

# SeyCCAT BGF5: Rapid Assessment of Fish Biodiversity in the Shallow Water (<40m) Habitats of the Alphonse Group, Seychelles



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In order to better understand ecological significance and therefore implement conservation measures that are appropriate, specific and effective to a certain marine ecosystem, it is crucial to have an understanding of the species present. Fish diversity and the relative abundance of different species at varying trophic levels within tropical marine ecosystems, particularly coral reefs, has often shown to correlate closely with overall ecosystem health and resilience. It is critical to understand what species of fish are present throughout the rarely explored parts of the Seychelles archipelago to create a biodiversity baseline to which future data can be compared in order to assess the health of the ecosystems over time and implement any necessary conservation measures. Moreover these atolls are geographically isolated 'oases' of marine life that have never been attached to any continental land mass and are poorly studied, thus this project increases national and global understanding and interest in the marine environment.



The Alphonse Group is made up of Alphonse and St Francois atolls, remotely situated 400km southwest of Mahé. The primary habitats of these remote atolls are coral reefs, seagrass flats, inner atoll lagoons and mangroves.

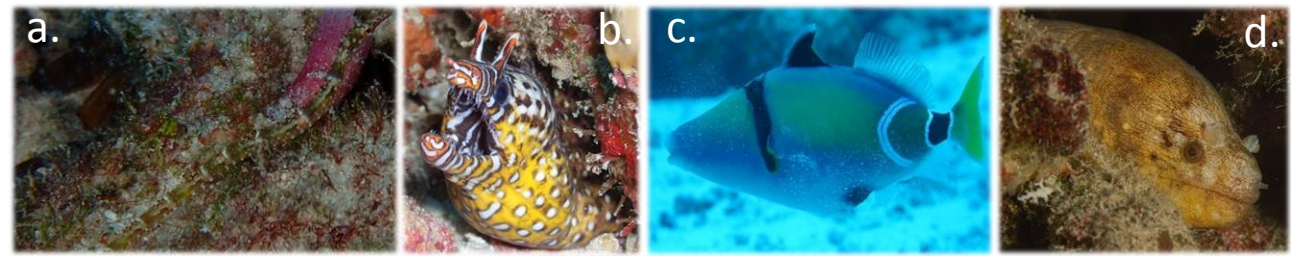
Left: The fieldwork sites surveyed are marked in yellow.

## Methodology

- A team of 2- 4 surveyors spent 42.2hrs in the water over 14 days in March 2022 covering as many habitats types as possible
- Every fish was photographed, identified using FishBase ([www.fishbase.org](http://www.fishbase.org)) and guidebooks and logged
- A photographic species inventory was made for future reference

## Results

**479 species** of fish represented by **68 different families** have been positively identified, of these confirmed species Gobiidae, Labridae and Serranidae were the most specious families which represents what is expected for tropical coral reefs, seagrass and mangrove habitats. 9 species were photographed and officially recorded for the first time in the Seychelles; of these 9 species 5 were expected to occur in the Seychelles but had not been recorded previously, 1 is an official range extensions from previous publication and 2 are potentially unknown species to science. The Alphonse Group supports 3 Critically Endangered and 8 Vulnerable species on the IUCN Red List, indicating the importance of these remote marine ecosystems for conservation.



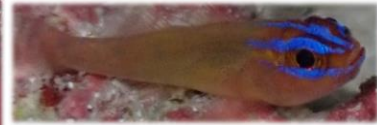
Newly recorded species for the Seychelles but expected to occur: a) *Corythoichthys* sp. b) *Enchelychore paradilis* c) *Rhinecanthus cinereus* d) *Scuticaria okinawae* e) *Micrognathus andersoni* f) *Cephalopholis polleni*



Species	Range Extension
<i>Pseudanthias parvirostris</i> (i)	+/- 1,400km



IUCN Red List - Endangered



Above: This species in the genus *Trimma* was photographed in crevices on steep reefs (20m+) at both Alphonse and St Francois. Visually it is different from known *Trimma* species (Winterbottom 2019), three samples were collected for genetic analysis at the Uni. Guelph, Bar Code of Life Laboratory, results are in progress.



Above: An unidentified species in the genus *Opistognathus*, likely to be a first sighting in the Seychelles.

Left: Thought to be *Pomacentrus philippinus*, however following communication with Dr Mark Erdmann it may be a new species. Sampling is needed to prove species status.

