



MARINE FISHERIES INFORMATION SERVICE



No. 76
OCTOBER 1987

Technical and Extension Series

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

COCHIN, INDIA

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

HEAVY LANDINGS OF *STOLEPHORUS DEVISI* BY SHORE SEINES ALONG MADRAS COAST*

Unusual heavy landing of *Stolephorus devisi* was observed in shore-seines operated during March, 1986 along the landing centres from Kottivakkamkuppam to Oyyalikuppam south of Mahabalipuram, southern-side of Madras. Though the fishery of these landing centres used to be contributed by substantial quantities of *Stolephorus* sp. this year it was unusual.

Occurrence of *Stolephorus* sp. in the shore-seine catches at Kovalam landing centre was observed from 21st March, 1986 onwards. To start with, it was about 350 kg per shore-seine but gradually increased on the

subsequent days to reach a maximum of 1,750 kg per unit per haul on 24th March, 1986 and thereafter the fishery declined slowly to 113.3 kg per unit on 27th March, 1986. The same trend of fishery was observed at Kottivakkamkuppam, Injambakkamkuppam, Panayurkuppam, Nainarkuppam, Pudukuppam, Nemelikuppam, Kokrimedukuppam and Oyyalikuppam landing centres also (Table 1). Anchovy fishery started at Kottivakkamkuppam on 18th March, 1986 itself, three days prior to the occurrence at Kovalam landing centre.

Table 1. Quantity of *Stolephorus devisi* landed by shore-seine in different landing centres

Landing centre	Date	No. of units operated	Estimated catch (kg)	CPUE (kg)
Kovalamkuppam	21-3-1986	3	1,050	350.00
	22-3-1986	5	2,810	562.00
	23-3-1986	6	6,210	1,035.00
	24-3-1986	6	10,500	1,750.00
	25-3-1986	5	5,200	1,040.00
	26-3-1986	4	2,430	675.00
	27-3-1986	4	780	195.00
Kottivakkamkuppam	18-3-1986	3	340	113.33
Injambakkamkuppam	25-3-1986	2	1,800	900.00
Panayurkuppam	22-3-1986	4	247	61.75
	23-3-1986	4	1,400	350.00
	24-3-1986	4	2,995	748.74
	25-3-1986	4	38	9.50
Nainarkuppam	21-3-1986	4	5,700	1,900.00
Pudukuppam	26-3-1986	2	6,000	3,000.00
Nemmelikuppam	24-3-1986	4	5,000	1,250.00
	25-3-1986	4	6,000	1,500.00
Kokrimedukuppam	21-3-1986	1	300	300.00
	22-3-1986	3	1,160	386.67
Oyyalikuppam	25-3-1986	1	55	55.00

*Prepared by R. Thangavelu, M. Bose and P. Poovannan, Madras Research Centre of CMFRI, Madras.

The incidence of high catches with wider fluctuations was recorded for a period of 10 days between 18th and 27th March, 1986 from Kottivakkamkuppam to Oyyalikuppam landing centres. No anchovy fishery was observed after this period. Apart from the anchovies, silver bellies, mackerel and lesser sardines were also found in the catches in negligible numbers.

Though there was a demand for this fish on the first two days in the local market, it declined during later days. At Nainarkuppam 5,700 kg of anchovies were sold for Rs. 15,000/- on 21st March, 1986, while at Panayurkuppam 1,500 kg were sold for Rs. 4,000/- on 24th March, 1986. Since there was no demand at Kovalam market, all the anchovy catches were sun-dried on the sandy beach and later transported by lorries to



Fig. 1. Shore-seine catches of *Stolephorus* at Kovalam landing centre.

Madras. The dried fish was sold at the rate of Rs. 8/- per kg at the local market of Kovalam.

A random sample was collected from the shore-seine catches and analysed. The size ranged between



Fig. 2. Fisher-folk gathered around the catches.

55 and 85 mm and the modal size group was 70-74 mm which contributed to 30.95% of the catches. Males constituted 54.76% while females and indeterminates formed 42.86 and 2.38% respectively in the population. Immature and maturing gonads were observed to be common in both the sexes.

Gut content analysis showed that the food was in a semi-digested condition and also observed the presence of numerous sand grains in a majority of fishes. The food of *Stolephorus* was mainly constituted by copepods (*Paracalanus*, *Oithona* and *Euterpina* sp.). However, the other items like mysis, megalopa larva of crab, fish eggs, cypris larva of barnacle and tintinnids; with sporadic occurrence of phytoplankton such as *Coscinodiscus*, *Nitzschia*, *Rhizosolenia* and *Pleurosigma* were also observed. From the analysis of stomach contents and plankton of Kovalam Bay, it is evident that occurrence of such heavy catches during a shorter duration of 10 days along the landing centres of Madras coast was probably due to presence of its favourite food along the coastal areas.

Salinity and temperature were found to be 34‰ and 30°C respectively at Kovalam Bay. It was understood that the water current was gently moving towards north. No wave action was observed in the bay waters. The fact that the fishery started first at the northern point of Kottivakkamkuppam and then gradually shifted towards south indicates that the shoal was moving towards south against the water currents.

