



Who's who of fishes of the Western Indian Ocean

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Coastal fishes of the Western Indian Ocean



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The highly anticipated *Coastal Fishes of the Western Indian Ocean* was finally published towards the end of 2022. Anyone working in the fields of marine fish identification, fisheries and fish biology, in the Western Indian Ocean (WIO) region and beyond, can put away their well-thumbed copies of *Smith's Sea Fishes*, and reach for their laptops (or phones) instead because *Coastal Fishes of the Western Indian Ocean* is digital – and freely available (<https://www.saiab.ac.za/coastal-fishes-of-the-western-indian-ocean.htm>). A limited number of printed copies of the 5-volume box sets will be made available depending on demand; I reviewed the digital version.

I had always assumed that JLB Smith's *The Sea Fishes of Southern Africa* (Central News Agency, 1949) was the first consolidated effort at an African east coast fish guide, but, according to the *Origins* chapter of the WIO book, that honour goes to *Fishes of Zanzibar* (Van Voorst, 1866). Smith did, though, conceive of a WIO fishes book in the early 1950s, shortly after the publication of his pioneering 1949 *Sea Fishes*. Building on this, Margaret Smith and Phil Heemstra of the (then) JLB Smith Institute of Ichthyology in Grahamstown produced the mammoth *Smith's Sea Fishes* (Macmillan South Africa), subsequent to the 1986 edition of which informal discussions were held at the institute which raised the daunting feasibility of producing a WIO fishes guide. This momentum was fortunately sustained by the institute's directors, with manuscripts incrementally being sent to Heemstra, and by 2014 most had been submitted. The bulk of the book consists of taxonomic identification keys from around 100 contributors, all experts on their respective taxa. In recognition, the first volume includes their biographical sketches, which is a nice touch – several of these luminaries have regrettably passed away.

Their contributions had to be dealt with by the editorial team, all research associates of the publisher, the South African Institute of Aquatic Biodiversity (SAIAB) – a national facility of the National Research Foundation. This was a colossal task, the extent of which was not always appreciated by unsympathetic and impatient users-to-be, who kept demanding "When will the WIO book be ready?". I count myself among their ranks, though I had the benefit of receiving some pre-publication keys when I was grappling with tricky specimens.

The book is a guide identifying the 3200+ species of coastal fishes known from the WIO, which has 15–20% of the world's known fishes. "Coastal" means those that occur in water less than ~200 m in depth – so those that inhabit inshore waters (including estuaries, beaches and rocky shores), extending onto the continental shelf and the upper part of the continental slope. Also included are some oceanic and deep-water species which move into shallower waters at times. The WIO is considered as the east and southern coasts of Africa (to Cape Point), Madagascar and the tropical islands (including Comoros, Seychelles, Maldives, Lakshadweep, Chagos), across to the southern tip of India and to as far south as St Paul Island (40° S).

Following the 'Origins' chapter, broad context and background to the WIO fishes is provided in subsequent chapters in Volume 1; these chapters are mines of information on diverse pertinent topics by several experts, including oceanography of the WIO, evolution of fishes, fish biology and genetics, origins and geology of WIO reefs, WIO fisheries, and a fascinating account of the early ichthyologists who first started collecting fishes in the region. A list of acronyms and a massive bibliography feature here too. Also here are instructions on how to use the book – right from the basics in case you do not know which family your fish specimen belongs to (if you do know, there are alphabetical indices of all family names (scientific and common) with their corresponding volume number to take you to the correct volume). If your specimen is cartilaginous (hagfishes, sharks, rays, chimaeras), the key to Families of Chondrichthyans takes up the remainder of Volume 1. If it is a bony fish, the key to their Orders is in Volume 2, commencing with the more primitive orders (eels, herrings, flyingfishes, seahorses, scorpionfishes, etc). Keys to the 'typical' fishes (Order Perciformes) are in Volumes 3 to 5, culminating in the more advanced families such as flatfishes, triggerfishes, filefishes, pufferfishes, etc. Preceding the systematic accounts, there are highly readable descriptions of the origins, evolution, diversity and anatomy of the cartilaginous and bony fishes. There are photos and/or illustrations for virtually every species in the book; there are 129 colour plates, and, with an estimated average of 10 species per plate, these alone produce well over 1000 colour images of species – let alone the innumerable black-and-white illustrations supplementing the systematic accounts. Some of these have been reproduced from earlier identification guides, but many are *de novo*. There is an overall glossary and numerous other subsidiary glossaries, which I found useful when interpreting terminology in the keys. Continuing the tradition of *Smith's Sea Fishes*, relevant literature is provided for each species in the book, and, for most, additional wider information on life history, interest to fisheries, etc. is also provided.

Since the book was launched in September 2022, I have had occasion to use several of the keys in the book, with success; the sheer size of the work means I cannot claim that there are no taxonomic errors, and trust the editorial and proofreading teams. There are, and will always be, specimens whose identity cannot be resolved in taxonomic works such as these. Resolution of, and ongoing disagreements between, taxonomists, and continual discoveries of new species all mean that the identification of species can be a moving target. But, being electronic and online, the keys can be updated frequently, and planning is already underway to expedite this. Some readers will regret that there is not a one-volume compilation to carry around with them, but the scope and scale of the fishes of the WIO rendered this impossible; besides, you can have it on your smartphone. A colleague of mine has even concatenated the volumes into one PDF file to make it more easily searchable. This epic publication sustains the enduring legacy of SAIAB and JLB in Makhanda – the editors and contributors can be very proud. And no, this review was not done by ChatGPT.

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