

A collection of fishes from a lagoon at Semakau Landfill

Subjects: 49 species of fish as follows. As voucher specimens are deposited in the Zoological Reference Collection of the Lee Kong Chian Natural History Museum at the National University of Singapore, catalogue numbers (with ZRC prefix) are appended. Within brackets are number of specimens covered by each catalogue number, and the size in cm of the largest example in each lot. SL refers to standard length (from snout tip to caudal fin base). DW refers to disc width (across the dorsum from the tip of one pectoral fin to the tip of the other pectoral fin).

Chondrichthyes:

Blue-spotted mask-ray, *Neotrygon kuhlii* (Dasyatidae); Fig. 1. ZRC 54567 (2: 16.5 DW)
Blue-spotted fantail ray, *Taeniura lymma* (Dasyatidae); Fig. 2. ZRC 54566 (2: 12.0 DW)

Teleostei:

Black-saddle herring, *Herklotsichthys dispilonotus* (Clupeidae); Fig. 3. ZRC 54601 (1: 7.0 SL)
White-lipped eel-tail catfish, *Paraplotosus albilabrus* (Plotosidae); Fig. 4. ZRC 54591 (1: 7.7 SL)
Riau viviparous brotula, *Ungusurculus riauensis* (Bythitidae); Fig. 5. ZRC 54606 (1: 4.2 SL)
Singapore toadfish, *Allenbatrachus reticulatus* (Batrachoididae); Fig. 6. ZRC 54607 (2: 7.3 SL)
Spot-tail frogfish, *Lophiocharion trisignatus* (Antennariidae); Fig. 7. ZRC 54603 (2: 7.6 SL)
Estuarine stonefish, *Synanceia horrida* (Synanceiidae); Fig. 8. ZRC 54595 (1: 7.1 SL)
Longspine waspfish, *Paracentropogon longispinis* (Tetrarogidae); Fig. 9. ZRC 54600 (9: 5.0 SL)
False scorpionfish, *Centrogenys vaigiensis* (Centrogeniidae); Fig. 10. ZRC 54570 (4: 8.0 SL)
Cloudy grouper, *Epinephelus erythrurus* (Serranidae); Fig. 11. ZRC 54587 (1: 7.1 SL)
Carpet eel-blenny, *Congrogadus subducens* (Pseudochromidae); Fig. 12. ZRC 54597 (2: 29.0 SL)
Chequered cardinalfish, *Ostorhinchus margaritophorus* (Apogonidae); Fig. 13. ZRC 54605 (8: 3.4 SL)
Black cardinalfish, *Apogonichthys melas* (Apogonidae); Fig. 14. ZRC 54604 (2: 4.3 SL)
Variegated cardinalfish, *Fowleria variegata* (Apogonidae); Fig. 15. ZRC 54572 (20: 5.4 SL)
Three-saddle cardinalfish, *Nectamia savayensis* (Apogonidae); Fig. 16. ZRC 54613 (8: 4.9 SL)
Oriental sillago, *Sillago burrus* (Sillaginidae); Fig. 17. ZRC 54573 (4: 11.9 SL)
Striped ponyfish, *Equula fasciata* (Leiognathidae); Fig. 18. ZRC 54584 (3: 7.6 SL)
Deepbody silverbiddy, *Gerres erythrourus* (Gerreidae); Fig. 19. ZRC 54583 (4: 7.8 SL)
Common silverbiddy, *Gerres oyena* (Gerreidae); Fig. 20. ZRC 54582 (24: 7.9 SL)
White-shouldered whiptail, *Pentapodus bifasciatus* (Nemipteridae); Fig. 21. ZRC 54571 (9: 8.5 SL)
Freckled goatfish, *Upeneus tragula* (Mullidae); Fig. 22. ZRC 54594 (1: 10.0 SL)
Vermiculated anglefish, *Chaetodontoplus mesoleucus* (Pomacentridae); Fig. 23. ZRC 54586 (1: 2.8 SL)
Bengal sergeant, *Abudefduf bengalensis* (Pomacentridae); Fig. 24. ZRC 54596 (1: 4.4 SL)
False clown anemonefish, *Amphiprion ocellaris* (Pomacentridae); Fig. 25. ZRC 54580 (2: 6.2 SL)
Palespot damselfish, *Dischistodus chrysopoecilus* (Pomacentridae); Fig. 26. ZRC 54578 (9: 9.7 SL)
Banded damselfish, *Dischistodus fasciatus* (Pomacentridae); Fig. 27. ZRC 54576 (28: 9.1 SL)
Honeyhead damselfish, *Dischistodus prosopotaenia* (Pomacentridae); Fig. 28. ZRC 54577 (8: 8.4 SL)
Three-spot damselfish, *Pomacentrus tripunctatus* (Pomacentridae); Fig. 29. ZRC 54579 (26: 7.5 SL)
Orange-dotted tuskfish, *Choerodon anchorago* (Labridae); Fig. 30. ZRC 54569 (8: 9.5 SL)
Bicoloured wrasse, *Halichoeres bicolor* (Labridae); Fig. 31. ZRC 54581 (4: 7.3 SL)
Pastel-green wrasse, *Halichoeres chloropterus* (Labridae); Fig. 32. ZRC 54568 (4: 8.1 SL)
Yellowtail blenny, *Enchelyurus flavipes* (Blenniidae); Fig. 33. ZRC 54588 (1: 2.1 SL)
Variable fang-blenny, *Petroscirtes variabilis* (Blenniidae); Fig. 34. ZRC 54592 (1: 6.9 SL)
Banded goby, *Amblygobius phalaena* (Gobiidae); Fig. 35. ZRC 54593 (1: 9.6 SL)
Head-striped goby, *Amblygobius stetophthalmus* (Gobiidae); Fig. 36. ZRC 54575 (35: 7.4 SL)
Dusky frillfin goby, *Bathygobius fuscus* (Gobiidae); Fig. 37. ZRC 54574 (24: 6.1 SL)
Ostrich goby, *Callogobius maculipinnis* (Gobiidae); Fig. 38. ZRC 54589 (1: 5.9 SL)
Saddled shrimp-goby, *Cryptocentrus maudae* (Gobiidae); Fig. 39. ZRC 54590 (1: 6.5 SL)
Pink-barred shrimp-goby, *Cryptocentrus melanopus* (Gobiidae); Fig. 40. ZRC 54612 (2: 7.1 SL)
Brown drombus, *Drombus triangularis* (Gobiidae); Fig. 41. ZRC 54602 (2: 2.8 SL)
Opalescent sand-goby, *Favonigobius opalescens* (Gobiidae) ZRC 54609 (5: 2.9 SL)
Black-spotted lagoon-goby, *Istigobius goldmanni* (Gobiidae) ZRC 54610 (32: 3.8 SL)
Ornate lagoon-goby, *Istigobius ornatus* (Gobiidae) ZRC 54611 (7: 4.1 SL)

Wilbur's goby, <i>Macrodontogobius wilburi</i> (Gobiidae)	ZRC 54608 (2: 4.5 SL)
Mural glider-goby, <i>Valencienna muralis</i> (Gobiidae); Fig. 42.	ZRC 54599 (2: 7.3 SL)
Singapore dragonet, <i>Callionymus enneactis</i> (Callionymidae); Fig. 43.	ZRC 54614 (10: 3.0 SL)
Javan flounder, <i>Pseudorhombus javanicus</i> (Paralichthyidae); Fig. 44.	ZRC 54598 (1:13.9 SL)
Bristle-tailed filefish, <i>Acreichthys tomentosum</i> (Monacanthidae); Fig. 45.	ZRC 54585 (1: 3.9 SL)

Subjects identified by: Contributors.

Location, date and time: Singapore Straits, Semakau Landfill, lagoon (Phase II cell); 14 August 2014; around 0700 to 1000 hrs.

Habitat: Marine. Intertidal zone of an artificial lagoon, among corals on a patch reef, and also on sandflats. In water no more than 30 cm deep.

Observers: Tan Heok Hui, Tammy Lim, Foo Mao Sheng, Letchumi & Tan Siong Kiat.

Observations: A total of 49 species of fish were obtained in three hours within the lagoon during morning low tide. Collecting gear included a 12 foot (diameter) cast net with 2.5 cm mesh size and fine-mesh hand nets. A clove oil-ethanol emulsion was sprayed around selected areas. This concoction narcotised the animals and drove them out of reef crevices. Fish specimens were then euthanized, photographed, and deposited in the Lee Kong Chian Natural History Museum at the National University of Singapore. The fishes in the collection were identified largely with reference to Allen & Erdmann (2012).

Remarks: The present survey was conducted inside a lagoon that was in the process of being filled, which will shortly destroy the resident marine life within. This fish collection is noteworthy as it is represented by a number of species that are rarely seen as they have cryptic habits and tend to be hidden within reef complexes. These include *Ungurusculus riauensis*, *Fowleria variegata*, *Enchelyurus flavipes* and *Callogobius maculipinnis*. To a list of fishes recorded from Semakau Landfill in M. F. C. Ng (2012: 146), as well as later records by Low et al. (2009: 78), H. H. Ng (2012: 27), Yeo (2013a, 2013b, 2014) and Toh & Lim (2013), the following species are new additions: *Neotrygon kuhlii*, *Herklotsichthys dispilonotus*, *Paraplotosus albilabrus*, *Ungurusculus riauensis*, *Allenbatrachus reticulatus*, *Epinephelus erythrurus*, *Apogonichthys melas*, *Fowleria variegata*, *Nectamia savayensis*, *Equula fasciata*, *Gerres erythrourus*, *Pentapodus bifasciatus*, *Abudefduf bengalensis*, *Dischistodus chrysopoecilus*, *Halichoeres chloropterus*, *Amblygobius phalaena*, *Bathygobius fuscus*, *Callogobius maculipinnis*, *Cryptocentrus melanopus*, *Favonigobius opalescens*, *Macrodontogobius wilburi*, *Valencienna muralis* and *Pseudorhombus javanicus*.

References:

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Fig. 1 – 45. Selection of fishes collected from a lagoon at Semakau Landfill on 14 August 2014. Unless specified otherwise, lateral views of the fishes are depicted.



Fig. 1. Dorsal view of *Neotrygon kuhlii* of 14.6 cm disc width.



Fig. 4. *Paraplotosus albilabrus* of 7.7 cm SL.



Fig. 5. *Ungusurculus riauensis* of 4.2 cm SL.



Fig. 2. Dorsal view of *Taenuiira lymma* of 12.0 cm disc width.



Fig. 6. *Allenbatrachus reticulatus* of 7.3 cm SL (dorsal view above).



Fig. 3. *Herklotsichthys dispilonotus* of 7.0 cm SL (dorsal view above shows the characteristic two black spots on the mid-dorsum).



Fig. 7. *Lophiocharion trisignatus* of 7.6 cm SL.

Photographs by Tan Heok Hui



Fig. 8. Juvenile *Synanceia horrida* of 7.1 cm SL (dorsal view above).

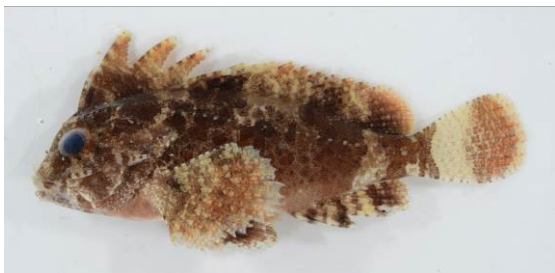


Fig. 9. *Paracentropogon longispinis* of about 4.6 cm SL.



Fig. 10. *Centrogenys vaigiensis* of about 8 cm SL.



Fig. 11. *Epinephelus erythrurus* of 7.1 cm SL.



Fig. 12. *Congrogadus subducens* of 22.2 cm SL.



Fig. 13. *Ostorhinchus margaritophorus* of 3.1 cm SL.



Fig. 14. *Apogonichthys melas* of 3.3 cm SL.



Fig. 15. *Fowleria variegata* of 4.3 cm SL.



Fig. 16. *Nectamia savayensis* of 3.6 cm SL.

Photographs by Tan Heok Hui



Fig. 17. *Sillago burrus* of 11.9 cm SL.



Fig. 22. *Upeneus tragula* of 10 cm SL.



Fig. 18. *Equula fasciata* of 7.5 cm SL.



Fig. 23. Juvenile *Chaetodontoplus mesoleucus* of 2.8 cm SL.



Fig. 19. *Gerres erythrourus* of 7.8 cm SL.



Fig. 24. *Abudefduf bengalensis* of 4.4 cm SL.



Fig. 20. *Gerres oyena* of 7.9 cm SL.



Fig. 25. *Amphiprion ocellaris* of 5.2 cm SL.



Fig. 21. *Pentapodus bifasciatus* of 8.4 cm SL.



Fig. 26. *Dischistodus chrysopoecilus* of 9.7 cm SL.

Photographs by Tan Heok Hui

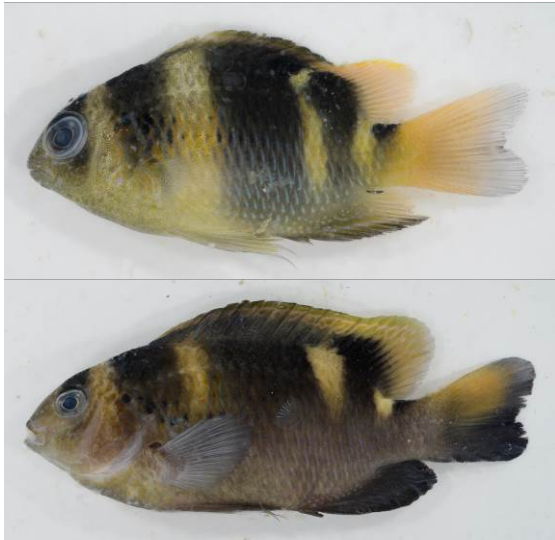


Fig. 27. *Dischistodus fasciatus*, juvenile of 3.4 cm SL (above) and adult of 9.1 cm SL.

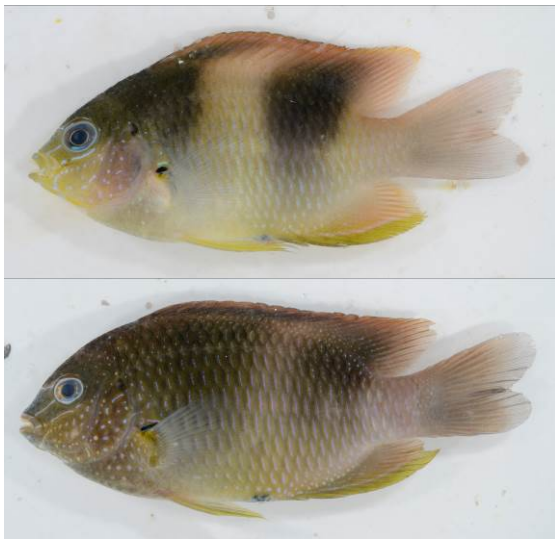


Fig. 28. *Dischistodus prosopotaenia*, juvenile of 4.1 cm SL (above) and adult of 8.6 cm SL.



Fig. 29. *Pomacentrus tripunctatus* of 4.0 cm SL.

Photographs by Tan Heok Hui



Fig. 30. *Choerodon anchorago* of about 9.5 cm SL.



Fig. 31. *Halichoeres bicolor* of 7.3 cm SL.

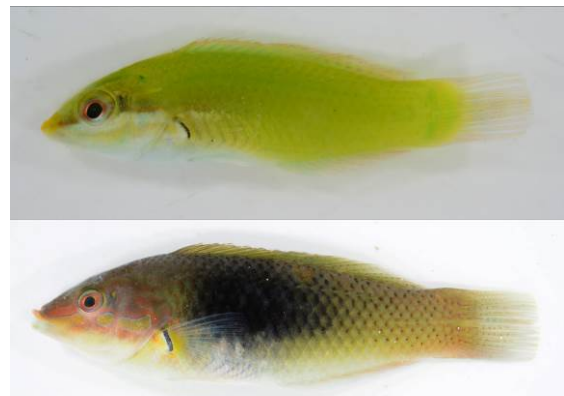


Fig. 32. *Halichoeres chloropterus*, juvenile of 3.3 cm SL (above) and adult of 7.9 cm SL.



Fig. 33. Juvenile *Enchelyurus flavipes* of 2.1 cm SL.



Fig. 34. *Petrosirtes variabilis* of 6.9 cm SL.



Fig. 35. *Amblygobius phalaena* of 9.6 cm SL.



Fig. 36. *Amblygobius stetophthalmus* of 7.1 cm SL.



Fig. 37. *Bathygobius fuscus* of 4.8 cm SL.



Fig. 38. *Callogobius maculipinnis* of 5.9 cm SL.



Fig. 39. *Cryptocentrus maudae* of 6.5 cm SL.



Fig. 40. *Cryptocentrus melanopus* of 7.1 cm SL.



Fig. 41. *Drombus triangularis* of about 2.8 cm SL.



Fig. 42. *Valencienna muralis* of 7.3 cm SL.



Fig. 43. *Callionymus enneactis* of 2.7 cm SL.



Fig. 44. *Pseudorhombus javanicus* of 13.9 cm SL.



Fig. 45. *Acreichthys tomentosum* of 3.9 cm SL.

Photographs by Tan Heok Hui