

Rapid fish stock depletion in previously unexploited seamounts: the case of *Beryx splendens* from the Sierra Leone Rise (Gulf of Guinea)

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Fish stocks associated with seamounts may be particularly susceptible to overexploitation. From January to July 2001, the Spanish Oceanographic Institute (IEO) conducted an experimental fishing survey entitled 'Palguinea-2001' on the seamounts of the Sierra Leone Rise. *Beryx splendens* (commonly called alfonsino) is the main commercial demersal fish associated with this area. The aim of this study was to investigate the effects of a demersal longline fishery targeting *B. splendens* on the previously unexploited small Machucambo Seamount over a short time-scale, and also to consider trends in pooled catch rate at another four seamounts. During 110 fishing days at Machucambo, a total catch of 207 tonnes of *B. splendens* was taken with a fishing effort of 1 309 070 hooks. A spectral analysis and red-noise spectra procedure (REDFIT) algorithm was used to identify the red-noise spectrum from the gaps in the observed time-series of catch per unit effort by weight. Our results show the potential impact of longline fishing pressure on an unexploited ecosystem ? after approximately 50 fishing days, the stock appeared to decline substantially, as reflected by a marked drop in catch per unit effort. The apparent rapid decline of the stock might be related to the small size and the virgin state of the Sierra Leone seamounts. The results could be extrapolated to similar small seamounts elsewhere. © 2015 NISC (Pty) Ltd.

alfonsino

CPUE

demersal fishery

fisheries management

longline

demersal fish

experimental study

fishery management

longlining

seamount

spectral analysis

stock assessment

teleost

time series

Atlantic Ocean

Gulf of Guinea

Sierra Leone

Berycidae

Beryx splendens