

## Studying Sea Turtle Conservation and Learning about the World: Insights from Social Science

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This special issue of *Conservation & Society* focuses on sea turtles and their conservation, from various social science perspectives. While there are other collections of papers devoted to sea turtle conservation from non-biological perspectives, and some of the individual contributions are by social scientists<sup>1</sup>, the present issue is timely, distinct, and valuable, for two reasons. First, social science has come of age in the sea turtle research and conservation community. The annual International Sea Turtle Symposium has progressed from the days when a single social science research presentation was noteworthy (e.g., Tambiah 1995) to those when a dedicated social science session is the default (and minimum) presence. This expansion is accounted for mostly by graduate students tackling important questions about human relationships with sea turtles, the design and implementation of conservation interventions, and their impacts on human communities and social-economic structures. Having long argued that sea turtle conservation needs more social science (Campbell 2003), I am happy to report that there has been progress on this front, and this special issue captures only a small fraction of the work being done. Second, an issue featuring social science research on sea turtles and their conservation is about much more than sea turtles. Sea turtle conservation provides a platform from which researchers can ask questions of interest to a broad audience concerned with the human aspects of wildlife conservation. But that platform is arguably unique because sea turtles are, quite simply, special. Charismatic species of international conservation concern, they inspire hundreds of organisations and hundreds of thousands of individuals, attract resources and attention, and are subject to conservation instruments devoted solely to them. Things ‘happen’ on the ground because of sea turtles, and these actions have the potential to alter human-environment relations both in water and on land. The ‘happenings’ related to sea turtles are many and diverse; so are the questions of critical interest to social scientists. For example, when the importance of sea turtles to the diets of Caribbean Nicaraguans changes, partly as a result of interventions by conservationists, what other changes

might we see in resource use and with what consequences for environment and culture (Garland & Carthy, this issue)? When fishing laws and regulations are introduced to reduce the incidental capture of sea turtles in fishing gear, how do fishers respond and what do responses suggest about efforts to engage fishers in management more generally (Jenkins, this issue)? When tourists flock in the tens of thousands to watch sea turtles nesting in remote locations, what do we learn about ecotourism, a broadly promoted mechanism for conserving wildlife in general (Meletis & Harrison, this issue)? Sea turtle conservation is a rich field for the social science researcher.

In spite of research opportunities and an increased presence of social science in venues like the International Sea Turtle Symposium, the social sciences remain underrepresented in the current body of sea turtle conservation research, where, to date, natural scientists (sometimes asking social science questions) have dominated. In a recent effort to identify the Top 20 ‘research questions to inform effective sea turtle conservation over the next 10 years’ (Hamann *et al.* In press), 35 researchers identified 347 questions that were categorised into 20 meta-questions. A single meta-question that was primarily the realm of social science resulted: ‘What are the most viable cultural, legal and socio-economic frameworks for sea turtle conservation?’ Three others integrated social and biological sciences to address management questions: ‘Are current conservation models working?’, ‘Under what conditions (ecological, environmental, social and political) can consumptive use of sea turtles be sustained?’, and ‘How can fisheries be managed to reduce bycatch and still remain viable and productive?’ While these meta-questions are broad, the relative paucity of social science questions generated through the Top 20 exercise flies in the face of what many conservation practitioners and academics have been arguing for decades: that social, political, cultural, legal, and economic issues—the so-called human dimensions—are at least as, and often more, important than biological or ecological ones in influencing conservation (Bradshaw & Bekoff 2001; Daily & Ehrlich 1999; Ludwig *et al.* 1993).

The relatively minor attention given to social science in the Top 20 exercise is partly a result of how the 35 participants were selected: an ISI Web of Knowledge search for key terms 'sea turtle' or 'marine turtle' and 'conservation' and subsequent selection of researchers most published and cited produced only one social scientist on the list. While the number of social science researchers studying issues related to sea turtle conservation is increasing, many of them are relatively new scholars, without a publishing track record. Some work done by social scientists and published in their disciplinary journals is missed by the sea turtle conservation community (and by ISI Web of Knowledge). There are researchers conducting highly relevant studies who never have (and likely never will) attend an International Sea Turtle Symposium, or publish in a journal sea turtles biologists are likely to come across independently (Campbell 2003).

By publishing the current collection of papers in *Conservation & Society*, we hope to engage readers interested in issues associated with wildlife conservation more generally. By publishing the papers together, we hope to attract the attention of sea turtle biologists and conservationists, who might not otherwise turn to this journal. The papers share a number of features that reflect the relatively new integration of social sciences into the sea turtle research community. First, the work presented in six of the seven papers was undertaken as part of the lead authors' Ph.D. research, and in one case, as a direct extension of this. Second, all but one of the authors have presented their work at the International Sea Turtle Symposium as students, and several of them have won prizes in the Symposium's student paper competition. Third, many of the authors have collaborated closely with natural scientists active at their research sites, and in some cases, these natural scientists are co-authors. The contributors are all pursuing much needed 'constructive engagement' (Redford *et al.* 2006) with conservation biologists, even when their work sometimes critiques conservation practice.

As noted in Hamann *et al.* (In press), there is some tension in social science research relating to sea turtles and their conservation, between those interested in utilitarian work and those taking a more critical perspective. The dichotomy is overstated, and it is more likely that there is a spectrum in play. On the utilitarian end, researchers are motivated to improve the lot of sea turtles and their conservation. The kinds of questions they ask and the data they collect reflect this commitment. Understanding human behavior, values, or economic and other systems is undertaken with the hope that these can be changed to the benefit of sea turtles. At the critical end of the spectrum, researchers often come to sea turtles through their interest in a broader issue or theory, e.g., conservation conflicts, environmental justice, economic incentives, or common pool resources. Sea turtles and their conservation is used as an example, based on particular properties of the animals, the case, or the study site, rather than because researchers are interested in sea turtle conservation per se. As with most spectra, the extremes are inhabited by few actual researchers and most fall somewhere in between. Researchers can also shift over

time, or according to the details of the given situation. Some starting at the utilitarian end may find the realities of rural communities living with sea turtles in a particular place too compelling to ignore. Others starting from the critical end may come to admire and appreciate sea turtles in new ways. While one might attempt to position the contributions here (e.g., paper x is more utilitarian than y), I will not. The divide within the social sciences is as, if not more, significant than that between natural and social sciences, and often unproductive. There is much to be learned from research positioned at different points along the spectrum.

The papers themselves range from multi-case comparisons and overviews to single case studies. They adopt a variety of theoretical frameworks, methods, and disciplinary perspectives. Taken together, they provide an indication of the breadth and diversity of social science research on sea turtles and their conservation. While there are many possible ways to organise these, they are presented according to the context of sea turtle conservation, starting with efforts designed to reduce the consumption of sea turtles (Gjertsen & Neisten; Pegas & Stronza; Meletis & Harrison), moving to attempts to reduce incidental capture and mortality of sea turtles in fisheries (Jenkins), and ending with contexts in which the consumptive use of sea turtles in culturally acceptable and/or legally permitted, both contemporarily (Garland & Carthy; Grayson *et al.*) and historically (Woodrum Rudrud).

Gjertsen & Niesten approach sea turtle conservation from an economic perspective, and examine eight cases where direct payments, formalised in Conservation Agreements, have been introduced to provide incentives for sea turtle conservation. Market-based approaches to conservation have been widely promoted over the past 20 years, whether they emphasise the 'sustainable use' of species as a means of conserving them, or develop markets for alternative products and services in order to replace income generated through use (Campbell 1998, 2002; Freese 1998). While sold on their ability to 'get people onside' with conservation by making wildlife conservation economically valuable, the results of such approaches have been mixed, and some analysts have suggested development benefits usually exceed those for conservation (Ferraro & Kiss 2002; Kiss 2004)<sup>2</sup>. As a result, direct payment schemes, where people are paid to forgo resource use, have been suggested as an alternative. In comparing and contrasting eight direct payment schemes, Gjertsen & Niesten are able to show that while the resulting Conservation Agreements share several key characteristics, they are nonetheless diverse and need to be designed with careful attention to the local context. While the approach is too new to evaluate with certainty, the reliance of direct payment schemes on outside intervention and resources poses problems for their long-term sustainability. How important this proves for the conservation community remains to be seen.

The contributions by Pegas & Stronza, and by Meletis & Harrison examine one of the more widely touted market-based solutions to conservation, where non-consumptive use of sea turtles through ecotourism<sup>3</sup> replaces traditional consumptive

use. And they do so at two iconic sea turtle conservation sites: at Praia do Forte, one of the TAMAR (Brazilian Sea Turtle Conservation Program) project sites in Brazil, and at Tortuguero, Costa Rica. The rise of ecotourism as a preferred solution for conservation and development conflicts began in earnest in the 1990s. It has since been critiqued from a number of perspectives, both in general and at specific study sites (Campbell *et al.* 2007; Kiss 2004). While some of the attraction of ecotourism to conservationists has worn off, it remains a reality with which communities, conservationists, and wildlife and other attractions must contend. Both contributions to this volume enhance our understanding of ecotourism in practice at sites where it has contributed to conservation success. Both raise questions regarding the sustainability of such success, but from different perspectives.

Pegas & Stronza look at the value of ecotourism related income and employment to residents of Praia do Forte, Brazil, where Projecto TAMAR has been promoting ecotourism as a means of alternative income generation. Their results show positive views of the organisation among residents and an appreciation for the economic benefits due to TAMAR's presence. Pegas & Stronza contextualise these findings in light of burgeoning mass tourism development in the region, over which TAMAR has no control, and which has the potential to swamp the economic benefits provided by TAMAR with more and better paying jobs. The co-existence of sea turtle ecotourism with mass tourism development has been problematic elsewhere (e.g., Playa Grande, Costa Rica) and these cases highlight the importance of considering ecotourism within its broader social, economic, and political context. Meletis & Harrison have a different focus, namely the guiding system in place in Tortuguero, Costa Rica, that facilitates tourist viewing of nesting turtles. Meletis & Harrison provide a perspective not often seen in the wildlife conservation literature, that of the tourist, and evaluate whether efforts to minimise the negative impacts of turtle watching on turtles have had impacts on tourist experiences and satisfaction. Their results suggest that tourists are generally satisfied with a more controlled and less active tour and are of clear relevance to managers. They also speak about the evolution of ecotourism in Tortuguero and the types of tourists that now visit, i.e., 'softer' ecotourists who may be satisfied with the new tour format, but who bring additional demands that may be problematic for the environment and development more generally. Meletis & Harrison challenge us to consider the complex interactions between tourists, the wildlife experiences they seek, and efforts to manage their engagements.

Jenkins offers the sole paper examining the problem of bycatch of sea turtles in fishing gear, recognised as a topic of critical importance in conservation, yet one of the more neglected by social scientists (Campbell & Cornwell 2008). Jenkins' paper illustrates just how diverse social science approaches to bycatch can be. She takes on the well-known and controversial case of the US government's efforts to reduce bycatch of sea turtles (at home and abroad) through the legally mandated use of Turtle Excluder Devices (TEDs)

in shrimp trawls. While the case has been studied by social scientists interested in the conflict (Margavio & Forsyth 1996), Jenkins approaches it from an entirely different perspective. She looks at the role of fishers in designing TEDs technology, and the factors influencing technology acceptance in the fishing community. She considers a number of factors that influence successful uptake of particular technologies, and compares the TEDs case with that of dolphin bycatch in tuna purse seine fishery. While Jenkins sheds new light on some of the details of the TEDs case, her results have implications for efforts to engage fishers not only in gear modification, but in management more generally.

Two papers deal with contemporary cases of sea turtle consumption, one from a cultural anthropology perspective, and one with an interest in management of common pool resources that travel across jurisdictional boundaries. Garland & Carthy explore the cultural ecology of sea turtle consumption on the Caribbean Coast of Nicaragua, following in the footsteps of Nietschmann (1973), one of the original social scientists whose work intersected with sea turtle conservation. Garland & Carthy are specifically interested in ideas from ecological anthropology on the mutually constitutive and co-evolving nature of human-environmental relations, and how culture contributes to and reflects these relations. Focusing in on the concept of 'taste preference', Garland & Carthy show how taste preferences within a rural community vary along demographic characteristics. They offer potential explanations of why this is so, and consider the implications of change for both environment and culture. Grayson *et al.* consider the possibilities for community-based management of sea turtles by Hammond Islanders in the Torres Straights. While the legally recognised rights of indigenous communities to traditional fisheries resources in the region suggests a community-based approach, the need for coordination across communities relying on the same migrating populations of sea turtles suggests some kind of co-management might be required, with a regional government body playing a coordinating role amongst communities. Cases where rights to use sea turtles are legally recognised, as in Caribbean Nicaragua and the Torres Straits Islands, provide valuable research opportunities. First, research like that of Grayson *et al.* is often directed at improving management, rather than eliminating use, and there is much to be learned about managing highly migratory common pool resources that might be widely relevant for marine resource management. Second, researchers like Garland & Carthy can probe human use and cultural values in a context where local communities are using resources legally, and are thus unconstrained by fear of arrest or reprisals. As a result, human-environment relations are more accessible.

The collection finishes with another multi-site study, this time from an anthropologist delving into historical records to explore the importance of sea turtles in Pacific Islands culture. Woodrum Rudrud details historical evidence relating to traditional laws for using sea turtles in Polynesia, and considers how the predominance of these might be explained by existing

theories of the ways biogeographical features interact with resource use and restrictions. She finds that the importance of sea turtles in Polynesia across biogeographically diverse islands cannot be accommodated in existing theories of human-resource relations. As part of a larger project examining use of sea turtles across the Pacific Islands, Woodrum Rudrud's paper illustrates that the 'special' status of sea turtles in human societies is far from a contemporary phenomenon.

And it is on this point—the connections between sea turtles and human societies—that this introduction ends. Because sea turtles are 'special', sea turtle conservationists and enthusiasts have sometimes judged their success in straightforward ways: 'are there more sea turtles?' or 'were fewer sea turtles killed?' Almost two decades ago, Nat Frazer (1992) pointed out the problems of isolating sea turtle conservation outcomes from the broader context in which they occur, but the tendency continues in many spheres of sea turtle conservation work. Sometimes efforts to reach these goals have profound impacts on human communities, not just in terms of their abilities to use or interact with sea turtles, but on the entire social-ecological system in which they are embedded. To understand or anticipate such impacts, we need to better understand not only how and why humans relate to sea turtles, but the context in which these relations are situated. There are both utilitarian and critical questions at stake here, and a growing cadre of social scientists is eagerly tackling them.

## Notes

1. For instance, the *Journal of International Wildlife Law and Policy* 2002 Issue 5 (Special Issue): Marine Turtles and International Instruments, and the *MAST* 2005 Issues 3 and 4 (Special Issues): Marine Turtles as Flagships.
2. There are many other critiques of market-based approaches to conservation, including that they reinforce an economic system responsible for degradation in the first place (McAfee 1999).
3. The non-consumptive nature of ecotourism has been challenged (Meletis & Campbell 2007), but remains popularly promoted.

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