



## PAGTAOB

is the Visayan term for the rising of the tide. Every flood of the tide brings with it new nutrients and other important components that sustain the numerous denizens in the intertidal zone. Just like the nutrients that are being brought in, information is also vital for marine scientists.

This newsletter aims to update the XU community and our partners on the different programs and activities of the McKeough Marine Center.

## INSIDE THIS ISSUE:

ALUBIJID CELEBRATES 2 <sup>ND</sup> PISTA SA DAGAT	2
GIS FOR UPSCALING SEAWEED OPERATIONS IN THE PHILIPPINES (GUSO-PHIL)	3
AJCU DELEGATES' MARINE LEARNING TRIP IN AGUTAYAN ISLAND	4
MBDA RECEIVES BFAR AWARD	5
XU JOINS THE 46 <sup>TH</sup> FIMFS ANNUAL NATIONAL CONVENTION	5
FIGHT AGAINST MARINE DEBRIS: A MACBAY-WIDE CLEANUP	6
10 TIPS FOR DIVERS TO PROTECT THE OCEAN PLANET	8

# PAGTÁOB

THE OFFICIAL NEWSLETTER OF THE MCKEOUGH MARINE CENTER OF XAVIER UNIVERSITY

JULY 2014 - DEC 2014  
VOLUME 2 - ISSUE 3

## VEST GEARS TOWARD PEOPLE'S PARTICIPATION TO PREVENT 'ANOTHER SENDONG'

By Stephen Roy Jayoma Pedroza



The region-wide environmental movement dubbed as Valuing Ecosystem Services Together (VEST) of Xavier University had its successful launch, highlighting the people's participation and a paradigm shift to prevent another catastrophe from inflicting Northern Mindanao.

"We have in one way or another experienced the wrath of a natural disaster. Do we want to experience another [Typhoon] Sendong? Of course not. We should rather say 'Never! No more,'" said Gertrude M. Garcia, the director of XU's McKeough Marine Center. MMC frontlines this environmental endeavor as part of the ridge-to-reef approach in the region.

VEST is grounded upon the philosophy that what happens at the top trickles down to the lowlands. Evidently, during the lash of Typhoon Sendong in December 2011, most water which came down and ravaged Cagayan de Oro City originated from the headwater tributaries in Bukidnon.

"The think tanks have thought of the Payment Ecosystem Services (PES). The PES program has VEST as its campaign aimed at engaging different sectors in the region to take part in the venture of protecting our remaining forests," Garcia said.

PES acts as a "payment cycle" designed to protect our forest in the highlands of Mindanao so that when it rains, the water will not be devastating by the time it reaches urbanized areas such as CDO.

"This rehabilitation will provide the ecological service of preventing further flooding in the city that is why it is important that we bring in the communities from the downstream and upland to this landscape restoration," said Dr Hilly Ann Roa-Quiaoit, XU vice-president for Research and Social Outreach (RSO).

"It is not too late to rehabilitate the forests of Bukidnon that is why our partners in the Mirayon-Lapok-Lirongan-Tinaytayan Tribal Association (MILALITTRA) have organized themselves to help us protect and manage

well our environment so CDO will not experience another Sendong again," added Roel R. Ravanera, the executive director of Xavier Science Foundation, the non-government organization which serves as the fund and resource manager of PES.

Part of this endeavor is to mainstream the principles of VEST. With this idea, a slew of activities were aimed at raising awareness and encouraging the Kagay-anons to participate in the fund drive to reforest Mt. Kalatungan and reward the efforts of the indigenous people community as the forest managers.

"We will now move forward by going directly to the household level, visit and conduct orientation for schools, corporations, various churches, and cooperatives," explained Evans I. Yonson, VEST project supervisor, as part of the five sectors encouraged to invest in nature. "The next target is making people value Mother Nature more. How? By donating to the cause."

The 5-year master plan of MILALITTRA aims to reforest 832 hectares, while 816 hectares will be allotted for agroforestry.

Mt. Kalatungan is among the 18 protected areas to be provided with technical and management assistance by both the public and private sectors to achieve balanced and inclusive growth.

"Our lives are interconnected with one another. What happens in the highlands will affect the downstream communities and we value our forests because they are part of our identity," MILALITTRA chairman Datu Dungkoan "Rio" Besto said in Bisaya.

"Above all, this project is a great way to show our utmost respect to Mother Nature—to heal what we have caused her."

*Photo by Anthony Jacob C. Karagdag*

# ALUBIJID CELEBRATES 2<sup>nd</sup> PISTA SA DAGAT

By Kristine A. Galarrita, MSc



As part of the Macajalar Bay Development Alliance's (MBDA) program on Information Education and Communication (IEC) campaign, the inter-LGU cooperation conducted the *Pista sa Dagat* to celebrate the importance of the bay and its resources by involving the community and other stakeholders in fun-filled activities. This event was piloted at Barangay Loguilo, Alubijid, Misamis Oriental on August 14, 2013 with the cooperation of its 3 coastal barangays. The recent *Pista sa Dagat* conducted on August 8, 2014 was not only attended by coastal communities but was also participated by upland barangays signifying the interconnectivity of the ridge, river and reef ecosystems.

The Municipality of Alubijid in coordination with the MBDA organized and conducted the 2<sup>nd</sup> Pista sa Dagat with the theme, "*Atong Kabaybayonan, Atong Kinabuhi.*" The fluvial parade marked the start of the celebration followed by various activities such as jingle-, poster- and mascot-making contests, boat racing, sand castle building and the traditional *palo sebo*, among others. Alubijid Mayor Alvin Giovanni Labis welcomed all participants and guests and emphasized the importance on the protection of the environment through the Ridge-to-Reef approach. Among those in attendance included Vice Mayor Emmanuel Jamis, the SB Committees, barangay chairmen and MBDA partners namely PNP Maritime Group, Philippine Coast Guard and the Bureau of Fisheries and Aquatic Resources-10. Xavier

University-McKeough Marine Center (XU-MMC) facilitated the quiz show as part of its campaign on marine conservation. This was participated by high school and elementary students wherein they and the audience learned a lot about the marine environment and its resources.

The *Alubijidnons* did not only have fun but went home bearing with them the knowledge on how to protect the watershed, river and their coastal communities. The success of this event was recognized by the Provincial Government of Misamis Oriental and prompted for the conduct of a province-wide *Pista sa Dagat* this year with the participation of 26 LGUs and the Gingoog Bay Alliance.



# GIS FOR UPSCALING SEAWEED OPERATIONS IN THE PHILIPPINES (GUSO-PHIL)

By Patrice Bianca Roa

[www.underwaterfestival.org](http://www.underwaterfestival.org)

In November 2014, Xavier University hosted an inception meeting officially accepting a grant of Php19M funded by the Department of Science and Technology - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) to map out the seaweed farms in the Philippines. With XU vice-president for Research and Social Outreach Dr. Hilly Ann Roa-Quiaoit as the project leader, this project is in partnership with Dr. Wilfredo H. Uy of Mindanao State University - Naawan (MSUN) and Dr. Della Grace G. Bacaltos from Southern Philippines Agri-business and Marine and Aquatic School of Technology in Davao Oriental (SPAMAST).

The project mainly has three components: GIS, Biological, and Socio-economic. Under XU, the units involved are: Geoinformatics and Precision

Agriculture Center (GPAC), Department of Biology, Department of Sociology and Anthropology, College of Computer Studies (CCS) and the McKeough Marine Center (MMC). The project will also link with the Bureau of Fisheries and Aquatic Resources (BFAR), Seaweed Industry Association of the Philippines (SIAP), the Marine Science Institute of the University of the Philippines (UPMSI) and the respective local government units (LGUs).

With GPAC heading the GIS component, it will serve as the database headquarters for all the data that will be gathered by all partners. With this database, an atlas of maps showing the seaweed farm areas will be generated. In addition to this output, an interactive website will provide an actual map of groundtruthed data with seaweed farm details.



## MARINE CORNER



### AJCU DELEGATES' MARINE LEARNING TRIP IN AGUTAYAN ISLAND

By Ria Duana A. Roble

As part of the Association of Jesuit Colleges and Universities - Service Learning Program (AJCU-SLP) Asia Pacific of Xavier University's Kristohanong Katilingban sa Pagpakabana-Social Involvement Office (KKP-SIO), the XU McKeough Marine Center (MMC) organized a marine learning trip geared towards getting a sound awareness and exposure to the Agutayan Island for the AJCU delegates on August 17, 2014. The participants came from the different Jesuit schools in Korea, Indonesia, Japan, and the Philippines.

Prior to the actual trip, a short lecture about the programs of MMC with its endeavors for marine conservation and an orientation about the details of the trip to Agutayan Island were given in the evening of August 15 at the XU Manresa Magis Center.

During the trip, the MMC team imparted some significant information about the giant clams and other marine resources to the delight of the delegates since it was their first time to observe these marine wonders in their natural habitat. However, when told that these organisms are in the verge of extinction due to human intrusion and environmental imbalance, they expressed as much concern to do their part to help protect these endangered species. The tour was rather short but worthwhile for everyone.

The rest of the morning was spent by the delegates snorkeling and swimming in the area which obviously made their learning experience more fun and undeniably worth sharing in their respective home countries.



A soft looking tube anemone (*Cerianthus* sp.) seems pretty harmless like a beautiful flower, but be sure not to touch as it stings like a bee.



The painted frogfish (*Antennarius pictus*) hides its true shape by the markings around its body making them look more like a palette of algae and colorful denizens of the reef than a fish. But like all frogfishes, secretly hidden in its arsenal is a striking gulp and a distensible stomach that can accommodate prey as large as the frogfish.



The hawksbill turtle (*Eretmochelys imbricata*) is a species of sea turtle that has been recorded to nest in the beaches of Macajalar and Gingoog bays. They are mostly solitary and are commonly seen in coral reef areas within both bays. They may seem common to the divers and the people of Misamis Oriental but this is one of the species that is critically endangered globally, having its population reduced greatly.

Words and photos by  
Fra-and Timothy Quimpo



### MBDA RECEIVES BFAR AWARD

By Kristine A. Galarrita and Jo Marie T. Acero

The Macajalar Bay Development Alliance (MBDA) received a commendation award during the 51<sup>st</sup> Fish Conservation Week Celebration of the Bureau of Fisheries and Aquatic Resources - Region 10 (BFAR-10) on October 13-17, 2014.

With the theme "Sektor ng mga Mangingisdang Rehistrado at Kinilala, Kabalik sa Pagsulong ng Pangisdaang Masagana," the week-long event awarded various institutions for their contributions and support to the sustainable management of fisheries and aquatic resources.

Dr. Hilly Ann Roa-Quiaoit, XU vice-president for Research and Social Outreach (RSO), was also a recipient of the commendation award for initiating the creation of the inter-LGU alliance in 2008, and for her support in research and capacity building activities.

The celebration was in line with the Presidential Proclamation No. 176 and mandated in the Fisheries Code of the Philippines (RA 8550 series of 1998) to remind the public the importance of protecting and preserving the marine resources as it is one of the main livelihoods of the general populace.



### XU JOINS 46<sup>th</sup> FIMFS ANNUAL NATIONAL CONVENTION

By Rex Samuel A. Abao Jr

The 46<sup>th</sup> Federation of Institutions for Marine and Freshwater Sciences (FIMFS) Annual Conference convened on October 22-24, 2014 at the Jose Rizal Memorial State University (JRMSU) in the historical city of Dapitan, Zamboanga del Norte. Five delegates from Xavier University which includes four Biology faculty members, Lolita Martinez, Vic Moses Tagupa, Anita Mabao and Rex Samuel Abao Jr, and XU McKeough Marine Center (MMC) technical assistant Ria Duana Roble attended the three-day conference led by the XU vice-president for Basic Education and FIMFS secretary, Dr. Dulce R. Dawang. This year's convention, with the theme "Strengthening Collaboration in Aquatic Ecosystems Conservation" was attended in by more than 250 participants from various parts of the country.

Roble presented the scientific paper titled "Giant Clams in Agutayan Island, Jasaan Misamis Oriental: A Decade Ago After Reseeding." The paper concluded that the giant clam population in the area decreased from 574 to 141 and the survival rate of the clams for 13 years lowered to 26.3%. Regular monitoring of the giant clams is being conducted by MMC and volunteers from the academe and civic groups from date of reseeded until the present.

FIMFS is the longest running scientific organization of aquatic sciences in the country which started in 1968. Since its inception, the FIMFS annual convention has been a venue for presentation of studies related to aquatic sciences by academic and research institutions, both private and government-affiliated, all over the country. The late Fr. James McKeough SJ was the co-founder of the Federation with other educators from leading universities in the Visayas and Mindanao: Ateneo de Davao, Mindanao State University, Silliman University and the University of San Carlos.



# FIGHT AGAINST MARINE DEBRIS:

(AN EXCERPT FROM THE MACAJALAR BAY COASTAL CLEANUP 2014 REPORT By Kristine A. Galarrita and Ria Duana A. Roble)



Marine debris poses big threats to the marine environment, as well as to human health. Marine resources such as fishes, crabs, seaweeds, shellfishes, etc. serve as good food and livelihood to human beings. The decline of catch leads to competition of resources and may eventually leave humans no choice but to practice illegal methods such as dynamite fishing, cyanide fishing and poaching among others, in the need to feed their families and survive each day.

This is a reality happening now that no place on Earth is exempted. Majority of the trashes such as plastics, rubber materials, discarded fishing gear and wastes coming from industrial factories, beach resorts, restaurants and the uplands contaminate our bay and coasts. It is now in our hands to help spread the knowledge, minimize the severity of pollution and stop the

ocean's silent killer. For in one way or another, marine debris injures and kills marine life; it threatens each of our lives.

## MMC, MBDA spearhead cleanup

In order to address these unceasing concerns on marine degradation, the Xavier University-McKeough Marine Center (XU-MMC) and Macajalar Bay Development Alliance (MBDA) initiated two activities in part of the 2014 International Coastal Cleanup Month: (1) a marine conservation photo exhibit and (2) a synchronized coastal and underwater cleanup. The first activity was held at Centrio - Ayala Mall on September 15-19, 2014 as part of the Provincial Tourism Week which showcased the marine resources present in the Macajalar Bay and the programs implemented to combat the threats being faced by our remaining resources. Furthermore, an audio-

visual presentation "Sangtwayo" was shown during the last day to convey the importance of Marine Protected Areas (MPAs) and the great need to conserve it. The AVP is one of the outputs of MMC's 2-year project and funded by GIZ through the "Enhancing Resiliency to Climate Change" program for Macajalar Bay.

The second activity was a synchronized coastal cleanup and marine debris recording in 55 barangays along the Macajalar Bay on September 20, 2014 with the participation of various representatives from the Department of Environment and Natural Resources - X, Bureau of Fisheries and Aquatic Resources - X, Philippine Coast Guard, Petron Corporation, Shell Cagayan de Oro, N Hotel, Archdiocese of CDO and Bulua National High School, among others. MMC led the cleanup together with the National Service Training Program - IEC

# A MACBAY-WIDE CLEANUP



Student Development Advocates (NSTP-ISDA) at Barangay Bonbon while the member-LGUs of the MBDA did their cleanup in their respective localities. Representatives from the provincial government of Misamis Oriental also took part in selected areas of the bay. Similarly, an underwater cleanup were participated by dive volunteers from MMC, XU Marine Science Society and Dive Special, Inc. in the MPAs of Barangay Bayabas in CDO and in Barangay Taytay of El Salvador City.

## Trashes in Macajalar Bay

The figure below shows the top 5 collected marine debris in the coastal areas of Macajalar Bay. Worldwide, food wrappers or containers (1,140,222 pcs), plastic beverage bottles (1,065,171 pcs) and plastic bags (1,019,902 pcs) were respectively found to be the top 2, 3 and 4 most collected trash basing on the international coastal cleanup 2012 report of

Ocean Conservancy. Food wrappers and plastic beverage bottles still hold its rank in the 2013 report. Cigarette filters and butts were first in rank for both 2012 and 2013 reports. Overall, plastic materials were the most abundant type of trash collected in all coastal areas of Macajalar Bay ranging from 48.68% (Laguindingan) to 89.10% (Kinoguitan).

A total of 55 out of 88 coastal barangays in Macajalar Bay, specifically 2,734 volunteers participated in the simultaneous coastal cleanup. A river bank in San Isidro, Jasaan was also included in the cleanup signifying the connectivity of the river to the reef. Ocean Conservancy reported that a total of 561,633 persons volunteered worldwide in 2012 - 143,946 of which were from the Philippines covering 444 miles. Record of volunteers in the country increased to 182,644 in 2013. The Philippines has been identified by Ocean Conservancy as the Top 2 participating country in celebration of international coastal cleanup.

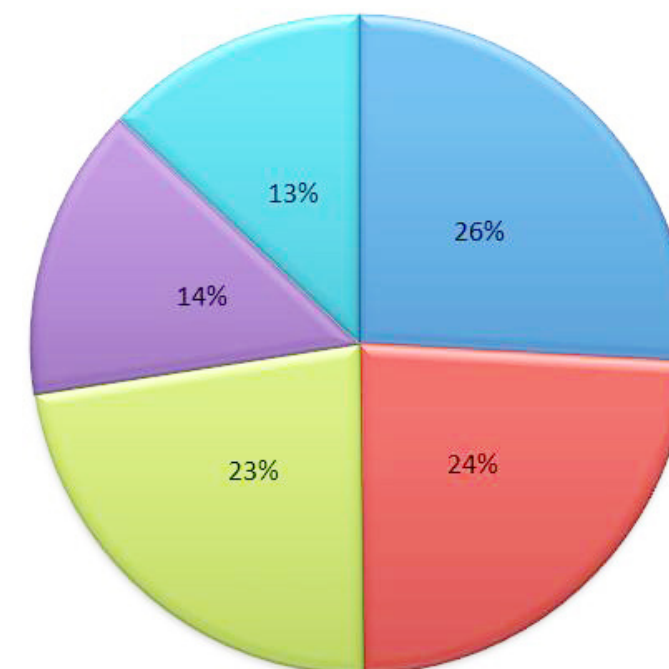
## Engage. Protect. Advocate.

The upland areas are also encouraged to initiate cleanup activities to highlight the interconnectivity of the ridge-river-reef ecosystems in which any debris and pollutants coming from the highlands eventually go downstream to the river, and finally to the bay. This does not only affect the marine resources but also humans who depend on it for food and livelihood.

The main goal of this cleanup is to minimize, if not eliminate pollution in the coastal areas in the near future. Raising awareness on the effects of marine debris with the cooperation of the community and other stakeholders is essential. An intensive Information Education and Communication (IEC) campaign on how to mitigate trashes including effective policies with special emphasis to the most common debris collected in the area is highly recommended.



The photo exhibit forms part of the Misamis Oriental tourism week celebration.



## TOP 5 COLLECTED TRASH (%) IN THE COASTAL AREAS OF MACAJALAR BAY

- bags: grocery/retail (plastic)
- food wrappers (plastic)
- cigarette filters
- bags: trash (plastic)
- cloth fragments

# Bachelor of Science in Marine Biology

Students are trained to be knowledgeable in the field of Marine Science and conduct research on the utilization, development and conservation of marine resources.

Graduates can also proceed to medical school and other related fields of research.

For more information, contact:

**XU Biology Department**  
(088) 858-3116 local 3102



## 10 TIPS FOR DIVERS TO PROTECT THE OCEAN PLANET

Divers share a deep connection with the ocean. You can make a difference for ocean protection every time you dive, travel and more.



Be a buoyancy expert



Be a Role Model



Take Only Photos—Leave Only Bubbles



Protect Underwater Life



Become a Debris Activist



Make Responsible Seafood Choices



Take Action



Be an Eco-tourist



Shrink your Carbon Footprint



Give Back

Source: [www.projectaware.org](http://www.projectaware.org)



**McKeough Marine Center**  
2nd Floor, Science Center Building  
Xavier University - Ateneo de Cagayan  
Corrales Avenue, Cagayan de Oro City  
Philippines, 9000  
+ 63-88-8583116 local 3115  
[mmc@xu.edu.ph](mailto:mmc@xu.edu.ph)

### EDITORIAL STAFF

**Ria Duana A. Roble**  
Editor

**Stephen Roy J. Pedroza**  
Proofreader

**Wendel T. Abejo**  
Layout Artist

### PHOTO CREDITS:

**Anthony Jacob C. Karagdag**  
**Fra-and Timothy Quimpo**  
**Rhea M. Arroyo**  
**Jo Marie T. Acero**  
**Jue A. Lalas**  
**Warwin Sabasaje**