Appendix 1. Taxonomy

Of the 49 species collected, 31 were confidently identified to species level using the resources available (Chapter 3, Section 3.2). Where taxonomic keys were not available, or where the specimens were too damaged for accurate verification, the specimens were recorded to the lowest taxonomic level possible. Where the prominent distinguishing features among these specimens were recorded they have been included in this appendix. However, for many individuals the taxonomic grouping was determined through comparison of “unknowns” in one final sitting at the microscope, ensuring that they all had similar features, with no obvious exceptions. A second opinion from another taxonomically trained colleague (Rebecca Aspden) was sought whilst doing these comparisons to minimise the risk of missing key distinguishing features.

As far as possible, representatives from each species (or group) were photographed. The intention of this was to create a macrofauna “catalogue” where photographs and the distinguishing features could be amalgamated into one useful resource. The catalogue has been included in this appendix, however it does not yet contain the full range of taxonomic groups or species, nor the accompanying descriptions and features. It is currently a “work in progress” but those interested in utilising it are welcomed to contact the author for an updated version or clarification. Additionally, reference collections were established and are currently located in the Coastal Research Group, Department of Zoology and Entomology at Rhodes University, South Africa, and in the Sediment Ecology Research Group, Scottish Oceans Institute at the University of St Andrews, Scotland.
Taxonomic notes

Orbina B

- Only buccal segment is achaeteous.
- Lamella from segment 4.
- No hooks.
- Thoracic section flattened, abdomen more rounded.

Orbiniidae A

- Flail setae in abdominal neuropodia.
- Forked setae in abdominal notopodia.
- Branchiae from 6th setiger.
- Three rows of thoracic hooks present in neuropodia.

Cumacean A

- Periopods 3 and 4 in females have rudimentary exopods.
- Males had well developed exopods on periopods 1 and 2.
- Telsonic somite not produced
- Male with 5 pairs of smooth pleopods
- No freely articulated telson.

Cumacean B

- Much more robust than Cumacean A.
- Hairs present on the pleopods.
- Spines present on the uropods.

Eurydice sp nov.

- Antenna 2 not extending to Pereon 5
- Coxae not produced.
**Basuto sp nov.**

- Lacking an exaggerated “spoon” shaped propodus.
- Anteriorly produced coxae 1 that extends under the jaw, more so than *G. latipes*.

**Exosphaeromatidae sp.**

- Distinctly produced telson and pereonite VII has an elongate process (occasionally)

Classification into feeding type and developmental mode were based on the species, if literature was available, or using broad characteristics of higher taxonomic levels (see below). The aim of the functional analyses in this thesis was to determine, broadly, if upwelling was influencing one feeding group or developmental mode more so than another. Conflict exists in the literature surrounding the preferred method of feeding for some of the taxa particularly when the characteristics were determined using higher taxonomic levels, however, the allocation of feeding type or reproductive mode was made *a priori* using the information available at the time and the best judgement of the author so there was no bias toward a particular result in the analyses.

**References used in addition to those stated in Chapter 3, Section 3.2.**


A.i.caerulea
Decapod juvenile, Birah River
G. benguellana
G. incerta
L.tetraura
N. capense

Anterior foot

laddered setae
Mid-body foot

Genticulate setae

N. capense

Posterior foot
Orbiniidae A
E. latipes
S. capense
T. granulatus
Exosphaeroma sp.
B. cunctator
Caprellid sp.
Cirratulid sp.
Cumacean A female
*Cumacean A male*
Syllidae sp.
E. kensleyi
E. natalensis
G. convoluta
G. latipes
G. psammodytes
S. squamata
Nemertean
Emerita sp.
P. longimanus
T. capensis

Amphipod B
Exosphaeroma sp.