

The different response of the macrobenthic community to different anthropogenic activities on a new limnological ecosystem in Wadi Al Rayan Lower Lake, Western desert of Egypt

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Wadi Al Rayan area is located in the western desert of Egypt. In the 1970s, two man-made lakes have been formed from the drainage water of farm lands in the EL-Fayoum Province. Since then the biodiversity of this area had changed completely. Benthic communities have been formed gradually in this new limnological ecosystem. By that time, some anthropogenic activities also started to develop. The establishment of Fish Farms and Land Reclamation are considered as the two main projects using the benefits of lake water.

Benthic invertebrates considered as an ideal tool to monitor the anthropogenic stress because of their short generation time and their life-type that in close association to the sediment. This study aimed to estimate the difference in colonization by macrofauna in these new environments by investigating the communities monthly for one year from June 2003 to May 2004.

The statistical results showed that the communities were significantly different in both Fish Farms and the Land Reclamation area. The benthic composition of the two communities was also different. At the same time that the two sites reported almost the same species and the same species richness, but the dominance of the species composition was significantly different. In the Fish Farm area, five species were abundant while the amphipod *Corophium volutator* was reported as the most dominant among them. But in the Land Reclamation area only two species were dominant with 94% of the benthic population in the Land Reclamation area existing exclusively of just two species; *Hydrobia sp.* and *Corophium volutator*.

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