THE ICHTHYOFAUNA OF THE ARABIAN GULF - TROPICAL MARINE FISHES IN AN EXTREME ENVIRONMENT.

KRUPP F. & M. ALMARRI

Senckenberg Research Institute, Frankfurt, Germany

The fish species composition in the Arabian Gulf is reviewed and factors limiting biological diversity are discussed. Systematic research on the fishes of the area started in the first half of this century along the Iranian shores, while most of the more recent studies have been conducted on the Arabian side, with a significant increase in research activities following the 1991 Gulf War. To date about 540 fish species belonging to 118 families are known from the Gulf. This number is low compared to other branches of the tropical Indo-Pacific, such as the Red Sea which harbours more than twice this number of species. The shallowness of the Gulf, the comparatively low structural complexity of its habitats, extreme seasonal fluctuations in temperature and high salinity are limiting the species richness. The fish fauna is young in geological terms, with limited time for speciation processes. About 20 fish species are known exclusively from the Gulf. In many cases their distribution pattern is insufficiently clear and endemism is probably less than 2 %. In addition to unstable, naturally stressful conditions, where many species are living close to the limit of their ecological tolerance, human pressure is increasing rapidly. Fish populations have recovered from the effects of the 1991 oil spill, but they still are exposed to chronic oil pollution, development and fishing pressure.

STOCK ASSESSMENT OF COMMERCIAL FISHES IN THE NORTHERN NEW CALEDONIAN LAGOONS. 2 - LAGOON BOTTOM AND NEAR REEF FISHES.

KULBICKI M., LABROSSE P. & Y. LETOURNEUR

ORSTOM, Nouméa, Nouvelle-Calédonie

The northern part of New Caledonia was sampled using bottom longlines and handlines. A total of 90 longlines stations (2 lines with 100 hooks each) were sampled, and 399 handlines stations were performed using a standard protocol. Longline stations were set 3 miles apart on lagoon bottoms and handline stations 2 miles apart near reefs. Underwater visual censuses (UVC) were performed on 18 longline stations and in the vicinity of 100 handline stations. Handlines captured more Lutjanidae and less Carangidae than longlines. Handlines tended also to catch smaller fishes. Handlines and longlines indicated strong differences in catch composition and fish size between regions and between biotopes, the northern part of the lagoon yielding higher CPUE for most species. Correlations between longline or handline CPUE and biomass estimates from UVC were significant. This allowed to make biomass estimates from CPUE data. Biomass of line-fish ranged from 4 to 15 g/m2. From these biomass estimates it was then possible to calculate stock estimates for total line-fish stock and separately for the major species. Near reefs, the stock was estimated at 13 500 tons, and on lagoon bottoms the stock was 61 000 tons. Biomass estimates are compared with values from other areas in New Caledonia and the Indo-Pacific.

Kulbicki Michel, Labrosse P., Letourneur Y. (1997).

Stock assessment of commercial fishes in the northern new caledonian lagoons : 2. Lagoon bottom and near reef fishes.

In : 5th Indo-Pacific fish conference : abstracts. Nouméa : ORSTOM, 54 multigr.. Indo-Pacific Fish Conference, 5., Nouméa (NCL), 1997/11/03-08.