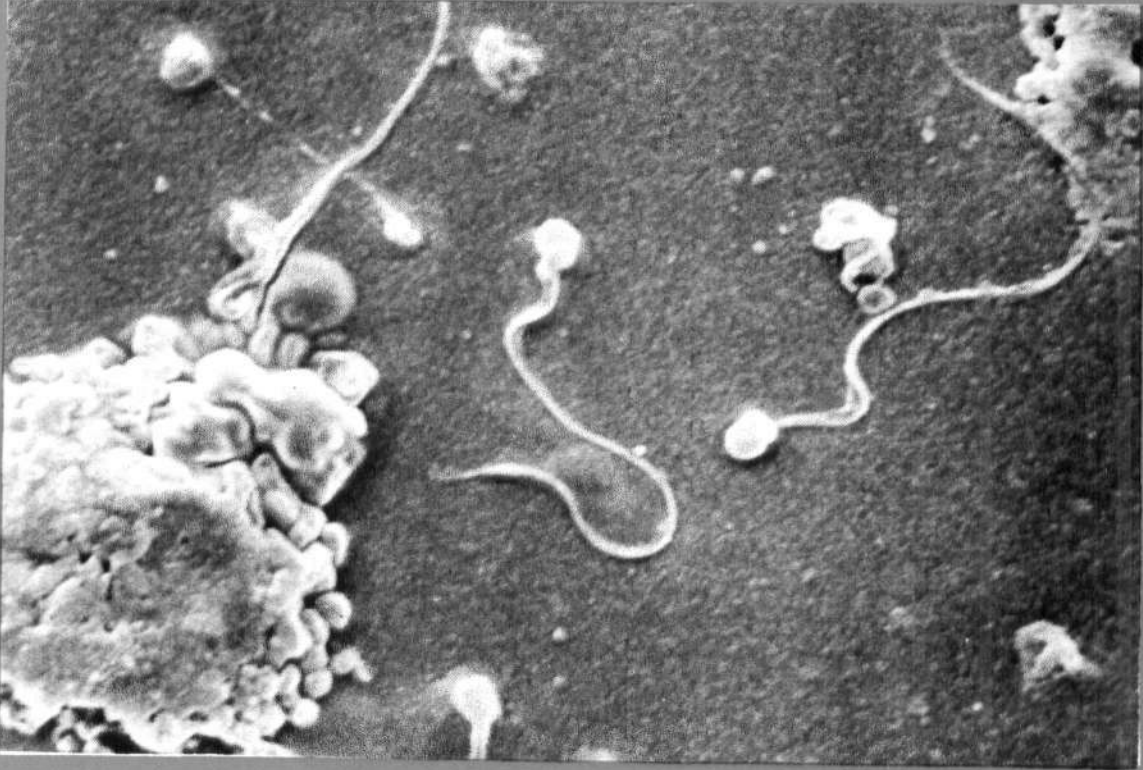




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## OBSERVATIONS ON CATFISH LANDINGS BY PAIR TRAWLERS AT RAMESWARAM\*

During 1980-'81, trawling trials by two-boats with high opening trawl nets commenced in the Palk Bay with Mandapam, Pamban and Rameswaram as bases of operation. Pillai and Sathiyadas (*Mar. Fish. Infor. Serv., T & E ser., No. 39 : 1982*) have furnished a detailed account on the history and other particulars of this fishery in 1982. They reported the landings of 109 t of catfishes during February-April at Rameswaram, which formed 9.32% in total landings. Subramani (*Mar. Fish. Infor. Serv., T & E Ser., No. 73 : 1987*) recorded good landings of catfish from this gear, sometimes even upto 7 t/unit. Kasinathan and Bose (*Mar. Fish. Infor. Serv., T & E Ser., No. 95 : 1989*) observed occasionally heavy landings of catfishes from pair trawlers in February and March, 1988.

### Pair trawl catfish fishery during 1988-'92

Table 1 furnishes data on the catch, effort and species composition of catfishes in pair trawl operations during 1988-'92 at Rameswaram Verkotttil landing centre. From 1988 to 1992, the fishing effort and total landings have registered staggering increase by 32.45 and 39.41%, respectively. Catfish catches showed a steady decline from 77.03 t in 1988 to 19.18 t in 1991. But in the year 1992, it registered a phenomenal 18.20% increase over the catch in the previous year. Regarding species composition, from 1988 to 1991, *Tachysurus caelatus* Val. was the dominant, forming an average 69% of all catfishes. In 1992, the soldier catfish, *Osteogenetosus militaris* (Linnaeus) constituted 61.85% of all catfishes. Such heavy landings of this species have never occurred before in any gear along the Palk Bay and the Gulf of Mannar.

### Details of catfish fishery in 1992

During mid January-mid April, 1992, the pair trawling boats operated about 10-25 km N.E. off Rameswaram (approx. 9° 10'-9° 30'N and 79° 20'-79° 35'E) at 10-16 m depth, where the sea bottom is mostly muddy. Of the estimated 12,874.55 t of fish landed, about 3% was constituted by catfishes at a CPUE of 52.2 kg. Peak catfish catches were recorded in February (254.15 t at a CPUE of 116 kg). In April, the catch plummeted to 3.74 t and the fishery disappeared by about middle of April. The proportion of *O. militaris* in the total catfishes ranged from 59.5% in January to 64.9% in April. From the enquiries with local fishermen, it was learnt that best catches of catfishes came from west of Katchativu.

A perusal of catfish catches from pair trawlers during 1988-'92 (Table 1) and the total rainfall during September to April (Table 2) indicates an inverse relationship between the two. Minimum catch of 19.18 t was recorded in 1991 while the total rainfall during September, 1990 - April, 1991 was maximum (893.4 mm). Though the rainfall decreased to 584.8 mm during September, 1991 to April, 1992, catfish catches registered an enormous increase.

Some biological studies of *O. militaris*, *Tachysurus caelatus* and *T. maculatus* were carried out in the month of March. In *O. militaris*, the total length varied from 220 to 419 mm with 320-339 mm as the modal size group. Female to male ratio was 2:1. Of the females examined, 88% were in stages IV-VII; 25% were in stage VI (fully ripe). In *T. caelatus*, length ranged from 322 to 590 mm with

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TABLE 1. Catch effort and species composition data of catfishes from pair trawlers at Rameswaram Verkottil landing centre during 1988-1992 (Given in the parenthesis are percentage of catfish in total landings and that of different species in total catfish catch)

Units	1988				1989				1990				1991				1992								
	Jan.	Feb.	Mar.	Apr.	Total	Jan.	Feb.	Mar.	Apr.	Total	Jan.	Feb.	Mar.	Apr.	Total	Jan.	Feb.	Mar.	Apr.	Total					
Total catch (t)	—	125	86	—	211	36	201	185	59	481	—	376	171	—	547	—	392	813	221	1426	760	2196	2069	2012	7057
Total catfish (t)	—	231.57	87.02	—	318.59	33.48	75.04	152.04	48.10	306.66	—	276.20	188.10	—	464.30	—	831.40	1316.66	227.76	2375.62	2035.79	3686.0	3662.36	3281.4	12874.55
Total catfish (%)	—	70.55	6.48	—	77.03	15.00	6.71	22.25	10.27	60.23	—	24.00	31.50	—	55.50	—	18.18	—	—	19.18	63.55	254.15	46.73	3.74	368.17
	—	(90.47)	(7.45)	—	(24.18)	(44.8)	(8.94)	(14.63)	(35.29)	(19.64)	—	(8.69)	(16.75)	—	(11.96)	—	(1.46)	—	—	(0.81)	(3.12)	(6.53)	(1.26)	(0.11)	(2.86)
<i>Tachysurus caelatus</i> (t)	—	47.20	4.57	—	51.77	8.45	4.50	14.75	13.65	41.35	—	16.85	25.45	—	39.25	—	13.89	—	—	13.89	14.30	86.41	9.81	0.73	111.25
	—	(66.90)	(70.59)	—	(67.21)	(25.24)	(67.06)	(66.29)	(83.90)	(68.66)	—	(70.31)	(80.79)	—	(70.72)	—	(72.42)	—	—	(72.42)	(22.50)	(34.00)	(20.96)	(19.52)	(30.22)
<i>Cetostegus milinaris</i> (t)	—	4.80	0.06	—	4.86	2.55	0.95	3.55	1.15	8.20	—	4.55	1.75	—	3.75	—	3.48	—	—	3.48	37.81	157.57	29.91	2.43	227.72
	—	(6.80)	(0.99)	—	(6.31)	(7.62)	(14.16)	(15.96)	(7.07)	(13.61)	—	(18.96)	(5.56)	—	(6.76)	—	(18.14)	—	—	(18.14)	(59.50)	(62.00)	(64.01)	(64.97)	(61.86)
Other species (t)	—	18.55	1.85	—	20.40	4.00	1.26	3.95	1.47	10.68	—	2.60	4.30	—	12.50	—	1.91	—	—	1.81	11.44	10.17	7.01	0.56	29.20
	—	(26.29)	(2.85)	—	(26.46)	(11.95)	(18.78)	(7.75)	(9.04)	(17.73)	—	(10.83)	(13.66)	—	(22.52)	—	(9.44)	—	—	(9.44)	(18.0)	(4.00)	(15.0)	(15.51)	(7.99)

TABLE 2. Data on total rainfall in Rameswaram Island during September, 1987 to April, 1992 (Source : Meteorological Department, Panbar) and pair trawl landings of catfish during January to April in each year

Period	Total rainfall (In mm)	Total catfish catch during Jan.-Apr. (In t)
September 1987-April 1988	497.20	77.03
September 1988-April 1989	517.10	60.23
September 1989-April 1990	759.30	55.50
September 1990-April 1991	893.40	19.18
September 1991-April 1992	584.80	368.17

520-539 mm as the mode. Female to male ratio was 2.1:1. 65% of females were in stages IV-VII; 30% were in stage VI. Total length range of *T. maculatus*, the third most dominant species, was 204-333 mm with 320-339 mm as the mode. Female to male ratio was 1:1. 90% of females in stages IV-VII; 65% were in stage VI. Specimens carrying eggs in the mouth were rare in all the species.

### Marketing

In 1992, the pair trawl fishery catches have attracted a large number of fish traders from Kerala. During peak landing period (February), upto 35 lorries/day, fully loaded with ice blocks arrived at Rameswaram landing centre. About 10% of the catfish catches were purchased by them, while about 70% were taken to the interior markets of Tamil Nadu, like Tiruchi, Coimbatore, Madurai and Pollachi, the rest being sun-dried before selling in the local markets. Price of catfish remained rather steady at Rs. 5 to 7 per kg, during both peak and weak periods of its fishery.

### Remarks

During their introductory operations in the Palk Bay, the pair trawlers brought enormous quantities of white pomfrets, hence the gear came to be known locally as 'Vaval madi' (In Tamil 'Vaval' means white pomfret and 'madi' means net). However, in the following years, the composition of the dominant species in the catches varied and in 1992, oil sardines constituted about 71% of total landings. Pair trawl has proved to be the most efficient gear in this region exploiting shoaling fishes moving slightly above the sea bottom.

Though generally a subsidiary catch, catfishes are observed to dominate the catches in some units occasionally. They also fetch a reasonably good price. The marked increase in catfish catches in the year 1992 could be attributed to different reasons, such as increase in fishing effort by about 395%, change in the area of operations, etc. Occurrence of a high percentage of fish in advanced stages of maturation in the catches suggest that catfishes engaged in spawning migration are exploited by this gear.