



# Characterizing bridger organizations and their roles in a coastal resource management network

Lee Wilson\*, Bertrum H. MacDonald

Dalhousie University, School of Information Management, 6100 University Avenue, Suite 4010, PO Box 15000, Halifax, NS B3H 4R2, Canada



## ARTICLE INFO

### Keywords:

Bridgers  
Boundary-spanners  
Social network analysis  
Tidal power  
Marine renewable energy

## ABSTRACT

Tidal power developments occurring in the Canadian province of Nova Scotia provide an informative case study of a natural resource management issue occurring in a coastal zone involving many stakeholders in several sectors. Research has shown that bridger organizations are important vehicles for forging connections and encouraging communication across sectoral boundaries in complex networks. Using a mixed-methods approach encompassing participatory mapping and social network analysis, this study examined stakeholder communication networks in the region, with a particular focus on identifying “bridger” organizations. The results show that communication within the tidal power network does cross sectors, and that bridger organizations are vital in connecting organizations across sectoral boundaries. Bridging activities are multifaceted with three distinct, yet complementary roles: coordinators, connectors, and information mediators. Numerous bridger organizations can co-exist within a network and they often specialize by working within specific sectors. Organizations from the NGO, research, and government sectors, in particular, feature prominently as bridgers within this network, in part because they are often seen as neutral brokers of information. By identifying the functions of bridgers and the sectors well-suited to perform these activities, this paper provides guidance to coastal and ocean managers, NGOs, government bodies, and research groups on where to deploy resources to support bridger organizations within natural resource development networks.

## 1. Introduction

Natural resource management in coastal zones often involves a complex interplay among multiple stakeholders, sometimes with competing interests. Social Network Analysis (SNA) has been used to study communication in governance networks in such settings (Bodin et al., 2006; Bodin and Crona, 2009; Cárcamo et al., 2014; Ernoul and Wardell-Johnson, 2013; Hartley, 2010; Parag et al., 2013; Robins et al., 2011; Vance-Borland and Holley, 2011; Weiss et al., 2012). Research in this area has highlighted the importance of intermediary, “bridger,” organizations that are capable of communicating across organizational, sectoral, and even national boundaries (Kowalski and Jenkins, 2015; Rathwell and Peterson, 2012; Smythe et al., 2014). Bridging roles are complex, highly-varied, and context dependant (Obstfeld et al., 2014). Understanding the roles fulfilled by bridger organizations in multi-stakeholder networks can explain coordination and knowledge mobilization activities within these settings (Collins-Dogrul, 2012). Yet, fundamental questions such as which organizations or sectors are well-suited to bridging activities and what mechanisms are effective at performing a bridging role are still not well understood. Using the

emergent tidal energy industry in the Bay of Fundy region of Nova Scotia, Canada as a case study, this paper explores the nature of, and roles fulfilled by, bridgers in cross-sectoral and inter-organizational information sharing in natural resource management networks in coastal environments. Insights drawn from this study will contribute to a broader understanding of bridgers in natural resource management networks, as well as inform coastal and ocean managers on how to support bridger organizations within such networks.

### 1.1. Background

In the Bay of Fundy region of the Canadian province of Nova Scotia, renewable energy generated by tidal forces is being explored due to its vast potential, estimated at up to 2500 MW (Nova Scotia Department of Energy, 2014; Offshore Energy Environmental Research Association, 2015). This initiative comes in the wake of efforts to use marine renewable energies in the Canadian Atlantic Provinces to mitigate the effects of climate change, as well as stimulate economic growth through the production of “green” energy (Nova Scotia Department of Energy, 2012). The tidal energy sector in Canada is in a pre-commercial stage of

\* Corresponding author.

E-mail address: [lee.wilson@dal.ca](mailto:lee.wilson@dal.ca) (L. Wilson).

development. The first “test” turbine was deployed in the fall of 2016 (Offshore Energy Environmental Research Association, 2015; Withers, 2016).

Recommendations from a 2008 Strategic Environmental Assessment urged a cautious, iterative approach in exploring potential impacts (Offshore Energy Environmental Research Association, 2008). As a result, considerable research was pursued on the environmental, socio-economic, and political ramifications of tidal power implementation in the region. A stakeholder analysis scoping study identified constituents (Howell and Drake, 2012), and “toolkit” documents offer a suite of best practices for industry development (MacDougall and Colton, 2013) and community engagement (Colton and Isaacman, 2013). However, despite this research, no study has yet examined stakeholder perceptions of inter-organizational communication or how, and indeed if, stakeholder communication occurs.

### 1.2. Social network analysis in the context of integrated management

In Canada, coastal zone issues are nominally governed by the integrated coastal and oceans management (ICOM) policy framework of the *Oceans Act*. ICOM, commonly known as integrated coastal zone management (ICZM), is a wholly integrated, participatory form of management that spans sectorial, organizational, and governmental boundaries (Bastien-Daigle et al., 2008; Bruckmeier, 2005; Taljaard et al., 2011; Wiber et al., 2010; Wilson and Wiber, 2009). This type of management is purportedly accomplished through the creation of a participatory governance framework wherein all stakeholders are provided an equal opportunity to debate coastal zone issues (Bremer and Glavovic, 2013; Coffey and O’Toole, 2012; Coffey and O’Toole, 2016). Yet, ICZM practices are often underdeveloped or non-existent in many coastal settings, including more economically developed nations like Canada (Sorensen, 2000; Westmacott, 2002).

The current literature suggests that the development of strong communication and information-sharing networks are essential to the success of integrated management (Mitchell et al., 2006; Sessa and Ricci, 2010). In building an evaluation framework for knowledge mobilization in ICZM, Coffey and O’Toole (2012) included SNA as one of four essential components. They argue that an SNA perspective provides the ability to discover “the influence of informal processes, the interplay across organizational boundaries, and the possibilities for intervening to improve the way in which knowledge systems may operate for a defined purpose” (p. 319). Bodin et al. (2006) and Bodin and Crona (2009) also suggest that SNA methods can be used to examine important features of natural resource management networks that often involve an interplay of multiple stakeholders with varied interests. For example, Bastien-Daigle et al. (2008) found that the major success of instances of ICZM in the Canadian Atlantic provinces was its capacity to foster novel connections among organizations, as well as enhance existing networks and increase trust among stakeholder groups.

Several studies have shown that SNA is effective for building understanding, and, where necessary, improving the operation of complex networks involving multiple stakeholder groups representing diverse interests (Ernoul and Wardell-Johnson, 2013; Hartley, 2010; Newman and Dale, 2005; Parag et al., 2013; Vance-Borland and Holley, 2011). In a study of fisheries and land use planning networks in the Chesapeake Bay, for example, Hartley (2010) found that a lack of network connectivity across jurisdictions and sectors hindered fisheries management. Parag et al. (2013) discovered that boundary organizations were essential for connecting closely knit community groups to larger state and non-state entities among environmental groups, industry, and government organizations involved in energy governance in the UK.

Boundary-spanning or bridger organizations have been identified in several studies. Ernoul and Wardell-Johnson (2013) noted the importance of “translators,” i.e., bridger organizations, that “create and consolidate links between competing interests, resulting in the re-organization and redefinition of relationships, and thus stabilize a

vulnerable system” (p. 232). Smythe et al. (2014) discovered that information “brokers,” particularly those from non-governmental sectors, e.g., universities and other research-based groups, are highly influential network actors in ecosystem-based management initiatives. Kininmonth et al. (2015) similarly found that the presence of a “coordinating actor” can enhance collaboration among resource managers in social-ecological networks. Kowalski and Jenkins (2015) stated that bridger organizations can lower the transaction costs of information exchange across a network by facilitating connections among organizations from various sectors. Rathwell and Peterson (2012) found that municipalities engaged in watershed governance were more likely to be connected indirectly by non-governmental organizations (NGOs) and other government organizations than directly. Bodin et al. (2006) suggested that organizations can “bridge” otherwise disconnected actors, gain exclusive access to information and control over the transmission of information within a network, and synthesize information from multiple sources.

In SNA theory, bridgers facilitate the flow of information between at least two otherwise unconnected groups or actors (Hanneman and Riddle, 2005; Long et al., 2013). While several terms are used to describe this phenomenon, e.g., information brokers, and boundary-spanners (Burt, 1995; Easley and Kleinberg, 2010; Isaac et al., 2014), the term bridger is used here as in earlier literature (Hartley, 2010; Rathwell and Peterson, 2012; Tortoriello and Krackhardt, 2010; Vance-Borland and Holley, 2011). SNA theory posits that bridgers maintain an intermediary position in order to control access to, and transmission of, information (Burt, 1995; Gould and Fernandez, 1989). As intermediaries, bridgers hold a structural advantage by ensuring that some actors remain disconnected (Bodin et al., 2006). More recently, an alternative view argues that bridgers forge new connections among unconnected actors, thereby closing structural holes rather than exploiting them (Collins-Dogrul, 2012; Obstfeld, 2005; Snow et al., 1992). Despite different views, both theories agree that bridging fulfills diverse roles within a network (Collins-Dogrul, 2012; Gould and Fernandez, 1989; Snow et al., 1992). Through the application of a mixed methods approach the current study provided an opportunity to identify and characterize the activities of bridgers in order to more fully understand the important roles that bridgers play in multi-sector networks than has previously been reported.

## 2. Methods

### 2.1. Identification of stakeholder organizations

The “stakeholders” in this study were groups or organizations affected by tidal power activities. Previous studies on the socio-economic impact of tidal power implementation noted potential stakeholders (Colton and Isaacman, 2013; Howell and Drake, 2012; MacDougall and Colton, 2013; Moore et al., 2009) and research on regulatory frameworks listed relevant government bodies. Internet searches identified non-governmental organizations (NGOs) and research groups, as did informal conversations with individuals involved in tidal power, and attendance at the International Conference on Ocean Energy in Halifax, Nova Scotia in November 2014.

Stakeholder organizations were categorized into eight broad sectors based on contextual data, namely, government (municipal, provincial, and federal); the marine renewable energy industry; First Nations<sup>1</sup>; research; the fishing and aquaculture industry; NGOs (including industry associations); the tourism industry; and community groups (Howell and Drake, 2012). Email invitations were sent to 25 of these organizations and representatives of 19 participated in the study. Individuals holding executive-level positions, or positions entailing active

<sup>1</sup> Predominant aboriginal groups south of the Arctic in Canada are known as “First Nations.”

Download English Version:

<https://daneshyari.com/en/article/8060832>

Download Persian Version:

<https://daneshyari.com/article/8060832>

[Daneshyari.com](https://daneshyari.com)