



Annual Report

2021 – 2022

Estuarine and Coastal Studies Foundation

(Registered under Section 8 of Companies Act, 2013)

CIN: U80100WB2021NPL248544

Darpan ID: WB/2021/0297074



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+91 9830622766 ■ estuarycoast@gmail.com ● www.ecsfindia.org

From the Director's desk

The majority of the world population lives near the coast. The coastal and estuarine regions serve as the backbone for ecological and economical issues. Due to rapid degradation these regions are on threat which would directly hit the human society. Estuarine and Coastal Studies Foundation (ECSF) brings together scientists, professionals, advisors and students across various domains for conducting research and development with an aim to expand the horizon of estuarine and coastal studies so that the knowledge touches the lives and livelihoods even of the most marginalized. ECSF is one of the first institutions in the eastern India which is carrying out the research, education and awareness regarding the multidisciplinary approach for coastal and estuarine issues the overall wellbeing of the society. In order to promote and expand the coastal and estuarine studies ECSF is already doing collaborative research and educational programs with several leading institutions of West Bengal.

I conclude by thanking all the members and students whose continuous cooperation and support made it possible for ECSF.

Thank you

Dr. Amallesh Mukhopadhyay

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Summary

Estuarine and Coastal Studies Foundation (ECSF) is a research and higher education organization which was established on 1st October 2021 as a nonprofit company registered under Section 8 of Companies Act, 2013 and also registered by the NITI Aayog of the Government of India. ECSF is aimed to undertake, facilitate, advocate and implement estuarine and coastal research and education for natural resource management to attain sustainable development goals by involving various stakeholders of the community. ECSF has a multidisciplinary vision towards estuarine and coastal studies which includes faculties from zoology, botany, microbiology, marine science, geography, social science, wild life on a regular or visiting basis. Within these few months ECSF has already signed Memorandum of Understanding (MOU) with two leading institutions of West Bengal for collaborative research and education purposes. Till date almost 8 post graduate and undergraduate students of different colleges and universities (University of Calcutta, Maulana Abul Kalam Azad University of Technology, Sidho Kanho Birsha University, Diamond Harbour Womens' University National Institute of Technology Rourkela, City College, Behala College) have completed their Science Hands-on course and received the completion certificate. A Ph.D. student is currently working on her Ph.D. in collaboration with West Bengal State University and ECSF.

Introduction

Nearly 70% of the world's population lives near the coasts; therefore, coastal issues are not at all distant to us, rather, they affect our everyday life through many tangible and intangible forms. Estuaries and coasts have been serving us both economically and ecologically since the ancient times. In the process however, those ecosystems have become degraded and depleted of their natural resources. Thus, a new generation of professionals and scientists are required who would bridge the gap between scientific and social knowledge with the traditional know-how of the land to achieve sustainable developmental goals. Estuarine and Coastal Studies Foundation (ECSF) brings together scientists, professionals, advisors and students across various domains for conducting research and development with an aim to expand the horizon of estuarine and coastal studies so that the knowledge touches the lives and livelihoods even of the most marginalized. Estuarine and Coastal Studies Foundation is a research and higher education organization which was established on 1st October 2021 as a nonprofit company. The main goals of the company are:

- Undertake and facilitate research and development activities to attain sustainability in estuarine and coastal environments.
- Undertake and facilitate education and training in estuarine and coastal environments to train manpower for estuarine and coastal sustainability.
- To undertake, facilitate and address Sustainable Development Goals of United Nation.
- To undertake, facilitate and advocate sustainable and decentralized natural resource management practices as the principal means of building coastal

societies and foster the use of local and indigenous knowledge as a key to conserving estuarine and coastal environments.

ECSF is currently working with the students, researchers and faculty members of reputed educational and research institutions of India such as University of Calcutta, West Bengal State University, Diamond Harbour Women's University, Sidho-Kanho-Birsha University, National Institute of Technology (Rourkela), Maulana Abul Kalam Azad University of Technology (West Bengal), Adamas University, Gitam University, Chandernagore College, Shibpur Dinobundhoo Institution (College), City College and others.

Research

- **Meroplankton** – Meroplankton include the larval forms of many economically important species of shellfishes and finfishes. Estuarine and Coastal Studies Foundation (ECSF) is constantly monitoring the diversity, community structure and vulnerability.



- **Estuarine Pollution** – Due to rapid urbanization increasing natural hazards (such as cyclone, storm surges, flooding) the anthropogenic stress and the pollution load is increasing day by day. ECSF is working to monitor the pollution level which would ultimately help to identify the sources.



- **Plankton taxonomy** – Planktons are the main food resource for the fish community in the estuary. Any change in the plankton community can also affect the fishes. The taxonomic identification and enumeration of zooplankton and phytoplankton from Hugli River as well as Indian Sundarban is being regularly monitored by ECSF.



Collaborative Research

A collaborative research approach has been taken for molecular identification of the copepods from Ganges River. Inhabitants of this estuary are experiencing climatic change in the form of altered salinity, temperature, pH regimes. They are slowly shifting their size classes, present distribution, and community structure in result of such escalated abiotic variability and they are constantly adapting themselves to the changing nature. The DNA sequencing data of the dominant

copepod species would reveal the exact taxonomic identification method of the copepods from Ganges River Estuary. ECSF has submitted a joint collaborative research project on “Impact of an ecotone on copepods: perspectives of genetic variability and ecological adaptations in the metapopulation” with Dr. Brajogopal Samanta, Assistant Professor (Department of Microbiology and FST) of Gandhi Institute of Technology and Management (GITAM), Vishakhapatnam, India.

A Ph.D. Student named Ms. Sonali Ghatak is currently registered in West Bengal State University under the joint supervision of Prof. Narayan Ghorai, Professor, West Bengal State University and ECSF.

Education and Training

ECSF has educational and training programs dedicated to students (bachelors and masters) and researchers through which they could acquire extensive knowledge and experiences of scientific research. Through our educational and training programs they learn to conceptualize research designs, handle scientific equipments, field and laboratory techniques, data processing and scientific writing skills. They also acquire field exposures through extensive field works in estuaries and coastal environments.

Science Hands-on

Traditionally the education of a student is largely restricted to text books whereas the Science Hands-on program provides a real life science experience beyond that. Through Science Hands-on a student develops his/her skills of critical thinking, gets trained in handling scientific equipments applicable to field and laboratory techniques, does practice field works, data analysis and scientific writing, and interacts with scientists of national and international reputes. Students from different colleges and universities such as University of Calcutta, Maulana Abul Kalam Azad University of Technology, Sidho Kanho Birsha University, Diamond Harbour Womens' University National Institute of Technology Rourkela, City College, Behala College etc completed the course. Till date almost 12 post graduate and undergraduate students have completed their Science Hands-on course and received the completion certificate.



Outreach



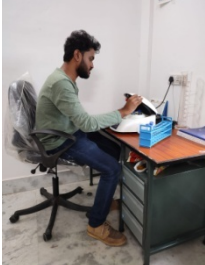


As a part of the collaborative research work ECSF have signed several MOU (Memorandum of Understanding) with different institutes. The purpose of the MOU is to state the intentions of the institutions in undertaking collaboration in the research and education. Both the institutions have common scientific and research interests and will cooperate in performing the scientific and research activities.








- A MOU has been signed between Estuarine and Coastal Studies Foundation and Chandernagore College for collaborative research and education purpose on 14/3/2022.
- A MOU has been signed between Estuarine and Coastal Studies Foundation and Dinabandhu Institution Howrah for collaborative research and education purpose on 24/3/2022.





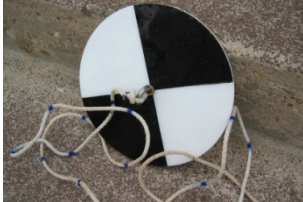
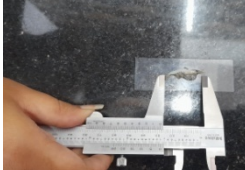


Infrastructure

Estuarine and Coastal Studies Foundation (ECSF) provides well-developed infrastructure for research and educational purposes. They are as follows:

Spectrophotometer	
Multiparameter water quality probes	
Centrifuges	
Hot air oven	
Precision balance	

<p>-20° Freezer</p>	
<p>Turbidity meter</p>	
<p>Vortex mixture</p>	
<p>Magnetic stirrer with hot plate</p>	
<p>Microscope with camera</p>	
<p>Handheld GPS</p>	
<p>Light meter</p>	

<p>pH meter</p>	
<p>Plankton nets</p>	
<p>Mechanical flow meter</p>	
<p>Clinometer compass</p>	
<p>Sacchi disks</p>	
<p>Vernier Calipers</p>	

Publications

Al-Shehhi, A. M., Dutta, S., & Paul, S. (2021). Stock assessment of *Scomberomorus commerson* (Kingfish) fishery of Oman: Perspectives of sustainability. *Regional Studies in Marine Science*, 47, 101970.

Staff

Scientific Staff (Ph.D. holder) – 1

S&T staff for science and research activities – 2

Estuarine and Coastal Studies Foundation

Regd. Address: 10/5 Amrita Pyne Lane, Howrah 711101, West Bengal, India

Correspondence Address: 111& 112 Deshpran Sasmal Road, Howrah 711101, West Bengal,
India