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# Geographical distribution: Microbatrachella capensis (Boulenger, 1910)

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**PYXICEPHALIDAE**

***Microbatrachella capensis***

(Boulenger, 1910)

**Micro Frog**

**O.L. ANGUS**

*Microbatrachella* is a monotypic genus containing only the Micro Frog *Microbatrachella capensis* – an anuran species endemic to the southern coastal lowlands of South Africa's Western Cape Province. Following the discovery of the species on the Cape Flats at various localities in the early 1900s, it was later discovered at Betty's Bay and Kleinmond in the 1970s, and then on the Agulhas Plain in 1980. Site occupancy across its range is limited by strict habitat requirements, in the form of blackwater ephemeral wetlands with a distinct vegetation community (de Villiers 2004). Its small area of occupancy (AOO) of 7 km$^2$, and the fact that this AOO is decreasing, in combination with its severely fragmented distribution, has resulted in *M. capensis* being listed as Critically Endangered (IUCN and SA-FRoG 2017).

On 17 July 2021, the author recorded a frog call at the seasonal Nuwejaars Wetlands on the floodplain of the Nuwejaarsrivier, in the Overberg region of the Western Cape Province in South Africa (34° 37' 30" S, 19° 49' 39" E, 3419DB; 17 m a.s.l.). Upon inspection of the call's spectrogram, and through consultation with expert herpetologists Atherton de Villiers and Marius Burger, we identified the call as *M. capensis.* The author, accompanied by Tyrone Ping, Kurt van Wyk and Eugene Hahndiek, returned to the same wetland on 31 July 2021 and captured five male frogs which were identified as *M. capensis.* These five individuals were distinguished from the similar-looking and sympatric Southern Caco *Cacosternum australis* by the presence of webbing between the phalanges of the toes, as the latter species lacks webbing (du Preez and Carruthers 2017). The author returned to the Nuwejaarsrivier for a third time in mid-October 2021 to perform a targeted survey along a 7 km stretch of the Nuwejaarsrivier. Through call identification, the presence of *M. capensis* was confirmed at four additional sites (Fig. 1). Calls were heard coming from shallow sections of the main channel and small wetlands adjacent to it. The presence of *M. capensis* appeared to correlate with floating vegetation, such as Cape Pondweed *Aponogeton distachyos* and the sedge *Isolepis* sp. The water level at each site ranged from several centimetres to waist deep, although this would vary greatly depending on the time of year (Eugene Hahndiek, pers. comm.). At one site, males were heard calling from an area recently cleared of invasive Weeping Wattle *Acacia saligna*, suggesting either a degree of tolerance to alien plant invasion, or the ability to recolonize areas previously invaded by *A. saligna.* Their presence has also been confirmed just east of Elim, through an audio recording by Amy Williams. In addition,

several misidentified records uploaded to iNaturalist in 2019 have now been recognized as *M. capensis* (https://www.inaturalist.org/projects/micro-frogs-of-nuwejaars-sma).

In summary, *M. capensis* has been discovered within a relatively large stretch of the Nuwejaarsrivier, translating to a 16 km north-east range extension for the species. The nearest population of *M. capensis* occurs in the western section of Agulhas National Park, which is considered a stronghold for the species (Turner and de Villiers 2017). This new locality extends their presence into a third tertiary river catchment.

The genetic difference between this new population and those from adjacent catchments has yet to be determined. Will (2005) showed that two evolutionary distinct lineages are present within *M. capensis*, one corresponding to those populations on the Agulhas Plain and the other to those from the Cape Flats, Bettys Bay and Kleinmond. Future genetic analyses should seek to ascertain whether all populations on the Agulhas Plain, including those from the newly discovered locality described here, belong to the same lineage. Given the presence of relatively continuous habitat, there is potential for *M. capensis* to have a considerable presence in the Nuwejaars Wetlands, which cover an area of approximately 6 km$^2$. Thus, future surveys should seek to establish where the range of *M. capensis* ends, both upstream and downstream of the newly discovered localities. Regarding the conservation of the newly discovered population, it is situated

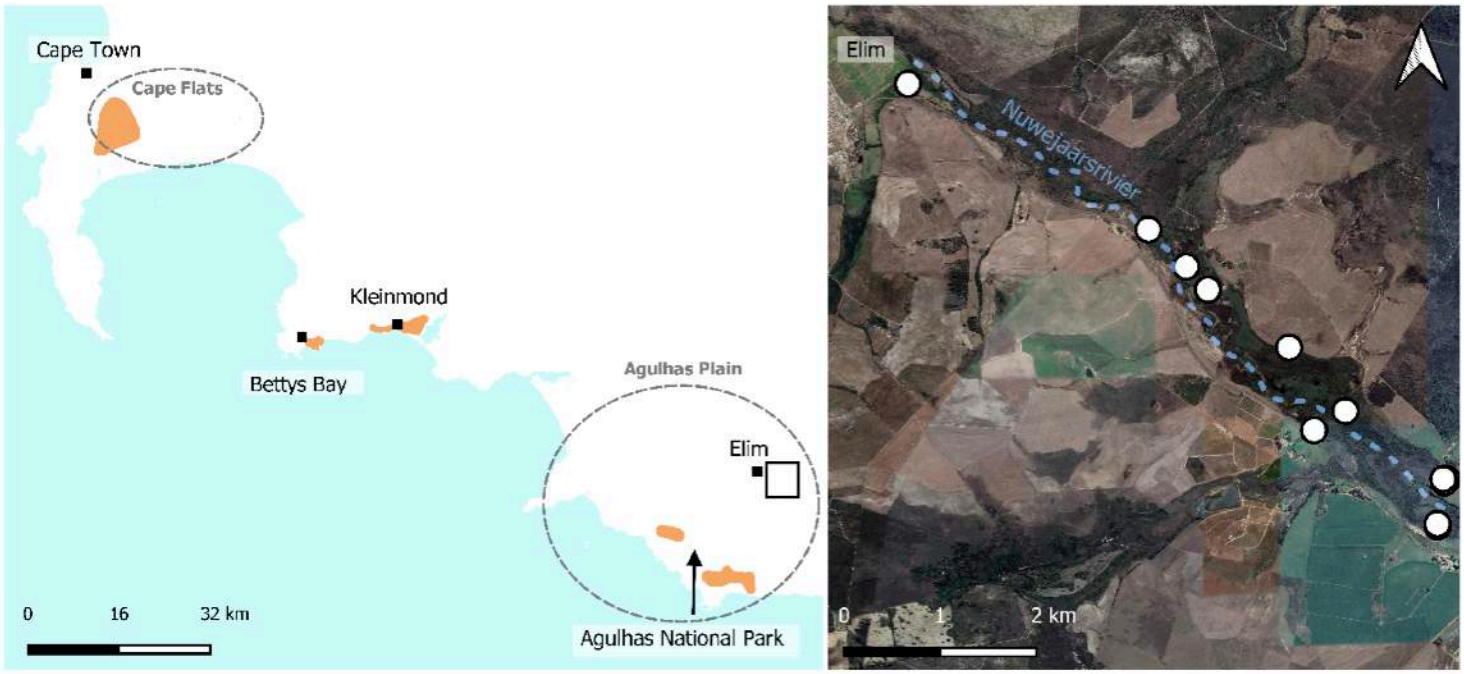



**Figure 1**. (Left) Micro Frog *Microbatrachella capensis* distribution as of the last IUCN assessment in 2017. The five known populations are indicated by orange polygons. Dashed ellipses indicate the relative positions of the Cape Flats and Agulhas Plain, respectively, and the box on the latter indicates the location of the image on the right. (Right) An orthophoto of the Nuwejaars Wetlands, with white dots indicating sites along the river where the presence of *M. capensis* has been confirmed.

within the Nuwejaars Special Management Area (SMA), meaning the species will ultimately be included in a conservation management plan. The biggest threat to this population appears be the invasion of alien trees in their breeding habitat. The Nuwejaars SMA facilitates an ongoing alien plant clearing program which should ultimately improve the quality of *M. capensis* habitat along the river.

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