



**SOCIAL NETWORKS AND COLLECTIVE ACTIONS AMONG WILDLIFE
MANAGEMENT STAKEHOLDERS: INSIGHTS FROM FURBEARER
TRAPPING AND WATERFOWL HUNTING CONFLICTS IN NEW YORK
STATE**

by Heather Ann Triezenberg

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A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

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August 2010

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Cornell University 2010

Negative interactions between diverse stakeholders in multi-use natural resource settings create potentially contentious environments for wildlife management agencies. In a few cases, political activism (collective action) resulting from such interactions has been pronounced. These incidents are important for wildlife agencies and communities affected by wildlife because the outcomes of resulting public discussions have the potential to influence access or opportunities for wildlife harvest activities, limit wildlife management tools, influence public perceptions about wildlife as a resource, and affect relationships within and among communities. The goal of my research was to develop and examine a conceptual model incorporating the social interactions among diverse stakeholders towards influencing wildlife management. I examined negative interactions in two contexts: (1) between waterfront residents and waterfowl hunters and (2) between dog owners and wildlife trappers. I conducted semi-structured interviews ($n=50$) in four case study communities (Brookhaven, Canandaigua, Southampton, and Queensbury) that had related public issue discussions. Local/in-state regional organizations played important roles for enabling collective actions and expanding how public issues were framed. When stakeholders with similar policy positions banded together, policy outcomes were in the same

direction as their positions. Concern for personal safety, individual rights, and individual privileges were common underlying interests for most stakeholders, even those with differing policy positions. I sent mail-back questionnaires ($N= 4,000$) to relevant stakeholders in two areas of the state where conflicts are likely to arise to assess experiences, attitudes, and political engagement on these management issues. Waterfowl hunters who hunt closer to occupied dwellings were less sensitive to residents' concerns; waterfront residents who knew waterfowl hunters were more accepting of waterfowl hunting. Both wildlife trappers and dog owners were concerned about dogs getting caught in traps on multi-use public lands; dog owners who took their dogs with them to state forests, municipal lands, or along roads or sidewalks exhibited higher levels of concern that their dog might get caught in a trap. This research deepens our understanding of how wildlife-related public issues emerge, how action networks form, how similar or dissimilar interests are across stakeholder groups, and what factors may promote positive or negative stakeholder interactions.

BIOGRAPHICAL SKETCH

Heather Ann Triezenberg was born Heather Ann Van Den Berg on February 19, 1980, in Lapeer, Michigan to Judith Meyer Van Den Berg and Robert Van Den Berg. She grew up in Imlay City, Michigan, where she graduated from the Imlay City Christian School (8th grade) in 1994 and from Imlay City High School in 1998. In August 1998, she enrolled in Michigan State University (MSU) in East Lansing, Michigan, to pursue a Bachelor of Science in Fisheries & Wildlife Management. While at MSU, Heather was an active member of the Liberty Hyde Bailey Scholars Program in the College of Agriculture and Natural Resources, and served as the vice-president for the undergraduate Fisheries & Wildlife Club. During her undergraduate studies, she traveled to Parana, Brazil, to learn about tropical forestry and eco-tourism and spent her final semester in County Mayo, Ireland, teaching transition year students at the Balla Secondary School as part of a rural community development project with the Tochar Valley Network. Heather earned numerous honors while an undergraduate, including the Fisheries & Wildlife Club Most Active Member Award, the Jeffery D. Rupert Fisheries & Wildlife Leadership Excellence Award, and the College of Agriculture and Natural Resources Outstanding Senior Leadership Award, where she was invited to address graduates at her May 2002 commencement. At that time, Heather also began her professional career as Education Director for the Clinton River Watershed Council (CRWC) in Rochester, Michigan, where she coordinated watershed education, outreach, and stewardship programs for youth and adults. During her time with CRWC, Heather was recognized by the Michigan Department of Natural Resources, Michigan Alliance for Environmental and Outdoor Education, and Marine Environmental Education Foundation for service, education, and collaboration. In August 2004, Heather returned to MSU to pursue a Master of Science in Fisheries

& Wildlife Management. She worked with MSU Extension, Michigan Department of Natural Resources, and numerous state and local conservation organizations to develop, pilot test, and evaluate the impacts of an adult conservation education and volunteerism program. Heather graduated from MSU in August 2006. Her thesis topic was titled, “Impacts of the Michigan Conservation Stewards Program on participants’ knowledge, attitudes, and skills regarding ecology and resource management.” In 2006, she was recognized as a national 4-H Fisheries & Wildlife Volunteer. Heather entered a Doctor of Philosophy program in Natural Resource Policy in August 2006 and began her studies with the Human Dimensions Research Unit at Cornell University. She has been employed as both a graduate research assistant and a teaching assistant in the Department of Natural Resources. While at Cornell, she has served as the Treasurer of the Natural Resources Graduate Student Association and co-chaired or served on various committees. Heather is a member of The Wildlife Society – Human Dimensions Working Group, International Association for Society and Natural Resources, International Network for Social Network Analysis, and Organization of Wildlife Planners. She earned the Best Student Paper Award from the Northeast Section of The Wildlife Society for her presentation at the Northeast Fish and Wildlife Association Conference and a Kieckhefer Fellowship, both in 2009. Heather married Jeffrey Triezenberg on June 13, 2009.

To all of my loved ones, thank you for your grace and generosity.

ACKNOWLEDGMENTS

I have received support from numerous professional colleagues and personal friends throughout my Ph.D. program. My advisor, Dr. Barbara A. Knuth, has guided me through this doctoral research and encouraged me to maintain a healthy perspective. She has mentored me over the past four years enabling me to achieve my goals. My committee members John Forester, Connie Yuan, and Janis Dickinson have offered their critiques and reflections on my ideas. I thank the Human Dimensions Research Unit faculty and staff, Dan Decker, Rich Stedman, Shorna Broussard Allred, Bruce Lauber, Nancy Connelly, Jody Enck, Bill Siemer, Karlene Smith, and Margie Peech, for always opening their doors and offering fresh ideas when I had questions.

Gordon Batcheller and Bryan Swift, of the New York State Department of Environmental Conservation, shared their knowledge and concerns for managing wildlife-related stakeholder interactions to achieve conservation goals. Their friendship and support have always made me believe my research filled some of their management needs and would inform future decisions. The members of the migratory bird management team, furbearer management team, regional wildlife management team, and various wildlife biologists across New York State generously shared their time and perspectives with me as I formulated and implemented my research.

Graduate students in the Human Dimensions Research Unit shaped my perspectives and experiences throughout my doctoral research, especially Meredith Gore, Heidi Kretser, and Kristen Leong as they provided countless feedback and guidance on my questions early in my graduate program. Graduate students in Natural Resources selflessly listened during challenging times and shared fresh perspectives, especially Ann Armstrong, Kendra Liddicoat, Jennifer Shirk, Heather Hudenko Wiczorek, Nighthawk Evenson, Dan Bogan, Robin DeBruyne, Willie Fetzer,

Stefanie Hufnagl-Eichiner, Kim Falbo, Rachel Neugarten, and Steve Raciti.

I thank my husband, Jeff Triezenberg, for his love and support as I pursued my doctorate. I experienced many transformations while in graduate school, including learning the possibility and gratification of pursuing personal and professional interests. Finally, I acknowledge my dog, Gunther, as the most reliable writing companion. Although you couldn't read or edit drafts of my chapters, you did help shred them.

Funding for this project was provided by New York Federal Aid in Wildlife Restoration Grant WE-173-G. This research was supported in part by the Cornell University Agricultural Experiment Station federal formula funds, Project No. NYC-147433 received from Cooperative State Research, Education and Extension Service, U.S. Department of Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

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CHAPTER 1

INTRODUCTION

Conflicts in wildlife management have typically focused on conflicts between humans and wildlife or between humans over how wildlife should be managed. An emerging priority for research and management is the need to understand the interactions and social organizing among wildlife stakeholders that lead to social conflicts, that is, conflicts between humans over what human activities (related to wildlife) are acceptable. Managing the impacts from social interactions among wildlife stakeholders is likely to be an important aspect of wildlife management in the 21st century, especially as different stakeholder groups increase their proximity to one another, debates over human activities related to wildlife become more divisive, and stakeholders seek to directly influence management policies.

Social conflicts among stakeholders have manifested in New York State in two contexts: (1) between dog owners and furbearer trappers, both using public lands; and (2) between waterfront residents and waterfowl hunters who hunt along developed waterways often in proximity to residences. Wildlife managers may need to pay attention to the social interactions among hunters, trappers, and the non-hunting public to minimize negative and maximize positive interactions if they want to sustain public and policy support for hunting and trapping as wildlife management tools and as legal recreational pursuits, especially in suburban areas where support for innovative wildlife management is often needed.

The goal of my research is to develop and apply a conceptual model representing the influences of social interactions among consumptive and non-consumptive stakeholders, including attitudes, experiences, socio-demographics,

underlying interests, and previous political engagement on intentions to influence wildlife management and policy. My research draws broadly from guiding concepts in planning, communication, and the human dimensions of wildlife management, and addresses several objectives to: (1) identify how stakeholders with differing viewpoints in a wildlife harvest dispute are connected together; (2) determine the relationship between network position and perception of the dispute; (3) identify and compare stakeholders' policy positions and underlying interests; (4) assess and compare the experiences and attitudes of consumptive (e.g., waterfowl hunters and furbearer trappers) and non-consumptive (e.g., dog owners and residents affected by consumptive activities) stakeholders associated with social interactions; (5) identify which variables (socio-demographic, experiences, attitudes) best explain stakeholders' satisfaction with multiple-use management; and (6) identify which variables best explain stakeholders' intentions to contact decision-makers to have an influence on management and policy decisions. My research uses a multidisciplinary approach to contribute to a critical information gap to understand the nature of social conflicts among stakeholders, how to anticipate conflicts, and how to respond when negative stakeholder interactions relating to furbearer trapping and waterfowl hunting occur. My research advances theoretical frameworks for understanding how stakeholders interact, mobilize, and frame the topic of public issue discussions. My research advances the use of social network analysis (both theory and analysis) to the field of human dimensions of wildlife management. The findings from this research will suggest stakeholder engagement strategies for communication, education, conflict resolution, citizen participation, and law enforcement relating to wildlife management. My dissertation concludes with a synthesis chapter summarizing the contributions of this research toward advancing theory, method, policy, and practice within the context

of human dimensions of wildlife management, and discusses avenues for future research.

In developing this research, I started with the social interaction between consumptive (e.g., waterfowl hunters or furbearer trappers) and non-consumptive (e.g., waterfront residents or dog owners) wildlife-related stakeholders as the basis for public issue discussions. I used social network analysis applied retrospectively to four case study communities that had experienced wildlife stakeholder conflicts, to understand who was involved, how the stakeholders with diverse viewpoints were connected together, how they perceived or framed the issues, and their policy positions and underlying interests (Figure 1-1). These interactions have the potential to escalate into broader social conflicts through a public issue evolution model from initial stakeholder interactions to involvement of others leading to full-blown, controversial public issues. If wildlife managers seek to minimize social conflicts among stakeholders, they may anticipate problems before they become public issues. To help develop anticipatory approaches suitable for wildlife managers, I used cognitive theoretical frameworks that link together stakeholder socio-demographics, attitudes, experiences, and previous political engagement to develop a survey tool for predicting stakeholder satisfaction with the multiple uses of lands and waterways and intentions to contact decision-makers in collective actions (Figure 1-2).

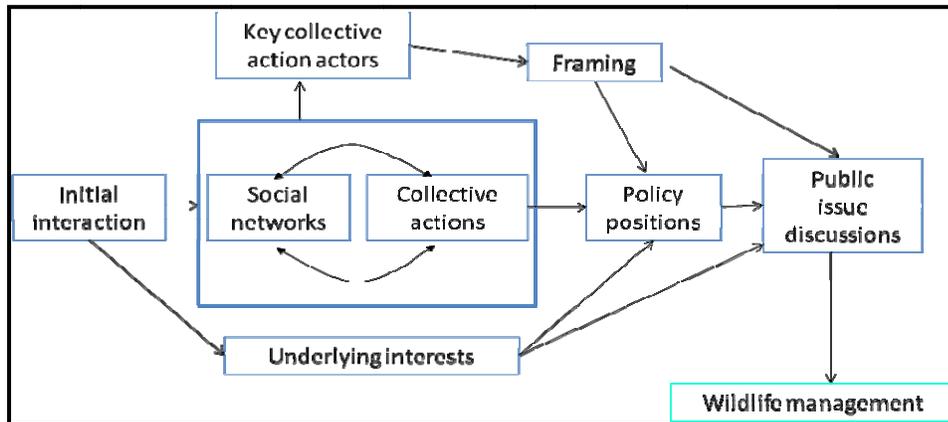


Figure 1-1. Retrospective conceptual model of factors influencing public issue discussions related to waterfowl hunting or furbearer trapping with potential to affect wildlife management in case study communities (Brookhaven, Canandaigua, Queensbury, Southampton), New York State, USA, 2009.

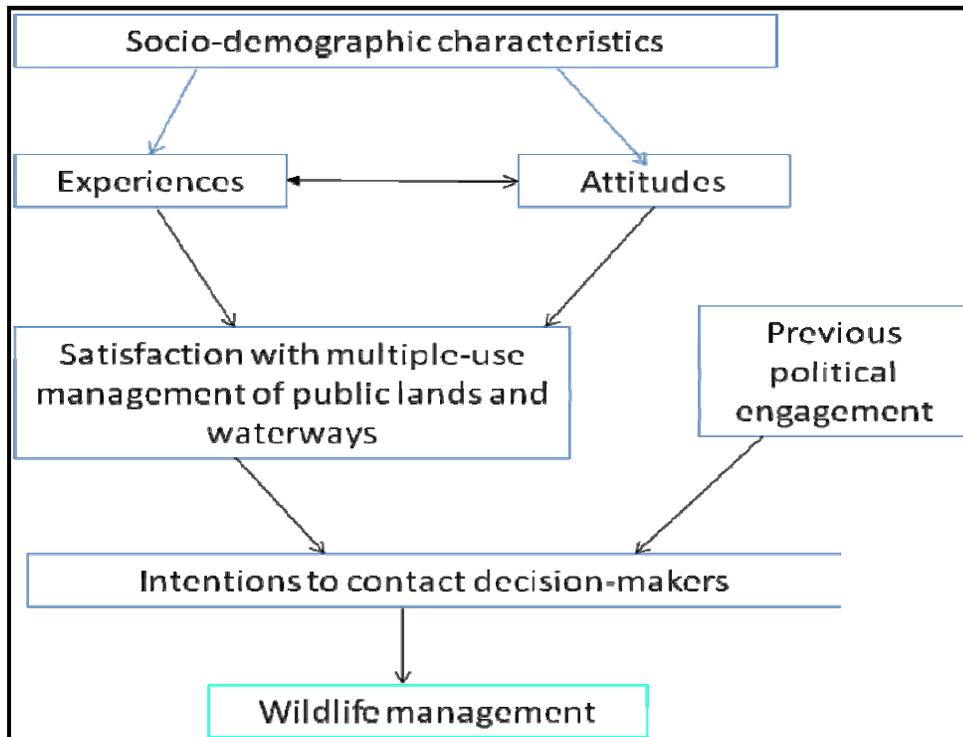


Figure 1-2. Anticipatory conceptual model of factors for predicting stakeholder intentions to contact decision-makers to influence wildlife management policies in New York State, USA, 2009.

In the subsequent chapters, I explore various aspects of my research using extensive literature reviews of relevant theoretical frameworks and methodologies for qualitative, quantitative, and social network analyses. Each chapter is described briefly below.

In Chapter 2, I provide a detailed description of the overall methods used in this research, including data collection procedures and analyses. I describe the criteria for selecting the study areas, for both the case studies of four New York State communities (retrospective phase) and the regional studies involving self-administered mail-back questionnaires in two multi-county areas (anticipatory phase). Chapters 3 and 4 draw on my case study retrospective analyses, and chapters 5 and 6 draw on the regional, prospective studies. I present the qualitative, quantitative, and social network analyses used to explore the data relative to the study objectives. I also discuss the limitations of my research approach and analyses. Chapters 3-6 are organized to be stand-alone manuscripts and each contains in-depth methods relevant to their respective portions of the study.

In Chapter 3, I identify the social networks of stakeholders involved with public issue discussions following disputes relating to furbearer trapping or waterfowl hunting and determine the extent to which homophily of policy positions (e.g., support for restricted vs. maintained/expanded hunting or trapping access and opportunities) exists in four case study communities. Homophily refers to the extent to which people are more likely to form relationships with people similar to themselves than with people who are different than themselves (e.g., birds of a feather flock together). In this chapter, I also identify the underlying interests that motivate these stakeholders to become involved with public issue discussions and examine the extent to which these underlying interests are similar or dissimilar for each stakeholder group.

In Chapter 4, I identify key aspects of social interactions within each network, including (1) the influence and role of the initial disputants involved in the initial negative interaction, (2) the presence and role of coordinator(s) (degree centrality measures), and (3) the presence and role of broker(s) (betweenness centrality measures). I also analyze how these stakeholders with important roles within the social network perceive and frame the wildlife-related social conflicts. I seek to understand the social construction of public issues as additional stakeholders become involved in policy discussions by combining quantitative social network analysis with qualitative open-ended methodologies.

In Chapter 5, I analyze the emerging issue of interactions among wildlife trappers and dog owners for multiple-use of public lands by examining stakeholders' socio-demographics, experiences, attitudes, political engagement, and behavioral intentions. I identify public land types used by both wildlife trappers and dog owners for recreation. I also identify dog owner and wildlife trapper attitudes toward multi-uses of public lands. I seek to understand the factors that best explain satisfaction with management of public lands and intentions to contact decision-makers when stakeholders have concerns relating to multi-use management of public lands.

In Chapter 6, I examine the emerging issue of interactions among waterfowl hunters and waterfront residents along publicly accessible waterways that are developed. I compare socio-demographics, experiences, attitudes, political engagement, and behavioral intentions of waterfowl hunters and waterfront residents near the Braddock Bay State Wildlife Management Area. I identify the negative and positive interactions among these stakeholders, and how these interactions may be related to attitudes toward waterfowl hunting along developed waterways. I seek to understand the factors that best explain acceptance waterfowl hunting along developed

waterways and intentions to contact decision-makers when stakeholders have concerns relating to waterfowl hunting along develop waterways.

In the conclusions (Chapter 7), I review what I learned about negative stakeholder interactions and collective action mobilizing within the context of social conflicts related to wildlife management. I discuss how my dissertation contributes to theory, method, policy, and practice, and suggest the limitations of my research. I synthesize the wildlife management implications from this research for responding to and anticipating future social conflicts among stakeholders related to wildlife harvest. Finally, I suggest ideas for future research on this topic, including how social network analysis may be applied to understand how stakeholders might cooperate for wildlife management.

The appendices include relevant background information for this research, including the Cornell University Institutional Review Board approval letters (Appendix A). Appendix B contains the interview guide and participant recruitment materials for the case study interviews conducted in the four communities described in Chapters 3 and 4. Appendix C includes the cover letters, thank you letters, and mail-back questionnaires for the two regional studies described in Chapters 5 and 6. Appendix D includes the interview guides for the non-respondent telephone surveys for the two regional studies. Finally, Appendix E presents the results of the respondent and non-respondent analysis for the two regional studies.

CHAPTER 2

METHODS

Introduction

In this chapter, I present the methods used to conduct my dissertation research. I describe the objectives for the two phases of my research: (1) retrospective community case studies and (2) anticipatory regional studies, as well as the study area descriptions for each of these phases. This research adhered to the guidelines and protocols approved by the Cornell University Institutional Review Board (#0908000566) (Appendix A). I include a description of the processes for developing the interview guides and recruitment scripts (Appendix B) and mail-back questionnaires and appropriate letters (Appendix C) along with the specifics on the statistical analyses used to address the objectives in this study.

Retrospective Community Case Studies

I conducted case studies of four communities in New York State that had experienced local policy discussions relating to negative interactions between consumptive and non-consumptive wildlife stakeholders. Studying the events that occurred in these communities was a purposeful strategy to select information-rich cases for in-depth study for understanding rather than empirical generalizations (Patton, 2002). When selecting communities for inclusion in this study, I utilized a maximum variation sampling approach to capture and describe central themes that cut across communities that have a great deal of variation (Patton, 2002). The variation that cuts across the communities addresses conflict context (furbearer trapping, waterfowl hunting) and level of development (rural, suburban).

Waterfowl hunting case studies

Brookhaven, New York, is a suburban Long Island community located in Suffolk County, which has approximately 1.5 million residents (U. S. C. B. USCB, 2005). The Town of Brookhaven spans both the North and South Shores of Long Island, but the concerns over waterfowl hunting have primarily focused on Mount Sinai Harbor, located on the North Shore. Concerns over waterfowl hunting in Mount Sinai Harbor have existed for several decades, but the public issue emerged in the mid-1990s after a meadow on the eastern edge of the harbor was developed.

Residents expressed concerns over waterfowl hunting activities for several years. In 2003, harbor residents, local hunters, and town officials developed a cooperative agreement where the hunters self-restricted their hunting locations to avoid the tidal waters immediately adjacent to the homes. This agreement worked for several years until 2007 when the issue surfaced again and local hunters successfully lobbied the Town of Brookhaven Council to pass a local law permitting waterfowl hunters to possess unloaded and encased firearms on municipal lands (e.g., town-owned boat ramps) for the purposes of waterfowl hunting. To this point, it was illegal to possess a firearm on town-owned lands; this change in law made it possible for hunters to legally access the harbor with their firearms. Since the 2007 law change, to my knowledge no formal Town or state level public issue discussions on this topic have occurred, although through my interviews I learned that some respondents continued to discuss the issue with friends, neighbors, and colleagues and occasionally contacted decision- makers.

Canandaigua, New York, is a rural community located on Canandaigua Lake, one of the Finger Lakes. Canandaigua is in Ontario County, which has a population of approximately 100,000 residents (U. S. C. B. USCB, 2005). In 2001, an altercation occurred between a resident living along Canandaigua Lake and a waterfowl hunter

hunting on the lake. The resident objected to waterfowl hunting. Interactions between the hunter and resident escalated. The hunter charged the resident with hunter harassment and the resident levied several charges against the hunter, including hunting too early in the morning, hunting over baited waterfowl, trespassing, and littering. The charges against both parties were eventually thrown out of court. The City of Canandaigua passed a resolution in 2002 requesting State Legislators to sponsor a bill that would amend New York State Environmental Conservation Law to change the law that exempts waterfowl hunters from discharging firearms within 500' of an occupied dwelling. The Town of Canandaigua did not approve a similar resolution that same year. To my knowledge no substantive public issue discussions have occurred on this topic since the incident in 2001 and related policy discussions in 2002. A key resident stakeholder involved with this issue was elected to the Town of Canandaigua Board; however, the issue of waterfowl hunting along developed waterfronts has not been raised since this individual became a locally elected decision-maker.

Furbearer trapping case studies

Southampton, New York, is a suburban Long Island community located in Suffolk County, which has approximately 1.5 million residents (U. S. C. B. USCB, 2005). In 2005, a domestic dog died as a result of being caught in a furbearer wildlife trap located in the Long Pond Green Belt. The Long Pond Green Belt comprises lands owned by the Town of Southampton, The Nature Conservancy, and the New York State Department of Environmental Conservation (NYS DEC). A trapper had set a body-gripping trap in the Green Belt near a recreational trail where the dog's owner had allowed the dog to run off-leash. At the time, there were no local policies prohibiting the trap from being set or prohibiting the dog from being off-leash in the Green Belt. State Environmental Conservation Laws dealing with regulated trapping

activities and prohibiting dogs from running at large were applicable to the trapper and dog owner. The trapper was cited for not having an identifying tag on the trap. The dog owner was not cited. Within a couple of months, the Town of Southampton in 2006 passed a local law prohibiting wildlife trapping on town-owned lands. Two nearby towns (East Hampton and Shelter Island) also passed laws restricting trapping on town-owned lands. Some of the key stakeholders from this community lobbied state legislators in 2006 to amend state Environmental Conservation Law and transfer trapping authority from the state wildlife agency to counties; they were unsuccessful. Some of the key stakeholders were invited in 2007 to meet with NYS DEC Commissioner Grannis and his aides. To my knowledge, no substantive local or state level policy discussions on this topic have occurred since 2007, with the exception of NYS DEC promulgating emergency trapping regulations that require trappers place a protective covering over body-gripping traps set on land and restrict body-gripping traps from being placed within 100' of a public trail, except on wildlife management areas.

Queensbury, New York, is a rural community in northern New York near the Adirondack Park. Queensbury is located in Warren County, which has approximately 65,000 residents (U. S. C. B. USCB, 2005). In 2003, a dog was caught in a furbearer trap in Pack Forest in nearby Warrensburg, but released alive by its owner. However, in 2006, a dog that was caught in a body-gripping trap set on state land in nearby Lake Luzerne died. Its owners were walking the dog along a gravel road, allowing the dog to run off-leash. If the dog was running at large it would be an illegal activity according to Environmental Conservation Law § 11-0923 (NYS, 2010), which prohibits dog owners or trainers from allowing dogs to run at large on fields or woods inhabited by deer, except on lands owned by the dog owner or trainer. During the 2006-2007 trapping season, a Queensbury town resident became concerned about

trapping after seeing a trapper place a trap in a roadside culvert within the town. Several months later the Town of Queensbury Board reviewed a proposed resolution that would restrict where traps could be placed within the town. A town resolution restricting trapping was discussed in 2007, but not passed into law. To my knowledge, no substantive local or state level policy discussions have occurred related to the interface of dogs and wildlife trapping, with the exception of the emergency trapping regulations promulgated by NYS DEC to limit non-target animals from being caught in wildlife traps and to require traps be set farther away from public trails. The Town of Queensbury had, in 2009, been considering establishing a dog park, which some respondents mentioned during interviews. An eagle was entangled in a foot-hold trap in the Adirondacks in 2009. This event spurred additional wildlife trapping public issue discussions and discussion regarding trapping policy revisions, but was not mentioned during my interviews because the incident occurred after I concluded my interviews.

Case study objectives

The objectives of the case study interviews were to (1) identify how stakeholders with differing viewpoints in a wildlife harvest dispute are connected together; (2) determine the relationship between network position and perception of the dispute; and (3) identify and compare stakeholders' policy positions and underlying interests.

Data collection

Interview Guide: I developed a semi-structured interview guide (Appendix B) that I used in the conversations with the study subjects. The guide was developed based on the insights from informal exploratory interviews conducted during the summer of 2008 with NYS DEC staff, key organizations involved in the local discussions, and local decision-makers, as well as theory and results from previously

published literature. I asked questions relating to the social conflict and related public issue discussions, such as stakeholder interests, concerns, perception of public issue, perception of the level of conflict, perception of how NYS DEC was involved with the issue, media use, knowledge of how to influence laws and regulations, wildlife attitudes and values, general concerns over wildlife management issues, and how the NYS DEC might improve their relationship with stakeholders. From a social network perspective, I asked questions about what actions respondents took, how and why they contacted such individuals, organizations, or institutions, and what the nature of their relationship was with others who may have influenced them to take action. The questions asked during the interviews addressed the specific research objectives in this dissertation, but also included additional questions for future analyses.

Study Subjects: I identified study subjects for this research by (1) contacting NYS DEC staff for their suggestions of key informants, (2) conducting a search of local newspapers in each of the four communities for articles covering the public issue and then reviewing the articles for names of people or organizations that were involved with the public issue, and (3) requesting public record documents of town meetings where stakeholders may have discussed the issue. This non-probability approach is called snowball or chain sampling in qualitative case study research (Patton, 2002) and is appropriate for identifying ego-centered networks in communities (Muller, Wellman, & Marin, 1999). In total, I had a population of 113 people who were either identified during the document review or through the informant-referral process (Table 2-1). I searched for contact information for the individuals through (1) www.google.com (accessed 8/7/09), (2) www.people.yahoo.com (accessed 8/7/09), or (3) www.theultimates.com/white/ (accessed 8/7/09). If I could identify a phone number or e-mail address for the individual, I called the phone number or sent an e-mail (if given the choice, I called

the number first). If individuals did not answer the telephone when I called, I left a message identifying myself and providing my contact information and stated I was conducting a study on the public issue in their community. If phone numbers were unlisted, but a mailing address was provided, I sent up to three letters via U.S. postal mail to the home address of the individual inviting them to contact me if they were interested in participating in the study (Appendix B). I used a participant recruitment script (Appendix B) when I contacted individuals seeking their involvement in this study. If the individual expressed interest in participating in the study, we identified a convenient time for me to conduct the interview. Once an interview was scheduled, I mailed or e-mailed the contact letter for the study, which described the informed consent process and included appropriate contact information should the respondent have any questions or concerns (Appendix B).

Table 2-1. Summary of potential study subjects in case study communities (Brookhaven, Canandaigua, Queensbury, Southampton) to research social conflicts between (1) dog owners and wildlife trappers and (2) waterfront residents and waterfowl hunters, New York State, USA, 2009.

Community case study	Conflict context	Completed interviews	Unable to schedule interview (>3 attempts)	Declined interview*	Un-reachable	Total potential subjects
Brookhaven	Waterfowl	14	8	3	8	33
Canandaigua	Waterfowl	11	4	7	6	28
Queensbury	Furbearer	13	1	6	2	22
Southampton	Furbearer	12	10	4	4	30
Total		50	23	20	20	113

*Some who declined interviews provided public documents to review.

Interviews: I conducted all of the interviews during February and August 2009. All interviews were conducted over the telephone, at various times during the

week or weekend, day or evening. Interviews were conducted individually, except one, where the respondent requested his assistant also contribute to the interview. Interviews ranged from 15 – 90 minutes, and on average were approximately 40 minutes. The majority (46/50) of interviews were digitally recorded, except four (three in Brookhaven and one in Canandaigua) where the participants declined to be recorded. In the four cases where the respondents declined to be recorded, I took detailed notes during the interview and then expanded the notes after the interview, usually within one day (Rubin & Rubin, 2005).

Data processing and analyses

I listened to all of the interview digital recordings and reviewed the notes of the four interviews not recorded to (1) identify interesting themes, concepts, events, people, or organizations, and (2) enter data that could easily be coded (e.g., where I asked respondents whether or not they engaged in a series of collective actions or their agreement with a series of attitudes toward wildlife management statements) directly into a SPSS spreadsheet. The remaining portions of the interviews were transcribed by me and one other transcriptionist. I reviewed the documents to (1) check for errors or gaps in the transcriptions, and (2) identify (for a second time) the interesting themes, concepts, events, people, or organizations. After reviewing each document, I saved it as an .rtf file for use in qualitative analysis software (Atlas.ti 6.1).

I imported the fifty .rtf data files into Atlas.ti 6.1 and began the first of three stages of coding the interview transcripts. The first phase focused on identifying all of the network relationships respondents reported for these public issues. Each respondent had a unique code (for example, stakeholders from Brookhaven were assigned a number between 1-99; Canandaigua between 100-199; Southampton between 200-299; and Queensbury between 300-399), as did other individuals, organizations, or decision-makers that respondents identified. Once the network

coding was complete, I exported the data as a primary document-by-code matrix table. I transformed the spreadsheet to create a case-by-case (square) matrix, making sure the individuals or institutions identified in the columns matched the individuals or institutions identified in rows. I then imported the square matrix into UCINET 6.150 and filled (1) the missing data with symmetric counterparts and (2) blanks with 0s to have a complete and symmetric matrix. These procedures for moving from transcriptions to UCINET follow a similar protocol suggested by McKether, Gluesing, & Riopelle (2009).

The second phase of coding focused on identifying individuals' policy positions during the public issue discussions, how they framed the issue, and the range of underlying motivations. For the policy positions, I coded each person based on the reported position on the wildlife policy topic. A person who indicated support for restrictions on access or opportunity for recreational wildlife harvest activities was coded as "restrict." A person who reported supporting traditional uses for land and water resources, or the expansion of access or opportunity to recreational wildlife harvest activities, was coded as "maintain/expand." To test for homophily, I used the matrix algebra function in UCINET and multiplied the square network matrix by the positions of network members (0 = restrict and 1 = maintain/expand hunting or trapping) to create a new matrix that represented the connections among people who supported maintaining/expanding hunting or trapping. Then, I reversed the network member characteristics (0 = maintain/expand and 1 = restricting hunting or trapping) and multiplied the reverse-coded characteristics by the network matrix using matrix algebra and produced a second matrix that represented the connections among people who supported restricting waterfowl hunting or trapping. The diagonal in each of the two new matrices represents the mean number of network connections each individual has with people of a similar position. I exported the diagonal from each of the new

matrices into SPSS to run a non-parametric t-test to compare the extent to which people formed relationships with similar policy positions. Two hypotheses were employed for the homophily test:

H₀: Stakeholders will not differ in the mean number of network connections based on their policy position.

H₁: Stakeholders will have different mean number of network connections based on their policy position.

During this third phase of coding, I also relied on a grounded theory approach for revealing the underlying interests (value-orientations) on all sides of the public issue discussions (Patton, 2002) and utilized Rubin & Rubin's approach (2005) for iterative analysis of concepts and themes, allowing themes to emerge from the interviews. I used this approach because of the novelty of my research topic and the lack of a base of information from which to draw. Most studies on furbearer trapping issues have not included semi-structured interviews to probe in-depth cognitive parameters. To my knowledge no studies relating to this aspect of waterfowl hunting exist in the literature, and the cognitive hierarchy developed by Fulton et al (1996) is geared toward stakeholder values associated with wildlife, not stakeholder interactions. During the initial review of the transcripts, I developed a list of overarching concepts from the literature (Fisher, Ury, & Patton, 1991; Fulton et al., 1996), for example, desires, concerns, fears, needs, attitudes, and beliefs. I reviewed all of the transcripts to identify various themes that might fit under the concepts following procedures described in Rubin & Rubin (2005). After a list of themes was identified, I coded all of the transcripts for the appropriate themes. After the coding was finished, I exported the text representing each theme for additional analysis and interpretation by stakeholder position, community type, and conflict context. The homophily and underlying interests are reported in Chapter 3.

The next analysis stage focused on importing each square matrix into UCINET 6.150, where centrality measures (Freeman degree and Freeman betweenness) were calculated. I reported the normalized degree centrality and normalized betweenness centrality measures so that they can more easily be compared across various social networks in different communities (Muller et al., 1999). I also displayed the social networks for each community using NetDraw in UCINET. I identified the “initial disputants” based on DEC contacts’ and respondents’ reports. The other key stakeholders for enabling the collective action were identified based on the network analysis centrality measures. Individuals with the highest normalized degree centrality measure were considered the collective action “coordinator” in the public issue discussions. In contrast, individuals with the highest normalized betweenness centrality measure were considered the collective action “broker” in the public issue discussions.

The final phase of the analysis compared the reported perceptions of the public issue for each of the key stakeholders involved in collective actions in each community. For each key stakeholder, perceptions were compared based on similarity/dissimilarity to reveal any patterns between network position and perception of the public issue or how the individual framed the conflict when communicating with others (Rubin & Rubin, 2005). Both the qualitative text and quantitative social networks were used in this analysis for a richer interpretation of the data, rather than relying only on one source of information. The key stakeholders for enabling the collective action and issue framing are reported in Chapter 4.

Anticipatory Regional Studies

I conducted two studies in regions of New York State where disputes relating to negative interactions between consumptive and non-consumptive stakeholders

within the contexts of furbearer trapping and waterfowl hunting may be likely to emerge in the future given characteristics similar to my case study communities. Studying the socio-demographics, experiences, attitudes, and behavioral intentions in areas of New York State potentially affected by negative stakeholder conflicts provides information on the concerns, satisfaction with multiple-use management of public lands and waterways, and behavioral intentions to contact decision-makers before an incident involving negative interactions occurs. The relationships among these variables and patterns on likely tendencies for future political engagement are important for identifying which elements of these issues might be proactively managed to limit negative and promote positive interactions among stakeholders.

Potential dog owner – wildlife trapper interactions study area

I selected a 10-county area (Chemung, Chenango, Cortland, Madison, Ontario, Schuyler, Seneca, Steuben, Tompkins, and Yates) in the Southern Tier of New York to study potential interactions between licensed wildlife trappers and licensed dog owners. I selected this area because it is a heavily trapped area of the state (G. Batcheller, NYS DEC, personal communication), and it has substantial state public lands available for multiple use recreation as well as a significant dog owner population distributed across suburban centers and rural counties (Table 5-1). Additionally, I could not find a record of any dogs that were caught in wildlife traps in this area during the time immediately preceding the study, which was important for the context of this as an anticipatory analysis in an area that had not yet experienced direct dog owner-trapper negative interactions that resulted in public issue discussions.

Potential waterfront resident – waterfowl hunter interactions study area

I selected the greater Braddock Bay State Wildlife Management Area along Lake Ontario in western New York to study potential interactions between waterfront residents and waterfowl hunters. This area was selected because Braddock Bay State

Wildlife Management Area is managed for migratory birds and is a popular waterfowl hunting and bird-watching destination. The wetland complex along the Lake Ontario shoreline is within the Town of Greece, which is approximately 15 miles from Rochester, NY. The Town of Greece has a population density of approximately 2,250 people/square mile (Town of Greece, 2010). Because this location is heavily managed for migratory birds in a suburban area, the potential for interactions between hunters and residents is likely high, making this area reflective of other areas in the state that have the potential for conflicts over waterfowl hunting along developed waterfronts with occupied dwellings. Over the past 10 years, residents have complained about the waterfowl hunting occurring in this area. In response, the Town has worked with the NYS DEC, residents, and waterfowl hunters to establish a committee to discuss problems relating to waterfowl hunting in this area, which meets as needed to discuss any concerns over waterfowl hunting along developed waterways (H. Kennedy, NYS DEC, personal communication).

Anticipatory study objectives

The objectives of the regional study anticipating potential interactions among consumptive and non-consumptive stakeholders were to: (1) assess the experiences and attitudes of consumptive (e.g., waterfowl hunters and furbearer trappers) and non-consumptive (e.g., dog owners and residents affected by consumptive activities) stakeholders associated with social interactions; (2) identify which variables (socio-demographic, experiences, attitudes) best explain stakeholders' satisfaction with multiple-use management; and (3) identify which variables best explain stakeholders' intentions to contact decision-makers to have an influence on management and policy decisions.

Data collection

Questionnaires: I developed four questionnaires (Appendix C) each tailored to the group receiving it (e.g., dog owners, wildlife trappers, waterfront residents, waterfowl hunters). The questionnaires were developed based on insights from informal exploratory interviews conducted during the summer of 2008 with NYS DEC staff, key organizations involved in the local discussions, and local decision-makers, as well as theory and results from previously published literature. I asked questions relating to potential negative stakeholder interactions, such as stakeholder socio-demographics, experiences, attitudes toward consumptive wildlife harvest and wildlife management, previous political engagement, future political engagement, information-seeking behaviors, media use, organizational membership, and agreement with organizational viewpoints. The questions asked during the interviews addressed the research objectives in the dissertation, but also included additional questions for analyses outside of what is included in this volume.

Sample Frames and Sampling: The trapper sample ($n=1,000$) was drawn randomly from the population of wildlife trappers age 18 years and older living in the 10-county study area who had purchased a trapping license the previous year. The dog owner sample ($n=1,000$) was drawn randomly from the population of dog owners (age 18 years and older) who were current license holders registered with the New York State Department of Agriculture and Markets. The waterfront resident sample ($n=1,000$) was drawn randomly from the population of property owners age 18 years and older who permanently live on the residential parcel within 0.25 miles of the Braddock Bay wetland complex (i.e., Braddock Bay, Round Pond, Buck Pond, Long Pond, Cranberry Pond, and Lake Ontario), which encompasses Braddock Bay State Wildlife Management Area. The waterfowl hunter sample ($n=1,000$) was drawn randomly from the population of waterfowl hunters (age 18 years and older) from the

ZIP codes 14400 – 14699, which encompass counties in the greater-Rochester area (e.g., Genesee, Ontario, Orleans, Livingston, Monroe, Seneca, Wayne, Wyoming, and Yates) who had registered with the federal Harvest Information Program (HIP), indicating they hunted for ducks, geese, brants, coots, or snipes the previous season. I drew my sample from this group of HIP registrants because they reported hunting species likely to be found in the study area and because it is plausible to assume that they have hunted in the Braddock Bay because it would be within two hours drive of their residence.

Mail-back and non-respondent survey implementation: I used a modified tailored design method (Dillman, Smyth, & Christian, 2009) because I did not send a pre-notice letter or include a token incentive (Appendix C) (Table 2-2). The first mailing consisted of a cover letter and questionnaire with return postage paid. The second mailing, sent one week later, consisted of a thank you/reminder letter. The third mailing, sent two weeks after the second mailing, consisted of a cover letter and replacement questionnaire with return postage paid. The final mailing, sent one week after the third mailing, was a thank you/reminder letter. Two weeks after the final mailing, I conducted non-respondent telephone surveys using a subset of the questionnaire items with 90 individuals from each group (Appendix D). The mailings were administered by the Human Dimensions Research Unit (HDRU) at Cornell University; the non-respondent surveys were conducted by the Survey Research Institute at Cornell University.

Table 2-2. Schedule of modified tailored design method for survey implementation for studying potential interactions between (1) dog owners and wildlife trappers in a 10-county Southern Tier area and (2) waterfront residents and waterfowl hunters in the greater Braddock Bay State Wildlife Management Area, New York State, USA, 2009.

Event	Contents	Date
#1	Cover letter and questionnaire	March 5, 2009
#2	Thank-you/reminder letter	March 12, 2009
#3	Cover letter and replacement questionnaire	March 26, 2009
#4	Final reminder letter	April 2, 2009
#5	Non-respondent telephone surveys	April 18 – May 4, 2009

Data processing and analyses

Data from the returned questionnaires were coded and entered into SPSS 16.0 databases for analyses. The adjusted response rates for each group were: Dog owners (45.5%); wildlife trappers (50.5%); waterfront residents (49.4%); and waterfowl hunters (60.5%) (Table 2-3). I reviewed the frequencies and summary statistics for all the questions. I used Minitab 15 to conduct Chi-square analysis to test for differences between respondents and non-respondents for each group (Appendix E). I selected variables of interest for further Chi-Square analysis, t-test and ANOVA means comparison, correlations, and regression; they are described below.

Table 2-3. Response rates for mail-back questionnaires for (1) dog owners and wildlife trappers in a 10-county Southern Tier area and (2) waterfront residents and waterfowl hunters in the greater Braddock Bay State Wildlife Management Area, New York State, USA, 2009.

Strata	Sample size	Returned	Undeliverables	Refusals (N)	Adjusted Response Rate ¹
Dog owners	1,000	446	20	19	45.5%
Trappers	1,000	487	36	7	50.5%
Waterfront residents	1,000	480	28	8	49.4%
Waterfowl hunters	1,000	592	22	9	60.5%

¹Adjusted response rate formula: Sample size – undeliverables = adjusted base; Total returns/adjusted based = adjusted response rate.

The questions I asked on the mail-back questionnaires were:

Age. Respondents reported the year they were born and I calculated the variable age from that information.

Gender. Respondents reported their gender.

Education. Respondents reported their highest level of formal education.

Income. Respondents reported their total household income, before taxes, in 2008.

Recreational Activities. Respondents were asked which types of activities they participated in during the last year. I combined the activities into the following variables, recoded as 0 (no) or 1 (yes):

- Consumptive wildlife activities = waterfowl hunting, hunting (non-waterfowl), trapping, and fishing;
- Non-consumptive wildlife activities = watching wildlife and photographing wildlife;
- Motorized activities = snowmobiling, ATV riding, motor-boating, and jet-skiing;
- Non-motorized activities = hiking, swimming, mountain biking, canoeing or kayaking, camping, cross-country skiing, backpacking, and snowshoeing; and
- Extreme activities = rock climbing and downhill skiing.

Town Size. I asked respondents to indicate the size of the place where they currently live.

Dog Owner. I asked wildlife trappers if they owned a dog.

Found Trap. I asked dog owners if they had ever found any wildlife traps while using public lands.

Harassed. I asked waterfowl hunters if they had ever been harassed by residents of waterfront homes while waterfowl hunting in New York State.

Hunt Close. I asked waterfowl hunters how close the nearest occupied dwelling was when they hunt over water. Response options were less than 100 feet, 100-250 feet, 251-500 feet, and more than 500 feet.

Waterfront. I asked waterfowl hunters if they live along a waterfront.

Hunt Waterfowl. I asked waterfront residents who indicated they hunted waterfowl what types of land or water they hunt over.

Know Waterfowl Hunters. I asked waterfowl residents if they know other people who hunt waterfowl, and if they live in their household.

Set Traps. I asked wildlife trappers if they set wildlife traps in New York State during the regulated trapping season anytime since 2003.

Trap Lands. I asked wildlife trappers to indicate which types of lands they conducted trapping activities on since 2003. Response options were: State forests; state wildlife management areas; Finger Lakes National Forest; city, village, town, or county lands; along a road (e.g., U.S. or NY Routes, gravel roads); public lands (don't know the type); other public lands; private lands you own; private lands, where another owner allows you to trap on it; other private lands.

Percent Lands. I asked wildlife trappers to indicate on average what percent of their New York State trapping activities they conducted on different types of lands.

Dog Walk Lands. I asked dog owners to indicate which types of lands in New York State they walked their dog(s) in a typical year. The response options were: State forests; state wildlife management areas; state parks; city, village, town, or county lands (e.g., municipal lands); Finger Lakes National Forest; national wildlife refuges; nature preserves or land trusts; designated "dog parks"; public roads or

sidewalks; private property I own; private property where the owner has allowed me to; don't know the status of the lands; and other.

Months Walk Dogs. I asked dog owners during which months they take their dog(s) with them to public lands in New York State, such as wildlife management areas, state forests, Finger Lakes National Forest, national wildlife refuges, or municipal lands.

Dog Risk. I asked dog owners about their level of concern that their dog may be caught in a wildlife trap set on public lands in New York State. Response options were: not at all concerned, somewhat unconcerned, neither concerned nor unconcerned, somewhat concerned, very concerned, or no opinion.

Attitudes Toward Multiple-Use of Public Lands. I asked dog owners and wildlife trappers to indicate their level of agreement or disagreement with a series of statements toward multiple-use of public lands for recreation with dogs and wildlife trapping. I used a five-point Likert scale with a "don't know" option.

Attitudes Toward Management of Furbearing Wildlife. I asked dog owners and wildlife trappers to indicate their level of agreement or disagreement (on a 5-point Likert scale with a "don't know" option) about a series of statements toward the management of furbearing wildlife.

Land or Water Hunt. I asked waterfowl hunters over which types of lands or water they hunt waterfowl in New York State. The response options were: Shallow water marsh, beaver pond, or small river; big river (e.g., Niagara), big lake, or ocean; agriculture fields; or other.

Hunt Blind. I asked waterfowl hunters what type of concealment they typically use when waterfowl hunting over water. The response options were: temporary blind set up on land along the waterfront, temporary blind set up in the water, permanent blind on a dock or other structure, boat (e.g., canoe, layout, or motor), or other.

Access Locations. I asked waterfowl hunters how they accessed their hunting locations when hunting over water in New York State. The categories were: State wildlife management areas; state parks; city, village, town, or county lands; canal lands; do not use any public launch sites; private marina; land that I own; land owned by others who have allowed me to use it; do not use any private launch sites.

Resident. I asked waterfront residents whether they were a permanent or seasonal resident at the location where they received the questionnaire.

Seasonal. I asked waterfront residents who indicated they were seasonal residents to indicate how many weeks per season they spent at the location where they received the questionnaire.

Watch Waterfowl. I asked waterfront residents if they watched waterfowl at the location where they received the questionnaire.

Feed Waterfowl. I asked waterfront residents if they fed waterfowl at the location where they received the questionnaire.

Problems. I asked waterfront residents if waterfowl caused problems at the location where they received the questionnaire.

Attitudes Toward Waterfowl Management. I asked both waterfront residents and waterfowl hunters to indicate their level of agreement or disagreement with a series of statements toward waterfowl management. I used a five-point Likert scale with a “don’t know” option.

Attitudes Toward Waterfowl Hunting. I asked both waterfront residents and waterfowl hunters to indicate their level of agreement or disagreement with a series of statements toward waterfowl hunting along waterfronts developed with residential homes. I used a five-point Likert scale with a “don’t know” option.

General Media Use. I asked all respondents to indicate where they get most of their general news in a typical weekday. Response options were: Television, print newspaper, online newspaper, radio, Internet, other, and don't know.

Natural Resources-Related Media Use. I asked all respondents to indicate where they get most of their natural resources-related news in a typical weekday. Response options were: Television, print newspaper, online newspaper, radio, Internet, other, and don't know.

Importance of Information Sources. I asked all respondents to indicate how important or unimportant each source for receiving information about multiple-use of public lands. Response options were: Not at all important, slightly important, somewhat important, moderately important, very important, or don't know. The sources of information were: U.S. postal service mail, print newspaper, online newspaper, television, radio, state government Internet website, e-mail from the NYS DEC (or ENCON), interest group Internet website, Internet blog, educational presentation/demonstration, and other.

Join Organization. I asked all respondents their typical reasons for joining any organization because: they know several people in an organization, they know one other person in an organization, very close friends of mine are in the organization, acquaintances of mine are in an organization, they were interested in addressing personal interests through an organization, and they were interested in helping others address their interests through an organization.

Information Seeking. I asked all respondents two questions relating to information-seeking behaviors about multiple-use of public lands. The first question asked respondents to indicate up to three organizations from which they received mostly new information. The second question asked respondents to indicate up to three organizations they trusted for information.

Organizational Viewpoint Agreement. I asked all respondents the extent to which they agreed or disagreed with the viewpoints of various organizations. For dog owners and wildlife trappers, I asked about the following organizations: American Kennel Club, Humane Society of the United States, New York State Conservation Council, New York State Trappers Association, Mixed Breed Dog Clubs of America, People for Ethical Treatment of Animals, Animal Protection Institute, National Trappers Association, and other. For waterfowl hunters and waterfront residents, I asked about: Lake Plains Waterfowl Association, Humane Society of the United States, Ducks Unlimited, People for the Ethical Treatment of Animals, Local Homeowner's Association, Finger Lakes & Western New York Waterfowl Association, Audubon Society, Central New York Wildfowlers, New York State Conservation Council, and other.

Political Engagement – Any Issue. I asked all respondents to indicate which government officials they contacted seeking to change policies within the past five years. The government officials were: New York State Assembly or Senate Members, New York State Office of the Governor, Local Government Officials, U.S. Congressional Representative, and U.S. Senators.

Political Engagement – Wildlife Management Issues. I asked all respondents to indicate which government officials they contacted seeking to change policies on wildlife management issues within the past five years. The government officials were: Department of Environmental Conservation (DEC or ENCON), New York State Assembly or Senate Members, New York State Office of the Governor, Local Government Officials, U.S. Congressional Representatives, U.S. Senators, or New York State Conservation Council.

Future Political Engagement. I asked all respondents how likely or unlikely they were to contact decision-makers, media, or organizations if they had a concern

over the multiple uses of public lands or waterfowl hunting for each respective context. The response options were: Very unlikely, unlikely, neither likely nor unlikely, likely, very likely, or don't know. Specifically, I wanted to know the likelihood of the respondents for contacting: Department of Environmental Conservation, New York State Assembly Members or Senators, New York State Office of the Governor, New York State Conservation Council, Local Government Officials, Local Police Department, U.S. Congressional Representatives, U.S. Senators, organizations they belong to, mass media, or other.

I used SPSS 16.0 and Minitab 15 to analyze the data from the mail-back surveys using Chi-square tests, independent t-tests and ANOVA for means comparison, and linear and logistic regression.

Trustworthiness of results

Validity is a measure of the relationship of my conclusions to the truth in the real world, for example, the extent to which the descriptions, conclusions, explanations, or interpretations are correct (Maxwell, 1996). The main threat to validity, especially in qualitative research, is the question of *how might I be wrong?* Threats to validity can be addressed by presenting evidence that make alternative explanations implausible. To minimize threats to validity in the qualitative phase of my research, I used triangulation to identify my informants and continued interviewing until my informant referrals and ideas were redundant (Patton, 2002). I was unable to do member checks in this research, specifically for the social networks because (1) I was not allowed to disclose the identities of social network members and (2) each member only has a perspective relative to his or her network position.

Threats to validity in quantitative research can be addressed through randomization of sampling, non-respondent surveys, statistical control of specific variables, or analysis using specific statistical tests (Maxwell, 1996; Dillman et al.,

2009). Threats to external validity were addressed by using a random sampling design and conducting non-response bias checks to understand the limitations for which the results can be generalized. I did not detect differences between respondents' and non-respondents' responses for most items (Appendix E); however, I did detect a few differences. I ultimately decided not to weight my data for further analysis (to generalize results to the overall population for a limited set of variables) because I was reporting and employing in my models a larger set of variables for which I (1) detected no difference, (2) detected a significant difference, or (3) was unable to assess differences between respondents and non-respondents, not just a small set of variables for which I had complete respondent and non-respondent comparison data. I was not able to minimize threats to construct validity for generalizing the constructs from one stakeholder group to another (e.g., from wildlife trappers to dog owners) because during exploratory factor analysis the factors had different attitude items loading on each factor, suggesting that the stakeholder groups conceptualize the constructs in different ways and, therefore, extending one group's conceptualization to another group may be problematic. Because of this, I did not combine attitude items into a factor, but rather worked with individual attitude items in my analysis. I addressed face validity of the questionnaire items by having NYS DEC contacts associated with the study and HDRU colleagues not associated with the study review the survey instruments. I incorporated their comments to improve the instrument clarity and precision.

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CHAPTER 3

CONNECTIONS AMONG STAKEHOLDERS IN WILDLIFE HARVEST DISPUTES: SOCIAL NETWORK POLICY POSITIONS AND UNDERLYING INTERESTS

Abstract

Wildlife management agencies are increasingly being asked to respond to conflicts resulting from stakeholder interactions. Although conflicts escalating to political action are relatively few, consequences for wildlife management can be significant. In public issue discussions, stakeholders often anchor to “positions” (e.g., ban hunting), without communicating their interests (e.g., concerned for my personal safety). I conducted case studies of four communities that have experienced disputes relating to stakeholder interactions over furbearer trapping or waterfowl hunting, to identify wildlife stakeholders’ social network homophily of policy positions and underlying interests (value orientations). I found network homophily in support of maintaining/expanding hunting or trapping access and opportunities in three communities. For addressing public issues related to stakeholder interactions, I suggest expanding models of value orientations to include personal safety, individual rights, and individual privileges. Managing stakeholder interactions may require stakeholder engagement for decision-making to identify mutually agreeable solutions.

Introduction

Conflicts in wildlife management have typically focused on balancing potential risks to humans and wildlife (Messmer, 2000). Conflicts may arise when stakeholders disagree about the goals, objectives, or techniques for managing wildlife. Various

approaches to citizen participation and decision-making have been offered, but the focus of these has largely been on determining how wildlife should be managed or how people's actions toward wildlife should be directed (Leong, Decker, Lauber, Raik, & Siemer, 2009). Increasingly, however, wildlife managers are challenged to manage the impacts that result from negative or conflicting interactions among wildlife stakeholders (Riley et al., 2002).

In my study context, the focus of management is on the interactions among stakeholders, and the differences in their wildlife policy preferences, underlying interests, and values. Thus, the target of management becomes the actions of people toward people, not necessarily toward wildlife, but in the context of a wildlife harvest activity. Multiple-use conflicts are not uncommon in natural resources management; for example, state and federal public lands are often managed for diverse recreational uses (Morgan, Newman, & Wallace, 2007). Although limited in number, the disputes that result from these negative stakeholder interactions may escalate into broader social conflicts with particularly visible public issue discussions or consequential implications for wildlife management and policy.

Public issue discussions are often characterized by stakeholders anchoring into their specific positions, for example positions either supporting or opposing hunting or trapping. Fisher, Ury, & Patton (1991) suggest that to resolve disputes, stakeholders should focus instead on their underlying interests, not their positions. Underlying interests are desires, concerns, fears, or needs (i.e., underlying values, beliefs, and attitudes) that motivate people to be politically active in public issue discussions (Fisher et al., 1991). In my study communities a variety of policy options occurred: restricting hunting and trapping opportunities, expanding hunting and trapping opportunities, or maintaining current policies (no change). I employed the theory of homophily within social networks (McPherson, Smith-Lovin, & Cook, 2001),

exploring whether wildlife stakeholders in two different contexts actively formed network relationships with people holding the same position or if they formed relationships with people holding the opposite position and if this was related to policy outcomes. Homophily can divide people based on dissimilar policy positions, leading to protracted conflicts. Lack of homophily may signal an environment that can lead to productive management activities because stakeholders are communicating across positional lines and may be more open to interest-based negotiation (Fisher et al., 1991). I also explored stakeholders' interests motivating them to become politically active and characterized these interests using the cognitive hierarchy framework, which links values, basic beliefs, attitudes, norms, behavioral intentions, and behaviors (Figure 3-1) (Fulton et al., 1996). This is particularly important because appearances of stakeholder disagreements over fundamental values are often really a difference in policy preferences (positions), and room for mutually agreeable solutions can be identified (Wondolleck & Yaffee, 2000)

Conceptual Framework

Social network analysis and homophily of policy positions

Social network analysis generates empirically-derived analytical maps of people and their relationships in a network structure, as well as the attributes associated with each individual (Scott, 2000; Wellman, 1988). Social network analysis is emerging as a tool for analyzing the governance structures of natural resources co-management arrangements (Adger, Brown, & Tompkins, 2005; Janssen et al., 2006), but limited empirical examples exist (Prell, Hubacek, & Reed, 2009). The phrase "birds of a feather flock together" summarizes the patterns of homophily in which similarity breeds connection among individuals (McPherson, Smith-Lovin, &

Cook, 2001). The theory of homophily posits that individuals are more likely to form relationships with people similar to themselves than with people dissimilar to themselves (McPherson et al., 2001). People may be similar or dissimilar based on socio-demographic variables such as age, education, or income, but they might also be homophilous on dimensions of values or attitudes. To my knowledge, no research on homophily of wildlife-related values, attitudes, or policy positions exists. Strong homophily results in homogenous networks which may limit the type of information network members receive, the attitudes they form, or the interactions they have (McPherson et al., 2001). Homophilous networks, especially when centered on policy positions may exacerbate disputes, leading to protracted conflicts. In my study context, I focused on the extent to which people form relationships with others who hold similar or dissimilar policy positions. Forming network relationships with people who have dissimilar policy positions may be particularly important when stakeholders are seeking to change prevailing policies. In these circumstances, it may be politically necessary to interact with those who support or benefit from the existing policies rather than only with those sharing the same goal for change, particularly if those supporting the prevailing policies hold power or influence in the policy-making process or possess information that will be important in making the argument for change.

Underlying interests and value orientations

Research on the human dimensions of wildlife management typically focuses on values, attitudes, or behaviors of stakeholders (Decker, Brown, & Siemer, 2001). Cognitive hierarchy structure provides an approach for understanding values as foundational, built upon by basic beliefs, attitudes, norms, behavioral intentions, and behaviors (Fulton et al., 1996) (Figure 3-1). This framework has been applied in

studies of the human dimensions of wildlife (Fulton et al., 1996; Manfredo, Pierce, Fulton, Pate, & Gill, 1999) and of fisheries (Bruskotter & Fulton, 2008) to identify value orientations toward wildlife and fisheries that predict behavioral intentions. Manfredo et al. (1999) suggested that an individual's beliefs about wildlife use or protection (protection-use value orientation) explains attitudinal positions on a variety of issues in wildlife management, for example the public acceptance of wildlife trapping. My study context focused on stakeholder interactions related to wildlife harvest and therefore went beyond the issues of wildlife use or protection.

Study Focus

My work focused on social conflicts among wildlife stakeholders over furbearer trapping and waterfowl hunting in New York State. Furbearer trappers interact with dog owners on public lands, similar to multi-use recreational conflicts on public lands where both types of users may be legally engaging in their recreation. Conflicts among waterfowl hunters and waterfront residents, however, have only recently emerged, and little research on this topic exists. These conflicts may become an important issue for resource management agencies as the proliferation of occupied dwellings in increasingly limited waterfront areas leads to more and increasingly protracted conflicts. My study objectives were to:

1. Determine the extent of homophily among stakeholder network relationships, based on policy positions.
2. Identify the underlying interests (value orientations) that motivate stakeholders to become politically active.

Methods

I selected communities in New York State: two with public issues related to waterfowl hunting (Brookhaven and Canandaigua) and two with public issues related

to furbearer trapping (Southampton and Queensbury). I used purposeful maximum variation sampling (Patton, 2002) to identify common patterns that might cut across the four case study communities. My goal was to yield information-rich insights and in-depth understandings about how stakeholders interact with each other for these public issues. Each community had experienced impacts from interactions among stakeholders relating to waterfowl hunting or wildlife trapping activities within the last decade. The waterfowl hunting conflicts were less volatile in comparison to the wildlife trapping conflicts; however, in each case the disputes were protracted, developing into public issues where either local or state-level decision-makers became involved. For each wildlife context, I included one rural (Canandaigua and Queensbury) and one suburban (Brookhaven and Southampton) community. The communities are described below.

Waterfowl hunting case studies

Brookhaven, New York, is a suburban Long Island community located in Suffolk County, which has approximately 1.5 million residents (U. S. C. B. USCB, 2005). The Town of Brookhaven spans both the North and South Shores of Long Island, but the concerns over waterfowl hunting have primarily focused on Mount Sinai Harbor, located on the North Shore. Concerns over waterfowl hunting in Mount Sinai Harbor have existed for several decades, but the public issue emerged in the mid-1990s after a meadow on the eastern edge of the harbor was developed. Residents expressed concerns over waterfowl hunting activities for several years. In 2003, harbor residents, local hunters, and town officials developed a cooperative agreement where the hunters self-restricted their hunting locations to avoid the tidal waters immediately adjacent to the homes. This agreement worked for several years until 2007 when the issue surfaced again and local hunters successfully lobbied the

Town of Brookhaven Council to pass a local law permitting waterfowl hunters to possess unloaded and encased firearms on municipal lands (e.g., town-owned boat ramps) for the purposes of waterfowl hunting. Previously it had been illegal to possess a firearm on town-owned lands; this change in law made it possible for hunters to legally access the harbor with their firearms.

Canandaigua, New York, is a rural community located on Canandaigua Lake, one of the Finger Lakes. Canandaigua is in Ontario County, which has a population of approximately 100,000 residents (U. S. C. B. USCB, 2005). In 2001, an altercation between a resident living along Canandaigua Lake and a waterfowl hunter hunting on the lake occurred. The resident objected to waterfowl hunting. Interactions between the hunter and resident escalated. The hunter charged the resident with hunter harassment and the resident levied several charges against the hunter, including hunting too early in the morning, hunting over baited waterfowl, trespassing, and littering. The charges against both parties were eventually thrown out of court. The City of Canandaigua passed a resolution requesting State Legislators to sponsor a bill that would amend New York State Environmental Conservation Law to change the law which exempts waterfowl hunters from discharging firearms within 500' of an occupied dwelling. The Town of Canandaigua did not approve a similar resolution.

Wildlife trapping case studies

Southampton, New York, is a suburban Long Island community located in Suffolk County, which has approximately 1.5 million residents (U. S. C. B. USCB, 2005). In 2005, a domestic dog died as a result of being caught in a furbearer wildlife trap located in the Long Pond Green Belt. The Long Pond Green Belt comprises lands owned by the Town of Southampton, The Nature Conservancy, and the New York State Department of Environmental Conservation. A trapper had set a body-gripping

trap in the Green Belt near a recreational trail where the dog's owner had allowed the dog to run off-leash. At the time, there were no local policies prohibiting the trap from being set or prohibiting the dog from being off-leash in the Green Belt. State Environmental Conservation Laws regulated trapping activities and prohibited dogs from running at large. The trapper was cited for not having an identifying tag on the trap. The dog owner was not cited for any violation. Within a couple of months, the Town of Southampton passed a local law prohibiting wildlife trapping on town-owned lands. Two nearby towns (East Hampton and Shelter Island) also passed laws restricting trapping on town-owned lands. Some of the key stakeholders from this community also lobbied state legislators to amend state Environmental Conservation Law and transfer trapping authority from the state wildlife agency to counties; they were unsuccessful.

Queensbury, New York, is a rural community in northern New York near the Adirondack Park. Queensbury is located in Warren County, which has approximately 65,000 residents (U. S. C. B. USCB, 2005). In 2003, a dog was caught in a furbearer trap in Pack Forest in nearby Warrensburg, but released alive by its owner. However, in 2006, a dog that was caught in a body-gripping trap set on state land in nearby Lake Luzerne died. Its owners were walking the dog along a gravel road, allowing the dog to run off-leash. During the 2006-2007 trapping season, a Queensbury town resident became concerned about trapping after seeing a trapper place a trap in a roadside culvert within the town. Several months later the Town of Queensbury Board reviewed a proposed resolution that would restrict where traps could be placed within the town. A town resolution restricting trapping was discussed, but not passed into law.

Data collection

I identified potential participants for this study using a snowball sampling technique (Patton, 2002) by starting with key informants identified by staff from the New York State Department of Environmental Conservation – Bureau of Wildlife (DEC). I also reviewed newspaper stories and public meeting records to identify individuals who spoke with the media or at public meetings. From this initial sample, I asked respondents to refer me to potential informants (i.e., snowball) until I was referred to the same people. This sampling approach produces ego-centered networks, which are commonly used to study social networks in communities when the size and members of a network are unknown beforehand (Muller et al., 1999).

I contacted potential study subjects up to three times by telephone where possible, and by letter when I was unable to reach them by phone. When I contacted the potential study subjects, I invited them to participate in the study and scheduled an interview at a time of mutual convenience, if the subject was interested in participating in the study. I mailed a contact letter with additional study information. I conducted all of the semi-structured interviews, consisting of open-ended and closed-ended questions, over the telephone. The interviews were conducted between February and August 2009, and ranged from 15-90 minutes, with most approximately 40 minutes. Most interviews (46/50) were recorded and transcribed by one of two transcriptionists; for the non-recorded interviews, I took detailed notes and expanded the notes afterwards (usually within several hours after the interview). The methods and data collection instruments used in this study were approved by the Cornell University Institutional Review Board (#0908000566).

Data analysis

Social network analysis and homophily of policy positions. Data processing and analysis followed a protocol similar to McKether, Gluesing, & Riopelle (2009). All respondents were assigned a unique code, as well as other stakeholders identified by respondents. Stakeholders from Brookhaven were assigned a number between 1-99; Canandaigua between 100-199; Southampton between 200-299; and Queensbury between 300-399. Assignment of number was based on list building during review of transcripts. The unique code was used throughout data processing and analysis to protect the identity of the respondents and other stakeholders. I opted for unique number codes rather than developing hundreds of pseudonyms. Interview transcripts, or the detailed interview notes, were imported into Atlas.ti and coded for network relationships. Once the coding was complete, the primary-document matrix was exported as an Excel file. In Excel I transformed the matrices to make a square (e.g., case-by-case) matrix for each of the four study communities. Each square matrix was then imported into UCINET. I coded each person based on the reported position on the wildlife policy topic. A person who indicated support for restrictions on access or opportunity for recreational wildlife harvest activities was coded as “restrict.” A person who reported supporting traditional uses for land and water resources, or the expansion of access or opportunity to recreational wildlife harvest activities was coded as “maintain/expand.” I displayed the social networks for each community using NetDraw in UCINET with circle nodes indicating support for restricting hunting/trapping and triangles indicating support for maintaining/expanding hunting and trapping access or opportunity (Figure 3-2).

To test for homophily, I used the matrix algebra function in UCINET and multiplied the square network matrix by the positions of network members (0 =

restrict and 1 = maintain/expand hunting or trapping) to create a new matrix that represented the connections among people who supported maintaining/expanding hunting or trapping. Then, I reversed the network member characteristics (0 = maintain/expand and 1 = restricting hunting or trapping) and multiplied the reverse-coded characteristics by the network matrix using matrix algebra and produced a second matrix that represented the connections among people who support restricting waterfowl hunting or trapping. The diagonal in each of the two new matrices represents the mean number of network connections each individual has with people of a similar position. I exported the diagonal from each of the new matrices into SPSS to run a non-parametric t-test to compare the extent to which people formed relationships with similar policy positions. Two hypotheses were employed for the homophily test:

H₀: Stakeholders will not differ in the mean number of network connections based on their policy position.

H₁: Stakeholders will have different mean number of network connections based on their policy position.

Underlying interests and value orientations. Following procedures for handling qualitative data (Rubin & Rubin, 2005), I reviewed and coded the interview transcripts using Atlas.ti a second time. The purpose of the qualitative analysis of the open-ended interview questions is not to provide numeric summaries, but rather “to discover variation, portray shades of meaning, and examine complexity...to reflect the complexity of human interaction by portraying it in the words of the interviewees to make the complexity understandable to others” (Rubin & Rubin, 2005), p.202). I relied on a grounded theory approach for revealing the underlying interests (value orientations) on all sides of the issue (Patton, 2002) and utilized Rubin & Rubin’s

approach (2005) for iterative analysis of concepts and themes, allowing themes to emerge from the interviews. I used this approach because of the novelty of my research topic and the lack of a base of information from which to draw. Most studies on furbearer trapping issues have not included semi-structured interviews to probe in-depth cognitive parameters, to my knowledge no studies relating to this aspect of waterfowl hunting exist in the literature, and the cognitive hierarchy developed by Fulton et al (1996) is geared toward stakeholder values associated with wildlife, not stakeholder interactions. I first developed a list of overarching concepts from the literature (Fisher et al., 1991; Fulton et al., 1996), for example: desires, concerns, fears, needs, attitudes, and beliefs. Following procedures described in Rubin & Rubin (2005), I reviewed the transcripts to identify various themes that might fit under the concepts. After a list of themes was identified, I coded all of the transcripts for the appropriate themes. I exported the text representing each theme for additional analysis and interpretation by stakeholder position, community type, and conflict context. From the themes that emerged in the underlying interests, I organized them based on respondents' indication of how the themes were linked in the multiple-levels of value orientations (basic beliefs), attitudes, and norms.

Results

Social networks and homophily of policy positions

In three communities, I found significant differences in the mean number of connections between stakeholders connecting to people with similar policy positions as compared to connections to stakeholders with differing policy positions. In both of the waterfowl hunting communities, stakeholders seeking to maintain or expand waterfowl hunting access and opportunity had significantly greater mean number of connections with other stakeholders with a similar position than with a dissimilar

position (Brookhaven, $Z=-4.360$, $p=0.000$) (Figure 3-2); (Canandaigua, $Z=-2.940$, $p=0.003$) (Figure 3-2). In these communities, the policy outcomes were either to maintain or expand current waterfowl hunting access and opportunity. Stakeholders in Queensbury, the rural trapping case study community, also exhibited a significant difference in the mean number of connections ($Z=-2.053$, $p=0.040$) (Figure 3-2) between stakeholders connecting to others with similar policy positions as compared to stakeholders connecting to others with different policy positions. Similar to the two waterfowl hunting communities, the policy outcome in Queensbury was in favor of maintaining current trapping access and opportunity. The exception to these results is Southampton, the suburban trapping community, where I found no significant difference ($Z=-1.415$, $p=0.157$) (Figure 3-2) in the mean number of connections between stakeholders connecting to other stakeholders with similar policy positions as compared to dissimilar positions leading us to fail to reject H_0 . Southampton was the only study community that restricted wildlife harvest access and opportunity by prohibiting furbearer trapping on town-owned lands as a policy outcome.

Underlying interests and value orientations

The overarching themes based on underlying interests and concerns (value orientations) expressed by respondents are displayed in Figure 3-1.

Proximity. Residents in all study communities expressed concern about the proximity of the waterfowl hunting or furbearer trapping activities to occupied dwellings, neighborhoods, or places of high recreational use (e.g., hiking or bicycle trails).

On Canandaigua Lake they go hunting in people's front yards. And for somebody to shoot a gun five feet from a bedroom window I have to be 500' from a house when I'm deer hunting to discharge a gun. (Canandaigua, 119)

That was to prevent accidental capture of household pets and wayward children so we discussed setbacks...some kind of restrictions to be placed on these traps... (Queensbury, 348)

Queensbury trappers were concerned about the impact of placing traps near where people are.

... just kind of stay away from people, not being too visible because...because it may cause you trouble.” (Queensbury, 339)

Access and opportunity. Across all study communities, hunters and trappers expressed concern about the limited access to lands or waters or opportunity to participate in their wildlife harvest activity.

...trappers’ got a right to the woods...and [if] he’s following the law, he’s got a right to do what he’s doing in there... (Queensbury, 338)

The issue is even more complex in suburban places where waterfowl hunters expressed concern over the limited access to public places where municipalities place additional restrictions.

The concern over restricting hunting access is that hunters who do not own private property on the island will have no other locations to hunt waterfowl. If the hunter is not a resident of the town, then the hunter is also prohibited from the... the bays, harbors, and salt water rivers. For example, most towns require a person be a resident of the town and obtain a resident parking sticker after they prove their residency to park a car in the municipal boat ramp. As time has passed, municipal ramps are closed or specifically closed during the winter. (Brookhaven, 3)

At the same time, Brookhaven residents also expressed concern over limited access.

There’s probably a trespassing problem concern too because [hunters] walk across somebody’s front yard because it is on the waterfront and they don’t have access to the waterway. (Brookhaven, 14)

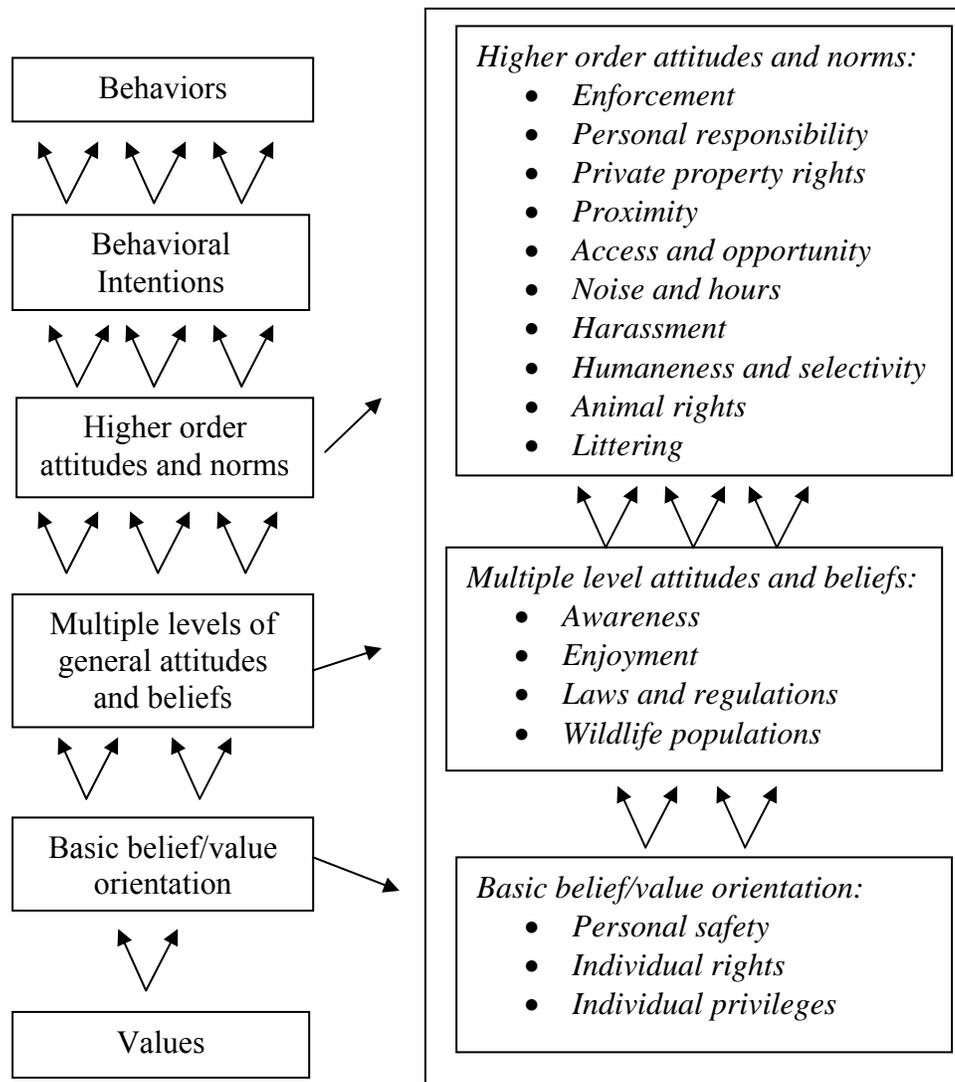


Figure 3-1. Adapted cognitive hierarchy model from Fulton et al. (1996) with the emergent themes from interviews (*in italics*) in case study communities (Brookhaven, Canandaigua, Queensbury, Southampton), New York State, USA, 2009.

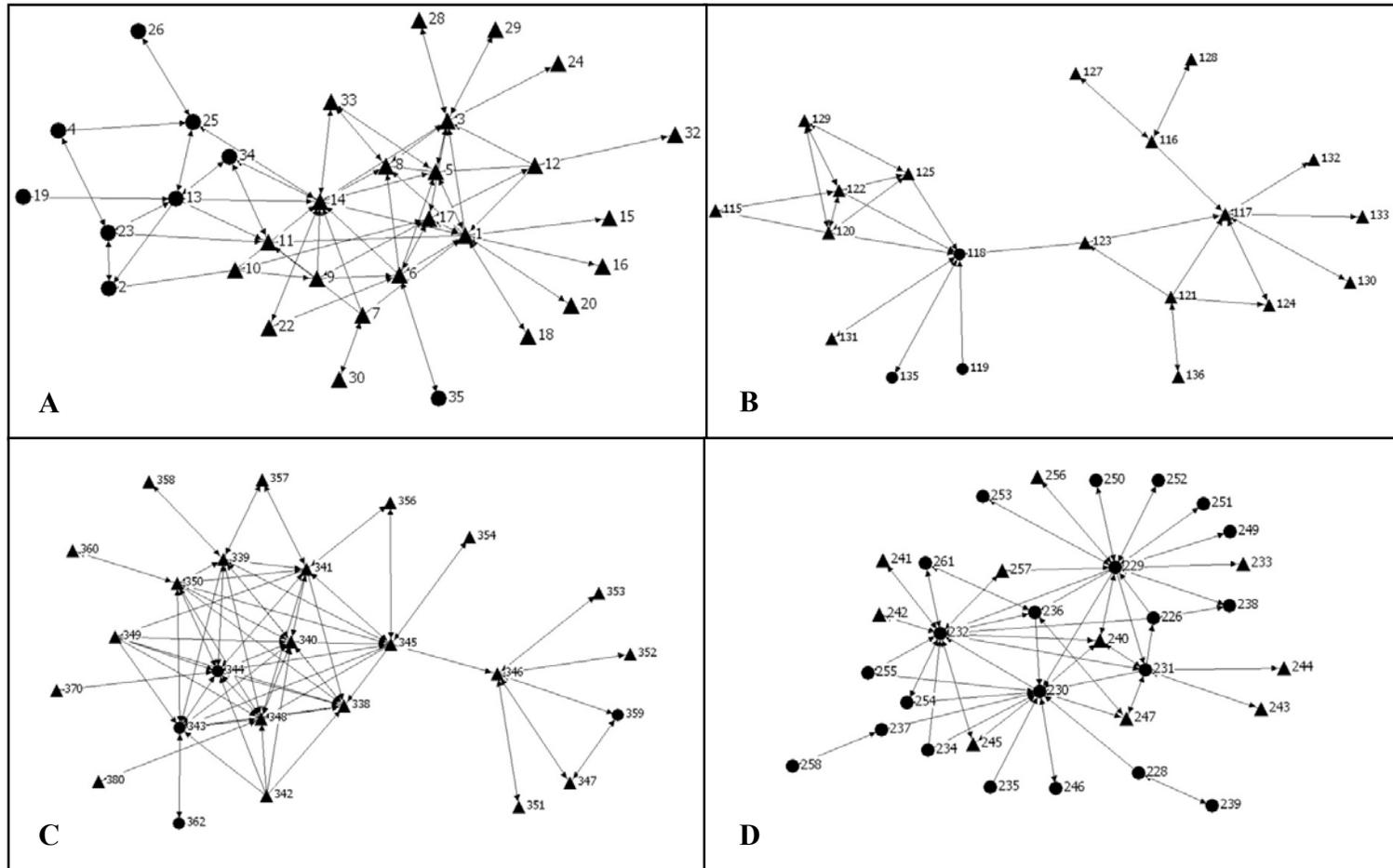


Figure 3-2. Policy networks for stakeholders involved in public issue discussions relating to social conflicts about waterfowl hunting or wildlife trapping in case study communities: (A) Brookhaven, (B) Canandaigua, (C) Queensbury, (D) Southampton, New York State, USA, 2009. Circles = restrict hunting or trapping access/opportunity. Triangle = maintain or expand hunting or trapping access/opportunity.

In the furbearer trapping context, residents also expressed concern for access to lands for passive recreation.

The interest that we have in it primarily is...safe access to natural areas, trails preservation, trails management related to the safe use of trails...
(Southampton, 234)

Noise and hours. Although specific to the waterfowl hunting context, residents in both communities expressed concern about the noise from shotguns in the early morning hours.

...concerned about noise because at times the noise and the sounds are very loud, they wake you up when you are sleeping. They go off early in the morning, like at 5 a.m., and that is really disruptive. (Brookhaven, 2)

Harassment. Waterfowl hunters expressed concern about interference or “harassment” while they legally engaged in waterfowl hunting. The interference might be either from residents along the waterfront or from local police officers who approached hunters about hunting in response to residents’ requests.

I have experienced harassment myself...people coming down there telling you to get the h*** out of here. You’ve got no right, you’re a criminal. You are a murderer. (Brookhaven, 9)

Well, duck hunters have been harassed when individuals call the county police department...it is not so much that the officers have harassed the hunter, but the individuals who keep calling [the police] are harassing the hunters.
(Brookhaven, 12)

Brookhaven residents were concerned about hunters harassing or threatening them too.

It would be like oh f*** you. Go screw off. You better watch yourself.
(Brookhaven, 11)

Humaneness and selectivity. This theme is specific to the trapping context (Southampton & Queensbury), but residents in both communities expressed concern over the humaneness of different wildlife traps, especially when non-target species,

such as dogs, cats, threatened or endangered species, or animals that are too big/too small may become caught in them.

I have concerns about the humaneness of different kinds of traps used whether it's a body-gripping trap, or even a cage trap any kind of trap...that does not kill an animal instantly, is...they're meant to kill wildlife instantly, but if you have a non-target species in there an animal that's smaller or larger than the type of animal you're trying to trap then it's likely it won't die right away ... (Southampton, 229)

Wildlife populations. In the suburban study communities (Brookhaven & Southampton) residents and hunters/trappers expressed concern for an overabundance of some, but not all species, that require management actions to reduce the impacts. Hunters/trappers in the rural communities (Canandaigua & Queensbury) also agreed.

There is an overabundance of geese, and management should take place, but not necessarily all ducks. (Brookhaven, 4)

Animal rights. Both the suburban communities (Brookhaven & Southampton) had one resident each that was concerned about animal rights.

I have a personal issue with killing things for sport. I have no problem with the fact that the Indians killed all those animals ...they lived on [the land]. I get the impression duck hunters...don't necessarily eat the ducks. (Brookhaven, 13)

Littering. Brookhaven (suburban community) had one resident concerned about the litter waterfowl hunters left behind.

They all tend to leave a fair amount of garbage. We've had shells wash up along the water, and trash along the water. (Brookhaven, 2)

Safety. Safety was a concern of stakeholders in all communities. In the waterfowl hunting context, hunters in Brookhaven and Canandaigua expressed concern about safety from interactions with residents potentially threatening hunters.

A woman came out of a house and threatened to shoot me. She was a long ways away and all I could think of in the back of my mind was that she was going to come out of that house with Grandpa's 30-30 and start whacking away at me sitting here in my boat. I would have been just a sitting duck if you will. It weight heavy on me and I got home and called the DEC [environmental conservation officer]... [who] talked to her, and she supposedly wasn't going to do it again. I went back there hunting to the spot and the same thing happened the next week. (Canandaigua, 123)

Brookhaven hunters were also concerned about safety from accidents potentially involving other hunters.

If I thought that it was an unsafe issue to be hunting in Mount Sinai Harbor I would be on the side of those people [promoting restricting waterfowl hunting]. I don't want someone killed in an accident. (Brookhaven, 9)

Brookhaven residents were concerned that hunters hunt in a safe manner in the environment, accounting for the landscape, too close to homes, while ensuring they don't aim towards houses.

...were oops weren't shooting towards the water; we were shooting towards the land. (Brookhaven, 13)

In the furbearer trapping context, Southampton residents were concerned for the safety of animals.

...it represents a danger to family dogs and cats...and it's also an issue for endangered species, threatened species, and it's a danger to people, our children who are in populated areas and who may use particular recreational areas... (Southampton, 228)

Individual rights. Residents in both waterfowl hunting communities were concerned about hunters trespassing.

[Hunters] would park by our place and walk across our property to get to the meadow and to the water; their weapons were not broken down...
(Brookhaven, 13)

In Canandaigua, hunters believed they have more rights for using the waterways than the riparian residents.

Charter of New York State and the navigation laws protect the waters of Canandaigua Lake – it is a public waterway...in my estimation the user [has] more rights than the riparian shore owner... (Canandaigua, 117)

Laws and regulations. Waterfowl hunters in both study communities were concerned about laws and regulations.

...we are concerned over the encroachment to the restrictions to our legal firearms rights. (Brookhaven, 8)

However, in contrast, Canandaigua residents expressed concern about the exception for waterfowl hunters that allow them to be any distance from an occupied dwelling.

The concern has to do with the specific waiver that is in the hunting regulations that is unique to NYS where a waterfowl hunter does not have [to be] any required distance from an occupied dwelling when shooting out over open water. (Canandaigua, 118)

In the furbearer trapping context, Southampton residents favored a county-wide ban on furbearer trapping.

My original intent [was] to impose some sort of regulations county-wide, regardless of the type of land. (Southampton, 231)

Queensbury trappers were adamant that local governments (in their case towns) do not have the authority or expertise to manage wildlife.

I don't believe that any of the people on the Town Board know how [to] or the capability of taking care of wildlife...we have DEC in Albany that write the laws and enforce them... (Queensbury, 350)

Awareness. In the suburban communities (Southampton and Brookhaven), residents believed people were unaware of the wildlife harvest activities occurring in their community. Brookhaven hunters also agreed with this.

...the only signs you see are that this is a nature preserve: no motorized vehicles or no this or no that...it seems like it is a protected place. The last thing that you would expect would be something that dangerous [as a trap]... (Southampton, 230)

Enforcement. Concern over enforcement of the current regulations existed in all four study communities. In the waterfowl hunting context, hunters in both communities were concerned that DEC doesn't protect hunters' privileges under current laws.

I hunt to the letter of the law; I expect the law to back me up if I am true to all the rules. (Canandaigua, 123)

In Brookhaven, residents were concerned that calling NYS DEC law enforcement was ineffective because staff were unavailable when waterfowl hunters are out in the field.

Residents would call and leave a message on [the DEC] answering machine. The DEC called back and said oh sorry we can't help you because we didn't see it. Residents were getting increasingly frustrated when they were reaching out to their government to report a violation of their property rights and no one was responding. They would begin to call the Police Department who would then show up and the police weren't exactly sure what the laws were, whether it was legal or illegal. (Brookhaven, 11)

Enjoyment. Residents and trappers in Queensbury enjoyed observing and studying animals.

...I've always been interested in wildlife, not only from hunting and trapping, but just observing them...I'm an avid bird feeder... (Queensbury, 341)

In Brookhaven, waterfowl hunters believed

...having grown up with the sport, I know that is not a quality [hunting] experience anyway. Why do you want to sit in front of someone's front lawn and shoot ducks? They [ducks] were probably lured there by somebody throwing them white bread or French fries. (Brookhaven, 1)

Personal responsibility. In general, hunters in the waterfowl hunting communities were concerned that hunters should not push the envelope when hunting along developed waterfronts.

With waterfowl hunting you need to take into consideration where you are. I think hunters need to be somewhat responsible to try to pick a spot that is not 2' from someone's house. Now, you are legal to be 2' from someone's house as long as you are below the high watermark, but having said that, there needs to be some responsibility on the hunter's part not to be an idiot. (Canandaigua, 121)

Trappers in Southampton believed dogs should be under their owner's control.

...but I believe there was some responsibility on the dog owner part to keep their dog under control... (Southampton, 227)

Discussion

Policy outcomes for maintaining or expanding waterfowl hunting and trapping access and opportunity may be related to significant homophilous network relationships among stakeholders with similar policy positions. Although stakeholders in Brookhaven, Canandaigua, and Queensbury were able to form network relationships and achieve the intended outcome with other stakeholders possessing similar policy positions, the issue may not be resolved because the policy outcome may not have actually addressed the underlying interests of stakeholders on all sides of the issue. Homophily of policy positions may exacerbate disputes and contribute to

protracted conflicts. Non-homophilous policy networks, where cross-positional communication occurs may help foster learning, cooperation, and lead to conflict resolution. Homophily can occur along many dimensions, such as race, ethnicity, religion, education, occupation, and gender (McPherson et al., 2001). Individuals may be multi-dimensional leading to stakeholders exhibiting homophily on one dimension (e.g., policy position) but not on other dimensions (e.g., gender, religion, or stakeholder type).

My results suggest stakeholders who exhibit different policy positions (e.g., support maintain/expand vs. restrict hunting or trapping access or opportunity) have similar underlying interests (value orientations) for personal safety, individual rights, and individual privileges related to stakeholder interactions. These findings are what Wondolleck and Yaffee (2000) describe as “what appears to be a disagreement over fundamental values often is revealed to be differences over preferences, and room for mutually acceptable agreements is found to exist (p.48).” Stakeholder engagement for conflict resolution and policy formation should focus on the similarities and differences in value orientations of stakeholders, addressing the underlying causes of the problem and putting forth more enduring policy solutions.

Previous research has identified *wildlife* value orientations as predictors for behaviors such as voting on wildlife trapping issues, participation in hunting, fishing, or wildlife watching activities (Fulton et al., 1996; Manfredi et al., 1999). For potential social interactions related to wildlife, value orientations reflecting basic beliefs about personal safety, rights, and privileges, not on wildlife, may be important predictors of behavioral intentions. If state wildlife management agencies seek to retain a broad range of recreational opportunities on public lands, wildlife-use opportunities, legal management tools and techniques, and public support for wildlife

as a resource, they may need to address these basic beliefs about stakeholder interactions.

Future research can develop and test a path model to determine if value orientations (basic beliefs) about personal safety, individual rights, and individual privileges are predictors of the higher level attitudes and norms toward the interactions of hunters/trappers and the non-hunting/trapping public, and ultimately behavioral intentions for wildlife hunting/trapping or viewing. Future homophily analysis of social networks can analyze the extent to which stakeholders form relationships with other stakeholders holding similar values.

Conclusion

Conflict resolution literature suggests that stakeholders should focus on their interests, not their positions or preferences, and find options for mutual gain (i.e., enlarge the potential options before deciding on an appropriate solution) (Fisher et al., 1991; Wondolleck & Yaffee, 2000). If homophily of policy positions exist, it may continue to divide stakeholders who are dissimilar, leading to challenges for promoting positive stakeholder interactions for future management activities. Stakeholders on both sides of the issues involved in these disputes appear to have similar interests, signaling an opportunity for state wildlife management agencies to facilitate processes for identifying mutually agreeable management policies relating to consumptive and non-consumptive stakeholder interactions in wildlife management contexts. This may be an important task if state wildlife management agencies seek to maintain a wide range of recreational opportunities on public lands, wildlife-use opportunities, legal management tools and techniques, and public support for wildlife as a resource.

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CHAPTER 4

SOCIAL NETWORKS AND COLLECTIVE ACTIONS: RELATIONSHIP BETWEEN NETWORK POSITIONS AND FRAMING OF PUBLIC ISSUES IN WILDLIFE MANAGEMENT

Abstract

Wildlife management agencies are increasingly challenged with managing the impacts from stakeholder interactions when disputes among a few individuals escalate into broader public issues. I examined public issues resulting from stakeholder interactions using theories from collective action, social networks, and social constructionism to understand key roles and perspectives among stakeholders engaged in collective actions related to wildlife management policies. I conducted semi-structured telephone interviews with 50 key stakeholders in four communities in New York State that experienced collective stakeholder interactions in the contexts of waterfowl hunting or wildlife trapping. My results revealed collective action coordinators and brokers, representing local/in-state regional organizations, were not initially involved in the disputes and varied in how they framed the issues. Stakeholder engagement strategies for managing the impacts from these interactions may need to incorporate the temporal element of how the social construction of each issue changes over time as additional stakeholders become involved.

Introduction

Wildlife managers have been challenged with stakeholder-related conflicts concerning wildlife management for as long as the profession has existed (Gentile, 1987). In recent decades, wildlife managers have increased their focus on public issues related to human-wildlife conflicts, for example when stakeholders were in a dispute over control of deer abundance in a neighborhood (Decker, Raik, & Siemer, 2004; Messmer, 2000). Increasingly wildlife professionals are faced with managing the impacts resulting from interactions among people associated with wildlife management activities, such as wildlife harvest (Riley et al., 2002). Such social conflicts among stakeholders, as well as related public issue discussions and political activity, contribute to a strained wildlife management climate. Although the number of social conflicts each year is limited, political activity resulting from such conflicts has been pronounced. The outcomes of these public issue discussions have the potential to greatly impact wildlife management by influencing the range of recreational opportunities on public lands, wildlife-use opportunities, legal management tools and techniques, and public support for wildlife as a resource.

In recent years, public issues and social conflicts resulting from stakeholder interactions have emerged, most notably among (1) wildlife trappers and dog owners (Unruh, 2008) and (2) waterfowl hunters and waterfront residents (Hubbard, 2008). The issue-evolution model was developed to describe how the impacts from initial private stakeholder interactions become the topic of public issue discussions and eventual political activity (Decker et al., 2004; Hahn, 1990). Initially, during the “concern” stage, concerned individuals or groups identify undesirable impacts in their community and discuss them with friends or neighbors. In the “involvement” stage, stakeholders seek support from one another and begin to inform state wildlife

management agencies, elected decision-makers, or non-governmental organizations regarding their concerns. The “issue” stage occurs when a critical mass in the community believes the impacts are of concern, although they might not all agree with the prevailing perspective. The issue-evolution cycle continues on towards resolution through community discussion and involvement. Within this issue-evolution cycle, little is known about the relationship between the initial concerns stemming from undesirable impacts and how and why stakeholders socially organize a critical mass of stakeholders. My work addresses this information gap.

In this research, I explore how the perceived undesirable impacts from stakeholder interactions in the contexts of wildlife trapping or waterfowl hunting move through the concern and involvement stages of issue evolution. As described above, I draw upon theories from collective action, social networks, and social constructionism to reveal how the impacts from private stakeholder interactions become public issues in these contexts. Within the context of these theories, I focus on the social interactions that emerge to prompt and coordinate collective actions leading to public issue discussions. I also examine how stakeholders perceive and frame the issues, concluding with recommendations for stakeholder engagement toward achieving the outcomes and impacts valued by stakeholders.

Conceptual Framework

When public issues emerge relating to wildlife management, stakeholders may individually or collectively lobby agency personnel or elected decision-makers, or organize ballot initiatives or referenda to influence policies where such mechanisms exist (Cockrell, 1999; Loker, Decker, & Chase, 1998; Whittaker & Torres, 1998). When two or more individuals join together in these types of actions seeking a common goal, they are considered to be engaging in collective actions (Ostrom, 1998).

Social ties among individuals are essential for enabling communication and coordination of collective actions (Marwell, Oliver, & Prael, 1988). A limited number of stakeholders typically hold key roles for coordinating or communicating the collective actions (Marwell et al., 1988). These individuals play a key role in the operation of the collective action, and also in framing its issues and goals.

Collective action

Collective actions are the efforts by two or more individuals who join together to seek outcomes that would not likely be attainable without the involvement of others (Olson, 1965; Ostrom, 1998). In natural resource management, collective action theories have been applied to the co-management of common-pool resources (Ostrom, 1990; Wagner, Kreuter, Kaiser, & Wilkins, 2007), for example voluntary landowner cooperatives for the management of habitat for deer (Wagner et al., 2007). In the political environment, however, voting, lobbying, or forming interest groups are examples of collective actions (Ostrom, 1998). Wildlife stakeholders engage in these actions that enable public issues to emerge, which potentially influence wildlife management policies (Williamson, 1998). In extreme cases, wildlife stakeholders engage in collective actions when wildlife policy is determined through direct democracy (Williamson, 1998).

The outcomes and benefits of collective actions produce public goods such that those who did not participate in the group collective action can still derive benefits from the public good. These non-contributors are called free-riders (Olson, 1965). Researchers dealing with collective action seek to understand why people choose to participate in collective actions when they can also free ride. Special attention has been paid to how social network ties curb free-riding, specifically how ties influence the process by which collective actions emerge in groups (Diani & McAdam, 2003;

Marwell et al., 1988). Participants in collective actions are usually recruited through pre-existing social networks, where organizational ties have a stronger effect than individual ties in mediating participation in collective actions (Diani & McAdam, 2003; McAdam & Paulsen, 1993).

In my study context, collective actions occur as the impacts from initially-limited stakeholder interactions become the focal topic of public issues. The set of collective actions on these issues may include stakeholders who perceive different concerns and impacts. I examine these stakeholders together to identify the prevailing perspectives in collective actions. As the public issue evolves, for example, the prevailing perspective may change based on who serves in key collective action roles. To understand how collective actions operate, I am interested in finding out who serves as the collective action coordinator of the prevailing perspectives and as key broker who potentially connects together diverse viewpoints on this public issue and communicates information about the collective action.

Social networks

Social network analysis reveals the patterns of relationships among individuals (Wellman, 1988). Social network theories deal with the classic questions of how relationships, rather than individual characteristics, influence behaviors (Granovetter, 1985). Connections between people (e.g., a dyadic pair) represent relational linkages of a social network; when pairs of people connect with other pairs through their relationships a larger social network structure is formed (Scott, 2000). Social network analysis is emerging in natural resources management where researchers are not only interested in stakeholders' interests and concerns (e.g., attribute data), but also in how stakeholders interact together in a social network (e.g., relational data) (Adger et al.,

2005; Janssen et al., 2006; Prell et al., 2009). However, limited empirical examples in natural resources management exist (Prell et al., 2009).

In this study, I integrated social network analysis with collective action theories to reveal how prevailing collective actions operate as public issues emerge. This approach is appropriate because when concerns over the impacts of stakeholder interactions emerge, often some stakeholders have well-established organizations while other stakeholders may not be involved with organizations or may only represent themselves (Wellman, 1988). For example, waterfowl hunters and wildlife trappers have pre-existing well-formed organizations, but other stakeholders may not have established organizations with pre-existing network ties they can easily access. Because this study focuses on collective actions of wildlife stakeholders, I am interested in two empirical indicators: degree centrality and betweenness centrality. Degree centrality is the level of connectedness of one network member to other network members (Prell et al., 2009; Scott, 2000). The individual that is directly connected to the most other network members will have the highest degree centrality. The individuals with the highest degree centrality serve as key coordinators for collective actions because they have the greatest potential for motivating the network and quickly diffusing information through a centralized network (Diani & McAdam, 2003; Prell et al., 2009; Rogers, 2003). In contrast, betweenness centrality refers to the extent to which an individual lies “in-between” other individuals who themselves are disconnected (Prell et al., 2009; Scott, 2000). This individual can play a very important broker or gatekeeper role for information flow. This broker role may be useful at linking disconnected segments of the network and for mobilizing and diffusing information about collective actions to the larger network, which may be channeled to exacerbate or resolve conflicts (Diani & McAdam, 2003; Prell et al., 2009; Rogers, 2003). How individuals in key roles perceive public issues has

implications for how they frame issues when communicating with others about collective actions.

Social constructionism and framing

The perceptions and meanings people construct about reality, labelled social constructionism, result from the web of interactions with other people and social systems (Allen, 2005; Patton, 2002). According to this definition, social network interactions will play an important role in enabling individuals' social construction of a phenomenon, and may explain why perceptions of public issues vary across individuals, particularly if they are members of different social networks. Previous research has shown that negative or indirect network relationships are associated with higher perceived intergroup conflicts (Labianca, Brass, & Gray, 1998). In essence, each person has a different web of social network interactions from which they develop their perceptions or frames of public issues, potentially leading each person to have a slightly different perception (Benford & Snow, 2000). How prevailing perspectives in public issues are framed may be influenced by key stakeholders who play important roles for enabling collective actions.

In my study context, I wanted to document the social networks involved with the public issues over stakeholder interactions and determine which stakeholders served in key roles for enabling collective actions. The key roles I considered are: (1) initial disputant, as identified by respondents; (2) coordinator, as identified by the network measure of highest degree centrality; and (3) broker, as identified by the network measure of highest betweenness centrality. Additionally, I wanted to examine how these stakeholders in key network positions perceived, or framed, the collective action associated with the public issue. Understanding differences in collective action frames may be important for responding to and engaging with concerned stakeholders, especially when timing matters.

Methods

I used purposeful maximum variation sampling (Patton, 2002) to be able to identify common patterns that might cut across my case study communities. My goal was to yield information-rich insights and in-depth understandings about how stakeholders interact with each other on these public issues. The characteristics of the overall issue in each community were similar in that each involved impacts from interactions among consumptive (e.g., hunters and trappers) and non-consumptive (e.g., dog owners or waterfront residents) stakeholders relating to waterfowl hunting or wildlife trapping activities in recent years. The waterfowl hunting conflicts were less volatile in comparison to the wildlife trapping conflicts; however, in each case the disputes were protracted, developing into public issues where either local or state-level decision-makers became involved. I studied two communities with public issues relating to waterfowl hunting and two communities with public issues relating to wildlife trapping. For each study context (public issues over wildlife trapping or waterfowl hunting), I included one rural and one suburban community. I describe the communities below.

Case studies of public issues relating to waterfowl hunting

Brookhaven, New York, is a suburban Long Island community located in Suffolk County, which has approximately 1.5 million residents (U. S. C. B. USCB, 2005). The Town of Brookhaven spans both the North and South Shores of Long Island, but the concerns over waterfowl hunting have primarily focused on Mount Sinai Harbor, located on the North Shore. Concerns over waterfowl hunting in Mount Sinai Harbor have existed for several decades, but the public issue emerged in the mid-1990s after a meadow on the eastern edge of the harbor was developed. Residents expressed concerns over waterfowl hunting activities for several years. In

2003, harbor residents, local hunters, and town officials developed a cooperative agreement where the hunters self-restricted their hunting locations to avoid the tidal waters immediately adjacent to the homes. This agreement worked until 2007 when the issue surfaced again and local hunters successfully lobbied the Town of Brookhaven Council to pass a local law permitting waterfowl hunters to possess unloaded and encased firearms on the municipal lands (e.g., town-owned boat ramps) for the purposes of waterfowl hunting. To this point, it had been illegal to possess a firearm on town-owned lands, so this change in law made it possible for hunters to legally access the harbor with their firearms.

Canandaigua, New York, located in the central part of New York is a rural community on Canandaigua Lake, one of the Finger Lakes. Canandaigua is in Ontario County, which has a population of approximately 100,000 residents (U. S. C. B. USCB, 2005). In 2001, an altercation occurred between a resident living along Canandaigua Lake and a waterfowl hunter hunting on the lake. The resident objected to waterfowl hunting in close proximity to her home. Interactions between the hunter and resident escalated. The hunter charged the resident with hunter harassment and the resident charged the hunter with several violations, including hunting too early in the morning, hunting over baited waterfowl, trespassing, and littering. The charges against both parties were eventually thrown out of court. The City of Canandaigua passed a resolution requesting State Legislators to sponsor a bill that would amend New York State Environmental Conservation Law to change the law which exempts waterfowl hunters from the 500' safety zone law prohibiting the discharge of firearms within 500' of an occupied dwelling. The Town of Canandaigua did not approve a similar resolution.

Case studies of public issues relating to wildlife trapping

Southampton, New York, is a suburban Long Island community located in Suffolk County, which has approximately 1.5 million residents (U. S. C. B. USCB, 2005). In 2005, a domestic dog died as a result of being caught in a wildlife trap located in the Long Pond Green Belt. The Long Pond Green Belt comprises lands owned by the Town of Southampton, The Nature Conservancy, and the New York State Department of Environmental Conservation. A trapper had set a body-gripping trap in the Green Belt near a recreational trail where the dog's owner had allowed the dog to run off leash. At the time, there were no local codes prohibiting the trap from being set or prohibiting the dog from being off leash in the Green Belt. State Environmental Conservation Laws regulated trapping activities and prohibited dogs from running at large. The trapper was cited for violating the Environmental Conservation Law, which requires trappers to place an identifying tag on the trap. The dog owner was not cited for any violation. The Town of Southampton passed a local law prohibiting wildlife trapping on town-owned lands, and two nearby towns (East Hampton and Shelter Island) passed similar laws.

Queensbury, New York, is a rural community in northern New York near the Adirondack Park. Queensbury is located in Warren County, which has approximately 65,000 residents (U. S. C. B. USCB, 2005). In 2003, a dog was caught in a wildlife trap in Pack Forest in nearby Warrensburg, but released alive. However, in 2006, a dog died after being caught in a wildlife trap set on state land in nearby Lake Luzerne. Its owners were walking the dog along a gravel road, allowing the dog to run off leash. During the 2006-2007 trapping season, a Queensbury town resident became concerned about trapping after seeing a trapper place traps in a roadside culvert within the town. Several months later the Town of Queensbury board reviewed a proposed resolution

that would restrict where traps could be placed within the town. The trapping resolution was debated, but was not passed into law.

Data collection

I identified potential participants for this study using a snowball sampling technique (Patton, 2002) by starting with key informants identified by staff from the New York State Department of Environmental Conservation – Bureau of Wildlife (DEC). I also reviewed newspaper stories and public meeting records to identify individuals who spoke with the media or at public meetings. From this initial sample, I asked respondents to refer me to potential informants (i.e., snowball) until I was no longer referred to new informants. This sampling approach produces ego-centered networks, which are common for studying social networks in communities (Muller et al., 1999), particularly when the size and members of a network are unknown beforehand.

Potential study subjects were contacted up to three times by telephone where possible, and by letter when I was unable to reach them by phone. When I contacted the potential study subjects, I invited them to participate in the study and, if the subject was interested in participating in the study, I scheduled an interview at a time of mutual convenience. I mailed a contact letter with additional study information. I conducted all of the semi-structured interviews, consisting of open-ended and closed-ended questions, over the telephone. The interviews were conducted between February and August 2009, and ranged from 15-90 minutes, with most approximately 40 minutes. Most interviews (46/50) were recorded; for the non-recorded interviews, I took detailed notes and expanded the notes afterwards (usually within several hours after the interview). The methods and data collection instruments used in this study were approved by the Cornell University Institutional Review Board (#0908000566).

Data processing and analysis

Data processing and analysis followed a similar protocol to McKether, Gluesing, & Riopelle (2009). All respondents were assigned a unique code, as were the stakeholders identified by respondents. The unique code was used throughout data processing and analysis to protect the identity of the respondents and stakeholders. Stakeholders from Brookhaven were assigned a number between 1-99; Canandaigua between 100-199; Southampton between 200-299; and Queensbury between 300-399. Assignment of number was based on list building during review of transcripts. I opted for a unique number code rather than developing hundreds of pseudonyms. Interview transcripts, or the detailed interview notes, were imported into Atlas.ti (Muhr, 2009) and coded for network relationships. Once the coding was complete, the primary-document matrix was exported as an Excel file. In Excel I transformed the matrices to make a square (e.g., case-by-case) matrix for each of the four study communities. Each square matrix was then imported into UCINET (Borgatti, Everett, & Freeman, 2002), where centrality measures (Freeman degree and Freeman betweenness) were calculated. I reported the normalized degree centrality and normalized betweenness centrality measures so that they can more easily be compared across various social networks in different communities (Wasserman & Faust, 1994). I also displayed the social networks for each community using NetDraw in UCINET (Borgatti et al., 2002).

Key stakeholders, playing important roles in the collective actions, were identified for each community. I identified the “initial disputants” based on DEC contacts’ and respondents’ reports. The other key stakeholders were identified based on the network analysis. Individuals with the highest normalized degree centrality measure are considered the collective action “coordinator” in the public issue discussions. In contrast, individuals with the highest normalized betweenness

centrality measure are considered the collective action “broker” in the public issue discussions.

The final phase of the analysis included examining the reported perceptions of the public issue for each of the key stakeholders involved in the collective actions in each community. For each key stakeholder, I compared perceptions for similarities and dissimilarities to reveal any patterns between network position and perception of the public issue or how the individual frames the conflict when communicating with others (Rubin & Rubin, 2005). Both the qualitative text and quantitative social networks were used in this analysis for a richer interpretation of the data, rather than relying only on one source of information (Patton, 2002).

Results

Brookhaven, NY

The network figure for Brookhaven is presented in Figure 4-1, with summary data on key stakeholders presented in Table 4-1. The initial disputants were residents living along the Mount Sinai Harbor (#13, 23, and 25) who originally expressed concerns over the waterfowl hunting activities. Respondent #13, a resident along Mount Sinai since the mid-1970s, described the impacts of concern as:

Being so close to the house, their weapons were not broken down when they were here... you have to respect the property rights of an individual...the hunters would park down there and walk through their yards with their weapons ready to go. Or, they would sit on the beach back of their houses and lazily shoot at ducks. We never [wanted] to stop duck hunting in Mount Sinai Harbor, it was to try and coexist safely.

The key collective action coordinator was #1, who is a staff member for a national waterfowl conservation organization. He was also a collective action broker. His perceptions of the impacts were:

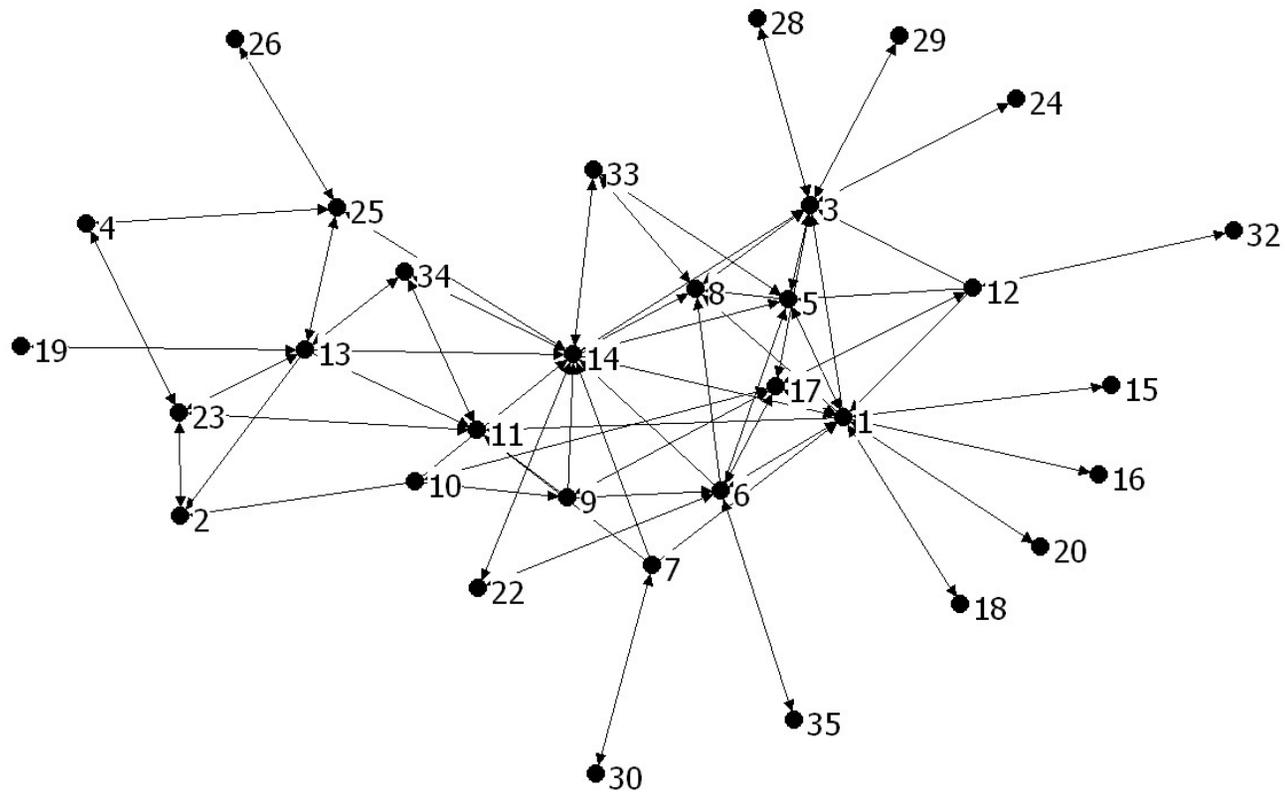


Figure 4-1. Policy networks for stakeholders involved in public issue discussions about waterfowl hunting in Brookhaven case study, New York State, USA, 2009.

Proximity to those homes, residents who are not going to be tolerant or claim to be scared - you know you hear these claims of the pellets hit my kids' school bus - I don't know whether they did or didn't. But, according to the hunters, they claim those were outright lies...It seems to have degenerated to a point where there is all kinds of false accusations - just a whole lot of these situations. But, [Environmental Conservation Law Enforcement] officers were trying to find some kind of amicable resolution and for a while it appeared that was the case. For example...the hunters agreed to voluntarily put a line of buoys across the harbor asking the people to voluntarily not go east of those buoys. In other words, be respectful of these neighbors' wishes - don't go in this particular corner of the harbor, don't stick it right in their face, stay out in the middle.

The key broker (#14) for the collective action was a waterfowl hunter and resident who lived on Mount Sinai Harbor since the mid-1950s. His perceptions of the impacts were:

Basically I have to say it is a noise problem. If they couldn't hear the hunters, they wouldn't care. There's probably a trespassing problem concern too because [hunters] walk across somebody's front yard because it is on the waterfront and they don't have access to the waterway. I'd call [them] preservationists as opposed to conservationists. Somebody has to control the wildlife. They could care less about the traditions. They don't go outside.

Southampton, NY

The network figure for Southampton is presented in Figure 4-2, with summary data on key stakeholders presented in Table 4-1. The initial disputant was stakeholder #230, a local resident who adopted a dog from a local animal rescue organization. The dog died as a result of being caught in a body-gripping wildlife trap. Since the dog was adopted from a local animal rescue organization, the owner took the dog and trap back to the organization. The initial disputant described the impacts from the stakeholder interactions as:

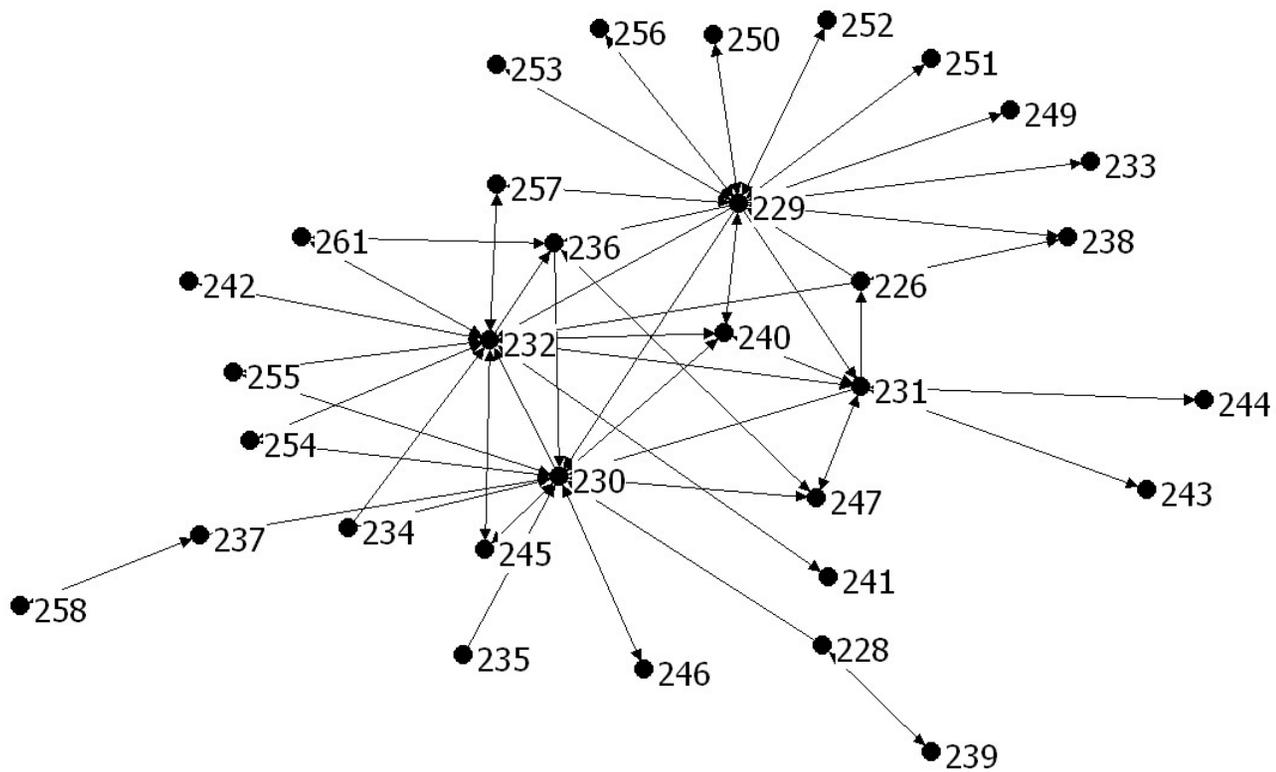


Figure 4-2. Policy networks for stakeholders involved in public issue discussions about furbearer trapping in Southampton case study, New York State, USA, 2009.

Other people have other views, but for me, it goes back to the posting. If I saw a sign before I walked into a nature preserve that from Nov. until Feb, body-gripping traps may be present in this area, I'm just going to turn around and decide to go someplace else. If that area is there for the trappers, and that's what they want to do, you know, then I just don't want to be there, you know. I can't make it stop you know.

The collective action coordinator was #232, the Executive Director of the local non-profit domestic animal rescue organization. She formerly worked for a national conservation organization in the area that was one of the landowners of the property in the Long Pond Greenbelt Preserve where the dog was killed. The coordinator described the impacts as:

when we got the facts straight about exactly on which land it happened and checked on the laws and learned about the laws that govern wildlife trapping on public land, we realized that everything that happened was legal...and so and then there was education process further about past efforts to regulate traps and the whole issue of local jurisdiction vs. New York State you know, jurisdiction of wildlife laws. We realized that we could approach it from local law perspective and that's when we started our campaign to change laws and uh we tried, we did successfully change 3 local laws we got a county resolution passed, we were not able to get a home rule law changed in New York State.

The broker in the collective action was #229, the Executive Director of a local non-profit wildlife rescue organization. She described the impacts as:

I have concerns about the humaneness of different kinds of traps used whether it's a body-gripping trap, or even a cage trap any kind of trap that you know, that does not kill an animal instantly, is considered inhumane particularly the body-gripping traps that are meant to, they're meant to kill wildlife instantly, but if you have a non-target species in there an animal that's smaller or larger than the type of animal you're trying to trap then it's likely it won't die right away, there's different size traps for different size animals, so uh a trapper might be trying to get a squirrel and instead a dog will get in it and then of course the trap won't work as effectively and the animal that's inside suffers, so um, the center as a whole doesn't take a stand against animal rights issues, you know on trapping itself, it is the method that's used to kill the animal and it's not done you know, humanely in most cases we feel.

Canandaigua, NY

The network figure for Canandaigua is presented in Figure 4-3, with summary data on key stakeholders presented in Table 4-1. For the conflict in Canandaigua, the initial disputants were #123, a waterfowl hunter from the surrounding area, and #118, a resident living along Canandaigua Lake. The waterfowl hunter involved in the dispute (#123) described the impacts as:

I was hunting legally. Unfortunately, once she found out what was legal and what wasn't legal, she chose to lie. She falsely accused me of trespassing, of shooting early, she said I'd littered because I hadn't picked up my shot shells, and that I was shooting too close to the property. I'm pretty convinced that no matter where you set up, someone is going to come out and give you a hard time. It is only for those few months, particularly for the split season. If you know the split season is what 10-15 days and that's probably when most of the hunters hit the Finger Lakes.

The waterfront resident (#118) involved in the dispute, who also served as the key coordinator in the collective action, described the impacts as:

The concern has to do with the specific waiver that is in the hunting regulations in New York State... where a waterfowl hunter does not have any required distance from an occupied dwelling when shooting out over open water. A couple of things: (1) with undulating shorelines, when you are on a cove or something, you can be shooting out over open water, but in the excitement a few degree turn means you might be aimed toward a dwelling, and (2) what I found waterfowl hunting generally takes place before sunrise - they have the ability to shoot from ½ hour before sunrise and they generally get to their location and get all set-up before sunrise. You've got somebody shooting off a shot-gun, sometimes within feet of where your dwelling is while it is still dark out.

So, I did work with [my Assembly Member's office] office through Albany and they had said that if I could get two municipalities to do a resolution asking them to get the law changed that they would look into it further. So I went to the City of Canandaigua and made a presentation to them. They did approve a resolution asking him to sponsor a bill changing that. Then I came to the Town of Canandaigua and gave them a copy of the resolution that the

City had done and asked them to do the same thing and they voted on whether or not they should do it. 3-2 they voted not to do it, so therefore I didn't have the support of two municipalities and it didn't go any further.

The key broker in the collective action is #117, President of a local waterfowl hunting organization. He described the impacts as:

I have concerns that this is a public recreation area. Charter of New York State and the navigation laws of New York State protect the waters of Canandaigua Lake - it is a public waterway. In effect gives, in my estimation, the user more rights than the riparian shore owner to some extent. The constant comment was, well I bought this house on the lake and I shouldn't have to listen to that. It is only a few days out of the year. People typically don't hunt in populated areas during the first season; it is almost always during the second split. There is the fear because of guns, I understand that, but when you look at the law, waterfowl hunting over a big body of water or shooting from shore over water is probably the safest hunting activity there is.

Queensbury, NY

The network figure for Queensbury is presented in Figure 4-4, with summary data on key stakeholders presented in Table 4-1. The initial disputants were #343 and 362. #343, a locally-elected official described the impacts as:

... made it very clear that nobody was insinuating or in favor of outlawing trapping, it's just that we wanted to curtail the placement of certain kinds of traps relative to proximity to residential neighborhoods where kids played and where pets were allowed to play. It's not to say that I wouldn't characterize it as a rash of incidences [of dogs caught or killed in wildlife traps in nearby towns], but certainly it was on the radar and there was a greater awareness that in fact this wasn't some antiquated practice that in fact people still were placing traps that you know, did bodily harm, and they were along public right of ways where it was, pets were allowed to be and where kids certainly probably thought it was safe to run and play.

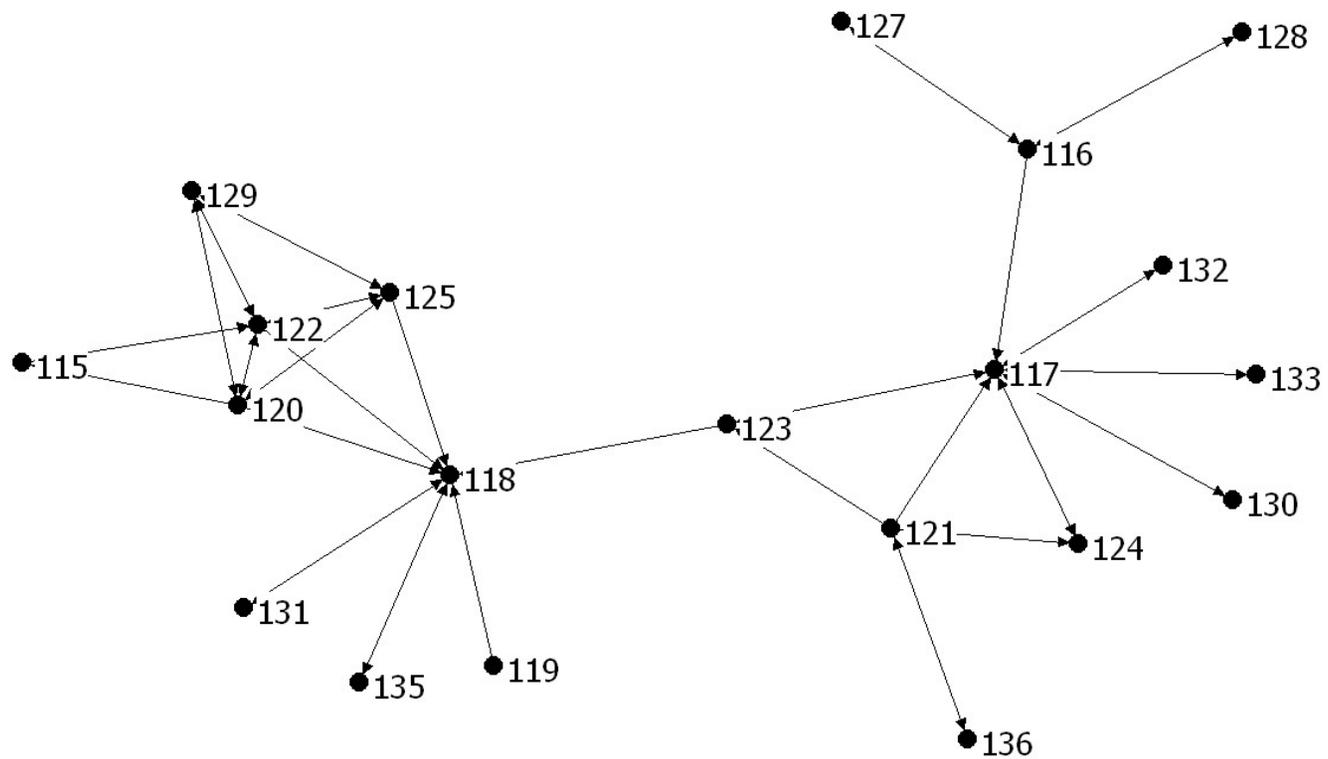


Figure 4-3. Policy networks for stakeholders involved in public issue discussion about waterfowl hunting in Canandaigua case study, New York State, USA, 2009.

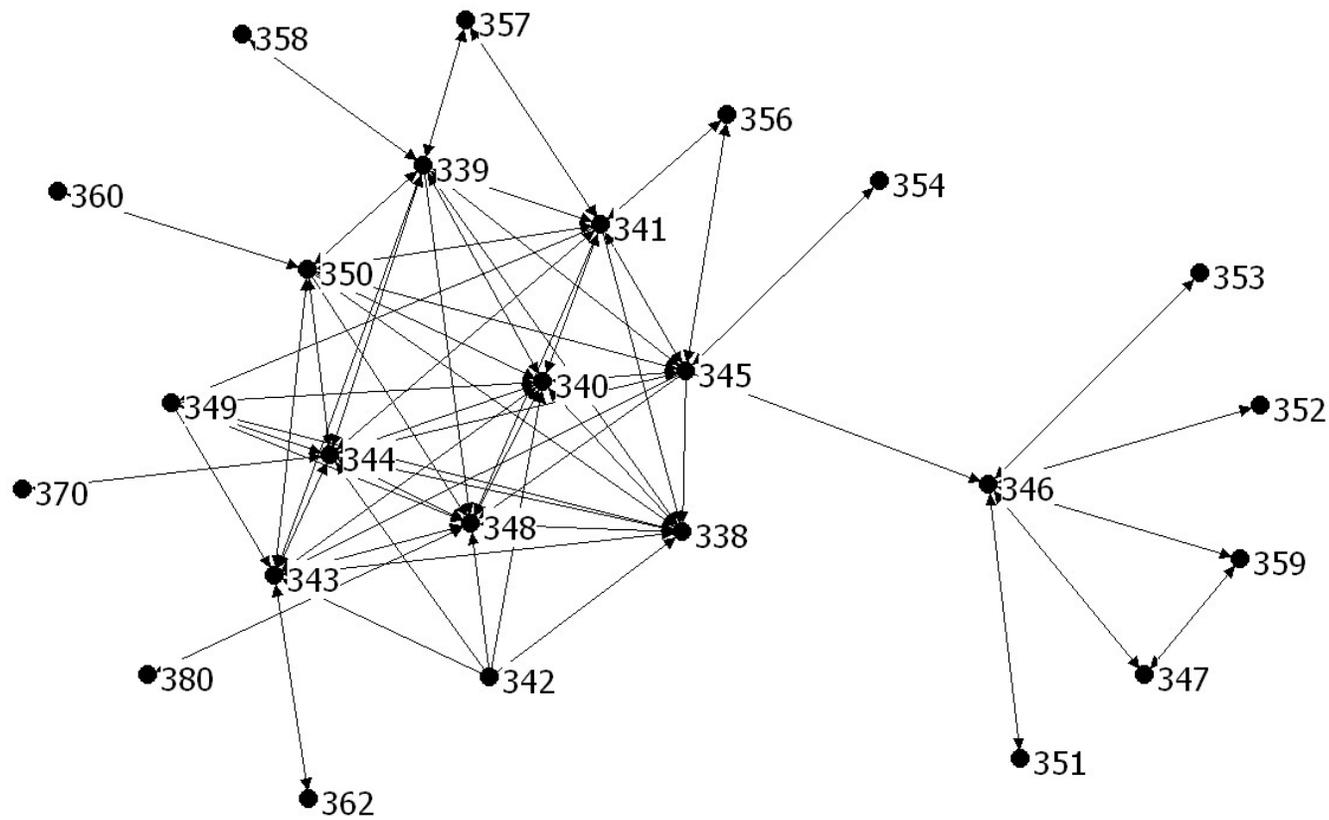


Figure 4-4. Policy networks for stakeholders involved in public issue discussions about furbearer trapping in Queensbury case study, New York State, USA, 2009.

Table 4-1. Summary of policy actors in public issue discussions relating to waterfowl hunting and furbearer trapping conflicts in case study communities (Brookhaven, Southampton, Canandaigua, Queensbury), New York State, USA, 2009.

	Communities			
	Brookhaven	Southampton	Canandaigua	Queensbury
Context	Waterfowl hunting	Wildlife trapping	Waterfowl hunting	Wildlife trapping
Development	Suburban	Suburban	Rural	Rural
Initial disputant	13, 23,25	230	118, 123	362, 343
...frame	Concern for safety, private property rights, and co-exist with hunters.	Concern for personal decision of where to recreate with dog. Posting signs would have been informative.	Concern over hunters legally engaging in waterfowl hunting that allows them to hunt close to homes in the early morning hours while it is still dark outside.	Concern of the placement of traps in proximity to residential homes, schools, and other occupied dwellings.
Coordinator (ndegree centrality)	1 (9.677)	232 (14.545)	118 (18.421)	345 (23.958)
...frame	Concern about proximity of hunting to homes. Hunters should be respectful of homeowners and not go too close.	Recognized trapping and recreation with dogs were both legal. Concern over local public safety authority because state has resource management authority.	Concern about proximity of hunting activities to occupied dwellings. Concern to change state Environmental Conservation Law to require larger distances.	Concern over too many regulations (statewide or local) affecting wildlife trapping.
Broker (nbetweenness centrality)	1 (34.948), 14 (34.58)	229 (33.400)	117 (18.129)	345 (28.197)
...frame	Concern for noise and trespassing, but must understand wildlife in this area need to be managed.	Concern over the humaneness of wildlife traps.	Laws in New York State protect the waterfowl hunter using the public waterway more than the riparian resident adjacent to the hunter.	Concern over too many regulations (statewide or local) affecting wildlife trapping.
Policy outcome	Local town law changed providing more access and opportunity for waterfowl hunting.	Local town law changed prohibiting wildlife trapping (regulated and nuisance) on town-owned lands.	No change to local town laws relating to waterfowl hunting. (City of Canandaigua passed a support resolution to change state Environmental Conservation Law.)	No change to local town laws relating to wildlife trapping.

The collective action coordinator and broker was the same individual, #345, who is a trapper, a licensed nuisance wildlife control operator, and involved with the state trapping association. He described the impacts as:

They've gone out of their way to make a whole lot of regulations for the whole state and the town, in this instance there was no incident. This was just a mere observation. In other words, a guy walking down the street and he sees a guy setting a trap and says I don't like that, so let's get rid of this wicked, cruel, awful trapping, it's like, give me a break, you know. Where is your problem, is it just the fact you don't like it, well there's a lot of things people don't like, but they just don't go around changing laws just cause they don't like it. #343 dug his heels in, he wasn't going to budge, it was like, he wasn't going to let facts get in the way of his decision making.

Discussion

Based on the results from the suburban case study communities (Brookhaven-hunting and Southampton-trapping), I conclude that when the impacts from stakeholder interactions become the topic of broader public issues, the initial disputants do not continue to play a key role in the prevailing collective action as involvement grows. Rather, over time, different individuals emerge to play key coordinating roles for the collective action and brokering roles for communicating information. In both the suburban communities, the key coordinators (high degree centrality) and brokers worked for local/in-state regional organizations that were related to the topic of the public issue. These individuals were able to draw upon their pre-existing network ties to coordinate and mobilize collective actions as expected from literature reviews (Diani & McAdam, 2003; McAdam & Paulsen, 1993). The interesting finding from my research, however, is that these organizations were local/in-state rather than state-wide or national organizations even when some of these events hit national news. This suggests that in-field dispute resolution efforts, for example local law enforcement or DEC Environmental Conservation Officers, might

be able to mediate disputes before they become full-blown public issues. As the issue evolves, however, state wildlife agency or wildlife conservation organizations may be able to reach out to related local/in-state organizations to proactively involve them in conflict resolution decision-making processes.

In the two rural communities (Canandaigua-hunting and Queensbury-trapping), each role (disputants, brokers, coordinators) was not played by unique individuals. In Canandaigua one of the initial disputants continued on to coordinate the collective action. In Queensbury, the key coordinator was also the information broker for the collective action. The basis for the public issue itself may reflect differences in how collective actions operate in each of the rural communities. In Canandaigua, the public issue emerged in response to a protracted dispute between two people – a waterfront resident and a waterfowl hunter – whereas in Queensbury, the public issue emerged in response to a concern a resident had about the placement of traps. In this case the action was not in response to a specific incident where a dog was killed in a wildlife trap, but to the awareness of traps within the town boundaries, although a couple of dogs were caught or killed in wildlife traps in nearby towns in previous years.

The public issue policy networks appear more complex in the suburban communities (Southampton, Brookhaven) than the rural communities (Canandaigua, Queensbury). The total number of stakeholders involved with the policy networks, the range of underlying interests, and the dynamic nature of unique individuals serving in key roles for enabling the collective action all contribute to the complexity of the suburban case study communities. The complexity of an issue may actually make resolution efforts easier, especially if stakeholders communicate with stakeholders with different views or if they have both similar and dissimilar interests (Fisher et al., 1991).

Across all four study communities, none of the individuals in key stakeholder and networking roles framed the public issue discussions related to banning waterfowl hunting or furbearer trapping as wildlife harvest issues per se; rather, their concerns focused instead on when, where, and how these hunting and trapping activities might be carried out on shared landscapes as part of a wildlife management program, expressing interests in minimizing the negative impacts resulting from stakeholder interactions. In the two waterfowl hunting communities (Brookhaven and Canandaigua), both initial disputants and coordinators expressed concerns over proximity of hunting activities to residences, especially possessing or discharging firearms and trespassing on private property. In the suburban waterfowl community (Brookhaven), the initial disputant stated a goal for the waterfowl hunters and waterfront residents to co-exist safely, and the coordinator of the prevailing collective action sought an amicable resolution where hunters and residents might be respectful of each other. However, in the rural waterfowl community (Canandaigua), an initial disputant who opposed hunting and who also was the prevailing collective action coordinator acknowledged the legality of waterfowl hunting and sought to outright change state laws dealing with waterfowl hunting.

In the wildlife trapping case study communities, the results reveal much more variation in framing the issue. In the suburban trapping community (Southampton), the initial disputant framed the issue as a personal decision that she would have made if she had known wildlife traps were placed in the area where she walked her dog. However, in the rural trapping community (Queensbury), the initial disputant framed the issue as a need to curtail the placement of wildlife traps in proximity to occupied dwellings (e.g., homes, schools). In 1996, heavily influenced by voters in suburban areas, Colorado voters banned wildlife trapping in the state in a ballot initiative (Cockrell, 1999). Given this trend, one would expect the opposite to be true – i.e., the

suburban initial disputants might ask for curtailment and the rural initial disputants might ask for individual choice. The story gets more complicated when, in both trapping communities, the key roles of collective action coordinator and information broker were played by individuals who represent organizations. Queensbury had just one individual play both the coordinator and broker roles, representing the prevailing collective action goal of making it easier to trap by preventing additional regulations. Southampton's collective action coordinator represented a local domestic animal rescue organization and acknowledged the legality of the trapping and dog-walking activities involved with the accident of a dog killed in a wildlife trap, but represented the prevailing goal of restricting trapping on town-owned lands, and of delegating wildlife trapping authority from the state to counties through the legislative process. The key information broker in Southampton, representing a local wildlife rescue organization, expressed concern over the humaneness of wildlife trapping when non-target species were caught in a trap. My results clarify previous research that has shown the importance of organizations at influencing participation in collective action by identifying local/in-state regional organizations specifically (Diani & McAdam, 2003; McAdam & Paulsen, 1993).

Local-level policy changes were made in both of the suburban communities, but not in the two rural communities. The Town of Brookhaven in 2007 passed a resolution that amended local law to permit waterfowl hunters to possess unloaded and encased firearms on the town-owned boat ramp for the purposes of waterfowl hunting on the harbor. This action essentially expanded access to waterfowl hunting locations on suburban Long Island. The Town of Southampton in 2006 passed a resolution that amended local law to prohibit wildlife trapping on town-owned land. This action essentially restricted access to wildlife trapping locations, for both regulated

recreational and nuisance wildlife trapping within the Town of Southampton. (Nearby towns of Easthampton and Shelter Island also passed similar local laws.)

In the trapping communities, the initial disputants framed the issues differently than the prevailing perspective of the collective action coordinator. This signals that the temporal element may be especially important when a state wildlife management agency is dealing with impacts from stakeholder interactions. For example, an Environmental Conservation Officer may be able to act as a mediator when responding to in-field disputes among stakeholders. However, if an issue is not resolved in-field, then the dispute may continue to escalate and develop into a public issue. As the public issue develops, other stakeholders become involved with the process, playing key roles and perhaps representing different perspectives than the initial disputants' perspectives. At this point, a state wildlife agency may no longer be able to rely on passive-receptive engagement with stakeholders, but may need to take a much more active role in managing the impacts from stakeholder interactions (Decker & Chase, 1997). An intermediary approach may be necessary, in which the agency and key stakeholders engage in two-way communication and learning for those stakeholders interested in these issues (Leong et al., 2009).

The broader challenge of managing the impacts from stakeholder interactions is becoming an increasingly important focus for wildlife management agencies (Riley et al., 2002). Currently, the DEC uses stakeholder engagement strategies in the form of waterfowl hunter and wildlife trapper committees and task forces to provide recommendations for wildlife harvest regulations or address issues as needed. Expanding the scope of the waterfowl hunting and wildlife trapping citizen committees might be one way to proactively engage other stakeholders and their interests before negative impacts from stakeholder interactions become the focus of bona fide public issues. Another option might be to keep the committees as is, and

restrict their scope to recommending hunting and trapping seasons, while implementing a separate intermediary approach (Leong et al., 2009) that brings together the key stakeholders surrounding these issues in a stakeholder engagement process for learning about each others' interests to focus on broader policy issues.

Conclusion

Wildlife management has experienced a re-focusing from “managing populations to enhancing wildlife’s societal values” (Messmer, 2000). Managing stakeholder interactions may be an important step if state wildlife agencies or conservation organizations seek to promote wildlife as a resource rather than as a pest, sustain wildlife hunting and trapping opportunities, and maintain tools for wildlife management. Developing the capacity to manage impacts from stakeholder interactions is not the sole responsibility of state or federal wildlife management agencies (Riley et al., 2002), but governmental agencies can take the lead on stakeholder engagement strategies which may enable efficient management, working with other organizations and levels of government as appropriate. Incorporating broader perspectives into wildlife management decisions may be a critical step for keeping the wildlife management institution in a central role for achieving conservation goals. Failure to do so could diminish management credibility and effectiveness (Decker, Krueger, Baer, Knuth, & Richmond, 1996)

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CHAPTER 5

MANAGING FOR FURBEARER TRAPPING AND DOG-RELATED RECREATION ON PUBLIC LANDS: TOWARDS LIMITING MULTIPLE-USE CONFLICTS IN NEW YORK STATE

Abstract

Different types of resource users frequent public lands, resulting in opportunity for conflict among users. I examined the emerging issue of interactions among wildlife trappers and dog owners for multiple-use of public lands by examining stakeholders' socio-demographics, experiences, attitudes, political engagement, and behavioral intentions. I sent mail-back questionnaires to licensed dog owners ($n=1,000$) and wildlife trappers ($n=1,000$) in a 10-county area of New York State. Results revealed dog owner respondents and wildlife trapper respondents exhibit similar trends in public land usage, especially for state forests, municipal lands, and along public roads or sidewalks. Seeing dogs under voice and sight command of their owner or trainer was positively related to satisfaction with management of public lands for wildlife trapping and recreation with dogs for both wildlife trapper respondents and dog owner respondents ($p<0.05$). Less than half of dog owner respondents were concerned their dog may become caught in a wildlife trap set on public lands in New York State; concern levels were higher for dog owner respondents who used public lands. Management agencies seeking to minimize negative and maximize positive stakeholder interactions might communicate the importance of dogs being under voice and sight command while on public lands or implement spatial management policies, especially on state forests, municipal lands, or along roads or

sidewalks. These management actions may help maintain the broadest range of recreational activities on public lands, acceptable wildlife management tools, and public support for wildlife as a resource.

Introduction

Wildlife trapping played an important role in the exploration and development of North America, and provided a foundation for economic activity (Manfredo et al., 1999). Since its inception, wildlife management has included a focus on managing furbearer species and attention to furbearers was an integral part of the early conservation movement (Batcheller, Decker, Hamilton, & Organ, 2000), but has been challenged by anti-trapping sentiment that has evolved over time (Gentile, 1987). Today, furbearer management faces many challenges, including declining participation in trapping activities (Batcheller et al., 2000), limited public support for wildlife trapping (Batcheller et al., 2000; Cockrell, 1999; Manfredo et al., 1999), increased demand for nuisance animal control (Armstrong & Rossi, 2000), and limited understanding of furbearer management by wildlife professionals and administrators (Batcheller et al., 2000). An emerging issue for furbearer management is the problem of domestic dogs killed in body-gripping traps set on public lands resulting in negative interactions among wildlife-related stakeholders. My research examines the issue of negative interactions among stakeholders related to furbearer trapping and suggests which elements might need to be managed to limit conflicts in the future. Developing policies that limit negative interactions and maximize positive interactions among stakeholders may be important for wildlife management agencies seeking to retain the broadest range of recreational opportunities on public lands, wildlife management tools, and public support for wildlife as a resource.

Wildlife trapping and dog-related recreation on public lands may lead to negative interactions among stakeholders related to furbearer management. In Montana, for example, concerned stakeholders have organized the Footloose Montana campaign, which focuses on the threat of trapping to public safety on public lands, and its impact on our natural resources ("Footloose Montana Website," 2010). Participation in and support for trapping activities are in decline (Andelt, Phillips, Schmidt, & Gill, 1999; Batcheller et al., 2000; USFWS, 2007), while at the same time, the number of companion dogs continues to increase (Bekoff & Meaney, 1997) making this an issue in need of examination. Although negative interactions among dog owners and trappers are limited, such disputes have the potential to escalate into broader social conflicts as these events become a more public issue, and stakeholders seek to influence wildlife management policy through interest group formation, lobbying agency personnel or commissioners, or direct democracy (Cockrell, 1999; Minnis, 1998). Seeking to influence policies by contacting decision-makers is an example of collective action when two or more stakeholders seek common goals (Olson, 1965; Ostrom, 1998).

Although most trapping controversies have focused on foothold traps (Andelt et al., 1999; Gentile, 1987), in New York State, domestic dogs were killed in body-gripping wildlife traps placed on public lands in Southampton in 2005 (MSNBC, 2006) and Lake Luzerne in 2006 (Post-Star, 2006). New York State Environmental Conservation Law (§11-1101 to-1109 (NYS, 2010)) regulates the activities of wildlife trappers, and includes a provision prohibiting interference with legally-set wildlife traps set by another person (§11-1101 (9) (NYS, 2010)) and threatening, following, or physically attacking trappers (§ 11-0110 (2) (NYS, 2010)). Agriculture and Markets Law regulates the licensing of domestic dogs in New York State (§109 (NYS, 2010)), but delegates authority to local municipalities for registering dogs and preventing them

from running at large (i.e., local leash laws) (§ 124 (NYS, 2010)). Environmental Conservation Law specifically addresses free-roaming dogs by prohibiting dog owners or trainers from allowing dogs to run at large in fields or woods inhabited by deer, except on lands owned by the dog owner or trainer) (§ 11-0923 (NYS, 2010)). Another section of Environmental Conservation Law permits environmental conservation officers, forest rangers, members of state police or county police, park patrolmen, park rangers, dog wardens, forest rangers, or municipal police within their jurisdiction to kill dogs that are pursuing or killing deer without any requirement for damages to the dog owner (§ 11-0529 (NYS, 2010)).

To understand how state wildlife management agencies might proactively anticipate negative interactions between stakeholders, and develop management strategies to limit such interactions, I sought to understand the factors underlying stakeholder satisfactions. I based my analysis on selected social, psychological, and cultural theoretical perspectives that have been applied to explain the relationship among stakeholders' attitudes, experiences, and behavioral intentions. According to the Theory of Reasoned Action framework, attitudes have been shown to predict behavioral intentions (Ajzen & Fishbein, 1980). Attitudes are evaluative beliefs about something (Decker et al., 2001). Many attitudes may influence behavioral intentions (Fulton et al., 1996). For my research, I examined a number of attitudes toward wildlife trapping and recreation with dogs to provide insights about which items are important for motivating political engagement with multiple land-use public issues.

My study objectives were to: (1) explore the extent to which licensed wildlife trappers differed from licensed dog owners in their attitudes toward management of and behaviors on multi-use public lands; (2) identify which variables (e.g., socio-demographic, attitudinal, experiences, political engagement) best explained satisfaction with public lands management for recreation with dogs and

wildlife trapping; and (3) identify which variables best explained intentions to contact decision-makers when stakeholders have concerns relating to multiple-use management of public lands.

Study Area

I selected a 10-county area (Chemung, Chenango, Cortland, Madison, Ontario, Schuyler, Seneca, Steuben, Tompkins, and Yates) in the Southern Tier of New York to study potential interactions between licensed wildlife trappers and licensed dog owners. I selected this area because it is a heavily trapped area of the state (G. Batcheller, personal communication), and it has substantial state public lands available for multiple use recreation as well as a significant dog owner population distributed across suburban centers and rural counties (Table 5-1). Additionally, I did not find a record of any dogs that were caught in wildlife traps in this area during the time immediately preceding the study, which was important for the context of this as an anticipatory analysis in an area that had not yet experienced direct dog owner-trapper negative interactions that resulted in public issue discussions.

Table 5-1. Characteristics of 10-county study area for potential interactions between furbearer trappers and dog owners in New York's Southern Tier, USA, 2009.

County	Total Licensed Trappers ¹	Total Licensed Dog owners ²	Total County Population ³	Density (people/Sq. Mile in 2000) ³	Major City ^{3,4}
Chemung	117	13,537	87,813	223.2	Elmira
Chenango	266	9,175	50,898	57.5	None
Cortland	133	5,866	48,302	97.2	Cortland
Madison	240	9,001	69,766	105.9	None
Ontario	244	14,550	104,475	155.6	None
Schuyler	78	4,054	18,888	58.4	None
Seneca	80	3,845	34,086	102.6	None
Steuben	332	18,228	96,573	70.9	Corning
Tompkins	83	10,487	101,136	202.7	Ithaca
Yates	109	3,420	24,652	72.8	None
Total	1,682	92,163	636,589		

¹ (NYSDEC, 2009)

² (NYS DAM, 2009)

³ (USCB, 2009)

⁴ Major city = >10,000 population (USCB, 2009)

Methods

I sent mail-back questionnaires to a random sample of 1,000 licensed dog owners and 1,000 licensed wildlife trappers residing in the 10-county area of the Southern Tier of New York during the spring of 2009. Although the question items on the survey instruments were similar, the questionnaires differed by group, including specific items tailored to the stakeholder group. I modified the tailored design method (Dillman et al., 2009) and did not send a pre-notice letter or include a token financial incentive. The first mailing consisted of a cover letter and questionnaire with return postage paid. The second mailing, sent one week later, consisted of a thank you/reminder letter. The third mailing, sent two weeks after the second mailing, consisted of a cover letter and replacement questionnaire with return postage paid. The final mailing, sent one week after the third mailing, was a thank you/reminder letter. Two weeks after the final mailing, I conducted non-respondent telephone surveys using a subset of the questionnaire items with 90 individuals from each group.

The mailings were administered by the Human Dimensions Research Unit (HDRU) at Cornell University; the non-respondent surveys were conducted by the Survey Research Institute at Cornell University. This research was approved by the Cornell University Institutional Review Board (#0908000566).

Development of the questionnaires was informed by insights from informal exploratory interviews with staff from the New York State Department of Environmental Conservation (NYS DEC) and key stakeholders in case study communities that had experienced conflicts relating to wildlife trapping and recreation with dogs (chapters 3 & 4). Collaborators with the NYS DEC reviewed the questionnaires for content validity. Colleagues at the HDRU reviewed the questionnaires for face validity. I revised the questionnaires based on feedback to improve the clarity and precision of the final items.

The trapper sample ($n=1,000$) was drawn randomly from the population of wildlife trappers age 18 years and older living in the 10-county study area who had purchased a trapping license the previous year. The dog owner sample ($n=1,000$) was drawn randomly from the population of dog owners (age 18 years and older) who were current license holders registered with the New York State Department of Agriculture and Markets.

I asked all respondents a variety of attitude questions and to indicate on a 5-point Likert scale the extent to which they strongly disagreed (1) to strongly agreed (5) with each statement relating to their attitudes toward multiple-use of public lands. I asked all respondents questions about their previous political engagement and the likelihood of future political engagement if they had a concern over the multiple-use of public lands. A set of socio-demographic and recreational activity questions were included on the questionnaire for each sample, as well as general media use. I asked questions about the types of land on which they conducted trapping activities or

walked their dog in a typical year for the wildlife trapper and dog owner questionnaires, respectively. I asked dog owners questions relating to their level of concern that their dog may be caught in a wildlife trap set on public lands, and if they had ever found a trap on public lands. I asked wildlife trappers if they were dog owners themselves. I conducted Chi-square analysis to detect possible differences between respondents and non-respondents for each stratum. I used SPSS 16.0 and Minitab 15 for the analyses consisting of: Chi-square of land usage types, ANOVA for comparing the means of attitude statements among the various groups, linear regression for identifying factors predicting satisfaction with management of public lands in the region for both recreation with dogs and wildlife trapping, and binomial logistic regression for predicting intentions to contact decision-makers with concerns regarding multiple-use of public lands.

Results

Of the 1,000 surveys sent to each of the random samples of licensed dog owners and licensed wildlife trappers, I received 446 completed questionnaires from the dog owner sample and 487 from the wildlife trapper sample. After accounting for undeliverables and refusals, this resulted in an adjusted response rate of 45.5% for dog owners and 50.5% for wildlife trappers.

I did not detect differences between respondents and non-respondents for most of the items, except for the following. Among trappers, respondents differed from non-respondents in whether or not they had trapped furbearers since 2003. Nearly eighty-three percent of trappers in my sample of respondents reported they set traps in New York State during the regulated trapping season anytime since 2003 as compared to only 62.9% of non-respondents, indicating respondents were more engaged in trapping activities and potentially more interested in trapping-related policies ($\chi_1^2 =$

18.398, $P \leq 0.001$). Trapper respondents had a higher political activity in that 57.1% reported they had contacted government officials seeking to change policies in the past five years as compared to 23.3% of non-respondents ($\chi_1^2 = 34.651$, $P \leq 0.001$). These limited differences between respondents and non-respondents suggest that trapper questionnaire respondents may be more avid than non-respondents and therefore more likely to be actively setting wildlife traps and concerned about policies and their consequences. The relationships reported here, therefore, may reflect more closely the trappers more likely to engage in political activity rather than describe the general population of wildlife trappers in this area.

Dog owner non-respondents expressed less concern (24.5%) than respondents (41.9%) that their dog might get caught in a wildlife trap on public lands in New York State ($\chi_1^2 = 17.051$, $P \leq 0.001$). In general, approximately half of dog owners who responded (54.4%) reported that they had contacted government officials seeking to change policies as compared to the nearly one-quarter (22.2%) of non-respondents ($\chi_1^2 = 30.890$, $P \leq 0.001$). I did not weight the dog owner data for additional data analysis because respondents appeared to exhibit stronger viewpoints toward agreement/disagreement items than non-respondents, and respondents might be the most likely to become politically active on these policy discussions and the focus of this study is on understanding factors that may drive stakeholder political activity. Dog owner non-respondents generally did not have strong opinions toward these items – this is not unexpected since I sampled from such a large sampling frame and many dog owners may not have had a reason to consider these issues prior to receiving the questionnaire. As with the trapper group, relationships reported for dog owners should be interpreted to reflect dog owners who find these issues more salient rather than describe the general dog owner population in this region. Future research might

narrow the sampling frame to those individuals who are concerned about interacting with furbearer traps while they are walking their dogs on public lands.

Respondent Socio-Demographics

On average, dog owner respondents were 57 years old (SD =12.9 years) and over half (58.7%) were female. Approximately one-quarter (24.1%) of dog owner respondents had a high-school education/GED education while 30.2% reported having some college education. The median income reported for dog owner respondents was \$40,000-\$59,999; however, 74.9% reported earning less than \$60,000 annually. Very few (1.4%) dog owner respondents reported they trapped wildlife. In contrast, wildlife trapper respondents were 53 years old (SD =15.34 years). Almost all (99%) of wildlife trapper respondents were male. Approximately one-third (36.1%) of wildlife trapper respondents had a high-school education/GED with another third (31.4%) having some college education. Sixty percent of wildlife trapper respondents' annual household income was less than \$60,000; however, the median reported trapper respondent household income was \$40,000-\$59,999 annually. Almost two-thirds (63.6%) of wildlife trapper respondents owned a dog.

Reported Usage of Lands

Wildlife trapper respondents predominantly used their own private property (66.4%) or private property where another owner has granted them permission (91.4%) for trapping activities. When using public lands, most trapper respondents trapped along a road (40.4%), but 27.3% used municipal lands, 25.8% used state forests, and 18.4% used state wildlife management areas (Table 5-2). While nearly two-thirds (64.7%) of licensed dog owner respondents do not take their dog with them to any public lands in New York State, others had varying levels of public land usage. Over half (50.9%) of dog owner respondents took their dog with them along public roads or sidewalks, while over a third (34.2%) took their dogs with them on municipal

lands. Dog owner respondents used state lands much less with 14.0% using state parks, 12.2% using state forests, and 6.1% using state wildlife management areas (Table 5-2). Usage rates of the types of lands differed between wildlife trapper respondents and dog owner respondents, except for municipal lands ($p < 0.01$) (χ^2 details are reported in Table 5-2).

Table 5-2. Percent of licensed dog owner respondents ($n=446$) and licensed wildlife trapper respondents ($n=487$) using different types of land in the 10-county study area in New York, USA, 2009.

What types of lands do you use?	% Using	% Using	$X^2(df=1)$	P
	Licensed dog owners	Licensed wildlife trappers		
State forests	12.2	25.8	25.28	0.000
State wildlife management areas	6.1	18.4	30.20	0.000
State parks	14.0	n/a ¹		
Municipal lands	34.2	27.3	4.64	0.031
Public roads or sidewalks ²	50.9	40.4	9.27	0.002
Unknown public lands	1.4	14.6	52.29	0.000
Private property that I own	80.1	66.4	20.12	0.000
Private property where another owner granted me permission	24.7	91.4	378.11	0.000

¹Wildlife trapping is not permitted in New York State Parks.

²For the wildlife trapper questionnaire, this item was stated as “Along a road (e.g., US or NY Routes, gravel roads).” On the dog-owner questionnaire, this item was stated as “Public roads or sidewalks.” We combined these categories because spatially they overlap, although trappers are not permitted to place wildlife traps within 100’ of a house, dwelling, etc..

Concern Dog May Get Caught in Trap

Dog owner respondents differed significantly in their concern (54.4% unconcerned vs. 45.7% concerned) their dog might get caught in a wildlife trap set on public lands in New York State ($\chi_1^2 = 5.747$, $P = 0.017$). Dog owner respondents who used state forests, municipal lands, or public roads or sidewalks for walking their dog differed significantly ($p < 0.01$) in their concern their dog may get caught in a wildlife trap on public lands (Table 5-3). In contrast, dog owner respondents who used state wildlife management areas or state parks did not differ significantly in their concern (Table 5-3).

Table 5-3. Percent of licensed dog-owner respondents ($n=413$) concerned their own dog may be caught in a wildlife trap set on public lands, by the type of public lands used in a 10-county area in New York State's Southern Tier, USA, 2009.

Land Type	% Unconcerned¹	% Concerned²	χ^2 (df=1)	P
State forests	28.0	70.0	11.169	0.001
State wildlife management areas	41.7	50.0	0.260	0.610
State parks	35.2	61.1	4.906	0.027
Municipal lands	35.7	51.5	7.081	0.008
Public roads or sidewalks ³	36.5	50.0	10.655	0.001

¹% Unconcerned = respondents who indicated they were not at all concerned or somewhat unconcerned.

²% Concerned = respondents who indicated they were somewhat concerned or very concerned.

³ For the wildlife trapper questionnaire, this item was stated as "Along a road (e.g., US or NY Routes, gravel roads)." On the dog-owner questionnaire, this item was stated as "Public roads or sidewalks." We combined these categories because spatially they overlap, although trappers are not permitted to place wildlife traps within 100' of a house, dwelling, etc..

Attitudes Toward Multi-Use Public Land Management

Respondent groups differed in level of agreement on most items relating to attitudes toward multiple-use public land management, comparing respondents who were only dog owners, only wildlife trappers, or both dog owners and wildlife trappers ($p < 0.01$, Table 5-4); the exception was satisfaction with the management of public lands for both recreation with dogs and wildlife trapping. Dog owner respondents had greater agreement than both wildlife trapper respondents and dog owner/wildlife trapper respondents for all of significantly different attitude items toward multiple-use management of public lands for both wildlife trapping and recreation with dogs; the exception was agreement that trappers should be allowed to trap wildlife on public lands, where dog owning wildlife trappers had greatest agreement ($p < 0.05$, Table 5-4).

Table 5-4. Licensed dog owner respondents' (n=421), wildlife trapper respondents' (n=160), and dog owning wildlife trapper respondents' (n=289) attitudes toward the multiple-use management of public lands for wildlife trapping and recreation with dogs in New York's Southern Tier counties, USA, 2009.

Attitude Statement ¹	Dog owners only ^{2,3}	Wildlife trappers only ^{2,3}	Dog owning wildlife trappers ^{2,3}	F	p
	Mean ¹ (SD)	Mean ¹ (SD)	Mean ¹ (SD)		
Dog owners have relatively few places where they can take their dogs and allow them to run off-leash.	3.75(1.00) ^a	2.61(1.13) ^b	2.66(1.19) ^b	113.604	0.000
Most dogs I see on public lands are under voice and sight command of their owner or trainer.	3.44(0.95) ^a	3.14(1.06) ^b	3.24(1.04) ^b	6.352	0.002
Trappers should be allowed to trap wildlife on public lands.	2.91(1.33) ^a	4.58(0.74) ^b	4.60(0.76) ^b	266.385	0.000
I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping.	3.22(0.79) ^a	3.30(1.11) ^a	3.32(1.01) ^a	1.098	0.334
I am concerned about dogs getting caught in wildlife traps on public lands.	3.74(1.06) ^a	3.35(1.16) ^b	3.42(1.20) ^b	10.762	0.000

¹ Five-point Likert scale with 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree.

² Dog owners were significantly different (p<0.05) than both wildlife trappers only and dog owning wildlife trappers using Bonferroni post-hoc pairwise comparison.

³ Any two means that do not have the same superscript are significantly different at p<0.05. Degrees of freedom for all ANOVA are 2.

Political Engagement

Wildlife trapper respondents (39.3%) and dog owner respondents (33.9%) seem similarly likely to have contacted a NYS Assembly or Senate Member in a previous political engagement on any issues ($\chi_1^2 = 2.84$, $P = 0.092$). Wildlife trapper respondents (25.3%) reported contacting NYS Assembly or Senate Members at significantly higher rates than dog owner respondents (13.6%) ($\chi_1^2 = 19.23$, $P \leq 0.001$) regarding wildlife issues. In comparison, 54.3% of trapper respondents reported contacting the NYS DEC for wildlife management issues whereas only 33.2% of dog owner respondents reported contacting the NYS DEC ($\chi_1^2 = 40.79$, $P \leq 0.001$). Dog owner respondents and wildlife trapper respondents exhibited similar levels of political engagement with local government; 33.2% and 26.9% respectively reported they contacted their local government officials for any issue within the past five years ($\chi_1^2 = 4.25$, $P = 0.039$), and 14.7% and 14.3% respectively reported contacting local government officials regarding wildlife issues ($\chi_1^2 = 0.04$, $P = 0.843$).

Approximately three-quarters of dog owner respondents (71.1%) and wildlife trapper respondents (84.6%) indicated they would contact the NYS DEC ($\chi_1^2 = 22.66$, $P \leq 0.001$) if they had a concern over multiple-use of public lands in the future. Significantly more dog owner respondents (53.6%) than wildlife trapper respondents (43.1%) would contact local government officials ($\chi_1^2 = 8.95$, $P = 0.003$). Significantly more dog owner respondents (46.3%) than wildlife trapper respondents (37.3%) would also contact the local police department ($\chi_1^2 = 6.64$, $P = 0.010$). Fewer dog owner respondents would contact NYS Assembly or Senate Members (37.9%) compared to wildlife trapper respondents who would (48.9%) ($\chi_1^2 = 9.99$, $P = 0.002$). NYS DEC will likely hear from the majority of both dog owners and wildlife trappers initially if these stakeholders have a concern over multiple-uses of public lands. Local government officials; however, are likely to hear from dog owners while NYS

Assembly or Senate Members are likely to hear from wildlife trappers if these stakeholders have concerns over multiple-uses of public lands.

Satisfaction With Multiple-Use Public Land Management

Satisfaction with management of public lands within the study region for both recreation with dogs and wildlife trapping was significantly and positively influenced by attitudes toward seeing dogs on public lands under voice and sight command of their owner or trainer for both dog owner respondents and wildlife trapper respondents (Table 5-5). Dog owner respondents' satisfaction with management of public lands was negatively influenced by attitudes toward dog owners having relatively few places where they can take their dogs and allow them to run off-leash; however, wildlife trapper respondents' satisfaction was positively influenced by the same attitude statement. Trapper respondents' use of state wildlife management areas was positively related to their satisfaction with multiple-use public land management. However, trapping along public roads and concern about dogs getting caught in wildlife traps on public lands were negatively related to trapper respondents' satisfaction. Allowing trappers to trap wildlife on public lands was significantly and positively related to dog owner respondents' satisfaction; however, income was negatively related. The satisfaction model explained 19% of variance for dog owner respondents and 11% for wildlife trapper respondents, suggesting other factors may be important (Table 5-5).

Table 5-5. Regression model predicting satisfaction with management of public lands in region for both recreation with dogs and wildlife trapping licensed for both dog owner respondents ($n=446$) and licensed wildlife trapper respondents ($n=487$), New York State, USA, 2009.

Variable	Definition	Licensed dog owners		Licensed wildlife trappers	
		Unstandardized β	Std. Error	Unstandardized β	Std. Error
Off-leash dog places	Respondents' disagreement or agreement (1-5 scale) with statement "Dog owners have relatively few places where they can take their dogs and allow them to run off-leash."	-0.083**	0.042	0.153**	0.053
Dogs under control	Respondents' disagreement or agreement (1-5 scale) with statement "Most dogs I see on public lands are under voice and sight command of their owner or trainer."	0.093**	0.043	0.185***	0.056
Trap public lands	Respondents' disagreement or agreement (1-5 scale) with statement "Trappers should be allowed to trap wildlife on public lands."	0.145***	0.036	n.s.	n.s.
Dog concern	Respondents' disagreement or agreement (1-5 scale) with statement "I am concerned about dogs getting caught in wildlife traps on public lands."	n.s.	n.s.	-0.098**	0.050
State wildlife management areas	Dummy variable, 1 if respondent used state wildlife management areas for trapping or dog-walking activities, 0 otherwise.	n.s.	n.s.	0.262*	0.158
Roads or sidewalks	Dummy variable, 1 if respondent used public roads or sidewalks ¹ for trapping or dog-walking activities, 0 otherwise.	n.s.	n.s.	-0.287**	0.132
Nonconsumptive	Dummy variable, 1 if respondent watched or photographed wildlife over the last 12 months, 0 otherwise.	-0.153*	0.095	n.s.	n.s.
Income	Respondent indicated annual household income, before taxes, in 2008. Six categories from \leq \$39,000 to \geq \$120,000.	-0.074**	0.028	n.s.	n.s.
Constant		3.456***	0.446	2.776**	1.149
		$R^2=0.191$		$R^2=0.108$	

* = $p < 0.10$, ** = $p < 0.05$, *** = $p < 0.001$

¹For the wildlife trapper questionnaire, this item was stated as "Along a road (e.g., US or NY Routes, gravel roads)." On the dog-owner questionnaire, this item was stated as "Public roads or sidewalks." We combined these categories because spatially they overlap, although trappers are not permitted to place wildlife traps within 100' of a house, dwelling, etc.

Intentions to Contact Decision-Makers

Contacting NYS Assembly or Senate Members. Socio-demographics, land use, and previous political engagement were associated with dog owner respondents' intentions to contact NYS Assembly or Senate Members in the future if they have concerns over multiple-use of public lands. The model had a pseudo-R² of 30% and correctly predicted probabilities 71% of the time (Table 5-6). Dog owner respondents who used state forests were 2 times more likely to contact NYS Assembly or Senate Members than those who did not use state forests. Similarly, dog owner respondents who had previous political engagement experience were 7 times more likely to contact elected state decision-makers than respondents with no prior political engagement.

For wildlife trapper respondents, attitudes, previous political engagement, and media use were associated with intentions to contact NYS Assembly or Senate members in a model that had a pseudo-R² of 39% and correctly predicted probabilities 76% of the time (Table 5-7). Trapper respondents who reported prior political engagement were 11 times more likely to contact state level decision-makers than those who had no previous political involvement. Trapper respondents who received general news from TV or print newspapers sources were 1.7 and 1.8 times more likely, respectively, than respondents who do not use those sources for their general news. Wildlife trapper respondents were 1.7 times more likely to contact NYS Assembly or Senate Members for a one-unit increase in agreement with allowing trappers to trap wildlife on public lands than the reference agreement level.

Table 5-6. Logistic regression for predicting intentions to contact decision-makers in the state conservation agency (NYS DEC), the state legislature, and local government for licensed dog owner respondents (n=446), New York State, USA, 2009.

Variable	NYS DEC			Assembly or Senate Members			Local Government Officials		
	Exp(β)	β	Wald	Exp(β)	β	Wald	Exp(β)	β	Wald
<i>Demographics</i>									
Age		n.s.		1.023	0.023	2.744*	1.053	0.52	13.288***
Income	0.783	-0.244	5.316**		n.s.		1.216	0.195	3.976*
Education		n.s.		1.281	0.247	2.951*		n.s.	
<i>Attitudes statements...</i>									
Most dogs I see on public lands are under voice and sight command of their owner or trainer.	1.404	0.339	4.582**		n.s.		1.322	0.279	3.543*
I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping.		n.s.			n.s.		1.485	0.395	4.484**
<i>Lands you use</i>									
State forests		n.s.		2.137	0.759	2.899*		n.s.	
Previous political engagement		n.s.		7.045	1.952	34.367***	2.279	0.824	8.720***
<i>General media use</i>									
TV	0.401	-0.915	4.479**		n.s.		0.521	-0.653	3.222*
Print newspapers	0.603	-0.506	2.618*		n.s.			n.s.	
<i>Outdoor activities</i>									
Consumptive wildlife activities	3.823	1.341	12.367***		n.s.		1.932	0.658	4.072**
Motorized activities	0.289	-1.241	11.262***		n.s.		0.471	-0.753	5.343**
<hr/>									
Nagelkerke pseudo R ² =		0.281			0.304			0.264	
<hr/>									
% correctly predicted as not contacting		35.2%			77.8%			57.0%	
% correctly predicted as contacting		93.4%			59.8%			79.3%	
Overall correctly predicted		77.2%			70.9%			69.6%	

*Significant at p<0.10, **significant at p<.05, ***significant at p<0.01

Table 5-7. Logistic regression for predicting intentions to contact decision-makers in the state conservation agency (NYS DEC), the state legislature, and local government for licensed wildlife trapper respondents' ($n=487$), New York State, USA, 2009.

Variable	NYS DEC			Assembly or Senate Members			Local Government Officials		
	Exp(β)	β	Wald	Exp(β)	β	Wald	Exp(β)	β	Wald
<i>Attitudes statement...</i>									
Trappers should be allowed to trap wildlife on public lands.		n.s.		1.714	0.539	7.303***		n.s.	
<i>Lands you use</i>									
State forests		n.s.			n.s.		0.520	-0.654	4.640**
Previous political engagement	2.586	0.950	7.434***	11.223	2.418	59.775***	3.104	1.133	17.102***
<i>General media use</i>									
TV		n.s.		1.723	0.544	2.821*		n.s.	
Print newspapers	1.961	0.673	3.793**	1.834	0.607	4.220**		n.s.	
Nagelkerke pseudo $R^2=$									
		0.116			0.393			0.167	
% correctly predicted as not contacting		2.1%			68.4%			73.6%	
% correctly predicted as contacting		99.6%			82.7%			52.9%	
Overall correctly predicted		85.5%			75.9%			64.6%	

*Significant at $p<0.10$, **significant at $p<0.05$, ***significant at $p<0.01$

Contacting NYS Department of Environmental Conservation. Socio-demographics, attitudes, media use, and outdoor activities were associated with dog owners' intentions to contact NYS DEC if they had a concern over multiple-use of public lands in the future (Table 5-6). The model had a pseudo-R² of 28% and correctly predicted the probabilities 77% of the time. Dog owner respondents who participated in consumptive wildlife activities were 3.8 times more likely to contact NYS DEC than those who did not. Dog owner respondents were 1.4 times more likely to contact NYS DEC for a one-unit increase in agreement with the statement "most dogs I see on public lands are under voice and sight command of their owner or trainer" than the reference agreement level. The model predicting wildlife trapper respondents' intentions to contact NYS DEC had a pseudo-R² of 12%, but correctly predicted probabilities 86% of the time (Table 5-7). Wildlife trapper respondents with prior political engagement experience were 2.5 times more likely to contact NYS DEC than those without prior political experience.

Contacting Local Government Officials. Previous political engagement, outdoor activities, attitudes, media use, and socio-demographics were associated with dog owner respondents' intentions to contact local government officials in the future if they have a concern over multiple-use management (Table 5-6). The model pseudo-R² of 26% and correctly predicted the probabilities at 70% level. Dog owner respondents reporting previous political engagement were 2.3 times more likely to contact local government officials than those without previous political experience. When the dog owner respondents engaged in consumptive wildlife activities, they were 1.9 times more likely to contact local government officials than dog owners who did not engage in consumptive wildlife activities. Dog owner respondents were 1.5 times more likely to contact local government officials for a one-unit increase in satisfaction with management of public lands in the study region for both recreation

with dogs and wildlife trapping as compared to the reference satisfaction level. The model predicting wildlife trapper respondents' intentions to contact local government officials had a pseudo- R^2 of 17% and correctly predicted the probabilities 65% of the time (Table 5-7). Trapper respondents with prior political engagement experience were 3 times more likely to contact locally-elected decision-makers than those with no prior political experience.

Discussion

Managing for the impacts from interactions among stakeholders will likely be an important component of wildlife management in the 21st century (Riley et al., 2002). If state wildlife management agencies want to reduce the impacts of negative stakeholder interactions, they may need to take an active role in anticipating emerging issues and implementing strategies to minimize conflicts. Developing policies that limit negative interactions and maximize positive interactions among stakeholders may be important for wildlife management agencies seeking to retain the broadest range of recreational opportunities on public lands, acceptable wildlife management tools, and public support for wildlife as a resource.

Few differences existed between respondents and non-respondents, except for items related to avidity and political activity, therefore the results from this research are likely to reflect the general population of dog owners and wildlife trappers. If wildlife managers want to improve satisfaction with management of public lands for both recreation with dogs and wildlife trapping among trappers and dog owners, they may need to address the issue of dogs being under voice or sight command while on public lands. Increasing satisfaction may be an important policy goal as less than half of both wildlife trappers and dog owners expressed satisfaction with management of public lands for both recreation types. Because dog owners agreed that wildlife

trappers should be allowed to trap wildlife on public lands, focusing on having dogs under voice or sight command may be more productive than focusing on reducing trapping opportunities. Similarly, having dogs under control may reduce trapper concerns and increase trapper satisfaction, as trapper satisfaction was negatively related to concern for dogs getting caught in wildlife traps. In contrast, the current Footloose Montana organization addresses the management of public lands for recreation with dogs and wildlife trapping by seeking to prohibit trapping rather than advocating responsible dog ownership and active control of dogs by owners on public lands ("Footloose Montana Website," 2010).

Stakeholder outreach efforts might target dog owners who walk their dogs on state forests, municipal lands, or along public roads or sidewalk to communicate the range of activities occurring on those types of lands, the types of risks they potentially expose their pet to, and the importance of having their dog under control (either on a leash or under voice or sight command). Dog owners who use state wildlife management areas or state parks were less concerned about their dog getting caught in a trap. Perhaps stakeholders are more aware of the allowance of wildlife trapping in wildlife management areas or the restriction on wildlife trapping in state parks leading dog owners to be less concerned about their dog getting caught in a wildlife trap because they know the activities permitted on those lands.

Managing potential stakeholder interactions between wildlife trappers and dog owners on municipal lands, state forests, or along roads or sidewalks may be important as we found similar levels of usage on these types of lands for wildlife trapping and recreation with dogs. Research on trappers' use of land types has typically focused on private, state, or federal lands (Muth, Daigle, Zwick, & Glass, 1996), leaving other types of lands unexamined. State natural resource management agencies do not have the authority to implement land use policies to limit negative stakeholder interactions

on municipal lands (e.g., establish dog parks or trapping zones); however, they do have the authority to manage when and where trapping activities occur in proximity to other types of activities. New York State, for example, recently revised wildlife trapping regulations and now prohibit body-gripping traps from being placed within 100' of a public trail (except in wildlife management areas) (6 NYCRR section 6.3 (NYS, 2010)). Environmental Conservation Law prohibits wildlife trappers from setting or placing traps along public highways ((NYS, 2010)§11-1101 (10)) and prohibits the placement of traps within 100' of a dwelling, school building, school playground, or church without the written consent of the owner or lessee of the property where the trap is set ((NYS, 2010)§11-1101 (12)).

Spatial management and education efforts may help reduce conflicts among stakeholders using public lands (Vaske, Donnelly, Wittmann, & Laidlaw, 1995). Focusing on state forest land users may be particularly productive in this region, as the use of these lands was a motivating factor for intentions to contact decisions makers by both dog owners and trappers in this study. Print newspapers may be an important information source for wildlife trappers or dog owners as respondents who were more likely to contact any decision-makers also reported more use of print newspapers for their general news. Although print newspaper readership is declining (PEW, 2008), wildlife-related stakeholders appear to continue to rely on print newspapers (C A Loker, Shanahan, & Decker, 1999). How a newspaper frames the problem may influence how stakeholders relying on newspapers for information perceive the problem. Finally, dog owners and trappers who already engage in political discussions are the most likely to contact NYS DEC, NYS Assembly or Senate Members, or local government officials seeking to influence policies relating to the multiple-use of public lands for recreation with dogs and wildlife trapping. If state wildlife management agencies seek to incorporate the range of stakeholder interests,

they may need to employ various citizen participation strategies (e.g., Leong et al., (2009)) to incorporate the appropriate information from stakeholders not likely to contact them.

Management Implications

Wildlife management agencies have an opportunity to manage social interactions among wildlife-related stakeholders to prevent unfortunate accidents of dogs being killed in wildlife traps. Strategies that minimize negative and maximize positive interactions might include communicating the importance of dogs being under voice and sight command while on public lands, or implementing spatial user group separation management policies, especially on state forests, municipal lands, or along roads or sidewalks. These management actions may help maintain the broadest range of recreational activities on public lands while limiting conflicts among users.

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CHAPTER 6

MANAGING FOR WATERFOWL HUNTING ALONG DEVELOPED WATERWAYS: TOWARDS LIMITING WILDLIFE-RELATED STAKEHOLDER CONFLICTS IN NEW YORK STATE

Abstract

Suburban or exurban development along waterways encroaching on publicly accessible hunting areas may lead to social conflicts between waterfowl hunters and waterfront residents who are spatially co-located. I examined this emerging issue of conflicts between waterfowl hunters and waterfront residents by examining stakeholders' socio-demographic characteristics, experiences, attitudes, political engagement, and behavioral intentions. I sent mail-back questionnaires to waterfowl hunters ($n=1,000$) and waterfront residents ($n=1,000$) in the greater-Rochester area of New York State. Results revealed that hunters who hunted closer to occupied dwellings were less sensitive to residents' concerns and experienced more harassment from waterfront residents. Waterfront residents who knew waterfowl hunters were more supportive of waterfowl hunting. Wildlife management agencies or conservation organizations seeking to minimize stakeholder conflicts between waterfront residents and waterfowl hunters may consider communication and education efforts targeted toward waterfront residents, waterfowl hunters, and local police departments.

Introduction

Conflicts among wildlife-related stakeholders are common and can sometimes be useful in suggesting new directions and encouraging engagement in policy discussions. However, when conflict escalates and becomes disruptive it can do more

harm than good (Minnis, 2001). Conflicts may emerge in wildlife management occurs as suburban or exurban development encroaches upon public hunting areas, leading to social conflicts among wildlife-related stakeholders who are spatially co-located. Identifying which elements lead to conflicts, and mediating or resolving conflicts when they do occur, is an important part of wildlife management in the future because conflicts will likely increase or escalate (Case and Seng (1999) as cited in (Minnis, 2001)). My research addresses this information gap by examining factors that lead to social conflicts among waterfowl hunters and waterfront residents in New York State (NYS).

Suburban or exurban development along NYS waterways accessible to waterfowl hunters, including the Great Lakes, the Finger Lakes, major rivers, and Long Island, is likely to continue in the future leading to conflicts between waterfowl hunters and waterfront residents. Waterfowl hunters have recreation-based ties to publicly-accessible waters while waterfront residents have non-recreation-based ties to the same waters, making the issue similar in complexity to recent multiple-use conflicts on public lands (Lewicki, Gray, & Elliott, 2003; Morgan et al., 2007). Interactions between hunters and private landowners, for example landowners who post no-hunting signs on their property, have been studied by human dimensions or recreation researchers since the 1960s (Graefe & Thapa, 2004 as cited in (Decker et al., 2001 ; Lauber & Brown, 2000; Morgan et al., 2007). In the context of suburban or exurban residential areas, however, waterfowl hunters are hunting on public waterways adjacent to privately-owned waterfront properties where the resident objects to hunting activities, but has no authority over the activities occurring on the public waters.

NYS Environmental Conservation law permits hunters hunting migratory game birds to discharge a shotgun over water if no dwelling house or public structure,

livestock or person is situated in the line of discharge less than five hundred feet from the point of discharge (§ 11-0931 4(b)4 (NYS, 2010)), exempting waterfowl hunters from the law which prohibits firearm discharge within 500' from occupied structures (§ 11-0931 4(a)2) (NYS, 2010)). This provision of law, enacted in the 1960s, creates conditions where waterfowl hunters may legally engage in waterfowl hunting any distance from occupied dwellings as long as they are not trespassing on private property (B. Swift, NYS DEC, personal communication). Environmental Conservation Law also prohibits the interference with the lawful taking of wildlife by threatening, following, or physically attacking hunters (§ 11-0110 (2) (NYS, 2010)).

Social interactions among consumptive and non-consumptive stakeholders may influence non-hunters' support for wildlife-related recreational opportunities and hunters' intentions to go hunting again (Enck & Van Den Berg, 2007; Stedman & Decker, 1996). Managing stakeholder interactions may be important for wildlife management agencies at a time when participation in and public support for hunting activities are declining (Brown, Decker, Siemer, & Enck, 2000; Riley et al., 2002; Stedman & Decker, 1996; USFWS, 2007). Wildlife managers will need information on stakeholders' attitudes, experiences, and behavioral intentions, especially when the two stakeholder groups share little in common except that they are spatially co-located. Information from this research may inform changes in regulations, stakeholder engagement, or public education strategies to limit negative and promote positive stakeholder interactions.

Study Focus

The study objectives were to (1) determine waterfowl hunters' experiences hunting along developed waterfronts; (2) determine waterfront residents' experiences with waterfowl hunters; (3) compare the extent to which stakeholder interaction experiences are related to attitudes toward waterfowl hunting along developed

waterfronts; (4) identify which variables (e.g., socio-demographic, attitudinal, experiences, and political engagement) explained acceptance among waterfront residents of waterfowl hunting in the BBSWMA; and (5) identify which variables explained intentions to contact authorities when waterfront residents and waterfowl hunters have concerns relating to waterfowl hunting along developed waterways.

Methods

I selected the greater Braddock Bay State Wildlife Management Area (BBSWMA) along Lake Ontario in western New York to study potential interactions between waterfront residents and waterfowl hunters. I selected this area because BBSWMA is managed for migratory birds and is a popular waterfowl hunting and bird-watching destination with residential riparian development on some of the waterways. This area may be relevant to conditions in other areas of the state that have had similar conflicts between residents and waterfowl hunters. The wetland complex along the Lake Ontario shoreline is within the Town of Greece, which is approximately 15 miles to the west from Rochester, NY. The Town of Greece has a population density of approximately 2,250 people/square mile (Town of Greece, 2010). Over the past 10 years, residents have complained about waterfowl hunting occurring in this area. In response, the Town has worked with the New York State Department of Environmental Conservation (NYS DEC), residents, and waterfowl hunters to establish a committee to discuss problems relating to waterfowl hunting, which meets as needed to discuss any concerns about hunting along developed waterways (H. Kennedy, NYS DEC, personal communication).

During the spring of 2009, I sent mail-back questionnaires to a random sample of 1,000 residents living near BBSWMA and 1,000 waterfowl hunters from the greater-Rochester area registered in the migrating bird Harvest Information Program

(HIP). Although the general topics of inquiry were similar, specific questions were tailored to each stakeholder group. I utilized a modified tailored design method (Dillman et al., 2009) because I did not send a pre-notice letter or include a token financial incentive. The first mailing consisted of a cover letter and questionnaire with return postage paid. The second mailing, sent one week later consisted of a thank you/reminder letter. The third mailing, sent two weeks after the second mailing consisted of a cover letter and replacement questionnaire with return postage paid. The final mailing, sent one week after the third mailing, was a thank you/reminder letter. Two weeks after the final mailing, I completed non-respondent telephone interviews with 90 waterfowl hunters and 90 waterfront residents using a subset of the questionnaire items. The mailings were administered by the Human Dimensions Research Unit (HDRU) at Cornell University; the non-respondent surveys were conducted by the Survey Research Institute at Cornell University. This research was approved by the Cornell University Institutional Review Board (#0908000566).

Development of the questionnaires was informed by insights from informal exploratory interviews with staff from NYS DEC and semi-structured interviews with key stakeholders in case study communities (e.g., chapters 3 &4) that had conflicts between waterfowl hunters and waterfront residents along developed waterways. Collaborators with the NYS DEC reviewed the questionnaires for content validity. Colleagues at the HDRU reviewed the questionnaires for face validity. I revised the questionnaires based on feedback to improve the clarity and precision of the final items.

The resident sample ($n=1,000$) was drawn randomly from the population of property owners age 18 years and older who permanently live on a residential parcel within 0.25 miles of BBSWMA wetland complex (i.e., Braddock Bay, Round Pond, Buck Pond, Long Pond, Cranberry Pond, and Lake Ontario). The waterfowl hunter

sample ($n=1,000$) was drawn randomly from the population of waterfowl hunters (age 18 years and older) from the ZIP codes 14400 – 14699, which encompass counties in the greater-Rochester area (e.g., Genesee, Ontario, Orleans, Livingston, Monroe, Seneca, Wayne, Wyoming, and Yates) who had registered with the HIP, indicating they hunted for ducks, geese, brants, coots, or snipes the previous season. I drew the sample from this selected group of HIP registrants because they reported hunting species likely to be found in the study area and live within a short drive to BBSWMA.

I asked a series of attitude questions using a 5-point Likert scale and asked respondents to indicate the extent to which they strongly disagreed (1) to strongly agreed (5) with each statement relating to their attitudes toward waterfowl hunting. I asked questions about their previous political engagement and the likelihood of future political engagement if they had a concern over waterfowl hunting. A set of socio-demographic and recreational activity questions were included on both survey types, as well as media use for seeking general news. I asked waterfowl hunters questions about the types of land or water and proximity to occupied dwellings on which they conducted waterfowl hunting in New York State, and if they had ever been harassed while hunting or while preparing for or leaving the hunt. I asked residents questions about their experiences with waterfowl and waterfowl hunters. I conducted Chi-square analysis to detect possible differences between respondents and non-respondents for each group. I used SPSS 16.0 and Minitab 15 for the analyses consisting of: ANOVA and independent t-tests for comparing the means of attitude statements among the various groups; linear regression for identifying factors predicting acceptance of waterfowl hunting in respondents' area; and binomial logistic regression for predicting hunter harassment while hunting in front of residential homes and intentions to contact authorities with concerns over waterfowl hunting.

Results

I received 480 completed questionnaires from waterfront residents. After accounting for undeliverables and refusals, my adjusted response rate was 49.4%. I received 592 completed questionnaires from waterfowl hunters. After accounting for undeliverables and refusals my adjusted response rate was 60.5%.

I did not detect differences between respondents and non-respondents for most of the variables, with a few exceptions. I asked waterfront resident non-respondents 20 questions, of which I detected significant differences between respondents and non-respondents for 5 items (Appendix E, Table E-3). Waterfront resident non-respondents exhibited greater agreement (93.2%) with the statement “hunters should seek the permission of waterfront residents before hunting in front of an occupied dwelling” than respondents (74.1%) $X^2(1, N = 490) = 10.750, p=0.001$. Waterfront resident respondents reported higher levels of political engagement than non-respondents with 56.1% of respondents reporting they contacted government officials seeking to influence policies as compared to non-respondents (27.8%) $X^2(1, N = 552) = 24.122, p=0.000$.

I asked waterfowl hunter non-respondents a total of 35 questions, of which I did not detect significant differences between respondents and non-respondents for 22 items (Appendix E, Table E-4). Waterfowl hunter non-respondents reported higher rates of hunting over land (88.9%) as compared to respondents (75.5%) $X^2(1, N = 681) = 8.006, p=0.005$. Conversely, respondents reported higher rates of hunting over water (87.5%) than non-respondents (73.3%) $X^2(1, N = 681) = 12.696, p=0.000$. Nearly half of all waterfowl hunter respondents (53.5%) reported some level of political engagement by reporting that they contacted government officials seeking to influence policies, whereas only 12.4% of non-respondents reported similar activities $X^2(1, N = 661) = 52.220, p=0.000$. I did not weight the data for further analysis

because of the limited differences found between respondents and non-respondents in each group (residents, hunters), and the focus of this research on understanding factors related to likely political engagement.

Respondent Socio-Demographics

Respondents had similar social-demographic characteristics. Waterfront resident respondents' average age was 58 years old (SD = 13.4 years) and 50.2% had at least an undergraduate degree. Although the median annual household income reported was \$60,000 - \$79,999, more than one third (37.2%) of resident respondents reported earning an annual household income of less than \$59,999 annually. The majority (66.7%) of resident respondents were male. Over two-thirds (70.8%) of waterfront resident respondents reported they knew waterfowl hunters and 7.8% reported they hunted waterfowl themselves. Waterfowl hunter respondents' average age was 48 years (SD = 13.44 years) and almost entirely (99.5%) male. Over forty percent (42.6%) of hunter respondents earned at least an undergraduate degree. Almost forty percent (39.1%) of hunter respondents reported earning an annual household income of less than \$59,999; the median income was \$60,000 - \$79,999. A small proportion (13.1%) of hunter respondents reported they lived along a waterfront.

Hunting experiences along developed waterfronts

Overall, 55% of waterfowl hunter respondents reported hunting within 500' from occupied dwellings, including 38.2% who reported hunting less than 250' from the nearest occupied dwellings (Table 6-1). Over one quarter (26.2%) of hunter respondents reported they had been harassed by residents of waterfront homes while they were waterfowl hunting in New York State. I predicted the probability of being harassed by residents of waterfront homes while waterfowl hunting in NYS using binary logistic regression with distance to nearest occupied dwelling as the independent variable. Hunter respondents who hunted farther from occupied

dwellings were less likely to report being harassed by residents of waterfront homes while hunting in NYS (Table 6-1). Hunter respondents who were 100-250' from occupied dwellings were half as likely to report harassment while those who hunted >500' were one-tenth as likely to report harassment (Table 6-1).

Table 6-1. Logistic regression predicting waterfowl hunter respondents' ($n=592$) harassment while hunting near occupied dwellings in New York State, USA, 2009.

Distance to nearest occupied dwelling	% Overall	Harassed by residents of waterfront homes while you were waterfowl hunting in NYS.		
		Exp(β)	β	Wald
Less than 100 feet	17.0			61.779***
100 – 250 feet	21.2	0.590	-0.527	3.515*
251 – 500 feet	17.2	0.381	-0.965	9.908**
More than 500 feet	44.7	0.116	-2.155	55.662***
Nagelkerke pseudo $R^2=$				0.178
% correctly predicted as not harassed				88.9%
% correctly predicted as harassed				32.5%
Overall correctly predicted				73.4%

*Significant at $p<0.10$, **significant at $p<.05$, ***significant at $p<0.01$

Attitudes toward waterfowl hunting along waterfronts

Resident respondents and hunter respondents differed significantly ($p=0.000$) on all attitudes toward waterfowl hunting items (Table 6-2). A majority of resident respondents (57.9%) and hunter respondents (76.6%) agreed that waterfowl hunting in their area is acceptable (Table 6-2). Less than one-quarter of resident respondents (20.2%) agreed that waterfowl hunting can safely occur any distance from the water's edge whereas 72.5% of hunter respondents agreed (Table 6-2). About 34% of resident respondents agreed that waterfowl hunting begins too early in the morning (Table 6-2).

Table 6-2. Overall attitudes of waterfront resident respondents (n=427) and waterfowl hunter respondents (n=562) toward waterfowl hunting along waterfronts developed with residential homes in New York State, USA, 2009.

Attitude statements relating to waterfowl hunting along waterfronts developed with residential homes.	Overall				X ² (df=1)	P
	Waterfront residents		Waterfowl hunters			
	% Disagree ¹	% Agree ²	% Disagree ¹	% Agree ²		
I am concerned about a lack of public access opportunities for waterfowl hunting.	47.7	18.3	8.3	76.3	333.30	0.000
I can understand why non-hunters may be bothered by the noise from waterfowl hunting.	14.5	72.2	22.5	59.3	14.56	0.000
Waterfowl hunters should be able to hunt any day of the week during the hunting season.	39.7	41.2	3.6	93.2	274.84	0.000
Waterfowl hunting begins too early in the morning.	38.7	34.4	92.4	2.7	261.39	0.000
Waterfowl hunting can safely occur any distance from the water's edge.	54.5	20.2	12.1	72.5	297.32	0.000
Most non-hunters do not understand waterfowl hunting.	14.0	56.8	4.9	83.7	41.47	0.000
Most waterfowl hunting in my area is acceptable ³ .	22.7	57.9	8.0	76.6	51.63	0.000

¹Strongly disagree + disagree

²Strongly agree + agree

³For residents, "my area" was defined as BBSWMA and for hunters "my area" was defined as the greater-Rochester area, which include BBSWMA.

Mean attitudes toward hunting along waterfronts developed with residential homes did not differ between waterfowl hunter respondents and waterfowl hunting resident respondents (Table 6-3). Resident respondents who knew waterfowl hunters and resident respondents who do not know waterfowl hunters had significantly different means ($p < 0.05$) for all attitudes toward waterfowl hunting along waterfronts developed with residential homes (Table 6-3). Waterfront resident respondents who knew waterfowl hunters exhibited greater acceptance than resident respondents who did not know hunters regarding waterfowl hunting and less disagreement that waterfowl hunting can safely occur any distance from water's edge (Table 6-3).

Hunter respondents who had been harassed by residents while waterfowl hunting differed significantly ($p < 0.05$) from hunter respondents who had not been harassed for most attitude items toward hunting along waterfronts developed with residential homes (Table 6-4). Hunter respondents who did not report being harassed exhibited significantly greater understanding ($\bar{x} = 3.48$) of why non-hunters may be bothered by the noise from waterfowl hunting than hunters who reported being harassed ($\bar{x} = 3.12$) ($p < 0.001$). Those hunter respondents who reported being harassed exhibited greater agreement ($\bar{x} = 4.26$) with the statement "waterfowl hunting can safely occur any distance from the water's edge" than hunter respondents who were not harassed ($\bar{x} = 3.89$) ($p < 0.001$). Harassed hunter respondents also agreed more than non-harassed respondents ($\bar{x} = 4.50$) that "most non-hunters do not understand waterfowl hunting" ($\bar{x} = 4.14$) ($p < 0.000$).

Table 6-3. Attitudes of waterfront resident respondents and waterfowl hunter respondents toward waterfowl hunting along waterfronts developed with residential homes in New York State, USA, 2009.

	BBSWMA waterfront residents			Waterfowl Hunters (WH)	<i>F</i>	<i>p</i>
	Don't know WH Not WH <i>n</i> =126	Know WH Not WH <i>n</i> =264	Know WH WH <i>n</i> =37	<i>n</i> =562		
Attitude statements relating to waterfowl hunting along waterfronts developed with residential homes.	Mean ¹ (SD)	Mean ¹ (SD)	Mean ¹ (SD)	Mean ¹ (SD)		
I am concerned about a lack of public access opportunities for waterfowl hunting.	1.98(0.95) ^a	2.51(1.15) ^b	4.27(0.99) ^c	4.14(0.99) ^c	250.182	0.000
I can understand why non-hunters may be bothered by the noise from waterfowl hunting.	4.13(1.02) ^a	3.82(1.15) ^b	3.32(0.94) ^b	3.38(1.07) ^b	24.167	0.000
Waterfowl hunters should be able to hunt any day of the week during the hunting season.	2.47(1.30) ^a	2.99(1.34) ^b	4.57(0.87) ^c	4.61(0.79) ^c	253.446	0.000
Waterfowl hunting begins too early in the morning.	3.72(1.25) ^a	2.95(1.37) ^b	1.41(0.64) ^c	1.51(0.78) ^c	238.303	0.000
Waterfowl hunting can safely occur any distance from the water's edge.	1.86(1.05) ^a	2.39(1.29) ^b	3.76(1.30) ^c	3.99(1.10) ^c	184.630	0.000
Most non-hunters do not understand waterfowl hunting.	3.65(1.05) ^a	3.52(1.10) ^a	4.31(0.89) ^b	4.24(0.90) ^b	39.061	0.000
Most waterfowl hunting in my area is acceptable. ³	2.88(1.28) ^a	3.43(1.17) ^b	3.92(0.98) ^c	3.90(0.89) ^c	39.283	0.000

¹ Five-point Likert scale with 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree.

² Any two means that do not have the same superscript are significantly different at $p < 0.05$. Degrees of freedom for all ANOVA are 3.

³ For residents, "my area" was defined as BBSWMA and for hunters "my area" was defined as the greater-Rochester area, which include BBSWMA.

Table 6-4. Means comparison of attitudes of waterfowl hunter respondents who have ($n=150$) vs. have not been harassed ($n=412$) by residents of waterfront homes towards waterfowl hunting along waterfronts developed with residential homes in New York State, USA, 2009.

Attitude statements relating to waterfowl hunting along waterfronts developed with residential homes.	Waterfowl hunters		t	p
	Not harassed	Harassed		
	Mean ¹	Mean ¹		
I am concerned about a lack of public access opportunities for waterfowl hunting.	4.06	4.35	-3.28	0.001
I can understand why non-hunters may be bothered by the noise from waterfowl hunting.	3.48	3.12	3.29	0.001
Waterfowl hunters should be able to hunt any day of the week during the hunting season.	4.57	4.70	-1.71	0.088
Waterfowl hunting begins too early in the morning.	1.56	1.36	2.78	0.006
Waterfowl hunting can safely occur any distance from the water's edge.	3.89	4.26	-3.43	0.001
Most non-hunters do not understand waterfowl hunting.	4.14	4.5	-4.45	0.000
Most waterfowl hunting in my area is acceptable. ²	3.92	3.84	0.89	0.375

¹Five-point Likert scale with 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree.

²For hunters "my area" was defined as the greater-Rochester area, which include BBSWMA.

Political engagement

When asked about previous political engagement, 30.7% of resident respondents and 35.3% of hunter respondents reported contacting NYS Assembly or Senate Members for any issue within the past five years $X^2(1, N = 1034) = 2.41, p=0.120$. Almost sixty percent (58.7%) of hunter respondents reported contacting NYS DEC for wildlife management issues whereas 31.6% of resident respondents contacted NYS DEC for wildlife management issues within the past five years $X^2(1, N = 1034) = 75.64, p=0.000$. Almost all (98.5%) waterfront resident respondents reported contacting their local government officials for any issue within the past five years, whereas more than one quarter (27.3%) of waterfowl hunter respondents reported similar activities $X^2(1, N = 1034) = 14.806, p=0.000$.

I asked about intentions to contact authorities if they had a concern over waterfowl hunting in their area in the future. Three-quarters (77.4%) of resident respondents and 89.3% of hunter respondents indicated they would contact NYS DEC $X^2(4, N = 952) = 13.525, p=0.009$. Significantly more resident respondents (58.9%) than hunter respondents would contact the local police department (26.7%) $X^2(4, N = 861) = 11.378, p=0.000$. A greater proportion of hunter respondents (39.4%) than waterfront resident respondents (28.2%) reported they would contact NYS Assembly or Senate Members $X^2(4, N = 819) = 8.671, p=0.070$.

Acceptance of Waterfowl Hunting in Local Area

The attitudinal items explained 62.7% of the variance in waterfront resident respondents' acceptance of waterfowl hunting in their area, for residents who do not know waterfowl hunters and are not hunters themselves (Table 6-5). Waterfowl hunting beginning too early in the morning was negatively related to acceptance. Concern for lack of public access opportunities for waterfowl hunting, allowing hunters to hunt any day of the week during hunting season, and non-hunters not

understanding waterfowl hunting were all significantly and positively related to resident respondents' acceptance of waterfowl hunting in their area (Table 6-5).

For waterfront resident respondents who knew waterfowl hunters, the attitudinal items explained 51.7% of the variance in their acceptance of waterfowl hunting in their area (Table 6-5). Concern for lack of public access opportunities, allowing hunters to hunt any day of the week during hunting season, hunting safely occurring any distance from waters' edge, and non-hunters not understanding waterfowl hunting were all significantly and positively related to resident respondents who knew waterfowl hunters acceptance of waterfowl hunting in their area (Table 6-5).

The model explaining waterfowl hunter respondents' acceptance of waterfowl hunting in their area explained very little of the variance (6.6%), suggesting other factors are the main drivers. Despite the low R^2 , education, participation in non-consumptive wildlife activities, and waterfowl hunting safely occurring any distance from water's edge were significantly and positively related to acceptance of waterfowl hunting (Table 6-5). Concern for lack of public access opportunities and allowing hunters to hunt any day of the week during the hunting season were negatively related to acceptance of waterfowl hunting in their area (Table 6-5).

Table 6-5. Linear regression models predicting acceptance of waterfowl hunting in residential area for waterfront resident respondents, including non-hunter residents who do not know hunters, and residents who know hunters, and for waterfowl hunter respondents, greater-Rochester, New York State, USA, 2009.

Variable	Waterfront residents		Waterfowl hunters (WH)
	Don't know WH Not WH n=126	Know WH Not WH n=264	n=599
	β	β	β
I am concerned about a lack of public access opportunities for waterfowl hunting.	0.218*	0.149**	-0.135***
Waterfowl hunters should be able to hunt any day of the week during the hunting season.	0.257**	0.172**	-0.090**
Waterfowl hunting begins too early in the morning.	-0.376***	-0.222***	n.s.
Waterfowl hunting can safely occur any distance from the water's edge.	n.s.	0.211***	0.079*
Most non-hunters do not understand waterfowl hunting.	0.187*	0.194***	n.s.
Non-consumptive wildlife activities	n.s.	n.s.	0.086*
Education	n.s.	n.s.	0.159***
	R ² =0.627	R ² =0.517	R ² =0.066

* = $p < 0.10$, ** = $p < 0.05$, *** = $p < 0.001$

Intentions to Contact Authorities

Contacting NYS Assembly or Senate Members. Socio-demographics, knowing waterfowl hunters, attitudes toward public access for hunting and understanding why non-hunters may be bothered by the noise from waterfowl hunting, previous political engagement, and participation in extreme activities were associated with waterfront resident respondents' intentions to contact NYS Assembly or Senate Members (Table 6-6). The pseudo-R² for the model was 27%. Resident respondents who had political engagement experience were 4 times more likely than those without prior experience to contact NYS Assembly or Senate Members. Resident respondents who knew waterfowl hunters were half as likely than resident respondents who did not know waterfowl hunters to contact NYS Assembly or Senate Members if they have a concern over waterfowl hunting in the future.

For waterfowl hunter respondents, socio-demographics, attitudes toward public access for hunting, understanding why non-hunters may be bothered by the noise from waterfowl hunting, and distance from water's edge waterfowl hunting can safely occur, previous political engagement, harassment, and hunter distance from occupied dwellings were associated with intentions to contact NYS Assembly or Senate Members in a model that had a pseudo-R² of 26% (Table 6-7). Hunter respondents who had previous political engagement experience were 3.6 times more likely than hunter respondents without prior political experience to contact NYS Assembly or Senate Members. Hunter respondents who experienced being harassed or hunted at least 100' from occupied dwellings, however, were less than half as likely than hunter respondents who had not been harassed or hunted <100' from occupied dwellings to contact NYS Assembly or Senate Members.

Contacting NYS Department of Environmental Conservation. Attitudes toward understanding why non-hunters may be bothered by the noise from waterfowl hunting

and prior political engagement were associated with waterfowl hunter respondents' intentions to contact NYS DEC if they had a concern over waterfowl hunting in the future (Table 6-7). The pseudo-R² was 25% for this model. Hunter respondents who had previous political engagement experience were 2.8 times more likely than hunter respondents without prior political experience to contact NYS DEC. Those who agreed with the statement "most non-hunters do not understand waterfowl hunting" were 1.5 times more likely than hunter respondents who disagreed with this statement to contact NYS DEC. The model predicting waterfront resident respondents' intentions to contact NYS DEC had a low pseudo-R² value of 18% (Table 6-6); however, respondents who knew waterfowl hunters were 3.8 times more likely than resident respondents who did not know waterfowl hunters to contact NYS DEC.

Contacting Local Police Departments. The models for predicting intentions to contact local police departments had little explanatory power, with only a pseudo-R² of 19% for waterfront resident respondents (Table 6-6) and 14% for waterfowl hunter respondents (Table 6-7). Hunter respondents were nearly 2 times more likely to contact local police departments if they had been harassed by waterfront residents than hunters who had not been harassed.

Table 6-6. Logistic regression models predicting intentions to contact authorities of waterfront resident respondents ($n=480$) living near Braddock Bay State Wildlife Management Area, New York State, USA, 2009.

Variable	NYS DEC			Assembly or Senate Members			Local Police Departments		
	Exp(β)	β	Wald	Exp(β)	β	Wald	Exp(β)	β	Wald
Income		n.s.			n.s.		1.229	0.206	3.539*
Know waterfowl hunters	3.820	1.340	5.399**	0.446	-0.807	2.765*		n.s.	
Waterfowl hunter		n.s.			n.s.		0.362	-1.017	3.197*
I am concerned about a lack of public access opportunities for waterfowl hunting.		n.s.		1.588	0.463	4.619**		n.s.	
I can understand why non-hunters may be bothered by the noise from waterfowl hunting.		n.s.		0.664	-0.410	3.653**		n.s.	
Waterfowl hunting begins too early in the morning.	1.684	0.521	3.928**	1.624	0.485	4.570		n.s.	
Previous political engagement		n.s.		4.040	1.396	9.358***	0.362	-1.017	3.197*
Consumptive wildlife activities	2.884	1.059	4.155**		n.s.		1.971	0.678	3.397*
Motorized activities		n.s.			n.s.		0.433	-0.838	4.471
Non-motorized activities		n.s.			n.s.		2.220	0.798	2.744*
Extreme activities		n.s.		2.208	0.792	3.083*		n.s.	
Nagelkerke pseudo $R^2=$		0.176			0.271			0.193	
% correctly predicted as not contacting		8.8%			87.0%			54.9%	
% correctly predicted as contacting		99.0%			45.5%			82.9%	
Overall correctly predicted		85.3%			73.1%			71.4%	

* = $p < 0.10$, ** = $p < 0.05$, *** = $p < 0.001$

Table 6-7. Logistic regression models predicting intentions to contact authorities of waterfowl hunter respondents ($n=592$) from greater-Rochester area, New York State, USA, 2009.

Variable	NYS DEC			Assembly or Senate Members			Local Police Departments		
	Exp(β)	β	Wald	Exp(β)	β	Wald	Exp(β)	β	Wald
Age		n.s.			n.s.		0.978	-0.022	4.592**
Education		n.s.		1.385	0.326	5.196**		n.s.	
I am concerned about a lack of public access opportunities for waterfowl hunting.		n.s.		1.279	0.246	3.548*		n.s.	
I can understand why non- hunters may be bothered by the noise from waterfowl hunting.		n.s.			n.s.		1.353	0.302	5.446**
Waterfowl hunting can safely occur any distance from the water's edge.		n.s.		1.209	0.190	2.779*		n.s.	
Most non-hunters do not understand waterfowl hunting.	1.524	0.421	4.733**	1.305	0.266	3.056*		n.s.	
Previous political engagement	2.776	1.021	4.546**	3.687	1.305	25.209***		n.s.	
Harassed by waterfront residents		n.s.		0.419	-0.870	7.984***	1.931	0.658	5.133**
<i>Distance hunt from occupied dwellings</i>									
< 100 feet		n.s.		Ref.		6.604*		n.s.	
100-250 feet		n.s.		0.416	-0.876	4.846**		n.s.	
251-500 feet		n.s.		0.439	-0.823	3.786**		n.s.	
>500 feet		n.s.		0.426	-0.854	5.401**		n.s.	
General media use – print newspapers		n.s.			n.s.		1.577	0.455	2.993*
Motorized activities		n.s.			n.s.		3.159	1.150	9.830***
Nagelkerke pseudo R ² =		0.249			0.262			0.138	
% correctly predicted as not contacting		7.4%			75.2%			91.6%	
% correctly predicted as contacting		100.0%			61.6%			22.8%	
Overall correctly predicted		93.9%			69.3%			69.2%	

* = $p < 0.10$, ** = $p < 0.05$, *** = $p < 0.001$

Discussion

Managing the impacts from stakeholders' social interactions will be an important component of wildlife management agencies (Riley et al., 2002), especially when those interactions result in social conflicts among stakeholders. Identifying which elements lead to conflicts, and mediating and resolving conflicts when they do occur, will be an important component of wildlife management as conflicts among stakeholders will likely continue or escalate in the future (Case and Seng (1999) as cited by Minnis 2001). Developing policies and processes that limit negative interactions and maximize positive interactions among stakeholders may be important for wildlife management agencies seeking to retain the broadest range of wildlife use opportunities, wildlife management tools, and public support for wildlife as a resource.

My study results provided evidence that waterfront resident respondents who knew waterfowl hunters were generally less concerned about and more supportive towards waterfowl hunting along developed waterways. Presumably "knowing waterfowl hunters" stems from positive social interactions between hunters and residents. My findings are similar to Stedman & Decker (1996) who found the majority of non-hunters knew hunters and had positive beliefs about hunting as a wildlife management tool. If wildlife management agencies seek to maintain waterfowl hunting opportunities, retain hunters by providing quality hunting experiences, and maintain public support for waterfowl hunting they may need to manage the social interactions among waterfowl hunters and waterfront residents. Managing the impacts of social interactions within a waterfowl hunting context may not only be important for the experiences residents have, but also for the experience hunters have.

The closer waterfowl hunter respondents hunted to occupied dwellings, they more likely they were to experience harassment by waterfront residents. Hunter respondents' who experienced harassment by waterfront residents also exhibited less sensitive attitudes towards understanding residents' concerns about waterfowl hunting along developed waterways. Experiencing harassment or interference by waterfront residents presumably leaves waterfowl hunters dissatisfied with their in-field hunting experience. Negative in-field hunting experiences, and their intensity, may be related to intentions to go hunting again (either the same year or in future years) (Enck & Van Den Berg, 2007).

The majority of respondents, both waterfront residents and waterfowl hunters, agreed that waterfowl hunting in their area was acceptable. The models predicting waterfront resident respondents' acceptance of waterfowl hunting in their area were adequate in that they explained more than 50% of the variance, whereas the model predicting waterfowl hunter respondents' acceptance was insufficient (explaining only 7% variance). Agreement that waterfowl hunting can safely occur any distance from the water's edge was a significant predictor of waterfront resident respondents who knew waterfowl hunters' acceptance of waterfowl hunting in their area. This suggests that if residents know waterfowl hunters they are knowledgeable about waterfowl hunting activities or they trust hunters to conduct hunting activities in a safe manner. Future research can test the relationships among waterfront residents' experiences with waterfowl hunters (positive or negative), knowledge of waterfowl hunting activities, and trust in waterfowl hunters to safely engage in hunting.

The models predicting the probabilities of intentions to contact authorities if respondents had a concern over waterfowl hunting did not have high predictive power, especially for local police departments (14% and 19%, respectively, for hunter and resident respondents) and NYS DEC for resident respondents (18%). The pseudo-R²

was at least 25% for the other models. Assembly or Senate Members will likely hear less from hunter respondents who hunt farther from occupied dwellings and have not experienced harassment than those who hunt closer and experience interference from waterfront residents. Likewise, those resident respondents who know waterfowl hunters are less likely to contact Assembly or Senate Members. If Assembly or Senate Members hear from stakeholders on the issue of waterfowl hunting along developed waterways, they will likely hear from stakeholders on opposite sides of the issue: hunters who hunt closer, and experience more interference from residents, and residents who are not familiar with waterfowl hunters (and presumably waterfowl hunting). Wildlife management agencies may consider interventions that provide opportunities for waterfront residents to positively interact with waterfowl hunters, education programs for waterfowl hunters on responsible hunting, or consider requiring a minimum distance from hunter to occupied dwelling, as many other states require of waterfowl hunters (Schuster, Hammitt, Moore, & Schneider, 2006; Vaske et al., 1995). Research on the human dimensions of wildlife management is important to inform policies relevant to all stakeholders, not only those individuals contacting the authorities to initiate public issue discussions (Cynthia A Loker et al., 1998).

Conclusion

Wildlife managers are seeking ways to manage the impacts from stakeholder interactions by developing policies that limit negative interactions and maximize positive interactions among stakeholders. Implementation of these policies may be important for wildlife management agencies seeking to retain the broadest range of wildlife use opportunities, wildlife management tools, and public support for wildlife as a resource. Waterfront resident respondents and waterfowl hunter respondents have different interests; therefore, addressing a diversity of concerns may be important

because stakeholders are concerned about different things. Creative stakeholder processes may be necessary to help stakeholders realize the potential of developing enduring solutions. A combination of stakeholder education and outreach or spatial management may be necessary to minimize these stakeholder conflicts. Specifically, wildlife agency or conservation organizations seeking to minimize conflicts may institute communication or education efforts that target: (1) waterfront residents for the purposes of increasing their knowledge of waterfowl hunting activities and familiarity with waterfowl hunters; (2) waterfowl hunters for the purposes of emphasizing appropriate proximity between hunter and occupied dwellings; and (3) local law enforcement for the purposes of increasing their knowledge of waterfowl hunting activities and in-field dispute resolution strategies.

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CHAPTER 7

CONCLUSIONS

Social conflicts resulting from negative interactions among stakeholders will be a significant challenge for wildlife managers in the 21st century. Multiple-use conflicts are not uncommon for land management agencies. On federal lands managers have worked for decades to develop policies to manage negative interactions among stakeholders (Morgan et al., 2007; Wondolleck & Yaffee, 2000). Within a wildlife management context, managing the impacts from negative stakeholder interactions resulting from multiple uses on public lands and waterways related to wildlife is an emerging issue. This research lends insights into how wildlife management agencies, which typically focus on managing wildlife resources or stakeholders' actions toward wildlife resources, could anticipate negative stakeholder interactions, respond when negative stakeholder interactions occur, or include affected stakeholders in decision-making processes. How stakeholders interact may be an important management component if state wildlife management agencies seek to preserve future opportunities for wildlife harvest, wildlife management tools, participation in hunting and trapping, as well as improve public support for conservation and maintain public perceptions of wildlife as a renewable resource.

Summary of Findings

In this volume, I sought to demonstrate the relationships among in-field social interactions, stakeholder social networks, public issues, and issue framing as well as the baseline underlying interests, experiences, and attitudes of stakeholders toward multiple-uses within the contexts of furbearer trapping and waterfowl hunting in New

York State. In Chapter 1, I conceptualized two situations with regard to stakeholder conflicts: one for informing wildlife management based on retrospective analysis (Figure 1-1) and one for more proactive wildlife management (Figure 1-2). Overall, my findings suggest that stakeholders with different viewpoints are connected together throughout public issue discussions, although stakeholders who support maintaining or expanding hunting and trapping opportunities were more connected with others having the same policy position in three of the four communities. This study also revealed that stakeholders have similar underlying interests of personal safety, individual rights, and individual privileges motivating them to be involved in policy discussions. Communicating those underlying interests and concerns may be lost in the process of advocating specific positions relating to wildlife harvest opportunities (e.g., ban hunting or trapping in my area).

Using the anticipatory framework to examine potential social interactions among wildlife stakeholders, my study revealed that less than half of both wildlife trapper respondents and dog owner respondents were satisfied with the management of public lands in their region for both recreation with dogs and wildlife trapping. This indicates there is a need to manage wildlife trapping and dog-related recreation on multiple-use public lands to improve stakeholders' satisfaction. My findings suggest that dog owner respondents were supportive of continuing to allow trapping on public lands.

In the waterfowl hunting context, waterfowl hunter respondents and waterfront resident respondents were generally accepting of the waterfowl hunting occurring in their region. My results revealed that waterfowl hunter respondents who hunted closer to occupied dwellings (e.g., <500') experienced higher rates of harassment or interference from waterfront residents and exhibited less sensitivity to residents' concerns. Negative in-field hunting experiences may be related to waterfowl hunters

intentions to go hunting again (Enck & Van Den Berg, 2007). Wildlife management agencies or conservation organizations seeking to retain waterfowl hunters and public support for waterfowl hunting may consider implementing waterfowl hunter education or outreach programs to increase their awareness of waterfront residents' concerns or require a minimum spatial distance between waterfowl hunter and occupied dwelling, as many other states require. Spatial management may be difficult, however, as suburban or exurban development encroaches on publicly accessible waterfowl hunting locations.

My results demonstrated that resident respondents who were familiar with waterfowl hunters exhibited greater support for waterfowl hunting. Wildlife conservation organizations or management agencies seeking to minimize conflicts between waterfront residents and waterfowl hunters may consider implementing outreach or engagement strategies with waterfront residents to increase their familiarity with waterfowl hunters and knowledge of waterfowl hunting activities. Education and spatial management have been suggested as intervention strategies for other social conflicts in natural resources management (Vaske et al., 1995). Management actions of some sort may be necessary because stakeholder conflicts are likely to continue or escalate in the future (Case and Seng (1999) as cited in (Minnis, 2001)).

Integrating the Conceptual Models

Combining the conceptual models presented in Chapter 1 (Figures 1-1 and 1-2) that I used to design this study suggests a revised conceptual model (Figure 7-1). I combined the models together based on the results from my empirical work. Chapters 3, 4, & 6 focused specifically on interpersonal social networks; chapters 5 & 6 focused on relationships based on spatial co-location on publicly accessible lands or

waterways. Both approaches led to insights about the direct (person-by-person or case-by-case network matrix) or indirect (affiliation-by-affiliation matrix) interrelationships among stakeholders, and how these relationships might influence attitudes, experiences, satisfaction, and prior political engagement for intentions to contact decision-makers to influence wildlife management.

Results from chapters 3 & 4 revealed the importance of social networks throughout the issue evolution process when a dispute between consumptive and nonconsumptive stakeholders occurred. Results from Chapter 4 also revealed the social networks that emerged during issue evolution process persisted, even after the issue reached resolution in the case study communities, enabling stakeholders to address similar issues in other areas in the future. Key stakeholders in the Southampton case study community (dog killed in 2005) reported they interacted with stakeholders from the Queensbury case study community (dog killed in 2006). Key stakeholders in the Canandaigua case study community (incident in 2001) reported interactions with stakeholders from Long Island (incidents in 2003 & 2007). Results from chapter 5 revealed the potential for interactions between wildlife trappers or dog owners that may occur on the same parcel (e.g., state forests, municipal lands, or along public roads or sidewalks). These spatially-based potential interactions can be the basis for an affiliation matrix in social network analysis. Chapter 6 revealed the importance of positive or negative social interactions (i.e., relationships, which are the basis for social networks). Results from chapter 3 identified social-demographics, including policy positions, and underlying interests as important factors as the basis for social network relationships.

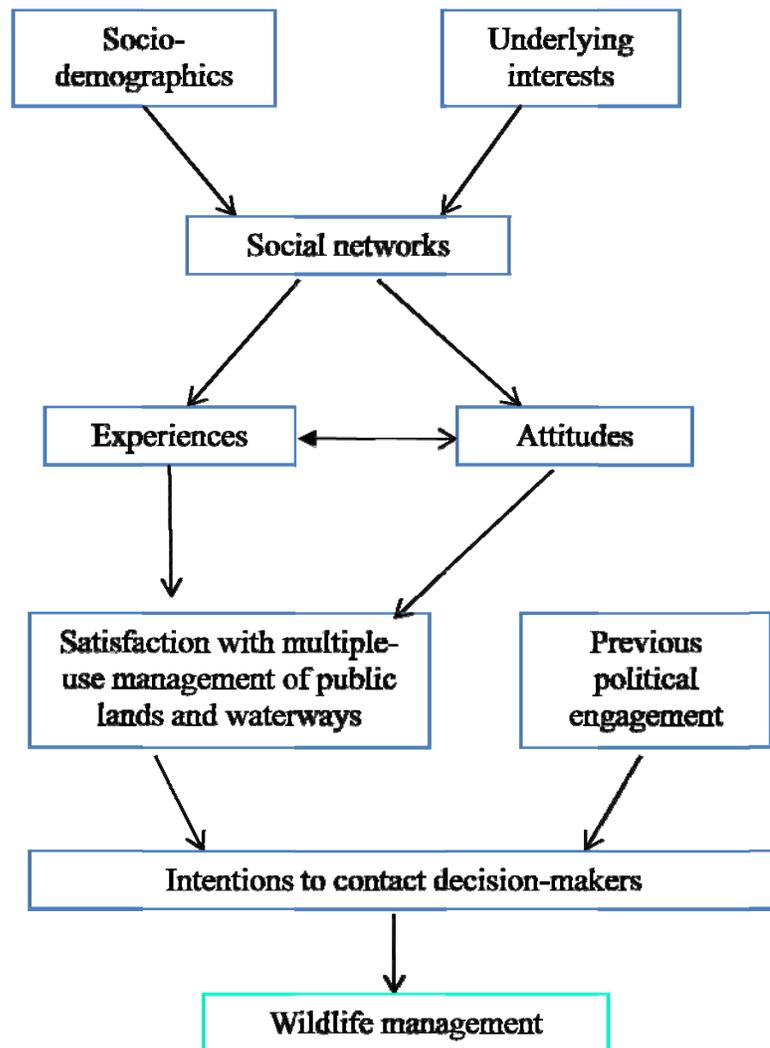


Figure 7-1. Combined conceptual model for predicting intentions to contact decision makers to influence wildlife management policies, New York State, USA, 2009.

In Chapter 3, I focused on my community case study data and explored the extent to which wildlife stakeholders formed homophilous relationships with other stakeholders with the same policy position and the extent of and similarity among their underlying interests. I found in both waterfowl hunting communities (Brookhaven and Canandaigua) and the rural trapping community (Queensbury) that stakeholders

formed homophilous relationships in support of maintaining/expanding hunting or trapping access and opportunities. Policy outcomes in these communities resulted in maintaining or expanding hunting/trapping access and opportunity. Homophily was not exhibited in Southampton (suburban, trapping community); this may be related to the policy outcome that restricts trapping access or opportunity on town-owned lands. As discussed in chapter 3, stakeholders in all communities on both sides of the issue have similar underlying concerns for personal safety, individual rights, and individual privileges. Support for and engagement in wildlife harvest activities and wildlife conservation may have a strong social component that has been overlooked in previous research. Framing the issue in terms of these underlying interests that focus on social interactions may enable NYS DEC, communities, conservation organizations, and other stakeholders to search for mutually acceptable agreements, resolving the conflict (Fisher et al., 1991; Wondolleck & Yaffee, 2000).

In Chapter 4, I focused on understanding public issue discussions as collective actions and sought to identify the prevailing perspective and how it changes over time. In this chapter, I again focused on my four case study communities and identified which individuals played key roles in collective actions over time and how they perceived or framed the policy disputes. Except in Canandaigua, the initial disputants did not play key central roles (coordinator or broker) over time as the issue developed. Individuals representing local or in-state regional organizations played key roles in responding to, communicating with, and mobilizing other stakeholders to become involved and framed the issues in different ways than the initial disputant had. This suggests that groups may use incidents as an opportunity to advance their organization's agenda.

In Chapter 5, I focused on anticipating social conflicts among stakeholders and sent questionnaires to random samples of licensed dog owners and wildlife trappers in

a 10-county area in New York's Southern Tier where conflicts might emerge in the future. The goal of the research was to collect information to inform proactive management and stakeholder engagement strategies. I explored the similarities and differences in dog owner respondents' and wildlife trapper respondents' attitudes and experiences toward management of public lands for both recreation with dogs and wildlife trapping. Both trapper respondents and dog owner respondents were concerned about dogs getting caught in wildlife traps placed on public lands. I identified which variables best explained satisfaction with public land management: both dog owner respondents and trapper respondents were positively influenced by seeing dogs on public lands under voice and sight command of their owner or trainer. I also examined which variables best predicted political intentions to contact decision-makers for issues relating to the multiple-use management of public lands. For both dog owner and wildlife trapper respondents, prior political involvement was an important factor for predicting intentions to contact NYS Assembly or Senate Members and local governmental officials. Identifying which aspects of management might help minimize negative stakeholder interactions will help prevent incidents from occurring in the future.

In Chapter 6, I focused on anticipating social conflicts among stakeholders and sent questionnaires to random samples of waterfront residents living near Braddock Bay State Wildlife Management Area near Rochester, NY, and waterfowl hunters registered in the Harvest Information Program from a multi-county area in Western New York. The goal of this research was to inform proactive management and stakeholder engagement strategies with waterfowl hunters and waterfront residents. I explored the extent of experiences with waterfowl and waterfowl hunting along developed waterfronts and examined differences between waterfowl hunter respondents' and waterfront resident respondents' attitudes toward such activities. I

found that resident respondents who know other waterfowl hunters are more supportive of waterfowl hunting than residents who do not know hunters. I found that hunter respondents who hunted close to the shoreline experienced higher levels of harassment or interference and appeared less tolerant of waterfront residents' concerns. I identified which variables explained acceptance of hunting in their area and found resident respondents were positively motivated by their attitudes toward lack of public access opportunities, allowing hunters to hunt any day of the week during the hunting season, and nonhunters not understanding waterfowl hunting. For hunter respondents, the model explained very little of the variance suggesting other unmeasured factors related to characteristics of migrating waterfowl, the timing of waterfowl hunting regulations, or hunter identity are important for predicting waterfowl hunters' acceptance of waterfowl hunting in their area. Determining aspects of concern for waterfront residents and waterfowl hunters can inform management policies toward minimizing negative stakeholder interactions related to wildlife management in New York State.

Contributions to Theory, Method, Policy, and Practice

I anticipate my dissertation work will contribute to public issue evolution and collective action theories, by documenting how stakeholders with diverse viewpoints are connected together in a social network, with different individuals playing key roles for initiating, coordinating, and communicating about collective actions for public issue discussions. Integrating social network and collective action perspectives can be applied to understand how networks can contribute to, exacerbate, or resolve conflicts in a specific community or enable issue evolution in other communities in the future. These social interactions may influence future wildlife management activities.

The analytical tool of social network analysis is the major contribution to the research methods in the field of human dimensions of natural resources. Social network theories and analyses have been used in the fields of development sociology, business, and computer sciences, but are just beginning to be applied to natural resources management and to wildlife management specifically. Although my research failed to document how the strength of social network relationship influences one's decision to engage in a collective action, this is a topic for future research. These topics start to address the behavioral model of collective action that Elinor Ostrom (1998) called for when she described second generation models of collective action and will help test various theories for how social network ties influence people for collective action (Diani & McAdam, 2003; McAdam & Paulsen, 1993). To accomplish this, I suggest identifying socio-psychological indicators or objective communication metrics for measuring social network relationship characteristics. Additionally, I suggest selecting case study sites with limited recall bias, for example an incident that occurred less than one year ago or where researchers can observe a phenomenon as it unfolds.

Social network analysis has only recently been applied to natural resources management topics. Integrated social network theories and analytical tools provide a framework for examining the effects of network structure by studying the pattern of ties among individuals, organizations, or institutions, and how they allocate resources within a social system, as well as ties to natural resources (Wellman, 1988). Network theories and analyses allow managers or researchers the opportunity to examine the classic question of how social relationships influence behavior applied to natural resources management issues (Granovetter, 1985). Network analysis allows a researcher to examine attributes of stakeholders, characteristics of ties between stakeholders, and structures of relationships among stakeholders at multiple-scales

(Scott, 2000); (Prell et al., 2009). Understanding network relationships might provide insights for collaboration, communication, contagion, conflict, governance, learning, or planning within the natural resources arena.

My research contributes to policy by anticipating negative social interactions between consumptive and non-consumptive wildlife stakeholders. From the anticipatory regional phase of my research, I found that wildlife trapper respondents and licensed dog owner respondents both selected for municipal lands and along public roads or sidewalks – this may be an area of potential spatial overlap that current laws and regulations may not adequately address to limit the negative interactions. In the waterfowl hunting context, my research revealed that hunter respondents who hunt closer to occupied dwellings experience higher levels of harassment or interference than those hunter respondents who hunt farther away from occupied dwellings. Those same hunter respondents also exhibited attitudes that were less sensitive to residents' concerns suggesting that managing the spatial proximity of hunter to occupied dwellings might limit the negative experiences that both hunters and residents experience. Engaging with stakeholders to develop management policies may very well be an effective means to identify areas of joint interest and concern, understand the perspective of other stakeholders, and recommend policies or practices to limit negative interactions. My case study research revealed that over time as the policy network grows, the initial disputants are no longer in a key collective action role as other individuals, often representing local or in-state regional organizations, take center stage and frame the prevailing perspective in the policy discussions in slightly different ways than had the initial disputants. This indicates that timing matters – initially if NYS DEC is contacted by stakeholders involved in disputes, the agency has an opportunity to mediate and resolve the disputes locally. If days pass since the incident occurred, then proactively reaching out to the local or in-state regional

organizations may be beneficial because they are likely to become involved in the policy discussions at some point. My findings demonstrated in three of the four case study communities that the policy actors were able to significantly connect with others with the same policy position supporting hunting and trapping; these findings seem related to the policy outcomes in those three communities.

As a contribution to wildlife management practice, I offer the following suggestions for stakeholder engagement strategies to encourage state wildlife agencies to engage with both consumptive and nonconsumptive stakeholders:

- Education and communication: Develop and implement education and communication programs that aim to increase hunters'/trappers' and residents'/dog owners' awareness of each others' concerns, as well as residents'/dog owners' knowledge about the nature of hunting and trapping activities. Efforts to reach out or help the other stakeholder group learn about each others' activities and concerns may help limit negative or promote positive interactions on public lands and waterways.
- Stakeholder engagement for conflict resolution: When a dispute occurs, it may be necessary for the state wildlife agency to facilitate a "learning committee" to explore joint interests, concerns, and options for mutual gain to enable resolution of the issue locally. This may be especially important in suburban areas where support for innovative wildlife management may be an important component for the future of wildlife management.
- Stakeholder engagement for decision-making: Currently, NYS DEC has Waterfowl Hunter and Furbearer Trapper Task Forces to recommend waterfowl hunting and furbearer trapping regulations and address issues as needed. Because these are populated almost exclusively by hunters and trappers, extending an invitation for these task forces to include a diverse

set of stakeholders or initiating a broader task force consisting of stakeholders commonly affected by wildlife harvest activities may incorporate broader interests. This may build rapport with nonconsumptive wildlife stakeholders and help build support for hunting and trapping for recreation and for wildlife management tools. Hunters and trappers may be reluctant to include other stakeholders with diverse interests, so the DEC may need to carefully communicate why it is in the consumptive stakeholders' best interest to include these nonhunting stakeholders.

- Enforcement of hunting/trapping laws, rules, and regulations: In both study contexts, stakeholders on both sides of the issue expressed concern over the enforcement of hunting laws, rules, and regulations. If waterfowl hunters, for example, believed they were legally abiding by the hunting regulations and were interrupted by a waterfront resident they believed that if they called the DEC that the Environmental Conservation Officers should enforce the hunter harassment laws and issue a violation to the resident.

Limitations

There are several caveats and limitations for my research that are worth noting. First, in the case study research the findings can be transferred to other areas, but should not be generalized outright (Patton, 2002). One reason to limit the generalization of the results to other states is that the contexts may be different, for example other states may not have the same laws, rules, and regulations for wildlife trapping or waterfowl hunting. Another limitation for retrospective case studies is that I asked respondents to remember how the public issue developed and who they interacted with leading to some respondents not fully recalling these events. To

address this, I attempted to triangulate the information provided among all of the interview respondents. As a check, I reviewed media articles and public meeting minutes to gain a clearer picture of the events that occurred.

In the regional study, my response rates differed per population: dog owners (45.5%), wildlife trappers (50.5%), waterfront residents (49.4%), and waterfowl hunters (60.5%). In comparing respondents and non-respondents, I did detect differences on some items; however, respondents appeared more avid and engaged in the topic than non-respondents, leading me not to weight the data for the analysis. Because the dog owner sample had the lowest response rate and many of the respondents indicated they did not take their dog off their property, future research may seek to engage more fully dog owners who regularly take their dogs to multiple-use public lands.

In addition to the limitations identified above for each phase of the research, the data analyzed in this volume does not include all of the information collected through the interviews and surveys. In collaboration with my graduate committee and NYS DEC, I plan to continue analyzing these data because they may lend additional insights to theory, method, policy, and practice. Even with the limitations identified above, the results and implications included in this dissertation may be transferred to other areas to inform wildlife management strategies.

Future Research

The relationship among social interactions, social networks, collective action, and support for wildlife management is complex and merits further attention. My dissertation provides a foundation for further inquiry into this subject, specifically how one might transition from conflict scenarios to cooperative social networks for wildlife management. First, social network and collective action frameworks and methods

should be extended to study other natural resource management scenarios. Additional studies utilizing these theories or methods will enable findings to be transferred to other situations.

My findings suggest social networks play an important role in enabling stakeholders to become involved with the policy discussions and for shaping how public issues are framed. Although my research failed to document specifically how network relationships influenced stakeholders' behaviors, this area is worth exploring. My methods produced mixed results on measures of how network relationships influenced behaviors. When I asked respondents outright if they had been influenced by an individual, an organization, or media piece, most respondents suggested they had not. In other parts of the interviews, however, respondents would describe at length how some entity played a key role in their learning about the incidents and shaping how they perceived the issue. Although individuals reported they were not influenced by anyone or anything they had a relationship with when asked directly, upon elaboration they portrayed an underlying relationship that motivated them. Future research might focus on theoretical explorations for developing social-psychological indicators for how network relationships influence behaviors or for determining variables that are highly correlated with behavioral change. This could lead to a more objective assessment of how individuals are influenced by others.

My case study research results suggested that stakeholders potentially involved with negative interactions and social conflicts were motivated by their basic beliefs about personal safety, individual rights, and individual privileges. Previous research has suggested that wildlife is the focus of the basic beliefs (or value orientations) for influencing decisions to engage in hunting, trapping, wildlife-viewing, or voting intentions to support or oppose wildlife harvest. Respondents in my study, however, did not mention wildlife as the main motivating factor for becoming involved with

these issues. Future research might seek to quantitatively examine these concepts using path models. For wildlife managers, learning how to manage these social interactions by both minimizing the negative and maximizing the positive social interactions might be critical if they seek to sustain hunting and trapping opportunities in the future and to build support for conservation activities.

Through my regional research, I explored the relationship between socio-demographics, attitudes, experiences, satisfaction with multiple-use management, political engagement, and intentions to contact decision-makers. I found that respondents who have had negative experiences while hunting have less tolerant attitudes toward other users. Future research might seek to clarify causal relationships among these variables. Using exploratory factor analysis, I was unable to identify factors that had high reliability on the same items for both the consumptive and nonconsumptive stakeholders. This suggests that these stakeholders fundamentally think about wildlife management, wildlife harvest, and social interactions in different ways. This has theoretical and practical implications because the same frameworks that have been useful for understanding hunters and trappers (i.e., consumptive users) may not be appropriate for nonconsumptive users, especially nonhunters who do not have experiences with hunters (Stedman & Decker, 1996).

Research on the relationship among hunters, nonhunters, and state wildlife agency personnel is not new as previous research has discussed the importance of recognizing nonhunters and their interests as an important element of wildlife management, especially in rural areas (Stedman & Decker, 1996). My research extends this notion, but also considers these important relationships in suburban areas of New York State. My research suggests that nonhunting stakeholders are interested in hunting or trapping activities from a social interaction perspective rather than simply a wildlife perspective. In this study, I demonstrated that hunters/trappers and

nonhunters/nontrappers have similar underlying interests and concerns related to social interactions. Previous researchers (Jonker, Muth, Organ, Zwick, & Siemer, 2006; Kretser, 2008) have demonstrated a lack of support for differences in attitudes and support for natural resources management along rural-urban interfaces and recommend using the co-orientation model (McLeod & Chaffee, 1973) for understanding why some stakeholders from some groups believe they have different views than stakeholders from another group. I agree with this recommendation based upon the results in this research, and also recommend examining this concept within the assumptions of decision-makers.

Previous research on predicting behaviors in wildlife management has focused on using wildlife value orientations and attitudes as predictors of behavioral intentions related to wildlife (Fulton et al., 1996; Manfredo et al., 1999). My findings suggest that in the realm of managing social interactions among stakeholders in a wildlife harvest context that value orientations toward personal safety, individual rights, and individual privileges (Chapter 3) might be more important than focusing on wildlife, as previous research has suggested. Future research might test this hypothesis that value orientations toward stakeholder interactions might be important predictors by developing indicators and testing a path model as Fulton et al. (1996) did with the wildlife value orientations.

I identified an opportunity for state wildlife agencies or organizations interested in conservation, waterfowl, or waterfowl hunting to reach out to waterfront residents to increase their familiarity with waterfowl hunting. Future research might address how stakeholder engagement strategies and social networking influence positive or negative stakeholder interactions, perceptions of, attitudes toward, and knowledge of waterfowl hunting activities. Similarly, my research revealed waterfowl hunter respondents who hunted close to occupied dwellings experienced higher rates

of interference and exhibited less sensitive attitudes toward residents' concerns than hunters who hunted >500' from occupied dwellings. Future research might examine the causality of these concepts. Additionally, if waterfowl hunting regulations are changed, research might examine the extent to which hunters experience less interference of harassment and document the extent to which waterfront residents express concerns about hunting activities.

My research revealed that dog owner respondents and wildlife trapper respondents were both concerned about dogs getting caught in wildlife traps set on public lands. Future research might examine the impact of spatial management (e.g., dog parks) on these stakeholders' satisfaction with public land management and concern for dogs getting caught in wildlife traps on public lands. Research might also explore the specific characteristics of licensed dog owners who use state lands, municipal lands, and public roads to walk their dogs. This is the subset of licensed dog owners that communication and engagement strategies might target.

Collectively, the main chapters (3-6) in this dissertation demonstrate the importance of social interactions with nonconsumptive stakeholders for wildlife management conservation. Researchers have identified managing the impacts of interactions among stakeholders as they relate to wildlife as an important component of wildlife management (Riley et al., 2002). I have considered the impacts of stakeholder interactions from a retrospective, case study perspective and from a more predictive and proactive perspective to anticipate contentious issues and potentially limit negative interactions. Throughout my dissertation I have focused on the importance of relationships – or social networks – among stakeholders involved in these issues. Social interactions, when they are focused toward proactive discussions, will likely be an important component for developing and implementing management strategies to limit the negative interactions from occurring. These social interactions,

if transformed into positive relations for cooperation, may promote wildlife conservation into the future, especially in suburban areas where support for innovative wildlife management will be needed. Social relations, after all, are fundamental to human survival (Ostrom, 1998).

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APPENDIX A

Institutional Review Board Materials



Institutional Review Board for Human Participants

Cornell University
395 Pine Tree Rd., Suite 320
Ithaca, NY 14850
Telephone: 607 255-5138
Fax: 607 255-0758

NOTIFICATION OF EXPEDITED APPROVAL

Protocol ID# 08-09-060

Termination Date: 10/14/2009

To: Heather A. Van Den Berg
From: Jennifer Gerner, IRB Chair
Date of approval: October 15, 2008 *(If you are using a consent form, enter this date at the bottom of it now.)*
Project(s): **Collective Action and Social Networks Among Wildlife Management Stakeholders: Insights from Furbearer Trapping and Waterfowl Hunting in New York State**

A member of the IRB has reviewed and given an expedited approval to the above referenced project as far as the use of human participants is concerned.

Please take note of the following:

10-15-08 Comments:

This protocol is approved with the following:

- 1. Oral consent is appropriate, but prior to consenting, participants should be given another copy of the recruitment letter at the time of the in-person interview (if they didn't bring it with them), or they should be sure to have or be sent another copy for phone interviews, so they can ask any questions they might have and so that they have a copy of the contact information.**
- 2. No signatures are required for oral consent.**
- 3. Please be sure that no names or identifying information will be recorded during or with the interviews -- the data from the interviews should remain anonymous. Also no names of other people should be mentioned.**

The terms of Cornell University's Federalwide Assurance (FWA) with the federal government mandate the following important conditions for investigators:

1. All consent forms, records of study participation, and other consent materials **must** be held by the investigator for **five years** after the close of the study.
2. Investigators must submit to the IRB any **proposed amendment** to the study protocol, consent forms, interviews, recruiting strategies, and other materials. Investigators may not use these materials with human participants until the IRB has reviewed them. For information about study amendment procedures and access to the Amendments application form, please refer to the IRB website: <http://www.irb.cornell.edu>.
3. Investigators must promptly report to the IRB any **adverse events** involving human participants. The definition of prompt reporting depends upon the seriousness of the adverse event. For guidance on recognizing, defining, and reporting adverse events to the IRB, please refer to the IRB website: <http://www.irb.cornell.edu>.

If the use of human participants is to continue beyond the assigned approval period, federal requirements mandate that the protocol be re-reviewed and receive an updated approval. **You may not continue to use human participants beyond the stated approval period without an updated approval.** Please note that the terms of our FWA with the federal government do not allow for an extension of this period without review. Continuing without an updated approval constitutes a violation of University policy and federal regulations. Research funds administered by Sponsored Programs Services will not be released to any project that does not have a current IRB approval.

Approximately six weeks before the expiration of your approval, you will be sent a notification of pending expiration, and an explanation of the renewal process. Applications for renewal of approval must be submitted sufficiently in advance of the expiration date to permit the IRB to conduct its review before the current approval expires. Please allow at least two weeks for the review.

***If you do not plan to renew your protocol approval at the end of the year, please provide the IRB with a Project Closure form. A link to the Project Closure form can be found at <http://www.irb.cornell.edu/forms>.*

C: Barbara K. Knuth



Institutional Review Board for Human Participants

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NOTIFICATION OF AMENDMENT APPROVAL

Protocol ID# 08-09-060

To: Heather A. VanDenBerg
From: Jennifer Gerner, IRB Chair
Date of approval: January 16, 2009
Project(s): *Collective Action and Social Networks Among Wildlife Management Stakeholders: Insights from Furbearer Trapping and Waterfowl Hunting in New York State*

The IRB has reviewed and approved the following amendment(s) to the above referenced project.

1/5/2009 Amendment: Amendment includes data collection instrument i.e. questionnaire for semi-structured interview described in Phase I of the approved research plan. Amendment also requests that end date for Phase I be extended to May 2009 from December 2008. If new end date is approved permission is requested to revise the contact letter to reflect the new study dates: January - May 2009. Amendment also includes revised text for oral informed consent process to make it easier to understand for respondents.

If you requested modifications to a consent form(s):

- Use only the modified form for additional subject enrollment.
- Include on the form the date of this notification for the revised IRB approval date.

If you submitted revised/final versions of interview guides, questionnaires, or debriefing scripts, you have approval to use these materials immediately.

All other study procedures/instruments are to remain unchanged from the original submission and IRB approval.

IRB approval for this project expires on **October 14, 2009**

c: Barbara K. Knuth



Institutional Review Board for Human Participants

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NOTIFICATION OF AMENDMENT APPROVAL

Protocol ID#

To: Heather A. VanDenBerg
From: Jennifer Gerner, IRB Chair
Date of approval: February 10, 2009
Project(s): *Collective Action and Social Networks Among Wildlife Management Stakeholders: Insights from Furbearer Trapping and Waterfowl Hunting in New York State*

The IRB has reviewed and approved the following amendment(s) to the above referenced project.

2/5/2009 Amendment: 1. requesting approval of the four questionnaires (one for each stake holder type) and the cover letters and reminder notes that will accompany the questionnaires for Phase II of the approved research plan. 2. seek permission to conduct a non-respondent analysis to examine for differences between respondents and non-respondents. To do this analysis 50 individuals from each strata (200 total) of the non-respondents to the questionnaires in Phase II be contacted by phone. They will be asked to complete a subset of the survey questions. 3. Revise supervisor's initial from K to A.

If you requested modifications to a consent form(s):

- Use only the modified form for additional subject enrollment.
- Include on the form the date of this notification for the revised IRB approval date.

If you submitted revised/final versions of interview guides, questionnaires, or debriefing scripts, you have approval to use these materials immediately.

All other study procedures/instruments are to remain unchanged from the original submission and IRB approval.

IRB approval for this project expires on **October 14, 2009**

c: Barbara A. Knuth



Cornell University
Office of
Research Integrity and Assurance

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Ithaca, NY 148
p. 607-255-51:
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Institutional Review Board for Human Participants

NOTICE OF EXPEDITED AMENDMENT APPROVAL

To: Heather Van Den Berg
From: Jenny Gerner, IRB Chairperson
Protocol ID#: 0908000566
Project(s): Collective Action and Social Networks Among Wildlife Management Stakeholders: Insights from Furbearer Trapping and Waterfowl Hunting in New York State
Date of Approval: June 17, 2009
Expiration Date: October 14, 2009

The above-referenced protocol amendment request has been reviewed and given expedited approval by the Institutional Review Board for Human Participants (IRB) for the inclusion of human participants in research. **This approval shall remain in effect until October 14, 2009.**

This approval covers the following change(s)/modification(s):

- The extension of the Phase I in-depth interviews until August 2009 and, if granted, the change of dates the contact letter to reflect the new date..

If you requested modifications to a consent form(s):

- Use only the modified form for additional subject enrollment.
- Include on the form the date of this notification for the revised IRB approval date.

If you submitted revised/final versions of interview guides, questionnaires, or debriefing scripts, you have approval to use these materials immediately.

All other study procedures/instruments are to remain unchanged from the original submission and IRB approval.

Note: Forms should be downloaded from the IRB website at www.irb.cornell.edu/forms for each use.



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Institutional Review Board for Human Participants

NOTICE OF EXPEDITED AMENDMENT APPROVAL

To: Heather Triezenberg
From: Jenny Gerner, IRB Chairperson
Protocol ID#: 0908000566
Project(s): Collective Action and Social Networks Among Wildlife Management Stakeholders: Insights from Furbearer Trapping and Waterfowl Hunting in New York State
Date of Approval: August 18, 2009
Expiration Date: October 14, 2009

The above-referenced protocol amendment request has been reviewed and given expedited approval by the Institutional Review Board for Human Participants (IRB) for the inclusion of human participants in research. **This approval shall remain in effect until October 14, 2009.**

This approval covers the following change(s)/modification(s):

- Permission to collect data from a sample of licensed dog-owners in a six-county region (Fulton, Montgomery, Saratoga, Schenectady, Warren and Washington)
- Approval of a questionnaire, modified from an approved instrument in February 2009 to conduct a non-respondent telephone survey using a subset of questionnaire items.
- Add Triezenberg to investigator's last name, reflecting recent marriage.

If you requested modifications to a consent form(s):

- Use only the modified form for additional subject enrollment.
- Include on the form the date of this notification for the revised IRB approval date.

If you submitted revised/final versions of interview guides, questionnaires, or debriefing scripts, you have approval to use these materials immediately.

All other study procedures/instruments are to remain unchanged from the original submission and IRB approval.

Note: Forms should be downloaded from the IRB website at www.irb.cornell.edu/forms for each use.



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Institutional Review Board for Human Participants

NOTICE OF EXPEDITED CONTINUATION APPROVAL

To: Heather Triezenberg
From: Jenny Gerner, IRB Chairperson
Protocol ID#: 0908000566
Project(s): Collective Action and Social Networks Among Wildlife Management Stakeholders: Insights from Furbearer Trapping and Waterfowl Hunting in New York State
Date of Approval: October 12, 2009
Expiration Date: October 11, 2010

The above-referenced request for protocol continuation has been reviewed and given expedited approval by the Institutional Review Board for Human Participants (IRB) for the inclusion of human participants in research. **This approval shall remain in effect until October 11, 2010.**

This approval does not replace any departmental or other approvals that may be required.

Federal regulations require that all research be reviewed at least annually. As the Principal Investigator it is your responsibility to obtain review and continued approval **before** the expiration date. Applications for renewal of approval must be submitted sufficiently in advance of the expiration date to permit the IRB to conduct its review before the current approval expires. Please allow three weeks for the review.

Any research-related activities -- including recruitment and/or consent of participants, research-related interventions, data collection, and analysis of identifiable data -- conducted during a period of lapsed approval is unapproved research and can never be reported or published as research data. If research-related activities occur during a lapse in the protocol approval, the activities become a research compliance issue and must be reported to the IRB via an unexpected event form (www.irb.cornell.edu/forms).

All changes or amendments to the above-referenced protocol require review and approval by the IRB **before** implementation.

Unexpected events involving human participants must be promptly reported to the IRB. For guidance on recognizing, defining, and reporting unexpected events, please refer to the IRB website: <http://www.irb.cornell.edu/policy/>.

Note: Forms should be downloaded from the IRB website for each use.

APPENDIX B

Case Study Data Collection Materials

Participant Recruitment Information

Good (morning, afternoon, or evening):

My name is Heather Van Den Berg; I am a graduate student at Cornell University studying how citizens form coalitions seeking to change state or local laws affecting wildlife management. My research is supported by Cornell University's College of Agriculture and Life Sciences and the New York State Department of Environmental Conservation, and has been approved by the Cornell Institutional Review Board on October 21, 2008. [If referent has agreed to be identified: "Name of referent has suggested that you have been involved with"] [If referent has not agreed to be identified: "You have been suggested as someone involved with"] the activities seeking to change local laws or state laws following [the death of a local dog in a wildlife trap or waterfowl hunting concerns] in [insert community name].

Would you be willing to speak with me about your involvement in some recent discussions over wildlife harvest regulations? The interview will take approximately 30 minutes.

If you agree to participate in this study, and are 18 years or older, we can schedule a time to speak at your convenience. To prepare for the interview, I will either e-mail or mail a short letter describing the study.

Can we schedule a time for a telephone interview? When are some convenient times for you? [If potential participant declines a telephone interview, I will ask: "If you are uncomfortable with a telephone interview, can we arrange a time and location for an in-person interview?"] I have a confirmation letter I would like to mail or e-mail. Would you be willing to share your e-mail address or mailing address with me?

[Inquiry letter; printed on HDRU letterhead.]

May 19, 2009

Dear Mr. or Ms. [Potential Study Participant]:

I am a graduate student at Cornell University studying how citizens form coalitions seeking to change state or local laws affecting wildlife management. Specifically, I am conducting research on the conflicts over [wildlife trapping or waterfowl hunting] in [community name], NY.

You were identified as someone involved in the policy discussions relating to wildlife trapping in the Town of Southampton public meeting minutes or area newspaper articles. I would like to interview you about your involvement with discussions over wildlife trapping in Southampton, your opinions toward wildlife and the Department of Environmental Conservation. I am sending you this letter because I do not have any other way to contact you. If you are interested in speaking with me, or learning more about this study, please contact me at 607-255-8337 or hav5@cornell.edu

My research has been approved by the Cornell University Institutional Review Board. After you contact me to express interest in talking with me, I will share with you a short letter further describing this study before we have any discussions. If you agree to participate in this study, we can schedule a time to speak at your convenience.

Many thanks in advance for your consideration.

Sincerely,

Heather A. Van Den Berg
Graduate Research Assistant

[Contact letter; printed on HDRU letterhead.]

**Collective action and social networks among wildlife management stakeholders:
Insights from furbearer trapping and waterfowl hunting in New York State**

Dear Study Participant,

Thank you for agreeing to take part in the study of how citizens interact and form coalitions seeking to change statewide wildlife laws and regulations or local laws affecting wildlife management. I will **call you on date and time, or meet you at location, date, and time (if necessary)**. Please read this letter carefully and feel free to ask any questions you may have, at any time, about participating in this study.

What the study is about: The study purpose is to compare interactions among wildlife stakeholders in two New York State contexts, furbearer trapping and waterfowl hunting, and to examine how and why people become involved together in trying to influence public policy on wildlife-related activities.

What we will ask you to do: The interview will take approximately 30 minutes, and will include questions about you, your involvement with discussions over waterfowl hunting or furbearer trapping in your community, your opinions toward wildlife and the Department of Environmental Conservation. All the interviews will be conducted between January and August 2009. With your permission, we would also like to record the interview with a digital voice recorder, but we can instead take hand-written notes if you prefer.

Risks and benefits associated with participating in this study: There is a risk that you may find some of the questions about your involvement with the discussions over waterfowl hunting or furbearer trapping to be sensitive or may feel uncomfortable discussing your role in the network, especially if you were directly involved with the wildlife management issues. To reduce the risks to you, you may choose not to answer specific questions or withdraw from the study at any time if you are uncomfortable. Additionally, we will assign a pseudonym name to each of our study participants and only use the pseudonyms in any analyses or reports. Potential benefits to you from participating in this study may be knowing that you are helping in a research study relevant for improving applied wildlife management, and the opportunity to reflect on your own involvement in wildlife management issues.

Compensation: You will not be compensated for taking part in this study, but we really appreciate your willingness to participate.

Confidentiality: In any report we make public, we will use a pseudonym that will make it difficult for people to identify you; however, because your identity and opinions may be publicly available already (for example, from public meeting records

or archived news reports), I can not entirely assure confidentiality because people are familiar with this issue in your community may read the results and infer your identity and responses. Your name will never be used in our study reports. If we digitally record the interview, we will destroy the electronic file after the results have been published, which we anticipate will be by May 2010. Any e-mail correspondence can neither be considered private nor secure, and may be read by a third party.

Sponsors of this study: The New York State Department of Environmental Conservation and Cornell University College of Agriculture and Life Sciences provide funding for this project. Please be aware that we are required to allow the New York State Department of Environmental Conservation, sponsor of this study, access to these records to allow them to respond to Freedom of Information Law requests, if any are received.

If you have questions: The researchers conducting this study are Heather Van Den Berg and Professor Barbara Knuth. If you have questions, you may contact Heather at hav5@cornell.edu or 607-255-8337. You can reach Professor Knuth at bak3@cornell.edu or 607-254-6765. If you have any questions or concerns regarding your rights as a subject in this study, you may contact the Institutional Review Board (IRB) at 607-255-5138 or access their website at <http://www.irb.cornell.edu>. This study has been approved by the IRB on January 17, 2009.

Taking part is voluntary: Taking part in this study is completely voluntary, although you must be 18 years or older to qualify as a participant. You may skip any questions that you do not want to answer. If you decide not to participate, or would prefer to withdraw from the study, you may do so at any time without being penalized.

Thank you in advance for your assistance with this study.

Sincerely,

Barbara A. Knuth, Professor
Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg
Graduate Research
Assistant
Human Dimensions
Research Unit

Collective action and social networks among wildlife management stakeholders: Insights from furbearer trapping and waterfowl hunting in New York State

Phase I research: Semi-structured interviews

Participant name: _____

Organization Representing: _____

Phone number: _____

E-mail address: _____

Mailing address: _____

Assigned Pseudonym: _____

A. Community Name		B. Community Type		C. Harvest Type	
<input type="checkbox"/> Brookhaven		<input type="checkbox"/> Rural (upstate – Canandaigua or Queensbury)		<input type="checkbox"/> Waterfowl hunting (Brookhaven or Canandaigua)	
<input type="checkbox"/> Canandaigua					
<input type="checkbox"/> Queensbury		<input type="checkbox"/> Suburban (downstate – Brookhaven or Southampton)		<input type="checkbox"/> Furbearer trapping (Queensbury or Southampton)	
<input type="checkbox"/> Southampton					
	<u>Date:</u>	<u>Day of the week:</u>	<u>Time:</u>	<u>Result:</u>	
Initial call					
1 st call					
2 nd call					
3 rd call					
4 th call					
5 th call					
6 th call					
7 th call					
8 th call					

In-person interview date and location:

Comments:

5. Please share with me a brief summary, from your perspective, of the public issue surrounding [the death of a local dog in a wildlife trap or waterfowl hunting concerns] in [your community] over the last 5-10 years? What happened when, as you recall? (GO TO #6)
6. Now I'm going to ask you about your perception of conflict for this issue. On a scale of 1 to 5, where 1 is no conflict, 2 is a little conflict, 3 is some conflict, 4 is a moderate amount of conflict, and 5 is a lot of conflict, in your view, how much conflict existed during the height of the public issue discussions about [waterfowl hunting or wildlife trapping]... (GO TO #7)

No conflict	A little conflict	Some conflict	Moderate amount of conflict	A lot of conflict
1	2	3	4	5

7. From your perspective, how has the New York Department of Environmental Conservation been involved with these activities and discussions? In your opinion, how should the Department of Environmental Conservation have been involved with these activities and discussions following the [dog death/discussions over waterfowl hunting] incident? (For example, did the Department do all that you think it should have done, or are there things you think the Department should have done differently?) (GO TO #8)
8. How have the local media, such as newspapers and television, influenced your opinions toward this issue? (GO TO #9)
9. How familiar are you with the current [waterfowl hunting or wildlife trapping] state regulations and Environmental Conservation Laws? What are your opinions toward these regulations and laws? Are there any components of the regulations you would like modified? If so, which parts? (GO TO #10)
10. How familiar are you with the process of changing statewide [waterfowl hunting or wildlife trapping] laws or regulations? Are there any elements of the statewide regulation-setting process you would like modified? If so, what elements? (GO TO #11)
11. How familiar are you with the current local laws which might affect [waterfowl hunting or wildlife trapping]? What are your opinions on these local laws? Are there any components of the local laws you would like modified? If so, what parts? (GO TO #12)

Now, I'd like to focus our discussion and ask you in more detail about actions you have taken or people you have talked with related to [trapping or waterfowl hunting] activities.

II. Contacting decision-makers

12. Have you contacted anyone from the NYS Department of Environmental Conservation (DEC) seeking to change Environmental Conservation Laws or regulations affecting [trapping or waterfowl hunting]?

No (GO TO #13)

Yes (GO TO a)

a. How did you contact the Department of Environmental Conservation? (check all that apply)(GO TO b)

Telephone

Letter via U.S. Postal Service

E-mail

Website

In-person

Other

b. Do you still have contact with the DEC, say within the past two months, on any topic?

No (GO TO c)

Yes (GO TO c)

c. During the issue, did you decide to contact the DEC...

...on your own? (GO TO #13)

...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

13. Have you contacted any of your local Town Officials seeking to change local laws affecting [trapping or waterfowl hunting]?

No (GO TO #14)

Yes (GO TO a)

a. How did you contact your Town Officials? (check all that apply) (GO TO b)

Telephone

Letter via U.S. Postal Service

E-mail

Website

In-person

Other

- b. Do you still have contact with your Town Officials on this issue, say within the past two months, on any topic?
 No (GO TO c)
 Yes (GO TO c)
- c. During the issue, did you decide to contact your Town Officials...
 ...on your own? (GO TO #14)
 ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

14. Have you contacted a New York State Assembly Member seeking to change Environmental Conservation Laws affecting [trapping or waterfowl hunting]?

- No (GO TO #15)
- Yes (GO TO a)
- a. How did you contact the State Assembly Members? (check all that apply) (GO TO b)
 - Telephone
 - Letter via U.S. Postal Service
 - E-mail
 - Website
 - In-person
 - Other
- b. Do you still have contact with the State Assembly Members, say within the past two months, on any topic?
 No (GO TO c)
 Yes (GO TO c)
- c. During the issue, did you decide to contact the State Assembly Members...
 ...on your own? (GO TO #15)
 ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

15. Have you contacted a New York State Senator seeking to change Environmental Conservation Laws affecting [trapping or waterfowl hunting]?

- No (GO TO #16)
- Yes (GO TO a)
- a. How did you contact the State Senator? (check all that apply) (GO TO b)
 - Telephone

- Letter via U.S. Postal Service
 - E-mail
 - Website
 - In-person
 - Other
- b. Do you still have contact with the State Senator, say within the past two months, on any topic?
- No (GO TO c)
 - Yes (GO TO c)
- c. During the issue, did you decide to contact the State Senator...
- ...on your own? (GO TO #16)
 - ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

16. Have you contacted the Office of the Governor of New York seeking to change Environmental Conservation Laws affecting [trapping or waterfowl hunting]?

- No (GO TO #17)
 - Yes (GO TO a)
- a. How did you contact the Office of the Governor? (check all that apply) (GO TO b)
- Telephone
 - Letter via U.S. Postal Service
 - E-mail
 - Website
 - In-person
 - Other
- b. Do you still have contact with the Office of the Governor, say within the past two months, on any topic?
- No (GO TO c)
 - Yes (GO TO c)
- c. During the issue, did you decide to contact the Office of the Governor...
- ...on your own? (GO TO #17)
 - ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

- 17.** Have you contacted a U.S. Congressional Senator seeking to change Environmental Conservation Laws affecting [trapping or waterfowl hunting]?
___ No (GO TO #18)
___ Yes (GO TO a)
- a. How did you contact the U.S. Congressional Senator? (check all that apply) (GO TO b)
___ Telephone
___ Letter via U.S. Postal Service
___ E-mail
___ Website
___ In-person
___ Other
- b. Do you still have contact with the U.S. Congressional Senator, say within the past two months, on any topic?
___ No (GO TO c)
___ Yes (GO TO c)
- c. During the issue, did you decide to contact the U.S. Congressional Senator...
___ ...on your own? (GO TO #18)
___ ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

- 18.** Have you contacted a U.S. Congressional Representative seeking to change Environmental Conservation Laws affecting [trapping or waterfowl hunting]?
___ No (GO TO #19)
___ Yes (GO TO a)
- a. How did you contact the U.S. Congressional Representative? (check all that apply) (GO TO b)
___ Telephone
___ Letter via U.S. Postal Service
___ E-mail
___ Website
___ In-person
___ Other
- b. Do you still have contact with the U.S. Congressional Representative, say within the past two months, on any topic?

No (GO TO c)

Yes (GO TO c)

- c. During the issue, did you decide to contact the U.S. Congressional Representative ...
 ...on your own? (GO TO #19)

...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

III. Contacting other organizations

19. Have you contacted any local or in-state regional organizations, such as [the Southshore Waterfowlers Association, the Animal Rescue Fund of the Hamptons, the Group for the East End (or others)] seeking to change Environmental Conservation Laws or Regulations, or local laws, affecting [trapping or waterfowl hunting]?

No (GO TO #20)

Yes (GO TO a)

- a. How did you contact local or in-state regional organizations? (check all that apply)
(GO TO b)

Telephone

Letter via U.S. Postal Service

E-mail

Website

In-person

Other

- b. Do you still have contact with these local or in-state regional organizations, say within the past two months, on any topic?

No (GO TO c)

Yes (GO TO c)

- c. During the issue, did you decide to contact these local or in-state regional organizations...

...on your own? (GO TO #20)

...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

20. Have you contacted any state or national organizations, such as [Ducks Unlimited, Humane Society of the United States, National Trappers Association, or New York League of Conservation Voters] seeking to change Environmental Conservation Laws or Regulations, or local laws, affecting [trapping or waterfowl hunting]?

- No (GO TO #21)
- Yes (GO TO a)
- a. How did you contact these state or national organizations? (check all that apply) (GO TO b)
- Telephone
- Letter via U.S. Postal Service
- E-mail
- Website
- In-person
- Other
- b. Do you still have contact with these state or national organizations, say within the past two months, on any topic?
- No (GO TO c)
- Yes (GO TO c)
- c. Did you decide to contact these state or national organizations...
- ...on your own? (GO TO #21)
- ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

IV. Contacting the media

21. Have you contacted any newspaper reporters, editors, or newspapers regarding this issue?
- No (GO TO #22)
- Yes (GO TO a)
- a. What were you seeking when contacting the newspapers? (GO TO b)
- b. How did you contact the newspaper staff? (check all that apply) (GO TO c)
- Telephone
- Letter via U.S. Postal Service
- E-mail
- Website
- In-person
- Other

- c. Do you still have contact with the newspaper staff, say within the past two months, on any topic?
 No (GO TO d)
 Yes (GO TO d)
- d. During the issue, did you decide to contact the newspaper staff...
 ...on your own? (GO TO #22)
 ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

22. Have you contacted any television stations regarding this issue?

- No (GO TO #23)
- Yes (GO TO a)
- a. What were you seeking when contacting the television stations? (GO TO b)
- b. How did you contact the television stations? (check all that apply) (GO TO c)
 - Telephone
 - Letter via U.S. Postal Service
 - E-mail
 - Website
 - In-person
 - Other
- c. Do you still have contact with the television stations, say within the past two months, on any topic?
 No (GO TO d)
 Yes (GO TO d)
- d. During the issue, did you decide to contact the television stations...
 ...on your own? (GO TO #23)
 ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

V. Contacting other individuals

23. Have you contacted any individuals whom might be considered friends or your family members to get them involved with this issue?

- No (GO TO #24)
- Yes (GO TO a)
- a. How did you contact friends or family? (check all that apply) (GO TO b)
- Telephone
- Letter via U.S. Postal Service
- E-mail
- Website
- In-person
- Other
- b. Do you still have contact with these friends and family, say within the past two months, on any topic? ?
- No (GO TO c)
- Yes (GO TO c)
- c. During the issue, did you decide to contact these friends and family...
- ...on your own? (GO TO #24)
- ...because you were prompted to by someone else – either an individual, or an organization, or something you saw or heard in the media? (GO TO NETWORK RELATIONSHIPS FORM)

24. Have you contacted people from other New York towns dealing with similar issues?
- No (GO TO #25)
- Yes (GO TO a)

Which towns? Who did you speak with? What did you discuss? (GO TO #25)

VI. Wildlife attitudes and values

25. Now, I'm going to ask you about your attitudes toward wildlife. I will read a series of statements and I would like you to tell me whether you agree or disagree with each statement on a scale of 1 to 5, where 1 is strongly disagree, 2 is moderately disagree, 3 is neither agree nor disagree, 4 is moderately agree, and 5 is strongly agree. Now I will read each statement, and please tell me how strongly you agree or disagree, from 1 to 5.

It is important...	1 Strongly Disagree	2 Moderately Disagree	3 Neither Agree Nor Disagree	4 Moderately Agree	5 Strongly Agree
...that I observe or photograph wildlife.	1	2	3	4	5
...that I talk about wildlife with family and friends.	1	2	3	4	5

...that local economies benefit from the sale of equipment, supplies, or services related to wildlife recreation.	1	2	3	4	5
...that I tolerate most wildlife nuisance problems.	1	2	3	4	5
...that I understand more about the behavior of wildlife.	1	2	3	4	5
...that game animals are managed for an annual harvest for human use without harming the future of the wildlife population.	1	2	3	4	5
...that I hunt game animals for food.	1	2	3	4	5
...that I know that wildlife exist in nature.	1	2	3	4	5
... that professional services to trap nuisance wildlife be available in my community.	1	2	3	4	5
...that I express opinions about wildlife and their management to public officials or to officers of private conservation organizations.	1	2	3	4	5
...that residents in my community have access to nuisance wildlife control operators to help address wildlife problems.	1	2	3	4	5
...that I see wildlife in books, movies, paintings or photographs.	1	2	3	4	5
...that I trap furbearing animals for the sale of fur or pelts.	1	2	3	4	5
...that I tolerate the ordinary risk of wildlife transmitting disease to humans or domestic animals.	1	2	3	4	5
...that I have most nuisance wildlife removed from my property.	1	2	3	4	5
...that I consider the presence of wildlife as a sign of the quality of the natural environment.	1	2	3	4	5
...that I tolerate the ordinary personal safety hazards associated with some wildlife.	1	2	3	4	5
...that I hunt game animals for recreation.	1	2	3	4	5
...that I appreciate the role that wildlife play in the natural environment.	1	2	3	4	5

...that local economies benefit from the services related to nuisance wildlife animal control.	1	2	3	4	5
...that wildlife are included in educational materials as the subject for learning more about nature.	1	2	3	4	5
...that I tolerate most levels of property damage by wildlife.	1	2	3	4	5

Now, I'd like to wrap-up our interview with just a few final questions.

VII. Conclusion

26. Are there any ways in which the DEC might work to improve their relationship with you? (GO TO #27)

27. Are there any ways in which the DEC might work to improve their relationship with others you know? (GO TO #28)

28. Is there anything else related to these issues or wildlife management that you would like to share with me? (GO TO #29)

29. Is it okay for me to contact you again if I have any follow-up questions about this topic or our conversation today?

Thank you very much for your time!

Network Relationships Form

From main questionnaire: <i>Who did you contact?</i> (Circle one)			
DEC Senator	Town Official	NYS Assembly Member	NYS
Office of the NYS Governor	U.S. Senator	U.S. Representative	
Local/In-State Regional Organization		State/National Organization	
Newspaper reporters/editors (Family/Friends)	Television stations	Individuals	

- 1) Who? Specific name: _____ (Include media as an organization)
(GO TO #2)
- 2) For the issue of [waterfowl hunting or wildlife trapping] in [your community], would you consider this person or organization an: (GO TO #3)
- ___ Ally
- ___ Opponent

3) Would you consider your relationship with this... (GO TO #4)

...Person:	...Organization:
___ A very strong adversary	___ Very strongly adversarial
___ An adversary	___ Adversarial
___ An acquaintance	___ Neither adversarial nor collaborative
___ A good friend	___ Collaborative
___ A very close friend	___ Very collaborative

4) Now I'm going to ask you about your perception of conflict with this person or organization. On a scale of 1 to 5, where 1 is no conflict, 2 is a little conflict, 3 is some conflict, 4 is a moderate amount of conflict, and 5 is a lot of conflict, in your view, how much conflict existed between you and this person or organization during the height of the public issue discussions... (GO TO #5)

	No conflict	A little conflict	Some conflict	Moderate amount of conflict	A lot of conflict
Person...	1	2	3	4	5
Organization...	1	2	3	4	5

5) Is this person a neighbor in your neighborhood? (GO TO #6)

No

Yes

6) How long have you known this... (GO TO #7)

Person:

Organization:

_____ years

_____ years

7) How frequently did you interact with this person or organization during the post-incident discussions? (GO TO #8)

Person:

Organization:

Rarely

Rarely

1-2 times per year

1-2 times per year

4-6 times per year

4-6 times per year

1-2 times per month

1-2 times per month

Once a week

Once a week

More than once a week

More than once a week

8) Have you discussed other topics with this... (GO TO #9)

...Person, such as (check all that apply.)

...Organization, such as (check all that apply.)

family

family

friends

friends

politics

politics

local events

local events

community

community

work

work

leisure

leisure

9) Now I'm going to ask you about information you may have received from this source. From this... (GO TO #10)

...Person, I received:

...Organization, I received:

no information

no information

mostly information I had already received

mostly information I had already received from

from other sources
 ___ mostly new information

other sources
 ___ mostly new information

PROBE: what types of information did you receive? Do you recall or have any examples to share with me?

10) Now I'm going to ask you about your trust in this source. I will read a series of statements and I would like you to tell me whether you agree or disagree with each statement. On a scale of 1 to 5, where 1 means you strongly disagree, 2 means you moderately disagree, 3 means you neither agree nor disagree, 4 means you moderately agree, and 5 means you strongly agree with the statement.
 (GO TO #11)

It is important for me...	Person					Organization				
	1	2	3	4	5	1	2	3	4	5
... to be able to trust this source in times of uncertainty.										
... to be able to trust this source to be cooperative in times of change.										
... to be able to seek the approval of this source for my actions.										

11) On the same scale, in general how much do you agree with the views of this person or organization. On a scale of 1 to 5, where 1 means you strongly disagree, 2 means you moderately disagree, 3 means you neither agree nor disagree, 4 means you moderately agree, and 5 means you strongly agree with the views of this... (GO TO #12)

...Person:	1	2	3	4	5	...Organization:	1	2	3	4	5
-------------------	---	---	---	---	---	-------------------------	---	---	---	---	---

12) Would you have chosen to become involved with this issue had this person or organization not influenced you? (GO TO #13)

Person:	Organization:
___ No	___ No
___ Yes	___ Yes

Now, I would like to ask you about your interaction with this person or organization BEFORE the [trapping or waterfowl hunting incident] happened.

13) Did you have contact with this person or organization before the [trapping or waterfowl hunting] incident began? (GO TO #14)

Person:	Organization:
<input type="checkbox"/> No	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

14) Before the [trapping or waterfowl hunting] incident, would you consider your relationship with this... (GO TO #15)

...Person:	...Organization:
<input type="checkbox"/> A very strong adversary	<input type="checkbox"/> Very strongly adversarial
<input type="checkbox"/> An adversary	<input type="checkbox"/> Adversarial
<input type="checkbox"/> An acquaintance	<input type="checkbox"/> Neither adversarial nor collaborative
<input type="checkbox"/> A good friend	<input type="checkbox"/> Collaborative
<input type="checkbox"/> A very close friend	<input type="checkbox"/> Very collaborative

I would like to ask you about your interaction with this person NOW or within the past two months.

15) Do you currently have contact with this... (GO TO #16)

...Person	...Organization
<input type="checkbox"/> No	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

16) Would you consider your relationship with this... (GO TO #17)

...Person:	...Organization:
<input type="checkbox"/> A very strong adversary	<input type="checkbox"/> Very strongly adversarial
<input type="checkbox"/> An adversary	<input type="checkbox"/> Adversarial
<input type="checkbox"/> An acquaintance	<input type="checkbox"/> Neither adversarial nor collaborative
<input type="checkbox"/> A good friend	<input type="checkbox"/> Collaborative
<input type="checkbox"/> A very close friend	<input type="checkbox"/> Very collaborative

17) Now I'm going to ask you about information you currently receive from this source. From this...
(GO TO #18)

...Person, I receive:

- no information
- mostly information I had already received from other sources
- mostly new information

...Organization, I receive:

- no information
- mostly information I had already received from other sources
- mostly new information

18) I will read a series of statements and I would like you to tell me whether you agree or disagree with each statement. On a scale of 1 to 5, where 1 means you strongly disagree, 2 means you moderately disagree, 3 means you neither agree nor disagree, 4 means you moderately agree, and 5 means you strongly agree with the statement. (GO TO #19)

It is important for me...	Person					Organization				
	1	2	3	4	5	1	2	3	4	5
... to be able to trust this source in times of uncertainty.										
... to be able to trust this source to be cooperative in times of change.										
... to be able to seek the approval of this source for my actions.										

19) On the same scale, in general how much do you agree with the views of this person or organization NOW. On a scale of 1 to 5, where 1 means you strongly disagree, 2 means you moderately disagree, 3 means you neither agree nor disagree, 4 means you moderately agree, and 5 means you strongly agree with the views of this... (GO TO #20)

...Person:	1	2	3	4	5	...Organization:	1	2	3	4	5

20) Can you share with me any contact information so I can also interview this person or a representative from this organization? (GO TO #21)

_____ phone _____ e-mail

21) Do you approve of me using your name when I contact the individual or organization you identified above? (RETURN TO MAIN QUESTIONNAIRE)

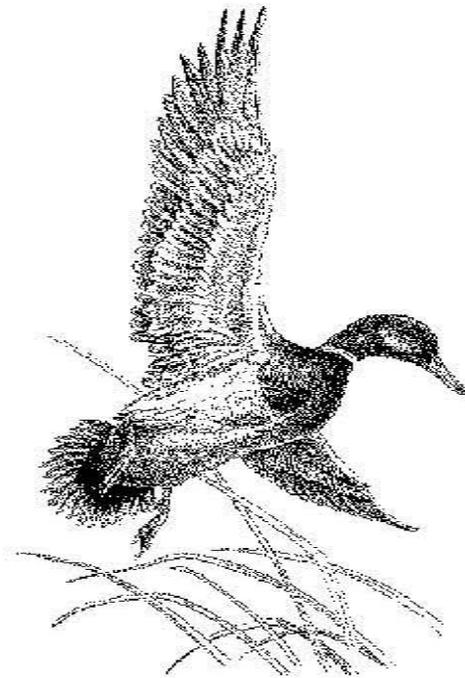
- No
- Yes

APPENDIX C

Regional Study Data Collection Materials

Waterfowl Management and Hunting:

A SURVEY OF WATERFOWL HUNTERS



Research conducted by:



Cornell University
Department of Natural Resources
Human Dimensions Research Unit

About this Questionnaire

Research conducted by:
Human Dimensions Research Unit
Department of Natural Resources
College of Agriculture and Life Sciences
Cornell University
Ithaca, New York 14853

The purpose of this research is to determine hunters' interests and concerns about the management of waterfowl (e.g., wild ducks and geese) and waterfowl hunting around the Braddock Bay State Wildlife Management Area. We are also interested in understanding from where you receive information about waterfowl management. The results from this survey will help the New York State Department of Environmental Conservation and its partners improve communication with the public. You were randomly selected for this survey because you registered in the Harvest Information Program last year and live in the greater-Rochester area.

Your participation in this study is voluntary, and your responses are extremely important to us. We would like to hear from EVERYONE who receives this questionnaire, not just those with strong opinions. Please complete this questionnaire at your earliest convenience, seal it with the white resealable label provided, and drop it in any mailbox; return postage has been provided. Your identity will be kept confidential and the information you give us will never be associated with your name.

This questionnaire has an identification number on the back so that we can remove your mailing address from the list when you return the questionnaire so we will not send you additional reminder notices.

Thank you for your help with this important study!



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

You were selected for this survey because you registered in the Harvest Information Program last year and you live in the greater-Rochester area. Please think about waterfowl management and your waterfowl hunting experiences in Central and Western New York when completing the following questions.

1. In an average year, over what types of land or water do you hunt waterfowl in New York State?

(Please check all that apply.)

- Shallow water marsh, beaver pond, or small river
- Big river (e.g., Niagara), big lake, or ocean
- Agricultural fields
- Other, please describe: _____

2. When hunting over water in New York State, what types of concealment do you typically use?

(Please check all that apply.)

- Temporary blind set up on land along the waterfront
- Temporary blind set up in the water
- Permanent blind on a dock or other structure
- Boat (e.g., canoe, layout, or motor)
- Other, please describe: _____

3. When hunting over water in New York State, how do you typically access your hunting locations? *(Please check all that apply.)*

Public launch sites:

- State wildlife management areas
- State Parks
- City, Village, Town, or County lands
- Canal lands
- Do not use any public launch sites

Private launch sites:

- Private marina
- Land that I own
- Land owned by others who have allowed me to use it
- Do not use any private launch sites

ATTITUDES TOWARD WATERFOWL MANAGEMENT

4. Please indicate how strongly you agree or disagree with the following statements related to waterfowl management. <i>(Please circle one number per line.)</i>	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. I am satisfied with the diversity of waterfowl species that occur at Braddock Bay.	1	2	3	4	5	DK
b. I am satisfied with the population levels of waterfowl species that occur at Braddock Bay.	1	2	3	4	5	DK
c. I am satisfied with the quality of bird-watching experiences at Braddock Bay.	1	2	3	4	5	DK
d. I find the problems from nuisance waterfowl tolerable.	1	2	3	4	5	DK
e. Waterfowl hunting is detrimental to waterfowl populations.	1	2	3	4	5	DK
f. I am satisfied with the quality of habitat available for waterfowl in Braddock Bay.	1	2	3	4	5	DK
g. Waterfowl management in North America has been a success.	1	2	3	4	5	DK
h. Management of waterfowl habitat helps protect wetlands.	1	2	3	4	5	DK
i. Waterfowl hunting helps control nuisance waterfowl populations.	1	2	3	4	5	DK
j. Harvest of waterfowl in New York is part of a North American-wide management approach.	1	2	3	4	5	DK
k. Waterfowl habitat management contributes to general wildlife conservation.	1	2	3	4	5	DK
l. I am satisfied with the waterfowl management in my area.	1	2	3	4	5	DK
m. Waterfowl hunters are important advocates for wetlands protection and wildlife conservation.	1	2	3	4	5	DK
n. Waterfowl hunters are concerned about the welfare of the waterfowl they hunt.	1	2	3	4	5	DK

MEDIA USE

5. Thinking about a typical weekday, OVERALL, where do you get most of your GENERAL NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Online newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

6. Thinking about a typical weekday, OVERALL, where do you get most of your NATURAL RESOURCES-RELATED NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

7. Please indicate how important or unimportant each source is to you for receiving information about wildlife management.

(Please circle one number per line.)

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important	Don't Know
a. Mail via U.S. Postal Service	1	2	3	4	5	DK
b. Print newspaper	1	2	3	4	5	DK
c. Online newspaper	1	2	3	4	5	DK
d. Television	1	2	3	4	5	DK
e. Radio	1	2	3	4	5	DK
f. State Government Internet Website	1	2	3	4	5	DK
g. E-mail from NYS Department of Environmental Conservation (DEC, ENCON)	1	2	3	4	5	DK
h. Interest Group Internet Website	1	2	3	4	5	DK
i. Internet Blog	1	2	3	4	5	DK
j. Educational presentation/demonstration	1	2	3	4	5	DK
k. Other, please list: _____	1	2	3	4	5	DK

ATTITUDES TOWARDS WATERFOWL HUNTING

8. Please indicate whether you agree or disagree with the following statements related to waterfowl hunting along waterfronts developed with residential homes. (Please circle one number per line.)	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. I am concerned about a lack of public access opportunities for waterfowl hunting.	1	2	3	4	5	DK
b. I can understand why non-hunters may be bothered by the noise from waterfowl hunting.	1	2	3	4	5	DK
c. Waterfowl hunters should be able to hunt any day of the week during the hunting season.	1	2	3	4	5	DK
d. I am concerned about my safety when I see waterfowl hunters nearby with a gun	1	2	3	4	5	DK
e. I am bothered by the noise associated with waterfowl hunting.	1	2	3	4	5	DK
f. There are too many waterfowl hunters in my area.	1	2	3	4	5	DK
g. Waterfowl hunting begins too early in the morning.	1	2	3	4	5	DK
h. Waterfowl hunting can safely occur any distance from the water's edge.	1	2	3	4	5	DK
i. Waterfowl hunters should be at least 250 feet from occupied dwellings.	1	2	3	4	5	DK
j. Waterfowl hunters should be able to hunt only every other day during the hunting season.	1	2	3	4	5	DK
k. Most non-hunters do not understand waterfowl hunting.	1	2	3	4	5	DK
l. Hunters should seek the permission of waterfront residents before hunting in front of an occupied dwelling.	1	2	3	4	5	DK
m. Most waterfowl hunting in my area is acceptable.	1	2	3	4	5	DK
n. Waterfowl hunting can legally occur any distance from the water's edge.	1	2	3	4	5	DK
o. Most waterfowl hunters respect residents living along waterfronts where they hunt.	1	2	3	4	5	DK

MEMBERSHIP IN ORGANIZATIONS

9. What are your typical reasons for joining an organization (of any type)? *(Please check all that apply.)*

- I know several people in an organization.
- I know one other person in an organization.
- Very close friends of mine are in an organization.
- Acquaintances of mine are in an organization.
- I am interested in addressing my interests through an organization.
- I am interested in helping others in an organization address their interests.

10. Please list up to three organizations from which you receive mostly new information about wildlife management. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

11. Please list up to three organizations you trust the most for information about wildlife management. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

12. From the list of organizations below, please indicate whether you agree or disagree with the viewpoints of each organization.

(Please circle one number per line.)

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. Lake Plains Waterfowl Association	1	2	3	4	5	DK
b. Humane Society of the United States	1	2	3	4	5	DK
c. Ducks Unlimited	1	2	3	4	5	DK
d. People for Ethical Treatment of Animals	1	2	3	4	5	DK
e. Your Local Homeowner's Association	1	2	3	4	5	DK
f. Finger Lakes & Western NY Waterfowl Assoc.	1	2	3	4	5	DK
g. Audubon Society	1	2	3	4	5	DK
h. Central New York Wildfowlers	1	2	3	4	5	DK
i. New York State Conservation Council	1	2	3	4	5	DK
j. Other, please identify: _____	1	2	3	4	5	DK

INFLUENCING GOVERNMENTAL POLICIES

13. For any issue, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators

14. For wildlife management issues, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- Department of Environmental Conservation (DEC or ENCON)
- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators
- New York State Conservation Council

15. In the future, if you had a concern over waterfowl hunting, how likely would you be to contact...?

(Please circle one number per line.)

	Very Unlikely	Unlikely	Neither likely nor unlikely	Likely	Very Likely	Don't Know
a. Dept. of Environmental Conservation (DEC, ENCON, or Conservation Officers)	1	2	3	4	5	DK
b. New York State Assembly Members or Senators	1	2	3	4	5	DK
c. New York State Office of the Governor	1	2	3	4	5	DK
d. New York State Conservation Council	1	2	3	4	5	DK
e. Local Government Officials	1	2	3	4	5	DK
f. Local Police Department	1	2	3	4	5	DK
g. Your local Homeowner's Association	1	2	3	4	5	DK
h. U.S. Congressional Representatives	1	2	3	4	5	DK
i. U.S. Senators	1	2	3	4	5	DK
j. Mass media (e.g., Newspapers, TV, etc.)	1	2	3	4	5	DK
k. Organizations you belong to	1	2	3	4	5	DK
l. Other: _____	1	2	3	4	5	DK

BACKGROUND INFORMATION

Your identity will be kept confidential and the information you give us will never be associated with your name.

16. In what year were you born? _____ (Please fill in a number.)

17. What is your gender? (Please check one.)

_____ Male _____ Female

18. What is your highest level of formal education? (Please check one.)

_____ Some high school
_____ High school diploma (or GED)
_____ Some college or technical school
_____ Completed an undergraduate degree
_____ Completed a postgraduate degree

19. Please describe the place where you currently live. (Please check one.)

_____ Rural area, population less than 2,500 people
_____ Small town, population of 2,500 to 19,999 people
_____ Suburban area, population of 20,000 to 49,999 people
_____ Urban City, population of 50,000 or more people

20. What was your annual household income, before taxes, in 2008? (Please check one.)

_____ \$39,999 or less	_____ \$80,000-99,999
_____ \$40,000-59,999	_____ \$100,000-119,999
_____ \$60,000-79,999	_____ \$120,000 or more

21. Which of the following activities have you engaged in over the last 12 months? (Please check all that apply.)

- | | |
|--|---|
| <input type="checkbox"/> Hiking | <input type="checkbox"/> Camping |
| <input type="checkbox"/> Rock Climbing or Ice Climbing | <input type="checkbox"/> Cross-country skiing |
| <input type="checkbox"/> Watching wildlife | <input type="checkbox"/> Backpacking |
| <input type="checkbox"/> Photographing wildlife | <input type="checkbox"/> Snowshoeing |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> ATV riding |
| <input type="checkbox"/> Mountain biking | <input type="checkbox"/> Downhill skiing |
| <input type="checkbox"/> Canoeing or Kayaking | <input type="checkbox"/> Motor-boating |
| <input type="checkbox"/> Snowmobiling | <input type="checkbox"/> Jet-skiing |
| <input type="checkbox"/> Waterfowl hunting | <input type="checkbox"/> Fishing |
| <input type="checkbox"/> Hunting (not-waterfowl) | <input type="checkbox"/> None of the above |
| <input type="checkbox"/> Trapping | <input type="checkbox"/> Other: _____ |

22. Have you ever been harassed by residents of waterfront homes while you were waterfowl hunting in New York state? (Please check one.)

- No
- Yes, please explain: _____
- _____
- _____

23. In places where you hunt over water, how close is the nearest occupied dwelling? (Please check one.)

- Less than 100 feet
- 100 – 250 feet
- 251 – 500 feet
- More than 500 feet

24. Do you live along a waterfront? (Please check one.)

- No
- Yes -> **For how many years?** _____

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

Thank You For Your Time and Effort!

To return this questionnaire, seal it with the white removable seal and drop it in the nearest mailbox. Return postage has been provided.

March 5, 2009

Dear Waterfowl Hunter:

We invite you to participate in a survey conducted by Cornell University to learn about waterfowl hunters' interests and concerns about waterfowl management and hunting near Braddock Bay Wildlife Management Area. We are also interested in understanding from where waterfowl hunters receive information about waterfowl management. You were chosen to participate in this survey because you registered in the Harvest Information Program last year and live in Central or Western New York. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to waterfowl management.

Please complete the enclosed questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox (no envelope is needed). The return postage has been provided. Your participation in the survey is strictly voluntary, but your response is very important to us. We would like to hear from everyone who receives this questionnaire, not just those with strong opinions. Because we contact only a sample of waterfowl hunters, the information you provide will represent many other people in your area. Your identity will be kept confidential and the information you give us will never be associated with your name.

The questionnaire has an identification number for the purpose of crossing your name off our master list when you respond, so that we will not send you additional reminder notices. Your name will not become part of the database of survey results. The Cornell University Institutional Review Board for Human Participants (IRB) has approved the methods used in this study (#08-09-060) on February 10, 2009. You may contact IRB at 607-255-5138 or irbhp@cornell.edu. If you have any questions or concerns about the survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you in advance for your assistance with this study.

Sincerely,

Barbara A. Knuth, Professor
Co-Leader
Human Dimensions Research Unit

Heather A. Van Den Berg
Graduate Research Assistant
Human Dimensions Research Unit

March 12, 2009

Dear Waterfowl Hunter:

Last week we mailed you a questionnaire asking you about your interests and experiences with waterfowl management and hunting near Braddock Bay Wildlife Management Area. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet completed it, we would appreciate it if you would take a few minutes now to fill it out. Your prompt response will keep us from bothering you with additional reminder letters.

Even if you are not an avid waterfowl hunter, we'd still like to know about your interests in waterfowl management and hunting, and the sources from which you receive information on such topics. Please fill out the questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox. Postage has been provided.

Thanks again for your help.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

March 26, 2009

Dear Waterfowl Hunter:

About three weeks ago we wrote to you seeking information about your experiences with waterfowl management and hunting. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet done so, please take the time to complete it today.

Cornell University is conducting this study to learn more about waterfowl hunters' interests and concerns about waterfowl management and hunting near Braddock Bay Wildlife Management Area. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to waterfowl management.

Let us assure you once again that your participation in this study is voluntary, but your response is important to us. Your identity will be kept confidential and the information you give us will never be associated with your name. In case our earlier mailing did not reach you, or in the event that your questionnaire has been misplaced, we have enclosed a replacement questionnaire. Return postage has been provided. After completing the questionnaire, simply seal it with the enclosed white removable sticker, and drop it in the mailbox. If you have any questions or concerns about this survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you for your time and effort.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

April 2, 2009

Dear Waterfowl Hunter:

We are writing to you once more to encourage you to participate in the survey of waterfowl hunters' interests and concerns over waterfowl management and hunting near Braddock Bay Wildlife Management Area. Even if you are not an avid waterfowl hunter, your input is valuable to us. Your identity will be kept confidential and the information you give us will never be associated with your name.

Although we have received a large number of completed questionnaires, we have not heard from you. Our past research tells us that those who do not return their questionnaire right away often have quite different opinions from those who do. For the survey results to reflect accurately all the waterfowl hunters in this area, we need to hear from you and others who have not yet responded. Simply complete the questionnaire, seal it with the white removable sticker provided, and drop it in any mailbox. Postage has been provided.

Thank you for your time and effort.

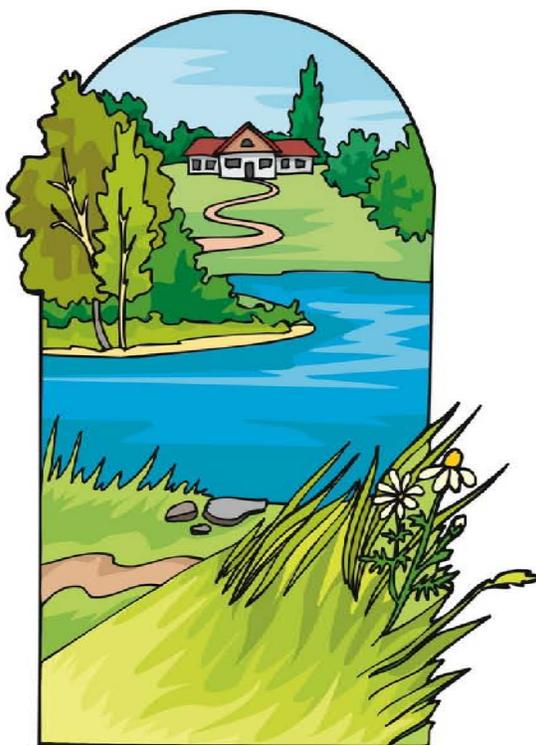
Sincerely,

Barbara A. Knuth, Professor
Co-Leader
Human Dimensions Research Unit

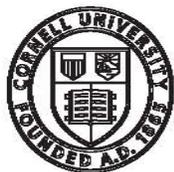
Heather A. Van Den Berg
Graduate Research Assistant
Human Dimensions Research Unit

Waterfowl Management and Hunting:

A SURVEY OF RESIDENTS NEAR BRADDOCK BAY AND
LAKE ONTARIO



Research conducted by:



Cornell University
Department of Natural Resources
Human Dimensions Research Unit

About this Questionnaire

Research conducted by:
Human Dimensions Research Unit
Department of Natural Resources
College of Agriculture and Life Sciences
Cornell University
Ithaca, New York 14853

The purpose of this research is to determine residents' interests and concerns about the management of waterfowl (e.g., wild ducks and geese) and waterfowl hunting around the Braddock Bay State Wildlife Management Area. We are also interested in understanding from where you receive information about waterfowl management. The results from this survey will help the New York State Department of Environmental Conservation and its partners improve communication with the public. You were selected to receive this questionnaire because you live near Braddock Bay State Wildlife Management Area.

Your participation in this study is voluntary, and your responses are extremely important to us. We would like to hear from EVERYONE who receives this questionnaire, not just those with strong opinions. Please complete this questionnaire at your earliest convenience, seal it with the white resealable label provided, and drop it in any mailbox; return postage has been provided. Your identity will be kept confidential and the information you give us will never be associated with your name.

This questionnaire has an identification number on the back so that we can remove your mailing address from the list when you return the questionnaire so we will not send you additional reminder notices.

Thank you for your help with this important study!



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

You were selected for this survey because you live near Braddock Bay State Wildlife Management Area. Please think about waterfowl management and hunting in this region when you answer the following questions.

1. Are you currently a permanent or seasonal resident at the location where you received this questionnaire?

(Please check one and indicate how many years.)

_____ Permanent -> **For how many years?** _____ (Go to #3)

_____ Seasonal -> **For how many years?** _____ (Go to #2)

2. If seasonal, on average how many weeks per season do you spend at the location where you received this questionnaire?

(Please write in the number of weeks per season.)

Number of weeks

_____ Winter

_____ Spring

_____ Summer

_____ Fall

3. Do you watch waterfowl at the location where you received this questionnaire? *(Please check one.)*

_____ No

_____ Yes

4. Do you feed waterfowl at the location where you received this questionnaire? *(Please check one.)*

_____ No

_____ Yes

5. Do waterfowl cause any problems at the location where you received this questionnaire? *(Please check one.)*

_____ No

_____ Yes

ATTITUDES TOWARD WATERFOWL MANAGEMENT

6. Please indicate how strongly you agree or disagree with the following statements related to waterfowl management.

(Please circle one number per line.)

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. I am satisfied with the diversity of waterfowl species that occur at Braddock Bay.	1	2	3	4	5	DK
b. I am satisfied with the population levels of waterfowl species that occur at Braddock Bay.	1	2	3	4	5	DK
c. I am satisfied with the quality of bird-watching experiences at Braddock Bay.	1	2	3	4	5	DK
d. I find the problems from nuisance waterfowl tolerable.	1	2	3	4	5	DK
e. Waterfowl hunting is detrimental to waterfowl populations.	1	2	3	4	5	DK
f. I am satisfied with the quality of habitat available for waterfowl in Braddock Bay.	1	2	3	4	5	DK
g. Waterfowl management in North America has been a success.	1	2	3	4	5	DK
h. Management of waterfowl habitat helps protect wetlands.	1	2	3	4	5	DK
i. Waterfowl hunting helps control nuisance waterfowl populations.	1	2	3	4	5	DK
j. Harvest of waterfowl in New York is part of a North American-wide management approach.	1	2	3	4	5	DK
k. Waterfowl habitat management contributes to general wildlife conservation.	1	2	3	4	5	DK
l. I am satisfied with the waterfowl management in my area.	1	2	3	4	5	DK
m. Waterfowl hunters are important advocates for wetlands protection.	1	2	3	4	5	DK
n. Waterfowl hunters are concerned about the welfare of the waterfowl they hunt.	1	2	3	4	5	DK

MEDIA USE

7. Thinking about a typical weekday, OVERALL, where do you get most of your GENERAL NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Online newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

8. Thinking about a typical weekday, OVERALL, where do you get most of your NATURAL RESOURCES-RELATED NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Online newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

9. Please indicate how important or unimportant each source is to you for receiving information about wildlife management.

(Please circle one number per line.)

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important	Don't Know
a. Mail via U.S. Postal Service	1	2	3	4	5	DK
b. Print newspaper	1	2	3	4	5	DK
c. Online newspaper	1	2	3	4	5	DK
d. Television	1	2	3	4	5	DK
e. Radio	1	2	3	4	5	DK
f. State Government Internet Website	1	2	3	4	5	DK
g. E-mail from NYS Department of Environmental Conservation (DEC, ENCON)	1	2	3	4	5	DK
h. Interest Group Internet Website	1	2	3	4	5	DK
i. Internet Blog	1	2	3	4	5	DK
j. Educational presentation/demonstration	1	2	3	4	5	DK
k. Other, please list: _____	1	2	3	4	5	DK

ATTITUDES TOWARDS WATERFOWL HUNTING

10. Please indicate whether you agree or disagree with the following statements related to waterfowl hunting along waterfronts developed with residential homes. (Please circle one number per line.)	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. I am concerned about a lack of public access opportunities for waterfowl hunting.	1	2	3	4	5	DK
b. I can understand why non-hunters may be bothered by the noise from waterfowl hunting.	1	2	3	4	5	DK
c. Waterfowl hunters should be able to hunt any day of the week during the hunting season.	1	2	3	4	5	DK
d. I am concerned about my safety when I see waterfowl hunters nearby with a gun	1	2	3	4	5	DK
e. I am bothered by the noise associated with waterfowl hunting.	1	2	3	4	5	DK
f. There are too many waterfowl hunters in my area.	1	2	3	4	5	DK
g. Waterfowl hunting begins too early in the morning.	1	2	3	4	5	DK
h. Waterfowl hunting can safely occur any distance from the water's edge.	1	2	3	4	5	DK
i. Waterfowl hunters should be at least 250 feet from occupied dwellings.	1	2	3	4	5	DK
j. Waterfowl hunters should be able to hunt only every other day during the hunting season.	1	2	3	4	5	DK
k. Most non-hunters do not understand waterfowl hunting.	1	2	3	4	5	DK
l. Hunters should seek the permission of waterfront residents before hunting in front of an occupied dwelling.	1	2	3	4	5	DK
m. Most waterfowl hunting in my area is acceptable.	1	2	3	4	5	DK
n. Waterfowl hunting can legally occur any distance from the water's edge.	1	2	3	4	5	DK
o. Most waterfowl hunters respect residents living along waterfronts where they hunt.	1	2	3	4	5	DK

MEMBERSHIP IN ORGANIZATIONS

11. What are your typical reasons for joining an organization (of any type)? *(Please check all that apply.)*

- I know several people in an organization.
- I know one other person in an organization.
- Very close friends of mine are in an organization.
- Acquaintances of mine are in an organization.
- I am interested in addressing my interests through an organization.
- I am interested in helping others in an organization address their interests.

12. Please list up to three organizations from which you receive mostly new information about wildlife management. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

13. Please list up to three organizations you trust the most for information about wildlife management. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

14. From the list of organizations below, please indicate whether you agree or disagree with the viewpoints of each organization.

(Please circle one number per line.)

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. Lake Plains Waterfowl Association	1	2	3	4	5	DK
b. Humane Society of the United States	1	2	3	4	5	DK
c. Ducks Unlimited	1	2	3	4	5	DK
d. People for Ethical Treatment of Animals	1	2	3	4	5	DK
e. Your Local Homeowner's Association	1	2	3	4	5	DK
f. Finger Lakes & Western NY Waterfowl Assoc.	1	2	3	4	5	DK
g. Audubon Society	1	2	3	4	5	DK
h. Central New York Wildfowlers	1	2	3	4	5	DK
i. New York State Conservation Council	1	2	3	4	5	DK
j. Other, please identify: _____	1	2	3	4	5	DK

INFLUENCING GOVERNMENTAL POLICIES

15. For any issue, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators

16. For wildlife management issues, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- Department of Environmental Conservation (DEC or ENCON)
- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators
- New York State Conservation Council

17. In the future, if you had a concern over waterfowl hunting, how likely would you be to contact...?

(Please circle one number per line.)

	Very Unlikely	Unlikely	Neither likely nor unlikely	Likely	Very Likely	Don't Know
a. Dept. of Environmental Conservation (DEC, ENCON, or Conservation Officers)	1	2	3	4	5	DK
b. New York State Assembly Members or Senators	1	2	3	4	5	DK
c. New York State Office of the Governor	1	2	3	4	5	DK
d. New York State Conservation Council	1	2	3	4	5	DK
e. Local Government Officials	1	2	3	4	5	DK
f. Local Police Department	1	2	3	4	5	DK
g. Your local Homeowner's Association	1	2	3	4	5	DK
h. U.S. Congressional Representatives	1	2	3	4	5	DK
i. U.S. Senators	1	2	3	4	5	DK
j. Mass media (e.g., Newspapers, TV, etc.)	1	2	3	4	5	DK
k. Organizations you belong to	1	2	3	4	5	DK
l. Other: _____	1	2	3	4	5	DK

BACKGROUND INFORMATION

Your identity will be kept confidential and the information you give us will never be associated with your name.

18. In what year were you born? _____ (Please fill in a number.)

19. What is your gender? (Please check one.)

_____ Male _____ Female

20. What is your highest level of formal education? (Please check one.)

_____ Some high school
_____ High school diploma (or GED)
_____ Some college or technical school
_____ Completed an undergraduate degree
_____ Completed a postgraduate degree

21. Please describe the place where you currently live.

(Please check one.)

_____ Rural area, population less than 2,500 people
_____ Small town, population of 2,500 to 19,999 people
_____ Suburban area, population of 20,000 to 49,999 people
_____ Urban City, population of 50,000 or more people

22. What was your annual household income, before taxes, in 2008?

(Please check one.)

_____ \$39,999 or less	_____ \$80,000-99,999
_____ \$40,000-59,999	_____ \$100,000-119,999
_____ \$60,000-79,999	_____ \$120,000 or more

23. Which of the following activities have you engaged in over the last 12 months? *(Please check all that apply.)*

- | | |
|--|---|
| <input type="checkbox"/> Hiking | <input type="checkbox"/> Camping |
| <input type="checkbox"/> Rock Climbing or Ice Climbing | <input type="checkbox"/> Cross-country skiing |
| <input type="checkbox"/> Watching wildlife | <input type="checkbox"/> Backpacking |
| <input type="checkbox"/> Photographing wildlife | <input type="checkbox"/> Snowshoeing |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> ATV riding |
| <input type="checkbox"/> Mountain biking | <input type="checkbox"/> Downhill skiing |
| <input type="checkbox"/> Canoeing or Kayaking | <input type="checkbox"/> Motor-boating |
| <input type="checkbox"/> Snowmobiling | <input type="checkbox"/> Jet-skiing |
| <input type="checkbox"/> Waterfowl hunting | <input type="checkbox"/> Fishing |
| <input type="checkbox"/> Hunting (not-waterfowl) | <input type="checkbox"/> None of the above |
| <input type="checkbox"/> Trapping | <input type="checkbox"/> Other: _____ |

24. If you hunt waterfowl, over what types of land or water do you hunt waterfowl? *(Please check all that apply.)*

- Shallow water marsh, beaver pond, or small river
- Big river (e.g., Niagara), big lake, or ocean
- Agricultural fields
- Other, please describe: _____

25. Do you know other people who hunt waterfowl? *(Please check one.)*

- No
- Yes-> **Do these waterfowl hunters live in your household?** *(Please check one.)*
 - No
 - Yes

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

Thank You For Your Time and Effort!

To return this questionnaire, seal it with the white removable seal and drop it in the nearest mailbox. Return postage has been provided.

March 5, 2009

Dear Waterfront Resident:

We invite you to participate in a survey conducted by Cornell University to learn about waterfront residents' interests and concerns about waterfowl management and hunting near Braddock Bay Wildlife Management Area. We are also interested in understanding from where waterfront residents receive information about waterfowl management and hunting activities. You were chosen to participate in this survey because you live near Braddock Bay Wildlife Management Area. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to waterfowl management.

Please have the person in your household who is most aware of waterfowl management and hunting activities complete the enclosed questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox (no envelope is needed). The return postage has been provided. Your participation in the survey is strictly voluntary, but your response is very important to us. We would like to hear from everyone who receives this questionnaire, not just those with strong opinions. Because we contact only a sample of waterfront residents, the information you provide will represent many other people in your area. Your identity will be kept confidential and the information you give us will never be associated with your name.

The questionnaire has an identification number for the purpose of crossing your name off our master list when you respond, so that we will not send you additional reminder notices. Your name will not become part of the database of survey results. The Cornell University Institutional Review Board for Human Participants (IRB) has approved the methods used in this study (#08-09-060) on February 10, 2009. You may contact IRB at 607-255-5138 or irbhp@cornell.edu. If you have any questions or concerns about the survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you in advance for your assistance with this study.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

March 12, 2009

Dear Waterfront Resident:

Last week we mailed you a questionnaire asking you about your interests and experiences with waterfowl management and hunting near Braddock Bay Wildlife Management Area. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If the questionnaire has not yet been completed, we would appreciate it if the person in your household who is most aware of waterfowl management and hunting activities takes a few minutes now to fill out the questionnaire. Your prompt response will keep us from bothering you with additional reminder letters.

Even if you do not have strong opinions about waterfowl management and hunting, we'd still like to know about your interests and concerns, and the sources from which you receive information on such topics. Please fill out the questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox. Postage has been provided.

Thanks again for your help.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

March 26, 2009

Dear Waterfront Resident:

About three weeks ago we wrote to you seeking information about your experiences with waterfowl management and hunting. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet done so, please ask the person in your household who is most aware of waterfowl management and hunting activities to take the time to complete it today.

Cornell University is conducting this study to learn more about waterfront residents' interests and concerns about waterfowl management and hunting near Braddock Bay Wildlife Management Area. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to waterfowl management.

Let us assure you once again that your participation in this study is voluntary, but your response is important to us. Your identity will be kept confidential and the information you give us will never be associated with your name. In case our earlier mailing did not reach you, or in the event that your questionnaire has been misplaced, we have enclosed a replacement questionnaire. Return postage has been provided. After completing the questionnaire, simply seal it with the enclosed white removable sticker, and drop it in the mailbox. If you have any questions or concerns about this survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you for your time and effort.

Sincerely,

Barbara A. Knuth, Professor
Co-Leader
Human Dimensions Research Unit

Heather A. Van Den Berg
Graduate Research Assistant
Human Dimensions Research Unit

April 2, 2009

Dear Waterfront Resident:

We are writing to you once more to encourage you to participate in the survey of waterfront residents' interests and concerns about waterfowl management and hunting near Braddock Bay Wildlife Management Area. Even if you do not have strong opinions, your input is valuable to us. Your identity will be kept confidential and the information you give us will never be associated with your name.

Although we have received a large number of completed questionnaires, we have not heard from you. Our past research tells us that those who do not return their questionnaire right away often have quite different opinions from those who do. For the survey results to reflect accurately all the waterfront residents in this area, we need to hear from you and others who have not yet responded. Simply have the person in your household who is most aware of waterfowl management and hunting activities complete the questionnaire, seal it with the white removable sticker provided, and drop it in any mailbox. Postage has been provided.

Thank you for your time and effort.

Sincerely,

Barbara A. Knuth, Professor
Co-Leader
Human Dimensions Research Unit

Heather A. Van Den Berg
Graduate Research Assistant
Human Dimensions Research Unit

Sharing Public Lands: Dogs and Management of Furbearing Wildlife

A SURVEY OF LICENSED DOG-OWNERS



Research conducted by:



Cornell University
Department of Natural Resources
Human Dimensions Research Unit

About this Questionnaire

Research conducted by:
Human Dimensions Research Unit
Department of Natural Resources
College of Agriculture and Life Sciences
Cornell University
Ithaca, New York 14853

The purpose of this research is to determine licensed dog-owners' interests and concerns with multiple-use of public lands, such as wildlife management areas, state forests, Finger Lakes National Forest, county parks, and nature preserves. Specifically, we are interested in your views about management of these shared public lands for licensed dog-owners and wildlife management of furbearing wildlife such as beaver, fox, mink, muskrat, raccoons, skunk, coyote, opossum, and weasel. We are also interested in understanding from where you receive information about multiple-use of public lands. The results from this survey will help the New York State Department of Environmental Conservation and its partners improve communication related to public land and wildlife management. You were randomly selected for this survey because you are a licensed dog-owner living in a Southern Tier county.

Your participation in this study is voluntary, and your responses are extremely important to us. We would like to hear from EVERYONE who receives this questionnaire, not just those with strong opinions. Please complete this questionnaire at your earliest convenience, seal it with the white resealable label provided, and drop it in any mailbox; return postage has been provided. Your identity will be kept confidential and the information you give us will never be associated with your name.

This questionnaire has an identification number on the back so that we can remove your mailing address from the list when you return the questionnaire so we will not send you additional reminder notices.

Thank you for your help with this important study!



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

You were selected for this survey because you are a licensed dog-owner living in Chemung, Chenango, Cortland, Madison, Ontario, Tompkins, Schuyler, Seneca, Steuben, or Yates counties. Please think about the multiple-use of public lands for recreation and management of furbearing wildlife in these counties when you answer the following questions.

1. Please indicate on which lands in New York State you walk your dog(s) in a typical year. (Please check all that apply.)

- State Forests
- State Wildlife Management Areas
- State Parks
- City, Village, Town, or County Lands (e.g., Municipal Lands)
- Finger Lakes National Forest
- National Wildlife Refuges
- Nature Preserves or Land Trusts
- Designated "Dog Parks"
- Public Roads or Sidewalks
- Private property I own
- Private property where the owner has allowed me to
- Don't know the status of lands where I walk my dog
- Other, please indicate: _____

2. In a typical year, during which months do you take your dog with you to public lands in New York State, such as wildlife management areas, state forests, Finger Lakes National Forest, national wildlife refuges, or municipal lands? (Please check all that apply.)

- January, February, or March
- April, May, or June
- July, August, or September
- October, November, or December
- I do not take my dog to any of these types of public lands

ATTITUDES TOWARD THE MULTIPLE-USE OF PUBLIC LANDS

3. Please indicate whether you agree or disagree with the following statements related to multiple-use of public lands for recreation and wildlife trapping. <i>(Please circle one number per line.)</i>	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. Dog owners have relatively few places where they can take their dogs and allow them to run off-leash.	1	2	3	4	5	DK
b. Wildlife trapping is a traditional activity.	1	2	3	4	5	DK
c. Most dogs I see on public lands are under voice and sight command of their owner or trainer.	1	2	3	4	5	DK
d. Trappers should be allowed to trap wildlife on public lands.	1	2	3	4	5	DK
e. Dog owners or trainers should have access to designated "dog parks" to allow their dogs to run off-leash, safely.	1	2	3	4	5	DK
f. Trappers should be allowed to trap wildlife on private lands, with landowner permission.	1	2	3	4	5	DK
g. Trappers should be able to use body-gripping traps on public lands.	1	2	3	4	5	DK
h. I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping.	1	2	3	4	5	DK
i. I am concerned about dogs getting caught in wildlife traps on public lands.	1	2	3	4	5	DK
j. Most dogs I see on public lands are on a leash.	1	2	3	4	5	DK
k. State forest managers should designate "dog parks" where dogs may run off-leash, safely.	1	2	3	4	5	DK

4. How concerned are you that your dog may be caught in a wildlife trap set on public lands in New York State such as, state forests, wildlife management areas, Finger Lakes National Forest, National Wildlife Refuges, or municipal parks? (Please circle one.)

Not at all concerned	Somewhat unconcerned	Neither concerned nor unconcerned	Somewhat concerned	Very concerned	No opinion
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MEDIA USE

5. Thinking about a typical weekday, OVERALL, where do you get most of your GENERAL NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Online newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

6. Thinking about a typical weekday, OVERALL, where do you get most of your NATURAL RESOURCES-RELATED NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Online newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

7. Please indicate how important or unimportant each source is to you for receiving information about multiple-use of public lands.

(Please circle one number per line.)

	Not at all important	Slightly important	Somewhat important	Moderately Important	Very Important	Don't Know
a. Mail via U.S. Postal Service	1	2	3	4	5	DK
b. Print newspaper	1	2	3	4	5	DK
c. Online newspaper	1	2	3	4	5	DK
d. Television	1	2	3	4	5	DK
e. Radio	1	2	3	4	5	DK
f. State Government Internet Website	1	2	3	4	5	DK
g. E-mail from NYS Department of Environmental Conservation (DEC, ENCON)	1	2	3	4	5	DK
h. Interest Group Internet Website	1	2	3	4	5	DK
i. Internet Blog	1	2	3	4	5	DK
j. Educational presentation/demonstration	1	2	3	4	5	DK
k. Other, please list: _____	1	2	3	4	5	DK

ATTITUDES TOWARD MANAGEMENT OF FURBEARING WILDLIFE

8. Please indicate whether you agree or disagree with the following statements related to the management of furbearing wildlife in your region. <i>(Please circle one number per line.)</i>	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. Management of furbearing wildlife may be necessary to protect endangered species or habitats.	1	2	3	4	5	DK
b. Furbearing wildlife should be restored to their historic ranges.	1	2	3	4	5	DK
c. Furbearing wildlife are a threat to public health.	1	2	3	4	5	DK
d. The harvest of furbearing wildlife should be managed as a renewable resource.	1	2	3	4	5	DK
e. Furbearer management decisions should be made based on sound scientific research.	1	2	3	4	5	DK
f. Most wildlife traps capture target species in the most humane manner.	1	2	3	4	5	DK
g. Regulated trapping enables the management of furbearing wildlife.	1	2	3	4	5	DK
h. Furbearing wildlife should be managed to prevent them from becoming nuisance wildlife problems.	1	2	3	4	5	DK
i. Furbearing wildlife populations have been restored.	1	2	3	4	5	DK
j. I am satisfied with the management of furbearing wildlife in my region.	1	2	3	4	5	DK
k. Most wildlife traps selectively capture their target species.	1	2	3	4	5	DK
l. Residents in my community should have access to nuisance wildlife control operators to help address wildlife problems.	1	2	3	4	5	DK

MEMBERSHIP IN ORGANIZATIONS

9. What are your typical reasons for joining an organization (of any type)? *(Please check all that apply.)*

- I know several people in an organization.
- I know one other person in an organization.
- Very close friends of mine are in an organization.
- Acquaintances of mine are in an organization.
- I am interested in addressing my interests through an organization.
- I am interested in helping others in an organization address their interests.

10. Please list up to three organizations from which you receive mostly new information about multiple-use of public lands. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

11. Please list up to three organizations you trust the most for information about multiple-use of public lands. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

12. From the list of organizations below, please indicate whether you agree or disagree with the viewpoints of each organization.

(Please circle one number per line.)

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. American Kennel Club	1	2	3	4	5	DK
b. Humane Society of the United States	1	2	3	4	5	DK
c. New York State Conservation Council	1	2	3	4	5	DK
d. New York State Trappers Association	1	2	3	4	5	DK
e. Mixed Breed Dog Clubs of America	1	2	3	4	5	DK
f. People for Ethical Treatment of Animals	1	2	3	4	5	DK
g. Animal Protection Institute	1	2	3	4	5	DK
h. National Trappers Association	1	2	3	4	5	DK
i. Other, please identify: _____	1	2	3	4	5	DK

INFLUENCING GOVERNMENTAL POLICIES

13. For any issue, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators

14. For wildlife management issues, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- Department of Environmental Conservation (DEC or ENCON)
- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators
- New York State Conservation Council

15. In the future, if you had a concern over multiple-use of public lands, how likely or unlikely would you be to contact...?

(Please circle one number per line.)

	Very Unlikely	Unlikely	Neither likely nor unlikely	Likely	Very Likely	Don't Know
a. Dept. of Environmental Conservation (DEC, ENCON, or Conservation Officers)	1	2	3	4	5	DK
b. New York State Assembly Members or Senators	1	2	3	4	5	DK
c. New York State Office of the Governor	1	2	3	4	5	DK
d. New York State Conservation Council	1	2	3	4	5	DK
e. Local Government Officials	1	2	3	4	5	DK
f. Local Police Department	1	2	3	4	5	DK
g. U.S. Congressional Representatives	1	2	3	4	5	DK
h. U.S. Senators	1	2	3	4	5	DK
i. Organizations you belong to	1	2	3	4	5	DK
j. Mass media (e.g., Newspapers, TV, etc.)	1	2	3	4	5	DK
k. Other: _____	1	2	3	4	5	DK

BACKGROUND INFORMATION

Your identity will be kept confidential and the information you give us will never be associated with your name.

16. In what year were you born? _____ (Please fill in a number.)

17. What is your gender? (Please check one.)

_____ Male _____ Female

18. What is your highest level of formal education? (Please check one.)

- _____ Some high school
- _____ High school diploma (or GED)
- _____ Some college or technical school
- _____ Completed an undergraduate degree
- _____ Completed a postgraduate degree

19. Please describe the place where you currently live. (Please check one.)

- _____ Rural area, population less than 2,500 people
- _____ Small town, population of 2,500 to 19,999 people
- _____ Suburban area, population of 20,000 to 49,999 people
- _____ Urban City, population of 50,000 or more people

20. What was your annual household income, before taxes, in 2008? (Please check one.)

- | | |
|------------------------|-------------------------|
| _____ \$39,999 or less | _____ \$80,000-99,999 |
| _____ \$40,000-59,999 | _____ \$100,000-119,999 |
| _____ \$60,000-79,999 | _____ \$120,000 or more |

21. Which of the following activities have you engaged in over the last 12 months? (Please check all that apply.)

- | | |
|--|---|
| <input type="checkbox"/> Hiking | <input type="checkbox"/> Camping |
| <input type="checkbox"/> Rock Climbing or Ice Climbing | <input type="checkbox"/> Cross-country skiing |
| <input type="checkbox"/> Watching wildlife | <input type="checkbox"/> Backpacking |
| <input type="checkbox"/> Photographing wildlife | <input type="checkbox"/> Snowshoeing |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> ATV riding |
| <input type="checkbox"/> Mountain biking | <input type="checkbox"/> Downhill skiing |
| <input type="checkbox"/> Canoeing or Kayaking | <input type="checkbox"/> Motor-boating |
| <input type="checkbox"/> Snowmobiling | <input type="checkbox"/> Jet-skiing |
| <input type="checkbox"/> Waterfowl hunting | <input type="checkbox"/> Fishing |
| <input type="checkbox"/> Hunting (not-waterfowl) | <input type="checkbox"/> None of the above |
| <input type="checkbox"/> Trapping | <input type="checkbox"/> Other: _____ |

22. Have you ever found any wildlife traps while you were using public lands? (Please check one.)

- No
 Yes

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

Thank You For Your Time and Effort!

To return this questionnaire, seal it with the white removable seal and drop it in the nearest mailbox. Postage has been provided.

March 5, 2009

Dear Licensed Dog-Owner:

We invite you to participate in a survey conducted by Cornell University to learn about licensed dog-owners' interests and concerns with multiple-use of public lands, such as wildlife management areas, state forests, Finger Lakes National Forest, county parks, and nature preserves in New York's Southern Tier counties. We are specifically interested in the management of these shared public lands for licensed dog-owners and wildlife management of furbearing wildlife such as beaver, fox, mink, muskrat, raccoons, skunk, coyote, opossum, and weasel. We are also interested in understanding from where dog-owners receive information about the multiple-use management of such lands. You were chosen to participate in this survey because you are a licensed dog-owner living in Chemung, Chenango, Cortland, Madison, Ontario, Tompkins, Schuyler, Seneca, Steuben, or Yates counties. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to multiple-use of public lands and management of furbearing wildlife.

Please complete the enclosed questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox (no envelope is needed). The return postage has been provided. Your participation in the survey is strictly voluntary, but your response is very important to us. We would like to hear from everyone who receives this questionnaire, not just those with strong opinions. Because we contact only a sample of licensed dog-owners, the information you provide will represent many other people in your area. Your identity will be kept confidential and the information you give us will never be associated with your name.

The questionnaire has an identification number for the purpose of crossing your name off our master list when you respond, so that we will not send you additional reminder notices. Your name will not become part of the database of survey results. The Cornell University Institutional Review Board for Human Participants (IRB) has approved the methods used in this study (#08-09-060) on February 10, 2009. You may contact IRB at 607-255-5138 or irbhp@cornell.edu. If you have any questions or concerns about the survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you in advance for your assistance with this study.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

March 12, 2009

Dear Licensed Dog-Owner:

Last week we mailed you a questionnaire asking you about your interests and concerns with multiple-use of public lands, such as wildlife management areas, state forests, Finger Lakes National Forest, county parks, and nature preserves in New York's Southern Tier counties. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet completed it, we would appreciate it if you would take a few minutes now to fill it out. Your prompt response will keep us from bothering you with additional reminder letters.

Even if you do not have strong opinions about management of shared public lands, we'd still like to know about your interests and concerns, and the sources from which you receive information on such topics. Please fill out the questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox. Postage has been provided.

Thanks again for your help.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

March 26, 2009

Dear Licensed Dog-Owner:

About three weeks ago we wrote to you seeking information about your interests and concerns with the management of shared public lands in Chemung, Chenango, Cortland, Madison, Ontario, Tompkins, Schuyler, Seneca, Steuben, or Yates counties. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet done so, please take the time to complete it today.

Cornell University is conducting this study to learn more about licensed dog-owners' interests and concerns over multiple-use management of public lands for recreation and furbearing wildlife in New York's Southern Tier counties. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to multiple-use public land management.

Let us assure you once again that your participation in this study is voluntary, but your response is important to us. Your identity will be kept confidential and the information you give us will never be associated with your name. In case our earlier mailing did not reach you, or in the event that your questionnaire has been misplaced, we have enclosed a replacement questionnaire. Return postage has been provided. After completing the questionnaire, simply seal it with the enclosed white removable sticker, and drop it in the mailbox. If you have any questions or concerns about this survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you for your time and effort.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

April 2, 2009

Dear Licensed Dog-Owner:

We are writing to you once more to encourage you to participate in the survey of licensed dog-owners' interests and concerns over the multiple-use of public lands for recreation and furbearing wildlife in New York's Southern Tier counties. Even if you do not have strong opinions, your input is valuable to us. Your identity will be kept confidential and the information you give us will never be associated with your name.

Although we have received a large number of completed questionnaires, we have not heard from you. Our past research tells us that those who do not return their questionnaire right away often have quite different opinions from those who do. For the survey results to reflect accurately all the licensed dog-owners in this area, we need to hear from you and others who have not yet responded. Simply complete the questionnaire, seal it with the white removable sticker provided, and drop it in any mailbox. Postage has been provided.

Thank you for your time and effort.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

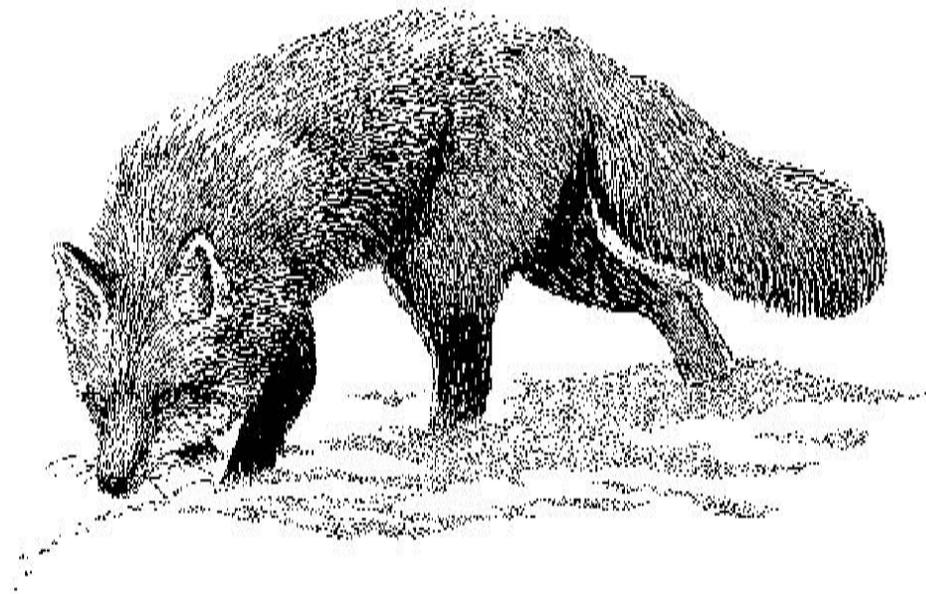
Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

Sharing Public Lands: Dogs and Wildlife Trapping

A SURVEY OF TRAPPERS



Research conducted by:



**Cornell University
Department of Natural Resources
Human Dimensions Research Unit**

About this Questionnaire

Research conducted by:
Human Dimensions Research Unit
Department of Natural Resources
College of Agriculture and Life Sciences
Cornell University
Ithaca, New York 14853

The purpose of this research is to determine licensed trappers' interests and concerns with multiple-use of public lands, such as wildlife management areas, state forests, Finger Lakes National Forest, county parks, and nature preserves. Specifically, we are interested in your views about the management of these shared public lands for licensed dog-owners and wildlife management of furbearing wildlife such as beaver, fox, mink, muskrat, raccoons, skunk, coyote, opossum, and weasel. We are also interested in understanding from where you receive information about multiple-use of public lands. The results from this survey will help the New York State Department of Environmental Conservation and its partners improve communication related to public land and wildlife management. You were randomly selected for this survey because you purchased a license to trap wildlife in one of New York State's Southern Tier counties.

Your participation in this study is voluntary, and your responses are extremely important to us. We would like to hear from EVERYONE who receives this questionnaire, not just those with strong opinions. Please complete this questionnaire at your earliest convenience, seal it with the white resealable label provided, and drop it in any mailbox; return postage has been provided. Your identity will be kept confidential and the information you give us will never be associated with your name.

This questionnaire has an identification number on the back so that we can remove your mailing address from the list when you return the questionnaire so we will not send you additional reminder notices.

Thank you for your help with this important study!



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

You were selected for this survey because you are a licensed wildlife trapper living in Chemung, Chenango, Cortland, Madison, Ontario, Tompkins, Schuyler, Seneca, Steuben, or Yates counties. Please think about the multiple-use of public lands for recreation and management of furbearing wildlife in these counties when you answer the following questions.

1. Have you set wildlife traps in New York State during the regulated trapping season anytime since 2003? (Please check one.)

No (Please go to question #4.)

Yes (Please go to question #2.)

2. If you trapped wildlife in New York State since 2003, please indicate on which types of lands you conducted trapping activities in a given year. (Please check all that apply.)

Public lands:

State Forests

State Wildlife Management Areas

Finger Lakes National Forest

City, village, town, or county lands

Along a road (e.g., US or NY Routes, gravel roads)

Public lands, don't know what type

Other public lands, please indicate: _____

Private lands:

Private lands you own

Private lands, where another owner allows you to trap on it

Other private lands, please indicate: _____

3. Since 2003, for an average year, please indicate what percent of your New York State trapping activities you conducted on the different types of land.

(Please fill in the blanks; numbers should total 100%.)

_____ % on private lands you own

_____ % on private lands owned by another owner who allows you to trap on the lands

_____ % on public lands (e.g., wildlife management areas, state forests, county lands, roadsides)

_____ % on lands that you do not know what type

100% Total

ATTITUDES TOWARD THE MULTIPLE-USE OF PUBLIC LANDS

4. Please indicate whether you agree or disagree with the following statements related to multiple-use of public lands for recreation and wildlife trapping. <i>(Please circle one number per line.)</i>	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. Dog owners have relatively few places where they can take their dogs and allow them to run off-leash.	1	2	3	4	5	DK
b. Wildlife trapping is a traditional activity.	1	2	3	4	5	DK
c. Most dogs I see on public lands are under voice and sight command of their owner or trainer.	1	2	3	4	5	DK
d. Trappers should be allowed to trap wildlife on public lands.	1	2	3	4	5	DK
e. Dog owners or trainers should have access to designated "dog parks" to allow their dogs to run off-leash, safely.	1	2	3	4	5	DK
f. Trappers should be allowed to trap wildlife on private lands, with landowner permission.	1	2	3	4	5	DK
g. Trappers should be able to use body-gripping traps on public lands.	1	2	3	4	5	DK
h. I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping.	1	2	3	4	5	DK
i. I am concerned about dogs getting caught in wildlife traps on public lands.	1	2	3	4	5	DK
j. Most dogs I see on public lands are on a leash.	1	2	3	4	5	DK
k. State forest managers should designate "dog parks" where dogs may run off-leash, safely.	1	2	3	4	5	DK

MEDIA USE

5. Thinking about a typical weekday, OVERALL, where do you get most of your GENERAL NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Online newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

6. Thinking about a typical weekday, OVERALL, where do you get most of your NATURAL RESOURCES-RELATED NEWS? (Please check all that apply.)

- Television
- Print newspaper
- Online newspaper
- Radio
- Internet
- Other, please describe: _____
- Don't know

7. Please indicate how important or unimportant each source is to you for receiving information about multiple-use of public lands.

(Please circle one number per line.)

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important	Don't Know
a. Mail via U.S. Postal Service	1	2	3	4	5	DK
b. Print newspaper	1	2	3	4	5	DK
c. Online newspaper	1	2	3	4	5	DK
d. Television	1	2	3	4	5	DK
e. Radio	1	2	3	4	5	DK
f. State Government Internet Website	1	2	3	4	5	DK
g. E-mail from NYS Department of Environmental Conservation (DEC, ENCON)	1	2	3	4	5	DK
h. Interest Group Internet Website	1	2	3	4	5	DK
i. Internet Blog	1	2	3	4	5	DK
j. Educational presentation/demonstration	1	2	3	4	5	DK
k. Other, please list: _____	1	2	3	4	5	DK

ATTITUDES TOWARD MANAGEMENT OF FURBEARING WILDLIFE

8. Please indicate whether you agree or disagree with the following statements related to the management of furbearing wildlife in your region. <i>(Please circle one number per line.)</i>	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. Management of furbearing wildlife may be necessary to protect endangered species or habitats.	1	2	3	4	5	DK
b. Furbearing wildlife should be restored to their historic ranges.	1	2	3	4	5	DK
c. Furbearing wildlife are a threat to public health.	1	2	3	4	5	DK
d. The harvest of furbearing wildlife should be managed as a renewable resource.	1	2	3	4	5	DK
e. Furbearer management decisions should be made based on sound scientific research.	1	2	3	4	5	DK
f. Most wildlife traps capture target species in the most humane manner.	1	2	3	4	5	DK
g. Regulated trapping enables the management of furbearing wildlife.	1	2	3	4	5	DK
h. Furbearing wildlife should be managed to prevent them from becoming nuisance wildlife problems.	1	2	3	4	5	DK
i. Furbearing wildlife populations have been restored.	1	2	3	4	5	DK
j. I am satisfied with the management of furbearing wildlife in my region.	1	2	3	4	5	DK
k. Most wildlife traps selectively capture their target species.	1	2	3	4	5	DK
l. Residents in my community should have access to nuisance wildlife control operators to help address wildlife problems.	1	2	3	4	5	DK

MEMBERSHIP IN ORGANIZATIONS

9. What are your typical reasons for joining an organization (of any type)? *(Please check all that apply.)*

- I know several people in an organization.
- I know one other person in an organization.
- Very close friends of mine are in an organization.
- Acquaintances of mine are in an organization.
- I am interested in addressing my interests through an organization.
- I am interested in helping others in an organization address their interests.

10. Please list up to three organizations from which you receive mostly new information about multiple-use of public lands. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

11. Please list up to three organizations you trust the most for information about multiple-use of public lands. *(Please write names.)*

- 1st _____
- 2nd _____
- 3rd _____

12. From the list of organizations below, please indicate whether you agree or disagree with the viewpoints of each organization.

(Please circle one number per line.)

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
a. American Kennel Club	1	2	3	4	5	DK
b. Humane Society of the United States	1	2	3	4	5	DK
c. New York State Conservation Council	1	2	3	4	5	DK
d. New York State Trappers Association	1	2	3	4	5	DK
e. Mixed Breed Dog Clubs of America	1	2	3	4	5	DK
f. People for Ethical Treatment of Animals	1	2	3	4	5	DK
g. Animal Protection Institute	1	2	3	4	5	DK
h. National Trappers Association	1	2	3	4	5	DK
i. Other, please identify: _____	1	2	3	4	5	DK

INFLUENCING GOVERNMENTAL POLICIES

13. For any issue, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators

14. For wildlife management issues, please indicate which government or other officials you might have contacted seeking to change policies in the past five years. (Please check all that apply.)

- Department of Environmental Conservation (DEC or ENCON)
- New York State Assembly or Senate Members
- New York State Office of the Governor
- Local Government Officials
- U.S. Congressional Representatives
- U.S. Senators
- New York State Conservation Council

15. In the future, if you had a concern over multiple-use of public lands, how likely or unlikely would you be to contact...?

(Please circle one number per line.)

	Very Unlikely	Unlikely	Neither likely nor unlikely	Likely	Very Likely	Don't Know
a. Dept. of Environmental Conservation (DEC, ENCON, or Conservation Officers)	1	2	3	4	5	DK
b. New York State Assembly Members or Senators	1	2	3	4	5	DK
c. New York State Office of the Governor	1	2	3	4	5	DK
d. New York State Conservation Council	1	2	3	4	5	DK
e. Local Government Officials	1	2	3	4	5	DK
f. Local Police Department	1	2	3	4	5	DK
g. U.S. Congressional Representatives	1	2	3	4	5	DK
h. U.S. Senators	1	2	3	4	5	DK
i. Organizations you belong to	1	2	3	4	5	DK
j. Mass media (e.g., Newspapers, TV, etc.)	1	2	3	4	5	DK
k. Other: _____	1	2	3	4	5	DK

BACKGROUND INFORMATION

Your identity will be kept confidential and the information you give us will never be associated with your name.

16. In what year were you born? _____ (Please fill in a number.)

17. What is your gender? (Please check one.)

_____ Male _____ Female

18. What is your highest level of formal education? (Please check one.)

- _____ Some high school
- _____ High school diploma (or GED)
- _____ Some college or technical school
- _____ Completed an undergraduate degree
- _____ Completed a postgraduate degree

19. Please describe the place where you currently live. (Please check one.)

- _____ Rural area, population less than 2,500 people
- _____ Small town, population of 2,500 to 19,999 people
- _____ Suburban area, population of 20,000 to 49,999 people
- _____ Urban City, population of 50,000 or more people

20. What was your annual household income, before taxes, in 2008? (Please check one.)

- | | |
|------------------------|-------------------------|
| _____ \$39,999 or less | _____ \$80,000-99,999 |
| _____ \$40,000-59,999 | _____ \$100,000-119,999 |
| _____ \$60,000-79,999 | _____ \$120,000 or more |

21. Do you own a dog? (Please check one.)

- _____ No
- _____ Yes

22. Which of the following activities have you engaged in over the last 12 months? (Please check all that apply.)

- | | |
|---|--|
| <input type="checkbox"/> Hiking | <input type="checkbox"/> Camping |
| <input type="checkbox"/> Rock Climbing or
Ice Climbing | <input type="checkbox"/> Cross-country
skiing |
| <input type="checkbox"/> Watching wildlife | <input type="checkbox"/> Backpacking |
| <input type="checkbox"/> Photographing wildlife | <input type="checkbox"/> Snowshoeing |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> ATV riding |
| <input type="checkbox"/> Mountain biking | <input type="checkbox"/> Downhill skiing |
| <input type="checkbox"/> Canoeing or Kayaking | <input type="checkbox"/> Motor-boating |
| <input type="checkbox"/> Snowmobiling | <input type="checkbox"/> Jet-skiing |
| <input type="checkbox"/> Waterfowl hunting | <input type="checkbox"/> Fishing |
| <input type="checkbox"/> Hunting (non-waterfowl) | <input type="checkbox"/> None of the above |
| <input type="checkbox"/> Trapping | <input type="checkbox"/> Other: _____ |

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

Thank You For Your Time and Effort!

To return this questionnaire, seal it with the white removable seal and drop it in the nearest mailbox. Postage has been provided.

March 5, 2009

Dear Wildlife Trapper:

We invite you to participate in a survey conducted by Cornell University to learn about wildlife trappers' interests and concerns with multiple-use of public lands, such as wildlife management areas, state forests, Finger Lakes National Forest, county parks, and nature preserves in New York's Southern Tier counties. We are specifically interested in the management of these shared public lands for licensed dog-owners and wildlife management of furbearing wildlife. We are also interested in understanding from where wildlife trappers receive information about the multiple-use management of such lands. You were chosen to participate in this survey because you purchased a trapping license and you live in Chemung, Chenango, Cortland, Madison, Ontario, Tompkins, Schuyler, Seneca, Steuben, or Yates counties. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to multiple-use of public lands and management of furbearing wildlife.

Please complete the enclosed questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox (no envelope is needed). The return postage has been provided. Your participation in the survey is strictly voluntary, but your response is very important to us. We would like to hear from everyone who receives this questionnaire, not just those with strong opinions. Because we contact only a sample of licensed wildlife trappers, the information you provide will represent other wildlife trappers in your area. Your identity will be kept confidential and the information you give us will never be associated with your name.

The questionnaire has an identification number for the purpose of crossing your name off our master list when you respond, so that we will not send you additional reminder notices. Your name will not become part of the database of survey results. The Cornell University Institutional Review Board for Human Participants (IRB) has approved the methods used in this study (#08-09-060) on February 10, 2009. You may contact IRB at 607-255-5138 or irbhp@cornell.edu. If you have any questions or concerns about the survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you in advance for your assistance with this study.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

March 12, 2009

Dear Wildlife Trapper:

Last week we mailed you a questionnaire asking you about your interests and concerns with multiple-use of public lands, such as wildlife management areas, state forests, Finger Lakes National Forest, county parks, and nature preserves in New York's Southern Tier counties. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet completed it, we would appreciate it if you would take a few minutes now to fill it out. Your prompt response will keep us from bothering you with additional reminder letters.

Even if you do not have strong opinions about management of shared public lands, we'd still like to know about your interests and concerns, and the sources from which you receive information on such topics. Please fill out the questionnaire as soon as possible, seal it with the enclosed white removable sticker, and drop it in the nearest mailbox. Postage has been provided.

Thanks again for your help.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

March 26, 2009

Dear Wildlife Trapper:

About three weeks ago we wrote to you seeking information about your interests and concerns with the management of shared public lands in Chemung, Chenango, Cortland, Madison, Ontario, Tompkins, Schuyler, Seneca, Steuben, or Yates counties. If you have already completed and returned the questionnaire, please accept our sincere thanks for your help. If you have not yet done so, please take the time to complete it today.

Cornell University is conducting this study to learn more about wildlife trappers' interests and concerns about multiple-use management of public lands for recreation and furbearing wildlife in New York's Southern Tier counties. Information from this study will help the New York State Department of Environmental Conservation and its partners improve communication related to multiple-use public land management.

Let us assure you once again that your participation in this study is voluntary, but your response is important to us. Your identity will be kept confidential and the information you give us will never be associated with your name. In case our earlier mailing did not reach you, or in the event that your questionnaire has been misplaced, we have enclosed a replacement questionnaire. Return postage has been provided. After completing the questionnaire, simply seal it with the enclosed white removable sticker, and drop it in the mailbox. If you have any questions or concerns about this survey, please contact Heather Van Den Berg at 607-255-8337 or hav5@cornell.edu.

Thank you for your time and effort.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

April 2, 2009

Dear Wildlife Trapper:

We are writing to you once more to encourage you to participate in the survey of wildlife trappers' interests and concerns about the multiple-uses of public lands for recreation and furbearing wildlife in New York's Southern Tier counties. Even if you do not have strong opinions, your input is valuable to us. Your identity will be kept confidential and the information you give us will never be associated with your name.

Although we have received a large number of completed questionnaires, we have not heard from you. Our past research tells us that those who do not return their questionnaire right away often have quite different opinions from those who do. For the survey results to reflect accurately all the wildlife trappers in this area, we need to hear from you and others who have not yet responded. Simply complete the questionnaire, seal it with the white removable sticker provided, and drop it in any mailbox. Postage has been provided.

Thank you for your time and effort.

Sincerely,

Barbara A. Knuth, Professor

Co-Leader

Human Dimensions Research Unit

Heather A. Van Den Berg

Graduate Research Assistant

Human Dimensions Research Unit

APPENDIX D

Non-respondent Data Collection Materials

Response Outcomes

Outcome	Dog Owners	Wildlife Trappers	Waterfront Residents	Waterfowl Hunters	Total
Completed survey	90	90	90	90	360
Bad phone number	25	30	32	27	114
Too ill, deceased or incapable of responding	5	0	12	1	18
Mailed in questionnaire	6	5	2	9	22
Refused	5	4	7	4	20
Pending	121	123	141	119	504
Total	252	252	284	250	1038

Dog-Owner Stakeholder

Nonrespondent Phone Follow –Up

Good (Morning, Afternoon):

My name is _____ and I work for Cornell University. May I speak to _____.

(IF INDIVIDUAL IS UNAVAILABLE, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

I'm calling in regard to the questionnaire we sent you recently on the shared management of public lands for dogs and furbearing wildlife in New York's Southern Tier counties.

I know you may have been too busy to fill out the questionnaire, but we hoped we could include your input on a few key questions so our information reflects the opinions of all licensed dog-owners in the Southern Tier counties. Would you be willing to spend about 5 minutes now with me answering a few key questions?

(IF NO, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

1. Please indicate where you walk your dog(s) in a typical year. I will read several types of land, please say 'no' or 'yes' for each.

Type of land	No	Yes
State Forests	N	Y
State Wildlife Management Areas	N	Y
State Parks	N	Y
City, Village, Town, or County Lands (e.g., Municipal Lands)	N	Y
Finger Lakes National Forest	N	Y
National Wildlife Refuges	N	Y
Nature Preserves or Land Trusts	N	Y
Designated "Dog Parks"	N	Y
Public Roads or Sidewalks	N	Y
Private property I own	N	Y
Private property where the owner has allowed me to	N	Y
Don't know the status of lands where I walk my dog	N	Y
Other, please indicate: _____	N	Y

2. In a typical year, during which months do you take your dog with you to public lands in New York State, such as wildlife management areas, state forests, Finger Lakes National Forest, national wildlife refuges, or municipal lands? I will read

groups of months and say ‘no’ or ‘yes’ to indicate whether you take your dog with you to public land.

Months of the year	No	Yes
January, February, or March	N	Y
April, May, or June	N	Y
July, August, or September	N	Y
October, November, or December	N	Y
I do not take my dog to any of these types of public lands	N	Y

Please indicate whether you disagree or agree with the following statements about multiple-use of public lands by indicating whether you strongly disagree, disagree, neither agree nor disagree, agree, strongly agree, or don’t know. (Please read “don’t know” as an option.)

3. Dog owners have relatively few places where they can take their dogs and allow them to run off-leash. Do you....

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don’t Know

} Read all choices, if necessary.

4. Dog owners or trainers should have access to designated “dog parks” to allow their dogs to run off-leash, safely. Do you...

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don’t Know

} Read all choices, if necessary.

5. I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping. Do you...

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree, or

Don't Know

Read all choices, if necessary.

6. Most wildlife traps capture target species in the most humane manner. Do you....

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree, or

Don't Know

Read all choices, if necessary.

7. Residents in my community should have access to nuisance wildlife control operators to help address wildlife problems. Do you...

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree, or

Don't Know

Read all choices, if necessary.

8. Please indicate your level of concern that your dog may be caught in a wildlife trap set on public lands in New York State such as, state forests, wildlife management areas, Finger Lakes National Forest, National Wildlife Refuges, or municipal parks? Are you....

- Not at all concerned
- Somewhat unconcerned
- Neither concerned nor unconcerned
- Somewhat concerned
- Very concerned
- No opinion

} Read all choices,
if necessary.

9. Thinking about a typical weekday, OVERALL, where do you get most of your GENERAL NEWS? I'll read the choices, and for each one tell me 'no' or 'yes' if you get your general news from that source.

News source	No	Yes
Television	N	Y
Print newspaper	N	Y
Online newspaper	N	Y
Radio	N	Y
Internet	N	Y
Other, please describe: _____	N	Y
Do not know	N	Y

10. For any issue, have you contacted government or other officials seeking to change policies in the past five years. Please indicate 'no' or 'yes'.

No

Yes

In what year were you born? _____

END INTERVIEW

That's all the questions I have today. Thank you very much for taking the time to talk with me.

Record Gender: Male Female

**Wildlife Trapper Stakeholder
Non-respondent Phone Follow –Up**

Good (Morning, Afternoon):

My name is _____ and I work for Cornell University. May I speak to _____.

(IF INDIVIDUAL IS UNAVAILABLE, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

I'm calling in regard to the questionnaire we sent you recently on the shared management of public lands for dogs and furbearing wildlife in New York's Southern Tier counties.

I know you may have been too busy to fill out the questionnaire, but we hoped we could include your input on a few key questions so our information reflects the opinions of all wildlife trappers in the Southern Tier counties. Would you be willing to spend about 5 minutes now with me answering a few key questions?

(IF NO, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

Before we begin, there are a few points I need to cover:

I want to assure you that all the information you give will be kept completely confidential and that none of it will be released in any way that would permit your identification.

Your participation in this study is, of course, voluntary. If there is any question that you would prefer not to answer, just tell me and we will go on to the next question.

1. Have you set wildlife traps in New York State during the regulated trapping season anytime since 2003? Please indicate 'no' or 'yes'.

___ No, If No, go to #3

___ Yes, If Yes, go to #2

2. Please indicate on which types of lands you conducted trapping activities in a given year. I will read different types of land, please say 'no' or 'yes' to indicate whether you trap on each type of land.

Type of land	No	Yes
<i>Public lands</i>	N	Y
State Forests	N	Y
State Wildlife Management Areas	N	Y
Finger Lakes National Forest	N	Y

City, village, town, or county lands	N	Y
Along a road (e.g., US or NY Routes, gravel roads)	N	Y
Other public lands, please indicate: _____	N	Y
Public lands, don't know what type	N	Y
<i>Private lands</i>	N	Y
Private lands you own	N	Y
Private lands, where another owner allows you to trap on it	N	Y
Other private lands, please indicate: _____	N	Y

Please indicate whether you disagree or agree with the following statements about multiple-use of public lands by indicating whether you strongly disagree, disagree, neither agree nor disagree, agree, strongly agree, or don't know. . (Please read "don't know" as an option.)

3. Dog owners have relatively few places where they can take their dogs and allow them to run off-leash. Do you...

Strongly Disagree
 Disagree
 Neither agree nor disagree
 Agree
 Strongly Agree, or
 Don't Know

} Read all choices, if necessary.

4. Dog owners or trainers should have access to designated "dog parks" to allow their dogs to run off-leash, safely. Do you...

Strongly Disagree
 Disagree
 Neither agree nor disagree
 Agree
 Strongly Agree, or
 Don't Know

} Read all choices, if necessary.

5. I am concerned about dogs getting caught in wildlife traps on public lands. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

6. I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
 - Don't Know
- } Read all choices, if necessary.

7. Most wildlife traps capture target species in the most humane manner. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

8. Thinking about a typical weekday, **OVERALL**, where do you get most of your **GENERAL NEWS**? I'll read the choices, and for each one tell me 'no' or 'yes' if you get your general news from that source.

News source	No	Yes
Television	N	Y
Print newspaper	N	Y
Online newspaper	N	Y

Radio	N	Y
Internet	N	Y
Other, please describe: _____	N	Y
Don't know	N	Y

9. For any issue, have you contacted government or other officials seeking to change policies in the past five years. Please indicate 'no' or 'yes'.

____ No

____ Yes

10. Do you own a dog? Please indicate 'no' or 'yes'.

____ No

____ Yes

In what year were you born? _____

END INTERVIEW

That's all the questions I have today. Thank you very much for taking the time to talk with me.

Record Gender: _____ Male _____ Female

**Waterfowl Hunter Stakeholder
Nonrespondent Phone Follow –Up**

Good (Morning, Afternoon):

My name is _____ and I work for Cornell University. May I speak to _____.

(IF INDIVIDUAL IS UNAVAILABLE, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

I'm calling in regard to the questionnaire we sent you recently on the management and hunting of wild ducks and geese near Braddock Bay State Wildlife Management Area and the greater-Rochester area.

I know you may have been too busy to fill out the questionnaire, but we hoped we could include your input on a few key questions so our information reflects the opinions of all waterfowl hunters in this area. Would you be willing to spend about 5 minutes now with me answering a few key questions?

(IF NO, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

1. Do you hunt over water, land, or both? I will read the type of location, please say 'no' or 'yes' to indicate whether you hunt over it.

Type of land or water	No	Yes	Go to...
Land	N	Y	
Water	N	Y	If Yes for Water, go to #2 If No for Water, go to #4.

2. When hunting over water in New York State, what types of concealment do you typically use? I will read several options, please say 'no' or 'yes' to indicate what type of concealment you typically use.

Type of concealment	No	Yes
Temporary blind set up on land along the waterfront	N	Y
Temporary blind set up in the water	N	Y
Permanent blind on a dock or other structure	N	Y
Boat (e.g., canoe, layout, or motor)	N	Y
Other, please describe: _____	N	Y

3. When hunting over water in New York State, how do you typically access your hunting locations? I will read several access points, please say 'no' or 'yes' to indicate whether you access your hunting locations through this or not.

Public launch sites	No	Yes

State wildlife management areas	N	Y
State parks	N	Y
City, Village, Town, or County lands	N	Y
Canal lands	N	Y
Do not use any public launch sites	N	Y
Private launch sites		
Private marina	N	Y
Land that you own	N	Y
Land owned by others who have allowed you to use it	N	Y
Do not use any private launch sites	N	Y

Please indicate whether you disagree or agree with the following statements about the management of waterfowl (e.g., wild ducks and geese) and waterfowl hunting near Braddock Bay State Wildlife Management area, by indicating whether you strongly disagree, disagree, neither agree nor disagree, agree, strongly agree, or don't know. (Please read "don't know" as an option.)

4. I am concerned about a lack of public access opportunities for waterfowl hunting. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

5. I am satisfied with the waterfowl management in my area. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

6. Waterfowl hunting can safely occur any distance from the water's edge. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

7. I can understand why non-hunters may be bothered by the noise from waterfowl hunting. Do you....

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

8. I am satisfied with the population levels of waterfowl species that occur at Braddock Bay. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

9. Hunters should seek the permission of waterfront residents before hunting in front of an occupied dwelling. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

10. Waterfowl hunters are concerned about the welfare of the waterfowl they hunt. Do you...

- Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree, or
 - Don't Know
- } Read all choices, if necessary.

11. Thinking about a typical weekday, OVERALL, where do you get most of your GENERAL NEWS? I'll read the choices, and for each one tell me 'no' or 'yes' if you get your general news from that source.

News source	No	Yes
Television	N	Y
Print newspaper	N	Y
Online newspaper	N	Y
Radio	N	Y
Internet	N	Y
Other, please describe: _____	N	Y
Don't know	N	Y

12. For any issue, have you contacted government or other officials seeking to change policies in the past five years. Please indicate 'no' or 'yes'.

- No
- Yes

13. Have you ever been harassed by residents of waterfront homes while you were waterfowl hunting in New York State? Please indicate 'no' or 'yes'.

____ No

____ Yes

14. In places where you hunt over water, how close is the nearest occupied dwelling?
The nearest occupied dwelling is....

____ Less than 100 feet

____ 100 – 250 feet

____ 251 – 500 feet, or

____ More than 500 feet

} Read all choices, if necessary.

In what year were you born? _____

END INTERVIEW

That's all the questions I have today. Thank you very much for taking the time to talk with me.

Record Gender: ____ Male ____ Female

**Waterfront Resident Stakeholder
Non-respondent Phone Follow –Up**

Good (Morning, Afternoon):

My name is _____ and I work for Cornell University. May I speak to _____.

(IF INDIVIDUAL IS UNAVAILABLE, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

I'm calling in regard to the questionnaire we sent you recently on the management and hunting of wild ducks and geese near Braddock Bay State Wildlife Management Area.

I know you may have been too busy to fill out the questionnaire, but we hoped we could include your input on a few key questions so our information reflects the opinions of all waterfront residents in the Braddock Bay area. Would you be willing to spend about 5 minutes now with me answering a few key questions?

(IF NO, FIND OUT WHEN IT WOULD BE CONVENIENT TO CALL AGAIN.)

Before we begin, there are a few points I need to cover:

I want to assure you that all the information you give will be kept completely confidential and that none of it will be released in any way that would permit your identification.

Your participation in this study is, of course, voluntary. If there is any question that you would prefer not to answer, just tell me and we will go on to the next question.

1. Are you a permanent or seasonal resident near Braddock Bay State Wildlife Management Area?

_____ Permanent

_____ Seasonal

_____ Do not live there

Please indicate whether you disagree or agree with the following statements about the management of waterfowl (e.g., wild ducks and geese) and waterfowl hunting near Braddock Bay State Wildlife Management area, by indicating whether you strongly disagree, disagree, neither agree nor disagree, agree, strongly agree, or don't know. (Please read "don't know" as an option.)

2. I am satisfied with the waterfowl management near Braddock Bay State Wildlife Management Area. Do you...

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don't Know

} Read all choices, if necessary.

3. Waterfowl hunters are concerned about the welfare of the waterfowl they hunt. Do you...

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don't Know

} Read all choices, if necessary.

4. Waterfowl hunting can safely occur any distance from the water's edge. Do you...

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don't Know

} Read all choices, if necessary.

5. I am concerned about a lack of public access opportunities for waterfowl hunting. Do you...

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don't Know

Read all choices, if necessary.

6. I am satisfied with the population levels of waterfowl species that occur at Braddock Bay. Do you... (should there be an NA option – since they do not live there?)

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don't Know

Read all choices, if necessary.

7. Hunters should seek the permission of waterfront residents before hunting in front of an occupied dwelling. Do you...

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don't Know

Read all choices, if necessary.

8. I am bothered by the noise associated with waterfowl hunting. Do you...

- Strongly Disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree, or
- Don't Know

Read all choices, if necessary.

9. Thinking about a typical weekday, OVERALL, where do you get most of your GENERAL NEWS? I'll read the choices, and for each one tell me 'no' or 'yes' if you get your general news from that source.

News source	No	Yes
Television	N	Y
Print newspaper	N	Y
Online newspaper	N	Y
Radio	N	Y
Internet	N	Y
Other, please describe: _____	N	Y
Don't know	N	Y

10. For any issue, have you contacted government or other officials seeking to change policies in the past five years? Please indicate 'no' or 'yes'.

- No
- Yes

11. Do you know other people who hunt waterfowl? Please indicate 'no' or 'yes'.

- No
- Yes

12. Do you hunt waterfowl? Please indicate "no" or "yes".

- No
- Yes

In what year were you born? _____

END INTERVIEW

That's all the questions I have today. Thank you very much for taking the time to talk with me.

Record Gender: _____ Male _____ Female

APPENDIX E

Analysis of Respondents and Non-respondents

Table E-1. Differences between wildlife trapper respondents and non-respondents on key variables.

Variable	Respondents		Non-respondents		X ² (df=1)	p	Overall
	n	%	n	%			population*
Set wildlife traps in NYS during regulated trapping season anytime since 2003.	483	82.8%	89	62.9%	18.398	0.000	72.9%
Trapped wildlife on state forests	396	25.8%	57	29.8%	0.426	0.514	n.s.
Trapped wildlife on state wildlife management areas	396	18.4%	57	21.1%	0.224	0.636	n.s.
Trapped wildlife on Finger Lakes National Forest	396	2.5%	57	7.0%	3.357	0.067	n.s.
Trapped wildlife on city, village, town, or county lands (e.g., municipal)	396	27.3%	56	30.4%	0.233	0.629	n.s.
Trapped wildlife along a road (e.g., US or NY Routes, gravel roads)	396	40.4%	57	40.4%	0.000	0.994	n.s.
Trapped wildlife on other public lands, please indicate	396	5.8%	57	7.0%	0.130	0.718	n.s.
Trapped wildlife on public lands, don't know what type	396	14.6%	58	10.5%	0.697	0.404	n.s.
Trapped wildlife on private lands you own	396	66.4%	57	54.4%	3.165	0.075	n.s.
Trapped wildlife on private lands, where another owner allows you to trap.	396	91.4%	57	86.0%	1.759	0.185	n.s.
Trapped wildlife on other private lands, please indicate	396	3.0%	57	1.8%	0.291	0.590	n.s.
Dog owners have relatively few places where they can take their dogs and allow them to run off-leash. [†]	413	27.5%	86	45.4%	7.083	0.008	39.0%
Dog owners or trainers should have access to designated "dog parks" to allow their dogs to run off-leash safely. [†]	434	61.0%	87	66.7%	65.640	0.732	n.s.
I am concerned about dogs getting caught in wildlife traps on public lands. [†]	449	54.6%	89	43.8%	4.529	0.033	49.6%

I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping. [†]	409	47.7%	88	68.2%	6.301	0.012	62.0%
Most wildlife traps capture target species in the most humane manner. [†]	468	91.5%	89	86.6%	2.633	0.105	n.s.
General news from television	465	74.0%	90	65.6%	2.690	0.101	n.s.
General news from print newspaper	465	63.4%	90	53.3%	3.263	0.071	n.s.
General news from online newspaper	465	10.3%	90	18.9%	5.351	0.021	14.8%
General news from radio	465	53.1%	90	53.3%	0.001	0.970	n.s.
General news from Internet	465	27.7%	90	34.4%	1.651	0.199	n.s.
General news from other, please describe	465	9.2%	90	7.8%	0.199	0.656	n.s.
General news from do not know	465	0.4%	90	1.1%	0.650	0.420	n.s.
For any issue, contacted government or other officials seeking to change policies in the past 5 years.	476	57.1%	90	23.3%	34.651	0.000	40.0%
Own a dog	472	63.6%	90	74.4%	3.953	0.047	69.1%
Male	479	99.0%	90	96.7%	2.865	0.091	n.s.
Age (df=128)	487	53 years	90	50 years	t=-2.14	0.035	52 years

[†]Agreement with statement

*Adjusted for respondents' and non-respondents' proportions. Formula: # NR Pool = Sample size - (# respondents + undeliverables); Multiplier = # NR pool/(completed non-respondent interviews) = x; Overall non-respondent for each category = # for each category * x; Total = # Respondent for each category + # overall non-respondent for each category; Overall population % = Total # for each category/ (N - undeliverables). For means, $y=1/N[N1*y1 + N2*y2]$.

Table E-2. Differences between dog owner respondents and non-respondents on key variables.

Variable	Respondents		Non-respondents		X ² (df=1)	p	Overall population*
	n	%	n	%			%
Walked dog on state forests	392	12.2%	90	8.9%	1.559	0.212	n.s.
Walked dog on state wildlife management areas	442	6.1%	89	7.9%	0.381	0.537	n.s.
Walked dog on state parks	442	14.0%	90	20.0%	2.088	0.148	n.s.
Walked dog on Finger Lakes National Forest	442	4.3%	90	3.3%	0.176	0.675	n.s.
Walked dog on city, village, town, or county lands (e.g., municipal)	442	34.2%	90	44.4%	3.435	0.064	n.s.
Walked dog on National Wildlife Refuges	442	1.4%	90	6.7%	9.560	0.002	4.3%
Walked dog on nature preserves or land trusts	442	3.6%	90	10.0%	6.796	0.009	7.1%
Walked dog on designated "dog parks"	442	4.1%	90	8.9%	3.732	0.053	n.s.
Walked dog along a road (e.g., US or NY Routes, gravel roads)	442	50.0%	90	52.2%	0.052	0.820	n.s.
Walked dog on private lands you own	442	80.1%	90	83.3%	0.504	0.478	n.s.
Walked dog on private lands, where another owner allows you to walk your dog.	442	24.7%	90	35.6%	4.556	0.033	30.6%
Walked dog on other private lands, please indicate	442	3.2%	90	2.2%	0.229	0.632	n.s.
Don't know the status of the lands where I walked dog	442	1.4%	90	0.0%	1.236	0.266	n.s.
Walked dog January - March on public lands	442	13.6%	90	22.2%	4.377	0.036	18.3%
Walked dog April - June on public lands	442	28.1%	90	52.2%	20.024	0.000	41.3%
Walked dog July - September on public lands	442	31.0%	90	55.6%	19.787	0.000	44.5%
Walked dog October - December on public lands	442	18.3%	90	31.1%	7.503	0.006	25.3%
Didn't take my dog to any public lands.	442	64.7%	26	65.4%	0.005	0.944	n.s.
Dog owners have relatively few places where they can take their dogs and allow them to run off-leash.*	360	64.9%	84	73.8%	0.111	0.739	n.s.
Dog owners or trainers should have access to designated "dog parks" to allow their dogs to run off-leash safely.†	411	77.1%	89	77.5%	0.141	0.707	n.s.

I am satisfied with management of public lands in my region for both recreation with dogs and wildlife trapping. [†]	287	31.4%	73	63.0%	7.025	0.008	57.9%
Most wildlife traps capture target species in the most humane manner. [†]	315	24.4%	67	46.3%	4.468	0.035	41.9%
Residents in my community should have access to NWCOS to help address wildlife problems. [†]	381	75.9%	87	92.0%	4.215	0.040	88.6%
Concerned that your dog may be caught in a wildlife trap set on public lands. [†]	379	41.9%	87	24.5%	17.051	0.000	33.2%
General news from television	427	83.1%	90	67.8%	11.157	0.001	74.5%
General news from print newspaper	427	62.1%	90	53.3%	2.370	0.124	n.s.
General news from online newspaper	427	15.2%	90	26.7%	6.831	0.009	21.7%
General news from radio	427	47.5%	90	46.7%	0.023	0.880	n.s.
General news from Internet	427	34.4%	90	44.4%	3.231	0.072	n.s.
General news from other, please describe	427	3.7%	90	5.6%	0.624	0.430	n.s.
General news from do not know	446	4.3%	90	0.0%	3.975	0.046	n.s.
For any issue, contacted government or other officials seeking to change policies in the past 5 years.	428	54.4%	90	22.2%	30.890	0.000	36.3%
Male	426	41.3%	90	43.3%	0.125	0.724	n.s.
Age (df=133)	423	57 years	89	54 years	t=-1.98	0.049	55 years

[†]Agreement with statement

*Adjusted for respondents' and non-respondents' proportions. Formula: # NR Pool = Sample size - (# respondents + undeliverables); Multiplier = # NR pool/(completed non-respondent interviews) = x; Overall non-respondent for each category = # for each category * x; Total = # Respondent for each category + # overall non-respondent for each category; Overall population % = Total # for each category/ (N - undeliverables). For means, $y=1/N[N1*y1 + N2*y2]$.

Table E-3. Differences between waterfront resident respondents and non-respondents on key variables.

Variable	Respondents		Non-respondents		X ² (df=1)	p	Overall population*
	n	%	n	%			%
Permanent resident where you received questionnaire.	477	97.9%	90	98.9%	0.386	0.534	n.s.
I am satisfied with the waterfowl management near Braddock Bay State Wildlife Management Area.†	396	53.7%	77	72.7%	2.730	0.098	n.s.
Waterfowl hunters are concerned about the welfare of the waterfowl they hunt.†	359	43.3%	70	52.8%	0.233	0.630	n.s.
Waterfowl hunting can safely occur any distance from the water's edge.†	410	20.2%	82	23.1%	0.000	1.000	n.s.
I am concerned about the lack of public access opportunities for waterfowl hunting.†	427	18.3%	77	26.0%	1.337	0.248	n.s.
I am satisfied with the population levels of waterfowl species that occur at Braddock Bay.†	400	56.0%	82	69.5%	0.615	0.433	n.s.
Hunters should seek permission before hunting in front of occupied dwellings.†	451	74.1%	88	93.2%	10.75	0.001	86.2%
I am bothered by the noise associated with waterfowl hunting.†	461	40.0%	88	37.5%	0.375	0.540	n.s.
General news from television	466	83.9%	90	82.2%	0.156	0.693	n.s.
General news from print newspaper	466	68.5%	90	57.8%	3.873	0.049	n.s.
General news from online newspaper	466	16.5%	70	27.8%	6.378	0.012	22.4%
General news from radio	466	43.6%	90	50.0%	1.265	0.261	n.s.
General news from Internet	466	36.9%	90	37.8%	0.024	0.876	n.s.
General news from other, please describe	466	6.2%	90	2.2%	2.294	0.130	n.s.
General news from do not know	480	2.9%	90	0.0%	2.691	0.101	n.s.
For any issue, contacted government or other officials seeking to change policies in the past 5 years.	462	56.1%	90	27.8%	24.122	0.000	41.2%
Know people who hunt waterfowl.	462	70.8%	89	53.9%	9.742	0.002	61.9%

Hunt waterfowl	476	11.3%	90	3.3%	5.364	0.021	7.3%
Male	460	66.7%	90	71.1%	0.655	0.418	n.s.
		58		60			
Age (df=122)	480	years	90	years	t=1.00	0.320	n.s.

[†]Agreement with statement

*Adjusted for respondents' and non-respondents' proportions. Formula: # NR Pool = Sample size - (# respondents + undeliverables);
Multiplier = # NR pool/(completed non-respondent interviews) = x; Overall non-respondent for each category = # for each category * x;
Total = # Respondent for each category + # overall non-respondent for each category; Overall population % = Total # for each category/
(N - undeliverables).

Table E-4. Differences between waterfowl hunter respondents and non-respondents on key variables.

Variable	Respondents		Non-respondents		X ² (df=1)	p	Overall population*
	n	%	n	%			%
Hunt over land.	591	75.5%	90	88.9%	8.006	0.005	80.8%
Hunt over water.	591	87.5%	90	73.3%	12.686	0.000	81.9%
Use a temporary blind set up on land along waterfront.	591	72.4%	66	80.3%	1.881	0.170	n.s.
Use a temporary blind set up in the water.	591	16.9%	66	22.7%	1.386	0.239	n.s.
Use a permanent blind on a dock or other structure	591	15.6%	66	21.2%	1.398	0.237	n.s.
Use a boat (e.g., canoe, layout, or motor)	591	38.2%	66	51.5%	4.375	0.036	43.5%
Use other for waterfowl hunting, please describe	591	14.4%	66	10.6%	0.703	0.402	n.s.
Access hunting locations through state wildlife management area.	591	42.8%	66	47.0%	0.419	0.518	n.s.
Access hunting locations through state parks.	591	18.6%	66	12.1%	1.698	0.193	n.s.
Access hunting locations through city, village, town, or county lands.	591	27.9%	66	42.4%	6.021	0.014	33.7%
Access hunting locations through canal lands.	592	4.4%	66	9.1%	2.820	0.093	n.s.
Do not use any public launch sites.	591	30.5%	18	31.6%	0.011	0.917	n.s.
Access hunting locations through private marinas.	591	10.7%	66	22.7%	8.263	0.004	15.4%
Access hunting locations through land that you own.	591	20.5%	66	45.5%	20.931	0.000	30.4%
Access hunting locations through land owned by others who have allowed you to use it.	591	62.1%	66	84.8%	13.400	0.000	71.1%
Do not use any private launch sites.	591	17.3%	7	71.4%	13.818	0.000	38.7%
I am satisfied with the waterfowl management near Braddock Bay State Wildlife Management Area.†	551	60.4%	87	63.2%	0.091	0.763	n.s.
Waterfowl hunters are concerned about the welfare of the waterfowl they hunt.†	556	92.7%	89	95.5%	0.231	0.630	n.s.
Waterfowl hunting can safely occur any distance from the water's edge.†	569	72.5%	84	69.1%	1.133	0.287	n.s.

I am concerned about the lack of public access opportunities for waterfowl hunting.†	562	76.3%	81	65.5%	8.394	0.004	73.6%
I am satisfied with the population levels of waterfowl species that occur at Braddock Bay.†	190	17.2%	49	42.9%	0.917	0.338	n.s.
Hunters should seek permission before hunting in front of occupied dwellings.†	580	59.3%	66	66.7%	1.604	0.205	n.s.
I can understand why non-hunters may be bothered by the noise from waterfowl hunting.†	580	59.3%	89	69.6%	3.248	0.072	n.s.
General news from television	567	81.0%	90	62.2%	16.083	0.000	73.1%
General news from print newspaper	567	55.4%	90	50.0%	0.907	0.341	n.s.
General news from online newspaper	567	12.7%	90	32.2%	22.757	0.000	20.9%
General news from radio	567	44.4%	90	48.9%	0.620	0.431	n.s.
General news from Internet	567	43.7%	90	47.8%	0.513	0.474	n.s.
General news from other, please describe	567	6.5%	90	7.8%	0.195	0.659	n.s.
General news from do not know	567	0.4%	90	0.0%	0.318	0.573	n.s.
For any issue, contacted government or other officials seeking to change policies in the past 5 years.	572	53.5%	89	12.4%	52.220	0.000	36.4%
Been harassed by residents of waterfront homes while waterfowl hunting in NYS.	585	26.7%	90	35.6%	3.067	0.080	n.s.
When hunting over water, how close is the nearest occupied dwelling?	548		66		3.586 (df=3_	0.310	n.s.
<100 feet		17.0%		22.7%			
100-250 feet		21.2%		16.7%			
251-500 feet		17.2%		10.6%			
>500 feet		44.7%		50.0%			

Male	574	99.5%	90	97.8%	3.007	0.083	n.s.
		47		43			
Age (df=114)	592	years	90	years	t=-2.34	0.021	46 years

[†]Agreement with statement

*Adjusted for respondents' and non-respondents' proportions. Formula: # NR Pool = Sample size - (# respondents + undeliverables); Multiplier = # NR pool/(completed non-respondent interviews) = x; Overall non-respondent for each category = # for each category * x; Total = # Respondent for each category + # overall non-respondent for each category; Overall population % = Total # for each category / (N - undeliverables). For means, $y=1/N[N1*y1 + N2*y2]$.

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