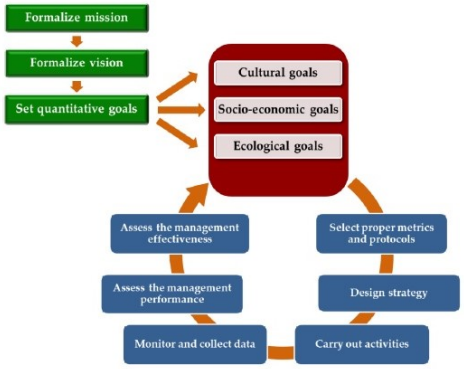
Organization Science improves management effectiveness of Marine Protected Areas

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Abstract (300 word limit)

Marine Protected Areas (MPAs) are important tools to achieve ecological, cultural and socio-economic goals. MPAs Ecological Management Effectiveness (EME) is the degree to which MPAs reach their ecological goals. The significant variability of EME among MPAs has been extensively studied and partly explained by several MPA features linked to design, management and implementation (e.g. surface area, enforcement, age of protection). We investigated EME variability by employing, for the first time, Organization Science, the discipline that studies organizations. Using an exploratory multiple case study approach, we applied OS principles to eleven Mediterranean MPAs in order to characterize several organizational features. Among those eleven, eight MPAs were taken into account to explore the relationships between EME and MPA features, such as: 1) organizational size (i.e. the ratio between the number of full-time employees and the total MPA surface area), 2) management performance (i.e. the level of effort exerted to enhance and sustain the MPA management, including enforcement), 3) total surface area, and 4) MPA age. The log-response ratios of fish biomass in protected vs unprotected (control) areas was used as a proxy of EME. Results show that a number of organizational features are highly variable among the MPAs we studied. Management performance, organizational size and, to a lesser extent, MPA age were positively correlated with the log-response ratio of fish biomass, whereas total surface area did not display a significant role. Based on our findings, two relevant outcomes emerge from this exploratory study: i) the management performance of the MPAs considered needs extensive improvements; ii) the employment of Organization Science in the management effectiveness assessment made possible the elaboration of a framework (see image) that can assist MPA managers to reach goals more effectively, with a more efficient use of available resources.

Image



Steps of the management process of an MPA.

Recent Publications (minimum 5)

1. Barnard, C., 1938. Functions of the Executive. Harvard University Press, Cambridge, Mass.
2. Claudet, J., Osenberg, C.W., Benedetti-Cecchi, L., Domenici, P., García-Charton, J.A., Pérez-Ruzafa, Á., et al., 2008. Marine reserves: size and age do matter. Ecol. Lett. 11 (5), 481–489.
3. Daft, R., 2016. Organization Theory and Design, twelfth ed. Cengage Learning.
4. Hocking, M., Stolton, S., Dudley, N., 2000. Evaluating Effectiveness: A Framework for Assessing the Management of Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK, pp. 121pp x +.
5. Horigue, V., Aliño, P.M., Pressey, R.L., 2014. Evaluating management performance of marine protected area networks in the Philippines. Ocean Coast Manag. 95, 11–25.
6. Giakoumi, S., Scianna, C., Plass-Johnson, J., Micheli, F., Grorud-Colvert, K., Thiriet, P., et al., 2017. Ecological effects of full and partial protection in the crowded Mediterranean Sea: a regional meta-analysis. Sci. Rep. 7, 8940.
7. Scianna, C., Niccolini, F., Gaines, S.D., Guidetti, P., 2015. 'Organization Science': a new prospective to assess marine protected areas effectiveness. Ocean Coast Manag. 116, 443–448.



Biography (150 word limit)

Claudia Scianna, together with the co-authors, has developed the idea to apply the Organizational Science to the Marine Protected Area during her PhD. The approach and the methodology are based on several years of experience in the field of marine protected areas of some of the authors, as well as on several years of experience in the field of others. The main idea is that marine protected areas are organizations too and they need to be evaluate also as a business company in order to succeed. This has determined, for example, a new definition of size, the organizational size, in the MPAs field. Also the research has brought to the creation of a framework, easy to follow by MPAs managers in order to improve MPAs effectiveness.

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Notes/Comments: