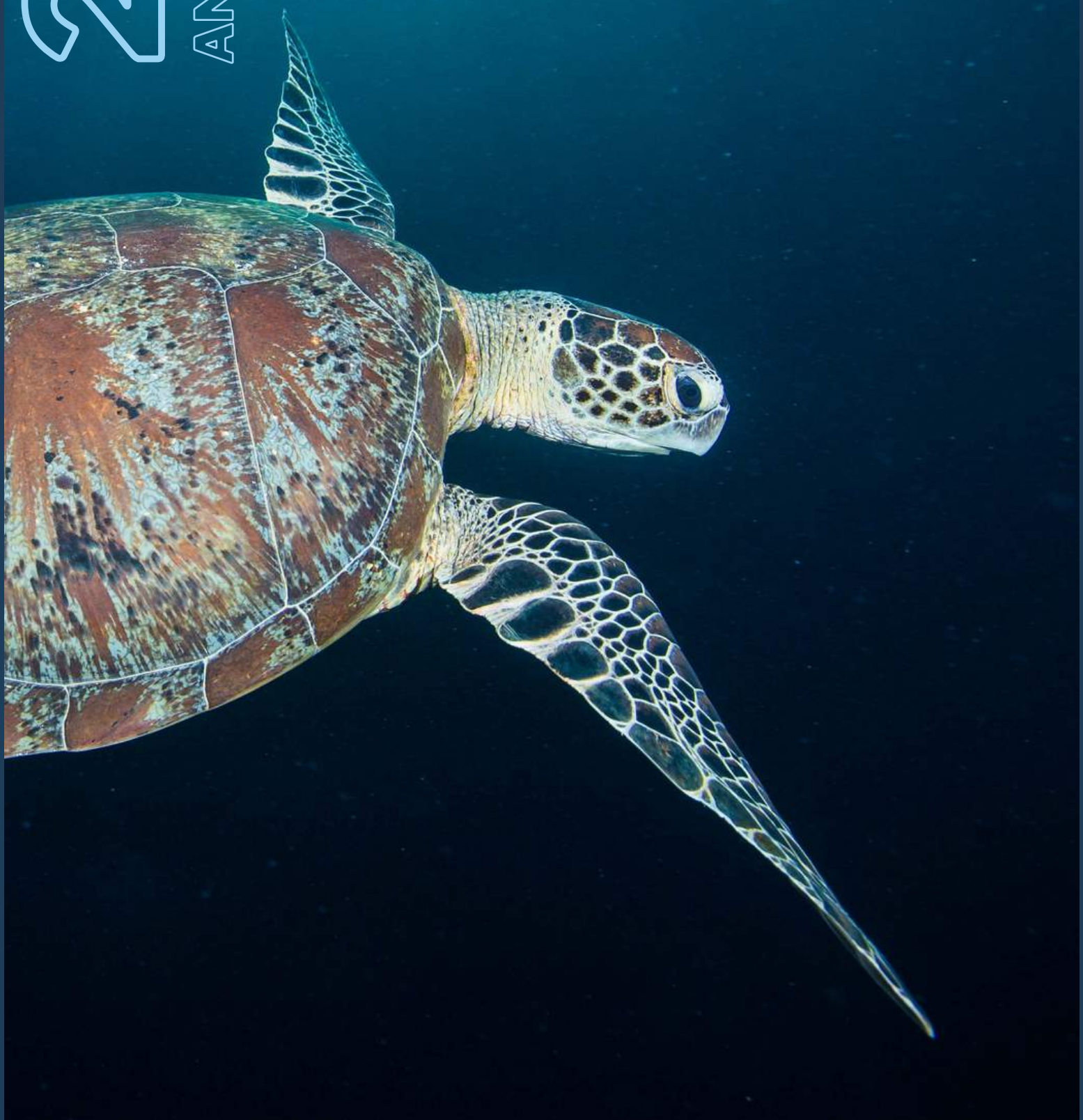
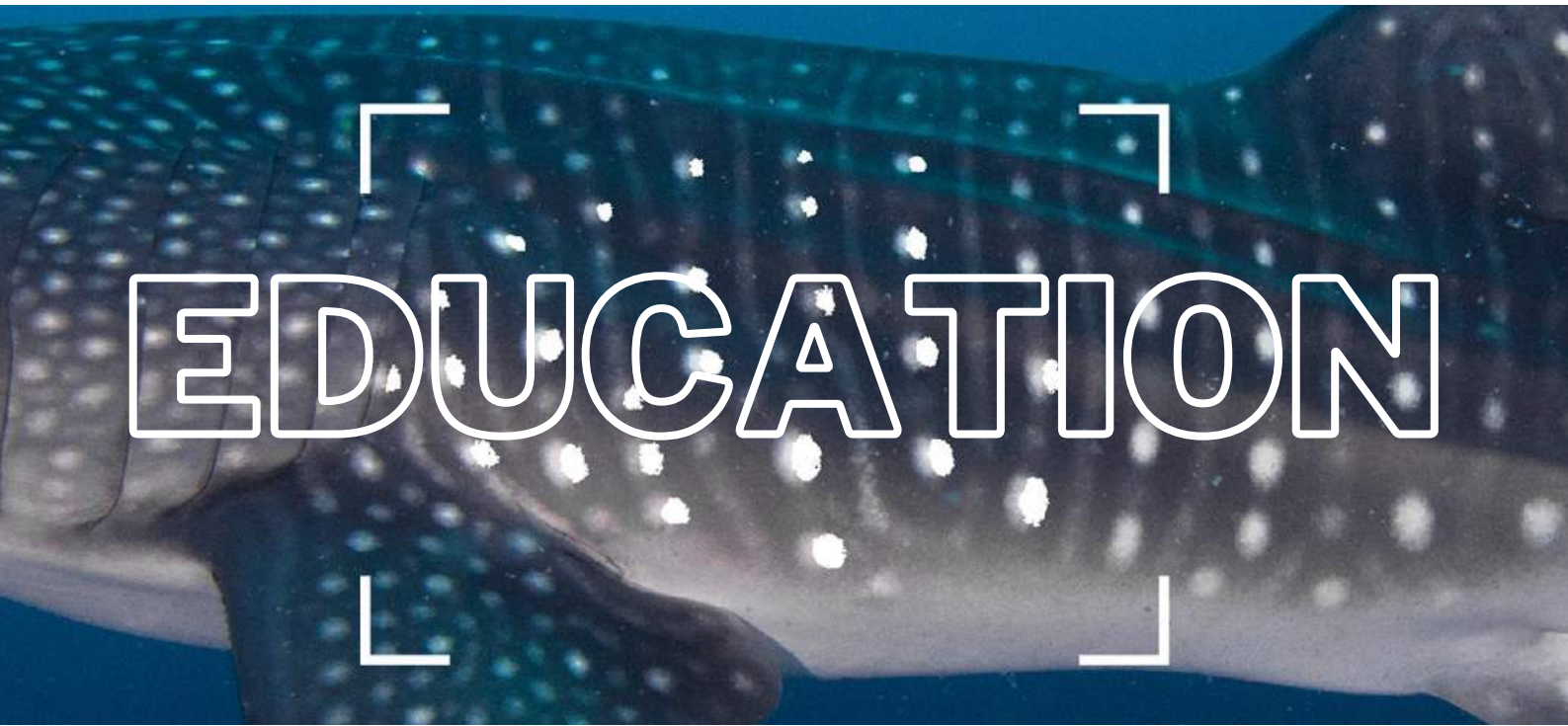
2021 ANNUAL REPORT

LARGE
MARINE
VERTEBRATES
RESEARCH
INSTITUTE
PHILIPPINES




SCIENCE


PEOPLE


EDUCATION

ABOUT #LAMAVE

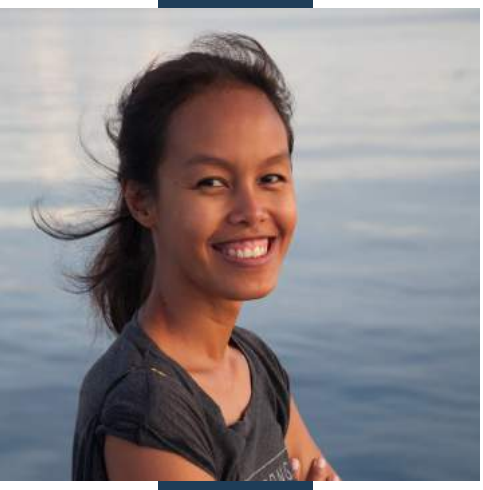
Large Marine Vertebrates Research Institute Philippines (LAMAVE) is a Filipino non-stock non-government organization dedicated to the research and conservation of marine megafauna and the marine environment in the Philippines and wider region. LAMAVE focuses its efforts on charismatic marine megafauna, using them as umbrella species to protect the wider marine environment. We identify hotspots and quantify populations of species including whale sharks, turtles, and other animals. We use technology such as satellite and acoustic tags to help determine key habitat sites, home ranges, and migratory corridors of marine species. The results are shared with government and stakeholders to work together to minimize impacts and develop tools for conservation management such as creating or zoning marine protected areas or advising policies.

MISSION & VISION

A secure and prosperous ocean for marine life and people.

To protect marine megafauna in Southeast Asia by investing in local people, building ocean leaders, and providing science-based tools to support the sustainable management of marine resources for the benefit of the Filipino people.

MESSAGE FROM OUR PRESIDENT



DEAR FRIENDS,

We have made it through yet another challenging year. Many of us had high hopes that the pandemic would have been brought under control as quickly as it had abruptly arrived, but its effects are still very much present as we continue to tackle the hardships and rebound from its devastating grip.

This has been a rebuilding year for LAMAVE. While we were sad to see some team members move on to pursue their own ambitions, it has been an incredible journey working alongside some of the most dedicated and passionate leaders in this field. As one chapter closes, so a new one begins and we welcomed four new members to the team who infused new energy and dynamics to the organization. I am proud of the team at how quickly we adapted our operations and worked overtime to adjust to this new landscape.

Though much of our field work had been suspended, we were able to still respond to marine animal strandings and rehab by providing a mix of in-person and remote assistance, which was possible through the cooperation of our stakeholders. Luckily, towards the end of the year as restrictions eased and provincial borders opened up, we finally managed to transfer our office to the province of Palawan! This enabled us to start work for two new projects - one involving filming for a shark conservation impact media campaign, the other initiating trainings with the local communities to combat illegal poaching and trade of sea turtle eggs. We were also able to reopen one field site, allowing our team to return once again to the ocean and continue the monitoring of whale sharks in the area.

Without a doubt, there has been the need to rethink business models and restructure operations as most systems would no longer be relevant. We took this opportunity to focus on and expand our partnerships - an immensely rewarding collaborative environment with artists, creatives, athletes, and organizations passionate of supporting our mission. We launched our first ever corporate social responsibility campaign with Garmin - where we received over 1800 citizen science photograph submissions of marine animals across Asia that assisted in the quantification of marine biodiversity in the region.

We could not have accomplished any of this year's work without the dedication and hard work of our team, the continuous support of our partners, our friends and family that kept us sane during the episodes of rolling lockdowns, the organizations and institutions that championed our mission, and all of our online LAMAVE community who have given us encouragement, appreciation, and support. For all of this, we are extremely grateful and optimistic about the coming year.

JESSICA LABAJA
PRESIDENT

THE PROBLEM

The ocean is an amalgamation of diverse habitats and extreme environments that are home to many unique organisms - some being among the oldest living things found on this planet and a fundamental component of supporting all life on Earth. Yet, the destruction and threats the ocean is faced with compromises its integrity for sustaining its key ecosystem functions. For centuries, people have assumed the ocean was an infinite provider of natural resources and immune to human impacts. Now, we are only just beginning to comprehend the detrimental and potentially irreversible effects we have inflicted on our seas.

Fisheries across the globe continue to harvest at unsustainable rates - endangering not only the targeted species, but also many animals that are incidentally caught as bycatch due to the non-selective and destructive fishing gear used. Critical marine habitats such as those supporting breeding and nesting populations, mating and feeding grounds, cleaning stations, and migratory corridors are all jeopardized by unregulated coastal and offshore development and harmful fishing practices. Our ocean has become a traffic jam of cargo vessels and ocean liners that threaten important migratory routes of animals and cause wildlife collisions, oil spills and exchange of invasive alien species. To tackle these issues, we need to address the knowledge gaps and lack of science-based evidence that are a cause for hindering effective conservation efforts.

BIGGER PICTURE

LAMAVE works in our corner of the ocean to contribute to the United Nation (UN) Sustainable Development Goal (SDG) 14 - Life Below Water, to conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

Our organizational vision is a secure and prosperous ocean for marine life and people. We do this through protecting marine megafauna in Southeast Asia, investing in local people, building ocean leaders, and providing science-based tools to support the sustainable management of marine resources for the benefit of the Filipino people.

We Work With Other Organizations Aligned with the SDG's to:

- Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts.
- Implement science-based management plans in order to restore fish stocks in the shortest time feasible.
- By 2020, conserve at least 10 percent of coastal and marine areas.
- Increase scientific knowledge, develop research capacity and transfer marine technology in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries.

LAMAVE Snapshots of the Year

PROJECTS

6

NEW TEAM MEMBERS

4

STUDENTS MENTORED

55

NEW PARTNERSHIPS

3

MARINE ANIMAL RESPONSES

72

VACCINATED TEAM MEMBERS

ALL 11!

WHALE SHARKS

SPECIES SPOTLIGHT
WHALE SHARK

Whale sharks are the largest fish in the world and perhaps one of the most charismatic marine megafauna. Despite their iconic status worldwide, they face many anthropogenic threats that have resulted in their classification as Endangered in the IUCN Red List of Threatened Species, an assessment of the extinction risk for a species.

The Problem:
Poor management and lack of enforcement related to unsustainable tourism practices is a concern as whale shark tourism continues to gain in popularity.

The Solution:
The creation of robust management strategies in identified critical habitats for the enforcement of regulatory frameworks in these areas.

Bridging the Gap:

1. Received grant from Korea Green Foundation to allow monitoring whale shark population in identified global whale shark hotspot
2. Resumed field work in Honda Bay, Palawan for the remainder of our third whale shark season in the area
3. Long-term data collected used to help support the proposed listing of Panaon Island, one of the Philippines' whale shark aggregation sites, as a Marine Protected Area
4. Supervised three students to continue citizen science data collection across four social media platforms

The Philippines was the first country in Asia to organize whale shark tourism. This species holds cultural relevance in many provinces across the country – so much so it is featured in our currency bill!

IMPACT MEDIA

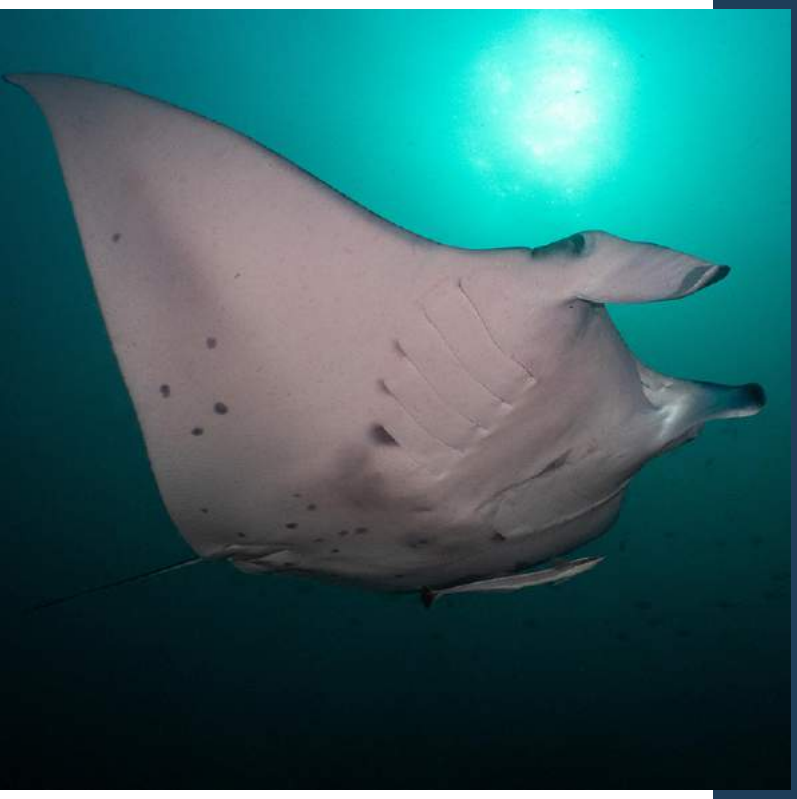
Filming began for 'Sharks of the Sulu' - an impact media campaign to support elasmobranch conservation in Palawan. The project is funded by the Save Our Seas Foundation.

SPECIES SPOTLIGHT

MANTA RAYS

The presence of both the oceanic and reef manta ray throughout the Philippines highlights the key role the country plays in supporting the population status and recovery potential of these highly intelligent and charismatic animals.

MANTA RAYS



The Problem:
There is a severe lack of data on manta ray populations and habitats across the Philippines, leaving the door open for unregulated and unsustainable exploitation.

The Solution:
To intensively study manta ray populations to better understand their connectivity and habitat use in order to effectively protect them

Bridging the Gap:

1. Identified 25 oceanic manta rays in Palawan - the only known population of oceanic manta rays in the Philippines
2. Regular participation in marine governing bodies FMA 7 and PAMB
3. Philippine Manta Distribution Research Paper submitted for review
4. A by-product of our manta ray research was the gathering of extensive data on other marine megafauna including whale sharks, eagle rays, and thresher sharks.
5. Developed new technology to study manta rays remotely for longer periods of time

Unique spot patterns on the ventral side (belly) of manta rays allows researchers to identify individuals and understand the population structure in a given area.

SPECIES SPOTLIGHT

MARINE TURTLES

With 5 of the 7 marine turtle species encountered locally, the Philippines is a critically important foraging and nesting habitat for these threatened species.

The Problem:
Past research has focused primarily on nesting sites, so data on foraging adult and sub-adult turtle populations is sorely lacking.

The Solution:
LAMAVE is building a National Turtle Catalogue of foraging marine turtles across the Philippines using data from in-water surveys and citizen science. This catalogue seeks to establish baseline data of Philippine marine turtle populations while finding areas of high aggregation and previously-unknown foraging sites.

Bridging the Gap:

1. As of April 2021, a total of 1,315 green (Chelonia mydas) and 187 hawksbill (Eretmochelys imbricata) individuals were identified from 27,058 encounters across 43 sites.
2. Worked with 5 universities across the Philippines to expand citizen science.
3. Trained more than 20 protected area rangers in turtle nesting and stranding response in El Nido
4. Added the Philippine Olive Ridley population to the global mapping initiative called The State of the World's Sea Turtles (SWOT)

SHARKS

SPECIES SPOTLIGHT

SHARKS

The skillful hunters of our ocean. Sharks have significant cultural, historical, and economic value to the people of the Philippines, and the importance to regulate and balance these is necessary for the health of our ocean and us all.

The Problem:
Approximately 200 species of sharks inhabit Philippine waters, yet data on their population status across the country is inadequate and remains limited. Furthermore, multiple species are unsustainably targeted by fisheries across the Philippines or are subject to incidental bycatch.

The Solution:
The collection of additional data and information on shark populations to better conserve them across their habitats.

Bridging the Gap:

1. Presented research at ICBS (International Conference on Biosphere and Sustainability)
2. The first scientific paper on pelagic thresher sharks at Ticao-Burias Pass Protected Seascape (TBPPS) submitted
3. "Biodiversity of Tubbataha Reefs Natural Park" paper submitted
4. Attended and supported two apprehensions of illegal shark fishers
5. National Geographic Deep Sea grant awarded

Our research has identified Tubbataha Reefs Natural Park and UNESCO World Heritage Site as having some of the highest densities of white tip reef shark *Triaenodon obesus* and grey reef shark *Carcharhinus amblyrhynchos* globally.

In July 2021, local authorities apprehended collectors of banned fishery products worth nearly Php13 million in an operation in Barangay Punta Engaño, Lapu-Lapu City including shells, giant clams, corals, sharks and turtles. We were on hand to assist with species identification of sharks and turtles and to collect genetic information to help understand the population source of the species – work that is contributing to a national and international project to tackle the illegal wildlife trade.

EXPEDITIONS

#EXPEDITIONSHARK

Travel restrictions, rolling lockdowns, and economic instability prevented us from organizing our seasonal research expeditions to Tubbataha Reefs Natural Park (TRNP) – a project site heavily dependent on such endeavours. Despite this, we were still able to accomplish several of our research objectives including monitoring the movement and connectivity of sharks thanks to the generosity and collaboration with our local partners.

- Retrieved and re-deployed 5 acoustic receivers in Cagayancillo
- Conducted underwater visual census surveys (UVC) assessing elasmobranch diversity and abundance in TRNP

CAPACITY BUILDING

INVESTING IN PEOPLE AS CONSERVATIONISTS AND EXPERTS

All the research, data, and analysis conducted would only be half as impactful if we weren't able to share our knowledge and create a learning environment for the next generation of planetary stewards. Our core pillars embody these values which we strive to accomplish with local communities, emerging leaders in this field, and our stakeholders.

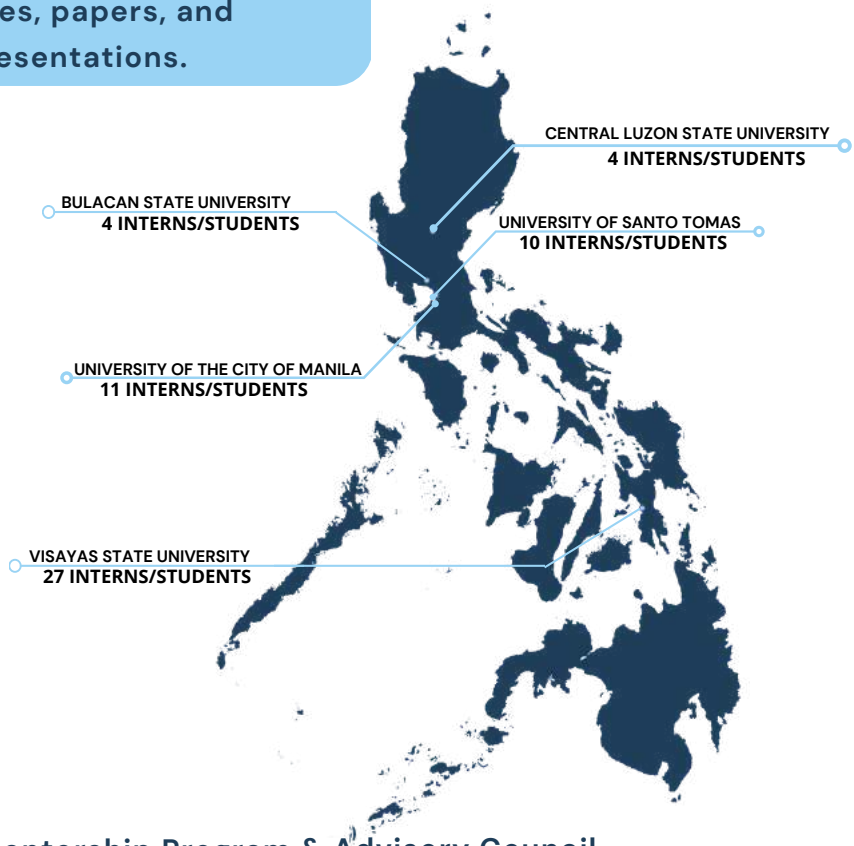
The support we received from the Filipino community has been both incredible and heart-warming, as they likewise placed importance on our shared values of conservation, sustainability, awareness, and knowledge dissemination. We could not be prouder of the work these inspiring individuals have accomplished and the positive impact they will have in reshaping our future.

SKILLS DEVELOPMENT

STUDENTS

Despite disruptions from the pandemic preventing us from hosting in-person internships and training, our educational efforts were remarkable! We still managed to work with students to develop their communications, research, and data management skills.

Supported over 50 Filipino Students from 5 Universities to conduct data analysis, studies, papers, and conference presentations.



Jackson Wild Mentorship Program & Advisory Council

Our Director, Sally Snow, was selected to mentor 3 individuals, and additionally supported 4 more across Asia, providing guidance in navigating barriers in conservation and impact media, building networks, and staging conservation issues relevant to the region. This has been a tremendous opportunity for early-career professionals in Asia to learn about the challenges and opportunities in the region and how to successfully navigate the space. She also currently sits on the Jackson Wild Advisory Council.

SKILLS DEVELOPMENT

STAKEHOLDERS

Our work cannot be accomplished without the cooperation and collaboration of our stakeholders. A mix between in-person training and online meetings have allowed us to continue pushing for increased protection of threatened marine megafauna in the Philippines and provide support to the people and communities dependent on these resources.

21 Community Members

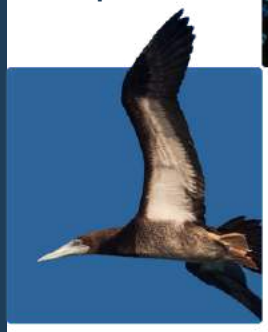
Trained in turtle stranding/nesting protocols

7 Turtle Rehabilitations

48 Turtle Stranding Responses

3 Agencies trained in Underwater Visual Census Surveys for monitoring shark diversity

13 Government Environmental Board meetings attended



Coordinated with Local Government Agencies for Best Practices of rescued avifauna in Palawan

Coordinated with national fisheries department to support the rights of small-scale coastal fisheries sector

Supporting National Conservation Campaigns

LAMAVE has been working with our partners and conservation leaders to engage in policy dialogues regarding urgent marine environmental matters on seabed quarrying, ore mining, reclamation in biodiverse coastal marine habitats, proposals of marine protected areas, and developing a national shark strategic plan.

MARINE ANIMAL STRANDING & RESCUE

LGU officials, volunteers, & LAMAVE staff battle waves as they return a stranded kogia to the ocean in Amlan, Negros Oriental - one of 50 strandings the team responded to across the country this year.

ASIA-PACIFIC MARINE TURTLE GENETIC WORKING GROUP (APMTGWG)

During January - August 2021, we spearheaded the effort to create the APMTGWG with the goal to enhance in-country technical capacity, standardize methodologies, identify research priorities, and establish a regional collaborative network to facilitate genetic studies that can support national and international marine turtle management and protection efforts. A series of 8 workshops brought together researchers from around the world.

SKILLS DEVELOPMENT

OUR STAFF

LEARNING AND SHARING KNOWLEDGE

Webinars:
The team attended more than 70 webinars

Courses:

- Intro to Canva and Basic Design
- Jackson Wild Editing Masterclass
- Verdant Learn: GIS for Wildlife Conservation
- RARE Behavior-Centered Design for the Environment
- University of Connecticut Disease of Aquatic Animals Program
- UNDP/Tribal Link Foundation- Indigenous Peoples at the UN
- IUCN SSG: Crash Course on the Human Dimensions of Shark Conservation
- Learning for Nature: Ecosystem Restoration

Workshops:

- Nonprofit Marketing Summit
- Leadership for Gender Equality Forum
- Shark Policy Communications Workshop
- WIO Regional Benthic Imagery Workshop

LEADERSHIP

"It made me more equipped in establishing myself as a conservation leader in the Philippines, especially with their module on personal leadership and project planning. This helped me be able to get a better understanding of the problems we are trying to solve and implement solutions strategically and effectively."

- Project Leader, Sue Ong on participating in the Conservation Leadership Program as a recipient of the CLP Grants Award

TEAM SPOTLIGHT Q&A

Taking the plunge into the deep sea

with Titus Cañete

Founded in 2021, the Ocean Discovery League is a 501(c)3 non-profit that aims to remove barriers to exploration of the deep sea through the development of AI-driven data analysis, low-cost deep sea technologies, and capacity building with historically excluded communities. LAMAVE Project Leader Titus Cañete joined the Ocean Discovery League team to complete the capacity of Asian countries for deep sea research, part of a global assessment.

What made you pursue this program?

I wanted to capacitate myself in deep sea research and learn about the current research efforts not only on a national level but also from an international perspective, as well as to understand how deep sea research could become more accessible to researchers interested in the field.

How did this program help you grow as a leader?

Through participating in the Ocean Discovery League's Deep Sea Capacity Assessment Research, I was able to get a better grasp of deep sea research by realizing what has been done, which countries have access to equipment necessary for the conduct of field research, as well as limitations that are still being faced by prospect researchers in the field of deep sea.

What was the biggest thing you took away from this program?

I believe that my participation in the program has taught me to be more resourceful and creative in data acquisition especially when data is proving difficult to source.

What is one thing you are better equipped to tackle because of attending this program OR how did this program help you tackle a conservation challenge?

Through the program, the capacities of deep sea research in countries all over the world will be better understood which will hopefully create an impact in research priority areas, management efforts, collaboration initiatives, and conservation policies within those countries.

What is one advice/what can you share with those who want to pursue a profession in the science, environment, or conservation arena?

Find and work with individuals who share the same passion as you as they will provide a great source of support and motivation in your career as a conservationist, especially during your difficult and low times.

OUTREACH

Collaborative Projects:

Shell Bank

Combating illegal wildlife trade of marine turtles in Asia-Pacific by developing protocols to trace turtles from "sale to source" through the creation of a transnational reference genetic database of rookeries across the region.

Sea Turtle Rescue Alliance (Eurasia/Americas)

Global network of over 60 members established for sea turtle conservation by sharing best practices in medical, husbandry, and treatment in the rescue, response, stranding and release of distressed animals.

Communicating science - presentation of research for:

Scientific Publications & Articles

1. *Meyer, L., Barry, C., Araujo, G., Barnett, A., Brunnschweiler, J.M., Chin, A., Gallagher, A., Healy, T., Kock, A., Newsome, D., Ponzo, A., and Huveneers, C. (2021). Redefining provisioning in marine wildlife tourism. J. Ecotourism. DOI: 10.1080/14724049.2021.1931253*
2. *Polyak, M., Petros, C., Ponzo, A., McGhee, A., and McLellen, F. (2021). Global Connections for the Medical Treatment of Sea Turtles. Status of the World's Sea Turtles (SWOT) Report, Vol. XVI. https://www.seaturtlestatus.org/swot-report-vol-16*
3. *Pierce, S., Grace, M., and Araujo, G. (2021). Conservation of whale sharks. In: Dove ADM, Pierce SJ (eds) Whale sharks: biology, ecology, and conservation. CRC Press, Boca Raton, FL, p 129–1152. DOI: https://doi.org/10.1201/b22502*
4. *Rohner, C., Norman, B., Araujo, G., Holmberg, J., and Pierce, S. Population Ecology of Whale Sharks. In: Dove ADM, Pierce SJ (eds) Whale sharks: biology, ecology, and conservation. CRC Press, Boca Raton, FL, p 129–1152. DOI: https://doi.org/10.1201/b22502*
5. *Rowat, D., Robinson, D., Alistair, D.,..., Yopak, K., Ziegler, J., and Pierce, S. Outstanding Questions in Whale Shark Research and Conservation. In: Dove ADM, Pierce SJ (eds) Whale sharks: biology, ecology, and conservation. CRC Press, Boca Raton, FL, p 129–1152. DOI: https://doi.org/10.1201/b22502*
6. *Yong, M.M.H., Leistenschneider, C., Miranda, J.A. et al. (2021). Microplastics in fecal samples of whale sharks (Rhincodon typus) and from surface water in the Philippines. Micropl.&Nanopl. 1, 17. DOI: 10.1186/s43591-021-00017-9*
7. *Ziegler, J., Araujo, G., Labaja, J., Snow, S., Ponzo, A., Rollins, R., and Dearden, P. (2021). Exploring the wildlife value orientation of locals working in community-based marine wildlife tourism in the Philippines. Tour. Mar. Environ. 16, 1 DOI: 10.3727/154427321X16101028725332*

CAMPAIGN SPOTLIGHT

THE DESCENT MISSION

In June, LAMAVE and GARMIN launched the 'The Descent Mission' a corporate social responsibility (CSR) campaign aimed at inspiring a collective effort from both prominent diving personalities and regular scuba divers. It highlighted the use of Citizen Science for marine research while hinging on LAMAVE's expertise in marine conservation.

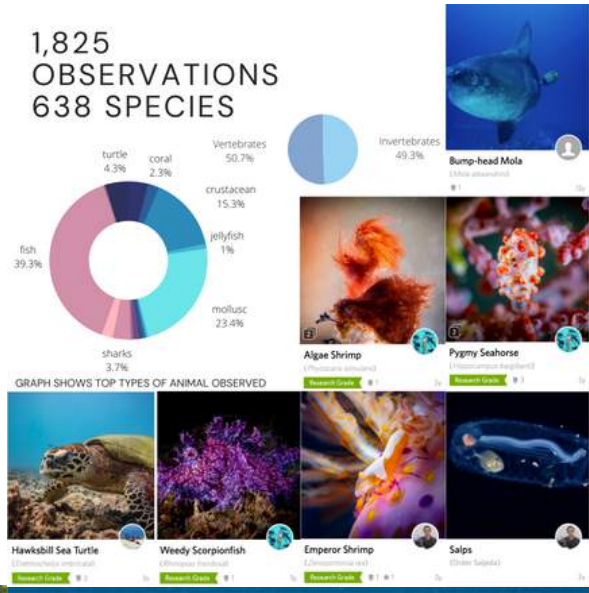
One element, the #EveryDiveCounts Underwater Photo Contest, asked participants to submit their photographs of marine animals to contribute to conservation research. This was done by uploading observations to a dedicated project ('The Descent Mission') on the citizen science platform iNaturalist.

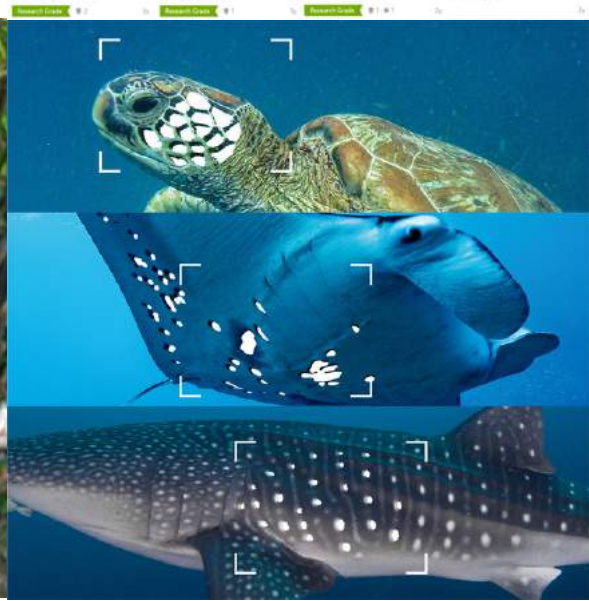
iNaturalist

By sharing their photos on iNaturalist, divers contributed valuable data to help researchers better understand the presence, distribution, and critical habitats for some of the most globally threatened marine species.

GARMIN | LARGE MARINE VERTEBRATES RESEARCH INSTITUTE PHILIPPINES

LEARN EXPLORE RECORD





1 PROJECT

83 MEMBERS*

1825 OBSERVATIONS

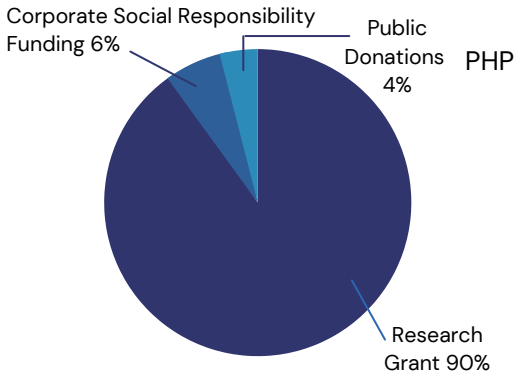
638 SPECIES

22 COUNTRIES

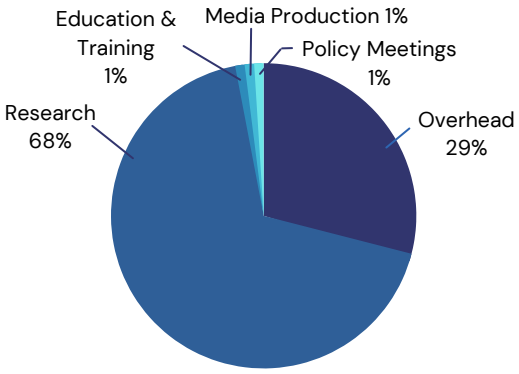
FINANCIAL SUMMARY

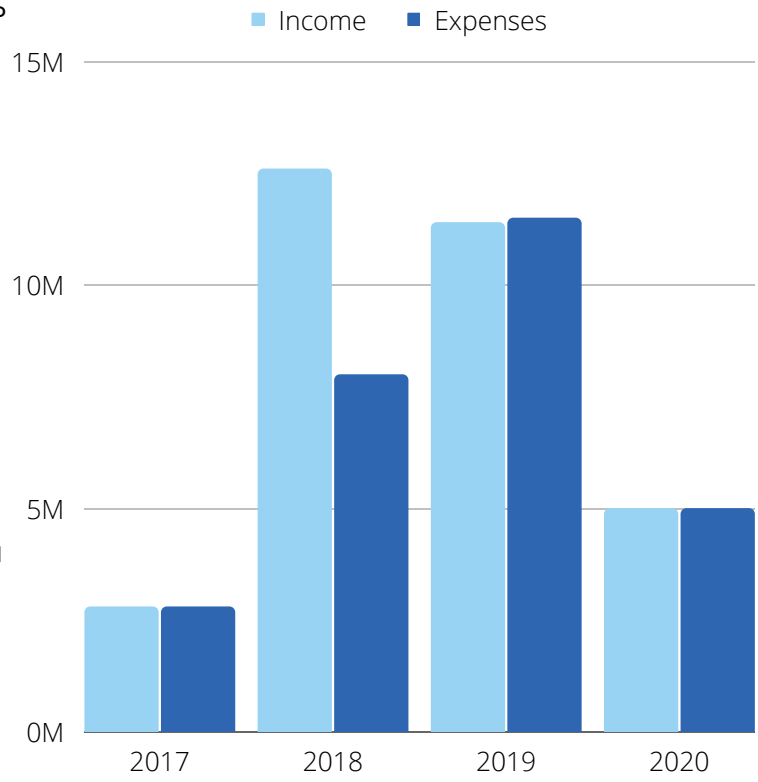
The effects of Covid 19 continued to be a difficult financial challenge to overcome in 2021, as many sectors had also been negatively affected. We are extremely grateful for the organizations, sponsors, and donors who have continued to support our team and the conduct of marine megafauna research and conservation efforts in the Philippines through this difficult time.

2021 INCOME



2021 EXPENSES





This year, as the majority of our projects remained closed, researchers focused on online data mining, presenting research at conferences, training students and interns, and data analysis and reports while in the safety of headquarters. The allocated funds for research grants continue to support our in-field operations when conditions become favorable to execute field work.

17%

increase in Research Grants funding from 2020

THANK YOU | MARAMING SALAMAT PO

We could not conduct activities or achieve our long-term conservation goals without the support of our funders, partners, collaborators, and donors, for whom we are incredibly grateful.

FOUNDATION & GRANT AGENCY PARTNERS

GOVERNMENT PARTNERS

PARTNER ORGANIZATIONS

UNIVERSITY PARTNERS & COLLABORATORS

PRIVATE SECTOR

DONORS 2021

Anas Wongmmudthong	Sheena May Bombarda	Angelica Duque	Frederic Tarasevicius	Rey Ostria
Barry Capoquian	Tanapol Tangjipienchok	ALON	Jerossalyn Pacificar	Salig PH
Chun Shu Lai	Tien Yi Yu	Christian Klever	Lyn Aquino	Shelby Pearl
Roland Chua Jr.	Tsan Chen Ho	Don Cover	Olaf Bautista	Valentin Mercado Jr
Sawarin Janyavaroj	Wen Ting Chen	EZ Dive Enterprise	Pierre Kaklamanos	

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