

Observations on aspects of the biology of *Pseudocrenilabrus philander* (M. Weber, 1897) from a subtropical South African impoundment

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Abstract

Investigations were made into the biology of the small cichlid, *Pseudocrenilabrus philander*, from a newly formed man-made lake in the Northern Province, South Africa. Aspects including population composition, habitat and food preferences as well as condition, fecundity and breeding behaviour are discussed.

Introduction

Although a large number of small cichlid species occur on the African continent, only a few are found in South African waters. Of these, *Pseudocrenilabrus philander* (Weber, 1897) or Southern mouthbrooder, is one of the most abundant and widespread, being highly adaptable to a wide range of environmental conditions. It occurs mostly in the littoral zones of natural and man-made water bodies in this region. During prolonged periods of drought, which often occur in South Africa, *P. philander* is usually one of the last species to succumb to these adverse conditions. It is also one of the first to inhabit newly impounded water bodies.

The geographical distribution of *P. philander* in Africa is extensive, stretching from the Zaire River Basin southwards down to the Orange River catchment (Daget et al., 1991). North of the Zaire River System, this species is replaced by *P. multicolor* (Daget et al., 1991).

Sexually active males of *P. philander* are usually very colourful. Such males, when freshly caught, possess an overall bluish-green iridescence with an electric-blue line below the mouth. The dorsal fin, anal fin and upper ridge of the caudal fin are all fringed in red. Female fish and juveniles are greenish-grey dorsally with as many as 10 vertical dark bars on the trunk. The largest specimen caught during the present investigation was a male of 68.8 mm standard length (SL). The scale count of *P. philander* is: 11 = 27-30; fin counts are: D = XIII-XV 9-11. A = III 8-9 (Jubb, 1967).

The present study, which took place from 1988 to 1989, deals with the biology of *P. philander* from Lake Middle Letaba in the Northern Province Lowveld (Fig. 1). This interesting small cichlid, together with juveniles of the Mozambique tilapia, *Oreochromis mossambicus* (Peters, 1852), constitutes a large proportion of the total number of fish caught by subsistence fishermen along the shores of this lake.

Materials and methods

Fish were collected from four localities (Fig. 1) with the aid of a Moore-type electrical fish shocker (Moore, 1968) and, where possible, with a 10 m-long Capenta beach seine net (5 mm stretched mesh size). Locality 1 included a section of the dam wall and a

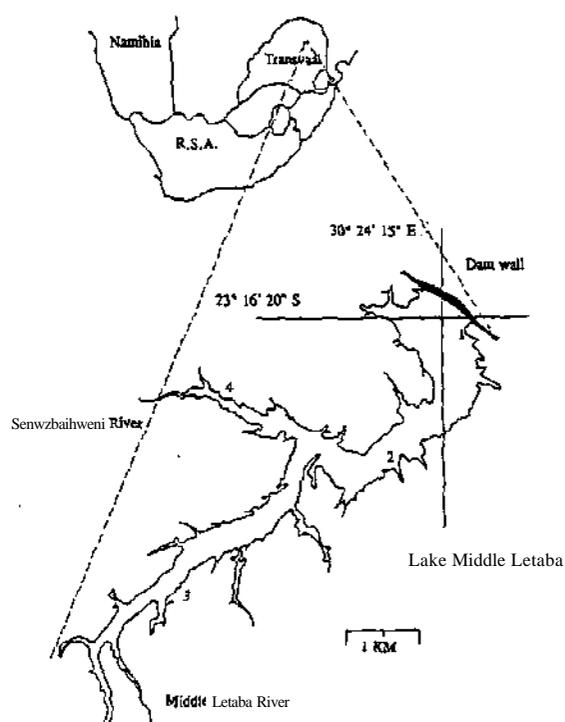


Figure 1

Geographical position of Lake Middle Letaba indicating the four representative fish sampling localities along its shores

substrate consisting of a sandy gravel texture overgrown with *Potamogeton* during most of the year except winter, when this aquatic macrophyte tends to die off. Locality 2 was adjacent to a rocky outcrop on the eastern shore of the lake and its substrate was strewn with rocks of various sizes. Both localities are exposed to wave action. The substrate of Locality 3 consisted of a soft muddy structure, containing large quantities of organic material, mainly derived from cow dung. This location was characterised by fallen trees, reed beds and extensive growths of aquatic macrophytes, dominated by *Utricularia* spp., *Potamogeton* spp. and *Nymphaea lotus*. The fourth locality had an extensive rocky bottom interspaced with sand-filled gullies. A dense cover of floating, waterloving grass was present during most of the year. All localities were

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