

Finfish Constituents of Trawl By-catch off Visakhapatnam

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228 species belonging to 68 families have been identified as constituting the low value finfish by-catch landed by small trawlers based at Visakhapatnam, Andhra Pradesh, India. Four species listed viz., *Myrophis lepturus*, *Uranoscopus bicinctus*, *U. oligolepis*, and *Lagocephalus guentheri* are reported as new records from Indian waters.

Key words : Trawl by-catch constituents, Visakhapatnam.

The trawl catches include over 11% of the economically less important by-catch of finfishes. This constitutes not only small-sized and non-edible species, but also juveniles of commercially important species (Sujatha, K., unpublished). Regionwise check lists of trawl by-catch constituents are helpful in improving ichthyological knowledge of the region and for fisheries management. It also contributes to knowledge of distribution of nonconventional species which are poorly represented in the catches by the traditional gear.

Weekly samples of low value finfish by-catch were collected from the landings of small trawlers based at Visakhapatnam (17°44' N lat. 83°33' E long.), Andhra Pradesh, during April 1989 to March 1990. These vessels operated within a depth range of about 50 m. Fishes were identified using recent fish taxonomic works and revisions. Classification of Nelson (1984) has been adopted for this study.

Table 1. Fishes represented in the trawl by-catch off Visakhapatnam

Order RAJIFORMES

Family TRYGONIDAE

1. *Amphotistius imbricatus* (Schneider)

Family TORPEDINIDAE

2. *Narke dipterygia* (Schneider)
3. *Narcine timlei* (Schneider)
4. *Narcine brunnea* Annandale

Family RHINOBATIDAE

5. *Rhinobatus holcorhynchus* Norman

Order ELOPIFORMES

Family ELOPIDAE

6. *Elops machnata* (Forsskal)

Order ANGUILLIFORMES

Family MURAENIDAE

7. *Gymnothorax enigmaticus* Mc Cosker & Randall
8. *Gymnothorax reticularis* Bloch
9. *Gymnothorax rupeus* McClelland

Family OPHICHTHYDAE

10. *Myrophis lepturus* Kathaus
11. *Pisodonophis cancrivorus* (Richardson)

Family CONGRIDAE

12. *Muraenesox cinereus* (Forsskal)
13. *Congresox talabonoides* (Bleeker)

Order CLUPEIFORMES

Family CLUPEIDAE

14. *Opisthopterus tardoore* (Cuvier)
15. *Nematalosa nasus* (Bloch)

Family ENGRAULIDAE

16. *Stolephorus heterolobus* (Ruppell)
17. *Stolephorus waiti* Jordan & Seale
18. *Stolephorus indicus* (Van Hasselt)
19. *Thryssa setirostris* (Broussonet)
20. *Thryssa dussumieri* (Valenciennes)
21. *Thryssa malabarica* (Bloch)
22. *Thryssa mystax* (Schneider)

Order SILURIFORMES

Family ARIIDAE

23. *Arius jella* Day
24. *Arius dussumieri* Valenciennes

Family PLOTOSIDAE

25. *Plotosus lineatus* (Thunberg)
26. *Plotosus limbatus* Valenciennes
27. *Plotosus nkunga* Gomon & Taylor

Order ACILOPIFORMES

Family HARPADONTIDAE

28. *Harpodon nehereus* (Hamilton-Buchanan)

Family SYNODONTIDAE

29. *Saurida undosquamis* (Richardson)
30. *Saurida tumbil* (Bloch)
31. *Saurida longimanus* Norman
32. *Trachinocephalus myops* (Forster)

Order GADIFORMES

Family BREGMACEROTIDAE

33. *Bregmaceros maclellandi* Thompson
34. *Bregmaceros atripinnis* Tickell

Order LOPHIIFORMES

Family ANTENNARIIDAE

35. *Antennarius hispidus* (Bloch & Schneider)
36. *Antennarius nummifer* (Cuvier)
37. *Antennarius pinniceps* Valenciennes

Family OGCOCEPHALIDAE

38. *Halieutaea coccinea* Smith
39. *Halieutaea stellata* Vahl

Order SYNGNATHIFORMES

Family FISTULARIDAE

40. *Fistularia petimba* Lacepede

Order SCORPAENIFORMES

Family SCORPAENIDAE

41. *Apistus carinatus* (Bloch & Schneider)
42. *Brachypterois serrulatus* (Richardson)
43. *Choridactylus multibarbus* Richardson
44. *Minous coccineus* Alcock
45. *Minous inermis* Alcock
46. *Minous monodactylus* (Bloch & Schneider)
47. *Pterois mombasae* (Smith)
48. *Pterois russellii* Bennett
49. *Scorpaenopsis cirrhosa* (Thunberg)
50. *Sebastapistes amplisquamiceps* (Fowler)

Family PLATYCEPHALIDAE

51. *Grammoplites portuguesus* (Smith)
52. *Grammoplites scaber* (Linnaeus)
53. *Grammoplites suppositus* (Torschel)
54. *Platycephalus indicus* (Linnaeus)

55. *Rogadius asper* (Cuvier)
56. *Rogadius serratus* (Cuvier)
57. *Sorsogona tuberculata* (Cuvier)
58. *Sugggrundus macracanthus* (Bleeker)
59. *Sugggrundus rodricensis* (Cuvier)
60. *Thysanophrys chiltonae* Schultz

Family TRIGLIDAE

61. *Lepidotrigla longipinnis* Richards & Saksena

Family DACTYLOPTERIDAE

62. *Dactyloptena orientalis* (Cuvier)
63. *Dactyloptena macracanthus* (Bleeker)

Order PERCIFORMES

Family ACROPOMATIDAE

64. *Acropoma japonicum* Gunther

Family TERAPONIDAE

65. *Terapon jarbua* (Forsskal)
66. *Terapon theraps* (Cuvier)

Family SERRANIDAE

67. *Epinephelus latifasciatus* (Temminck & Schlegel)
68. *Epinephelus undulosus* (Quoy & Gaimard)

Family PRIACANTHIDAE

69. *Priacanthus hamrur* (Forsskal)
70. *Priacanthus holocentrum* Bleeker

Family APOGONIDAE

71. *Apogon andhrae* Dutt & Rao
72. *Apogon aureus* (Lacepede)
73. *Apogon ellioti* (Day)
74. *Apogon glaga* Bleeker
75. *Apogon kiensis* (Jordan & Snyder)
76. *Apogon lineatus* Temminck & Schlegel
77. *Apogon miger* Ooderlein
78. *Apogon nigripinnis* Cuvier
79. *Apogon quadrifasciatus* Cuvier
80. *Archamia lineolata* Cuvier
81. *Archamia mozambiquensis* Smith

Family HAEMULIDAE

82. *Plectorhinchus polytaenia* (Bleeker)
83. *Pomadasys commersonni* (Lacepede)
84. *Pomadasys maculatum* (Bloch)

Family LUTJANIDAE

85. *Lutjanus sanguineus* (Cuvier)
86. *Lutjanus russelli* (Bleeker)

Family NEMIPTERIDAE

87. *Nemipterus hexodon* (Quoy & Gaimard)
88. *Nemipterus japonicus* (Bloch)
89. *Nemipterus mesoprion* (Bleeker)
90. *Scolopsis jonesi* (Talwar)

Family EPHIPPIDAE

91. *Ephippus orbis* (Bloch)

Family GERREIDAE

92. *Pentaprion longimanus* (Cantor)
93. *Gerres macracanthus* Bleeker
94. *Gerres oyena* (Forsskal)

Family MULLIDAE

95. *Mulloides flavolineatus* (Lacepede)
96. *Upeneus moluccensis* (Bleeker)
97. *Upeneus sulphureus* Cuvier
98. *Upeneus tragula* Richardson
99. *Upeneus taeniopterus* Cuvier
100. *Upeneus vittatus* (Forsskal)

Family DREPANIDAE

101. *Drepane longimana* (Bloch & Schneider)
102. *Drepane punctata* (Linnaeus)

Family SILLAGINIDAE

103. *Sillago lutea* McKay
104. *Sillago indicus* McKay, Dutt & Sujatha

Family LACTARIIDAE

105. *Lactarius lactarius* (Bloch & Schneider)

Family SCIAENIDAE

106. *Atrobucca trewavasae* Talwar & Sathiarajan
107. *Chrysochir aureus* (Richardson)
108. *Johnieops dussumieri* (Cuvier)
109. *Johnieops macrorhynchus* Mohan
110. *Johnieops sina* (Cuvier)
111. *Johnieops vogleri* (Bleeker)
112. *Johnius belangerii* (Cuvier)
113. *Johnius carutta* (Bloch)
114. *Johnius dussumieri* (Valenciennes)
115. *Johnius elongatus* Mohan
116. *Johnius glaucus* (Day)
117. *Johnius macropterus* (Bleeker)
118. *Kathala axillaris* (Cuvier)
119. *Nibea maculata* (Schneider)
120. *Otolithes cuvieri* Trewavase
121. *Otolithes ruber* (Schneider)
122. *Otolithoides biauritus* (Cantor)
123. *Panna microdon* (Bleeker)
124. *Pennahia macrophthalmus* (Bleeker)

Family LEIOGNATHIDAE

125. *Gazza achlamys* Jordan & Stark
126. *Gazza minuta* (Bloch)
127. *Leiognathus berbis* (Valenciennes)
128. *Leiognathus bindus* (Valenciennes)
129. *Leiognathus brevirostris* (Valenciennes)
130. *Leiognathus dussumieri* (Valenciennes)
131. *Leiognathus elongatus* Gunther
132. *Leiognathus jonesi* James
133. *Leiognathus leuciscus* (Gunther)
134. *Leiognathus lineolatus* (Valenciennes)

135. *Leiognathus splendens* (Cuvier)

136. *Secutor insidiator* (Bloch)

137. *Secutor ruconius* (Hamilton-Buchanan)

Family LOBOTIDAE

138. *Datnioides quadrifasciatus* (Sevastianov)

Family CARANGIDAE

139. *Alectis indicus* (Ruppell)
140. *Alepes vari* (Cuvier)
141. *Carangoides malabaricus* (Bloch & Schneider)
142. *Gnathanodon speciosus* (Forsskal)

Family APOLECTIDAE

143. *Apolectus niger* (Bloch)

Family POMACENTRIDAE

144. *Pomacentrus cyanomos* Bleeker
145. *Dascyllus* spp.

Family LABRIDAE

146. *Bodianus axillaris* (Bennett)
147. *Xyrichtys pentadactylus* (Linnaeus)

Family POLYNEMIDAE

148. *Polynemus sextarius* Schneider
149. *Polynemus microstoma* (Bleeker)
150. *Polynemus heptadactylus* Cuvier

Family SPHYRAENIDAE

151. *Sphyræna forsteri* Cuvier

Family OPISTHOGNATHIDAE

152. *Opisthognathus muscatensis* Boulenger

Family CEPOLIDAE

153. *Acanthocephala abbreviatus* (Valenciennes)
154. *Acanthocephala limbata* (Valenciennes)

Family URANOSCOPIDAE

155. *Ichthyoscopus inermis* Cuvier
156. *Uranoscopus bicinctus* (Temminck & Schlegel)
157. *Uranoscopus cognates* Cantor
158. *Uranoscopus oligolepis* Bleeker

Family BLENNIIDAE

159. *Xiphasia setifer* Swainson

Family CALLIONYMIDAE

160. *Callionymus gardineri* Regan
161. *Callionymus japonicus* Houthuyn

Family GOBIIDAE

162. *Oxyurichthys tentacularis* (Valenciennes)
163. *Oxyurichthys ophthalmonema* (Bleeker)
164. *Parachaeturichthys polynema* (Bleeker)

Family TRYPAUCHEIDAE

165. *Trypauchen microcephalus* Bleeker
166. *Trypauchen vagina* (Bloch & Schneider)

Family KURTIDAE

167. *Kurtus indicus* Bloch

Family ELEOTRIDAE

168. *Eleotriodes sexguttatus* (Valenciennes)

Family TRICHIURIDAE

169. *Trichiurus lepturus* Linnaeus
170. *Trichiurus gangeticus* Gupta
171. *Lepturacanthus savala* (Cuvier)

Family STROMATEIDAE

172. *Pampus argenteus* (Euphrasen)

Order PLEURONECTIFORMES

Family PSETTODIDAE

173. *Psettodes erumei* (Schneider)

Family CITHARIDAE

174. *Brachypleura novae-zeelandiae* Gunther

Family PARALICHTHYIDAE

175. *Cephalopsetta ventrocellatus* Dutt & Rao
176. *Pseudorhombus arsius* (Hamilton)
177. *Pseudorhombus elevatus* Ogilby
178. *Pseudorhombus javanicus* (Bleeker)
179. *Pseudorhombus triocellatus* (Schneider)
180. *Paralichthodes algoensis* Gilchrist

Family BOTHIDAE

181. *Arnoglossus tapeinosoma* (Bleeker)
182. *Bothus myriaster* (Temminck & Schlegel)
183. *Crossorhombus azureus* (Alcock)
184. *Engyprosonopon cocosensis* (Bleeker)
185. *Engyprosonopon grandisquamis* (Temminck & Schlegel)
186. *Kinolaeops guentheri* (Alcock)
187. *Laeops nigromaculatus* (von Bonde)

Family PLEURONECTIDAE

188. *Marleyella biocolorata* (von Bonde)
189. *Poecilopsetta colorata* (Gunther)
190. *Poecilopsetta praelonga* Alcock
191. *Samaris cristatus* Gray

Family CYNOGLOSSIDAE

192. *Cynoglossus arel* (Schneider)
193. *Cynoglossus bilineatus* (Lacepede)
194. *Cynoglossus capensis* (Kaup)
195. *Cynoglossus dispar* Day
196. *Cynoglossus kopsi* (Bleeker)
197. *Cynoglossus lingua* Hamilton-Buchanan
198. *Cynoglossus macrostomus* Norman
199. *Cynoglossus puncticeps* (Richardson)

Family SOLEIDAE

200. *Aesopia cornuta* Kaup
201. *Euryglossa panoides* (Bleeker)
202. *Heteromycteris capensis* (Kaup)
203. *Heteromycteris oculus* (Alcock)

204. *Synaptura albomaculata* Kaup
205. *Synaptura commersoniana* (Lacepede)
206. *Zebrias japonicus* Bleeker
207. *Zebrias regani* (Gilchrist)
208. *Zebrias synapturoides* (Jenkins)

Order TETRAODONTIFORMES

Family BALISTIDAE

209. *Sufflamen fraenatus* (Bloch & Schneider)
210. *Abalistes stellatus* (Lacepede)

Family MONACANTHIDAE

211. *Paramonacanthus cingalensis* (Frase-Brunner)
212. *Paramonacanthus chairocephalus* (Bleeker)

Family TRIACANTHIDAE

213. *Pseudotriacanthus strigilifer* (Cantor)
214. *Triacanthus biaculeatus* (Bloch)

Family OSTRACIIDAE

215. *Lactoria fornasini* (Bianconi)
216. *Tetrosomus gibbosus* (Linnaeus)

Family TETRAODONTIDAE

217. *Arothron hispidus* (Lacepede)
218. *Arothron immaculatus* (Bloch & Schneider)
219. *Arothron stellatus* (Bloch & Schneider)
220. *Canthigaster solandri* (Richardson)
221. *Chelonodon fluviatilis* (Buchanan)
222. *Chelonodon patoca* (Buchanan)
223. *Lagocephalus guentheri* (Ribeiro)
224. *Lagocephalus inermis* (Temminck & Schlegel)
225. *Lagocephalus lunaris* (Bloch & Schneider)
226. *Lagocephalus scleratus* (Gmelin)
227. *Torquigener hypselogonion* (Bleeker)

Family DIODONTIDAE

228. *Diodon hystrix* Linnaeus

During the preliminary studies on low value trawl by-catch components off Visakhapatnam, 228 species belonging to 68 families have been identified (Table 1). The present list contains four species viz., *Myrophis lepturus*, *Uranoscopus bicinctus*, *U. oligolepis* and *Lagocephalus guentheri* which are reported as new records from Indian waters.

The seaward range of operation of the small trawlers operating off Visakhapatnam, generally does not extend beyond 50 m isobath because they are interested mainly in the exploitation of the penaeid prawn

stocks. Prawns account for only about 15% of the total catch on an average and the rest of the catch consists of a variety of fishes (Sastry & Chandrasekhar, 1986). Most of the species occurring in this region are represented in the low value by-catch landed by the trawlers. Sudharshan (1981) provided key to 283 species of fish in trawl catches. Seshagiri Rao (1991) has listed 172 commercially important species off Andhra coast.

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