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The nexus between governance and the economic impact of whale-watching. The case of the coastal lagoons in the El Vizcaíno Biosphere Reserve, Baja California, Mexico

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ABSTRACT

Whale-watching (WW) has gained considerable importance for coastal communities as a potentially sustainable form of marine resource use. However, as a common-pool resource, marine wildlife runs the risk of being overexploited, which can lead to negative effects on both animal populations and economic sustainability. Therefore, careful management and use regulation by capable institutions are required. But any governance arrangements that seek to comply with these exigencies need to be accepted by both (local) stakeholders and resource users. To assure compliance with regulations, the former must be involved in decision-making about management issues and should also partake in the economic benefits of WW. These two factors are major drivers of positive attitudes towards conservation governance. This article analyzes the nexus between governance and the economic impact of WW in the case of the coastal lagoons in the El Vizcaíno Biosphere Reserve (EVBR), Baja California, Mexico, a globally-renowned WW destination.

The results of our research show that a government-led WW governance arrangement evolved over time in the EVBR to prevent overexploitation and restrict resource use by non-local operators, thus ensuring that mainly local service providers will profit from WW. Moreover, the Reserve's advisory board serves as a relatively effective negotiating platform that offers possibilities for participation by local stakeholders while also mitigating conflicts among actors that represent unequal powers. Therefore, these institutional arrangements are widely-accepted and supported by local actors who often rely on economic rationalism in their arguments.

We calculated the economic impact of WW using an input-output model: ~18,000 whale-watchers produce an annual regional economic impact of US-$0.7 million and generate 334 seasonal and 180 year-round jobs. The opportunity costs related to restrictions on resource use are adequately compensated, so the case of WW in the EVBR supports the general feasibility of the people-oriented protected area approach and the suitability of biosphere reserves as governing institutions for marine wildlife tourism.

1. Introduction

Many coastal communities, particularly those located in peripheral areas of emerging economies and developing countries, often face the hardships of socioeconomic change in times of decreasing income from fisheries. In some cases, environmental restrictions due to the establishment of protected areas might further curtail people's ability to earn a living. As a result, some have turned to marine wildlife tourism to diversify their economies (Chen, 2010), since ecotourism offers avenues to generate revenues that can, at least potentially, benefit local entrepreneurs and/or cooperatives by compensating for use restrictions (Brenner et al., 2016a, 2016b). The El Vizcaíno Biosphere Reserve (EVBR), the largest terrestrial protected area (PA) in Mexico, located on the Baja California Peninsula, bears good prospects for ecotourism based on whale-watching (WW) offered by local tour operators, as its two lagoons – Ojo de Liebre and San Ignacio (Fig. 1) – contain the principle mating and calving areas of Pacific grey whales (Brenner and Job, 2012). Thus, it is one of the premier WW sites in the northern

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hemisphere (Parsons et al., 2003). WW and other forms of marine wildlife tourism might trigger local and regional economic development as these fast-growing activities are attaining greater importance around the world (Orams, 2002, 2013). O'Connor et al. (2009) report that 13 million whale-watchers generate total expenditures of US-$2.1 billion and create employment for 13,200 people worldwide. The EVBR constitutes an important case study of this phenomenon because earlier research by Young (1999a,b) makes it possible to trace the evolution of governance arrangements involving WW back to the 1980s.

However, because marine wildlife tourism depends on well-conserved marine ecosystems, it is imperative to prevent unsustainable uses (Higham et al., 2016). Moreover, like fisheries, marine fauna shares most of the key characteristics of common-pool resources (Moore and Rodger, 2010). Consequently, Higham et al. (2016) argue that WW should be recognized as a form of non-lethal consumptive exploitation carried out by a considerable number of interdependent stakeholders and call for a paradigm shift in the governance and on-site management of this activity.

In order to reconcile protection of marine mammals with the needs of local communities (Hoyt, 2005a), WW must be managed and restricted, but this requires locally-adapted conservation governance that considers not only the norms established for local tour operators and tourists, but also the institutions that define, monitor and enforce them. Self-regulation through community-based management schemes rarely proves viable due to the common-pool characteristics of this resource, so governance regimes will likely need to be installed by state authorities (Heenehan et al., 2015; Moore and Rodger, 2010). However, schemes of this kind might not lead to the desired outcome if their design is based on a command-and-control approach. In contrast, participatory approaches might hold out greater promise of success because they give local WW stakeholders a say in decision-making that is expected to increase acceptance of, and compliance with, regulations (Vasconcelos et al., 2013; Dietz et al., 2003). In the absence of these two conditions, any ecologically-oriented, socially-balanced management program for WW would be at risk (Heenehan et al., 2015; Pascual et al., 2016).

In addition to participation, the literature reveals that economic rationalism is decisive in gaining acceptance and support for regulatory frameworks among stakeholders who need to benefit from the governance scheme implemented (Stern, 2008; Wunder, 2007). In this context, the socioeconomic consequences of WW – generally perceived as beneficial for local economic development (Orams, 2002, 2013; Parsons et al., 2003) – require careful management to ensure sustainable development of WW communities (Avila-Foucat et al., 2013). These effects need to be assessed systematically, especially in light of the doubts raised by Silva (2015) and Young (1999a) regarding the palpable benefits attributed to WW and how the costs and benefits of conservation and WW tend to be distributed unequally.

Based on economic rationalism, we argue that substantial, socially-balanced economic benefits from WW are a necessary precondition for local stakeholders in WW destinations to accept and comply with regulations. However, a proper regulatory framework for WW management is also a precondition for the stakeholders to benefit significantly. In the absence of an effective WW governance arrangement with appropriate schemes for conflict resolution and compensation, several place-based actors (such as local fishing cooperatives and *ejidos*[1] in the EVBR) would not be able to offer WW tours at all because actors who are more powerful in terms of monetary resources, experience, political relations and involvement in the tourism industry would squeeze them out of the market. Thus, WW governance must be designed to achieve a more balanced spread of the economic impact (EI) of WW. This nexus is the core hypothesis of our contribution. Although several studies have confirmed the economic importance of WW (Orams, 2002, 2013; Parsons et al., 2003) and insights into the success factors of effective WW/marine protected area management have been presented (Vasconcelos et al., 2013; Cudney-Bueno et al., 2009; Trung Ho et al., 2014), the nexus between these two factors has not yet been analyzed systematically.

This nexus lies at the very heart of UNESCO's concept of biosphere reserves (BR) as a means of promoting sustainable development by balancing the often contradictory objectives of protecting ecosystems while simultaneously fostering regional economic development for the benefit of local people in different geographical settings[2] (Shafer, 2015; Hill et al., 2015). Over the last two decades, the UNESCO has implemented ambitious strategies related to the development of sustainable tourism in BRs (Job et al., 2017). Proposed in the mid-1990s, the Seville Strategy (1996) stresses the importance of the economic impacts generated by nature-based tourism (UNESCO, 1996), while the Madrid Action Plan (2008) focuses on the participation of local people in BR governance of tourism-related issues (UNESCO, 2008). Since we consider that both factors – regional economic development and context-sensitive governance structures – are necessary to achieve sustainable regional development based on nature tourism, we consider PAs, and particularly BRs, as suitable institutional frameworks for the governance and sustainable management of WW (Forestell, 2008). For this reason, we do not focus on technical WW regulations but, rather, on the institutional genesis and evaluation of WW governance. This article thus addresses the interrelation between environmental governance and EI by analyzing the supply side of WW in addition to the more commonly-studied demand side. Thus, our contribution – based on several studies conducted over various years – highlights how the sustainable use of cetaceans for tourism purposes depends, on the one hand, on a participatory governance regime and, on the other, facilitates the implementation of such governance; as the EI of WW fosters acceptance of, and commitments to, both the management scheme and the concept of BR itself.

The article is structured as follows: our theoretical approach takes WW as an activity characterized by common-pool resource traits, outlines management frameworks for WW, and then discusses the role of PA in them. Next, the link between EI and positive attitudes towards conservation and regulation is discussed. After a brief description of the survey area, we explain our methodology, which combined quantitative and qualitative strategies. Our results elucidate, first, the genesis and evolution of state-led governance structures for WW in the EVBR and their evaluation by service providers involved in WW; and second, the EI of WW according to the demand and supply sides. The article closes with a discussion of these results and some conclusions.

2. Theoretical background

2.1. Governance of WW based on common-pool resource management

Following Moore and Rodger (2010) and Heenehan et al. (2015), we argue that although WW constitutes a non-extractive use of the abundance of observable cetaceans in the study area, the WW system can be described using common-pool resources terminology, “where the exclusion of any of those who benefit from using the resources is costly, and exploitation by one user reduces the availability of the resource to others” (Moore and Rodger, 2010, 831). In practice, this situation could lead to an ever-increasing number of WW operators disturbing, and finally displacing, whales, while simultaneously impairing visitor experiences and reducing tourism income. Moore and Rodger (2010) mention additional specific problems of marine wildlife tourism that

[1] *Ejidos* are corporate entities instituted after the Mexican revolution (1910–1920) to distribute land to poor peasants. Most *ejidos* are collectively-owned or farmed cooperatively. Products are also marketed collectively (Perez-Verdin et al., 2009).

[2] Today, the World Network of Biosphere Reserves is composed of 669 BR in 120 countries, including 20 transboundary sites (UNESCO, 2018).