
Natural History Notes

Interesting new record and further notes on the occurrence of marine fish in Nyamithi Pan, Ndumo Game Reserve, South Africa

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Nyamithi Pan, situated in Ndumo Game Reserve, South Africa, is a floodplain pan near the confluence of the Usuthu and Pongolo rivers. It lies approximately 75 km from the Indian Ocean. The floodplain and its fish have been extensively surveyed (Coke & Pott 1970; Kok 1980; Merron *et al* 1993, 1994, 1994a, 1994b, 1994c, 1994d; Pooley 1975) and there are many records of the occurrence of marine fish in this and other pans of the Pongolo and Usuthu rivers. These are, however, usually isolated instances of individual fish being caught and attracting attention.

Many of the records (Table 1) are old and the Pongolo and Usuthu river systems have been markedly modified in the last few decades through the construction of dams, particularly the Pongolopoort dam, agriculture and water abstraction. Fishing, mainly gillnetting, has intensified greatly and several exotic fish, particularly *Cyprinus carpio* (carp) have become well established in many Pon-

golo floodplain pans (*pers. obs.*) in the last few years.

More recent, although erratic, fish monitoring in Nyamithi Pan by EKZN Wildlife staff has yielded some interesting records (Table 2) confirming the continued immigration of some species into the system and also added a new species record for the pan and river systems. More formal, though intensive, fish sampling (Merron *et al.* 1993, 1994a, 1994b, 1994c) failed to show the presence of any marine fish in Nyamithi. In 1999, tourists reported a dead shark in Nyamithi Pan and on investigation it was found to be a *Carcharhinus leucas* of almost two metres. Shark fin sightings had been reported for several months but the reason for its death was not clear. There are often well over one hundred *Crocodylus niloticus* (Nile crocodile) in the pan but the dead shark was mostly intact and it was reported that an adult hippo appeared to be guarding the car-

Table 1
Historical records of the occurrence of marine fish in the Pongolo and Usuthu river systems

Species	Name	Place	No.	Reference
<i>Pristis microdon</i>	Sawfish	Pongolo River	1(?)	Campbell 1969
<i>Carcharhinus leucas</i>	Zambezi shark	Confluence of Pongolo/Usuthu	1(?)	Crass 1964
<i>Megalops cyprinoides</i>	Oxeye tarpon rivers and pans	Pongolo & Usuthu	Several	Crass 1964 Coke & Pott 1970 Merron <i>et al.</i> 1994a
<i>Mugil cephalus</i>	Bull mullet	Nyamithi pan	Two	Pooley 1975
<i>Acanthopagrus berda</i>	River bream	Pongolo river and pans	Several	Pooley 1975 Bruton & Cooper 1980
<i>Microphis fluviatilis</i>	Pipefish	Usuthu river	?	Merron <i>et al.</i> 1993

Table 2
Recent records of marine fish in Nyamithi pan, Ndumo Game Reserve

Species	Name	Number	Year
<i>Carcharhinus leucas</i>	Zambezi shark	1	1999
<i>Megalops cyprinoides</i>	Oxeye tarpon	1, 9	1996, 2002
<i>Acanthopagrus berda</i>	River bream	1, 1	1998 & 2000
<i>Elops machnata</i>	Springer	9	2002

cass and was seen to drive away any crocodiles which approached the dead fish.

One *Megalops cyprinoides* was caught in 1996 while, early in 2002, nine more were caught and many more were seen breaking the surface in the manner typical of the species (Skelton 1993). In 1998, one *Acanthopagrus berda*, of 420 mm (fork length), was caught, tagged and released and another, smaller, *A. berda* was caught in 2000 (Tables 1 & 2).

In early 2002, a total of nine *Elops machnata*, of fork lengths 650–800 mm, were caught and released. Several more were seen and the fish were in good condition. These fish represent the first records of this species in these river systems. This species has often been recorded in estuaries, but a survey of the literature (Bruton & Kok 1980; Skelton 1993; van der Elst 1998; Whitfield 1998) yielded no mention of *E. machnata* appreciably upstream of estuaries, despite their ability to survive in fresh water.

All the recent Nyamithi records were made during relatively low water levels, several months after any flooding episodes. It seems likely that the fish enter the pan during high flood levels and then stay there for extended periods. The fish were released alive and so not examined internally for gonad condition.

As the *M. cyprinoides* and *E. machnata* recorded recently were in good condition and the species were still apparently abundant several months after they had immigrated, it appears that they compete well with the *Hydrocynus vittatus* (tigerfish) which were abundant in the pan at the time. They also appear to survive well in spite of high densities of large *C. niloticus*. No *C. carpio* have

yet been recorded in Nyamithi, though they are abundant in Namanini Pan, just outside the reserve. It is possible that they fall easy prey to *C. niloticus*.

The most recent records are the first evidence of large scale sustained immigration of *M. cyprinoides* and *E. machnata* far up rivers. Using Nyamithi as an indicator of the system's fish species composition, it appears that despite their modifications, the immigration of marine species to the Usuthu and Pongolo river systems has not stopped and may have increased in some instances.

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