SeaFishAtlas Newsletter

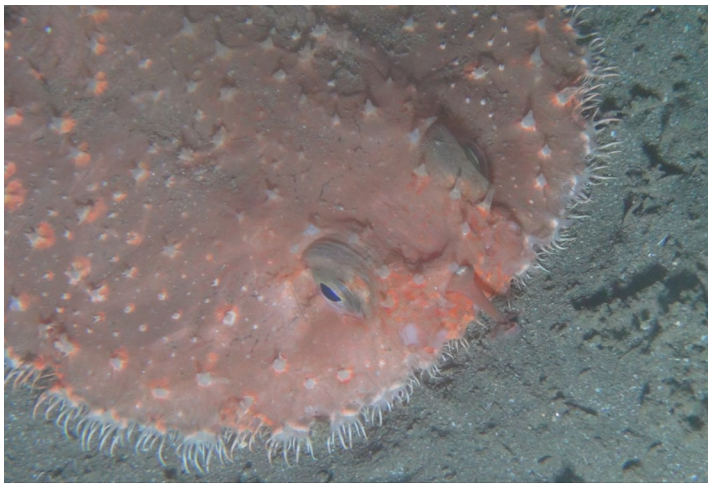
This issue of the Sea Fish Atlas newsletter covers some amazing fish photographed off the KZN coast from an ROV during a research cruise undertaken by the collaborative "Spatial Solutions" project. This is one of the open call projects that falls under the African Coelacanth Ecosystem Programme (ACEP). ACEP provides the necessary infrastructure and technical and logistical support for the project and additional funding and support is provided by the Wildlands Conservation Trust and the Grindrod Blue Fund. ACEP is a flagship project of the Department of Science and Technology managed by the South African Institute for Aquatic Biodiversity (SAIAB), a research facility of the National Research Foundation. You can read more about the ACEP open call projects here.

Secrets of proposed KZN MPAs revealed

A recent series of surveys using a ROV (Remotely Operated Vehicle) off the Kwa-Zulu Natal coast in the area proposed as the new uThukela Banks MPA (Marine Protected Area) revealed an amazing diversity of previously unexplored marine habitats. SCUBA divers are well aware of the delights offered by the shallower coral reefs in this area, but with the ROV diving to depths not easily accessible to divers a whole new array of secrets was revealed. Although detailed analyses will have to be undertaken and results peer reviewed before solid conclusions can be drawn, it is apparent just from this initial snapshot that there is a wealth of biodiversity in this region that is surely worth protecting.

A highlight of the expedition was when the ROV was sent on its deepest dive to date; over 200 m down to survey the uThukela muddy shelf edge. At this depth it is pitch dark and as the ROV descended and touched down into the silt the beam of its lights revealed an array of fascinating species. Two fish species recently new to science were photographed and filmed live within their natural habitats; a seabat (opposite) and a frogmouth (above). In fact, the frogmouth has only just been described (when an official scientific name is allocated) and is called the Southern frogmouth, *Chaunax atimovatae*. The authors that described it were thrilled to be able to include a photograph of a live specimen in their publication and slipped it in as the article went to press in July this year! The seabat is known by experts but has not officially been described yet, this particular one belongs to the genus "*Halieutaea*". Seabats (like most anglerfish) lure prey to within striking distance with a modified dorsal ray before gulping it down, if you look closely you can see the "angling" lure in the photo opposite. The ACEP Spatial Solutions team even managed to film the seabat feeding which can be viewed here. This is the first time either of these species has been seen alive in their natural habitats in South Africa.

The first ever photo of a live specimen of a new fish species known as the Southern frogmouth, *Chaunax atimovatae* (ACEP Spatial Solutions).

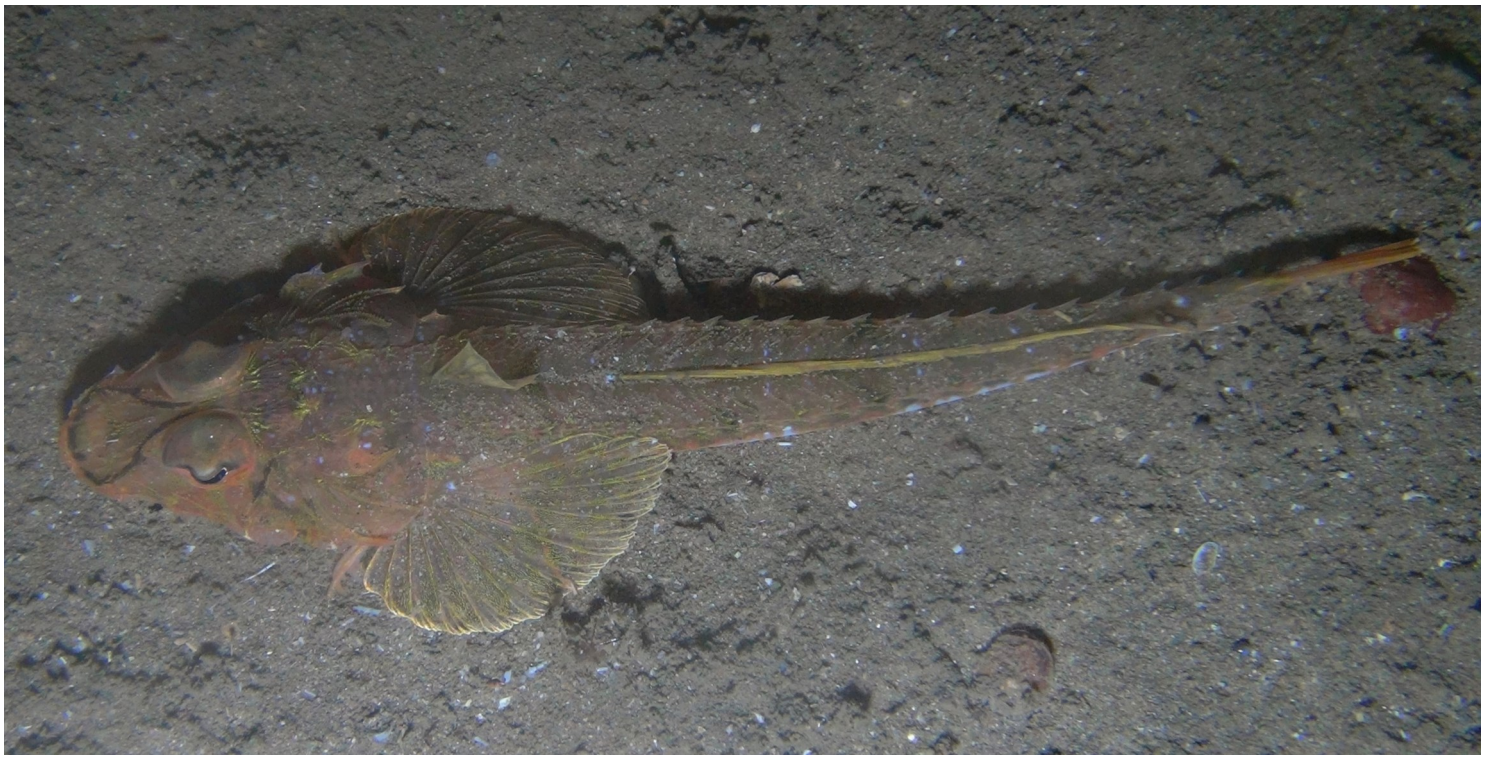


An undescribed species of seabat, a type of anglerfish from the genus *Halieutaea* (ACEP Spatial Solutions).

Enjoy the gallery over the next two pages of a few of the fascinating fish photographed on this research trip.

A “greeneye” photographed at 225 m that belongs to the genus *Chloropthalmus* (from the Greek *chloros* = green and *opthalmus* = eye). You can see exactly why they have been given this name from the photograph. Greeneyes are synchronous hermaphrodites, each fish has both male and female reproductive organs and thus are able to self-fertilize and do not have to find a mate to reproduce. Living in these depths where individual fish have to spread out so as not to compete for limited food means that mates may be hard to come by so this adaptation is very advantageous, if not essential (Pic ACEP Spatial Solutions).

A “jelly nose” or “tadpole fish” from the genus *Ateleopus* photographed at 225 m. Most of their skeleton is made of up cartilage although they do have some bones and so are still classified as bony fishes or “Osteichthyes” (Pic ACEP Spatial Solutions).



This beautiful fish is the rare spiny flathead, *Hoplichthys acanthopleurus,* photographed at 120 m. As far as I can tell this is yet another first in-situ photograph, this species is usually only seen as bycatch in trawl nets and I could not find another photograph of this species live in its natural habitat. This is the only species of spiny flathead (family: Hoplichtyidae) that is found in South Africa, and it is usually found in 120 - 300 m off KZN.

Left: A sand snake eel, *Ophisurus serpens*, photographed at 227 m from the ROV. Those orange blotches on its body are actually parasitic flatworms! There is a lovely video clip where you can watch the eel feeding (or at least attempting to feed) and see the flatworms crawling over its skin here, warning: slightly creepy! Sand snake eels live in estuaries as juveniles and then move into deeper silty areas of up to 300 m deep as they mature. As you can see from the photo they stay burrowed into the silt with only their heads protruding (Pic ACEP Spatial Solutions).

Middle: A beaked sandfish, *Gonorynchus gonorynchus*. For those of you who dive off Cape Town this species may be a familiar sight! They are usually spotted in shallower sandy areas where they hide in the sand with only their eyes and noses showing, but can be found to around 200 m deep, this particular one was photographed at 220 m (Pic ACEP Spatial Solutions).

Right: A blackblotch swallowtail, *Odontanthias caudicinctus,* photographed at 137 m. This species was originally only thought to occur in Kenya until a specimen was caught off the Transkei. This photo from off KZN is the first time this species has been photographed alive in-situ in South Africa! This particular individual was hanging around a deep wreck that was full of discarded fishing line which nearly wrecked the ROV, hence the slightly fuzzy image! (Pic ACEP Spatial Solutions).

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