

A checklist of fish species in Brunei Bay, Malaysia

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Introduction:

- The fishes in the Brunei Bay waters are important as protein sources and consumed by the communities especially the fishermen. These communities also benefited financially as some of the fishes in the Brunei Bay waters are commercially important.
- Brunei Bay is home for both the endangered species such as Irrawaddy dolphins and the Hawksbill turtle where Brunei Bay acts as an important foraging ground for both species. The certain fish species could be the preferred prey items for the Irrawaddy Dolphins and the Hawksbill turtle or even a commercialized fish that humans usually consume.
- Thus, the objectives of this study will provide the checklist of fish community in two sites and providing knowledge which may contribute to the proper implementation and development of a comprehensive sustainable management plan for Brunei Bays in the future.

Methods:

- Two study areas in Awat-Awat and Bukit Sari, Lawas, Brunei Bay on the 11th February 2020 and 12th February 2020 respectively. (Figure 1). "Kabat" net and casting net were used during sampling of fishes in Bukit Sari, Lawas and seine net was used in Awat-awat, Lawas or bought from Lawas Central Market, Lawas town.
- In the laboratory, fish samples were observed, sorted, counted, identified and preserved.
- The conservation status of all fish species was determined based on the International Union for Conservation of Nature Red List (IUCN 2021).
- The observation of the commercial value of fish species were referred to Froese & Pauly (2021).

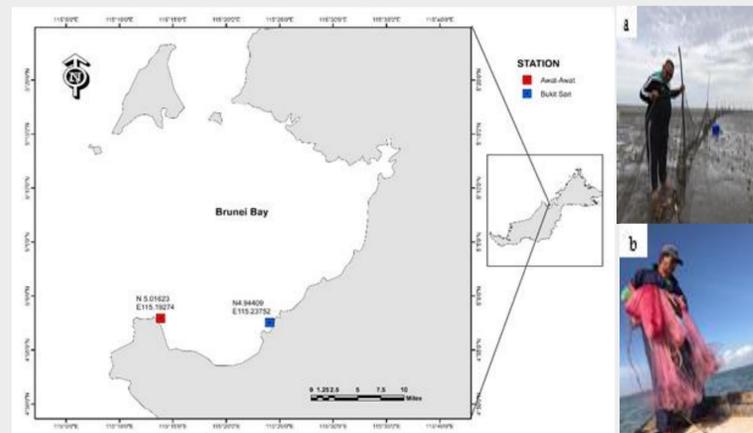


Figure 1. Location of the sampling sites, showing the positions of Bukit Sari and Awat-awat, Brunei Bay, Sarawak. Sampling sites: a = Bukit Sari, b = Awat, awat.

Results and Discussion:

93 fish species 41 families 21 order	75 fish species commercially valuable
IUCN Red List, <ul style="list-style-type: none"> Three species (Near Threatened, NT) <i>Brevitrygon walga</i>, Scaly whipray  <i>Harpadon nehereus</i>, Bombay-duck  <i>Scomberomorus commerson</i>, Narrow-barred spanish mackerel  One species (Vulnerable, VU) <i>Aetobatus ocellatus</i>, Ocellated eagle ray  	

The suggestions of these findings to the management of fish and habitats conservation in the bays are much needed because some of them may face extinction risk.

Conclusion:

- This study can be considered as the preliminary checklist of the fish species in the Brunei Bays and provides essential information for conservation and future study.
- They are several actions needed to reach completeness: 1) focused on abundance and diversity, 2) enhance sampling effort and diversify fishing methods, and 3) length-weight relationships study for certain species. More sampling will unequivocally reveal new species, particularly for tiny, secretive, and cryptic taxa like gobiids and bleniids. The greater spatial areas will be needed to better understand the role of the ecosystem and their linkages.
- This checklist should be helpful for future planning and to conserve the Brunei Bays ecosystem for the future.

References:

- Froese, R. and Pauly, D. 2021. FishBase [Online]. Available from: www.fishbase.org, version (06/2021).
- IUCN. 2021. The IUCN Red List of Threatened Species [Online]. Available from: www.iucnredlist.org.

Acknowledgements:

- The authors thank to Mr. Ajahar A. Sahar (UMS) for their help in logistics and equipment. The authors extend gratitude to Mr. Ismail Ahmad and family for their support and assistances throughout the surveys.
- This study was funded by the China-ASEAN maritime cooperation fund, collaboration between FIO and UMT surveys for marine mammals and sea turtles research in the Bay of Brunei.