

Invertebrates community dynamics in temporary wetland ecosystems

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FBIS160426163203**

Temporary wetlands (endorheic pans) are generally understudied compared to their permanent counterparts, even though they support the highest number of threatened species than any other habitat types. There is no better living embodiment of this statement than the temporary wetlands in Kenilworth Racecourse Conservation Area (KRCA). Conservation authorities in this area have expressed interest in having a comprehensive species list of aquatic invertebrates occurring in their temporary wetlands. Understanding of aquatic invertebrates, being an important food source for birds and amphibians, is absolutely necessary. Upon our visit of their temporary wetlands, similar requests have also been expressed by managers at Youngsfield Military Base, Rondvlei Nature Reserve and Milnerton section of the Table Bay Nature Reserve, to provide them with a comprehensive species list as well. Such information is crucial for conservation assessment and restoration prioritisation exercises. For example, since we know that at KRCA there are two species of frogs that are critically endangered, every management decision of the area, which is still an active horse racing course, has to take that into consideration. Once-off sampling yields a highly incomplete picture of the diversity in temporary wetlands given that they have rapid succession and complete replacements within weeks/months of inundation. Also, once-off sampling does not give insights into the organismal dynamics including their successional and phenological patterns, and life-history strategies. Therefore, this study will involve weekly assessment of the invertebrates from the moment the pans are inundated until they dry up. This will be complemented with laboratory hatching assays (resurrection experiments) of dried soil sediments. Together, these two methods will give us a comprehensive understanding of biodiversity dynamics, allowing us to build a species list for these conservation areas.