

Biological survey of Sandvis 1, introduction and faunal list

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ABSTRACT

The topography of Sandvis is briefly introduced and changes in the area, based on charts, described. These show that the area has evolved, within 90 years, from an open harbour, suitable for large craft, to an almost completely landlocked generally shallow lagoon.

A faunal list of the aquatic and marinal fauna is given. Excluding the planktonic component a total of 93 invertebrate and 25 vertebrates are recorded.

1 INTRODUCTION

During 1974 the authors were asked by the Nature Conservation and Tourism Division to undertake a survey of the marine invertebrates and fishes of Sandvis, to establish *inter alia* its ecological importance and need for protection. The results of this survey will be published as a series. Part 1 describes the area in broad detail and contains a faunal list of the marine animals. Part 2 will deal in detail with the distribution and numbers of intertidal invertebrates. Subsequent reports will consider the distribution and biomass of subtidal invertebrates, the biology of the fishes, and the physical parameters.

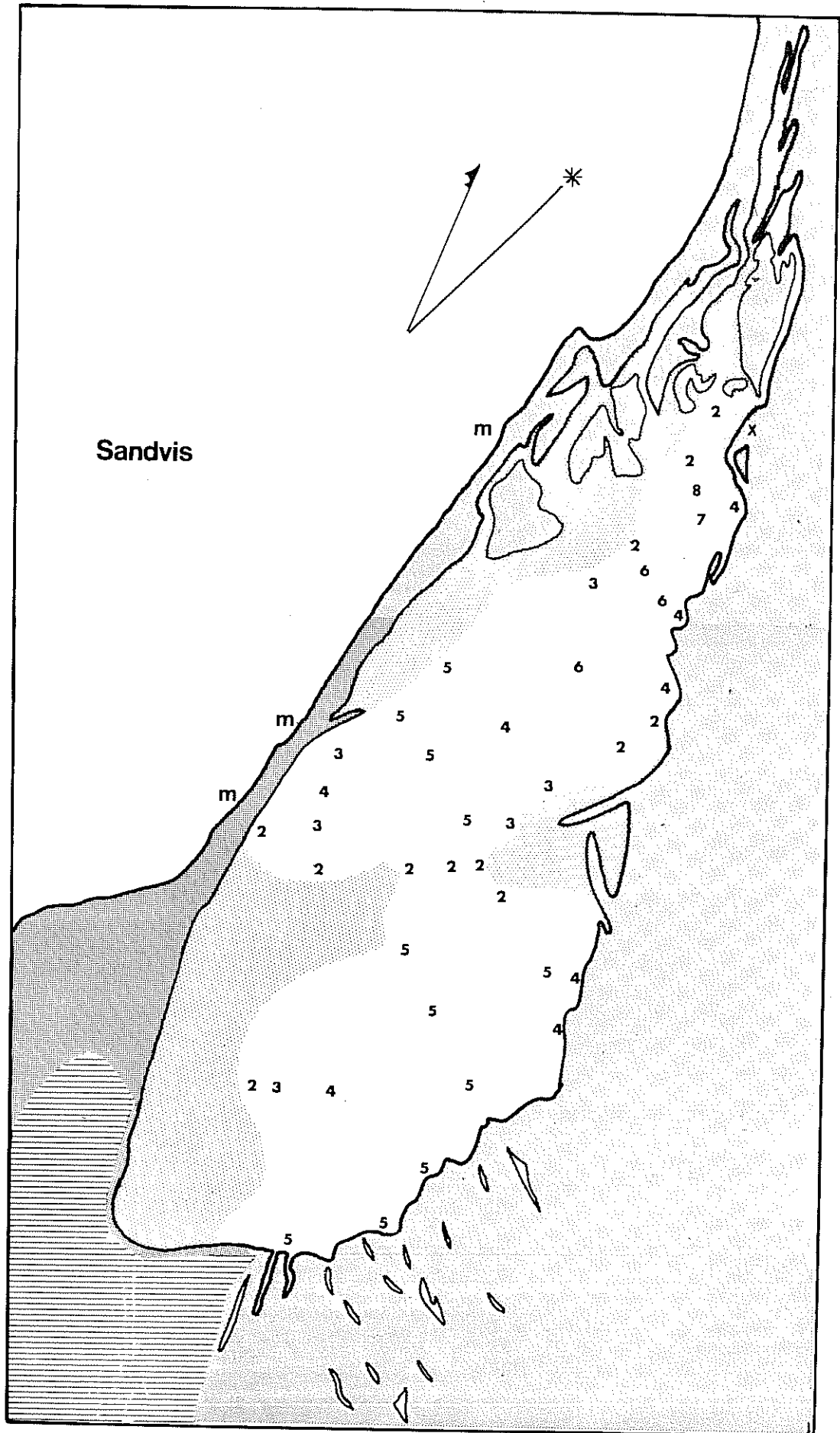
Sandvis, or Sandwich Harbour (formerly Port D'Ilheo) is a large body of generally shallow water situated at approximately 23°20'S 14°25'E, some 50 km south of Walvis Bay. It is 11,1 kilometres long by 3,3 kilometres wide at its widest part. (fig. 1), with the long axis running roughly north-south. To the east the lagoon is bounded by high sand dunes of the central Namib system, along much of the eastern edge these dunes run directly into the lagoon. In the south-east corner the line of dunes is at an angle to the coast line and the dunes are separated by pools of seepage water and channels only open to the lagoon at high tide. The western side consists of a sand bar separating the lagoon from the sea. There are extensive shallows on the lagoon side of most of the sand bar. Although the lagoon has been known to be completely closed off to the sea (*de la Bat pers commun*) this has not occurred during the survey. The position and form of the mouth, however, is continually changing. In general it varies from a roughly central position to an opening at the northern half.

An extensive damp salt pan lies to the south of the lagoon, which appears devoid of macroscopic life apart from the insect *Heterocerus peringueyi*. The northern end is a large area of mud flats interspersed with pools and drainage channels. Above H.W.N. there are extensive beds of the halophyte *Arthrocnemum* and *Sporobolus* grass.

The high dunes of the land protect Sandvis from easterly winds. The dominant winds (at least 6 hours on 90% of days) are southerly, however, and the salt pan provides no protection. This wind combined with the shallow water results in a very rough sea on most afternoons. The temperature within the lagoon due to solar warming is always higher than the sea outside. The degree of warming is dependant on several factors: apart from sunshine, air temperature, fog, evaporation and the time of high tide are all important. In general the temperature within the body of the lagoon is some 5-6°C above the ambient sea temperature in summer and 2-3°C in winter. In the semi-isolated pools of the northern mud flats and gulleys near the south end, much higher temperatures can occur. Sea temperatures, measured at the mouth on an incoming tide, normally range between 12°C and 16°C; however, since the low water temperatures are dependant on wind induced upwelling, wide variations can occur, and sea temperatures in the area within the range of 10°C and 21°C occur.

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Map I.

Sandvis, General features, mouth not shown. Dark stippling: dry land. Light stippling: less than 1 metre L.W.S.T. Horizontal hatching: salt pan. M: alternate positions of mouth. X: Anigab. Depths in metres. Due to scour, depths up to 8 metres may occur in the vicinity of the current mouth.

Initial water analysis suggest that underground seepage of freshwater has little effect on salinities and that Sandvis is best considered as a marine lagoon.

The higher temperature of Sandvis relative to the surrounding coast line has resulted in a number of animals becoming established outside their normal range.

Sandvis was a well known anchorage in the days of sail and is believed to have been used as a careening base by pirate vessels. It was certainly used for this purpose later by whalers both British and American. Near the end of the 19th century there was an ill-fated attempt to establish a meat canning factory there, while the Cape Town firm of de Pass & Spence operated a fishing station for many years. Later a company held the rights to collect guano.

Today it is difficult to imagine Sandvis being used as an anchorage for large vessels. The topography of Sandvis has however, undergone marked changes in the last 100 years. When surveyed in 1880 by Lt. C.F. Oldham in H.M.S. *Sylvia*, the northern end of the lagoon was an open bay with a depth of 5 fathoms. By 1892 the sandspit had extended northwards considerably and a bar of 10 foot was reported at the mouth. Later silting in the northern end continued. This was probably accelerated during the tenure of the guano company since, to increase the roosting areas and thus the guano yield, they used sandpumps to create artificial sand banks.

Due to its isolation very little marine biological work has been done at Sandvis. The only previous work was Lucks' (1970) study on the steenbras, *Lithognathus aureti*. Nothing was known regarding the species composition of the invertebrate fauna.

Unfortunately during the course of this survey a short list of marine animals, randomly collected at Sandvis was published (Stuart 1975). The work has many inaccuracies and areas are vaguely defined. This is especially true of the beach which includes items washed up. Most serious however, is that in the mollusc list certain species are listed as dead shells, implying, to anyone not familiar with the area, that all other animals were collected alive in the habitats listed. This is certainly not always true. Among other dubious records Stuart lists *Ostrea atherstonei* Newton from the sand bar. For a living animal this would be both geographically and ecologically an exceptional record. We believe this record to refer to dead, beach rolled valves of *Hinnites* sp. which are common on the sand bar but having their origin well away from Sandvis.

The present faunal list records intertidal and benthic invertebrates and aquatic vertebrates. In addition parasitic animals and some of the larger planktonic invertebrates are listed but no attempt has been made to include the copepods and other smaller zooplankton. Birds, although in many cases, important in the marine ecosystem of the area, are not included. A detailed report on the birds has recently been published (Berry & Berry 1976). In all cases only material collected alive, and seen by us is listed.

2 COLLECTING AREAS AND METHODS

2.1 Hard substratum

The main hard substratum consists of three ridges of rock projecting from the dunes and exposed at low water. Other hard substrata for settling organisms are an iron cylinder

north of the rocks, and the old wreck site to the south. This last consists of a scattering of iron work, bricks, bottles, cattle bones etc. lying between H.W.N. and L.W.S. It is assumed that these are connected with the illfated meat factory. In certain areas a secondary hard substratum fauna occurs where animals have settled on large *Perna* which themselves are anchored in mud or sand.

2.2 Sand

Coarse sand of marine origin occurs on the beach to seaward of the sand bar and in places on the lagoon side of the bar, especially in the region where the current mouth is. In the mouth area and outside the bar the sublittoral sand is very hard packed, probably by a combination of wave action and scour on the ebbtide.

Finer sand originating from the dunes occurs along much of the eastern edge. At the southern end, wind blown sand of dune origin forms a low ridge between the pan and the lagoon and overspills into the lagoon due to the prevailing wind.

2.3 Mud

In the main lagoon mud occurs wherever the depth exceeds about 2 metres L.W.S. These areas are referred to as green mud, the bottom consisting of very soft mud matted together with the tubes of amphipods of two species of *Ampelisca*.

The northern portion of the lagoon forms extensive mud flats exposed at low water except for semi-isolated pools and drainage channels. The higher portions of the mud banks are covered with dense growths of *Aithrocnemum* and *Sporobolus*, the former sheltering vast numbers of *Assiminia* snails. Unlike the green mud areas, this mud is very hard packed and often contains large numbers of dead bivalve shells, especially *Dosinia* and *Lutraria*.

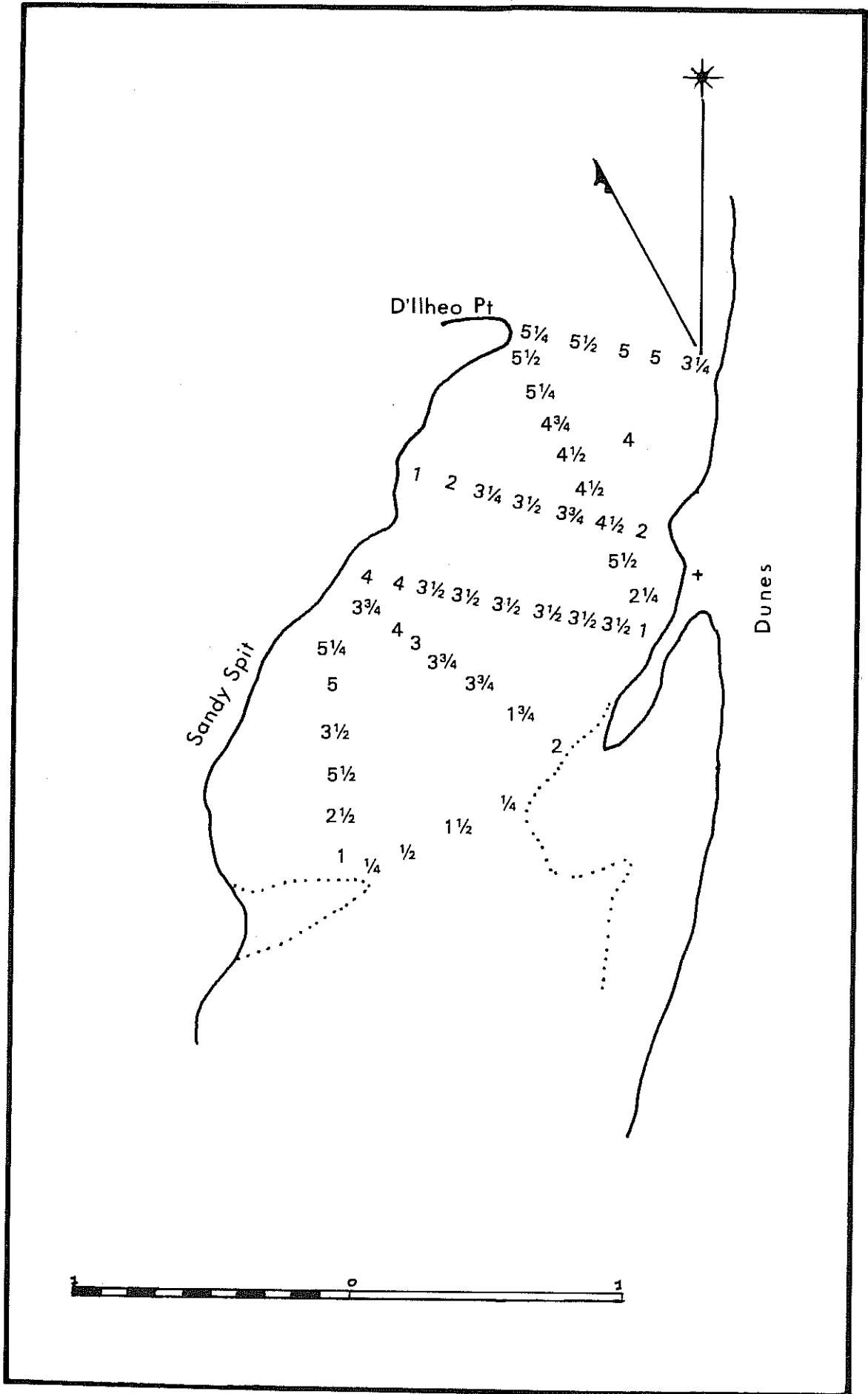
2.4 Sand-mud mixtures

There are extensive areas of the lagoon where the depth is less than 2 metres L.W.S. Most of these areas consist of sand-mud mixtures. The physical constitution of the substratum varies in different areas due to influence of scour action, aeration and sand/mud ratios. This has resulted in differences in the dominant fauna of the different areas. They have been named for their dominant faunal constituent. (Map 3).

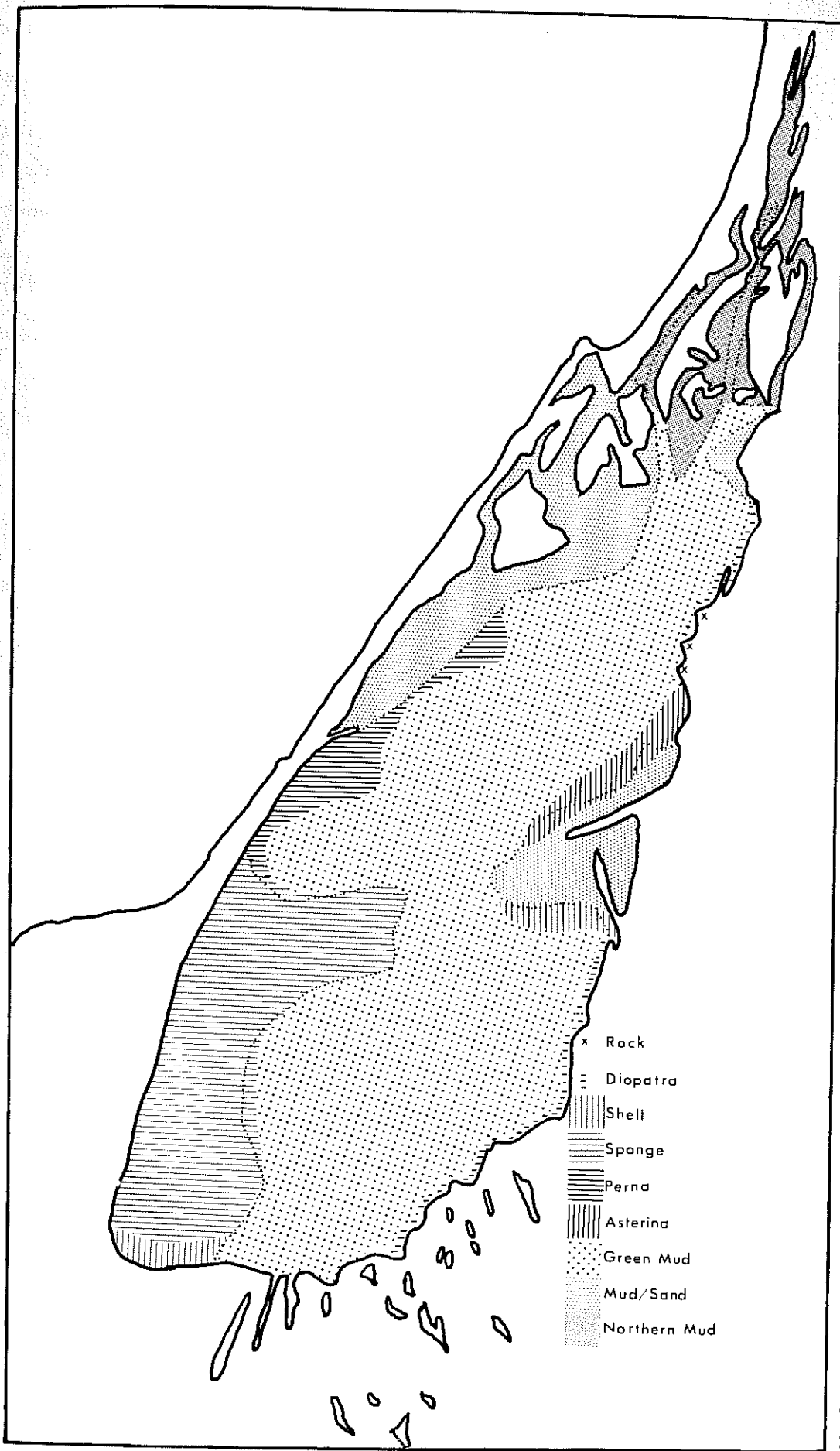
2.5 Shell

At the southern end, and to the south of the large Eastern bank there are areas of dead shell, mostly *Dosinia*. These are presumably the results of earlier mass mortalities.

Wherever possible collecting was done by hand, either directly on hard substratum or by means of digging and sieving on soft substratums. Below L.W.S. most collecting was done by dredging from a dinghy. Fish were collected by gillnetting, seining and hand nets, depending on habitat.



Map 2.
Sundvis. Based on the original chart of the survey by H.M.S. Sylvia 1880. Depths in fathoms, scale in miles. X: Anigab.



Map 3.

Sandvis. Showing main marine ecological areas. Shell: areas of broken shell, large numbers of *Anirotidae* and *Tapes*. Sponge: *Ciocalypia* and associated boring and surface organisms. *Perna*: *Perna perna* with attached weed, smaller animals in weed. *Asterina*: *Asterina ludwiziana* and pelecypoda. Green mud: *Amphelicta* spp. dominant. Mud sand: low biomass, pelecypoda and polychaeta. Northern mud: high biomass, pelecypoda and polychaeta.

This map was prepared by the author of this report, using data from the Sandvis Biological Survey, 1968-1970. Scale in miles. X: Anigab.

3 ACKNOWLEDGEMENTS

The survey was initiated by the Director of Nature Conservation and Tourism with the active co-operation of his staff. We especially acknowledge the help of Messrs. John Dixon and Charles Clinning, who, if not "hewers of wood and drawers of water", certainly provided these two very necessary items along with whole-hearted co-operation in many ways.

The field work has been made possible with the co-operation of the Directors of the South African Museum and the State Museum. In addition to Messrs. Clinning and Dixon, the following, all members of the State Museum staff assisted in field work: Dr. M.L. Penrith and Messrs. A. Simoes & E. Makgoabone. We are grateful to Dr. N.A. Millard for the identification of some Coelenterata and Mrs. J. Day for cumacean identifications. Copies of various interesting old charts of Sandvis, were kindly supplied by the Hydrographer of the South African Navy, Capt. A. Fawthrop.

The paper is published with the permission of the secretary for National Education.

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SPECIES LIST

SPECIES	OCCURRENCE AT SANDVIS	DISTRIBUTION
MOLLUSCA		
GASTEROPODA		
<i>Assiminea</i> cf. <i>sinensis</i> Nevill	Very abundant in northern weed-flats, especially in <i>Arthrocnemum</i> Taxonomic position very uncertain	Natal to Port Alfred; Hong Kong; Sumatra
<i>Bullia digitalis</i> Meuschen	On sandbar at lagoon mouth	Port Elizabeth to Lüderitzbucht
<i>Bullia laevissima</i> (Gmelin)	On sandbar at lagoon mouth; dredged from mud in channel near mouth	Port Elizabeth to Lüderitzbucht
<i>Epitonium kraussi</i> (Nyst)	Present in <i>Perna</i> area near mouth, 8 m	Natal to False Bay; Möwe Point; Baia dos Tigres
<i>Gibbula benzi</i> (Krauss)	Fairly common in <i>Perna</i> area near mouth, 8 m	East London to Saldanha Bay
<i>Littorina knysnaensis</i> Philippi	Juveniles abundant on rocks, adults abundant in weeds at northern end	Natal to Rocky Point, S.W.A.
<i>Marinula tristanensis</i> Connolly	Common in weed beds at northern end	Camps Bay, Cape; Tristan da Cunha; Gough Island; Dassen Island;
<i>Melampus acinoides</i> Morelet	Common in sand/mud at bases of weed, especially <i>Arthrocnemum</i>	Port Alfred to False Bay
<i>Nassarius kochianus</i> (Dunker)	Fairly common in starfish area; common in channel near mouth; in mud around rocks	Port Alfred to Table Bay; Rocky Point, S.W.A.
<i>Nassarius plicatellus</i> (Adams)	Fairly common starfish area	Table Bay to Mocamedes
<i>Natica vittata</i> Gmelin	Common in mud around rocks; dredged from mud in channels and from <i>Perna</i> area	Morocco to Senegal
<i>Patella granatina</i> Linnaeus	Present on rocks	Agulhas to Rocky Point, S.W.A.
<i>Patella granulata</i> Linnaeus	Fairly common on rocks	Zululand to Mocamedes
<i>Siphonaria capensis</i> Quoy & Gaimard	Abundant on rocks	Natal to Rocky Point, S.W.A.
MOLLUSCA		
Pelecypoda		
<i>Aulacomya ater</i> (Molina)	Rare on rocks; fairly common in starfish area attached to algae	Port Alfred to Rocky Point; Straits of Magellan; Falkland Islands; Kerguelen Island
<i>Charomytilus meridionalis</i> (Krauss)	Present on rocks; many juveniles attached to algae 8 m	Port Alfred to Möwe Point
<i>Donax serra</i> (Chemnitz)	Rare in sandbar at mouth; abundant on sea-beach	Port Elizabeth to Baia dos Tigres
<i>Dosinia lupinus</i> Linnaeus	Abundant in mud flats and sand at northern and southern end; present in starfish area and <i>Perna</i> area	Bushmans River to Walvis Bay; Baia dos Tigres to Senegal
<i>Gastrano matadon</i> (Gmelin)	Present in northern mud flats	Inhaca Island to Still Bay; West Africa
<i>Gregariella barbatella</i> (Cantraine)	Rare on rocks and in algal area	Natal to Cabo Negro, Angola; Mediterranean
<i>Lepurimetis hanleyi</i> (Dunker)	Abundant in northern mud flats	Known as Pleistocene fossil from Redhouse, Knysna, Sedgfield; taxonomic position uncertain
<i>Lutraria lutraria</i> (Linnaeus)	Common in coarse sand at southern end; dead <i>in situ</i> at northern end	Natal to Lüderitzbucht, Mediterranean; possibly West Africa

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<i>Perna perna</i> (Linnaeus)	Abundant on rocks; many juveniles on algae at 8 m; in mud channel at northern end and in starfish area	Mocambique to Table Bay; Yzerfontein; Meob Bay to Mocamedes; Mediterranean; West Africa; Brazil; Straits of Magellan; Red Sea
<i>Petricola bicolor</i> Sowerby	Fairly common amongst barnacles on rocks; in rusty iron ruins of wreck	Inhaca Island to Walvis Bay
<i>Semimytilus algosus</i> (Gould)	Abundant on rocks; on algae at 8 m	Mcob Bay to Angra Fria, S.W.A.; Ecuador; Chile; Juan Fernandez Island
<i>Tapes corrugata</i> (Gmelin)	Common on sandbar at mouth; in mudflats at northern and southern end; rare on rocks; fairly common in starfish area and amongst algae	Natal to Rocky Point; Mediterranean; West Africa to Angola
<i>Tellina trilatera</i> Gmelin	Present on sandbar at mouth; fairly common on sea-beach	Port Alfred to False Bay; Saldanha Bay

BRACHIOPODA

<i>Discinisca tenuis</i> (Sowerby)	Present on rocks; abundant in <i>Perna</i> area	Walvis Bay to Möwe Point; Chile; Peru
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ECHINODERMATA

<i>Amphipholis squamata</i> (Delle Chiaje)	Fairly common in starfish area	Mocambique to Lüderitzbucht
<i>Asterina luderitziana</i> Döderlein	Abundant in channel and starfish area, present on <i>Perna</i> in channels	Lüderitzbucht to Torra Bay
<i>Ophtothrix triglochis</i> Müller	Fairly common in starfish area	East London to Lüderitzbucht
<i>Parechinus angulosus</i> (Leske)	Fairly common in starfish area	Zululand to Rocky Point

**ARTHROPODA
INSECTA**

<i>Heterocerus peringueyi</i> Grouvelle	Abundant in upper layer of mud/organic detritus in northern mud flats	Port Alfred to Olifants River
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POLYCHAETA

<i>Boccardia polybranchia</i> (Haswell)	Abundant in crevices in rocks and in mud flats at low tide	Cape to S.W.A.; Subantarctic; Australia; New Zealand; Japan; Mediterranean; Europe
<i>Cirriformia tentaculata</i> (Montagu)	Abundant in mud banks at northern and southern end	Mocambique to S.W.A.; Europe to West Africa; Indo-Pacific
<i>Diopatra neopolitana neopolitana</i> Della Chiaje	Abundant in northern and southern mud flats; from mouth to sand dune bases	Natal; S.W.A.; Mediterranean
<i>Eulalia sanguinea</i> Oersted	Common in starfish area	Mocambique to Cape; Rocky Point; cosmopolitan in tropical and temperate waters
<i>Glycera tridactyla</i> Schmarda	Present in mud banks	Mocambique to S.W.A.; Mediterranean to West Africa; Tristan da Cunha; Madagascar, Persian Gulf; Japan
<i>Harmothoe aequiseta aequiseta</i> (Kinberg)	Fairly common in starfish area	Natal to S.W.A.
<i>Lumbrineris tetraura</i> (Schmarda)	Present in <i>Perna</i> area	Natal to S.W.A.; cosmopolitan in tropical and temperate waters
<i>Nephtys hombergi</i> Savigny	Common in southern mud banks, and sand bank close to sea beach	Natal to S.W.A.; Norway; Mediterranean to Angola
<i>Nereis (Neanthes) succinea</i> Frey & Leuckart	Fairly common in <i>Perna</i> and starfish areas 8m	Natal to S.W.A.; North Sea; North and South Atlantic; Pacific
<i>Nereis (Nereis) falsa</i> Quatrefages	Common in mud banks	Natal to S.W.A.; Mediterranean to West Africa; Madagascar
<i>Palaenotus chrysolepis</i> Schmarda	Present in <i>Perna</i> area	Natal to S.W.A.; Madagascar; Australia; Chile; California to Alaska
<i>Phyllodoce castanea</i> (Marenzeller)	Present in <i>Perna</i> area	Mocambique to Rocky Point; Indo-Pacific
<i>Phyllodoce schmardei</i> Day	Fairly common in northern mud banks	False Bay
<i>Platynereis dumerillii</i> (Audouin & Edwards)	Present in <i>Perna</i> area; fairly common in starfish area	Natal to S.W.A.; cosmopolitan in tropical and temperate waters
<i>Pseudonereis variegata</i> (Grube)	Common amongst <i>Perna</i> on rocks	Mocambique to S.W.A.; circumtropical
<i>Scolecopsis squamata</i> (Müller)	Taken in plankton	Mocambique to S.W.A.; Mediterranean to West Africa; Indo-Pacific
<i>Scoloplos (Scoloplos) sp.</i>	Taken in plankton	
<i>Syllidea armata</i> Quatrefages	Present in <i>Perna</i> area	Cape to S.W.A.; Mediterranean to West Africa

POLYZOA

Electra verticillata (Lamouroux) Abundant on algae on *Perna* East London to Rocky Point

PORIFERA

Ciacalypta alleni de Laubenfels Abundant in patches in southern shallow end of lagoon Durban to Lüderitzbucht
Hymeniacedon perlevis (Montagu) Common on rocks and amongst ruins of wreck East London to Lüderitzbucht

CRUSTACEA
CIRRIPIEDIA

Balanus amphitrite Darwin Common on rocks and in *Perna* area near mouth Mocambique to Cape
Chthamalus dentatus Krauss Abundant on rocks Mocambique to Cape; Lüderitzbucht to tropical West Africa

CRUSTACEA
CUMACEA

Upselaspis caparti (Fänge) Common in plankton; taken from stomach contents of *Argyrosoma* Walvis Bay plankton

CRUSTACEA
MYSIDACEA

Mesopodopsis slabberi van Beneden Common in plankton; taken from stomach contents of grebe and *Trachurus* Transkei to Lüderitzbucht

CRUSTACEA
LEPTOSTRACA

Nebalia capensis Barnard Fairly common in algal area; taken in plankton False Bay to Orange River Mouth
Nebalia ilheoensis Kensley Taken from stomach contents of *Argyrosoma* So far known only from Sandvis

CRUSTACEA
COPEPODA (Parasitic forms only)

Brochiella lithognathae Kensley & Grindley From *Lithognathus aureti* Table Bay; Rocky Point
Caligus engraulidus Barnard From *Mugil cephalus*; *Hypacanthus amia*; free-swimming in plankton Port Elizabeth
Caligus sp. On *Diplodus sargus*; *Lithognathus aureti*; *Argyrosoma hololepidotus*
Pandarus bicolor Leach From *Triakis megalopterus* Durban to Table Bay

CRUSTACEA
ISOPODA

Eurydice langicornis (Studer) Common in sea-embayment where new mouth is forming False Bay to Lüderitzbucht
Exosphaeroma laeviusculum (Heller) Between mytilids on rocks Cape Peninsula to Lüderitzbucht
Idotea indica H.M. Edwards Present amongst algae 8 m Table Bay to Rocky Point
Nerocila orbignyi (Guérin-Meneville) Free-swimming in plankton; parasitic on *Mugil*, *Thyrssites* Agulhas to St. Helena Bay; North Africa
Niambia truncata (Brandt) Abundant in *Arthrocnemum* and other weed patches under bushes along shore Port Elizabeth; southern Cape; Namaqualand; Walvis Bay; Okahandja
Pontogeloides latipes Barnard Free-swimming in pools; burrowing in detritus; common in sand at sand dune bases Mocambique to Walvis Bay
Tylos granulatus Krauss Common on sand dune beach, and on inner (land) side of sea beach sandbar Cape Point to Möwe Point

CRUSTACEA
 AMPHIPODA

<i>Amaryllis macrophthalmalma</i> Haswell	Fairly common in <i>Perna</i> area	Mocambique to S.W.A.; austral
<i>Ampelisca brevicornis</i> (Costa)	Abundant in mud flats, especially below low tide level	Mocambique to S.W.A.; cosmopolitan
<i>Ampelisca palmata</i> Barnard	Abundant in mud flats, especially below low tide level	Mocambique to S.W.A.; Atlantic
<i>Erichthonius brasiliensis</i> (Dana)	Fairly common in starfish area	Mocambique to Olifants River; circumtropical
<i>Lembos hypacanthus</i> Barnard	Abundant in <i>Perna</i> area, in sponge <i>Ciocalypa</i> and in starfish area	Natal to S.W.A.
<i>Melita subchelata</i> Schellenberg	Abundant in starfish area and <i>Perna</i> area; fairly common in sponge <i>Ciocalypa</i>	Saldanha Bay to S.W.A.
<i>Paramoera capensis</i> (Dana)	Abundant in <i>Perna</i> area	Natal to S.W.A.; austral
<i>Photis longimanus</i> Walker	Common in <i>Perna</i> area	Port Elizabeth to S.W.A., Indo-Pacific
<i>Talorchestia quadrispinosa</i> Barnard	Common on sand dune beach	False Bay to S.W.A.

 CRUSTACEA
 DECAPODA

<i>Hymenosoma orbiculare</i> Desmarest	Abundant in mud-bottom areas, in <i>Perna</i> and starfish area, in weed pools, in <i>Arthrocnemum</i> patches	Mocambique to southern Angola; Zanzibar
<i>Macropetasma africana</i> (Balss)	Fairly common in channel near mouth	Natal to False Bay; Swakopmund
<i>Nautilocorystes ocellata</i> (Gray)	From <i>Mustelus</i> gut (probably does not occur in lagoon)	Port Elizabeth to Walvis Bay
<i>Ovalipes punctatus</i> (de Haan)	From <i>Mustelus</i> gut; fresh dead specimens washed ashore	Natal to Lüderitzbucht; austral and Indo-Pacific
<i>Palaemon (Palaemon) pacificus</i> Stimpson	Abundant in algal area and northern channel	Mocambique to Rocky Point; Indo-Pacific
<i>Palaemon (Palaemon) pacificus</i> Stimpson	Abundant in algal area and northern channels, common in night plankton	Mocambique to Rocky Point; Indo-Pacific
<i>Pilumnoides perlatus</i> (Poeppig)	Fairly common amongst mytilids on rocks, in algal area	False Bay to Rocky Point; Panama; Chile; North Atlantic
<i>Upogebia capensis</i> (Krauss)	Fairly common amongst rusty ruin of wreck	Mossel Bay to Lüderitzbucht

COELENTERATA

<i>Aglaophenia pluma dichatoma</i> (M. Sars)	Present in <i>Perna</i> area	East London to S.W.A.; Mediterranean to West Africa
<i>Anthothoe stimpsoni</i> (Verrill)	Abundant in <i>Perna</i> and especially starfish area, and on rocks	Durban to Lüderitzbucht
<i>Bunodosoma capensis</i> (Lesson)	Common around rocks	Transkei to Lüderitzbucht
<i>Koellikerina cf fasciculata</i> (Péron & Lesueur)	Present in plankton	West Africa and Mediterranean
<i>Pleurobrachea</i> sp.	Present in plankton	

VERTEBRATA

PISCES

CHONDRICHTHYES

<i>Mustelus mustelus</i> (Linnaeus)	Common over bank. Usually gravid ♀♀	E. Atlantic
<i>Triakis megalopterus</i> (A. Smith)	Less common than preceding species. Again usually gravid ♀♀	South Africa, S. Angola
<i>Rhinobates blochi</i> Müller & Hente	Abundant in all shallow areas	E. Atlantic
<i>Myliobates aquila</i> (Linnaeus)	Seasonally abundant in midwater	England to South Africa
<i>Dasyatis pastinacus</i> (Linnaeus)	Shallow water over banks. Uncommon	Baltic to South Africa
<i>Callorhynchus capensis</i> Dumeril	Rare	South Africa

OSTEICHTHYES

<i>Engraulis capensis</i> Gilchrist	Small schools of juveniles occasionally in lagoon	South Angola, Cape
<i>Sardinops ocellata</i> (Pappe)	Not Common	South Angola to Natal

<i>Tachysurus feliceps</i> (Valenciennes in C & V)	Rather rare in shallow areas	South Angola to Natal
<i>Lichia amia</i> (Linnaeus)	Pelagic. Always present, possibly an isolated population	Europe to South Africa, very rare on S.W.A. coast
<i>Trochurus trachurus</i> (Linnaeus)	Always present but numbers vary	There is confusion over the name of this species, <i>japonicus</i> , <i>capensis</i> , <i>trachrus</i> have all been used.
<i>Pomatomus saltator</i> (Linnaeus)	Pelagic, rather rare in Sandvis	Cosmopolitan (missing inshore on W. coast)
<i>Argyrosomus hololepidotus</i> (Lacepede)	Common in midwater	Congo to Mocambique
<i>Diplodus sargus</i> Linnaeus	Abundant over sand banks	Mediterranean to W. Indian Ocean
<i>Lithognathus aureti</i> Smith	Abundant over banks and midwater	Cape Frio to Lüderitz
<i>Lithognathus lithognathus</i> (Cuvier in C & V)	Only found once (Penrith 1977)	Sandvis to S. Mocambique
<i>Thyrstites atun</i> Euphrasen	Pelagic, only young found	Circumglobal in S. temperate waters
<i>Mugil cephalus</i> Linnaeus	Rare in main lagoon, abundant adults and juveniles found in pools and galleys	Circum-Tropical
<i>Liza Tricuspidens</i> (Smith)	Rare	Sandvis to Natal. Possibly a synonym of <i>L. aurata</i> Risso
<i>Liza richardsoni</i> A. Smith	Large schools in main lagoon, juveniles in shallows	S. Angola to South Cape
<i>Hepsetia breviceps</i> (Cuvier in C & V)	Common in shallow areas. Important food of predators	Cape Cross to St. Lucia
<i>Gobius nudiceps</i> Cuvier in C & V	Channels of N. mud flats, between <i>Perna</i> , wreck site	
<i>Blennius cornutus</i> Linnaeus	Common at wreck site, and <i>Perna</i>	Cape Cross to Natal
<i>Clinus superciliosus</i> Linnaeus	Rocks and dredged at <i>Perna</i>	Rocky Point to Kei River
<i>Trigata</i> sp.	Juveniles very common at times	
<i>Ophisurus serpens</i> Linnaeus	Common in mud banks	Cosmopolitan
MAMMALIA		
<i>Arctocephalus pusillus</i> (Schreber)	Varying population of young adults	S. Angola to E. Cape
? <i>Cephalorhynchus heavisidei</i> (Gray)	Based on sight records of 1 pair	Southern hemisphere