

2nd International Conference on Oceanography

July 21-23, 2014 Hampton Inn Tropicana, Las Vegas, USA

Artificial Reef Program on the Northern Coast of Rio de Janeiro- Brazil (1996-2011)

Ilana Rosental Zalmon¹, Brotto D S² and Luciano Neves dos Santos³

¹North Rio de Janeiro State University, Brazil

²Veiga de Almeida University, Brazil

³Federal University of Rio de Janeiro State, Brazil

Artificial reefs were deployed on a flat bottom, 9 m deep and 5 km area offshore Southeast Brazil, and changes on composition and structure of the associated fish assemblages were assessed over a period of 15 years. Fishes were collected through bottom gillnets at 1 month, 6 months, 1 year, 6 years, 7 years, 10 years, 13 years, 14 years and 15 years after artificial reef settlement. A total of 552 fishes, 45 species and 19 families were caught, with *C. chrysurus* (Carangidae) and *C. nobilis* (Haemulidae) as the prevalent species and Sciaenidae as the richest family (11 species). Fish abundance, richness and biomass varied significantly with time, increasing gradually until the sixth-seventh years and lowered subsequently. The same unimodal response was recorded for the abundance and biomass of planktivorous and invertivorous fishes and for Haemulidae, suggesting that this family accounted for most of the temporal variation recorded for the whole-fish assemblage descriptors. The abundance and biomass of sharks decreased gradually after the first year but apparently recovered up to the fifteenth year. Fish usage of artificial reefs seems to be modulated by a continuous species turnover with time, since no single species occurred throughout the surveys and an arch effect was observed from the detrended correspondence analysis performed on the species abundance matrix. This study stresses the importance of long-term assessments on marine artificial reefs in order to incorporate the successional patterns of fish colonization into management actions and thus to optimize the effects of large-scale habitat manipulation programs.

Biography

Ilana Rosental Zalmon has completed his PhD in 1995 from University of Sao Paulo, Brazil and postdoctoral studies from University of California at Santa Barbara. She is a Professor and marine researcher on community ecology at the Centre of Bioscience and Biotechnology from the University of North Rio de Janeiro. She has published more than 45 papers in reputed journals and has been serving as a referee member of repute.

ilana@uenf.br