SUMMARY
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* In the first chapter, some ecological aspects of Aghanashini estuary are elaborated.

* A brief description of Aghanashini river and estuarine area is given with respect to study area.

* Location of each of the study stations in the river estuary is described.

* The second chapter includes the materials and methods used for hydrological studies of the estuary.

* Water samples were collected from the surface and bottom at four study stations once in every month. The water samples were collected on the day of highest tide of every month, during high tide and low tide on the same day to keep uniformity throughout the year.

* The third chapter includes studies on some hydrological features of Aghanashini estuary over a period of twelve months.

* The study includes the monsoon season (Jun – Sep), post – monsoon (Oct – Jan) and pre – monsoon season (Feb – May).

* The water temperature of study area ranged from and there was not much fluctuation between the surface and bottom water temperature, since Aghanashini is a shallow estuary. Generally the water temperature was higher during pre – monsoon season compared to monsoon and post – monsoon seasons.

* The pH range of surface and bottom water generally remained on the alkaline side with few exceptions. The alkaline pH range of Aghanashini estuary suggests that the estuary water is not polluted during the period of present work.
* The chapter 4 includes some investigations on sediment nature of Aghanashini estuary.

* The sediment samples were collected for the period of one year during low tide, at an interval of one month. The samples were analyzed for temperature, moisture, organic carbon, sand silt and clay fractions and median diameter of particles.

* In Aghanashini estuary, the organic matter concentration is increased from higher reaches to lower reaches. Station 1 contained maximum organic matter, followed by station 2, 3 and 4.

* The percentage of sand was comparatively more towards upper reaches. The station 4 showed maximum concentration of sand.

* The silt fraction was more towards the river mouth.

* The clay percentage was more at station 2, followed by station 1, 3 and 4.

* Median diameter of sediment particles was more at station 2, followed by station 4, 1 and 3.

* The fifth chapter includes some investigations on the zooplankton of Aghanashini estuary.

* The zooplankton samples were collected at monthly intervals during the high tide from the sampling stations, for a period of one year from June 1999 to May 2000.

* Protozoa, Coelenterates, Ctenophores, Polychaetes, Cheatognaths, Mollusca, Copepods, Decapods, Amphipods, Protochordates, various larval forms, Fish
eggs and larvae and some unidentified species constitute the zooplankton of Aghanashini estuary.

* The copepods were found throughout the period of study at all four stations and constituting the major group of zooplanktons of Aghanashini estuary.

* The larval forms constituted another important group of zooplankton dominated by copepod nauplius, which were observed at all four study stations throughout the period of investigation. The higher density of larval forms may be due to the presence of considerable population of caridian and penaeid prawns and crabs in the estuary.

* The carnivorous zooplanktonic forms, such as Hydromedusae, Ctenophores and Cheatognaths are ecologically important even though they are found in small number in Aghanashini estuary. They were observed at first two stations where the salinity was comparatively higher. They were not observed at upper reaches of the estuary.

* The planktonic polychaetes were confined to the marine water dominated area (station 1 and station 2).

* The fish eggs and larvae were found throughout the year at all four stations. They were found in larger number during post - monsoon and pre - monsoon months.

* The molluscan larvae were very sparse and they were found throughout the year at station 1 and in low concentration at station 2.

* The planktonic Protochordates were confined to only two stations of lower reaches. They were not found in upper reaches (station 3 and 4).
* The miscellaneous and unidentified species also contributed considerably to the total zooplankton population of the estuary.

* The total zooplankton per m$^3$ for the year under investigation was maximum at station –1 followed by station –2, 3 and 4. The concentration of zooplankton was comparatively low at fresh water dominated area. The present work supports the concept that the zooplankton population is more abundant in the estuary particularly in high salinity region than low salinity locations.

* The total zooplankton showed a major peak during pre- monsoon months and minor peak during post–monsoon.

* The present study revealed that Aghanashini estuary particularly towards the river mouth had abundant zooplankton population that can support a good estuarine fishery.

* The chapter 6 includes some investigations of macro-benthos of Aghanashini estuary, since the benthos is capable of utilising food materials available in the sediments and forms an important link in the transfer of energy.

* The sieve fraction above 500 microns has been considered as macro-benthos.

* The macro-benthic faunas encountered in Aghanashini estuary are Nematoda, Polychaeta, Gastropoda, Bivalvia, Tanidacea, Amphipoda, Decapoda, Worms and Pisces.

* The samples of benthos were collected for the period of one year, i.e. from June 1999 to May 2000.

* The density of macro-benthos was maximum at station 3 followed by station 1, 2 and 4.
* The benthic faunal components exhibited bimodal pattern of distribution with monsoon as a period of minimum density and post –monsoon and pre-monsoon with maximum density.
* The macro-benthic population included commercially important bivalves in comparatively higher density.
* The clams are the important representatives of benthic fauna of Aghanashini estuary. They are represented by *M. meritrix, M.casta, P.malabarica* towards the mouth of the estuary whereas the low salinity area consist of *V.cyprinoides*. They are commercially important edible species. The estuary is also rich in dead calm beds.
* The chapter 7, deals with some aspects of finfish and shellfish seed resources of Aghanashini estuary. *P.merguensis, M.dobsoni, M.monoceros, M.affinis*, Caridians, *Ambassis* species and Goboid seeds represent the finfish seeds of estuary. On the basis of total number of seeds of all taxa obtained from the estuary, station 2 was found to be richest followed by station 3, 1 and station 4.
* The percentage of seed concentration of four study stations was 14.36, 57.74, 15.78 and 12.12 respectively.
* In general, pre-monsoon season showed higher density of seeds except at station 1, where the seed density was highest during post-monsoon season.
* The seeds of higher size range were obtained during Pre-monsoon and Post-monsoon months than that of monsoon months in Aghanashini estuary.
* The environmental characteristic of the estuary was found to fluctuate periodically in three seasons, the monsoon (Jun - Sep), post – monsoon (Oct –
Jan) and pre – monsoon (Feb – May). While the monsoon was characterized by heavy rainfall, greater riverine discharge and consequent dilution of the estuarine water, the post – monsoon maintained stable environmental conditions and was characterized by increased biomass productions. This knowledge would assist in planning and management of aquacultural programs.

CONCLUSION

The topography, tidal regime, water quality, sediment characters, faunal composition, availability of natural seed stock and socio – economic structure of Aghanashini estuary indicate that the estuary offers immense aquacultural potentiality.