

## Poster Presentations

### **The Biology of *Penaeus monodon* in the Capture Fisheries off Orissa Coast, India in the Context of Occurrence of Natural Broodstock**

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The tiger prawn of India, *Penaeus monodon* Fabricius has a differential distribution in the two coasts of India. Density is high in the northeastern part of the Bay of Bengal gradually declining towards the mid-east and becoming quite scarce towards the south. On the west coast, the distribution is more sparse and limited to a few months, off Bombay. The only known inshore areas of capture fisheries are the Godavari estuarine system, and the lagoons off Orissa at Chilka and Madras at Pulicat. The only known offshore capture exists off the Orissa coast at Paradip and Puri extending south to Visakhapatnam and Kakinada Bay. The greatest production comes off the brackishwater "bheri" (wild culture) system in the extensive "sunderbans" of West Bengal on the northeast where millions of seed recruited to the Hooghly estuarine complex are drawn in along with tidal waters and "cultured." The distribution profoundly affects the maturity, breeding and recruitment of this highly euryhaline species.

The distribution can be related to the cyclic currents in the Bay of Bengal which have a profound effect on the salinity and temperature profile. It can also be related to the immense quantity of freshwater inflow from the mighty Hooghly-Matlah-Roopnarayan Padma estuarine complex at the head of the Bay and the other major riverine estuaries on the mid-east coast viz., the Mahanadi, Godavari and Krishna. The pattern of circulation and estuarine flows is such that it might also positively influence the food distribution, both live and detrital, in this region.

Ripe (gravid) and ripening females and males of *P. monodon* in the size range of 100-250 g are captured off Paradip coast in the not very deep (30-40 m) waters where coastal trawlers operate, from October through April corresponding to the post-monsoon stability in the water movement and the increasing salinity. This offers a good augury for setting up

hatcheries in adjacent zones using naturally mature forms. Catch records from one major freezing plant are presented to indicate the density and distribution of the species at the Paradip-Puri coast.

### **Seasonal Abundance of Penaeid Prawn Seed in the Ennore Estuary, Madras in Relation to Hydrography and Lunar Phase**

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An estimate of seed resources in the coastline, estuarine, and backwater bodies is an important prerequisite for developing prawn farming. A one-year (1983) survey on penaeid seed, based on tide and lunar periodicity, indicates the following species: *Metapenaeus dobsoni*, *Penaeus indicus*, *P. japonicus*, *M. monoceros*, *P. semisulcatus* and *P. monodon* in order of their abundance. *P. indicus* and *P. japonicus* are predominant in February and March (77.5 and 82.06% of total seed, respectively) when the average salinity ranges from 33.6 to 35.1 ppt followed by *M. dobsoni*. A second peak of *P. indicus* is observed in June when *M. dobsoni* showed its highest peak (47.35%) with continued abundance up to December.

During the northeast monsoon, when the average salinity fell to a lower range of 19.9 to 24.6 ppt, *P. monodon* and *M. monoceros* showed moderate abundance. As the site chosen is very near the bar mouth, most of the seed collected were postlarvae. In *Penaeus* and *Metapenaeus* genera, total size range is 7-15 mm and 3-4 mm, respectively. Afternoon collections showed greater abundance followed by forenoon and night collections. Low tide and Full Moon collections showed greater abundance than those made during high tide and New Moon. Differences in seasonality may reflect breeding intensity of the respective prawn species in the sea. Variations in hydrographic features may also significantly contribute to seasonal abundance. A strong correlation between salinity and seed abundance is seen. The seed potential of these prawns in Ennore estuary is discussed.