



# PAGTÁOB

The Official Newsletter of the McKeough Marine Center of Xavier University | Volume 3 Issue 1 | January - August 2015

*PAGTÁOB is the Visayan term for the rising of the tide. Every flood of the tide brings with it new nutrients and 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*



## SCORE, MMC CONDUCT WORKSHOP ON CORAL PROPAGATION, CONSERVATION

*By Rex Samuel A Abao Jr and Ria Duana A Roble*

**S**exual Coral Reproduction (SCORE) Foundation and Xavier University - McKeough Marine Center held a four-day workshop on coral propagation, conservation and restoration at the XU Marine Station, Jasaan, Misamis Oriental. Held on May 2-5, the workshop was led by XU vice-president for Research and Social Outreach Dr Hilly Ann Roa-Quiaoit.

The workshop served as an avenue for the delegates to share insights and discuss the status of the corals in the country. The lectures, spearheaded by SCORE Foundation president Dr Dirk Petersen, focused on coral restoration employing sexual reproduction, and included issues on coral degradation. The concepts covered in the lectures were put into practice through laboratory works and complimentary night dives that enabled the participants to observe first-hand coral spawning.

There were nine academic institutions from different parts of the Philippines that participated in the workshop: University of the Philippines - Visayas Institute of Marine Fisheries and Oceanology, Bohol Island State University - Candijay Campus, Mindanao State University - Naawan, University of Northern Philippines - Vigan, Jose Rizal Memorial

State University, Visayas State University, Mindanao State University - Sulu, De La Salle University and XU. The Department of Environment and Natural Resources - Region 10 and the Bureau of Fisheries and Aquatic Resources - Region 10 representatives were also present during the said event.

Other members of the team who trained the delegates and shared their insights were marine ecologist and SCORE Foundation communications officer Dr Carin Jantzen; aquarist Mitch Carl from Omaha's Henry Doorly Zoo and Aquarium in Nebraska, USA; aquarists Pam Montbach and Tim Wong from Steinhart Aquarium, California Academy of Sciences in California, USA; and the aquarist, photographer, filmmaker Mike McCue from Underwater World in Guam, USA.

To conclude the workshop, a half-day seminar was held at the XU Nursing Amphitheater on May 6. The Coral Conservation and Restoration Workshop 2015 provided strategies and useful information that will aid the academe and government offices in achieving coral restoration efforts in the near future.

*Photos by Mike McCue and Sue Ong*

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# Ridge-to-Reef Exchange Learning Visit

*Text and photos Sue Andrey Ong*

**O**n February 19, the McKeough Marine Center, a member of the Ecosystem Alliance (EA) program welcomed Benin EA NGO partners, Togolese NGO JVE and GiZ lead program country coordinator from West Africa.

The learning visit aimed to enhance the knowledge and experience of the participants on river basin management, Payment for Ecosystem Services modalities in Northern Mindanao, coastal and forest management, and to build linkage among NGOs.

A series of speaking engagements were held in Cagayan de Oro City and Malaybalay City which provided opportunities for both parties to share their best practices on environmental management of their respective organizations and adopted communities.

The two-week exchange visit was facilitated by the Valuing Ecosystem Services Together (VEST) team in collaboration of the Macajalar Bay Development Alliance and local government units, Kitanglad Integrated NGOs, Non-Timber Forest Product (NTFP), Department of Environment and Natural Resources-Protected Areas Management Board-Kalatungan, Bukidnon-Daraguyen Tribe in Mt Kitanglad, Miarayon-Lapok-Lirongan-Tinaytayan Tribal Association (MILALITTRA) of Mt Kalatungan and other partner NGOs.

Different field exposures were conducted during the exchange visit from the coastal areas of Macajalar Bay to the local sunflower weavers' community in Manalog, Bukidnon-Daraguyen Tribe and MILALITTRA in the province of Bukidnon.



# MMC, MBDA celebrate Earth Hour

*By Ria Duana Roble | Photos by MMC*

**S**M Supermalls once again staged Earth Hour to set an example on taking a stand against the indiscriminate threat of global warming and pledged a commitment to a low-carbon lifestyle by switching off their lights, going beyond the hour. The campaign also made a strong statement that the simplest and smallest action (like switching off electricity for an hour) when done by a lot people, can make an impact of global proportions.

This formed part of the center's and the alliance's information, education and communication (IEC) campaign initiatives on marine conservation. Topics discussed centered on marine resources and its ecosystems, documentaries of MMC's and MBDA's efforts for marine conservation, and environment-themed educational videos were shown during the exhibit.

Guests, especially children, were intrigued and amazed of the wonders of nature during the info drive. With this kind of activity, it did not only limit to promoting awareness but also encouraged people to change their behavior and make the efforts in becoming more resilient to climate change.

Following the theme "Change Climate Change" the Xavier University-McKeough Marine Center (MMC) and Macajalar Bay Development Alliance (MBDA) initiated a "Ridge-to-Reef Photo Exhibit and Information Drive" at SM City, Cagayan de Oro on March 28-30.







# The 1st Macajalar Bay *Pista sa Dagat*

By Kristine Ares Galarrita | Photos by Sue Andrey Ong and MBDA

The Macajalar bay Development Alliance in collaboration with Bureau of Fisheries and Aquatic Resources X, Department of Environment and Natural Resources X, and McKeough Marine Center held the 1st Macajalar Bay *Pista sa Dagat* on May 26-27 at Marvilla Beach Resort, in the Municipality of Opol in line with the simultaneous celebration of the Ocean and Fisherfolk Month.

This activity aimed to mobilize among coastal municipalities/cities the awareness and ownership of the ecosystems and its resources. It also attempted to tag along businesses, private and other sectors, as sustainability and partnerships are key elements for the success in finding ways to improve the milieu of our ecosystems.

One of the highlights of the event was

the marine parade which marked the start of the event with a total of 12 participating boats representing the MBDA, BFAR, DENR, XU-MMC, PNP Maritime Group, Philippine Coast Guard and the 4th Infantry Division through the 58th Infantry Battalion

Kristine Galarrita, MBDA program manager, culminated the opening program with the launching of the alliance's official website, [macajalarbay.com](http://macajalarbay.com). A night fellowship by the Oceania Festival drew together the participants and other beachgoers.

On its second day, DENR X led the coastal cleanup wherein the trash collected was recorded for monitoring. This was followed by various games participated in by the fisherfolk and facilitated by the MBDA TWG members.

The 2-day *pista* was made possible by the presence of partner NGAs, various stakeholders, and 11 out of 14 LGUs of MBDA were represented together with the provincial government of Misamis Oriental and fisherfolk representatives.

Locally, LGU Alubijid conducted the *Pista sa Dagat* for two consecutive years, in 2013 and 2014, as part of MBDA's IEC program.



# MSASD holds benchmarking visit to learn MBDA'S experiences on coastal mng't

By Kristine Ares Galarrita | Photo by MBDA

The Metro Siargao Alliance for Sustainable Development (MSASD), an alliance composed of 9 member-LGUs from the province of Surigao del Norte, embarked on a benchmarking trip aimed at learning how the Macajalar Bay Development Alliance (MBDA) was established, how it has addressed its challenges and sustained its programs.

The learning visit was held on June 19. The activity highlighted the importance of the academe's involvement on coastal management, such as the partnership of MBDA and Xavier University, sharing of MBDA's technical working group's experiences and

lessons to the participants, marine exposure through snorkeling and other water activities in the Agutayan Island of Jasaan.

This is the fourth time for MBDA to host a learning visit after the Passage Development Alliance, Cagayan de Oro River Basin Management Council for its *Ang Panagtagbo sa Tigbantay sa Lasang, Suba ug Dagat*, and XU – McKeough Marine Center for its International Union for the Conservation of Nature - Ecosystem Alliance and its EA Benin-Togo NGO partners from the Republic of Benin in West Africa.



## Meeting of the Minds

By Haskell Ann Rama Distajo

Each person that we meet knows something that we do not. It is rare for students from different schools to gather to share experiences and opinions about a subject.

However, last July 12 of this year, Marine Science Society took on a rare opportunity to meet and talk with some marine biology students from the University of the Philippines-Visayas about their experiences as students and their opinions about marine life, resour-

ces and the environment as a whole.

This was not done in an air-conditioned room, as one would think it would, but this was done outside the corners of the campus, it was through river trekking in Mapawa, Misamis Oriental. It was different to share one's knowledge and experience in a room with artificial lights and calculated temperature. Outside, where the sun is bright, land is rough and bumpy, with the wind touching one's skin gently and where water flows

without constraint, is an environment a person would feel more open and free.

It is difficult to find people with whom you share the same mindset and passion. Meeting the students of the UP-Visayas was a gathering of minds with the same thoughts, opinions and perspective about the marine environment. And for the Marine Science Society, it was a worthwhile and a joyful experience for we truly did learn things we did not know.

## Bachelor of Science in Marine Biology

Xavier University - Ateneo de Cagayan offers a course on Marine Biology where students are trained to be knowledgeable in the field of Marine Science, and to be able to 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, you may contact:

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# MMC joins EAFM training in Laguna

By Nadine Arabelle L Vivares

**M**ckeough Marine Center staff Kristine Ares Galarrita and Rex Samuel Abao Jr participated in the course training for Ecosystem Approach to Fisheries Management (EAFM) conducted in Los Baños, Laguna last June 29 to July 3.

Conducted by the Philippine Council for

Agriculture, Aquatic and Natural Resources Research and Development (PCAAR-RD-DOST), the 5-day training aimed to provide basic knowledge on the EAFM process and how EAFM can assist in decision making for responsible and sustainable fisheries management in the respective regions of the participants.

## Artificial reef domes deployed in Villanueva

By Ria Duana A Roble and Stephen J Pedroza | Photos by MBDA



Rex Samuel Abao and Jue Alef Lalas) deployed the domes in selected sites of Villanueva. Among those in attendance were participants from Macajalar Bay Development Alliance (MBDA), XU-MMC, LGU Villanueva including Vice Mayor Edwin Dagasuhan.

MacBay is a major fishing ground in Northern Mindanao and serves as a pivotal hub for international and local industries. However, economic pressures and strong coastal migration have posed threats to the ecological diversity and stability of the bay. MBDA pushes for a multisectoral development towards marine conservation, provides expertise in bay enforcement, and develops information, education, communication activities and materials.

**T**he Junior Chamber International (JCI) Manila and JCI Macajalar 24K (an all-female chapter based in Cagayan de Oro City) in partnership with the McKeough Marine Center (MMC) of Xavier University, Scuba de Oro and the local government unit of Villanueva, deployed artificial reef domes in the Villanueva portion of Macajalar Bay on March 16, 2015 to promote marine growth and rehabilitation of damaged corals. The artificial reef domes are a mixture of cement, sand and dead corals.

JCI initiated a project dubbed as "Sea of Life" that aimed to build environmental awareness against illegal means of fishing and to rehabilitate the areas where coral growth is possible.

A total of 8 divers, (3 of whom are from MMC namely, Fra-and Timothy Quimpo,



MMC sees the partnerships with non-government organizations and other sectors to boost active marine protection and preservation efforts, ensuring a sustainable future for the coastal communities and the Macajalar Bay.

## MARINE CORNER



### The Stonefish

By Nadine Arabelle L Vivares  
Photo by Fra-and Timothy Quimpo

News about a tourist dying reportedly because of a stonefish sting has been making rounds on the Internet a few months ago. Whether it was what really happened, it is true that stonefish venom is one of the most potent venoms in the animal kingdom, and fatalities due to stonefish envenomation have been reported around the world. Stonefishes are considered the most dangerous venomous fish in the world, however they only cause harm when they are stepped on; they do not actively attack people.

Stonefishes (genus *Synanceia*) are found in the coasts of the Indo-Pacific, including the Philippines. They owe their name to their ability to mimic stones and corals with their mottled color and textures. Their excellent camouflage makes them effective hunters as their fish prey (and humans!) cannot distinguish them from the substrate; this is why it is important to wear protective footwear when in the ocean. Thirteen dorsal spines jut out from the venom glands along its back which inject venom when pressure is applied to them, such as when a person accidentally steps on them. Envenomation will cause excruciating pain, swelling, paralysis, and shock, which may result in death if not treated immediately.

IF STUNG BY A STONEFISH, these are the things to remember: (1) immediately get out from the water; (2) immerse stung limb in hot water, in a temperature as hot as the victim can tolerate. It is known that stonefish venom has heat-sensitive proteins, so heat inactivates the venom; (3) seek medical help the soonest possible; (4) a tetanus immunization should be given after treatment.



## PES project in Mt Kalatungan recounts beginnings, celebrates milestones

By Stephen J Pedroza | Photos by Anthony Jacob C Karagdag

**T**he inaugural year of the Payment for Ecosystem Services (PES) project in Mt Kalatungan in Talakag, Bukidnon reaped promising outcomes and engagements amid the challenges of a paradigm shift to what is known as an “emerging financial tool for environmental conservation.”

This rehabilitation project, built on research and community collaborations, has introduced to Northern Mindanao a market-oriented “rewarding mechanism” where there exists “the seller” who protects and provides ecosystem services to “the buyer” who benefits from these intangible products.

“First of all, PES was and still a big challenge because it’s very difficult to convince people to pay for environmental services,” recounted Raoul T Geollegue, senior technical consultant of Relief International – Enterprise Works Worldwide Philippines, one of the lead partner institutions for this project.

“This is a juxtaposition between what are forest goods and the services. Our mindset is that we pay for goods but not for something that is not concrete, like fresh air,” Geollegue added.

The Mirayon–Lapok–Lirongan–Tinaytayan Tribal Association (MILALITTRA) serves as “the seller” or forest manager in this project while different sectors — businesses, cooperatives, academic institutions, religious organizations and households in Cagayan de Oro City— are “the buyers” of the various ecosystem services, such as ensuring the streamlines along the region develop high water infiltration capacity and providing continuous supply of potable water, clean air and food, among others.

This green project was officially launched on May 21, 2014 with the presence of leaders and representatives from public and private institutions. After a month, the first wave of project implementation and tree-planting activities took off for the pilot three-hectare area.

Mt Kalatungan is among the 18 protected areas provided with PES technical and management assistance from different public and private groups. Harboring diverse species of flora and fauna, it was identified as part of a “Terrestrial Biodiversity Corridor,” the Kitanglad-Ligawasan Corridor in the Greater Mindanao biogeographic region with “extremely high critical” conservation priority.

In his presentation during the “Modalities, Practices and Experiences in the Implementation of PES” forum on July 17, Xavier Science Foundation (XSF) executive director Roel R Ravanera said that the pilot year of PES in Mt Kalatungan has harvested “very encouraging” results.

“Different sectors and groups have shown their support in this project since we launched it in May 2014,” Ravanera recounted. “Over the past year, we were able to gather Php1.3M, which is a very encouraging response from the people of Cagayan de Oro City despite the difficulties of selling ecosystem services.”

XSF acts as the fund manager of the PES project in Mt Kalatungan.

This accumulated fund will be used to fulfill the 5-year development master plan of MILALITTRA in the areas of environmental protection, cultural preservation, youth development, and education and health services, among other aspects. Their Community Development Plan (CDP) targets to reforest 832 hectares and utilize 816 hectares for agro-forestry within their ancestral domain.



Members of the partner *lumad* community for PES in Mt Kalatungan express their heartfelt commitment to continue their participation in this project and at the same time share their culture that is rooted to the life of the forest.

“The forest is an extension of our identity as a tribe,” MILALITTRA leader Datu Dungkoan “Rio” Besto said in Bisaya. “We are committed and we will do our tasks in protecting and preserving the environment of Mt Kalatungan to ensure that we have delivered our part in this project.”



A champion of environmental conservation, Datu Rio, whose name means “river,” is optimistic that this endeavor will help develop and preserve their culture.

“This project is not just for the present generation but also for the future of our tribe,” he continued.

The MILALITTRA is also looking forward to the construction of their *tulugan* (a sacred place for community dialogues and rituals) and the CDP provision of incentives for the *Bantay Lasang* volunteers using the income and support generated from PES.

The wrath of Typhoon Sendong (internationally known as Washi) in December 2011 was more than a daunting revelation for the people of CDO that what was once a “disaster-free city” can no longer ignore the brunt of climate change. The tragedy has propelled both public and private sectors to craft sustainable and long-term solutions to prevent another severity from reoccurring.

“Sendong is very traumatic for Cagayan de Oro City,” Ravanera expressed. “We need to really work together in hopes that we can avoid disasters in the future.”

Based on the flood maps produced by the

XU - Engineering Resource Center (ERC) together with national and international research organizations, most of the water and sediments which came down and ravaged the “City of Golden Friendship” originated from the headwater tributaries in Bukidnon during the lash of Sendong.

PES has brought together the communities from the downstream and highlands of NorMin to this landscape rehabilitation to provide the ecological services of preventing flood in a catchment area such as CDO.

“The people who contributed to this PES were the ones who experienced Typhoon Sendong so it was easy for them to relate,” Ravanera shared, adding that for the sustainability of the project they need to step up to the challenges of getting the trust and confidence of the buyers, ensuring the delivery of results and services, and providing efficient management.

Now that it has to track another year, the issue of sustainability has been given an utmost importance by the key players of this project. PES in Mt Kalatungan is in the list of priority projects supported by the Cagayan de Oro River Basin Management Council and it hopes to get the support of the local government units in Region 10 as part of their environmental policies.

In addition, the Del Monte Foundation endowed P1.25M worth of endemic seedlings for this green project. The ceremonial signing of the memorandum of agreement on the donation also transpired at the July 17 event.

Part of this endeavor is to mainstream the principles of PES, raising awareness among Kagay-anons so they would participate in the fund drive to reforest Mt Kalatungan and reward the efforts of the *lumad* people as the forest managers.

With this idea, Xavier University, through its Research and Social Outreach and McKeough Marine Center, launched the offshoot campaign known as Valuing Ecosystem Services Together (VEST) in November 2014.

“After the grand launch, VEST has produced more IEC materials and conduct-

ed a lot of activities to promote the importance of working together for PES,” said VEST social marketing supervisor Evans I Yonson, who is also a Development Communication professor at XU.

“We applied different social media strategies to invite people to our events and encourage them to “inVEST” in nature,” Yonson added, without forgetting the use of catchy hashtags such as #VESTfriendofNature, #inVESTinNature and #50ShadesofGreen.

The social marketing team along with volunteers from XU visited Mirayon on July 31 to distribute water jugs to schoolchildren as part of the “Jug for Education” project of VEST. The team also produced a photo book chronicling the journey of this campaign, which will be launched during the ceremonial turnover of management of this environmental campaign to the XU - Center of Communication for Development.

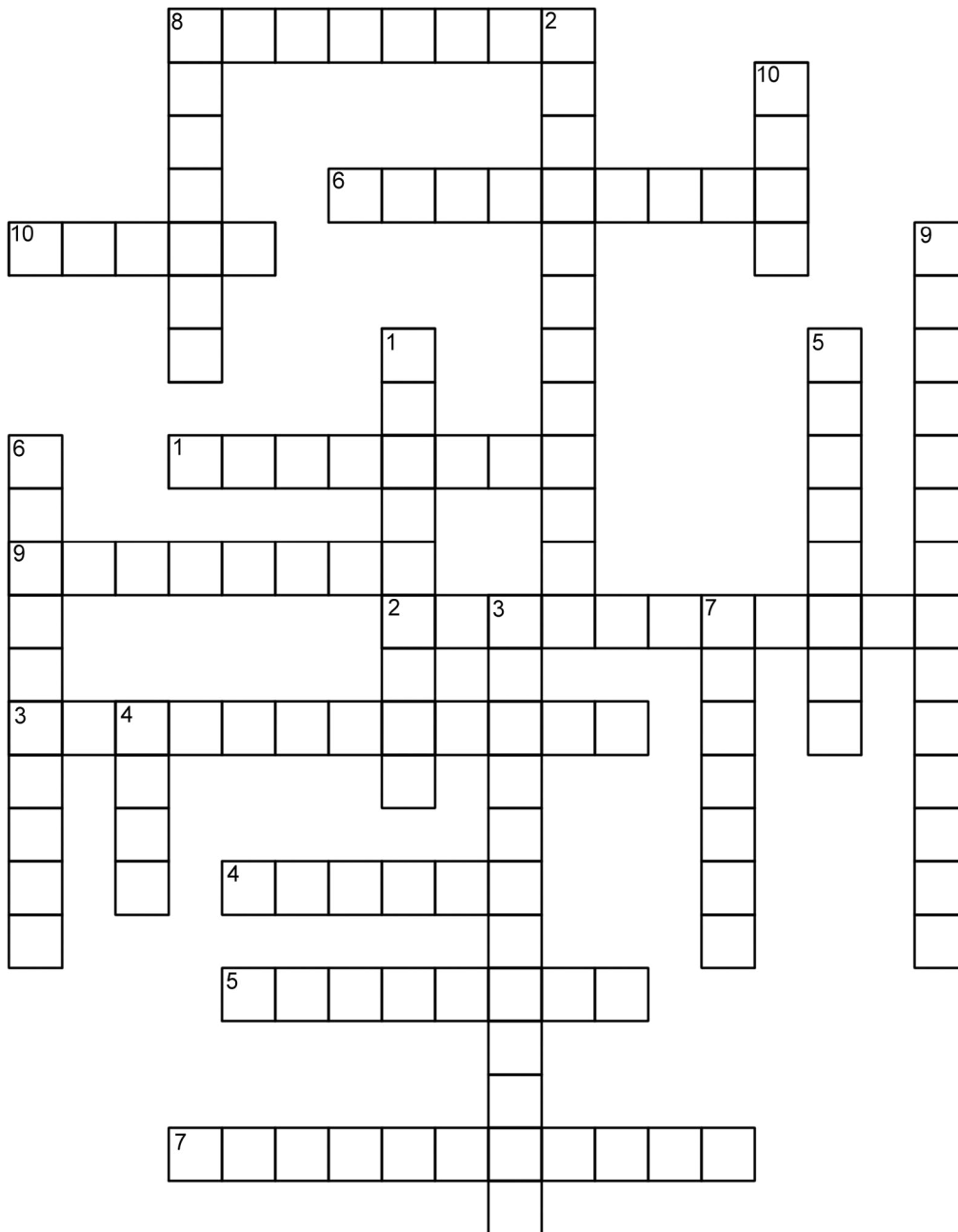
In a span of one year, VEST has built a network of student volunteers, conducted school orientations, produced two albums of songs about conservation, organized speaking engagements and film festivals about the PES project and collaborated with different organizations for local and global environmental celebrations.



“With these milestones of the project, we can see that it was already a good start,” Yonson mused. “The VEST journey continues because caring for Mother Nature doesn’t stop.”

*Editor’s note: This is an abridged version of the article which originally appeared on the XU website: <http://www.xu.edu.ph/>.*

# Crossword Puzzle



## Across

1. Phylum where jellyfishes belong to
2. Members of this group have the most advanced nervous system of all invertebrates
3. Amazing ability of sea stars to re-grow injured arms and even grow a new individual from a detached arm
4. Refers to the whole community of mangrove plants
5. Organisms that are small, microscopic drifters of the marine environment
6. Shark species that can live in both salt and freshwater environments
7. The largest sea turtle species in the world that can be found in the Philippines
8. The only living species where males give birth to their babies
9. "Little dragons"; generally colorful, small, benthic fishes
10. A type of eel commonly found in coral reef crevasses

## Down

1. *Tridacna gigas*
2. Sharks and rays
3. Fishes are cold-blooded creatures, also known as \_\_\_\_\_
4. The Filipino term for a popular red algae used for food/carrageenan
5. Scientific name of the largest and heaviest bony fish
6. Small, shell-less, and often colorful and striking in form, this mollusk's name also means "naked gills"
7. Longest bony fish in the world
8. *Chironex fleckeri*, a species of box jelly
9. An extinct herbivorous marine mammal whose closest living relatives are the *dugongs* and manatees
10. The fastest shark in the ocean

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