

Research and Education at Palk Bay Center Sustainable Fisheries Projects

Palk Bay Center in southern India is dedicated to environmental education addressing both young people and adults. As a field station for coastal research with appropriate programs, PBC turns increasingly into an advanced training and advisory center for coastal ecology of the northern Palk Bay region.



Report by Vedharajan Balajii

February - Free medical camp in Palk Bay Center

Five surrounding villages of Palk Bay Centre were selected for the Free Medical Camp. OMCAR Foundation announced to public about this camp by megaphone, posters and hand notices. However, we realized that elder people were in difficult to come to PBC. So, we informed village presidents to gather elder people in a pickup point in each village. PBC organized its car to carry the elders between village and PBC by its shuttle service. The free medical camp was organized jointly with Marine Police Department. About 150 people have benefitted from local fishing/farming villages.

The dining hall construction was completed, which is capable of serving food for 40 students at a time. This additional facility in Palk Bay Cen-

tre is providing more comfort and better hygiene conditions.

March - Spreading Awareness on Sustainable Fishery – Slow Fish Concepts

In 2014, OMCAR Foundation has been highlighting sustainable fishery education to all the coastal and adjacent schools. A conventional idea of a sustainable fishery is that it is one that is harvested at a sustainable rate, where the fish population does not decline over time because of fishing practices. Our team visited systematically planned and visited regularly to local schools to create awareness on this topic. Those visited schools are later invited to attend our Palk Bay Environmental Education Field Trips, which strengthen their understanding on marine conservation and its relationship with local fishery.

April - From Genova to Palk Bay

Slow Fish – Sustainable Fishery Awareness Posters prepared for displaying in schools and public places. 1000 posters were printed in English and Tamil languages. The poster contained the message of a local artisanal fisher – “Catch only big fishes without fish eggs and young fishes to protect our fishery resources”

This poster display is the follow up of discussion in slow fish meeting in 2013 at Genova. Du-



In cooperation with the Coastguard a free medical camp was organized at PBC.



ring this meeting, it was suggested by Mr. Jens Ambsdorf, Director of Light House Foundation to implement grassroot environmental awareness activities about slow fish contents (sustainable fishery). As OMCAR decided to highlight “sus-

tainable fishery” topic for awareness in the year 2014, we printed posters, visiting schools and organizing field trips for spreading awareness on Sustainable Fishery.

The posters explained the sustainable fishery messages for the conservation of local marine resources. Another poster from MFF also displayed in all the schools, which explained the importance of marine biodiversity and important marine species in India. The posters were displayed and explained to school students by omcar staffs. Slow fish refers to reducing indiscriminate fishery exploitations and maintaining sustainability of marine ecosystems by encouraging traditional and artisanal fishing methods.

April - Sharing marine experiences

One Day Meeting was held at Palk Bay Centre for the staff of Katamaran, which is an NGO located in Marakkanam. During this meeting Dr. Balaji and staffs of OMCAR foundation shared the methods of awareness rising among local community. Approaching schools, official permissions, topics that are suitable for environmental awareness, preparing paintings and awareness booklets for school children were shared by omcar staffs to staffs of Katamaran. OMCAR director also explained about organizing marine education field trips and lessons that are suitable for middle school students.

April - Palk Bay Centre maintenance work

Continuous maintenance is necessary in order to improve the benefits of Palk Bay Centre for better marine education, research and awareness. Upstairs in the centre is now being developed into a marine research laboratory. Seagrass research samples (seagrass specimens, sediments and water) will be analyzed in this laboratory. Student visitors can also enjoy better facility to observe marine planktons, cross sections of mangrove roots and leaves through microscopes.

May - Seagrass Beds, Dugong Feeding Grounds

Seagrass beds have been surveyed using acoustic, video and scuba groundtruthing techniques. Since the start of this project in 2012, we have completed about 210 km² area and identified

important dugong feeding grounds, and distribution of different species based on depth. This survey will be continued to cover the nearshore seagrass beds of entire palk bay in two to three years. The updated findings (photos, videos and species identification) of this research work are being shared with local community through our awareness and education events regularly, which will be also published in scientific journals soon.



The posters explain the sustainable fishery messages for the conservation of local marine resources.



The posters are also displayed in all the schools, which explained the importance of marine biodiversity and important marine species in India.

May - Artisanal Fisher Survey in Palk Bay

Artisanal fishers in Palk Bay are following traditional, unique methods of fishing such as pot

fishing; sail bait fishing and free swimming. They are still using traditional wooden canoes in near shore waters and hand picking shrimps from mangrove waters. There is no survey report available about the artisanal fishers of Palk Bay, which is important for improving their livelihood and to preserve their traditional methods. Our survey aimed to fulfill this gap by identifying such fishers in local fishing villages. Our staffs are being visited the fisher households to understand their economic conditions, problems in continuing traditional fishing techniques and asked their suggestions for improving the fish productivity in their traditional fishing areas. The survey will be completed at the end of this year.

June - Sustainable Fishery Education

65 students of Pudupattinam Matric School, 60 students of Adirampattinam K.M.School, 70 students of Manjavayal middle school, 60 students of girls higher secondary school were participated in school level sustainable fishery events in June 2014. Slow fish posters were displayed in all schools after the event.

June - Sustainable Fishery Field Education

50 students from Pallikondan Middle School were visited Palk Bay Centre to learn about local marine ecosystems, fishing methods and concepts of sustainable fishery methods.

Dr. V. Balaji, Director of OMCAR Foundation received State Government Environment Award 2014 (Aringar Anna Award) from Honorable Minister of Environment Thoppu Venkatachalam on 5th June 2014 during World Environment Day celebrations held at Chennai. This award is given to him for his long-term contribution for marine and coastal ecosystem conservation in Palk Bay.

July - Sustainable Fishery Education in Schools

The sustainable fishery education event was conducted in three schools. 60 students were participated in the programme held at T.kottai Melakadu Government Higher Secondary School. 55 students were participated in Naduvikadu Oxford metric higher secondary school and 63 students were participated in Adirampattinam Imam Shabi matriculation school. Information about Palk Bay

marine fishery productivity, fish assemblages, mangrove ecosystem, seagrass ecosystem, fish protein for healthy society and good practices for sustainable fishery were explained to the students. The students were invited to participate Palk Bay Centre environmental education events in forthcoming months.

A model of Dugong from Palk Bay Centre visited Australia for IUCN World Parks Congress. His international experience with leading conserva-



Dr. Balaji was awarded the environmental prize of the government 2014 (Aringar Anna Award).



Most important Topic at PBC in 2014 was sustainable fisheries.

tionists, young professionals and places were filmed to share with PBC visitors in 2015.

July - IUCN National Committee Meeting in Delhi

As a member of IUCN National Committee formed by Ministry of Environment and Forest, Government of India, Dr. Balaji represented annual meeting of members held at New Delhi. During this meeting the members decided to conduct various field programmes based on National Biodiversity Strategy and synchronize all their activities into IUCN National Committee reports in order to promote the committee activities.

August - Palk Bay Centre – Monthly Marine Education Programme

50 students from Thokkalikadu Government Middle School visited Palk Bay Environmental Education centre on 31st August 2014. The students were organized for a walk-in –field trip to mangrove restoration site, seagrass bed and beach. They attended sustainable fishery education presentation and demonstration of marine ecology field survey equipments and laboratory. The students learned to identify local marine mollusca and fishes using photographic guidance and preserved specimens. The relationship between healthy local marine and coastal ecosystems such as mangroves, seagrass beds and fishery associated socio economy, protein supply were explained to the students. The students tested pH, salinity of mangrove waters, observed marine phyto- and zooplankton, cross sections of mangrove roots, salt secreting glands of mangrove leaves and mangrove crabs in the laboratory.

793 students participated in our school level sustainable fishery education events in August 2014.

August - Survey of Dugong Feeding Grounds

The project was aimed to determine the locality, size and distribution of seagrass species and dugong feeding grounds in northern palk bay through fisher interviews, underwater acoustic and video surveys. It started in 2013 and is being carried out until August 2014. We expect complete the first phase in December 2014.

August - Fisher Interviews

Fisher interviews were conducted by visiting eve-

ry fisher in the project area individually. A standard questionnaire was prepared for interviews. This survey revealed that 75% of the fishers have directly seen dugongs in the project area while fishing. 89% of fishers have observed dugongs while traveling to fishing grounds from the shore. 61% of fishers told that they have seen frequently. However 37% of fishers told that they did not see them in the last one year. 84% of the the fishers told that the number of dugongs have been reduced since they came to fishing work.



For extended surveys of the seegrass areas a new mobile biological laboratory was used.

63% of them told that they know the area where dugongs will regularly seen. The full details will be submitted in the final report.

In the above interview, the project aim is to identify dugong feeding ground, so 63% of the fishers told us the frequent dugong observation sites, which were later indicated by them in a local coastal map. Then we had another question that why dugongs are frequently found in those areas. Old fishers told that the meadows of *Syringodium isoetifolium* (a seagrass species) which is a favorite food for dugongs is growing there naturally. They told that dugong grasses are found at about 5m depth which is actually between deeper and shallow areas. It is called as “Panni Thaazhai” (Panni refers to pig (dugongs) and Thaazhai refers to seagrass). It is also mentioned as Dugong Grass in other countries, which is slightly sweet in taste and the leaves are tubu-

lar in shape (like a syringe – so called as syringodium).

August - Acoustic Survey

A total area of 207.2 square kilometer was surveyed using acoustic method. The submergerd aquatic vegetation survey equipment (biosonic MX habitat mapper) was fixed on OMCAR research boat. Transects were laid using GIS software which are perpendicular to coast. (see our interim report also). Boat was oriented along the transects while operating underwater acoustic equipment. Data were directly processed in Biosonic softwares and further transferred to GIS softwares for creating thematic maps of seagrassbeds.

This survey revealed the thematic maps of depth, seagrass percentage cover and height in the project area. Very interestingly, the thematic maps showed high density, healthy seagrass beds in the same approximate areas as mentioned by fishers as dugong feeding grounds. So, instead of searching dugongs in the entire palk bay, we now further narrow down to search in those dense, healthy seagrass beds. However, we further needed to confirm the presence of seagrass species, dugong grazing paths or live grazing dugongs (which is now very rare due to traditional hunting and consumption by local fishing communities), although government has banned dugongs hunting.

August - Video Survey

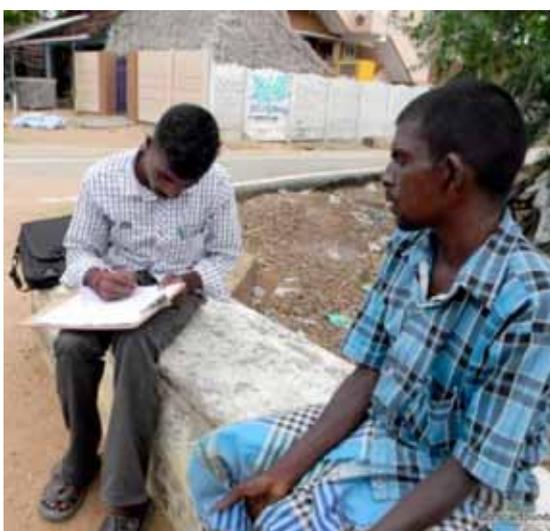
Although we have scuba equipments, divers and a seaviewer remote camera, the video survey has been in struggle due to higher turbidity. Northern side of Palk Bay (the study area) is generally has high turbidity due to heavy siltation from a number of river tributaries. In addition to this, the diurnal ocean currents and seasonal winds making difficult for video survey. So, we have completed only few transects of video survey (please see photos) that provide georeferenced videos of seagrass beds. We need few more months complete our video survey.

September - Sustainable Fishery Education

School level sustainable fishery awareness events were conducted for 194 students covering three schools such as Alangadu Higher secondary school, Gopalamudram middle school and Thillavilagam middle school. 60 students visited PBC in September 2014 to learn about Sustainable Fishery.

September - Teacher Training Programme

On 25th September 2014, Thursday, teachers



Interviewing fishers revealed that 75% of the fishers have directly seen dugongs in the project area

who are acting as Ecoclub & National Green Corps Coordinators of various middle, high and Higher secondary schools of Thanjavur district attended the field training at OMCAR Palk Bay Centre, near Mallipattinam, Thanjavur district. This training was conducted by C.P.R Environmental Education Centre, Chennai and OMCAR Foundation at OMCAR Palk Bay Environmental Education Centre located at Velivayal coastal village, near Mallipattinam. Here, the importance of Marine conservation, biodiversity of mangroves and its conservation management, need of mangrove awareness among public and education about marine and coastal areas were discussed.

October - Sustainable Fishery Education

The sustainable fishery education events were conducted in three schools in October 2014. A total number 220 students were participated in those events.

October - OMCAR at Terra Madre 2014

OMCAR coordinator G. Murugesan participated in Terra Madre (Mother Earth) 2014 event held at Turin, Italy. Participants from more than 150 countries have attended this global event. The event held at Oval building of Turin. Farmers, fishermen, NGOs, researchers, fishery experts, agricultural experts and community leaders were participated in this event. Millets, traditional food items, cheese, butter, traditional fruits, organic agricultural products, organic fruit beverages, meat, chocolates and many more traditional and organic food items from all over the world were exhibited. Local people from Turin were also visited the stalls, meetings and other events. This international food festival is aimed to create awareness on traditional food production and consumption which is good for both land and our health. Various NGO representatives and journalists were also participated in this event from India. Slow fish meeting was held during the event.

November - Marine Education for Students

Students from 10 different schools visited Palk Bay Centre organized by National Green Corps coordinator Dr. Sivasubramaniam. A total number of 30 students from nearby towns and villages were organized at PBC. This is the first time such group of students from across the district visited Palk Bay Centre and enjoyed their new active learning experience about local marine life, mangroves, seagrass beds and fishery. 30 students from Mallipattinam Higher Secondary School participated in PBC monthly sustainable fishery education events on 27th November 2014

November - International Exposure of OMCAR PBC in IUCN World Parks Congress 2014

IUCN organizes World Parks Congress in every ten years. In 2014, it was organized at Sydney Olympic Park, Australia from November 12th to 19th 2014. Dr. Balaji, founder of OMCAR Foundation was selected in a international competition named as "Pushing Boundaries Challenge". This competition selected two young professionals working for nature conservation in which Dr. Balaji from India and Andrew from South Africa was selected.

The selected winners of this competition were invited to attend IUCN World Parks Congress, one week pre congress youth workshop, a visit to Google office in Sydney. IUCN supported travel, accommodation and food as a delegate of the congress.

During one week workshop held at Blue Mountains near Sydney, young professional working all over the world for nature conservation were shared their conservation experience and developed a pact to propose during IUCN World Parks Congress. After one week of workshop events, the participants were invited to visit Google office in Sydney for one day training to learn how to use Google earth tools for conservation mapping.

This pre-congress workshop has given insight of various conservation professional careerers and how to support each other for environmental research, conservation and awareness using locally adaptable strategies. Future internship programmes among the participant organizations will be followed up, and the pact developed during the workshop is being continuously updated.

Dr. Balaji has delivered a presentation in two sessions during IUCN World Park Congress. The title of the presentation was “Camera, Bike, Kayak and Conservation”. In this presentation, he explained how his first hand made underwater

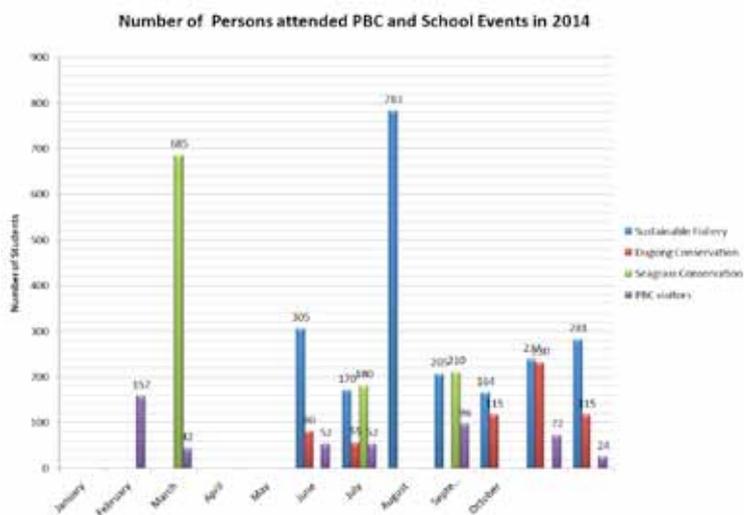
camera in his teenage led him to ride his 1200km motor cycle in 2002 and 600km seaka-yaking in 2007 for creating awareness about marine conservation. He then explained how he founded OMCAR Foundation and its grassroot environmental conservation, awareness and re-search activities through Palk Bay Centre.

November - Dugong-Documentary

An educational documentary has been produced for creating awareness about dugong conservation among school students throughout the IUCN WPC 2014. The story begins from a local village with a dugong toy, which travelled to Australia participating various events for conservation, while international participants sharing their views on marine conservation and wishes to Palk Bay Centre. This documentary is in post production work which will be ready to display in LCD shows for PBC visitors, students and teachers from February 2015.

December - Mangrove Restoration Field Work

5,000 mangrove seedlings from PBC nursery were transplanted to nearby coastal area and planted along the creeks. The mangrove seedlings have been raised by various student and women groups for the past one year through PBC educational events and backyard nurseries. The seedlings were planted in selected sites by our traditional mangrove restoration experts in a suitable season (monsoon). The sites are marked for taking time-lapse photos for the next five years.



A total of 4,310 visitors attended different education events at Palk Bay Centre in 2014. Most important topic in this year was sustainable fisheries, whereas 2013 the ecology and conservation of seagrassbeds was focussed.

Dezember - Einweihung der OMCAR-Verwaltung
Unser neues Büro für die Verwaltung des Palk Bay Centers wurde im 12. Dezember 2014 von Schülern und Lehrern eingeweiht. Gemeindevertretern und Professoren waren zu der Feierlichkeit eingeladen. Das neue Büro befindet sich zwischen der Stadt Pattukottai und dem Palk Bay Centre.

December - Terra Madre Day Celebrations

27 fisher women have participated in the celeb-



5.000 mangrove seedlings were transported to the coastal area and have been planted along the bay.

rations. Basic concepts of Terra Madre and global meeting were explained to participants. Dr. Balaji has shared the importance of promoting traditional food cultures and organic farming practices.

After the meeting, the participants were involved in community cooking by using organic certified products. They cooked traditional Tamil food using millets, grains, coconuts, fruits and vegetables. This event is the first of its kind in PBC, which will be promoted into bigger events for traditional food training with special reference to marine fish, shrimps and squids.

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since June 2004

Funding 2014:

39.195 Euro

Project partner:

Organization for Marine Conservation,
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