General Introduction
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Shrimps are extremely valuable resources, in view of their large domestic as well as export demand. Their high value emphasizes the importance of resource management, especially, since substantial increase in global shrimp production is not expected, to make most efficient use of the stocks in existing fisheries. However, shrimp management is somewhat different in concept than management of other fisheries, owing to its unique life history.

The important biological characteristic of penaeids is the presence of two distinct phases in their life cycle, involving postlarval and juvenile phase living close to inshore waters or in estuaries which serve as their nursery and an adult phase in deeper waters, where they mature and spawn. Different species spend variable amount of time, ranging from few weeks to several months in their nursery habitats.

The open estuary and tidal ponds of Cochin, where traditional prawn fisheries exist are ideal nurseries for prawns. Fishery of the tidal ponds involves trapping wild seeds during nursery phase and allowing them to feed naturally and grow till they emigrate when they are caught in filternets. Tidal ponds are generally extensive in nature with little or no management. These habitats, however, provide a potential and biologically healthy environment for the growth of prawns and fishes.

In seasonal ponds, paddy and prawn are cultivated alternately. Paddy is cultivated during monsoon, when salinity becomes low. After paddy harvesting in October, prawn and fish seeds are allowed to enter the field during high tides. Harvesting starts in November and is carried out for 6-7 days around every full and new moon. The process of trapping and filtration continue till the middle of April, when ponds are drained and the entire stocks were harvested. Perennial ponds are non-drainable and filtration is carried out round the year. However, occasional partial harvesting is resorted, when any calamities struck or large proportion of good-sized prawns encountered in the catch.

Shrimp fishery of tidal ponds is supported mainly by M. dobsoni, P. indicus and M. monoceros. Despite, having many biological features in common, like backwater nursery phase, variations are expected to occur in the degree to which the brackishwater environment is put to use by each species and their distribution.
In view of the importance of these habitats for shrimp fisheries, several studies have already been carried out on the ecology and related aspects (Menon and Raman, 1961; George, 1961; 1962a; 1962b; Banergy and George, 1967; Mohamed and Rao, 1971; Kuttyamma and Antony, 1975; Gopalan et al. 1980; Muthu 1983; Mammen, 1984; Purushan and Rajendran, 1984; Jose et al., 1987). These studies provided considerable information on the ecology and some aspects of biology of major species. However, information on many vital aspects on the resource characteristics is still lacking.

Nursery areas being separate from adult habitats and its extreme vulnerability to natural environmental changes and human interference including fishing and habitat modifications, necessitated separate management practices for balanced utilisation of the resources. Living resources, being always in a dynamic state, such measures should be based on sound knowledge on the resource characteristics of individual species. Since, tidal ponds form part of the obligatory nursery grounds of penaeid shrimps, such information will be useful, not only for the management of tidal pond fishery, but for the backwaters as a whole.

In view of the above, this study was designed to understand more about postlarval recruitment, distribution, growth, mortality, emigration and yield of major species under different conditions. Purpose of this study is to develop scientific basis for management decision, through better understanding of the population, about which management decision has to be made.

Study materials for postlarval recruitment was obtained from set nets and lift nets; distribution, abundance and growth from lift nets and cast nets and emigration from filter nets and set nets. Yield data were collected by direct observations and from farmer's registers.

Results of the present study are presented in the forthcoming chapters. Study sites and characteristics are briefed in Chapter-1 and their hydrology in Chapter-2. Chapter-3 deals with postlarval ingress and recruitment and Chapter-4, distribution and abundance over time and space. Age and growth are dealt with in Chapter-5 and mortality in Chapter-6. Emigration of prawns is discussed in Chapter-7. Chapter-8 deals with length-weight relationship and condition factor, Chapter-9 sex ratio and sexual maturity and Chapter 10 yield. Summary, conclusion and references are provided in the order towards the end.