Benthic community ecology for Algerian river Seybouse

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Abstract
The Seybouse is the second largest river basin in Algeria, hosting an important biodiversity and providing various ecosystem services. This watershed is highly influenced by agricultural and industrial activities, which threaten its biodiversity and ecosystem integrity. The use of benthic macroinvertebrates as biological indicators has a long tradition in developed countries and integrated into all assessments of the ecological quality of river systems. However, the macroinvertebrates of many North African regions are still not well studied, including those of the Seybouse river. The aim of this study is to assess the inventory and ecological role of benthic macroinvertebrates in inland waters of the Seybouse River and determine the impact of pollution on their spatial distributions. We sampled the benthic macrofauna of Wadi Seybouse and its affluents using regular surveys in three sites, of which one was in the upper Seybouse Bouhamdane in Medjez Amar and two in the middle Seybouse. Between December 2019 and May 2020, 10 physico-chemical parameters (pH, EC, OD, water speed, NO3, Salinity, NO2, MES, turbidity, depth) were measured in order to establish a health state diagnosis of these aquatic ecosystems. The complementary biological approach by the analysis of populations of macroinvertebrates identified 7482 individuals and 40 taxa divided into five classes: Crustaceans which were the most dominant, insects with the main orders (Ephemeroptera, Diptera, Trichoptera, Heteroptera and Odonata), Molluscs, Nematodes and Annelids. The physico-chemical analyzes and the application of the organic pollution indices indicated a strong to excessive pollution for all sites, especially in Seybouse upstream.

Author keywords
Benthic macro-invertebrates; Bio-indicators; Pollution; Quality; Seybouse