Monitoring recreational qualities and impacts in coastal and marine areas

Andreas Skriver Hansen, Sweden, andreas.hansen@geography.gu.se

Introduction

Each year, thousands of people visit marine protected areas (MPA) around the world. Coastal and marine areas are popular because of their unique natural qualities and recreational opportunities, often resulting in close encounters and experiences with nature. Just like any terrestrial protected area (TPA), however, MPAs often face a challenge when it comes to balancing environmental and recreational interests. A central focus is thus on how to best plan and manage goals for nature conservation alongside an increasing level of recreational and touristic activities. (Pike, et al., 2010). This puts great emphasis on management efforts, including visitor and environmental monitoring. But is it possible to do monitoring in water-dominated areas, where people enter the area from all directions without any means of control or observation? And where visitor impacts are quickly washed away or disappear in the endless depths? This paper will address this managerial challenge.

Background

As human activity poses an increasing challenge in MPAs in the form of visitor impacts on the environment, there is a growing need to monitor visitor activities and behaviour in order to counter impacts on the environment (Stelzenmüller, 2013). For a long time now, MPAs have thus received increased attention within the natural and social sciences with a focus on how to keep goals for nature conservation and protection alongside offering quality recreational experiences to visitors (Fish, et al., 2005). This is of course a managerial challenge in all protected areas, but even more so in MPAs, where impacts on the coastal and marine environment often are hidden beneath the surface and where recreational activities are spread out in a large area. Consequently, MPA managers need to build a fundamental understanding of the environmental and recreational profile of their area, if recreational opportunities are to be kept intact and visitor impacts minimized (Cole, 2004). This emphasises the need for effective monitoring methods that can supply managers with such information.

Aim and scope

A monitoring method combining both *environmental* and *recreational* interests is one such management approach. With this method at hand, managers can direct their actions to areas of attention and make qualified decisions that benefit both conservation goals and recreational opportunities. However, while combined monitoring efforts are found in a few studies from terrestrial areas (e.g. Alessa, et al., 2008; Lyon, et al., 2011), studies from coastal and marine areas are basically non-existent. This is a problem, especially since management and monitoring of terrestrial areas differs from marine based areas due to different landscape contexts and conditions, effecting both the application and results of different management and monitoring approaches. Consequently, managers of MPAs need new professionalised and combined monitoring methods, rooted within both the natural- and social sciences, and with a distinct marine focus, in order to attain successful management. In order to remedy this situation, the primary aim in an upcoming

paper is thus to introduce the development of a combined, interdisciplinary monitoring method, focusing on both environmental and recreational monitoring efforts, and designed especially for coastal and marine areas.

Methods

Two parallel studies performed in Kosterhavet National Park, Sweden, during the summer of 2013 will form the base of the data presented and discussed in the paper. One study was conducted by a marine ecologist looking at visitor impacts on soft and shallow sea floors. Filming the sea floor using a custom-made underwater sled with an attached camera, several transects in the form of inventory studies were made from chosen areas in the national park, and subsequently analysed for human impacts. The other study was conducted by a human geographer mapping and describing the recreational profile of the study area, including visitor related activities and conflicts. Three monitoring methods were employed: on site observations (n=37), short on site interviews (n=101) and a small two page questionnaire survey (n=513) that also included a mapping exercise of visitor activities. In the end, the two monitoring activities were combined and put into GIS layers in order to pin point and compare popular visitor locations and high impact areas.

The presentation

The presentation will delve into this work in detail by first describing the context and importance of recreational and environmental monitoring studies in coastal and marine areas before introducing the combined monitoring method itself. This will eventually lead to a presentation of the results of the two studies as well as a discussion and some reflections on the usefulness and limits of the monitoring approach, with a special focus on practical implications for area managers. Last, the general interdisciplinary nature of the method will finish off the article alongside thoughts about future research opportunities.

Based on this approach, the paper is explorative, descriptive and evaluative in its form. Furthermore, the intention is that the paper is of interest to protected area managers as well as environmental researchers and scholars with an interest in natural resource management.

References

Alessa, L., Kliskey, A. and Brown, G., 2008. Social–ecological hotspots mapping: A spatial approach for identifying coupled social–ecological space. Landscape and Urban Planning, 85. pp. 27–39

Cole, D.N. 2006. Visitor and Recreation Impact Monitoring: Is It Lost in the Gulf between Science and Management? The George Wright Forum, 23(2), pp. 11-16

Fish, T.E., Recksiek, H. and Coble, T.G., 2005. Balancing Visitor Use And Resource Protection: Tools For Coastal And Marine Protected Area Managers. Proceedings of the 14th Biennial Coastal Zone Conference, New Orleans, Louisiana, July 17-21, 2005

Lyon,K., Cottrell, S.P., Siikamäki, P. and Marwijk, R.V., 2011. Biodiversity Hotspots and Visitor Flows in Oulanka National Park, Finland. Scandinavian Journal of Hospitality and Tourism, 11(sup1), pp. 100-111

Pike, K., Johnson, D., Fletcher, S., Wright, P. and Lee, B., 2010. Social Value of Marine and Coastal Protected Areas in England and Wales. Coastal Management, 38(4), pp. 412-432

Stelzenmüller, V. 2013. Monitoring and evaluation of spatially managed areas: A generic framework for implementation of ecosystem based marine management and its application. Marine Policy, 37, January Issue, pp. 149-164