MPA Science Corner: Knowledge transfer among managers - Spatial management of seabirds - Partially protected areas - Mesophotic coral reefs

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Article: Lundmark, C., Sandström, A., Andersson, K., Laikre, L. Monitoring the effects of knowledge communication on conservation managers' perception of genetic biodiversity – A case study from the Baltic Sea. Marine Policy 99, 223-229 (2019).

Finding: Knowledge transfer among peers can be an effective means to change marine managers' understanding and beliefs. This is demonstrated through surveys of Baltic Sea marine managers taken both immediately after and 3-4 months after they participated in educational sessions on genetic biodiversity conservation. However, changes in their policy beliefs appeared to dissipate over time. The authors conclude that knowledge-communication efforts may need to continue over longer periods in order to facilitate efficient translation of new evidence into practice.

Preprint: Oppel, S., et al. Spatial scales of marine conservation management for breeding seabirds. Marine Policy 98, 37-46 (2018).

Finding: Tracking data from more than 5400 adult breeding seabirds of 52 species in 10 families showed that there are substantial differences in how far-ranging and dispersed different families are. Area-based management approaches may be less effective for birds that forage over large ranges in isolation, such as albatrosses, petrels, storm petrels and frigate birds. Improving fisheries management and reducing pollution over large areas may be a better bet for these birds. In contrast, short-ranging and aggregating species – including cormorants, auks, gulls, and some penguins – do likely benefit from smaller-scale protected areas during breeding season.

Preprint: Zupan, M., Fragkopoulou, E., Claudet, J., Erzini, K., Costa, B., Gonçalves, E. Drivers of ecological effectiveness in marine partially protected areas. Frontiers in Ecology and the Environment (2018). doi:10.1002/fee.1934.

Finding: The ecological effectiveness of partially protected areas (PPAs) – MPAs that allow for varied uses – depends on whether management is effective and on the nature of the allowed uses. Weakly regulated PPAs are not, in the end, different than unprotected areas, whereas highly and moderately regulated PPAs do confer ecological benefits, such as higher levels of biomass. The ecological effectiveness of PPAs is boosted when they are adjacent to a no-take MPA.

Article: Gress, E., Arroyo-Gerez, M., Wright, G., Andradi-Brown, D. Assessing mesophotic coral ecosystems inside and outside a Caribbean marine protected area. Royal Society Open Science 5, 180835 (2018).

Finding: Mesophotic coral reefs are not often incorporated in shallow coral reef conservation plans. But a study of the Mesoamerican reef off the coast of Cozumel, Mexico, shows there would be benefits to doing so. Forty-two percent of fish species are present in both the shallow and deeper reefs of the area, suggesting mesophotic zones may play a role in supporting fish populations. These reefs also contain diverse benthic assemblages. The study recommends incorporating mesophotic reefs into the Cozumel National Park management plan, which currently focuses only on shallow zones.

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