given urban area, many residents will support urban deer removal by a few different means. Several urban deer culling techniques have been used to alleviate overabundant urban deer populations, some of which include: bow hunting by recreational hunters, archery by professional hunters, sharpshooting, contraception, trap and relocate, and trap and euthanasia. Even though many residents in a city may be in favor of managing their deer herd, wildlife managers still have to identify the optimal deer culling technique to be used for the city.

### **Urban Deer Culling Techniques**

Lauber and Knuth (2000) demonstrated that the two principal concerns of citizens regarding deer culling techniques were the effectiveness in reducing deer numbers and how humane a technique has proven to be. Lethal deer management techniques are often opposed by some citizens (Dougherty et al. 2001, Lauber & Knuth 2000, Stout et al. 1997), but these techniques show rapid results and are the most cost effective. (Kilpatrick & Walter 1999). Two general categories for urban deer culling are often considered. Urban areas with an overabundant deer population can 1) remove deer via non-lethal methods (contraception, trapping and relocating) or 2) remove deer via lethal methods (archery hunting, sharpshooting, trapping and euthanasia).

Since public attitudes about lethal control methods may be negative at times, researchers have tried to find effective contraceptives for deer. One study looked at the

issues surrounding fertility control. Kirkpatrick and Turner (1995) concluded that fertility control is currently not an option for large numbers of animals. The study also pointed out that even if effective contraceptives were developed for deer, no research has been done to discover how many animals would need to be treated in order for fertility control to be effective. The use of contraceptives is also very cost prohibitive (Bowker et al. 2003). Reliable and economic fertility control is still in an experimental state at this point (Kirkpatrick & Turner 1995).

Another deer culling technique that managers have tried is the use of sharpshooters with firearms. This technique usually involves hiring professional “sharpshooters” to kill a portion of the deer in an urban area. While this has proven to be successful in reducing local deer populations (Deblinger et al. 1995, McCullough 1984, Roseberry et al. 1969, Sigmund & Bernier 1994), residents often perceive it as a public safety threat.

Archery deer hunts are usually the least controversial urban deer management technique that a wildlife manager can choose. Kilpatrick and Walter (1999) assessed the effectiveness of a controlled archery deer hunt in a residential community. The study found that the archery hunt was effective in reducing the deer population. The archery hunt reduced the deer herd by 50-52% in the first year. The number of homeowners that suffered deer damage decreased from 53% to 32% after the hunt. In another study, 89-93% of respondents reported to have experienced damage to landscape plantings (Kilpatrick & LaBonte 2003). After a controlled archery hunt, 82% of respondents affected by the hunted deer reported a decrease in damage to landscape plantings (Kilpatrick & LaBonte 2003).

Archery hunts have also proven to be very safe. No hunting-related accidents were reported during a two-year hunt in Connecticut (Kilpatrick & Walter 1999). In addition, there were no reports of illegal or unethical hunter conduct. Kilpatrick and Walter (1999) feel that “a well-designed archery hunt with a rigorous hunter-selection process can be an effective management tool to reduce urban deer herds.” Their “rigorous hunter-selection process” included a personal interview with each candidate to determine their hunting ethics. Candidates were also required to pass a target shooting assessment.

### **Public Attitudes Toward Lethal Control**

Even though studies have shown that urban deer removal with lethal methods can be safe and effective, it is not always easy to get approval from all community members in an area to implement urban deer culling. Most studies that have been done to find out how supportive the public may be toward lethal control (e.g. firearms hunting, archery hunting) of overabundant deer have found that the public is more likely to be supportive of non-lethal management actions as opposed to lethal control (Curtis et al. 1993, Stout et al. 1997, Wittman et al. 1998, Zinn et al. 1998). However, studies suggest that support for lethal control of deer populations may increase as the negative experiences with deer increase (Decker 1994, Loker 1996).

In one study, Dougherty et al. (2001) found that about 17% of respondents thought that lethal control of deer populations in Cuyahoga Valley National Park were “very unacceptable”. More respondents (40%), however, found lethal control actions of the deer population to be “very acceptable” (Dougherty et al. 2001).

Kilpatrick and LaBonte (2003) found that an urban hunt in itself can change the public's attitudes about urban hunting. "Two out of every three residents who did not support hunting before the hunt indicated afterward that they would support future hunts in their community" (Kilpatrick and LaBonte 2003). This change in attitude occurred because the hunt was safe and effective (Kilpatrick & LaBonte 2003). Also, any negative perceptions about hunting that the residents may have had were not supported. Kilpatrick and LaBonte (2003) proposed that urban hunt programs that are fast, safe, and maximize harvest opportunities should increase community support for urban hunting as an acceptable deer culling tool.

In Hilton Head Island, South Carolina, Bowker et al. (2003) attempted to discern how much residents would be willing to pay for lethal and non-lethal urban deer management. The results were surprising. While other studies have found that the public often prefers non-lethal methods of deer reduction (Curtis et al. 1993, Stout et al. 1997, Wittman et al. 1998, Zinn et al. 1998), Bowker et al. (2003) found that respondents were actually more willing to pay for lethal removal of urban deer. For a 50% reduction in the size of the local deer herd, Hilton Head Island residents stated that they would be willing to pay (on average) \$56.34 per year for lethal deer control and \$45.75 per year for non-lethal deer control. The authors did not report whether this difference was statistically significant. Respondents who said they were unwilling to pay anything for non-lethal deer herd reduction identified questionable program effectiveness as a big reason for their opinion. Another reason cited was the excessive cost for non-lethal options (\$802-\$1100 per deer versus \$86-\$94 per deer, Bowker et al. 2003).

## **The Importance of Information and Communication**

In 1999, Mankin et al. surveyed Illinois residents to determine their attitudes toward wildlife-related issues. Most of the respondents (53%) were either somewhat or very concerned about wildlife-related damage to their home and landscapes. Eighty-five percent of respondents were concerned about vehicle collisions with deer. Even though a majority of respondents were concerned with deer-related damage to their house and/or car, less than 50% of respondents supported hunting as a means of population control. When asked whether hunting or destruction of habitat contributes more to causing species to become endangered, almost 30% of respondents indicated hunting. With so many misconceptions about hunting, there is clearly a need for accurate information about the use of hunting as a wildlife management tool to be communicated to the public.

Dougherty et al. (2001) reported that about 25% of respondents living in the nine surrounding counties of Cuyahoga Valley National Park indicated that they were slightly or not at all informed on deer management issues at Cuyahoga Valley National Park. With the lack of awareness of deer management problems and with so many misconceptions held by the public, it is extremely important to improve the public understanding of deer ecology and deer management by disseminating educational information to the public (Kilpatrick & LaBonte 2003, Lauber & Knuth 2004, Mankin, et al. 1999, Stout et al. 1997).

In Yosemite National Park, visitors are bombarded by 141 unique messages (through interpretive signage) related to bear-human conflicts (Lackey & Ham 2004). And yet the number of bear incidents has increased over the past forty years. This means that although Yosemite National Park officials are sending out numerous messages,

“many visitors are not engaging with them and processing them” (Lackey & Ham 2004). Information is not enough; quantity of information and intensity of delivery do not guarantee that the public has received the message (Rizzo 1999, Timmerman et al. 2001). In order for the public to receive and process information, it must be presented to them in such a way that the public prefers or responds to. Before interpreters set out to educate the public, they must first discover the best way to reach the public. Perhaps the best way to reach the public is to ask the public how they would prefer to learn about environmental topics such as urban deer management.

Involving the public in management decisions can be challenging, particularly for controversial issues. Lauber et al. (2002) found that respondents preferred very diverse outcomes for an overabundant Canada goose (*Branta canadensis*) population in New York. The respondents did not all have the same outcome/goal in mind. Also, when asked what wildlife managers should do about the geese, respondents came up with a wide array of options. Respondents could not agree on whether or not overabundant geese were a health threat or not and thus could not settle on how to address potential human health risks. Despite the occasional headache, involving the public in a wildlife management decision can result in better management decisions and a reduction in conflict associated with the issue (Lauber et al. 2002).

Stout et al. (1997) implemented a communication plan with the goal of informing citizens about deer culling techniques. The communication plan was created by a community task force. The task force, consisting of community residents, prominent city officials, and law enforcement personnel, discussed deer management issues with New York State Department of Environmental Conservation biologists. Even with wildlife

biologists recommending hunting as the most effective and the most economical approach to urban deer management, the citizen task force still preferred non-lethal deer culling techniques. The communication plan helped biologists identify deer management actions to take (particularly long-term options such as contraceptive research); however, it changed property owners' opinions only slightly.

Lauber and Knuth (2004) explored how communication of information influences citizens' attitudes toward suburban deer management. They found that people were more likely to be influenced by communication that addressed the outcomes they considered most important. Thus, communication about how urban hunting could not only reduce the deer population, but also could ease residents' concerns, would be most effective. Lauber and Knuth (2004) caution that communication must address a vast spectrum of concerns in order to address the concerns of all citizens. Overall, Lauber and Knuth's (2004) message was that understanding the public's concerns about deer management could lead to more effective and influential communication.

### **Communication Strategies Used to Educate About Environmental Issues**

Using only one type of communication will not be enough to educate an entire community. For instance, if only television advertisements are used to tell residents about urban deer population culling, then anyone who does not watch that station or anyone that does not watch television, would not receive any information about urban deer culling. A more effective means of educating the majority of community members would be to incorporate several different modes of communication into a community

education program. Organizations and agencies must deliver program content using a variety of methods to best reach a large number of participants (Palmer & Dann 2004).

Because there are few studies (Lackey 2002, Lackey & Ham 2004, Monroe 2003, Palmer and Dann 2004, Rodewald 2001, Timmerman et al. 2001) that have examined communication strategies used to educate the public about problem wildlife (the issue of most interest to this study), research was reviewed about communication strategies used for addressing environmental issues in general.

Many different communication strategies have been implemented. Written materials, such as brochures and handouts, are widely used. Other communication strategies include, but are not limited to: printed fact sheets or brochures; printed bulletins or manuals; newsletters; on-line information (websites); conferences, workshops, or short courses; seminars/presentations; videos/DVD; radio news releases; and television news releases.

Rodewald (2001) sent out a survey to 100 county extension agents and district specialists dealing with agriculture and natural resources in Ohio. She asked respondents how they would like to receive information on wildlife-related topics and how their clientele would like to receive information on wildlife-related topics. Respondents answered that they, as well as their clients, would prefer to receive information on wildlife-related topic via printed fact sheets and printed bulletins/manuals. Respondents perceived themselves to be more willing to use on-line resources than their clientele. Overall, respondents answered that they, as well as their clients, believed that face-to-face teaching and videos were less preferred than all other communication strategies (Rodewald 2001).

Palmer and Dann (2004) had similar results. They found that almost 64% of the participants in their Backyard Wildlife Habitat program preferred the free National Wildlife Federation written materials to the National Wildlife Federation Backyard Wildlife Habitat program website, the Backyard Wildlife Habitat Information Kit, and the National Wildlife Federation slideshow/presentation. Before participants attended the Backyard Wildlife Habitat workshop, 21% reported using free National Wildlife Federation printed materials. However, only 7% of participants had used the Backyard Wildlife Habitat website, information kit, or had attended a National Wildlife Federation slideshow/presentation (Palmer & Dann 2004). Palmer and Dann (2004) concluded that some communication strategies were more important than others for influencing participants.

The mode of communication is not the only important thing when educating the public about wildlife issues. The content of the message, regardless of media, is important. Monroe (2003) states that when people are aware of the negative consequences of their actions and when they think that they are responsible for fixing the problems arising from those action, they are more likely to incorporate more positive environmental behaviors into their lives. She identified several factors that could be taken into consideration to increase environmental awareness amongst the public.

An important step for the researcher to take is to carefully identify the attitudes of the public and to understand the benefits and barriers to these attitudes, as perceived by the members of the public (Monroe 2003). Once this is accomplished, the researcher can incorporate those findings into different communication strategies. An effective “toolbox” of communication strategies should be “used to reduce barrier, increase

motives, obtain commitment, support social norms, provide information, and increase intentions to obtain” attitudes preferred by the researchers. McKenzie-Mohr and Smith (1999) found that combinations of these tools are more effective than any single tool.

### **The Deer Population in Stevens Point, Wisconsin**

Stevens Point, Wisconsin (population 24,551) is located along the Wisconsin River in the central part of the state. Stevens Point is in the Curtis “tension zone” where northern and southern plant species and animal species meet. The resulting diversity of flora and fauna provide excellent habitat for white-tailed deer. Similar to other cities and towns in the state of Wisconsin, Stevens Point has seen significant increases in its urban deer population. In 1929, there were less than 30,000 deer in the state of Wisconsin. Entering the 2006 hunting season, there was an estimated 1.8 million deer in the state (Koele 2006). In Portage County, where Stevens Point resides, deer densities are often 55-60 deer per square mile (Wisconsin Department of Natural Resources website 2007).

Another unique feature in Stevens Point is the large amount of green space within the city limits. As stated previously, Stevens Point is located along the Wisconsin River. The wooded shores of the Wisconsin River provide excellent white-tailed deer habitat throughout the river’s course in the state. Another river that actually winds through town, the Plover River, also provides abundant deer habitat. Stevens Point has several wooded parks and recreational areas that often serve as white-tailed deer refuge areas.

Perhaps the most well-known of all of Stevens Point’s green space is Schmeckle Reserve. Schmeckle Reserve is a 275-acre natural area in the northern part of Stevens Point and is often an excellent site to view the effects of the overabundant deer

population. Throughout the reserve, a browse line is evident. Regrowth for tree species is minimal due to the deer browsing the saplings and young oaks. Invasive species like common buckthorn (*Rhamnus cathartica*) have crept into these niches left by deer browsing the native plants (Zimmerman 2005). Director Ron Zimmerman also said that the Reserve receives numerous phone calls from the community with people complaining about how the “Schmeckle deer” have ruined their gardens.

Schmeckle Reserve is not only a popular hideout for deer, but also a popular recreational area for city residents. More than 150,000 recreational users visit the reserve each year (Zimmerman 2007). Because of this high volume of visitors in Schmeckle Reserve at any given time, it is impossible to administer most types of lethal deer culling within the reserve limits due to public safety concerns.

Although Schmeckle Reserve has its own problems with overabundant deer, the remainder of the city of Stevens Point has had a fair share as well. It is not uncommon to see deer on city streets. On October 15<sup>th</sup>, 2005, a white-tailed deer crashed through the window of the downtown M&I Bank (Smith 2005). Throughout the fall of 2005, a local radio station, 97.9 WSPT, played a commercial for a local auto body shop, Scaffidi’s Auto. The radio commercial said that any customer that brought in a car that had been damaged from a collision with a deer could be entered into a prize drawing. Anecdotal events like these suggest that the community in Stevens Point is dealing with an overabundant deer herd. “Most of the city has a 25 mph speed limit, but we still have car-deer crashes. One signal, we think there are just too many deer,” says Elbert Rackow, Stevens Point’s Deer Management Committee Chair.

This problem is not limited to Stevens Point. Twenty miles downstream (on the Wisconsin River) from Stevens Point lie the communities of Wisconsin Rapids, Grand Rapids, Biron, and Port Edwards. These four cities combined their efforts in October 2005 to form a “Multi-metro Deer Management Committee”. The committee sent out surveys entitled “Urban deer...Friend or Foe” to residents of all four cities to discover the public opinions regarding the deer populations in those cities (Multi-metro Deer Management Committee 2005). The survey consisted of eight questions, most of which asked if respondents had sustained deer damage and if they thought there were too many or not enough deer. The final two questions asked if the person would support an increase in the harvest of antlerless deer within city limits and if the person would support an increase in the area currently available for archery hunting within the city limits.

The city of Stevens Point has been working hard to alleviate the problems caused by their overabundant deer population as well. In 2002, the Stevens Point City Council appointed a deer management committee. The mission of the committee was to initiate and maintain a deer removal program within the city limits. The Stevens Point Deer Management Committee did not send out any questionnaires before the planned deer removal to discover the attitudes and opinions of community residents. They did, however, present the Wisconsin Department of Natural Resources (WI DNR) with car/deer collision data for the past few years to justify the need for urban deer removal in the city. In 1999, twenty-one car/deer accidents occurred. Thirty-one car/deer accidents occurred in 2000 and twenty-five car/deer accidents in 2001 (Rackow 2005). Since the city posted speed limit during those years was only twenty-five miles per hour, the

regional WI DNR biologist granted the city of Stevens Point permission to remove sixty deer per year for the next five years. The Committee was told that the city's deer situation would be reassessed in five years to determine if further culling would be necessary.

In the fall of 2003, the Stevens Point Deer Management Committee hired one professional archer to remove deer from the city's herd. Although the archer was able to cull several deer each year, nearly as many car-deer accidents occurred. Three years later, there is still much evidence of an overabundant deer population in Stevens Point (Rackow 2005).

The Stevens Point City Council has tried to help reduce the urban deer herd by allowing archery hunting in selected parts of the city. These areas are generally sparsely populated and a safe distance from buildings. Because city officials are still not satisfied with the number of deer in Stevens Point, the Stevens Point Deer Management Committee has tried to gain support for sharpshooting in the city a couple of times. As mentioned previously, sharpshooting is often the most effective deer culling technique. In 2002, permission to hire sharpshooters was rejected by the city council. This was mainly due to citizen opposition at the city council meeting. The Committee tried again to get permission for the use of sharpshooters within city limits during the 2006-2007 hunting season. And again, they were denied.

In October 2006, the Stevens Point Deer Management Committee decided to try a new deer culling technique and hired a trapper to trap and euthanize sixty deer on city-owned properties throughout the fall (Rackow 2007). The trapper was unable to capture any deer in his experimental traps though, and another professional archer was hired in

November to carry on the removal effort. Throughout this entire deer culling process, the residents of Stevens Point have not been involved at all. The Committee (made up of city council members) decides how many deer to cull and what culling technique to use.

Residents are invited to attend city council meetings and/or Stevens Point Deer Management Committee meetings to voice their opinions, but few if any regularly attend either meeting. Thus, the public has had very little input on the entire deer removal project in Stevens Point.

### **A Potential Solution**

Many studies have found that once an urban deer culling program is established in a city, wildlife managers have to continue culling deer annually to keep the deer population at a satisfactory level (Bowker et al. 2003, Doerr et al. 2001, Kilpatrick and Walter 1999). Thus, urban deer culling will likely become an annual event in Stevens Point, surrounding central Wisconsin cities, and many other cities throughout the eastern United States with overabundant white-tailed deer populations. More people are being exposed to deer damage every year, and studies have shown that the more deer damage (deer/vehicle accidents, damage to yards, etc.) people experience, the more likely they are to support urban hunting (Decker 1994, Loker 1996).

Researchers have tried implementing different techniques of informing the public about deer management issues. Stout et al. (1997) implemented a communication plan derived from a citizen task force. Lauber and Knuth (2004) gave the public information about deer management in their surveys. Both studies still had minimal success increasing the public's awareness of effective deer management techniques. However,

the studies did offer helpful hints for continuing efforts to educate the public about deer management. Lauber and Knuth (2004) thought that research-based information could influence the perceptions of management techniques. They also said that communication can be used to educate the public about deer. Yet, information alone is not effective; it needs to also address the specific concerns of the local community (Lauber & Knuth 2004).

Implementing a community education plan could be the answer that wildlife managers have been looking for to educate the public about deer management issues. Employing a community education program would allow wildlife managers to discover the public's concerns with deer culling and reach them in innovative ways. Giving the public information alone is not enough; managers need to explore creative community education programming as a method of communicating with the public.

## **CHAPTER 3**

### **METHODS**

The purpose of this study was to investigate the concerns that residents had about the deer population within the city limits of Stevens Point, Wisconsin, and to develop a community education plan that incorporated those concerns, as well as effective modes of communication. The community education plan was designed to educate residents about white-tailed deer culling in urban areas.

Among the data collected were the attitudes and opinions of community residents about the Stevens Point deer herd, the attitudes and opinions of community residents about urban deer culling, the types of community education programs that other communities have already implemented and found successful, and the modes of communication that would be most effective in reaching large percentages of the residents of Stevens Point. A more detailed picture of Stevens Point residents' attitudes and opinions of deer were necessary in order to create the most complete community education program that would address their major concerns about the deer population in the city.

Quantitative research procedures were utilized to examine the survey data. The random selection of residents guaranteed a representative population sample. Although the purpose of this project was to create a community education plan for addressing concerns of Stevens Point residents, it will be possible in the future to replicate this study in other urban areas throughout the eastern United States that are also dealing with issues

stemming from urban deer populations and incorporate similar community education plans in those areas.

One tool used for addressing the first two objectives in this study was the questionnaire. Questionnaires are an inexpensive way to gather data from a potentially large number of respondents (Bradburn et al. 2004). Often, questionnaires are the only feasible way to reach a large enough number of respondents to allow for accurate statistical analyses. Questionnaires may also be used to correlate respondents' opinions with the factors that have influenced opinions. When writing a questionnaire, the most important thing to consider is the main objective of the study (Dillman 2000).

The questionnaire for this study primarily asked closed format questions. Closed format questions are those that have a predetermined set of responses (Bradburn et al. 2004). Closed format questions are advantageous in that it is easier (than open format questions) to calculate percentages and other statistical data over the whole group of respondents. Closed format questions also save time and money. This study followed a modified version of general questionnaire design procedures as written by Dillman (2000). This study primarily used Likert-type scale questions in order to make the questionnaire as user-friendly as possible. Likert-type scale questions can often induce a higher response rate because they are simple and easy for respondents to answer. The Likert-type questions also allowed diverse statistical comparisons to be made during data analysis.

The questionnaire focused on questions about the residents' opinions of urban deer, the residents' attitudes and opinions regarding potential urban deer culling techniques, as well as questions designed to find out where residents are obtaining the

information used to form these opinions. Respondents' answers to these questions helped to gain a better understanding of which community concerns to address in the community education program. Respondent answers also helped target those communication modes that may be most effective in the city of Stevens Point. Questionnaire methodology was utilized in addressing the first two objectives of this study.

**Objective 1: Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point.**

With guidance from environmental education and interpretation professors, wildlife management professors, and the UW-Stevens Point Internal Review Board (IRB), a questionnaire was developed (see Appendix E). The questionnaire was split into two main sections. The first section was devoted to determining the attitudes and opinions of community residents regarding the deer population in Stevens Point. The second section of the questionnaire addressed the second objective.

The questionnaire was based on previous studies about urban deer management issues, as well as previous studies about communication modes to communicate to the public regarding problem wildlife (e.g. Decker & Gavin 1987, Decker 1994, Grandy 1993, Kilpatrick & LaBonte 2003, Lackey 2002, Loker 1996, Monroe 2003, Palmer & Dann 2004, Rodewald 2001, Stout et al. 1997, Zinn et al. 1998). The questionnaire also incorporated information from previous studies regarding urban deer management techniques (e.g. Deblinger et al. 1995, Kilpatrick & Walter 1999, Kirkpatrick & Turner 1995, McCullough 1984, Roseberry et al. 1969, Sigmund & Bernier 1994).

Questions were designed to gather information on the current attitudes of residents toward white-tailed deer in Stevens Point. The questionnaire was utilized to try to determine factors that may explain why a resident feels a particular way. It included questions about the severity of deer damage (e.g. deer ate garden plants, hitting a deer with a car, etc.) the respondent had suffered. There was also a comments section where respondents could describe their biggest concerns with the deer population. The questionnaire also asked about the hunting background of the family to see if that is related to respondents' attitudes. Questions addressed what kinds of deer management techniques respondents would be willing to support. Lastly, the questionnaire asked a few basic demographics questions, such as age and gender.

With the questions on the questionnaire finalized, five-hundred Stevens Point residents were identified as questionnaire recipients. Residents were defined as individuals who owned property and lived in Stevens Point. The city tax assessor's office reported that there were approximately eight-thousand property owners in the city of Stevens in 2005. An online computer program was used to randomly select five-hundred numbers between one and eight thousand. Next an Excel database was created. One column listed all five-hundred random numbers. Another column left spaces to fill in the parcel numbers of the properties. Another column left spaces to fill in names and addresses of questionnaire recipients. The last column assigned survey numbers (1-500) to each of the recipients. These survey numbers were later used to determine if the resident had already completed a questionnaire or if they needed another copy sent.

Once the questionnaire recipient database was complete, it was printed off and taken to the Stevens Point Tax Assessor's Office. The tax assessor's office keeps the

previous year's (2005 in this case) tax roll on file. The tax roll lists all eight thousand property tax payers in Stevens Point. Every property tax payer was assigned one number between one and eight-thousand. With the questionnaire recipient database in hand, the researcher was then able to look up all five-hundred random numbers to identify questionnaire recipients. It would have taken a very long time to write down all of those names and addresses, so instead, only the parcel number was written down. Parcel numbers are how the city of Stevens Point identifies properties within the city limit. Each property has one unique parcel number. After all five-hundred parcel numbers were entered into the questionnaire recipient database, it was possible to visit the city's online website (<http://stevenspoint.com/>) to enter the parcel numbers and obtain the names and addresses of the residents. These names and addresses were then typed into the questionnaire recipient database to be converted into mailing labels by transferring the information to Microsoft Word's Mail Merge Wizard.

On September 28<sup>th</sup>, 2006, the first mailing was sent to questionnaire recipients. The mailing consisted of one copy of the questionnaire, a cover letter explaining the study and the recipients' role in it (see Appendix D), and a self-addressed, stamped envelope. Dillman (2000) advised that sending a self-addressed, stamped envelope would increase response rates. Also, each envelope containing the first mailing was personally hand-stamped instead of using metered mail. Again, this was done as per Dillman's advice.

Another method that Dillman (2000) suggests for improving questionnaire response rate is to include some type of incentive with the survey. For this study, respondents were offered a 10% discount coupon (see Appendix H) to the Schmeckle

Reserve Browse Shop, a small nature-oriented gift shop on the northern boundary of Schmeckle Reserve. An Excel database kept track of which recipients responded to the questionnaire. Once someone had responded, a discount coupon was reserved for him or her at the Schmeckle Reserve Visitor Center Front Desk. The coupon was good for 10% off of any merchandise in the store.

On October 13<sup>th</sup>, 2006, a reminder postcard was sent to all questionnaire recipients who had not yet returned a complete questionnaire. The reminder postcards simply stated that a completed questionnaire had not been received from them yet, and encouraged recipients to find and complete the questionnaire sent to them two weeks earlier (see Appendix F).

Finally, on October 30<sup>th</sup>, 2006, a third mailing was completed. This third mailing consisted of a cover letter asking for the recipient's support (see Appendix G), a second copy of the questionnaire, and a self-addressed, stamped envelope. The third mailing was only sent to those who had yet to send in a completed questionnaire. By following a modified Dillman (2000) method of sending an initial mailing, a reminder postcard, and a third mailing with another copy of the questionnaire, a reasonably high questionnaire response rate was expected and obtained. The final response rate for this study was 59.8%.

**Objective 2. Determine what combination of communication modes to use to reach a large percentage of the population in Stevens Point.**

*Research Method 1: Questionnaire*

Two methods were used to identify the modes of communication to be used in the final community education plan. The first method was the questionnaire. As mentioned above, the questionnaire was developed with two main sections. In the second section of the questionnaire, questions were asked regarding where residents obtained their information/knowledge about deer and urban deer management. Questions asked residents what sources of information were most readily available to them. Questions also asked residents what sources of information they found to be most credible. Lastly, the questionnaire simply asked residents what communication mode they would most prefer when being informed of urban deer management issues.

#### *Research Method 2: Investigate Other Communities*

The second method that was used to determine which communication modes to incorporate into the community education plan was investigating what communication strategies other communities have used with their citizens regarding problem wildlife.

As previously mentioned, many urban areas throughout the eastern United States are experiencing problems from overabundant white-tailed deer herds. It was important to locate, identify, and obtain information from other organizations or communities that have implemented some sort of media in a community education plan to help determine which communication modes would be most effective.

Several organizations were contacted in search for effective media used in problem wildlife education programs. The search was limited to Midwestern states where community populations were most likely to resemble those found in Stevens Point, Wisconsin. Organizations that were contacted include: Wisconsin Department of Natural

Resources, Wisconsin Bureau of Wildlife Management, Pheasant Branch Nature Reserve, Michigan Department of Natural Resources, Minnesota Department of Natural Resources, Iowa Department of Natural Resources, Illinois Department of Natural Resources, Indiana Department of Natural Resources, Ohio Department of Natural Resources, and the Quality Deer Management Association (see Appendix N).

After the previously mentioned organizations were identified as knowledgeable sources that could report on effective communication modes, they were all sent an email asking for their cooperation (see Appendix M). The email briefly explained this research project and asked the organizations to quickly evaluate the use of different media types in their problem wildlife educational programs. Attached to the email was a simple evaluation form for respondents to complete and email back. The evaluation form asked respondents to share what type of media they implemented (printed materials, website, video/DVD, etc.), the name of the education/communication program, and what species of wildlife that the program was designed for (see Appendix O). Respondents were also asked if the media was successful in their opinion and why or why not.

#### *Analyzing Which Communication Modes to Use*

The media evaluation forms were collected and compiled into an Excel database. The results of those programs were compared to the questionnaire results from this study. Communication modes that were successful in most or all of the other community education/communication programs were to be incorporated into this study. Communication modes that were not successful in most or all of the community education plans were not going to be incorporated into this study.

**Objective 3. Develop a community education plan to educate community residents about deer population management and the different culling options available.**

*Urban Deer Population Management Information*

In order to create various communication tools for educating community residents about urban deer management, it was first necessary to have accurate and reliable information about urban deer management to convert into communication tools.

Information was collected on this topic from several reputable sources including, but not limited to: Wisconsin Department of Natural Resources, Wisconsin Bureau of Wildlife, United States Fish and Wildlife Service, The Wildlife Society symposiums, North American Wildlife and Natural Resources Conferences, and various peer-reviewed articles from scientific journals (such as the *Journal of Wildlife Management*, *Wildlife Society Bulletin*, and *Human Dimensions of Wildlife*).

*Building the Community Education Program*

The community education plan consists of a “package” of communication techniques that the city of Stevens Point can implement to educate residents about urban deer management. Modes of communication previously determined to be successful in other community programs were considered, as well as modes of communication selected by questionnaire respondents. The modes of communication selected from the questionnaire responses to be incorporated in the community education plan were the most common responses.

The community education plan was developed based upon the findings from the questionnaire used to address the first and second objectives. The attitudes and concerns of the community were incorporated into the community education plan as suggested by Lauber and Knuth (2004). The final product is a collection of different media designed to communicate to the public what urban deer culling is and how it can affect city residents. The plan was distributed to Stevens Point city officials, the Stevens Point Deer Management Committee, and several other city officials/wildlife managers that had requested the complete plan. It was sent with the recommendation that all communication methods contained within the package be implemented to reach the largest percentage of the city's population. If city officials follow this study's recommendations and implement the community education plan, they should have a more knowledgeable and informed citizenry that is capable of making responsible and logical decisions regarding the city's deer herd.

### **Statistical Analyses**

Two software programs were used for the bulk of the statistical analyses in this study. Microsoft Excel was used for creating tables and graphs, and for evaluating many descriptive statistics. SPSS statistical software was utilized for some descriptive statistical analyses, all univariate statistical analyses, and all multivariate statistical analyses. Throughout the analyses, findings were considered significant if the p-value was less than 0.05.

## CHAPTER 4

### RESULTS

#### **Objective 1: Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point.**

##### *Attitudes and Opinions Regarding City Deer Herd*

A majority of the respondents reported that they liked seeing deer in Schmeckle Reserve a lot (59.7%). Almost 80% said that either they somewhat liked seeing deer in Schmeckle Reserve or they liked it a lot. However, opinions were a lot more divided as to whether or not respondents liked seeing deer in their yard. Slightly over half of the respondents said that they somewhat liked or liked it a lot when they saw deer in their yard. Less than half of the respondents somewhat disliked or did not like seeing deer in their yard at all (Figure 4.1).

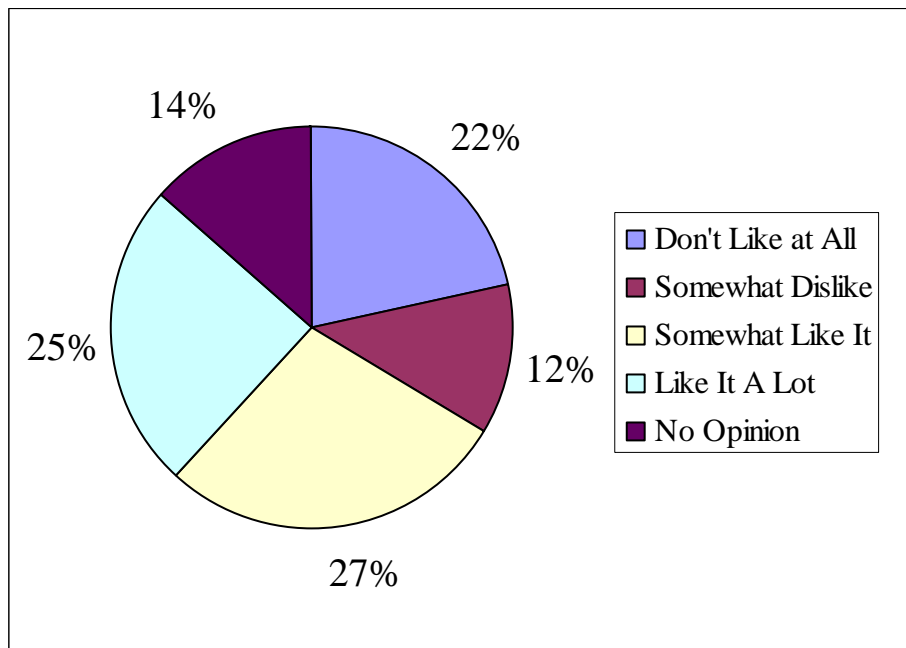


Figure 4.1 Respondents' Attitudes about Seeing Deer in their Yard (n=280)

The study questionnaire asked several questions to ascertain why residents might like/dislike the city's urban deer herd. Residents were asked how much damage had been done to their property by deer within the past twelve months. A large percentage of respondents (41.0%) did not report any deer damage. Twenty-six percent of respondents reported having very little deer damage. Only 8.0% of respondents reported having severe deer damage to their properties in the past twelve months. When asked exactly how much money deer damage had cost residents per year, the responses ranged from \$0.00 to \$1,500.00. The average amount for those that reported damage was \$59.08, while the most common response was \$100.00.

Various parts of respondents' properties were damaged. The following areas were damaged by deer most often: flower gardens (39.6%), trees and shrubbery (33.7%), and vegetable gardens (14.9%). Several other things were written in by respondents as having suffered from deer damage. These areas/items include: bird feeders, lawn, fence, hostas, ornamental flowers, pumpkins, native vegetation, apple trees, grape vines, raspberry bushes, and potted vegetable plants. Despite all of the deer damage reported, most respondents (55%) were not concerned at all or not very concerned about deer damage to their property. About 37% of respondents were slightly or very concerned with deer damage to their properties (Figure 4.2).

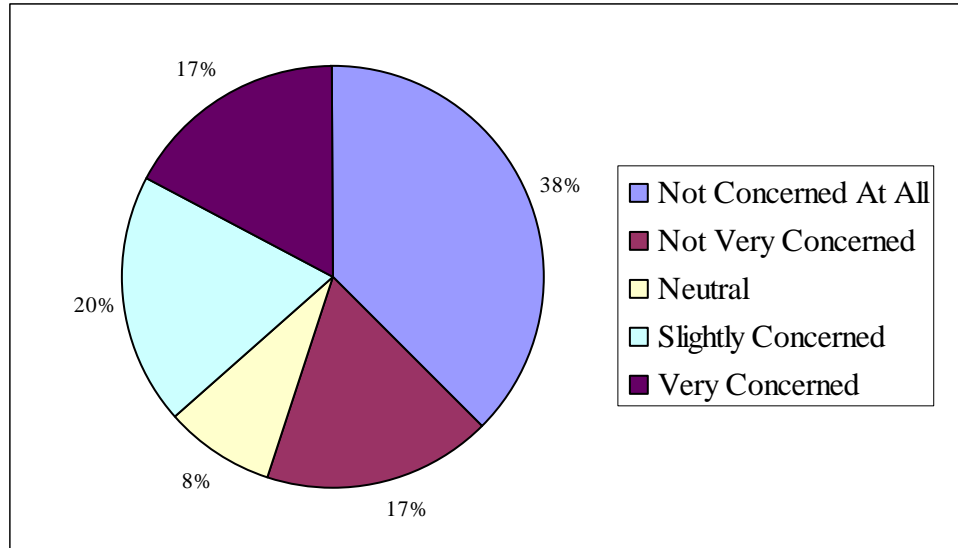


Figure 4.2 Respondents' Level of Concern Regarding Deer Damage to their Properties (n=275)

Next, the questionnaire asked respondents a series of questions to determine their prior experience related to deer in urban and/or rural settings. Respondents were asked if they (or anyone in their household) had ever contracted Lyme disease. Most respondents (86.1%) answered no. On the other hand, a majority of respondents (56.6%) had hit a deer while driving/riding in a vehicle. The amount of monetary damage done to vehicles by deer varied quite a bit. Many respondents (43.8%) reported damage between \$1.00 and \$3,000.00, while 5.2% of respondents reported damage done to their vehicles totaling more than \$5,000.00.

Respondents were more likely to be concerned about getting into a deer-vehicle accident than to have deer damage done to their yards. Almost three-fourths of the respondents were slightly or very concerned about getting into a deer-vehicle accident (Figure 4.3). Twenty percent of respondents were not very concerned or not concerned at all.

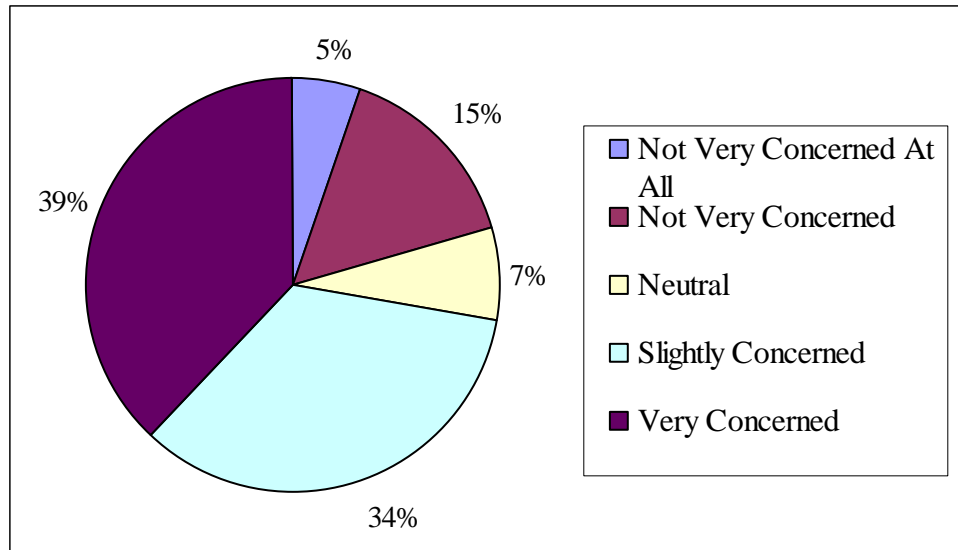


Figure 4.3 Respondents' Level of Concern Regarding the Possibility of Getting into a Deer-Vehicle Accident (n=283)

#### *Imposing Taxes to Pay for Urban Deer Management*

When asked whether respondents would financially support methods to control the deer population in Stevens Point through tax dollars, several respondents (39.2%) answered no. Only 23.3% of respondents said yes to paying taxes for urban deer culling. This question was the one most often left blank on the questionnaire. Of 295 respondents, only 255 answered this question. Thus we were unable to determine how forty (13.5%) of our respondents felt.

Those that said that they would be willing to put tax dollars toward urban deer management, were asked which factors influenced their decision. Their answers were widely distributed between deer damage to shrubbery, deer damage to gardens, deer-vehicle collisions and a variety of other factors that were provided (Figure 4.4).

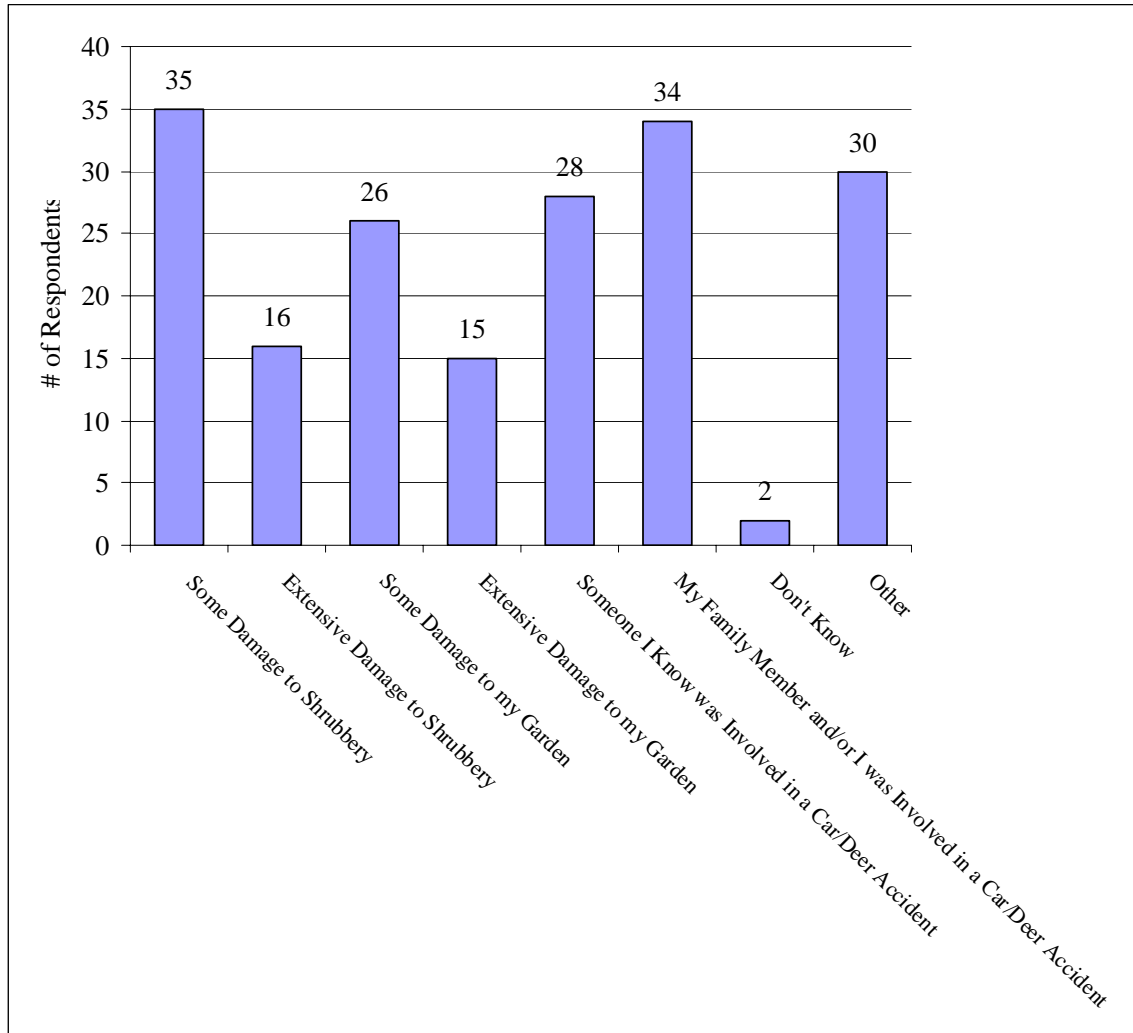


Figure 4.4 Factors Contributing to Respondents' Willingness to Pay Taxes for Urban Deer Management (n=186)

Other factors listed by respondents include (but were not limited to): lyme disease, deer feces in yard, damage to native vegetation, humane treatment of animals, large animals should be kept out of residential areas, and general concern for public safety.

When asked how much annual tax money they would be willing to pay to control the Stevens Point deer population, respondents answered anywhere from \$0.00 to \$300.00. The average amount of annual tax money that respondents would be willing to pay was \$20.39 while the mode (discounting answers of \$0.00) was \$10.00.

Several respondents were in favor of accepting donations or holding fundraisers to raise the money to pay for urban deer management. In fact, donations and fundraising were preferred to taxation as the way to pay for urban deer culling. Almost 18% of respondents preferred donations and fundraising compared to 13% of respondents who were in favor of taxation to pay for deer management. Twenty percent of respondents had other suggestions though. The most popular response here was to say that the city should not pay anything for deer removal. Respondents said that if the city opened up bow hunting to recreational hunters, that the hunters would remove deer for free. Other responses for the preferred way to pay for urban deer management include, but are not limited to: direct specific payments, combination of taxes and donations/fundraising, shrub tax, pay more in insurance premiums, and those affected should have to pay more.

#### *Opinions about Urban Deer Culling Techniques*

Respondents were presented with a table that briefly defined the six major categories of urban deer culling techniques. Along with a definition for each technique, a general cost estimate was given for that technique. Each technique was described as very inexpensive, fairly expensive, or very expensive. The basis for these descriptions was taken from the literature as well as quotes from local vendors applying for the Stevens Point Deer Management Committee's deer culling position.

When asked how they felt about contraception, many respondents (43%) strongly disagreed with the use of it to control urban deer populations. Only 5% of respondents strongly agreed with using contraception (Figure 4.5).

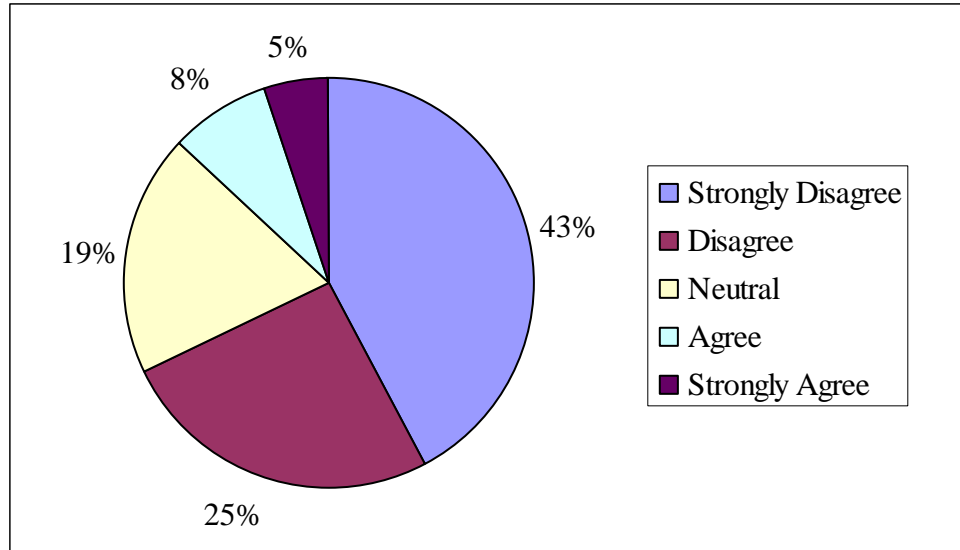


Figure 4.5 Respondent Opinions about using Contraception as an Urban Deer Management Technique (n=261)

When asked how they felt about urban bow hunting by professionals, an almost equal number of respondents either strongly disagreed (26 %) or agreed (28%) with the technique. Respondents had fairly mixed feelings about this technique (Figure 4.6).

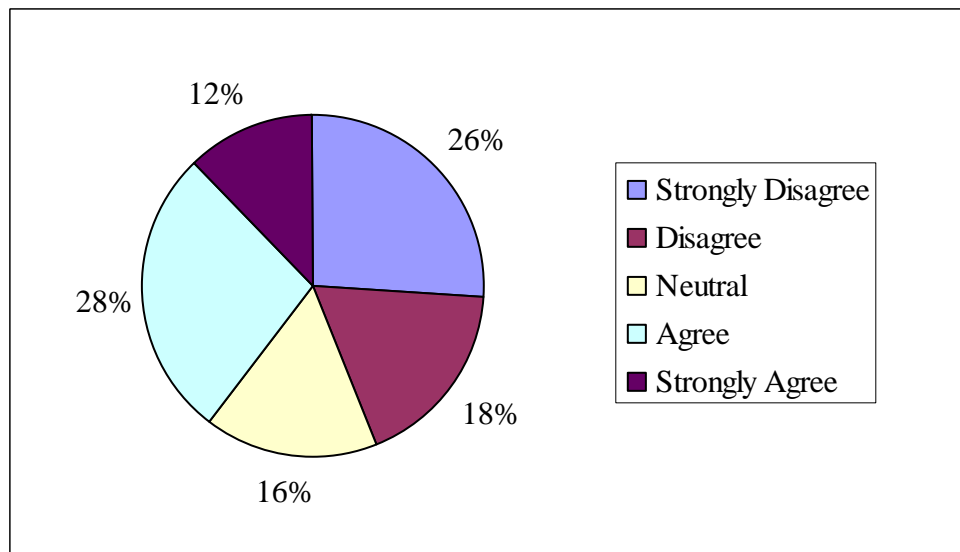


Figure 4.6 Respondent Opinions about using Urban Bow Hunting by Professionals as an Urban Deer Management Technique (n=264)

The responses for urban bow hunting by recreational hunters received a majority of support in contrast to the responses for the other urban deer culling techniques. Approximately 65% of respondents agreed or strongly agreed with this culling technique. Only about 25% of respondents either disagreed or strongly disagreed, while 10% of respondents were neutral. Twenty eight percent of respondents also agreed with urban bow hunting by recreational hunters as an urban deer culling technique (Figure 4.7).

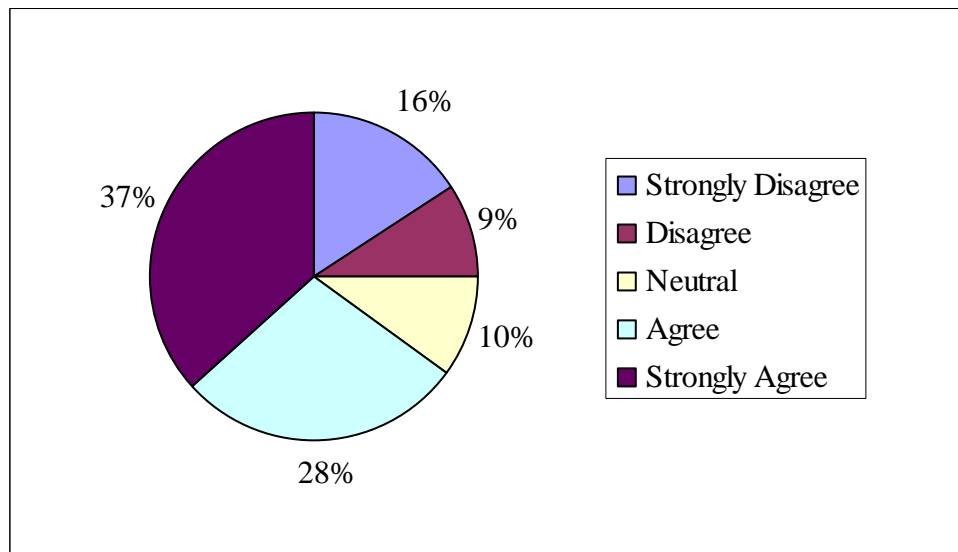


Figure 4.7 Respondent Opinions about using Urban Bow Hunting by Recreational Hunters as an Urban Deer Management Technique (n=265)

The strongest negative response came when respondents were asked about urban rifle hunting (sharpshooting). A majority of respondents disagreed or strongly disagreed (63%) with this culling technique. Only 7% strongly agreed with using urban rifle hunting (Figure 4.8).

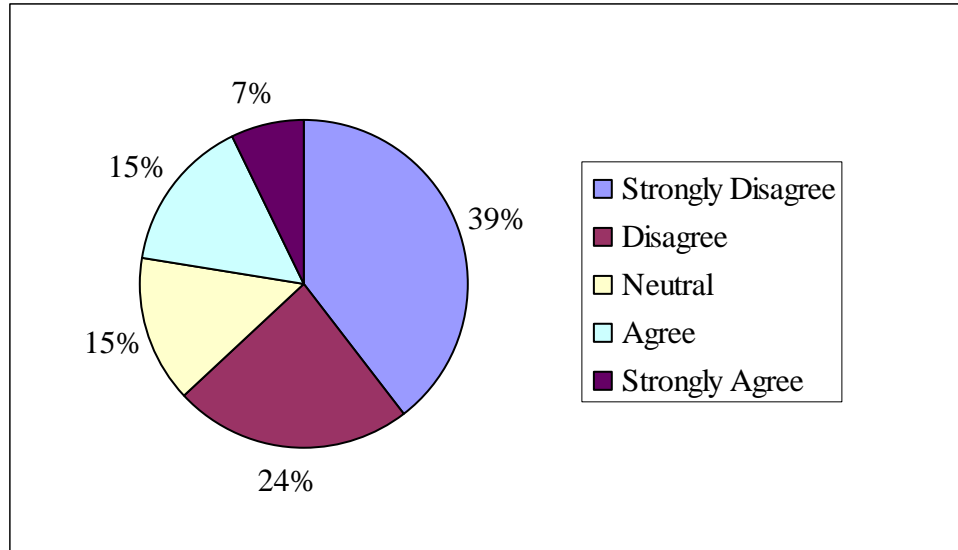


Figure 4.8 Respondent Opinions about using Urban Rifle Hunting (Sharpshooting) as an Urban Deer Management Technique (n=262)

Respondent opinions about trapping and relocation as an urban culling technique were mixed. Just over half disagreed with this method while 25% agreed (Figure 4.9). Many respondents (19%) were neutral.

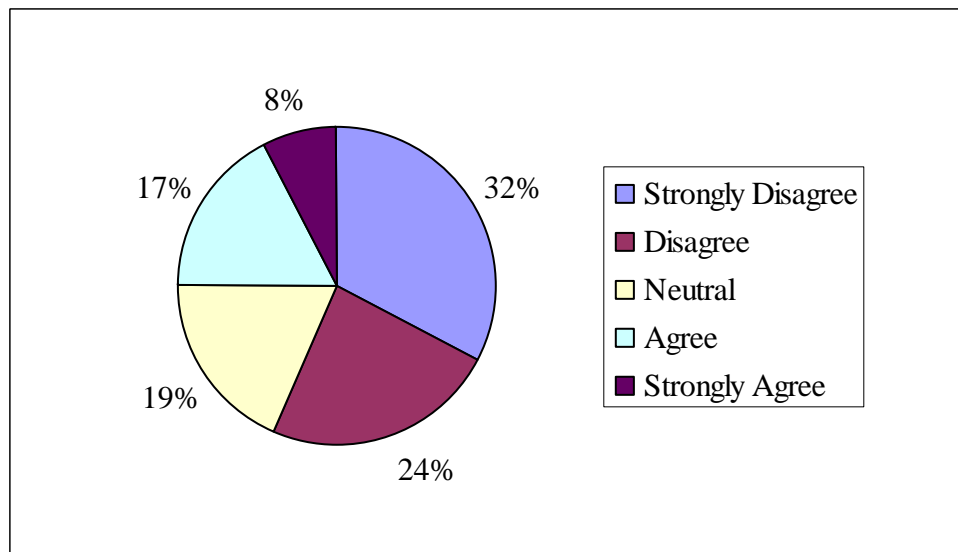


Figure 4.9 Respondent Opinions about using Trapping and Relocation as an Urban Deer Management Technique (n=263)

The last urban deer culling technique explored was trapping and euthanasia. This was another unpopular choice. Sixty-nine percent of respondents either disagreed or strongly disagreed with using this technique to manage urban deer. Only 5% of respondents strongly agreed with trapping and euthanasia (Figure 4.10).

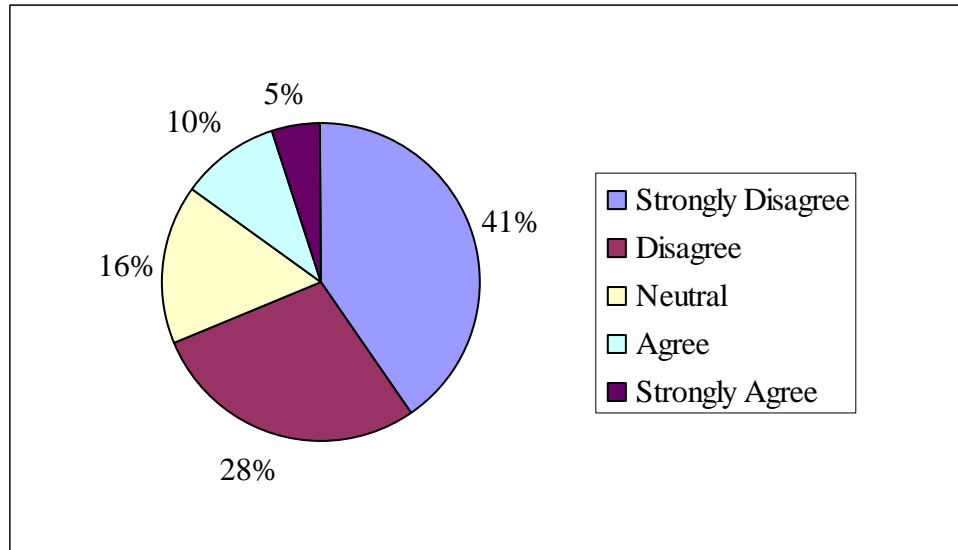


Figure 4.10 Respondent Opinions about using Trapping and Euthanasia as an Urban Deer Management Technique (n=261)

If we combine the results from the six different culling techniques, some trends are more noticeable (Table 4.1). The strongest response for any of the urban deer management techniques was 68% of respondents strongly disagreeing or disagreeing with the use of contraception. On the other hand, respondents were five to eight times more likely to agree with the use of urban bow hunting by recreational hunters as an urban deer culling technique (Table 4.1).

Table 4.1 Respondent Opinions about Urban Deer Management Techniques (n=277)

|  | <b>Strongly Disagree</b> | <b>Disagree</b> | <b>Neutral</b> | <b>Agree</b> | <b>Strongly Agree</b> |
|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| <b>Contraception</b>                             | 43%                      | 25%             | 19%            | 8%           | 5%                    |
| <b>Urban Bow Hunting by Professionals</b>        | 26%                      | 18%             | 16%            | 28%          | 12%                   |
| <b>Urban Bow Hunting by Recreational Hunters</b> | 16%                      | 9%              | 10%            | 28%          | 37%                   |
| <b>Urban Rifle Hunting/Sharpshooting</b>         | 39%                      | 24%             | 15%            | 15%          | 7%                    |
| <b>Trapping and Relocation</b>                   | 32%                      | 24%             | 19%            | 17%          | 8%                    |
| <b>Trapping and Euthanasia</b>                   | 41%                      | 28%             | 16%            | 10%          | 5%                    |

Urban bow hunting by recreational hunters is the only urban deer culling technique where respondents agreed more than disagreed (Figure 4.11). Urban bow hunting by recreational hunters is also the only urban deer culling technique where respondents strongly agreed more than any other category (strong disagree, disagree, neutral, or agree) for a particular culling technique.

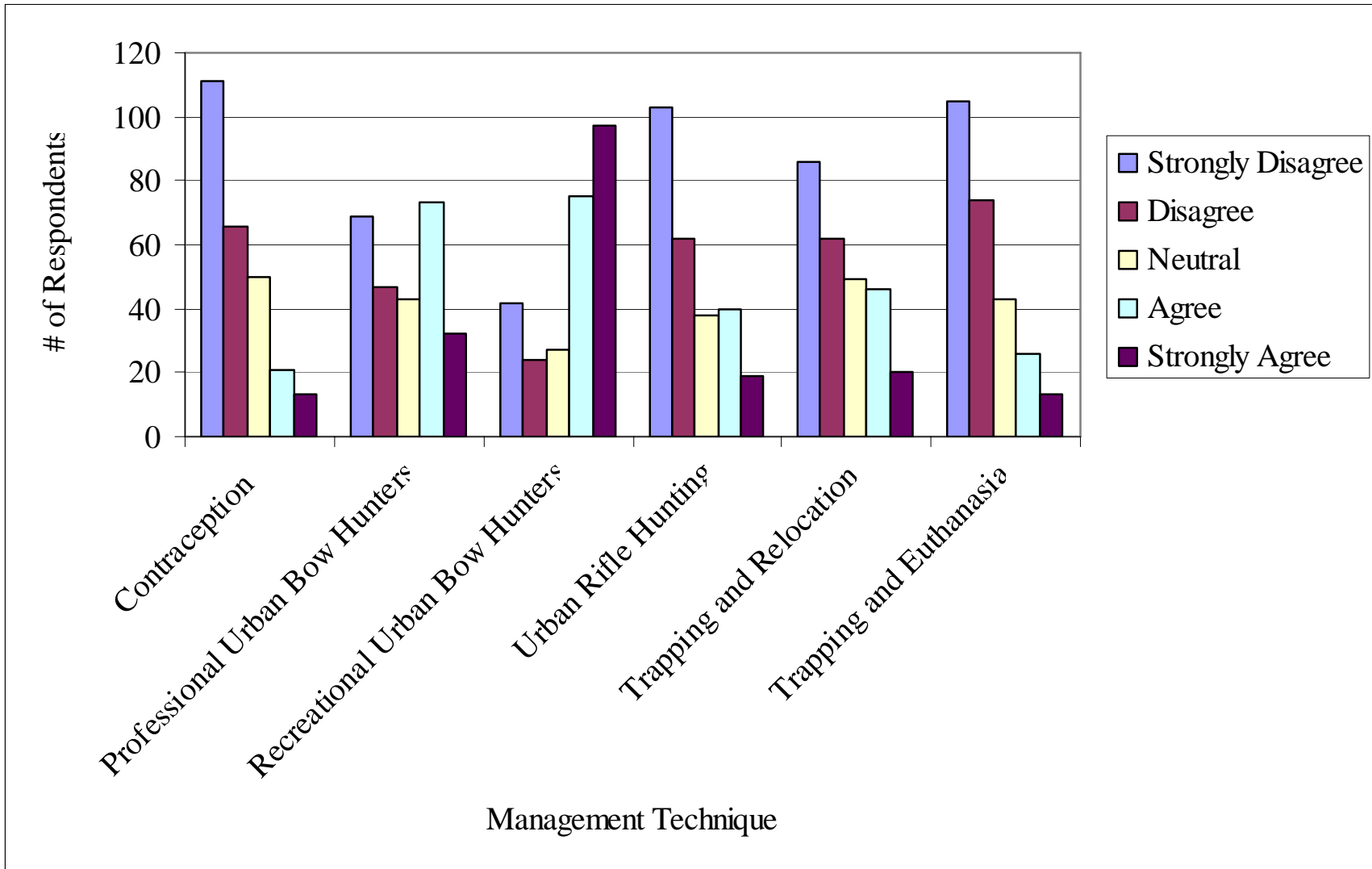


Figure 4.11 Respondent Opinions about Urban Deer Management Techniques (n=277)

### *Self-Reported Knowledge of Respondents*

About two out of five respondents (40.3%) who filled out the study questionnaire considered themselves to be somewhat knowledgeable regarding white-tailed deer biology and management. Almost as many respondents considered themselves to be very knowledgeable (10.1%) as those that reported that they were not knowledgeable at all (12.8%). This means that just over half of the respondents (50.4%) considered themselves to be knowledgeable about deer biology and management. There were not any significant differences found in responses between respondents who considered themselves to be knowledgeable and those that did not.

### *Similarities in Responses from Different Quadrants*

The city of Stevens Point can easily be divided into quadrants by two major streets that cross through the city (Figure 4.12). These quadrants are used by the Stevens Point Deer Management Committee to set deer culling goals around the city.

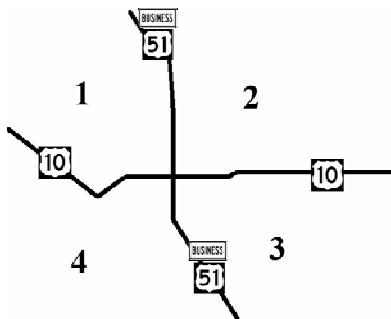


Figure 4.12 A Simplified Map of the city of Stevens Point Divided into Four Quadrants

The questionnaire asked respondents to indicate which quadrant of the city they lived in by circling a number on the map. Our number of respondents from each quadrant was fairly equal (Figure 4.13). Several statistical analyses did not find any significant

differences between residents of different quadrants with regards to the items on the questionnaire.

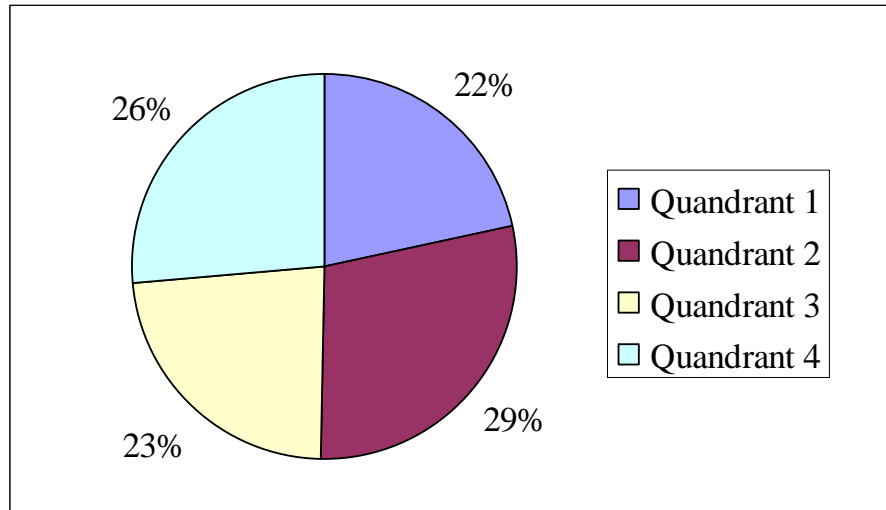


Figure 4.13 Respondent Area of Residence (n=266)

#### *Respondents' Level of Education*

The highest level of education completed by the respondents was variable. Respondents' education levels were fairly evenly distributed amongst high school, technical school, college, and graduate school (Figure 4.14). Only 1% of respondents had only finished grade school. And only 1.4% of respondents did not answer the question on the questionnaire about education level. No significant differences were found for any attitudes or opinions between any of the education levels.

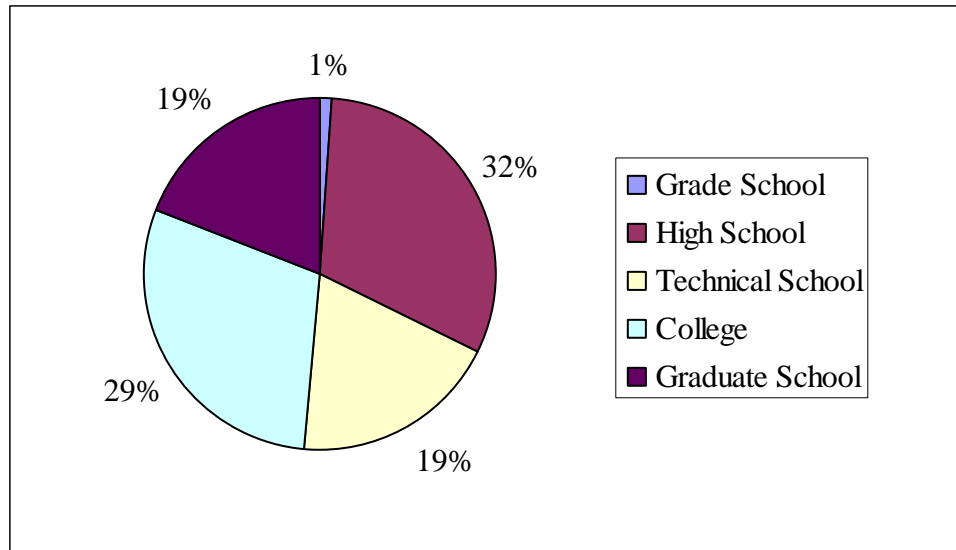


Figure 4.14 Levels of Education Completed by Respondents (in percentage, n=274)

#### *Male versus Female Responses*

Approximately 61.8% of the respondents were male, while 33.0% were female. The city of Stevens Point reports that 51.9% of its residents are female while 48.1% of its residents are male. While it may appear that the genders of the respondents for this study were skewed, very few significant differences were found between male and female respondents. Throughout most of the study, males and females had similar attitudes and opinions about urban deer management. Since we did not see a large variance in male/female responses, we could assume that more women respondents would not have altered the study's findings to a large degree.

One difference found between men and women was that women were statistically more likely to strongly agree with the use of contraception as an urban deer management technique ( $X^2 = 7.168$ , 1 df,  $p=.007$ ). Female respondents were interested in learning about a few different deer-related topics as well. Women were statistically more likely to be very interested in learning more about deer reproductive biology ( $X^2 = 5.928$ , 1 df,

$p=.015$ ), preferred forage of deer ( $X^2 = 5.049$ , 1 df,  $p=.025$ ), and the population estimate of deer in Schmeckle Reserve ( $X^2 = 7.953$ , 1 df,  $p=.005$ ). On the other hand, women generally considered themselves less knowledgeable about deer and deer management than men. Female respondents were statistically less likely to consider themselves somewhat knowledgeable ( $X^2 = 13.286$ , 1 df,  $p=.000$ ) or very knowledgeable ( $X^2 = 4.246$ , 1 df,  $p=.039$ ) regarding deer and deer management.

#### *Hunter versus Non-Hunter Responses*

Approximately 31.6% of the questionnaire respondents were hunters. In the state of Wisconsin, the Wisconsin Department of Natural Resources estimates that the percentage of residents who hunt is approximately 15% (WI DNR website). Since this study had a higher than average percentage of hunters, we looked to see if there were any differences between hunter and non-hunter responses. Hunters were statistically more likely to like seeing deer in their yard ( $X^2 = 8.408$ , 1 df,  $p=.004$ ) and statistically less likely to be concerned about getting into a car/deer accident ( $X^2 = 12.154$ , 1 df,  $p=.000$ ).

Hunters considered themselves to be more knowledgeable about deer and deer management than non-hunters. The only topic that they were statistically more likely to be very interested in learning about was the minutes of the last Stevens Point Deer Management Committee Meeting ( $X^2 = 3.669$ , 1 df,  $p=.005$ ). Hunters were statistically less likely to be very interested in learning about deer reproductive biology ( $X^2 = 5.606$ , 1 df,  $p=.018$ ) or the preferred forage of deer ( $X^2 = 6.445$ , 1 df,  $p=.011$ ).

Hunters were also found to be statistically less likely than non-hunters to consider universities ( $X^2 = 5.326$ , 1 df,  $p=.021$ ) reliable sources of information on deer and deer

management. They preferred learning about deer and deer management from local hunting clubs.

One important area that hunters and non-hunters agree on for the most part is the type of urban deer culling that they would prefer to see in Stevens Point (urban bow hunting by recreational hunters). The only statistical difference was that hunters were less likely than non-hunters to choose urban rifle hunting (sharpshooting) as their preferred means of deer culling ( $X^2 = 4.097$ , 1 df,  $p=.043$ ).

Further statistical analyses were run for this study. Please see Appendix K for additional graphs compiled from the questionnaire responses. See Appendix L for the results of all chi-square analyses ran.

**Objective 2. Determine what combination of communication modes to use to reach a large percentage of the population in Stevens Point.**

*Respondent Communication Preferences*

Survey respondents have obtained information about white-tailed deer through several different modes of communication. Friends and family members were most often cited as a means of obtaining deer information (61.5%). Printed materials were also selected quite often (59.0%), while few respondents had attended a workshop, seminar, or presentation to learn more about deer (11.1%). The following were reported as places where respondents have received deer information:

|                                 |       |
|---------------------------------|-------|
| Friends/Family Members-         | 61.5% |
| Printed Materials-              | 59.0% |
| Television News or Commercials- | 47.9% |
| Newsletters-                    | 27.1% |
| Websites/On-line Information-   | 18.4% |
| Video/DVD-                      | 14.2% |

Workshop/Seminar/Presentation- 11.1%

Several additional modes of communication were written in on the questionnaire. These sources include: newspapers, deer hunting, personal observations/experience, education, deer farms, DNR employees, Whitetails Unlimited, National Rifle Association, and the Quality Deer Management Association.

When respondents were asked where they would like to learn more about deer, the most common response was printed materials (27.4%). Examples of printed materials on the questionnaire included printed regulations, brochures, flyers, and books. The second most common response to this question was “Not Interested in Learning More About Deer” (23.4%).

Newsletters and television news/commercials were also highly requested by respondents (Table 4.2). Workshops/seminars/presentations, on the other hand, were not requested very often; only 7.3% of respondents wanted to learn more about deer in that face-to-face environment. Several other modes of communication were suggested by respondents, some of which include: newspapers, magazines, library meetings, journal articles, and the National Geographic television channel.

Table 4.2 Percentage of Respondents who Selected the Listed Modes of Communication (n=487)

|                                |       |
|--------------------------------|-------|
| Printed Materials              | 27.4% |
| Newsletters                    | 21.5% |
| Television News or Commercials | 19.8% |
| Websites/On-line Information   | 17.0% |
| Radio News Releases            | 12.8% |
| Friends and/or Family Members  | 8.3%  |
| Video/DVD                      | 7.6%  |
| Workshop/Seminar/Presentation  | 7.3%  |

After discovering the modes of communication respondents preferred for learning more about deer, the questionnaire asked them which sources they would like to learn more about deer from. There are several different sources of communication out there, but we wanted to know who the respondents considered to be the most reliable. State agencies, such as the Wisconsin Department of Natural Resources were considered to be the most reliable source of communication for deer (58.0%). Universities and conservation organizations were also rated credibly for providing deer information (Table 4.3). Interestingly, cities and towns were not considered to be very reliable sources of communication for deer (22.6%). One respondent claimed that “cities can slant information and manipulate findings for grant money or other aids in the state government”.

Table 4.3 Percentage of Respondents who Selected the Listed Sources of Communication Reliable Regarding Deer (n=793)

|                                  |       |
|----------------------------------|-------|
| State Agencies                   | 58.0% |
| Universities                     | 51.4% |
| Conservation Organizations       | 47.6% |
| Personal Observations/Experience | 35.1% |
| Hunting Clubs                    | 30.6% |
| Cities and Towns                 | 22.6% |
| Friends/Family                   | 22.6% |

Respondents did list other sources of communication that they find to be reliable. Some of these sources included: television, radio, online, newspapers, libraries, and symposiums.

Finally, respondents were asked what topics they would like to see discussed in Stevens Point urban deer management media. The largest number of respondents was very interested in the deer population density in Schmeckle Reserve (46.2%). The

effectiveness of the various urban deer management techniques was a close second (44.1%), followed by foraging preferences of deer (42.0%). Those three topics, all selected by at least 40% of respondents, were considered priorities to include in the community education plan. In general, respondents were least interested in learning more about deer reproduction or Stevens Point Deer Management Committee Meeting Minutes (Table 4.4).

Table 4.4 Respondent Interest in Learning about Deer-Related Topics (n=1880)

|                | Money Spent on Deer Damage Per Year | Cost of Management Techniques | Effectiveness of Management Techniques | Deer Reproduction | Kinds of Plants Deer Like | Number of Deer in Schmeckle Reserve | Deer Management Committee Meeting Minutes |
|----------------|-------------------------------------|-------------------------------|--|-------------------|---------------------------|-------------------------------------|---|
| Not Interested | 16.3%                               | 15.6%                         | 16.3%                                  | 25.0%             | 17.4%                     | 12.2%                               | 18.8%                                     |
| Interested     | 72.2%                               | 70.1%                         | 74.0%                                  | 58.7%             | 70.1%                     | 77.1%                               | 67.3%                                     |

Respondents reported being slightly interested in all of the topics presented (Figure 4.15). More people were very interested in the following topics than slightly interested: money spent on deer damage per year, effectiveness of urban deer management techniques, preferred forage of deer, and the Schmeckle Reserve deer population level. More respondents were not interested at all in deer reproductive biology than any other topic (Figure 4.15).

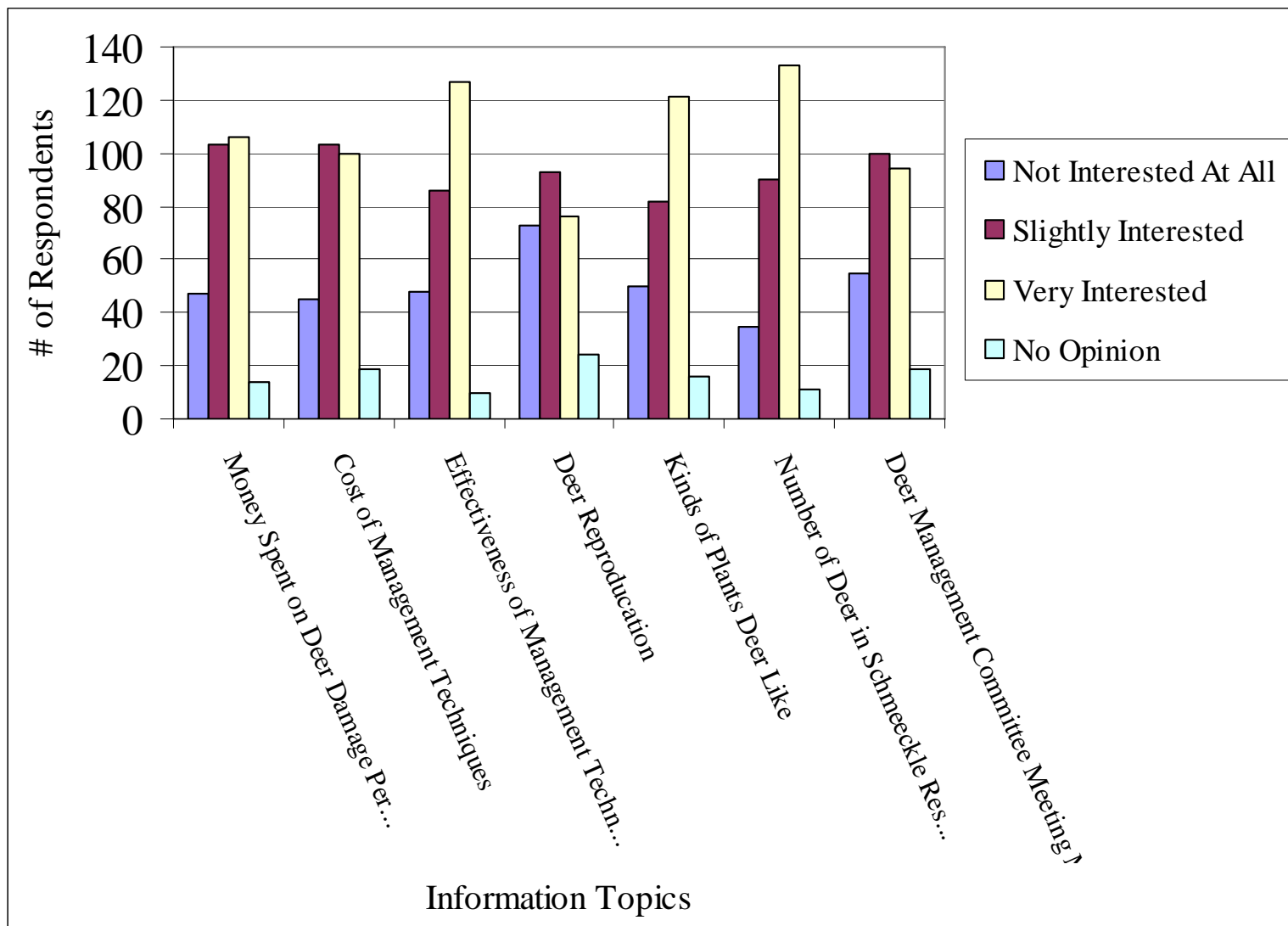


Figure 4.15 Respondent Interest in Learning about Deer-Related Topics (n=282)

### *Evaluations of Other Community Education Media*

Twenty individuals from ten different organizations throughout the midwestern United States were contacted to obtain information about media used in other community education/communication programs. Of those contacted, several replied that they were not aware of any programs that met the description provided. Only two individuals were able to identify problem wildlife educational programs using media that could be evaluated. Unfortunately, one of the programs suggested, Living with White-Tailed Deer is not yet available. The other individual from the Minnesota Department of Natural Resources (MN DNR) was able to suggest two programs where the media used could be evaluated.

The first program, Urban Deer Issues in Minnesota, provided basic background information and MN DNR's philosophy and policy using numerous "case studies." This program utilized PowerPoint presentations. The urban wildlife biologist that submitted this media evaluation said that he found the PowerPoint to be successful. He did not elaborate as to why he thought it was successful.

The second program, Urban Wildlife Species Issues, also provided basic background information about the MN DNR and its policies toward urban wildlife. In this program, the media utilized were printed information sheets about the various wildlife species covered in the program. Again, the urban wildlife biologist reported that the printed information sheets were successful. He did not specify why he believed that the information sheets were successful.

**Objective 3. Develop a community education plan to educate community residents about deer population management and the different culling options available.**

The community education plan was developed using the data obtained from the first and second objectives (see Appendix T). The first page of the plan is a cover letter explaining to the recipient what the plan is and how it can be used. The cover letter was necessary because the plan was sent to a variety of individuals and organizations throughout the country. It was important to give an introduction to this study and how the plan should be used.

The succeeding pages contain an abstract of the study, the original questionnaire used for this study, questionnaire descriptive results, and a summary of findings. Also included in the plan were the media developed from the recommendations of survey respondents (Table 4.5). These media include a brochure, newsletters, a television press release, and a link to a website built according to the responses from this study. A re-writable compact disc was provided that contained an electronic version of the community education plan, including the source code for the website.

Table 4.5 Top Four Communication Modes (in **bold**) Utilized in the Community Education Plan (n=487)

|                                       |              |
|---------------------------------------|--------------|
| <b>Printed Materials</b>              | <b>27.4%</b> |
| <b>Newsletters</b>                    | <b>21.5%</b> |
| <b>Television News or Commercials</b> | <b>19.8%</b> |
| <b>Websites/On-line Information</b>   | <b>17.0%</b> |
| Radio News Releases                   | 12.8%        |
| Friends and/or Family Members         | 8.3%         |
| Video/DVD                             | 7.6%         |
| Workshop/Seminar/Presentation         | 7.3%         |

The information contained within the community education plan is also derived from questionnaire responses. The deer-related topics that respondents could select as topics that they were interested in learning about were as follows:

- How much money is spent on damage caused by deer every year?
- How much do different deer management techniques cost?
- How effective are different deer management techniques?
- How often do deer have fawns and how many fawns are born each year?
- What kinds of plants do deer like to eat?
- How many deer are in Schmeckle Reserve?
- What happened at the last Deer Management Committee Meeting?

As reported previously, respondents were interested in a wide array of topics. Deer reproduction was the topic that most often marked with “Not Interested At All” and the least often to be marked by respondents as “Very Interested” to learn about. There were not any significant differences found between any other of the deer-related topics. Thus, it was decided to include all of the topics in the media of the community education plan except deer reproduction.

Finally, respondents reported that they did not find cities and towns to be reliable sources of communication. State agencies and universities, on the other hand, were generally considered to be reliable sources of communication. Therefore, the community education plan will be distributed with the recommendation that all media reproduced from the plan be distributed through state agencies or universities. This should increase the validity of the community education plan in the eyes of the public.

### **Questionnaire Response Rate**

Two-hundred ninety five residents of Stevens Point completed and returned the study questionnaire. Originally, five-hundred residents had been randomly selected as

questionnaire recipients and mailed questionnaires. Of those, seven residents no longer lived at the addresses obtained and were unreachable. Thus, the questionnaire was actually sent to 493 residents with a final response rate of 59.8% (Table 4.6)

Table 4.6 Questionnaire Response Rates (n=295)

| <b>Mailing</b>             | <b>Date</b>        | <b>Response Rate</b> |
|----------------------------|--------------------|----------------------|
| 1st Mailing                | Sept. 28th, 2006   | 38.5%                |
| Reminder Postcard          | October 13th, 2006 | 6.0%                 |
| Third Mailing              | October 30th, 2006 | 15.3%                |
| <b>Final Response Rate</b> |                    | <b>59.8%</b>         |

## **CHAPTER 5**

### **DISCUSSION**

#### **Objective 1. Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point.**

##### *Attitudes and Opinions Regarding City Deer Herd*

Respondents were never asked outright if they supported urban deer management in Stevens Point. They were also never asked outright if they thought the deer population in Stevens Point was overabundant, adequate, or under-populated. When developing the survey, these questions were left out because researchers wanted to discover how people truly felt about all of the issues related to urban deer populations, not just how people felt about culling deer. The public's feelings about deer culling are widely documented in other studies (Bowker et al. 2003, Dougherty et al. 2003, Kilpatrick et al. 2004, Kilpatrick & LaBonte 2003, Kilpatrick & Walter 1999, Lauber & Knuth 2000, Loker et al. 1999, Stout et al. 1997).

For the purposes of this study, it was necessary to avoid asking those questions so as not to skew respondents' answers toward their final goal (whether it be deer removal or leaving the deer herd as it is). For example, if respondents had pointed out that they were not interested in any type of deer control or removal, they may have answered questions based on what they thought would support their idea. They may have simply stated that they were not concerned about deer-vehicle accidents just because they did not want to support deer control in any way. Based upon respondents' answers to several different carefully worded questions in the questionnaire, it was possible to discern a

respondent's true feelings on the issues at hand, not just whether they were in favor or not of urban deer management.

When asked whether or not they like seeing deer in their yard, respondent answers were quite varied. From this question alone, it appeared that city residents were fairly divided as to whether or not the deer population in Stevens Point was too high or adequate. Respondents also had mixed answers in regards to concern with deer damage to their properties, although slightly more were not concerned with deer damage to their properties. This same trend is apparent in the extent of damage done to resident properties by deer in the past twelve months. More residents reported no deer damage or very little deer damage to their properties than those that reported moderate or severe deer damage.

After asking the extent of damage (none, very little, moderate, severe) done to properties by deer, the researchers were curious to discover just how much residents were paying for deer damage to their properties on an annual basis. The average amount of money that Stevens Point residents spend on deer damage per year was \$20.39. The average amount of money spent by Stevens Point residents, discluding those that did not suffer any deer damage, was \$59.08. Answers ranged from \$0.00 to \$1,500.00. People responded that they had to repair bird feeders, shrubs, trees, gardens, and flowers. There were others though, that must have had to pay for more expensive repairs in order to spend \$1,200 or \$1,500 on yearly deer damage. Although it is not possible to determine exactly what those monies were spent on from the data, it may be possible that a few respondents considered putting up a fence to be property damage expense. Another part of a property that was reported to be damaged was the yard. Perhaps someone had to

bring in some sod to replace lawn damage caused by deer. Several other reasons for these high expenses could be speculated as well.

Finally, when respondents were asked about deer-vehicle accidents, a large difference in resident attitudes and opinions becomes apparent. Almost three-quarters of city residents (73%) are concerned about the possibility of getting into a deer-vehicle accident. Although respondents were only asked if they were concerned about getting into a deer-car accident in general, it is possible that many were concerned about getting into such an accident within city limits. Whether residents are genuinely concerned about getting into a deer-vehicle accident within city limits or not is as relevant as how many residents actually get into such accidents every year. The city of Stevens Point has posted 25 mile per hour speed limits throughout the city and there are still about 20 deer-vehicle accidents per year.

In Stevens Point, the number of deer-vehicle accidents was used exclusively as the data to support urban deer culling. Deer-vehicle accidents have been used as a measure of deer abundance in urban areas in combination with other factors that may affect resident perceptions about deer (Kilpatrick & LaBonte 2003 and West & Parkhurst 2002). Based on the deer-car accident data (Table 5.1), the Wisconsin Department of Natural Resources (WI DNR) granted the city of Stevens Point five years of urban deer culling. Sixty tags are issued each year to fill. After five years (after the 2007 hunting season), the city will need to report results to the WI DNR to help determine if deer culling should continue or not. Thus far, it appears that culling has started to reduce the number of deer-vehicle accidents within the Stevens Point city limits (Table 5.1).

Table 5.1 Deer-Car Accidents in Stevens Point 1999-2005

| <b>Year</b> | <b># of Deer-Car Accidents</b> |
|-------------|--------------------------------|
| 1999        | 21                             |
| 2000        | 31                             |
| 2001        | 25                             |
| 2002        | 22                             |
| 2003        | 34*                            |
| 2004        | 17                             |
| 2005        | 20                             |

\* = The year that deer culling began in the city.

In Stevens Point, more than half of respondents reported being present in a vehicle that had hit a deer (56.6%) and more than half of respondents reported another member of their household being present in a vehicle that has hit a deer (56.6%). Thus, it is likely that a large number of residents are concerned about getting into a deer-vehicle accident because they have already been involved in such an accident.

A majority of questionnaire respondents had also paid to fix damages to their vehicles after deer-car accidents. Over 55% of respondents reported at least spending some money to repair such damages. Five percent had to pay more than \$5,000. This amount of money could cause people to question whether or not there are too many deer.

Several variables were looked at in this study, such as the different types of property damage done by deer and how residents felt about seeing deer. By looking at these variables alone, it appears that residents of Stevens Point have very mixed opinions as to whether or not there are too many deer in the city. Some respondents are very concerned about deer damage while others are not concerned at all. Some respondents like to see deer in their yard; some do not like it at all. But the fact that so many residents

are concerned with deer-vehicle accidents suggests that many residents do believe that the city of Stevens Point has an overabundant deer herd. An unpublished study by Ginnett (2005) found that a majority of residents were in favor of reducing the Stevens Point deer herd. Also, the city has been culling deer for four years now. In four years, the mayor of Stevens Point has received very few calls from residents that disagree with the urban deer culling occurring in the city. As mentioned previously, deer-vehicle accidents are often used to determine a deer population's abundance level, and it appears that this study corroborates the general use of that index.

We could even go one step further to suggest that the number of deer-vehicle accidents (or percentage of residents who have been in a deer-vehicle accident), combined with residents' concern about getting into deer-vehicle accidents and the amount of money spent on deer-car damages would supply the most reliable index to measure acceptable abundances of deer in an urban area.

It is interesting to note, however, that although resident attitudes and opinions were quite mixed about seeing deer in their yard or the amount of deer damage in on their properties, residents were largely in agreement about Schmeckle Reserve, the 275-acre natural area located on the north edge of the city. The majority of Schmeckle Reserve's 275 acres are excellent habitat for deer and the Reserve is well known as an excellent place to view deer in the city. There are residents, however, who are not happy with the deer population in the Reserve. One respondent wrote, "Close up the darn Reserve. That would get rid of the deer [in Stevens Point]". On the other hand, some respondents wrote,

"We live near Schmeckle Reserve and expect to see deer. We try to minimize their interest in our landscaping by planting things that are less

tasty to deer. Regardless of what the city decides, I don't want the Schmeckle deer population to be affected.”

and,

“Thanks so much for providing such a nice place to experience the outdoors and view nature. I love walking the trails and watching the deer.”

Overall, an overwhelming majority (79.5%) of residents liked seeing deer in the Reserve.

It is truly a testament to the Reserve that although residents have mixed feelings about a lot of deer-related issues throughout the city, they are supportive and protective of the Reserve and its mission to serve as a refuge for urban wildlife.

#### *Similarities in Responses from Different Quadrants*

On the last question of the questionnaire, respondents were asked which quadrant of the city they lived in. The researchers were interested in the answer to this question primarily because of Schmeckle Reserve. As mentioned previously, Schmeckle Reserve is located on the northern edge of Stevens Point. To be specific, Schmeckle Reserve is located in the northeastern quadrant (Quadrant Two). Several residents of the city have called Schmeckle Reserve Director, Ron Zimmerman to complain over the years. They proclaim that “Schmeckle deer” are ruining their yards. By asking respondents where they lived, it was possible to determine if residents living in different areas of the city were experiencing different deer issues and if they felt differently about deer than residents in other parts of the city.

Researchers were also interested to discover if residents that lived near Schmeckle Reserve (in Quadrant Two) had any different attitudes and opinions about deer because of the large contiguous tract of deer habitat nearby. It turned out that no

significant differences were found between answers of respondents from any of the four quadrants. Residents living near Schmeckle Reserve did not report any additional deer damage compared to other residents throughout the city.

### *Imposing Taxes to Pay for Urban Deer Management*

Stevens Point residents have paid a minimal amount of tax money in the past for the deer culling program. The city allocated \$3,000.00 to the Stevens Point Deer Management Committee to be used for deer culling. Archers were paid \$50.00 per deer culled and were able to cull up to 60 deer per year. In 2006, the city applied for and was awarded a grant for \$3,000.00 to pay for deer culling. Thus, residents did not pay tax money toward the deer culling program in 2006. It is unclear at this time whether or not the city will receive the grant again next year, or if residents will be forced to pay culling costs in the future (Rackow 2007).

Interestingly, a majority of respondents did not support the use of taxes to pay for urban deer management. Those that did say that they would pay taxes for urban deer management cited a number of reasons other than the ones listed in the original question on the questionnaire (damage to shrubbery, damage to garden, and involvement in deer-car accidents). Most of these responses had something to do with some personal damage caused by deer, concern about the safety of city residents, or the humane treatment of animals. The bigger question here is why are residents so hesitant to pay tax money for deer management?

Some respondents did explain that the reason that they did not want to pay taxes to support urban deer management was because they did not want to pay any more

money in taxes period. Some proclaimed, “we are already taxed enough” or “I already pay taxes, I’m not for extra taxes”. The most common answer that respondents gave for not wanting to pay taxes though was that urban deer management should not cost anything. Many respondents felt that recreational hunters could remove the necessary numbers of deer for no charge.

There was not a significant difference between hunter and non-hunter responses on the question of paying taxes for management. Both hunters and non-hunters proclaimed that the city could save a lot of money if it did not hire professional archers, trappers, or sharpshooters. Some even pointed out that the city could make money from culling deer if it charged recreational hunters for tags to hunt urban deer. This data may explain why many respondents supported urban bow hunting by recreational hunters when asked their opinions about the different urban deer culling techniques.

As mentioned previously, the question on the questionnaire regarding whether respondents would support paying taxes for urban deer management was the most often skipped question on the entire questionnaire. This could mean that the results for this particular question are not as valid as the rest of the questionnaire results. There may be several reasons for respondents leaving the question blank though. Perhaps respondents knew that they had paid tax money for deer management in the past so they did not see the point in answering a question about whether or not they wanted to. Another possibility is that residents did not see the urban deer herd as a big enough issue to pay money towards controlling.

More likely though, is that respondents just were not comfortable with answering a question about what they would financially support. Some people are simply not

comfortable with discussing their income, expenditures, or anything else that relates to personal finances.

### *Opinions about Urban Deer Culling Techniques*

Respondents were given the following, brief descriptions of each of the six urban deer management techniques:

- **Contraception:** Using fertility control products to limit the number of deer fawns born each year. Cost: Very Expensive
- **Urban Bow Hunting by Professionals:** Deer are removed from the population by archers hired by the city of Stevens Point. Cost: Fairly Expensive
- **Urban Bow Hunting by Recreational Hunters:** Deer are removed by recreational bowhunters that put in for tags. Cost: Very Inexpensive
- **Urban Rifle Hunting:** Deer are removed from the population by sharpshooters hunting over bait. Cost: Fairly Expensive
- **Trapping and Relocation:** Deer are humanely trapped in the city and then released in rural areas. Cost: Very Expensive
- **Trapping and Euthanasia:** Deer are humanely trapped in the city and euthanized at the site of the trap. Cost: Fairly Expensive

The descriptions of the different techniques were purposely kept brief because the researchers wanted to determine what perceptions respondents had about the techniques. The purpose of this question was not to educate the respondents. The definitions in this question were provided to ensure that all respondents had enough knowledge to determine differences between the culling techniques and accurately select which techniques they did/did not agree with.

After looking through resident responses, it is possible to rank the urban deer culling techniques in order of most preferred to least preferred by respondents. The ranking is as follows:

- 1). Urban Bow Hunting by Recreational Hunters
- 2). Urban Bow Hunting by Professionals
- 3). Trapping and Relocation
- 4). Urban Rifle Hunting
- 5). Trapping and Euthanasia
- 6). Contraception

This ranking should allow Stevens Point city officials to choose an urban deer management technique that residents will agree with and support.

Urban bow hunting by recreational hunters was easily the most preferred of all management techniques. Recreational hunters living in Stevens Point would obviously benefit from city selection of this technique because they would be able to help cull the deer herd. Because deer are prevalent in the city, many hunters believe that hunting deer within the city limits would be easier than hunting for deer in rural areas. Before jumping to the conclusion that a skewed number of hunter respondents (31.6%) swayed the ranking by strongly agreeing with urban bow hunting by recreational hunters, it is very important to point out that no significant difference was found between hunters and non-hunters when asked if they strongly agreed with this management technique. No significant difference was found between males and females either. Urban bow hunting by recreational hunters was the most preferred urban deer management technique for residents of Stevens Point, Wisconsin.

The second-highest ranked management technique was bow hunting by professionals. Professional bow hunters have been used in several studies and could arguably be called one of the most common types of urban deer management throughout

the eastern United States (Beringer et al. 2002, Bowker et al. 2003, Doerr et al. 2001, Kilpatrick & Walter 1999, Lauber & Knuth 2000). Perhaps respondents agreed with its use because they had heard of this technique being used in other cities. It has been found that members of the general public feel like bow hunting is safer than rifle hunting within city limits (Doerr et al. 2001, Kilpatrick & Walter 1999, Lauber & Knuth 2000). Perhaps residents of Stevens Point feel the same way.

Although bow hunting by professionals was the second-most preferred management technique, there were actually more respondents who disagreed with its use (44%) than agreed with it (40%). The large number of respondents who disagreed was probably made up of three distinct groups of respondents. The first group could be residents who would really like to see the deer population in Stevens Point decrease. Residents in Stevens Point consider themselves to be relatively knowledgeable regarding deer and urban deer management. Since both urban rifle hunting and urban bow hunting by professionals were described as costing the same (fairly expensive), respondents may have just picked the technique that could remove more deer quickly. Respondents might have known that it is easier to remove more deer with the use of sharpshooting (urban rifle hunting) than by bow hunting.

The second group of respondents that disagreed with the use of urban bow hunting was those who opposed all of the culling techniques. It is made up of individuals that are not interested in any sort of urban deer management. They feel that the deer population in Stevens Point is at an adequate level and does not need to be adjusted.

The third group of respondents that disagreed with the use of urban bow hunting by professional hunters is made up of respondents who strongly agreed with urban bow

hunting by recreational hunters and indicated that they strongly disagreed/disagreed with every other culling technique. By looking through the management technique agree/disagree data, it is noticeable that more residents disagree with the use of any urban deer management technique more so than they agreed (with the exception of urban bow hunting by recreational hunters). At first glance, this would make it appear that residents of Stevens Point are not in favor of culling deer in the city. But, by looking back at the actual questionnaires that were returned to the researchers, a distinct pattern emerged.

As stated before, urban bow hunting by recreational hunters was the only culling technique where more respondents agreed with it more than disagreed. The difference between those that agreed and those that disagreed was significant. Basically, a majority of respondents (65%) agreed or strongly agreed with this culling technique. But because so many respondents agreed with this technique, it may have skewed the results for management techniques in general. Almost every respondent who marked that they agreed or strongly agreed with bow hunting by recreational hunters, marked strongly disagree for every other culling technique. Thus, it looked like residents really were not in favor of using any culling technique at all since five of the six techniques had more negative responses than positive. In reality though, data from this study suggest that a majority of Stevens Point residents are in favor of culling deer from within city limits.

When asked about how they felt about trapping and relocation, and urban rifle hunting, respondents had similar opinions. A similar number of respondents agreed with both culling techniques and a similar number of respondents disagreed with both techniques. It appears that Stevens Point residents feel the same way about both techniques. Slightly more people disagreed with urban rifle hunting, so it was ranked

third in the list of respondent preferences for culling techniques. Other studies have found trapping and relocation to be one of the most preferred culling techniques because the deer are not actually dispatched (Beringer et al. 2002, Doerr et al. 2001, Lauber & Knuth 2000). It was interesting that residents did not place it higher above urban rifle hunting which is traditionally not very supported by residents in their communities (Beringer et al. 2002, Doerr et al. 2001, Kilpatrick et al. 1997, Lauber & Knuth 2000).

Perhaps Stevens Point residents are more likely to be tolerant of urban rifle hunting because there are relatively higher numbers of hunters here than in many other communities. The state of Wisconsin is made up of about 10% hunters, while Stevens Point's hunter population is closer to 15% (Holsman 2006). Or maybe residents just avoided agreeing with trapping and relocation because it was defined as a "very expensive" management technique. Since a majority of residents were not willing to pay taxes to support urban deer management, it is very possible that a large number of respondents did not agree with the use of trapping and relocation just because they did not want to pay for it.

Trapping and euthanasia was not a popular culling technique among city residents. More people disagreed with it (69%) than with any other culling technique. It ranked just barely above contraception however, because more respondents agreed with it than with contraception. One reason why trapping and euthanasia was so strongly disagreed with was probably because many people do not consider it sporting to dispatch a deer or any other live animal while it is inside of a trap. Although trapping and euthanasia is a more economical option than trapping and relocation, it was defined as being about the same price (fairly expensive) as urban bow hunting by professionals and

urban rifle hunting. Given the choice between those three culling techniques, most respondents chose urban bow hunting by professionals.

The least preferred urban deer culling technique was the use of contraception. A majority of respondents strongly disagreed with its use. This may have been because it was defined as being a very expensive deer culling technique. Perhaps respondents thought it sounded like a difficult task to administer fertility control products to deer. Or perhaps some respondents were aware of existing literature (Kirkpatrick & Turner 1995, Lauber & Knuth 2000) which does not find contraception to be a viable culling option for most communities. Another interesting thing to note about the responses for this question is that more respondents answered that they were neutral (17.4%) than for any other management technique. Almost one-fifth of respondents did not know whether to agree or disagree with the use of this method. It could be inferred that contraception is the least understood or least known about of all of the urban deer culling techniques.

**Objective 2. Determine what combination of communication modes to use in order to reach a large percentage of the population in Stevens Point.**

*Respondent Communication Preferences*

It was not surprising that a majority of respondents (61.5%) had obtained information about white-tailed deer from friends and/or family members in the past. Friends and family can be a trusted source for seeking new information. In the state of Wisconsin which is steeped in hunting tradition, it would be surprising if less of the respondents had obtained information about deer from friends and/or family.

Almost sixty percent of respondents reported obtaining information about deer from printed materials. Since hunting regulations and books were considered to be printed materials, this high response was probable and even expected. The 32% of respondents that hunted should have picked up hunting regulations and read about deer. Many people have also probably read articles in popular magazines or looked up the size of a deer's track in a field guide.

There was one unusually high response rate for places where respondents had previously gained deer information. Over 11% of respondents had attended a workshop, seminar, or presentation about deer. Since these types of activities are often limited to an academic crowd or conservation group enthusiast (such as an active member of Whitetails Unlimited), it says a lot about the population of Stevens Point that so many respondents had attended such events. The city of Stevens Point is fairly well educated. Sixty-three percent of respondents had completed a post-secondary degree. Forty-six percent of respondents had completed either a bachelor's degree or a graduate degree, with 18% having completed a master's or doctorate degree.

To help determine what information to include in the community education plan, respondents were asked how they would like to obtain more information about deer in the future. In concurrence with previously mentioned studies (Palmer & Dann 2004, Rodewald 2001), printed materials were the most preferred mode of communication by Stevens Point residents. One surprising result was the second most preferred mode of communication, newsletters. Having so many respondents request newsletters was interesting because it was unapparent who they thought would be publishing these newsletters. Newsletters are generally published on some sort of periodical basis by an

organization. So, maybe, respondents were trying to say that they wanted periodical, up-to-date information about deer. It is unclear where they thought the information would come from. Perhaps they thought that the Stevens Point Deer Management Committee would put out monthly newsletters updating the community on their meeting minutes. However, most respondents were not interested or not interested at all in learning about the proceedings of the Deer Management Committee. One final possibility is that respondents read the word “newsletter” and associated it with “newspaper”. Respondents were given a fill-in-the-blank “other” option for answering this question. The most widely repeated answer in this other option was newspaper.

Another somewhat surprising result was that websites and on-line information was only the fourth most preferred communication mode. It would seem like in a modern world where citizens are becoming more and more technologically advanced, that websites would be one of the first places where residents would turn to find information about deer. Further, as noted earlier, the education level of Stevens Point is relatively high. Typically, higher educated people have more experience with and access to internet resources. The researchers are unsure as to how to explain websites’ low ranking on the list of respondents’ preferred modes of communication.

Friends and/or family members fell to sixth place in the ranking of where respondents would like to learn more about deer. Respondents may have realized that friends and/or family members do not always give reliable information. This finding was supported by the following question’s results which answered what sources of information respondents found to be most reliable. Friends and/or family was the least reliable source of all possible sources listed.

Another interesting finding was that cities and town were selected to be only as reliable as friends and/or families (22.6% of respondents identified them as reliable sources of information). For some reason, respondents were more likely to choose state government agencies over local government (in cities and towns). In fact, state government agencies were selected most often (by 58% of respondents) as a reliable source of information. Perhaps they felt as though agencies with more constituents were more forthcoming with information because they impact more people.

Hunters were significantly less likely to believe that state agencies were reliable sources of information. Several hunter respondents wrote comments on their questionnaires about not trusting the WI DNR. Some respondents even referred to somewhat unrelated deer hunting topics:

“Don’t like Earn-A-Buck, do like T-Zone antlerless hunts. Wisconsin has outrageous fines for possession of untagged or improperly tagged deer”.

Several other respondents wrote that deer management should be regulated at the state level. These respondents tended to then infer that it was the WI DNR’s fault that Stevens Point had too many deer in the first place. It is clear that some hunter respondents did not have a positive view of state agencies.

Besides learning about how and where respondents would like to learn more information about deer, it was also important to determine what kinds of deer information respondents would like to learn. Most respondents were slightly interested in all of the deer-related topics to choose from. Even respondents who had stated that they were not interested in learning anything else previously in the questionnaire often marked that they were slightly or very interested in learning more about one or more topics.

There were significant differences found though between different demographic groups of respondents. Hunters were significantly less likely to be very interested in learning about deer reproduction or the preferred forage of deer. This makes sense because hunters are more likely to be aware of deer biology and natural history already due to their personal experience and observations. Several respondents did write on their questionnaires that they already know what deer ate or how many young they might have.

Hunters were significantly more likely, however, to be very interested in learning about the proceedings of the Stevens Point Deer Management Committee. This may have been because hunters had more of a vested interest in how the Committee decides to cull deer in Stevens Point. While several respondents regardless of demographic group felt very passionately about which urban deer culling technique the city should employ, hunters would be the group most affected. If the Committee decides to implement an urban bow hunting season in the future, hunters would then be able to apply for permits/tags to hunt deer in the city. Thus, it is important that they stay abreast of current happenings within the Stevens Point Deer Management Committee meetings.

Some significant differences were found between male and female respondents in regards to what they were interested in learning more about. Women were significantly more likely to be very interested in learning more about deer reproductive biology, preferred forage of deer, and the number of deer in Schmeeckle Reserve. Women may have been more interested in deer reproductive biology because they were generally less knowledgeable (self-reported) than men. Women were significantly less likely to consider themselves somewhat or very knowledgeable compared to men. This may

explain why women wanted to learn more introductory deer knowledge while males were more concerned with deer-related costs.

### *Evaluations of Other Community Education Media*

It was challenging to find other education/communication programs with media created in response to problem wildlife issues. It was especially difficult to find such programs that utilized different types of media to transport the messages of the programs. The response rate for this portion of the study was also especially low. Out of twenty professionals contacted, only four responded (20% response rate). In the field of wildlife biology, professionals are often kept very busy and they may have balked at filling out any sort of program evaluation sheet.

Another issue that may have caused the low response rate was lack of interest. The initial contact email briefly described this study and stated that urban deer management media was being developed. It asked respondents to evaluate existing program media on the attached evaluation sheet. Respondents were also offered the chance to receive a final copy of this research to see how their comments enhanced it. Dillman (2000) suggests that researchers offer the final results of the study as an incentive to increase response rate. All of the explanation of this research and the request for help from colleagues was limited to three short paragraphs. In retrospect, it may have boosted the response rate if the abstract or proposal for this research was provided.

One last reason for the low response rate could simply be the lack of information in this area of research. It was difficult to find research that compared and evaluated the effectiveness of different media types in educating members of the public. One study did

find that the use of brochures and videos appeared to be more effective than flyers and exhibits (Lackey & Ham 2004), but relatively little other information was available that evaluated the media used in problem wildlife programs.

At any rate, it was decided to only include one of the media recommendations from the two returned evaluation sheets. One evaluation form had recommended the use of PowerPoint presentations in educating the public about urban deer. The use of a PowerPoint presentation would most likely occur in a workshop or seminar. This study found that only 7.3% of respondents wanted to learn more about deer in that setting. In fact, learning through workshops, seminars, and presentations was the least often selected mode of communication chosen by respondents.

The other mode of communication recommended from the media evaluation sheets was printed materials. That researcher claimed to use printed information sheets about several different urban wildlife species to educate citizens about those species. He proclaimed that the information sheets were successful. Since his finding matches those found in other studies (Palmer & Dann 2004, Rodewald 2001), and since those were also the findings of this study, printed materials were included in the final community education plan.

**Objective 3. Develop a community education plan to educate community residents about deer population management and the different culling options available.**

The development of a community education plan was the overriding goal of this entire research project. Several cities and towns in the eastern United States are affected by urban deer populations. Many city officials and wildlife managers are faced with the

challenge of convincing residents that urban deer culling is necessary. The community education plan was designed to be a tool that city officials and wildlife managers could use to help educate residents about urban deer and the options cities have regarding urban deer herds.

In Stevens Point, it did not appear that the majority of residents are in need of any support or encouragement to implement more/new urban deer culling plans. The community education plan can however, still be a valuable tool for Steven Point city officials. The plan may be exactly what the city needs to help non-supporters at least understand the factors driving the decision to cull deer.

The first page of the plan will describe in detail what the plan is intended for and how it should be used. This plan will not be appropriate for all cities. Stevens Point is a city with an above-average hunting population and above-average educated residents. Stevens Point also has a 275-acre recreational area in town that harbors many deer, but that residents are very supportive of and defend. These are all considerations that a manager must think about before deciding whether or not this plan can be implemented in his/her city.

Although research has shown that using multiple modes of communication increases the audience for the message (McQuail 2000, Petty & Cacioppo 1986, Stout et al. 1992), no definitive research has been completed that identifies an optimal number of communication modes. In this study, only the four most popular modes of communication were chosen to be included in the community education plan. The primary reason for this was the marked jump (over 4%) in respondents who wanted to learn more information about deer from websites as opposed to the next highest mode of

communication, radio news releases. The cost of implementing this plan was also considered. It was decided that the four modes of communication would be the most economic way to reach a majority of the population.

Just as there is no set number of modes of communication to use to effectively reach an audience, there is not any research available that identifies a specific number of natural resource-related topics that can be effectively covered by one educational program. In this study, six of seven deer-related topics were chosen for inclusion in the community education plan. The seventh topic was not included primarily because the support for it was significantly less than for the other topics. Also, deer reproductive biology is a topic that most people could research on their own. It would be fairly easy for a resident to obtain a field guide and look up how many fawns that deer have and how often. They could also easily find factors that affect reproductive rates of deer. The other topics were considerably more difficult to research and providing that information will be a service to community members.

It is the hope of the researcher that community education plan recipients will follow the recommendations of the plan and ask their state agency or university affiliates to distribute all urban deer management media. In order to accomplish the goal of this entire research project, which was to create a more informed citizenry that would be capable of assisting city officials and wildlife managers in making important management decisions, it is important that the plan is distributed in a way that will make it seem the most reliable.

## **Questionnaire Responses**

### *Questionnaire Response Rate*

The response rate for questionnaires used in a study can make or break a study. If the response rate is too low, the results may be invalid as there may be an insufficient number of responses to represent an entire population. However, if the response rate is high enough, the researcher is able to assume that his/her responses are representative of a larger population. For this study, a response rate of 59.8% was obtained.

A nearly sixty percent response rate appears to be quite common in other urban deer opinion surveys (Stout et al. 1997, West and Parkhurst 2002). Babbie (1982) stated that a 50-60% questionnaire response rate is adequate for performing most statistical analyses. Besides looking at previous research, there were a few other ways to determine if the 59.8% of respondents was representative of the entire city of Stevens Point. One way was to compare city census data to the demographics of the survey respondents. The actual responses of different demographic groups within the study were also compared to identify differences between respondents.

### *Male versus Female Responses*

The city of Stevens Point's population is 48.1% males and 51.9% females. Respondents to the questionnaire were 61.8% male and 33.0% female. There are a couple reasons why there may have been more male than female respondents. Probably the main reason is the way in which the questionnaires were addressed. To obtain a list of residents of the city to send questionnaires to, property tax records were used. The questionnaires were sent to whoever was listed as the owner of the property. While in

many cases, both a man and women were listed together as co-owners of a property, it was more likely to see only a man's name listed as owner as opposed to only a woman's name listed as the property owner. Even if a questionnaire was sent to both people listed as the owners, wives may have let their husbands fill out the questionnaire because of their traditional head-of-household positions. It may also be possible that males are generally more interested in wildlife issues.

Regardless of how many males and females responded on the questionnaires, it is important to remember that several statistical analyses were run to determine the differences between male and female respondents. Not many significant differences were found. Women were significantly more likely to strongly agree with contraception as a method of urban deer culling than men. This finding was also found to be true by researchers in New York (Lauber et al. 2001, Lauber & Knuth 2000). Women also had a few different preferences for what they were more interested in learning about deer. Women were significantly more likely to be very interested in deer reproductive biology, preferred forage of deer, and the number of deer in Schmeckle Reserve. No significant differences were found in how women felt about the deer herd in Stevens Point. Thus, it could be argued that it does not matter that more males responded than females.

#### *Hunter versus Non-Hunter Responses*

Another important demographic to consider regarding how representative the respondents are of the population of Stevens Point is whether or not the respondents were hunters. The percentage of hunters in Stevens Point is relatively high at around 15% (Holsman 2006), while 31.6% of survey respondents were hunters. Again, there are a

few reasons why more hunters may have responded to the survey than non-hunters.

White-tailed deer are a very popular big-game animal in Stevens Point. It seems like everyone in town knows at least one deer hunter. It is possible that as soon as hunting respondents opened the envelope and saw that the questionnaire regarded deer, they were instantly more interested than non-hunting respondents. The questionnaires were sent out about one month before the archery deer season opened, so a lot of hunting respondents' minds may have already been focused on the upcoming hunt. They may have been more excited to fill out a deer questionnaire.

Another reason that hunters may have been more willing to fill out the survey is because they may have had ulterior motives. One of the urban deer culling techniques listed was urban bow hunting by recreational hunters. This option would allow area bow hunters to purchase tags or enter a lottery to draw for tags to cull urban deer themselves. Hunters may have hoped that by filling out the survey and reporting that they most strongly agreed with the urban bow hunting by recreational hunters culling option, that they might be able to hunt the urban deer themselves.

But even if there were more hunters that responded to the questionnaire for various reasons, the results were insignificant in many key areas. First of all, hunters were actually statistically more likely to see deer in their yard. This could be interpreted a few different ways. Hunters may have liked seeing deer in their yard more simply because they enjoy pursuing them in wilder areas and are excited to have an opportunity to see their quarry up close and personal. Related to that idea, hunters may be more adept at spotting deer in their yard or noticing signs of deer than non-hunters. This might be the driving force behind the finding that hunters see more deer.

Hunters may prefer seeing deer more because they think that the more deer there are, the more likely it is that they will get a chance to help cull the urban deer herd. To help determine which of these interpretations is correct, data from another question was analyzed. Respondents were asked if they were concerned about getting into a deer-vehicle accident. Hunters were significantly less likely to be concerned with getting into a deer-vehicle accident. Concern for deer-vehicle accidents is often included in a measurement used to determine if a deer population is too high (Ellingwood & Spignesi 1986, Kilpatrick & LaBonte 2003, West and Parkhurst 2002). Data collected in this study may suggest that concern for getting into deer-vehicle collisions is not a viable index of measuring urban deer overabundance. Hunters in Stevens Point were not concerned about getting into a deer-vehicle accident, yet they were in favor of using recreational bow hunting to keep the city's deer herd in check. Further research needs to be done to determine why hunters are less concerned about deer-vehicle accidents.

Hunters were significantly less likely to financially support methods to control the deer population in Stevens Point through tax dollars. Respondents who reported moderate deer damage to their properties were significantly more likely to support using tax dollars for deer management. Thus, it can be reasoned that hunters did not want to pay tax dollars for management because they had suffered less deer damage to their properties.

It was also considered that hunters may be less likely to support paying tax dollars for deer management because they believe that they can help remove deer (via bow hunting) for no cost to the city. In this case, we would expect to see that hunters are significantly more likely to strongly agree with urban bow hunting by recreational

hunters as a culling technique. However, this conclusion was not drawn from the data. In fact, no significant difference was found between opinions of hunters and non-hunters regarding urban bow hunting by recreational hunters as an urban deer culling technique.

It is possible that the responses for this study may have been slightly biased toward hunter opinions. Multiple significant differences were found between hunters and non-hunters. Hunters were more likely to see deer and yet less concerned about deer-vehicle accidents. Thus, it is possible that hunters did answer favorably toward urban deer management because of the possibility that they could get involved with the management. Although the results may be slightly skewed, it is important to note that hunters and non-hunters did not differ in their support for a culling technique (urban bow hunting by recreational hunters) that the city of Stevens Point would be able to effectively implement. Also, Stevens Point is home to relatively more hunters than other cities in the state so it is important that they have a voice in the management of the city's deer herd.

### **Summary of Findings**

The first objective of this study was to discover the attitudes and opinions of Stevens Point residents regarding white-tailed deer and urban deer culling techniques. The data showed that residents are mixed in their opinions about seeing deer in their yard. Many residents like seeing the deer while many do not. Residents also had mixed opinions about deer damage to their properties. A majority of residents had suffered at least some degree of deer damage on their properties, and yet just over half of residents reported that they were not concerned about deer damage.

Finally, when asked whether they or a family member had been in a deer-car accident, a change was evident in respondent answers. Opinions were no longer mixed. Seventy-three percent of residents were concerned about getting into a deer-vehicle accident. Almost sixty percent of residents had been in a car-deer accident or been present in a vehicle that had. A similar percentage of residents had had to pay at least some money in vehicle repairs due to car-deer accidents. The number of residents who had experienced vehicle accidents due to deer as well as the general concern voiced by residents regarding deer-car accidents could suggest that the city of Stevens Point is in need of urban deer culling. Urban deer culling would decrease the city's deer herd to a culturally acceptable level.

Even though the city of Stevens Point may be in need of urban deer culling, residents made it clear that they would like the deer in Schmeckle Reserve left alone. Almost 80% of residents said that they enjoyed seeing deer in the Reserve. Several comments were written in on the last page of the questionnaire that showed general support for Schmeckle Reserve regardless of how many deer live there.

A majority of residents did not support paying tax money for urban deer management, even though they have done so in the past three years. While some residents said that they did not want to have their taxes raised for any reason, a lot of residents said no to taxes because they felt like the city should not have to pay for urban deer culling. They felt that recreational bow hunters would cull deer from within city limits for free. Several suggested that the city could actually make money from urban deer culling by selling permits/tag to recreational bow hunters.

Resident opinions about urban deer culling techniques were fairly mixed with the exception of urban bow hunting by recreational hunters. That technique was clearly favored over all others. Stevens Point residents preferred the following culling techniques (in order from most preferred to least preferred):

1. Bow Hunting by Recreational Hunters
2. Bow Hunting by Professionals
3. Trapping and Relocation
4. Urban Rifle Hunting
5. Trapping and Euthanasia
6. Contraception

Based on the data, it appears that residents would be willing to support bow hunting by professional hunters as the city's urban deer culling technique as well. The third most preferred technique however, did not have enough citizen support to really be considered a viable option in Stevens Point, Wisconsin.

The second objective of this study was to identify a combination of communication modes that could reach a large percentage of the population in Stevens Point. This was done by finding out where, what, and how residents would prefer to receive information about deer.

Most residents had obtained information about deer in the past. Most residents received this information from their friends and family members. In the future however, residents indicated that they would like to learn more about deer in the form of:

1. Printed Materials
2. Newsletters
3. Television News or Commercials
4. Websites/On-Line Information

Printed materials could include anything from hunting regulations to brochures.

Apparently residents enjoy having the information in their hands to read. The number of

residents who requested to learn through newsletters was surprisingly high, although its high ranking may be an indication that residents would like to receive more periodic updates about deer and deer management.

A majority of residents did not believe that city officials in general are very good sources of reliable information about deer. They were not asked how they felt about Stevens Point officials. Many residents found state agencies to be the most reliable source of deer information. Universities were a close second. This data should be considered when planning to distribute information about deer or other problem wildlife species.

Stevens Point residents were interested in learning more about several deer-related topics. They were especially interested in the Schmeeckle Reserve deer population, showing once again the importance of the 275-acre natural area within the city. Women were more likely than men to be interested in Schmeeckle deer, suggesting that hunters (most hunters were male) interested in eventually hunting inside the Reserve were not skewing these results. Not surprisingly, many residents were interested in the cost and effectiveness of different deer culling techniques. Women were significantly more likely than men to be interested in learning more about reproductive biology, but even so, over a quarter of respondents were not interested at all in the subject.

The data collected for the first and second objectives came primarily from the questionnaire sent to five-hundred community residents. The questionnaire response rate was just under sixty percent. The respondents were a fairly representative sample of Stevens Point residents. Slightly more males responded than census data showed and slightly more hunters responded than would have been expected. Despite these factors,

few significant differences were found between answers of these different demographic groups. Respondents were fairly evenly distributed throughout the city's quadrants.

The third objective of the study was to develop a community education plan. The plan was intended to serve as a tool for city officials to use in cases of overabundant deer populations within urban areas. The plan consists of a detailed letter explaining the results of this study, as well as instructions for implementing the community education plan. It also contains the four pieces of media that residents preferred the most: a brochure (i.e. printed materials), a newsletter, a press release for a television news story, and the source code for an internet website.

The media contains information requested by the residents. The media explain what the different urban deer culling techniques are, how effective they are, and how much they cost. There are also lists of the plants that deer do and do not like to eat. In creating the media, the attitudes and opinions of the residents (as discovered in the first objective) were kept in mind to ensure that the media addressed their concerns. Residents were very concerned about deer-vehicle accidents so the media in the community education plan reflect that and contain information about the costs of deer damage to vehicles and how overabundant deer populations raise the risk of such accidents.

Finally, the community education plan contains a compact disc with electronic copies of all of the media and recommendations to distribute the media via a state agency or university. A product of this entire research project, the community education plan is meant to serve as a tool for city officials and wildlife managers that can be used to create

a more informed citizenry that is capable of helping to make responsible decisions regarding urban wildlife.

### **Implications and Future Recommendations**

The results of this study suggest that one effective way to determine a city's cultural carrying capacity for deer is to look at resident opinions about deer-vehicle accidents. This information, combined with the number of deer-vehicle accidents in a given urban area, should give city officials an index of how residents might feel toward urban deer management.

It is recommended that Stevens Point city officials do try a new urban deer culling technique next year. If officials allowed residents to apply for or draw from hunting permits/tags, they would not only save \$3,000 per year, they may actually make money from the culling program. Urban bow hunting by recreational hunters was not really considered in the past due to liability concerns; however it is apparent that residents feel that it is safe enough. Perhaps other communities could also consider allowing urban bow hunting by recreational hunters. Communities that have relatively high numbers of residents who hunt would be ideal candidates for this urban deer culling technique.

The community education plan was developed from data gathered in this study. Due to time constraints however, the plan was not actually implemented and evaluated. In order for the plan to really be a valuable tool for wildlife managers and city officials, its content should be evaluated to make sure that it is serving its intended purpose: to educate people through several communication channels about the many different aspects of urban deer management.

The community education plan is unlike anything tried before in urban deer management. The plan was developed entirely based on local resident opinions. Residents were able to tell us what they wanted to learn and how they wanted to learn it. The plan includes a variety of information that residents requested in order to educate themselves about white-tailed deer and urban deer culling. Studies have shown that the best way to communicate with the public is to address the public's concerns through several different channels. This community education plan does just that and it would be exciting to see other cities throughout the United States follow suit and create educational packages based on resident recommendations that would appeal to and reach a majority of residents.

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# ***APPENDICES***



April 26, 2006

Cortney Schaefer  
Human Dimensions of Natural Resources  
CNR

Dear Cortney:

Congratulations! It is a pleasure to accept the recommendation of the Review Committee and approve your request for a Student Research Fund (SRF) grant of \$500 for your proposal entitled "Developing a Community Education Program on White-Tailed Deer Management in an Urban Area." I am pleased to provide you with this opportunity to further your development and contribute to your scholarship.

**As dictated by a federal mandate, the Grant Support Services Office shares grant recipient information with the Financial Aid Office. If you are a financial aid recipient, this grant award may result in a change in your financial aid. Please contact a UWSP financial aid counselor as soon as possible to discuss this grant. I strongly recommend you bring a copy of your grant to that meeting.**

A summary critique of your proposal is enclosed. I trust you will find these constructive comments helpful when you begin the implementation of your project. You will also find a copy of the approved budget attached. Please contact Payment Services, 346-2052, or your faculty advisor for the procedures you must follow in order to expend your grant funds. Remember that these funds should be expended by April 1, 2007 unless your advisor submits a request, in writing to me, to carry over the funds beyond that date.

I wish you the best of luck in completing your project. Remember to submit a final report regarding your research to Grant Support Services by April 1, 2007.

Sincerely,

A handwritten signature in cursive script that reads "Cindy".

Cindy Marczak  
University Services Program Associate

Enclosures

XC: Brenda Lackey, Faculty Advisor  
File 76.32



# WHITETAILS UNLIMITED, INC.

NATIONAL HEADQUARTERS ▪ 2100 MICHIGAN STREET ▪ P.O. BOX 720 ▪ STURGEON BAY, WI 54235

Est. 1982

Dear Project Coordinator,

This correspondence is to notify you that your application for cost-share funding has recently been reviewed by WTU's Special Project Committee. I am very pleased to inform you that after careful consideration, the Committee approved a contribution to this worthwhile project. For specifics about the contribution, please refer to the attached copy of the master application.

**Important Requirements:** Upon completion of project/event, all recipients of Special Project funding are required to provide Whitetails Unlimited with a short description ( 100 words or less ) outlining the project accompanied with two quality photos. WTU reserves the right to publish information/photos (see sample enclosed) for organizational purposes.

**Deadline:** The project outline and photos should be sent no later than fourteen days following project/event completion. Send project outline/photos to: Whitetails Unlimited, P. O. Box 720, Sturgeon Bay, WI 54235, Attention: Jeff Davis.

If you have any questions, after looking over the enclosed materials, please don't hesitate to contact me. The contribution in the form of a check has been enclosed and I wish you great success with the project.

Sincerely,

Peter J. Gerl  
Executive Director

Encl.: master copy, check

"Working For An American Tradition"

PHONE-(920)743-6777 ▪ FAX-(920)743-4658 ▪ NH@WHITETAILSunLIMITED.COM ▪ WWW.WHITETAILSunLIMITED.COM



Schmeeckle Reserve

University of Wisconsin-Stevens Point  
Stevens Point, WI 54481

(715) 346-4992  
schmeeckle@uwsp.edu



August 24, 2006

Mr. Mayor,

Thank you so much for taking the time to meet with Schmeeckle Reserve Director Ron Zimmerman, Stevens Point Deer Management Committee Representative Roger Trzebiatowski, and myself yesterday. Everyone provided me with some excellent suggestions for revisions to the Deer Management in Stevens Point questionnaire.

The questionnaire, along with an accompanying cover letter will be mailed to 500 randomly selected property tax payers in Stevens Point in late September. A second survey will be sent to non-respondents in mid-October. I will provide a short (5-10 minute) presentation at the City Council Meeting in early October to notify residents of this study and the questionnaires they may be receiving in the mail. The survey consists of several questions designed to discover how residents feel about the deer herd in Stevens Point, how knowledgeable residents are regarding urban deer management techniques, and how residents would prefer to learn more about urban deer. The overall goal of the study is to help create an informed citizenry that can effectively contribute to their city's urban deer management planning.

It is important for the University of Wisconsin-Stevens Point (Schmeeckle Reserve) and the City of Stevens Point to work together on this project as the results will benefit constituents of both. Thank you for granting me permission to use the City of Stevens Point letterhead in conjunction with the Schmeeckle Reserve letterhead on each of the 500 surveys. I will also be mailing the Deer Management in Stevens Point questionnaires to survey recipients in an envelope with the City of Stevens Point logo. Alderman Trzebiatowski, representing the Stevens Point Deer Management Committee, approved of the City's affiliation with this study as well.

I look forward to sharing the results of the study with you and the Stevens Point Deer Management Committee. Thank you again for your support!

Sincerely,

Cortney Schaefer  
Graduate Assistant  
Schmeeckle Reserve-UWSP



City of Stevens Point

1515 Strongs Avenue  
Stevens Point, WI 54481

Schmeeckle Reserve

University of Wisconsin-Stevens Point  
Stevens Point, WI 54481



September 28th, 2006

Dear Resident,

The City of Stevens Point and Schmeeckle Reserve are appealing to you for your help. We are only asking for a few minutes of your time. You can assist us in resolving an issue that many cities throughout the country are experiencing. We would like to ask you to give us your candid, honest opinion of the deer population within the city limits of Stevens Point, as well as urban deer management techniques in general. Your answers will help us create an effective educational program to address residents' concerns about urban white-tailed deer and to provide recommendations as to how wildlife managers should manage our deer herd in Stevens Point.

As an enclosure with this letter, you will find a multiple-choice questionnaire that will take no more than 10-15 minutes of your time to complete. We would like to present you with a **10% off discount coupon** to use at the Schmeeckle Reserve Browse Shop for your assistance in filling out this questionnaire. Coupons will be reserved in your name at the Schmeeckle Reserve Visitor Center (2419 North Point Drive, across from Sentry World Golf Course) upon receipt of the completed questionnaire.

The information you give us on the questionnaire will be recorded in an anonymous form. We will not release information that could identify you. All completed surveys will be kept in a locked cabinet and will not be available to anyone not directly involved in the study.

Once the study is completed, we would be glad to give you the results. In the meantime, if you have any questions, please contact Cortney Schaefer at the phone number or e-mail address listed below. If you have any complaints about your treatment as a participant in this study, please call or write:

Dr. Karlene Ferrante, Interim Chair  
Institutional Review Board for the Protection of Human Subjects  
Department of Psychology  
University of Wisconsin-Stevens Point  
Stevens Point, WI 54481 (715) 346-3952

Thank you so much for your assistance!

Sincerely,

Cortney Schaefer  
Graduate Assistant-Schmeeckle Reserve/UWSP  
(715) 346-4992  
cscha615@uwsp.edu

Your completion and submission of the survey to the researchers represents your consent to serve as a subject in this research.  
This research project has been approved by the UWSP Institutional Review Board for the Protection of Human Subjects.

## Deer Management in Stevens Point

This survey is part of a study to assist the University of Wisconsin-Stevens Point and the City of Stevens Point with making decisions about urban wildlife management in the city of Stevens Point.

**Your responses are confidential and will never be associated with your name.**

Completion of this survey will take approximately 10-15 minutes.

Thank you for your assistance!!

Survey # \_\_\_\_\_

**1. Describe how seeing deer in your yard makes you feel. (Circle one).**

Don't Like At All      Somewhat Dislike      Somewhat Like It      Like It A Lot      No Opinion

**2. Describe how seeing deer in Schmeckle Reserve makes you feel. (Circle one).**

Don't Like At All      Somewhat Dislike      Somewhat Like It      Like It A Lot      No Opinion

**3. How would you describe the extent of damage done to your property by deer within the past 12 months? (Circle one).**

None                  Very Little                  Moderate                  Severe                  No Opinion

**4. How much has deer damage to your property cost you within the past 12 months?**

\$ \_\_\_\_\_

**5. What part of your property was damaged? (Circle all that apply).**

None                  Vegetable Garden                  Flower Garden                  Trees and Shrubbery                  Other: (describe: \_\_\_\_\_)

**6. Describe your level of concern with deer damage to your property. (Circle one).**

Not Concerned At All      Not Very Concerned      Neutral      Slightly Concerned      Very Concerned

**7. Have you or anyone in your household ever contracted Lyme disease?**

\_\_\_\_\_ Yes                  \_\_\_\_\_ No

**8. Have you ever hit a deer or been present in a vehicle that has?**

\_\_\_\_\_ Yes                  \_\_\_\_\_ No

**9. Has any other member of your household ever hit a deer or been present in a vehicle that has?**

\_\_\_\_\_ Yes                  \_\_\_\_\_ No

**10. How much monetary damage have deer collisions caused to your vehicle? (Check one).**

\_\_\_\_\_ None      \_\_\_\_\_ \$1-\$1,500      \_\_\_\_\_ \$1,501-\$3,000      \_\_\_\_\_ \$3,001-\$5,000      \_\_\_\_\_ \$5,001 or More

**11. Describe your level of concern about getting into a deer-vehicle accident. (Circle one).**

Not Concerned At All      Not Very Concerned      Neutral      Slightly Concerned      Very Concerned

**12. Would you financially support methods to control the deer population in Stevens Point through tax dollars?** (If No or Don't Know, please skip to **Question #15**).

\_\_\_\_\_ Yes                      \_\_\_\_\_ No                      \_\_\_\_\_ Don't Know

**If yes, which of the following factors contributed to your opinion?** (Check all that apply).

- \_\_\_\_\_ Some damage to my shrubbery
- \_\_\_\_\_ Extensive damage to my shrubbery
- \_\_\_\_\_ Some damage to my garden
- \_\_\_\_\_ Extensive damage to my garden
- \_\_\_\_\_ Someone I know was involved in a car/deer accident
- \_\_\_\_\_ My family member and/or I was involved in a car/deer accident
- \_\_\_\_\_ Other (describe: \_\_\_\_\_)
- \_\_\_\_\_ Don't Know

**13. How much would you pay in annual tax money to control the deer population in Stevens Point?**

\$ \_\_\_\_\_

**14. How would you prefer to pay for urban deer management?** (Circle one).

Donations/  
Fundraising                      Taxation                      Don't Know                      Other: \_\_\_\_\_

**15. How strongly do you agree/disagree with the following ways to control deer populations? Please note that the relative cost of implementing each method is included for a reference:** (Circle one response for each item).

**a. Contraception:** Using fertility control products to limit the number of deer fawns born each year.  
Cost: Very Expensive

|  |                      |          |         |       |                   |
|--|----------------------|----------|---------|-------|-------------------|
|  | Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|--|----------------------|----------|---------|-------|-------------------|

**b. Urban Bow Hunting by Professionals:** Deer are removed from the population by archers hired by the city of Stevens Point.  
Cost: Fairly Expensive

|  |                      |          |         |       |                   |
|--|----------------------|----------|---------|-------|-------------------|
|  | Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|--|----------------------|----------|---------|-------|-------------------|

**c. Urban Bow Hunting by Recreational Hunters:** Deer are removed by recreational bowhunters that put in for tags.  
Cost: Very Inexpensive

|  |                      |          |         |       |                   |
|--|----------------------|----------|---------|-------|-------------------|
|  | Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|--|----------------------|----------|---------|-------|-------------------|

**d. Urban Rifle Hunting:** Deer are removed from the population by sharpshooters hunting over bait.  
Cost: Fairly Expensive

|  |                      |          |         |       |                   |
|--|----------------------|----------|---------|-------|-------------------|
|  | Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|--|----------------------|----------|---------|-------|-------------------|

**e. Trapping and Relocation:** Deer are humanely trapped in the city and then released in rural areas.  
Cost: Very Expensive

|  |                      |          |         |       |                   |
|--|----------------------|----------|---------|-------|-------------------|
|  | Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|--|----------------------|----------|---------|-------|-------------------|

**f. Trapping and Euthanizing:** Deer are humanely trapped in the city and euthanized at the site of the trap.  
Cost: Fairly Expensive

|  |                      |          |         |       |                   |
|--|----------------------|----------|---------|-------|-------------------|
|  | Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|--|----------------------|----------|---------|-------|-------------------|

**16. How knowledgeable would you consider yourself to be regarding white-tailed deer biology and management?**

Not Knowledgeable      Not Very      Somewhat      Very      No Opinion  
At All      Knowledgeable      Knowledgeable      Knowledgeable

**17. Where have you obtained information about white-tailed deer in the past? (Check all that apply).**

- Printed Materials (such as printed regulations, a brochure, flyers, books, etc.)
- Newsletters
- Website/On-line Information
- Workshop/Seminar/Presentation
- Video/DVD
- Radio News Releases
- Television News or Commercials
- Friends and/or Family Members
- Other(describe): \_\_\_\_\_

**18. How would you like to learn more about deer? (Check all that apply).**

- I am Not Interested in Learning More About Deer
- Printed Materials (such as printed regulations, a brochure, flyers, books, etc.)
- Newsletters
- Website/On-line Information
- Workshop/Seminar/Presentation
- Video/DVD
- Radio News Releases
- Television News or Commercials
- Friends and/or Family Members
- Other(describe): \_\_\_\_\_

**19. Which sources of communication do you believe provide the most reliable information regarding deer? (Check all that apply).**

- State Agencies (e.g. Wisconsin Department of Natural Resources)
- Universities (e.g. University of Wisconsin-Stevens Point)
- Cities and Towns (e.g. City Council, Urban Deer Management Committees)
- Conservation Organizations (e.g. Whitetails Unlimited, The Audubon Society)
- Hunting Clubs (e.g. North American Hunting Club)
- Friends/Family
- Personal Observations and Experience
- Other(describe): \_\_\_\_\_

**20. Which of these topics would you be interested in learning more about concerning the Stevens Point area?**

*(Circle one response for each item).*

|   |                       |                     |                 |            |
|---|-----------------------|---------------------|-----------------|------------|
| <b>a. How much money is spent on damage caused by deer every year?</b>        | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>b. How much do different deer management techniques cost?</b>              | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>c. How effective are different deer management techniques?</b>             | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>d. How often do deer have fawns and how many fawns are born each year?</b> | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>e. What kinds of plants do deer like to eat?</b>                           | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>f. How many deer are in Schmeckle Reserve?</b>                             | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>g. What happened at the last Deer Management Committee Meeting?</b>        | Not Interested At All | Slightly Interested | Very Interested | No Opinion |

**21. Are you a hunter? If yes, how many years have you been hunting?**

\_\_\_\_\_ Yes; # of Years \_\_\_\_\_ No

**22. What level of education have you completed?**

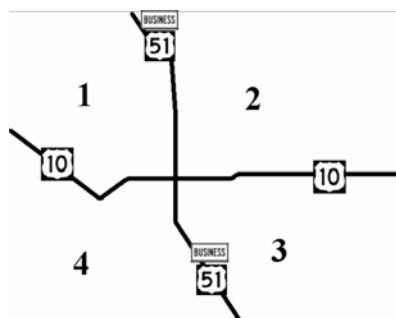
Grade School    High School    Technical School    College    Graduate School    No Answer

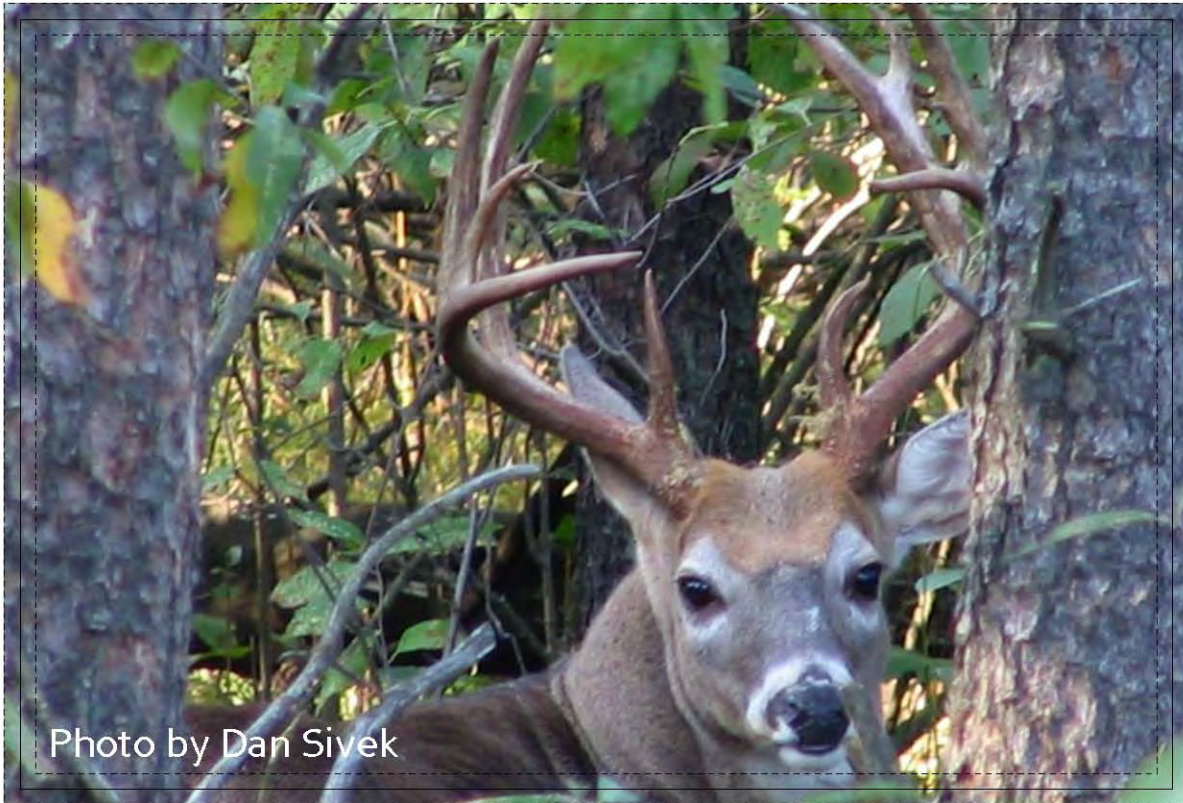
**23. Your gender:**

\_\_\_\_\_ Male                  \_\_\_\_\_ Female

**24. Any other comments?**

**25. Please circle which quadrant of Stevens Point you currently live in:**





**FROM:** Schmeeckle Reserve  
College of Natural Resources  
University of Wisconsin-Stevens Point  
Stevens Point, WI 54481

Dear Resident,

Last week, a questionnaire seeking your opinions about urban deer management in Stevens Point was mailed to you. Your name was drawn randomly from a list of households in Stevens Point.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because we believe your response will be very useful to city officials and wildlife managers.

If you did not receive a questionnaire, or it was misplaced, please call us at 715-346-4992 and we will get another one in the mail to you today.

Sincerely,

Cortney Schaefer  
Graduate Assistant  
Schmeeckle Reserve-UWSP  
cscha615@uwsp.edu

PLACE  
STAMP  
HERE

Made in U.S.A.

POSTCARD

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City of Stevens Point

1515 Strongs Avenue  
Stevens Point, WI 54481

Schmeeckle Reserve

University of Wisconsin-Stevens Point  
Stevens Point, WI 54481



October 30th, 2006

Dear Resident,

The City of Stevens Point and Schmeeckle Reserve are once again appealing to you for your help. A few weeks ago, a questionnaire seeking your opinions about urban deer management in Stevens Point was mailed to you. If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because we believe your response will be very useful to city officials and wildlife managers.

As an enclosure with this letter, you will find another copy of the multiple-choice questionnaire that will take no more than 10-15 minutes of your time to complete. We would like to present you with a **10% off discount coupon** to use at the Schmeeckle Reserve Browse Shop for your assistance in filling out this questionnaire. Coupons will be reserved in your name at the Schmeeckle Reserve Visitor Center (2419 North Point Drive, across from Sentry World Golf Course) upon receipt of the completed questionnaire.

The information you give us on the questionnaire will be recorded in an anonymous form. We will not release information that could identify you. All completed surveys will be kept in a locked cabinet and will not be available to anyone not directly involved in the study.

Once the study is completed, we would be glad to give you the results. In the meantime, if you have any questions, please contact Cortney Schaefer at the phone number or e-mail address listed below. If you have any complaints about your treatment as a participant in this study, please call or write:

Dr. Karlene Ferrante, Interim Chair  
Institutional Review Board for the Protection of Human Subjects  
Department of Psychology  
University of Wisconsin-Stevens Point  
Stevens Point, WI 54481 (715) 346-3952

Thank you so much for your assistance!

Sincerely,

Cortney Schaefer  
Graduate Assistant-Schmeeckle Reserve/UWSP  
(715) 346-4992  
cscha615@uwsp.edu

Your completion and submission of the survey to the researchers represents your consent to serve as a subject in this research.  
This research project has been approved by the UWSP Institutional Review Board for the Protection of Human Subjects.



Front

Schmeckle Reserve  
Browse Shop

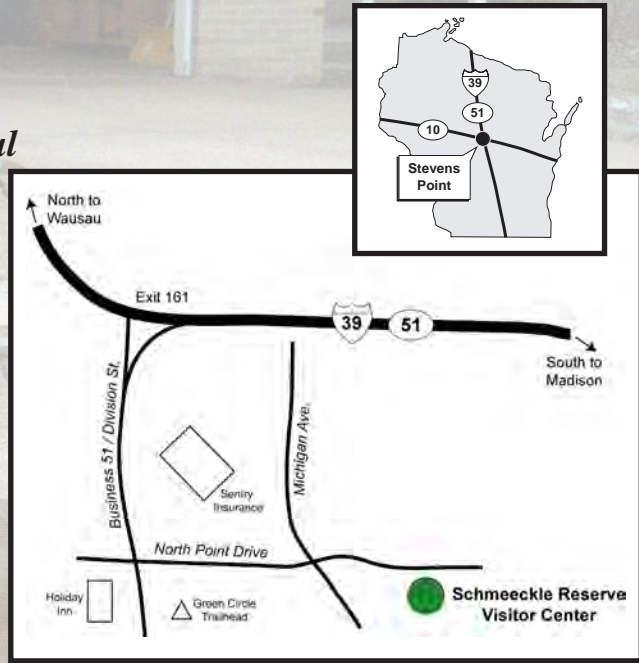
*Featuring unique natural and cultural  
items from Central Wisconsin*

**10% Off**

Discount Amount

\_\_\_\_\_  
Validation Signature

\_\_\_\_\_  
Date



The Schmeckle Reserve Browse Shop is located on North Point Drive just east of Michigan Avenue.

Back



## Deer Management in Stevens Point 2006 Resident Survey-December 14th, 2006

Total Number of Respondents: 295 (59.8% Response Rate)

Population: City of Stevens Point-about 25,000

1. Describe how seeing deer in your yard makes you feel. (Circle one).

- Don't Like at All: 21.2% (61)
- Somewhat Dislike: 11.5% (33)
- Somewhat Like It: 27.1% (78)
- Like It a Lot: 24.0% (69)
- No Opinion: 12.2% (38)

2. Describe how seeing deer in Schmeeckle Reserve makes you feel. (Circle one).

- Don't Like at All: 4.2% (12)
- Somewhat Dislike: 3.8% (11)
- Somewhat Like It: 19.8% (57)
- Like It a Lot: 59.7% (172)
- No Opinion: 9.4% (27)

3. How would you describe the extent of damage done to your property by deer within the past 12 months?  
(Circle one).

- None: 41.0% (118)
- Very Little: 26.0% (75)
- Moderate: 20.8% (60)
- Severe: 8.0% (23)
- No Opinion: 2.1% (6)

4. How much has deer damage to your property cost you within the past 12 months?

Average-\$59.08, Mode-\$100.00, Range-\$0.00-\$1,500.00

5. What part of your property was damaged? (Circle all that apply).

- None: 38.5% (111)
- Vegetable Garden: 14.9% (43)
- Flower Garden: 39.6% (113)
- Trees and Shrubbery: 33.7% (97)
- Other:
  - Bird feeders (5)
  - Lawn (5)
  - Fence (2)
  - Hostas (2)

- Ornamental flowers
- Pumpkins
- Native veg. (Trilliums)
- Apple tree
- Grape vines
- Raspberry bush
- Potted vegetable plants.

6. Describe your level of concern with deer damage to your property. (Circle one).

- Not Concerned At All: 35.8% (103)
- Not Very Concerned: 16.3% (47)
- Neutral: 8.0% (23)
- Slightly Concerned: 18.8% (54)
- Very Concerned: 16.3% (47)

7. Have you or anyone in your household ever contracted Lyme disease?

- Yes: 12.2% (35)
- No: 86.1% (248)

8. Have you ever hit a deer or been present in a vehicle that has?

- Yes: 56.6% (163)
- No: 41.7% (120)

9. Has any other member of your household ever hit a deer or been present in a vehicle that has?

- Yes: 56.6% (163)
- No: 41.0% (118)

10. How much monetary damage have deer collisions caused to your vehicle? (Check one).

- None: 37.5% (108)
- \$1-\$1,500: 22.6% (65)
- \$1,501-\$3,000: 21.2% (61)
- \$3,001-\$5,000: 6.6% (19)
- \$5,001 or More: 5.2% (15)

11. Describe your level of concern about getting into a deer-vehicle accident. (Circle one).

- Not Concerned At All: 5.2% (15)
- Not Very Concerned: 14.6% (42)
- Neutral: 7.3% (21)
- Slightly Concerned: 33.3% (96)
- Very Concerned: 37.5% (108)

12. Would you financially support methods to control the deer population in Stevens Point through tax dollars? (If No or Don't Know, please skip to Question #15).

- Yes: 23.3% (67)
- No: 39.2% (113)
- Don't Know: 26.0% (75)

If yes, which of the following factors contributed to your opinion? (Check all that apply).

- Some damage to my shrubbery: 12.2% (35)
- Extensive damage to my shrubbery: 5.6% (16)
- Some damage to my garden: 9.0% (26)
- Extensive damage to my garden: 5.2% (15)
- Someone I know was involved in a car/deer accident: 9.7% (28)
- My family member and/or I was involved in a car/deer accident: 11.8% (34)
- Don't Know: 0.7% (2)
- Other:
  - Lyme Disease (3)
  - Wake us up walking in our rocks. Clean out bird feeders
  - Deer poop in yard
  - Much damage to native vegetation and spread of Lymes
  - Human Treatment of Animals
  - Very damaging at former residence
  - There are just too many deer.
  - Deer population health if overcrowded
  - Overpopulation of deer is damaging habitat
  - School bus hit deer in front of house
  - Large animals should be kept out of residential areas
  - Better through tax money than volunteer donation
  - I think the sharpshooters are enough. The sharpshooters may be hired by Town of Hull??
  - Birdfeeders/Birdbath
  - Damage to other Stevens Point residents' properties
  - A matter of inches from part of a deer skull hitting myself in an accident where part of the skull came through the windshield.
  - I don't want deer in my downtown area
  - Hunting in city not allowed
  - Need of controlling herd so that overpopulation stays under control to keep disease down
  - Control state-wide
  - Put up fences and don't feed the deer. No bird feeders or put them in a fence.
  - We like the deer but herd must be managed
  - General concern for public safety
  - Stevens Point is an urban area and there are a lot of deer-so a control policy would be good.
  - Concern to deer
  - Damage to autos, people, planes, etc.
  - Cannot really afford for funds to go to your program
  - My dog was attacked by a deer. Cost \$400.00 in vet fees.

13. How much would you pay in annual tax money to control the deer population in Stevens Point?  
Average-\$20.39, Mode-\$10.00, Range-\$0.00-\$300.00

14. How would you prefer to pay for urban deer management? (Circle one).

- Donations/Fundraising: 17.7% (51)
- Taxation: 13.2% (38)
- Don't Know: 8.3% (24)
- Other:
  - Open city hunting/Bow hunting tags (14)
  - Hunting licenses (3)
  - DNR (2)
  - Shouldn't have any
  - I already pay taxes, I'm not for extra taxes
  - Direct specific payment
  - Combination of taxes and donation/fundraising
  - Let them live
  - Shrub tax
  - Leave them in the woods and fine people who feed them in the city.
  - Let the population be natural
  - Pay more in insurance comps.
  - Those most affected should pay more
  - Owner

15. How strongly do you agree/disagree with the following ways to control deer populations? Please note that the relative cost of implementing each method is included for a reference: (Circle one response for each item).

- Contraception:
  - Strongly Disagree: 38.2% (110)
  - Disagree: 22.9% (66)
  - Neutral: 17.4% (50)
  - Agree: 7.3% (21)
  - Strongly Agree: 4.5% (13)
- Urban Bow Hunting by Professionals:
  - Strongly Disagree: 24.0% (69)
  - Disagree: 16.3% (47)
  - Neutral: 14.9% (43)
  - Agree: 25.0% (72)
  - Strongly Agree: 11.1% (32)
- Urban Bow Hunting by Recreational Hunters:
  - Strongly Disagree: 14.6% (42)
  - Disagree: 8.3% (24)
  - Neutral: 9.4% (27)
  - Agree: 25.7% (74)
  - Strongly Agree: 33.7% (97)
- Urban Rifle Hunting:
  - Strongly Disagree: 35.8% (103)
  - Disagree: 21.5% (62)
  - Neutral: 13.2% (38)

- Agree: 13.5% (39)
- Strongly Agree: 6.6% (19)

- Trapping and Relocation:
  - Strongly Disagree: 29.9% (86)
  - Disagree: 21.2% (61)
  - Neutral: 17.0% (49)
  - Agree: 16.0% (46)
  - Strongly Agree: 6.9% (20)
- Trapping and Euthanasia:
  - Strongly Disagree: 36.1% (104)
  - Disagree: 25.7% (74)
  - Neutral: 14.9% (43)
  - Agree: 9.0% (26)
  - Strongly Agree: 4.5% (13)

16. How knowledgeable would you consider yourself to be regarding white-tailed deer biology and management?

- Not Knowledgeable At All: 12.8% (37)
- Not Very Knowledgeable: 26.4% (76)
- Somewhat Knowledgeable: 40.3% (116)
- Very Knowledgeable: 10.1% (29)
- No Opinion: 4.9% (14)

17. Where have you obtained information about white-tailed deer in the past? (Check all that apply).

- Printed Materials: 59.0% (170)
- Newsletters: 27.1% (78)
- Website/On-line Information: 18.4% (53)
- Workshop/Seminar/Presentation: 11.1% (32)
- Video/DVD: 14.2% (41)
- Radio News Releases: 29.2% (84)
- Television News or Commercials: 47.9% (138)
- Friends and/or Family Members: 61.5% (177)
- Other:
  - Newspaper (14)
  - Deer hunting (14)
  - Personal Observation/Experience (12)
  - Education (7)
  - UWSP (6)
  - Nowhere/None (4)
  - Deer Farms (2)
  - Have never really looked, it just seems so logical
  - Remember wolves will kill deer and children playing by themselves in wilderness!
  - Rumors
  - DNR Employees
  - Whitetails Unlimited/NRA

- QDM Materials
- Word of mouth only

18. How would you like to learn more about deer? (Check all that apply).

- Not Interested in Learning More about Deer: 39.6% (114)
- Printed Materials: 27.4% (79)
- Newsletters: 21.5% (62)
- Website/On-line Information: 17.0% (49)
- Workshop/Seminar/Presentation: 7.3% (21)
- Video/DVD: 7.6% (22)
- Radio News Releases: 12.8 % (37)
- Television News or Commercials: 19.8% (57)
- Friends and/or Family Members: 8.3% (24)
- Other:
  - Newspaper (6)
  - Personal Observation/Experience (5)
  - Magazines (3)
  - All of the above
  - Library meetings
  - I asked for information from UWSP in the past on the tracking of collared deer in Schmeeckle and received nothing! Collect it....disseminate it!
  - You can not learn all you need to know in books. Whitetails very adaptive to environment. Must be in the outdoors to understand them.
  - Journals/Symposiums
  - Channel 8 or National Geographic
  - I would volunteer to advocate for the most humane treatment of the deer population.

19. Which sources of communication do you believe provide the most reliable information regarding deer? (Check all that apply).

- State Agencies: 58.0% (167)
- Universities: 51.4% (148)
- Cities and Towns: 22.6% (65)
- Conservation Organizations: 47.6% (137)
- Hunting Clubs: 30.6% (88)
- Friends/Family: 22.6% (65)
- Personal Observations and Experience: 35.1% (101)
- Other:
  - Don't know (4)
  - Media (TV/Radio) (2)
  - Hunting (2)
  - 6 deer crossing street in front of motorcycle is deadly!
  - Online
  - Newspaper
  - State agencies, university, cities can slant, manipulate these findings for grant money of other aids in the state government.
  - Library reference materials
  - Journals/Symposiums

- Education-driving with caution
- Honest state agencies
- Talking and listening to people like myself, we have a great thing here.
- Any group or agency that can accurately and truthfully estimate the existing size of the deer herd and also correctly estimate the size of a successfully/humanely sustainable deer herd.
- None
- Look in woods

20. Which of these topics would you be interested in learning more about concerning the Stevens Point area? (Circle one response for each item).

- How much money is spent on damage caused by deer every year?
  - Not Interested At All: 16.3% (47)
  - Slightly Interested: 35.4% (102)
  - Very Interested: 36.8% (106)
  - No Opinion: 4.9% (14)
  
- How much do different deer management techniques cost?
  - Not Interested At All: 15.6% (45)
  - Slightly Interested: 35.4% (102)
  - Very Interested: 34.7% (100)
  - No Opinion: 6.6% (19)
  
- How effective are different deer management techniques?
  - Not Interested At All: 16.3% (47)
  - Slightly Interested: 29.9% (86)
  - Very Interested: 44.1% (127)
  - No Opinion: 3.5% (10)
  
- How often do deer have fawns and how many fawns are born each year?
  - Not Interested At All: 25.0% (72)
  - Slightly Interested: 32.3% (93)
  - Very Interested: 26.4% (76)
  - No Opinion: 8.3% (24)
  
- What kinds of plants do deer like to eat?
  - Not Interested At All: 17.4% (50)
  - Slightly Interested: 28.1% (81)
  - Very Interested: 42.0% (121)
  - No Opinion: 5.6% (16)
  
- How many deer are in Schmeeckle Reserve?
  - Not Interested At All: 12.2% (35)
  - Slightly Interested: 30.9% (89)
  - Very Interested: 46.2% (133)
  - No Opinion: 3.8% (11)

• What happened at the last Deer Management Committee Meeting?

- Not Interested At All: 18.8% (54)
- Slightly Interested: 34.7% (100)
- Very Interested: 32.6% (94)
- No Opinion: 6.6% (19)

21. Are you a hunter? If yes, how many years have you been hunting?

- Yes: 31.6% (91)
- # of Years: Average-30.40 years, Mode-30 years, Range-3-60 years\_
- No: 63.9% (184)

22 What level of education have you completed?

- Grade School: 1.0% (3)
- High School: 29.2% (84)
- Technical School: 17.7% (51)
- College: 27.4% (79)
- Graduate School: 18.1% (52)
- No Answer: 1.4% (4)

23 Your gender:

- Male: 61.8% (178)
- Female: 33.0% (95)

24. Any other comments?

- Please see Comments sheet for all responses

25. Please circle which quadrant of Stevens Point you currently live in:

- Quadrant 1: 20.1% (58)
- Quadrant 2: 26.4% (76)
- Quadrant 3: 21.5% (62)
- Quadrant 4: 24.0% (69)



## Deer Management in Stevens Point 2006 Resident Survey Comments

I live in the woods so that I can enjoy the animals that live here. I really get sick of people who plant hostas and then complain the deer eat them!

The deer population in my area, near McDill Pond, has dwindled in the past 12 months. It was much worse before that and much damage was done. Someone seems to have brought it under control this last year.

I don't believe we need to kill deer in city limits just so people can grow gardens. That is not fair to nature, and we could find a humane way to handle the situation.

A good issue to explore

Instead of hiring "sharpshooters" open hunting in the city with tags-that way, the state still gets its money and the city has the deer population managed (at not cost to the city or taxpayers!!)

Deer are welcome on my property, I love them!!

Lets increase deer population control; both for safety and land management

The media should explain more

Leave the deer as they are. Nature will take care of them. I have lived in the city for about 37 years. I now live at Lindbergh Ave for 15 years, close to Springville Pond. People feed the deer and say how pretty it is to see deer in their yards. Everyone that feeds thinks it is pretty until they plant flowers and gardens. They they get upset with the deer and want to get rid of them. The deer did not invite themselves to the city. The people invited them. They were here before we were. We are taking their space. People should just leave them be as they are.

I grew up in the country where hitting deer was par for the course. But I never expected to hit a deer on Michigan Ave! I think I am more annoyed than concerned; they keep eating the buds off my daylillies!

Our neighbors used to feed the deer regularly. I told them about the ordinances so they stopped. We still have about 5-7 each night or early morning in the backyard if they're not spooked.

While the deer are very plentiful in my neighborhood and have done much damage over the years, I have stopped buying perennials unless I know they aren't favored by deer until I can get my yard full fenced. I would rather spend my own money on my own property rather than pay taxes to have them killed. I can't imagine they are any worse in any part of the city.

The deer were here first. If people had the desire to learn to plant correctly, it would be a small problem! (But most people would rather kill the innocent or have them killed than actually have to do a little more about it-a real shame!)

Extend hunting season to control the population

Give out bow permits on edge of town, especially to land owners

There are deer in my yard everyday-I am sick of the damage.

I have noticed much overgrazing of my 2 acre residence which is in the city of Stevens Point.

I think at least part of the reason we're seeing so many deer is because we've encroached on so much of their land. I think we should find a way to market venison as an alternative meat. We should also continue to test for and study CWD. We should invest in the incinerators to destroy CWD and keep it from spreading.

Unless the deer population is controlled on a state level, deer will just continue to move into the city no matter how many you cull.

Good luck on your project. I know the deer management isn't a top priority but when you see dead deer in a 25 mph zone, makes one wonder how many deer there are.

I am married to an avid wild game hunter for 24 years.

The focus for deer removal seems to be in the same areas each year. I would like to see our city list appropriate contact people (in our newspaper or buyer's guide) that handle the deer problems within the city so we may contact them before they decide to focus the removal. In my neighborhood, we consistently have 5-10 deer in our yards each day and would approve of someone coming in my yard even 1 day and hunting them. They are so tame that they do not run when you walk past them and the oldest one that comes actually followed me down the street one day. This is not normal deer behavior. I do enjoy having them around.

Cortney, your survey is very timely. As I'm writing, I've got 4 deer in my yard. They're cute, but they eat everything but rhubarb. Good luck with your project and I hope that you have many opportunities to share your results with local government. Thanks!

There are ways to rid deer cheaply without wasting tax money. With high gas prices and more smaller cars and motorcycles on the road, humans are higher on the food chain. Lets use common sense!! Hit a deer at 55 on a motor bike and you are dead meat!!

Deer don't belong in the city.

The population of in-city deer is much too high.

While I feel this is important, I do think that we need to be aware of where tax dollars are being spent to better assess this situation

Very nice survey!

Don't waste money on hiring "professional" hunters. If it can be allowed, it should be for everyone.

I think the meetings should be very public so the people who know what they are doing can get involved.

Thanks for your help and concern!

The past 13 months not much deer damage. The year before last, it was worse. Many flowers destroyed then.

Numbers are excessive

We live near Schmeckle and expect to see deer. We try to minimize their interest in our landscaping by planting things that are less tasty to deer. Regardless of what the city decides, I don't want the Schmeckle deer population to be effected.

Happy to see this survey-should have been done years ago! Less deer seen in my backyard this year than previously.

Be honest about the deer herd and its movement into/within Stevens Point. When I contacted Schmeckle Reserve personnel about a herd of 7 deer in our neighborhood, one with a radio collar, I was told they were not from the Reserve.

Perhaps the information in Question #20a-g should have been distributed with this survey in order to get informed opinions.

Allow volunteer bow hunters to cull the herd. Why pay any money when we'll do for free if given the chance.

I like deer in Schmeckle but they pose a hazard on Maria Drive and Michigan Ave. Perhaps we can't have deer in Schmeckle if we don't want them in the city.

Leave the deer alone!

Question 15 should have a choice "Urban shotgun hunting by recreational hunters". This would likely be more effective than bow hunting. Q12-The list of factors presented in this question seems to assume that the citizens of Stevens Point act only on a self-serving level. I believe many are community minded and care about their neighbors. Q21 should have considered an answer for "former hunters".

I don't have a lot of strong feelings on the subject except that if it's decided that the animals are to be euthanized, that it is done so humanely.

Don't Feed Deer-let "Mother" Nature (God) manage them.

If the city were to use a lottery system to draw tags for recreational hunters, they could not only thin the herd, but also raise money by selling the chances to hunt, making money for the city instead of spending it.

Who is controlling the rabbit population? I am glad there are no deer coming into my yard. We do know three people who have contracted Lyme disease, but they do not even live anywhere close to Point.

Think of the possible response of someone seeing the bow or gun kill. I agree we have a problem, but would rather see an animal eating out of a poison feeder than being shot via bow or gun.

I love animals and I strongly believe that if we minimize the areas developed and stop building in certain areas so less deer will interfere with human life. We are building where they live.

Program to provide additional hunting in areas of the city!

I believe deer are a very important resource for hunters to have the opportunity to help thin out the populations-I do not want to see this opportunity jeopardized in any way, shape, or form.

We need to do something as the deer are overrunning our gardens

One ad for bow hunters in Stevens Point is all that is needed. You would have more hunters than you want.

I am 94 and was a hunter

Should manage deer statewide or countrywide, highway speeds cause the most damage or deaths

Make the people stop feeding deer, fence in gardens. I know some people that are feeding deer out their window because their grandkids like to see them. I see deer lying in people's yards. Don't feed the deer in the city and it will take about 2 years to get rid of them. They won't go where they are not wanted. People want the deer in the city like they want birds. I raised deer and elk for 7 years.

I've witnessed the "professionals". I heard them in Point-Tom Jakusz for one has shot bucks instead of just does before-what makes him a professional? Because he's a good shot?

These people (Tom Jakusz) you have killing deer now are not professionals, just hunters. They (deer) belong in an area like this and should not be harrassed in protected areas set aside for this very reason. The city should not pay people to hunt animals. Hunters would pay for the privelege to do this for the city. How stupid to consider paying \$50 a head to anyone to hunt deer, like has been going on already.

Used wisely, recreational bow hunters can and will do anything so called sharpshooters can do at no cost. Most good hunters can shoot bow or gun as well as anyone else who shoots. Hunters pay to hunt...why pay someone to do it?

I personally from outdoor experience do not believe there are as many whitetailed deer in Portage County as DNR "experts" would have us believe. I've lived on the west side of Stevens Point my whole life and don't see as many deer in the woods or town as I used to.

Remove a deer and another one will move in. Paying to remove deer is not cost effective.

We are elderly, don't get out too much

I love to see wildlife. I do not like to see animal cruelty. However, I do understand the population needs to be thinned out.

We need to drastically reduce the deer population.

We had a herd of 25-30 deer two years ago. The city culled them, which was effective. We now can have flowers and plants without putting our my scarecrow sprinkler. I like this arrangement as we have not seen more than 2 deer in the last year. The deer population does not belong in the city proper.

It seems as though the DNR has created this deer problem by always wanting to have enough deer for the

hunters.

As suggested earlier, create a lottery-resident archers must apply-then shoot a series to qualify. If they qualify, then they special tags/permits.

Would like to know more about CWD

Four years ago, when I lived on the far south side, we had major deer damage to our flowers (perennials and annuals).

Thanks so much for providing such a nice place to experience the outdoors and view nature. I love walking the trails and watching the deer.

Promote recreational bow hunters participation in culling. Look on the internet, there are hundreds of cities that allow recreational hunting at no or little cost to both taxpayer and hunter. Too many non and anti hunters running the show.

Selecting archers from the community to control the herd seems best

We are neighbors with these animals now! Is anyone really surprised!?!

This survey is a good idea. I hope you get many responses.

Don't like Earn a Buck, Do like T-Zone antlerless hunts. Wisconsin has outrageous fines for possession of untagged or improperly tagged deer

Let DNR trap them and take out in the country. They say there are so many deer in the county, only in some areas. And the DNR can stick Earn a Buck

Cut down deer populations

Need to discourage safe or refuge areas by allowing controlled bow hunting activities during normal hunting seasons.

I am an avid bow hunter and would be interested in culling deer in Schmeeckle.

Thanks-Good luck :-)

I would not like to see the deer being hurt. There should be more licenses given out and extend the hunting period. People should eat deer to keep them in check. Eat lots of deer instead of beef or pork :-)

There are too many deer in the whole state!

Not at this time

Get rid of the reserve and also the UWSP. Make homes or places for more work. Let the people that want the reserve pay for it.

We not only have many deer our yard. We have dozens of turkeys that do more damage than the deer. They

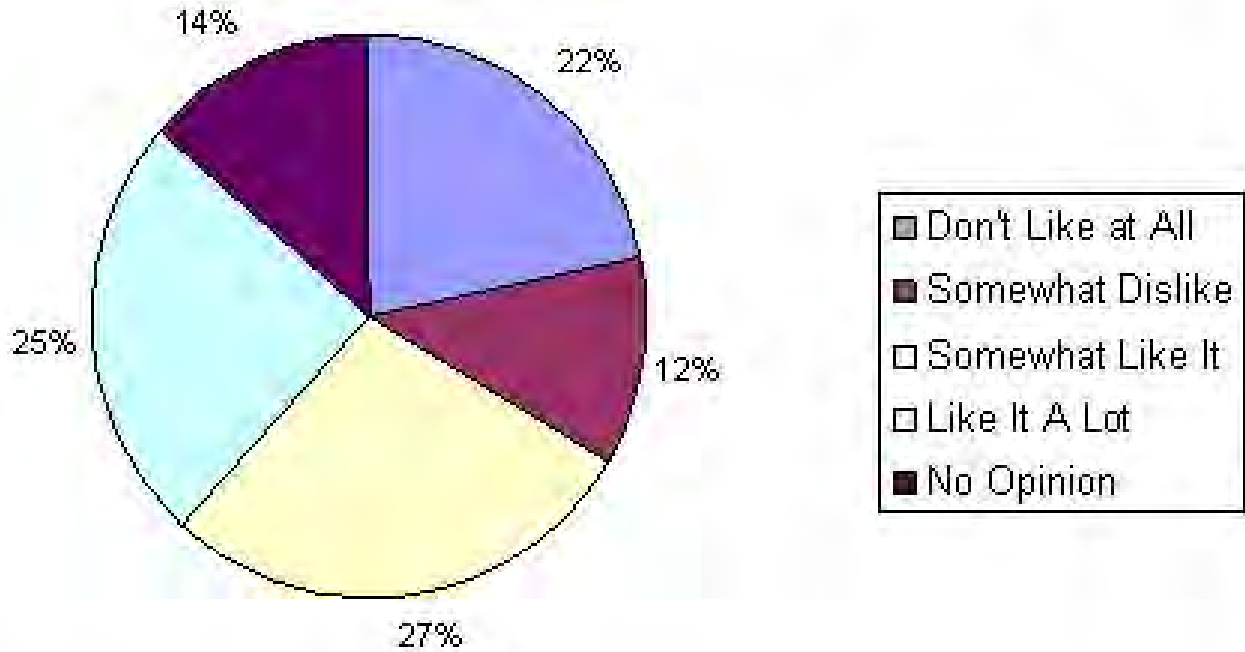
make a terrible mess and they disturb our sleep. Have a neighbor that who feeds the deer and turkey. I know that this may not concern you, but they seem to me the same problems. They have dozens of babies! Help!

Enforce the ban on feeding deer

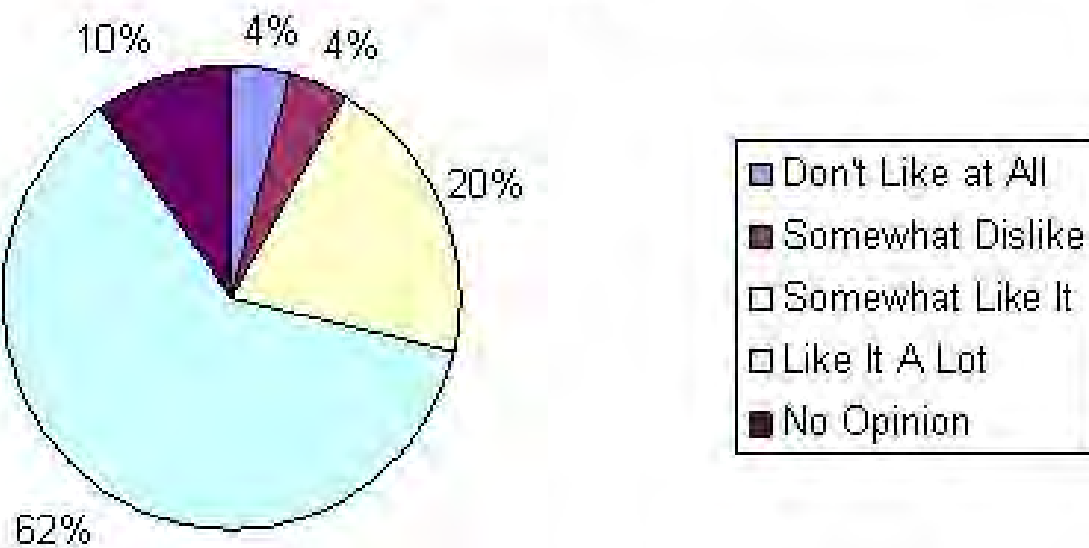
Kill all the deer

Close up the darn Reserve. That would get rid of the Deer. Build more student housing.

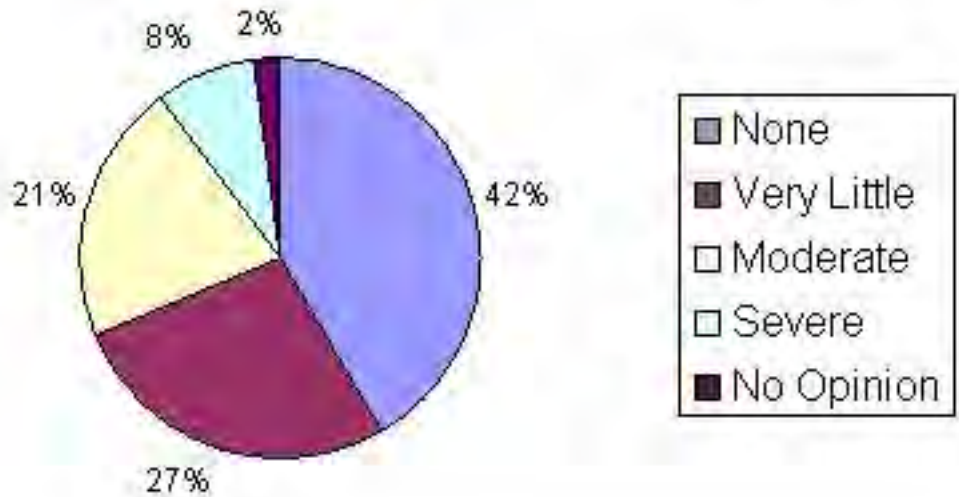
### Respondent Opinions About Deer in Yard



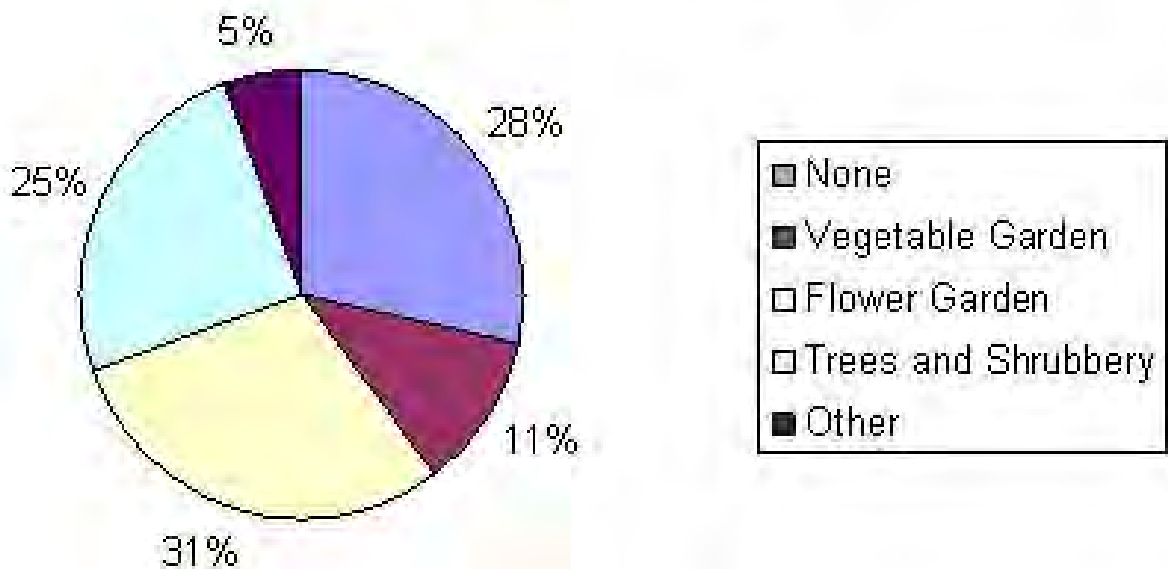
### Respondent Opinions About Deer in Schmeckle Reserve



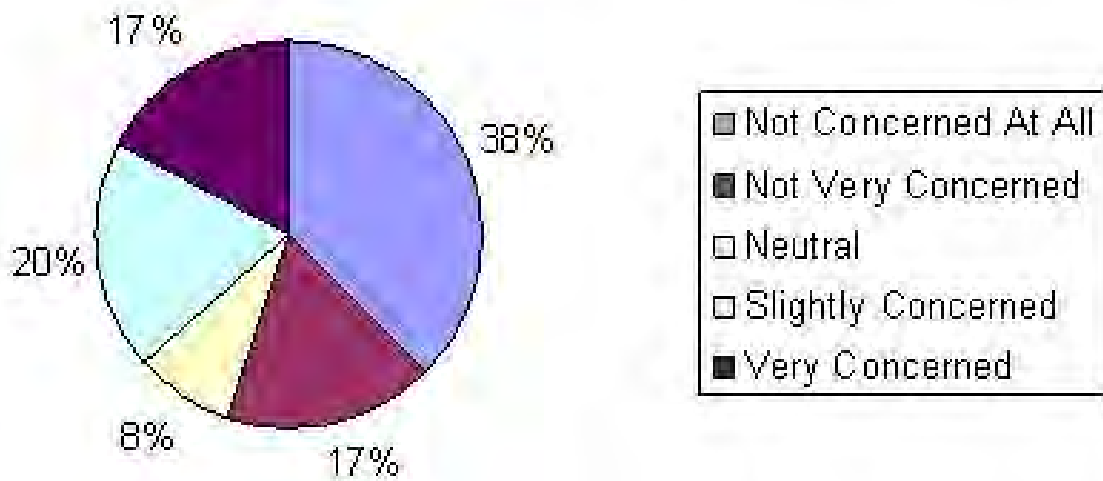
### Deer Damage to Household Properties September 2005-September 2006



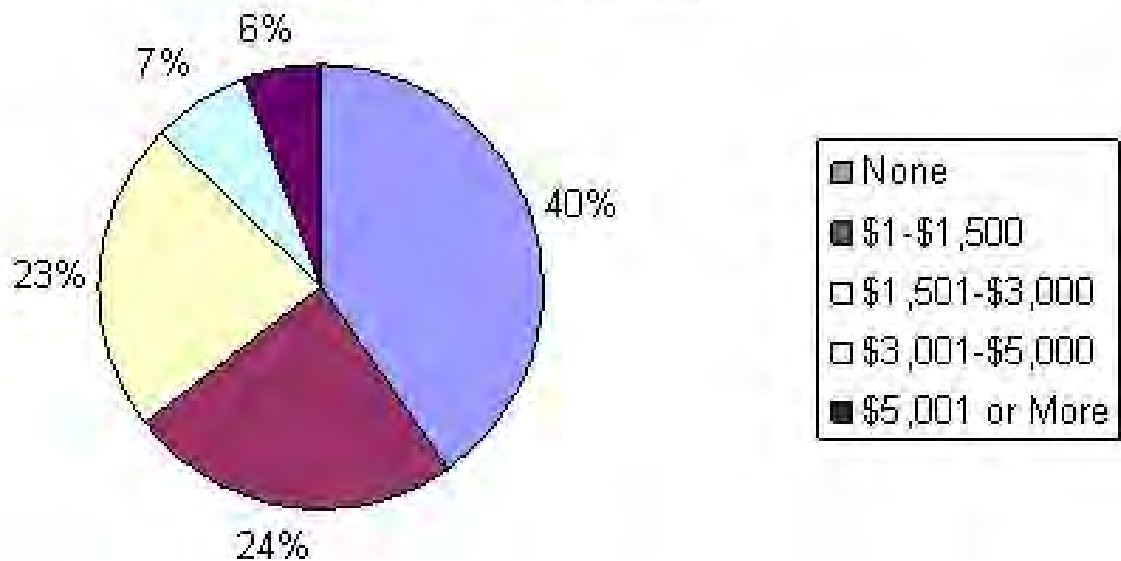
### Area of Property Damage



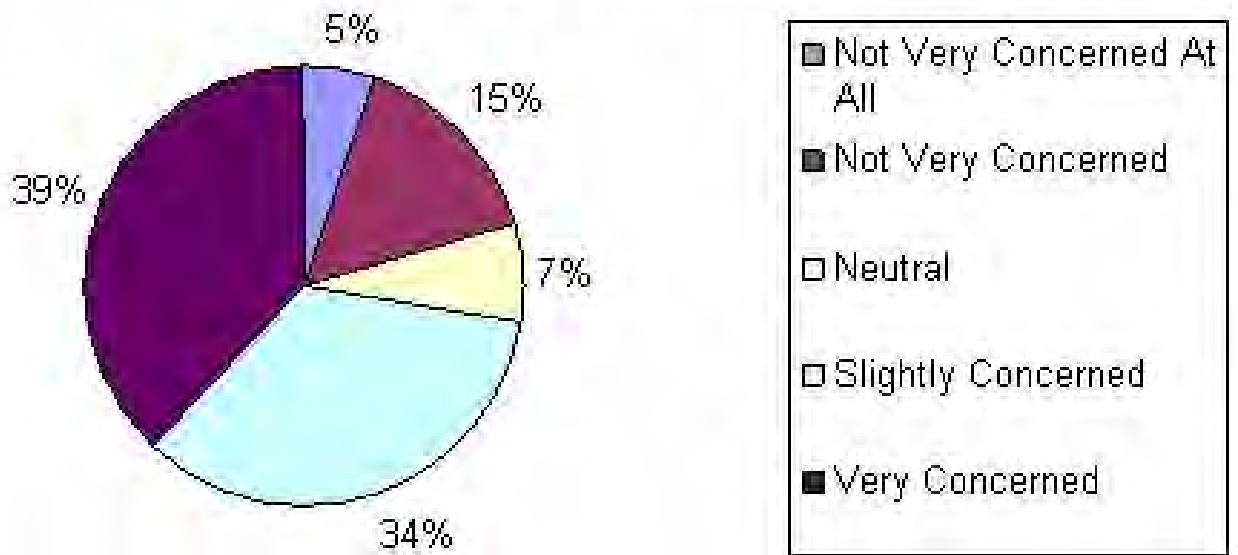
### Respondents' Level of Concern with Deer Damage to Their Property



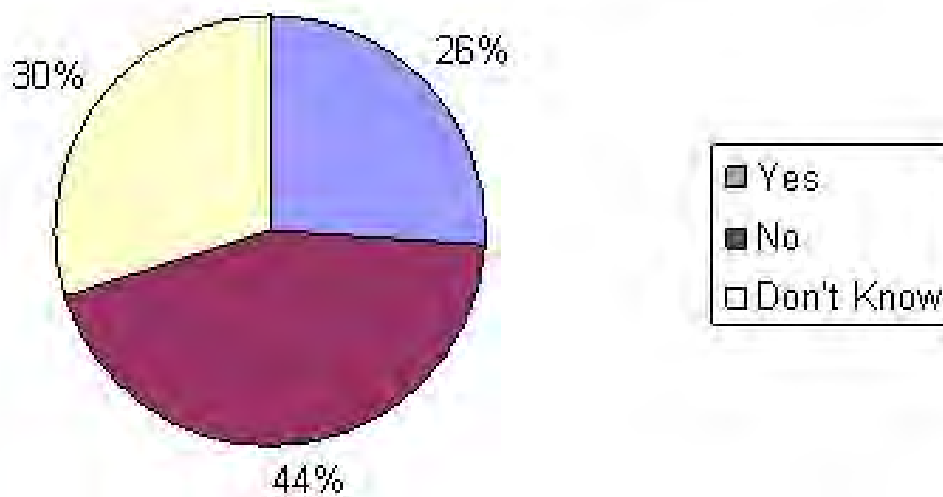
### Amount of Monetary Damage Caused by Individual Deer/Car Collisions



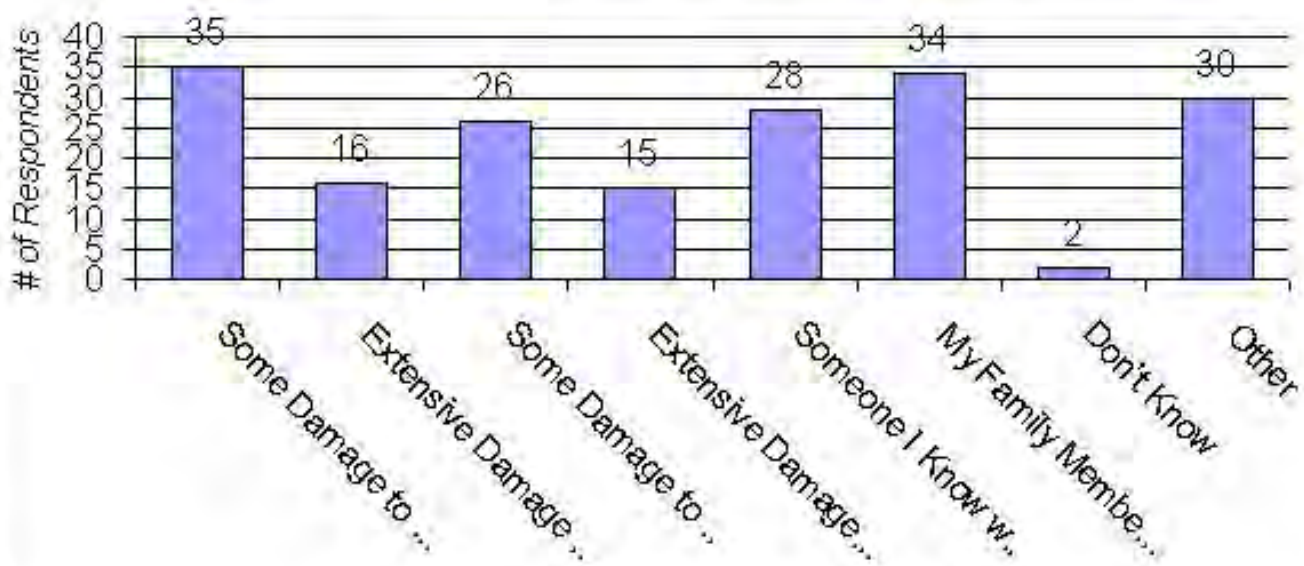
### Respondents' Level of Concern Regarding Deer/Vehicle Accidents



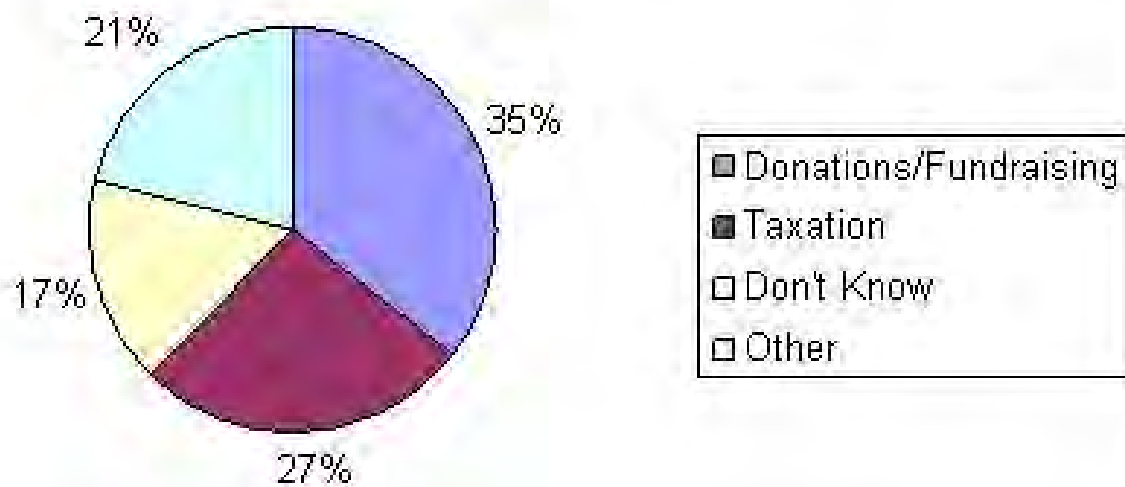
### Percentage of Respondents Willing to Pay Taxes Toward Urban Deer Management



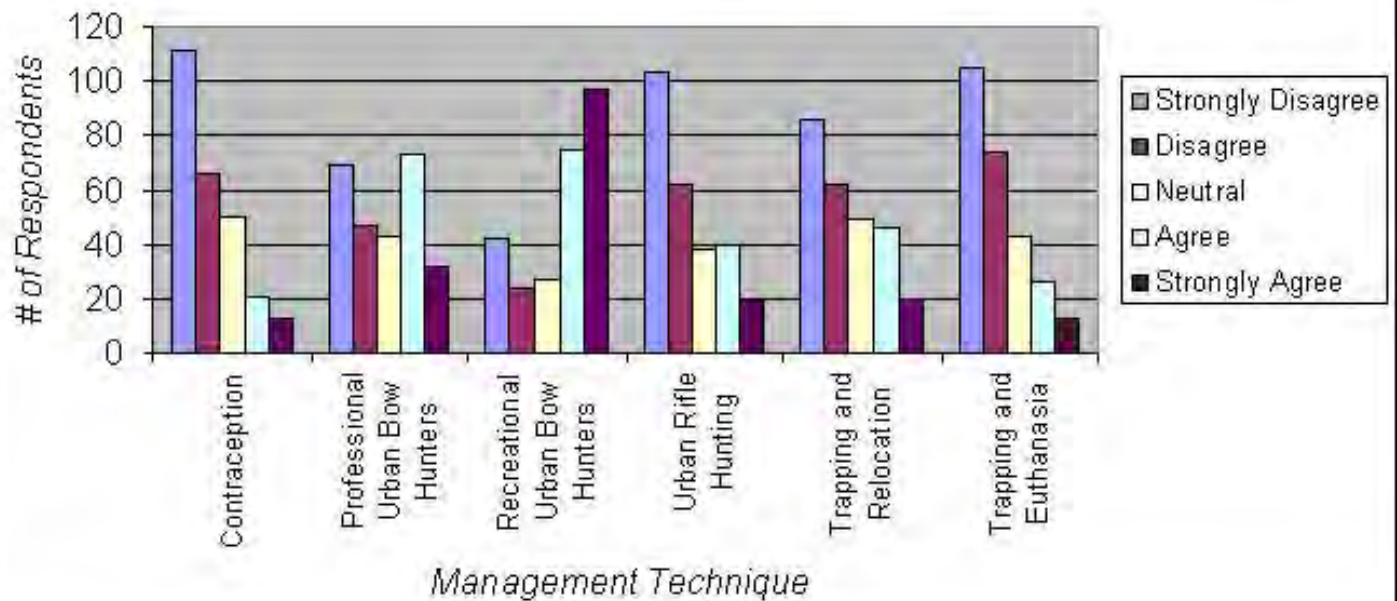
### Factors Contributing to Respondents' Desire to Pay Taxes Towards Urban Deer Management



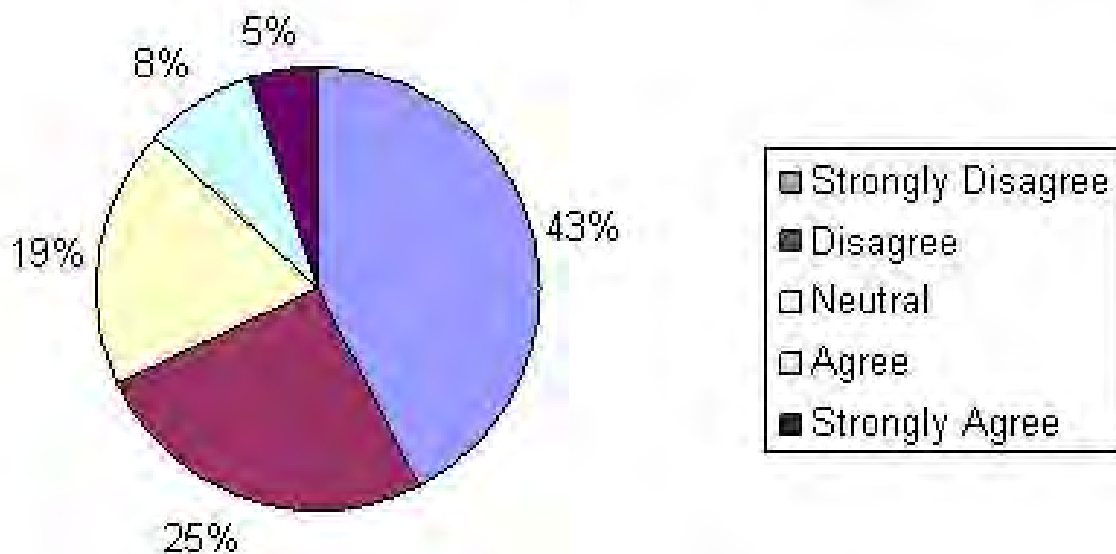
### Preferred Methods of Paying for Urban Deer Management



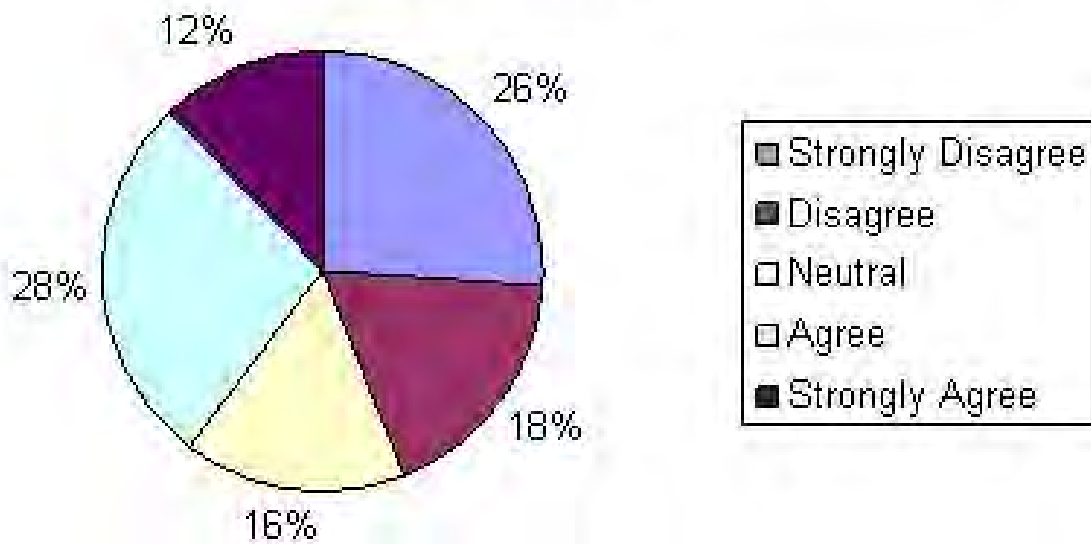
## Respondent Opinions About Urban Management Techniques



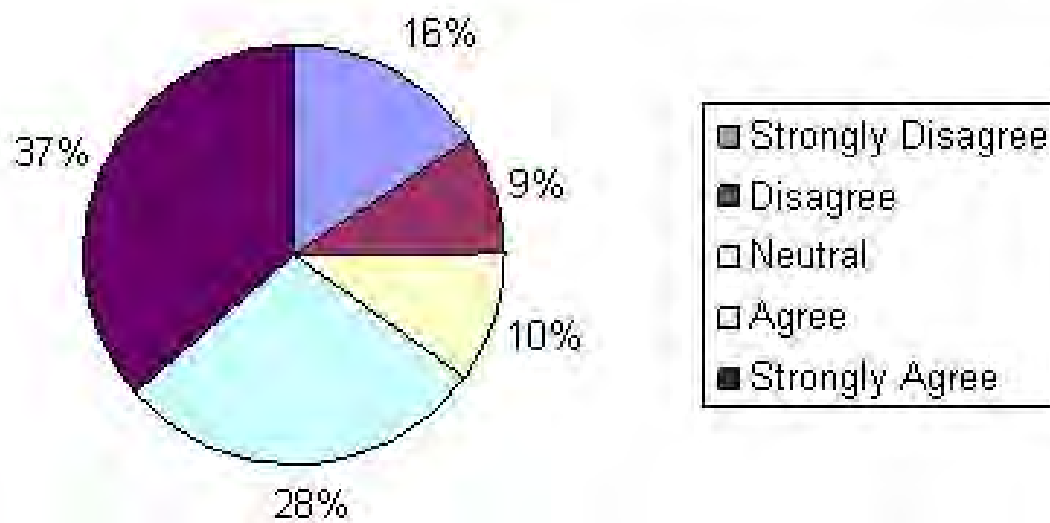
## Respondent Opinions About Contraception



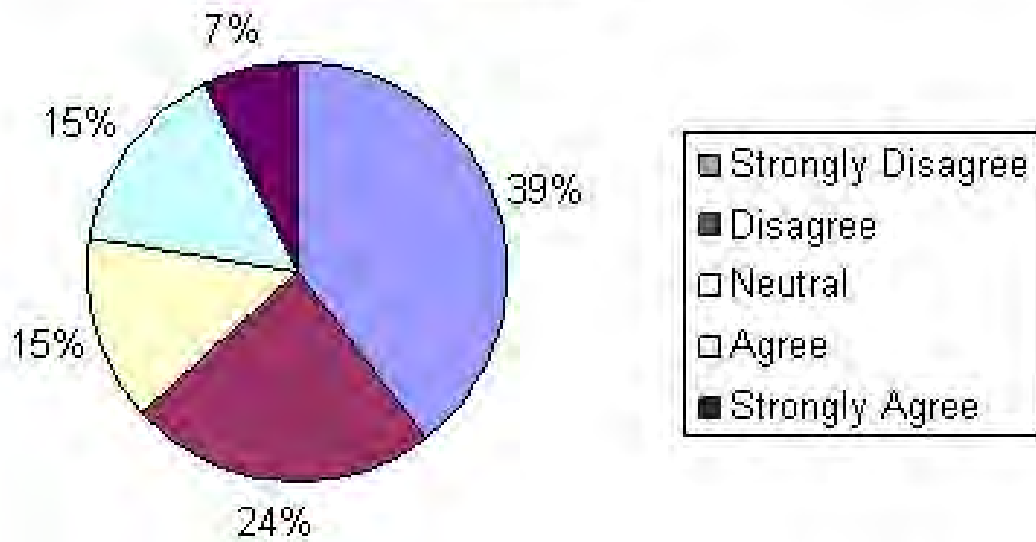
### Respondent Opinions About Bow Hunting by Professional Hunters



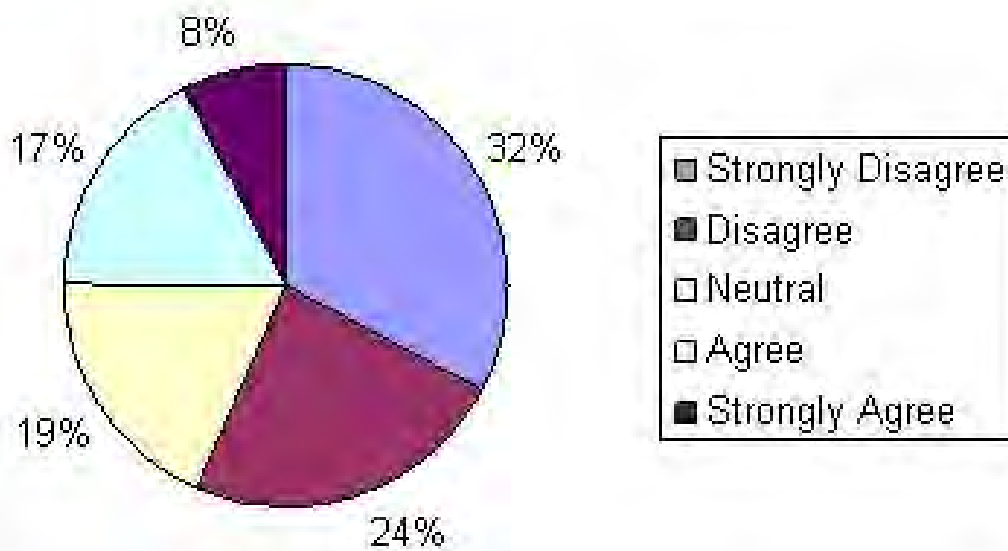
### Respondent Opinions About Urban Bow Hunting by Recreational Hunters



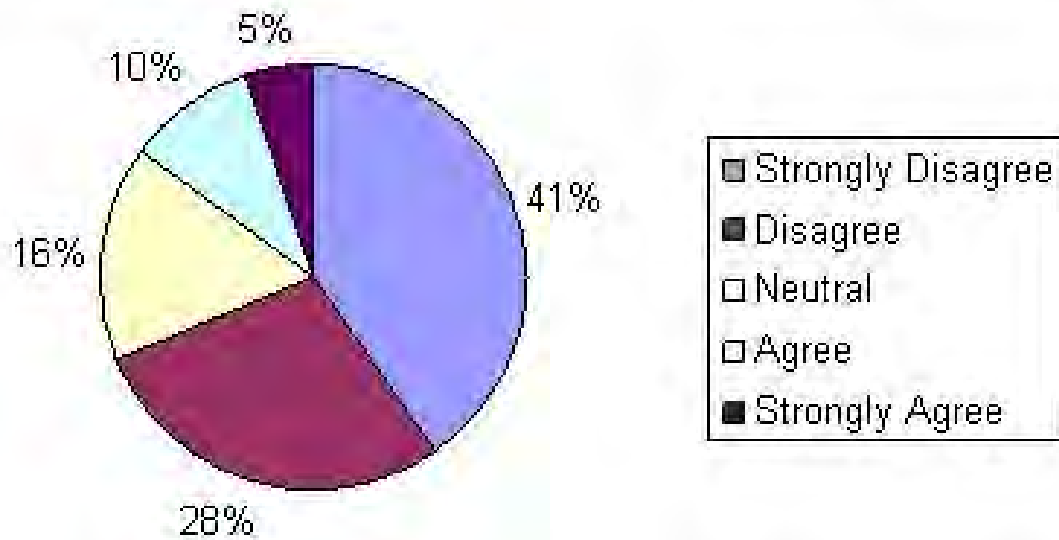
### Respondent Opinions About Urban Rifle Hunting (Sharpshooting)



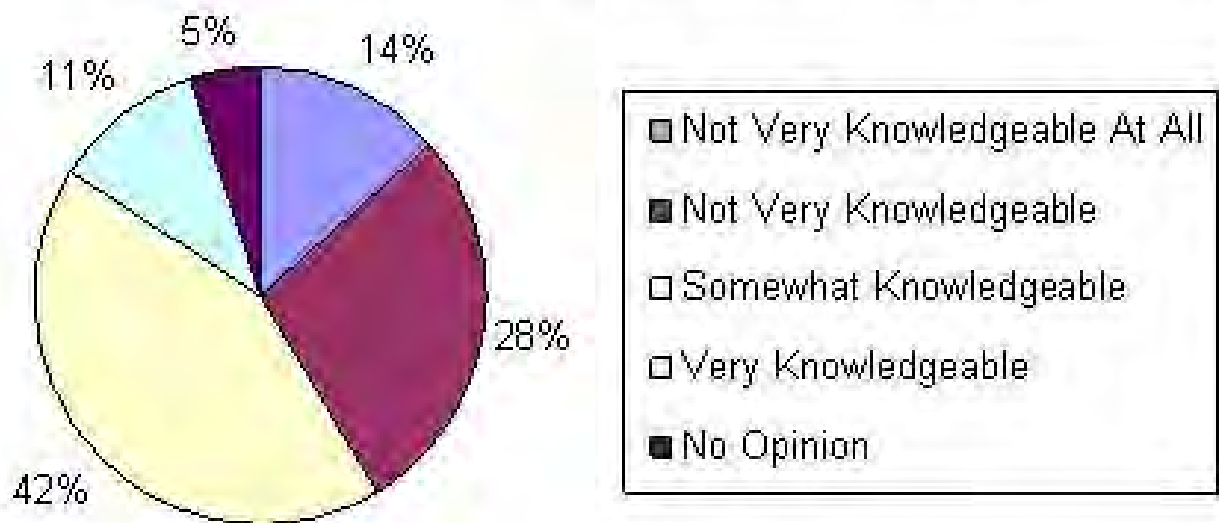
### Respondent Opinions About Trapping and Relocation



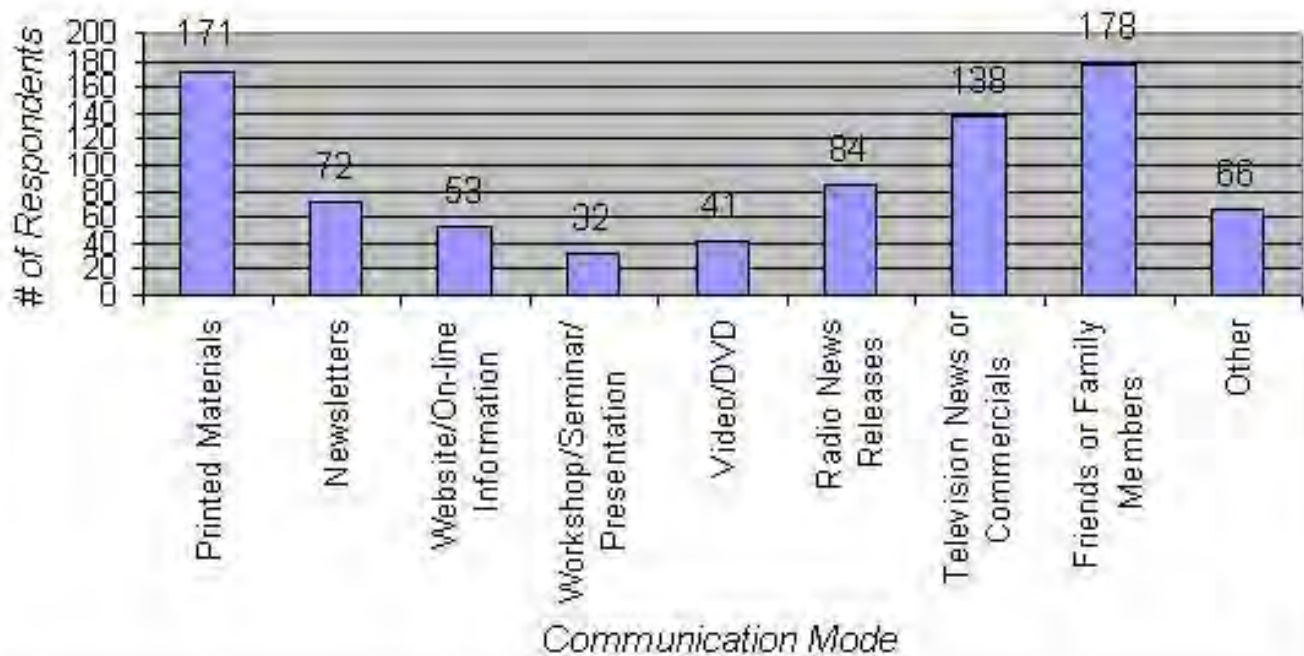
### Respondent Opinions About Trapping and Euthanasia



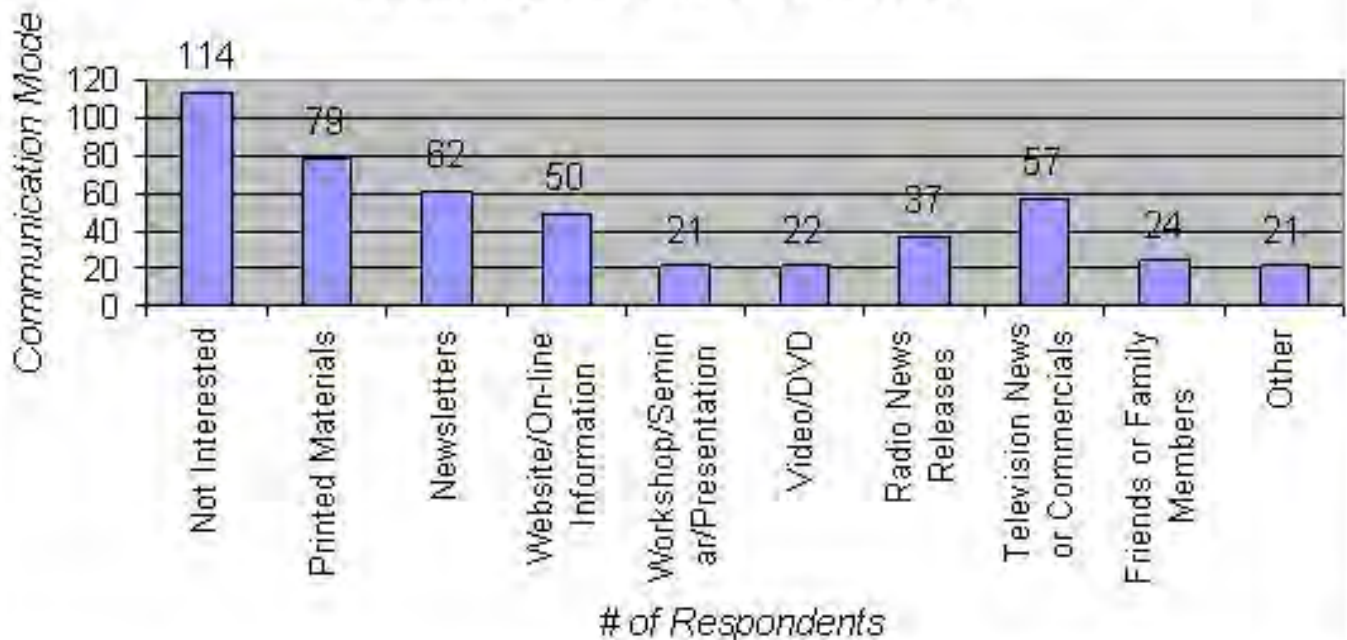
### Self-Reported Knowledge Level of Respondents Regarding Deer Biology and Management



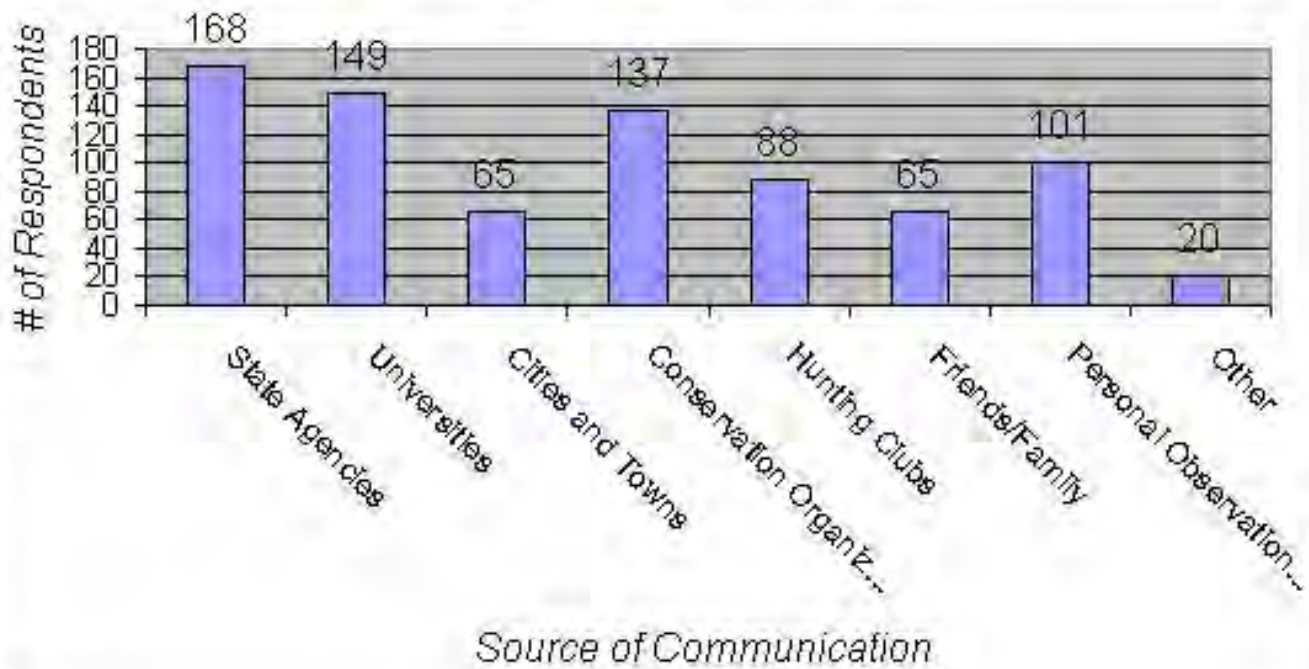
**Communication Modes Where Respondents Previously Obtained Information About Deer**



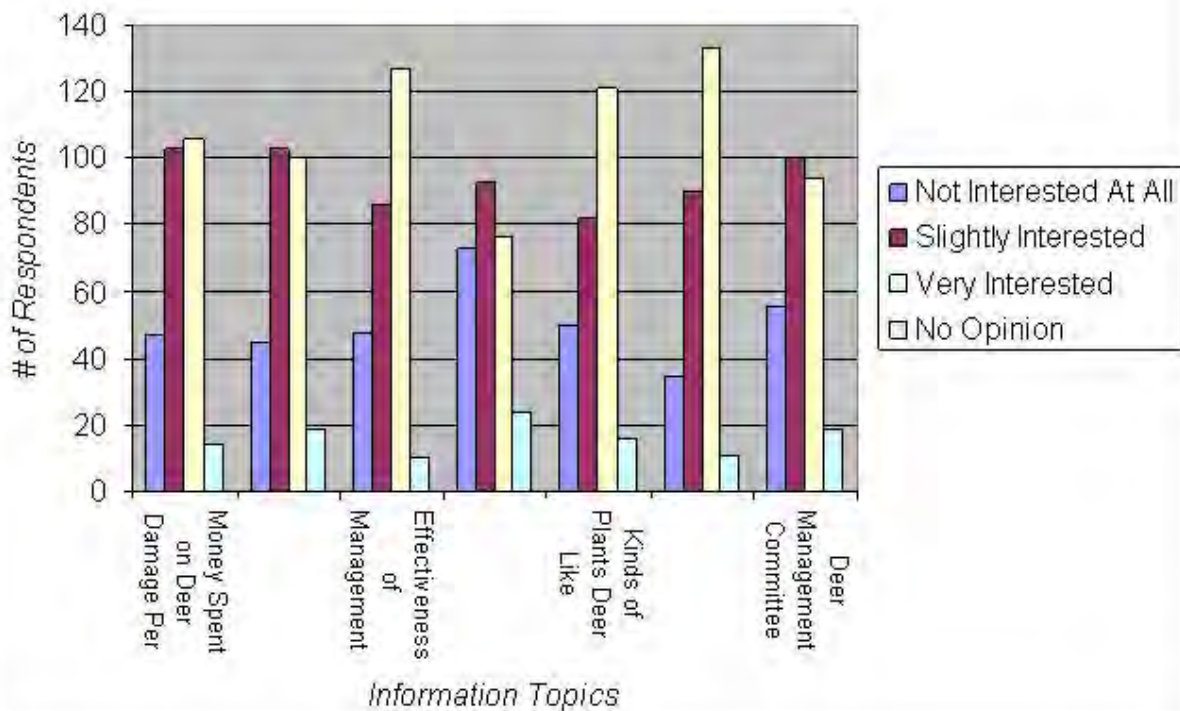
**Communication Modes Preferred by Respondents for Obtaining Information About Deer**



## Communication Sources Believed Most Reliable by Respondents



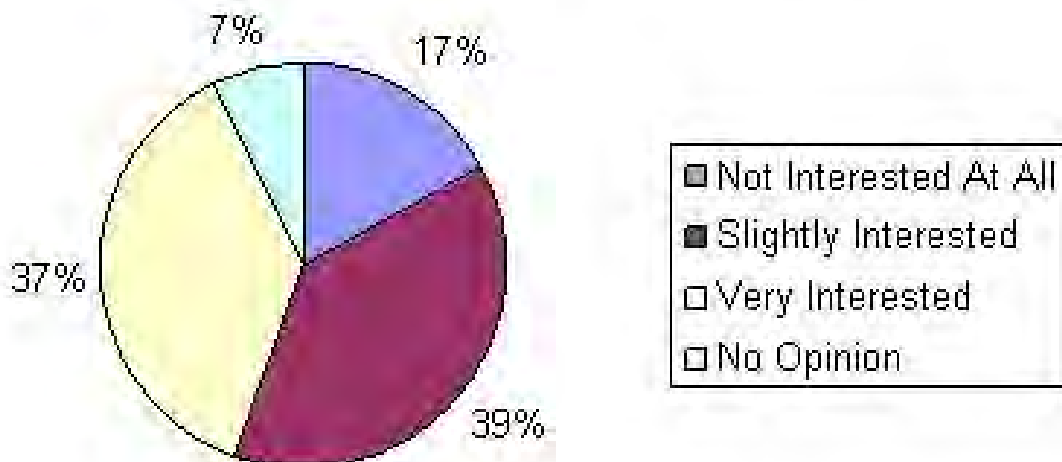
## Deer-Related Topics Respondents Are/Are Not Interested In



### Respondent Interest in Money Spent Per Year on Deer Damage



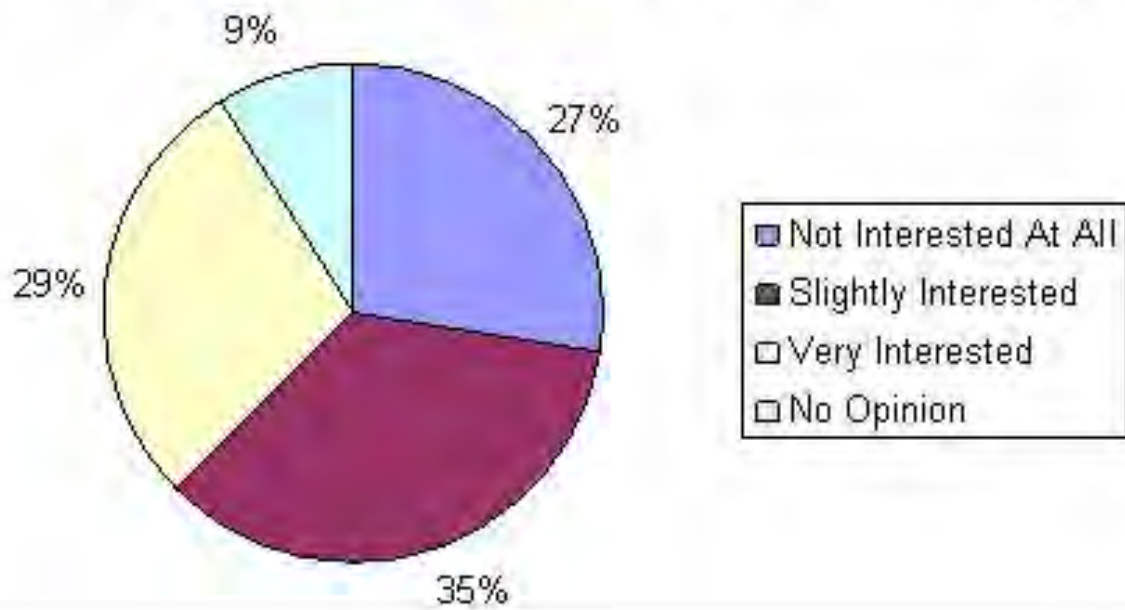
### Respondent Interest in Cost of Deer Management Techniques



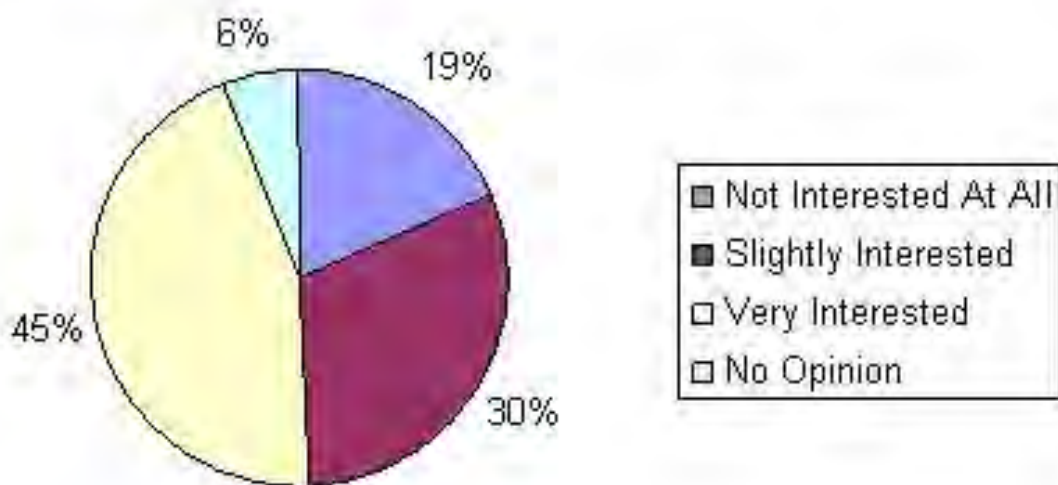
### Respondent Interest in Effectiveness of Deer Management Techniques



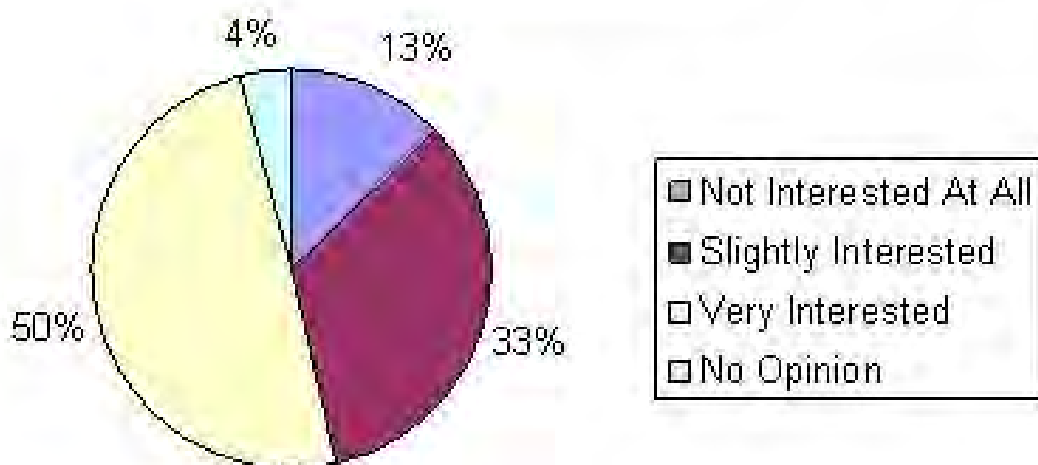
### Respondent Interest in Deer Reproductive Biology



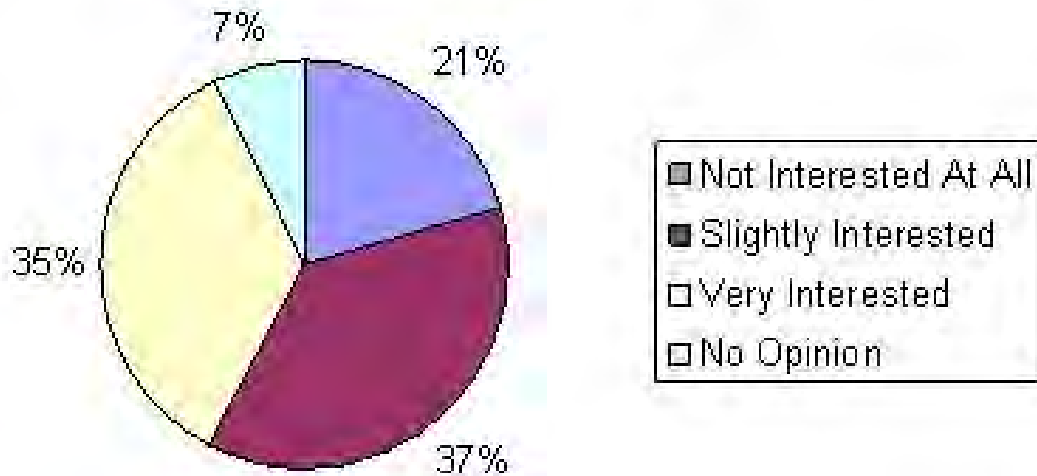
### Respondent Interest in Deer Forage Preferences



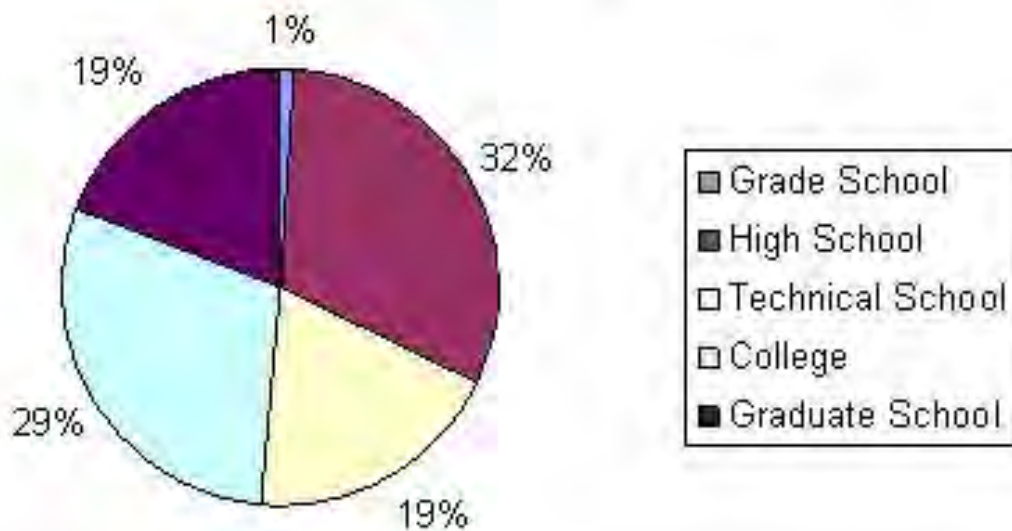
### Respondent Interest in Schmeckle Reserve Deer Population Estimate



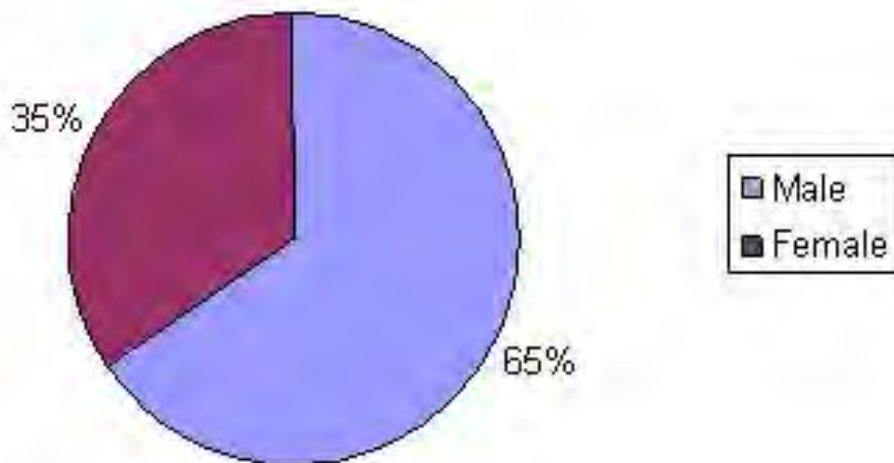
### Respondent Interest in Deer Management Committee Meeting Updates



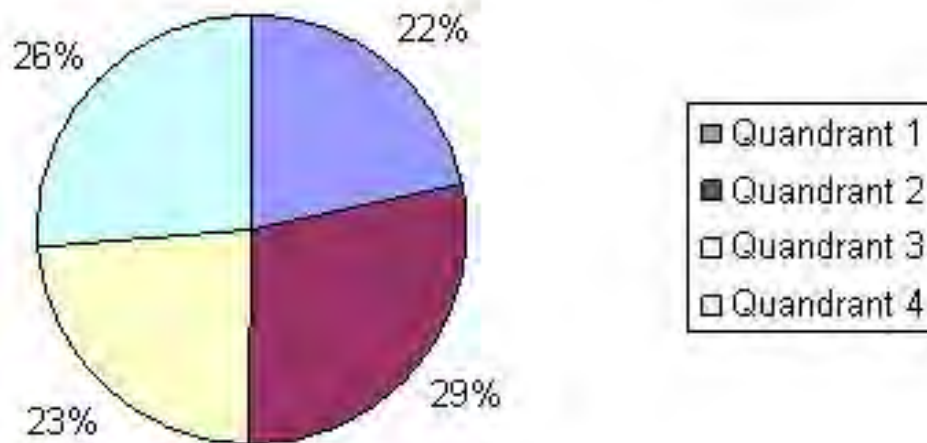
### Education Level of Respondents



**Respondent Gender**



**Respondent Area of Residence**



## Hunters vs. Non-Hunters

- Are Hunters More Likely to Strongly Agree with...
  - Contraception-No,  $p>0.05$
  - Urban Bow Hunting by Professionals-No, Significantly Less Likely,  $p<0.05$
  - Urban Bow Hunting by Recreational Hunters-Yes,  $p>0.05$
  - Urban Rifle Hunting-No, Significantly Less Likely,  $p<0.05$
  - Trapping and Relocation-No,  $p>0.05$
  - Trapping and Euthanasia-No,  $p>0.05$
- Are Hunters More Likely to Believe the Following are Reliable Sources of Communication...
  - State Agencies-No, Significantly Less Likely  $p<0.05$
  - Universities-No, Significantly Less Likely  $p<0.05$
  - Cities and Towns-No, Significantly Less Likely  $p<0.05$
  - Conservation Organizations-No,  $p>0.05$
  - Hunting Clubs-Yes,  $p<0.01$
  - Friends/Family-NO,  $p>0.05$
  - Personal Observations and Experience-Yes,  $p<0.01$
- Are Hunters More Likely to Be Very Interested in Learning About...
  - Amt. of Money Spent on Deer Damage Yearly-No,  $p>0.05$
  - Cost of Different Management Techniques-No,  $p>0.05$
  - Effectiveness of Different Management Techniques-No,  $p>0.05$
  - Deer Reproductive Biology-No, Significantly Less Likely  $p<0.05$
  - Preferred Forage of Deer- No, Significantly Less Likely  $p<0.05$
  - Number of Deer in Schmeckle Reserve-No,  $p>0.05$
  - Minutes of Last Deer Management Committee Meeting-Yes,  $p>0.05$
- Are Hunters More Likely to Like Seeing Deer in Their Yard A Lot?
  - Yes,  $p<0.01$
- Are Hunters More Concerned About Getting Into a Deer-Vehicle Accident?
  - No, Significantly Less Likely  $p<0.01$
- Are Hunters More Likely to Financially Support Methods to Control the Deer Population in Stevens Point Through Tax Dollars?
  - No, Significantly Less Likely  $p<0.01$
- How do Hunters Prefer to Pay for Urban Deer Management?
  - Something other than Taxation and Donations/Fundraising
- Are Hunters More Likely to Consider Themselves to be Very Knowledgeable About Deer Biology and Management?
  - Yes,  $p<0.01$
  - How About Somewhat Knowledgeable? Yes,  $p<0.01$
- Are Hunters More Likely to be Interested in Learning More About Deer?
  - No,  $p>0.05$

## Who Supports Tax Dollars for Urban Deer Control?

- Who Supports Financially Supporting Methods to Control the Deer Population in Stevens Point Through Tax Dollars?
  - Respondents who have hit a deer or been a vehicle that has are not significantly more likely to financially support methods to control the deer population in Stevens Point through tax dollars. ( $p>0.05$ )
  - Respondents who did not like seeing deer in their yard at all, were significantly more likely to financially support methods to control the deer population in Stevens Point

- through tax dollars. ( $p > 0.05$ )
- o Respondents who suffered severe deer damage to their properties were not more likely to financially support methods to control the deer population in Stevens Point through tax dollars. ( $p > 0.05$ )
- o Respondents who suffered moderate deer damage to their properties were significantly more likely to financially support methods to control the deer population in Stevens Point through tax dollars. ( $p < 0.01$ )
- o Respondents who suffered deer damage to their flowers gardens were significantly more likely to financially support methods to control the deer population in Stevens Point through tax dollars. ( $p < 0.01$ )
- o Respondents who had had someone in their household contract Lyme disease were not more likely to financially support methods to control the deer population in Stevens Point through tax dollars. ( $p > 0.05$ )

## Level of Education

- Are Graduate School Graduates More Likely to Strongly Agree with...
  - o Contraception- No,  $p > 0.05$
  - o Urban Bow Hunting by Professionals- No,  $p > 0.05$
  - o Urban Bow Hunting by Recreational Hunters- No,  $p > 0.05$
  - o Urban Rifle Hunting- No, but not Significantly,  $p > 0.05$
  - o Trapping and Relocation- No,  $p > 0.05$
  - o Trapping and Euthanasia- No,  $p > 0.05$
- Are College Graduates More Likely to Strongly Agree with...
  - o Contraception- No,  $p > 0.05$
  - o Urban Bow Hunting by Professionals- No,  $p > 0.05$
  - o Urban Bow Hunting by Recreational Hunters- No,  $p > 0.05$
  - o Urban Rifle Hunting- No,  $p > 0.05$
  - o Trapping and Relocation- No,  $p > 0.05$
  - o Trapping and Euthanasia- No,  $p > 0.05$
- Are Technical School Graduates More Likely to Strongly Agree with...
  - o Contraception- No,  $p > 0.05$
  - o Urban Bow Hunting by Professionals- No,  $p > 0.05$
  - o Urban Bow Hunting by Recreational Hunters- No,  $p > 0.05$
  - o Urban Rifle Hunting- No,  $p > 0.05$
  - o Trapping and Relocation- No,  $p > 0.05$
  - o Trapping and Euthanasia- No,  $p > 0.05$
- Are High School Graduates More Likely to Strongly Agree with...
  - o Contraception- No,  $p > 0.05$
  - o Urban Bow Hunting by Professionals- No,  $p > 0.05$
  - o Urban Bow Hunting by Recreational Hunters- No,  $p > 0.05$
  - o Urban Rifle Hunting- No, but not Significantly,  $p > 0.05$
  - o Trapping and Relocation- No,  $p > 0.05$
  - o Trapping and Euthanasia- No,  $p > 0.05$
- Are Grade School Graduates More Likely to Strongly Agree with...
  - o Contraception- No,  $p > 0.05$
  - o Urban Bow Hunting by Professionals- No,  $p > 0.05$
  - o Urban Bow Hunting by Recreational Hunters- No,  $p > 0.05$
  - o Urban Rifle Hunting- No,  $p > 0.05$

- o Trapping and Relocation- No,  $p > 0.05$
- o Trapping and Euthanasia- No,  $p > 0.05$

### Male vs. Female Respondents

- Are Women More Likely to Like Seeing Deer in the Yard A Lot?
  - o No,  $p > 0.05$
- Are Women More Concerned with Deer Damage to Their Property?
  - o No,  $p > 0.05$
- Are Women More Concerned About Getting into a Deer-Vehicle Accident?
  - o No,  $p > 0.05$
- Are Women More Likely to Financially Support Methods to Control the Deer Population in Stevens Point Through Tax Dollars?
  - o No,  $p > 0.05$
- Are Women More Likely to Strongly Agree with the Following Management Techniques:
  - o Contraception-Yes,  $p < 0.01$
  - o Urban Bow Hunting by Professional-No,  $p > 0.05$
  - o Urban Bow Hunting by Recreational Hunters-No,  $p > 0.05$
  - o Urban Rifle Hunting-No,  $p > 0.05$
  - o Trapping and Relocation-Yes,  $p < 0.05$
  - o Trapping and Euthanasia-No,  $p > 0.05$
- Are Women More Likely to Consider Themselves to be?
  - o Not Knowledgeable At All-Yes,  $p < 0.05$
  - o Not Very Knowledgeable-Yes,  $p < 0.01$
  - o Somewhat Knowledgeable-No, Significantly Less Likely,  $p < 0.01$
  - o Very Knowledgeable- No, Significantly Less Likely,  $p < 0.05$
- Are Women More Likely to be Very Interested in the Following Topics:
  - o Amt. of Money Spent on Deer Damage Yearly-No,  $p > 0.05$
  - o Cost of Different Management Techniques-No,  $p > 0.05$
  - o Effectiveness of Different Management Techniques-No,  $p > 0.05$
  - o Deer Reproductive Biology-Yes,  $p < 0.05$
  - o Preferred Forage of Deer- Yes,  $p < 0.05$
  - o Number of Deer in Schmeckle Reserve- Yes,  $p < 0.01$
  - o Minutes of Last Deer Management Committee Meeting- No,  $p > 0.05$

### Difference in Answers Between the 4 Quadrants

- Were Respondents in Quadrant \_\_\_\_\_ More Likely to See Severe Deer Damage Done to Their Properties?
  - o Quadrant 1- No,  $p > 0.05$
  - o Quadrant 2- No,  $p > 0.05$
  - o Quadrant 3- No,  $p > 0.05$
  - o Quadrant 4- No,  $p > 0.05$
- Were Respondents in Quadrant \_\_\_\_\_ More Likely to See Moderate Deer Damage Done to Their Properties?
  - o Quadrant 1- No,  $p > 0.05$
  - o Quadrant 2- No,  $p > 0.05$
  - o Quadrant 3- No,  $p > 0.05$
  - o Quadrant 4- No,  $p > 0.05$

## Miscellaneous Analyses

- Respondents who have hit a deer or been a vehicle that has are significantly more likely to be very concerned about getting into a deer-vehicle accident. ( $p < .05$ )
- Are \_\_\_\_\_ Educated Respondents More Likely to Report that they are Very Knowledgeable?
  - Graduate School and College Graduates Reported to be Very Knowledgeable more often than other Respondents
- Were Very Knowledgeable Respondents More Likely to Check “Not Interested in Learning More About Deer”?
  - No,  $p > 0.05$
  - How about Somewhat Knowledgeable Respondents? No, Significantly Less Likely,  $p < 0.05$
  - How about Not Very Knowledgeable Respondents? No,  $p > 0.05$
  - How about Not Knowledgeable Respondents? Yes,  $p < 0.05$
- Were Respondents Who Liked Seeing Deer in Their Yards A Lot More Likely to Strongly Agree with one of the Following Management Techniques:
  - Contraception- No,  $p > 0.05$
  - Urban Bow Hunting by Professional- No, Significantly Less Likely,  $p < 0.01$
  - Urban Bow Hunting by Recreational Hunters- No,  $p > 0.05$
  - Urban Rifle Hunting- No, Significantly Less Likely,  $p < 0.05$
  - Trapping and Relocation- No, Significantly Less Likely,  $p < 0.05$
  - Trapping and Euthanasia- No,  $p > 0.05$
- Were Respondents Who Didn't Like Seeing Deer in Their Yards At All More Likely to Strongly Agree with one of the Following Management Techniques:
  - Contraception- No,  $p > 0.05$
  - Urban Bow Hunting by Professional- Yes,  $p < 0.01$
  - Urban Bow Hunting by Recreational Hunters- No, Significantly Less Likely,  $p < 0.05$
  - Urban Rifle Hunting- Yes,  $p < 0.01$
  - Trapping and Relocation- No,  $p > 0.05$
  - Trapping and Euthanasia- Yes,  $p < 0.01$
- Were Respondents Who Didn't Like Seeing Deer in Their Yards At All More Likely to Strongly Disagree with one of the Following Management Techniques:
  - Contraception- Yes,  $p < 0.05$
  - Urban Bow Hunting by Professional- Yes,  $p < 0.01$
  - Urban Bow Hunting by Recreational Hunters- Yes,  $p < 0.01$
  - Urban Rifle Hunting- Yes,  $p < 0.01$
  - Trapping and Relocation- Yes,  $p < 0.05$
  - Trapping and Euthanasia- Yes,  $p < 0.01$

January 3rd, 2007

Dear Colleagues,

I would like to ask for your help with my graduate research. I am currently completing my Master's of Natural Resources in Environmental Education and Interpretation at the University of Wisconsin-Stevens Point. My research project is to develop a community education plan for urban white-tailed deer management. I have already collected a multitude of data via a questionnaire sent out in October and November. Now, I am hoping to find agencies/organizations that have implemented a community education program or some other sort of communication plan in communities suffering from problem wildlife issues. I would especially like to learn about plans/programs that have been geared toward deer issues, but any sort of program implemented in response to urban nuisance wildlife would be helpful.

For my research, I am creating several types of media to be used for urban deer management education. Based on the responses from my study questionnaires, it looks like I will be creating a website, a newsletter, a brochure, and writing a television news story. I would like to hear what other education/communication programs have found successful or unsuccessful in regards to media. I do not want to create a brochure if you have found them to be useless in education. Or, you may have discovered some other form of media that more effectively reaches members of the public than any of the methods I have suggested. If you or a colleague you know has worked on a project using different media types, please fill out the simple attached form and email it back to me. It should only take 5-10 minutes to complete.

Thank you so much for your time and please let me know if you have any questions. Also, I would be happy to provide respondents with the final results of my research in April or May of this year. Please let me know if you are interested in receiving my complete community education plan. Thanks again for your help!

Cortney

| <b>Community Education Plan Contacts</b>  |                        |                       |  |                   |   |
|---|------------------------|-----------------------|--|-------------------|---|
| <b>Name of Organization</b>               | <b>Name of Contact</b> | <b>Phone Number</b>   | <b>Email Address</b>   | <b>Contacted?</b> | <b>Comments</b>   |
| Wisconsin Bureau of Wildlife Management   | Ricky Lien             | 920-892-8756 ext.3045 | <a href="mailto:ricky.lien@dnr.state.wi.us">ricky.lien@dnr.state.wi.us</a>       | Yes, 1/3/2007     | Urban Deer Specialist for Wisconsin                             |
| Wisconsin Department of Natural Resources | John Dunne             | 715-839-3771          |  |                   | Helped Administer Recreational Bow Hunting in 2 Wisconsin towns |
| Pheasant Branch Nature Reserve            | Penny Klein            | 608-827-1044          |  |                   | Runs a community education program in Middleton, WI             |
| Michigan Department of Natural Resources  | Kevin Frailey          | 517-373-7306          | <a href="mailto:fraileyk@michigan.gov">fraileyk@michigan.gov</a>                 | Yes, 1/3/2007     | Director of Education and Outreach                              |
| Michigan Department of Natural Resources  | Patricia Stewart       | 517-241-3100          | <a href="mailto:stewartpa@michigan.gov">stewartpa@michigan.gov</a>               | Yes, 1/3/2007     | Chief of Communications   |
| Minnesota Department of Natural Resources | Dave Schad             | 651-259-5180          | <a href="mailto:david.schad@state.mn.us">david.schad@state.mn.us</a>             | Yes, 1/3/2007     | Division of Fish and Wildlife Director                          |
| Iowa Department of Natural Resources      | Kevin Baskins          | 515-281-8395          | <a href="mailto:kevin.baskins@dnr.state.ia.us">kevin.baskins@dnr.state.ia.us</a> | Yes, 1/3/2007     | Chief of Communications   |
| Illinois Department of Natural Resources  | Valerie Keener         | 217-524-4126          | <a href="mailto:dnr.teachkids@illinois.gov">dnr.teachkids@illinois.gov</a>       | Yes, 1/3/2007     | Division of Education Administrator                             |
| Indiana Department of Natural Resources   | Kim Brant              | 317-233-3046          | <a href="mailto:kbrant@dnr.IN.gov">kbrant@dnr.IN.gov</a>                         | Yes, 1/3/2007     | Director of the Division of Communications                      |
| Ohio Department of Natural Resources      | Jane Beathard          | 614-265-6860          | <a href="mailto:jane.beathard@dnr.state.oh.us">jane.beathard@dnr.state.oh.us</a> | Yes, 1/3/2007     | Office of Communications  |
| Ohio Department of Natural Resources      |                        | 800-945-3543          | <a href="mailto:wildinfo@dnr.state.oh.us">wildinfo@dnr.state.oh.us</a>           | Yes, 1/3/2007     | Division of Wildlife  |
| Quality Deer Management Association       |                        | 800-209-3337          |  | Yes, 1/5/2007     | Filled out form on website                                      |
| Quality Deer Management Association       | Joe Bruner             | 608-642-1148          | <a href="mailto:jbrunker@qdma.com">jbrunker@qdma.com</a>                         | Yes; 1/5/2007     | Midwest Regional Director of QDMA                               |
| Quality Deer Management Association       | Chris Pevey            | 217-734-9230          | <a href="mailto:cpevey@qdma.com">cpevey@qdma.com</a>                             | Yes; 1/5/2007     | Heartland Regional Director of QDMA                             |
| Quality Deer Management Association       | Bob Ducharme           | 269-832-0486          | <a href="mailto:bducharme@qdma.com">bducharme@qdma.com</a>                       | Yes; 1/5/2007     | Great Lakes Regional Director of QDMA                           |

## Community Education Plan Contacts (cont.)

|                                     |                 |              |  |                  |  |
|-------------------------------------|-----------------|--------------|--|------------------|--|
| Quality Deer Management Association | Ken Allein      | 716-432-9144 | <a href="mailto:kallein@qdma.com">kallein@qdma.com</a>     | Yes;<br>1/5/2007 | Northeast Regional Director of QDMA    |
| Quality Deer Management Association | Matt Ross       | 603-335-5213 | <a href="mailto:mross@qdma.com">mross@qdma.com</a>         | Yes;<br>1/5/2007 | New England Regional Director of QDMA  |
| Quality Deer Management Association | Dennis Campbell | 540-946-8447 | <a href="mailto:dcampbell@qdma.com">dcampbell@qdma.com</a> | Yes;<br>1/5/2007 | Mid-Atlantic Regional Director of QDMA |
| Quality Deer Management Association | Bob White       | 706-207-1292 | <a href="mailto:bwhite@qdma.com">bwhite@qdma.com</a>       | Yes;<br>1/5/2007 | Southeast Regional Director of QDMA    |
| Quality Deer Management Association | Tom Goodhue     | 270-776-2838 | <a href="mailto:tgoodhue@qdma.com">tgoodhue@qdma.com</a>   | Yes;<br>1/5/2007 | Central Regional Director of QDMA      |

# Nuisance Wildlife Education/Communication Plan Evaluation

---

Name of Organization: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Contact Email: \_\_\_\_\_

Please answer all four questions for each type of media (website, brochure, radio spot, newspaper advertisement, etc.) used in your education or communication program(s):

Media Type #1: \_\_\_\_\_

1). Name of Education/Communication Program: \_\_\_\_\_

2). Which wildlife species was the program designed for? \_\_\_\_\_

3). Was the Media Successful? \_\_\_\_\_

4). Why or Why Not? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Media Type #2: \_\_\_\_\_

1). Name of Education/Communication Program: \_\_\_\_\_

2). Which wildlife species was the program designed for? \_\_\_\_\_

3). Was the Media Successful? \_\_\_\_\_

4). Why or Why Not? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Media Type #3: \_\_\_\_\_

1. Name of Education/Communication Program: \_\_\_\_\_
2. Which wildlife species was the program designed for? \_\_\_\_\_
3. Was the Media Successful? \_\_\_\_\_
4. Why or Why Not? \_\_\_\_\_

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Media Type #4: \_\_\_\_\_

1. Name of Education/Communication Program: \_\_\_\_\_
2. Which wildlife species was the program designed for? \_\_\_\_\_
3. Was the Media Successful? \_\_\_\_\_
4. Why or Why Not? \_\_\_\_\_

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Media Type #5: \_\_\_\_\_

1. Name of Education/Communication Program: \_\_\_\_\_
2. Which wildlife species was the program designed for? \_\_\_\_\_
3. Was the Media Successful? \_\_\_\_\_
4. Why or Why Not? \_\_\_\_\_

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**University of Wisconsin-Stevens Point**  
Grant Support Services and Sponsored Programs

Stevens Point WI 54481-3897  
715-346-2632; Fax 715-346-4132  
www.uwsp.edu/grantsup

October 23, 2006

Cortney Schaefer  
Human Dimensions of Natural Resources  
CNR

Dear Cortney:

Congratulations! Your request for a Student Research Fund (SRF) Travel to Present grant has been approved for funding in the amount of \$300 for your proposal entitled "Developing a Community Education Program for Urban White-tailed Deer Management." I am pleased to provide you with this opportunity to further your development and contribute to your scholarship.

**As dictated by a federal mandate, the Grant Support Services Office shares grant recipient information with the Financial Aid Office. If you are a financial aid recipient, this grant award may result in a change in your financial aid. Please contact a UWSP financial aid counselor as soon as possible to discuss this grant. I strongly recommend you bring a copy of your grant to that meeting.**

You will find a copy of the approved budget attached. Please contact Payment Services, 346-2052, or your faculty advisor for the procedures you must follow in order to expend your grant funds. Remember that these funds should be expended by January 1, 2007 unless your advisor submits a request, in writing to me, to carry over the funds.

I wish you the best of luck in your conference presentation.

Sincerely,

A handwritten signature in cursive script that reads "Cindy".

Cindy Marczak  
University Services Program Associate

Enclosures

XC: Brenda Lackey, Faculty Advisor  
File 87.12

# Developing a Community Education Plan on Urban White-tailed Deer (*Odocoileus virginianus*) Population Management

Cortney Schaefer  
 University of Wisconsin-  
 Stevens Point  
 December 6<sup>th</sup>, 2006

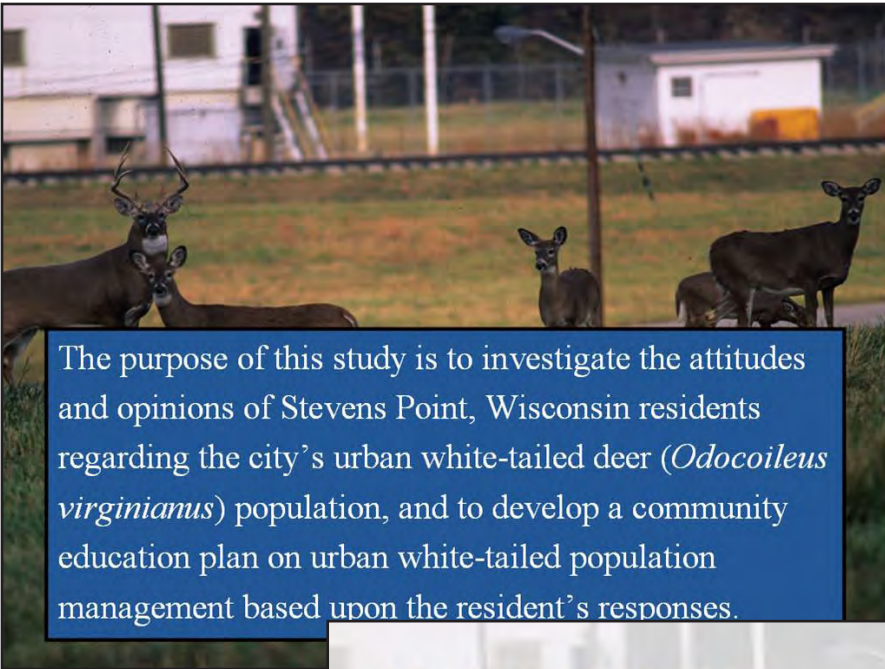
## Background

- Stevens Point, Wisconsin (pop. ~25,000)
  - Home to largest undergraduate CNR in the country
  - Outdoor-conscientious town
  - Relatively large amount of green space
    - Schmeeckle Reserve
  - 55-60 deer per square mile in Portage County

## Background

- Evidence of an overabundant urban deer population:
  - Vehicle-deer accidents
  - Loss of shrubbery and ornamental plants
  - Deer/Bank Incident
  - Auto shop commercial
  - Browse line in throughout the city
- History of Urban Deer Management in Stevens Point
  - Started in 2002
  - Archery/Trapping

| Year | # of Car/Deer Accidents |
|------|-------------------------|
| 1999 | 21                      |
| 2000 | 31                      |
| 2001 | 25                      |
| 2002 | 22*                     |
| 2003 | 34                      |
| 2004 | 17                      |
| 2005 | 20                      |



The purpose of this study is to investigate the attitudes and opinions of Stevens Point, Wisconsin residents regarding the city's urban white-tailed deer (*Odocoileus virginianus*) population, and to develop a community education plan on urban white-tailed population management based upon the resident's responses.

## Study Objectives

- 1) Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point.
- 2) Determine what combination of communication modes to use in order to reach a large percentage of the population in Stevens Point.
- 3) Develop a community education plan to educate community residents about deer population management and the different management options available.



## Methods: Objective 1

- Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point.
  - Questionnaire consisted of 25 questions
    - 4 demographic questions, 1 open ended comments question
    - 15 questions regarding attitudes and opinions,
    - 2 pages (front and back)
    - Mostly Likert-type questions with a few fill in the blanks
    - Took 10-15 minutes to complete

## Methods: Objective 1

- Questionnaire
  - 500 questionnaires sent on Sept. 28<sup>th</sup>, 2006
  - Reminder postcard sent on Oct. 14<sup>th</sup>, 2006
  - Second copy of questionnaire sent on Oct. 30<sup>th</sup>, 2006

### 1. Describe how seeing deer in your yard makes you feel. (Circle one).

Don't Like At All    Somewhat Dislike    Somewhat Like It    Like It A Lot    No Opinion

### 2. Describe how seeing deer in Schmeckle Reserve makes you feel. (Circle one).

Don't Like At All    Somewhat Dislike    Somewhat Like It    Like It A Lot    No Opinion

### 3. How would you describe the extent of damage done to your property by deer within the past 12 months?

(Circle one)  
None                      Very Little                      Moderate                      Severe                      No Opinion

## Methods: Objective 2

### 17. Where have you obtained information about white-tailed deer in the past? (Check all that apply).

- Printed Materials (such as printed regulations, a brochure, flyers, books, etc.)
- Newsletters
- Website/On-line Information
- Workshop/Seminar/Presentation
- Video/DVD
- Radio News Releases
- Television News or Commercials
- Friends and/or Family Members
- Other(describe): \_\_\_\_\_

### 18. How would you like to learn more about deer? (Check all that apply).

- I am Not Interested in Learning More About Deer
- Printed Materials (such as printed regulations, a brochure, flyers, books, etc.)
- Newsletters
- Website/On-line Information
- Workshop/Seminar/Presentation
- Video/DVD
- Radio News Releases
- Television News or Commercials
- Friends and/or Family Members
- Other(describe): \_\_\_\_\_

## Methods: Objective 3

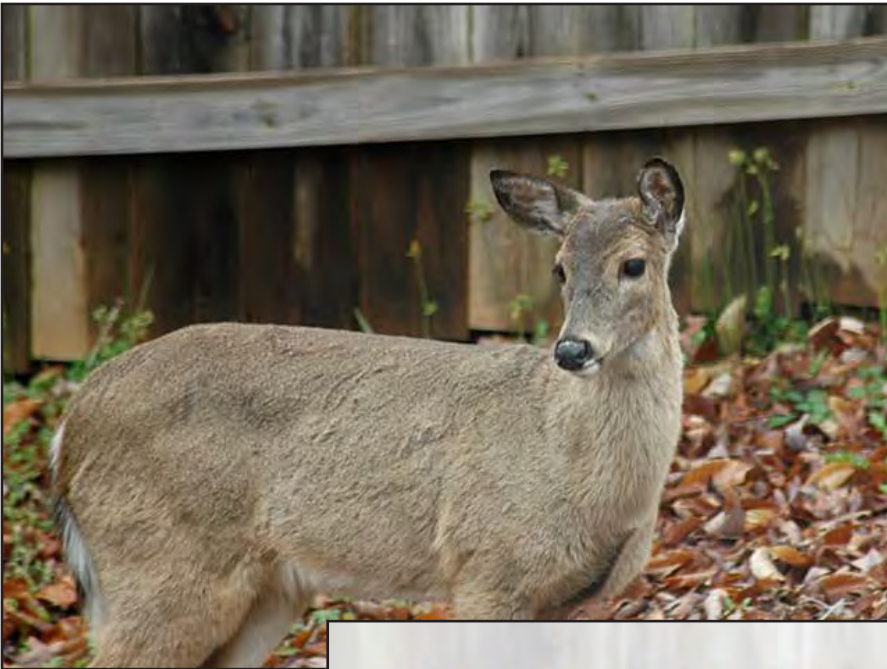
- Develop a community education plan to educate community residents about deer population management and the different management options available.
- Obtain accurate information about urban deer management
- Incorporate modes of communication



## Methods: Objective 3

- **Community Education Plan:** A package of information that incorporates several different **modes of communication** determined to be most effective for Stevens Point residents. It will contain information about urban deer population management, as well as general white-tailed deer information.





## Preliminary Results

- Questionnaire Response Rate

- First Mailing: **38.5%** (190/493)
- Reminder Postcard: **6%** (30/493)
- Second Mailing: **13.4%** (66/493)
- Total Response Rate: **58.0%** (286/493)

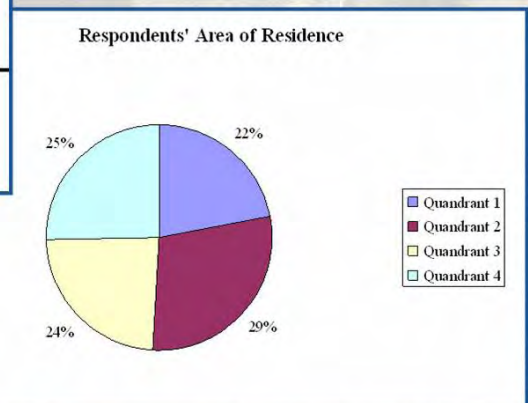
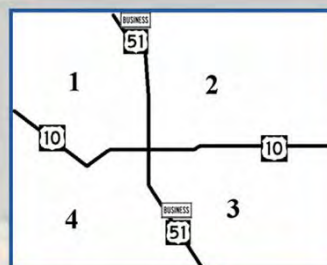
**Deer Management in Stevens Point**

This survey is part of a study to assist the University of Wisconsin-Stevens Point and the City of Stevens Point with making decisions about urban wildlife management in the city of Stevens Point.  
**Your responses are confidential and will never be associated with your name.**  
 Completion of this survey will take approximately 10-15 minutes.  
 Thank you for your assistance!! Survey # \_\_\_\_\_

**1. Describe how seeing deer in your yard makes you feel. (Circle one).**  
 Don't Like At All    Somewhat Dislike    Somewhat Like It    Like It A Lot    No Opinion

**2. Describe**  
 Don't Like

## Preliminary Results



## Preliminary Results

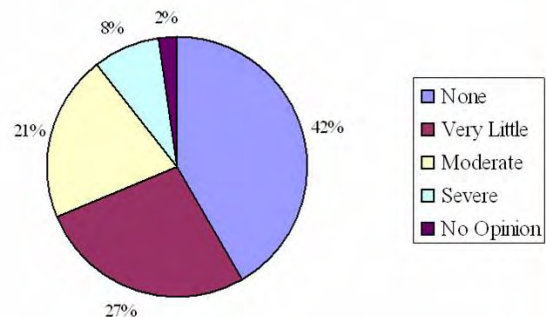
- Male versus Female
  - Contraception
  - Interested in Deer Reproductive Biology, Preferred Forage, and # of Deer in Schmeckle Reserve
- Hunters versus Non-Hunters
  - Deer-Vehicle Accidents
  - Reliable Sources of Information
- Quadrant Residents versus Other Quadrant Residents

## Preliminary Results: Stats

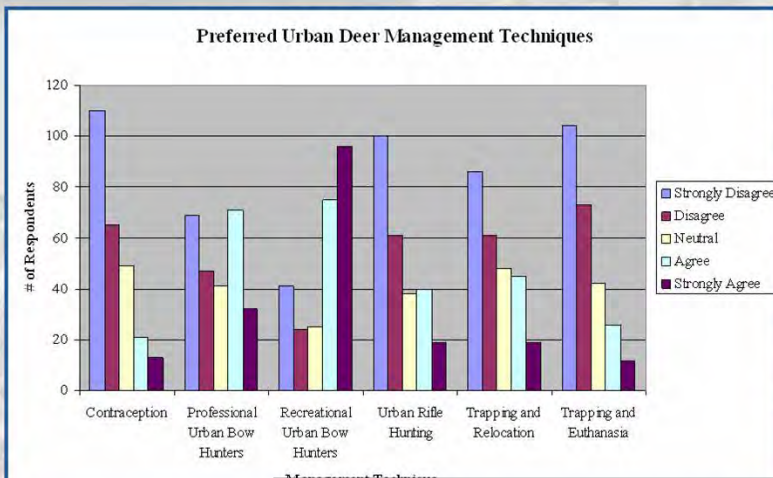
- Average Deer Damage per Household per Year in Stevens Point
  - \$58.88 (Mode: \$100.00, Range: \$0.00-\$1,500.00)
- Management Techniques
  - Hunters were Less Likely to Choose Urban Rifle Hunting
  - Women were More Likely to Choose Contraception

## Preliminary Results: Stats

Extent of Deer Damage in Past 12 Months



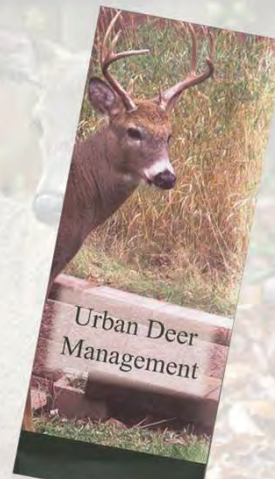
## Preliminary Results: Stats



## Preliminary Results: Media

### 1) Urban Deer Management Printed Materials

- 27.5% (78) of respondents requested printed materials
- 59.5% (169) had learned from printed materials in the past
- Brochure and Poster



**How Much do Deer Cost Us?**

Each year, Wisconsin residents spend thousands of dollars on damages caused by deer/vehicle collisions.

- How many deer/vehicle collisions each year in Wisconsin?
- Estimated cost of trees and shrubs ruined by deer
- Estimated cost of vegetable gardens ruined by deer
- Estimated cost of flower gardens ruined by deer
- Estimated number of cases of Lyme disease in Wisconsin

-Amount of money spent on deer management in Stevens Point: \$3,000 per year.

**Urban Deer Management**

**Basic Deer Biology**

White-tailed deer are the most common big-game animal in the U.S. They are extremely adaptable and live in a variety of habitats.

They eat a variety of foods like leaves, grass, bark, acorns, and pretty much everything in your garden! The average white-tail eats 6-8 pounds of forage per day.

White-tailed deer give birth in the summer to twins or even triplets. That means that one doe this year could equal 4 deer next year.

Photos by Julie Bonham

| Management Techniques    | Description  | Humaneness   | Cost   | Effectiveness   | Major Pros  | Major Cons  |
|--------------------------|--|--|--|---|---|---|
| Contraception            | Giving fertility control products to limit the number of deer fawns born each year | Very humane, deer feels no pain or discomfort of any kind                        | Very expensive, most communities cannot afford this method                           | Not very effective, researchers have not had very good results in testing this method | Very humane and deer are not hurt                                     | Is not a reliable method of removing deer, very expensive |
| Bow Hunting-Professional | Deer are removed by professional archers hired by the city of Stevens Park         | Humane, deer is killed quickly. Can become inhumane if a poor shot is taken      | Fairly expensive, archers may charge up to \$200 per deer                            | Fairly effective, deer can become wary and it may be time consuming to remove enough  | Very safe for human residents   | Can be expensive and take a long time                     |
| Bow Hunting-Recreational | Deer are removed from the herd by recreational bow hunters that put in for tags    | Humane, deer is killed quickly. Can become inhumane if a poor shot is taken      | Very cheap, local residents pay the city for tags instead of the city paying archers | Fairly effective, deer can become wary and it may be time consuming to remove enough  | Safe for human residents and the cheapest method                      | May take a long time                                      |
| Rifle Hunting            | Deer are removed by professional sharpshooters hunting over bait piles             | Very humane, deer is dispatched quickly and without pain                         | Fairly expensive, sharpshooters may charge up to \$200 per deer                      | Very effective, several deer can be removed in a very short time                      | Removes the most deer in the smallest amount of time                  | Not considered safe by many members of the public         |
| Trapping & Relocation    | Deer are trapped in the city and then released in rural areas                      | Not very humane, deer suffer from stress of relocation and many die anyways      | Very expensive, relocating deer takes a serious effort to transport a live deer      | Not very effective, most deer die from stress or move back into the city              | Deer may live happily somewhere else                                  | Many deer die anyway or reham, very expensive             |
| Trapping & Euthanasia    | Deer are trapped in the city and euthanized at the site of the trap                | Fairly humane, deer suffers some stress in the trap but is dispatched of quickly | Fairly expensive, trappers may charge up to \$200 per deer                           | Fairly effective, traps can be used where other methods cannot                        | Can be used much closer to homes than other methods, can be used 24/7 | May not always be able to live deer into traps            |

Photo Courtesy of Virginia Dept of Game and Inland Fisheries

## Preliminary Results: Media

### 2) Urban Deer Management Newsletter

- 21.8% (62) requested newsletters
- 27.1% (71) had previously learned from them
- Newspaper?

### 3) Urban Deer Management TV Commercial/News

- 19.7% (56) requested TV news/commercial
- 47.9% (136) had previously learned from TV
- Press Release

## Preliminary Results: Media

### 4) Urban Deer Management Website

- 17.3% (49) requested online information
- 18.0% (51) had previously learned online
- Website address:

<http://students.uwsp.edu/cscha615/urbandeermgmt/index.htm>



## Preliminary Results: Media

- Content of Media:
  - # of Deer in Schmeeckle Reserve **46.5%**
  - Effectiveness of Deer Management Techniques **44.0%**
  - Forage Selection of Deer **41.9%**
  - Money Spent on Deer Damage Per Year **36.6%**
  - Cost of Deer Management Techniques **34.5%**
- Respondents Not Interested in:
  - Deer Reproductive Biology **25.5%**
  - Stevens Point Deer Management Committee **19.0%**

## Future Plans:

- Continue Data Analysis
  - More comparative analyses
  - Review other education plans
- Complete Community Education Plans
  - Revise media
  - Deliver community education plans
    - March/April 2007
- Peer-reviewed article
- Evaluate Community Education Plan

## Acknowledgements

- Graduate Committee Members
  - Dr. Brenda Lackey (Advisor)
  - Dr. Bob Holsman
  - Dr. Rick Wilke
  - Ron Zimmerman
- Schmeeckle Reserve
  - Jim Buchholz
  - Office Staff
- City of Stevens Point
  - Mayor Gary Wescott
- Funding Contributors
  - University of Wisconsin-Stevens Point Graduate Fund
  - Whitetails Unlimited
- Stevens Point Deer Management Committee
  - Elbert Rachow
  - Roger Tzrebiatowski



## Questions?

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## Thesis Project Expenses

| Date       | Amt. of \$ | For What?                              | Paid out of? | Paid to who?   | Money Left<br>in Acct. |
|------------|------------|--|--------------|--|------------------------|
| 9/1/2006   |            | Beginning Balance                      |              |  | \$1,300.00             |
| 9/19/2006  | 499.98     | 1,282 Stamps                           | #909001      | US Post Office   | \$800.02               |
| 9/19/2006  | \$7.50     | 500 UWSP Envelopes                     | #908302      | UWSP Central Stores  | \$792.52               |
| 9/19/2006  | \$5.52     | 1,500 Avery Address Labels             | #908302      | Office Depot   | \$787.00               |
| 9/26/2006  | \$20.97    | 1,500 Sheets of Grey Paper             | #908302      | Staples  | \$766.03               |
| 9/26/2006  | \$5.52     | 1,500 Avery Address Labels             | #908302      | Office Depot   | \$760.51               |
| 10/2/2006  | \$67.84    | 500 Reminder Postcards                 | #908302      | <a href="http://PrintsMadeEasy.com">PrintsMadeEasy.com</a> | \$692.67               |
| 10/10/2006 | \$72.00    | 300 Reminder Postcard Stamps           | #908302      | US Post Office   | \$620.67               |
| 10/25/2006 | \$7.50     | 500 UWSP Envelopes                     | #908302      | UWSP Central Stores  | \$613.17               |
| 10/25/2006 | \$204.75   | 525 Follow-up Survey Stamps            | #908302      | US Post Office   | \$408.42               |
| 10/30/2006 | \$110.00   | Midwest Conference Registration        | #908302      | Midwest Conference 2006                                    | \$298.42               |
| 12/8/2006  | \$300.00   | Food and Lodging at Midwest Conference | #909001      | Various Vendors  | -\$1.58                |



Est. 1982

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Winter  
2006

### **Involving the Community in Urban Deer Population Management**

*At Whitetails Unlimited we understand that deer are beautiful animals which we as humans enjoy viewing. Deer also play a major role in an ecosystem more complex than we can ever imagine. However, with urban expansion and the loss of agricultural lands, obvious signs of an unbalanced urban deer population are everywhere. The telltale signs include increase in deer/vehicle collisions, loss of native plant species, and damage to residential vegetation. Searching for answers to this current dilemma, WTU has partnered with University of Wisconsin - Stevens Point and graduate assistant Cortney Schaefer to conduct the following research project. Here in Cortney's own words, is an outline of the research:*

In the mid to late eighties, several wildlife managers began realizing that white-tailed deer populations were increasing at a rapid rate, particularly in urban areas. It was quickly discovered that high urban deer populations led to increased deer depredation on gardens and ornamental plants, more vehicle/deer collisions, higher incidences of Lyme disease, and poorer quality habitat for deer and other urban wildlife. Throughout the past couple of decades, wildlife managers have tried several methods of urban deer management to help reduce deer/human conflicts. While urban deer management has proven effective in several cities and states throughout the United States, the

biggest obstacle that wildlife managers have to face is public opposition from city residents. Many residents do not understand or care about the importance of maintaining stable deer populations. If residents understood the problems caused by overabundant deer herds, as well as how humane/effective deer removal can be, many may be more supportive of urban deer management.

My study will survey 500 randomly selected residents of Stevens Point, Wisconsin, to discover what residents think and feel about their city's urban deer population. The city of Stevens Point has been removing deer within city limits for the past three years based upon



Photo courtesy of Michigan Department of Natural Resources

*(continued on page 2)*



### **Happy Holidays!**

The staff of Whitetails Unlimited would like to send our best wishes to everyone — our members, volunteers, supporters, corporate sponsors, and everyone in the conservation and hunting community — during this Christmas and holiday season. We also send our thanks to everyone in the armed forces, and their families, for their service in keeping America safe and free.

**Working For An American Tradition**

### **Inside ...**

- CWD Still a Problem...2
- Pass It On!.....3
- Public Recreation.....3
- 25th Anniversary Celebrations.....4
- Gun Safety Innovations is Newest Sponsor..... 6

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## Urban Deer ...

*(continued from cover)*

the high number of deer/vehicle accidents in the city. While the number of accidents is high, public opinion on the city's deer herd is currently unknown. I will be sending out surveys in late September and early October of 2006. My results could drastically affect Stevens Point's management plan for the fall of 2007, or the results may completely support what the city is doing and encourage Stevens Point city officials to maintain their current management strategy.

The survey will ask questions to determine residents' preferences for the types of media



(TV, internet, brochures, etc.) in which they would like to see information posted. I want to find out if people would listen more to a radio commercial or an internet website, etc. I will also ask questions about what kinds of information residents would be interested in learning more about. For instance,

does the public really care about how many deer/vehicle collisions there are in Wisconsin per year, or would they rather learn how

much forage one white-tailed deer can eat in one day? Perhaps people want to know how much high white-tailed deer populations can increase the occurrence of Lyme disease. By finding out what the public wants to learn and how they would like to learn, I am hoping to produce several different pieces of media for several different groups of people. My hope is that by catering to different learning styles and preferences for information, I will be able to reach the largest percentage of the population so that almost everyone will see/hear/read at least something about urban deer management in Stevens Point. And really, that is the overall goal of this study: to create a more informed citizenry that is capable of assisting public officials in making the right decisions for their city's urban deer herd. This program could also be easily modified in the future for use in other communities experiencing overabundant urban deer populations.

Preliminary results of this study will be available in December 2006. Final results and draft pieces of deer management media will be available in the spring of 2007. For a complete copy of the survey, please email [cscha615@uwsp.edu](mailto:cscha615@uwsp.edu).

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## CWD Still a Problem

Chronic Wasting Disease is still a hot topic that continues to worry wildlife professionals and hunters alike. However, ongoing research from the University of Colorado at Denver continues to show that the chance of CWD being transferred to humans is very, very low. In fact, they can find no evidence that it has ever happened, and they are dubious that it can, but they continue to research the issue.

That's the good news. On the bad news side, more states are implementing CWD surveillance programs, and additional cases of CWD keep popping up. Arizona is asking hunters to provide samples for testing, and Colorado has found two legally harvested bull moose infected with the disease. Maine, Massachusetts, and Montana have instituted rules to prevent hunters from bringing carcasses into the state, in an

attempt to keep CWD out of their deer herds. The U.S. Department of Agriculture continues to work on regulations for herd certification and interstate transport of cervids.

Most troubling is new research from Colorado State University showing that CWD may spread through saliva and blood of infected deer, indicating that the disease could transfer through social contact. And the aggressive programs that the Wisconsin DNR has used for several years in an attempt to reduce the deer herd in CWD-infected areas seems to have had little effect. The number of deer in these areas has actually increased due to both deer behavior and how hunters and landowners are reacting to the DNR programs.

CWD remains a troubling problem, but at least it appears to be a health problem only for cervids, not humans.

# Urban Deer Management Community Education Plan



“[T]he future of our wildlife resources is tied directly to solid education, both in and out of the classroom, involving wildlife, their habitats, and all of the anthropogenic forces that threaten their future.”

-Former President of The Wildlife Society, Paul R. Krausman



# Urban Deer Management Community Education Plan

Created March 2007 by Cortney Schaefer

Marilyn Stone  
948 Westwood Drive  
Pleasant View, UT 84414

Dear Marilyn,

Thank you for requesting a copy of the Urban Deer Management Community Education Plan. This plan was developed using data collected from 500 randomly-selected residents in the city of Stevens Point, Wisconsin. I asked residents how they felt about the deer population in the city and how they felt about urban deer management in general. I tried to address their concerns, as well as provide new information for them with this community plan.

In order to create an effective education plan, I asked residents what modes of communication they had used to learn about deer in the past. This information was combined with data collected on how residents reported they would like to learn more deer information in the future. The top four modes of communication selected by the residents were:

- 1). Printed Materials (such as brochures, hunting regulations, fliers, etc.)
- 2). Newsletters
- 3). Television News or Commercials
- 4). Websites/On-Line Information.

Inside this community education plan, you will find representatives of each of those preferences (a brochure, newsletters, a press release, and a website address).

It is my hope that you and other wildlife managers/city officials will read through this education plan and implement it in your own communities. One important fact to point out first though, is that each community is different. The first step to take before deciding on an urban deer management method, is to find out from the residents if they believe the city's deer population is too high. Only residents of individual towns can truly say if the number of deer in the city is overabundant or adequate.

The media contained in this community education plan would be an excellent start for anyone looking to educate their communities about urban deer and urban deer management. However, please remember that these materials were designed specifically for residents of Stevens Point, Wisconsin. It is strongly recommended that you first send out copies of the included questionnaire to discover if this education plan is appropriate for your residents. After you have surveyed your residents, please feel free to edit and revise the education plan materials to fit your needs. They are offered as a base to build your own community education program.

One final word of caution is to consider who will actually be distributing your community education plan. My research showed that many residents did not trust cities and towns as reliable deer information sources. You



# Urban Deer Management Community Education Plan

Created March 2007 by Cortney Schaefer

may consider putting a state agency letterhead on your plan in order to boost residents' confidence level in the information. State agencies and universities ranked very high as reliable sources for information about deer.

The major goal underlying this entire research project was to create more informed citizenries that would be capable of assisting urban deer managers in making accurate decisions regarding a city's urban deer population. If you are interested in involving your community with management decisions, please consider implementing the questionnaire and the Urban Deer Management Community Education Plan. Together, hopefully we will be able to create a more harmonious relationship between wildlife managers and the public.

Thank you again for requesting this education plan. Please do not hesitate to contact me if any questions should arise. Thanks and Good Luck!

Sincerely,

Cortney M. Schaefer  
Graduate Assistant  
Schmeckle Reserve  
College of Natural Resources  
University of Wisconsin- Stevens Point  
Stevens Point, WI 54481  
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# Urban Deer Management Community Education Plan

Created March 2007 by Cortney Schaefer

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- a). Brochure
- b). Newsletters (Issues 1-3)
- c). Television Press Release
- d). Website Address and Printed Webpages
- e). Compact Disc\*

\*The compact disc includes an electronic copy of this entire community education plan, including the brochure, newsletters, and the press release. It also contains the source-code for the website. All media were created in Adobe InDesign (Adobe Creative Suite CS2).

# Development of a Community Education Plan for Urban White-Tailed Deer Management

by Cortney Schaefer

## **Abstract:**

Rising white-tailed deer populations throughout the United States are a concern to wildlife managers and the public. The greatest controversy is the conflict between people and deer in urban areas. This problem is further compounded by the fact that some people do not understand or care about the importance of maintaining urban deer populations. It is important to find out how to best educate communities about urban deer and urban management. The objectives of this study were to 1) Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point, 2) Determine what combination of communication modes to use to reach a large percentage of the population in Stevens Point, and 3) Develop a community education plan to educate community residents about deer population management and the different management options available. Five hundred randomly selected residents of Stevens Point, Wisconsin were surveyed (59.8% response rate) to discover how they felt about the city's urban deer population. Residents had mixed opinions about the sight of deer in their yards; however, most residents (73%) were concerned about getting into a deer-vehicle accident. Sixty-five percent of residents agreed with the use of urban bow hunting by recreational hunters in Stevens Point, significantly more than other management techniques. Residents also reported what modes of communication they preferred to learn about deer through. Printed materials, newsletters, television news/commercials, and websites were the most preferred modes and as such, examples of each were included in the Urban Deer Management Community Education Plan. Information that residents wanted to see included in the community education plan varied so all deer-related information was included with the exception of the one topic that residents were really not interested in learning about: deer reproductive biology. The purpose of the Education Plan is to create a more informed citizenry that will be capable of assisting urban wildlife managers in making accurate decisions about the city's deer herd. The Urban Deer Management Community Education Plan could easily be modified and implemented in other communities living with urban deer populations.

## Deer Management in Stevens Point

This survey is part of a study to assist the University of Wisconsin-Stevens Point and the City of Stevens Point with making decisions about urban wildlife management in the city of Stevens Point.

**Your responses are confidential and will never be associated with your name.**

Completion of this survey will take approximately 10-15 minutes.

Thank you for your assistance!!

Survey # \_\_\_\_\_

**1. Describe how seeing deer in your yard makes you feel. (Circle one).**

Don't Like At All      Somewhat Dislike      Somewhat Like It      Like It A Lot      No Opinion

**2. Describe how seeing deer in Schmeckle Reserve makes you feel. (Circle one).**

Don't Like At All      Somewhat Dislike      Somewhat Like It      Like It A Lot      No Opinion

**3. How would you describe the extent of damage done to your property by deer within the past 12 months? (Circle one).**

None                      Very Little                      Moderate                      Severe                      No Opinion

**4. How much has deer damage to your property cost you within the past 12 months?**

\$ \_\_\_\_\_

**5. What part of your property was damaged? (Circle all that apply).**

None                      Vegetable Garden                      Flower Garden                      Trees and Shrubbery                      Other: (describe: \_\_\_\_\_)

**6. Describe your level of concern with deer damage to your property. (Circle one).**

Not Concerned At All                      Not Very Concerned                      Neutral                      Slightly Concerned                      Very Concerned

**7. Have you or anyone in your household ever contracted Lyme disease?**

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

**8. Have you ever hit a deer or been present in a vehicle that has?**

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

**9. Has any other member of your household ever hit a deer or been present in a vehicle that has?**

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

**10. How much monetary damage have deer collisions caused to your vehicle? (Check one).**

\_\_\_\_\_ None      \_\_\_\_\_ \$1-\$1,500      \_\_\_\_\_ \$1,501-\$3,000      \_\_\_\_\_ \$3,001-\$5,000      \_\_\_\_\_ \$5,001 or More

**11. Describe your level of concern about getting into a deer-vehicle accident. (Circle one).**

Not Concerned At All                      Not Very Concerned                      Neutral                      Slightly Concerned                      Very Concerned

**12. Would you financially support methods to control the deer population in Stevens Point through tax dollars?** (If No or Don't Know, please skip to **Question #15**).

\_\_\_\_\_ Yes                      \_\_\_\_\_ No                      \_\_\_\_\_ Don't Know

**If yes, which of the following factors contributed to your opinion?** (Check all that apply).

- \_\_\_\_\_ Some damage to my shrubbery
- \_\_\_\_\_ Extensive damage to my shrubbery
- \_\_\_\_\_ Some damage to my garden
- \_\_\_\_\_ Extensive damage to my garden
- \_\_\_\_\_ Someone I know was involved in a car/deer accident
- \_\_\_\_\_ My family member and/or I was involved in a car/deer accident
- \_\_\_\_\_ Other (describe: \_\_\_\_\_)
- \_\_\_\_\_ Don't Know

**13. How much would you pay in annual tax money to control the deer population in Stevens Point?**

\$ \_\_\_\_\_

**14. How would you prefer to pay for urban deer management?** (Circle one).

Donations/  
Fundraising                      Taxation                      Don't Know                      Other: \_\_\_\_\_

**15. How strongly do you agree/disagree with the following ways to control deer populations? Please note that the relative cost of implementing each method is included for a reference:** (Circle one response for each item).

**a. Contraception:** Using fertility control products to limit the number of deer fawns born each year.  
Cost: Very Expensive

|                      |          |         |       |                   |
|----------------------|----------|---------|-------|-------------------|
| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|

**b. Urban Bow Hunting by Professionals:** Deer are removed from the population by archers hired by the city of Stevens Point.  
Cost: Fairly Expensive

|                      |          |         |       |                   |
|----------------------|----------|---------|-------|-------------------|
| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|

**c. Urban Bow Hunting by Recreational Hunters:** Deer are removed by recreational bowhunters that put in for tags.  
Cost: Very Inexpensive

|                      |          |         |       |                   |
|----------------------|----------|---------|-------|-------------------|
| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|

**d. Urban Rifle Hunting:** Deer are removed from the population by sharpshooters hunting over bait.  
Cost: Fairly Expensive

|                      |          |         |       |                   |
|----------------------|----------|---------|-------|-------------------|
| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|

**e. Trapping and Relocation:** Deer are humanely trapped in the city and then released in rural areas.  
Cost: Very Expensive

|                      |          |         |       |                   |
|----------------------|----------|---------|-------|-------------------|
| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|

**f. Trapping and Euthanizing:** Deer are humanely trapped in the city and euthanized at the site of the trap.  
Cost: Fairly Expensive

|                      |          |         |       |                   |
|----------------------|----------|---------|-------|-------------------|
| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|

**16. How knowledgeable would you consider yourself to be regarding white-tailed deer biology and management?**

Not Knowledgeable      Not Very      Somewhat      Very      No Opinion  
At All      Knowledgeable      Knowledgeable      Knowledgeable

**17. Where have you obtained information about white-tailed deer in the past? (Check all that apply).**

- Printed Materials (such as printed regulations, a brochure, flyers, books, etc.)
- Newsletters
- Website/On-line Information
- Workshop/Seminar/Presentation
- Video/DVD
- Radio News Releases
- Television News or Commercials
- Friends and/or Family Members
- Other(describe): \_\_\_\_\_

**18. How would you like to learn more about deer? (Check all that apply).**

- I am Not Interested in Learning More About Deer
- Printed Materials (such as printed regulations, a brochure, flyers, books, etc.)
- Newsletters
- Website/On-line Information
- Workshop/Seminar/Presentation
- Video/DVD
- Radio News Releases
- Television News or Commercials
- Friends and/or Family Members
- Other(describe): \_\_\_\_\_

**19. Which sources of communication do you believe provide the most reliable information regarding deer? (Check all that apply).**

- State Agencies (e.g. Wisconsin Department of Natural Resources)
- Universities (e.g. University of Wisconsin-Stevens Point)
- Cities and Towns (e.g. City Council, Urban Deer Management Committees)
- Conservation Organizations (e.g. Whitetails Unlimited, The Audubon Society)
- Hunting Clubs (e.g. North American Hunting Club)
- Friends/Family
- Personal Observations and Experience
- Other(describe): \_\_\_\_\_

**20. Which of these topics would you be interested in learning more about concerning the Stevens Point area?**

*(Circle one response for each item).*

|   |                       |                     |                 |            |
|---|-----------------------|---------------------|-----------------|------------|
| <b>a. How much money is spent on damage caused by deer every year?</b>        | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>b. How much do different deer management techniques cost?</b>              | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>c. How effective are different deer management techniques?</b>             | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>d. How often do deer have fawns and how many fawns are born each year?</b> | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>e. What kinds of plants do deer like to eat?</b>                           | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>f. How many deer are in Schmeeckle Reserve?</b>                            | Not Interested At All | Slightly Interested | Very Interested | No Opinion |
| <b>g. What happened at the last Deer Management Committee Meeting?</b>        | Not Interested At All | Slightly Interested | Very Interested | No Opinion |

**21. Are you a hunter? If yes, how many years have you been hunting?**

\_\_\_\_\_ Yes; # of Years \_\_\_\_\_ No

**22 What level of education have you completed?**

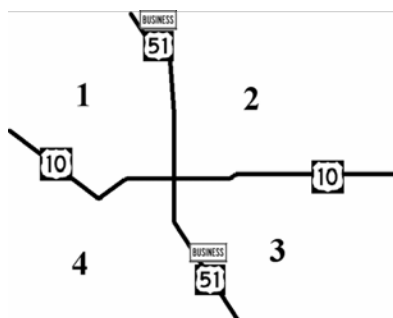
Grade School    High School    Technical School    College    Graduate School    No Answer

**23 Your gender:**

\_\_\_\_\_ Male                  \_\_\_\_\_ Female

**24. Any other comments?**

**25. Please circle which quadrant of Stevens Point you currently live in:**





## Deer Management in Stevens Point 2006 Resident Survey-December 14th, 2006

Total Number of Respondents: 295 (59.8% Response Rate)

Population: City of Stevens Point-about 25,000

1. Describe how seeing deer in your yard makes you feel. (Circle one).

- Don't Like at All: 21.2% (61)
- Somewhat Dislike: 11.5% (33)
- Somewhat Like It: 27.1% (78)
- Like It a Lot: 24.0% (69)
- No Opinion: 12.2% (38)

2. Describe how seeing deer in Schmeckle Reserve makes you feel. (Circle one).

- Don't Like at All: 4.2% (12)
- Somewhat Dislike: 3.8% (11)
- Somewhat Like It: 19.8% (57)
- Like It a Lot: 59.7% (172)
- No Opinion: 9.4% (27)

3. How would you describe the extent of damage done to your property by deer within the past 12 months?  
(Circle one).

- None: 41.0% (118)
- Very Little: 26.0% (75)
- Moderate: 20.8% (60)
- Severe: 8.0% (23)
- No Opinion: 2.1% (6)

4. How much has deer damage to your property cost you within the past 12 months?

Average-\$59.08, Mode-\$100.00, Range-\$0.00-\$1,500.00

5. What part of your property was damaged? (Circle all that apply).

- None: 38.5% (111)
- Vegetable Garden: 14.9% (43)
- Flower Garden: 39.6% (113)
- Trees and Shrubbery: 33.7% (97)
- Other:
  - Bird feeders (5)
  - Lawn (5)
  - Fence (2)
  - Hostas (2)

- Ornamental flowers
- Pumpkins
- Native veg. (Trilliums)
- Apple tree
- Grape vines
- Raspberry bush
- Potted vegetable plants.

6. Describe your level of concern with deer damage to your property. (Circle one).

- Not Concerned At All: 35.8% (103)
- Not Very Concerned: 16.3% (47)
- Neutral: 8.0% (23)
- Slightly Concerned: 18.8% (54)
- Very Concerned: 16.3% (47)

7. Have you or anyone in your household ever contracted Lyme disease?

- Yes: 12.2% (35)
- No: 86.1% (248)

8. Have you ever hit a deer or been present in a vehicle that has?

- Yes: 56.6% (163)
- No: 41.7 % (120)

9. Has any other member of your household ever hit a deer or been present in a vehicle that has?

- Yes: 56.6% (163)
- No: 41.0% (118)

10. How much monetary damage have deer collisions caused to your vehicle? (Check one).

- None: 37.5% (108)
- \$1-\$1,500: 22.6% (65)
- \$1,501-\$3,000: 21.2% (61)
- \$3,001-\$5,000: 6.6% (19)
- \$5,001 or More: 5.2% (15)

11. Describe your level of concern about getting into a deer-vehicle accident. (Circle one).

- Not Concerned At All: 5.2% (15)
- Not Very Concerned: 14.6% (42)
- Neutral: 7.3% (21)
- Slightly Concerned: 33.3% (96)
- Very Concerned: 37.5% (108)

12. Would you financially support methods to control the deer population in Stevens Point through tax dollars? (If No or Don't Know, please skip to Question #15).

- Yes: 23.3% (67)
- No: 39.2% (113)
- Don't Know: 26.0% (75)

If yes, which of the following factors contributed to your opinion? (Check all that apply).

- Some damage to my shrubbery: 12.2% (35)
- Extensive damage to my shrubbery: 5.6% (16)
- Some damage to my garden: 9.0% (26)
- Extensive damage to my garden: 5.2% (15)
- Someone I know was involved in a car/deer accident: 9.7% (28)
- My family member and/or I was involved in a car/deer accident: 11.8% (34)
- Don't Know: 0.7% (2)
- Other:
  - Lyme Disease (3)
  - Wake us up walking in our rocks. Clean out bird feeders
  - Deer poop in yard
  - Much damage to native vegetation and spread of Lymes
  - Human Treatment of Animals
  - Very damaging at former residence
  - There are just too many deer.
  - Deer population health if overcrowded
  - Overpopulation of deer is damaging habitat
  - School bus hit deer in front of house
  - Large animals should be kept out of residential areas
  - Better through tax money than volunteer donation
  - I think the sharpshooters are enough. The sharpshooters may be hired by Town of Hull??
  - Birdfeeders/Birdbath
  - Damage to other Stevens Point residents' properties
  - A matter of inches from part of a deer skull hitting myself in an accident where part of the skull came through the windshield.
  - I don't want deer in my downtown area
  - Hunting in city not allowed
  - Need of controlling herd so that overpopulation stays under control to keep disease down
  - Control state-wide
  - Put up fences and don't feed the deer. No bird feeders or put them in a fence.
  - We like the deer but herd must be managed
  - General concern for public safety
  - Stevens Point is an urban area and there are a lot of deer-so a control policy would be good.
  - Concern to deer
  - Damage to autos, people, planes, etc.
  - Cannot really afford for funds to go to your program
  - My dog was attacked by a deer. Cost \$400.00 in vet fees.

13. How much would you pay in annual tax money to control the deer population in Stevens Point?  
Average-\$20.39, Mode-\$10.00, Range-\$0.00-\$300.00

14. How would you prefer to pay for urban deer management? (Circle one).

- Donations/Fundraising: 17.7% (51)
- Taxation: 13.2% (38)
- Don't Know: 8.3% (24)
- Other:
  - Open city hunting/Bow hunting tags (14)
  - Hunting licenses (3)
  - DNR (2)
  - Shouldn't have any
  - I already pay taxes, I'm not for extra taxes
  - Direct specific payment
  - Combination of taxes and donation/fundraising
  - Let them live
  - Shrub tax
  - Leave them in the woods and fine people who feed them in the city.
  - Let the population be natural
  - Pay more in insurance comps.
  - Those most affected should pay more
  - Owner

15. How strongly do you agree/disagree with the following ways to control deer populations? Please note that the relative cost of implementing each method is included for a reference: (Circle one response for each item).

- Contraception:
  - Strongly Disagree: 38.2% (110)
  - Disagree: 22.9% (66)
  - Neutral: 17.4% (50)
  - Agree: 7.3% (21)
  - Strongly Agree: 4.5% (13)
- Urban Bow Hunting by Professionals:
  - Strongly Disagree: 24.0% (69)
  - Disagree: 16.3% (47)
  - Neutral: 14.9% (43)
  - Agree: 25.0% (72)
  - Strongly Agree: 11.1% (32)
- Urban Bow Hunting by Recreational Hunters:
  - Strongly Disagree: 14.6% (42)
  - Disagree: 8.3% (24)
  - Neutral: 9.4% (27)
  - Agree: 25.7% (74)
  - Strongly Agree: 33.7% (97)
- Urban Rifle Hunting:
  - Strongly Disagree: 35.8% (103)
  - Disagree: 21.5% (62)
  - Neutral: 13.2% (38)

- Agree: 13.5% (39)
- Strongly Agree: 6.6% (19)

- Trapping and Relocation:
  - Strongly Disagree: 29.9% (86)
  - Disagree: 21.2% (61)
  - Neutral: 17.0% (49)
  - Agree: 16.0% (46)
  - Strongly Agree: 6.9% (20)
- Trapping and Euthanasia:
  - Strongly Disagree: 36.1% (104)
  - Disagree: 25.7% (74)
  - Neutral: 14.9% (43)
  - Agree: 9.0% (26)
  - Strongly Agree: 4.5% (13)

16. How knowledgeable would you consider yourself to be regarding white-tailed deer biology and management?

- Not Knowledgeable At All: 12.8% (37)
- Not Very Knowledgeable: 26.4% (76)
- Somewhat Knowledgeable: 40.3% (116)
- Very Knowledgeable: 10.1% (29)
- No Opinion: 4.9% (14)

17. Where have you obtained information about white-tailed deer in the past? (Check all that apply).

- Printed Materials: 59.0% (170)
- Newsletters: 27.1% (78)
- Website/On-line Information: 18.4% (53)
- Workshop/Seminar/Presentation: 11.1% (32)
- Video/DVD: 14.2% (41)
- Radio News Releases: 29.2% (84)
- Television News or Commercials: 47.9% (138)
- Friends and/or Family Members: 61.5% (177)
- Other:
  - Newspaper (14)
  - Deer hunting (14)
  - Personal Observation/Experience (12)
  - Education (7)
  - UWSP (6)
  - Nowhere/None (4)
  - Deer Farms (2)
  - Have never really looked, it just seems so logical
  - Remember wolves will kill deer and children playing by themselves in wilderness!
  - Rumors
  - DNR Employees
  - Whitetails Unlimited/NRA

- QDM Materials
- Word of mouth only

18. How would you like to learn more about deer? (Check all that apply).

- Not Interested in Learning More about Deer: 39.6% (114)
- Printed Materials: 27.4% (79)
- Newsletters: 21.5% (62)
- Website/On-line Information: 17.0% (49)
- Workshop/Seminar/Presentation: 7.3% (21)
- Video/DVD: 7.6% (22)
- Radio News Releases: 12.8 % (37)
- Television News or Commercials: 19.8% (57)
- Friends and/or Family Members: 8.3% (24)
- Other:
  - Newspaper (6)
  - Personal Observation/Experience (5)
  - Magazines (3)
  - All of the above
  - Library meetings
  - I asked for information from UWSP in the past on the tracking of collared deer in Schmeeckle and received nothing! Collect it...disseminate it!
  - You can not learn all you need to know in books. Whitetails very adaptive to environment. Must be in the outdoors to understand them.
  - Journals/Symposiums
  - Channel 8 or National Geographic
  - I would volunteer to advocate for the most humane treatment of the deer population.

19. Which sources of communication do you believe provide the most reliable information regarding deer? (Check all that apply).

- State Agencies: 58.0% (167)
- Universities: 51.4% (148)
- Cities and Towns: 22.6% (65)
- Conservation Organizations: 47.6% (137)
- Hunting Clubs: 30.6% (88)
- Friends/Family: 22.6% (65)
- Personal Observations and Experience: 35.1% (101)
- Other:
  - Don't know (4)
  - Media (TV/Radio) (2)
  - Hunting (2)
  - 6 deer crossing street in front of motorcycle is deadly!
  - Online
  - Newspaper
  - State agencies, university, cities can slant, manipulate these findings for grant money of other aids in the state government.
  - Library reference materials
  - Journals/Symposiums

- Education-driving with caution
- Honest state agencies
- Talking and listening to people like myself, we have a great thing here.
- Any group or agency that can accurately and truthfully estimate the existing size of the deer herd and also correctly estimate the size of a successfully/humanely sustainable deer herd.
- None
- Look in woods

20. Which of these topics would you be interested in learning more about concerning the Stevens Point area? (Circle one response for each item).

- How much money is spent on damage caused by deer every year?
  - Not Interested At All: 16.3% (47)
  - Slightly Interested: 35.4% (102)
  - Very Interested: 36.8% (106)
  - No Opinion: 4.9% (14)
  
- How much do different deer management techniques cost?
  - Not Interested At All: 15.6% (45)
  - Slightly Interested: 35.4% (102)
  - Very Interested: 34.7% (100)
  - No Opinion: 6.6% (19)
  
- How effective are different deer management techniques?
  - Not Interested At All: 16.3% (47)
  - Slightly Interested: 29.9% (86)
  - Very Interested: 44.1% (127)
  - No Opinion: 3.5% (10)
  
- How often do deer have fawns and how many fawns are born each year?
  - Not Interested At All: 25.0% (72)
  - Slightly Interested: 32.3% (93)
  - Very Interested: 26.4% (76)
  - No Opinion: 8.3% (24)
  
- What kinds of plants do deer like to eat?
  - Not Interested At All: 17.4% (50)
  - Slightly Interested: 28.1% (81)
  - Very Interested: 42.0% (121)
  - No Opinion: 5.6% (16)
  
- How many deer are in Schmeckle Reserve?
  - Not Interested At All: 12.2% (35)
  - Slightly Interested: 30.9% (89)
  - Very Interested: 46.2% (133)
  - No Opinion: 3.8% (11)

• What happened at the last Deer Management Committee Meeting?

- Not Interested At All: 18.8% (54)
- Slightly Interested: 34.7% (100)
- Very Interested: 32.6% (94)
- No Opinion: 6.6% (19)

21. Are you a hunter? If yes, how many years have you been hunting?

- Yes: 31.6% (91)
- # of Years: Average-30.40 years, Mode-30 years, Range-3-60 years\_
- No: 63.9% (184)

22 What level of education have you completed?

- Grade School: 1.0% (3)
- High School: 29.2% (84)
- Technical School: 17.7% (51)
- College: 27.4% (79)
- Graduate School: 18.1% (52)
- No Answer: 1.4% (4)

23 Your gender:

- Male: 61.8% (178)
- Female: 33.0% (95)

24. Any other comments?

- Please see Comments sheet for all responses

25. Please circle which quadrant of Stevens Point you currently live in:

- Quadrant 1: 20.1% (58)
- Quadrant 2: 26.4% (76)
- Quadrant 3: 21.5% (62)
- Quadrant 4: 24.0% (69)

## Summary of Findings

The first objective of this study was to discover the attitudes and opinions of Stevens Point residents regarding white-tailed deer and urban deer culling techniques. The data showed that residents are mixed in their opinions about seeing deer in their yard. Many residents like seeing the deer while many do not. Residents also had mixed opinions about deer damage to their properties. A majority of residents had suffered at least some degree of deer damage on their properties, and yet just over half of residents reported that they were not concerned about deer damage.

Finally, when asked whether they or a family member had been in a deer-car accident, a change was evident in respondent answers. Opinions were no longer mixed. Seventy-three percent of residents were concerned about getting into a deer-vehicle accident. Almost sixty percent of residents had been in a car-deer accident or been present in a vehicle that had. A similar percentage of residents had had to pay at least some money in vehicle repairs due to car-deer accidents. The number of residents who had experienced vehicle accidents due to deer as well as the general concern voiced by residents regarding deer-car accidents could suggest that the city of Stevens Point is in need of urban deer culling. Urban deer culling would decrease the city's deer herd to a culturally acceptable level.

Even though the city of Stevens Point may be in need of urban deer culling, residents made it clear that they would like the deer in Schmeckle Reserve left alone. Almost 80% of residents said that they enjoyed seeing deer in the Reserve. Several comments were written in on the last page of the questionnaire that showed general support for Schmeckle Reserve regardless of how many deer live there.

A majority of residents did not support paying tax money for urban deer management, even though they have done so in the past three years. While some residents said that they did not want to have their taxes raised for any reason, a lot of residents said no to taxes because they felt like the city should not have to pay for urban deer culling. They felt that recreational bow hunters would cull deer from within city limits for free. Several suggested that the city could actually make money from urban deer culling by selling permits/tag to recreational bow hunters.

Resident opinions about urban deer culling techniques were fairly mixed with the exception of urban bow hunting by recreational hunters. That technique was clearly favored over all others. Stevens Point residents preferred the following culling techniques (in order from most preferred to least preferred):

1. Bow Hunting by Recreational Hunters
2. Bow Hunting by Professionals
3. Trapping and Relocation
4. Urban Rifle Hunting
5. Trapping and Euthanasia
6. Contraception

Based on the data, it appears that residents would be willing to support bow hunting by professional hunters as the city's urban deer culling technique as well. The third most preferred technique however, did not have enough citizen support to really be considered a viable option in Stevens Point, Wisconsin.

The second objective of this study was to identify a combination of communication modes that could reach a large percentage of the population in Stevens Point. This was done by finding out where, what, and how residents would prefer to receive information about deer.

Most residents had obtained information about deer in the past. Most residents received this information from their friends and family members. In the future however, residents indicated that they would like to learn more about deer in the form of:

1. Printed Materials
2. Newsletters
3. Television News or Commercials
4. Websites/On-Line Information

Printed materials could include anything from hunting regulations to brochures. Apparently residents enjoy having the information in their hands to read. The number of residents who requested to learn through newsletters was surprisingly high, although its high ranking may be an indication that residents would like to receive more periodic updates about deer and deer management.

A majority of residents did not believe that city officials in general are very good sources of reliable information about deer. They were not asked how they felt about Stevens Point officials. Many residents found state agencies to be the most reliable source of deer information. Universities were a close second. This data should be considered when planning to distribute information about deer or other problem wildlife species.

Stevens Point residents were interested in learning more about several deer-related topics. They were especially interested in the Schmeckle Reserve deer population, showing once again the importance of the 275-acre natural area within the city. Women were more likely than men to be interested in Schmeckle deer, suggesting that hunters (most hunters were male) interested in eventually hunting inside the Reserve were not skewing these results. Not surprisingly, many residents were interested in the cost and effectiveness of different deer culling techniques. Women were significantly more likely than men to be interested in learning more about reproductive biology, but even so, over a quarter of respondents were not interested at all in the subject.

The data collected for the first and second objectives came primarily from the questionnaire sent to five-hundred community residents. The questionnaire response rate was just under sixty percent. The respondents were a fairly representative sample of Stevens Point residents. Slightly more males responded than census data showed and slightly more hunters responded than would have been expected. Despite these factors, few significant differences were found between answers of these different

demographic groups. Respondents were fairly evenly distributed throughout the city's quadrants.

The third objective of the study was to develop a community education plan. The plan was intended to serve as a tool for city officials to use in cases of overabundant deer populations within urban areas. The plan consists of a detailed letter explaining the results of this study, as well as instructions for implementing the community education plan. It also contains the four pieces of media that residents preferred the most: a brochure (i.e. printed materials), a newsletter, a press release for a television news story, and the source code for an internet website.

The media contains information requested by the residents. The media explain what the different urban deer culling techniques are, how effective they are, and how much they cost. There are also lists of the plants that deer do and do not like to eat. In creating the media, the attitudes and opinions of the residents (as discovered in the first objective) were kept in mind to ensure that the media addressed their concerns. Residents were very concerned about deer-vehicle accidents so the media in the community education plan reflect that and contain information about the costs of deer damage to vehicles and how overabundant deer populations raise the risk of such accidents.

Finally, the community education plan contains a compact disc with electronic copies of all of the media and recommendations to distribute the media via a state agency or university. A product of this entire research project, the community education plan is meant to serve as a tool for city officials and wildlife managers that can be used to create a more informed citizenry that is capable of helping to make responsible decisions regarding urban wildlife.

### **Implications and Future Recommendations**

The results of this study suggest that one effective way to determine a city's cultural carrying capacity for deer is to look at resident opinions about deer-vehicle accidents. This information, combined with the number of deer-vehicle accidents in a given urban area, should give city officials an index of how residents might feel toward urban deer management.

It is recommended that Stevens Point city officials do try a new urban deer culling technique next year. If officials allowed residents to apply for or draw from hunting permits/tags, they would not only save \$3,000 per year, they may actually make money from the culling program. Urban bow hunting by recreational hunters was not really considered in the past due to liability concerns; however it is apparent that residents feel that it is safe enough. Perhaps other communities could also consider allowing urban bow hunting by recreational hunters. Communities that have relatively high numbers of residents who hunt would be ideal candidates for this urban deer culling technique.

The community education plan was developed from data gathered in this study. Due to time constraints however, the plan was not actually implemented and evaluated. In order for the plan to really be a valuable tool for wildlife managers and city officials, its content should be evaluated to make sure that it is serving its intended purpose: to educate people through several communication channels about the many different aspects of urban deer management.

The community education plan is unlike anything tried before in urban deer management. The

plan was developed entirely based on local resident opinions. Residents were able to tell us what they wanted to learn and how they wanted to learn it. The plan includes a variety of information that residents requested in order to educate themselves about white-tailed deer and urban deer culling. Studies have shown that the best way to communicate with the public is to address the public's concerns through several different channels. This community education plan does just that and it would be exciting to see other cities throughout the United States follow suit and create educational packages based on resident recommendations that would appeal to and reach a majority of residents.



## How Much do Deer Cost Us?

The City of Stevens Point spends \$3,000.00 per year to control the city's urban white-tailed deer herd.



But how much do Stevens Point residents pay for deer damage? Stevens Point residents were surveyed to discover the costs of living with urban deer. Residents reported spending between \$1.00 and \$1,500.00 to repair deer damage to their properties. The amount of money most often spent was \$100.00. The average amount of money spent on deer damage to properties in one year was \$59.08.

This brochure was jointly developed by the University of Wisconsin-Stevens Point and the City of Stevens Point. Additional funding provided by Whitetails Unlimited.



Photos by Jani Buechler

## Urban Deer Management

## Basic Deer Biology

White-tailed deer are the most common big-game animal in the U.S. They are extremely adaptable and live in a variety of habitats.

They eat several things like leaves, grass, bark, birdseed, and pretty much everything in your garden! The average white-tail eats 6-8 pounds of forage per day.

Some plants that deer do not like to eat include barberry, birch, and holly. For

a complete list of foods that deer like and dislike, visit: <http://students.uwsp.edu/cscha615/urbandeermgmt/BasicDeerBiology/DeerBiology.htm>



| <b>Management Techniques</b> | <b>Description</b>   | <b>Humaneness</b>  | <b>Cost</b>  | <b>Effectiveness</b>  | <b>Major Pros</b>  | <b>Major Cons</b>   |
|------------------------------|--|--|--|---|--|---|
| Contraception                | Giving fertility control products to limit the number of deer fawns born each year | Very humane; deer feel no pain or discomfort of any kind                         | Very expensive; most communities cannot afford this method                           | Not very effective; researchers have not had very good results in testing this method | Very humane and deer are not hurt                                      | Is not a reliable method of removing deer; very expensive |
| Deer Hunting: Professional   | Deer are removed by professional archers hired by the city of Stevens Point        | Humane; deer is killed quickly. Can become inhumane if a poor shot is taken      | Partly expensive; archers may charge up to \$200 per deer                            | Partly effective; deer can become wary and it may be time consuming to remove enough  | Very safe for human residents  | Can be expensive and take a long time                     |
| Deer Hunting: Recreational   | Deer are removed from the herd by recreational bow hunters that put in for tags    | Humane; deer is killed quickly. Can become inhumane if a poor shot is taken      | Very cheap; local residents pay the city for tags instead of the city paying archers | Partly effective; deer can become wary and it may be time consuming to remove enough  | Safe for human residents and the most economical method                | May take a long time                                      |
| Deer Hunting: Bow Hunting    | Deer are removed by professional sharpshooters hunting over sethtraps              | Very humane; deer is dispatched quickly and without pain                         | Partly expensive; sharpshooters may charge up to \$200 per deer                      | Very effective; several deer can be removed in a very short time                      | Removes the most deer in the smallest amount of time                   | Not considered safe by many members of the public         |
| Deer Hunting: Relocation     | Deer are trapped in the city and then released in rural areas                      | Not very humane; deer suffer from stress of relocation and many die anyway       | Very expensive; it takes a serious effort to transport a live deer                   | Not very effective; no deer die from stress or move back into the city                | Deer may live happily some where else                                  | Many deer die anyway or return; very expensive            |
| Trapping & Relocation        | Deer are trapped in the city and euthanized at the site of the trap                | Partly humane; deer suffers some stress in the trap but is dispatched of quickly | Partly expensive; trappers may charge up to \$200 per deer                           | Partly effective; traps can be used where other methods cannot                        | Can be used much closer to houses than other methods; can be used 24/7 | May not always be able to lure deer into traps            |

Photo Courtesy of Virginia Dept. of Game and Inland Fisheries



# Urban Deer Management Stevens Point, WI

Volume 1, Issue 1

January 2007

## Why Look at Urban Deer Management?

Rising white-tailed deer populations throughout the United States are a growing concern to wildlife managers and the public, especially concerning conflict between people and deer in urban areas. The goal of this newsletter is to help urban residents understand deer herd dynamics and the different methods of controlling urban deer herds, as well as what our own city is planning for our deer herd.

Urban deer management can only really be done on a city-wide level. It is up to city residents to say if the deer population level in the city is too high, too low, or adequate. If residents believe the deer population is too high, they should have a say in deciding which urban deer management technique the city should use to manage the herd. But, not all residents are aware of their management options. And others do not understand the negative effects of overabundant

### Inside this Issue:

- Why Look at Urban Deer Management?
- What Kinds of Food do Deer Like?
- What Kinds of Plants do Deer Avoid?
- How Much do Urban Deer Cost Us?



### Next Issue:

- Why Look at Urban Deer Management?
- The Deer of Schmeckle Reserve.
- Stevens Point Deer Management Committee Update.



Photo courtesy of Roger Trzebiatowski

deer. By learning more about deer management, residents will be able to help city officials and wildlife managers make the right decisions regarding the city's deer herd.



Photo courtesy of Virginia Dept. of Game and Inland Fisheries

## What Kinds of Food do Deer Like to Eat?

Deer will eat almost anything, including tree bark, when they are hungry. Tulips, shrubs, bulbs, garden vegetables, flowering plants, and even birdseed are all delicacies for deer. Please see below for a list of ornamental plants that deer really like.

The following is a list of foods that deer really like to eat:

- Balsam Fir (*Abies balsamea*)
- Fraser Fir (*Abies fraseri*)
- Norway Maple (*Acer platanoides*)
- Eastern Redbud (*Cercis canadensis*)

- Atlantic White Cedar (*Chamaecyparis thyoides*)
- Clematis (*Clematis spp.*)
- Cornelian Dogwood (*Cornus mas*)
- Winged Euonymus (*Euonymus alatus*)
- Wintercreeper (*Euonymus fortunei*)
- English Ivy (*Hedera helix*)
- Apples (*Malus spp.*)
- Cherries (*Prunus spp.*)
- Plums (*Prunus spp.*)
- Rhododendrons (*Rhododendron spp.*)
- Evergreen Azaleas (*Rhododendron spp.*)
- Catawba Rhododendron (*Rhododendron spp.*)
- Hybrid Tea Rose (*Rosa* (x) hybrid)
- European Mountain Ash (*Sorbus aucuparia*)
- Yews (*Taxus spp.*)
- American Arborvitae (*Thuja occidentalis*)

## What Kinds of Plants do Deer Avoid?

Urban white-tailed deer are notorious for eating all of our favorite plants in the yard. If you want to keep the plants in your yard protected, one thing you can do is plant ornamentals that deer rarely ever eat. The following are ornamental plants that deer rarely damage:

- Barberry (*Berberis spp.*)
- Common Barberry (*Berberis vulgaris*)
- Paper Birch (*Betula papyrifera*)
- Common Boxwood (*Buxus sempervirens*)
- Russian Olive (*Elaeagnus angustifolia*)
- American Holly (*Ilex opaca*)
- Drooping Leucothoe (*Leucothoe fontanesiana*)
- Colorado Blue Spruce (*Picea pungens*)
- Japanese Pieris (*Pieris japonica*)



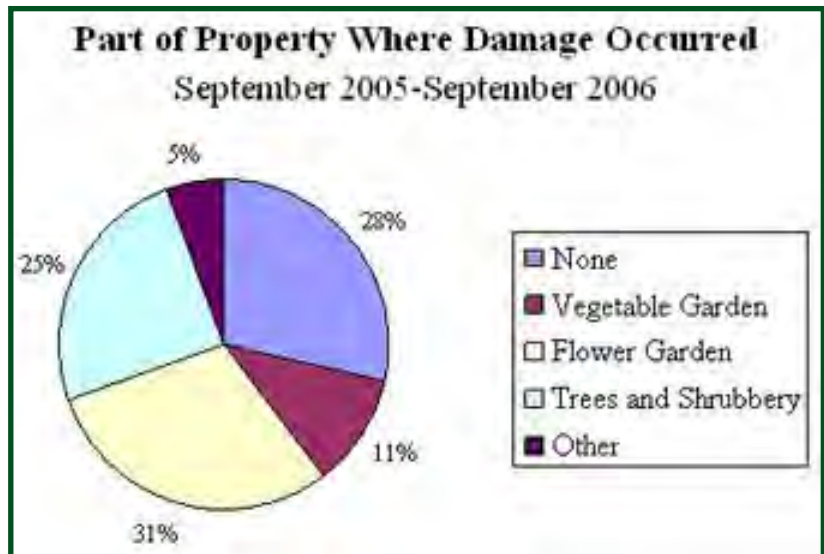
Photo courtesy of Michigan Department of Natural Resources

## How Much do Urban Deer Cost Us?

The City of Stevens Point spends \$3,000.00 per year to control the city's urban white-tailed deer herd. In past years, each deer removed cost \$50.00 (total of 60 deer). During the 2006/2007 deer culling season however, the cost of deer culling rose to \$74.00 per deer (40 deer could be removed).

But how much do Stevens Point residents pay for damage caused by urban deer? In the fall of 2006, five-hundred Stevens Point residents were surveyed to discover their opinions about deer, as well as the costs of living with urban deer. Residents reported spending between \$1.00 and \$1,500.00 to repair deer damage to their properties. The amount of money most often spent was \$100.00. The average amount of money spent on deer damage to properties in one year was \$59.08.

Residents were also asked if they had suffered much property damage to deer and what parts of their property were damaged. Residents also indicated how much money they had spent on deer-vehicle collisions. Almost 60% of residents reported having been in a deer-vehicle accident.



## For More Information.

Contact the **Stevens Point Deer Management Committee:**

- Elbert Rackow  
Chair  
715-341-1393
- Roger Trzebiatowski  
Voting Member  
715-344-2322  
[rogertreb@charter.net](mailto:rogertreb@charter.net)
- Cortney Schaefer  
Advisory Member  
715-346-4992  
[cscha615@uwsp.edu](mailto:cscha615@uwsp.edu)



Photo courtesy of Jim Buchholz, Schaeffer's Reserve

*“I love to see wildlife. I do not like to see cruelty to animals. However, I do understand that the population needs to be thinned out.”*

*~Anonymous City Resident  
2006 Steven Point Deer Survey*



# Urban Deer Management

## Stevens Point, WI

Volume 1, Issue 2

March 2007

### Why Look at Urban Deer Management?

Rising white-tailed deer populations throughout the United States are a growing concern to wildlife managers and the public, especially concerning conflict between people and deer in urban areas. The goal of this newsletter is to help urban residents understand deer herd dynamics and the different methods of controlling urban deer herds, as well as what our own city is planning for our deer herd.

Urban deer management can only really be done on a city-wide level. It is up to city residents to say if the deer population level in the city is too high, too low, or adequate. If residents believe the deer population is too high, they should have a say in deciding which urban deer management technique the city should use to manage the herd. But, not all residents are aware of their management options. And others do not understand the negative effects of overabundant deer. By learning more about deer management, residents will be able to help city officials and wildlife

#### Inside this Issue:

- Why Look at Urban Deer Management?
- The Deer of Schmeckle Reserve.
- Stevens Point Deer Management Committee Update.

#### Next Issue:

- Why Look at Urban Deer Management?
- Urban Deer Management Techniques: Descriptions, Effectiveness, Cost, Pros, and Cons.



Photo courtesy of Roger Trzebiatowski

managers make the right decisions regarding the city's deer herd.



Photo courtesy of Virginia Dept. of Game and Inland Fisheries

## The Deer of Schmeckle Reserve.

Schmeckle Reserve is a popular destination for many Stevens Point residents. Visitors are usually excited to see deer as they are biking, hiking, or jogging the trails that run through the 275-acre natural area.

Residents have made it clear that even while urban deer management is occurring in the rest of the city, the deer of Schmeckle Reserve should be left alone. The Reserve is grateful for the public support of its first mission: to serve as a “green island” of refuge for wildlife in the middle of the city.

Schmeckle Reserve has two other missions, one of which is to foster research and education, while the other is to serve as a recreational area for city residents. Schmeckle's visitors are so

important that the Reserve would never risk the safety of visitors by allowing urban deer culling to take place within the Reserve.

But how many deer are there in the Reserve? At this point, nobody really knows. Students at the University of Wisconsin-Stevens Point are currently trapping and collaring deer to estimate home range sizes. Unfortunately, the students have not been able to capture enough deer to make accurate estimates of each deer's home range. Please look for new information in the future regarding this project.

## Stevens Point Deer Management Committee Update.

**Date of Last Meeting:** January 4th, 2007

**Minutes from December 7th, 2006:**

1. Deer Management Committee minutes of November 16th, 2006: Chair Rackow moved to approve the minutes, Member Phillips seconded. Ayes, all; nays; none; motion passes.



Photo courtesy of Jim Buchholz, Schmeckle Reserve

## 2. The 2006 Culling Project

A. Committee members were encouraged to attend the Public Protection Committee Meeting at 6:00pm, Monday, December 11, 2006, at the Water Department.

B. The number of persons signed up to receive culled deer remains at 27.

C. An ad in the City's official newspaper may be required if and when the culler culls numerous deer.

D. The culler, Mike Wilhite, was informed at the Wisconsin Deer Donation 2006 program which might be used if the culler culls more deer than there are people signed up to receive them.

E. Mike Wilhite of Wilhite Wildlife Control, Inc., reported that he and his assistant were out 11 times but were unable to cull any deer. Several deer were seen immediately after shooting hours ended.

F. No deer were reported as being taken in the Tenth District and near the Airport during the regular deer archery season.

3. Results of the Deer Survey in Stevens Point by Cortney Schaefer. Cortney Schaefer distributed the Deer Survey. A copy of the survey is available in the City Clerk's office for public viewing. It will be placed on the next Committee agenda. Prof. Ginnett requested that Dr. Ginnett's class projects be placed on the agenda.

4. Date, time, and location of next meeting. The next meeting is scheduled for Thursday, January 4th, 2007 at 9:00 AM, in the City Conference Room.

5. Adjournment. The meeting was adjourned at 9:50 AM.

## For More Information.

### Contact the Stevens Point Deer Management Committee:

- Elbert Rackow  
Chair  
715-341-1393
- Roger Trzebiatowski  
Voting Member  
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- Cortney Schaefer  
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Photo courtesy of Cortney Schaefer



# Urban Deer Management

## Stevens Point, WI

Volume 1, Issue 3

May 2007

### Why Look at Urban Deer Management?

Rising white-tailed deer populations throughout the United States are a growing concern to wildlife managers and the public, especially concerning conflict between people and deer in urban areas. The goal of this newsletter is to help urban residents understand deer herd dynamics and the different methods of controlling urban deer herds, as well as what our own city is planning for our deer herd.

Urban deer management can only really be done on a city-wide level. It is up to city residents to say if the deer population level in the city is too high, too low, or adequate. If residents believe the deer population is too high, they should have a say in deciding which urban deer management technique the city should use to manage the herd. But, not all residents are aware of their management options. And others do not understand the negative effects of overabundant deer. By learning more about deer management, residents will be able to help city officials and wildlife

#### Inside this Issue:

- Why Look at Urban Deer Management?
- Urban Deer Management Techniques: Descriptions, Effectiveness, Cost, Pros, and Cons.

#### Next Issue:

- To Be Determined...



Photo courtesy of Roger Trzebiatowski

managers make the right decisions regarding the city's deer herd.

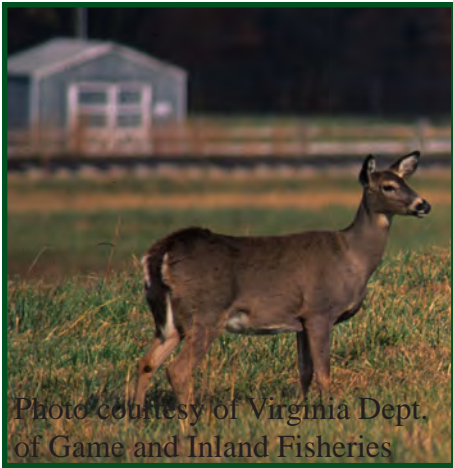


Photo courtesy of Virginia Dept. of Game and Inland Fisheries

## Urban Deer Management Techniques.

Currently, there are about six major categories of urban deer management techniques: urban bow hunting by recreational hunters, urban bow hunting by professionals, urban rifle hunting (sharpshooting), trapping and relocation, trapping and euthanasia, and contraception. Each of these methods has been used in cities throughout the eastern United States.

In Stevens Point, it appears that the preferred method of urban deer management is urban bow hunting by recreational hunters. This means that resident bow hunters may apply for receive tags to hunt themselves, instead of hiring professional archers. The Stevens Point Deer Management Committee is currently employing the urban bow hunting by

professionals method. This was the second-most preferred technique of Stevens Point residents.

There are several different ways to remove deer from cities because each city is different. Some urban deer management techniques are supported more by the public than others. Some are more effective than others. And some are just plain cheaper than others. Take a look at the table on the following page to decide which of the techniques you prefer and why.

## For More Information.

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- Elbert Rackow  
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Photo courtesy of Jim Buchholz, Schmeckle Reserve

| <u>Management Techniques</u> | <u>Description</u>   | <u>Humanness</u>   | <u>Cost</u>  | <u>Effectiveness</u>  | <u>Major Pros</u>   | <u>Major Cons</u>   |
|------------------------------|--|--|--|---|---|---|
| Contraception                | Giving fertility control products to limit the number of deer fawns born each year | Very humane; deer feels no pain or discomfort of any kind                        | Very expensive; most communities cannot afford this method                           | Not very effective; researchers have not had very good results in testing this method | Very humane and deer are not hurt                                     | Is not a reliable method of removing deer; very expensive |
| Bow Hunting- Professional    | Deer are removed by professional archers hired by the city of Stevens Point        | Humane; deer is killed quickly. Can become inhumane if a poor shot is taken      | Fairly expensive; archers may charge up to \$200 per deer                            | Fairly effective; deer can become wary and it may be time consuming to remove enough  | Very safe for human residents   | Can be expensive and take a long time                     |
| Bow Hunting- Recreational    | Deer are removed from the herd by recreational bow hunters that put in for tags    | Humane; deer is killed quickly. Can become inhumane if a poor shot is taken      | Very cheap; local residents pay the city for tags instead of the city paying archers | Fairly effective; deer can become wary and it may be time consuming to remove enough  | Safe for human residents and the most economic method                 | May take a long time                                      |
| Rifle Hunting                | Deer are removed by professional sharpshooters hunting over set bait piles         | Very humane; deer is dispatched quickly and without pain                         | Fairly expensive; sharpshooters may charge up to \$200 per deer                      | Very effective; several deer can be removed in a very short time                      | Removes the most deer in the smallest amount of time                  | Not considered safe by many members of the public         |
| Trapping & Relocation        | Deer are trapped in the city and then released in rural areas                      | Not very humane; deer suffer from stress of relocation and many die anyways      | Very expensive; it takes a serious effort to transport a live deer                   | Not very effective; most deer die from stress or move back into the city              | Deer may live happily somewhere else                                  | Many deer die anyway or return; very expensive            |
| Trapping & Euthanasia        | Deer are trapped in the city and euthanized at the site of the trap                | Fairly humane; deer suffers some stress in the trap but is dispatched of quickly | Fairly expensive; trappers may charge up to \$200 per deer                           | Fairly effective; traps can be used where other methods cannot                        | Can be used much closer to homes than other methods; can be used 24/7 | May not always be able to lure deer into traps            |

# FOR IMMEDIATE RELEASE

## Urban Deer Management Community Education Plan to be Implemented in Stevens Point, Wisconsin

STEVENS POINT, WI – Rising white-tailed deer populations throughout the United States are a growing concern to wildlife managers and the public, especially concerning conflict between people and deer in urban area. The goal of a recent survey was to help urban residents understand deer herd dynamics and the different methods of controlling urban deer herds, as well as what our own city is planning for our deer herd. It is likely that urban hunting will become common practice in communities throughout the country.

A recent survey conducted by University of Wisconsin-Stevens Point graduate student, Cortney Schaefer, has found that a majority of Stevens Point residents are supportive of urban deer management of the city's deer herd. While urban deer culling has occurred in Stevens Point since 2002, this is the first public opinion survey to take place regarding the deer management.

While the survey included several questions designed to discover how city residents felt about urban deer, its main purpose was to compile information about residents' learning preferences regarding deer. Residents were asked what modes of communication (television, radio, printed materials, seminars, website) they had heard information about deer from in the past. They were also asked what modes of communication they would prefer to learn from in the future. Not only did residents report how they would like to learn, but also what they would like to learn. Finally, residents were asked who they viewed as reliable sources of communication (state agencies, cities and town, universities, conservation organizations, etc.) regarding deer.

The result of all of this data collected is the Urban Deer Management Community Education Plan. The Plan was developed to be used as an educational tool for city officials and wildlife managers. It contains the four most preferred modes of communication by Stevens Point residents:

- 1). Brochure (printed materials)
- 2). Newsletters (Issues 1-3)
- 3). Television Press Release
- 4). Website Information.

Each piece of media contains deer-related information that residents reported they were interested in learning more about. These topics included: plants that deer like to eat, plants that deer do not like to eat, the cost of living with urban deer, the deer of Schmeckle Reserve, Stevens Point Deer Management Committee updates, the cost of urban deer management techniques, and the effectiveness of urban deer management techniques.

### Plants that Deer Like to Eat

White-tailed deer are the most common big-game animal in the U.S. They are extremely adaptable and live in a variety of habitats. They eat a variety of foods like leaves, grass, bark, acorns, and pretty much everything in your garden! Tulips, shrubs, bulbs, garden vegetables,

flowering plants, and even birdseed are all delicacies for deer. The average deer eats 6-8 pounds of forage per day!

### Plants that Deer Do Not Like to Eat

Urban white-tailed deer are notorious for eating all of our favorite plants in the yard. If you want to keep the plants in your yard protected, one thing you can do is plant ornamentals that deer rarely ever eat. Some ornamental plants that deer rarely damage are barberry, paper birch, Colorado blue spruce, common boxwood, Russian olive, and American holly.

### The Cost of Living with Urban Deer

The City of Stevens Point spends \$3,000.00 per year to control the city's urban white-tailed deer herd. In past years, each deer removed cost the city \$50.00 (total of 60 deer). During the 2006/2007 deer culling season however, the cost of deer culling rose to \$74.00 per deer (total of 40 deer could be removed).

But how much do Stevens Point residents pay for damage caused by urban deer? In the fall of 2006, five-hundred Stevens Point residents were surveyed to discover their opinions about deer, as well as the costs of living with urban deer. Residents reported spending between \$1.00 and \$1,500.00 to repair deer damage to their properties. The amount of money most often spent was \$100.00. The average amount of money spent on deer damage to properties in one year was \$59.08.

### The Deer of Schmeckle Reserve

Visitors to Schmeckle Reserve are always excited to see deer as they are biking or jogging Schmeckle's trails. Don't worry...that will never change. Urban hunting will never take place in Schmeckle Reserve. Although you may well notice a browse line (horizontal line between the vegetation where deer can and where deer cannot reach), Schmeckle deer will always be protected, no matter how the city decides to manage urban deer.

### Stevens Point Deer Management Committee Updates

The last Stevens Point Deer Management Committee meeting was held on December 7<sup>th</sup>, 2006. The meeting was focused on the progress of the 2006 Deer Culling Season. The professional culler hired by the Committee, Mr. Mike Wilhite of Wilhite Wildlife Control, reported that he had not been able to cull any deer yet with eleven attempts at hunting.

### Cost of Urban Deer Management Techniques

Of the six basic categories of urban deer management, some methods cost much more/less than others. The methods, listed in order of most expensive to least expensive are: 1) Contraception, 2). Trapping and Relocation, 3). Urban Rifle Hunting (Sharpshooting), 4). Urban Bow Hunting by Professionals, 5). Trapping and Euthanasia, and 6). Urban Bow Hunting by Recreational Hunters.

## Effectiveness of Urban Deer Management Techniques

Urban Rifle Hunting (Sharpshooting) is widely considered the most effective means of removing urban deer quickly and efficiently. Urban Bow Hunting by Professionals, Urban Bow Hunting by Recreational Hunters, and Trapping and Euthanasia are all pretty effective techniques as well, although they are more time-consuming. Trapping and Relocation is often not incredibly effective. Relocated deer may move back into the urban area or die anyway from the stress of being relocated. Contraception has not really been proven as an effective urban deer management technique at all.

The major goal underlying the Urban Deer Management Community Education Plan was to create a more informed citizenry that would be capable of assisting urban deer managers in making accurate decisions regarding Stevens Point's deer population. If residents have all of the facts about urban deer and urban deer population management, we will all be able to decide what is best for the city of Stevens Point, its residents, and its urban deer herd.

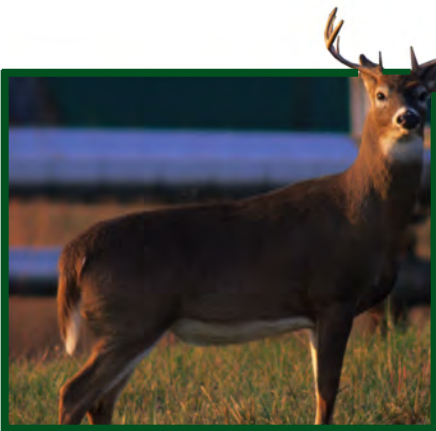
Contact:

Cortney Schaefer, 715/457-2145

Fax: 715-295-8918

Email: [cscha615@uwsp.edu](mailto:cscha615@uwsp.edu)

<http://students.uwsp.edu/cscha615/UrbanDeerMgmt/>



# Urban Deer Management Community Education Plan

Created March 2007 by Cortney Schaefer

Please visit the online website, **Urban Deer Management in Stevens Point, Wisconsin**, to view the finished webpages.

<http://students.uwsp.edu/cscha615/urbandeermgmt/>





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## Why Look at Urban Deer Management?

Rising white-tailed deer populations throughout the United States are a growing concern to wildlife managers and the public, especially concerning conflict between people and deer in urban areas. The goal of this website is to help urban residents understand deer herd dynamics and the different methods of controlling urban deer herds, as well as what our own city is planning for our deer herd. It is very likely that urban hunting will become common practice in communities throughout the country.



Photo by Roger Trzebiatowska



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## Basic Deer Biology

White-tailed deer are the most common big-game animal in the U.S. They are extremely adaptable and live in a variety of habitats. They eat a variety of foods like leaves, grass, bark, acorns, and pretty much everything in your garden! The average deer eats 6-8 pounds of forage per day! White-tailed deer give birth in the summer to twins or even triplets. That means that one doe this year could equal 4 deer next year!

[Deer and Ticks?](#)

[Foods Deer Like To Eat](#)

[Foods Deer Do Not Like](#)



Photo courtesy of Michigan Dept. of Natural Resources



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## Deer and Ticks?

Increasing deer populations also increase the occurrences of Lyme disease. As many know, Lyme disease is transferred to humans and/or pets by deer ticks. A baby tick's first "meal" is often a rabbit or some other small mammal. Once the tick grows bigger, it moves on to deer. The more deer there are, the more opportunities ticks have to feed. Thus, with more deer, we end up with more ticks in general. And more ticks equals more cases of Lyme disease.

[Deer and Ticks?](#)

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Photos from [www.CanLyme.com](http://www.CanLyme.com)





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## Foods Deer Like to Eat

Deer will eat almost anything, including tree bark, when they are hungry. Tulips, shrubs, bulbs, garden vegetables, flowering plants, and even birdseed are all delicacies for deer. Please see below for a list of ornamental plants that deer really like.

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Photo by Jim Buchholz

Balsam Fir (*Abies balsamea*)

Fraser Fir (*Abies fraseri*)

Norway Maple (*Acer platanoides*)

Eastern Redbud (*Cercis canadensis*)

Atlantic White Cedar (*Chamaecyparis thyoides*)

p

- Fraser Fir (*Abies fraseri*)
- Norway Maple (*Acer platanoides*)
- Eastern Redbud (*Cercis canadensis*)
- Atlantic White Cedar (*Chamaecyparis thyoides*)
- Clematis (*Clematis spp.*)
- Cornelian Dogwood (*Cornus mas*)
- Winged Euonymus (*Euonymus alatus*)
- Wintercreeper (*Euonymus fortunei*)
- English Ivy (*Hedera helix*)
- Apples (*Malus spp.*)
- Cherries (*Prunus spp.*)
- Plums (*Prunus spp.*)
- Rhododendrons (*Rhododendron spp.*)
- Evergreen Azaleas (*Rhododendron spp.*)
- Catawba Rhododendron (*Rhododendron spp.*)
- Hybrid Tea Rose (*Rosa (x) hybrid*)
- European Mountain Ash (*Sorbus aucuparia*)
- Yews (*Taxus spp.*)
- American Arborvitae (*Thuja occidentalis*)



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## Foods Deer Don't Like to Eat

Urban white-tailed deer are notorious for eating all of our favorite plants in the yard. If you want to keep the plants in your yard protected, one thing you can do is plant ornamentals that deer rarely ever eat. The following are ornamental plants that deer rarely damage:

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[Foods Deer Do Not Like](#)

Common Boxwood  
(*Buxus sempervirens*)



Barberry (*Berberis spp.*)

Common Barberry (*Berberis vulgaris*)

Paper Birch (*Betula papyrifera*)

Common Boxwood (*Buxus sempervirens*)

Russian Olive (*Elaeagnus angustifolia*)

American Holly (*Ilex opaca*)

Drooping Leucothoe (*Leucothoe fontanesiana*)

Colorado Blue Spruce (*Picea pungens*)

Japanese Pieris (*Pieris japonica*)



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## Management Techniques

| Management Technique             | Description   | Humaneness  | Cost   | Effectiveness  |
|----------------------------------|---|---|--|--|
| <b>Contraception</b>             | Giving fertility control products to limit the number of deer fawns born each year  | Very humane; no pain or discomfort of any kind                              | Very expensive; most communities cannot afford this method                           | Not very effective; researchers have not had good results in testing this method     |
| <b>Bow Hunting-Professional</b>  | Deer are removed by professional archers hired by the city of Stevens Point         | Humane: deer is killed quickly. Can become inhumane if a poor shot is taken | Fairly expensive: archers may charge up to \$200 per deer                            | Fairly effective; deer can become wary and it may be time consuming to remove enough |
| <b>Bow Hunting-Recreational</b>  | Deer are removed by recreational bow hunters (community members) that draw for tags | Humane: deer is killed quickly. Can become inhumane if a poor shot is taken | Very cheap; local residents pay the city for tags instead of the city paying archers | Fairly effective; deer can become wary and it may be time consuming to remove enough |
| <b>Rifle Hunting</b>             | Deer are removed by professional sharpshooters hunting over set bait piles          | Very humane; deer is dispatched quickly and without pain                    | Fairly expensive: sharpshooters may charge up to \$200 per deer                      | Very effective; this method removes the most deer in the shortest amount of time     |
| <b>Trapping &amp; Relocation</b> | Deer are trapped in the city and then released in rural areas                       | Not very humane; deer suffer from stress of relocation and may die anyway   | Very expensive; relocating deer takes a serious effort to transport a live deer      | Not very effective; most deer die from stress or move back into the city             |

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|                                  |   |  |  |   |
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| <b>Trapping &amp; Relocation</b> | Deer are trapped in the city and then released in rural areas                       | Not very humane; deer suffer from stress of relocation and may die anyway                        | Very expensive; relocating deer takes a serious effort to transport a live deer      | Not very effective; most deer die from stress or move back into the city  |
| <b>Trapping &amp; Euthanasia</b> | Deer are trapped in the city and euthanized at the site of the trap.                | Fairly humane; deer suffers some stress in the trap but is dispatched of quickly and painlessly. | Fairly expensive; trappers may charge up to \$200 per deer.                          | Fairly effective; traps can be used where other methods cannot, however it is not always easy to get deer to enter traps. |



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## Deer Damage Cost Analyses

The City of Stevens Point spends \$3,000.00 per year to control the city's urban white-tailed deer herd. In past years, each deer removed cost the city \$50.00 (total of 60 deer). During the 2006/2007 deer culling season however, the cost of deer culling rose to \$74.00 per deer (total of 40 deer could be removed).

But how much do Stevens Point residents pay for damage caused by urban deer? In the fall of 2006, five-hundred Stevens Point residents were surveyed to discover their opinions about deer, as well as the costs of living with urban deer. Residents reported spending between \$1.00 and \$1,500.00 to repair deer damage to their properties. The amount of money most often spent was \$100.00. The average amount of money spent on deer damage to properties in one year was \$59.08.

The survey asked several other questions to get an idea of how much urban deer were costing Stevens Point residents. To see more extensive results of the deer damage survey, please click the link below:

## [Extensive Deer Damage Cost Results](#)





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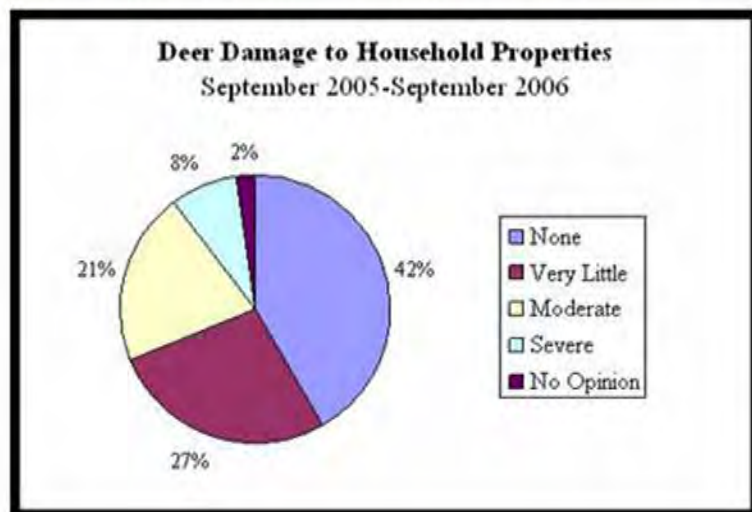
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## Extensive Deer Damage Cost Results

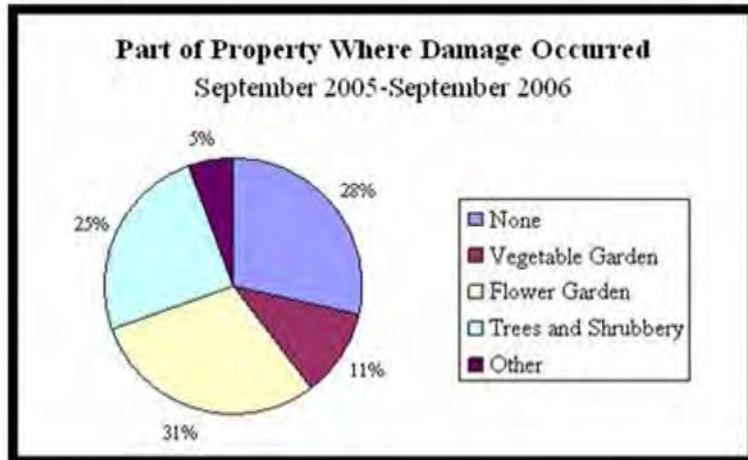
The Fall 2006 Deer Survey in Stevens Point asked several questions to discover how much the city's urban deer herd was costing residents. Residents were asked to answer all questions for a one year period (September 2005-September 2006). To see the results for yourself, please read the following questions and look at how residents responded in the graphs below:

Question 1. How would you describe the extent of damage done to your property by deer in the past 12 months?

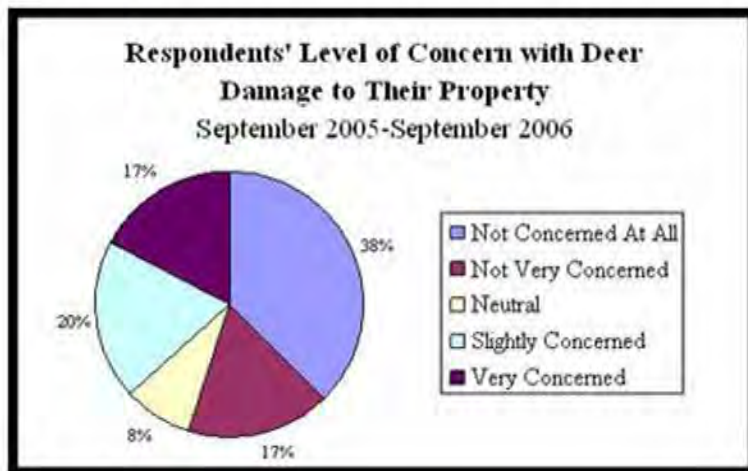


Question 2. What part of your property was damaged?

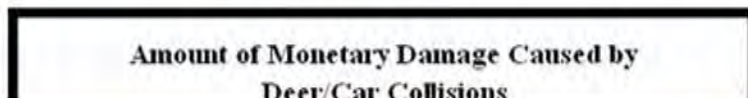
Question 2. What part of your property was damaged?



Question 3. Describe your level of concern with deer damage to your property.



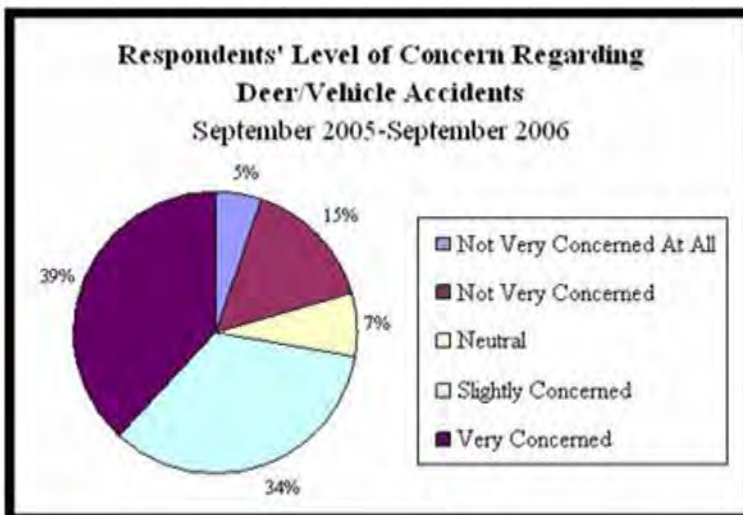
Question 4. How much monetary damage have deer collisions caused to your vehicle?



Question 4. How much monetary damage have deer collisions caused to your vehicle?



Question 5. Describe your level of concern about getting into a deer-vehicle accident.





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## Stevens Point Deer Mgmt. Committee Update

Date of Last Meeting: **January 4th, 2007**

Minutes from **December 7th, 2006:**

1. **Deer Management Committee minutes of November 16th, 2006:** Chair Rackow moved to approve the minutes, Member Phillips seconded. Ayes, all; nays; none; motion passes.
2. **The 2006 Culling Project**
  - A. Committee members were encouraged to attend the Public Protection Committee Meeting at 6:00pm, Monday, December 11, 2006, at the Water Department.
  - B. The number of persons signed up to receive culled deer remains at 27.
  - C. An ad in the City's official newspaper may be required if and when the culler culls numerous deer.
  - D. The culler, Mike Wilhite, was informed at the Wisconsin Deer Donation 2006 program which might be used if the culler culls more deer than there are people signed up to receive them.
  - E. Mike Wilhite of Wilhite Wildlife Control, Inc., reported that he and his assistant were out 11 times but were unable to cull any deer. Several deer were seen immediately after shooting hours ended.
  - F. No deer were reported as being taken in the Tenth District and near the Airport during the regular deer archery season.

F. No deer were reported as being taken in the Tenth District and near the Airport during the regular deer archery season.

**3. Results of the Deer Survey in Stevens Point by Cortney Schaefer.** Cortney Schaefer distributed the Deer Survey. A copy of the survey is available in the City Clerk's office for public viewing. It will be placed on the next Committee agenda. Prof. Ginnett requested that Dr. Ginnett's class projects be placed on the agenda.

**4. Date, time, and location of next meeting.** The next meeting is scheduled for Thursday, January 4th, 2007 at 9:00 AM, in the City Conference Room.

**5. Adjournment.** The meeting was adjourned at 9:50 AM.

[Click here](#) for link to Agenda for the Next Meeting



## DEER MANAGEMENT COMMITTEE

### AGENDA

Thursday, January 4, 2007 - 9:00 A. M.

City Conference Room

(A quorum of the City Council may attend this meeting.)

1. Members.

Voting Members

Member Elbert J. Rackow, 1824 Gilkay Avenue, Stevens Point, WI 54481, 715-341-1393, Chair

Alderman Roger G. Trzebiatowski, 3309 McCulloch Street, Stevens Point, WI 54481, 715-344-2322

Member, Mike Phillips, 3225 Mary St., Stevens Point, WI 54481, H 715-341-4255, C 321-0966

Advisory Members

Mr. Greg Dahl, DNR Wildlife Manager, 473 Griffith Ave., Wisconsin Rapids, WI 54494, 715-421-7818

Prof. Tim Ginnett, College of Natural Resources, UW-SP, Stevens Point, WI 54481, 715-346-4191

Police Chief Jeffrey S. Morris, 1515 Strongs Ave., Stevens Point, WI 54481, 715-346-1500

Thomas J. Jakusz, 1058 Martin Island Dr., Stevens Point, WI 54481, 715-341-7852

✓ Cortney Schaefer, Schmeackle Reserve, 2419 North Point Dr., Stevens Point, WI 54481, 715-346-4992

Mike Wilhite, Wilhite Wildlife Control, LLC, E2784 Bosland Rd., Scandinavia, WI 54977, 715-445-4731

2. Deer Management Committee minutes of December 7, 2006.

3. The 2006 Culling Project.

A. Action by the Public Protection Committee and the Council on permitting use of firearms to cull deer.

B. Number of persons signed up to receive culled deer.

C. Request to the DNR dated December 19, 2006, to extend the term of the grant through March 31, 2007.

D. Progress by Wilhite Wildlife Control, Inc., in culling deer with archery tackle.

E. Review results of hunting with archery tackle in the Tenth District and near the Airport during the regular deer archery season.

4. Results of the Deer Survey in Stevens Point by Cortney Schaefer.

5. Prof. Ginnett's Class Projects.

2. Deer Management Committee minutes of December 7, 2006.
3. The 2006 Culling Project.
  - A. Action by the Public Protection Committee and the Council on permitting use of firearms to cull deer.
  - B. Number of persons signed up to receive culled deer.
  - C. Request to the DNR dated December 19, 2006, to extend the term of the grant through March 31, 2007.
  - D. Progress by Wilhite Wildlife Control, Inc., in culling deer with archery tackle.
  - E. Review results of hunting with archery tackle in the Tenth District and near the Airport during the regular deer archery season.
4. Results of the Deer Survey in Stevens Point by Cortney Schaefer.
5. Prof. Ginnett's Class Projects.
6. Date, time, and location of next meeting.
7. Adjournment.

Any person who has special needs while attending this meeting or needs agenda materials for this meeting should contact the City Clerk as soon as possible to ensure a reasonable accommodation can be made. The City Clerk can be reached by telephone at (715) 346-1569, or by mail at 1515 Strongs Ave., Stevens Point, WI 54481.

Copies of ordinances, resolutions, reports and minutes of the committee meetings are on file at the office of the City Clerk for inspection during the normal business hours from 7:30 a.m. to 4:00 p.m.

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## The Deer in Schmeeckle Reserve

Visitors to Schmeeckle Reserve are always excited to see deer as they are biking or jogging Schmeeckle's trails. Don't worry...that will never change :- ) Urban hunting will never take place in Schmeeckle Reserve. Although you may well notice a browse line (horizontal line between the vegetation where deer can and where deer cannot reach), Schmeeckle deer will always be protected.



Click on the logo to be redirected to Schmeeckle Reserve's website.



Photo by Jim Buchholz



Photo by Jim Buchholz



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## Contact Information

Cortney Schaefer  
Graduate Assistant  
Schmeckle Reserve  
UW-Stevens Point  
2419 North Point Drive  
Stevens Point, WI 54481  
Ph. 715-346-4992  
Fax 715-295-8918  
Email: cscha615@uwsp.edu

This website was created and developed in partial fulfillment of requirements for a Master's of Science in Natural Resources degree. It is part of a joint project between the University of Wisconsin-Stevens Point and the City of Stevens Point. Funding also provided by Whitetails Unlimited.



| <b>Name</b>      | <b>Organization</b>                              | <b>Email Address</b>   | <b>Phone Number</b>       | <b>Physical Address</b>  |
|------------------|--|--|---------------------------|--|
| Elbert Rackow    | City of Stevens Point                            | none   | 715-341-1393              | Plan dropped off April 4th<br>Whitetails Unlimited, Inc.<br>PO Box 720<br>Sturgeon Bay, WI 54235               |
| Pete Gerl        | Whitetails Unlimited                             | <a href="mailto:pgerl@whitetailsunlimited.com">pgerl@whitetailsunlimited.com</a> | 1-800-274-5471            | Bureau of Wildlife Management<br>WI Department of Natural Resources<br>1155 Pilgrim Road<br>Plymouth, WI 53073 |
| Ricky Lien       | Bureau of Wildlife                               | <a href="mailto:ricky.lien@dnr.state.wi.us">ricky.lien@dnr.state.wi.us</a>       | 920-892-8756<br>Ext. 3045 | P.O. Box 11104<br>4010 W. Broad St<br>Richmond, VA 23230-1104  |
| Lee Walker       | Virginia Department of Game and Inland Fisheries | <a href="mailto:Lee.Walker@dgif.virginia.gov">Lee.Walker@dgif.virginia.gov</a>   | 804-367-0486              | MassWildlife<br>One Rabbit Hill Road<br>Westboro, MA 01581   |
| David Kenyon     | Michigan Department of Natural Resources         | <a href="mailto:kenyond@michigan.gov">kenyond@michigan.gov</a>                   | 517-373-6516              |  |
| Ellie Horwitz    | Massachusetts Department of Wildlife             | <a href="mailto:Ellie.Horwitz@state.ma.us">Ellie.Horwitz@state.ma.us</a>         | 508-792-7270<br>Ext. 105  |  |
| Joe Brunker      | Quality Deer Management Association              | <a href="mailto:jbunker@qdma.com">jbunker@qdma.com</a>                           | 608-744-2000              |  |
| Pat Caffrey      | LaCrosse, WI                                     | <a href="mailto:caffrey@netscape.net">caffrey@netscape.net</a>                   | 608-534-5004              | N13001 W. Prairie Road<br>Trempealeau, WI 54661  |
| Marilyn Stone    | Independent Wildlife Author                      | <a href="mailto:marilyn_stone@yahoo.com">marilyn_stone@yahoo.com</a>             | 801-737-3487              | 948 Westwood Dr.<br>Pleasant View, UT 84414  |
| Blaine Bechtold  | Grand Haven, MI                                  | <a href="mailto:blain.bechtold@arni.usda.gov">blain.bechtold@arni.usda.gov</a>   | 616-841-5852<br>Ext. 10   | 16731 Ferris Street<br>Grand Haven, MI 49417   |
| Pete Schoommaker | Whitetails Unlimited                             | <a href="mailto:pschoommaker@nycap.tr.com">pschoommaker@nycap.tr.com</a>         |                           | 526 N. Main St.<br>Gloversville, NY 12078  |

1954 S. County Road O  
Mosinee, Wisconsin 54455

March 19, 2007

Whitetails Unlimited  
Attn: Jeff Davis  
PO Box 720  
Sturgeon Bay, WI 54235

Mr. Davis:

I would like to take this opportunity to thank you and your organization for you funding contribution to my graduate research project, Development of a Community Education Plan for Urban White-tailed Deer Management. Your support was integral in allowing me the opportunity to adequately sample the city of Stevens Point. I was able to send reminder postcards and follow-up questionnaires to boost my response rate and get a more representative sample of the city. Thanks to your generous support, I was also able to attend the Midwest Fish and Wildlife Conference in Omaha, Nebraska where I presented preliminary results of my study to wildlife professionals from across the Midwestern United States.

Now that my research project is complete, I would like to comply with the requirements necessary for recipients of special project funding. Enclosed with this letter, you will find a short description outlining my thesis research. I have also enclosed two high-quality photographs. Please feel free to contact me if you would like electronic copies of the photographs.

Thank you for your organization's support in completing this project. I know that the city of Stevens Point is grateful. I am hoping that publishing my results in a peer-reviewed journal will encourage other cities with urban deer herds to implement a similar public education program. Thank you again!

Sincerely,

Cortney M. Schaefer  
cscha615@uwsp.edu

# Development of a Community Education Plan for Urban White-Tailed Deer Management

## Whitetails Unlimited Project Summary

Cortney Schaefer

The objectives of this study were to 1) Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point, 2) Determine what combination of communication modes to use to reach a large percentage of the population in Stevens Point, and 3) Develop a community education plan to educate community residents about deer population management and the different culling options available. Residents were surveyed to discover how they felt about the city's urban deer population. Residents had mixed opinions about the sight of deer in their yards; however, most residents (73%) were concerned about getting into a deer-vehicle accident. Sixty-five percent of residents agreed with the use of urban bow hunting by recreational hunters in Stevens Point, significantly more than other culling techniques. Residents also reported what modes of communication they preferred to learn about deer through. Printed materials, newsletters, television news/commercials, and websites were the most preferred modes and as such, examples of each were included in the Urban Deer Management Community Education Plan. Information that residents wanted to see included in the community education plan varied so all deer-related information was included with the exception of the one topic that residents were really not interested in learning about: deer reproductive biology. The purpose of the Education Plan is to create a more informed citizenry that will be capable of assisting urban wildlife managers in making accurate decisions about the city's deer herd.

## FINAL REPORT

**GRANT TYPE:** Student Research Fund Grant (3/27/2006)

**NAME OF GRANTEE:** Cortney M. Schaefer

**TITLE OF PROPOSAL:** Development of a Community Education Plan on Urban White-Tailed Deer Management

### **WHAT WERE THE OBJECTIVES OF THE PROPOSAL?**

The objectives of this study were to 1) Determine the attitudes and opinions of community residents regarding the deer population in Stevens Point, 2) Determine what combination of communication modes to use to reach a large percentage of the population in Stevens Point, and 3) Develop a community education plan to educate community residents about deer population management and the different management options available.

### **HOW WERE THESE OBJECTIVES REALIZED?**

*Objective #1:* Five hundred randomly selected residents of Stevens Point, Wisconsin were surveyed (59.8% response rate) to discover how they felt about the city's urban deer population. Residents had mixed opinions about the sight of deer in their yards; however, most residents (73%) were concerned about getting into a deer-vehicle accident. Sixty-five percent of residents agreed with the use of urban bow hunting by recreational hunters in Stevens Point, significantly more than other management techniques.

*Objective #2:* Residents also reported what modes of communication they preferred to learn about deer through. Printed materials, newsletters, television news/commercials, and websites were the most preferred modes and as such, examples of each were included in the Urban Deer Management Community Education Plan.

*Objective #3:* Residents were also asked what types of deer-related information they would like to learn more about. The information residents wanted varied considerably so all deer-related information was included in the final community education plan with the exception of the one topic that residents were really not interested in learning about: deer reproductive biology.

### **WHAT WERE THE BENEFITS TO YOU, YOUR STUDENTS, AND THE UNIVERSITY?**

This research project greatly benefited me in that I learned a lot about cooperative wildlife management. I worked with several different organizations (the University, the city of Stevens Point, the Stevens Point Deer Management Committee, and Whitetails Unlimited) to complete this project. Each group had a slightly different goal for deer management and it was neat to see how cooperatively, we were able to come up with an education plan that could be implemented in this community. The overall purpose of the plan is to create a more informed citizenry that

will be capable of assisting urban wildlife managers in making accurate decisions about the city's deer herd. Many other cities in the Midwest could benefit from this project as well. The Urban Deer Management Community Education Plan could easily be modified and implemented in other communities living with urban deer populations. I am currently working on a peer-reviewed article to share my results with a wider audience. My advisor, the University of Wisconsin-Stevens Point, and I will all benefit if my work is published as planned in the Journal of Applied Environmental Education and Communication.

**SIGNED:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

PLEASE RETURN TO GRANT SUPPORT SERVICES, 204 MAIN, BY APRIL 1, 2007