
Applying the Biodiversity Intactness Index to a marine ecosystem: the southern Benguela

Kate Watermeyer^{*1,2}, Lynne Shannon², and Guy Midgley¹

¹Université de Stellenbosch (SUN) – Victoria Street, Stellenbosch, 7600 Stellenbosch, Cap occidental, South Africa

²Marine Research Institute, University of Cape Town (Ma-Re, UCT) – Private Bag X3 Rondebosch 7701, South Africa

Abstract

Biodiversity is known to be an important factor in the resilience of systems to perturbations in environmental or other drivers, buffering the system against the effects of large-scale change. Human induced pressures on ecosystems such as exploitation, habitat destruction, pollution and indirect forcing via climate change are driving high rates of biodiversity loss. Reducing biodiversity loss is thus a common goal in management plans and a means of measuring biodiversity change is therefore necessary. Scholes & Biggs (2010) proposed the biodiversity intactness index (BII) as a simple but sensitive indicator of biodiversity loss since pre-modern or baseline levels. The index has been successfully applied to a terrestrial environment in southern Africa. Here the application of the BII in a marine environment, the southern Benguela, is explored. The BII was calculated both from data and expert opinion and its ability to assess biodiversity change due to fishing pressure assessed.

Keywords: Biodiversity index, marine, ecosystem change

*Speaker