

## SOME OBSERVATIONS ON THE MACKEREL FISHERY RESOURCES OF MADRAS COAST \*

N. S. RADHAKRISHNAN\*\*, E. VIVEKANANDAN AND M. D. K. KUTHALINGAM

*Central Marine Fisheries Research Institute, Cochin-682 031*

### ABSTRACT

Compared to earlier years, the landings of the Indian mackerel *Rastrelliger kanagurta* were unusually high at Madras in 1986. At Kasimedu, the landings from trawlers increased from the annual average of 19.1 tonnes during 1981-1985 to 219.0 t in 1986. The catch from the non-mechanised *Eda Valai* (bag net) also exhibited a similar increase from the annual average of 16.6 t during 1981-1985 to 914.5 t in 1986. The catch rates were also very high in 1986. Data collected on length measurements and maturity stages of *R. kanagurta* are also presented in the text.

### INTRODUCTION

MACKEREL forms one of the most important pelagic fishery resources of the west coast of India, especially along Kerala and Karnataka. During the past few years, the mackerel fishery of the west coast has declined from an annual average of 95,164 t in 1971 to 11,676 t in 1984, the corresponding figures in Karnataka are 64,047 t and 12,337 t (Anon., 1982, 1986). In Tamil Nadu and Andhra Pradesh in the east coast, the landings have fluctuated at an estimated annual average of about 9,000 t during 1971-1984. However the mackerel landings have increased during 1981 to 1986 at Kasimedu landing centre, Madras which is one of the important landing centres of the Tamil Nadu Coast. Considering the decline in the west coast landings, the increase in the mackerel landings here assumes importance.

Hence, it is considered worthwhile to present this data and project salient features of the fishery.

The authors are thankful to Dr. P. S. B. R. James, Director, Central Marine Fisheries Research Institute, Cochin for encouragement and help.

### MATERIAL AND METHODS

Data on catch and effort of trawl net and *Eda Valai* (bag net) from Kasimedu, Madras were collected from 1981 to 1986, twice in a week and the data raised for monthly values. Length and maturity studies were made on mackerel sampled from *eda valai* during June-September, 1986. The length frequency sample data on each observation day were raised to the day's catch to compute the monthly length composition of catch.

### RESULTS AND DISCUSSION

#### *Fishery*

\* In the absence of purse seine and rampani net which land bulk of the mackerel catch in

\* Presented at the 'Symposium on Tropical Marine Living Resources' held by the Marine Biological Association of India at Cochin from January 12-16, 1988.

\*\* Present Address: Madras Research Centre of Central Marine Fisheries Research Institute, 141, Marshalls Road, Egmore, Madras 600 008.

the west coast (Noble, 1979), the mackerel landings in Madras Coast were mainly from trawl net and the indigenous *eda valai*. Landings from other indigenous gears such as gill net, boat seine and shore seine were negligible. Hence, catch data collected from trawl net and *eda valai* only are presented here.

During 1981-86, the fishing effort of trawlers increased from 20,745 to 46,518 units days with an annual average of 34,251 units days

(Table 1). The annual mackerel catch from them increased from 3.6 tonnes in 1981 to 219.0 t in 1986. Similarly the catch rate increased from 0.2 kg/unit to 4.7 kg/unit. The annual average catch and catch rate from trawlers were 52.4 t and 1.5 kg/unit, respectively. The annual catch from *eda valai* also increased from 6.8 t in 1981 to 914.5 t in 1986 with an annual average of 166.3 t. Correspondingly, the catch rate also increased subsequently substantially from 9.0 kg/unit to 647.2 kg/unit with an average of 138.0 kg/unit.

TABLE 1. Estimated number of units, catch (tonnes) and catch rate (kg/unit) of mackerel at Kastimedu landing centre, Madras

Year	Effort	Trawl catch	Catch rate	Effort	Eda valai catch	Catch rate
1981	20745	3.6	0.2	748	6.8	9.0
1982	35823	11.8	0.3	1390	2.2	1.6
1983	30902	24.0	0.8	1287	34.4	26.7
1984	30376	11.3	0.4	1303	23.4	18.0
1985	41142	44.9	1.1	1088	16.3	15.0
1986	46518	219.0	4.7	1413	914.5	647.2
Average	34251	52.4	1.5	1205	166.3	138.0

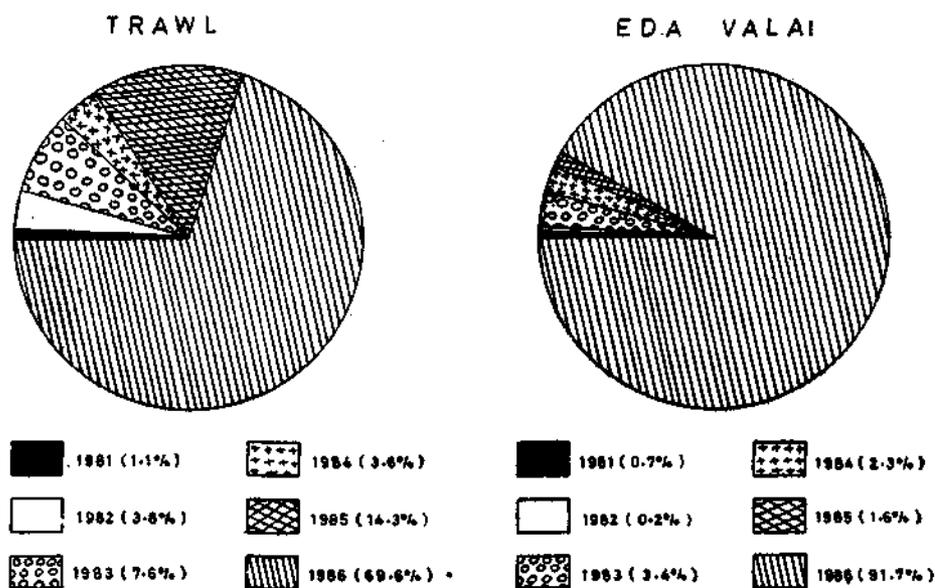


Fig. 1. Yearwise percentage of mackerel landings in the total mackerel landings of 1981-1986.

The increase in mackerel landings from trawl net and *eda valai* was pronounced during 1986 compared to monthly landings of previous years. The annual average trawl landings increased from 19.1 t during 1981-1985 to 219.0 t in 1986; likewise, the *eda valai* catch were due to unusually high *eda valai* catches

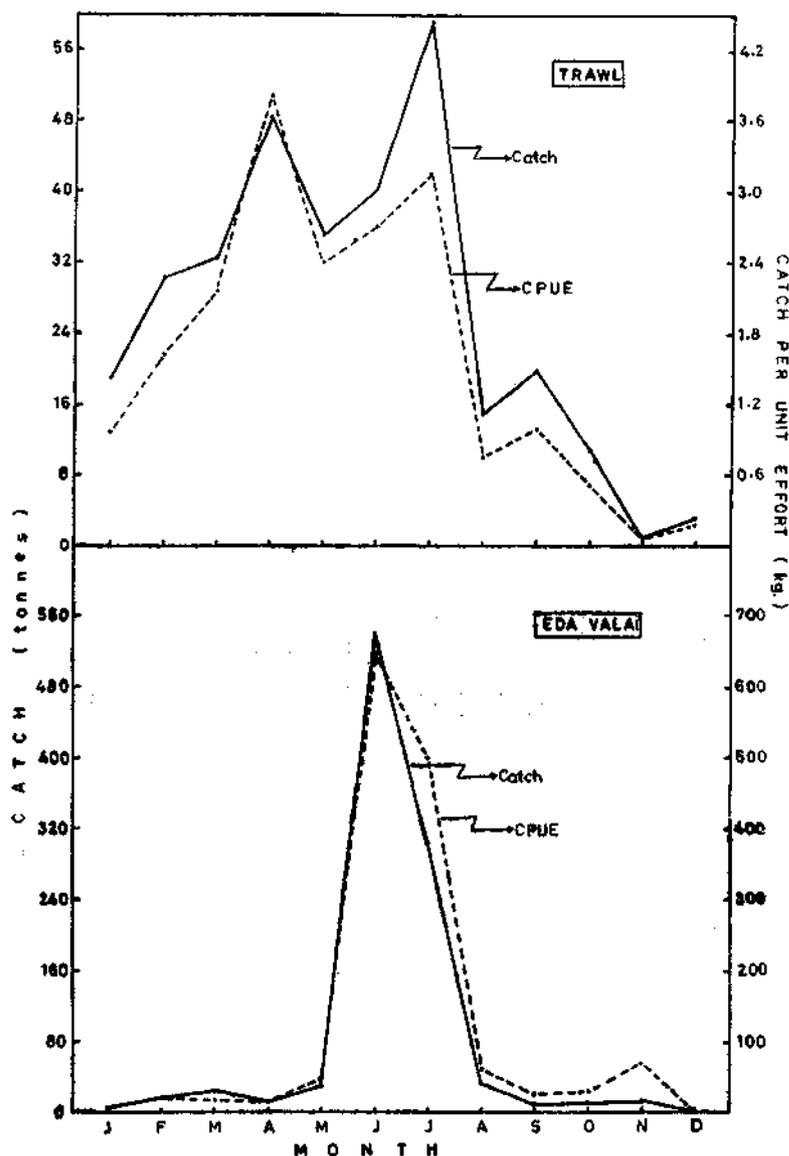


Fig. 2. Monthwise average mackerel catch and catch rate during the years 1981-1986.

in June (537 t) and July (306 t); hitherto not observed in Madras Coast. Similarly the monthly trawl landings also were very high (17-44 t per month) during January-July 1986

increased from 16.6 t to 914.5 t. Of the above total for 6 years (1981-86) 69.6% in trawl and 91.7% in the *eda valai* landings were obtained on 1986 (Fig. 1). In the monthwise average

landings for the years 1981-86, one major peak (June) in *eda valai* fishery and two major peaks (April and July) in the trawl fishery were observed (Fig. 2).

*Length, age composition and maturity conditions*

The mackerel landings comprised almost exclusively of *R. kanagurta*. *R. faughni* reported from Madras Coast (Gnanamuthu, 1971) formed only a negligible percentage. The fishery consisted mainly 1 year old fish (160-209 mm length; modal length: 185-189 mm) during June-July and 0-year old fish (120-159 mm length; modal length: 130-134

mm) during August-September. All 1-year old fish had spent gonad in June and resting stage in July, suggesting that spawning would have occurred in May/June. Girijavallabhan and Gnanamuthu (1974) observed March-May as the spawning season of mackerel off Madras Coast. In the west coast, May-July has been reported as the spawning season of *R. Kanagurta* (Noble, 1979).

The continuously increasing mackerel landings off the Madras Coast calls for detailed studies on the fishery and biology of the species to evaluate its resource position in the area.

REFERENCES

- ANON. 1982. Trends in marine fish production in India 1981. *Mar. Fish. Infor. Serv. T. & E. Ser.*, 41: 1-32.
- 1986. Marine fish production in India 1983-84 and 1984-85. *Ibid.*, 67: 1-78.
- GIRIJAVALLABHAN, K. G. AND J. C. GNANAMUTHU 1974. On a mackerel larvae (*Rastrelliger* sp.) from the inshore waters of Madras. *Indian J. Fish.*, 21: 293-294.
- GNANAMUTHU, J. C. 1971. On the occurrence of *Rastrelliger faughni* Matsui in the Indian waters. *Ibid.*, 18: 170-173.
- NOBLE, A. 1979. The Indian mackerel in 1978. *Mar. Fish. Infor. Serv. T & E.*, 8: 12 p.