Marine Policy 57 (2015) 120–131

Contents lists available at ScienceDirect

Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Casting a net to better understand fisheries management: An affiliation network analysis of the Great Lakes Fishery Commission

Kate K. Mulvaney [a], Seungyoon Lee [b], Tomas O. Höök [a,c], Linda S. Prokopy [a,*]

[a] Department of Forestry and Natural Resources, Purdue University, 195 Marsteller Street, West Lafayette, IN 47907, USA
[b] Brian Lamb School of Communication, Purdue University, West Lafayette, IN 47907, USA
[c] Illinois–Indiana Sea Grant College Program, Purdue University, 195 Marsteller Street, West Lafayette, IN 47907, USA

ARTICLE INFO

Article history:
Received 17 October 2014
Received in revised form
2 February 2015
Accepted 13 March 2015

Keywords:
Great Lakes fisheries management
Social network analysis
Affiliation networks
Stakeholder engagement

ABSTRACT

Natural resource governance, and fisheries management in particular, includes multiple governmental jurisdictions and stakeholders. For many fisheries, however, an understanding of the numbers of organizations involved in management and the relationships among those organizations remains lacking. Using an email survey, we investigated the affiliation network of formal and informal relationships of Great Lakes Fishery Commission (GLFC) policy and decision makers (i.e., organizations involved in the management of Laurentian Great Lakes fisheries). The 63 respondents identified 1516 relationships with 149 organizations which provide numerous opportunities for groups to share resources and information. Important organizational roles that can be identified through network analysis include the coordinating role of the GLFC's staff and connections through stakeholder representatives. Informal relationships are an important aspect of the affiliation network with more than one-third of all relationships identified as informal relationships and 16 organizations identified only through informal relationships. Identification of affiliation networks could be a useful tool for understanding the connection between diverse stakeholder organizations and natural resource managers.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Fisheries and other natural resource governance is evolving into integrated, stakeholder-based frameworks in which various government agencies interact with the private sector and civil society to influence and make decisions [15]. Diverse participation is important for providing context for social-environmental systems with regard to not only complex environmental issues, but also social, ethical and economic issues [32]. Additionally, past successful collaborative participation in the decision-making process can improve future processes that may otherwise be polarizing [27].

This increased interaction and collaboration highlight the importance of understanding the formal and informal relationships between natural resource managers and stakeholders for the facilitation of information and resource flows and policy development [11]. Therefore, there is an increased value of taking a social network analysis approach [9] that aids the understanding of relationships among different managers and stakeholders involved with governance and how those relationships hinder or promote good governance of natural resources [11,19]. This approach increases the understanding of which stakeholders are or could be engaged in the decision-making process, thereby identifying those who affect and are affected by management actions and policies [22]. Including some organizations or individuals in the decision-making process but (intentionally or unintentionally) omitting other organizations can result in groups pitted against one another or against the management objectives [22].

This research investigates the affiliation network of policy and decision makers involved in the management of fisheries in the Laurentian Great Lakes. Specifically, this research aims to identify the complex aggregation of organizations that influence management and the key roles within the Great Lakes Fishery Commission (GLFC) for the flow of information. This includes understanding the breadth of the organizations that have relationships with GLFC's policy and decision makers (their affiliation network), as well as identifying roles within the GLFC that are connected to a large number of organizations or that serve important bridging roles. Finally, this research focuses on the significance of informal relationships within the GLFC network. The prominence of informal ties in Great Lakes fisheries management is an important lesson for conducting network analysis in natural resources social science because although formally documented relationships are often used to understand networks, they may not include all of the organizations or individuals that play critical roles in governance.

1.1. Laurentian Great Lakes and their fisheries management

The Laurentian Great Lakes Basin consists of five large lakes (Ontario, Erie, Huron, Michigan and Superior) as well as parts of

* Corresponding author. Tel.: +1 765 496 2221.
E-mail address: lprokopy@purdue.edu (L.S. Prokopy).

http://dx.doi.org/10.1016/j.marpol.2015.03.008
0308-597X/© 2015 Elsevier Ltd. All rights reserved.

the adjacent U.S. states of New York, Pennsylvania, Ohio, Indiana, Illinois, Michigan, Wisconsin, and Minnesota and the Canadian province of Ontario (see Fig. 1 for a map of the area). The lakes play significant economic, social and ecological roles within the region and are among the most important freshwater ecosystems in the world [28].

The Great Lakes region has a long history of fishing with native/aboriginal communities engaging in fisheries since the beginning of human habitation in the area. Commercial fisheries have existed in the region since European settlement of the area [5,24] and are presently worth more than $22 million in dockside value annually ([25]). Recreational fishing has been documented in the area since the 1800s, and is a valuable economic resource for the region with an estimated impact of $393 million to $1.47 billion, or as high as $7 billion for the industry ([41,2]). Along with this long history of extraction by humans comes a history of resource depletion and species extirpation. In fact, the annual catch of many species was already depleted by the end of the 19th century [5,24].

Since the 1950s, many agencies and organizations have worked together to address the impacts that stem from human use of coastal areas, fish harvest and invasive species on the Great Lakes [13]. These agencies range from local nongovernmental organizations located within the Great Lakes basin such as the Alliance for the Great Lakes and the Great Lakes Sport Fishing Council to political organizations such as the Council of Great Lakes Governors which is a collaboration of top politicians with the goal of working together on regional economic and resource management issues [24]. The Great Lakes recreational and commercial fisheries fall primarily within the jurisdictional boundaries of the eight states and one province rather than federal waters, and they are responsible for setting the conditions for stocking and harvesting [13].

Once highly contentious (see [14]), currently less so, Native Americans and the First Nations of Canada also maintain some rights to management of the Great Lakes fisheries. In the United States, fishing rights are based on several treaties reached between the U.S. government and Native American tribes. The Chippewa-Ottawa Treaty Fishery Management Authority and the Great Lakes Indian Fish and Wildlife Commission represent the tribes on various committees in the main fishery management organization, the Great Lakes Fishery Commission (GLFC: see further description of the GLFC in the next section). Canadian aboriginal people are also granted some off-reservation rights through the Canadian Constitution Act of 1982 [13]. The First Nations do not have a formal role in the GLFC, but instead, their fisheries are managed on their behalf by the province of Ontario [24].

1.2. Great Lakes Fishery Commission

Although no organization has singular responsibility for the valuable Great Lakes fishery, the GLFC serves as an umbrella organization for coordinating efforts of the complex multijurisdictional management arrangement. While the GLFC is specifically restricted from encroaching on the responsibilities of other federal, state and tribal agencies, it has been given responsibilities for the formulation and coordination of a research program for fish stocks and using the findings from the research program to make recommendations to the agencies involved [23]. The GLFC mainly functions under the Joint Strategic Plan for Management of Great Lakes Fisheries (GLFC 2007) which facilitates the Council of Great Lakes Fishery Agencies, the Council of Lake Committees, as well as the individual lake committees that are responsible for the research, monitoring and implementation of fisheries management for each of the five Great Lakes. The lake committees are particularly important for system-specific fisheries management and serve as a place for all levels of agencies to share research and discuss lake-specific issues. Each of these committees has at least one technical committee to provide scientific advice [24].

The GLFC functions at a binational, basin-wide coordinating level and through individual lake committees facilitates lake-specific management. In addition to the GLFC, agencies involved in the management of Great Lakes fisheries include the federal governments of the United States and Canada, two U.S. intertribal authorities (Chippewa-Ottawa Treaty Fishery Management Authority and the Great Lakes Indian Fish and Wildlife Commission), eight state governments (Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania and New York), and the provincial government of Ontario [23]. Great Lakes fisheries management is also greatly influenced by stakeholder interests through the U.S. sportfishing, commercial fishing, public-at-large and agency advisors for each of the lake committees, and the Canadian public-at-large, sportfishing, commercial fishing, aboriginal

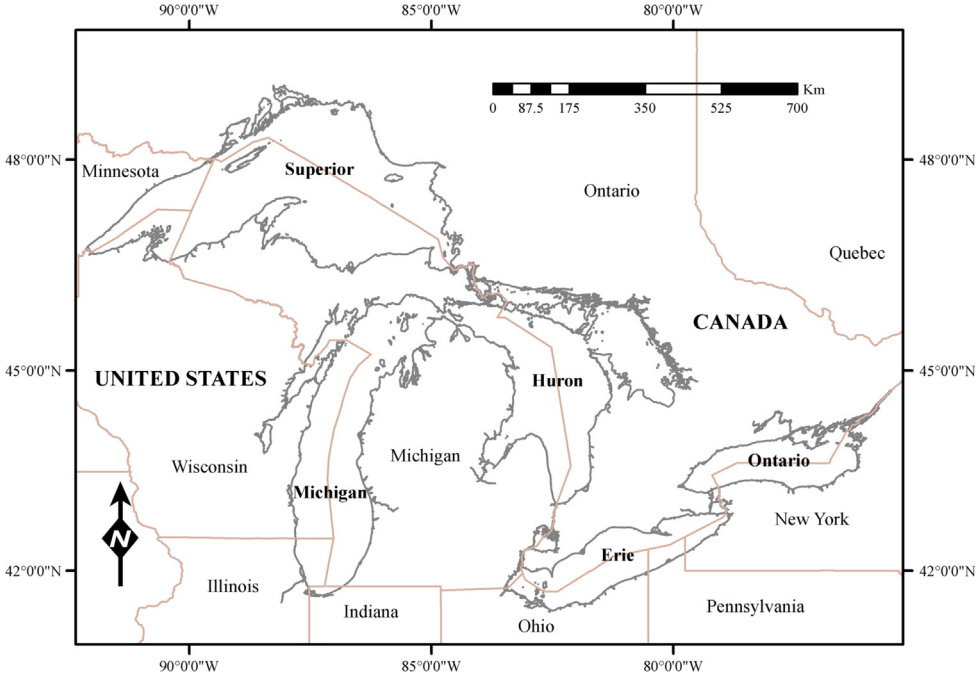

Fig. 1. A map of the Great Lakes region. Countries are identified with bolded, capital font. States/provinces are identified with normal (non-bolded, non-capitalized) font. The lakes are identified with bolded, non-capitalized font. Map credit: Carolyn Foley, Illinois–Indiana Sea Grant College Program/Purdue University.

Download English Version:

https://daneshyari.com/en/article/7490268

Download Persian Version:

https://daneshyari.com/article/7490268

Daneshyari.com