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# Strategizing agency and community partnerships: A case study of an urban fishing program

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**Strategizing agency and community partnerships:  
A case study of an urban fishing program**

by

**Angie Carter**

A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
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Co-Majors: Rural Sociology; Sustainable Agriculture

Program of Study Committee:  
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Ames, Iowa

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## ABSTRACT

The co-management of urban natural resources presents a new landscape for natural resource managers as they work with community and civic partners in the urban landscape. Through urban co-management, partners new to working together collaborate to address natural resource problems that they may not otherwise be able to manage on their own. The shift from a traditional, prescriptive model of natural resource management to one incorporating community engagement requires the management of social capital in addition to environmental goals. In this thesis, I analyze the role of social capital using an inductive case study of state and municipal agencies' engagement in a beginning co-management partnership. Social capital is defined as the function of social relationships at both individual and network levels. Co-management is described as an approach to natural resource management in which diverse stakeholders share responsibilities, goals, and decisions. In their work together, these diverse stakeholders may build capacity for further collaboration and success through the creation of social capital throughout the co-management process. What makes the co-management successful is dependent upon the unique situation of the natural resource in question as well as the nature and evolution of the partnerships. Managers and partners can use social planning to address environmental problems collaboratively through a process specific to their own situation.

This case study analyzes a new collaboration among government and community stakeholders in which the government agencies hoped to increase urban residents' understanding of the function and health of their watershed through the creation of new recreational opportunities, thereby improving water quality. The case study findings reveal that emphasizing a process-oriented approach to the planning and evaluation of co-management is central to the building of social capital within a new co-management partnership. Additionally, the case study findings suggest that prioritizing social capital's development within the process of co-management may help partners as they plan and evaluate their program process. From this analysis, two tools have been created to assist co-management partners in the planning of their program. This case study will inform the guidance of future urban fishing programs and be of use to others studying co-management of natural resources through a recreational program initiative.

The thesis is structured as three papers. The first paper (chapter two) presents a synthesis of urban fishing program components and the need for improved evaluation and partnership-building as understood from a co-management approach. The second paper (chapter three) analyzes the role of social capital and trust within a new partnership between agencies as they begin a pilot urban fishing program initiative. The third paper (chapter four) analyzes the potential social capital of watershed resident stakeholders as the urban fishing program partners plan site selection through a social planning framework.

## **CHAPTER 1. CHOOSING A LURE: NATURAL RESOURCE MANAGEMENT AND PARTNERSHIPS**

### **Introduction**

Natural resource managers face an array of challenges in their work: decreased funding for resource management, changing demographics as the population shifts from rural to urban areas, and increased impairment of natural resources through human influence and extreme weather events. Partnerships are increasingly important to natural resource managers as they face these challenges (Natcher et al. 2005; Leach et al. 2002; Barber and Taylor 2000; Wondolleck and Yaffee 2000) and as they shift from a top-down approach to a collaborative one engaging diverse stakeholders in the management process (Carlsson and Berkes 2005; Koontz et al 2004, Plummer and FitzGibbon 2004). In addition to making biological improvements to meet environmental goals, collaborative natural resource management integrates social outcomes throughout the natural resource management process through increased social capital. Natural resource management partnerships offer an opportunity for increased trust and collaboration among government agencies and between government agencies and residents; however, the maintenance and management of the social relationships central to these collaborations may be new to natural resource managers (Wondolleck and Yaffee 2000). The management of these social relationships is particularly important to government agencies and community groups new to working together as they begin the shared management of urban natural resources.

Co-management is defined as a combination of local-level and state-level systems (Berkes, George, and Preston 1991) sharing the management of natural resources among government agencies and community stakeholders (Plummer and FitzGibbon 2004). Partnerships emerge through this collaborative approach (Berkes 2009). Co-management presents a continuum of collaboration from exchanges of information to governance, and the social relationships involved may evolve simultaneously both over time (Carlsson and Berkes 2005) and through increased collaboration (Wondolleck and Yaffee 2000). I use social capital as the theoretical framework through which to better understand the emergence of co-management partnerships, the evolution of their collaboration, and their potential. Social capital exists in social relationships and networks that form across similar and dissimilar individuals and groups (Robison and Flora 2003; Pretty 2003; Coleman 1990). Social capital is both an input and an outcome from collaborative processes (Wagner and Fernandez-Gimenez 2008) and is central to the co-

management process. Like co-management, social capital is defined by its function rather than its output and makes possible what would not otherwise exist in its absence (Carlsson and Berkes 2005; Coleman 1990). Social planning is an approach used to leverage social capital through a community-oriented planning process (Weil 2005, Rothman 1995).

This case study analyzes the role of social capital within an emerging co-management program partnership among two government agencies and community residents in Des Moines, Iowa. Collaboration success stories are valuable to program managers, but collaboration is a process rather than an end-point (Wondolleck and Yaffee 2000) and analysis of the beginnings and stages of this process are missing from the literature. An “idealized narrative” of co-management exists (Conley and Moote 2003) in which co-management is viewed as a panacea (Carlsson and Berkes 2005). Similarly, within social capital literature, social capital is usually discussed in terms of its benefits rather than the negative impacts it may have within social networks (Portes 1998). The social capital embedded within these relationships among individuals, organizations, or agencies may not all be beneficial (Lin 1999). The following chapters analyze how new partners navigate the opportunities and challenges within a new natural resource collaboration, highlighting the difficult stages of the process as well as the potential for growth, thus offering more context to the success stories highlighted in much of co-management literature. Co-management, social capital, and planning are used to analyze this new partnership and its focus upon urban water quality improvements.

### ***Co-management and partnerships***

Since the 1990s, government agencies have faced funding constraints within their natural resource management (Plummer and FitzGibbon 2004). These constraints, combined with changing demographics as urban populations grow and rural populations decline, have inspired interest groups to challenge agency legitimacy (Wondolleck and Yafee 2000). In response to these changes, natural resource agencies at local, state, and federal levels have reoriented their traditional top-down management to incorporate more collaborative approaches, including partnerships, in an effort to more effectively address environmental problems (Koontz et al. 2004). An example of this shift is the implementation of co-management of natural resources, a new approach for many agencies (Plummer and FitzGibbon 2004). Pretty (2003) found “some 0.4 to 0.5 million groups have been established since the early 1990s for watershed, forest, irrigation, pest, wildlife, fishery, and microfinance management. These offer a route to



sustainable management and governance of common resources” (p. 1912). Co-management partnerships may be increasing; however, social capital is understudied in natural resource collaborations (Wagner and Fernandez-Gimenez 2008) and the literature lacks analysis of how these partnerships form and are maintained (Carlsson and Berkes 2005; Natcher et al. 2005).

These collaborative efforts are referred to by a variety of names within natural resource management literature, including collective resource management (Pretty 2003) and collaborative resource management (Wondolleck and Yafee 2000), among others. The literature recognizes that these efforts share a common focus—the collaboration among diverse stakeholders working together to create environmental improvements through natural resource management (Carlsson and Berkes 2005; Koontz et al. 2004; Pretty 2003; Wondolleck and Yafee 2000). Carlsson and Berkes (2005) describe co-management as the partnership networks that form as stakeholders share decision-making and responsibility for natural resource management while building trust, solving problems, and learning together through the resource management. Carlsson and Berkes (2005) further define co-management as “a continuous problem-solving *process*, rather than a fixed state, involving extensive deliberation, negotiation and joint learning within problem-solving networks” and suggest that co-management research should focus on the function of different management tasks rather than the structure of the system (p. 65). In this analysis, the term “co-management” will be used to describe these collaborations.

Partnerships are the foundation of the co-management process (Plummer and FitzGibbon 2004). Natural resource management often requires partners to manage what neither could manage successfully alone: “Local users alone can hardly manage most natural resources in the complex contemporary world. At the same time, we have overwhelming evidence that centralized management of local resources is problematic” (Carlsson and Berkes 2005:71). The partnerships involved in the co-management of natural resources consist of those engaged in the relationships between and among government agencies and community users (Plummer and FitzGibbon 2004) who agree to share decision-making responsibility throughout the collaboration (Arnstein 1969). While collaboration may be defined in as many ways as there are partnerships, Selin and Chavez (1995) define collaboration as an “emerging process [...] between natural resource management agencies and other resource stakeholders [that evolves] in response to a host of internal and external factors” (p. 190). In addition to being emergent, these partnerships exist within a continuum from information-sharing to collaborative governance

(Carlsson and Berkes 2005). Co-management requires increased focus upon the social relationships involved because it is not prescriptive; rather it emerges through knowledge and understanding of the diverse stakeholders who take part in the process (Natcher et al. 2005). The emergence and evolution of co-management allows managers and stakeholders to create a model that suits their resource and community best. This process can be described using the sociological principles of social capital and trust.

### ***Social capital and trust***

The formation of co-management partnerships relies upon the trust and social capital built over a long period of time (Koontz et al. 2004; Carlsson and Berkes 2005). The role of trust and social capital become increasingly important in this dynamic process (Carlsson and Berkes 2005), but are understudied (Wagner and Fernandez-Gimenez 2008). A process-based approach to the management of natural resources, including the management of the social capital and trust this management incorporates, strengthens the collaboration (Laurian 2009). This analysis will draw upon Coleman's (1990) definition of social capital:

Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence. Like physical capital and human capital, social capital is not completely fungible, but is fungible with respect to specific activities. A given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others. Unlike other forms of capital, social capital inheres in the structure of relations between persons and among persons. It is lodged neither in individuals nor in physical implements of production. (P. 302)

These relationships and network ties embody the social capital that contributes to successful co-management: "Social capital, in turn, is created when the relations among persons change in ways that facilitate action [...] it is embodied in the *relations* among persons" (Coleman 1990:304). "Social capital exists in relationships" (Robison and Flora 2003:1189) and co-management involves relationships among agency and community partners who may be new to working together.

Trust is a form of social capital (Coleman 1990) that is a precondition for successful planning in collaborative processes because it facilitates cooperation while increasing the likelihood of stakeholders' participation in the process (Laurian 2009) and increases the efficiency of partners' work (Pretty 2003). Trust is often the key success indicator in co-management, serving as a foundation for successful partnerships (Carlsson and Berkes 2005).

Trust positively influences those engaged in collaborative process and decision-making (Hosmer 1995; Dirks and De Cremer 2011) but is multi-layered within inter-organizational partnerships existing among individuals and within the partner organization (Zaheer et al. 1998). Additionally, trust lessens the negative influence of inevitable conflicts arising throughout the process of co-management. When co-management partners trust one another, they disagree without sabotaging their collaborative process (Wagner and Fernandez-Gimenez 2008), although this trust requires time to build and is fragile (Pretty 2003; Wondollock and Yaffee 2000). Trust and social capital evolve over time in the formation of co-management partnerships (Carlsson and Berkes 2005), but they also can depreciate over time: “Social relationships die out if not maintained; expectations and obligations wither over time; and norms depend on regular communication” (Coleman 1990:321). The role of partners within management of social capital and trust is important because they can strengthen or deter individual and organizational relationships (Koontz et al 2004).

The social outcomes of community partnerships include increased social capital as different stakeholder groups increase contact, communication, and trust through knowledge-sharing and collective problem-solving (Koontz et al. 2004). Pretty (2003) further describes types of social capital in terms of bonding, bridging, or linking relationships:

Bonding social capital describes the links between people with similar objectives and is manifested in local groups, such as guilds, mutual-aid societies, sports clubs, and mothers’ groups. Bridging describes the capacity of such groups to make links with others that may have different views, and linking describes the ability of groups to engage with external agencies, either to influence their policies or to draw useful resources. (P. 1913)

Berkes (2009) discusses the continuum of co-management as consisting of exchange, joint, nested, or network systems, which may or may not evolve into governance structures. As bridging, bonding, and linking social capital form within these partnerships, “people have the confidence to invest in collective activities, knowing that others will also do so” (Pretty 2003:1913). Through these interactions, social capital evolves among individuals and organizations, creating capacity for collaboration. Further, these relationships among individuals and organizations may evolve into collective social capital or civiness (Portes 2000). As stakeholders continue to collaborate and build trust through their collaboration, their social capital evolves from individual relationships to larger civic structures:

Public social capital is the transition point from micro to macro scale, from personal networks to community-wide networks. When these connections occur in a “public” group setting but

benefits are restricted to members of the group, social capital retains its micro personal resource meaning. However, when benefits accrue beyond individuals and their personal groups to the larger community, a macro scale of relationships evolves. (Morton 2003:104)

Social capital provides a means for understanding how these co-management partnerships evolve along the continuum from individual relationships to networks and organizations, and, potentially, to larger civic structures.

### ***Planning co-management partnerships***

The co-management of natural resources inspires partnerships as stakeholders share goals, power, and responsibility while building trust, solving problems, and learning together through the management of a natural resource (Carlsson and Berkes 2005). Partnerships are increasingly important to natural resource management (Natcher et al. 2005; Leach et al. 2002; Barber and Taylor 2000; Wondolleck and Yaffee 2000) and are essential as “local users alone can hardly manage most natural resources in the complex contemporary world” (Carlsson and Berkes 2005:71). However, the lack of literature analyzing how these partnerships are formed and maintained is a “theoretical oversight” (Carlsson and Berkes 2005) that is “surprising given the considerable multidisciplinary interest afforded to these arrangements over the past 30 years” (Natcher et al. 2005:240).

If co-management describes the process of collaboration rather than its end-point (Berkes 2009; Carlsson and Berkes 2005; Wondolleck and Yaffee 2000), then further study of how to develop these partnerships is needed. In their study of ten years of co-management case studies, Wondollek and Yaffee (2000) stress the need for evaluation methods that fit the evolutionary nature of collaborative process rather than forcing this process into specific outcomes. Instead of adopting a top-down method or formula for success, co-management and collaborative natural resource management literature stresses the need for place-based and stakeholder-oriented evaluation methods (Patton 1996, Conley and Moote 2003). The process of program evaluation may inform or refine program goals (Patton 1996). Evaluating successful partnerships requires multiple measures to match the multiple goals of diverse stakeholders (Leach et al. 2002). This is an iterative process, incorporating new stakeholder perspectives, opportunities, and challenges as they emerge. An iterative process facilitates the emergence of insights, questions, and issues that may shape the future course of action (Horton et al. 2003). Through evaluation, co-management

partners might strategically plan the evolution and expansion of their programs to engage community stakeholders through social planning.

Rothman (1995) and Weil (2005, 1996) define social planning as a process by which the community is engaged in collective problem-solving to address social change. Weil's (1996) discussion of social planning as a route to mitigate the impact of funding and staffing cuts to government social program is similar to the discussion of the rise of co-management within natural resource literature. She cautions that increased participation at the community level may strengthen a program but does not ensure that the community participation is equitable. Planning may assist co-management partners in developing programs that are more effective because they are community-appropriate and community-specific, integrating the community's needs and knowledge within the co-management process.

### **Case study background**

The purpose of this case study is to document stakeholder involvement and program development of a pilot urban fishing program in Des Moines, Iowa from 2010-2012. These data provide a foundation from which to analyze partnership formation between and among agencies, community organizations, and residents. Additionally, we analyze the impacts and process in order to strategize program approaches for existing and future collaborations. Using data from key stakeholder interviews and resident focus groups, we analyze the sociological concepts of social capital and trust in relation to planning the development of the co-management partnership. Through this analysis, the case study will offer a framework and tools for agencies involved in programs incorporating partnerships within program planning or natural resource management.

Primary stakeholders were the Iowa Department of Natural Resources (IDNR) and the City of Des Moines Parks and Recreation Department (City). The IDNR and City began discussion about an urban fishing program in 2009. Additional stakeholders include the Natural Resource Conservation Service (NRCS), Polk County Soil and Water Conservation District (PCSWCD), Polk County Conservation Board, and various community and neighborhood groups within Des Moines, Iowa metro area. While this case study focuses on the Des Moines urban fishing program pilot project, it will also be a useful resource for state agencies and city government collaborating on projects in which community ownership and stakeholder participation is central to project success. The IDNR plans to use the case study to inform their

collaboration with the City. Thus, the IDNR expects to use this case study to define guidelines for the development of urban fishing initiatives in urban areas across Iowa. Iowa State University (ISU) will complete a final report of the case study and provide this to the IDNR upon completion of the project.

### Case study sites

Iowa does not currently have a formal statewide urban fishing program, though the IDNR does manage urban fishing opportunities throughout the state in collaboration with county or city governments such as trout stocking at Ada Hayden Heritage Park in Ames, Iowa or the stocking of fish at Polk County's Fort Des Moines Park. Since 2009, the IDNR has funded a summer part-time staff member to assist in the coordination of summer fishing clinics through the City of Des Moines Parks and Recreation department. In 2010, talks began about creating an urban fishing program beyond summer fishing clinics that would improve urban fisheries within the City. Also in 2010, ISU and IDNR, in conjunction with the City and Polk County Soil and Water Conservation District (PCSWCD), evaluated the sustainability of Des Moines park ponds and lakes in terms of biological, chemical, and physical criteria. They prioritized four urban pond sites (Figure 1.1) within Des Moines for potential urban fishing program development: Greenwood Park Pond, Mac Rae Park Pond, Witmer Park Pond, and Tai Dam community pond. This case study focuses on the potential for an urban fishing initiative at these four urban park ponds in Des Moines, Iowa.

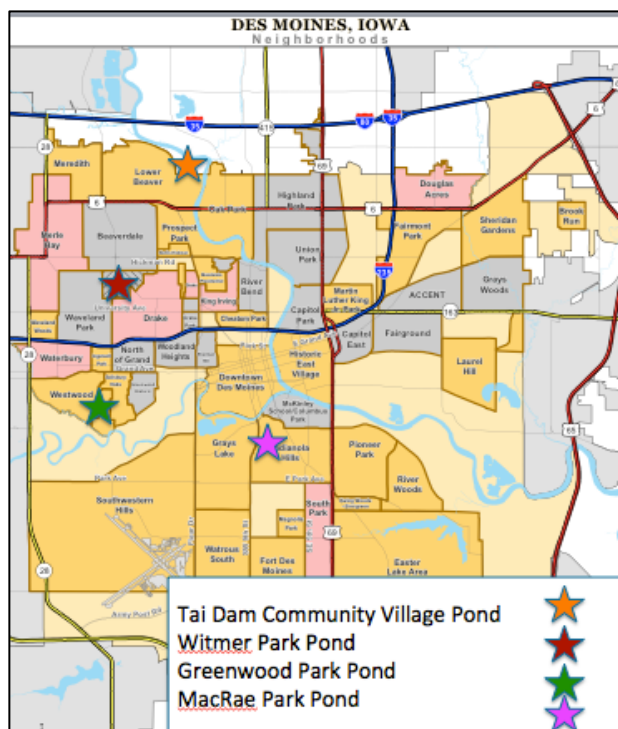


Figure 1.1 Prioritized park ponds in Des Moines, IA

## Research questions

The Des Moines pilot urban fishing program presents a partnership between a state agency and municipalities in Iowa that is new for agency and municipality staff, as well as urban residents. These stakeholder groups envision common components and goals, but do not have a program model or roadmap to help them strategize how to create these components or reach these goals. Current urban fishing programs in other states offer models of success, yet the sustainability of these models has been challenged with budget and staffing cuts in recent years. The majority of literature about program partnerships focuses upon fiscal or contractual partnerships rather than offering managers tools for creating, managing, or evaluating the increased stewardship or social relationships these programs may inspire and build in communities.

My research questions evolved through initial conversations with agency stakeholders prior to the start of the case study and a thorough review of the existing literature about urban fishing programs and urban outdoor education initiatives. Based on these initial conversations, I chose the theory of social capital (Pretty 2003; Coleman 1990) as a framework for analysis of the creation and influence of partnerships in this new natural resource management partnership emerging through the urban fishing program initiative. The focus of this case study is upon partnerships because these were identified as a key component to existing programs—either they strengthened programs or their absence weakened programs—and the development of partnerships has been a challenge in the evolution of the Des Moines urban fishing program. Urban fishing managers may be able to identify that they have a strong partner, or that their program is successful because of the partnerships involved, but may not be able to identify or evaluate the role of these partnerships to their program's success.

The following questions framed the inductive approach of the case study: 1) What existing and potential partnerships might be key to this program's development? 2) How do these partnerships form and evolve? 3) What opportunities or capacities might these partnerships build within urban communities as they engage in public health, urban food sources, watershed improvement, or ecological awareness initiatives? 4) What are the barriers these partnerships may encounter within the community or city and state level agencies? 5) If partnerships are one measurement of success, how does one identify the strength and potential of these partnerships? All questions identify gaps in information needed for a successful urban fishing program and

provide context and background understanding for stakeholders. Questions 1 and 4 identify success indicators that can be used in program planning and assessment. Questions 1, 2, 4, and 5 identify potential for partnership building and opportunities for future knowledge sharing.

## **Methodology**

Exploratory findings from a pilot urban fishing program in Des Moines, Iowa are presented using the case study method. The case study is an appropriate method of research in order to “retain the holistic and meaningful characteristics of real-life events—such as individual life cycles, small group behavior, organizational and managerial processes, neighborhood change” (Yin 2009). The new partnership between two government entities—the City and the IDNR—presents an opportunity to analyze the life-cycle of the urban fishing program, the attitudes of the neighborhood and organizational stakeholder groups within Des Moines, and the impact of the potential program within these institutions, organizations, and neighborhoods. A mixed-methods approach including participant observation, interviews, focus groups, analyses of a pre-existing survey and available archival data was used.

This case study includes focus groups with community members and semi-structured interviews with key stakeholders (Table 1.1). The IDNR and City suggested contacts within their own and related organizations for interview and focus group participation. Interview and focus group participants were selected using purposive snowball sampling, a method by which initial interview participants identify others, creating a chain of participants (Coleman 1959). Through purposive snowball sampling, initial contacts identified other stakeholder participants who have already invested social capital in the urban fishing program initiative. I first interviewed those staff from the IDNR who led the urban fishing program initiative in Des Moines. Through these interviews, additional interview participants were identified who were involved in the project development or whose perspective offered further insight about the future and scope of the collaboration. Resident focus groups consisted of four focus groups composed of neighborhood residents from the four prioritized urban park pond watersheds as well as residents from those neighborhoods immediately surrounding the park. Additionally, a fifth focus group comprised of community organization representatives who were interested in the urban fishing program as it related to their agency or group’s city-wide youth or environmental education programming provided data concerning opportunities for the expansion of social capital beyond the neighborhoods’ borders. Individuals contacted for interviews included those whose roles within



or in relation to the IDNR and City were identified as key to the program's success. The IDNR staff involved in the project also suggested names of urban fishing program managers whose work was featured in the 2007 American Fisheries Society's Urban and Community Fishing Program Symposium (Eades and American Fisheries Society 2008). Inclusion of these interviews with urban fisheries managers from outside the state of Iowa strengthens the case study's external validity. Additionally, these interviews with urban fisheries managers outside the state were analyzed in relation to interviews with Des Moines City staff and IDNR staff to ensure construct validity.

Semi-structured interview and focus group guides (Robson 2002) were used and incorporated open-ended questions focusing on five themes: interviewee's role, program structure, challenges, opportunities, and lessons learned (Appendix C and Appendix D). Research design and instruments were reviewed by the Iowa State University Institutional Review Board (ISU IRB) to protect participants and assure confidentiality. Interviews and focus group discussions were recorded, transcribed, and then analyzed using Nvivo 9 qualitative data management software (QSR International Pty Ltd. Version 9, 2010) to identify recurring themes and patterns in the data using open, axial, and selective coding. I analyzed data to find patterns and emergent themes from the interview and focus group data using an inductive approach based on grounded theory (Corbin and Strauss 2008; Charmaz 2007). Focus group participants completed a short questionnaire about park use, environmental awareness, and neighborhood involvement, as well as demographic information, prior to the start of the meeting (Appendix E). Focus group participant questionnaires were analyzed by hand to identify recurring themes and patterns in demographic data such as how long residents have lived in the neighborhood, if they rent or own their homes, their age groups, and how often and how they use the park. The research team coded data independently and then compared and reconciled their analyses to ensure intercoder reliability.

**Table 1.1 Case study data collection**

	Resident focus groups	Key informant interviews with Des Moines urban fishing program stakeholders	Urban fishing program manager interviews from other states
#	5	18	6
Notes	4 with neighborhood residents from the watersheds around the prioritized pond sites; 1 with community members at-large	18 interviews in total with 16 participants, 2 were follow-up interviews	Managers were from 5 states other than Iowa
Purpose	Learn opportunities/barriers within communities		
Sampling	Purposive Snowball Sampling		

Participants for interviews or focus groups were contacted by phone or email and, if interested, requested to suggest a 45 minute time during the business day that would be convenient for them to meet with me at their office. In interviews and focus groups, I reviewed the consent forms (Appendix A and B) with participants based on ISU IRB protocols prior to their participation in the study. For those interviewed by phone, the consent form was mailed in a confirmation email so that the participant would have the document in hand when we began our conversation by phone. I interviewed six urban fishing program managers from 5 other states and one IDNR staff member by phone because their offices were over a 3-hour drive from Iowa State University. When contacting neighborhood associations or community organizations, I first called the director or chair, and in all cases these contacts said that they would send out an email or make phone calls to others in the group to notify them of the focus group and ask their participation. Additionally, two neighborhood associations posted the focus group on their neighborhood listserv or website. I scheduled focus groups for weekday evenings at a location convenient to the neighborhoods and parks, such as a local church or community center, and offered light refreshments.

Participants in the focus groups were entered into a raffle for one \$25 Bass Pro gift card provided by the IDNR per focus group as incentive and a token of appreciation for their participation. Additionally, Bass Pro Shop donated t-shirts and caps to raffle to focus group participants. Participants in each focus group were entered into a raffle for the gift card, t-shirt, and cap and three participants were chosen randomly at the end of each focus group. Interview participants were not entered into the raffle because their participation occurred during work

hours at their workplace. Participants will be offered a copy of the final case study by downloading it from the Iowa State University Sociology Extension and Wildlife Extension websites upon its completion.

### **Thesis organization**

The following chapters are written as three journal articles. Common theoretical themes link the inductive findings based in my five research questions. Table 1.2 outlines the research questions, data collection methods, and theories used in analysis throughout the case study as they relate to individual chapters. Each chapter addresses a different perspective through a combination of the above research questions.

The second chapter (first paper) presents a synthesis of urban fishing program components and the need for improved evaluation and partnership-building as understood from a co-management approach. The challenges presented through co-management of natural resources are not unique to urban fishing programs. Analysis of foundational knowledge in existing literature and interviews with current program managers informs the tools we developed for managers to better strategize and plan programs. These tools may be of use to researchers and practitioners engaged in co-management programs. The lessons learned from the urban fishing program managers, and their acknowledgement of the importance of evaluation in the co-management process, shapes the analysis of partnerships in chapter three.

Chapter three (second paper) analyzes the role of social capital within the emerging collaborative process of the pilot urban fishing program in Des Moines, Iowa. As discussed in chapter two, co-management literature calls for more discussion of evaluation throughout the collaborative process as partnerships form, evolve, and change. This provides adaptability to the partners as they navigate conflict and change. I document and analyze a new collaboration between the two agencies as they begin the program planning process. Both organizations identified water quality improvements as the overarching goal for the program in terms of program impact and program sustainability. Further, they recognized that in order to best direct their efforts, they needed to learn more about the community and neighborhood groups. Differences in agency decision-making process and communication presented challenges to the collaborative process in the urban fishing program initiative and might be used to inform program planning in this case and beyond.

In chapter four (third paper), a social planning framework is used to analyze the potential social capital of watershed resident stakeholders as the urban fishing program partners plan site selection. The agency partners had gathered biological and physical data from the urban park ponds in prioritizing their potential as sustainable fisheries, but needed information about the social landscape of the watersheds surrounding the urban park ponds. Five focus groups provided input from residents about their attitudes towards their neighborhood's park pond and the potential for increased recreational activity there. While specific to the proposed program sites in Des Moines, the analysis of these focus groups' questions and ideas will be valuable to others engaged in planning watershed improvements and programs.

Finally, the fifth chapter concludes the thesis and summarizes the findings of the preceding chapters in the context of my initial research questions. Additionally, implications for natural resource managers and next steps for further research are discussed. Hopefully, this will be useful not only to the program partners and stakeholders, but to other state and local agencies attempting new co-management of resources through recreational program initiatives.

The appendices include the consent forms and the interview and focus group guides, as well as a focus group survey, used throughout the case study's data collection (Appendix A, B, C, D, E). Additionally, the appendices include tools created throughout the process of the case study—a process model (Appendix F), a program partnership template (Appendix G), and two case study reports (the third is due in June 2012) provided to the natural resource agency partner (Appendices H and I).

**Table 1.2 Thesis organization**

<b>Section</b>	<b>Research Questions</b>	<b>Data Analysis</b>	<b>Data Collections</b>
Chapter 2: Keeping them on the line! Evaluation's role in urban fishing programs	<ol style="list-style-type: none"> <li>1. What existing and potential partnerships might be key to program development?</li> <li>2. How do these partnerships form and evolve?</li> <li>3. What opportunities or capacities might these partnerships build within urban communities as they engage in public health, urban food sources, watershed improvement, or ecological awareness initiatives?</li> <li>5. If partnerships are one measurement of success, how does one identify the strength and potential of these partnerships?</li> </ol>	<p>Identify recurring themes and patterns in data using grounded theory</p> <p>Identify strategies for collaboration using co-management framework, trust, and social capital</p>	<p>Literature review</p> <p>Interviews with urban fishing program managers</p>
Chapter 3: What's the catch? Partnership in an urban fishing program	<ol style="list-style-type: none"> <li>2. How do these partnerships form and evolve?</li> <li>4. What are the barriers these partnerships may encounter within the community or city and state level agencies?</li> <li>5. If partnerships are one measurement of success, how does one identify the strength and potential of these partnerships?</li> </ol>	<p>Identify recurring themes and patterns in data using grounded theory</p> <p>Identify strategies for collaboration using co-management framework, trust, and social capital</p>	<p>Literature review</p> <p>Interviews with city and state agency partners</p>
Chapter 4: Can we eat it? Urban fishing programs and water quality	<ol style="list-style-type: none"> <li>3. What opportunities or capacities might these partnerships build within urban communities as they engage in public health, urban food sources, watershed improvement, or ecological awareness initiatives?</li> <li>4. What are the barriers these partnerships may encounter within the community or city and state level agencies?</li> </ol>	<p>Identify recurring themes and patterns in data using grounded theory</p> <p>Identify opportunities and barriers for partner engagement using social planning theory</p>	<p>Literature review</p> <p>Interviews with city and state agency partners</p> <p>Focus groups with representatives of neighborhood groups and interested residents in planned areas</p>

## **CHAPTER 2. KEEPING THEM ON THE LINE! EVALUATION'S ROLE IN URBAN FISHING PROGRAMS**

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### **Abstract**

Urban fishing programs are of increasing importance to fisheries managers as they face the challenges of decreasing angler numbers and funding constraints. These programs have grown in number and diversity; however, the literature lacks a holistic program evaluation process that includes a comprehensive synopsis of program components necessary for a successful and sustainable urban fishing program. Co-management of natural resource management programs offers an opportunity to engage program partners—the organizations, agencies, and community stakeholders—in proactive evaluation of program process. We reviewed existing urban fisheries program literature and interviewed urban fisheries program managers to gain insights and to synthesize available information regarding success indicators in new or existing programs. Our review identified the need for further investigation of evaluation

beyond license sales, event attendance, or fish stocked. Integrating evaluation at each stage of the program management process is important to building and maintaining the organizational and community partnerships on which urban fishing and many other programs are dependent. It is also important to evaluate partnerships as both a foundation and a result of program management. Missing analysis of evaluation represents a systemic challenge that is not specific to urban fishing programs, but also exists in resilience, development, and natural resource literature. We address this gap by presenting a template to evaluate and strategize partnerships as part of an existing process model that can be used to engage evaluation throughout a program's life cycle. Because each urban fishing program exists within a unique geographic area, organizational structure, and social dynamic, we present a template that can be used to strategize the often multi-layered relationships among program stakeholders, staff, and components.

### **Urban fishing programs and co-management**

The first urban fishing programs piloted by the U.S. Bureau of Sport Fisheries and Wildlife in the late 1960s aimed to increase recreational opportunities in proximity to low-income and inner-city areas in order to mitigate racial tension (Meneau 2008; Pape and Eades 2008). The program philosophy of urban fishing programs shifted in the late 1970s, as the "social relevance" of these programs was prioritized within agencies (Hunt et al. 2008:179). This social relevance included outreach to new anglers and partners, and required agencies to collaborate with diverse stakeholders to improve urban waters, create habitat, engage residents, and create programs (Hunt et al. 2008). Urban fishing programs are not alone in this increased reliance upon collaboration for program implementation. Since the 1990s, natural resource management has faced challenges presented by government agencies' budget constraints (Plummer and FitzGibbon 2004), growing urban populations, and interests groups' questions of agency legitimacy (Wondolleck and Yafee 2000). In response to these challenges, natural resource agencies at local, state, and federal levels are shifting their traditional top-down management to incorporate more collaborative approaches, including partnerships, as they try to more effectively address environmental problems (Koontz et al. 2004). This presents a challenge to urban fishing program and other natural resource managers because the social relationships

that emerge through the partnership process often require more management than the natural resource itself (Natcher, Davis, and Hickey 2005).

Carlsson and Berkes (2005) use the term “co-management” to define this process in which partners and stakeholders share goals, power, and responsibility for natural resource management while building trust, solving problems, and learning together through the resource management. Further, the authors describe co-management as “a continuous problem-solving *process*, rather than a fixed state, involving extensive deliberation, negotiation and joint learning within problem-solving networks” and suggest that co-management research should focus on the function of different management tasks rather than the structure of the system (Carlsson and Berkes 2005:65). The sociological theory of social capital is central to this process and describes how these partnerships “come about.” This analysis will use Coleman’s (1990) definition of social capital as it pertains to the social relevance and outcomes of urban fishing programs:

Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. [...] Unlike other forms of capital, social capital inheres in the structure of relations between persons and among persons. It is lodged neither in individuals nor in physical implements of production. (P. 302)

The social outcomes of community partnerships include increased social capital as different stakeholder groups increase contact, communication, and trust through knowledge-sharing and collective problem-solving (Koontz et al. 2004). Pretty (2003) further describes these types of relations in terms of bonding, bridging, and linking social capital:

Bonding social capital describes the links between people with similar objectives and is manifested in local groups, such as guilds, mutual-aid societies, sports clubs, and mothers’ groups. Bridging describes the capacity of such groups to make links with others that may have different views, and linking describes the ability of groups to engage with external agencies, either to influence their policies or to draw useful resources. (P.1913)

As bridging, bonding, and linking social capital form within these partnerships, “people have the confidence to invest in collective activities, knowing that others will also do so” (Pretty 2003:1913). The prioritization of urban fishing programs’ social relevance (Hunt et al. 2008) emphasizes the importance of these relationships and network ties, or social capital, that contribute to successful co-management.

Given the variety of urban fishing program models that have emerged during the now greater than 40-year history of designated urban fishing programs (Allen and American Fisheries



Society 1984), identification of shared success indicators among diverse programs may help guide and inform managers as they shape their urban fishing programs to address the unique opportunities and barriers presented through geographic location and targeted populations. Existing literature outlines commonalities among program models, opportunities, and challenges to program implementation (Allen and American Fisheries Society 1984, Eades and American Fisheries Society 2008). Identifying these and managing for them are measures of a successful program, but the relationships among the components and a standardized method of evaluation have not been explored fully in existing program literature. Despite the growth of urban fishing programs and activities since the 1990s (Hunt et al. 2008), the literature lacks an analysis of evaluation tools that play important parts in the development, longevity and benefits derived from the program, not only in terms of catch per unit effort, but also in respect to watershed management, partnership development, and other program facets. Without this knowledge, managers are hard-pressed to develop programs that have a high likelihood of sustainability and that are able to demonstrate outcomes associated with their program, and thus, justification for their continuation.

Most urban fishing literature examines specific programs or elements of such programs using single case studies (Eades and American Fisheries Society 2008). Evaluating success of urban fishing programs is important to their evolution and integration within city and state programs (Ballard 2008), though evaluation, while essential to a program's future, is too often undervalued or inconsistent (Ballard 2008; Neal and Eades 2008). The increasing importance of partnerships to natural resource management (Leach, Pelkey, and Sabatier 2002) is evident in urban fishing program literature (Freudenberg and Arlinghaus 2008; Penne and Cushing 2008; Sweatman et al. 2008), yet the literature lacks discussion of evaluation's role in collaborations. This is a significant gap because as partnership importance increases, failed or conflicted collaborations present high costs in terms of staff time, funding, and social capital (Conley and Moote 2003). The integration of evaluation within these partnerships may be influential to the success and sustainability of these programs. Evaluation of partners' roles within a program and including stakeholders in the process of evaluation has been important to successful collaborative natural resource program outcomes (Wondollek and Yaffee 2000) because "social relationships

or interactions [are] inherent in every characteristic associated with co-management” (Plummer and FitzGibbon 2004:882).

A lack of literature focusing on the analysis of evaluation and its impact is not unique to urban fishing programs. The norm in natural resource agencies has been to initiate evaluation when there is a crisis or pressure (Wallace et al. 1994), yet evaluation may also be used as a proactive means to strengthen program collaboration. The relationship between partnership and natural resource outcomes is understudied, though Wagner and Fernandez-Gimenez (2008) offer insight into the connection between social capital and the strength of partnerships. The relationship between empowerment and outcomes has also been identified as needed within development literature (Alsop, Bertelsen, Holland 2005), suggesting that measuring the engagement of partners and community stakeholders in long-term outcomes is a systemic challenge across disciplines. Discussion of the need for increased study of program evaluation, and the role it plays in strengthening the sustainability of programs, is echoed throughout resilience and natural resource management literature (Wallace, Cortner, and Burke 1994; Bellamy et al. 1999, 2001; Nichols 2002; Plummer and Armitage 2007).

Given these gaps in the literature, this article examines the role of evaluation in terms of partnerships within the urban fishing program management process: What existing and potential partnerships might be key to program development? How do these partnerships form and evolve? What opportunities or capacity might these partnerships build within urban communities as they engage in public health, urban food source, watershed improvement, or ecological awareness initiatives? If partnerships are one measurement of success, how does one identify the strength and potential of these partnerships? We frame our discussion of these questions within the context of program evaluation in keeping with Carlsson and Berkes’ (2005) discussion of co-management as process rather than a fixed state, and suggestion that co-management research should focus on the function rather than the structure of the system.

In this article, we address the role of evaluation within urban fishing program management by synthesizing the components of successful programs and analyzing their function. We propose that the role of evaluation is central to the creation of partnerships in urban fishing programs. Through literature review and interviews with urban fishing program staff, we identify opportunities that evaluation may create in building more productive

partnerships and sustainable programs. To address the need for a cohesive explanation for the success of urban fishing programs, we identify gaps in the knowledge of success indicators and evaluation of such measures, identify factors that increase success among many different types of programs, and provide resources for individuals charged with development, implementation, management, or evaluation of urban fishing programs.

To evaluate, and then to strategize partnerships, we propose two tools that may be used throughout program development, management, and evaluation. The first tool is a template that can be used throughout the program process and for programs at any stage in their life-cycle in order to evaluate, and then to strategize, partnerships. The second tool is a process model to guide the development of new or expanding programs. Our process model presents a useful model to synthesize the often overwhelming web of stakeholders' priorities, needs, and contributions to assist with evaluation and assessment of partnerships throughout the program life-cycle. Through our review and analysis, we formulate a process-oriented approach needed to empower fisheries managers as they work to create these connections within the urban community and maintain a program that is sustainable (Mueller et al. 2011). We undertook this review to better understand what elements of an urban fishing program are essential for evaluation of long-term success, and how a program manager may increase his or her likelihood of developing and maintaining a successful program.

### **Research methods**

We provide a compilation summary of the American Fisheries Society (AFS) Symposia (1993 and 2007) and additional peer-reviewed literature pertaining to urban fishing program management and compliment this summary with updates from our interview data. This compilation and analysis of emergent themes informs the creation of our template, an evaluation tool that can be used to strategize program partnerships.

### ***Literature review and synthesis***

We reviewed co-management literature to learn more about evaluation of shared natural resource management because of the importance of social capital in the development and management of collaboration in urban fishing programs. To examine the extent to which existing urban fishing programs have been evaluated and success indicators have been identified, we

reviewed the existing urban fisheries peer-reviewed literature. In particular, the proceedings from the 1983 and 2007 AFS urban fishing program symposia (Allen and American Fisheries Society 1984, Eades and American Fisheries Society 2008) provide an in-depth overview of existing programs and topics of discussion. These symposia are a comprehensive body of knowledge regarding urban fishing programs because they brought together a diverse group of urban fisheries experts, including more than 150 practitioners from all areas of urban fisheries management, including biologists, researchers, administrators, and aquatic educators, in addition to academic researchers, members of federal and state level agencies, and non-governmental organizations. Insights gained through interviews with urban fishing program managers and staff, as well as a review of current peer-reviewed literature, support the symposia's findings and add current data to our review. From these sources, we identified commonalities among urban fishing programs and used these as indicators of success and analyze these in our results.

### ***Interviews with urban fishing program managers***

Interview participants were selected using purposive snowball sampling, a method by which initial interview participants identify others, creating a chain of participants (Coleman 1959). Our initial interview contacts for the case study were fisheries managers and staff in Iowa. They, in turn, recommended program managers and staff in other states for further contact. Additionally, we drew upon the 2007 AFS Urban and Community Fishing Symposium and contacted authors of those articles specifically focusing on success or sustainability of program development and management. As a follow-up to the 2007 AFS Urban and Community Fisheries Programs Symposium, we contacted authors of several case studies to receive updates on existing programs and to ask additional questions. From September 2010 through July 2011, we conducted 11 semi-structured interviews with managers and staff from state agencies whose responsibilities include urban fishing programs. Of these 11 interviews, five were in-person with fisheries managers and staff in Iowa, and six were by telephone with out-of-state managers and staff from five other states. All interviews were recorded and transcribed.

A semi-structured interview guide (Robson 2002) was used and incorporated open-ended questions focusing on five themes: interviewee's role, program structure, challenges, opportunities, and lessons learned (Appendix A). Using an inductive approach based on grounded theory (Corbin and Strauss 2008; Charmaz 2007), we analyzed data using Nvivo 9

qualitative data management software (QSR International Pty Ltd. Version 9, 2010) to find patterns and emergent themes from the literature and interviews to illuminate how managers know success when they see it. The success indicators we propose through this research is built upon the themes and experiences shared through review of the literature and interviews and provides a better understanding of existing knowledge and lessons learned to strategize program management.

## **Results**

In their summary of the 2007 American Fisheries Symposium on Urban and Community Fisheries Programs, Neal and Eades (2008) list “create partnerships” (p. 457) as the first of seven steps to a successful program and emphasize the multi-disciplinary and multitude of opportunities for partnership. “Evaluate program” is the seventh and final step, which the authors describe as “perhaps the most overlooked part of a successful program,” but also a process that “can help urban managers develop a resilient program which is responsive to program outcomes and flexible to refinement” (p. 459). While Neal and Eades’ seven steps to a successful program may sound prescriptive, the process is dynamic. The responsiveness of these partnerships and resilience of the program are shaped by the social capital created throughout the partnership creation and management. Steps one through seven, from “create partnerships” to “evaluate program,” represent an iterative process as partners test, refine, and adopt program components to fit within the structure of their program. The process of program management evolves: “once the system under focus has been mapped and its network structure has been analysed, one can evaluate the particular features that can be used to empower people and to reorganize relevant institutions” (Carlsson and Berkes 2005:71). This analysis focuses on the important connections between evaluation and partnership. Through this analysis, we create tools for program managers to use in strategizing their collaborative process.

### ***What is the role of evaluation?***

Evaluating success of urban fishing programs is important to their evolution and integration within city and state programs, yet evaluation, while essential to a program’s future, is too often undervalued or inconsistent (Ballard 2008). “Evaluation is an assessment at a point in time, often after the fact, that determines the worth, value, or quality of an activity, project, program, or

policy” (Horton et al. 2003:33), and evaluation of urban fishing programs’ success has taken the approach of focusing on angler or participant numbers. A process-oriented approach to evaluation that incorporates stakeholder perspectives would help program managers in meeting the goal of increased stewardship (Siemer and Knuth 2001). Evaluation that contributes to both the development of the program and the performance of the agency (Horton et al. 2003) may strengthen social capital within and beyond the agency. If the success of urban fishing programs is to reach beyond number of licenses sold, fish stocked and caught, and events held per year, managers must create methods to measure the less calculable yet perhaps more significant components of urban fishing programs—partnerships, impact, longevity. In our interviews, evaluation was a process that managers identified as important:

Yeah, I think any, starting out, getting as much, finding out as much as you can to make sure it’s successful is definitely the way to go. Yeah, because you want to be as successful as possible right from the start.  
*UFP Manager Interview 2011010*

So I would definitely tell people – Plan, filter everything through the plan, evaluate whether it’s going to help you reach your end goal, and last but not least, make sure that you say no to certain things so you can yes to others. And then in summary, tell them you’re going to do it, do it, and then tell them you did it.  
*UFP Manager Interview 2011012*

Evaluation was also identified as a central component to a resilient program, one that can withstand internal changes and external pressures:

And it really came into play really critically for us these last two years, Angie, when everyone’s going through the recession and cities are looking yet at making some extreme cutbacks in their city budgets. And because we charge them a fee, we’re considered like an outside contractor. And usually when any government entity starts cutting back, they look at cutting their outside contracts first before you starting cutting back personnel. And there’s already been a couple situations now where cities had at one point considered putting their funding of the urban program on the chopping block. And when this information became available to them, it was so compelling and the media would coincidentally get a hold of it, and before you knew it mayors were begging the parks directors – “Don’t you dare touch that urban program. That’s one that’s not going away.”  
*UFP Manager Interview 20011014*

Most states evaluated program effectiveness in terms of number of anglers and youth served in addition to catch and effort, but few states conducted more thorough analyses required to justify long-term program existence such as the effectiveness of programs in recruiting and retaining anglers or cost/benefit studies (Ballard 2008; Hunt et al. 2008). Existing evaluation research within urban fishing programs literature addresses anglers’ willingness to pay for various management efforts (Mahasuweerachai et al. 2010), success of water quality improvements at fisheries (Eades et al. 2008b), fishing clinics (Richters et al. 2008), or success

of specific species (Schultz and Dodd 2008a, 2008b, 2008c). “Perhaps the most overlooked part of a successful program is evaluation and refinement,” (Neal and Eades 2008:459) and this absence of a clearly-defined framework for evaluation of program success provides an opportunity for future application and research. Availability of avid-anglers and ease of survey method may make on-site and creel surveys cost-effective, but misses important information regarding the very population most urban fishing programs hope to recruit: the potential or lapsed angler and youth. A longer-term or more holistic method of evaluation is needed in managing program success. Particularly in this era of budget restrictions and cuts, evaluation might assist managers to move beyond replication of program components to an in-depth analysis of the multi-layered relationship among program stakeholders, staff, and components.

Barber and Taylor (1990) identified that “fisheries management professionals now believe that they primarily manage people, not fish” (p. 365). Process and logic models might provide means to evaluate and manage these social relationships. Process models (Ballard 2008; Fedler 2001) illustrate program process through stakeholder, goal, objective, and short-, mid-, and long-term outcomes. These models offer a valuable tool for fisheries managers and staff to plan, measure, and evaluate progress of urban fishing programs. A logic model illustrates “a simplified chain of relationships that portrays the logic and assumptions underlying a program or intervention and how it intends to achieve its expected results” (Horton et al. 2003:94). Use of logic models may help urban fisheries directors identify measurable indicators (Ballard 2008). Fedler’s “Conceptual Model for Program Development and Evaluation in Boating, Fishing and Aquatic Education” (Fedler 2001) is a logic model illustrating a holistic approach to educational program considerations. He recommends “a mixture of evaluation methods should be considered with the most appropriate methods selected for each aspect of the program being evaluated” (p.13). Additionally, he outlines a conceptual map for best practices that requires “an understanding of the outcomes desired from the program, appropriate methods for achieving the outcomes, resources necessary to apply the methods, and the environment and setting in which the program will occur” (p. 6). Strategic planning may enable agencies to extend beyond their traditional internal modes of evaluation to include evaluation that incorporates the complexity of their increasing partnerships (Horton et al. 2003). In this way, managers might build opportunities for partners to provide feedback and share in setting the direction of co-

management programs.

These tools may not solve the challenge many agencies face in evaluating their programs. In her discussion of program evaluations, Ballard (2008) states that the increased emphasis on evaluation conflicts with the amount of training in program evaluation possessed by urban fishing program staff. Conley and Moote (2003) found that within co-management of natural resources, “the most common form of evaluation focuses on whether and how collaborative efforts meet their identified goals and objectives. Goal setting is an important activity in many collaborative efforts, and many identify a range of social, economic, and environmental goals” (p. 377). This poses an additional challenge as managers may struggle with incorporating partners’ goals within the evaluations of collaborative programs:

Managers need new skills to move from the expert opinion role in traditional environmental management to an empowerment role as mediator, catalyst, or broker in the new order. Managers comfortable with the hierarchical decision making of public agencies are finding it difficult to cope with the lateral decisions needed to sustain effective collaboration. (Selin and Chavez 1995:189)

Horton et al. (2003) found that evaluation increases an organization’s capacity to improve performance; however, these efforts must be carefully planned and continuously monitored throughout the process. Each urban fishing program exists within a unique geographic area and social dynamic that influences the emergence of partnerships, but this may be hindered by agencies or organizations sidestepping the process of collaboration in their pursuit of funding (Bidwell and Ryan 2006). Hiring staff whose positions are dedicated to the coordination of the co-management process is one way to manage these challenges, otherwise agencies must rely upon those who value the collaboration management and see it as an added value to the larger organization (Sarason and Lorentz 1998). With the increased hiring freezes and funding constraints faced by many agencies, program managers are tasked with developing these skills or collaborating with partners who may assist in the process.

### ***What is the role of partnerships?***

The adaptability and flexibility of programs that have remained successful have featured key stakeholders involved in strong partnerships (Sweatman et al 2008; Balsman and Shoup 2008, Schroeder et al. 2008a, 2008b; Penne and Cushing 2008; Walsh et al. 2008; UFP Interviews 20011003, 2011007, 2011010, 2011012, 2011014). Many of those interviewed shared their investment in the partnership-building as an important aspect of the success of their programs,



however not all could specify how or why their urban fishing program became so successful. In other words, they knew they were doing something “right” but were not always able to articulate specific steps or processes they took to create the program’s success:

All I can tell you – my advice if you’re starting something is – Do not start it where you are critical for its maintenance and completion. Get as many people involved in it as possible. You have to do it.  
*UFP Interview 2011012*

As echoed by the urban fishing manager in the above quote, successful programs require integration within the community through partnerships and should not be the responsibility of the agency alone. Carlsson and Berkes (2005) elaborate further:

Co-management is a logical approach to solving resource management problems by partnership. Partnerships are often essential. Local users alone can hardly manage most natural resources in the complex contemporary world. At the same time, we have overwhelming evidence that centralized management of local resources is problematic. (P. 71)

One urban fishing program manager articulated these constraints of centralized management and the need for program integration within communities through partnerships:

And that’s the thing – a lot of it is out of your control. And you may have a director or commissioners that support the program, and then three years from now priorities change. In a big agency like this, all of a sudden you get chronic wasting disease or something else that’s threatening the deer hunting – oh, my, we have to... priorities change. Now with the budget cuts and we’re going through this reorganization. And those are the things that I don’t know how you put that in a book or how... [...] Hopefully some of those communities, if you’ve got built up good partnerships and hand them off, I think a lot of those communities will carry on, but when you can’t, don’t have fish to stock, we’re not a very good partner anymore when we can’t even stock the lakes for them. And then we change the regulations on them, you feel like ten years of treating them right, and then all of a sudden we say – Well, we’re not going to manage or stock your lake anymore, and we’re walking away from you.  
*UFP Interview 2011009*

Urban fishing programs adopting an integrated approach create opportunities for new partners and anglers (Ballard 2008; Balsman and Shoup 2008), thereby generating increased social capital. Social capital is “embodied in the *relations* among persons” and “facilitate[s] the achievement of goals that could not be achieved in its absence or could be achieved only at a higher cost” (Coleman 1990:304). Urban fishing program managers interviewed expressed the importance of social capital to the success of their programs:

So as the community gets involved and invests in it, then I think they want to take care of it. But if the DNR just goes and throws fish in it, then they don’t really, they don’t have that buy-in. So it’s got to be a partnerships, and I don’t think you’re going to have much success if it’s just – Well, the DNR is going to come in here and stock fish – because the city has no stake in it.  
*UFP Manager Interview 2011009*

So kind of getting them involved, getting them to take some ownership, maybe even cost-sharing on things like a fishing pier or creating just more opportunities for fishing, whether it be opening up some shoreline, putting in trails, stuff like that. So I think that's been probably the biggest way to partner with them.

*UFP Manager Interview 2011010*

These partnerships also pose challenges to urban fishing managers, specifically extensive communication and management. Sweatman et al. (2008) outline the challenges and opportunities presented through partnerships. Maintenance of these partnerships is often not recognized though it is essential to the success of collaborations with community members and city staff and essential for the continued success of the program:

And we also understand that in an urban setting our angler customers have a different expectation of what angling is than if they went to a remote lake or stream. In urban settings people are used to high levels of customer service, and if you don't provide it, then they kind of don't like the operation so well. And so we create a lot of great relationships.

*UFP Manager Interview 2011014*

It's like a majority of what we get done to sustain what we developed in that first phase is basically because of the partnerships.

*UFP Manager Interview 2011012*

You get to know the players, you develop a rapport, you develop communication. And then there's like an education thing that also goes on too; it's an education thing for us for sure because we're not park managers, and we don't know about city processes.

*UFP Manager Interview 2011007*

Communication and collaboration among city staff, community members, and agency staff are an often undervalued and sometimes invisible component that is central to program success:

They'll call me because they know that if it's not my expertise, I probably have a phone number they can call. And I enjoy that. That's why I got into all this. I got into this to be a link between the scientific community and the fishing community. I'm a passionate fisherman, and that is why I got into this. So I enjoy that, the fact that it's somebody they can trust – it's one of them that's going to give it to them straight, is not going to sugarcoat it but is going to be professional about it. And if I can't answer it, then I'll pass it on to somebody else. At the same time giving them a product, not just being an on-call information center, but providing for them something that if we weren't there it wouldn't be as good as it is. That's key. To me that's key – Are you essential? Are you doing things that make fishing better for people? Period. And that's kind of how I put the filter on for all that stuff.

*UFP Manager Interview 2011012*

The management of social capital through the maintenance of partnerships may not yet be an explicit component of program process or managers' responsibilities, but many sources in addition to the manager interviews identified partnerships as an important factor in articulating and achieving goals (Ballard 2008; Penne and Cushing 2008; Sweatman et al. 2008).

In their 1990 review of the importance of evaluation in fisheries management, Barber and

Taylor fisheries managers' views of their shifting role from the management of fish to the management of people. This shift is clear in the interviews and literature review we conducted, yet it appears that the agencies may not have revised job positions, program staffing, and program process to fit these changes. Managers we interviewed shared a great deal of programmatic knowledge about urban fishing programs, but more importantly they echoed Barber and Taylor's (1990) call for a recognition of values in the goal-setting and decision-making processes of urban fisheries management. A great deal of work is being done across a diversity of programs to establish connections in urban areas with new partners, but much of this work is not yet documented or measured through evaluation processes. This may pose challenges as agencies and government face cuts and must share the impact of their beyond participant numbers.

***What is the relationship between evaluation and partnerships?***

Most urban fishing literature examines specific programs or elements of such programs using single case studies. The 2007 AFS Symposium on Urban and Community Fishing Programs provides a comprehensive overview of the state of urban fishing programs through discussion of national surveys and specific case studies (Eades and American Fisheries Society 2008). These case studies identify factors of success, such as goals, partner roles, leadership, and ownership (Sweatman et al. 2008) or stewardship and educational components (Penne and Cushing 2008), but not specific relationships between success and evaluation. The role of partnerships is the key connector between the many variables existing in program management (Freudenberg and Arlinghouse 2008, Penne and Cushing 2008, Sweatman et al. 2008).

Urban fishing program evaluation literature has focused on the assessment of biophysical components such as stocking or species, or human dimensions such as angler identity and preference (Edwards and Okamoto 1980; Ditton and Hunt 2001; Fedler and Ditton 2011; Conway et al. 2006; Eades et al. 2008a; Emme and Buynak 2008; Hutt and Jackson 2008; Lang, et al. 2008a, 2008b; Schultz and Dodd 2008a, 2008b, 2008c; Richters et al. 2008; Taylor et al. 2008). While evaluation of these program components is important for program success and sustainability, a more holistic or comprehensive evaluation of program process may be more meaningful for both agencies administering programs and their partners (Ballard 2008). More comprehensive evaluation might be used in proactive ways to evaluate not only what is achieved,

but also to integrate what emerges throughout the program process (Bellamy et al. 1999) that might present unanticipated paths for program evolution and adaptation (Patton 1996). This more iterative evaluation of program process is dependent upon well-defined objectives to assist agency stakeholders as they navigate the program's development, implementation, and management (Bellamy et al. 1999). Prioritizing evaluation as a starting point rather than an end point in a program life-cycle helps the evaluative process to be "utilization-focused," informing program implementation and development, empowering stakeholders, and building relationships (Patton 1996).

The urban fishing program manager and staff interviews provided further insight into how these components influence implementation and management of programs. The process by which managers and staff dealt with change and challenges within programs highlights the strength that partnerships add to program resiliency and sustainability.

But it still always has to be more than just lip-service. You have to still be real and make that time to relate with their staff. Something we did ten years ago, twice a year we have what we call an Urban Program Roundtable meeting, where we ask all of our parks partners, we invite them all to come to a four-hour or three- to four-hour roundtable. And we talk about the urban program, and we show some of our recent videos of our program, or we talk about water quality issues, or we've even brought in guest speakers to talk about algae and aquatic plant control, or the newest breakout in aeration systems. [...] That's been a really great forum for them to network and for them to compare notes across one city to the other. And we invite everywhere from higher administrators to the groundskeeper to those kinds of meetings.

*UFP Manager Interview 2011014*

Evaluation was important to partners' communication and assuming program responsibilities (Sweatman et al. 2008) but is not often identified in case studies as a tool to increase collaboration and communication. The process of creating a program evaluation may inform or refine program goals (Patton 1996). Evaluating successful partnerships requires multiple measures to match the multiple goals of diverse stakeholders (Leach et al 2002). Connecting the stakeholders' roles to program goals through stakeholder analysis makes the evaluative process specific and user-oriented (Patton 1996), rather than an approach attempting to fit all with one process.

When asked about changes in their program management, recurring themes among those we interviewed were the increasing constraints due to economic and staffing challenges and the ever-increasing scope of their work:

And in the various symposiums I've been to over the years on urban fishing, one of the biggest reasons I think many states have failed to launch an urban program is because they understaff and they over-expect one person to do the marketing, the promotion, the management, the stocking and the education.

*UFP Manager Interview 2011014*

One manager pointed out that the 2007 AFS Urban and Community Fisheries Symposium occurred at the height of the fishing program's success and that soon after the program faced severe cuts (UFP Manager Interview 2011009). In the wake of the budget cuts and constraints that have confronted programs since the publication of the 2007 AFS Symposium, we learned that the role of partnerships and community and agency integration became especially important. These challenges and changes that have occurred since the 2007 symposium are missing from peer-reviewed literature.

Conley and Moote (2003) identify evaluation criteria in terms of process, socioeconomic, and environmental criteria. To be effective, an evaluation framework should assess environmental, economic, social, institutional, and technological impacts while serving as a tool in the process of program development, management, and implementation through iterative feedback that can improve program knowledge and objectives (Bellamy et al. 2001). Informing stakeholders of the opportunities and challenges of collaborations involved in the program management (Conley and Moote 2003) is an important part of creating this framework. Urban fishing program managers occupy a unique role in this regard, as managers must navigate their agency's internal landscape as well as partnerships with the organizations or governments in the urban landscape (Barber and Taylor 1990). The role of fisheries managers in many urban fishing programs bridges organizations, agencies, and communities while building and strengthening ties of urban communities to their ecosystems. Rather than adopting a top-down method or formula for success, co-management and collaborative natural resource management literature stresses the need for place-based and stakeholder-oriented evaluation methods (Patton 1996, Conley and Moote 2003). Patton (1996) argues that evaluation design must fit its intended use and situation in order to be useful. Our interviews with program managers identified several situational factors that influence program process through constraints or opportunities but that are largely outside of the stakeholders' control: funding, politics, and staff turn-over.

### ***What components and tools can be used in planning program evaluation?***

Plummer and FitzGibbon (2004) define three “products” of co-management: “enhanced decision-making” leading to greater equity and efficiency through the incorporation of multiple actors and integration of local knowledge, legal and non-legal legitimization as the collaboration becomes institutionalized, and increased local-level capacity (p. 881-882). They further propose these three products as both inputs and outputs, describing co-management as an emergent process in which “social relationships or interactions [are] inherent in every characteristic associated with co-management” (p. 882). In their study of natural resource collaborations in watersheds, Leach et al. (2002) found that partnerships are complex, often addressing social, economic, and ecological concerns throughout the course of their partnership. Their study found that measuring social capital is especially useful for emerging partnerships that have not yet developed other success measures. Further empirical study of social capital within urban fishing programs is needed. The acknowledged increase and importance of partnerships within both co-management literature (Leach et al. 2002) and urban fishing program literature (Schramm and Edwards 1994; Balsman and Shoup 2008; Penne and Cushing 2008; Schroeder et al. 2008a, 2008b; Sweatman et al. 2008; Walsh et al. 2008) suggests that social capital is important to incorporate within program components and evaluations.

Common among urban fishing programs in the United States are these three goals identified by Schramm and Edwards (1994): (1) Increase recreational fishing opportunities, (2) develop and increase environmental awareness and conservation ethics, and (3) increase public participation in recreational fishing. Recent literature stresses these same goals while emphasizing the importance of meeting the needs of populations that are increasingly urban as opposed to the traditional rural demographic that agencies may have been accustomed to in the past (Eades and American Fisheries Society 2008). These goals, combined with the shifting rural to urban population, national decline of fishing licenses, and increased pressure from budget cuts, signal that measureable outcomes and methods for evaluation are needed to understand how these goals are achieved in urban areas. Specifically, in response to limited funding sources and increased urbanization, goals must be set based on available resources and agency priorities (Sweatman et al. 2008) and should incorporate anglers’ interests so that success can be clearly evaluated (Balsman and Shoup 2008). Siemer and Knuth (2001) recommend that agencies

clearly define their environmental stewardship goal and objectives in order to measure and evaluate success in their achievement, but examples of such definitions are missing from the literature.

Surveys share findings about current program structures and their variables, such as target populations, funding and staffing models, available amenities, and partnerships formed at local, regional, and national levels (e.g., Gilliland 2008; Hunt et al. 2008; Schroeder et al. 2008b; Floyd et al. 2006; Gabelhouse 2005; Arlinghaus and Mehner 2004; Siemer and Knuth 2001). However, the knowledge available through these surveys and existing literature does not present specific examples of programs that have applied systemic evaluation to their program models. Despite the breadth of information and knowledge shared about audiences, program components, and program structure, the above surveys and the literature do not explore the role of partnerships as part of program assessment. In discussions and recommendations of goals in the current literature, the authors do not specify how to define measures or performance indicators. Several program managers shared that there is an increase in pressure to provide evaluation of their program success beyond numbers of participants or events (Interviews 2011004, 2011011, 201106), yet there is no commonly adopted method for providing this evaluation nor for showing the integration of these programs within existing community structures through partnerships.

An important and seemingly simple step to strengthen both partnership building and stewardship components within urban fishing programs may be to change the name of these programs. The name “urban fishing programs” fit well with the U.S. Bureau of Sport Fisheries and Wildlife’s intent to increase fishing access for inner-city and low income urban neighborhoods (Menau 2008), but the changing dynamics and needs of these programs may be better served by names reflecting the community aspects they incorporate (Pape and Eades 2008). Several programs have shifted from the name of urban fishing programs to Fishing in the Neighborhoods (FINs) or community fishing programs, and Pape and Eades (2008) suggest that it is time to re-examine if the name “urban fishing program” still best represents the scope of these programs. A name change may better reflect the collaborative process and ownership of stakeholders, as well as fit the changing nature of natural resources management.

The motivational differences among angler groups is well documented in the literature (Hunt and Ditton 2002; Arlinghaus and Mehner 2004; Hutt and Jackson 2008; Schroeder et al. 2008b).

Cost constraints, distrust of law enforcement, and uncertainty about regulations can be addressed by equipment loan programs, agency recruitment of more diverse staff for urban fisheries management, and non-license events at which would-be anglers can learn the regulations and what is required for license purchases (Schroeder et al. 2008b). Many state agencies use aquatic education and outreach programs to recruit children through activities and programs that increase interest and skill (Sweatman et al. 2008), yet promotion and outreach vary across program models. The vast majority of programs target youth and work in collaboration with city or county departments to coordinate the development, maintenance, management, and programming of urban fishing programs (Hunt et al. 2008).

Urban anglers, due to restrictions of time and mobility, value proximity to their homes in their angling destinations (Schramm and Edwards 1994), thus program managers stress convenience, access, and proximity to residence in recruiting new and under-represented anglers (Schramm and Dennis 1993; Fedler and Ditton 2000). According to the National U.S. Fish and Wildlife Service Survey of Fishing, Hunting, and Wildlife-Associated Recreation (2006a; 2006b), 92% of anglers are white and so many urban fishing programs continue to target under-represented angler groups in their aquatic education, promotion, and retention, such as Minnesota's Fishing in the Neighborhoods program (Schroeder et al. 2008a; Walsh et al. 2008) and Wisconsin's urban fishing program in Milwaukee (Stabo 2008). Other programs focus on recruiting anglers, specifically lapsed anglers and youth, who live in close proximity to the fishery but are time-restricted (Balsman and Shoup 2008). Evaluation of under-represented angler recruitment is a gap in urban fisheries literature, though recruitment and retention of under-represented groups has been explored in the context of broader recreational opportunities (Floyd and Johnson 2002; Shinew et al. 2004; Shores et al. 2007).

Safety is an often-underestimated factor in limiting potential angler involvement in urban fishing programs (Schramm and Edwards 1994; Hunt and Ditton 1997). In addition to angler safety, insufficient law enforcement in some urban areas threatens angler compliance. Eades et al. (2008) wrote that the greatest challenge to Nebraska's urban fishing program was insufficient law enforcement of regulations. In a 2007 survey, both fisheries administrators and anglers identified law enforcement as a program concern and 55% of staff involved in urban fishing program coordination reported that they did not have adequate law enforcement capabilities at



program sites (Eades et al. 2008). Safety improvements include patrol or game warden presence to monitor regulation compliance and increase angler security (Balsman and Shoup 2008; Eades et al. 2008) and inclusion of clear communication about any public health risks from consumption of fish to inform those with weakened immune systems or other health concerns (McOliver et al. 2008).

Gilliland (2008) identified the top three challenges of urban fishing programs and all are related to a lack of sustainable funding: lack of staff, availability of fish to support intensive stocking efforts, and lack of suitable sites to incorporate their programs. Particularly in the current atmosphere of budget cuts, fisheries managers are concerned about funds for pilot programs and the sustainability of funds for existing programs (Interview 2011003). Partnerships can provide sustainability even in times of budget cuts:

My point is that a lot of those partnerships and all those things are like we've moved in other directions, but one of the good things about [our program] is it was created with partnerships in mind to sustain the maintenance parts of it. So a lot of why they've been cut and I haven't is because some of our cooperators generate between a hundred and a hundred fifty thousand dollars a year to sustain the program. So how do they argue with that? You know what I'm saying? It's like a majority of what we get done to sustain what we developed in that first phase is basically because of the partnerships.  
*UFP Manager Interview 2011012*

Funding varies widely among urban fishing programs and influences the implementation and continued management of a successful program. In an interview with a former statewide urban fisheries program manager, the manager commented that funding was “easy to come by” at the beginning of the program when stakeholders were excited, but a long-term funding plan was challenging (Interview 2011009). This former fisheries program manager cited funding as the one component of program structure he would change if the program were to be started again from the ground up. Evaluation may play an important role in helping managers manage programs despite limited resources: “In a resource-constrained world, agencies must carefully assess the limits and trade-offs involved in making resource commitments. Engaging in collaborative environmental management means consciously deciding how, where, and when to expend scarce and limited resources” (Koontz et al. 2004:179). Strategizing partnerships while incorporating evaluation within the program process may help to mitigate the challenges presented through funding constraints.

Logic models, such as those shared in Ballard's (2008) discussion of evaluation in the 2007 American Fisheries Symposium, are useful models of program process. As Ballard writes, evaluation may consist of multiple methods and sources. Some urban fisheries managers with whom we spoke mentioned community partner forums where information is shared among urban partners, internal intra-agency brainstorm and feedback sessions for improving program process, focus groups, and speaking with other program managers as ways they evaluate their programs' effectiveness and success. None of the managers with whom we spoke mentioned using logic models, nor were these mentioned as tools in the case studies included in the American Fisheries Society symposia. We encourage managers to revisit Ballard's discussion and consider logic models as an important visualization of program process.

## **Discussion**

Our analysis of the urban fishing program manager interview data provides insight into the current trends of urban fishing program management, in addition to topics to be revisited in future symposia or research. The literature and our analysis of the interviews support the engagement of community and external agency stakeholders throughout the natural resource management process because these partners are influential and increasingly necessary for program success (Sweatman et al 2008; Balsman and Shoup 2008, Schroeder et al. 2008a, 2008b; Penne and Cushing 2008; Walsh et al 2008; Interviews 20011003, 2011007, 2011010, 2011012, 2011014). The importance of partners to urban fishing programs has been recognized by agencies as they manage urban fishing programs, but no tool has been available for program managers to use when evaluating and strategizing key partnerships that are critical to the success of their programs. Similarly, the importance of evaluation to programs has been acknowledged and addressed in terms of number of events and fish stocked, but has lacked the attention and inclusion in the process from the beginning of development.

We propose two tools to address these needs. Analysis of the urban fishing program manager interviews and literature review informs the development of these tools—a strategizing stakeholders template (Table 2.1) and a process model (Appendix F). Additionally, data collected from prior research in a case study of a pilot urban fishing program in Iowa provided further basis for the development of the stakeholder template categories and the proposed use of

these tools. As discussed by Ballard (2008) and Fedler (2001), process models help to plan short-term, mid-term, and long-term program outcomes. To increase the efficacy of process models, we offer a strategizing stakeholders template (Table 2.1) as a first step for managers to use when determining the types and investment of program partners. The strategizing stakeholders template is intended to be used to plan who will provide inputs to the categories within the process model.

Based upon literature and emergent themes from the data, the stakeholders template key (Table 2.2) provides a tool to qualitatively assess the social capital present within different partnerships at a point in time in the management process. This key contains descriptions for the different categories on the strategizing stakeholders template. Coplin and O’Leary (1972) adopt a similar accounting method for measuring political influence through the assigning of numeric codes to issue positions, power, salience, and hostility-friendship patterns. From our discussions with managers and review of the literature, we recognized a pattern of partners whose roles were “key” partners, or those who fulfill gaps in what the agency can offer to the community, but also partners whose roles were “secondary” yet added needed perspective and input to the program process. The stakeholders template and key will help managers to assess the variety of partners who may engage in the development, implementation, and management of an urban fishing program. Carlsson and Berkes (2005) describe co-management of natural resources as a dynamic process; however, identification of process components is a first step to understanding their function within the program process. After evaluating the program’s partnerships, managers may use the urban fishing program process model template (Appendix F) to plan the program process with these partners in mind.

The categories of our strategizing stakeholders template provide rules of thumb for assessment and reflect the themes emergent from our interviews with urban fishing program managers as well as within the literature. Urban fishing program managers can use these categories—interest, role, support, influence, and need—to assess program partnerships. For example, in choosing a new program site, it might be critical to program managers to identify sites where there is a high level of existing community engagement through schools, community groups, or private partners.

Identifying partners' *interest* describes their motivations to engage in the program. The interest of the natural resource agency might be described as an extension of recreational opportunities to urban areas. A neighborhood's interest might be to have a safer and more usable park. *Role* describes the position the stakeholder holds in the program process. In most co-management programs, the key roles are held by natural resource agencies and city or local governments. Without their role in the partnership, the program would not move forward. For example, an agency with limited resources may need buy-in from the community government in order to start a new program. The community government would be a "key" partner whose support is central to the success of the program. *Support* describes the stakeholder's predicted level of ownership. *Influence* describes the stakeholder's power to move the program forward within the community or agency. A new program may need partners with a high level of influence in order to establish the program within the community even if these partners do not demonstrate need the program. *Need* identifies the priority the partnering agency or group gives to the program and helps to identify where opportunities might be greatest. For example, multiple towns may be interested, but some of these towns may have existing opportunities available that lead them to not need an urban fishing program in their community. The strategizing stakeholders template identifies the partnerships that are important to program creation, implementation, and evolution. Partnerships may be short-, medium- or long-term depending upon the existing needs and value the program offers to stakeholders (Horton et al. 2003), and so partnerships will vary depending upon location and type of program, agency, and stage of program life-cycle.

The reality of the co-management relationships as a "continuous problem-solving process" (Carlsson and Berkes 2005:65) stresses the importance of flexible tools, and the stakeholders template would need to be revisited as the program evolves and partners' investment in the program process shift over time. A prescriptive approach to partnership planning would miss the variety of needs different programs have during their life-cycles, as well as the unique cultural situations of a program's demographic. In the urban fishing program manager interviews, we learned that managers are stretched thin, "doing more with less," and the management of partnerships requires a large amount of their time. This is consistent with the literature (Natcher et al. 2005; Barber and Taylor 1990). In order to help managers identify and

strategize the role of partners, the strategizing stakeholders template (Table 2.1) and key (Table 2.2) can be used to evaluate the potential capacity of partners in new or existing collaborations. Recognizing that partners' abilities and interest in the program will change over time, we encourage managers to revisit this template as programs evolve and needs or staff change.

Building upon the recommendation that social capital is a useful evaluation measure for emerging and new partnerships in co-management programs (Leach et al 2002), our template documents these partners and their bridging, bonding, and linking social capital within urban fishing program. The strategizing stakeholders template might be useful for collaborators to use in defining together which relationships should be included in the process model. Additionally, collaborators might identify gaps in their partnership process—for instance, managers might better plan where to start an urban fishing program in a location where there would be a high level of support and influence. Our template enables program stakeholders to identify their specific roles and can be a useful tool in strategizing next-steps of a specific collaborative group. This template empowers agency and public stakeholders to discuss their limitations and contributions to program process and to better plan for future opportunities and challenges. At the same time, the template categories provide managers means to organize potential contributions beyond subjective impressions, identifying the social capital that might emerge from pairing stakeholders who, for example, have high interest and need with those who have high influence.