



# MINDORO

## Biodiversity

April - June 2019

The official newsletter of Mindoro Biodiversity Conservation Foundation Inc.

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## MBCFI Way

### Tamaraw population confirmed in Mt. Calavite Wildlife Sanctuary

by: Don Geoff Tabaranza and Elyza Hazel Tan



Tamaraw survey team in Mt. Calavite Wildlife Sanctuary

The Tamaraw (*Bubalus mindorensis*) also known as Mindoro Dwarf Buffalo, is the largest native land mammal in the Philippines. IUCN list of threatened species and the Philippine national list of threatened fauna (DAO 2004-15) classified it as critically endangered (CR) due to its extremely low population, the threat of hunting and habitat loss.

The Tamaraw disappeared from much of its former range and is restricted now to four sites in Mindoro: Mts. Iglit-Baco Natural Park (MIBNP), Aruyan-Malati Tamaraw Reserve (AMTR), Upper Amnay- Mt. Gimparay and Mt. Calavite Wildlife Sanctuary (MCWS). However, the presence of the Tamaraw population in MCWS has not been verified and estimated for over two decades.

Through the initiative of the Department of Environment and Natural Resources - Tamaraw Conservation Program (DENR-TCP) in collaboration with Mt. Calavite Wildlife Sanctuary – Protected Area Management Office (MCWS-PAMO), DENR-PENRO- Mamburao, D' Aboville Foundation, Inc. (DAFI) and MBCFI, a Tamaraw verification survey was conducted in Mt. Calavite, Occidental Mindoro. The expedition aims to collect up-to-date scientific data on the population of the Tamaraw at MCWS in Brgy. Harrison, Paluan, Occidental Mindoro to enhance our understanding of species and develop more appropriate and effective conservation measures.

### OUR VISION

*Sustained conservation of Mindoro's natural treasures for future generations.*

### OUR MISSION

*To lead scientific research and catalyze collaborative and participative conservation efforts in key biodiversity areas of Mindoro resulting in empowerment of Mindoreños through increased awareness and care.*

The team trekked on June 17-21, 2019, to the identified site following recent reports of the occurrence of Tamaraw in the area. The team was divided into three groups, wherein two groups set up into separate observation points on peaks and ridgelines, overlooking vast expanses of suitable grassland and forest habitats. The third one entered and searched for Tamaraw in forested areas. Evidence of their presence, such as hoof marks, fecal deposits, and grazing, were noted and photographed. The team conducted the rapid visual assessments of the habitats in sites where they saw the Tamaraw or evidence of their presence were observed. To supplement current knowledge on the current status and life history of the Tamaraw, interviews with key informants – Tamaraw rangers, and Mangyan guides were conducted.

Tamaraws were found in a variety of habitats in slopes and ridges leading up to the summit of Mt. Calavite. Based on observation, the three main habitat types where the concentration of tracks, dung, wallows, and Tamaraw were in grassland, climbing / creeping bamboo, and forest (lowland forest and lower montane forest).



Tamaraw survey team in Mt. Calavite Wildlife Sanctuary

During the survey, the team observed a lone juvenile male Tamaraw resting in a patch of 1-meter tall grass. However, the presence of the roving team alerted the Tamaraw, which made a bluff charge before running off in the opposite direction. Upon inspection of the site, there are fresh tracks, dung, and evidence of grazing on the leaves of the surrounding vegetation. In another encounter, the team heard rumbling of hooves in a forest patch above 1,000masl. Inspection of the site revealed two fresh sets of hoof prints on wet soil – from an adult and young. Fecal deposits (some old and weathered), hoof prints and evidence of grazing were also observed in several areas near the peak of Mt. Calavite but were not very common. The team encountered several wallows, but only a few had evidence of recent use. Based on these physical marks, an estimated population size of 4-6 individuals is projected to inhabit the area south of Mt. Calavite's peak.

It is reported that in 1987, there are about 45 Tamaraw individuals present in Mt. Calavite. The last confirmed presence of Tamaraw at MCWS was in 1994 during the field visit by Kalikasan Mindoro Foundation Inc. (KMFI) with one individual sighted aside from observations of tracks and dung. However, succeeding field surveys by Tsukuba University and DENR in 2010, the Mindoro Biodiversity Conservation Foundation Inc. in 2013 and the Field Museum of Natural History, failed to report actual sightings of Tamaraw, aside from wallows, several tracks, and fecal deposits. This survey confirmed the presence of the Tamaraw in MCWS after 25 years of the last sighting.



Tamaraw survey team in Mt. Calavite Wildlife Sanctuary

It is, however, recommended that there should be more extensive surveys conducted in forests and grasslands on the northern slope of Mt. Calavite.

Incorporation of regulations to protected area management and ecotourism plans should be made to restrict camping areas near the Tamaraw habitats and limit day trips to treks to Pamburutan (Eagle Rock). Intensification of enforcement and protection measures should be made possible by increasing the number of rangers and frequency of patrolling efforts. It is also vital to raise awareness and engage local forest-dependent communities to reinforce active participation in biodiversity conservation and habitat protection.



Examining Tamaraw tracks



Dried Tamaraw feces

# The MBCFI Way

## Eco-camp for Youth Leaders

by Kathy Lene S. Cielo



Participants and organizers of the 2019 Eco-camp

Youth has an essential role in environmental advocacies, and it is vital that they are aware of the issues and concerns that our environment is currently facing. They can be the driving force to promote and support environmental conservation and sustainability.

This year, in partnership with the Provincial Government of Oriental Mindoro, through their Environment and Natural Resources Office, we selected Sangguniang Kabataan (SK) members from different municipalities to participate in the Eco-camp. This activity aimed at increasing the awareness of SK members toward biodiversity conservation and Mindoro's state of the environment by discussing significant issues and concerns. Moreover, it is also to encourage them to actively lead and participate in environmental protection and conservation events and activities and help them prepare project proposals related to it.



Thematic Presentation of Ms. Cora Bonsol of PGENRO

The four-day summer camp was conducted on May 27-30, 2019, to likewise celebrate the International Day of Biological Diversity, at the Provincial Demo Farm, Merit, Victoria, Oriental Mindoro. A total of 30 youth coming from all over Oriental Mindoro attended the activity.

Activities during the summer camp include basic leadership and teamwork actions, environmental talks, poster making, science communication, bird watching, and proposal writing. Participants were randomly clustered into two teams where they compete against each other. The group with the highest score at the end of the camp was proclaimed the winner. In the basic leadership and teamwork activities, the groups were asked to discuss and solve different complex environmental problems. Furthermore, lectures include Philippines biodiversity, Mindoro biodiversity, and thematic presentation in celebration of the International Day of Biological Diversity with the theme "Our Biodiversity, Our Food, Our Health." The participants' favorite activity is the bird watching led by Mr. Don Geoff Tabaranza, MBCFI's RESEARCH Program Manager. Students were taught on the proper use of binoculars and how to identify common birds found in agroforestry ecosystem.



Birdwatching Activity



Photo exhibit of newly recorded species in Mindoro

Environmental education and awareness is a powerful tool to engage everyone in biodiversity conservation, especially among young local leaders. These leaders can be our motivators for the young generations to participate in the protection and conservation of our environment.



Proposal Making



Leadership and Team Building (Tower Building)



Leadership and Team Building (Pass the Message)



Poster Making



Proposal Making by Ms. Lily May Evora Lim of PGENRO



Evaluation by Ms. Althea Cueto of PGENRO

## Species in Focus

### The Napoleon Wrasse

by Roderick C. Makiputin

Common name: Napoleon Wrasse "Mameng"  
Scientific name: *Cheilinus undulatus*  
Conservation status: Endangered



Photo by WaterFrame/Alamy Stock Photo

The Napoleon Wrasse (*Cheilinus undulatus*) is a large, brightly colored fish under the family Labridae. Known as Giant Wrasse, Humphead, Humphead Wrasse, Maori Wrasse, Napoleon Wrasse, Truck Wrasse, and Undulated Wrasse, and locally known as Mameng, it is the largest member of the wrasse family. It is also one of the largest reef-associated fish in the world. Napoleon Wrasse is identified easily by its size, forehead hump, and the presence of a pair of eye-stripes.

Fishes under the family Labridae feed on small invertebrates in shallow waters near the coast and fully developed coral reefs. They help control the population of small invertebrates present in coral reefs and also help in the transfer of nutrients in the food web. Specifically, Napoleon Wrasse feeds on mollusks, sea urchins, crustaceans, and other invertebrates. This species is also immune to the toxic spines of the crown-of-thorns starfish which helps maintain the population of these coral-eating starfish.

Currently, the species is categorized by the International Union for Conservation of Nature (IUCN) as "Endangered" as its current population trend is decreasing. One of the major factors that contribute to the decline of its population is overfishing. This species is heavily exploited for live fish trade and is considered one of the most expensive live food fish.

Promoting the conservation and protection of this species, the Protected Area Management Board of Apo Reef Natural Park (ARNP) adopted Napoleon Wrasse as the flagship species of the protected area (PA). The presence of this species, along with other brightly colored fishes and corals attracts tourists and diving enthusiasts which helps draw funds for the maintenance and management of the PA.

# Virtual Tour of Mindoro's Key Biodiversity Areas

## Apo Reef Natural Park

by Roderick C. Makiputin

The ARNP is one of the major natural areas in the Philippines blessed with marine resources and biodiversity. Lies within the municipal jurisdiction of the municipality of Sablayan, Occidental Mindoro, the protected area is approximately 15 nautical miles (27.8km) due west of Occidental Mindoro and 21 nautical miles (38.9km) northeast of Calamian Islands, Northern Palawan. Its atoll-like reef complex is the largest of its type in the Philippines. The entire protected area has a total area of 27,469 hectares (buffer zones included) while its core area covers 15,792 hectares only. Most of the main geographic features of ARNP is submerged under water except for three islands, namely: Apo Island, Apo Menor Island (Binanggaan), and Cayos del Bajo (Tinangkapan). Of the three islands mentioned, the largest is Apo Island with an area of 22.67 hectares, harbors mangrove, and beach vegetation. Followed by Apo Menor with an area of 2.63 hectares, a rocky limestone island with patches of mangrove and beach forest vegetation. Cayos del Bajo, smallest of the three islands, has an area of 0.28 hectares, a coralline rock formation with little vegetation.



Apo Island

Apo Reef is considered a conservation priority site for birds, reef fishes, and corals, an off-shore islet that serves as a nesting ground for sea turtle and seabirds and a perfect stop-over feeding site for migratory species. It is the home to 80 species of birds, 10 mammal species, and 7 reptile species. The survey also revealed 190 species of reef fish belonging to 32 families. The terrestrial ecosystem of ARNP is composed of two main vegetation types: mangrove forest and beach forest vegetation.



View from the lighthouse



Binanggaan



Lagoon



Mantanani Scops Owl

ARNP is proclaimed as a protected area under the National Integrated Protected Area System (NIPAS) and is being managed by the Protected Area Management Board (PAMB). The PAMB is the highest decision-making body in a protected area, composed of representatives of local and national stakeholders and organized by the Department of Environment and Natural Resources (DENR). The main implementer of the management is the Protected Area Office (PAO), headed by the Protected Area Superintendent (PASu).

The protected area is famous for the beauty of its aquatic and terrestrial environment, making it one of the most visited sites in Occidental Mindoro. A major fund source for the maintenance and management of the park comes from the park fees paid by the tourists that visit the area.



Apo Island

## The MBCFI Way

### Bird Survey at Apo Reef Natural Park

by Don Geoff Tabaranza



Bird watching near the ranger station

In our first quarter newsletter, we featured about migratory birds in Naujan Lake National Park and their importance. Similarly, migratory birds can be observed at the Apo Reef Natural Park (ARNP) in Sablayan, Occidental Mindoro. The ARNP is a component of the Enhanced National Integrated Protected Areas System (E-NIPAS) of the Philippines, and a Key Biodiversity Area (KBA) in Mindoro.

The presence or absence and number of observed waterbirds are important indicators to determine the health and quality of wetlands. It is for this particular account that the MBCFI participates in the annual waterbird censuses of the Department of Environment and Natural Resources. On March 28-29, 2019, the MBCFI and the Protected Area Office of the ARNP initiated a bird survey in the Apo Reef with the purpose of monitoring the population of migrant and resident bird species in the protected area and the possibility of discovering and documenting new species records for Mindoro.

For the waterbird survey, the 40 km transect cruise across Apo East Pass and one km transect walk yielded a record of 99 individuals from 10 species considered as waterbirds. These include four species from Family Ardeidae (Egrets & Herons), one species from Family Rallidae (Rails), two species from Family Scolopacidae (Sandpipers, Snipes & Phalaropes), and three species from Family Laridae (Gulls & Terns). The most numbered recorded species were the Bridled Terns (*Sterna anaethetus*) with 48 individuals, followed by Black-naped Terns (*Sterna sumatrana*) with 22 individuals and Barred Rails (*Gallirallus torquatus*) with 21 individuals.

Among the waterbird species recorded, three are migratory species, and seven are resident species. No threatened bird species were recorded. The Bridled Tern is considered a rare species and its nesting population at the ARNP is possibly among the largest in the Philippines.

Aside from waterbirds, a total of 87 individuals from 14 confirmed bird species (+2 identified to family level only) were observed at the ARNP. The list includes four migratory, nine resident and one Philippine endemic species. The most numerous were the migratory Chestnut-cheeked Starlings (*Sturnus philippensis*) with 30 individuals, followed by the resident Eurasian Tree-Sparrow (*Passer montanus*) with 18 individuals and resident Olive-backed Sunbirds (*Cirrynus jugularis*) with 11 individuals.

The survey results clearly indicate the importance of the ARNP as refuge of migratory and resident species, therefore, its protection is of paramount importance.



Bird watching at the lagoon



Olive-backed Sunbird



Chestnut-cheeked Starling



Black-naped Terns

## Eco-warriors on Spotlight

### Conservation and Protection of Apo Reef Natural Park

by Anna Ritchelle Nicanor

The Apo Reef Natural Park (ARNP) is one of the remaining natural areas of the Philippines. Endowed with rich aquatic and terrestrial diversity, it serves as a haven for migratory species seeking a place to rest. The Protected Area Management Board (PAMB) and the Protected Area Office (PAO) manage the protected area. The PAO is the main implementor of conservation efforts and environmental laws within the Protected Area (PA) to conserve and protect the park.

Regular patrolling is being conducted in the PA to monitor the status of the park. Taskforce MARLEN (Marine and Apo Reef Law Enforcement in Nature) is responsible for patrolling the PA. The team is composed of DENR-ARNP (PAO personnel), Local Government Uni (LGU) Sablayan, Philippine Army, Philippine National Police (PNP), Philippine Coast Guard (PCG). PAO collects patrolling reports every month and consolidate by the end of the year and submit to the central office for conservation plans and actions.

Another method for monitoring conducted every quarter is the Biodiversity Monitoring System (BMS). The BMS involves transect swim for marine biodiversity and transect walk for terrestrial biodiversity. BMS includes the use of field diary. A consolidated report is forwarded to the central office to which is used for decision-making.

To enhance the monitoring of marine biodiversity of the PA, the PAO installed nine Autonomous Reef Monitoring Structures (ARMS) units within the park. ARMS are long-term collecting devices that mimic-to some extent, the structural complexity of coral reefs. This device is used to examine and monitor cryptobiota. Cryptobionts are essential in the nutrient cycle in the reef ecosystem.



ARMS Monitoring

The PAO understands the importance of sea turtles in the marine ecosystem and promotes the conservation of pawikan. Pawikan conservation involves:

- 1) monitoring of turtle nests;
- 2) putting up temporary cages in nest area to protect it until eggs hatch; and
- 3) recording of the number of hatchlings and tagging of adult turtles.

The PAO also conducts cleaning activities to ensure a healthy environment for tourist and wildlife. The offices do coastal and island clean-ups three times a week to collect and record floating and washed non-biodegradable in the PA. They also conduct monitoring and clean-up of crown-of-thorns starfish to prevent outbreaks of this coral-eating starfish.



COTS Clean-up



ARNP Staff and volunteers

## Getting-to-know our Family

Leticia E. Afuang

(Vice President, Board of Trustees)

by Kyle S. Cielo

Dr. Letty, as we fondly called her, is an Associate Professor 2 at the Animal Biology Division, Institute of Biological Sciences, University of the Philippines – Los Baños. She is a herpetologist who specializes in the study of reptiles and amphibians, but she is popularly known as the "Snake Lady" in UP Los Baños for her expertise in handling and studying snakes.

She finished BS Zoology in the University of the Philippines Diliman and took her graduate studies in UP Los Baños, MS Zoology and Ph.D. in Environmental Science and Management, respectively.

She's been teaching for four decades now and doing research related to biodiversity and conservation for more than three decades. She has published 15 full journal articles, four notes/abstract, nine books/manual/book chapters, with editorial assignments and with some International Union for Conservation of Nature (IUCN) Red List publications.

Dr. Letty is one of the founding trustees of MBCFI since its establishment in 2008, and currently the Vice President of the Board of Trustees. She has provided invaluable inputs in the strategic plan, research agenda, and education program of the foundation.

She is the mother figure in the organization, who is ready and willingly provide inputs, suggestion, and pieces of advice not only on the professional side but also on some personal aspects of the lives of staff when needed.

She believes that education is one of the most vital aspects in biodiversity conservation, that is why she is more focused on developing and improving education strategies, and integrating biodiversity conservation.



# The MBCFI Way

## Annual Tamaraw Count 2019

by Don Geoff Tabaranza

The recent Tamaraw Count in the Mts. Iglit-Baco Natural Park in Occidental Mindoro has officially recorded a total of 480 individuals from 18 vantage points. The Tamaraw Count was initiated in 2000 and is now an annual event that takes place in Mts. Iglit-Baco National Park during the summer season, usually in April. The Department of Environment and Natural Resources (DENR), through its Tamaraw Conservation Program (TCP), is organizing and taking the lead in the annual count, which aims to monitor the population of Tamaraw in the MIBNP.

The activity is a two-phase undertaking comprised of the Actual Count and Data Consolidation Workshop. The actual count uses the Simultaneous Multi-Vantage Point Count Method. The study area covers the core habitat of the Tamaraw within the MIBNP measured approximately at 16,000 hectares. There are 18 observation sites or vantage points since 2008. As the Tamaraw Count progressed through the years, innovations or modifications were incorporated into the methodology to increase the accuracy of the count, like deployment of double observer-teams and incorporation of counting grids with a printed map.

On the first day, the briefing tackled wilderness first aid, station assignments and distribution of supplies and equipment. The team traveled from DENR-TCP to Station 2. On the next day, groups dispersed into their respective counting stations. Counts were conducted two times a day (5:30-7:00am and 5:00-6:00pm) for five days. Other characteristics were also recorded, such as the estimated age, sex, and location of Tamaraw. There were also other wildlife species encountered which were also recorded such as the Philippine Brown Deer and Mindoro Warty Pig, among others.

During the count, some issues were observed in the protected area by the counting teams. Evidence of hunting activities and recent burning for kaingin were observed near the Tamaraw Core Habitat.



Tamaraw taken from Lanas 1

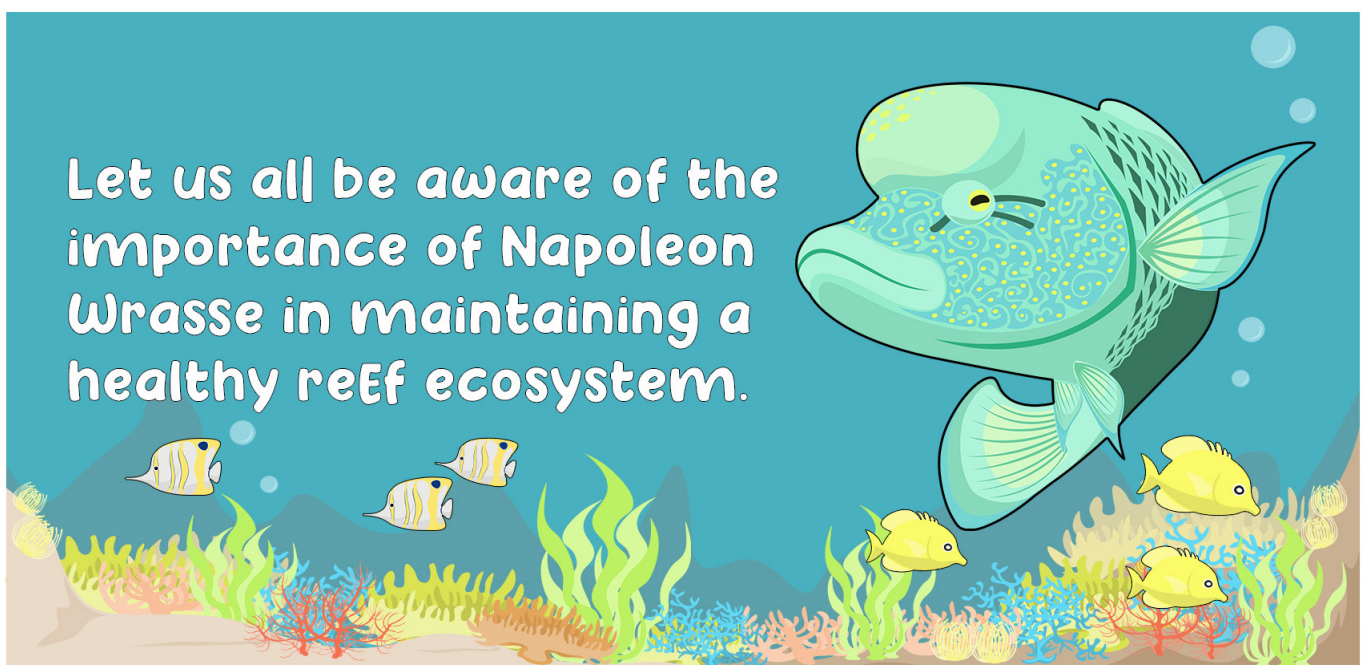
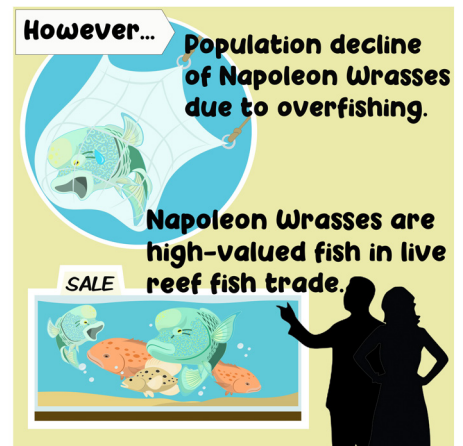
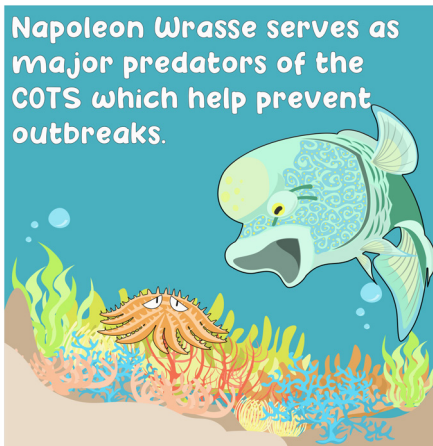
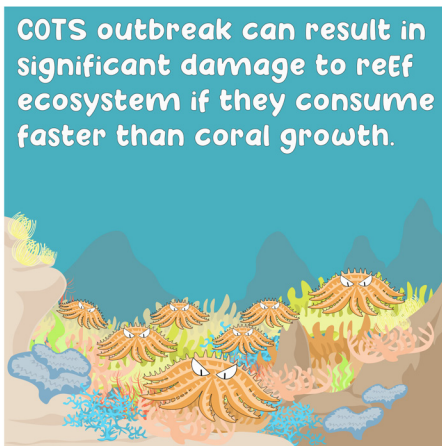
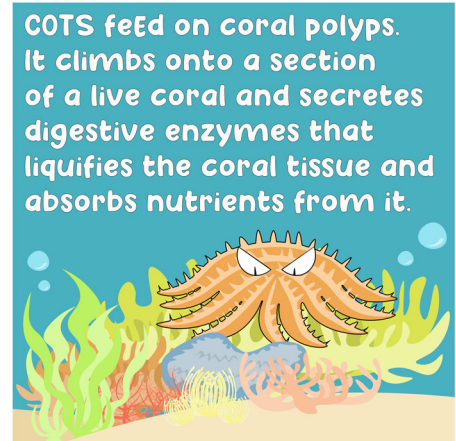
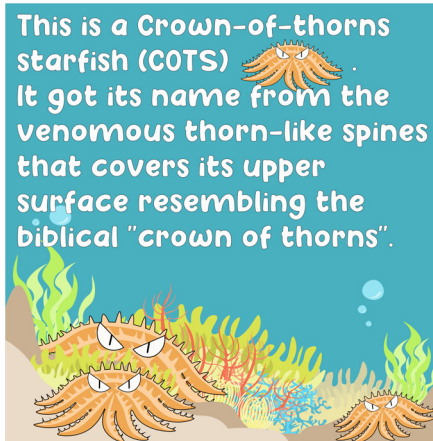
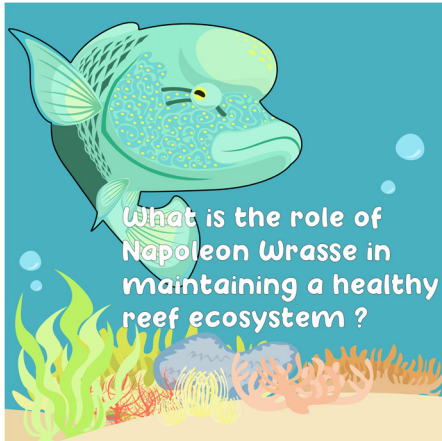


Annual Tamaraw Count Team 2019

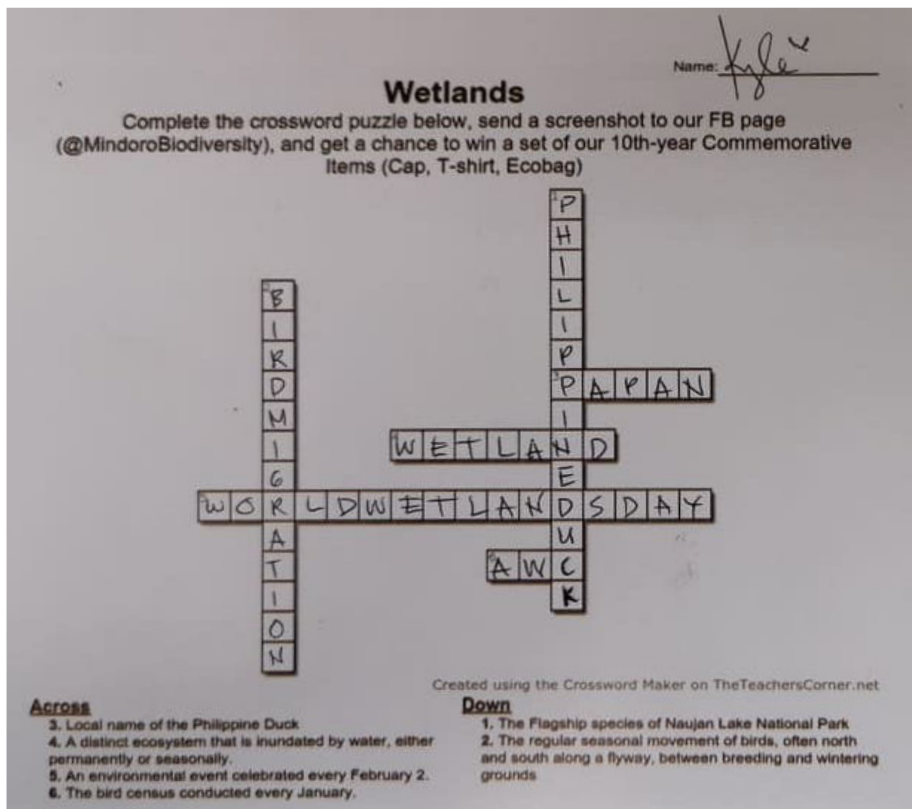
## Comics

### Importance of Napoleon Wrasse

by Roderick C. Makiputin



Answer to the crossword puzzle in the first quarter newsletter.



### Advisor

Grace C. Diamante

### Editor-in- Chief

Kyle S. Cielo

### Contributors and Reviewers

Errol A. Gatumbato  
Elvin Anthony M. Madamba  
Roderick C. Makiputin  
Anna Ritchelle Nicanor  
Jolly- Ann J. Retulin  
Don Geoff E. Tabaranza  
Elyza Hazel P. Tan

### Graphics

Roderick C. Makiputin

### Layout

Kyle S. Cielo

## Poem

### Inang Entablado

by Aceveda, K.P., Cabayao, J.R., De Mesa, B.J., Espinosa, A., Generato, J., Hernandez, J.L., Marcelo, J., Naling, J.P., Sabuco, J., Saplos, Q.V.,

(Eco camp 2019 Participants-Winning Team)

Sa isang mundo na puno ng pagbabago  
Sa isang mundo na puno ng mapanirang tao  
Tao, na sila mismo ang dahilan ng pagkatalo  
Oo talo tayo, pagdating sa sakunang binabato

Dahil may mga taong hindi edukado  
At mali ang paggamit sa kalikasang entablado  
Entabladong pagkukunan ng ating mga pangangailangan  
Pangangailangan na makukuha lang sa ating inang kalikasan

Pero tama ba?

Tama ba ang paggamit mo sa sinasabi mong inang kalikasan  
tama bang sinisira mo at inaabuso and entabladong ito  
Dahil and entabladong ito ang magiging rerepleksyon mo  
sa iyong pagkatao

Kaya payo ko sa inyo,  
Kung ipagpapatuloy ninyong sirain ang entabladong ito  
Ilalaban namin ang pagbuhay muli nito  
Dahil tayo ang hurado sa ating inang entablado

