Marine linefish programme priority species list

J H Wallace and R P van der Elst (Editors)

Prepared under the auspices of the South African National Committee for Oceanographic Research

SOUTH AFRICAN NATIONAL SCIENTIFIC PROGRAMMES REPORT NO 70
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In South Africa, use of coastal areas continues to increase, both for industrial and recreational purposes. Purposeful research into problems of national importance concerning man's use of the sea is supported by the South African National Committee for Oceanographic Research (SANCOR) of the CSIR's Cooperative Scientific Programmes (CSP). One of the programmes administered by SANCOR is the Marine Linefish Programme. (The others being Benguela Ecology, Coastal Processes, Estuaries, Marine Pollution, Marine Sedimentology and Oil Pollution).

The purpose of the Marine Linefish Programme is to direct effort towards increasing the state of knowledge about marine linefisheries in South Africa, so that this information can be used to aid in the development of effective management strategies.

During April 1982, a workshop was held in Durban to assemble and discuss existing knowledge on the biology of important angling fish in South African waters. This document is a product of this workshop and a synthesis of much of the information currently known on these fish. It has been prepared as a working document for the use by scientists and managers alike, to direct research towards providing information needed for the management of South African marine linefish resources when and if this becomes necessary.
ABSTRACT

This document is a synthesis of the current state of knowledge and of research requirements for 84 of the most important of South Africa's angling fish, and has been assembled from individual contributions which were presented at a workshop held in Durban in April 1982. For each species, information is presented on: distribution, angling status, preferred habitat, growth, reproduction, catch statistics and further research work required. The publication is intended to act as a working document and to direct research towards providing information which may be required for the future management of South Africa's marine linefish resource. It is proposed that this document will be periodically revised.

OPSOMMING

Hierdie dokument is 'n samevatting van die huidige stand van kennis en navorsingsbehoeftes sover dit 84 van die belangrikste Suid-Afrikaanse hengelvisse betref. Dit is saamgestel uit individuele bydraes aangebied tydens 'n werksessie wat gedurende April 1982 in Durban gehou is. Inligting aangaande elke spesie word aangebied oor: verspreiding, hengelstatus, voorkeur-habitat, groei, voortplanting, vangs-statistieke en verdere navorsingswerk wat benodig word. Die oogmerk van die publikasie is om te dien as 'n werkdokument en om navorsing te rig na die verskaffing van inligting wat benodig mag word vir die toekomstige bestuur van die Suid-Afrikaanse mariene lynvisbron. Na verwagting sal hierdie dokument periodiek hersien moet word.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREFACE</td>
<td>(iii)</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>(iv)</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>PURPOSE OF DOCUMENT</td>
<td>1</td>
</tr>
<tr>
<td>EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED IN TABLES</td>
<td>1</td>
</tr>
<tr>
<td>ORIGIN OF REFERENCES</td>
<td>2</td>
</tr>
<tr>
<td>CITATION OF INFORMATION CONTAINED IN THIS DOCUMENT</td>
<td>2</td>
</tr>
<tr>
<td>SCIENTIFIC NAME INDEX OF FISHES</td>
<td>3</td>
</tr>
<tr>
<td>COMMON NAME INDEX OF FISHES</td>
<td>5</td>
</tr>
<tr>
<td>PRIORITY SPECIES TABLES (IN ALPHABETIC ORDER ACCORDING TO SCIENTIFIC NAMES)</td>
<td>9-98</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>.99</td>
</tr>
<tr>
<td>PARTICIPANTS AT MARINE LINEFISH WORKSHOP APRIL 1982</td>
<td>105</td>
</tr>
<tr>
<td>TITLES IN THIS SERIES</td>
<td>108</td>
</tr>
</tbody>
</table>
INTRODUCTION: PURPOSE OF DOCUMENT

The difficulty of providing an overview of existing knowledge on the biology of angling fishes was addressed at the Marine Linefish Workshop held at the Oceanographic Research Institute, Durban, on 29/30 April 1982. With the collaboration of all participants, it was agreed that for selected species of importance, all relevant information would be listed. The parameters to be included in this listing were agreed upon, and rapporteurs were appointed to provide information on the various aspects of the fishery along different sectors of the coast (further details are obtainable in the report on the above Workshop).

The submissions were collated by Mr Rudy van der Elst (ORI) and Dr John Wallace (PEM), the documents prepared by CSP and presented to the Marine Linefish Steering Committee at its meeting in Stellenbosch on 3 September 1982. Final review and editing has since occurred, and has resulted in the preparation of this publication.

This publication, becoming known as the 'Visboekie' will serve as a working document to scientists and managers alike, to direct research towards providing information needed for management of South Africa's marine linefish resources when, and if this becomes necessary.

Concurrently, the South African Anglers Union has prepared a list of angling fish in South Africa which they consider to be scarce. This listing was based on extensive experience of anglers, and constitutes a valuable contribution to the knowledge of marine linefish in South Africa. Copies of this listing can be obtained from the South African Anglers Union, and have already been distributed to all participants at the Marine Linefish Workshop (see page 105).

EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED IN TABLES

Occurrence:

The two matrices at the top of each page summarise the occurrence of each of the species, according to geographic area and life stage (large matrix), and portion of coastal zone in which the fish are primarily caught (small matrix).

The following abbreviations have been used in these matrices:

MN Mocambique/South African border northwards
N Natal/Transkei : Ponta do Ouro to Kei River
SEC South East Coast : Kei River to Cape Infanta
SWC South West Coast : Cape Infanta to Cape Point
WC West Coast : Cape Point to Orange River
NN Namibia/South African border northwards
X Presence recorded
? Presence unknown
E Estuarine angling fish
R/S Rock and Surf angling fish
O/S Open Sea linefish

* This comprises information mainly of Natal origin
Status

For each of the species, status has been equated with perceived importance as an angling fish, and has been rated as follows:

- Very important/prime importance
- Important
- Moderately important
- Low importance

Research Needs

This most important aspect of the tables was prepared by reviewing all information provided by collaborators. Research needs are identified in terms of the parameters which are most directly relevant to resource management, namely:

- length and weight composition of catches
- length and weight at sexual maturity
- ageing and growth
- spawning areas and seasons
- juvenile nursery areas
- distribution of stocks, residency and migration
- catch per unit effort
- total catch and total effort

Research needs have been given a priority rating to indicate their overall importance to the linefish programme. It must be noted, however that this rating should be viewed together with the amount of work currently underway in setting new research objectives.

This applied or goal-oriented approach to marine linefish research is necessitated by limitations in the financial and manpower resources available and the urgent need to assess whether resource management is required to protect heavily exploited stocks.

ORIGIN OF REFERENCES

The references cited in this document comprise South African published works, results in press, and results in preparation. Foreign references applicable to the occurrence of species outside South African waters have generally been excluded. A full list of references is given on pages 99-103.

CITATION OF INFORMATION CONTAINED IN THIS DOCUMENT

Data included in the tabulations are for information of the linefish research community and not for publication or citation without permission of the author concerned.
SCIENTIFIC NAME INDEX OF FISHES

ACANTHOPAGRUS BERDA..........................9
ARGYROSOMUS HOLOLEPIDOTUS....................10
ARGYROZONA ARGYROZONA........................12
ATTRACTOSCION AEQUIDENS......................13
AUXIS THAZZARD.................................14
BOOPSBOIDEA INORNATA..........................15
CARANX IGNobilis...............................16
CARANX SEM......................................17
CARANX SEXFASCICATUS............................18
CARCHARHINUS LEUCAS..............................19
CARCHARHINUS OBSCURUS...........................20
CHEIMERIUS NUFAR................................21
CHRYSOLEPHUS ANGLICUS...........................22
CHRYSOLEPHUS CRISTICEPS........................23
CHRYSOLEPHUS GIBBICEPS..........................24
CHRYSOLEPHUS LATICEPS...........................25
CHRYSOLEPHUS PUNICEUS...........................26
CORACINUS CAPENSIS..............................27
CORACINUS MULTIFASCIATUS.......................28
CORYPHAENA HIPPURUS.............................29
CYMATOCEPS NASUTUS..............................30
DASYATIS JENKINSII...............................31
DINOPERCA PETERSI...............................32
DIPLODUS CERVINUS...............................33
DIPLODUS SARGUS.................................34
ELOPS MACHNATA.................................36
EPINEPHELUS ALBOMARGINATUS....................37
EPINEPHELUS ANDERSONI............................38
EPINEPHELUS GRAMMATOPHORUS....................39
EPINEPHELUS GUAZA...............................40
EPINEPHELUS MALABARICUS.......................41
EUTHYNNUS AFFINIS...............................42
GALEORHINUS GALEUS...............................43
GATERIN NIGER....................................44
HIMANTURA UARNAK................................45
ISTIOPHORIDAE....................................46
JOHNUS BELENGERII.................................47
KATSUWONUS PELAMIS...............................48
LICHIAMIA.........................................49
LITHOGNATHUS AURETI.............................51
LITHOGNATHUS LITHOGNATHUS.....................52
LITHOGNATHUS MORNYRUS.........................54
LUTJANUS ARGENTIMACULATUS.....................55
MEGALOPS CYPRINOIDES............................56
NEOSCORPIS LITHOPHILUS.........................57
OPLEGNATHUS CONWAYI............................58
PACHYMETOPON AENEUM............................59
PACHYMETOPON BLOCHII............................60
PACHYMETOPON GRANDE............................61
PAGELLUS NATALENsis.............................62
PETRUS RUPESTRIS.................................63
PLATYCEPHALUS INDICUS...........................64
POLYSTEGANUS CAERULEOPUNCTATUS................65
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>African pompano</td>
<td>96</td>
</tr>
<tr>
<td>Albakoor</td>
<td>92</td>
</tr>
<tr>
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<td>98</td>
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</tr>
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</tr>
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<td>Billfishes</td>
<td>46</td>
</tr>
<tr>
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<tr>
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<td>34</td>
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<td>65</td>
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</tr>
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<td>65</td>
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<td>Bronze bream</td>
<td>61</td>
</tr>
<tr>
<td>Bruin hottentot</td>
<td>61</td>
</tr>
<tr>
<td>Cape knifejaw</td>
<td>58</td>
</tr>
<tr>
<td>Cape stumpnose</td>
<td>78</td>
</tr>
<tr>
<td>Cape yellowtail</td>
<td>88</td>
</tr>
<tr>
<td>Carpenter</td>
<td>12</td>
</tr>
<tr>
<td>Catface rockcod</td>
<td>38</td>
</tr>
<tr>
<td>Dageraad</td>
<td>23</td>
</tr>
<tr>
<td>Dane</td>
<td>73</td>
</tr>
<tr>
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<td>34</td>
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<tr>
<td>Deen</td>
<td>73</td>
</tr>
<tr>
<td>Dolphinfish</td>
<td>29</td>
</tr>
<tr>
<td>Donkerhaai</td>
<td>20</td>
</tr>
<tr>
<td>Dorade</td>
<td>29</td>
</tr>
<tr>
<td>Dusky shark</td>
<td>20</td>
</tr>
<tr>
<td>Elf</td>
<td>72</td>
</tr>
<tr>
<td>Engelsman</td>
<td>22</td>
</tr>
<tr>
<td>Englishman</td>
<td>22</td>
</tr>
<tr>
<td>Fransmadam</td>
<td>15</td>
</tr>
<tr>
<td>Fregat-makriel</td>
<td>14</td>
</tr>
<tr>
<td>Frigate mackerel</td>
<td>14</td>
</tr>
<tr>
<td>Galjoen</td>
<td>27</td>
</tr>
<tr>
<td>Geelbek</td>
<td>13</td>
</tr>
<tr>
<td>Geelpens-klipkabeljou</td>
<td>40</td>
</tr>
<tr>
<td>Geelstert-koningvis</td>
<td>17</td>
</tr>
<tr>
<td>Geelvin-tuna</td>
<td>93</td>
</tr>
<tr>
<td>Giant kingfish</td>
<td>16</td>
</tr>
<tr>
<td>Giant sandshark</td>
<td>83</td>
</tr>
<tr>
<td>Grootkol-pompano</td>
<td>97</td>
</tr>
<tr>
<td>Grootoog-koningvis</td>
<td>18</td>
</tr>
<tr>
<td>Grootoog-tuna</td>
<td>94</td>
</tr>
<tr>
<td>Halfmaan-klipkabeljou</td>
<td>39</td>
</tr>
<tr>
<td>Halfmoon rockcod</td>
<td>39</td>
</tr>
<tr>
<td>Harry hotlips</td>
<td>44</td>
</tr>
<tr>
<td>Honeycomb ray</td>
<td>45</td>
</tr>
<tr>
<td>Hottentot</td>
<td>60</td>
</tr>
</tbody>
</table>
Javelin grunter........................................68
Kaapenaar.................................................12
Kaapse geelster..........................................88
Kaapse kraiibek.........................................58
Kaapse stompneus......................................78
Kargesig-klipkabeljou.................................38
Karonkel..................................................86
King mackerel...........................................86
Kleiner sandkruiper.................................81
Klein tuna...............................................42
Kob.......................................................10
Lampfish..................................................32
Lampvis...................................................32
Large spot pompano..................................97
Leervis...................................................49
Lesser sandshark.....................................81
Little tuna..............................................42
Longfin tuna..........................................92
Mackerel...............................................85
Makriel..................................................85
Malabar rockcod.....................................41
Marlyne.....................................................46
Melkhaai...............................................82
Milkskark...............................................82
Minikob....................................................47
Mussel cracker...........................................89
Natal stompneus.......................................80
Natal stumpnoose.....................................80
Nondi.....................................................47
Osoog-tarpon..........................................56
Panga......................................................76
Pensstreep-tuna......................................48
Perch.....................................................9
Piggy.....................................................71
Poenskop...............................................30
Red steenbras.........................................63
Red stumpnoose.......................................24
Red tjor-tjor...........................................62
Reus-koningvis.......................................16
Reus-sandkruiper....................................83
River snapper..........................................55
Rivier-snapper.......................................55
Roman.....................................................25
Rooijtjor-tjor..........................................62
Rooisteenbras.........................................63
Rooistompneus........................................24
Sand steenbras.......................................54
Sandsteenbras........................................54
Santer....................................................21
Scotsman.................................................66
Sea catfish..............................................91
Seebaber..................................................91
Seventyfour.............................................67
Shapenose brown stingray.........................31
Silverfish..............................................12
Skerpneus-pylstert...................................31
<table>
<thead>
<tr>
<th>Fish Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skipjack tuna</td>
<td>48</td>
</tr>
<tr>
<td>Skotsman</td>
<td>66</td>
</tr>
<tr>
<td>Slimjannie</td>
<td>9</td>
</tr>
<tr>
<td>Slinger</td>
<td>26</td>
</tr>
<tr>
<td>Snoek</td>
<td>95</td>
</tr>
<tr>
<td>Soldier</td>
<td>21</td>
</tr>
<tr>
<td>Spies-knorder</td>
<td>68</td>
</tr>
<tr>
<td>Spikkel-kathaa</td>
<td>75</td>
</tr>
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<td>69</td>
</tr>
<tr>
<td>Spotted catshark</td>
<td>75</td>
</tr>
<tr>
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<td>69</td>
</tr>
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<td>87</td>
</tr>
<tr>
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<td>90</td>
</tr>
<tr>
<td>Stinkvis</td>
<td>57</td>
</tr>
<tr>
<td>Stonebream</td>
<td>57</td>
</tr>
<tr>
<td>Streep-kathaa</td>
<td>74</td>
</tr>
<tr>
<td>Strepie</td>
<td>84</td>
</tr>
<tr>
<td>Striped catshark</td>
<td>74</td>
</tr>
<tr>
<td>Suidelike pompano</td>
<td>96</td>
</tr>
<tr>
<td>Swart rubberlip</td>
<td>44</td>
</tr>
<tr>
<td>Tarpon</td>
<td>36</td>
</tr>
<tr>
<td>Tasselfish</td>
<td>98</td>
</tr>
<tr>
<td>Tenpounder</td>
<td>36</td>
</tr>
<tr>
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<td>36</td>
</tr>
<tr>
<td>Vaalhaai</td>
<td>43</td>
</tr>
<tr>
<td>Varkie</td>
<td>71</td>
</tr>
<tr>
<td>Vier-en-seventig</td>
<td>67</td>
</tr>
<tr>
<td>Weskus-steenbras</td>
<td>51</td>
</tr>
<tr>
<td>West coast steenbras</td>
<td>51</td>
</tr>
<tr>
<td>White-edged rockcod</td>
<td>37</td>
</tr>
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<td>52</td>
</tr>
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<td>77</td>
</tr>
<tr>
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<td>33</td>
</tr>
<tr>
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<td>89</td>
</tr>
<tr>
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<td>37</td>
</tr>
<tr>
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<td>52</td>
</tr>
<tr>
<td>Witstompnus</td>
<td>77</td>
</tr>
<tr>
<td>Yellowbelly rockcod</td>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
</tbody>
</table>
PRIORITY SPECIES TABLES

PRESENTED IN ALPHABETICAL ORDER ACCORDING TO SCIENTIFIC NAMES

The following abbreviations have been used in the matrices in the following tables:

MN Mocambique/South African border northwards
N Natal/Transkei : Ponta do Ouro to Kei River
SEK South East Coast : Kei River to Cape Infanta
SWC South West Coast : Cape Infanta to Cape Point
WC West Coast : Cape Point to Orange River
NN Namibia/South African border northwards

X Presence recorded
? Presence unknown
E Estuarine angling fish
R/S Rock and Surf angling fish
O/S Open Sea linefish
SPECIES: ACANTHOPAGRUS BERDA - Perch/Slimjannie

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REFERENCES

STATUS: Moderate angling importance - no commercial value

HABITAT: a: Primarily estuarine
j: Natal estuaries only
l: ?

AGE & GROWTH: Juveniles only

SIZE AT SEX
MATURITY: Data will follow

REPRODUCTION: May-August; Estuarine mouths

FEEDING:

POPULATION: Good estuarine data

LGTH/WT: \[ g = 1.28 \times 10^{-5} L_e \text{ (cm)}^3 \text{.091} \]

CATCH STATS: Good data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Medium priority
Species decline probably prevents obtaining adequate future samples
Length and weight composition of catches
Ageing and growth
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

: Wallace (1975); Wallace & Van der Elst (1975)

: Wallace & Van der Elst (1975)

: Wallace (1975)

: Wallace (1975)

: Wallace (1975)

: Van der Elst (1981)

: Van der Elst (1978)

: Wallace (1975); Day et al (1981); Van der Elst (1981)
SPECIES: ARGYROSOMUS HOLOEPIDOTUS - Kob

<table>
<thead>
<tr>
<th>MN</th>
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<th>WC</th>
<th>NN</th>
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REFERENCE: Van der Elst (1975); Wallace (1975)

STATUS: Very important sport angling and commercial linefish; also an important trawl species

HABITAT: a: Estuaries to muddy offshore banks down to 400 m

j: Mainly marine inshore (SEC); offshore muddy banks (Natal), also estuaries

REFERENCE: Van der Elst (1975); Wallace & Van der Elst (1975); Winter (1979); Lasiak (1981, 1982); Beckley (in prep); Marais (in prep)

l: Melville-Smith & Baird (1980)

AGE & GROWTH: 54 otoliths/lengths collected (UPE)

REFERENCE: Wallace (1975); Wallace & Schleyer (1979) plus (Lasiak) 159 otoliths/lengths collected; SFRI (SWA)

SIZE AT SEX
MATURITY: Lc=750

REFERENCE: Wallace (1975); Lasiak (1982); Smale (1983); SFRI (SWA)

REPRODUCTION: Possibly not in Natal. Occurs in Cape. 56 gonads processed for microscopic examination (UPE)

REFERENCE: Wallace (1975); Lasiak (1982); Smale (in prep); SFRI (SWA)

FEEDING: Carnivore, mainly fish and squid. PE Museum N=1008

REFERENCE: Whitfield & Blaber (1978); Lasiak (1982); Neegan (1982); Smale (1983); Marais (in prep)

POPULATION: 1:1 available 1983 (ORI); data available for analysing (UPE). SEC N=11 000 (Smale)

REFERENCE: Wallace (1975); Winter (1979); Smale (1983); Kok (in prep); Beckley (in prep); Marais (in prep)

LGTH/WT: $2.75 \times 10^{-5} \text{Lt}^{2.837}$. Figures available (UPE)

REFERENCE: Marais & Baird (1980); Van der Elst (1981); Smale (1983); SFRI (SWA)


DISTRIBUTION: South African west, south and east coasts; eastern Atlantic; Mediterranean: Wallace (1975); Wallace & Van der Elst (1975); Van der Elst (1981); Kok (in prep)

MIGRATION: Movement to Natal in winter probably occurs but not yet documented: Wallace (1975): 665 tagged SFRI (SWA)

MORTALITY:

RESEARCH: Top priority:

NEEDS: Length and weight composition of catches
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
SPECIES: ARGYROZONA ARGYROZONA - Carpenter/Kaapenaar/Silverfish

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STATUS: Very important ski-boat angling and commercial line boat species

HABITAT: a: Deep reefs and mesopelagic
j: ? shallow reefs

AGE & GROWTH: $L_t = 74.4(1-e^{-0.071(5+1.524)})$

SIZE AT SEX: 
MATURITY: 
REPRODUCTION: 
FEEDING: 

POPULATION: SEC: N=4200

LGTH/WT: 

CATCH STATS: Sea Fisheries Institute: Commercial statistics. SEC: CPUE: total catch and total effort - no data. 30-200 tons trawled annually

DISTRIBUTION: Endemic, Table Bay to Transkei

MIGRATION: Larger specimens may migrate extensively

MORTALITY: Total mortality for early period 1967-1969

RESEARCH NEEDS: Top priority
Length and weight composition of catches
Juvenile nursery areas (SWC)
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
Investigate its role in 'doppies' fishery.
SPECIES: ATRACTOSCION AEQUIDENS - Geelbek

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STATUS: Very important angling and commercial species

HABITAT
- a: Pelagic, tending to shoal over prominent reefs
- j: Demersal (little data)
- l:

AGE & GROWTH:

SIZE AT SEX:

MATURITY:

REPRODUCTION:

FEEDING:
- False Bay: N=124
  - SEC: N=77
- Nepgen (1982)
- Smale (1983)

POPULATION:
- SEC: N=870
- Smale (1983)

LGTH/WT:

CATCH STATS:
- SFI commercial statistics.
  - CPUE: PE area; no information. Total catch and total effort
  - Smale (1983)

DISTRIBUTION:
- African west coast south of equator;
- South Africa south and east coasts to Pt. do Ouro; Australian east coast
- Van der Elst (1981)

MIGRATION:
- Moves into Natal waters in spring

MORTALITY:
- No information on natural mortality

RESEARCH NEEDS:
- Top priority
  - Length and weight composition of catches
  - Length and weight at sexual maturity
  - Ageing and growth
  - Spawning areas and seasons
  - Juvenile nursery areas
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort

REFERENCES

- Van der Elst (1981)
- Nepgen (1982)
- Smale (1983)
SPECIES: AUXIS THAZZARD - Frigate mackerel/Fregat-makriel

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STATUS: Moderate angling importance - low commercial value

HABITAT: a: Oceanic and coastal waters
j: Pelagic
l: 

AGE & GROWTH: Foreign data available

SIZE AT SEX:
MATURITY: Limited local data

REPRODUCTION: Limited local data

FEEDING:

POPULATION:

LGTH/WT: \( g = 5.13 \times 10^{-2} \text{ Lcf(cm)}^2,72359 \)

CATCH STATS: No specific data in catch statistics programme. Lumped with E. affinis

DISTRIBUTION: Circumtropical

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Medium priority
Good foreign data exists, confine research to length and weight composition of catches
Catch/Unit effort

REFERENCES:
: good foreign data exists
: Van der Elst (in prep)
: Van der Elst (in prep)
: Van der Elst (1981)
SPECIES: BOOPSIDEA INORNATA - Francismadam

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STATUS: Moderately important bait species

HABITAT:
a: Reefs
j: Reefs
l: 

AGE & GROWTH:

SIZE AT SEX
MATURITY:

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS: SEC: CPUE (total catch and total effort - nil)

Buxton (1984)

Buxton (1984)

Buxton (1983)

Buxton (1983)

Buxton (1983)

DISTRIBUTION: Endemic; Cape Point to Port St Johns

MIGRATION:

MORTALITY:

RESEARCH:
Medium priority
Length and weight composition of catches
Ageing and growth
Juvenile nursery areas
Catch/Unit effort

Total catch and total effort
Ongoing research needed.
SPECIES: CARANX IGNobilis – Giant kingfish/Reus-koningvis

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REFERENCES

STATUS: Important angling species with very little commercial value

HABITAT
- a: Marine – pelagic but associated with reefs
- j: Probably mainly estuarine

AGE & GROWTH:
- Juveniles
- Adults (East Africa)

SIZE AT SEX
MATURITY

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT: $kg = 2.07 \times 10^{-5} \text{Lcf(cm)}^2 = 2.987$

CATCH STATS: Moderate data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION

MORTALITY

RESEARCH NEEDS
- Medium priority
  - Length and weight composition of catches
  - Ageing and growth
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort
**SPECIES**: CARANX SEM - Yellowtail kingfish/Geelstert-koningvis

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**REFERENCES**

**STATUS**: Moderate angling importance but little commercial value

**HABITAT**
- Shallow nearshore reefs
- Other (specify)

**AGE & GROWTH**: 

**SIZE AT SEX**

**MATURITY**

**REPRODUCTION**: 

**FEEDING**: 

**POPULATION**: 

**LGH/T WT**: 

**CATCH STATS**: Only at generic level in catch statistics programme

**DISTRIBUTION**: Entire W Indian Ocean

**MIGRATION**: 

**MORTALITY**: 

**RESEARCH NEEDS**
- Medium priority
- Length and weight composition of catches
- Ageing and growth
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
**SPECIES**: CARANX SEXFASCIATUS - Bigeye kingfish/Grootoog-koningvis

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**REFERENCES**

**STATUS**: Moderate angling value

**HABITAT**

- a: Marine - shallow reefs
- j: Estuarine - probably also marine
- l:

**AGE & GROWTH**: Blaber (1982a)

**SIZE AT SEX**: Williams (1965); Blaber (1982)

**REPRODUCTION**: Van der Elst (in prep)

**FEEDING**: Blaber (1982a)

**POPULATION**: Blaber (1982a); Van der Elst (in prep)

**LGTH/WT**: kg = 2.47742 x 10^-4 Lcf (cm)^2.573 Van der Elst (1981)

**CATCH STATS**: Only at generic level in catch statistics programme

**DISTRIBUTION**: Widespread Indo Pacific Van der Elst (1981); Blaber (1982a)

**MIGRATION**: 

**MORTALITY**: 

**RESEARCH NEEDS**: Medium priority

- Length and weight composition of catches
- Ageing and growth
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
- and possible juvenile nursery areas at sea
SPECIES: CARCHARHINUS LEUCAS - Zambezi shark/Zambesihaai

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REFERENCES

STATUS: Moderately important angling species

HABITAT:
a: Estuarine and marine - especially river mouths
j: Mainly estuarine
l:

AGE & GROWTH: Preliminary extrapolated data

SIZE AT SEX
MATURITY: $L_T = 250$ cm

REPRODUCTION: 11 - 12 pups born in summer mostly close to estuaries.

FEEDING: Top carnivore - mostly on teleosts

POPULATION: Sex ratio 1:1

LGTH/WT:

CATCH STATS: Good data in catch statistics programme

DISTRIBUTION: Circumtropical

MIGRATION:

MORTALITY:

RESEARCH: Low priority

NEEDS:
Length and weight composition of catches
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

Van der Elst (1981)
Bass et al (1975)
Van der Elst (1979)
Van der Elst (1981)
Bass et al (1975)
Van der Elst (1979)
SPECIES: CARCHARHINUS OBSCURUS - Dusky shark/Donkerhaai

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REFERENCES

STATUS: Important angling fish - no commercial value:

HABITAT
a: Pelagic - Agulhas current
j: Sandy shores of Natal & E Cape

AGE & GROWTH: Preliminary extrapolated data

SIZE AT SEX
MATURITY: Both sexes Lₜ=2 800 mm

REPRODUCTION: 8 - 14 pups; mainly winter - Natal sandy shores

FEEDING: Top carnivore on teleosts, elasmobranchs & cephalopods

POPULATION: Sex ratio varies with locality - overall = 1:1 - nearshore population is unimodal

LGTH/WT: 7.157 x 10⁻⁵ Lₜ (cm) 2.986

CATCH STATS: Good data in catch statistics programme

DISTRIBUTION: Circumtropical

MIGRATION: Onshore/offshore and longshore - sexually segregated

MORTALITY:

RESEARCH NEEDS: Medium priority
Length and weight composition of catches
Catch/Unit effort
Total catch and total effort, and adult phase aspects of distribution of stocks, residency and migration
SPECIES: CHEIMERIUS NUFAR - Soldier/Santer

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STATUS: Very important angling and commercial species

HABITAT:
- Abundant on offshore reefs
- Shallow reef & sandy shores to 60 m

AGE & GROWTH: \( L_t = 953.56(1 - e^{-0.0654(t+2.6177)}) \)

SIZE AT SEX:
- Both sexes = 250 mm

REPRODUCTION: Jun-Oct: Natal continental shelf

FEEDING:
- Carnivorous mainly on fish & squid

POPULATION:
- M:F = 1:2 (Natal)

LGTH/WT: \( g = 2.4 \times 10^{-4} L_{cf}(cm)^{2.5705} \)

CATCH STATS: Data on catch statistics programme
- CPUE data: P E M

DISTRIBUTION: Entire West Indian Ocean

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
- Top priority
- Length and weight composition of catches
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort

REFERENCES:
- Coetzee & Baird (1981)
- Coetzee & Baird (1981)
- Coetzee (1978); Smale (1983)
- Garratt (in prep)
- Coetzee (1978); Smale (1983)
- Garratt (in prep)
- Druzhinin (1975); Coetzee & Baird (1981); Smale (N=300)
- Garratt (in prep)
- Coetzee & Baird (1981); Smale (N=3300); Garratt (in prep)
- Smale (1983); Garratt (in prep)
- Coetzee (1981)
- Smale (1983);
SPECIES: CHRYSOBLEPHUS ANGLICUS - Englishman/Engelsman

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REFERENCES

STATUS: Important angling fish of commercial value

HABITAT: a: Common on offshore reefs 20 - 120 m

AGE & GROWTH:

SIZE AT SEX
MATURITY:

REPRODUCTION: Probably not in Natal

FEEDING: Carnivorous on decapod crustaceans and molluscs

POPULATION:

LGTH/WT:

CATCH STATS: Limited data in catch statistics programme

DISTRIBUTION: Confined to Mozambique and Natal. A similar species may exist in Gulf of Aden

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Top priority
- Length and weight composition of catches
- Ageing and growth
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort

Garratt (in prep)
SPECIES: CHRYSoblephus Cristiceps - Dageaand

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REFERENCES:

STATUS: Important ski-boat angling and commercial linefish

HABITAT: a: Reefs
j: Shallow reefs
l: ? pelagic

AGE & GROWTH: Otolith and scale examination ongoing N=200

SIZE AT SEX

MATURITY: 50% maturity at 320 mm F.L.

REPRODUCTION: October - January incl.

FEEDING: Analysis 257 adults complete
Juveniles ongoing

POPULATION: Data on ski-boat fishery. N=3269

LENGTH/WT:

Total catch and total effort: no data

DISTRIBUTION: Endemic. Cape Point to Transkei;
uncommon northwards to Durban

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
Top priority
Length and weight composition of catches
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

Buxton (1984)
Buxton (1984)
Buxton (1983)
Robinson (1976); Buxton (1984)
Buxton (1982)
Crawford & Crous (1982); Buxton (1984)
Buxton (1984)
Crawford & Crous (1982); Buxton (1984)
SPECIES: CHRYSOBLEPHUS GIBBICEPS - Red stumpnose/Rooistompneus

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REFERENCES:

STATUS: Moderate importance SEC ski-boat fishing. SWC

HABITAT
a: Reefs
j: Shallow reefs
l: ? Pelagic

AGE & GROWTH: Otoliths and scales: N=100
Data on juveniles lacking

SIZE AT SEX
MATUREITY: Data on juveniles lacking

REPRODUCTION: October - April: SEC

FEEDING: Analysis of 76 adults complete.
Juveniles ongoing

POPULATION: SEC: Ski-boat catches: N=376

LGTH/WT:

Total catch and total effort: no data

DISTRIBUTION: Endemic. Cape Point to East London

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
Medium priority
Length and weight composition of catches
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
SPECIES : CHRYSOBLEPHUS LATICEPUS - Roman

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STATUS : Prime importance commercially; moderate importance for angling

HABITAT
a: Rocky seabed, shallow and offshore reefs
j: Rocky seabed, shallow and offshore reefs
l:

AGE & GROWTH: Otolith and scale examination ongoing N=200

SIZE AT SEX
MATURITY : 50% maturity less than 200 mm F.L.
Sex reversal at 270-330 mm F.L.

REPRODUCTION: September-February inclusive

FEEDING : False Bay
Analysis 212 adults complete. Juveniles ongoing

POPULATION : SEC N=2616

LGTH/WT :

No information on total catch and total effort. Commercial catch statistics: SWC Sea Fisheries

DISTRIBUTION: Endemic, Cape Point to Transkei

MIGRATION : Thought to be territorial and resident on reefs. Possibility of migration not researched.

MORTALITY :

RESEARCH NEEDS : Top priority
Length and weight composition of catches
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
(and possibly ageing and growth in SWC/WC area)

REFERENCES :
Penrith (1972); Buxton (1984)
Penrith (1972); Buxton (1984)
Brownell (1979)
Buxton (1984)
Buxton (1983)
Buxton (1984)
Nepgen (1981); Buxton (1982)
Buxton (1984)
Crawford & Crous (1982)
Buxton (1982)
Buxton (1983)
SPECIES: CHRYSOBLEPHUS PUNICEUS - Slinger

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STATUS: Prime angling fish of important commercial value

HABITAT
a: abundant on offshore reefs 20-100 m
j: widespread on reefs 20-60 m
l:

AGE & GROWTH:

SIZE AT SEX
MATURITY: f = 230 mm Lcf; sex reversal at ± 350-400 mm

REPRODUCTION: June–October Natal North and Upper South Coast - on deep reefs. Sex reversal is probable

FEEDING: Carnivorous on crustacea, molluscs & echinoderms

POPULATION: Sex ratio - m : f = 1:9.5
LGTH/WT: g = 6.3 x 10^-5 Lcf 2.8494

CATCH STATS: Limited data in catch statistics programme

DISTRIBUTION: Confined primarily to Natal & southern Mozambique

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Top priority
Length and weight composition of catches
Ageing and growth
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

REFERENCES
Garratt (in prep)
SPECIES: CORACINUS CAPENSIS - Galjoen

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STATUS: Prime importance as an angling fish

HABITAT: a: Rocky areas
j: 
l:

AGE & GROWTH: SEC: 22 otoliths/lengths collected: UPE
85 otoliths/lengths collected: SFRI (SWA)

SIZE AT SEX
MATUREITY: 50% 100% Van der Elst pers comm
32 cm 34 cm data sparse
data available SFRI

REPRODUCTION: 31 gonads processed for microscopic examination: UPE

FEEDING: 31 stomachs analysed: UPE
87 stomachs analysed: SFRI

POPULATION: Data available for analysing: UPE

LGTH/WT: Figures available: UPE

CATCH STATS: CPUE: 1979-1981; historical records:
Skeleton coast; 1978-1982

DISTRIBUTION: SWA to Natal

MIGRATION: 1303 tagged SWA

MORTALITY:

RESEARCH NEEDS: Top priority
Length and weight composition of catches
Length and weight at sexual maturity
Ageing and growth
Spawning areas and seasons
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
Priority species - urgently in need of study.

REFERENCES:
Penrith & Loutit (1982)
Van der Elst (1981)
SPECIES : CORACINUS MULTIFASCIATUS - Banded galjoen/Bandgaljoen

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STATUS : Important angling fish

HABITAT:
a: Shallow rocky areas
j: Rocky inter- and sub-tidal
l:

AGE & GROWTH:

SIZE AT SEX
MATUREITY: f Lcf = 190 mm; m Lcf = 220 mm

REPRODUCTION: March-October. Natal Rocky littoral

FEEDING: Carnivorous on a wide range of small invertebrates

POPULATION: sex ratio = 1:1. Unimodal but different for sexes

LGTH/WT: $g = 1.2 \times 10^{-5} \ Lcf^{3.15}$

CATCH STATS: Limited data published - data in catch statistics programme

DISTRIBUTION: Confined primarily to Natal & Mocambique

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
Medium priority
Length and weight composition of catches
Ageing and growth
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

REFERENCES:
Joubert (1981)
Berry et al (1982)
Joubert (1981)
Joubert (1981)
Joubert & Hanekom (1980)
Joubert (1981a)
Joubert (1981a)
Joubert (1981b)
Van der Elst (in prep)
**SPECIES**: CORYPHAENA HIPPURUS - Dolphinfish/Dorade

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**REFERENCES**: 

**STATUS**: Important angling species with possible commercial potential

**HABITAT**
- a: Oceanic and coastal waters
- j: Pelagic
- l: Pelagic

**AGE & GROWTH**: 
- : Adequate foreign data

**SIZE AT SEX**
- : Van der Elst (in prep)

**MATURITY**
- : Van der Elst (in prep)

**REPRODUCTION**
- : Van der Elst (in prep)

**FEEDING**
- : Van der Elst (in prep)

**POPULATION**
- : Van der Elst (1981)

**LGTH/WT**: $g = 4.47142 \times 10^{-2} \text{ Lcf}^{2.6015}$

**CATCH STATS**: Moderate data in catch statistics programme.

**DISTRIBUTION**: Circumtropical

**MIGRATION**
- : Van der Elst (in prep)

**MORTALITY**
- : Van der Elst (in prep)

**RESEARCH NEEDS**: 
- Medium priority
- Good foreign data is available for this species. Local research should concentrate on: Length and weight composition of catches, Distribution of stocks, residency and migration, Catch/Unit effort, Total catch and total effort
SPECIES: Cymatocetes nasutus — Black musselcracker/Poenskop

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REFERENCES:

Christensen (1978) Beckley (in prep)

STATUS: Important angling species

HABITAT:
- a: Inshore reefs
- j: Tidal pools

AGE & GROWTH: 28 otoliths/lengths collected (Coetzee)
- UPE: 9 otoliths/lengths

SIZE AT SEX

MATURITY:

REPRODUCTION: 28 gonads processed for microscopic examination (Coetzee); UPE 9 processed gonads

FEEDING:
- Juvenile feeding
  - 28 stomachs analysed
  - UPE: 10 stomachs collected

POPULATION:
- UPE: data available for analysing (N=?)

LGTH/WT:
- UPE: Figures available (N=?)

CATCH STATS:
- UPE: CPUE 1979-81; historical records 1959-78; postal competitions 1977-80

DISTRIBUTION: Endemic, Saldanha Bay to Tugela

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
- Top priority
  - Difficulties arise due to rel. low numbers caught over a large stretch of coast.
  - Ongoing longterm monitoring required whenever possible. Length and weight composition of catches
  - Length and weight at sexual maturity
  - Ageing and growth
  - Spawning areas and seasons
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort
SPECIES: DASYATIS JENKINSII - Sharpnose brown stingray/Skepneus-pylstert

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STATUS: Important angling fish, food value not yet appreciated

HABITAT:
- a: Sandy shores to 30 m
- j: Sandy shores to 30 m
- l: N/A

AGE & GROWTH: Preliminary extrapolated data available

SIZE AT SEX:
MATURITY:
REPRODUCTION:
FEEDING:
POPULATION:
LGTH/WT:
CATCH STATS: Catch statistics programme
DISTRIBUTION: East London northwards
MIGRATION:
MORTALITY:

RESEARCH:
NEEDS:
  - Length and weight composition of catches
  - Ageing and growth
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort

REFERENCES:
- Wallace (1967);
- Van der Elst (1981)
SPECIES: DINOPERCA PETERSI - Lampfish/Lampvis

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STATUS: Moderate angling importance - little commercial value

HABITAT:
- a: Reefs to depths of 50 m
- j: Rocky shores - data sparse

AGE & GROWTH:

SIZE AT SEX: 300 mm Lcf - data sparse

MATURE: Winter spawning in Natal - data sparse

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS: Sparse data in catch statistics programme

DISTRIBUTION: Confined primarily to Natal & Mozambique

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
- Medium priority
- Length and weight composition of catches
- Ageing and growth
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort

REFERENCES:
- Van der Elst (1981)
- Van der Elst (1981)
- Van der Elst (in prep)
- Van der Elst (in prep)
- Van der Elst (in prep)
- Garratt (in prep)
SPECIES: OIPLUDUS CERVINUS - Zebra/Wildeperd

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STATUS: Low importance

HABITAT
- a: Rocky shores
- j: Tidal pools
- l:

AGE & GROWTH:
- UPE: 20 otoliths/lengths collected
- 30 otoliths/lengths (Coetzee)

SIZE AT SEX
- MATURE

REPRODUCTION:
- UPE: 19 gonads processed for microscopic examination.
- 15 processed gonads (Coetzee)

FEEDING:
- UPE: 20 stomachs collected
- 20 stomachs analysed (Coetzee)

POPULATION:
- UPE: data available for analysing

LENGTH/WT:

CATCH STATS: Angler catch statistics

DISTRIBUTION: Endemic, Cape Point to Durban

MIGRATION
- :

MORTALITY
- :

RESEARCH NEEDS:
- Low priority
- Length and weight composition of catches
- Length and weight at sexual maturity
- Ageing and growth
- Spawning areas and seasons
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort

REFERENCES

: Brownell (1979)
: Beckley (in prep)
: Christensen (1978)
: Coetzee & Baird (1981)
SPECIES : DIPLODUS SARGUS - Blacktail/Dassie

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STATUS : Prime angling fish (favourite with André v d Westhuysen)

HABITAT : a: Shallow reefs to depths of 15 m
j: Rocky littoral, intertidal pools and estuarine mouths
l: Common midwater False Bay & probably most of SA Coast.

AGE & GROWTH: UPE 42 otoliths; preliminary growth rates juveniles available from ORI: 160 otoliths SFRI (SWA)

SIZE AT SEX : Both sexes Lt = 155 mm
MATUREY : SFRI (SWA)

REPRODUCTION: May-Dec Natal inshore & deeper reefs UPE data N=46 - HERMAPHRODITE. SFRI (SWA)

FEEDING : Omnivorous on seaweeds, sponges & bivalves Juvenile data from SEC - UPE data N=46 SFRI (SWA): N=160

POPULATION : Sex ratio 1:1 - Polymodel distribution SFRI (SWA)

LGTH/WT : g = 3.3 x 10^-5 Lcf (cm) 2.994 also SFRI (SWA)

CATCH STATS : Data published - also in catch statistics programme - SFRI (SWA)

DISTRIBUTION: Entire African Coast

REFERENCES

: Winter (1979); Joubert (1981); Joubert (1981); Lasiak (1981, 1982); Beckley (in prep); Berry et al (in press); Kok (in prep)

: Brownell (1979)

: Kok (in prep); Coetzee (in prep); Bennett (in prep); Beckley (in prep)

: Joubert (1981); Lasiak (1982); Coetzee (in prep)

: Joubert (1981); Lasiak (1982); Coetzee (in prep)

: Christensen (1978); Joubert & Hanekom (1980); Lasiak (1982); Coetzee (in prep)

: Joubert (1981); Kok (in prep); Bennett (in prep); Beckley (in prep)

: Marais & Baird (1980); Joubert (1981a); Coetzee & Baird (1981); Pennith & Loutit (1982); Bennett (in prep); Van der Elst (in prep)

MIGRATION :

MORTALITY :
RESEARCH NEEDS: Low priority

- Length and weight composition of catches
- Ageing and growth
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
SPECIES: ELOPS MACHNATA - Tenpounder/Tienponder

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STATUS: Important estuarine angling species
Infrequently caught at sea.

HABITAT:
a: Common in estuaries and off sandy beaches
j: Common in estuaries
1:

AGE & GROWTH:

SIZE AT SEX
MATUREY: No information on South African population
Does not appear to spawn in our waters

REPRODUCTION: As above

FEEDING: Data only available from estuaries

POPULATION: Data only available from estuaries

LGTH/WT: grams $2.94786 \times 10^{-2}$ Lcf cm$^{2.534}$

CATCH STATS: Catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION: Very little information available

MORTALITY:

RESEARCH NEEDS: Low priority
Distribution of stocks, residency and migration
Abundance of estuarine populations

REFERENCES:
Wallace (1975)
Wallace & Van der Elst (1975); Kok (in prep)
Melville-Smith (1980)
Beckley (in prep)
Whitfield & Blaber (1978)
Wallace (1975); Beckley (in prep)
Marais & Baird (1980); Van der Elst (1981)
Marais & Baird (1980a); Marais (in prep)
Wallace (1975); Van der Elst (1981); Beckley (in prep); Kok (in prep)
**SPECIES**: **SPINEPHELUS ALBOMARGINATUS** - White-edged rockcod/Witrand-klipkabeljou

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**STATUS**: Important angling and commercial species

**HABITAT**
- a: Deeper rocky reefs - 40-100 m
- j: Deeper rocky reefs - 40-100 m

**AGE & GROWTH**: 

**SIZE AT SEX**

**MATURITY**: 

**REPRODUCTION**: Sex reversal probable

**FEEDING**: 

**POPULATION**: 

**LGTH/WT**: 

**CATCH STATS**: 

**DISTRIBUTION**: Confined to Natal & S. Mocambique

**MIGRATION**: Seasonal variability in catches suggests migrations

**MORTALITY**: 

**RESEARCH NEEDS**
- Top priority
  - Length and weight composition of catches
  - Length and weight at sexual maturity
  - Ageing and growth
  - Spawning areas and seasons
  - Juvenile nursery areas
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort

**REFERENCES**
- Van der Elst (1981)
- Garratt (in prep)
SPECIES: **EPINESPHELUS ANDERSONI** - Catface rockcod/Katgesig-klipkabeljou

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**HABITAT**
- Offshore reefs to 50 m
- Shallow rocky littoral

**STATUS**: Very important angling & commercial species.

**AGE & GROWTH**:

**SIZE AT SEX**

**MATURITY**:

**REPRODUCTION**: Sex reversal probable

**FEEDING**: Carnivore - both juvenile & adult

**POPULATION**:

**LGTH/WT**: \( g = 1.696 \times 10^{-5} L_T \ (cm)^2.955 \)

**CATCH STATS**: Limited data in catch statistics programme

**DISTRIBUTION**: Confined to Natal & S Mozambique

**MIGRATION**:

**MORTALITY**:

**RESEARCH NEEDS**
- Top priority
  - Especially offshore aspects of:
    - Length and weight composition of catches
    - Spawning areas and seasons
    - Distribution of stocks, residency and migration
    - Catch/Unit effort
    - Total catch and total effort

**REFERENCES**
- Van der Elst (in prep)
- Garratt (in prep)
- Joubert & Hanskom (1981); Van der Elst (in prep)
- Van der Elst (1981)
**SPECIES**: EPINEPHELUS GRAMMATOPHORUS  -  Halfmoon rockcod/Halfmaan-klipkabeljou

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**STATUS**: Important angling and food fish

**HABITAT**: a: Abundant on offshore reefs (20-100 m)

**AGE & GROWTH**: 

**SIZE AT SEX**: 

**MATURITY**: : Garratt (in prep)

**REPRODUCTION**: Sex reversal probable

**FEEDING**: : Garratt (in prep)

**POPULATION**: : Garratt (in prep)

**LGTH/WT**: : Garratt (in prep)

**CATCH STATS**: : 

**DISTRIBUTION**: Widespread Indo Pacific

**MIGRATION**: : 

**MORTALITY**: : 

**RESEARCH NEEDS**: Top priority

- Length and weight composition of catches
- Length and weight at sexual maturity
- Ageing and growth
- Spawning areas and seasons
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
- Also taxonomic investigation with *E. rhyncholepis*

**REFERENCES**: Van der Elst (1981)
SPECIES: *EPINEPHELUS GUAZA* - Yellowbelly rockcod/Geelpens-klipkabeljou

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STATUS: Very important angling & food species

HABITAT:
- a: Deeper rocky reefs to 100 m
- i: Shallow rocky littoral
- ?

AGE & GROWTH:

SIZE AT SEX:

MATURITY:

REPRODUCTION: Limited data. Sex reversal probable

FEEDING: PEM N=84 carnivore

POPULATION: PEM N=313

LGTH/WT: $g = 1.696 \times 10^{-5} L_t$ (cm) $2.955$

CATCH STATS: Some data on catch statistics programme

DISTRIBUTION: Primarily Atlantic from Cape to Mediterranean

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
- Top priority
- Length and weight composition of catches
- Ageing and growth
- Spawning areas and seasons
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
SPECIES: **EPINEPHELUS MALABARICUS** - Malabar rockcod

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**REFERENCES**

**STATUS**: Moderately important angling fish, often in estuaries

**HABITAT**
- a: Shallow nearshore reefs
- j: Estuaries and marine littoral

**AGE & GROWTH**: 

**SIZE AT SEX**

**MATURITY**: Limited data (N = ± 200)  
Van der Elst (1981)

**REPRODUCTION**: Limited data - sex reversal probable  
Van der Elst (in prep)

**FEEDING**: 

**POPULATION**: 

**LGTH/WT**: 

**CATCH STATS**: Some data in catch statistics programme

**DISTRIBUTION**: Widespread Indo Pacific

**MIGRATION**: 

**MORTALITY**: No information on natural mortality  
Artificial mortality from catch statistics programme

**RESEARCH NEEDS**: Medium priority  
- Length and weight composition of catches  
- Length and weight at sexual maturity  
- Ageing and growth  
- Spawning areas and seasons  
- Juvenile nursery areas  
- Distribution of stocks, residency and migration  
- Catch/Unit effort  
- Total catch and total effort  
- Recently distinguished from **E. tauvina** hence requires literature survey
SPECIES: EUTHYNNUS AFFINIS - Little tuna/Kleintuna

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REFERENCES

STATUS: Important angling and commercial species

HABITAT
a: Oceanic & coastal waters
j:
l:

AGE & GROWTH: Good foreign data exists

SIZE AT SEX
MATURITY:

REPRODUCTION:

FEEDING:

POPULATION: Sex ratio 1:1

LGTH/WT: $g = 3.00 \times 10^{-5}$ Lcf 2.908

CATCH STATS: Data in catch statistics programme

DISTRIBUTION: Circumglobal

MIGRATION: Foreign data

MORTALITY: Foreign data

RESEARCH NEEDS:
- Medium priority
- Adequate foreign data exists
- Length and weight composition of catches
- Catch/Unit effort
- Total catch and total effort

Van der Elst (in prep)
SPECIES: GALEORHINUS GALEUS - Vaalhaai

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REFERENCES

STATUS: Moderately important in commercial handline and trawl fishery

HABITAT: a: Normally near seabed, down to 100 m
j: N/A
l: N/A

AGE & GROWTH: Preliminary extrapolated data

SIZE AT SEX
MATURITY

REPRODUCTION

FEEDING

POPULATION

LGTH/WT

CATCH STATS: SFRI commercial statistics

DISTRIBUTION: West and south-west coast of Republic. Mediterranean, Europe, west coast Americas

MIGRATION

MORTALITY

RESEARCH NEEDS: Medium priority
- Length and weight composition of catches
- Length and weight at sexual maturity
- Ageing and growth
- Pupping area and seasons
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
- An important species that has hitherto been neglected
SPECIES: GATERIN WIGER — Harry hotlips/Swart rubberlip

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REFERENCES

STATUS: Moderately important angling & food fish

HABITAT: a: Rocky & coral reefs 20-80 m
        j: Estuarine
        l: 

AGE & GROWTH:

SIZE AT SEX
MATURITY:

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS: No data on catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Low priority
SPECIES: HIMANTURA UARNAK - Honeycomb Ray

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REFERENCES:
: Van der Elst (1981)

STATUS: Moderately important angling species - no commercial value

HABITAT:
a: Shallow marine & estuarine
i: Mainly estuarine
l: 

AGE & GROWTH: Extrapolated data

SIZE AT SEX:
MATURITY:
REPRODUCTION:
: Wallace (1967); Van der Elst (in prep)

FEEDING: Limited data

POPULATION:
LGTH/WT:
CATCH STATS: Good data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION:
MORTALITY:

RESEARCH: Medium priority
NEEDS:
Length and weight composition of catches
Catch/Unit effort
Total catch and total effort
SPECIES: ISTIOPHORIDAE - Billfishes/Marlyne

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STATUS: Prime sport fish with low commercial value

HABITAT: a: Oceanic and coastal waters
j: Pelagic - oceanic
l: Pelagic - oceanic

AGE & GROWTH: Good foreign data available

SIZE AT SEX MATURITY: Good foreign data available

REPRODUCTION: Good foreign data

FEEDING: Good foreign data

POPULATION: Van der Elst (in prep)

LENGTH/WT: Good foreign data

CATCH STATS: Some data in catch statistic programme

DISTRIBUTION: Circumglobal

MIGRATION: Extensively documented

MORTALITY: Van der Elst (in prep)

RESEARCH NEEDS: Low priority: oceanic and coastal
Length and weight composition of catches
Distribution of, stocks residency and migration
Catch/Unit effort
Total catch and total effort
(Species include: black/blue/striped marlins and sailfish)

REFERENCES:
SPECIES: JOHNIUS BELENGERII - Nondi/Minikob

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REFERENCES

STATUS: Little importance to anglers

HABITAT a: Estuarine/marine
j: Estuarine
l:

AGE & GROWTH: :

SIZE AT SEX: :

MATURITY: :

REPRODUCTION: :

FEEDING: :

POPULATION: :

LGTH/WT: \( g = 1.51617 	imes 10^{-4} \text{ Lcf}^2 \times 2.9503 \)

CATCH STATS: :

DISTRIBUTION: :

MIGRATION: :

MORTALITY: :

RESEARCH NEEDS: Low priority
**SPECIES**: Katsuwonus pelamis - Skipjack tuna/Pensstreep-tuna

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**STATUS**: Very important angling species with moderate commercial value

**HABITAT**
- a: Oceanic and coastal waters
- j: Pelagic

**AGE & GROWTH**: Foreign data only

**SIZE AT SEX**
- Maturity: Foreign data

**MATURITY**
- Foreign data

**REPRODUCTION**: Foreign data

**FEEDING**: Foreign data PEM N=465

**POPULATION**: PEM N=765

**LGH/WT**: \( g = 2.0 \times 10^{-6} \text{ Lcf (cm)}^3 \cdot 3.378 \)

**CATCH STATS**: Data in catch statistics programme

**DISTRIBUTION**: Circumglobal

**MIGRATION**: 

**MORTALITY**: 

**RESEARCH NEEDS**: Medium priority
- Good foreign data exists for this species
- Length and weight composition of catches
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort

**REFERENCES**
- Van der Elst (in prep)
- Smale (1983); Van der Elst (in prep)
- Van der Elst (1981); Smale (1983)
- Smale (1983); Van der Elst (in prep)
SPECIES : LICHIA AMIA - Leervis

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STATUS : Very important angling species, of low importance commercially

HABITAT
a: Nearshore shallow littoral
j: and adolescents: estuaries and sandy littoral in Cape

AGE & GROWTH: 87 otoliths/lengths collected (UPE); age from population analysis (ORI)

SIZE AT SEX :
MATURE

REPRODUCTION: 23 gonads processed for microscopic examination (UPE)

FEEDING :

POPULATION : Data available for analysing (UPE)

LGTH/WT :

REFERENCES
: Van der Elst (1981)
: Talbot (1955); Wallace & Van der Elst (1975); Winter (1979); Lasiak (1981,1982); Smale & Kok (in prep) and Beckley (in prep)
: Day et al (1981); Van der Elst (in prep); Kok (in prep Bennett (in prep)
: Day et al (1981); Van der Elst (1981); Lasiak (1982); Bennett (1982); Van der Elst (1983)
: Lasiak (1982); Van der Elst (1983); Smale (1983); Bennett (in prep)
: Day et al (1981); Blaber (1982a); Lasiak (1982); Smale (N=92) (in prep); Coetzee (in prep); Smale & Kok (in prep); Bennett (in prep); Whitfield (in prep); Marais (in prep); Van der Elst (in prep).
: Winter (1979); Smale (N=267) (1983); Van der Elst (1983); Coetzee (in press); Smale & Kok (in prep); Bennett (in prep); Whitfield (in prep)
: Marais & Baird (1980); Van der Elst (1981); Smale (1983); Van der Elst (1983)
CATCH STATS: Catch statistics programme; SEC - UPE CPUE 1979-81, historical records 1959-78, postal competitions 1977-80, SEC - Open sea CPUE

DISTRIBUTION: Mediterranean, African west coast, South African south and east coasts to Pt. do Ouro

MIGRATION:

MORTALITY: Natal possibly available 1983

RESEARCH NEEDS: Top priority
Length and weight composition of catches
Ageing and growth
Juvenile nursery areas (in marine environment)
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

: Ratte (1977); Van Wyk (1979) Marais & Baird (1980 & 1980a); Smale (1983); Bennett (in prep); Whitfield (in prep); Marais (in prep); Kok (in prep)

: Day et al (1981); van der Elst (in prep)
SPECIES: LITHOGRATHUS AURETI - West Coast Steenbras/Weskus-steenbras

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REFERENCES

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STATUS: Prime angling species and caught commercially in beach seines

HABITAT:
- a: Inshore over sandy bottoms
- j:
- l:

AGE & GROWTH:
- 359 otoliths/lengths collected: SFRI

SIZE AT SEX:
- Data available: SFRI

REPRODUCTION:
- Data available: SFRI

FEEDING:
- 359 stomachs analysed: SFRI

POPULATION:
- Data available: SFRI

LGTH/WT:
- Data available: SFRI

CATCH STATS:
- 1978 - 1982 Skeleton Coast Park
- SFRI Commercial statistics

DISTRIBUTION:
- SWA

MIGRATION:
- 1955 fish tagged

MORTALITY:

RESEARCH NEEDS:
- Top priority
  - Length and weight at sexual maturity
  - Ageing and growth
  - Spawning areas and seasons
  - Juvenile nursery areas
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort
SPECIES: LITHOGRANTHUS LITHOGRANTHUS - White steenbras/Witsteenbras

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STATUS: Prime angling species and caught commercially in beach seines

HABITAT:

a: Inshore over sandy bottoms
j: Estuaries

AGE & GROWTH:

SIZE AT SEX MATURE:

REPRODUCTION: Bisexuality common
(UPE 54 gonads processed for microscopic examination)

FEEDING:

POPULATION: (UPE - data available for analysing)

LGTH/WT: Figures available (UPE)

CATCH STATS:


REFERENCES:

Talbot (1955); Mehl (1973); Winter (1979)

Lasiak (1981, 1982);
Kok (in prep); Beckley (in prep); Bennett (in prep)

Mehl (1973); (50 otoliths/lengths); Lasiak (89 otoliths/lengths);
Blaber (1974a); Van Wyk (1977a); Kok (in prep); Beckley (in prep)

Mehl (1973)

Mehl (1973); Lasiak (1982)

Scott et al (1952); Talbot (1955); Mehl (1973) (N=437);
Lasiak (1982) (N=54);
Nepgen (1982); Whitfield (in prep)

Mehl (1973) (N=437); Winter (1979); Kok (in prep);
Whitfield (in prep); Beckley (in prep)

Mehl (1973); Blaber (1974a); Kok (in prep)

Ratte (1977); Marais & Baird (1980, 1980a); Kok (in prep); Whitfield (in prep); Marais (in prep)
DISTRIBUTION: Endemic, Saldanha Bay to Natal. South Coast

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Medium priority
Length and weight composition of catches
Catch/Unit effort
Total catch and total effort
SPECIES: LITHOGRANTHUS MORMYRUS - Sand steenbras/Sandsteenbras

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STATUS: Low importance as angling fish

HABITAT:
- a: Along sandy shores
- j: Shallow sandy shores
- l:

AGE & GROWTH:

SIZE AT SEX
MATURITY: Very limited data: P E M

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS:

DISTRIBUTION: Circum - Africa

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Low priority

Numerically important component of inshore trawling catch off S Cape coast by T B Davie in 1980. Data on most aspects of biology lacking. With P. olivaceum and to a lesser extent L. mormyrus may warrant further research as potentially exploitable species.

REFERENCES:

Gilchrist (1903, 1916)
Brownell (1979)
Buxton (1981); South Cape Distribution
SPECIES: LUTJANUS ARGENTIMACULATUS - River snapper/Rivier-snapper

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STATUS: Moderately important angling species

HABITAT:
- Offshore coral and rocky reefs to 80 m
- Estuarine (marine?)

AGE & GROWTH:

SIZE AT SEX
MATURITY: Limited data

REPRODUCTION: Limited data

FEEDING:

POPULATION: Limited data

LGTH/WT:

CATCH STATS: Limited data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
- Low priority
  - Length and weight composition of catches
  - Length and weight at sexual maturity
  - Ageing and growth
  - Spawning areas and seasons
  - Juvenile nursery areas
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort

REFERENCES:
- Van der Elst (1981)
- Wallace (1975); Van der Elst (in prep)
- Wallace (1975); Van der Elst (in prep)
- Wallace (1975); Van der Elst (in prep); Kyle (in prep)
- Van der Elst (1981)
SPECIES: **Megalops cyprinoides** - Tarpon/Osoog-tarpon

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**REFERENCES**

**STATUS**: Important to a small group of specialized anglers

**HABITAT**

a: Estuarine
j: Estuarine mainly
l: 

**AGE & GROWTH:**

**SIZE AT SEX**

**MATURITY**

**REPRODUCTION**

**FEEDING**

**POPULATION**: Data sparse

**LGTH/WT**: \( g = 1.29143 \times 10^{-2} \text{Lt(cm)}^2.88457 \)

**CATCH STATS**: Very little data on catch statistics programme

**DISTRIBUTION**: Widespread Indo Pacific

**MIGRATION**

**MORTALITY**

**RESEARCH**: Low priority

**NEEDS**: Some foreign data exists

**REFERENCES**

Wallace (1975); Kyle (in prep)

Van der Elst (1981)
**SPECIES** : NEOSCOPORIS LITHOPHILUS - Stonebream/Stinkvis

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| STATUS | Very important angling species with little commercial value |

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<tr>
<th>HABITAT</th>
<th>Shallow rocky shores</th>
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<tbody>
<tr>
<td>j:</td>
<td>Abundant in rocky intertidal</td>
</tr>
<tr>
<td>l:</td>
<td>: Joubert (1981)</td>
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| AGE & GROWTH: |

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<td>LGTH/WT</td>
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<td>CATCH STATS</td>
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<td>DISTRIBUTION:</td>
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<td>MIGRATION</td>
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<td>MORTALITY</td>
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<td>RESEARCH NEEDS</td>
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**REFERENCES**

- Joubert (1981)
- Berry *et al.* (1982)
- Joubert & Hanekom (1980)
- Joubert (1981)
SPECIES : OPLEGNATHUS CONWAYI - Cape knifejaw/Kaapse kraalbek

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<tr>
<td>Vulnerable to spear-fishing. Low importance.</td>
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<th>HABITAT</th>
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<td>a: Shallow inshore reefs</td>
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<td>j: Shallow inshore reefs</td>
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<td>: Buxton (1983)</td>
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<td>Endemic, Cape Point to Tugela</td>
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<th>RESEARCH NEEDS</th>
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<tr>
<td>Low priority</td>
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Improve biological sampling when opportunities available.
Assess impact of spearfishing.

REFERENCES:
Van der Elst (1981)
SPECIES: PACHYMETOPON AENEUM - Blue hottentot/Blou hottentot

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STATUS: Moderately popular as angling and food fish

HABITAT: Rocky reefs 20-80 m

AGE & GROWTH: PEM otoliths & scales N=100

SIZE AT SEX: 50% at ± Lcf 220 mm

REPRODUCTION: Oct-April - Cape

FEEDING: Ongoing analysis at PEM N=88

POPULATION: PEM Sample N=761

LGTH/WT: Buxton (1983)

CATCH STATS: Data in catch statistics programme

DISTRIBUTION: Endemic to Southern Natal & E Cape

MIGRATION: Buxton (1984)

MORTALITY: Buxton (1982)

RESEARCH: Medium priority

NEEDS: Length and weight composition of catches, juvenile nursery areas, distribution of stocks, residency and migration, catch/unit effort, total catch and total effort

REFERENCES:

Buxton (1984)

Buxton (1983)

Buxton (1984)

Buxton (1982)
SPECIES : PACHYMETOPON BLOCHII - Hottentot

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REFERENCES

STATUS : Prime importance as angling and commercial species

HABITAT : a: In kelp beds and down to 50 m over rocky seabed
          j: In kelp beds
          l:

AGE & GROWTH: \( L_t = 42.04 \ [1 - e^{-0.144(t-1.20)}] \)

SIZE AT SEX
MATUREY :

REPRODUCTION :

FEEDING :

POPULATION :

LGTH/WT :

CATCH STATS :

DISTRIBUTION: Endemic, west and south-west coasts of Republic

MIGRATION : Adults semi-resident
? larvae and juveniles

MORTALITY : \( Z = 0.33 \) in False Bay. SWC 1967-1969.
M unknown.

RESEARCH NEEDS :

Length and weight composition of catches
Distribution of stocks, residency and migration (degree of residency)
Catch/Unit effort
Total catch and total effort

REFERENCES

Brownell (1979)

Nepgen (1977)

Nepgen (1977)

Nepgen (1977)

Nepgen (1977)

C Griffiths (UCT) (in prep)

Nepgen (1977)

Van der Elst (1981)

Nepgen (1977)
SPECIES: PACHYMETOPON GRANDE - Bronze bream/Bruiin hottentot

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REFERENCES

STATUS: Moderately important angling fish

HABITAT: a: Shallow reefs to 10 m.

AGE & GROWTH: UPE otolith N=51; limited Natal data: Van der Elst (in prep)

SIZE AT SEX: Limited Natal data: Van der Elst (in prep)

REPRODUCTION: UPE sample N=69 - limited Natal data: Van der Elst (in prep)

FEEDING: Limited Natal data - herbivore: Van der Elst (in prep)

POPULATION: Limited Natal data: Van der Elst (in prep)

LGTH/WT: Limited Natal data: Van der Elst (in prep)

CATCH STATS: Some data in catch statistics programme: Joubert (1980a)

DISTRIBUTION: Endemic to Natal and eastern Cape

MIGRATION:

MORTALITY:

RESEARCH: Medium priority

NEEDS: Length and weight composition of catches

Ageing and growth

Juvenile nursery areas

Catch/Unit effort

Total catch and total effort
SPECIES : PAGELLUS NATALENSIS - Red tjo-tjor/Rooitjor-tjor

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REFERENCES

STATUS : Moderately important angling fish

HABITAT : a: Deeper sandy bottoms, usually reef associated
          j:
          l:

AGE & GROWTH: Some foreign data

SIZE AT SEX
MATURITY :

REPRODUCTION: Limited foreign data

FEEDING :

POPULATION :

LGTH/WT :

CATCH STATS :

DISTRIBUTION: West Indian Ocean

MIGRATION :

MORTALITY :

RESEARCH NEEDS : Top priority
Length and weight composition of catches
Length and weight at sexual maturity
Ageing and growth
Spawning areas and seasons
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

Druzhinin (1975)
Buxton (1982)
SPECIES: PETRUS RUPESTRIS - Red steenbras/Rooisteenbras

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REFERENCES

STATUS: Prime angling and commercial fish; apparently declining in abundance

HABITAT:
a: Offshore reefs down to 160 m
j: Reefs

AGE & GROWTH: SEC some otolith material collected (PEM)

SIZE AT SEX
MATURITY: Sex reversal probable

REPRODUCTION:

FEEDING: Natal - limited data
SEC - N=100

POPULATION: SEC - N=693

LENGTH/WT

CATCH STATS: CPUE (total catch and total effort = nil)

DISTRIBUTION: Endemic, False Bay to St. Lucia

MIGRATION: Appears in Natal in winter, but not documented

MORTALITY:

RESEARCH:
NEEDS
- Length and weight composition of catches
- Ageing and growth
- Spawning areas and seasons
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort

Van der Elst (1981)
Smale (1983)
SPECIES: PLATYCEPHALUS INDICUS - Bartailed flathead/Balkstert-platkop

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REFERENCES

STATUS: Moderately important estuarine angling fish: Van der Elst (1981)

HABITAT
a: estuaries (? shallow muddy inshore areas)
j: estuaries (? marine)
l:

AGE & GROWTH:

SIZE AT SEX
MATURITY:

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS: Catch statistics programme

DISTRIBUTION:

MIGRATION:

MORTALITY:

RESEARCH NEEDS:

Low priority
Length and weight composition of catches
Length and weight at sexual maturity
Ageing and growth
Spawning areas and seasons
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

Van der Elst (1981)
SPECIES: POLYSTEGANUS COERULEOPUNCTATUS - Blueskin/Blouvel

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REFERENCES

STATUS: Moderate importance as angling & commercial species

HABITAT
a: Deeper reefs 66 to 405 m
j: 
L: 

AGE & GROWTH: Some foreign data

SIZE AT SEX
MATURITY: Some foreign data

REPRODUCTION: Some foreign data

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS: Limited data on catch statistics programme

DISTRIBUTION: Natal to Red Sea

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
Length and weight composition of catches
Length and weight at sexual maturity
Aging and growth
Spawning areas and seasons
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

Van der Elst (1981)
Busakhin (1980)
**SPECIES**: POLYSTEGANUS PRAEORBITALIS - Scotsman/Skotsman

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**REFERENCE**

**STATUS**: Important angling and commercial species

**HABITAT**
- a: Widespread on reefs 20-120 m
- j: Present on reefs 20-70 m
- l: 

**AGE & GROWTH**: 

**SIZE AT SEX**

**MATURITY**: 

**REPRODUCTION**: 

**FEEDING**: 

**POPULATION**: 

**LGTH/WT**: 

**CATCH STATS**: Limited data on catch statistics programme

**DISTRIBUTION**: Confined to Natal & S Mozambique

**MIGRATION**: 

**MORTALITY**: 

**RESEARCH NEEDS**: Top priority
- Length and weight composition of catches
- Ageing and growth
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
SPECIES: POLYSTEANUS UNDULOSUS - Seventyfour/Vier-en-sewentig

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REFERENCES

STATUS: Important angling and commercial fish, reduced in abundance through overfishing

HABITAT: Deep Reefs 20-200 m

AGE & GROWTH: Adequate data

SIZE AT SEX
MATURITY: Male 330 mm
Female 350 mm

REPRODUCTION: September-November
Natal continental shelf

FEEDING: Carnivore, mainly piscivorous but includes cephalopods and pteropods.

POPULATION: Males : Females : 1:1
Smale N=800

LENGTH/WT:

CATCH STATS: Limited data. Catch statistics programme
CPUE : SEC

DISTRIBUTION: Endemic, Agulhas to Maputo

MIGRATION: Cape to Natal during winter months

MORTALITY:

RESEARCH NEEDS:
Length and weight composition of catches
Spawning areas and seasons
(Extent of spawning areas)
Juvenile nursery areas
Catch/Unit effort
Total catch and total effort

REFERENCES

Ahrens (1964)
Ahrens (1964)
Ahrens (1964)
Ahrens (1964)
Smale (1983) (N=10)
Ahrens (1964)
Smale (1983)
Crawford & Crous (1982);
Smale (1983)
Ahrens (1964)
**SPECIES** : POMADASYS HASTA - Javelin grunter/Spies-knorder

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**REFERENCES**

**STATUS** : Moderate angling importance in estuaries and offshore

**HABITAT**
- a: Deep reefs to 75 m
- j: Estuarine - possibly also marine

**AGE & GROWTH**:

**SIZE AT SEX**

**MATURITY**

**REPRODUCTION**

**FEEDING**

**POPULATION** : Estuarine populations only

**LENGTH/WT** : \( g = 6.57 \times 10^{-5} \text{ (Lt) cm}^2 \times 2.7125 \)

**CATCH STATS** : No data on catch statistics programme

**DISTRIBUTION** : Widespread Indo Pacific

**MIGRATION**

**MORTALITY**

**RESEARCH NEEDS** : Low priority
- Length and weight composition of catches
- Length and weight at sexual maturity
- Ageing and growth
- Spawning areas and seasons
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
- Marine aspects of juvenile nursery areas
SPECIES: POMADYS COMMersonni - Spotted grunter/Spikkel-knorder

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STATUS: Very important angling species, not exploited commercially

HABITAT: a: Sandy shores and sand near rocky outcrops, estuaries

j: Estuaries:

l: 

AGE & GROWTH: UPE: 20 otoliths/lengths collected plus 20 otoliths/lengths (Lasik). 895 \( [1-e^{-0.066(t-348)}] \)

SIZE AT SEX: Female \( L_c=500 \). Male \( L_c=800 \)

MATURITY: 

REPRODUCTION: August to December, Natal inshore. UPE 15 gonads processed for microscopic examination

FEEDING: 

POPULATION: ORI: available 1983; polymodal:

LGTH/WT: \( g = 1.4 \times 10^{-5} L_c^{2.96} \)


REFERENCES: 

: Wallace (1975)

: Wallace (1975); Wallace & Van der Elst (1975); Van der Elst (1981); Kok (in press); Beckley (in press)

: Wallace & Van der Elst (1975); Winter (1979)

: Melville-Smith & Baird (1980)

: Wallace (1975)

: Wallace (1975)

: Wallace (1975)

: Van der Westhuisen & Marais (1977); Lasik (1982); Marais (in prep); Blaber (in progress)

: Wallace (1975); Winter (1979); Kok (in prep); Beckley (in prep); Marais (in prep)

: Marais & Baird (1980); Van der Elst (1981)

: Marais & Baird (1980,1980a); Kok (in prep)
DISTRIBUTION: Cape Agulhas northwards to Indian Ocean coasts including Australia

MIGRATION : Van der Elst (1981)
MORTALITY : Wallace (1975)

RESEARCH NEEDS : Medium priority
Length and weight composition of catches
Juvenile nursery areas (do they occur at sea?)
Catch/Unit effort
Total catch and total effort
SPECIES: POMADASYS OLIVACEUM - Piggy/Varkie

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REFERENCES

STATUS: Important angling fish

HABITAT
a: Only common on reefs deeper than 10 m
j: Recruited to intertidal & deeper reefs of Natal at early age
1: ?

AGE & GROWTH: Unpublished data on juvenile growth available from ORI

SIZE AT SEX
MATURITY: M Lcf = 130; F Lcf = 150

REPRODUCTION: Mar-Dec - Natal deep reefs

FEEDING: Omnivorous on seaweeds, sponges & small bivalves

POPULATION: Sex ratio 1:1 - size distribution depends on depth range

LGTH/WT: Juvenile g = 1.4 x 10^-5 Lcf (cm)^3.07
Adult g = 8.8 x 10^-5 Lcf (cm)^2.701

CATCH STATS: No data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION: Nearshore - Offshore

MORTALITY:

RESEARCH: Low priority

NEEDS: Length and weight composition of catches
Ageing and growth
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
SPECIES: POMATOMUS SALTATRIX - Eel

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REFERENCES

STATUS: Prime angling fish with moderate commercial value

HABITAT

a: Rocky and sandy shores

j: Sandy littoral of SEC & SWC, limited estuarine

AGE & GROWTH: $L_t = 840 \left[1 - e^{-0.1966(t-0.32)}\right] - UPE otoliths (N = 212)

SIZE AT SEX
MATUREY: M = 240; F = 250

REPRODUCTION: Sep-Dec: Natal shelf - UPE data N=144

FEEDING
ORI data = 87% piscivore - PEM data N = ± 1 000

POPULATION
Sex ratio 1:1 Polymodal distribution. PEM data N=9000

LGTH/WT: $g = 1.307 \times 10^{-5} L_t$ (cm) 2.934

CATCH STATS: Good data in catch statistics programme

DISTRIBUTION: Worldwide

MIGRATION: Seasonally between Cape & Natal

MORTALITY: Both fishing and natural mortality available: Van der Elst (in prep)

RESEARCH NEEDS

Top priority
Length and weight composition of catches
Juvenile nursery areas
Catch/Unit effort
Total catch and total effort

: Van der Elst (1976); Lasiak (1981, 1982); Smale (in prep).
: Van der Elst (in prep); Smale & Kok (in prep)

: Van der Elst (1976); Bennett (in prep); Lasiak (in prep)

: Van der Elst (1976)
: Van der Elst (1976); Smale (1983); Lasiak (in prep)

: Van der Elst (1976); Smale (1982); Smale (in prep)

: Van der Elst (1976); Smale (1983); Smale & Kok (in prep); Bennett (in prep)

: Van der Elst (1976)
: Van der Elst (1976); Ratte (1977); Marais & Baird (1980, 1980a); Smale (1983); Marais (in prep); Kok (in prep)

: Van der Elst (1976); Van der Elst (in prep)
SPECIES: PORCOSTOMA DENTATA - Dane/Deen

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STATUS: Prominent in offshore catches but low commercial value

HABITAT: a: Abundant on Natal reefs 20-100 m
         j:
         l:

AGE & GROWTH:

SIZE AT SEX
MATURITY:

REPRODUCTION: Spring: Natal continental shelf

FEEDING: Carnivorous on crinoids, ophiuroids, decapod crustaceans & polychaetes

POPULATION:

LGTH/WT:

CATCH STATS: No data in catch statistics programme

DISTRIBUTION: Confined to Natal and S Mocambique

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
- Top priority
- Length and weight composition of catches
- Length and weight at sexual maturity
- Ageing and growth
- Spawning areas and seasons
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort

REFERENCES:
- Garratt (in prep)
SPECIES : PORODERMA AFRICANUM - Striped catshark/Streep-kathasi

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STATUS : Low importance

HABITAT a: Reefs
j:
l: N/A

AGE & GROWTH: Preliminary extrapolated data

SIZE AT SEX
MATURITY :

REPRODUCTION: Data being collected

FEEDING :

POPULATION :

LGTH/WT :

CATCH STATS : Some data in catch statistics programme

DISTRIBUTION: Endemic to SA from Natal to Cape Town

MIGRATION :

MORTALITY :

RESEARCH NEEDS :
Length and weight composition of catches
Length and weight at sexual maturity
Ageing and growth
Pupping areas and seasons
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
Data collection incidental and opportunistic, and should be ongoing.

REFERENCES :
Bass et al (1975)
Van der Elst (1981)

: Bass et al (1975)
: Van der Elst (1981)
SPECIES: PORODERMA PANTHERINUM - Spotted catshark/Spikkel-kathai

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STATUS:

HABITAT:
- a: Reef
- j:
- l: N/A

AGE & GROWTH:

SIZE AT SEX:
MATURITY:

REPRODUCTION: Data being collected: SEC

FEEDING:

POPULATION:

LGTH/WT: Juveniles lacking: SEC

CATCH STATS:

DISTRIBUTION: Endemic

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
- Low priority
  - Length and weight composition of catches
  - Length and weight at sexual maturity
  - Ageing and growth
  - Pupping areas and seasons
  - Juvenile nursery areas
  - Distribution of stocks, residency and migration
  - Catch/Unit effort
  - Total catch and total effort
  - Data collection incidental and opportunistic, and should be ongoing

REFERENCES:
- Bass et al. (1975)
- Buxton (1984)
SPECIES: PTEROGYMNUS LANARIUS - Panga

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REFERENCES

STATUS: Important ski-boat and commercial line-boat species

HABITAT: a: Deep water, reef and sand
         j:
         l:

AGE & GROWTH: : Hecht (1976)

SIZE AT SEX : Hecht (1976)

MATURITY : Hecht (1976)

REPRODUCTION: : Hecht (1976); Buxton (1983)

FEEDING: Preliminary study
         More detail N=83

POPULATION: N=1711

LGTH/WT : Hecht (1976); Buxton (1982)

              Total catch and total effort: Nil

DISTRIBUTION: Endemic, False Bay to Durban
               Malagasy

MIGRATION : :

MORTALITY : :

RESEARCH NEEDS: Top priority
                Length and weight composition of catches
                Juvenile nursery areas
                Distribution of stocks, residency and migration
                Catch/Unit effort
                Total catch and total effort
                Investigate role in 'doppie' fishery.
SPECIES : RHABDOSARGUS GLOBICEPS - White stumpnose/Witstompneus

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STATUS : Important angling and commercial species.

HABITAT a: Littoral and shallow inshore
j: Estuaries and shallow inshore (especially in SWC and WC)

AGE & GROWTH:

SIZE AT SEX:

MATURITY:

REPRODUCTION:

FEEDING : False Bay : N=78 (SFRI)

POPULATION:

LGTH/WT:

CATCH STATS : Swartkops estuary

DISTRIBUTION: African west coast Angola southwards; South African west, south-west and south-east coasts.

MIGRATION:

MORTALITY:

RESEARCH NEEDS : Medium priority
Length and weight composition of catches
Length and weight at sexual maturity (expand on Talbot's work)
Ageing and growth (expand on Talbot's work)
Spawning areas and seasons (expand on Talbot's work)
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort

REFERENCES:

: Talbot (1955); Wallace & Van der Elst (1975); Beckley (in prep); Kok (in prep); Bennett (in prep)

: Talbot (1955)

: Talbot (1955)

: Scott et al (1952); Talbot (1955) (N=360 on estuaries, N=58 in sea); Nepgen (1982); Bennett (in prep)

: Talbot (1955); Bennett (in prep); Kok (in prep); Beckley (in prep)

: Marais & Baird (1980)

: Van der Elst (1981)
**SPECIES**: RHABDOSARGUS HOLUBI - Cape stumpnose/Kaapse stompneus

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**STATUS**: Important estuarine angling fish

**HABITAT**
a: Mainly inshore marine
j: Estuaries

**AGE & GROWTH**:  
: Talbot (1955); Blaber (1974); Wallace (1975); Wallace & Van der Elst (1975); Winter (1979); Kok (in prep); Beckley (in prep)

**SIZE AT SEX**

**MATURITY**:  
: Mallvile-Smith & Baird (1980)

**REPRODUCTION**:  
: Blaber (1974a); Wallace & Van der Elst (1975); Winter (1979); Bennett (in prep); Beckley (in prep)

**FEEDING**:  
: Blaber (1974); Talbot (1975); Whitfield (1981); Bennett (in prep); Whitfield (in prep); De Wet (in prep)

**POPULATION**:  
: Blaber (1974); Winter (1979); Kok (in prep); Whitfield (in prep); Beckley (in prep)

**LGTH/WT**:  
: Blaber (1974a); Winter (1979); Marais & Baird (1980)

**CATCH STATS**:  
: Blaber (1973); Marais & Baird (1980, 1980a); Kok (in prep); Whitfield (in prep)
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<thead>
<tr>
<th><strong>DISTRIBUTION</strong></th>
<th>Endemic, Mossel Bay to Maputo</th>
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<td><strong>MIGRATION</strong></td>
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<td>Length and weight at sexual maturity</td>
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<td>Spawning areas and season</td>
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<td>Occurrence at sea.</td>
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<td><strong>: Blaber (1973, 1974)</strong></td>
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**SPECIES**: RHABDOSARGUS SARBA - Natal stumpnose/Natal sea stompneus

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**REFERENCES**

**STATUS**: Prime angling fish with low commercial value:

**HABITAT**
- a: Primarily marine
- j: Estuarine
- l:

**AGE & GROWTH**:

**SIZE AT SEX**

**MATURITY**: Both sexes $L_T = 240$ mm

**REPRODUCTION**: July-November - Natal sandy shores (protogynous hermaphrodite)

**FEEDING**: Carnivorous on molluscs, hippids & echinodiscus

**POPULATION**: Both estuarine & marine - good data

**LGTH/WT**: $g = 1.794 \times 10^{-5} \ L_T$ (cm) 2.973

**CATCH STATS**: Good data in catch statistics programme

**DISTRIBUTION**: Widespread Indo Pacific

**MIGRATION**:

**MORTALITY**: Preliminary estimates only in 1983

**RESEARCH NEEDS**
- Medium priority
- Length and weight composition of catches
- Ageing and growth
- Distribution of stocks residency and migration
- Catch/Unit effort
- Total catch and total effort

**Wallace (1975)**

**Van der Elst (1981)**

**Van der Elst (in prep)**
**SPECIES** : RHINOBATUS ANNULATUS - Lesser sandshark/Kleiner sandkruiiper

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**REFERENCES**

**STATUS** : Important angling fish - no commercial value:

**HABITAT**  
a: Shallow coastal waters  
j: Shallow sandy shores  
l: :  

**AGE & GROWTH**: Preliminary extrapolated data  
: Wallace (1976)

**SIZE AT SEX**  
: Van der Elst (1981)

**MATURITY**  
: Van der Elst (in prep)

**REPRODUCTION**  
: Van der Elst (in prep)

**FEEDING**  
: Van der Elst (in prep)

**POPULATION**  
: Van der Elst (in prep)

**LGTH/WT**  
: \( g = 7.881 \times 10^{-5} L_t (cm)^{2.53} \)  
: Van der Elst (1981)

**CATCH STATS** : Good data in catch statistics programme  
: Van der Elst (1979)

**DISTRIBUTION** : Confined to S Mocambique and East coast of South Africa

**MIGRATION**  
: 

**MORTALITY**  
: 

**RESEARCH** : Medium priority

**NEEDS**  
Length and weight composition of catches  
Distribution of stocks, residency and migration  
Catch/Unit effort  
Total catch and total effort
SPECIES: RHIZOPRIONODON ACUTUS - Milkshark/Melkhaoai

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STATUS: Very important angling species - no commercial value

HABITAT:
- a: Natal sandy shores
- j: Natal sandy shores

AGE & GROWTH: Extrapolated data

SIZE AT SEX
MATURITY: m \( L_c = 700 \) mm; f \( L_c = 750 \) mm

REPRODUCTION: 3-6 pups born: Nov-Jan - Natal sandy shores

FEEDING: Carnivorous on small teleosts, crustaceans and cephalopods

POPULATION: F:M = 1:1 - normal distribution

LGTH/WT: \( 1.59 \times 10^{-5} L_c(cm) \) 2.809

CATCH STATS: Good data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION: Seasonal

MORTALITY: 

RESEARCH NEEDS:
- Length and weight composition of catches
- Catch/Unit effort
- Total catch and total effort

REFERENCES:

- Bass et al (1975)
- Van der Elst (1981)
SPECIES: RHYNCOBATUS DJEDDENSI S - Giant sandshark/Reus-sandkruiper

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REFERENCES

STATUS: Important angling species - no commercial value

HABITAT:
a: Shallow and deeper coastal waters to 30 m
j: Shallow sandy shores

AGE & GROWTH: Preliminary extrapolated data

SIZE AT SEX:
MATURITY:
REPRODUCTION: Limited data

FEEDING:
POPULATION:

LGTH/WT: $2.7287 \times 10^{-6} L_c^{3.086}$

CATCH STATS: Good data as "sandshark" in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION:

MORTALITY:

RESEARCH: Medium priority

NEEDS: Length and weight composition of catches
Catch/Unit effort
Total catch and total effort
**SPECIES**: SARPA SALPA - Strepie

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**STATUS**: Important angling fish, caught as food

**HABITAT**
- a: Shallow water; rocky shores
- j: Sandy littoral and estuaries S & E Cape

**AGE & GROWTH**: Preliminary unpublished data available at ORI

**SIZE AT SEX**
- MATURITY: Male 145 mm, Female 165 mm

**REPRODUCTION**: April-September, Natal rocky littoral, (rudimentary hermaphrodite)

**FEEDING**: True herbivore grazing mainly on Hypnea sp.

**POPULATION**: Sex ratio 1:1, unimodal but distinctly different between sexes

**LGTH/WT**: $5.9 \times 10^{-5}$ Lcf 2.793

**CATCH STATS**: Limited unpublished data at ORI

**DISTRIBUTION**: Saldanha Bay to Maputo; NE Atlantic and Mediterranean

**MIGRATION**

**MORTALITY**

**RESEARCH NEEDS**: Low priority
- Length and weight composition of catches
- Ageing and growth
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
- Same research needed in the Cape as that completed in Natal.

**REFERENCES**
- Joubert (1981); Van der Elst (1981)
- Joubert & Hanekom (1980)
- Joubert (1981)
### SPECIES: SCOMBER JAPONICUS - Mackerel/Makriel

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### REFERENCES

- Important commercially by line- and purse-seine
- Pelagic, shoaling
- Baird (1977)
- Baird (1974)
- Baird (1977)
- Baird (1978a)
- Baird (1974); Baird (1978a)
- Pelagic and handline stats.
- African west coast Angola southwards; South African south and east coasts to Maputo
- Top priority
- Length and weight composition of catches
- Juvenile nursery areas
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
- Stock assessment
SPECIES: SCOMBEROMORUS COMMerson - King mackerel/Katonkel

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STATUS: Prime angling and commercial species

HABITAT:
- a: Pelagic - coastal waters to shelf
- j:
- l:

AGE & GROWTH: ORI otoliths selected (N=1200) Australian records exist

SIZE AT SEX
MATURITY: Good data (N = ± 4 000)

REPRODUCTION: Primarily outside SA waters

FEEDING: Limited data - primarily piscivorous

POPULATION: Good data (N = ± 4 000)

LGTH/WT: \[ g = 7.95 \times 10^{-6} \text{ Lcf (cm)}^2 \cdot 2.997 \]

CATCH STATS: Data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION: Seasonally very pronounced

MORTALITY:

RESEARCH NEEDS:
- Top priority
- Length and weight composition of catches
- Distribution of stocks, residency and migration

REFERENCES:
- Van der Elst (in prep)
SPECIES: SCOMBEROMORUS PLURILINEATUS - Spotted mackerel

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REFERENCES

STATUS: Prime angling fish with considerable commercial value

HABITAT: a: Pelagic but reef associated
j: Pelagic - coastal waters

AGE & GROWTH: Available 1984

SIZE AT SEX
MATURETY:

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT: \( g = 9.88 \times 10^{-4} \text{ Lcf(cm)}^2, 2.2766 \)

CATCH STATS: Some data in catch statistics programme

DISTRIBUTION: Confined primarily to Natal & Mozambique

MIGRATION:

MORTALITY:

RESEARCH: Top priority

NEEDS: Length and weight composition of catches
       Catch/Unit effort
       Total catch and total effort
SPECIES: SERIOLA LALANDI - Cape yellowtail/Kaapse geelstert

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STATUS: Very important angling and commercial species

HABITAT:
- a: Pelagic, coastal waters, often near reefs
- j: Pelagic, coastal waters
- l: Pelagic

AGE & GROWTH: SFRI data, collected annually, preliminary analysis complete.

SIZE AT SEX MATURITY: SFRI data analysed

REPRODUCTION:
- Natal shelf. PEM: SEC limited data, SFRI: limited data on spawning area and trawl, not yet fully analysed

FEEDING: False Bay only; SFRI little data available. (N=200)

POPULATION: SFRI: Annual length frequency and biological: Smale (1983) sampling data partially analysed (N=520)

LGTH/WT: SFRI: Extensive data fully analysed

CATCH STATS: SFRI: Commercial catch data collected annually, partially analysed; insufficient for stock assessment. SEC. CPUE only

DISTRIBUTION: West coast of Africa south of equator, South Africa south and east coast to Tugela. Also Brazil south of equator.

MIGRATION: Annual along Natal, SWC and SEC coasts SFRI tagging studies

MORTALITY: SFRI: some data available, not adequate

RESEARCH NEEDS:
- Top priority
  - Length and weight composition of catches
  - Ageing and growth (ongoing)
  - Spawning areas and seasons (ongoing)
  - Juvenile nursery areas
  - Distribution of stocks, residency and migration (ongoing)
  - Catch/Unit effort
  - Total catch and total effort
  - Investigation of sport angling, commercial line and commercial trawl aspects of the fishing.

REFERENCES:
- Penney (1982); Smale (1983); Van der Elst (in prep)
- Nepgen (1982); Smale (1983)
- Brownell (1979)
SPECIES : SPARODON DURBANENSIS - Musselcracker/Witbiskop

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REFERENCES

STATUS : Important angling species but diminished catches in Natal.

HABITAT
a: Inshore reefs
j: Tidal pools
l:  

AGE & GROWTH: 28 otoliths/lengths collected
UPE : 9 otoliths/lengths

SIZE AT SEX:
MATURITY:

REPRODUCTION: 28 gonads processed for microscopic examination; UPE 9 processed gonads

FEEDING : 28 stomachs analysed UPE : 10 stomachs collected

POPULATION : UPE : data available for analysing (N=?)

LGTH/WT : UPE : Figures available (N=?)

CATCH STATS : UPE : CPUE 1979-81; historical records 1959-78; postal competitions 1977-80

DISTRIBUTION: Endemic, Saldanha Bay to Tugela

MIGRATION :

MORTALITY :

RESEARCH :

NEEDS
Difficulties arise due to rel. low numbers caught over a large stretch of coast. Ongoing longterm monitoring required whenever possible. Length and weight composition of catches Length and weight at sexual maturity Ageing and growth Spawning areas and seasons Distribution of stocks, residency and migration Catch/Unit effort Total catch and total effort
SPECIES: SPONDYLIOSOMA EMARGINATUM - Steentjie

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STATUS: Bait fish, moderately important

HABITAT: a: Reef
j: Reef/sand
l: 

AGE & GROWTH: Otoliths and scales being collected.

SIZE AT SEX
MATURITY:

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS: CPUE; (total catch and total effort: nil)

DISTRIBUTION: Endemic, west coast to Kei River

MIGRATION:

MORTALITY:

RESEARCH NEEDS: Medium priority
Length and weight composition of catches
Juvenile nursery areas
Catch/Unit effort
Total catch and total effort
Ongoing research needed

REFERENCES:

: Buxton (1984)
: Bruggen (1965)
: Buxton (1984)?
SPECIES: TACHYSURUS FELICEPS - Sea catfish/Seebaber

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STATUS: Commercially exploited on a small scale at Port Alfred, St. Helena Bay and few others - though probably underutilized.

HABITAT
a: Continental shelf. Occurs in SEC estuaries
b: Continental shelf. Occurs in SEC estuaries
l: N/A Mouth breeders

AGE & GROWTH:

SIZE AT SEX
MATURITY:

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS:

DISTRIBUTION: Endemic Southern African Coast from Angola to Mozambique

MIGRATION:

MORTALITY:

RESEARCH NEEDS:
Medium priority
Ageing and growth
Length and weight composition of catches (when comm. expl. develops)
Catch/Unit effort
Total catch and total effort

REFERENCES
Winter (1979); Kok (in prep); Beckley (in prep)
Bennett (in prep)
Kok (in prep)
Scott et al (1952); Bennett (in prep); Whitfield (in prep); Marais (in prep)
Winter (1979); Kok (in prep)
Whitfield (in prep); Marais (in prep)
Marais & Baird (1980)
Marais & Baird (1980, 1980a); Kok (in prep); Bennett (in prep); Whitfield (in prep); Marais (in prep)
SPECIES: THUNNUS ALALUNGA - Longfin tuna/Albakoor

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juvenile

| larvae |     |     |     |    |    |

REFERENCE: X

STATUS: Very important, main species of tuna caught on west coast

HABITAT: Oceanic

AGE & GROWTH: Good Foreign Data.

SIZE AT SEX MATURITY: Good Foreign Data.

REPRODUCTION: Good Foreign Data

FEEDING: Good Foreign Data

POPULATION: Good Foreign Data

LNGTH/WT: \( W = 0.00006303 \times L^3.28 \)

CATCH STATS: Supplied annually by SFI to ICCAT

DISTRIBUTION: World-wide

MIGRATION: Extensive: ICCAT refs

MORTALITY: ICCAT refs

RESEARCH NEEDS: Top priority
Continued participation in ICCAT
SPECIES: THUNNUS ALBACARES - Yellowfin tuna/Geelvin-tuna

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REFERENCES

STATUS: Very important angling and commercial species

HABITAT
a: Oceanic and coastal waters
j: Pelagic offshore
l: Oceanic

AGE & GROWTH: Good foreign data

SIZE AT SEX
MATUREITY: Good foreign data

REPRODUCTION: Good foreign data

FEEDING: Good foreign data; PEM data N=614

POPULATION: PEM data N=694

LGTH/WT: $g = 1.05 \times 10^{-4} \text{ Lcf } 2.738$

CATCH STATS: Data on catch statistics - data from ICCAT

DISTRIBUTION: Circumglobal

MIGRATION: Foreign data ICCAT

MORTALITY: Good foreign data

RESEARCH NEEDS: Top priority
- Length and weight composition of catches
- Distribution of stocks, residency and migration
- Catch/Unit effort
- Total catch and total effort
SPECIES: THUNNUS OBESUS - Bigeye tuna/Grootoog-tuna

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STATUS: Commercially important to longline fishermen only

HABITAT:
- a: Offshore oceanic
- j:
- l:

AGE & GROWTH:

SIZE AT SEX
MATURITY:

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT: \( Wt = 0.000012494 \times Lc^3 \times 12082 \)

CATCH STATS:

DISTRIBUTION: Atlantic Ocean

MIGRATION: Entire West Cape

MORTALITY: No information on natural mortality
- Artificial mortality from catch statistics programme

RESEARCH NEEDS: Low priority
- Continued participation in ICCAT

REFERENCES:
- Collect vol: Scientific papers ICCAT 9(2)
- De Jager et al (1963); Nepgen (1970); Collect vol: Scientific papers ICCAT 9(2)
- Collect vol: Scientific papers ICCAT 9(2)
- Supplied annually by SFI to ICCAT
SPECIES : THYRSITES ATUN - Snoek

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REFERENCES

STATUS : Prime importance commercially and important angling species, particularly on SWC and WC

HABITAT
a: pelagic, shoaling
j:
l:

AGE & GROWTH: 64 otoliths/lengths : SFRI (SWA)

SIZE AT SEX
MATURITY : 100 % at Lcf=520 mm

REPRODUCTION:

FEEDING:

POPULATION:

LGTH/WT:

CATCH STATS : SFRI commercial statistics. More caught by trawlers than by line

DISTRIBUTION: West coast of Africa south of equator; South African coast eastwards to Port Alfred.

MIGRATION : ? extensive along west coast

MORTALITY:

RESEARCH NEEDS:
Length and weight composition of catches
Length and weight at sexual maturity
Ageing and growth
Juvenile nursery areas
Distribution of stocks, residency and migration
(include investigation of possible west coast migration)
Catch/Unit effort
Total catch and total effort

Nepgen (1979) (Fish Bull. 12)
Nepgen (1979) (Fish Bull. 11)
Nepgen (1979) (Fish Bull. 12)
Nepgen (1979) (Fish Bull. 12)
De Jager (1955)
SPECIES: TRACHINOTUS AFRICANUS - African pompano/Suidelike pompano

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REFERENCES

STATUS: Important angling fish of low commercial value

HABITAT

a: Sandy and rocky marine shores
j: Shallow sandy beaches - sometimes estuarine
l:

AGE & GROWTH: Tank growth experiments

SIZE AT SEX

MATURITY: Limited data

REPRODUCTION: Limited data

FEEDING: Limited data

POPULATION: Estuarine and marine

LGTH/WT: Limited data

CATCH STATS: Data in catch statistics programme

DISTRIBUTION: Confined primarily to Mocambique & Natal

MIGRATION:

MORTALITY:

RESEARCH NEEDS:

Length and weight composition of catches
Length and weight at sexual maturity
Ageing and growth
Spawning areas and seasons
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
SPECIES: TRACHINOTUS BOTILA - Largespot pompano/Grootkol-pompano

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REFERENCES: Van der Elst (in prep)

STATUS: Important angling species with moderate food value

HABITAT
a: Sandy back surf zone
j: Super shallow surf zone
l: ?

AGE & GROWTH:

SIZE AT SEX

MATURITY:

REPRODUCTION:

FEEDING:

POPULATION: Limited data

LGTH/WT: g = 2.21623 x 10^-5 Lcf (mm) 2.9441

CATCH STATS: Data in catch statistics programme

DISTRIBUTION: Widespread Indo Pacific

MIGRATION:

MORTALITY:

RESEARCH NEEDS
Medium priority
Length and weight composition of catches
Length and weight at sexual maturity
Ageing and growth
Spawning areas and seasons
Juvenile nursery areas
Distribution of stocks, residency and migration
Catch/Unit effort
Total catch and total effort
SPECIES : UM BRINA Species - Tasselfish/Boardman

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REFERENCES

STATUS : Low angling importance, landed in beach seines and trawls. More important in False Bay

HABITAT : Rocky shores and bays

AGE & GROWTH :

SIZE AT SEX

MATURITY :

REPRODUCTION :

FEEDING :

POPULATION :

LGTH/WT :

CATCH STATS :

DISTRIBUTION: Endemic, Southern Cape to Natal, extending into Mozambique

MIGRATION :

MORTALITY :

RESEARCH : Low priority

NEEDS: Basic biology when opportunities arise
       Taxonomic study of SA species
REFERENCES


BUXTON, C.D. 1982. Inshore small mesh trawling survey off the Southern Cape coast. IV. The distribution of Pagellus natalensis, Lithognatus mormyrus and Pomadasys olivaceum, with notes on the feeding biology. (in prep)


GARRATT, P.A. The biology of four exploited sparid fishes of Natal. (in prep).


KYLE, R. Composition of catches made by Tonga fishermen in their kraals at Kosi Bay. (in prep).


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TITLES IN THIS SERIES


* Out of print