

The ichthyoplankton of the Kromme River estuary

R. Melville-Smith

Sea Fisheries Institute, Private Bag,
Sea Point 8060

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There is a paucity of literature regarding the ichthyocomponent of South African estuarine plankton. Apart from a two year in-depth study of the ichthyoplankton of the Swartkops estuary (Melville-Smith & Baird 1980) no other reports have been found in the literature.

Ichthyoplankton was sampled at 12 stations in the Kromme River estuary (34°08'S, 24°50'E) during January, June and November of 1978 (Fig. 1). The sampling methods were the same as those described by Melville-Smith & Baird (1980). A total of 12 larval fish families were recorded and, of these families, 12 species have been identified (Table 1).

The ichthyoplankton of the Kromme estuary appears to be very similar to that of the Swartkops estuary, only one Tetraodontid species being taken from the Kromme but not from the Swartkops. Six larval fish species recorded in relatively low numbers in the Swartkops estuary, were not found in the Kromme estuary. These were *Elops machnata*, *Solea bleekeri*, *Platycephalus indicus*, *Clinus superciliosus* and one species each of the Pomadasyid and Blenniidae families. It is possible that, with more intensive sampling, the presence in the Kromme estuary of these species may have been proved.

As with the Swartkops estuary, the warm months (in this case November and January), were the richest in terms of both larval fish abundance and numbers of species (Table 2), whereas low numbers of only five species were caught during winter (Table 2).

Numerically, on the basis of the results obtained in this study, (Table 2) higher larval fish densities were found in the Kromme estuary than in the Swartkops (Melville-Smith 1978). Three species, *Gilchristella aestuarius*,

Table 1 Larval fish species in the Kromme estuary during January, June and November and the stations at which they were present each month

Species	January*	June	November
<i>Argyrosomus hololepidotus</i>	1,2		
<i>Etrumeus teres</i>	1,3		
<i>Gilchristella aestuarius</i>	4-10	5-10	3-12
Gobiidae (ex. <i>P. Knysnaensis</i>)	1-10	4	4-12
<i>Hemiramphus</i> sp.	9,10		9,10
<i>Hepsetia breviceps</i>	2,3	7	1,2,3,5,6,12
<i>Heteromycteris capensis</i>	2,3,4		3,12
<i>Monodactylus falciformis</i>	1,2,4	5,11	5,7,8,12
<i>Omobranchus woodi</i>	4,6,7,9,10		5,7,8,9,10,11
<i>Psammogobius knysnaensis</i>	2,3,4		1,2,3,6,11
<i>Rhabdosargus</i> sp.	1	7,11	1,2,3
<i>Stolephorus commersonni</i>	1		11
<i>Syngnathus acus</i>	3,4		
Tetraodontidae	1,2,3		12
Unidentified sp.	1		11

*Excluding Stations 11 and 12.

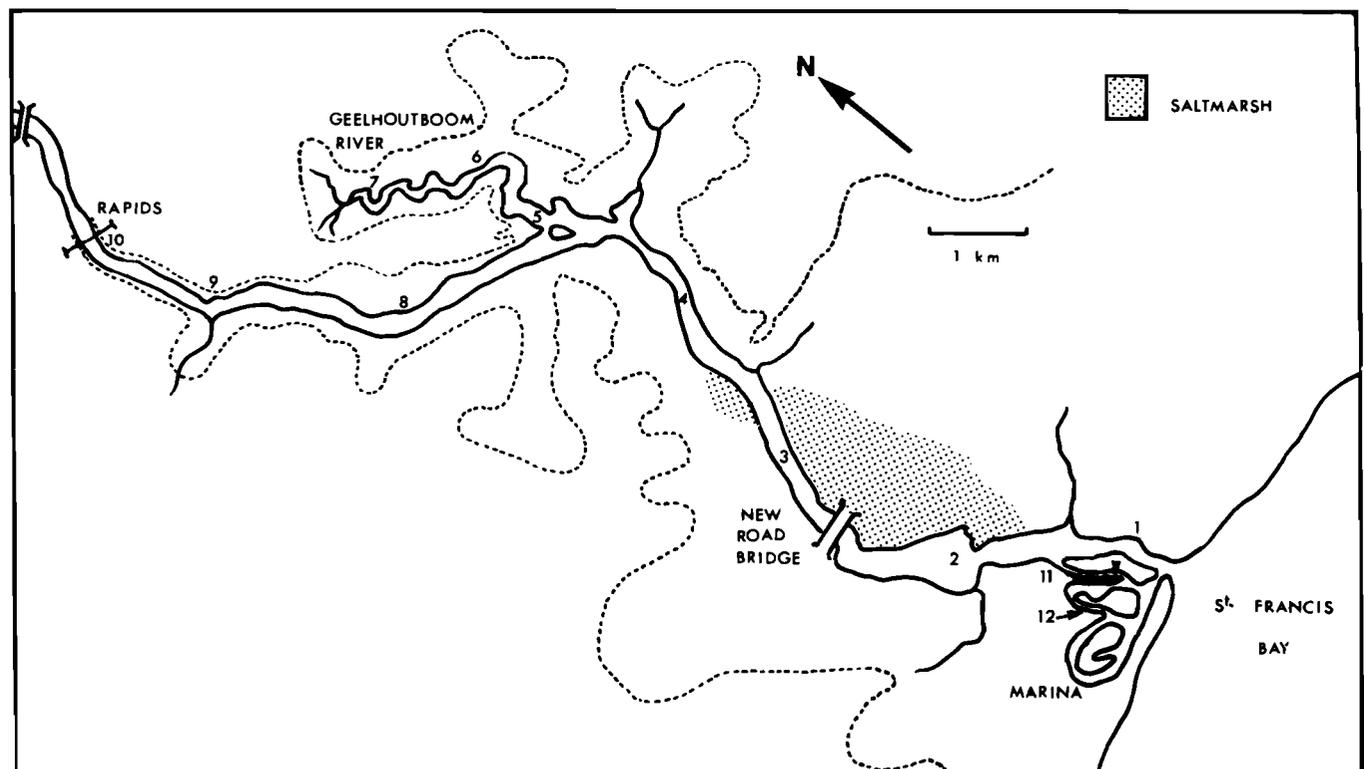


Fig. 1 Map of the Kromme River estuary showing the sampling stations.

Omobranchus woodi and larvae of the family Gobiidae (probably mainly *Glossogobius giuris*) constituted 97,71% and 96,28% of all the fish larvae sampled in January and November respectively. These three species were also the most dominant larvae in the Swartkops estuary (Melville-Smith & Baird 1980). All three species were most abundant in the mid and upper region of the estuary, above Station 5 (see Fig. 1).

In contrast to abundance, number of species recorded was greatest in the mouth and lower estuary, Station 5

Table 2 The mean and maximum number of each larval fish species /m³ water positively sampled during January, June and November 1978

Species	January*		June		November	
	mean	max	mean	max	mean	max
<i>Argyrosomus hololepidotus</i>	0,02	0,02				
<i>Etrumeus teres</i>	0,05	0,05				
<i>Gilchristella aestuarius</i>	9,76	22,23	0,18	0,33	3,63	14,39
Gobiidae (ex. <i>P. Knysnaensis</i>)	2,35	12,90	0,05	0,05	4,09	27,11
<i>Hemiramphus</i> sp.	0,19	0,21			0,04	0,05
<i>Hepsetia breviceps</i>	0,39	0,72	0,03	0,03	0,15	0,26
<i>Heteromycteris capensis</i>	0,03	0,04			0,04	0,06
<i>Monodactylus falciformis</i>	0,02	0,02	0,03	0,03	0,07	0,10
<i>Omobranchus woodi</i>	0,83	2,68			0,53	1,81
<i>Psammogobius knysnaensis</i>	0,11	0,17			0,41	1,52
<i>Rhabdosargus</i> sp.	0,03	0,04	0,06	0,08	0,03	0,03
<i>Stolephorus commersonni</i>	0,02	0,02			0,02	0,02
<i>Syngnathus acus</i>	0,04	0,05				
Tetraodontidae	0,10	0,16			0,02	0,02
Unidentified sp.	0,04	0,04			0,05	0,05
T o t a l	9,82	35,23	0,16	0,38	6,65	41,80

*Excluding Stations 11 and 12.

and below (Table 1). This was expected and was because of the presence of larvae of predominantly marine species (*Argyrosomus hololepidotus*, *Etrumeus teres*, *Hepsetia breviceps*, *Heteromycteris capensis* and *Stolephorus commersonni*) at these lower stations.

Two of the stations (6 and 7) were in the Geelhoutboom tributary and, from the numbers of larvae caught it was apparent that the Geelhoutboom was considerably richer in ichthyoplankton than the main estuary.

During June and November, ichthyoplankton was sampled at an additional two stations (11 and 12) in the Kromme River marina canals (Fig. 1). The results are discussed more comprehensively in Baird (1979), but, as expected, the June sample at these two stations revealed very little ichthyoplankton. In the November sample, however, numerous species were encountered, in essence similar in both composition and quantity to the mouth and lower estuary (Stations 1 to 5).

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