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Large branchiopod occurrence and community structure in relation to land-use types in temporary ponds of northern Tanzania

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Abstract

Large branchiopods are a key component of the fauna of temporary ponds and play an important role in the functioning of these vulnerable ecosystems. Owing to the establishment of new settlements and agricultural expansion, temporary ponds in Tanzania are disappearing at an alarming rate whilst little is known about their diversity and ecology. We contrasted temporary ponds from a protected area with those in communal lands to detect associations between land-use types and large branchiopod community structure. Six large branchiopod species were collected, five of which have been previously reported from Southern Africa, whilst one turned out to be new to science: *Streptocephalus manyarensis* n.sp. Kafula and Brendonck (2023). The clam shrimp *Cyzicus* sp., fairy shrimps *Streptocephalus lamellifer* Thiele (1900) and *S. bourquinii* Hamer and Appleton (1993) were the most abundant and widely occurring. Variation in large branchiopod community structure was explained by the presence of *Nothobranchius* killifish and orthophosphate concentration. The large branchiopod community structure was different in settlement and protected areas. Our study on the occurrence and structure of large branchiopod communities in relation to land-use types serves as a base for formulation of guidelines and management tools to regulate land-use practices adjacent to temporary pond ecosystems.

Keywords;

Anostraca; Laevicaudata; Spinicaudata; Notostraca; Afrotropical region; Lake Manyara Basin