



# समुद्री मात्स्यकी सूचना सेवा

## MARINE FISHERIES INFORMATION SERVICE

No. 130

JULY 1994



तकनीकी एवं TECHNICAL AND  
विस्तार अंकावली EXTENSION SERIES

केन्द्रीय समुद्री मात्स्यकी CENTRAL MARINE FISHERIES  
अनुसंधान संस्थान RESEARCH INSTITUTE  
कोचिन, भारत COCHIN, INDIA

भारतीय कृषि अनुसंधान परिषद  
INDIAN COUNCIL OF AGRICULTURAL RESEARCH

## THE NON-PENAEID PRAWN RESOURCES

Vinay D. Deshmukh

*Bombay Research Centre of CMFRI, Bombay-400 023*

The non-penaeid prawns, with the average catch of 57,000 tonnes, constitute one of the important marine resources in India. During 1979-'88 period, the catch of these prawns ranged from 36,303 - 71,985 tonnes, contributing 2.2 - 5% to the total marine fish production of the country. They form nearly 32% of the total prawn production. Although non-penaeid prawns are found all along the coastline, they form fisheries of commercial importance only along the northwest and the northeast coasts. The northern coast of Maharashtra, around Bombay, is par-

ticularly very rich, and contributes nearly three-fourth of the total non-penaeid production of the country. Among the maritime states Maharashtra contributes nearly 78% followed by Gujarat (11.5%), Andhra Pradesh (4.7%) and West Bengal (3.7%). In other states their landings are small and they are caught occasionally.

In Maharashtra with the average catch of 44,511 tonnes the non-penaeid prawns constitute 15.5% of the total marine fish production of (Fig. 1) the state, while in Gujarat, with 6,537 tonnes they form 2.85% (Fig. 2) and with 2,669

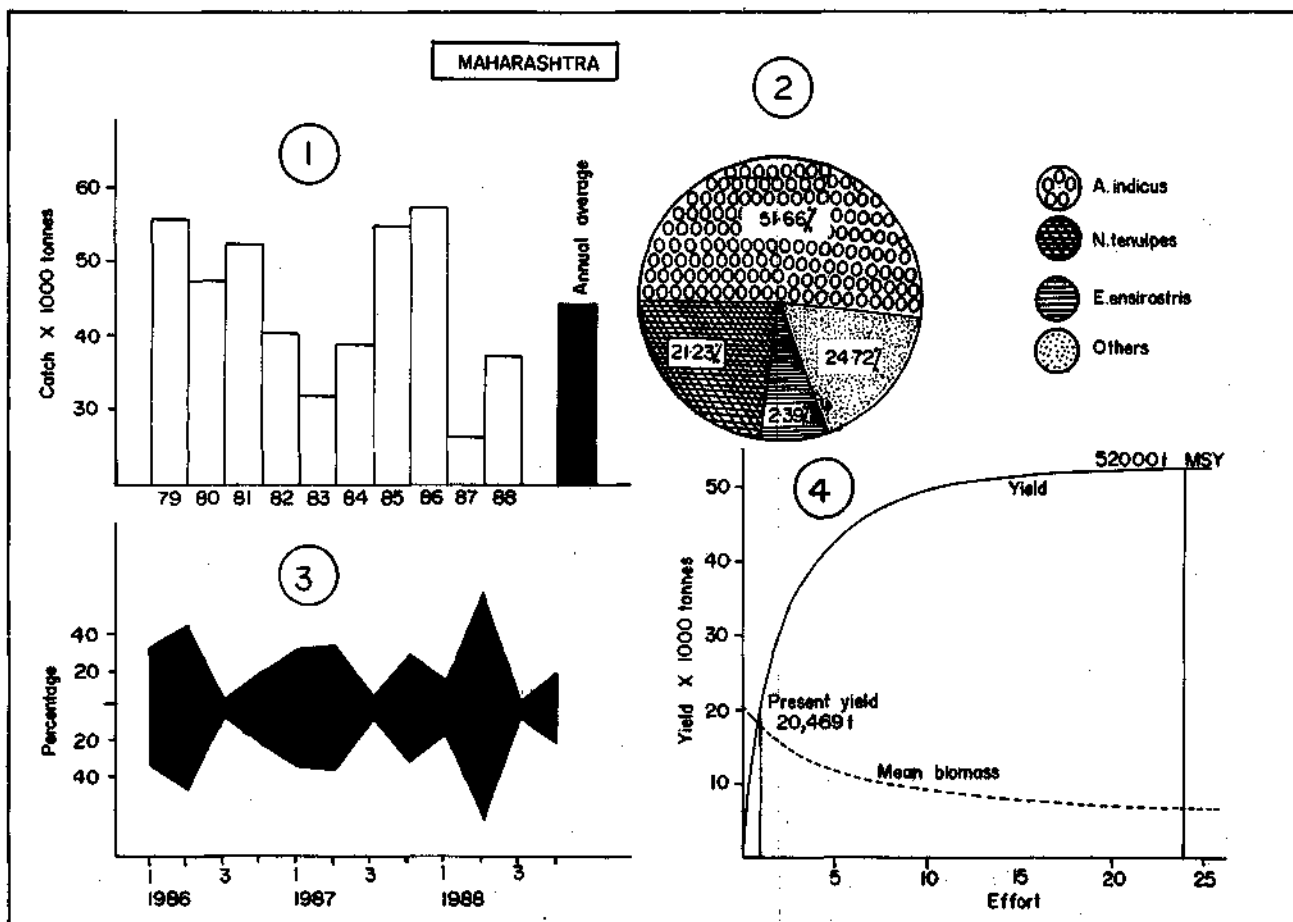


Fig. 1. Annual and average yield of non-penaeid resources along the Maharashtra coast along with quarterly percentage contribution, percentage species composition and catch per effort.

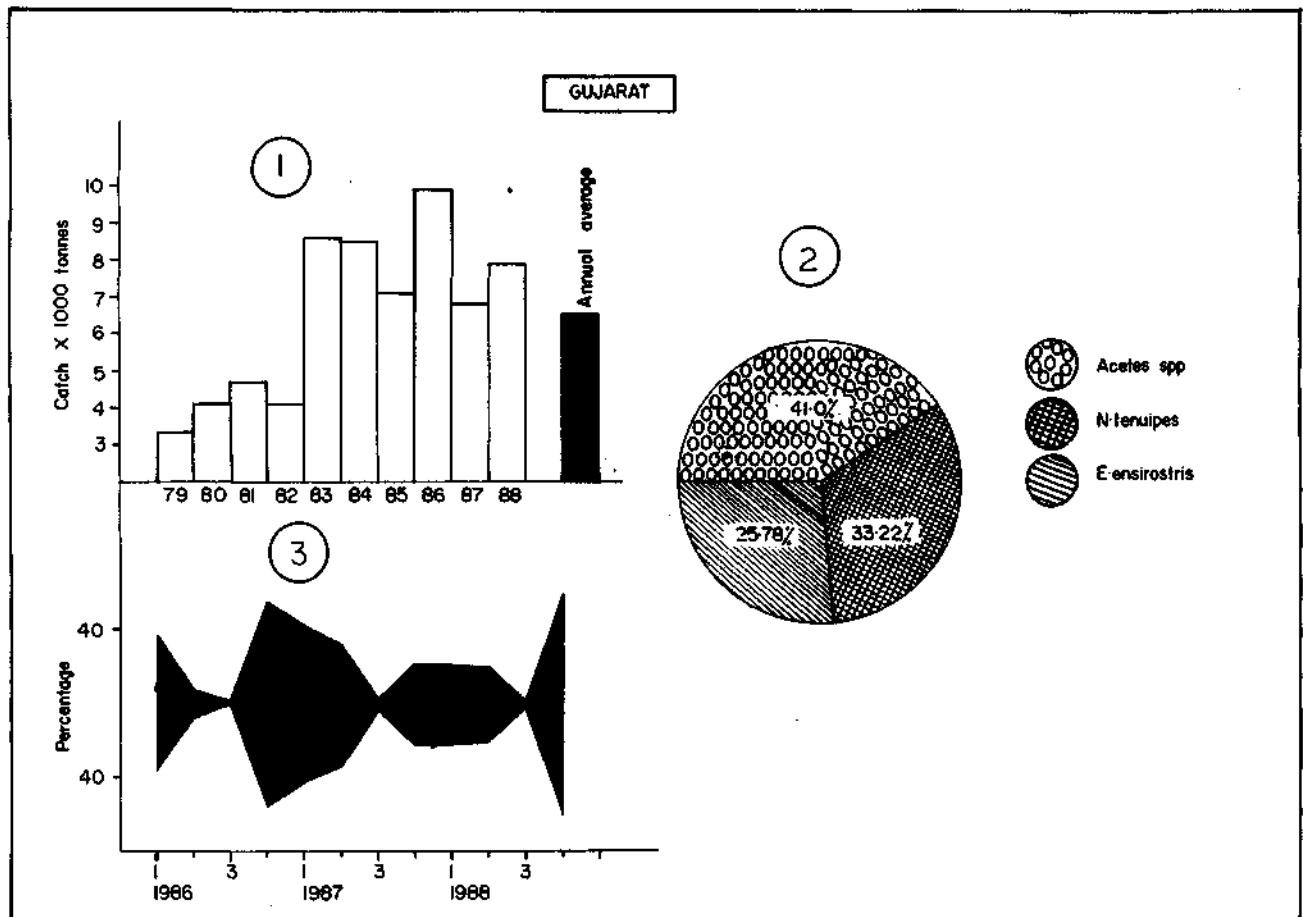


Fig. 2. Annual and average yield of non-penaeid resources during 1979 to'88 along the Gujarat coast along with quarterly percentage contribution in three years and percentage species composition.

tonnes in Andhra Pradesh they form 2.1% of the total marine fish production (Fig. 3).

The fishery is mainly supported by three species, viz. *Acetes indicus*, *Nematopalaemon tenuipes* and *Exhippolysmata ensirostris*, (Fig. 4-6) among which *A. indicus* is the most dominant species. In Maharashtra there are four species of *Acetes*, *A. indicus*, *A. johni*, *A. sibogae* and *A. japonicus* of which *A. indicus* is the dominant species which forms nearly 75% of the catch of *Acetes* species and 52% of the total non-penaeid prawns. In Gujarat *A. indicus* forms 41% followed by *N. tenuipes* (33.2%) and *E. ensirostris*. In Andhra Pradesh the non-penaeid prawns are mainly found in the deltaic estuarine regions of the rivers Godavary and Krishna. There are four species of *Acetes*, namely *A. indicus*, *A. erythraeus*, *A. japonicus* and *A. sibogae*. The catches of *Acetes* are dominant constituting 49%, followed by *N. tenuipes* (38.8%), *E. ensirostris* (10.10%) and other caridean species (2.1%).

The non-penaeid prawns are generally caught by the fixed bag nets, called 'dol' nets, in Maharashtra and Gujarat and by a variety of gears, such as stake nets, scoop nets, shore seines, boat seines and drag nets in Andhra Pradesh. Besides these gears, they are occasionally caught in the trawls also. The 'dol' nets operated in shallow water depths of 15- 25 metres get better catches of these prawns. In Maharashtra, the fishermen use very small sized cod end mesh of 8 - 10 mm when *Acetes* swarms are abundant and 15 - 30 mm when *N. tenuipes* is more in the catch. In other states there is no such selective use of cod end mesh for catching the non-penaeid prawns.

*A. indicus* is an epipelagic, planktonic prawn and occurs in surface waters in massive accumulations or swarms which are generally influenced by the tidal currents, rain and winds. In Maharashtra, swarms of *A. indicus* are abundant during April-June and in October-December period while that of *N. tenuipes* are during

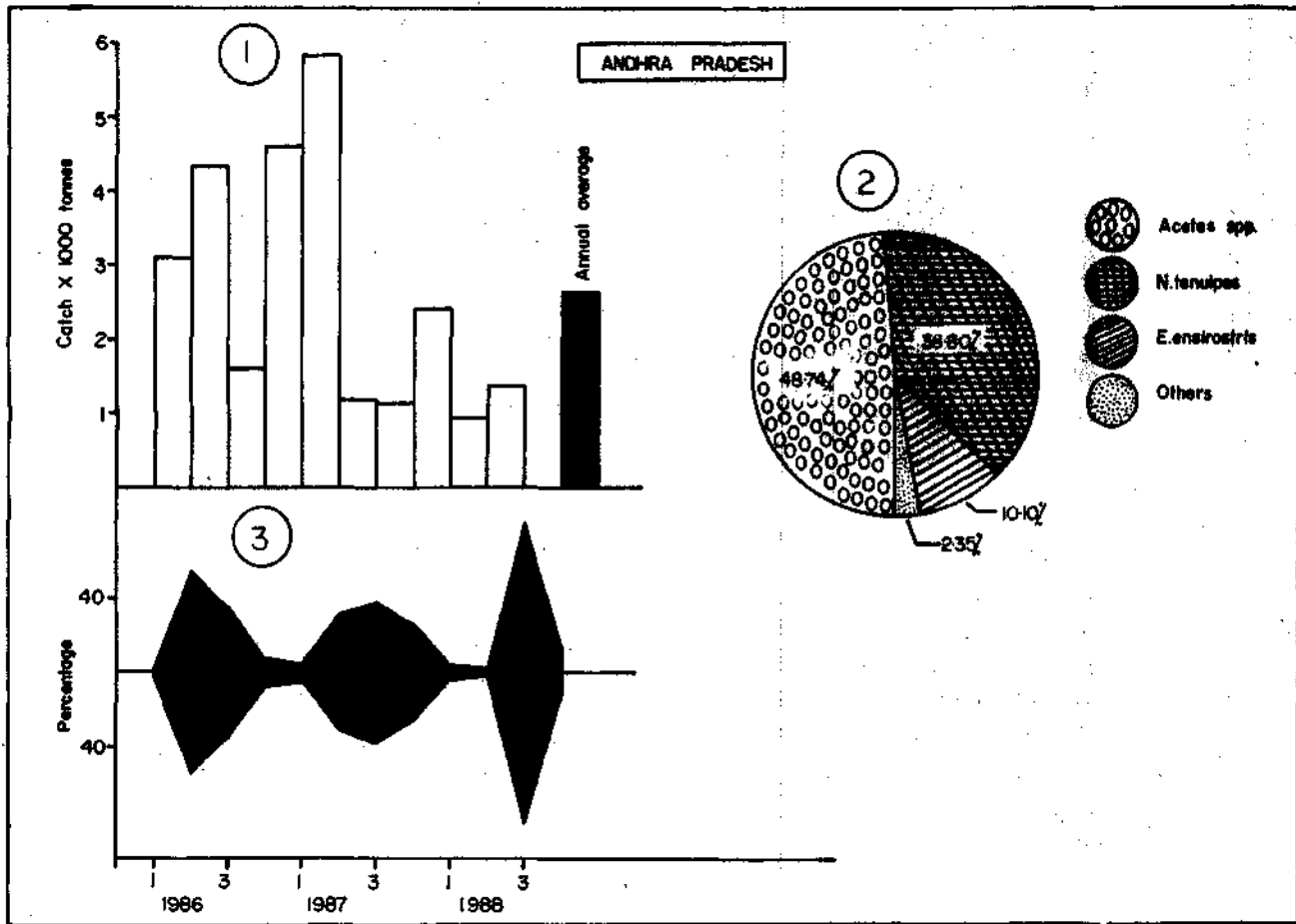


Fig. 3. Annual and average yield of non-penaeid resources during 1979-'88 along the coast of Andhra Pradesh along with quarterly percentage contribution in three years and percentage species composition.

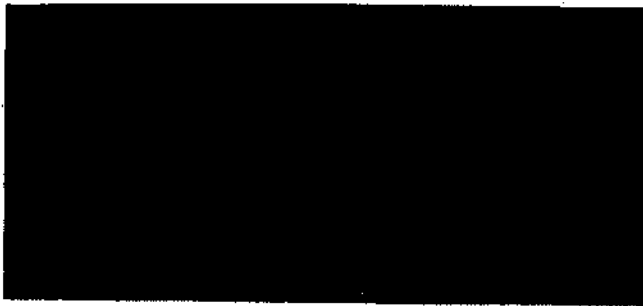


Fig. 4. *Acetes Indicus*.

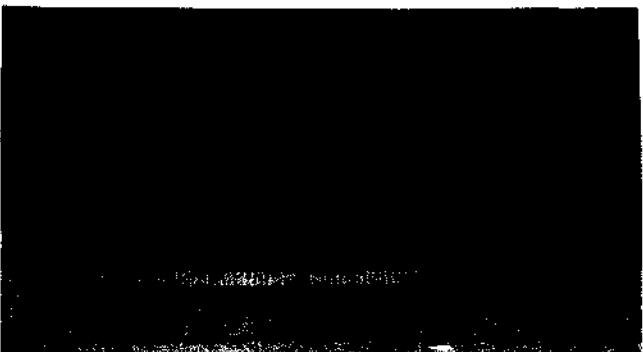


Fig. 5. *Ectippolysmata ensirostris*.

March-May and of *E. ensirostris* during July-September and in December. In Gujarat the peak period of occurrence of non-penaeid prawns is during January-March and in Andhra Pradesh during July-September period.

The non-penaeid prawns are tiny prawns, with the size of 2-3.5 cm in the case of *Acetes indicus*, 4-6 cm in the case of *N. tenuipes* and 5-9 cm in the case of *E. ensirostris*. These prawns

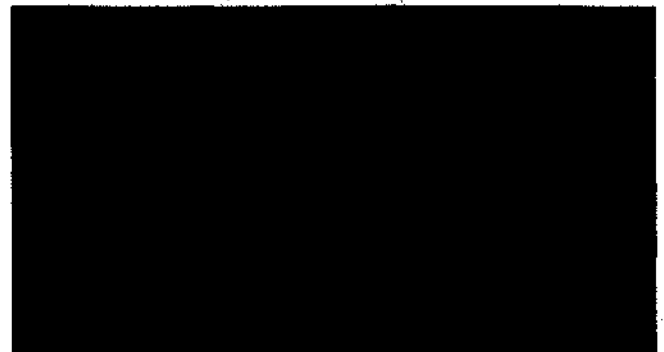


Fig. 6. *Nematopalaemon tenuipes*.



Fig. 7. Non-penaeid prawn catch.

are delicate with translucent body and hence they get easily decomposed when brought ashore. They are also too small for freezing and hence are sun dried and generally taken by the poor. Sometimes the dried prawns are used in fish meal for cattle and poultry feed or used as manure.

In Maharashtra, the present average yield of *A. indicus*, the most dominant species, is about 20,500 tonnes which can be increased to about

52,000 tonnes (MSY), but the effort required to harvest this would be enormous, to the extent of nearly 24 times of the present level of 300,700 dol net units operations made annually. This increase in effort, however, appears excessive and also unreasonable from the point of view of the other constituent species of the dol net. *A. indicus* is only a bycatch in the dol net, the target species being Bombay duck and other prime varieties of fish and prawns. Moreover, *A. indicus* is the most favourite food item of young ones of most of the coastal fishes, hence further exploitation of the species should be done cautiously so that the abundant biomass of fishes it is presently supporting would not be deprived of their food.

It is found that even at the present level of exploitation along the Maharashtra state, the large quantities of *A. indicus* landed on particular days, are not completely utilised for the human consumption. Therefore, before thinking in terms of increasing the catches it would be beneficial to develop proper processing techniques in order to make suitable products of consumer preferences, so that the quantities which are caught, are utilised to the maximum extent possible.