

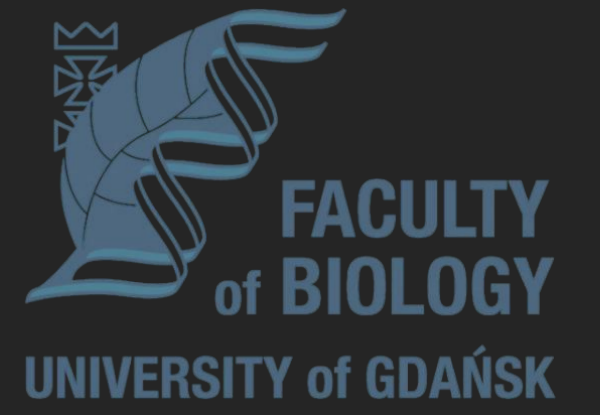
Biodiversity of non-marine Ostracoda of Botswana as compared with other Southern African countries



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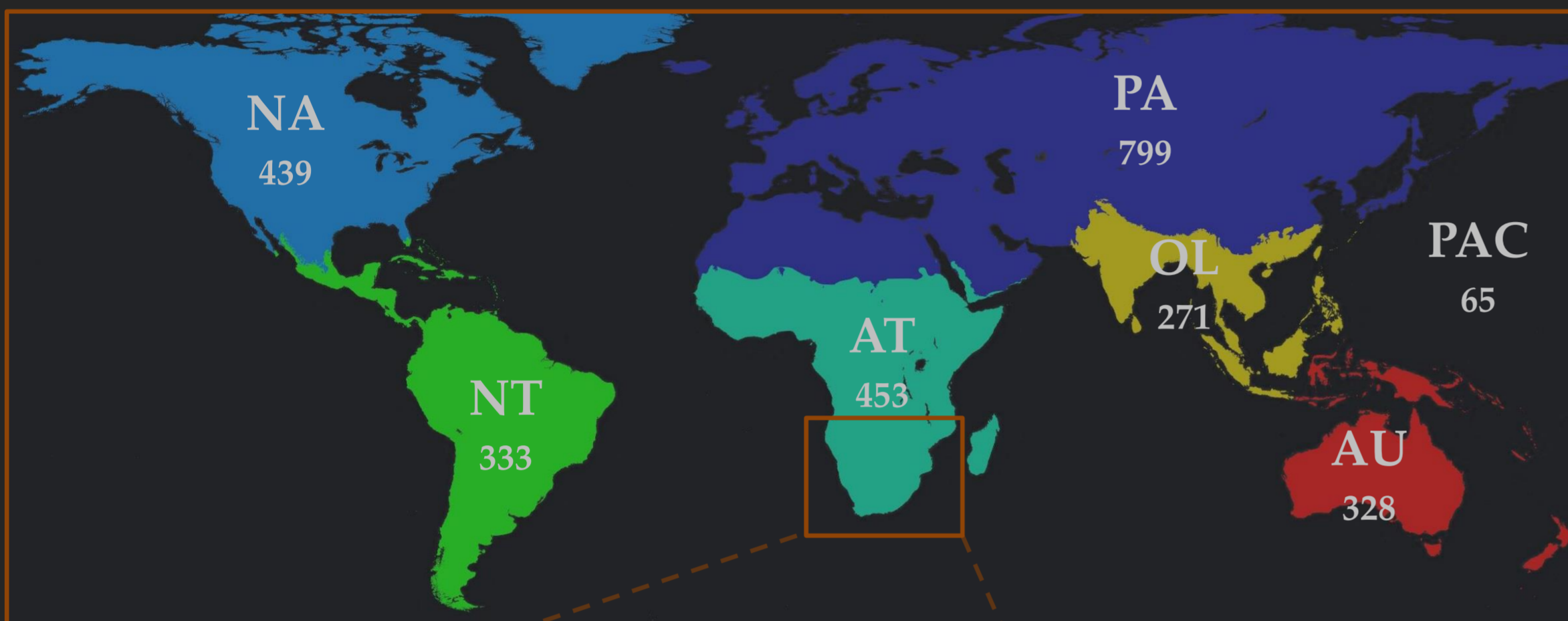
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INLAND WATERS IN BOTSWANA

Botswana is the land-locked country with a prevailing warm, semi-arid climate where droughts are common and rainfall is unpredictable. Natural arid conditions and frequent drought periods make Botswana highly susceptible to desertification. The wetlands consist mainly of a variety of seasonally rain-fed waterbodies, such as temporary freshwater or salt pans, temporary rivers, and man-made reservoirs. The only perennial wetlands include the systems of the Okavango river and the Chobe-Linyati-Kwando rivers in the north of the country. Inland water ecosystems are under increasing pressure and suffer from both recent human activity and natural climate variation.



Numbers of non-marine ostracod species reported in each zoogeographical region (Meisch et al. 2019)

(AT – Afrotropical; AU – Australasian; NA – Nearctic; NT – Neotropical; OL – Oriental; PA – Palearctic; PAC – Pacific Oceanic Islands)

MATERIAL AND METHODS

To estimate the number of ostracod species in Botswana, data from the literature and own studies were used:

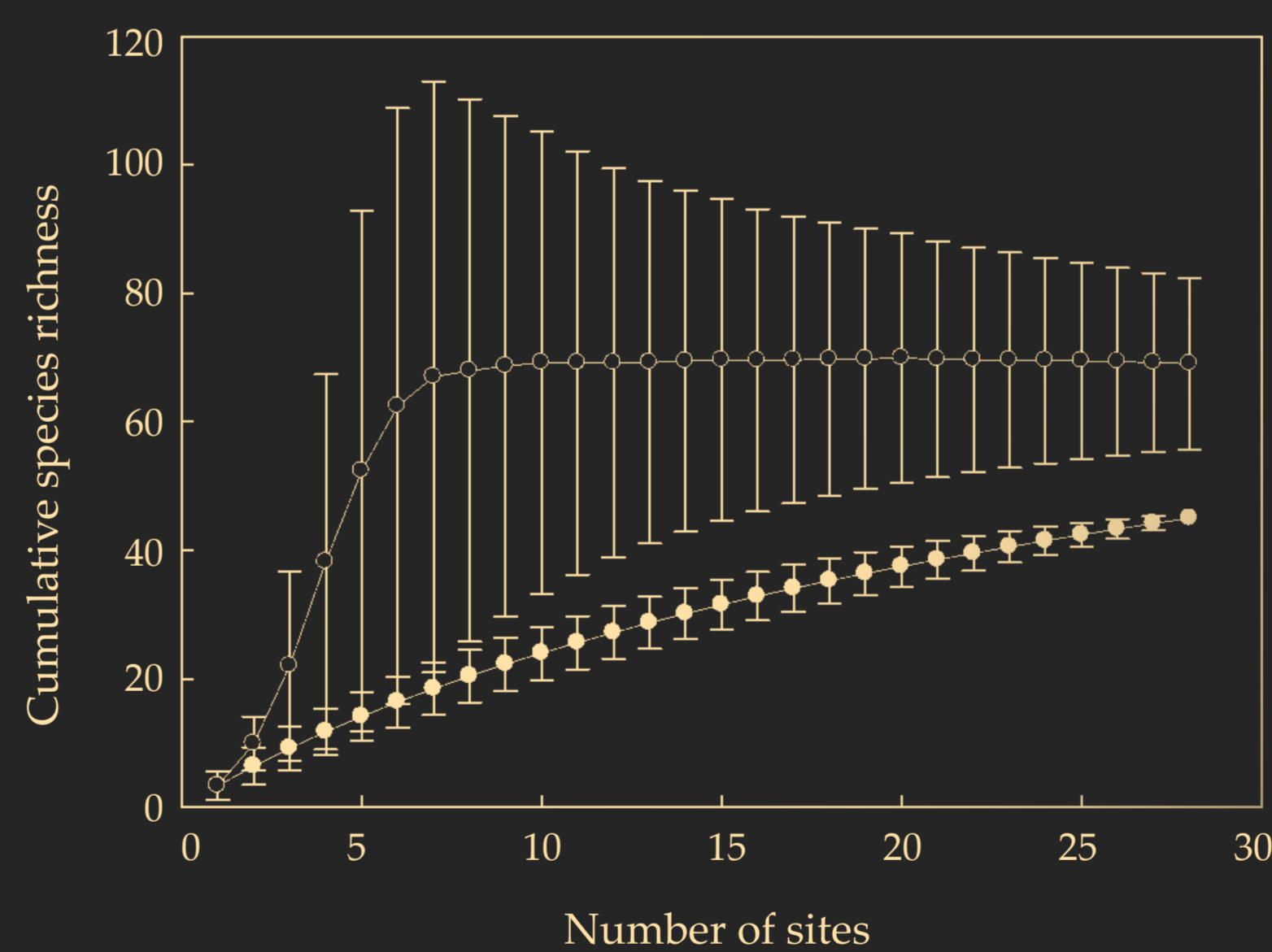
- * the historical occurrence of ostracods was taken from 16 publications (Daday 1913; Barnard 1935; McKenzie 1971; Martens 1988, 1990; Seaman et al. 1991; Martens et al. 1996; Smith 2000; Jocque et al. 2006, 2010; McCulloch et al. 2008; Savatentalinton and Martens 2008; Riedel et al. 2012, 2014; Olszewski et al. 2020; Szwarc et al. 2021)
- * a collection of recent ostracods was made from 11 freshwater sites in September 2012, using a hand-net



Map of Southern African countries (dark brown) and provinces in South Africa (light brown) with numbers of living ostracod species in parentheses (Botswana after Szwarc & Namiotko 2022, Malawi after Jacobs & Martens 2022, Namibia after Curtis 1991 and Curtis et al. 1998, South Africa after Martens 2001, Zambia after own database based on the literature). Numbers for regions with less than 10 species are not indicated.

AIMS

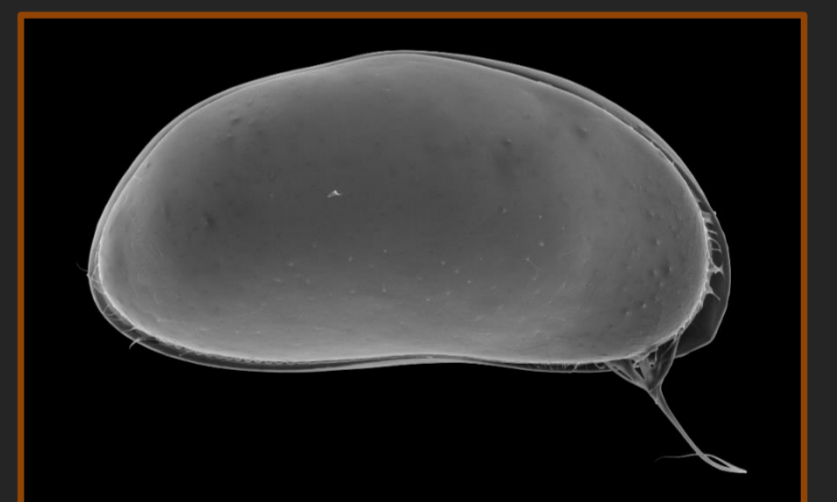
- * to present the inventory of living and fossil Quaternary non-marine ostracod species in Botswana
- * to compare ostracod species diversity in southern African countries



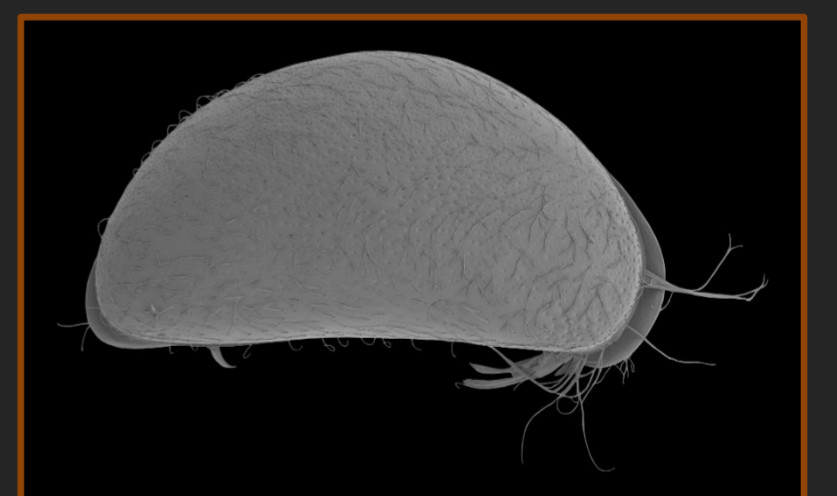
Species accumulation curves showing the average observed (closed circles) and estimated by the Chao 2 index (open circles) cumulative taxa richness against the number of 28 sites of living material.



Sarscypridopsis harundineti
(Szwarc et al. 2022)



Heterocypris oblonga
(Sars, 1924)



Potamocypris mastigophora
(Methuen, 1910)

SUMMARY

- * ~ 200 ostracod species belonging to 50 genera have been recorded from the Southern African countries
- * Western Cape Province in South Africa has the best studied ostracod fauna
- * 45 living and 11 fossil non-marine species were listed from Botswana (56 species in total), based on the literature and new collections
- * Our survey yielded 14 living species, of which seven were identified as new to the fauna of Botswana
- * Alpha (site) diversity was low and ranged from 1 to 12 (mean = 3.3)
- * Family Cyprididae made up 91% of the total living specific diversity and the most species-rich subfamily was Cypridopsinae (37% of the total living species inventory)
- * *Sarscypridopsis harundineti* and *Potamocypris mastigophora* were the most common (present at 38% and 29% of the studied sites, respectively)
- * The total observed species richness was 65.2% of the species number estimated by the Chao 2 index

Acknowledgements

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