214. CORRELATION PATTERNS OF SPECIES RICHNESS AND LOCAL RARITY AT A REGIONAL SCALE: IMPLICATIONS FOR PROTECTED AREA DESIGNATION

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Species richness and rarity are often used as ecological criteria for conservation planning, as in using richness hotspots for reserve selection. Since collecting adequate data on the richness and distribution of multiple taxa is usually infeasible, decisions are often based on proxies of biodiversity, often taxonomic subsets. While studies at a global scale have revealed that taxa subsets can correlate to overall biodiversity, there are insufficient data on correlation at a regional scale, which is often the scale at which conservation decisions are made. Here we use detailed, regional-level data of species richness for trees, small and large mammals, birds, amphibians and reptiles from two understudied tropical regional areas in Africa and South America to assess correlation of richness and rarity among multiple taxa. Our data indicates that some taxa subsets may show potential in indicating for overall biodiversity. Proxies of biodiversity richness and rarity can inform conservation planning, especially in tropical areas, where limited resources for biodiversity assessment have led to a paucity of data.

215. OPTIMISING CHOICES IN OFF-RESERVE MANAGEMENT USING THE MARZONE SOFTWARE

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Marxan is the world's most utilized tool in terrestrial, marine and coastal reserve design (Ball and Possingham 2000). It allows planning units of a region to be reserved or not reserved and to have a single fixed cost. MarZone expands this capability by allowing planning units to exist in the spectrum between reserved and not reserved, and take on a matrix of costs, more closely modeling real world zoning exercises. We have modified Marxan to incorporate these new capabilities, dealing with greater social and economic complexity and reality in natural resource management planning. Natural resource managers face decisions characterised by multiple objectives, multiple stakeholders, and conflicting objectives. We show how to avoid the juxtaposition of conflicting land/sea-uses by maximizing the achievement of biodiversity objectives and minimizing the disruption to resource uses and management costs using MarZone. We illustrate this method with case studies, showing how it can be applied to management decisions in terrestrial, marine and coastal regions across the globe.

216. AN OFFSHORE CLASSIFICATION FOR BIODIVERSITY CONSERVATION PLANNING ON THE EAST COAST OF SOUTHERN AFRICA

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The waters of the east coast of the South Africa are shaped by the interplay of the strong southward flowing Agulhas and Madagascar currents, which generate marked temperature differentials and strong gyres and upwelling cells, the influence of which are modified by a strong inshore river inflow influence from 64 estuaries and a seafloor incised by deep canyons. Much research has been done on near-shore systems, whereas the offshore biodiversity is largely unexplored. This is reflected in the level of protection: existing marine protected areas along the coast of the province of KwaZulu-Natal are limited to sensitive inshore areas of special interest (i.e. coral reefs) while offshore biodiversity is afforded zero formal protection. In this study geophysical mapping, coupled with remote-sensing biophysical data, is used to classify the offshore environment according to benthic-pelagic "profiles", and thus to map areas of similarity. Data at a scale of 1x1km from satellite imagery of sea surface temperature, chlorophyll and turbidity are combined with a comprehensive bathymetry layer, sediment data and reef density data in a multivariate analysis. These have generated offshore environmental domains, an ecosystem classification system, being applied and tested for systematic conservation planning.