

# DR. C. RAGHUNATHAN



Date of Birth : 30<sup>th</sup> May 1968

Sex : Male

Nationality : Indian

Present position : Joint Director / Scientist-E

Institution : Zoological Survey of India  
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Area of specialization: : Marine Biology, Zoology and Ecology

## 1. Educational qualifications :

(From the Degree level)

Name of the Degree/Diploma/Certificate along with subjects	College/University	Year of completion	Marks (%)	Class
B.Sc. Zoology	Aditanar College, Madurai Kamaraj University	1988	74 %	First
M.Sc. Marine Biology and Oceanography	Centre of Advanced Study in Marine Biology, Annamalai University	1990	64 %	First
Ph.D. Marine Biology	Centre of Advanced Study in Marine Biology, Annamalai University	1997		Awarded

## 2. Ph.D. Thesis:

Studies on the physiology of feeding behaviour of muricids *Murex tribulus* and *Chicoreus virgineus* (Neogastropoda: Prosobranchia) - An analysis

### Chapters

1. Structure of Proboscis and Accessory Boring Organ
2. Scanning Electron Microscopy of Radula
3. Chemoreception
4. Prey preference and feeding behaviour
5. Borehole analysis
6. Effect of carbonic anhydrase on drilling behaviour
7. Experimental Proboscisectomy)

## 3. Experience:

(in chronological order)

Name of the office	Designation /Grade	Period		Basic pay (Scale of pay)
		From	To	
CAS in Marine Biology Annamalai University, Parangipetta, Tamil Nadu	Senior Research Fellow	April 1991	September 1997	Rs. 2,400/- (Consolidated)
Type of duties & Functions	Aquaculture, larval development, reproductive biology, feeding behaviour of marine prosobranch gastropods, under the project <i>Tropical Marine Mollusc Programme</i> sponsored by Danish International Development Authority (DANIDA), Denmark			
Central Salt and Marine Chemicals Research Institute (CSIR), Bhavnagar, Gujarat	Research Associate	September 1997	March 2000	Rs; 8000/- (Consolidated)
Type of duties & Functions	Studies on phytoplankton, zooplankton and benthos of coastal waters of Gujarat under the project <i>Coastal Ocean Monitoring and Prediction System (COMAPS)</i> of Dept. of Ocean Development (presently Ministry of Earth Sciences) Govt. of India			
Central Salt and Marine Chemicals Research Institute (CSIR), Bhavnagar, Gujarat	Senior Research Associate (CSIR)	April 2000	December 2003	Rs. 8,000/- Basic pay
Type of duties & Functions	Studies on the imposex in marine gastropods along Indian coast. Biochemical composition and Bioaccumulation of heavy metals in edible green mussel			
Gujarat Ecology Society, Vadodara, Gujarat	Ecologist	January 2004	November 2004	Rs. 14,000/- (Consolidated)
Type of duties & Functions	Marine EIA studies for industries, and Intertidal faunal diversity of Saurashtra coast			
Zoological Survey of India, Marine Biology Regional Centre, Chennai	Scientist-B	November 2004	September 2007	Rs. 8000/- Basic pay

Type of duties & Functions	Marine faunal surveys, Taxonomy of marine animals, Density and diversity of fauna, Intertidal faunal of east coast of India, Status survey of sea cucumber, Oceanic survey of zooplankton and fishes, Identification and advisory services, and Administrative works			
Zoological Survey of India, Andaman and Nicobar Regional Centre, Port Blair	Scientist-C & Officer - in-Charge	September 2007	June 2011	Rs. 15600-39,100 GP Rs.6600 Pay scale
Type of duties & Functions	Marine faunal surveys, Taxonomy of marine animals, Density and diversity of macro fauna in coral reef ecosystem, Status survey of scheduled marine molluscs and holothurians, Oceanic survey of zooplankton and fishes, EIA studies, and Identification and advisory services.  As the Officer-in-Charge of ZSI/ANRC, Administrative works, National Coral Reef Research Institute, Lead Institution for Great Nicobar Biosphere Reserve, Monitoring the research activities of various grant-in-aid and in-house projects, and Assistance to the Director, ZSI.			
Zoological Survey of India, Andaman and Nicobar Regional Centre, Port Blair	Scientist-D & Officer - in-Charge	July 2011	Mach 2017	Rs. 15600-39,100 GP Rs.7600 Pay scale
Type of duties & Functions	Marine faunal surveys, Taxonomy of marine animals, Density and diversity of macro fauna in coral reef ecosystem, Studies on Lesser Known Marine Faunal communities, Preparation of Management Plan, Long Term Permanent Monitoring Plots of Corals are associated faunal communities, Reproductive Biology of Corals, Growth and Settlement of Corals and Ascidiens, Mapping of coral reefs outside of the protected areas Oceanic survey of zooplankton and fishes, EIA studies, and Identification and advisory services.  As the Officer-in-Charge of ZSI/ANRC, Administrative works, National Coral Reef Research Institute, Lead Institution for Great Nicobar Biosphere Reserve, Monitoring the research activities of various grant-in-aid and in-house projects, and Assistance to the Director, ZSI.			
Zoological Survey of India, Andaman and Nicobar Regional Centre, Port Blair	Scientist-E & Officer - in-Charge	10 <sup>th</sup> March 2017 to 31 <sup>st</sup> August 2017		Rs. 1,23,100/- (Basic)
Type of duties & Functions	Marine faunal surveys, Taxonomy of marine animals, Density and diversity of macro fauna in coral reef ecosystem, Studies on Lesser Known Marine Faunal communities, Preparation of Management Plan, Long Term Permanent Monitoring Plots of Corals are associated faunal communities, Reproductive Biology of Corals, Growth and Settlement of Corals and Ascidiens, Mapping of coral reefs			

	<p>outside of the protected areas Oceanic survey of zooplankton and fishes, EIA studies, and Identification and advisory services.</p> <p>As the Officer-in-Charge of ZSI/ANRC, Administrative works, National Coral Reef Research Institute, Lead Institution for Great Nicobar Biosphere Reserve, Monitoring the research activities of various grant-in-aid and in-house projects, and Assistance to the Director, ZSI.</p>
Zoological Survey of India, Kolkata	Scientist-E & Joint Director 1 <sup>st</sup> September 2017 to till date Rs. 1,23,100/- (Basic)
Type of duties & Functions	Marine faunal surveys, Taxonomy of marine animals, Density and diversity of macro fauna in coral reef ecosystem, Studies on Lesser Known Marine Faunal communities, Preparation of Management Plan, Long Term Permanent Monitoring Plots of Corals are associated faunal communities, Reproductive Biology of Corals, Growth and Settlement of Corals and Ascidians, Mapping of coral reefs outside of the protected areas Oceanic survey of zooplankton and fishes, EIA studies, and Identification and advisory services, Documentation of biosphere reserves,

## 4. Major Projects Handled as Principal Investigator:

### IN-HOUSE PROJECTS

#### 1. INTERTIDAL FAUNA OF EAST COAST OF INDIA (YEAR 2005-2007)

**Achievements:** The intertidal macrofauna were studied from 41 stations covering the length of 1650km along the east coast of Indian peninsula during the year 2005 to 2007. Among them, 5 stations from West Bengal coast, 12 stations from Orissa coast and 24 stations from Andhra Pradesh coast. The study revealed 204 species of macrofauna belonging to 148 genera and 19 groups. Among all three states the coast of Andhra Pradesh recorded highest of 178 species of macrofauna followed by 109 and 73 species at Orissa and West Bengal coasts respectively. Molluscs were the dominant group throughout the study area as its species composition was 133. The epitome of the present study revealed that diversity of faunal communities found maximum in Andhra Pradesh coast when compared to other two maritime states.

#### 2. STATUS SURVEY ON THE SCHEDULE-I HOLOTHURIANS OF INDIA (YEAR 2005-2007)

**Achievements:** Studies were made in east coast of Indian peninsula during the year 2005 to 2007. Identification and documentations were made on Schedule-I Holothurians

**3. STUDIES ON THE OCEANIC ZOOPLANKTON OF ANDAMAN SEA (YEAR 2008-2009)**

**Achievements:** Oceanic Zooplankton was surveyed by availing NIOT (Ministry of Earth Sciences) Research Vessel ORV Sagar Manjusha in 8 stations including volcanic Narcondam and Barren Islands along Andaman Sea during September 2008. A total of 96 species of zooplankton belonging to 74 genera and 19 groups were recorded. The zooplankton volume (4.7-12.7ml/100m<sup>3</sup>), numerical density (17300-31620 individuals/100m<sup>3</sup>) and species diversity (H' 2.18-3.45) were calculated.

**4. LITTORAL FAUNAL DIVERSITY OF CHIDYATAPU, SOUTH ANDAMAN SEA (YEAR 2008-2009)**

**Achievements:** A total of 219 species comprised of 98 species of Corals (31 genera and 10 families), 5 species of Polyclads under 4 genera, 50 species of Gastropods (23 genera and 19 families), 17 species of Bivalves (13 genera and 9 families), 27 species of Echinoderms (16 genera and 7 families), 11 species of Opisthobranchs under 10 genera and 10 species of Crabs (7 genera and 6 families), 1 species of Ascidian were identified. The live coral cover was estimated as 47-56% with the density of 15-24 colonies/10m<sup>2</sup>.

**5. LITTORAL FAUNAL DIVERSITY OF CAMPBELL BAY AND INDIRA POINT, ANDAMAN SEA (YEAR 2008-2011)**

**Achievements:** In order to record the marine organisms, the study was conducted in the intertidal and subtidal region upto the depth of 30m at nine reef areas of Great Nicobar Island. 42 species of phytoplankton, 72 species of zooplankton and 13 groups of meio-benthos were identified along with the total of 850 marine faunal communities, comprised of 25 species of sponges, 172 species of scleractinian corals, 8 species of soft corals, 7 species of polyclads, 78 species of crabs, 30 species of shrimps, 4 species of lobsters, 139 species of molluscs, 25 species of opisthobranchs, 48 species of echinoderms and 314 species of fishes were recorded during the study period. The percentage of live coral cover and density have been calculated for all nine study sites of Great Nicobar Island. The numerical density of corals estimated as 12 colonies/10m<sup>2</sup> at Indira Point to 21 colonies/10m<sup>2</sup> at Laxman Beach. The percentage of live coral cover varied from 31.12% at Indira Point to 75.12% at Laxman Beach with mean value of 40.71%. During the study period a mass bleaching of corals were also noticed due to sudden increase of surface sea temperature which rose up to 32°C during May 2010 against its normal temperature of 26-28°C. The percentage of coral bleaching was calculated as 40-65%. The rate of post-bleaching recovery was noticed as 76.02 to 94.21%. The data collected on new recruitments of corals 10.56 to 30.25%.

**6. REEF ASSOCIATED MACROBENTHIC FAUNA OF RUTLAND ISLAND, SOUTH ANDAMAN (YEAR 2008-2011)**

**Achievements:** In order to record the marine organisms, the study was conducted in the intertidal and subtidal region upto the depth of 40m at nine reef areas of Rutland Island. The present study reports a total of 1027 species comprised of 31 species of sponges, 327 species of scleractinian corals, 6 species of gorgonians, 10 species of polyclads, 40 species of crabs, 24 species of shrimps, 4 species of lobsters, 130 species of molluscs, 61 species of

opisthobranchs, 102 species of echinoderms and 292 species of fishes were recorded in the shelf region of Rutland Island during the period of study. One new species of coral *Ctenactis triangularis* sp. nov. has been described. Among them 33 species of corals, 19 species of opisthobranchs, 4 species of polyclads and 3 species of echinoderms were new records to India.

#### **7. STATUS OF CORAL AND ITS ASSOCIATED MACROFAUNA IN LANDFALL ISLAND SANCTUARY, NORTH ANDAMAN (YEAR 2011-2014)**

**Achievements:** A total 783 species of faunal communities comprising of scleractinian corals, alcyonacean corals, sea anemones, sphyrozoans, sponges, polyclads, echinoderms, molluscs, opisthobranchs, crabs, shrimps, lobsters, nemertean, ascidians, fishes, reptile and mammal were record from said study areas of North Andaman while Landfall Island represented a total of 660 species of faunal communities among them. The presence of higher number of scleractinian species within an area of 29.48 sq. km. reflects the supportive biogenic habitat at Landfall Island and adjoining islands of North Andaman for the scleractinian corals which is the building block for the development and sustaining of associated lots of faunal communities. The values of species diversity indices are high above the optimal level for all the five study areas. The mean diversity of the scleractinian corals is 4.35 while Landfall Island represented 5.33 which mathematically signify the importance as well as status of scleractinian corals to develop the marine biodiversity.

#### **8. CORAL AND ITS ASSOCIATED MACROFAUNAL DIVERSITY IN NEIL ISLAND, SOUTH ANDAMAN (YEAR 2014-2017)**

**Achievements:** A total of 573 species including 178 species of scleractinian corals, 38 species of octocorals, 16 species of sea anemones, 6 species of hydrozoans, 41 species of sponges, 42 species of molluscs, 28 species of opisthobranchs, 11 species of polyclads, 8 species of brozoans, 30 species of crabs, 23 species of shrimps and lobsters, 1 species of mantis shrimp, 4 species of cardiae shrimps, 33 species of echinoderms, 19 species of ascidians and 87 species of marine fishes were identified. 3 species of scleractinian corals, 1 species of sea anemone, 1 species of sponge, 1 species of ascidian and 3 species of fishes were recorded as new to Indian waters. The density of corals was 8-11 colonies/ 10m<sup>2</sup> area. Live coral cover is estimated as 22-31%.

#### **9. STATUS OF CORAL AND ITS ASSOCIATED MACROFAUNAL DIVERSITY IN NORTH REEF ISLAND SANCTUARY, NORTH ANDAMAN (YEAR 2014-2017)**

**Achievements:** A total of 701 species including 204 species of scleractinian corals, 39 species of octocorals, 12 species of sea anemones, 25 species of sponges, 150 species of molluscs, 21 species of opisthobranchs, 26 species of echinoderms, 24 species of crabs, 1 species of cardiae shrimp, 2 species of halobates, 33 species of ascidians and 172 species of fishes were identified. 3 species of crabs and 1 species of opisthobranch were recorded as new to Indian waters. The density of corals was 17-28 colonies/ 10m<sup>2</sup> areas. Live coral cover is estimated as 32-55%.

#### **10. STATUS OF CORAL AND ITS ASSOCIATED MACROFAUNA IN PAGET ISLAND SANCTUARY, NORTH ANDAMAN (YEAR 2016-2019)**

**Achievements:** A total of 402 species including 81 species of scleractinian corals, 8 species of sea anemones, 22 species of octocorals, 2 species of hydrozoans, 21 species of sponges, 26 species of molluscs, 13 species of opisthobranchs, 2 species of polyclads, 20 species of crabs, 9 species of shrimps, 2 species of lonsters, 20 species of echinoderms, 12 species of ascidians and 155 species of fishes. 1 species of opisthibranch and 1 species of sponge were recorded as new to Indian waters. The density of corals was 15-24 colonies/ 10m<sup>2</sup> area. Live coral cover is estimated as 29-42%.

#### **GRANT-IN-AID PROJECTS - FAUNAL COMMUNITY STUDIES**

##### **11. STATUS SURVEY ON SCHEDULED MOLLUSC *TROCHUS NILOTICUS* IN ANDAMAN AND NICOBAR ISLANDS (SPONSORED BY ANDAMAN AND NICOBAR ADMINISTRATION) (YEAR 2009-2010)**

**Achievements:** As required by the MoEF as well as A&N Administration, the status survey on Schedule-IV gastropod *Trochus niloticus* (Linnaeus, 1767) undertaken at 79 stations in A&N Islands. The mean density of *Trochus* varied from 6 shells/100m<sup>2</sup> in South Andaman to 20 shells/100m<sup>2</sup> in Nancowry Islands. The shell size ranged from 9.31cm in North Andaman to 12.73 in Nancowry Islands. Report has been submitted to both the departments with recommendations.

##### **12. SURVEY AND MONITORING THE HEALTH OF CORAL REEFS OF INDIA, NATIONAL CORAL REEF RESEARCH INSTITUTE (NCRI) (SPONSORED BY MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA) (2009-2013)**

**Achievements:** Twenty three major surveys were conducted in various islands of North Andaman, Middle Andaman, South Andaman, Ritchie's Archipelago, Little Andaman, Car Nicobar, Nancowry Islands, Kudul Island and Great Nicobar Island to assess the distribution and diversity of corals and coral associated communities. The live coral cover, species diversity and density of corals were estimated in 120 sites located in several islands of Andaman and Nicobar. A total of 424 species of scleractinian corals belonging to 72 genera and 16 families were reported in Andaman and Nicobar Islands through field studies. The percentage of live coral cover in the permanent monitoring plots estimated with the range of 43.71 to 63.71%. A total of 1240 species belong to the marine representatives such as phytoplankton, zooplankton, molluscs, echinoderms, corals, octo-corals, sponges, ascidians, opisthobranchs, polyclads, crustaceans, gorgonids and fishes were identified. Two new species of corals *Montipora samii* sp. nov. and *Ctenactis triangularis* sp. nov. were described. A total 353 species under 11 faunal groups are new record to Indian waters. They are 135 species of corals, 74 species of fishes, 78 species of opisthobranchs, 15 species of polyclads, 8 species of sponges, 10 species of crustaceans, 6 species of echinoderms, 6 species of ascidians, 5 species of gorgonids, 2 species of gastropods, 2 species of nemertean, and 1 species of bivalve were among them.

##### **13. DIVERSITY AND DISTRIBUTION OF CORALS AND THEIR ASSOCIATED FAUNA OF RANI JHANSI MARINE NATIONAL PARK, ANDAMAN (SPONSORED BY MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA) (YEAR 2009-2013)**

**Achievements:** Eight surveys were conducted at different sites in the three Islands of Rani Jhansi Marine National Park to get the quantitative and qualitative data on diversity, density, distribution of scleractinian corals and other coral associated faunal communities. Three plots (100 x 100m area for each plot) were selected for the permanent monitoring of corals in Rani Jhansi Marine National Park. A total of 148 species of scleractinian corals belonging to 8 families were reported from the Rani Jhansi Marine National Park during the survey. Among them the family Acroporidae is dominant as it composed of 43 species includes the genus *Acropora* (28 species) and *Montipora* (8 species). The percentage of live coral cover ranged from 59.53% in Henry Lawrence Island to 63.71% in John Lawrence Island. Besides, Eight genera of soft corals under the families Alcyoniidae, Nephtheidae and Isisidae; 18 genera of gorgonids under 10 families; 30 species of echinoderms belonging to 21 genera and 15 families; 100 species of gastropods belongs to 36 families; 54 species of nudibranchs belonging to 11 families; 52 species of crabs under 21 genera; and 216 reef associated fishes belongs to 39 families were reported. The studies indicated that corals of John Lawrence Island, Henry Lawrence Island, and Outram Island in Rani Jhansi Marine National Park; were bleached to the extent of 45-73% during April to May 2010. The recent survey conducted during January 2011 observed the progress of recuperation of the bleached corals.

#### **14. GIS BASED MAPPING AND ANALYSIS OF ECOLOGICAL VARIABLES OF REEFS AROUND THE LITTLE ANDAMAN ISLAND (SPONSORED BY MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA) (YEAR 2009-2013)**

**Achievements:** Three surveys were conducted in 6 locations along the Little Andaman during the reporting period. Total live cover of corals in Little Andaman was reported as 40-56% with the diversity of 121 species of scleractinian corals. Apart from that 188 species of coral reef fishes, 32 species of echinoderms, 26 species of soft corals, 6 species sponges and 25 species of molluscs have also been reported. 16 species of nudibranchs and 19 species of reef fishes reported from this island are new to Indian waters.

#### **15. LEAD INSTITUTION-GREAT NICOBAR BIOSPHERE RESERVE (SPONSORED BY MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA) (YEAR 2009-2013)**

**Achievements:** Four surveys were conducted in Great Nicobar Biosphere Reserve during to assess the density and diversity of faunal communities. A total of 323 species belongs to 195 genera and 82 families were identified from the terrestrial and marine environment during the reporting period. A total of 147 of fishes, 14 species of polychaetes and 40 species of molluscs reported from GNBR were documented. Interaction has been made with regional research organizations viz. Pondicherry University, University of Calcutta, Annamalai University, Central Salt and Marine Chemical Research Institute (CSIR), Central Agricultural Research Institute (ICAR), National Institute of Ocean Technology, Wildlife Institute of India, Salim Ali Centre for Ornithology and Natural History, Botanical Survey of India and Fishery Survey of India to undertake holistic research on GNBR. In this respect 18 proposals have been received from these institutions, out of them 11 proposals have been submitted to the Ministry as recommended by Director, Zoological Survey of India. Nomination Form for the inclusion of Great Nicobar Biosphere Reserve in the world network of UNESCO-MAB has been prepared and submitted to the MoEF



for necessary action. A total of 287 literatures pertaining to GNR were collected for the publication of Bibliography.

**16. PREPARATION OF MANAGEMENT PLAN (YEAR 2012-2021) FOR LOHABARRACK CROCODILE SANCTUARY (SPONSORED BY ANDAMAN AND NICOBAR ADMINISTRATION) (YEAR 2010-2011)**

**Achievements:** Two surveys have been conducted to the Lohabarrack Crocodile Sanctuary. The preparation of management plan for the period of ten years i.e. 2012-2021 has been completed and submitted to Department of Environment and Forests. The management plan contains, conservation zone, multiple use zone and tourism zone. Strategies for each zone have been elaborately given while a plan for eco-development also been furnished in detail.

**17. MONITORING THE CORAL REEFS OF ANDAMAN AND NICOBAR ISLANDS (SPONSORED BY ANDAMAN AND NICOBAR ADMINISTRATION) (YEAR 2010-2014)**

**Achievements:** Sixteen major surveys were conducted in various islands of North Andaman, Middle Andaman, South Andaman, Long Island, Ritchie's Archipelago, Little Andaman, Car Nicobar, Nancowry Islands, Kudul Island and Great Nicobar Island to assess the distribution and diversity of corals and coral associated communities. In order to monitor the health of corals, 11 permanent monitoring plots with an area of 100 × 100 m<sup>2</sup> have been employed in selected localities covering entire Andaman and Nicobar Islands. The depth of the monitoring plots ranging from 5 to 20m in the island fringe area. A total of 246 species of corals belongs to 50 genera and 12 families were reported from 11 permanent monitoring plots. Status surveys were conducted in major coral reef areas of Andaman and Nicobar Islands to assess the extent of 'Coral Bleaching' occurred in consequence upon the increase in surface seawater temperature to the maximum of 32°C during April to May 2010. Percentage of bleaching was calculated as 47 to 74%. Line Intercept Survey showed that a total of 75 species of corals was affected due to bleaching phenomena. Besides, parameters such as, salinity, temperature, dissolved oxygen, pH, turbidity and transparency in seawater, primary and secondary productivities, growth of corals, diversity, density and distribution of corals and coral associated organisms are being monitored periodically in the permanent monitoring plots.

**18. STATUS SURVEY ON SEA CUCUMBERS IN ANDAMAN AND NICOBAR ISLANDS (SPONSORED BY ANDAMAN AND NICOBAR ADMINISTRATION) (YEAR 2011-2012)**

**Achievements:** Surveys have been conducted in North, Middle and South Andaman, Ritchie's Archipelago, Little Nicobar, Nancowry Islands and Great Nicobar Island. Altogether 56 species of holothurians were recorded. Among them, *Holothuria atra*, *Actinophga miliaris*, *Holothuria edulis*, *Sticophus chloronotus* and *Thelenata ananas* were commonly found. The density of holothurians ranged from 11-24 ind./10m<sup>2</sup>.

**19. DNA BAR-CODING ON SPONGES OF ANDAMAN AND NICOBAR ISLANDS - IN TECHNICAL COLLABORATION WITH CENTRAL AGRICULTURAL RESEARCH INSTITUTE, ICAR, PORT BLAIR (SPONSORED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVERNMENT OF INDIA - CO-PI) (YEAR 2011-2013)**

**Achievements:** Bar coding for 53 species of sponges were completed.

**20. DETERMINATION OF THE CONSERVATION VALUE OF THE CORAL REEFS OF ANDAMAN (SPONSORED BY NCSCM/MOEF&CC/GOI) (YEAR 2014-2015)**

**Achievements:** A total of 143.46 sq. km. area was surveyed which represented 61 reef patches outside of Protected Areas (PAs) as vulnerable site of reef ecosystem. 223 species of scleractinian corals were recorded from those areas with 1058 species of reef associated animals while Andaman and Nicobar harbours a total of 588 species of hard corals among the reported 628 species of Indian waters.

**21. PREPARATION OF COASTAL AND MARINE BIODIVERSITY REGISTER (SPONSORED BY NBA/MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA) (YEAR 2014-2015)**

**Achievements:** Register for a total of 1500 species of fishes reported from Andaman and Nicobar Islands has been prepared and report submitted.

**22. REPRODUCTIVE BIOLOGY OF SCLERACTINIAN CORALS OF ANDAMAN AND NICOBAR ISLANDS (SPONSORED BY MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA) (YEAR 2014-2017)**

**Achievements:** The growth pattern of the scleractinian corals was monitored. The quarterly mean growth rate of *Fungia paumotensis* was  $0.323 \pm 0.028$  cm and for *Fungia repanda* was  $0.236 \pm 0.045$  cm. Monthly growth rate of *Acropora formosa* was  $2.34 \pm 0.18$  at Pongibalu while  $1.19 \pm 0.14$  at North Bay area. Eleven species of corals were studied for an experimental regeneration in their natural habitat. It was seen that the colonial species *Polyphyllia talpina* showed highest (0.333cm) development in unit length whereas the *Fungia scruposa* showed the lowest (0.033cm). The recruitment and growth pattern of scleractinian corals under eight families viz. Acroporidae, Faviidae, Siderastreaeidae, Mussidae, Agariciidae, Poritidae, Pectinidae and Fungiidae observed in one square meter area from North Bay and Pongibalu. The data indicated that, an average growth rate at North Bay for the species under the family Poritidae was 7mm/yr. while for Mussidae it was 9.5mm/yr. However for the species under the family Acroporidae was 60mm/yr. The growth data obtained from the corals of Pongibalu shown that 11mm/yr., 43mm/yr. and 24.25mm/yr. for the families Poritidae, Pocilloporidae and Acroporidae respectively.

**23. TAXONOMY, DIVERSITY AND DISTRIBUTION OF ACTINARIA (SEA ANEMONES), POLYCLADIDA AND SIPUNCULA IN ANDAMAN AND NICOBAR ISLANDS (SPONSORED BY MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA) (YEAR 2017-2019)**

**Achievements:** Studies were carried out in North & Middle Andaman and South Andaman. 6 species of polyclads, 10 species of sea anemones and 3 species of sipunculans were recorded.

**GRANT-IN-AID PROJECTS - REIA STUDIES**

**24. EIA STUDIES FOR CONSTRUCTION OF JETTY AND HARBOUR FACILITIES AT KATCHALL AND TERESSA ISLANDS (SPONSORED BY PORT MANAGEMENT BOARD, ANDAMAN AND NICOBAR ADMINISTRATION) (YEAR 2008-2009)**

**Achievements:** The undersea survey on Coral Reefs has been conducted in Katchal and Teressa Islands of Nicobar group for the environmental clearance to construct marine jetty and harbour facilities as required by Port Management Board, Port Blair. In Katchall Island 15 species of Corals under 13 genera with the density of 1-13 colonies/10m<sup>2</sup> and in Teressa Island 25 species of Corals under 14 genera with the density of 1-18 colonies/10m<sup>2</sup> were assessed. Report has been submitted to A&N Administration.

**25. EIA STUDIES ON THE ALIGNMENT OF ROAD CONSTRUCTION AT GREAT NICOBAR ISLAND (SPONSORED BY BORDER ROADS ORGANIZATION, MINISTRY OF DEFENCE, GOVERNMENT OF INDIA) (YEAR 2009-2012)**

**Achievements:** Rapid EIA study has been conducted for the Alignment of Road Construction from Shastri Nagar to Indira Point, Great Nicobar Island covering a length of 65 Km in three phases for the Border Roads Task Force, Ministry of Defence. The report for the three phases has been submitted. Under this project assessment has been made in both terrestrial and marine habitats along the project site, and the recommendations and remedial measures for expected impact have been suggested in the report.

**26. ENVIRONMENTAL IMPACT ASSESSMENT OF OFF SHIBPUR, DIGLIPUR OF NORTH ANDAMAN FOR THE EXTENSION OF AIRSTRIP OF INDIAN NAVY (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2011-2012)**

**Achievements:** Rapid EIA study has been conducted for the extension of runway at INS Shibpur in North Andaman by 3 km. for CRZ clearance. Under this project assessment has been made in both terrestrial and marine habitats along the project site, and the recommendations and remedial measures for expected impact have been suggested in the report.

**27. ENVIRONMENTAL IMPACT ASSESSMENT OF CAMPBELL BAY AT GREAT NICOBAR ISLAND FOR THE EXTENSION OF AIRSTRIP OF INDIAN NAVY (SPONSORED BY BORDER ROADS ORGANIZATION, MINISTRY OF DEFENCE, GOVERNMENT OF INDIA) (YEAR 2011-2012)**

**Achievements:** Rapid EIA study has been conducted for the extension of runway at INS Bazz in Campbell Bay, Great Nicobar Island by 3 km. for CRZ clearance. Under this project assessment has been made in both terrestrial and marine habitats along the project site, and the recommendations and remedial measures for expected impact have been suggested in the report.

**28. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON THE BIOTIC COMPONENTS OF PROPOSED EXTENSION OF EXISTING JETTY, AND CONSTRUCTION OF WET BASIN, FOR INDIAN NAVY AT HADDO, PORT BLAIR (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2012-2013)**

**Achievements:** Undersea surveys were conducted to assess the faunal communities in Haddo wharf area, North Bay. The expected environmental impact has been predicted for the proposed extension of jetty and construction of wet basin. The final report has been submitted to the Military Engineering

Services, Ministry of Defence along with field observations and recommendations.

**29. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON PROPOSED ROAD AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2012-2013)**

**Achievements:** Surveys were conducted in marine and terrestrial ecosystems of Trilby Island, Ross and Smith Island, Ariel Bay, Durgapur, Shibpur, Kalipur and Craggy Island to assess the faunal components in the project area. Expected impact has been assessed for mangrove and coral reef ecosystems in the vicinity of the project site.

**30. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON PROPOSED DESALINATION PLANT AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2012-2013)**

**Achievements:** Surveys were conducted in marine and terrestrial ecosystems of Trilby Island, Ross and Smith Island, Ariel Bay, Durgapur, Shibpur, Kalipur and Craggy Island to assess the faunal components in the project area. Expected impact has been assessed for mangrove and coral reef ecosystems in the vicinity of the project site.

**31. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON PROPOSED DEFICIENT SINGLE LIVING ACCOMMODATION AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2012-2013)**

**Achievements:** Surveys were conducted in marine and terrestrial ecosystems of Trilby Island, Ross and Smith Island, Ariel Bay, Durgapur, Shibpur, Kalipur and Craggy Island to assess the faunal components in the project area. Expected impact has been assessed for mangrove and coral reef ecosystems in the vicinity of the project site.

**32. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE CONSTRUCTION OF WORKSHOP FACILITIES FOR CASU AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2012-2013)**

**Achievements:** Surveys were conducted in marine and terrestrial ecosystems of Trilby Island, Ross and Smith Island, Ariel Bay, Durgapur, Shibpur, Kalipur and Craggy Island to assess the faunal components in the project area. Expected impact has been assessed for mangrove and coral reef ecosystems in the vicinity of the project site.

**33. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON FOR SPECIAL REPAIR TO EXISTING BOUNDARY WALL AND EXTENSION OF BOUNDARY WALL AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2012-2013)**

**Achievements:** Surveys were conducted in marine and terrestrial ecosystems of Trilby Island, Ross and Smith Island, Ariel Bay, Durgapur, Shibpur, Kalipur and Craggy Island to assess the faunal components in the project area. Expected impact has been assessed for mangrove and coral reef ecosystems in the vicinity of the project site.

**34. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON THE BIOTIC COMPONENTS IN SURVEY NO.7/1 AT ANDABEDA, BAMBOOFLAT VILLAGE, SOUTH ANDAMAN FOR THE EXTRACTION OF IMPERVIOUS MINERAL. (SPONSORED BY ANDAMAN AND NICOBAR PUBLIC WORKS DEPARTMENT, A & N ADMINISTRATION) (YEAR 2013-2014)**

**Achievements:** Surveys were conducted in marine and terrestrial ecosystems of North Bay, Mount Harriet National Park, Dundus Point, Andabeda and Rutland Island to assess the faunal components in the vicinity of project area. The final report has been prepared and submitted to the Andaman Public Works Department, A & N Administration along with field observations and necessary recommendations for CRZ clearance.

**35. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON THE BIOTIC COMPONENTS FOR THE CONSTRUCTION OF RURAL ROAD FROM KALIGHAT JETTY TO NISCHINTAPUR INCLUDING BRIDGE OVER KALIGHAT NALLAH (SPONSORED BY ANDAMAN AND NICOBAR PUBLIC WORKS DEPARTMENT, A & N ADMINISTRATION) (YEAR 2015-2016)**

**Achievements:** Surveys were conducted in 8 sites including reserve forest, mangroves and nearshore areas in Kalighat and its adjoining areas to study the faunal components and to predict the possible impact towards the construction of rural road and bridge. The final report submitted to with significant findings and recommendations.

**36. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE CONSTRUCTION OF CEMENT CONCRETE DAM AT KHUDIRAMPUR VILLAGE AT NORTH ANDAMAN (SPONSORED BY ANDAMAN AND NICOBAR PUBLIC WORKS DEPARTMENT, A & N ADMINISTRATION) (YEAR 2015-2016)**

**Achievements:** Surveys were conducted in 7 sites including reserve forests area of Khudhirampur and its adjoining areas and marine areas to study the faunal components and to predict the possible impact towards the construction of rural road and bridge. The final report submitted to with significant findings and recommendations.

**37. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS ON QUARRY MEASURING AN AREA OF 4.00 HECT. BEARING SURVEY NO. 700/P SITUATED AT NABAGRAM VILLAGE, DIGLIPUR AT NORTH ANDAMAN (SPONSORED BY ANDAMAN AND NICOBAR PUBLIC WORKS DEPARTMENT, A & N ADMINISTRATION) (YEAR 2015-2016)**

**Achievements:** Surveys were conducted in quarry area at Nabagram and 4 adjoining sites to assess the faunal components and to predict the impact expected to be caused by the operation of quarry. The final report has been submitted to funding agency with significant findings and recommendations.

**38. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE CONSTRUCTION OF COAST GUARD JETTY AT HUT BAY, LITTLE ANDAMAN ISLAND (SPONSORED BY INDIAN NAVY, MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2015-2016)**

**Achievements:** Undersea and terrestrial surveys were conducted at 10 stations in and around Hut Bay, Little Andaman to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for the construction of 75 m long and 15 m wide jetty have been provided to the Indian Coast Guard for CRZ clearance.

**39. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE ALTERNATE ALLOTMENT OF LAND AS TENANT OF SUBMERGENCE OF CULTIVABLE LAND AT BIMBLITAN AND OGRABRAJ, SOUTH ANDAMAN (SPONSORED BY A & N ADMINISTRATION) (YEAR 2015-2016)**

**Achievements:** Faunistic surveys are being conducted in 118 hectares of forest land at Bimblitan and Ograbraj for alternative allotment of land to earthquake affected local populace. The assessment studies are underway.

**40. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE PROVISION AND INSTALLATION OF AUTOMATIC RO PLANT TO SUPPLY WATER AT INS KARDIP, KAMORTA (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2015-2016)**

**Achievements:** Undersea and terrestrial surveys were conducted at 9 stations in Kamorta Island and its adjoining islands in Nancowry to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for installation of RO plant at INS Kardip have been provided to the Indian Coast Guard for CRZ clearance.

**41. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE PROVISION OF SEA WALL AND PROTECTIVE WORKS ALONG THE SHORE LINE AT INS KARDIP, KAMORTA (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2015-2016)**

**Achievements:** Undersea and terrestrial surveys were conducted at 9 stations in Kamorta Island and its adjoining islands in Nancowry to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for the construction of seawall at a length of 682.5m have been provided to INS Kardip for CRZ clearance.

**42. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE CONSTRUCTION OF 03-LANE SLIPWAYS AT PORT BLAIR JETTY, SOUTH ANDAMAN (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2015-2016)**

**Achievements:** Undersea and terrestrial surveys were conducted at 5 stations in Port Blair and its adjoining areas of South Andaman to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for the

construction of 3 lane slipways have been provided to Indian Coast Guard for CRZ clearance.

**43. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE INSTALLATION OF SURVEILLANCE CAMERAS IN THE WEST COAST OF NORTH ANDAMAN (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2016-2017)**

**Achievements:** Undersea and terrestrial surveys were conducted at 7 stations North Andaman to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for the installation of surveillance cameras to Andaman and Nicobar Command for CRZ clearance.

**44. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE JETTY EXTENSION PHASE-II (190 × 17 M) AND WET BASIN AND REFIT JETTY (145 × 12 M) AT NSRY AT HADDO, PORT BLAIR (SPONSORED BY ANDAMAN LAKSHADWEEP HARBOUR WORKS, GOVT. OF INDIA) (YEAR 2016-2017)**

**Achievements:** Undersea and terrestrial surveys were conducted at 5 stations in Port Blair and its adjoining areas of South Andaman to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for the construction of jetty extension to ALHW for CRZ clearance.

**45. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE CONSTRUCTION OF PROTECTIVE WORKS TO ARREST SOIL EROSION ALONG THE COASTLINE OF ROSS ISLAND (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2016-2017)**

**Achievements:** Undersea and terrestrial surveys were conducted at 4 stations in Port Blair and its adjoining areas of South Andaman to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for the construction of protection work to Indian Navy for CRZ clearance.

**46. RAPID ENVIRONMENTAL IMPACT ASSESSMENT FOR PHASE-III FROM KM 43.45 TO 48.61 ON NORTH- SOUTH ROAD A SECTOR SHASTRI NAGAR TO INDIRA POINT IN GREAT NICOBAR ISLAND (SPONSORED BY MINISTRY OF DEFENCE, GOVT. OF INDIA) (YEAR 2016-2017)**

**Achievements:** Undersea and terrestrial surveys were conducted at 9 stations in Great Nicobar Island to assess the marine and terrestrial faunal communities. Based on the baseline study, significant findings, expected impacts, mitigation measures and management plan for the construction of road to BRO for CRZ clearance.

**47. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR SECURITY INFRASTRUCTURE/ SHORE PROTECTION AT HADDO, PORT BLAIR (SPONSORED BY IIT, CHENNAI) (YEAR 2016-2017)**

**Achievements:** Undersea and terrestrial surveys were conducted at 6 stations in Port Blair and adjoining areas of South Andaman to assess the marine and

terrestrial faunal communities. Based on the baseline studies were carried out.

#### **48. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR CONSTRUCTION OF ROAD FROM HANSPURI TO BAJOTA, MAYABUNDER (SPONSORED BY A & N ADMINISTRATION) (YEAR 2016-2017)**

**Achievements:** Undersea and terrestrial surveys were conducted at 6 stations in Port Blair and adjoining areas of South Andaman to assess the marine and terrestrial faunal communities. Based on the baseline studies were carried out.

### **5. Major Projects Handled as Co-Principal Investigator:**

#### **1. STUDIES ON THE SEASONAL VARIATION AND FAUNAL COMPOSITION OF PULICAT LAKE, SOUTHEASTERN COAST OF INDIA AREAS (IN-HOUSE PROJECT OF ZSI) (YEAR 2005-2007)**

**Achievements:** Seasonal survey on the occurrence of phytoplankton, zooplankton, meiofauna, macrofauna and avifauna were conducted during 2005-2007. Eleven stations of equidistant covering entire area of Pulicat Lake are fixed for the periodic monitoring of physico-chemical and hydrobiological parameters. A total of 21 species of phytoplankton belongs to 16 genera were recorded during the survey. However the average cell count of phytoplankton varied from  $18.24 \times 10^2 \text{ L}^{-1}$ . The dominant species of phytoplankton among the surveyed area were *Coscinodiscus eccentricus*, *Coscinodiscus gigas*, *Ceratium furca*, *Navicula clavata* *Nitzschia longissima* and *Biddulphia heteroceros*. Twenty three species of zooplankton belonging to 21 genera were recorded from the Pulicat Lake. Among them, Copepods, Ostracods, Foraminerans, Tintinids, Gastropods and Bivalves were recorded during all the seasons of study. 109 species belongs to 78 genera and 54 families were recorded during the study. An average numerical density and biomass of benthic community were calculated as 435 No./m<sup>2</sup> and 22.11g /m<sup>2</sup> respectively. Mollusca was dominant group at all stations. Among them, *Meretrix meretrix*, *Catylsia opima*, *Crossotrea madrasensis*, *Cerithidea fluviatilis* and *Turitella attenuata* were commonly occurred throughout the Pulicat Lake. In addition, a total of 65 species belongs to 5 orders and 14 families were identified during the survey.

#### **2. FAUNAL DIVERSITY OF SADDLE PEAK NATIONAL PARK ADJOINING AREAS (IN-HOUSE PROJECT OF ZSI).**

**Achievements:** The study was carried out at major four areas of sea around Saddle Peak National Park of North Andaman. Intertidal and subtidal faunal surveys were carried out at four sites viz. Off Durgapur, Shibpur, Kalipur and Craggy Island. A total of 726 species of marine animals belong to 14 groups such as sponges, scleractinian corals, gorgonians, soft corals, sea anemones, polyclads, crabs, shrimps, lobsters, molluscs, opisthobranchs, echinoderms, ascidians and marine fishes were recorded during the study period from the four study areas of Saddle Peak National Park adjoining sea. Saddle Peak National Park adjoining sea represents 11.96% marine faunal communities of Andaman and Nicobar Islands.

#### **3. STUDIES ON THE FAUNAL DIVERSITY OF GREAT NICOBAR BIOSPHERE RESERVE (SPONSORED BY MOEF&CC).**



**Achievements:** During the period of study, 1735 species of fauna belongs to 24 groups were reported from Great Nicobar Island. Among them 527 species were reported from terrestrial ecosystem while 1208 species were reported from marine ecosystem.

**4. RAPID ENVIRONMENTAL IMPACT ASSESSMENT SURVEY OF 500 M RADIUS BEACH MAIN HOLE (BMH) AND 50 M EITHER SIDE OF CABLE LAID AT VERSOVA AND ALSO TO THE DISTANCE OF 12 NAUTICAL MILES OF INDIAN TERRITORIAL WATERS OFF MUMBAI. (SPONSORED BY EQMS INDIAN PVT. LTD, DELHI) (YEAR 2014-2015)**

**Achievements:** Surveys were conducted in 27 stations of the proposed study area up to 12 nautical mile of Versova beach area of Mumbai to assess the faunal components in the project area for laying undersea optical fibre cable. The final report has been prepared and submitted to the Environmental Quality Management Services (EQMS) India Pvt. Ltd. along with field observations and necessary recommendations.

**5. RAPID ENVIRONMENTAL IMPACT ASSESSMENT SURVEY AT 500M RADIUS IN BEACH MAIN HOLE (BMH) AND 50 M EITHER SIDE OF CABLE LAID AT SANTHOME BEACH, CHENNAI. (SPONSORED BY EQMS INDIAN PVT. LTD, DELHI) (YEAR 2014-2015)**

**Achievements:** Surveys were conducted in 18 stations of the proposed study area up to 12 nautical mile of Santhome beach area of Chennai to assess the faunal components in the project area to lay undersea optical fibre cable. The final report has been prepared and submitted to the *Environmental Quality Management Services (EQMS) India Pvt. Ltd.* along with field observations and necessary recommendations.

## **6. Total field experience along with details :**

(Entire career)

Twenty seven years of field experience up to July 2017

### **I. FIELD SURVEYS CONDUCTED FROM THE YEAR 1990 TO 2004 (BEFORE JOINING SERVICE IN ZSI)**

Field experience at CAS in Marine Biology, Annamalai University: Year 1990-1997

**1. FIGURATIVE KEYS FOR THE IDENTIFICATION OF PORTUNID CRABS OF PORT NOVO COAST**

**Achievements:** Surveys were conducted to collect the brachyuran crabs in Port Novo coast during 1990. As a result of survey the figurative keys were prepared for the 25 species of brachyuran crabs under the family Portunidae and report published.

**2. TROPICAL MARINE MOLLUSC PROGRAMME OF DANIDA, DENMARK**

**Achievements:** Under this 12 countries coordinated project on molluscs, several surveys were conducted in Tamil Nadu coast especially Cuddalore, Paranigipettai, Nagapattinam, Point Calimer, Palk Bay, Gulf of Mannar,

Kanyakumari, Muttom, Kolachal, Vizhinjam and Trivandurm coasts during 1991 to 1997 to assess the status of Prosobranchian gastropods especially the family Muricidae. Besides, studies such as larval development, reproductive biology, chemoreception, edibility, substratum preference, biochemical constituents, regeneration, feeding behaviour, prey preference, salinity tolerance, oxygen tension were conducted under laboratory and papers published on these aspects.

Field experience at Central Salt and Marine Chemicals Research Institute (CSIR), Bhavnagar, Gujarat: Year 1997 - 2003

### 3. COASTAL OCEAN MONITORING AND PREDICTION SYSTEM

**Achievements:** Under this all India coordinated project bi-monthly offshore surveys were conducted at Aliyabet, off Dahej, Off Gogha, Off Alang, Off Gopnath, Off Pipav, Off Porbandar, Off Veraval, Off Dwarka, Off Okha, Off Jamnagar and Off Poshitra through coastal research vessel, *ORV Sagar Patchimi* to monitor the diversity and density of Phytoplankton, Zooplankton and Benthos in coastal and offshore waters of Gujarat coast during 1997 to 2000 and reports submitted.

### 4. IMPACT OF TURBIDITY ON THE INTERTIDAL FAUNA OF SAURASHTRA COAST OF GUJARAT

**Achievements:** Surveys were conducted in the intertidal area of Gopnath, Mahuva, Mocha, Porbandar, Veraval, Dwarka and Okha coasts in Gujarat during 1997 to 1998 to assess the impact of turbidity on the intertidal fauna, and paper published.

### 5. EFFECT OF SODA-ASH INDUSTRIES EFFLUENT ON SEAWEED EPIPHYTIC FAUNA OF SAURASHTRA COAST OF GUJARAT

**Achievements:** Surveys were conducted in the intertidal area of Porbandar, Veraval, Dwarka and Okha of Saurashtra coast to assess the effect of soda-ash industries effluents on epiphytic fauna of seaweeds during 1998-1999 and paper published.

### 6. STUDIES ON NEWLY RECORDED GREEN MUSSEL *PERNA VIRIDIS* AT GUJARAT COAST

**Achievements:** First time recorded the occurrence of green mussel *Perna viridis* at Mocha coast near Porbandar, and its growth rate, density, biochemical constituents, bio-accumulation of heavy metals were studied during 1999 to 2001, the papers published.

### 7. IMPACT OF BRINE AND BITTERN ON THE GROWTH OF MANGROVE *AVICENNIA MARINA* IN GUJARAT COAST

**Achievements:** Surveys were conducted in Poshitra area of Gujarat to assess the impact of leakage of brine and bittern laden pipeline on the mangrove ecosystem during 2000-2001 and the experimental studies were conducted in the laboratory with *Avicinnia marina* and paper published.

**8. EFFECT OF SHIP SCRAPPING INDUSTRY ON THE BIODIVERSITY AT ALANG, GUJARAT**

**Achievements:** Surveys were conducted in one of the world largest ship breaking yards at Alang during 1999-2000 and the faunal and floral communities were assessed, and paper published.

**9. IMPACT OF OIL SPILL ON THE COASTAL WATERS AND PLANKTONIC AND BENTHIC COMMUNITIES IN MUL DWARKA, GUJARAT**

**Achievements:** Surveys conducted soon after the incident of oil spill from the grounded tanker vessel at Mul Dwarka during 2000 to assess its impact on water quality, plankton and benthos and report submitted.

**10. IMPOSEX ON MARINE MURICID GASTROPODS IN INDIAN COASTS**

**Achievements:** Imposex is the reversal of sex (female to male) due to endocrine hormonal disturbances caused by the marine pollutant tributyltin which is mainly used for anti-fouling paints in ships. Surveys were conducted in Saurashtra coasts, and other major port areas in India such as Mumbai coast, Goa coast, Mangalore coast, Cochin coast, Chennai coast, Vishakapatnam coast and Paradip coast to assess the imposex on the species under *Thais* and *Ocenebra* during 2001-2003 and the papers published.

**11. STUDIES ON PATHOGENIC AND NON-PATHOGENIC BACTERIA OF EDIBLE FISHES OF SAURASHTRA COAST OF GUJARAT**

**Achievements:** Surveys were conducted in Saurashtra coast of Gujarat to assess the pathogenic and non-pathogenic bacteria at different edible fishes during 2001-2003 and paper published.

**12. STUDIES ON THE EFFECT OF DESALINATION PLANT EFFLUENT ON THE PLANKTON AND BENTHOS OF MUL DWARKA COAST, GUJARAT**

**Achievements:** Offshore surveys were conducted to assess the effect of desalination plant effluent on the plankton and benthos during 2001 and the paper published.

**13. STUDIES ON THE IMPACT OF THE OFFSHORE CULTIVATION OF INVASIVE SEAWEED *KAPPAPHYCUS ALVEREZI* IN GULF OF MANNAR AND PALK BAY**

**Achievements:** Surveys were conducted in the Gulf of Mannar and Palk Bay area during 2001 to assess the impact of cultivation of *Kappaphycus alverezii* and paper published.

Field experience at Gujarat Ecology Society, Vadodara, Gujarat: January 2004 to November 2004

**14. FAUNAL DIVERSITY OF SAURASHTRA COAST**

**Achievements:** Surveys were conducted in the intertidal area of Gopnath, Mahuva, Mocha, Porbandar, Veraval, Dwarka and Okha coasts in Gujarat

during 2003 to assess the faunal diversity, first time reported the occurrence of scleractinian corals in this coast, paper published and report submitted to funding agency, i.e. MoEF/GOI.

## 15. MARINE EIA STUDIES

**Achievements:** Surveys were conducted in Dahej and Baruch in Gujarat to conduct EIA studies for group of industries including M/s. Indian Petrochemicals Corporation Ltd., M/s. Gujarat Alkalies and Chemicals Ltd., M/s. Cairn Energy Ltd., M/s. Birla Copper Ltd. and M/s. Palsana Pvt. Ltd. and reports submitted.

- A. Report on the effect of soda ash industry effluent of M/s. SAUKEM- Saurashtra Chemicals Ltd., Porbandar, Gujarat on the marine biota- A baseline study, June 2001.
- B. Report on “Effect of Reject Water, obtained after Desalination of Seawater by Reverse Osmosis Technique, on the Marine Environment at BCT, Muldwarka” for M/s Gujarat Ambuja Cements Ltd., Kodinar, Gujarat, India (July 2002).
- C. Report on “Effect of Eucheuma cultivation on the water quality and biota of marine environment at Palk Bay and Gulf of Mannar, Tamil Nadu,” for M/s. Pepsico India Holdings Ltd. Gurguon, India (July 2003).
- D. Report on rapid environmental impact assessment for the discharge of treated effluent in to the Kadodara Khadi (Channel) and finalizing the discharge point for the treated effluent of proposed Common Effluent Treatment Plant for M/s. Palsana Enviro Protection Limited, Palsana, Surat, India. (2003).
- E. Interim report on Environmental monitoring in the inshore waters of the Gulf of Khamhbat, off Dahej during 2004, submitted to M/s. Indian Petrochemical Corporation Limited and Gujarat Alkalies and Chemicals Limited, Dahej during April 2004.
- F. Interim report on Environmental monitoring in the inshore waters of the Gulf of Khamhbat, off Dahej during 2004, submitted to M/s. Indian Petrochemical Corporation Limited and Gujarat Alkalies and Chemicals Limited, Dahej during June 2004.
- G. Interim report on Environmental monitoring in the inshore waters of the Gulf of Khamhbat, off Dahej during 2004, submitted to M/s. Indian Petrochemical Corporation Limited and Gujarat Alkalies and Chemicals Limited, Dahej during June 2004.
- H. Report on Environmental monitoring in the Tapi estuary and adjacent nearshore waters region inshore waters of the Gulf of Khamhbat sponsored by M/s. Shell Hazira Private Limited,

M/s. Gujarat State Petroleum Corporation Limited, M/s. Niko Resources Limited and M/s. Cairn Energy India Pty Limited, Hazira during the year 2004.

## II. FIELD SURVEYS CONDUCTED AFTER JOINING SERVICE IN ZSI (YEAR 2004 TO TILL DATE)

Field experience at Marine Biology Regional Centre, ZSI, Chennai

### 1. RAPID ASSESSMENT ON THE IMPACT OF TSUNAMI ON THE FAUNAL COMMUNITIES ALONG SOUTHEAST COAST OF INDIA

**Achievements:** Surveys conducted along the Tamil Nadu coast especially, Chennai, Mahabalipuram, Pondicherry, Cuddalore, Nagapattinam, Thondi, Palk Bay, Gulf of Mannar and Kanyakumari during January 2005 to assess the impact of tsunami-2004 on faunal communities and report submitted.

### 2. INTERTIDAL FAUNA OF EAST COAST OF INDIA

**Achievements:** As a PI of the in-house project, four major surveys were conducted along the coasts of West Bengal, Orissa, Andhra Pradesh and Tamil Nadu during 2005-2007 to assess the diversity and density of intertidal macro faunal communities, and the report submitted to ZSI headquarters. The study also reported occurrence of the Brachiopod 'living fossil' *Lingula translucida* Dall for the first time in east coast of India and paper published.

### 3. STUDIES ON THE SEASONAL VARIATION AND FAUNAL COMPOSITION OF PULICAT LAKE, SOUTHEAST COAST OF INDIA

**Achievements:** As a Co PI of the in-house project 12 surveys were conducted to Pulicat Lake during 2005-2007 and studied the plankton, benthos, gastropods, bivalves, fishes and crustaceans, and report submitted to ZSI headquarters.

### 4. OCEANIC ZOOPLANKTON ALONG THE INDIAN EEZ OF BAY OF BENGAL

**Achievements:** In collaboration with Fishery Survey of India (FSI), Chennai, the oceanic zooplankton and fishes were surveyed availing onboard vessel *MFV Matsya Dhristi* during 9<sup>th</sup> February to 2<sup>nd</sup> March 2007 (23 days) in Indian EEZ of Bay of Bengal, and reports submitted to ZSI and FSI and paper published.

### 5. STATUS SURVEY ON THE SCHEDULE-I HOLOTHURIANS ALONG THE EAST COAST OF INDIA

**Achievements:** Surveys were conducted in 40 stations along Andhra Pradesh, Tamil Nadu and Pondicherry coasts during 2006 to assess the holothurians, and reports containing recommendations submitted to ZSI headquarters as well as administrative Ministry and paper published.

### 6. FAUNAL DIVERSITY OF SETHUSAMUDRAM SHIP CANAL AND ITS ADJOINING REGION OF GULF OF MANNAR AND PALK BAY

**Achievements:** Surveys conducted in Palk Bay and Gulf of Mannar during 2006 and prepared the faunal list of proposed Sethusamudram Ship Canal alignment, and submitted the report to ZSI headquarters and paper published.

Field experience at Andaman and Nicobar Regional Centre, ZSI, Port Blair

**1. LITTORAL FAUNAL DIVERSITY OF CHIDYATAPU REGION, ANDAMAN SEA**

Under this project 4 surveys were conducted during December 2007 to February 2008 to assess the intertidal and sub-tidal fauna and paper published. Through this study 6 species of nudibranchs were reported as new record to India.

**2. LITTORAL FAUNAL DIVERSITY OF CAMPBELL BAY AND INDIRA POINT, GREAT NICOBAR**

As a PI of this in-house projects 6 long-term surveys were conducted in Campbell Bay, Johinder Nagar, B'quary, Laxman Beach, Navy Dera, Afra Bay, Kondul, Shastri Nagar, Laxmi Nagar, Gandhi Nagar, Chinchem Basti, Magar Nallah, Indira Point and Kopen Heat during 2008-2011 to assess the coral and coral associated faunal communities such as echinoderms, molluscs, gorgonians, opisthobranchs and sponges.

**3. DIVERSITY OF CORAL ASSOCIATED FAUNAL COMMUNITIES OF RUTLAND ISLAND, ANDAMAN SEA**

As a PI of the project this in-house project, 22 local surveys were conducted in Arom Point, Pongibalu, Riflemen point, Aam dera, Chain Nallah, Sirumai dikri etc. during 2008 to 2011 to assess the coral and coral associated faunal communities such as echinoderms, molluscs, gorgonians, opisthobranchs and sponges.

**4. IMPACT OF TOTAL ECLIPSE ON THE FAUNAL COMMUNITIES IN SADDLE PEAK NATIONAL PARK**

Survey was conducted in marine and terrestrial ecosystem of Saddle Peak National Park, North Andaman during July 2009 to study the impact of total solar eclipse (22<sup>nd</sup> July 2009) and report submitted to ZSI headquarters.

**5. OCEANIC ZOOPLANKTON SURVEY IN ANDAMAN SEA**

In collaboration with National Institute of Ocean Technology (NIOT), Chennai, oceanic zooplankton was surveyed in Andaman Sea availing research vessel *ORV Sagar Manjusha* for a period of 15 days during September 2009, and report submitted to ZSI as well as NIOT and paper published.

**6. ASSESSMENT OF CORAL REEFS IN THE CONSTRUCTION SITE OF HARBOUR AND OTHER INFRASTRUCTURE FACILITIES AT KATCHAL AND TERESSA ISLANDS**

As a PI of the grant-in-aid project, surveys conducted in Katchal and Teressa Islands of Nicobar group during 2009 to assess the corals in the construction site of harbour and jetties, and report submitted to the Port Management Board, A&N Islands, and paper published.

**7. STATUS SURVEY ON *TROCHUS NILOTICUS* AND *TURBO MARMORATUS* IN ANDAMAN AND NICOBAR ISLANDS**

As a PI of the grant-in-aid project Status of Schedule-IV gastropods, *Trochus niloticus* and *Turbo marmoratus* were surveyed in 79 stations along A&N Islands during 2009-2010 and the report submitted to A & N Administration as well as MoEF&CC/GOI and book published.

**8. FAUNAL STUDIES IN SADDLE PEAK NATIONAL PARK AND ITS ADJOINING SEA, NORTH ANDAMAN**

As a Co-PI of this in-house project, six long-term surveys were conducted in Lamia Bay, Aerial Bay, Durgapur, Ross and Smith Islands, Plastic Islands, Twin Island and Shibpur during 2010-2011 to assess the coral and coral associated faunal communities.

**9. SURVEY AND MONITORING THE HEALTH OF CORALS OF INDIA, NATIONAL CORAL REEF RESEARCH INSTITUTE**

As a PI of the grant-in-aid project, 24 surveys were conducted/organized to North Andaman, Middle Andaman, South Andaman, Ritchie's Archipelago, Little Andaman, Car Nicobar, Nancowry Islands and Great Nicobar during 2009-2011 to assess the coral diversity, density, live cover etc. and annual reports submitted to the MoEF&CC/GOI.

**10. LEAD INSTITUTION-GREAT NICOBAR BIOSPHERE RESERVE**

As a PI of the grant-in-aid project, six long-term surveys were conducted in Great Nicobar Island during 2009-2011 to assess the marine and terrestrial faunal communities, and the annual reports submitted to the MoEF&CC/GOI.

**11. SPECIALIZED SURVEY AND MONITORING THE CORALS OF ANDAMAN AND NICOBAR ISLANDS**

As a PI of the grant-in-aid project, 12 surveys were conducted/organized in the 11 permanent monitoring plots at North Andaman, Middle Andaman, South Andaman, Ritchie's Archipelago, Little Andaman, Car Nicobar, Nancowry Islands and Great Nicobar during 2009-2011 to assess the coral diversity, density, live cover etc. and annual reports submitted to the A&N Administration.

**12. DIVERSITY AND DISTRIBUTION OF CORALS AND ITS ASSOCIATED FAUNA IN RANI JHANSI MARINE NATIONAL PARK (RJMNP), ANDAMAN**

As a PI of the grant-in-aid project, 9 surveys were conducted/organized to Outram, Henry Lawrence and John Lawrence Islands in RJMNP, Ritchie's Archipelago during 2009-2011 to assess the coral diversity, density, live cover etc. and annual reports submitted to the MoEF&CC/GOI.

### **13. GIS STUDIES ON CORALS REEFS OF LITTLE ANDAMAN**

As a Co PI of the grant-in-aid project, 6 surveys were conducted/organized to Little Andaman Island during 2009-2011 to assess the coral diversity, density, live cover etc. and annual reports submitted to the MoEF&CC/GOI.

### **14. FAUNAL DIVERSITY OF GREAT NICOBAR BIOSPHERE RESERVE**

As a Co PI of the grant-in-aid project, 6 surveys were conducted/organized in Great Nicobar Island during 2009-2011 to assess the diversity and density of terrestrial and marine animals, and annual reports submitted to the MoEF&CC/GOI.

### **15. RAPID EIA STUDIES FOR THE ALIGNMENT ROAD IN GREAT NICOBAR ISLAND**

As a PI of the grant-in-aid project, three surveys were conducted in Great Nicobar Island during 2010-2011 and report submitted for Phase-I-III to Border Roads Organization, Ministry of Defence, GOI.

### **16. PREPARATION OF MANAGEMENT PLAN (YEAR 2012-2021) FOR LOHABARRACK CROCODILE SANCTUARY**

As a PI of the grant-in-aid project 7 local surveys were conducted to Lohabarrack Crocodile Sanctuary during 2010-2011 and the report submitted to Andaman and Nicobar Administration.

### **17. STATUS SURVEY OF HOLOTHURIANS (SEA CUCUMBERS) IN THE TERRITORIAL WATERS OF A&N ISLANDS**

As a PI of the grant-in-aid project 8 surveys were conducted/organized in A & N Islands during 2011-2012 to assess the standing stock of holothurians.

### **18. STATUS OF CORAL AND ITS ASSOCIATED MACROFAUNA IN LANDFALL ISLAND SANCTUARY, NORTH ANDAMAN**

As a PI of the project 6 long-term surveys were conducted in Landfall Island, Peacock Island, East Island, Plastic degree, Twins Island, Ross and Smith Island, Lamia Bay, Graggy Island and Off Durgapur in North Andaman during 2011-2014.

### **19. STATUS OF CORAL AND ITS ASSOCIATED MACROFAUNA IN NORTH REEF ISLAND SANCTUARY, NORTH ANDAMAN**

As a PI of the project 4 long-term surveys were conducted in North Reef Island, Interview Island, Sound Island, Avis Island, Oliver Island and Mayabunder during 2014-2016.

### **20. STATUS OF CORAL AND ITS ASSOCIATED MACROFAUNA IN NEIL ISLAND, SOUTH ANDAMAN**

As a PI of the project 4 long-term surveys have been conducted in Neil Island during 2014-2016 to assess the status of corals as this island is promoted for tourism.



**21. DETERMINATION OF THE CONSERVATION VALUE OF THE CORAL REEFS OF ANDAMAN**

As a PI of the grants-in-aid project surveys were conducted/organized in 61 coral reef patches falling outside the protected area in Andaman Islands during 2014-2015.

**22. PREPARATION OF COASTAL AND MARINE BIODIVERSITY REGISTER**

As a PI of the grants-in-aid project surveys were conducted/organized Andaman and Nicobar Islands during 2014-2015.

**23. REPRODUCTIVE BIOLOGY OF SCLERACTINIAN CORALS OF ANDAMAN AND NICOBAR ISLANDS**

As a PI of the grants-in-aid project, surveys were conducted/organized in South Andaman, Middle Andaman, North Andaman, Little Andaman, Ritchie's Archipelago and Great Nicobar Island during 2014-2017.

**24. TAXONOMY, DIVERSITY AND DISTRIBUTION OF ACTINARIA (SEA ANEMONES), POLYCLADIDA AND SIPUNCULA IN ANDAMAN AND NICOBAR ISLANDS**

As a PI of the grants-in-aid project, surveys were conducted/organized in South Andaman, Middle Andaman, North Andaman, Little Andaman, Ritchie's Archipelago and Great Nicobar Island during 2017.

**25. EIA STUDIES FOR CONSTRUCTION OF JETTY AND HARBOUR FACILITIES AT KATCHALL AND TERESSA ISLANDS**

As a PI of the grants-in-aid project, surveys were conducted/ organized in nancowry group of islands during 2008-2009.

**26. EIA STUDIES ON THE ALIGNMENT OF ROAD CONSTRUCTION AT GREAT NICOBAR ISLAND**

As a PI of the grants-in-aid project, surveys were conducted/ organized in Great Nicobar Island and Pigeon Island during 2010.

**27. ENVIRONMENTAL IMPACT ASSESSMENT OF OFF SHIBPUR, DIGLIPUR OF NORTH ANDAMAN FOR THE EXTENSION OF AIRSTRIP OF INDIAN NAVY**

As a PI of the grants-in-aid project, surveys were conducted/ organized in North Andaman during 2011-2012.

**28. ENVIRONMENTAL IMPACT ASSESSMENT OF CAMPBELL BAY AT GREAT NICOBAR ISLAND FOR THE EXTENSION OF AIRSTRIP OF INDIAN NAVY**

As a PI of the grants-in-aid project, surveys were conducted/ organized in Great Nicobar Island during 2011-2012.

**29. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON THE BIOTIC COMPONENTS OF PROPOSED EXTENSION OF EXISTING JETTY, AND**

**CONSTRUCTION OF WET BASIN, FOR INDIAN NAVY AT HADDO, PORT BLAIR**

As a PI of the grants-in-aid project, surveys were conducted/ organized in Port Blair and adjoining areas of South Andaman during 2012-2013.

**30. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON PROPOSED ROAD AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized in North Andaman during 2011-2012.

**31. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON PROPOSED DESALINATION PLANT AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized in North Andaman during 2013-2014.

**32. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON PROPOSED DEFICIENT SINGLE LIVING ACCOMMODATION AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized in North Andaman during 2013-2014.

**33. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE CONSTRUCTION OF WORKSHOP FACILITIES FOR CASU AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized in North Andaman during 2013-2014.

**34. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON FOR SPECIAL REPAIR TO EXISTING BOUNDARY WALL AND EXTENSION OF BOUNDARY WALL AT INDIAN COAST GUARD DHQ-09, ARIEL BAY, DIGLIPUR, NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized in North Andaman during 2013-2014.

**35. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON THE BIOTIC COMPONENTS IN SURVEY NO.7/1 AT ANDABEDA, BAMBOOFLAT VILLAGE, SOUTH ANDAMAN FOR THE EXTRACTION OF IMPERVIOUS MINERAL**

As a PI of the grants-in-aid project, surveys were conducted/ organized in South Andaman during 2013-2014.

**36. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON THE BIOTIC COMPONENTS FOR THE CONSTRUCTION OF RURAL ROAD FROM KALIGHAT JETTY TO NISCHINTAPUR INCLUDING BRIDGE OVER KALIGHAT NALLAH**

As a PI of the grants-in-aid project, surveys were conducted/ organized at

Kalighat, Saddple Peak National Park and adjoining areas of North Andaman during 2015-2016.

**37. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE CONSTRUCTION OF CEMENT CONCRETE DAM AT KHUDIRAMPUR VILLAGE AT NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized at Khudirampur, Saddple Peak National Park and adjoining areas of North Andaman during 2015-2016.

**38. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS ON QUARRY MEASURING AN AREA OF 4.00 HECT. BEARING SURVEY NO. 700/P SITUATED AT NABAGRAM VILLAGE, DIGLIPUR AT NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized at Nabagram, Saddple Peak National Park and adjoining areas of North Andaman during 2015-2016.

**39. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE CONSTRUCTION OF COAST GUARD JETTY AT HUT BAY, LITTLE ANDAMAN ISLAND**

As a PI of the grants-in-aid project, surveys were conducted/ organized at Little Andaman Island of South Andaman during 2015-2016.

**40. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE ALTERNATE ALLOTMENT OF LAND AS TENANT OF SUBMERGENCE OF CULTIVABLE LAND AT BIMBLITAN AND OGRABRAJ, SOUTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized at Port Blair and adjoining areas of South Andaman during 2015-2016.

**41. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE PROVISION AND INSTALLATION OF AUTOMATIC RO PLANT TO SUPPLY WATER AT INS KARDIP, KAMORTA**

As a PI of the grants-in-aid project, surveys were conducted/ organized at Nancowry group of islands during 2015-2016.

**42. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON BIOTIC COMPONENTS FOR THE PROVISION OF SEA WALL AND PROTECTIVE WORKS ALONG THE SHORE LINE AT INS KARDIP, KAMORTA**

As a PI of the grants-in-aid project, surveys were conducted/ organized at Nancowry group of islands during 2015-2016.

**43. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE CONSTRUCTION OF 03-LANE SLIPWAYS AT PORT BLAIR JETTY, SOUTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized at

South Andaman during 2016-2017.

**44. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE INSTALLATION OF SURVEILLANCE CAMERAS IN THE WEST COAST OF NORTH ANDAMAN**

As a PI of the grants-in-aid project, surveys were conducted/ organized at North Andaman during 2016-2017.

**45. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE JETTY EXTENSION PHASE-II (190 × 17 M) AND WET BASIN AND REFIT JETTY (145 × 12 M) AT NSRY AT HADDO, PORT BLAIR**

As a PI of the grants-in-aid project, surveys were conducted/ organized at South Andaman during 2016-2017.

**46. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR THE CONSTRUCTION OF PROTECTIVE WORKS TO ARREST SOIL EROSION ALONG THE COASTLINE OF ROSS ISLAND**

As a PI of the grants-in-aid project, surveys were conducted/ organized at South Andaman during 2016-2017.

**47. RAPID ENVIRONMENTAL IMPACT ASSESSMENT FOR PHASE-III FROM KM 43.45 TO 48.61 ON NORTH- SOUTH ROAD A SECTOR SHASTRI NAGAR TO INDIRA POINT IN GREAT NICOBAR ISLAND**

As a PI of the grants-in-aid project, surveys were conducted/ organized at Great Nicobar Island during 2016-2017.

**48. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR SECURITY INFRASTRUCTURE/ SHORE PROTECTION AT HADDO, PORT BLAIR**

As a PI of the grants-in-aid project, surveys were conducted/ organized at South Andaman during 2016-2017.

**49. RAPID ENVIRONMENTAL IMPACT ASSESSMENT STUDIES FOR CONSTRUCTION OF ROAD FROM HANSPURI TO BAJOTA, MAYABUNDER**

As a PI of the grants-in-aid project, surveys were conducted/ organized at South Andaman during 2016-2017.

**50. Strengthening the activities of National Coral Reef Research Institute (NCRI):** Necessary efforts were paid with the support of DZSI to study the corals of A&N Islands. 50 surveys were conducted to monitor the coral reefs in A&N Islands under the projects of National Coral Reef Research Institute during 2009-2017. Record of scleractinian coral species increased to 588 and database has been prepared for them. The coral reef associated faunal communities such as polyclads increased to 38 sp., opisthobranchs increased to 256 sp., sea anemones increased to 33 sp. and ascidians increased to 101 sp. As per the advice of MoEF & CC, new proposal for another 5 year period of the NCRI has been submitted. Presently approval is awaited from MoEF & CC.

## 7. Academic achievements:

Books published	:	34
Papers published	:	249
Presentation of papers in international/national conferences and publication of abstracts	:	12
Papers in proceedings	:	28
Pamphlets published	:	34
Articles published	:	11
Keynote lecture delivered in national conference	:	8
Resource person in workshops	:	30
Award received	:	5
Indian Representative in International Meet	:	4
Identification and Advisory Services	:	204
Workshop/ Conference attended	:	61
Presentations made in MoEF&CC and ZSI meetings	:	31
Other Meeting attended	:	177
MoU Signed with other Govt. Departments	:	7
Member	:	4
Member in High Power Committee	:	10
Symposium organized	:	7
Scientific Cruise Expedition	:	3
Expert opinion provided for wildlife conservation	:	5
Administrative	:	10
New species described	:	Total- 10 2 sp. of scleractinian corals, 5 species of polyclads, 2 species of ascidian and 1 species of bird

New records of species to India	:	650 species (corals, fishes, sponge, nudibranchs, polyclad, brachiopod, ascidia, fish and bird)
Number of specimens registered in National Zoological Collections	:	1791
PI of in-house projects handled	:	10
Co-PI of in-House projects handled	:	2
PI of grant-in-aid projects handled	:	38
Co-PI of grant-in-aid projects handled	:	3
Research guidance for Ph.D. students	:	<ol style="list-style-type: none"> <li>1. Awarded Scholar -02 (Under Pondicherry University) &amp; 01 (Under Madras University)</li> <li>2. Thesis submitted scholar - 03 (Under Pondicherry University)</li> <li>3. Synopsis submitted scholar - 01 (Under Pondicherry University)</li> <li>4. Degree pursuing - 06 (Under Pondicherry University)</li> </ol>
Research guidance for M.Phil. students	:	2 (Awarded)

## 8. Publications: 351

### Books (35)

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2. Ramakrishna, C. **Raghunathan** and C. Sivaperuman, 2010. Recent Trends in Biodiversity of Andaman and Nicobar Islands: 1-542 (Published by the Director, Zoological Survey of India, Kolkata).
3. Ramakrishna, **Raghunathan, C.**, Tamal Mondal and Sivaperuman, C., 2010. Guide to Fungiids of Andaman and Nicobar Islands: 1-106p, (Published by the Director, ZSI, Kolkata).
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5. Ramakrishna, Tamal Mondal, **Raghunathan, C.**, Raghuraman, R. and Sivaperuman, C., 2010. New Record of Scleractinian Corals in Andaman and Nicobar Islands. Records of Zoological Survey of India, Occasional Paper No. 321: 1-144 Published by the Director, ZSI, Kolkata)
6. Ramakrishna, Titus Immanuel, Sreeraj, C.R., **Raghunathan, C.**, Raghuraman, R., Rajan, P.T. and J.S. Yogsh Kumar, 2010. An account of addition to the Ichthyofauna of Andaman and Nicobar Islands. *Rec. zool. Surv. India, Occ. Paper No.326*: 1-140.
7. Ramakrishna, Sreeraj, C.R., **Raghunathan, C.**, Sivaperuman, C., Yogesh Kumar, J.S., Raghuraman, R., Titus Immanuel and P.T. Rajan, 2010. Guide to Opisthobranchs of Andaman and Nicobar Islands. Published by Zoological Survey of India, Kolkata, 196p.
8. Venkataraman, K., **Raghunathan, C.** and C. Sivaperuman (Eds.) 2012. *Ecology of Faunal Communities on the Andaman and Nicobar Islands*, Springer-Verlag Berlin Heidelberg, 340p.
9. **Raghunathan, C.**, Sivaperuman, C. and K. Venkataraman (Eds.), 2012. *Recent Advances in Biodiversity of India*. Zoological Survey of India, Kolkata, 529p.
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11. Venkataraman, K., **Raghunathan, C.**, Sreeraj, C.R. and R. Raghuraman, 2012. A guide to Dangerous and Venomous Marine Animals of India. Published by Zoological Survey of India, Kolkata, 104p.
12. Venkataraman, K., **Raghunathan, C.**, Raghuraman, R., Sivaperuman, C., Sreeraj, C. R., Titus Immanuel and Yogesh Kumar, J. S. 2012. Scleractinia of Andaman and Nicobar Islands. (Published by the Director, Zoological Survey of India, Kolkata), 304 p.
13. Venkataraman, K., **Raghunathan, C.**, Sivaperuman, C., Raghuraman, R. and Tamal Mondal, 2013. Glimpses of Great Nicobar Biosphere Reserve (Published by the Director, Zoological Survey of India), 65p.

14. Venkataraman, K., Sivaperuman, C. and **Raghunathan, C.** (eds.), 2013. Ecology and Conservation of Tropical Marine Faunal Communities. Springer-Verlag Berlin Heidelberg, 483p.
15. **Raghunathan, C.**, Sadhukhan, K., Tamal Mondal., Sivaperuman, C., Venkataraman, K., 2013. A Guide to Common Echinoderms of Andaman and Nicobar Islands: 1-210, Published by the Director, Zoological Survey of India.
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20. Yogeshkumar, J.S., **Raghunathan, C.**, Raghuraman, R., Sreeraj, C.R. and Venkataraman, K., 2014. Handbook on Gorgonians (Octocorallia) of Andaman and Nicobar Islands. 1-119p. (Published by Director, Zoological Survey of India, Kolkata)
21. Venkataraman, K., **Raghunathan, C.**, Raghuraman, R and Sudhanshu Dixit, 2015. Fascinating Seaslugs and Flatworms of Indian Seas. 1-149. (Published by the Director, *Zool. surv. India*, Kolkata)
22. **Raghunathan, C.**, 2015. Littoral faunal diversity of Great Nicobar Island, *Rec. zool. Sur. India*, Occasional Paper No.369: 1-172 (Published by the Director, Zoological Survey of India, Kolkata)
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29. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2017. Glimpses of Coastal and Marine Biodiversity of India. 1-241. (Published by the Director, Zoological Survey of India, Kolkata).
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37. **Raghunathan, C.** and Ayyakkannu, K., 1992. Oxygen consumption and lethal level of oxygen deficiency in *Chicoreus ramosus*, *Phuket Marine Biological Center Special Publication No.10:213-215*.
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332. Venkataraman, K., **Raghunathan, C.**, Choudhury, S., Raghuraman, R. and Tamal Mondal, 2015. Sea Anemone Actiniaria. In: *National Workshop on Lesser Known Marine Animals of India*, 11<sup>th</sup> to 13<sup>th</sup> June 2015, Published by Director, Zoo. Surv. India, Kolkata.
333. Venkataraman, K., **Raghunathan, C.**, Raghuraman, R. and Tamal Mondal, 2015. Pea-nut Worm Sipuncula. In: *National Workshop on Lesser Known Marine Animals of India*, 11<sup>th</sup> to 13<sup>th</sup> June 2015, Published by Director, Zoo. Surv. India, Kolkata.

334. Venkataraman, K., **Raghunathan, C.**, Raghuraman, R. and Tamal Mondal, 2015. Horse-shoe Worm Phoronida. In: *National Workshop on Lesser Known Marine Animals of India*, 11<sup>th</sup> to 13<sup>th</sup> June 2015, Published by Director, Zoo. Surv. India, Kolkata.
335. Venkataraman, K., **Raghunathan, C.**, Venkatraman, C., Mondal, J. and Tamal Mondal, 2015. Acorn Worm Hemichordata. In: *National Workshop on Lesser Known Marine Animals of India*, 11<sup>th</sup> to 13<sup>th</sup> June 2015, Published by Director, Zoo. Surv. India, Kolkata.
336. Venkataraman, K., **Raghunathan, C.**, Sivaleela, G., Choudhury, S., Tamal Mondal and Raghuraman, R., 2015. Mud Dragon Kinorhyncha. In: *National Workshop on Lesser Known Marine Animals of India*, 11<sup>th</sup> to 13<sup>th</sup> June 2015, Published by Director, Zoo. Surv. India, Kolkata.
337. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Ascidians of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
338. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Echinoderms of India. Released on the occasion of National Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
339. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Gorgonians of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
340. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Molluscs of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
341. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Opisthobranchs of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
342. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Polyclads of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
343. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Marine Fishes of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
344. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Scleractinian Corals of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
345. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Sea Anemones of India. In: Workshop on '*Current Status of Marine Faunal Diversity in*

*India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.

346. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Soft Corals of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
347. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2016. Sponges of India. In: Workshop on '*Current Status of Marine Faunal Diversity in India*' held at ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> & 27<sup>th</sup> October 2016.
348. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2017. Coastal and Marine Ecosystems of India. In: National Workshop on '*Mainstreaming Coastal and Marine Biodiversity of India*' held at ZSI/ANRC, Port Blair, Andaman and Nicobar Islands during 23<sup>rd</sup> to 25<sup>th</sup> March 2017.
349. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2017. Seagrass Ecosystems of India. In: National Workshop on '*Mainstreaming Coastal and Marine Biodiversity of India*' held at ZSI/ANRC, Port Blair, Andaman and Nicobar Islands during 23<sup>rd</sup> to 25<sup>th</sup> March 2017.
350. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2017. Mangrove Ecosystems of India. In: National Workshop on '*Mainstreaming Coastal and Marine Biodiversity of India*' held at ZSI/ANRC, Port Blair, Andaman and Nicobar Islands during 23<sup>rd</sup> to 25<sup>th</sup> March 2017.
351. Kailash Chandra, **Raghunathan, C.** and Tamal Mondal, 2017. Coral Reef Ecosystems of India. In: National Workshop on '*Mainstreaming Coastal and Marine Biodiversity of India*' held at ZSI/ANRC, Port Blair, Andaman and Nicobar Islands during 23<sup>rd</sup> to 25<sup>th</sup> March 2017.

## **9. Special awards/Appreciation of work:**

1. Received '**HIGH PERFORMANCE SCIENTIST OF ZSI - 2011**' AWARD conferred by ZSI, HQs, Kolkata on 26<sup>th</sup> January 2012.
2. Received '**HIGH PERFORMANCE SCIENTIST OF ZSI - 2012**' AWARD conferred by ZSI, HQs, Kolkata on 26<sup>th</sup> January 2013.
3. Received a '**CERTIFICATE OF APPRECIATION**' from Central Agricultural Research Institute (CARI), ICAR, Port Blair on 23<sup>rd</sup> June 2013 for the meritorious services
4. Received a '**CERTIFICATE OF APPRECIATION**' from Central Island Agricultural Research Institute (CIARI), ICAR, Port Blair on 23<sup>rd</sup> June 2014 for the constant support and cooperation for strengthening research, extension and development activities of the institute.
5. Received an award '**FELLOW OF ANDAMAN SCIENCE ASSOCIATION**' conferred by Andaman Science Association, Port Blair on 17<sup>th</sup> April 2015.

## **10. New species described:**

Ten new species of animals comprising of 2 sp. of scleractinian corals, 5 species of polyclads, 2 species of ascidian and 1 species of bird were described till now from these regional centre while the holotype specimens of scleractinian corals are deposited in National Zoological Collections of ZSI, Port Blair. The details are given below.

Scleractinian corals :02

**1. *Favites monticularis* sp. nov.**

Phylum: Cnidaria Hatschek, 1888

Class: Anthozoa Ehrenberg, 1834

Order: Scleractinia Bourne, 1900

Family: Faviidae Gregory, 1900

Genus: *Favites* Link, 1807

*Journal of Threatened Taxa*, 5(10): 4510-4513

Tamal Mondal, C. Raghunathan and K. Venkataraman, 2013

**2. *Ctenactis triangularis* sp. nov.**

Phylum: Cnidaria Hatschek, 1888

Class: Anthozoa Ehrenberg, 1834

Order: Scleractinia Bourne, 1900

Family: Fungiidae Dana, 1846

Genus: *Ctenactis* Verrill, 1864

*Journal of Threatened Taxa*, 5(12):4653-4659;

<http://dx.doi.org/10.11609/JoTT.o3194.4653-9>

Tamal Mondal and C. Raghunathan , 2013

Aves: 01

**3. *Rallina* sp.**

Phylum: Chordata

Class: Aves

Order: Gruiformes

Family: Rallidae

Genus: *Rallina*

*BirdingASIA*, 17: 44-46

S. Rajeshkumar, C. Raghunathan and P. C. Rasmussen, 2012

Polyclads: 05

**4. *Pseudoceros galatheensis* sp. nov.**

Phylum: Platyhelminthes, Gegenbaur, 1859

Clade: Rhabditophora Ehlers 1985

Order: Polycladida Lang, 1884

Family: Pseudocerotidae Lang, 1884

Genus: *Pseudoceros* Lang, 1884

*Zootaxa*, 4221(1): 111-122.

Sudhanshu Dixit, C. Raghunathan and Kailash Chandra, 2017

**5. *Pseudoceros nigropunctatus* sp. nov.**

Phylum: Platyhelminthes, Gegenbaur, 1859

Clade: Rhabditophora Ehlers 1985  
Order: Polycladida Lang, 1884  
Family: Pseudocerotidae Lang, 1884  
Genus: *Pseudoceros* Lang, 1884  
*Zootaxa*, 4221(1): 111-122.  
Sudhanshu Dixit, C. Raghunathan and Kailash Chandra, 2017

**6. *Pseudoceros auranticrinis* sp. nov.**

Phylum: Platyhelminthes, Gegenbaur, 1859  
Clade: Rhabditophora Ehlers 1985  
Order: Polycladida Lang, 1884  
Suborder: Cotylea Lang, 1884  
Family: Pseudocerotidae Lang, 1884  
Genus: *Pseudoceros* Lang, 1884  
*Zootaxa*, 4269 (4): 495-512  
Sudhanshu Dixit, C. Raghunathan and Kailash Chandra, 2017

**7. *Pseudoceros vishnui* sp. nov.**

Phylum: Platyhelminthes, Gegenbaur, 1859  
Clade: Rhabditophora Ehlers 1985  
Order: Polycladida Lang, 1884  
Suborder: Cotylea Lang, 1884  
Family: Pseudocerotidae Lang, 1884  
Genus: *Pseudoceros* Lang, 1884  
*Zootaxa*, 4269 (4): 495-512  
Sudhanshu Dixit, C. Raghunathan and Kailash Chandra, 2017

**8. *Prostheceraeus fuscolineatus* sp. nov.**

Phylum: Platyhelminthes, Gegenbaur, 1859  
Clade: Rhabditophora Ehlers 1985  
Order: Polycladida Lang, 1884  
Family: Euryleptidae Lang, 1884  
Genus: *Prostheceraeus* Schmarda, 1859  
*Zootaxa*, 4269 (4): 495-512  
Sudhanshu Dixit, C. Raghunathan and Kailash Chandra, 2017

Ascidians: 02

**9. *Rhopalaea bilobata* sp. nov.**

Phylum: Chordata  
Class: Ascidiacea Blainville, 1824  
Order: Phlebobranchia Lahille, 1886  
Family: Diazonidae Seeliger, 1906  
Genus: *Rhopalaea* Philippi, 1843  
*Journal of Threatened Taxa*, 9(5): 10187-10193  
Jhimli Mondal, C. Raghunathan and Tamal Mondal, 2017

**10. *Herdmania andamanensis* sp. nov.**

Phylum: Chordata  
Class: ASCIDIACEA Blainville, 1884



Order: STOLIDOBRANCHIA Lahille, 1886  
Family: PYURIDAE Hartmeyer, 1908  
Genus: *Herdmania* Lahille, 1888  
*Zootaxa*, 4286 (3): 445-450  
Jhimli Mondal, C. Raghunathan and Kailash Chandra, 2017

## 11. Indian Representative in International Meet:

1. On deputation- participated in the SAARC Coastal Zone Management Workshop on 'Capacity building for Coral Reef Monitoring' held at Hikkaduwa, Sri Lanka from 21<sup>st</sup> to 24<sup>th</sup> June 2012.
2. On deputation- participated in the 'International Workshop for Sharks and Manta Rays at CITES' held at Colombo, Sri Lanka during 22<sup>nd</sup> and 23<sup>rd</sup> January 2013.
3. On deputation - attended the IPBES First Authors Meeting on the Regional Assessment for the Asia-Pacific Region during 17<sup>th</sup> to 21<sup>st</sup> August, 2015 at Tokyo, Japan.
4. On deputation-participated in CoP-13, at, Cancun, Mexico during 10<sup>th</sup> to 18<sup>th</sup> December 2016 as an Indian delegation for side events, in which he made a presentation on 'Faunal diversity in Indian Seascape'; besides posters depicting marine faunal diversity of India, diversity of echinoderms, polyclads, corals, soft corals, opisthobranchs, sponges, ascdians etc. have also been exhibited by ZSI, Port Blair during CoP 13; provided the inputs for India's stand on EBSA (Ecologically or Biologically Significant Marine Protected Area) for Angria Bank located off Maharashtra coast has been provided to the Additional Secretary, MoEF&CC during CoP 13.

## 12. Identification and Advisory Services:

1. Work plan for the bioaccumulation of heavy metals in edible marine fishes to Ms. Mahalakshmi, Ph.D. student of Madras University during December 2008.
2. Identified 55 species of molluscan samples (25 gastropods and 30 bivalves) for Ms. Thenmozhi, Research Scholar, University of Madras, Chennai during February 2008.
3. Given information pertaining to *Dugong dugon* in Andaman & Nicobar Waters to the research team from GEER Foundation, Gandhinagar, Gujarat during February 6, 2008.
4. Given necessary information about museum specimens of ANRS-ZSI, to Dr. M. Pramod, Nature Education Officer, Salim Ali Centre for Ornithology and Natural History, Ministry of Environment and Forests, Govt. of India, Coimbatore during February 2008.
5. Identified the Brine Shrimp *Artemia salina* for Mr. R.B. Jadhav, Dept. of Pharmacognosy, R.C. Patel College of Pharmacy Dhule-425 405, Maharashtra during March 18, 2008.

6. Given necessary information about Foraminiferans of Andaman and Nicobar Islands to Dr. C. Rajshekhar, Agharkar Research Institute, Dept. of Science and Technology, Govt. of India, Pune, Maharashtra during February 2008.
7. Served as a as a Member, Organizing Committee for the 'Sensitization Workshop on Women Scientists Scheme' organized by Science and Technology and Botanical Survey of India, Port Blair during February 13-16, 2008
8. Given necessary information about the Scheduled Species of Marine Animals to Dr. Alok Sexana, Conservator of Forests, Office of the Chief Conservator of Forests, Port Blair during March 12, 2008.
9. Given literature on Odonates of Andaman and Nicobar Islands to Mr. Michel, Sri Lanka on request during March 2008
10. Identified the jellyfishes for the Research Student from SRM University, Chennai during March 2008
11. Reviewed the paper entitled 'A new record and an ecological note of *Elysia bangtawensis* Swennen (Nudibranch)' received from editor of the journal Current Science and report has been sent.
12. Given an outlook on Marine Biodiversity of A& N Islands to IFS Officer (Trainee) Mr. Dinesh Kannan during May 8, 2008.
13. Identified 12 species of Foraminiferans and 6 species of Copepods from the gut content of fishes for the Zonal Director, Fishery Survey of India, Port Blair
14. Served as a Member in the Interview Committee for the selection of JRF under DOD sponsored research project for the Dept. of Marine Biology and Coastal Studies, Pondicherry University, Port Blair on May 19, 2008
15. Served as the Special Invitee in the Research Advisory Committee (RAC) meeting chaired by PCCF, Dept. of Environment and Forests, A&N Administration, on June 25, 2008 to scrutiny the project proposal 'Biodiversity of Benthic Community and their Environment Characteristics off Port Blair, Andaman Island'
16. Identified two species of jelly fishes (*Pelagia noctiluca* Peron and Lesueur and *Crambionella stuhlamanni* Chunn for Dr. C. Venkatraman, Scientist, MBS-ZSI, Chennai
17. Identified three species of molluscs, *Babylonia spirata*, *Donax faba* and *Donax cuneatus* for Dr. C. Venkatraman, Scientist, MBS-ZSI, Chennai.
18. Given the details of fauna reported from Meroe Island of Nicobar group as requested by Principal Chief Conservator of Forests (WL)
19. Identified 2 species of Nudibranchs, 2 species of fishes and 3 species of gastropods for the Scientist of Central Marine Chemicals and Research Institute, CSIR, Mandapam Camp, Tamil Nadu during March 2009

20. Identified 37 species of seaweed epiphytic fauna including Holothurians (Echinoderms), sponges, crustaceans, alcyonaceans, nudibranchs, polychaets, gastropods, fishes and ascidian were identified for the scientists of Central Salt and Marine Chemicals Research Institute (CSIR), Marine Algae Research Station, Mandapam, Tamil Nadu.
21. Provided the data on the faunal diversity Saddle Peak National Park to Divisional Forest Officer, Mayabunder, North Andaman for the preparation of Management Action Plan as requested.
22. Identification report on one amphibian species to Conservator of Forests (WL), Dept. of Environment and Forests, A&N Administration with the help of expert from WGFRS/ZSI, Calicut.
23. Provided the information on scheduled and endangered species of Sharks of Indian waters to Research Fellow of Madras Veterinary College, Chennai through MBRC/ZSI, Chennai.
24. Provided the data on nudibranchs of Indian waters as well as Gulf of Mannar Biosphere Reserve has been provided to Suganthi Devadason Marine Research Institute, Tuticorin, Tamil Nadu on request.
25. Identified 3 species of sponges have been identified for Lecturer, Dept. of Biotechnology, Alagappa University.
26. Provided the distributional record of gorgonid *Corralium* has been given to the Assistant Commissioner of Customs, Air Cargo Complex, Jaipur, Rajasthan through the Director, ZSI as required
27. Reviewed the three project proposals on Great Nicobar Biosphere Reserve received from the Ministry of Environment and Forests, New Delhi and the comments have been sent.
28. Served as a Member in the research advisory committee meeting of Dept. of Environment and Forests, A&N Administration on 8<sup>th</sup> July 2009
29. Served as a Executive Member in the Executive Council Meeting of Department of Science and Technology, A&N Administration on 15<sup>th</sup> July 2009
30. As required by the United States Fish and Wildlife Service, Arlington, USA the pertinent information on family Coralliidae in India for the inclusion in Appendix II of CITES has been submitted to ZSI headquarters for necessary action
31. Comments for the research proposal entitled 'Assessment of biophysical environment and status of coral reefs in selected reefs in Andaman and Nicobar Islands' received from the Ministry has been prepared and submitted to the Director, ZSI for consideration
32. Identified 4 species of sponges have been identified for National Institute of Ocean Technology, Port Blair on request.

33. Provided an information on the diversity of Sea pens (Coelenterate) in Indian waters to the Central Marine Fisheries Research Institute, Vishakapatnam
34. Report on the Gorgonids of India has been provided to the ZSI headquarters.
35. In response to the proposal of Wildlife Trust of India, the recommendations for the inclusion of all species of family Nautilidae under the Appendix-2 of CITES has been submitted to headquarters for onward transmission to the Ministry.
36. As per the requirement of Indian Institute of Science, Bangalore and upon their proposal 'Tectonics of Andaman-Nicobar Arc: Constraints from Coral Proxies,' suitable areas to undertake collaborative studies with ZSI has been submitted to headquarters for further course of action.
37. Identification of 51 species of corals and information about the coral reef ecosystem, molluscs, reef fishes and butterflies have been rendered to the Naval Marine Museum, Port Blair on request.
38. The seized specimens of top shell *Trochus nitoticus* have been identified and the report submitted to Wildlife Division of Dept. of Environment and Forests, Port Blair as required.
39. As per the request of Wildlife Crime Control Bureau, Southern Region, Chennai, the photographs on various corals, sea shells and other marine protected fauna of Andaman and Nicobar Islands have been provided for the preparation of publicity material/manual on Marine Wildlife.
40. Served as a Member in Research Advisory Committee of Department of Environment and Forests, A&N Administration on 12<sup>th</sup> October 2009, to scrutinize the 7 research proposals and the recommendations have been provided.
41. Comments on the Indian coral species included under the CITES Appendix-2 has been submitted to Director, ZSI.
42. Comments have been given to DZSI on the Rajya Sabha Question No. S2336 raised by Shri. O.T. Lepcha, Member, Rajya Sabha on the Corals of Lakkshadweep Islands are dying causing danger to the existence of the islands.
43. Identified 12 species of gastropods, 4 species of echinoderms, 4 species of fishes, 1 species of jelly fish and 1 species of sea anemone have been identified to the scientist of MBRC/ZSI, Chennai on request.
44. Identified 12 species of gastropods, 4 species of echinoderms, 4 species of fishes, 1 species of jelly fish and 1 species of sea anemone have been identified to the scientist of MBRC/ZSI, Chennai on request.
45. Analyzed the gut content of male and female Lobster *Linuparus somniosus* has been undertaken for the Fishery Survey of India, Port Blair.

46. Reviewed and submitted the comments to the Dept. of Environment of Forests, Port Blair on the research proposal 'Taxonomic revision of Indian Arctiidae (Lepidoptera)' as required.
47. Submitted the research proposal on the Corals, Avifauna and Butterflies of Mount Harriet National Park, South Andaman has been submitted to Dept. of Environment and Forests, A&N Administration seeking financial support.
48. Provided information pertaining to the biodiversity of Andaman and Nicobar Islands to the village biodiversity conservator at Pollachi, Tamil Nadu on request.
49. Provided information on stranding records for sea cow *Dugong dugon* in A&N Islands to the Freelance Wildlife Conservator, Bangaluru on request.
50. Provided information on species diversity of Gastrotricha in India to the Lecturer of Cochin University of Science and Technology.
51. 18 species of soft corals were identified for DST Women Scientist, Dept. of Biotechnology, Andhra University on request
52. Identified two jelly fishes for SRM University, Chennai on request.
53. Refereed two manuscripts on echinoderms received from Records of ZSI and comments have been sent.\
54. Identified confiscated Schedule-I holothurian *Holothuria leucospilota* (Brandt, 1835) for the Range Officers of Port Blair
55. Identified confiscated schedule -I holothruian *Actinopyga mauritiana* (Quoy & Gaimard, 1833) for Range Officer, Little Andaman respectively on request.
56. Identified the confiscated fins of Schedule -I shark *Glyphis gangeticus* (Muller and Henle, 1839) as per the request of the Deputy Conservator of Forests, Wildlife Division. Port Blair
57. Refereed one manuscript received from Records of ZSI and comments have been sent.
58. Identified the confiscated fins of Schedule -I shark *Glyphis gangeticus* (Muller and Henle, 1839) as per the request of the Deputy Conservator of Forests, Wildlife Division. Port Blair
59. As per the request of Wildlife Division of Department of Environment and Forests, Port Blair 2 species of sharks and 8 species of fishes were identified.
60. Reviewed 4 manuscripts for *Journal of Applied Geochemistry*.
61. Evaluated M.Phil. thesis in Marine Biology for Annamalai University.
62. Served as an interview committee member for award of UGC fellowship in Dept. of Ocean Studies and Marine Biology, Pondicherry University

63. As per the request of the Range Officer, Garacharma, Port Blair, 2 nos. of confiscated elephant tusk have been identified during November 2010.
64. As per the request National Institute of Ocean Technology, 9 species of soft corals were identified.
65. The hair samples of wild pig *Sus scrofa andamanensis* (Blyth, 1858) has been identified in consultation with the expert from ZSI headquarters for the Conservator of Forests, Diglipur Division, Andaman
66. 27 species of bivalve samples were identified for the post graduate student of Ethiraj College for Women, Chennai.
67. As requested by National Institute of Ocean Technology, Port Blair, 7 species of sponges, 2 species of soft corals and 2 species of gastropods were identified
68. Two species of corals have been identified for National Institute of Ocean Technology, Port Blair on request.
69. Two species of corals have been identified for National Institute of Ocean Technology, Port Blair on request.
70. Reviewed the project proposal on coral reef ecosystem received from the MoEF and comments offered.
71. Offered the comments on the Taiwan Racing Pigeon (*Columba livia*) with tag and microchip caught in Great Nicobar Island and kept under captivity in Forest Department have been offered to the PCCF on request.
72. Reviewed the project proposal on coral reef ecosystem in west coast of India received from the MoEF.
73. Refereed the manuscript for the *Indian Journal of Geo-Marine Sciences*, CSIR and comments offered.
74. Reviewed the project proposal on coral reef ecosystem in west coast of India received from the MoEF.
75. Refereed the manuscript for the *Indian Journal of Geo-Marine Sciences*, CSIR and comments offered.
76. Confiscated elephant tusk and two species of anemone fishes have been identified for the Ranger Officer, Port Blair.
77. Details on the Fauna of South Andaman to the Divisional Conservator of Forests, DoEF, Port Blair provided on request.
78. Three species of sponges, 2 species of soft corals have been identified for National Institute of Ocean Technology, Port Blair on request.
79. Seven species of sponges have been identified for National Institute of Ocean Technology, Port Blair on request.

80. Seized gastropod samples have been identified for Central Crime Station, Police Department, Port Blair on request.
81. Images of four species of Holothurians were provided to the guidebook on commercial sea cucumber of the world being prepared by Food and Agricultural Organization (FAO) on request.
82. Taxonomic characters analysis of corals under the family poritidae was made with a visiting fellow of Annamali University.
83. Reviewed the project proposal on corals as per the request of MoEF and offered comments.
84. Two samples of Antler have been identified for Divisional Forest Officer, North Andaman Division on request.
85. One live specimen of confiscated Water Monitor Lizard *Varanus salvator* (Schedule - 1 under Wildlife Protection Act, 1972) has been identified for Crime Branch Police, Port Blair.
86. Four live specimens of confiscated Water Monitor Lizard *Varanus salvator* (Schedule - 1 under Wildlife Protection Act, 1972) have been identified for Range Officers, Department of Environment and Forests, A&N Administration and reported submitted on request.
87. The confiscated/sized body parts of protected animals such as 2 elephant tusks for Central Crime Station, Port Blair; 2 elephant tusks, 1 sawfish rostrum and 4 molluscan shells for Range Officer, Port Blair; 11 species of corals for Ranger Officer, Great Nicobar Island were identified and reports submitted to the officials concerned.
88. Three species of seized live snakes were identified for Department of Environment and Forests, Andaman and Nicobar Administration on request.
89. One species of ascidian for National Institute of Ocean Technology, Port Blair has been identified on request and report submitted.
90. Confiscated elephant tusk for Central Crime Station, Port Blair has been identified on request and report submitted
91. A report on the status of King Cobra, South Andaman Krait and Hawksbill Sea Turtle has been submitted to the Principal Chief Conservator of Forests (WL), Andaman and Nicobar Administration on request.
92. Seven species of sponges have been identified for National Institute of Ocean Technology, Port Blair on request.
93. Seized gastropod samples have been identified for Central Crime Station, Police Department, Port Blair on request.
94. Images of four species of Holothurians were provided to the guidebook on commercial sea cucumber of the world being prepared by Food and Agricultural Organization (FAO) on request.

95. Taxonomic characters analysis of corals under the family Poritidae was made with a visiting fellow of Annamalai University.
96. Antler specimens have been identified for Divisional Forest Officer, Diglipur Division, North Andaman
97. Eleven species of bio-fouling organisms were identified for National Institute of Ocean Technology, Port Blair on request.
98. Pictures of interesting faunal elements of Andaman and Nicobar Islands have been provided to Deputy Conservator of Forests (WL), Andaman and Nicobar Administration on request.
99. One specimen of migratory bird *Fregata minor* (Gmelin, 1789) identified for the Forest Range Officer of Mangultan Range, South Andaman, and a lot containing 9 species of corals and 23 species of molluscs were identified for the Forest Range Officer of Protection Range, Port Blair on request.
100. Provided the work plan to study the diversity of echinoderms to Ms. Maryjune Cabiguin, MS Student of Xaviers University, Cagayan, Philippines.
101. Explained about the faunal diversity of Andaman and Nicobar Islands to Dr. Fronstantin Mitto, Herpetologist, Zoological Institute, RAS, St. Petersburg, Russia during his visit to the Centre on 9<sup>th</sup> July 2013.
102. List of publications of ZSI/ANRC and 90 reprints of publications pertaining to wildlife of A&N Islands have been given to the Chief Conservator of Forests, Department of Environment and Forests, A &N Administration on request for the preparation of management plan.
103. Provided comments on the UGC documents portraying the current scenario of Indian Higher Education as required for the perusal of Hon'ble Lt. Governor, Andaman and Nicobar Islands has been prepared and submitted to Assistant Secretary (Higher Education), A&N Administration on request.
104. Provided ZSI's view on the comments of CMFRI and WII upon the report on Status survey of sea cucumbers in territorial waters of Andaman and Nicobar Islands' and photographs of birds of Andaman and Nicobar Islands have been provided to Department of Environment and Forests, Andaman and Nicobar Administration on request.
105. Provided methodology for the estimation of echinoderms to Mr. Joseph, post graduate student of University of Philippines has been provided.
106. Seaweed associated fauna collected from Gulf of Mannar has been identified for Central Salt and Marine Chemical Research Institute, Marine Algal Research Station, Mandapam, Tamil Nadu has been identified on request.
107. As requested by the Deputy Conservator of Forests, Department of Environment and Forests, A & N Administration popular articles on corals, fishes, sea turtles, dugong, butterflies and birds were prepared and submitted for 59<sup>th</sup> wildlife week celebration.



108. As per the communication received from the administrative Ministry, the proposal on the inclusion of Great Nicobar Biosphere Reserve (GNBR) in the world network of Biosphere Reserve under the Man and Biosphere Programme (MAB) of UNESCO submitted by the ZSI, Port Blair has been approved by the International Advisory Committee meeting of UNESCO held on 11-13 March 2013 at UNESCO Headquarters, Paris.
109. 'Proposal to recommend three species of Elasmobranchs in India to list on Appendix - II of CITES' and submitted to administrative ministry as per the letter received from the ministry.
110. Provided the details of total harvestable stock available and the position of the present standing stock of schedule-IV marine gastropod *Trochus niloticus* outside the Protected Areas in Andaman and Nicobar Islands the as required by the Department of Environment and Forests, A&N Administration, for onward transmission to MoEF.
111. Provided reply for the Lok Sabha questions pertaining to Coral Reefs of India have been submitted to ZSI headquarters as required.
112. Prepared the comments on the project proposal on coral reef health received from Ministry of Earth Sciences and submitted to ZSI headquarters.
113. Edible nest of Swiftlet has been identified for Crime Police Station, Port Blair on request for Department of Environment and Forests, A&N Islands.
114. The seized material of edible nest swiftlet and scheduled gastropod shells were identified for Department of Environment and Forests, Port Blair on request and reports submitted.
115. Seized marine turtle has been identified for Forest Ranger Officer, Havelock Island, and submitted the report to respective range offices on request.
116. Check list of fauna of North and Middle Andaman has been provided to Planning Division of Department of Environment and Forests, A & N Administration on request.
117. Seized elephant tusks & crocodile teeth have been identified for Forest Range Officer, Garacharma, South Andaman.
118. Seized wildlife material such as molluscs and marine turtles were identified and report submitted to Wildlife Divisions of Haddo and Havelock respectively on request. Secretary to Andaman and Nicobar Administration.
119. Identification of *Turbo sparverius* was made for Assistant Director (Tourism), Andaman and Nicobar Administration on request.
120. Detailed report on status of corals of Middle and North Andaman was submitted as per the request of DFO, Mayabunder for the construction of management plan.

121. 20 photographs on different groups of animals and landscape of Great Nicobar Island was submitted as per the request of DCF, Chatham to use in Year Calendar 2015 with due credit to ZSI, Port Blair.
122. Confiscated specimen of Giant Clam has been identified for Deputy Conservator of Forests, Wildlife Division of Department of Environment and Forests, Port Blair on request.
123. As required by Department of Environment and Forests the pictures of protected marine and terrestrial animals have been provided.
124. As per the request of Station House Officer, Police Station, Ograbraj, South Andaman confiscated bird specimens have been identified and report submitted.
125. Seized material of sea cucumbers for Range Officer, Wandoor, and gastropods and sea cucumbers for Range Officer, Garacharma have been identified on request.
126. The faunal details of Rani Jhansi Marine National Park have been provided to the Range Officer, Havelock Range, Department of Environment and Forests on request.
127. As requested by National Institute of Ocean Technology, Port Blair, specimens of tunicate, hydroid, sponge and bryozoan were identified and report submitted.
128. Logistic support for SCUBA diving was extended to three scientific staff of National Centre for Sustainable Coastal Management (NCSCM) during their field studies at Mahatma Gandhi Marine National Park as requested.
129. Refereed the manuscript on deep sea shrimp for *Journal of Threatened Taxa* and offered comments.
130. Detailed faunal report of Landfall Island Sanctuary, East Island Sanctuary and West Island Sanctuary was submitted to the Divisional Forest Officer, Wildlife Division, Mayabunder on request for the preparation of Management Plan for the few important sanctuaries of North and Middle Andaman District.
131. Checklist of Migratory birds in view of risk of Avian Influenza virus was submitted to Divisional Forest Officer, Middle Andaman on request.
132. A detailed report submitted for recovered bird i.e. Wedge-tailed Shearwater *Ardenna pacifica* from Buniyadabad, Port Blair to the Range Officer, Zoo Range, Mini Zoo, Haddo, Port Blair on request.
133. Details of Snake species found in Andaman Islands were submitted to the Deputy Conservator of Forests, Wildlife Division, Port Blair on request.
134. Mr. S. Rajeshkumar, Senior Research Fellow, participated in a field trip along with official of Department of Environment and Forest to Cinque Island Sanctuary for the preparation of Management Action Plan from 6<sup>th</sup> to 7<sup>th</sup> May 2015 as per the request of Deputy Conservator of Forest, South Andaman.

135. Confiscated turtle fin was identified for the Wildlife Division, Department of Environment and Forest, Andaman and Nicobar Administration on request.
136. Details of newly recorded species of corals and sea anemones along with species and locality images during the year 2014 was provided to Mr. Ratnadeep Banerjee, Delhi based newspaper correspondence on request for the publication.
137. Faunal list of Cinque Island Sanctuary along with photographs was submitted to Deputy Conservator of Forests, Wildlife Division, South Andaman on request for the preparation management plan.
138. Threatened faunal list of Andaman and Nicobar Island was submitted to the Assistant Conservator of Forests, Office of the Principal Chief Conservator of Forests (Wildlife) on request for the preparation of Draft Wildlife Policy frame work as the reviewing work of existing Wildlife (Protection) Act, 1972.
139. The details of Horsefly of Andaman and Nicobar Islands have been provided to the PCCF (WL), Andaman and Nicobar Administration.
140. Proposal on Rapid Environmental Impact Assessment Studies on biotic components for the Augmentation of Security Infrastructure at Haddo area was submitted to the Garrison Engineer (I) (P) South, Prothrapur, Calicut on request.
141. Proposal on Rapid Environmental Impact Assessment Studies on biotic components for the construction of Eco-hut at Cinque Island Wildlife Sanctuary was submitted to the Office of the Deputy Conservator of Forests, Wildlife Division, Haddo, Port Blair on request.
142. Proposal on Rapid Environmental Impact Assessment Studies on biotic components for the provision of perimeter security infrastructure at Minnie Bay and Garacharma Defence Land, Port Blair was submitted to the Garrison Engineer (I) (P) North, Military Engineer Services, Minnie Bay, Junglighat-Post, Port Blair on request.
143. Proposal on Rapid Environmental Impact Assessment studies on the biotic components of the quarry measuring an area of 4.00 hect. bearing Survey No. 700/P situated at Nabagram village, under Diglipur Tehsil, North Andaman was submitted to the Executive Engineer, Office of the Executive Engineer, Andaman Public Works Department, Diglipur on request.
144. Report on Rapid Environmental Impact Assessment Studies on biotic components of reserve forest area in Khudhirampur village for the construction of Cement Dam was submitted to the Executive Engineer, Office of the Executive Engineer, Andaman Public Works Department, Diglipur on request.
145. Proposal on Rapid Environmental Impact Assessment studies on the biotic components of proposed expansion project of Megapode Resort at Haddo, Port Blair was prepared and submitted to the General Manager (Tourism),

Andaman and Nicobar Islands Integrated Development Corporation Limited, Vikas Bhawan, Port Blair on request.

146. Thirty Post graduate students of Department of Ocean Science and Marine Biology, Pondicherry University, Brookshabad Campus, Port Blair and sixty students of Khalsa Public School visited Regional Museum as part of their subject curricula on 4<sup>th</sup> and 14<sup>th</sup> August 2015 respectively and guidance was extended.
147. Laboratory facility of stereo zoom microscope (LEICA M 205 A) was extended to Mr Prasath D., Ph.D. Scholar, Pondicherry University, Port Blair on request.
148. Confiscated sea cucumber specimens received from the Range Officer, Department of Environment and Forests, Mannarghat have been identified and report submitted on request.
149. Provided the comments on the proposal for commercializing black pearl production in Andaman & Nicobar Islands submitted by the Head, Molluscan Fisheries Division, CMFRI to the Directorate of Fisheries, Andaman and Nicobar Administration on request.
150. Seized fish specimens have been identified for the Range Officer, Mahatma Gandhi Marine National Park, South Andaman, and fish specimen for ICAR-Central Inland Agricultural Research Institute, Port Blair on request.
151. As requested by the Assistant Director, Department of Industries, Andaman and Nicobar Administration, significance of marine diversity has been imparted to 32 participants of 'Marine Capture Fisherman- a National Occupational Standard Course' training programme under Pradhan Mantri Kausal Vikas Yojna, Ministry of Skill Development & Entrepreneurship during their visit to ZSI regional museum on 3<sup>rd</sup> November 2015.
152. As required by Department of Agriculture and Farmer's Welfare, Ministry of Agriculture, Dairying and Fisheries, Government of India comments on the ban on fishing and trade in Sea cucumber (Holothurians) has been provided to ZSI headquarters for onward transmission.
153. Images of scheduled faunal communities and marine biodiversity were submitted to the Deputy Conservator of Forests (WL), South Andaman as requested.
154. Seized specimens of gorgonian have been identified and report submitted to the Range Officer, Garacharma, South Andaman.
155. Confiscated teeth of *Alligator* sp. were identified for the Range Officer, Protection Range, Haddo, South Andaman as requested.
156. As requested by the Conservator of Forests (Wildlife), Department of Environment Forests, A & N Administration, 11 scientific personnel of the Centre have been deputed to participate in the census of saltwater crocodile organized during 30<sup>th</sup> and 31<sup>st</sup> January 2016.
157. Pertinent details about the tidal amplitudes as well as intertidal exposure on the Carbyn's Cove region of South Andaman have been provided to the

Station House Officer, Police Station, Aberdeen, Port Blair in connection with investigation of criminal case filed.

158. Confiscated live two molluscs specimens of *Tridacna crocea* Lamarck, 1819 and 32 specimens of *Amphiprion ocellaris* Cuvier, 1830 were identified for the Range Officer, Garacharma Range, Port Blair, South Andaman on request.
159. Twenty one marine fouling organisms were identified for National Institute of Ocean Technology, Andaman and Nicobar Center for Ocean Science and Technology (ANCOST), Port Blair on request.
160. Facility of National Zoological Collections was extended to Mr. Pradeep Kumkar, Student, Modern College of Arts, Science and Commerce to refer selected freshwater fish specimens on request.
161. As requested by the Officer-in-Charge of Naval Marine Museum, Port Blair, requisite information has been provided for the enhancement of display of their exhibits.
162. Guidance on taxonomy of scleractinian corals and echinoderms was extended to Mr. D. Rengasamy, visiting student intern, Department of Zoology, Bharathiar University, Coimbatore, Tamil Nadu during his visit from 3<sup>rd</sup> June to 20<sup>th</sup> July 2016 on request.
163. A team of 46 students of 9<sup>th</sup> and 10<sup>th</sup> standard of Khalsa Public School, Port Blair visited the regional museum of this office on 12<sup>th</sup> August 2016 and guidance on Biodiversity of Andaman and Nicobar Islands and museum specimens was provided by Mrs. Kamla Devi, Scientist-B and Dr. Tamal Mondal, DST-Young Scientist on to on request.
164. Identification of 210 specimens of scleractinian corals under 63 species, 445 specimens of molluscs under 89 species, 9 specimens of echinoderms under single species and 3 specimens of fishes belong to single species were identified for Samudrika-Naval Marine Museum, Port Blair on request.
165. Detailed list of butterflies and their host specific plants has been provided to the Deputy Conservator of Forest, Silviculture Division, Andaman and Nicobar Administration, Port Blair for setting up a Botanical Garden and Nature Interpretation Centre (BGNIC) at Port Blair.
166. Field assistance was extended to Mr. Varma, Hon'ble Justice of Supreme Court of India for Bird-watching at Chidiyatapu Biological Park on 28<sup>th</sup> September 2016.
167. Technical assistance was extended to a scientific team of National Centre for Sustainable Coastal Management, Ministry of Environment, Forest and Climate Change, Government of India during field survey tour on 18<sup>th</sup> and 19<sup>th</sup> October 2016 on request.
168. A team of 89 students of 1<sup>st</sup> year B.Sc., Department of Plant Science and Chemistry, Jawaharlal Nehru Rajkeeya Mahavidyalaya, Port Blair visited the regional museum of this office on 22<sup>nd</sup> October 2016 and guidance on

Biodiversity of Andaman and Nicobar Islands and museum specimens was provided by Dr. Tamal Mondal, DST-Young Scientist on request.

169. A team of 30 students of 3<sup>rd</sup> Semester M.Sc., Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair visited the regional museum of this office on 24<sup>th</sup> October 2016 and guidance was provided by Mrs. Kamla Devi, Scientist-B on request.
170. Confiscated carapace of dead turtle with head was identified for Range Officer, Mangultan Range, Department of Environment and Forests, Andaman and Nicobar Administration on request and report submitted on 10<sup>th</sup> November 2016.
171. Photographs of two species of ascidians were identified for the Department of Zoology, Maharaja Sayajirao University of Baroda, Vadodara, Gujarat on request.
172. Images of butterflies were submitted to the Deputy Conservator of Forests, Department of Environment & Forests, South Andaman on request.
173. Images of faunal diversity, ecosystems, forest cover and landscape of Andaman and Nicobar Islands were submitted to the Chief Conservator of Forests, Department of Environment & Forests, South Andaman on request.
174. Twenty five students of M.Sc. degree along with 2 faculty members from Centre of Advanced Study in Marine Biology, Annamalai University, Tamil Nadu, visited the Centre during 1<sup>st</sup> to 5<sup>th</sup> February 2017 to study the marine biodiversity of Andaman and Nicobar Islands.
175. Logistic support for surveys and collection of freshwater plankton has been rendered to Prof. B.K. Sharma, Department of Zoology, North Eastern Hill University during 6<sup>th</sup> to 10<sup>th</sup> February 2017 at South Andaman.
176. Detailed faunal lists on Dhanikhari, Ramakrishna Nagar and Kalpong Dam Reservoirs were provided to the Deputy conservator of Forest, Silviculture Division, South Andaman for the preparation of brief documents for wetlands and waterbodies of Andaman and Nicobar Islands on request.
177. Pictures and video footages on the animal behaviour on faunal diversity, ecosystems, forest cover and landscape were provided to the Chief Conservator of Forests, Dept. of Environment & Forests, Port Blair on request.
178. Guidance and laboratory facility for identification of ascidians have been extended to M.Sc. student of Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair on request.
179. Data on fish catch and reef associated faunal diversity of Andaman and Nicobar Islands were provided to M. Sc. students, Department of Geography, Jawaharlal Nehru Rajkeeya Mahavidyalaya, Port Blair.
180. Details of Faunal communities of all the six dams of Andaman and Nicobar Islands were submitted to the Deputy Conservator of Forests, Silviculture

Division, Department of Environment and Forests, Andaman and Nicobar Administration on request.

181. Taxonomical guidance and laboratory facility for the analysis of ascidians fauna was extended M.Sc. 2<sup>nd</sup> year student, Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair for the partial fulfilment of M.Sc. dissertation project on request.
182. RTI reply regarding the question on Checklist of Indian scleractinian corals was provided on request.
183. Proposal on Rapid Environmental Impact Assessment studies for augmentation of infrastructure at Hut Bay and provision of OTM accommodation was submitted to the Commanding Officer, INS Jarawa, Navy Office, Port Blair on request.
184. Status report of Megapode bird at Nicobar Islands was submitted to the Department of Environment and Forests, Andaman and Nicobar Administration on request.
185. Status report on *Tridacna crocea* in Andaman and Nicobar Islands was submitted to the Department of Environment and Forests, Andaman and Nicobar Administration on request.
186. Proposal for inclusion of the scalloped hammerhead shark, *Sphyrna lewini* (Griffith & Smith, 1834), in the Appendix I of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) was submitted to the Principal Chief Conservator of Forests, Department of Environment & Forests, Andaman and Nicobar Administration on request.
187. Seized flesh & flipper of Oliver Ridley Turtles was identified for the Divisional Forest Officer, Department of Environment & Forests, South Andaman on request.
188. Proposal on 'Rapid Environmental Impact Assessment studies on development of beach projects for the tourism department, A&N Admn. in North & Middle/ South Andaman Islands' was submitted to the Executive Engineer, Andaman Lakshadweep Harbour Works, Port Blair on request.
189. Proposal on 'Rapid Environmental Impact Assessment studies for the construction of approach road to light house from Harminder bay, Little Andaman Island' was submitted to the Executive Engineer, Minor Irrigation Department, APWD, Hut Bay on request.
190. Proposal on 'Rapid Environmental Impact Assessment studies for the construction of approach road to Krishna Nallah waterfalls, Little Andaman Island' was submitted to the Executive Engineer, Minor Irrigation Department, APWD, Hut Bay on request.
191. Proposal on 'Rapid Environmental Impact Assessment studies for the construction of approach road to waterfalls treatment plant, Little Andaman Island' was submitted to the Executive Engineer, Minor Irrigation Department, APWD, Hut Bay on request.

192. Proposal on 'Rapid Environmental Impact Assessment studies for the construction of treatment plant at Sunderpur under SD-II, MID, Hut Bay' was submitted to the Executive Engineer, Minor Irrigation Department, APWD, Hut Bay on request.
193. Proposal on 'Rapid Environmental Impact Assessment studies for the work c/o weir and laying pipeline in the forest area at Lamiya Bay inside the Saddle Peak National Park' was submitted to the Executive Engineer, Construction Division, APWD, Diglipur on request.
194. Proposal on 'Rapid Environmental Impact Assessment studies for reopening of stone quarry at Budha Nallah, Pahalgaon, Mayabunder' was submitted to the Executive Engineer, NACD, APWD, Mayabunder on request.
195. Proposal on 'Rapid Environmental Impact Assessment studies for construction of school playground and extension of school building for Government Senior Secondary School, Oralkatcha, Baratang Island' was submitted to the Deputy Education Officer, Rangat on request.
196. One species of jellyfish i.e. *Pelagia noctiluca* (Forsskal, 1775) (Semaestomeae: Pelagiidae) was identified for a fourth year B. Tech. Biotechnology, Vellore Institute of Technology (VIT), Vellore, Tamil Nadu on request.
197. Initiation of 3 month long foundation course on Green Skill Development Programme of Ministry of Environment, Forest and Climate Change, Government of India was made for the benefit for the school students on 29<sup>th</sup> May 2017.
198. Final report on Rapid Environmental Impact Assessment study for construction of road phase-III from KM 43.45 to 48.61 on north-south road sector Shastri Nagar to Indira Point in Great Nicobar Island was submitted to the Officiating Commander, Headquarters, 46 BRTF (GREF), Port Blair on request.
199. Detailed RTI reply was provided on the demographic statistics of the islands on request.
200. Evaluation was made on the expression of Interest for undertaking Marine Pearl Farming to produce Black Pearl from the Blacklip oyster in A & N Islands for the Andaman and Nicobar Administration, Port Blair on request.
201. Question paper on Biodiversity - Methods of Conservation and Management for 2016 Batch M.Sc. (BO&BD) Semester II Final Examination of Kerala University of Fisheries & Ocean Studies was prepared and submitted to Vice-Chancellor, Kerala University of Fisheries & Ocean Studies, Kerala on request.
202. Details about the environmental parameters for the development and survival of corals were provided to Dr. Jayendra Lakhmapurkar, Gujarat Ecology Society, Gujarat on request.



203. Distributional details of two marine Invasive Alien Species (IAS) were provided to the Deputy Conservator of Forests, Department of Environment and Forests, Andaman and Nicobar Administration, Port Blair on request.
204. Inaugural Ceremony of Green Skill Development Programme (GSDP), Foundation Course was organized in ZSI, Auditorium on 12<sup>th</sup> June 2017. Mr. M.S. Negi, Principal Chief Conservator of Forests and Chief Wildlife Warden, Department of Environment and Forests, Andaman and Nicobar Administration, Port Blair was cordially invited as Chief Guest, Dr. P. Vijayachari, Director, Regional Medical Research Centre (RMRC-ICMR), Port Blair, Dr. S. Dam Roy, Director, Central Island Agricultural Research Institute (CIARI-ICAR), Port Blair and Dr. K. Ravichandran, Chief Conservator of Forests, Department of Environment and Forests, Andaman and Nicobar Administration, Port Blair were cordially invited as guest of honour during the programme. Dr. C. Raghunathan, Scientist-E & Officer-in-Charge warmly welcomed chief guest, guest of honours, other dignitaries from other National and State Government Organizations, University and participants of the Green Skill Development Programme. Dr. C. Sivaperuman, Scientist-D & GSDP Course Coordinator demonstrated the mission and vision of the said programme.

### **13. Workshop/Conference Attended:**

1. Participated and presented a paper in the National Seminar on Prawn Feeds organized by Tamil Nadu Veterinary and Animal Sciences University, Fisheries College and Research Institute, Tuticorin, India between 25 and 26 February 1992.
2. Participated and presented the papers in the Second International Workshop of the Tropical Marine Mollusc Programme sponsored by DANIDA, Denmark, held at Centre of Advanced Study in Marine Biology, Parangipettai, India between 4 and 14 May 1992.
3. Visited Prince of Songkla University, Songkla, Phuket Marine Biological Center, Phuket and Prachuab Khiri Khan Coastal Aquaculture Development Center, Prachuab in THAILAND as a participant of Fourth International Workshop of the Tropical Marine Mollusc Programme between October 27 and November 2, 1993.
4. Participated in the National Workshop on Biostatistics, organized by AVC College, Mayiladuthurai, India between 21 and 23 December 1993.
5. Participated and presented the papers in the Fourth International Workshop of the Tropical Marine Mollusc Programme sponsored by DANIDA, Denmark, held at Prince of Songkla University, Songkla, Thailand between 27 October and 2 November, 1993.
6. Participated and presented the papers in the Sixth International Workshop of the Tropical Marine Mollusc Programme sponsored by DANIDA, Denmark, held at Hotel Breeze, Madras, India, between 12 and 20 June 1995.
7. Visited Diponegoro University, Semarang and Bogor Agriculture University, Bogor, INDONESIA as a participant of the Seventh International Workshop of

the Tropical Marine Mollusc Programme between November 11 and November 21, 1996.

8. Participated in the onboard Workshop at Ocean Research Vessel Sagar Paschimi on Biological Oceanography, Tuticorin organized by Regional Research Laboratory and Centre for Earth Science Studies, Trivandrum between 4 and 10 June 2000.
9. Visited National University of Singapore, SINGAPORE as a participant in the post workshop trip of Seventh International Workshop of the Tropical Marine Mollusc Programme between November 11 and November 21, 1996 sponsored by DANIDA, Denmark.
10. Participated and presented a paper in the National Symposium on Seaweeds of India: Biodiversity and Biotechnology, organized by Central Salt and Marine Chemicals Research Institute, Bhavnagar, Gujarat during 12-14 September, 2000.
11. Participated and presented a paper in the First R & D Seminar on Ballast Water Control and Management organised by National Institute of Oceanography and Global Ballast Programme, Goa during 13-14 June 2002.
12. Attended an All India Professional Development Programme on Environmental Laws in India-Interpretation and Implementation to be held at ESCI, Hyderabad from 26-28 April, 2005.
13. Attended the Environmental Meet on the 'Genesis of Kappaphycus/Eucheuma introduction in India and Environmental Impact Assessment of its cultivation on Coastal Environment of the Ramanathapuram region of Tamil Nadu', organized by Department of Environment, Government of Tamil Nadu, Panagal Building, Saidapet, Chennai on May 18, 2005.
14. Attended the 'Training Programme for Accounting Software for CDDO' held at Regional Office (SZ), Kendriya Sadan, Bangalore during the period from June 6-10, 2005.
15. Attended the 'Training programme for Scientist- B' held at Northern Regional Station, Zoological Survey of India, Dehra Dun from 4<sup>th</sup>- 8<sup>th</sup> July 2005.
16. Attended the 'Inauguration of the Marine Aquarium of Marine Biological Station, Zoological Survey of India, Chennai' held on 18<sup>th</sup> August 2005.
17. Attended the two days 'Meet on the Marine Biodiversity of Gujarat' held at Ecobalance Consultancy, Vadodara, Gujarat during 5<sup>th</sup> to 6<sup>th</sup> September 2005.
18. Attended the 'Amazing World of Animals - An Exposition' organized by Marine Biological Station, Zoological Survey of India, Chennai during October 25-29, 2005.

19. Attended short term course on 'GPS Surveying' organized by Department of Civil Engineering, Indian Institute of Technology, Roorkee during November 28 - December 2, 2005.
20. Participated and exhibited the Marine Aquarium in the programme for the creation of awareness of Marine Biodiversity of Gulf of Mannar organized by National Biodiversity Authority and Aquaculture Foundation of India during 17th to 19th December 2005.
21. Attended the 'National Symposium on Conservation and Valuation of Marine Biodiversity' organized by Marine Biological Station, Zoological Survey of India, Chennai during December 26-29, 2005.
22. Visited Centre of Advanced Study in Marine Biology, Annamalai University, Parangipettai on 4th February 2006 and had a discussion with the Director of the center on the collaborative project on the Development of Technology for the culture of Seahorse Hippocampus sp. under controlled conditions.
23. Attended the 'National Conference of Agrobiodiversity' organized by National Biodiversity Authority, Government of India, Chennai during February 12-15, 2006.
24. Attended the 'Foundation Day of Marine Biological Station', Zoological Survey of India, Chennai during March 1, 2006.
25. Attended the 'National Conference on Current Perspectives in Aquatic Biology' organized by Department of Zoology, University of Madras, Chennai during March 17-18, 2006.
26. Participated in the 'Workshop on Post Tsunami Coastal Protection Projects' organized by Department of Environment, Government of Tamil Nadu and Tsunami Rehab Information Network at Chennai during June 12, 2006.
27. Attended the Workshop on 'Indian Ocean Biogeographic Information System' organized by Census of Marine Life at National Institute of Oceanography, Regional Centre, Kochi during September 25-26, 2006.
28. Participated in the Workshop on 'Marine Fisheries Potential - present status and scope for sustainable development' organized by Fishery Survey of India, Port Blair during November 5, 2007
29. Attended one day seminar on Intellectual Property Rights and Patents organized by Regional Centre for Indian Council for Medical Research, Port Blair on 21<sup>st</sup> October 2008.
30. Attended and presented a paper entitled 'Current Scenario of Coral Reefs of Andaman and Nicobar Islands' in the National Brainstorming Workshop on the current status, threats and conservation measures of Coral Reefs in India' organized by Ministry of Environment and Forests and SDMRI at Tuticorin during 29<sup>th</sup>-30<sup>th</sup> December 2008

31. Participated in the Seminar on 'Emerging Trends in Forestry' organized by Department of Environment & Forests, Andaman and Nicobar Administration held at Hotel Megapode Nest, Port Blair on March 28, 2009.
32. Served as a Organizing Secretary of the 'National Symposium on Recent Advances in Biodiversity of Indian Subcontinent' organized by ZSI, Port Blair during March 11-13, 2009.
33. Attended the Marine Mammal Stranding Workshop held at CMFRI, Kochi from 21<sup>st</sup> to 23<sup>rd</sup> January 2010 organized by National Oceanic and Atmospheric Administration (NOAA), USA.
34. Delivered an invited lecture on Coral Reef Ecosystem at National Conference on Biodiversity held at Madurai Kamaraj University during 25<sup>th</sup> to 27<sup>th</sup> August 2010.
35. Participated in the 'Consultation Workshop on Bay of Bengal Large Marine Ecosystem' organized by Fishery Survey of India on 24<sup>th</sup> January 2011 at Port Blair.
36. Dr. C. Raghunathan, Scientist-C and Officer-in-Charge and presented a paper in the international conference on 'Marine Mammals Research and Conservation in Indian Ocean' held at CMFRI, Kochi during 26<sup>th</sup> to 27<sup>th</sup> August 2011.
37. Participated in the National Workshop on 'Mangroves: An Integral Component of Coastal Ecosystem - Conservation Strategies and Management Practices organized by DoEF from 12<sup>th</sup> to 14<sup>th</sup> October at Port Blair.
38. Participated and presented the papers in Conference of 9<sup>th</sup> Indian Fisheries Forum held at Chennai during 19<sup>th</sup> to 23<sup>rd</sup> December 2011.
39. Served as a resource person and made a presentation on 'Coral Reef Ecosystem of Andaman and Nicobar Archipelago' in the capacity building training programme on coral reef and seagrass monitoring conducted for Forest Department officials organized by National Institute of Ocean Technology, Port Blair during 18<sup>th</sup> to 22<sup>nd</sup> January 2012.
40. Served as a resource person and delivered a lecture on *Coast and its importance* in the workshop on Integrated Coastal Zone Management organized by ZSI/MARC, Digha on 26<sup>th</sup> February 2012.
41. Participated in the SAARC Coastal Zone Management Workshop on 'Capacity building for Coral Reef Monitoring' held at Hikkaduwa, Sri Lanka from 21<sup>st</sup> to 24<sup>th</sup> June 2012.
42. Attended the 3<sup>rd</sup> Indian Landslide Congress on 4<sup>th</sup> October 2012.
43. Attended the 'CITES meeting and Workshop for the revision of Wildlife (Protection) Act, 1972' held at ZSI headquarters, Kolkata from 20<sup>th</sup> to 21<sup>st</sup> November 2012.

44. Served as a resource person and delivered a lecture on 'Coast and its Importance' during 13<sup>th</sup> December 2012 at Integrated Coastal Zone Management Workshop held MARC/ZSI, Digha
45. Participated in the National Seminar on 'Innovative technologies for conservation and sustainable utilization of island biodiversity' held at CARI from 20<sup>th</sup> to 22<sup>nd</sup> December 2012.
46. Attended the 'International Workshop for Sharks and Manta Rays at CITES' held at Colombo, Sri Lanka during 22<sup>nd</sup> and 23<sup>rd</sup> January 2013.
47. Participated in the Workshop on Value of Biodiversity in Island Biosphere Reserve organized by ZSI, Port Blair on 13<sup>th</sup> and 14<sup>th</sup> September 2013.
48. Mentor in the INSPIRE programme of Department of Science and Technology, Government of India organized for Senior Secondary School students held at Department of Coastal Studies and Marine Biology, Pondicherry University, Port Blair on 27<sup>th</sup> October 2013 and delivered a lecture on 'Coastal and Marine Ecosystems of India with special reference to Coral Reef Ecosystem of Andaman and Nicobar Islands.
49. Delivered a invited lecture on 'Faunal diversity of Andaman and Nicobar Islands with special reference to Marine Ecosystem' in the Regional Science Congress Meet at Port Blair jointly organized Indian Science Congress Association and Pondicherry University during 23<sup>rd</sup> and 24<sup>th</sup> January 2014.
50. As a resource person and delivered a lecture on 'Coast and its importance' in the 'Training Programme on Integrated Coastal Zone Management' at ZSI/MARC, Digha on 5<sup>th</sup> January 2014.
51. Chaired Biodiversity Session and also delivered a invited lecture on 'Marine Biodiversity of India with special reference to Andaman and Nicobar Islands' in National Environmental Conference 2014 held at Kerala Central University, Nileswaram, Kasargod, Kerala during 17<sup>th</sup> to 19<sup>th</sup> February 2014.
52. Participated in 'International Conference on Advanced Technologies for Management of Ballast water and Biofouling from 4<sup>th</sup> to 7<sup>th</sup> March 2014' held at NIOT, Chennai and presented a paper on 'Bio-invasion of snowflake coral *Carijoa riisei* in Indian Seas'.
53. Dr. Served as a resource person and delivered two lectures on 'Marine Faunal Diversity of India with special reference to A&N Islands' and 'Protected Marine Animals of India' in the 'Workshop on Marine Faunal Resources and Conservation' organized by Department of Environment and Forests, A & N Administration on 8<sup>th</sup> October 2014.
54. Participated and presented 'Diversity of Opisthobranchs and Polyclads in India with special reference to Andaman and Nicobar Islands' at International Symposium MECOS 2: Marine Ecosystems Challenges and Opportunities) held at CMFRI during 2<sup>nd</sup> to 5<sup>th</sup> December 2014.
55. Attended as well as presented invited Keynote address on 'Marine Biodiversity and Climatic Changes' in National seminar on Harmonizing Biodiversity and Climate Change: Challenges and Opportunity during 17<sup>th</sup>-

19<sup>th</sup> April 2015 at Central Inland Agricultural Research Institute (CIARI), Port Blair.

56. A National Workshop on '*Lesser Known Marine Animals of India*' was organized at this Centre from 11<sup>th</sup> to 13<sup>th</sup> June 2015 as the part of Centenary Celebration Programme of Zoological Survey of India. A total of 45 research scholars, forest range officers, researchers and scientists were participated in this workshop from various universities and institutions across the country. Nineteen lectures pertaining to lesser known marine animals of India were delivered by the eminent scientific personalities of our country during the workshop including an endowment lecture on Founder Director of Zoological Survey of India, Thomas Nelson Annandale delivered by Dr. K. Venkataraman, Director, Zoological Survey of India. Three books entitled, '*Lesser known marine animals of India, Faviids of Andaman and Nicobar Islands* and *Polyclads of Andaman and Nicobar Islands*, thirteen pamphlets viz. *Spoon-worm Echiura, Moss animal Bryozoa, Horseshoe Crab Merostomata, Amphioxus and Tunicata Protochordata, Lamp Shell Brachiopoda, Sea Spider Pycnogonida, Comb Jellies Ctenophores, Jelly fish Schyphozoa, Sea Anemone Actiniaria, Pea-nut Worm Sipuncula, Horse-shoe Worm Phoronida, Acorn Worm Hemichordata* and *Mud Dragon Kinorhyncha*, and one poster *Lesser Known Marine Animals of India* were released during the inaugural function of the programme. Mr. G. N. Sinha, Principal Chief Conservator of Forests (Wildlife), Andaman and Nicobar Islands was inaugurated the workshop and Dr. T. Balasubramanian, Former Dean and Director, Centre for Advance Studies, Annamalai University felicitated the function, Dr. K. Venkataraman, Director, ZSI presided over the workshop while Dr. Dhriti Banerjee, Head of Office, ZSI delivered the vote of thanks.. A field trip was conducted at Mahatma Gandhi Marine National Park for the participants on 13<sup>th</sup> June 2015. All the scientists, scientific and administrative staff, research associates, research fellows and scholars of ZSI/ANRC were also participated in the workshop.
57. Delivered a lecture on '*Lesser Known Marine Fauna of India*' during the National Workshop on '*Lesser Known Marine Animals of India*' on 12<sup>th</sup> June 2015.
58. Resource Person in the training programme on Integrated Coastal Zone Management programme for State Government Officials of West Bengal and delivered lecture on 'An insight to Coast and its Importance' organized by ZSI-MARC, Digha on 24<sup>th</sup> September 2015.
59. Participant in the Workshop on Administrative Matters organized by Botanical Survey of India, Port Blair on 31<sup>st</sup> March 2016 with Mr. Sandeep Mukherjee, Under Secretary, DoPT/GOI.
60. Delivered a lecture on the Faunal Diversity of Andaman and Nicobar Islands in the Workshop on 'Ecology and conservation of Andaman & Nicobar Biodiversity', organized by Salim Ali Centre for Ornithology and Natural History (SACON) on 24<sup>th</sup> November 2016 at Port Blair.
61. Deputed by the Ministry of Environment, Forest and Climate Change, Government of India for the participation in CoP-13, at, Cancun, Mexico during 10<sup>th</sup> to 18<sup>th</sup> December 2016 as an Indian delegation for side events, in

which he made a presentation on 'Faunal diversity in Indian Seascape'; besides posters depicting marine faunal diversity of India, diversity of echinoderms, polyclads, corals, soft corals, opisthobranchs, sponges, ascdians etc. have also been exhibited by ZSI, Port Blair during CoP 13; provided the inputs for India's stand on EBSA (Ecologically or Biologically Significant Marine Protected Area) for Angria Bank located off Maharashtra coast has been provided to the Additional Secretary, MoEF&CC during CoP 13.

62. As deputed by the Director, ZSI attended the National Coastal Mission meeting held at MoEFCC on 1st November 2017 and provided the inputs on ZSI's achievements towards National Coastal Mission.
63. Prepared the achievement of ZSI on CBD- Aichi Biodiversity Targets as required by the administrative Ministry to compile the report on INDIA's Position for SBSTTA-21
64. Prepared the MoU for ZSI and CLMRE for the Exploration of Deep-sea fauna in Indian EEZ and submitted on 20th October 2017.
65. Prepared the inputs on ZSI's contribution in coastal and marine sector for strengthening the National Coastal Mission document being prepared by MoEFCC and submitted on 23rd October 2017
66. Submitted the ZSI's contribution for developing India's position for SBSTTA-21 has been submitted to MoEFCC on 31st October 2017.

#### **14. MoEF&CC and ZSI Meetings Attended:**

1. Attended the Senior Scientists meeting to discuss the Annual Progress of Work for Headquarters and Regional Stations of ZSI held from April 21-23, 2008 at Kolkata and presented the Annual Report of ZSI/ANRC, Port Blair
2. Attended the Half Yearly Meeting of Officers-in-Charge of Regional Stations of ZSI held at WGFS-ZSI, Calicut during 20-21 November, 2008
3. Attended the Senior Scientists meeting held at ZSI Headquarters at Kolkata from April 27-30, 2009 to discuss the annual progress of work made during the year 2008-2009.
4. Presented an Annual Report of Lead Institution: Great Nicobar Biosphere Reserve in the 'Indian National Man and Biosphere Reserve Committee' meeting held at Pachmarhi, Madhya Pradesh organized by MoEF/GOI, during 24<sup>th</sup> to 26<sup>th</sup> September 2009.
5. Presented the report on the Activities and Achievements of National Coral Reef Research Institute in the 'National Committee on Mangroves and Coral Reefs' meeting held at Andhra University during 29<sup>th</sup> to 30<sup>th</sup> September 2009 organized by MoEF/GOI.
6. Attended the Half Yearly progress meeting of Regional Stations of ZSI held at Northeastern Regional Centre of ZSI, Shillong during 7<sup>th</sup> - 8<sup>th</sup> December 2009.

7. Attended the Annual Progress Meeting of Regional Centres of ZSI held at ZSI headquarters at Kolkata during 28<sup>th</sup> to 30<sup>th</sup> April 2010.
8. Attended National Consultation Committee Meeting on the Strengthening the Man and Biosphere Programme held at Munnar, Kerala from 22<sup>nd</sup> and 23<sup>rd</sup> June 2010 organized by MoEF, UNESCO and DST.
9. Attended the 'Meeting of Expert Group-B on Conservation and Sustainable Utilization of Natural Resources' to be held at Centre of Advanced Study in Marine Biology, Annamalai University organized by MoEF during 23<sup>rd</sup> and 24<sup>th</sup> March;
10. Attended the Annual Meeting of Officers-in-Charge of ZSI Regional Centres held at ZSI Headquarters, Kolkata during 28<sup>th</sup> to 30<sup>th</sup> April 2011.
11. Attended the 'Stakeholders Consultation and Launch of the United Nations Decade on Biodiversity for Asia and Pacific' organized by Ministry of Environment and Forests at New Delhi on 23<sup>rd</sup> May 2011.
12. Attended the Man and the Biosphere Committee Meeting and made a presentation on Great Nicobar Biosphere Reserve at Ministry of Environment and Forests, New Delhi on 23<sup>rd</sup> June 2011.
13. Attended half yearly progress meeting of ZSI Regional Centres held at ZSI headquarter, Kolkata during 15<sup>th</sup> and 16<sup>th</sup> November 2011.
14. Attended Programme Advisory Committee Meeting of Southern Zone of ZSI held at ZSI/SRC, Chennai on 9<sup>th</sup> January 2012 and presented a new project proposal, progress of grant-in-aid projects and progress of J/SRFs.
15. Attended the Expert Committee (Mangroves and Coral Reefs) Meeting of MoEF/GOI held at Annamalai University, Annamalainagar during 9<sup>th</sup> and 10<sup>th</sup> February 2012.
16. Made a presentation upon the proposal for the establishment of ENVIS Centre at ZSI, Port Blair in ENVIS meeting held at MoEF on 4<sup>th</sup> December 2012 chaired by Additional Secretary.
17. Attended Programme Advisory Committee meeting at ZSI/SRC, Chennai on 29<sup>th</sup> January 2013.
18. Made a presentation on Status of Japanese Quail and *Trochus niloticus* at Animal Committee meeting held at MoEF, New Delhi on 24<sup>th</sup> May 2013
19. Attended the O/Cs meeting and made a presentation on the action plan of ZSI/ANRC for the Centenary Celebrations of ZSI on 19<sup>th</sup> January 2015; attended the Programme Advisory Committee meeting at ZSI/SRC, Chennai and presented the annual progress report of ZSI/ANRC for 2014-15 on 27<sup>th</sup> January 2015.



20. Attended Curtain Raiser of ZSI Centenary Celebration and National Conference on Animal Taxonomy- Challenges and Prospects from 13<sup>th</sup> to 15<sup>th</sup> February 2015 at ZSI headquarters, Kolkata and served as a Rapporteur in the session on 'State-of-Art Fauna of India from Genes to Ecosystem'.
21. Resource Person in the Training programme on Scheduled Animals for Enforcement Officers' organized by ZSI headquarters, Kolkata on 12<sup>th</sup> and 13<sup>th</sup> March 2014, in which delivered a lecture on the 'Protected Marine Animals of India'.
22. Presented a project proposal on 'Taxonomical Investigation of Lesser Known Marine Fauna of India' before the 'Steering Committee Meeting to oversee the implementation of AICOPTAX' held at MoEF&CC/GOI, New Delhi on 28<sup>th</sup> November 2014.
23. Centenary Run as the part of Centenary Celebration programme of Zoological Survey of India was organized on 1<sup>st</sup> July 2015 to celebrate the 100<sup>th</sup> foundation day from the National Heritage- Cellular Jail to ZSI office. One hundred and ninety participants from various Central Government Research Institutes, Schools, Pondicherry University, Annamalai University, Department of Environment and Forests including all the scientists, scientific and administrative staff, research associates, research fellows and scholars of this regional centre participated in the programme. Certificates were handed over to all the participants.
24. Attended the Annual Meeting of Senior Scientists at ZSI headquarters, Kolkata during 26<sup>th</sup> to 28<sup>th</sup> April 2016 and presented the Annual Progress (2015-2016) report of the Centre.
25. Attended the ad-hoc committee meeting for National Wildlife Board held at MoEF&CC, New Delhi on 5<sup>th</sup> May 2016 and presented the 'Status of *Trochus niloticus* in Andaman and Nicobar Islands' and 'Status of sea cucumbers in Andaman and Nicobar Islands and Gulf of Mannar'.
26. Served as a technical committee member in the National Conference on Faunal Diversity in Land and Seascape held at ZSI headquarters on 30<sup>th</sup> June to 2<sup>nd</sup> July 2016.
27. Attended the of International Conference on Conservation and Management of Seagrass Ecosystem in India held on 12<sup>th</sup> & 13<sup>th</sup> July 2016 at New Delhi organized by MoEF&CC and GIZ.
28. Attended 17<sup>th</sup> Meeting of the advisory Committee of Ecosystem Research Programme at MoEF&CC on 6<sup>th</sup> October 2016 and made a presentation on the annual progress report of the grants-in-aid project 'Reproductive Biology of Scleractinian Corals of Andaman and Nicobar Islands'
29. Served as a Coordinator for a National Workshop on 'Current Status of Faunal Diversity in India' organized by ZSI/EBRC, Gopalpur-on-Sea, Odisha during 26<sup>th</sup> and 27<sup>th</sup> October 2016 and deliver a lecture on 'Lesser known marine animals of India' in the Workshop; attended the Half Yearly Progress Monitoring Meeting for ZSI Regional Centres on 27<sup>th</sup>

and 28<sup>th</sup> at ZSI/EBRC and served as a Chairman for the Accounts Committee of the said monitoring meeting.

30. Convened the National Workshop on Mainstreaming Coastal and Marine Biodiversity held at ZSI, Port Blair on 23<sup>rd</sup> to 25<sup>th</sup> March 2017.
31. Convened the National Workshop on Coral Reef Ecosystemm of West Coast: Current Status and Way Forward at Jamnagar, Gujarat during 12<sup>th</sup> to 14<sup>th</sup> July 2017.
32. Attended the Brainstorming Session on Seaweed Cultivation and Utilization (Sea CU) at CSIR-CSMCRI, Bhavnagar on 27th November 2017 organized TIFAC (Technology Information Forecasting and Assessment Council), Department of Science and Technology, New Delhi. A presentation of Marine Macro Algae in India Coast: Status, Trend and Strategies has been made in the meeting.

## 15. Other meetings attended:

1. Attended a meeting on Release of Action Plan for the development of Tuna Fisheries in Andaman and Nicobar Islands, organized by Marine Products Export Development Authority (MPEDA), Cochin held at Port Blair on January 6, 2008 chaired by Lieutenant Governor of A& N Islands and Mr. Jairam Ramesh, Union Minister of State for Commerce, Govt. of India.
2. Attended a meeting of State Wildlife Board of Andaman and Nicobar Islands as a Member held at Raj Niwas, under the chairmanship Lieutenant Governor of A& N Islands on January 11, 2008 as Member.
3. Attended a State Level Committee as a Member for the Identification of Critical Wildlife Habitat held at Office of the Chief Wildlife Warden(WL), Dept. of Environment and Forests, Port Blair during January 18, 2008.
4. Attended a meeting of State Environment Committee of Andaman and Nicobar Islands as a Member held at Raj Niwas, under the chairmanship Lieutenant Governor of A& N Islands on February 28, 2008.
5. Attended the State Level Environmental Council Meeting chaired by Honourable Lieutenant Governor of A & N Islands held at Raj Niwas, Port Blair on 17<sup>th</sup> June 2009.
6. Attended State Level Wildlife Board Meeting chaired by Honourable Lieutenant Governor of A & N Islands held at Raj Niwas, Port Blair on 24<sup>th</sup> July 2009
7. Attended the meeting on 'Development of Handicraft Sectors in Andaman and Nicobar Islands' on 5<sup>th</sup> July 2010 chaired by the Chief Secretary, A & N Administration, and discussed the issues pertaining to the delisting of gastropod *Trochus niloticus* out of Schedule-IV category as recommended by ZSI.
8. Attended the meeting on State Level Steering Committee on Great Nicobar Biosphere Reserve held on 30<sup>th</sup> July 2010 chaired by the Chief Secretary, A & N Administration.

9. Attended the Scientific Advisory Committee meeting and the meeting on the site selection for the proposed Oceanarium in A&N Islands chaired by the Chief Secretary, A&N Administration on 12<sup>th</sup> and 23<sup>rd</sup> August 2010 respectively.
10. Attended the meeting to discuss in the issue pertaining to seashell craft industries of the Islands chaired by Chief Secretary of A&N Administration held at Secretariat, Port Blair on 27<sup>th</sup> July 2009.
11. Attended a Scientific Intereaction Session with Honourable Former President of India, Dr. A.P.J. Abdul Kalam on 3<sup>rd</sup> September 2009 during his visit to Port Blair.
12. Attended the Inter Media Publicity Co-ordination Committee meeting held at Botanical Survey of India, Port Blair on October 24, 2007.
13. Attended the meeting on the Consolation of M.Sc. programme in Island Ecology/Economy organized by Tata Institute of Social Sciences, Mumbai held at CARI Campus, Port Blair on December 18, 2007.
14. Attended the programme on Launching of Tuna Tagging Project and Special Drive Survey Programme in Andaman and Nicobar Islands as an invitee, held at Fishery Survey of India, Port Blair under the chairmanship of Mr. Praveen Kumar, Secretary to Govt. of India, Dept. of Animal Husbandry, Ministry of Agriculture on January 12, 2008.
15. Served as a as a Member, Organizing Committee for the 'Sensitization Workshop on Women Scientists Scheme' organized by Science and Technology and Botanical Survey of India, Port Blair during February 13-16, 2008.
16. Served as a Panel of Judge for the State Level Seminar for College Students on topic 'Earth resource towards sustainable use' organized by Dept. of Science and Technology, Andaman and Nicobar Islands, Port Blair during February 27, 2008.
17. Served as Chief Guest for the Workshop on Post Harvest Fish Handling and Prevention of Pollution at Fish Landing Centers' organized by Dept. of Ocean Studies and Marine Biology, Pondicherry University during February 29, 2008.
18. Attended the seminar organized by CARI, Port Blair on May 22, 2008 on the occasion of International Biodiversity Day.
19. Attended the Brain Storming Session on 'Island Fisheries' organized by CARI, Port Blair on June 21, 2008.
20. Attended the meeting of the State Level Steering Committee of Great Nicobar Biosphere Reserve as a Member on June 25, 2008 held at Secretariat, A&N Administration under the chairmanship of the Chief Secretary
21. Served as a Guest of Honour at the inaugural function for 'Off-campus training programme on Extension Management Skills' organized by

Department of Agriculture, A&N Administration, Port Blair on July 14, 2008

22. Served as a Guest of Honour in the TOLIC meeting held at ZSI Auditorium, Port Blair on July 21, 2008
23. Served as an External Expert for the evaluation of Senior Research Fellow of National Institute of Ocean Technology, Port Blair on September 26, 2008.
24. Served as a Examiner for the practical examinations and viva voce for the M.Sc. Marine Biology course on December 5, 2008 in Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair
25. Served as Member in the Selection Committee for the interview of Group-C Junior Assistant and Lab Attendant on December 8, 2008 in Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair.
26. Served as a member in the walk-in-interview committee for the recruitment of Research Associates, Junior Research Fellows, Technical/Field Assistants and Data Entry Operator under various projects of ANRS/ZSI, held at ZSI, Port Blair in 24<sup>th</sup> February 2009 and ZSI, Chennai on 26<sup>th</sup> February 2009.
27. Served as a External Examiner for the M.Sc. Marine Biology degree practical and viva voce examinations held in Department of Coastal and Marine Sciences, Pondicherry University on 17<sup>th</sup> April 2009.
28. Served as a Member for the Walk-in-Interview committee to select JRF at Department of Coastal and Marine Sciences, Pondicherry University on 19<sup>th</sup> May 2009.
29. Served as a Judge for the sit and draw and debate completion organized by Botanical Survey of India, Port Blair on the eve of International Biodiversity Day held on May 22, 2009.
30. Served as a Member for the Walk-in-Interview committee to select JRF held at ZSI, Port Blair on 3<sup>rd</sup> June and ZSI Chennai on 5<sup>th</sup> June 2009.
31. Attended the all India co-ordinated committee meeting on Rodent Control at Central Agricultural Research Institute, Port Blair during March 19-20, 2010.
32. Served as a Examiner for conducting viva-voice examination for M.Sc. Marine Biology and M.Sc. Disaster Management students of Pondicherry University on 12<sup>th</sup> April 2010.
33. Served as a member for walk-in-interview for the recruitment of JRFs held at ZSI, Chennai on 10<sup>th</sup> May 2010.
34. Served as a Member in the Ph.D. Doctoral Committee for Indian Council of Medical Research, Port Blair on 6<sup>th</sup> October 2010.

35. Served as an External Examiner for the Ph.D. viva-voce Examination in Ethiraj College for Women, University of Madras on 8<sup>th</sup> October 2010.
36. Served as a Member in the interview for the admission of candidate for the Ph.D. Programme in ZSI, Port Blair for the academic year 2010-2011
37. Given an exclusive interview on the activities and achievements of ZSI in Andaman and Nicobar Islands on 10<sup>th</sup> November 2010 to the Doordharsan Television Channel on request.
38. Served as a Member in the Research Advisory Committee meeting held at Dept. of Environment and Forests, A&N Administration on 30<sup>th</sup> November 2010.
39. Participated in the Consultation meeting on Mapping of Plant Resources of A&N Islands organized by Botanical Survey of India, Port Blair on 27<sup>th</sup> December 2010.
40. As requested by the Director, Educational Multi-Media Research Centre, Mysore University, scientist and scientific staff of the Centre given a series of television interviews on the activities of ZSI, Port Blair and the importance of 16 various marine and terrestrial faunal groups of A&N Islands during 28<sup>th</sup> to 30<sup>th</sup> December for the academic programme of University Grants Commission being telecasted through DD National Television Channel (Gyan Darshan).
41. Made a presentation on the proposed new boundary for Great Nicobar Biosphere Reserve prepared by ZSI, Port Blair as per the recommendations of UNESCO for the senior officials of A&N Administration, Coast Guard, Indian Navy, Andaman & Nicobar Command and other stake holders on 8<sup>th</sup> March 2011 at the PCCF Office, Port Blair.
42. Served as member in the meeting for organizing 'International Conference on Tropical Island Ecosystem' held in Secretariat chaired by Chief Secretary, A&N Administration on 10<sup>th</sup> January 2011.
43. Attended the meeting of the 'State Wildlife Board of A&N Islands' chaired by Honorable Lieutenant Governor of A&N Islands on 29<sup>th</sup> March 2011 as Member.
44. Served as a member in the meeting for 'Sectoral Action Plan for Green India Mission and Sustaining Island Ecosystem in connection with Climate Change Action Plan for A&N Islands' held at Dept. of Environment and Forests, A&N Administration on 1<sup>st</sup> February 2011.
45. Attended the meeting for the site selection of proposed Oceanarium in A&N Islands chaired by the Chief Secretary, A&N Administration on 1<sup>st</sup> February 2011.
46. Served as a member in 'Sectoral Action Plan for Green India Mission and Sustaining Island Ecosystem in connection with Climate Change Action Plan for A&N Islands' held at Dept. of Environment and Forests, A&N Administration on 4<sup>th</sup> March 2011.

47. Served as a selection committee member for the recruitment of scientific post in Department of Marine Biology and Coastal Sciences, Pondicherry University on 30<sup>th</sup> May 2011
48. Attended the Working Group Meeting for 12<sup>th</sup> Five Year Plan for A&N Administration held at Dept. of Environment and Forest, Port Blair on 10<sup>th</sup> June 2011.
49. Served as a Member in the Interview Committee constituted for the selection of Field Officers in National Sample Survey Organization, Port Blair on 21<sup>st</sup> June 2011.
50. Served as a member in the State Level Steering Committee meeting for Great Nicobar Biosphere Reserve held on 18<sup>th</sup> August 2011 chaired by Chief Secretary, A&N Administration.
51. Served as a member in the meeting of 12<sup>th</sup> Five Year Plan working group for A&N Administration on 19<sup>th</sup> August 2011 chaired by Chief Secretary, A&N Administration.
52. Served as a member in the Research Advisory Committee meeting at Department of Environment and Forests on 23<sup>rd</sup> August 2011.
53. Served as a member in the Committee to evaluate the draft feasibility report for setting up Oceanarium in A&N Islands on 20<sup>th</sup> October 2011.
54. Served as a member to discuss the progress on setting up Oceanarium in A&N Islands held at Directorate of Tourism, Andaman and Nicobar Administration on 23<sup>rd</sup> November 2011.
55. Served as a member in the meeting on feasibility study of proposed Oceanarium held on 12<sup>th</sup> December 2011 at Secretariat chaired by the Chief Secretary, A&N Administration.
56. Served as a committee member for the selection of Lower Division Clerk and Hindi Typist at Fishery Survey of India, Port Blair on 6<sup>th</sup> and 7<sup>th</sup> January 2012.
57. Made a presentation on 2<sup>nd</sup> draft of Management Plan for Lohabarrack Crocodile Sanctuary: 2012-2021 for the officials of Forest Department on 14<sup>th</sup> March 2012.
58. Served as a member to assess the feasibility report on the proposed Oceanarium in the Directorate of Tourism, A&N Administration on 26<sup>th</sup> March 2012.
59. Served as Member in 'Interface Meeting on Island Livestock Development' and made a presentation on Role ZSI on Faunal Diversity Research in A&N Islands at CARI-ICAR, Port Blair on 12<sup>th</sup> June 2012.
60. Served as a Member in State Level Steering Committee for Great Nicobar Biosphere Reserve at Secretariat, Port Blair chaired by Chief Secretary, A&N Administration on 18<sup>th</sup> June 2012.

61. Served as Member in Inter-Media Publicity Co-ordination Committee meeting organized by Doordharsan Kendra, Port Blair on 29<sup>th</sup> June 2012.
62. Served as a doctoral committee member for the Ph.D. research scholars of Marine Biology at Pondicherry University on 4<sup>th</sup> July 2012
63. Made a presentation on revised management plan for Lohabarrack Crocodile Sanctuary to the Officers of Department of Environment and Forests, A&N Administration on 13<sup>th</sup> July 2012
64. Convened a Stakeholder meeting for the 'Filming of Island Ecosystem' at ZSI, Port Blair on 20<sup>th</sup> July 2012.
65. D attended the review meeting at PCCF Office, Department of Environment and Forests, Port Blair.
66. Served as a member in Inter-Media Publicity Co-ordination Committee meeting organized by Doordharsan Kendra held at ZSI, Port Blair on 27<sup>th</sup> July 2012.
67. Served as a member for Inter-Media Publicity Co-ordination Committee meeting organized by Doordharsan Kendra held at ZSI, Port Blair on 17<sup>th</sup> August 2012.
68. Attended Ph.D. doctoral committee meeting held at Pondicherry University on 18<sup>th</sup> August 2012.
69. Attended consultation meeting to conduct studies on Fish Aggregating Devices conducted at NIOT, Port Blair on 7<sup>th</sup> September 2012.
70. Attended Fisheries Interface meeting held at Central Agricultural Research Institute, Port Blair on 26<sup>th</sup> September 2012.
71. Served as a member for Inter-Media Publicity Co-ordination Committee meeting organized by Doordharsan Kendra held at Police Headquarters, Port Blair on 28<sup>th</sup> September 2012.
72. Attended the 58<sup>th</sup> Wildlife Week meeting on 3<sup>rd</sup> and 8<sup>th</sup> October 2012 organized by Department of Environment and Forests, A&N Administration.
73. Member in the meeting on the finalization of maximum reserve price for the fish catches of FSI vessel MFV Blue Marlin held at Fishery Survey of India, Port Blair on 27<sup>th</sup> May 2013.
74. Attended the State Level Steering Committee meeting for Great Nicobar Biosphere Reserve held at Secretariat chaired by the Chief Secretary, A&N Administration on 15<sup>th</sup> July 2013.
75. Served as Research Advisory Committee member at Department of Environment and Forests, A & N Administration on 27<sup>th</sup> September 2013.

76. Served as a Member in Research Advisory Committee meeting of Department of Environment and Forests, Andaman and Nicobar Administration on 7<sup>th</sup> October 2013.
77. Served as an Expert Member in the Executive Council Meeting of Andaman Adim Janjati Vikas Samit held at Secretariat of Andaman and Nicobar Administration on 15<sup>th</sup> October 2013 chaired by the Chief Secretary.
78. Served as a member in Consultative meeting on declaration of eco-sensitive zones around protected areas held at Department of Environment and Forests, Andaman and Nicobar Administration on 20<sup>th</sup> February 2014;
79. Attended the meeting to discuss the concept note on various projects related to island protection zone, conservation of coastal and marine resources, eco-tourism and development of marine laboratory chaired by the Chief Secretary, A & N Administration held on 1<sup>st</sup> February 2014.
80. Served as a member in Research Advisory Committee at Department of Environment and Forests, A&N Administration held on 2<sup>nd</sup> and 29<sup>th</sup> May 2014.
81. Served as a member in Research Advisory Committee on 25<sup>th</sup> July 2014 in Department of Environment and Forests, Port Blair.
82. Served as a member in State Board for Wildlife meeting chaired by Hon'ble Lt. Governor of A&N Islands held at Rajniwas on 30<sup>th</sup> July 2014.
83. Served as a member in Science and Technology Council meeting held as Secretariat, Port Blair on 30<sup>th</sup> July 2014.
84. Served as a member in the Doctoral Committee meetings held at Department of Ocean Studies and Marine Biology, Pondicherry University on 4<sup>th</sup> and 14<sup>th</sup> August 2014.
85. Served as a member in the Doctoral Committee meetings held at Department of Ocean Studies and Marine Biology, Pondicherry University on 17<sup>th</sup> and 20<sup>th</sup> September 2014 and at ZSI, Port Blair on 25<sup>th</sup> September 2014.
86. Served as doctoral committee member in Pondicherry University on 8<sup>th</sup>, 10<sup>th</sup> and 24<sup>th</sup> October 2014; served as a member in technical committee of ICMR-RMRC, Port Blair on 10<sup>th</sup> October 2014.
87. Attended the meeting for the amendment of Wildlife Protection Act, 1972 held at Department of Environment and Forests on 11<sup>th</sup> October 2014.
88. Besides he has attended the meeting for CRZ clearance committee on 24<sup>th</sup> November 2014 chaired by Chief Secretary of A & N Administration; and served as a member in Research Advisory Committee meeting held at Department of Environment and Forests, A & N Administration on 26<sup>th</sup> November 2014.



89. Participated and presented 'Faunal resources in Indian Seas with special reference to Andaman and Nicobar Islands' in the National consultation on Andaman Sea studies and island sustainability organized by Fishery Survey of India, Port Blair under Bay of Bengal Large Marine Ecosystem (BOMBLE) project during 16<sup>th</sup> to 18<sup>th</sup> December 2014.
90. Served as an Observer for the examinations conducted by Indira Gandhi Open University on 11<sup>th</sup> and 12<sup>th</sup> December 2014 at Port Blair.
91. Served as a Chief Guest in the valedictory function of the PADI SCUBA diving training programme organized by NIOT, Port Blair and handed over the certificates to the participants on 20<sup>th</sup> December 2014.
92. Served as a member in the Research Advisory Committee meeting held on 16<sup>th</sup> January 2015 at Department of Environment and Forests, Port Blair.
93. Served as a Research Advisory Committee Member in Department of Environment and Forests, A&N Islands on 18<sup>th</sup> February 2015.
94. Attended the meeting with the Chairman and Members of 7<sup>th</sup> Pay Commission who has visited Port Blair to receive the memorandum from Central Govt. Employees of A&N Islands at Secretariat.
95. Served as a Member in Andaman Aadim Jamjati Vikas Samiti meeting held at Secretariat of A & N Islands chaired by Chief Secretary of A & N Administration on 17<sup>th</sup> March 2015.
96. Served as a Secretary in the meeting of Central Government Employees Welfare Coordination Committee held on 27<sup>th</sup> March 2015.
97. Attended the meeting for the inaugural programme of the Multiparametric Geophysical Observatory facilities of Indian Institute of Geomagnetism at Shoal Bay, South Andaman on 30<sup>th</sup> March 2015 in which Honorable Union Minister for Science and Technology and Earth Sciences, Dr. Harsh Vardhan was the chief guest.
98. Interview for the admission of Ph.D. research students in ZSI, Port Blair has been conducted on 19<sup>th</sup> August while recruitment of JRFs under grant-in-aid project held on 8<sup>th</sup> August 2011.
99. Served as a Member Interview Committee for admission of Ph.D. research students and JRFs in ZSI held on 8<sup>th</sup> and 19<sup>th</sup> August 2011.
100. Served as a member in the interview committee for the selection of Data Enumerator at Fishery Survey of India, Port Blair on 21<sup>st</sup> November 2011.
101. Served as a member in doctoral committee for Ph.D. students of Marine Biology, Pondicherry University, Port Blair on 29<sup>th</sup> February 2012.
102. Served as a Ph.D. doctoral committee member at Department of Marine Biology and Coastal Studies, Pondicherry University on 24<sup>th</sup> September 2012;

103. Served as a selection committee member for the selection of Project Fellows and assessment of SRFs in Department of Ocean Studies, and Department of Disaster Management in Pondicherry University during 19<sup>th</sup> and 20<sup>th</sup> December 2012
104. Served as selection committee member at Walk-in-interview for the recruitment of JRFs in the grant-in-aid project of the Centre was conducted on 19<sup>th</sup> June 2013.
105. Served as member in the selection committee for the recruitment of LDC and Hind Typist at Fishery Survey of India Port Blair on 15<sup>th</sup> May 2013.
106. Served as an External Member on 21<sup>st</sup> and 22<sup>nd</sup> June 2013 for the selection of 8 different categories of meritorious award winners including best scientist, best division etc. of CARI.
107. Served as an External Examiner for conducting Ph.D. viva-voce examination at Centre of Advanced Study in Marine Biology, Annamalai University, Tamil Nadu on 28<sup>th</sup> June 2013.
108. Served as a Doctoral Committee member for Ph.D. viva-voce examination in Department of Coastal Studies and Marine Biology, Pondicherry University on 2<sup>nd</sup> July 2013.
109. Served as an interview committee member for the recruitment Jr. & Sr. Deckhands in Fishery Survey of India, Port Blair on 1<sup>st</sup> July 2013,
110. Served as an interview committee member recruitment of JRF in Department of Disaster Management, Pondicherry University on 11<sup>th</sup> July 2013,
111. Served as an interview committee member for the recruitment of JRF in Department of Coastal Studies and Marine Biology, Pondicherry University on 19<sup>th</sup> July 2013.
112. Served as a member in the selection committee for the recruitment of Net Mender in Fishery Survey of India, Port Blair on 1<sup>st</sup> and 2<sup>nd</sup> December 2013.
113. Served as a doctoral committee member in Pondicherry University on 18<sup>th</sup> September 2013.
114. Conducted the interview for the admission of Ph.D. students in ZSI for the academic year 2013-14 and served as committee members.
115. Served as a Member in Doctoral Committee for Ph.D. students held at Department of Coastal Studies and Marine Biology, Pondicherry University, Port Blair on 17<sup>th</sup> October 2013.
116. Served as a member in the selection committee for the recruitment of LD Clerk at Fishery Survey of India, Port Blair on 26<sup>th</sup> March 2014 and JRFs at ZSI, Port Blair on 27<sup>th</sup> March 2014.

117. Served as an External Examiner for Ph.D. public viva-voce examination at Centre of Advanced Study in Marine Biology, Annamalai University on 24<sup>th</sup> May 2014.
118. Served as an external examiner for Ph.D. viva-voce at University of Madras, Chennai on 4<sup>th</sup> July 2014.
119. Served as Selection committee member for the recruitment of various posts in National Sample Survey Organization, Port Blair on 17<sup>th</sup> July 2014.
120. served as a member besides three nominees from Pondicherry University in interview for the selection of candidates for Ph.D. programme at ZSI, Port Blair for the academic year 2014-15 was held on 2<sup>nd</sup> September 2014.
121. Served as a Doctoral Committee Member in Pondicherry University on 5<sup>th</sup>, 18<sup>th</sup> and 21<sup>st</sup> February 2015.
122. Served as a Member in the Doctoral Committee meeting for Ph.D. students held at Pondicherry University on 16<sup>th</sup> and 27<sup>th</sup> March 2015.
123. Attended meeting pertaining to IGNFA and UNDP projects for capacity building of IFS officers on Biodiversity Conservation with special reference to Aquatic, Marine and Coastal Biodiversity held at Department of Environment and Forests, Port Blair on 1<sup>st</sup> May 2015.
124. Served as a member in the infrastructure development committee of RMRC/ICMR at Port Blair on 7<sup>th</sup> July 2015.
125. Served as member in the interview committee for the recruitment of Field Officers for National Sample Survey Organization at Port Blair on 7<sup>th</sup> July 2015.
126. Attended the meeting with PCCF(WL) for the scrutinizing the project proposal on DNA barcoding of birds of Andaman on 29<sup>th</sup> July 2015.
127. Attended a meeting of the Advisory Committee for Ecosystem Research Programme and presented annual progress report for the project entitled as 'Reproductive Biology of Scleractinian Corals in Andaman and Nicobar Islands' on 4<sup>th</sup> August 2015 at Ministry of Environment, Forest and Climate Change, New Delhi.
128. Attended the half yearly meeting of TOLIC at CIARI, Port Blair on 26<sup>th</sup> August 2015.
129. Convened the interview for admission in Ph.D. programme at ZSI, Port Blair on 27<sup>th</sup> August 2015.
130. Served as a member in MACP promotion committee for the Group-C staff of Central Island Agricultural Research Institute - ICAR on 11<sup>th</sup> September 2015.

131. Served as member in Research Advisory Committee meeting of Department of Environment and Forests, A & N Administration on 17<sup>th</sup> September 2015.
132. Served as member in Building committee as well as Doctoral Committee at ICMR-RMRC, Port Blair on 22<sup>nd</sup> September 2015.
133. Served as Member in the doctoral committee meeting at Pondicherry University, on 11<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup> and 24<sup>th</sup> and 30<sup>th</sup> November 2015.
134. Served as an External Examiner for the practical examinations of the subjects Marine Biology and Ecology at Pondicherry University.
135. Served as Member in the doctoral committee meeting held at ZSI/ANRC on 2<sup>nd</sup> and 14<sup>th</sup> December 2014, at Department Marine Biology and Coastal Studies, Pondicherry University on 3<sup>rd</sup>, 13<sup>th</sup> and 19<sup>th</sup> December 2015.
136. Served as an Observer for examinations conducted by IGNOU Regional Centre, Port Blair on 7<sup>th</sup> December 2015.
137. Served as a Member in building committee meeting at RMRC-ICMR, Port Blair on 10<sup>th</sup> December 2015.
138. Served as an External Examiner for M.Sc. Marine Biology degree students of Pondicherry University for the practical papers, Ecology and Fisheries on 10<sup>th</sup> December 2015.
139. Served as a witness at Sessions Court, Port Blair on 23<sup>rd</sup> December 2015 for the identification of seized Water Monitored Lizard.
140. Attended meeting at Andaman and Nicobar Command in connection with REIA study for the installation of surveillance camera at west coast of North Andaman on 25<sup>th</sup> February 2016.
141. Served as a Member in Doctoral Committee at Department of Ocean Studies and Marine Biology Pondicherry University on 1<sup>st</sup> and 30<sup>th</sup> March 2016 and ZSI on 28<sup>th</sup> and 29<sup>th</sup> March 2016
142. Served as Member in Purchase Committee of RMRC-ICMR, Port Blair on 15<sup>th</sup> March 2016; Member in State Wildlife Board meeting chaired by Hon'ble Lieutenant Governor of Andaman and Nicobar Islands on 18<sup>th</sup> March 2016
143. Special invitee on International Day for Forests 2016 organized at Forest Training Institute, Wimberligunj, South Andaman on 21<sup>st</sup> March 2016.
144. Executive Committee Member in Andaman Science Association on 26<sup>th</sup> March 2016.
145. Served as a Member in Ph.D. doctoral committee at Pondicherry University on 6<sup>th</sup> and 22<sup>nd</sup> April 2016

146. Served as an External Examiner to conduct Ph.D. public viva-voce examination in Department of Zoology, Bharathiar University, Coimbatore on 15<sup>th</sup> April 2016.
147. Served as a Doctoral Committee Member at ZSI, Port Blair on 2<sup>nd</sup> May 2016 and at Pondicherry University on 3<sup>rd</sup>, 10<sup>th</sup> and 27<sup>th</sup> May 2016 at Pondicherry University
148. Served as Interview Committee Member for the selection of JRFs at ZSI on 31<sup>st</sup> May 2016.
149. Served as a member in Research Advisory Committee meeting of Department of Environment and Forests, Port Blair on 1<sup>st</sup> June 2016.
150. Participated in the panel discussion on 'go wild for life: zero tolerance to the illegal wildlife trade' at Doordharsan Kendra, Port Blair and it was telecasted by DD, Port Blair on the eve of World Environment Day observed on 5<sup>th</sup> June 2016.
151. Served as an External Member for the DPC for the scientists of Central Island Agricultural Research Institute (CIARI), Port Blair on 4<sup>th</sup> June 2016.
152. Served as an Executive Member in Andaman Science Association meeting held at CIARI, Port Blair on 8<sup>th</sup> June 2016; served as an Expert Member in screening committee on 20<sup>th</sup> June 2016 for the selection of 13 different awards constituted for CIARI scientists and staff; served as a Guest of Honour in the 38<sup>th</sup> Establishment Day of CIARI and delivered a foundation day lecture on 'Coastal and marine biodiversity in India'.
153. Served as a doctoral committee member on 28<sup>th</sup> June 2016 at Pondicherry University; served as a Technical Committee member in the National Conference of faunal diversity in Indian land and seascape held during 30<sup>th</sup> June to 2<sup>nd</sup> July 2016 at ZSI headquarters.
154. Appeared as witness for wildlife case in Sessions Court, Port Blair on 14<sup>th</sup> July 2016.
155. Served as a Doctoral Committee member for ICMR, Port Blair on 9<sup>th</sup> July 2016 and at Pondicherry University on 28<sup>th</sup> June 2016.
156. Served as a Convener for Ph.D. student selection committee for the admission of students in ZSI for Ph.D. programme held on 29<sup>th</sup> July 2016.
157. Attended the TOLIC meeting as Member held at ICAR-CIARI, Port Blair on 29<sup>th</sup> July 2016.
158. Attended as an invitee in workshop on Dugong recovery programme organized by WII held at Department of Environment and Forest, A & N Administration on 5<sup>th</sup> August 2016.
159. Served as an executive committee member in Andaman Science Association meeting held on 10<sup>th</sup> August 2016 at ICAR-CIARI, Port Blair.

160. Served as a doctoral committee member at Pondicherry University on 8<sup>th</sup>, 11<sup>th</sup> and 29<sup>th</sup> August 2016.
161. Served as a member in the committee constituted by Department of Tourism, A & N Administration to promote safe and sustainable scuba diving and its meeting on 30<sup>th</sup> August 2016.
162. Served as a DPC Member for the assessment of Technical Officers and Scientific Staff of ICMR, Port Blair on 4<sup>th</sup> October 2016
163. Served as a Doctoral Committee Member for Ph.D. student at Pondicherry University on 21<sup>st</sup> October 2016.
164. Served as a Doctoral Committee at Pondicherry University on 2<sup>nd</sup> and 4<sup>th</sup> November 2016 and in ZSI on 7<sup>th</sup> and 21<sup>st</sup> November 2016.
165. Served as External Examiner for the practical examinations of M.Sc. Marine Biology students in Pondicherry University on 9<sup>th</sup> and 10<sup>th</sup> December 2016.
166. Served as a DPC member for ICAR-CIARI, Port Blair on 15<sup>th</sup> November 2016.
167. Served as a member for the selection of Project Fellow at ICMR, Port Blair on 22<sup>nd</sup> December 2016.
168. Served as a member in the committee for setting up minimum price for the catches of M.V. Blue Marlin at Fishery Survey of India on 6<sup>th</sup> January 2017.
169. Served as a member in Research Advisory Committee of Department of Environment and Forests, A & N Administration on 11<sup>th</sup> January 2017; served as a member in the building committee at ICMR, Port Blair on 17<sup>th</sup> January 2017.
170. Served as a Guest of Honour in the National Conference on Climate Change, Biodiversity and Bioresources Management organized by Microbiological Society of India at JNRM, Port Blair on 1<sup>st</sup> February 2017.
171. Delivered a lecture on Marine Faunal Diversity of India: Opportunities for Marine Biologist to the M.Sc. student of Marine Biology and Oceanography from Centre of Advanced Study in Marine Biology, Annamalai University during their visit to ZSI, Port Blair on 5<sup>th</sup> February 2017.
172. Served as a Chairman for technical committee in ICMR, Port Blair on 15<sup>th</sup> February 2017; attended the Meeting cum Workshop on Biosphere Reserves/Lead Institutes and stakeholders held at Pachmari, Madhya Pradesh during 20<sup>th</sup> and 21<sup>st</sup> February 2017.
173. Delivered a lecture on Faunal Diversity of Andaman and Nicobar Islands in the IFS Officers Refreshment Training held at Department of Environment and Forests, Port Blair on 28<sup>th</sup> February 2017.

174. Served as member in 9<sup>th</sup> meeting of State Board of Wildlife held at Raj Niwas chaired by Honourable Lieutenant Governor of A & N Islands.
175. Served as member during meeting to identify the possible commercial and developmental fisheries activities in island for the holistic development of islands held at ICAR-CIARI on 17<sup>th</sup> March 2017.
176. Served as member in the meeting to promote safe and sustainable diving in the islands held at Department of Environment and Forests on 17<sup>th</sup> March 2017.
177. Served as a member in wetland committee meeting held Department of Environment and Forests on 22<sup>nd</sup> March 2017 to discuss and for finalization on the water bodied to be proposed as wetlands of reserved/protected areas of A & N Islands.

## 16. MoU signed:

1. To conduct status survey of *Trochus niloticus* and *Turbo marmoratus* in Andaman and Nicobar Islands signed between ZSI, Port Blair and Directorate of Industries, A&N Administration.
2. To conduct collaborative study on DNA Bar-coding of marine sponges of Andaman and Nicobar Islands signed between ZSI, Port Blair and ICAR-CARI, Port Blair signed on 3<sup>rd</sup> August 2010 for the collaborative study on Marine Sponge Bar-coding.
3. Monitoring of coral reefs in A&N Island with Department of Environment and Forests, A&N Administration and ZSI.
4. To prepare Management Plan for Lohabarrack Island with Department of Environment and Forests, A&N Administration and ZSI.
5. To conduct EIA for road alignment in Great Nicobar signed between ZSI and Border Roads Organization, Ministry of Defence, Government of India.
6. To conduct Status survey of Sea cucumber in Andaman and Nicobar Islands with Department of Environment and Forests, A&N Administration and ZSI.
7. The agreements have been signed between ZSI, Port Blair and Military Engineering Services, Ministry of Defense, Government of India for conducting Rapid Environmental Impact Studies for the Construction of Desalination Plant at Indian Coast Guard Complex, Diglipur, North Andaman, and Extension of exiting jetty and construction of wet basin at Naval Ship Repair Yard, Haddo Wharf, Port Blair for Indian Navy.

## 17. Member:

1. Doctoral Committee for Ph.D. degree programme in Indian Council of Medical Research, Port Blair.
2. Doctoral Committee for Ph.D. degree programme in Department of Marine Biology and Coastal Studies, Pondicherry University, Port Blair.

3. Andaman Science Association, Port Blair.
4. *Secretary*: Central Govt. Employees Welfare Coordination Committee of A&N Islands constituted by DoPT, Govt. of India

## 18. Membership in high power committee:

1. State Wildlife Board of Andaman and Nicobar Islands
2. State level Environmental Steering Committee of Andaman and Nicobar Islands
3. Steering Committee for Great Nicobar Biosphere Reserve, Andaman and Nicobar Islands
4. Research Advisory Committee for Department of Environment and Forest, A&N Administration
5. Green India Mission for A&N Islands
6. Andaman Science Association
7. Andaman Scientific Forum
8. Journal of Socio-Ecological & Biological Academy
9. Marine Biological Association of India
10. Andaman Adim Janjati Vikas Samiti

## 19. Symposium organized:

1. Organizing Secretary: *Workshop on National Workshop on Coral Reef Ecosystem of West Coast of India: Current Status and Way Forward*, organized during 12<sup>th</sup> to 14<sup>th</sup> July 2017 at ZSI, Port Blair
2. Organizing Secretary: *Workshop on National Workshop on Mainstreaming Coastal and Marine Biodiversity of India*, organized during 23<sup>rd</sup> to 25<sup>th</sup> March 2017 at ZSI, Port Blair
3. Organizing Secretary: *Workshop on National Workshop on Lesser Known Marine Animals of India*, organized during 11<sup>th</sup> to 13<sup>th</sup> June 2015 at ZSI, Port Blair
4. Organizing Secretary: *Workshop on Value of Biodiversity in Island Biosphere Reserve*, organized during 13<sup>th</sup> to 14<sup>th</sup> September 2013 at ZSI, Port Blair
5. Organizing Secretary: *National Symposium on Recent Advances in Biodiversity of India*, organized during 11-14<sup>th</sup> March 2009 at ZSI, Port Blair
6. Convener: *National Symposium on Conservation and Valuation of Marine Biodiversity* organized by Zoological Survey of India, Marine Biological Station, Chennai during December 26-29, 2005.
7. Convener: *Amazing World of Marine Animals - An Exposition* organized by Zoological Survey of India, Marine Biological Station, Chennai during October 25-29, 2005.

## 20. Scientific Cruise experience:



1. Attended several cruises conducted by CRV SAGAR PASCHIMI for collecting various samples under the programme of Coastal Ocean Monitoring and Prediction System, sponsored by Department of Ocean Development, Government of India.
2. Participated in the Scientific Cruise of Fishery Survey of India Research Vessel, MFV MATSYA Drushti to study the Oceanic Zooplankton of Indian EEZ of Andaman waters from February 9 to March 2, 2007 (23 days)
3. Participated in the Scientific Cruise of Ministry of Earth Sciences, RV SAGAR MANJUSHA to study the Oceanic Zooplankton of Indian EEZ of Andaman waters from September 2008 (15 days)

## 21. Expert Opinion Provided for Conservation:

1. CITES: As a result of initiatives taken with DZSI by submitting the recommendations to the MoEF&CC/GOI, three species of elasmobranchs Scalloped hammerhead *Sphyrna lewini*, Oceanic white tip *Carcharhinus longimanus* and Ray Manta sp. along with 4 other elasmobranchs were included in **CITES Appendix-II** with effect from 24<sup>th</sup> September 2014 onwards.
2. W(P)A, 1972: On behalf of ZSI, as per the recommendations made before the Animal Committee-I of MoEF&CC, Tokay Gecko *Gecko gekko* has been included in **Schedule-I of Wildlife (Protection) Act, 1972** with immediate effect.
3. W(P)A, 1972: On behalf of ZSI, as per the recommendations made before the Animal Committee-I of MoEF&CC, breed variety of **Japanese Quail *Cortunix japonica*** has been delisted from the **Schedule-IV of Wildlife (Protection) Act, 1972**.
4. Status of Indian corals with reference to the coral species proposed by USA to include in **US Endangered Species Act** has been submitted to Administrative Ministry
5. **Impacts of Anthropogenic Underwater Noise on Coastal and Marine Biodiversity** has been submitted to Administrative Ministry
6. Comments on **Marine Biological Diversity of Areas beyond National Jurisdiction (ABNJ)** has been offered to the Administrative Ministry
7. Comments offered on the **EBSA (Ecologically or Biologically Significant Marine Areas)** in Indian context to the Administrative Ministry
8. Served as a witness at Sessions Court, Port Blair on March 2014 for the identification of seized Elephant Tusk as requested by Department of Environment and Forests.
9. Served as a witness at Sessions Court, Port Blair on 23<sup>rd</sup> December 2015 for the identification of seized Water Monitored Lizard as requested by Department of Environment and Forests.

## 22. International Assignments:

### 1. World Ocean Assessment

Served as a Contributing Author for First Global Integrated Marine Assessment (First World Ocean Assessment) for providing the inputs for the biodiversity of Indian Ocean. This has been initiated by United Nations Oceans & Law of the Sea, Division for Ocean Affairs and the Law of the Sea. The final report has been published by United Nations on 21<sup>st</sup> January 2016.

### 2. IPBES Regional Assessment on Biodiversity and Ecosystem Services for the Asia-Pacific

Serving as a Lead Author for IPBES regional assessment on Biodiversity and Ecosystem Services for the Asia-Pacific region under preparing the Chapter-3 entitled 'Status, trends and future dynamics of biodiversity and ecosystems underpinning nature's benefits to people' in which marine area has been taken-up to contribute. This assessment period is 2015-2018.

## 23. Administrative:

### 1. Recognition of ZSI, Port Blair for conducting Ph.D. Programme under Pondicherry University

Zoological Survey of India, Port Blair, has been affiliated with Pondicherry University (Central University) for conducting Ph.D. programme in Taxonomy, Ecology and Zoogeography from the academic year 2010-11 onwards. Since then 17 students are enrolled for Ph.D.

### 2. Strengthening the activities of National Coral Reef Research Institute (NCRI) and Lead Institution for Great Nicobar Biosphere Reserve (GNBR)

Necessary efforts were paid with the support of Director, ZSI and received the funds from the Ministry under the projects of National Coral Reef Research Institute (NCRI) including the grant-in-aid projects such as Coral reefs of Rani Jhansi Marine National Park, GIS based study on coral reefs in Little Andaman and the project personnel were recruited. The studies have been commenced. With the support of Director, ZSI funds for the Great Nicobar Biosphere Reserve (GNBR) under Lead Institution has been received from Ministry to coordinate the research in GNBR. Compiled and submitted the nomination form for UNESCO-MAB to include GNBR under UNESCO World Biosphere Network to the Ministry through Director, ZSI for necessary action. Preparation of bibliography of GNBR and investigation of faunal diversity in GNBR are under progress

### 3. Nomination of GNBR under UNESCO-MAB Programme

As a result of initiatives taken, the proposal for the inclusion of Great Nicobar Biosphere Reserve (GNBR) in the world network of Biosphere Reserve under the Man and Biosphere Programme (MAB) of UNESCO submitted by the ZSI, Port Blair has been approved by the International Advisory Committee meeting of UNESCO held on 26<sup>th</sup> - 27<sup>th</sup> May 2013 at UNESCO Headquarters, Paris. Subsequently Centre organized a workshop on 'Value of Biodiversity in Islands Biosphere' during 13<sup>th</sup> and 14<sup>th</sup> September 2013 for 57 higher secondary school students and 12 biology teachers as a part of celebration of the recognition of Great Nicobar Biosphere Reserve

under UNESCO World Biosphere Network and Man and Biosphere Programme. A booklet Six pamphlets viz. *Sponges of Great Nicobar Biosphere Reserve*, *Scleractinian corals of Great Nicobar Biosphere Reserve*, *Polyclads of Great Nicobar Biosphere Reserve*, *Opisthobranchs of Great Nicobar Biosphere Reserve*, *Molluscs of Great Nicobar Biosphere Reserve* and *Echinoderms of Great Nicobar Biosphere Reserve*, and 6 posters viz. *Ascidians of Great Nicobar Island*, *Sea anemones of Great Nicobar Island*, *Corals of Great Nicobar Island*, *Opisthobranchs of Great Nicobar Island*, *Characteristic fauna of Great Nicobar Island* and *Birds of Great Nicobar Island* were prepared and released.

#### **4. Museum development**

1. Six charts depicting the different faunal groups were prepared bilingually and displayed in museum.
2. 72 posters different marine organisms were displayed in the Centre
3. 170 photos of marine and terrestrial fauna were displayed in the Centre
4. Charts and boards depicting the activities, achievements, fauna of Andaman and Nicobar Islands were prepared and displayed in Museum.
5. Modernization of museum by introducing new cabinets with illumination
6. Prepared the pamphlets on corals, echinoderms, molluscs, ornamental fishes, edible fishes and butterflies of Andaman and Nicobar Islands.

#### **5. Repository of Island faunal Diversity**

Construction of Faunal Repository Building for Island Biodiversity at ZSI, Port Blair is under progress.

(Dr. C. Raghunathan)