



FINFISH ATLAS of EGREE Region

Dr. Padmavathi Devarapalli





FOREWORD

The East Godavari River Estuarine Ecosystem (EGREE) in Andhra Pradesh is second only to the Sunderbans in the area covered by mangroves along India's east coast. In recognition of its significance to national and global biodiversity, a part of EGREE has been declared as the Coringa Wildlife Sanctuary. Rich biodiversity helps ecosystems thrive, and also plays a crucial socio-economic role. This calls for ongoing research to understand the complex nature of ecosystems, with studies at each level of landscapes, habitats, species and related socio-economic dynamics to formulate effective management strategy/plans.

To deepen our understanding of this region, a comprehensive biodiversity inventory is being developed by the EGREE Foundation, which is an initiative of Government of India, United Nations Development Programme and Global Environment Facility project, 'Mainstreaming Coastal and Marine Biodiversity Conservation into Production Sectors in the East Godavari River Estuarine Ecosystem, Andhra Pradesh'. The Finfish ATLAS of EGREE is a product of this initiative. In addition to the Godavari estuarine area, Andhra Pradesh, with its 974 km long coastline, harbours a huge diversity of fish fauna, including finfish, molluscan and crustacean. This atlas is a deep dive into mapping the fish faunal diversity of the EGREE region.

The Finfish ATLAS of EGREE was developed by Dr. Padmavathi Devarapalli, based on 11 years of field experience in the Gautami Godavari Estuarine region and along the Kakinada coast. Dr. Devarapalli coupled this with extensive explorations of contemporary literature on fisheries.

The atlas includes detailed information on the fish fauna found in the area, such as the current International Union for Conservation of Nature (IUCN), CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora, also known as the Washington Convention) and the Wild Life (Protection) Act, 1972 statuses for all the 615 finfish species documented.

I congratulate Dr. Devarapalli and the project team, particularly for her hand-made drawings of all the species included in the atlas, and for her committed efforts in publishing this work. The Finfish ATLAS of EGREE will no doubt be a great resource for researchers, academicians, students, extension workers and anyone involved in the planning and development of fisheries.

With regards,



Mr. Jaco Cilliers
Country Director, UNDP in India
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FOREWORD

Mangroves in the vicinity of the estuaries and backwaters play an important role. Godavari River Estuarine Ecosystem is one such ecosystem after Sundarbans located on the East Coast of India with its rich biodiversity. Though these estuaries are biologically productive and valuable, yet are threatened by increased human encroachments which may affect ecosystem health, functions and services. In order to conserve this fragile ecosystem EGREE Foundation has been initiated with the active support of Government of India, MoFF and UNDP under the stewardship of AP State Forest Department with the financial assistance under Global Environment Facility (GEF).

This Foundation aims to improve the livelihoods and also to improve the sustainability resource use while mainstreaming the biodiversity conservation into the production activities of this region through cross-sectoral planning. Better understanding of any ecosystem with detailed documentation is very much essential to implement conservation plans in a successful manner. This "FIN-FISH ATLAS of EGREE" published by the EGREE foundation is one such instrument for the scientific management of fisheries in this region.

I congratulate the author cum consultant Dr. Padmavathi Devarapalli along with the team members of EGREE to bring this Fin-Fish ATLAS in a useful book format with detailed taxonomical information of more than 600 fin-fish species along with photographs as well as handmade drawings drawn by the author. I hope this ATLAS will be an ideal device for policy makers, fishery manager, taxonomists, researchers, academicians and students etc.,

(S.B.L. MISRA, IFS)



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FOREWORD

The Godavari delta in Andhra Pradesh on the east coast of India is a vital part of India's coastal and marine heritage as this region is unique in its mangrove forests and biological diversity. The new initiative of Government of India, Global Environment Facility, UNDP and Govt. of Andhra Pradesh: *Mainstreaming Coastal and Marine Biodiversity Conservation in the East Godavari River Estuarine Ecosystem (EGREE)*, aims to evolve a model for enhancing the capacity of institutions, promote sustainable resource use while mainstreaming biodiversity conservation into the production activities through cross-sectoral planning.

The widespread recognition of biodiversity and ecosystem values in management of natural resources has encouraged research and documentation of the very diverse tropical estuarine fish fauna and adverse anthropogenic effects on fishery habitats, useful for building strategies for sustainable fishery. In order to achieve the fine balance between sustainable economic growth and conservation for sustaining human wellbeing in this ecosystem, understanding of the fish species and their interrelationships with anthropogenic activities is imperative.

Finfish ATLAS of EGREE Region is documentation of fish faunal diversity and richness of the Gautami-Godavari Estuarine Region along the coast of Kakinada. This ATLAS is highly informative tool for fishery and coastal and marine protected areas management and is very useful as an excellent reference material for the fish fauna in Gautami-Godavari Estuarine Region and Kakinada coast.

I appreciate EGREE Foundation, Government of Andhra Pradesh, UNDP, EGREE Team and Dr. Padmavathi Devarapalli for bringing the ATLAS with detailed descriptions of 615 species depicting with hand drawings and photographs. I am sure that the enormous efforts made by EGREE Foundation in creating this ATLAS will help to improve the information on fish faunal diversity of region for supporting local communities, production sectors and decision makers for sustainable utilization of natural resources.

(Dr. S. K. KHANDURI)
Inspector General of Forest (WL)



Dr. ANIL MOHAPATRA

Scientist - 'D'

Zoological Survey of India
Marine Aquarium & Regional Centre
Ministry of Environment,
Forest & Climate Change
Digha - 721428, West Bengal, India.

Review of the Finfish Atlas of EGREE

It's indeed a pleasure to go through the 'Finfish Atlas of GoI-UNDP-GEF-GoAP Project-EGREE Foundation' as a reviewer, which embodies elaborately and clearly the diagnosis, identifying characters, distribution and systematic account of more than 600 species of EGREE region. I truly appreciate the marathon efforts by the author Dr. Padmavathi Devarapalli to bring out such a voluminous work. Overall the presentation of the atlas is very systematic, as the Author has summarised each species in a single page, which will be of great use for future researchers, scholars, academicians, taxonomist and managers of the region to a greater extent.

डा. अनिल महापात्र / Dr. Anil Mohapatra
बैज्ञानिक, समुद्री जलजीवशास्त्रा एवं प्रादेशिक केन्द्र
Scientist-D, Marine Aquarium & Regional Centre
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Rodolfo B. Reyes Jr.
Research Associate at FishBase (www.fin.ph)



Review of the Finfish Atlas of EGREE

The Finfish Atlas of EGREE presents over 600 fishes from the Gautami Godavari Estuary, located on the eastern coast of India. Family accounts include the etymology of the family name, diagnostic characters, distribution, and the number of genera and species, globally, as well as the numbers so far recorded for the region. Species summaries present the etymology of the species name, key characters, habitat of occurrences in the region, and more importantly, life history information. All scientific names have been checked against FishBase and for each species, the synonyms are presented. Best of all, the photographs in the Atlas are mostly of locally-collected specimens. Descriptions based on these locally-collected specimens enrich the species descriptions that one would find in other references. In addition, for many species, hand drawings by the author Dr. Padmavathi Devarapalli highlight features that are simply not possible to show in whole-specimen photographs. This atlas is clearly a product of years of painstaking study of specimens in the field and in the laboratory. Researchers and Fisheries officers will find this atlas a truly invaluable reference for fishes of the region.

I congratulate the EGREE Foundation and Dr. Padmavathi Devarapalli, consultant to bring this finfish atlas in a outstanding manner.

Rodolfo B. Reyes Jr.
Research Associate
FishBase Information and Research Group, Inc.
14th October 2016

Reviewer profile:

Working on life history information, morphometrics in relation to species identification, and the development of tools that use data in FishBase for analyses in general. On the side, Rudy reviews research manuscripts dealing with growth and life history of fishes for international journals. He is a member of the Editorial Boards of the Journal of Applied Ichthyology and Acta Ichthyologica et Piscatoria.

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Author cum Consultant: Dr. Padmavathi Devarapalli

Finfish Species Hand Drawings by: Dr. Padmavathi Devarapalli

Family Drawings: Courtesy FAO

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PREFACE

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(Dr. S.K. Khanduri)
Inspector General of Forests (WL)





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21 April 2017

M E S S A G E

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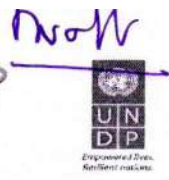
With regards,

A handwritten signature in blue ink, appearing to read 'Jaco Cilliers', is written below the text 'With regards,'.

Mr. Jaco Cilliers
Country Director, UNDP in India
United Nations Development Programme
New Delhi



EGREE
Foundation



"Mainstreaming Coastal and Marine Biodiversity Conservation in EGREE"

R.C. No. EGREE/CEO/017
Date: 30 / 09 / 2015

Office of Chief Executive Officer,
GoI-UNDP-GEF-GoAP-EGREE Project,
Kakinada.

MEMORANDUM OF UNDERSTANDING (MoU)

As per the approval of the Chief Executive Officer, EGREE Foundation and the Conservator of Forests, Rajahmundry O/N. No. 5-20/2015/EGREE Dated on 30th September 2015, the services of **Dr. D. Padmavathi W/o. Mr. V. Satyanarayana, F1, Triveni Grand Apartments, Near Bhashyam Public School, Shanthi Nagar, Kakinada -533 003, Fisheries Expert** (here in after referred to as FE) has been requested to prepare book on the **"Coastal, Estuarine and Marine Finfish Species Atlas of EGREE Region"**.

This is based on the 2nd Research Advisory Committee Meeting Recommendations under **Agenda No. 1 point no.4** dt: 2nd July, 2015 and the follow up actions (Chief Executive Officer letter dt: 2nd September, 2015 & Fishery Expert's submission dt: 3rd September, 2015), and decisions taken by the EGREE Foundation on the 2nd RAC meeting recommendations. The FE has agreed to the request of the Chief Executive Officer (CEO), EGREE Foundation - An initiative of GoI-UNDP-GEF Godavari Project to take up the task with the following Terms of Reference.

1. FE shall ensure the services to be rendered, tasks to be undertaken over the agreed time frame mentioned in the proposal submitted by her, completion of physical targets and corresponding financial achievement wherever prescribed will strictly be in accordance with the attached Terms of Reference.
2. This agreement will become effective upon signing on this MoU Dt. 30.09.2015 by the FE and the CEO, EGREE Foundation and shall expire upon satisfactory completion of the task described in the proposal submitted by the FE, but not later than ~~31st May 2016~~ *25th Dec 2015*.
3. The CEO, EGREE Foundation reserved the rights to cancel the assignment and / or shorten its duration without assigning any reason, if the performance is not up to the satisfaction. In that circumstances, the FE will hand over all works done till that time viz. the materials collected / prepared, any information and documentation gathered under this agreement etc., (either completed or partly completed or created through this assignment) to the CEO prior to the date of termination.
4. **SCHEDULE OF PAYMENT TO FE.** The CEO, EGREE Foundation will pay to the FE who's services has been requested for preparing the **"Coastal, Estuarine and Marine Finfish Species Atlas of EGREE Region"** as per the terms mentioned in the Cost Estimation to the Task column under Annexure - II.
5. The FE engaged for preparing the **"Coastal, Estuarine and Marine Finfish Species Atlas of EGREE Region"** shall indemnify and hold harmless to the CEO, EGREE Foundation against any and all claims, demands and or judgments of any nature brought against the Government of India / Government of Andhra Pradesh /CEO of the EGREE arising out of the services rendered or being rendered, works / tasks completed or under this paragraph shall survive the termination of this agreement.

D. Padmavathi