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**Where did all the fish go at Bikini Atoll? Species diversity, habitat choice and assemblage rules for coral reef fishes after 50 years undisturbed existence.**

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Bikini Atoll is well known for the atomic tests carried out there in the fifties. Since then, the atoll has been left undisturbed by fishermen and nuclear physicists alike. In the 1980ies, marine surveys were conducted as part of a resettlement programme. This included a survey of the fish populations for commercially important species. The atoll however was still not settled with the original population, hence the reefs continued to exist without further human interferences. In 2002 another data set was collected. In this talk, I will compare the fish assemblages from Bikini Atoll, 27 and 44 years after the last atomic tests in 1958. This comparison shows that few patterns are recognisable for commercially targeted fishes only, particular in the 1984 data set. However, in the 2002 data set we can discern several fish assemblages associated with different habitats such as patchreefs, lagoon habitat, outer exposed reef and atoll passes. Fish numbers and species of commercially exploited fishes appear to have increased, although there is the possibility of information loss from the old 1985 data set. This talk aims to achieve several objectives. Firstly I will present a multivariate analysis of fish biodiversity data for all species determining the major fish species associated with various habitats, secondly I will draw comparisons with an old data set and discuss the challenges of working with historic data, and lastly (but not least!) I will show photographs and impressions of the beautiful reefs and atoll of the Northern Marshall Islands.