

ABSTRACT BOOK

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to the environment: (1) the fatwa for environmentally friendly mining; (2) edict on the misuse of formalin and harm material in the production of fish; (3) edict on protection of wildlife for the balance of ecosystem; and (4) edict about wastes. Lessons learned from this “soft power movement” of interacting religious MUI and government, conservation NGOs and academia will be shared and hopes for future success toward ecological sustainability will be expressed.

EXTRAPOLATING CETACEAN DENSITIES IN THE OFFSHORE NORTH ATLANTIC: TOWARDS A BASIN-WIDE MANAGEMENT APPROACH

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Extrapolating beyond the range of environmental variables is very risky; however, geographical extrapolation is acceptable when parsimonious habitat models are built from meaningful environmental predictors and survey datasets. We were contracted by the U.S. Navy to estimate the densities of 29 cetacean species in the Atlantic fleet testing and training (AFTT) area, extending from the shoreline of North America to 45°W and from 21 to 65°N. Most of this area has only been surveyed with line transect protocols within 200 miles from shore. Our objective was to provide reliable extrapolations of cetacean densities in the AFTT area based on available cetacean line transect surveys and environmental predictors. We built generalized additive models from over 1.2 million km of line transect surveys in the U.S. waters and a variety of environmental predictors, favoring those for which a broad range of values was covered in the surveyed area. Since the U.S. surveys mostly covered nearshore waters, we incorporated European surveys which extended farther offshore but in the other side of the North Atlantic basin. The results illustrate the difficulty of providing robust density estimates in offshore waters from surveys mainly conducted in nearshore waters. In addition, our study suggests that, for some species, different environmental variables may drive cetacean distributions on each side of the North Atlantic. For example, when we added European surveys to our fin whale model, different predictors were selected and the abundance estimate for the AFTT area doubled. In contrast, for harbor porpoise, the same predictors were selected and the estimated abundance decreased by a more modest 30%. In both cases, much of the change in abundance occurred beyond the shelf. In conclusion, our study stresses the urgent need of conducting line transect surveys in the offshore North Atlantic in order to provide the most accurate estimations of cetacean densities.

MAPPING ECOSYSTEM SERVICES AT THE SITE LEVEL: A PROXY-BASED APPROACH FOR RIZOELIA NATIONAL PARK, CYPRUS.

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Conservation and management of Natura 2000 sites should go beyond simply conserving the biodiversity they support towards managing the multitude of services they provide. This shift in management necessitates the identification and mapping of these services. The National Park of Rizoelia in Cyprus is a Natura 2000 site supporting two priority habitats at the European level, Ziziphus arborescent mattoral (*5220) and gypsum steppes (*1520), which have been well documented and mapped. However, this is not the case for other services supported by the Park. The current study aims to identify, quantify and map the range of ecosystem services (ES) in the park. We develop a framework based on widely used methodologies using tables for regulating, provisioning and cultural ecosystem service linked to related indicators for their quantification. Furthermore, spatial concepts of service providing units, benefitting areas, spatial relations, rivalry, spatial and temporal scales are elaborated. Finally, matrices linking habitat types to ecosystem service potentials, flows, demands and budget estimates are provided. The resulting maps show the spatial distribution of ES in the park, which constitute a practical and easy tool for managers to integrate the concept of ES in decision-making. Nonetheless, integrating more data and validating this approach in the future is still necessary if it is to be adopted and applied as a standard method at regional or national scale.

SYMPOSIA NUMBER 188; NOT ALL SMALL DAMS ARE BENIGN: A STUDY ON THEIR CUMULATIVE IMPACTS IN SOUTH AFRICA

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Small dams are generally ignored in impact assessments due to the perception of their benign nature relative to large dams. This may be an oversight in catchments with a high density of small dams. In two South African regions, reduced low flows, deteriorated water quality, and impoverished macroinvertebrate communities (with dominance of opportunistic taxa and reduced abundance for specialist

