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SPURT IN FISH LANDINGS ALONG NORTH TAMIL NADU COAST*

In the second fortnight of August, 1982 a sudden spurt of unusually heavy fish landings was noticed along the northern part of Tamilnadu coast extending from Pondicherry to Madras. Some of the species of fishes represented in the catches being occupants of deeper water, a probable movement of deep water fishes into the inshore areas has occurred during this period. Certain details of the landings of a few centres along the coast during the time are presented.

Pondicherry

The heavy fish landings were observed from 17.8.1982 to 31.8.1982 in landing centres adjacent of Pondicherry, viz., Chinnamudaliarchavadi, Nochikuppam, Cholakandikuppam and Kanakachettykuppam. The catches comprised mainly of *Caranx* spp., *Soles*, *Nemipterus* spp. *Saurida* spp., cuttlefish and coral fishes and were fished by indigenous gears like bag net, shore seine, gill net and boat seine.

The landings ranged from 0.5 to 6.5 tonnes per day (Table.1). Due to the heavy catches, there was glut in all the landing centres of this region, resulting in very low market value for the fishes. For instance, the normal cost of *Decapterus* sp., about Rs.3 per kg. fell to Rs. 0.75 per kg. Consequently the fishermen did not go out for fishing for a day or two in some of the landing centres.

Kovalam

Whereas the temporary heavy landings lasted for about 15 days in Pondicherry region, the same was noticed in Kovalam region only for 2 days, viz., on 23.8.'82 and 24.8.'82. On 24.8.'82, about 3.3 tonnes of fishes were landed at Kottivakkam, mainly by shore seines (2 units). Of the 3.3 tonnes landed here about 2.3 tonnes were constituted by *Leiognathus bindus*.

At Kovalam landing centre, about 2.3 tonnes of fish were landed by boat seines (31 units). The catch consisted mainly of coral fishes, *Leiognathus* spp., *Nemipterus* spp., *squilla* spp., and *Sepia* spp. Interestingly some of the fishes, crabs and prawns, which normally inhabit deep waters were caught in boat seines operated in 4 m depth on that day

Fishes: *Psenes indicus*, *Chaetodon vagabundus*, *Holocentrus rubrum*, *Pseudorhombus triocellatus*, *Plectorhynchus pictus*, *Apogon multitaeniatus*, *Archamia lineolata*, *Scolopsis vosmeri*, *Pempheris moluca*,

Opisthognathus muscatensis, *Ichthyos copus*, *Synaptura zebra*, *Caesio caeruleaureus*, *Abudedefduf* sp., *Alectis indicus*, *Hoplobrotula* sp., *Brotula maculata* and *Epinephelus tauvina*. (Fig.)

Prawns: *Metapenaeus monoceros*, *Parapenaeopsis* spp., and *Trachypenaeus* sp.

Crabs: *Portunus hastoides*, *P.gladiator*, *Charybdis*, *Callianassa*, *Dorippe (Dorippoides) facchino*, *Philyra globulosa*

Madras

Similar rise in landings were observed in Madras also. At the Kasimedu landing centre for mechanised trawlers there was an abrupt increase in landings from 26.8.1982 lasting upto 30.8.'82 (Table 1). On these days the landings ranged from 30 to 44 tonnes per day. In the previous month of July the average landing was 22 tonnes per day, thus recording 1.5 to 2 fold increase in fish landings during this period. The major constituent in the catch at Kasimedu was *Nemipterus* spp. While *Nemipterus* spp. formed 17.1% of total trawl catch in July, the percentage composition of these fishes rose to 49.3 on these days. A few specimens of *N.metopias*, which is rarely recorded from these waters were also present. *Saurida* spp., *Sepia* spp. and coral fishes were the other varieties represented in the catches. Most of the private boats operated in inshore waters (15 m depth) during this period.

Environmental conditions

During the period of high landings it was noticed that there was a slight fall in surface water temperature along the north Tamil Nadu coast. The average surface water temperature off Kovalam dropped to 26.8°C on 24.8.'82 from the normal average temperature of 29.1°C recorded during the period from 1.8.'82 to 22.8.'82. Swarms of *Noctiluca miliaris* were also observed on 24.8.'82, one of the days of high landings of fishes.

Results of analysis of water samples collected off Madras on two days of heavy landings, making use of Cadalmin III are presented in Table 2. A notable feature is the low oxygen concentration (1.10 to 1.37 ml/l) and low temperature (26.2 to 27.2°C) during

*Prepared by E. Vivekanandan, M. Kathirvel, V. Selvaraj, K.G. Girijavallabhan, M. Rajagopalan and L. Chidambaram



Fig. Some species of fishes caught during the fortnight

Table.1. Estimated landings (in kg) at different centres of north Tamil Nadu coast during the second fortnight of August, 1982. (Major categories in the catch in parentheses)

Date August 1982	Pondicherry	Kovalam	Kasimedu (Madras)
17	2,000 (<i>Caranx</i> , <i>Nemipterus</i>)	175 (<i>Trichiurus</i>)	No data
18	5,000 (<i>Caranx</i> , Soles, Coral fishes)	No fishing	-do-
19	4,000 (<i>Sciaemids</i> , Soles, Coral fishes)	100 (<i>Dussumieria</i>)	18,420 (<i>Nemipterus</i> , <i>Saurida</i>)
20	No data	No data	No data
21	-do-	-do-	-do-
22	-do-	-do-	-do-
23	No fishing due to glut	500 (Coral fishes, <i>Nemipterus</i>)	20,978 (<i>Nemipterus</i> , <i>Sepia</i>)
24	6,500 (Soles, Rays, <i>Saurida</i>)	2,300 (Coral fishes, <i>Nemipterus</i>) 3,300 (at Kottivakkam) (Silverbellies)	No data
25	3,000 (<i>Upenoides</i> , <i>Serranus</i>)	25	-do-
26	500 (Coral fishes)	8	43,917 (<i>Nemipterus</i> , <i>Saurida</i>)
27	No data	82 (Tuna)	30,104 (<i>Nemipterus</i> , <i>Sepia</i>)
28	-do-	80	No data
29	6,000 (<i>Epinephelus</i>)	No data	-do-
30	No data	-do-	33,370 (<i>Nemipterus</i> , <i>Sepia</i>)
31	-do-	-do-	16,974 (<i>Nemipterus</i> , <i>Saurida</i>)

Table. 2. Hydrographic conditions in different areas off Madras

Date August '82	Station	Depth (m)	Dissolved O ₂ (ml/l)	Temperature (°C)	Salinity (‰)	Plankton
20	12.80/6B	10 Surface Collection	1.10	26.2	34.3	Swarm of <i>Noctiluca miliaris</i>
	13.80/1C	30 Surface Collection	1.37	27.2	34.0	-do-
	13.80/1C	30 Bottom Collection	No data	27.2	33.3	—
30	12.80/6B	30 Surface Collection	1.31	27.2	34.3	Swarm of <i>Noctiluca miliaris</i>

these days. In the month of July the average oxygen concentration off Madras was 3.53 ml/l and water temperature 29.2°C.

Analysis of plankton samples (horizontal and oblique collections) collected on 20.8.'82 and 30.8.'82 in the areas mentioned in Table 2 revealed swarms of *Noctiluca miliaris* on both days. In a subsequent collection on 4.9.'82, a bloom of *Chaetoceros* sp. was observed.

Remarks

The increased landings were observed off Pondicherry from 17.8.'82, off Kovalam on 23 & 24.8.'82 and off Madras from 26.8.'82, pointing to a possible drift in the commencement of the heavy landings from south to north direction in the northern part of Tamil Nadu

coast. This might probably indicate that the sudden movement of the slightly deeper water inhabitants of the coast caused by some unknown factor struck the coast in the southern area first and slowly moved towards the north upto Madras. There are indications that this unknown factor may be the sudden upwelling taking place in this area. The swarming of *Noctiluca* sp. along with fall in temperature at the time of high catch would suggest the occurrence of upwelling, driving the demersal fishes towards the shore.

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