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ON A COLLECTION OF FISHES FROM THE MALVAN MARINE SANCTUARY, MALVAN, MAHARASHTRA, INDIA

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INTRODUCTION

The Malvan coastal belt of Maharashtra has been declared as Malvan Marine Sanctuary only recently. This sanctuary is rich in marine flora and fauna especially the coral life and mangroves. A perusal of the existing literature shows that the ichthyofaunal resources of this sanctuary has not documented yet. Hence, an attempt was made to evaluate the fish resources of this sanctuary. Two faunistic surveys were undertaken for the assessment of the Marine fish faunal resources of the Malvan sanctuary in the months of September 2004 and October 2005. These surveys have resulted in enlisting 108 species of fishes belonging to 48 families and 13 orders. This study has also revealed the occurrence of 4 vulnerable and 2 near threatened species in this Malvan Marine Sanctuary. Common English names of the species have been provided along with the scientific names of the species.

STUDY AREA

The Malvan Marine Sanctuary is located in Malvan Taluka of Sindhudurg district in Konkan Region along the Maharashtra coast between 16°15'–16°50' N latitude and 73°27'–73°31' E longitude. It covers an area of 29.22 sq km. This coastal line is indented with creeks and bays. Kolam, Kalabati and Karli and the prominent creeks of this sanctuary. This region is free from pollution and harbours a wide variety of flora and fauna. The flora components of this region are mainly mangroves and sea grasses. Several species of marine algae are found in this region. Sand dune vegetation is also found very rich here. Mangrove species like *Rhizophora mucronata*, *Avicennia officinalis* and *Excoecaria* sp. flourish well here. It has been observed that among its faunal composition several species of sponges, sea fans, soft and hard corals, sea anemones thrive well in this sanctuary. Live pearl oyster and red coral are also found here. The sanctuary also includes turtle nesting grounds. The Malvan Marine sanctuary and its surrounding area support a

commercial trawl fishery. The Sindhurg fort, built by Shivaji Maharaj is situated in this sanctuary and is considered as one of the main attraction of Malvan. It is one of the very few relatively undisturbed locations along the western coast of India. The nearest major city is Mumbai, about 400 kilometers away.

LIST OF THE FISHES OF THE MALVAN SANCTUARY

Class CHONDRICHTHYES

Order 1. ORECTOLOBIFORMES

Family 1. HEMISCYLLIIDAE
(Bamboo sharks)

1. *Chiloscyllium griseum* Muller & Henle (Grey bamboo shark) (**Near threatened**)

Order 2. CARCHARHINIFORMES

Family 2. CARCHARHINIDAE
(Requiem sharks)

2. *Scoliodon laticaudus* (Muller & Henle) (Spade nose shark) (**Near threatened**)

Class OSTEICHTHYES

Order 3. ANGUILLIFORMES

Family 3. OPHICHTHIDAE
(Snake eels)

3. *Neenchelys buitendijki* (Weber and deBeufort) (Fintail serpent eel)
4. *Ophichthus apicalis* (Bennett) (Bluntnose snake-eel)

Family 4. MURAENESOCIDAE
(Pike congers)

5. *Congresox talabonoides* (Bleeker) (Indian pike conger) (**Vulnerable species**)
6. *Muraenesox cinereus* (Forsskal) (Daggertooth pike conger) (**Vulnerable species**)

Order 4. CLUPEIFORMES

Family 5. CLUPEIDAE
(Herrings, shads, sardines)

7. *Amblygaster clupeioides* Bleeker (Bleeker's smooth belly sardinella)
8. *Hilsa kelee* (Cuvier) (Kelee shad)
9. *Nematolosa nasus* (Bloch) (Bloch's gizzard shad)
10. *Pellona ditchella* Valenciennes (Indian pellona)
11. *Sardinella melaneura* (Cuvier) (Black tip sardinella)
12. *S. longiceps* Valenciennes (Indian oil sardine)
13. *Tenualosa ilisha* (Hamilton) (Hilsa shad) (**Vulnerable species**)

Family 6. PRISTIGASTERIDAE
(Pristigasterids)

14. *Opisthopterus tardoore* (Cuvier) (Tardoore)
15. *Ilisha melastoma* (Bloch & Schneider) (Indian ilisha)

Family 7. ENGRAULIDIDAE
(Anchovies)

16. *Stolephorus indicus* (van Hasselt) (Indian anchovy)
17. *Thryssa hamiltonii* (Gray) (Hamilton's thryssa)
18. *Thryssa dussumieri* (Valenciennes) (Dussumier's thryssa)
19. *T. malabarica* Bloch (Malabara thryssa)
20. *Thryssa mystax* (Hamilton) (Moustached thryssa)
21. *T. setirostris* (Broussonet) (Longjaw thryssa)

Family 8. CHIROCENRIDAE
(Wolf herrings)

22. *Chirocentrus dorab* (Forsskal) (Dorab wolf-herring)

Order 5. SILURIFORMES

Family 9. BAGRIDAE
(Bagrid catfishes)

23. *Mystus gulio* (Hamilton) (Long-whiskered catfish)

Family 10. ARIIDAE
(Sea catfishes)

24. *Arius maculatus* (Thunberg) (Spotted catfish)
25. *A. platystomus* Day (Flatmouth sea catfish)
26. *A. thalassinus* (Ruppell) (Giant sea catfish) (**Vulnerable species**)

Family 11. PLOTOSIDAE
(Eeltail catfishes)

27. *Plotosus canius* (Grey eel-catfish)

Order 6. AULOPIFORMES

Family 12. HARPADONTIDAE
(Bombay duck)

28. *Harpadon nehereus* (Hamilton) (Bombay duck)

Family 13. SYNODIDAE
(Lizardfishes)

29. *Saurida tumbil* (Bloch) (Greater lizardfish)

Order 7. GADIFORMES

Family 14. BREGMACEROTIDAE
(Codlets)

30. *Bregmaceros mccllellandii* Thompson (Spotted codlet)

Order 8. MUGILIFORMES

Family 15. MUGILIDAE
(Mulletts)

31. *Liza tade* (Forsskal) (Tade mullet)
32. *Mugil cephalus* Linnaeus (Flathead mullet)

Order 9. BELONIFORMES

Family 16. HEMIRAMPHIDAE
(Halfbeaks)

33. *Hemiramphus archipelagicus* Collette (Jumping halfbeak)
34. *H. far* (Forsskal) (Blackbarred halfbeak)
35. *H. lutkei* (Valenciennes) (Lutke's halfbeak)

Order 10. SCORPAENIFORMES

Family 17. PLATYCEPHALIDAE
(Flatheads)

36. *Platycephalus indicus* (Linnaeus) (Bartail flathead)

Order 11. PERCIFORMES

Family 18. CENTROPOMIDAE
(Snooks)

37. *Lates calcarifer* (Bloch) (Barramundi)

Family 19. SERRANIDAE
(Groupers)

38. *Epinephelus bleekeri* (Forsskal) (Dusky tail grouper)

Family 20. TERAPONIDAE
(Terapons)

39. *Terapon jarbua* (Forsskal) (Jerbua terapon)
40. *T. theraps* Cuvier (Largescaled terapon)

Family 21. APOGONIDAE
(Cardinalfishes)

41. *Apogon thermalis* Cuvier (Half-barred cardinal)

Family 22. SILLAGINIDAE
(Smelt-whittings)

42. *Sillago sihama* (Forsskal) (Silver sillago)

Family 23. CARANGIDAE
(Jacks, Kingfishes and pompanos)

43. *Alepes ciliaris* (Bloch) (African pompano)
 44. *A. djedaba* (Forsskal) (Shrimp scad)
 45. *A. kleinii* (Bloch) (Razor belly scad)
 46. *Atropus atropus* (Schneider) (Cleftbelly trevally)
 47. *Caranx carangus* (Bloch) (Crevalle jack)
 48. *C. ignobilis* (Forsskal) (Giant trevally)
 49. *C. sexfasciatus* Quoy & Gaimard (Bigeye trevally)
 50. *Decapterus russelli* (Ruppell) (Indian scad)
 51. *Gnathonodon speciosus* (Forsskal) (Golden trevally)
 52. *Megalaspis cordyla* (Linnaeus) (Torpedo scad)
 53. *Naucrates ductor* Linnaeus (Pilotfish)
 54. *Parastromus niger* (Bloch) (Black pomfret)
 55. *Scomberoides lysan* (Forsskal) (Double-spotted queenfish)
 56. *S. tol* (Cuvier) (Needle scaled queenfish)
 57. *Trachinotus blochii* (Lacepede) (Largespotted dart)

Family 24. CORYPHAENIDAE
(Dolphin fish)

58. *Coryphaena hippurus* (Common dolphin fish)

Family 25. LEIOGNATHIDAE
(Slipmouths or ponyfishes)

59. *Gazza minuta* (Bloch) (Toothpony)
 60. *Leiognathus bindus* (Valenciennes) (Orangefin ponyfish)
 61. *L. brevirostris* (Valenciennes) (Shortnose ponyfish)
 62. *L. daura* (Cuvier) (Goldstripe ponyfish)
 63. *L. equulus* (Forsskal) (Common ponyfish)
 64. *Secutor insidiator* (Bloch) (Pugnose ponyfish)

Family 26. LUTJANIDAE
(Snappers)

65. *Lutjanus argentimaculatus* (Forsskal) (River snapper)
 66. *L. johnii* (Bloch) (John's snapper)
 67. *L. russellii* Bleeker (Red snapper)

Family 27. GERREIDAE
(Mojarras)

68. *Gerres erythrourus* (Bloch) (Deep bodied mojarras)
69. *G. limbatus* Cuvier (Saddleback silver-biddy)
70. *G. macracanthus* Bleeker (Long rayed mojarra)

Family 28. HAEMULIDAE
(Grunts)

71. *Pomadasys kaakan* (Cuvier) (Javelin grunter)
72. *P. maculatus* (Bloch) (Saddle grunt)

Family 29. NEMIPTERIDAE
(Threadfin breams, Whiptail breams)

73. *Nemipterus japonicus* (Bloch) (Japanese threadfin bream)

Family 30. SCIAENIDAE
(Drums or croakers)

74. *Chrysochir aureus* (Richardson) (Reeve's croaker)
75. *Jahnius carutta* (Bloch) (Karut croaker)
76. *Otolithes rubber* (Schneider) (Tiger-toothed croaker)

Family 31. MULLIDAE
(Goatfishes)

77. *Upeneus vittatus* (Forsskal) (Yellowstriped goatfish)

Family 32. MONODACTYLIDAE
(Moonyfishes or fingerfishes)

78. *Monodactylus argenteus* (Linnaeus) (Silvery moony)

Family 33. PEMPHERIDIDAE
(Sweepers)

79. *Pempheris vanicolensis* Cuvier (Vanikoro sweeper)

Family 34. SCATOPHAGIDAE
(Spotted scat)

80. *Scatophagus argus* (Bloch) (Spotted scat)

Family 35. CICHLIDAE
(Cichlids)

81. *Etroplus suratensis* (Bloch) (Green chromide)

Family 36. SPHYRAENIDAE
(Barracuda)

82. *Sphyraena jella* Cuvier (Pickhandle barracuda)

Family 37. POLYNYMIDAE
(Threadfins)

- 83. *Eleutheronema tatradyctylum* (Shaw) (Fourfinger threadfin)
- 84. *Filimanus xanthonema* (Valenciennes) (Yellowthread threadfin)
- 85. *Polydactylus mullani* (Hora) (Spotted Sevenfinger threadfin)

Family 38. GOBIIDAE
(Gobies)

- 86. *Caragobius urolepis* (Bleeker) (Scaleless worm goby)
- 87. *Odontamblyopus rubicundus* (Hamilton) (Rubicundus eelgoby)

Family 39. TRYPACHENIDAE
(Burrowing goby)

- 88. *Trypauchen vagina* (Bloch) (Burrowing goby)

Family 40. SIGANIDAE
(Rabbitfishes)

- 89. *Siganus canaliculatus* (Park) (White-spotted spinefoot)

Family 41. TRICHIURIDAE
(Cutlassfishes)

- 90. *Lepturacanthus pantului* (Gupta) (Coromandal ribbonfish)

Family 42. SCOMBRIDAE
(Mackerels, tunas, bonitos)

- 91. *Auxis thazard* (Lacepede) (Frigate tuna)
- 92. *Rastrelliger kanagurta* (Cuvier) (Indian mackerel)
- 93. *Scomberomorus commerson* (Lacepede) (Narrow-barred Spanish mackerel)
- 94. *S. guttatus* (Bloch & Schneider) (Indo-Pacific king mackerel)
- 95. *Scomberoides tol* (Cuvier) (Needlescaled queenfish)
- 96. *Thunnus albacares* (Bonnaterre) (Yellowfin tuna)
- 97. *T. tonggol* (Bleeker) (Longtail tuna)

Family 43. STROMATEIDAE
(Pomfret)

- 98. *Pampus argenteus* (Euphrasen) (Silver pomfret)
- 99. *P. chinensis* (Euphrasen) (Chinese silver pomfret)

Order 12. PLEURONECTIFORMES

Family 44. PARALICHTHYIDAE
(Large-tooth flounders)

- 100. *Pseudorhombus javanicus* (Bleeker) (Javan flounder)
- 101. *P. triocellatus* (Schneider) (Three spotted flounder)

Family 45. CYNOGLOSSIDAE
(Tonguefishes)

102. *Cynoglossus puncticeps* (Richardson) (Speckled tongesole)

Family 46. SOLEIDAE
(Soles)

103. *Solea ovata* Richardson (Ovate sole)
104. *Synaptura albomaculata* Kaup (Kaup's sole)

Order 13. TETRAODONTIFORMES

Family 47. TETRAODONTIDAE
(Puffers)

105. *Lagocephalus inermis* (Schneider) (Smooth-backed blowfish)
106. *Torquigener hypselogenion* (Bleeker) (Orange-spotted toadfish)

Family 48. DIODONTIDAE
(Porcupinefishes)

107. *Diodon hystrix* Lacepede (Spot-fin porcupinefish)
108. *D. holocanthus* Lacepede (Long spine porcupinefish)

DISCUSSIONS

The present study has recorded 108 species belonging to 48 families in 13 orders in Malvan Marine Sanctuary.

Analysis of these 108 species shows that it contains 4 vulnerable species viz. *Congresox talabonoides*, *Muraenesox cinereus*, *Tenualosa ilisha* and *Arius thalassinus* and two near threatened species viz. *Chiloscyllium griseum* and *Scalioton laticaudus*. It also contains some important commercial food fishes. The fishes of the family Carangidae form the dominating group consisting of 15 species among the important food fishes. The fishes of the family Scombridae and Clupeidae represented by 7 species each followed by Leiognathidae and Engraulidae represented by 6 species each.

Malvan Marine Sanctuary is the only Marine Sanctuary in Maharashtra. The sanctuary is rich in coral and marine life in addition to the mangroves. The creation of Marine Biosphere Reserves has increased due to the natural changes and human depredation in many coastal area. Several ecologically important species of plant and animal have been extinct and whatever remains, urgently need for conservation measures. This has necessitated for the declaration of the sanctuaries for the conservation and protection of the marine wild life. Since Malvan Marine Sanctuary contains four vulnerable fish species and two near threatened species in addition to the coral life and mangroves

the declaration of the Malvan coast as Marine Sanctuary recently is justified and it needs urgent legal protection.

SUMMARY

The samples of fishes collected during the surveys conducted during September 2004 and October 2005 have been examined and determined with the help of standard literature (Collette, B.B. and Neun, C.E. 1983, Day, 1875-78; de Bruin *et al.*, 1995; Fischer and Bianchi, 1984; Talwar, 1995; Talwar and Jhingran, 1991; Talwar and Kacker, 1984; Whitehead, P.J.P., 1985; Whitehead, P.J.P., Nelson, J. and Wongratana, T., 1988). In all, 110 species belonging to 48 families under 13 orders have been recorded from this sanctuary and the same is enlisted here under.

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