



MaRHE



Organized by **MaRHE Center of the University of Milano-Bicocca** (Maldives)
and **Shark Research Mexico** (Mexico)



*White
Wave*
Maldives

A scientific diving cruise in the Central Atolls of the Maldives
3rd Edition

3 – 10 October 2026

Sharks of the Maldives:

**Introduction to field-based research
and monitoring techniques**



For info:

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INTRODUCTION

Shark populations are facing increasing threats across most of the world's coastal and high-seas regions, largely due to overfishing and bycatch, the impacts of climate change, habitat loss, and biodiversity decline.

The decline in shark populations and the degradation of their environments not only jeopardize the species but also pose significant risks to the economic and food security of many regions, particularly small island nations. In fact, studies have demonstrated that habitats with healthier shark populations often have higher fish biomass and biodiversity.

It is estimated that 100 million sharks are killed each year, in this global context, the need for trained scientists and citizen scientists who can collect, analyze data, and present effective conservation strategies is crucial to preserving elasmobranch populations.

Nowadays, only a few "hope spots" remain around the world. One standout is the Republic of Maldives, which, thanks to its conservation strategies and the total shark fishing ban in 2010, has become one of the top destinations for diving and swimming with sharks.

During this workshop, you will work alongside marine scientists on a scientific expedition in the Maldives, diving and training on elasmobranch monitoring techniques.

The goal of this expedition is to introduce you to both theoretical and practical skills necessary for conducting and assisting research projects focused on shark population surveys and data collection. The skills acquired in the field of shark biology and ecology can therefore be used both in the sectors related to the protection and conservation of ecosystems, and in the fields of fisheries management and tourism, as well as academic applications.

At the end of this theoretical-practical course, the student will acquire notions to:

- Identify sharks and their associated fauna.
- Use specialized recognition software to catalog and database sharks.
- Identify the common behaviours of sharks in their natural habitat.
- Understand techniques to monitor the movements of individuals.
- Use the diving photogrammetry techniques to survey biometric data on sharks.
- Design and carry out visual census operations for the study and monitoring of sharks.
- Terrestrial and aerial census of sharks using a drone or vantage points.
- Use baited remote underwater video stations (BRUVS) to monitor shark abundance and composition.
- Address medical and hyperbaric issues arising from potential accidents during fieldwork on a boat for shark research.
- Conduct citizen science data collection techniques.
- Use of R for scientifically efficient and impactful visualization and presentation of data.



ORGANIZATION OF THE WORKSHOP

The **7-day workshop** will take place from the **3rd to the 10th of October 2026** with a diving cruise in the central atolls of the Maldives (standard route). The logistical support base will be the safari boat **Island Safari 2** operated by **White Wave Maldives team** (www.whitewavemaldives.com). The program and the activities are organized by the staff of the **MaRHE Center**, the **Marine Research and High Education Center of the University of Milano-Bicocca** (Italy), located in Magoodhoo Island, Faafu, Maldives (www.marhe.unimib.it), and **Shark Research Mexico** (www.sharkresearchmexico.com).

The program includes daily theoretical lessons, practical sessions on shark data collection and analysis, hands-on activities, and fieldwork through scuba diving at different reefs in the Maldivian archipelago, with 2 dives per day scheduled. Participants will be assisted underwater by staff from White Wave and the MaRHE Center. The workshop will be conducted in **English language**.

The activities and lessons will be mainly held by **Dr. Darren Andrew Whitehead**. Darren is a competent shark researcher with over 15 years' experience working with sharks around the world, and is an expert in shark behaviour and nutrition, as well as being at the forefront of our knowledge of the human impact on sharks through tourism and fisheries. He is the founder of Shark Research Mexico (SRM), a non-profit organization dedicated to the research and conservation of sharks and rays in the Gulf of California. Darren holds both a Master's and a PhD in marine biology, focusing on sharks, and has published many peer-reviewed publications on the habitat suitability of sharks, the toxicology of different species, reproduction, and the behaviours of these animals.

Since 2014, he has been working solely in Mexican waters, focusing his research on seasonal aggregations of whale sharks, mako sharks, blue sharks, silky sharks, as well as bulls, black tips, and tigers from the Mexican Caribbean to Nayarit, Bahía de Los Angeles, Bahía de La Paz, and as far as the Mexican Pacific. Through his work with sharks, he has continued to advance scientific knowledge of these top predators through active fieldwork, assisted in developing management proposals for tourist activities in Mexican waters by calculating the carrying capacity of the tourism industry, and served as a link between fishing communities and the scientific community.

The workshop will be coordinated by researchers from the University of Milano-Bicocca and the MaRHE Center, who have extensive experience in studying tropical marine environments and are experts on the coral reef ecosystem of the Maldives from diverse perspectives.

In particular, **Prof. Simone Montano** and **Prof. Davide Seveso**, marine biologists, work as Assistant Professors at the University of Milan-Bicocca, Dept. of Earth and Environmental Science (DISAT), and both are vice-directors of the MaRHE Center in Magoodhoo (Faafu, Maldives), where they organized and carried out several workshops related to the coral reef ecosystem. Their research focuses mainly on the ecology of coral reefs and their associated organisms, studying their health conditions, pathologies, and responses to various environmental and anthropogenic stressors. They are the authors of more than 100 publications in international scientific journals and book chapters. They are lecturers in the course "Biodiversity and Marine Ecology" in the international Master's degree in Marine Sciences at the University of Milano-Bicocca, in collaboration with the Maldives National University (MNU). They are PADI diving instructors with an Advanced European Scientific Diver license and more than 500 scientific dives in tropical marine environments of the Indo-Pacific, the Red Sea, and the Caribbean.



Andrea Parmegiani, marine biologist who works as a dive guide with White Wave Maldives since 2019. He is currently a PhD student at the University of Milano-Bicocca, Dept. of Earth and Environmental Science (DISAT), and at the MarHE Center. His primary research focus is on shark aggregations, ecology, distribution, and ecotoxicology in the Maldives archipelago.

Dr. Jacopo Gobbato, marine biologist and Postdoctoral researcher at the University of Milano-Bicocca, Department of Earth and Environmental Sciences (DISAT), and the MarHE Center. His research primarily focuses on shark ecology, movement patterns, and habitat use in tropical reef ecosystems, using non-invasive approaches such as BRUVS and UAV-based surveys to investigate spatial behavior and ecosystem interactions. His work also includes broader studies on coral reef ecology, with experience in anthozoan health and responses to anthropogenic stressors and diseases, providing an integrated perspective on reef ecosystem functioning.



PARTICIPATION REQUIREMENTS

The workshop is primarily aimed at **University students enrolled in Bachelor's or Master's degree courses, or in a PhD program**. However, even graduates (preferably in the scientific field such as Biology, Environmental Sciences, and Natural Sciences) and anyone interested in learning more about shark ecology and biology can join the workshop. The **maximum number** of participants is set at **20**.

Two scholarships are available exclusively for Maldivian Nationals.

If the participant limit is exceeded, selection will be based on applicants' experience and interests. For this reason, during the enrollment process, we ask you to also submit your Curriculum Vitae and, optionally, a short motivation letter for possible evaluation and selection.

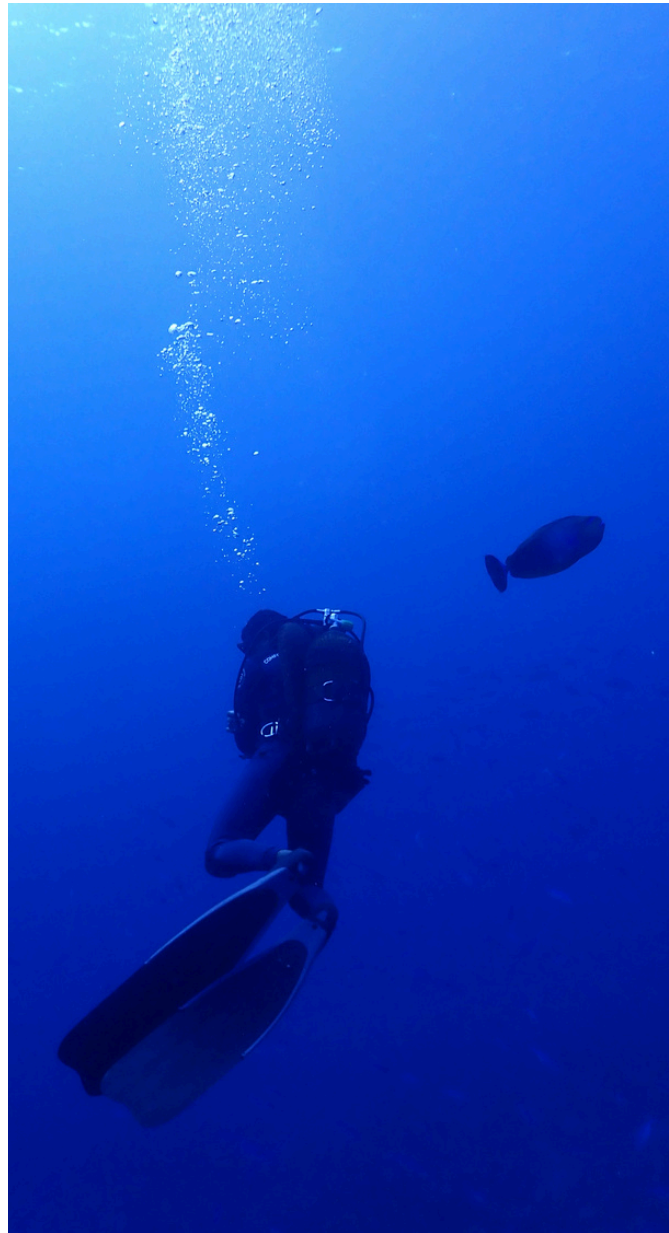
DIVING REQUIREMENTS

Each participant must be a certified diver (with a diving license from any association, e.g., PADI, SSI, CMAS), with a **minimum of 30 logged dives**.

All divers **must have a valid diving insurance (DAN or similar)** in order to perform diving activities. **Nitrox** is optional and available with an extra fee.

Each diver must fill in upon his/her arrival at the Liveboard a medical declaration for suitability for diving (see **Appendix 1** as an example). In case of a positive answer to any of the questions, an **additional medical certificate will be required** to attest the suitability for diving activities. This **must be obtained before travelling to the Maldives**.

To carry out practical activities, it is strongly recommended (but not mandatory) to have an **underwater camera or GoPro** and a **diving flashlight** or **torch**. Participants must bring their **own diving computer**, which cannot be rented on-site, and the **SMB (Surface Marker Buoy)**.



CREDITS RECOGNITION

Recognition of training credits is foreseen for students of the **International Master's Degree in Marine Sciences (University of Milano-Bicocca)**. In particular, for these students, the set of all activities carried out during the workshop, both theoretical (lectures, elaboration, and presentation of results) and practical (field activities and data collection), will reach the number of hours corresponding to **4 ECTS (practical training)**.

For students of the **Bachelor's degree in Biological Sciences (University of Milano-Bicocca)**, the recognition of **6 ECTS** is foreseen as an internship (not combinable with any other internships carried out in the Maldives).

Students enrolled in other degree courses and/or PhD programs, and/or other Universities or institutions, are requested to inquire in advance at the respective administrative secretariats regarding the possible recognition of ECTS credits.



PROGRAM

DAY 1 - Saturday, October 3rd:

- Meeting at Male' International Airport at **15:00** and accommodation on the boat
- Briefing of the boat and introduction to the staff
- Registration for diving activities
- Introduction of the Maldives and its marine environment
- Brief introduction of the workshop activities

DAY 2 - Sunday, October 4th:

- Briefing on dive logistics and safety

Dive 1 - Check Dive

Dive 2

- Lesson 1 - Shark biology, species identification, and behavior
- Lesson 2 - Basic first aid techniques for potential shark research and dive injuries
- Briefing on the next day's activities
- Night meeting session

DAY 3 - Monday, October 5th:

Dive 3 - Species ID and behavior

- Lesson 3 - Introduction to laser photogrammetry
- Practical session - Laser photogrammetry

Dive 4 - Visual census and photogrammetry

- Lesson 4 - BRUVS explanation, structure, purpose, benefits, global research
- Data analysis, introduction to identification software, and management of photo libraries and datasets
- Briefing on the next day's activities
- Night meeting session

DAY 4 - Tuesday, October 6th:

Dive 5 - Laser photogrammetry, species ID and behaviour

- Practical session - BRUVS construction

Dive 6

- BRUVS deployment
- Lesson 5 - Terrestrial and aerial drone surveys for sharks
- BRUVS data analysis session
- Briefing on the next day's activities
- Night meeting session

DAY 5 - Wednesday, October 7th:

Dive 7 - Laser photogrammetry, species ID and behaviour

- Practical session - BRUVS deployment, drone surveys

Dive 8 - Laser photogrammetry, species ID and behaviour

- Lesson 6 - First introduction to R Studio
- Drone data analysis and BRUVS analysis
- Briefing on the next day's activities

DAY 6 - Thursday, October 8th:

Dive 9 - Laser photogrammetry, species ID and behaviour

- Lesson 7 - Introduction to satellite tagging techniques and genetic analysis

Dive 10 - Laser photogrammetry, species ID and behaviour

- Seminar on R data analysis with practical examples on shark ecology
- Briefing on the next day's activities
- Night meeting session

DAY 7 - Friday, October 9th:

Dive 11 - Hulhumale urban sharks

- Presentation of group projects
- Conclusion of the workshop and leisure time
- Visit to the capital Male'

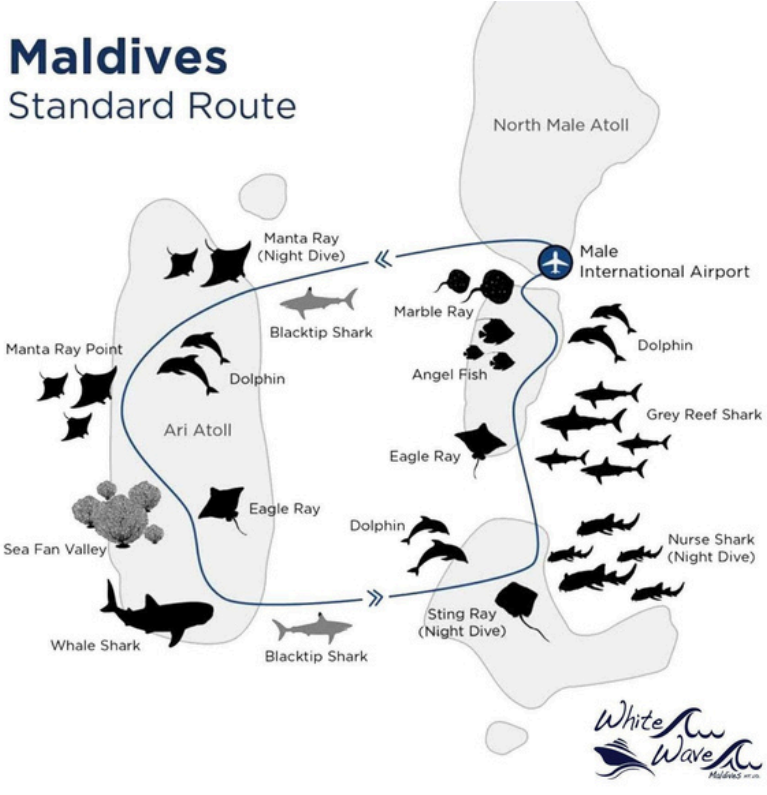
DAY 8 - Saturday, October 10th:

- Preparation and departure from Male International Airport



IMPORTANT NOTES:

- The program is indicative and subject to modifications due to logistical needs or weather and sea conditions. In case of extreme marine conditions, diving activities could be replaced by snorkeling activities.
- During the cruise, we will try to spot and analyze as many shark species as possible, including blacktip reef sharks, whitetip reef sharks, grey reef sharks, nurse sharks, and more. However, encounters with these species are not guaranteed.
- Some of the dives could be performed in the channels or in areas particularly subjected to sea currents, sometimes even strong ones. Please take this factor into account. Even the simplest dives could become challenging. For this reason, it is compulsory for each participant to bring the SMB (Surface Marker Buoy).
- Each dive is preceded by a briefing during which the dive profile and organization, as well as the scientific activities, are presented and summarized to the participants.
- If anyone needs to rent scuba gear, let us know in advance.
- It is strongly recommended to bring a personal laptop for work and analysis. Specific instructions for installing software on personal laptops to ease data analysis and exploration will be provided in detail in due time.



PRACTICAL INFORMATION

ACCOMMODATION

Accommodation is provided by the Liveaboard Island Safari 2 in multiple rooms (up to 4 beds). Each room has a private bathroom, air conditioning, and a fan. The rooms are cleaned and tidied up every day. Sheets and towels are provided. There are no accommodations in single rooms available.

Meals (breakfast, lunch, and dinner) are included and served as a buffet. Special dietary requirements and allergies must be noted in the application form. More info reported in the technical specifications below.

The White Wave Maldives team, operating in the Maldives since 2006, composed of expert Italian instructors and integrated with the local Maldivian crew, will welcome you, making each day of your stay on board an unforgettable experience. For each dive, you will be accompanied by 5 to 6 dive guides, ensuring your safety and comfort, even in more challenging conditions.

DOCUMENTS

To enter the Maldives, it is necessary to have a passport valid for at least 6 months from your departure date. If you do not have a passport, we invite you to request one promptly, as the wait may be long. If it is necessary to speed up the release times, Italian students only can request, after registering for the workshop, a letter from the MaRHE Center to be handed to the police headquarters. Please let us know if you need this.

A **dive insurance** (DAN or similar) is **mandatory**.



CLOTHING AND EQUIPMENT

The air temperature as well as the water temperature is around 28-29°C. The weather is always pleasant, even in the rainy months. Please note that most of the day will be spent on field activities and lectures; it is therefore advisable to wear comfortable, sporty, and light clothing.

For field activities and diving, it is strongly suggested to have your own equipment and in particular:

- Mask and fins (either with or without booties)
- Wetsuit (3mm) or shorty wetsuit (water is warm, avoid 5 mm or thicker wetsuits)
- Diving computer (it is mandatory to have your own)
- BCD and regulators
- SMB
- Diving flashlight and underwater camera or GoPro (optional but strongly recommended)

It is possible to rent, for a fee and based on availability, diving equipment (BCD, fins, and regulators) on the boat. However, we strongly recommend that you bring your own equipment with which you are familiar, so you are more confident. Please inform us in advance if you need to rent diving equipment or anything. The dive computer is not available.

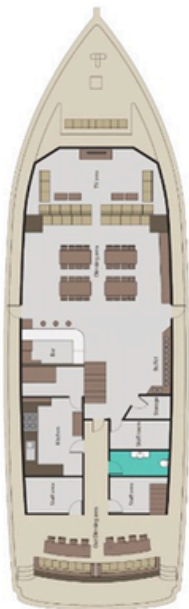
CURRENCY

The Maldivian currency is the Maldivian Rufiyaa (MVR). Euros and dollars are accepted in any bank or exchange office. 1 Euro = about 18 Maldivian Rufiyaa (MVR); 1 US \$ = about 15.42 MVR; It is possible to exchange money at the airport.

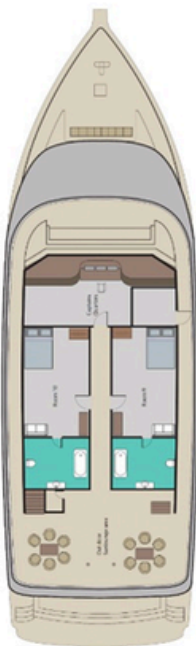
COMMUNICATION

On board the Liveaboard, there is a limited free WI-FI service that can be used for educational purposes during the morning and for communicating at home in the evening. However, you can purchase a local SIM with data at the airport or in Male city if you want to stay always connected. Internet top-ups can be purchased online. An e-SIM card is now available on the Maldivian Ooredoo website; however, compatibility with mobile phones must be verified beforehand, as not all brands and models support e-SIM cards.

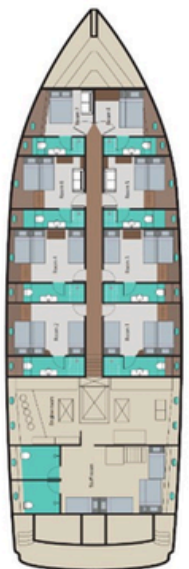




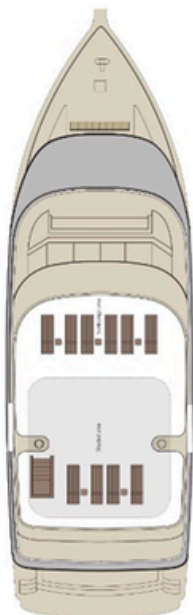
Level 2



Level 3



Level 1



Level 4

TECHNICAL SPECIFICATIONS M/Y ISLAND SAFARI 2	
Year of construction:	2007.
Boat type and hull:	Three-deck wooden motor yacht of Maldivian construction.
Length:	32 meters.
Width:	10 meters.
Decks:	3.
Electrical power:	220/240 volts - 2 silenced generators, 30KV each.
Engine:	480 HP Yanmar.
Cruising speed:	11 knots.
Desalinators:	6000 liters of fresh water per day.
Cabins:	<p>The 9 passenger cabins are all spacious and well-structured to accommodate any needs, families, and friends. They are equipped with a private bathroom with hot and cold shower, and autonomous air conditioning control and are divided as follows:</p> <ul style="list-style-type: none"> • 2 junior suite cabins with double beds • 4 double/twin cabins • 3 triple cabins
Passenger capacity:	18 pax / 21 max.
Crew:	12 persons and 5 instructors and Divemasters.
Diving crew:	4/5 people.
Restaurant:	International cuisine.
Buffet-style:	Breakfast, Lunch, Dinner + Maldivian-themed evening.
Served bar:	Wide selection of cocktails, wine, liquor, fruit juices, and soft drinks.
Bar lounge:	(1st deck) with TV, DVD player, Hi-Fi system, library.
Telecommunications:	Paid Wi-Fi internet 20\$ per week subject to changes depending on local prices variations. CB radio, GPS, cell phone, and safety devices required by local reg-ulations.
Tender:	5-meter dinghy with a Honda 40 HP outboard motor.
Diving Center:	A well-organized and equipped international diving center. Equipment rental is available onboard if needed.
Support boat:	"Diving Dhoni" with a 4-cylinder engine.
Underwater locator radio:	"Lost diver" safety device.
Compressors:	3 compressors.
Nitrox:	Available for an additional fee.
Cylinders:	12-liter steel tanks with INT/DIN mono valve - 5 cylinders: 15-liter steel tanks with INT/DIN mono valve - 1 cylinder: 18-liter steel tank with INT/DIN mono valve
First Aid:	3 oxygen cylinders of 50 liters each and a complete kit

FEE & REGISTRATION

The registration fee for the workshop "Introduction to field-based shark research and monitoring techniques" is

EURO 2100

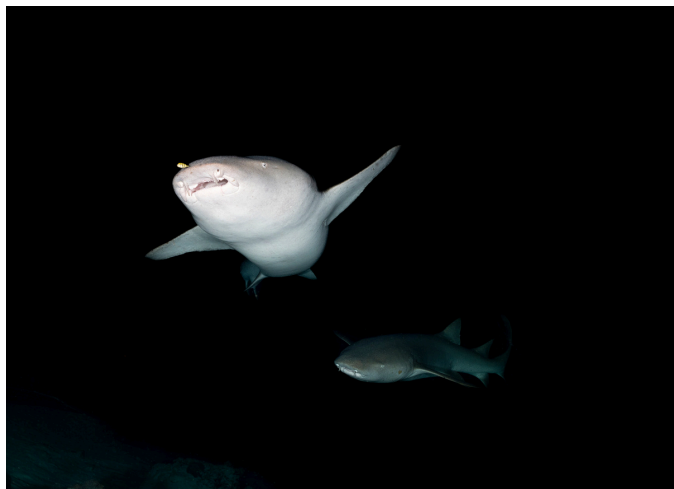
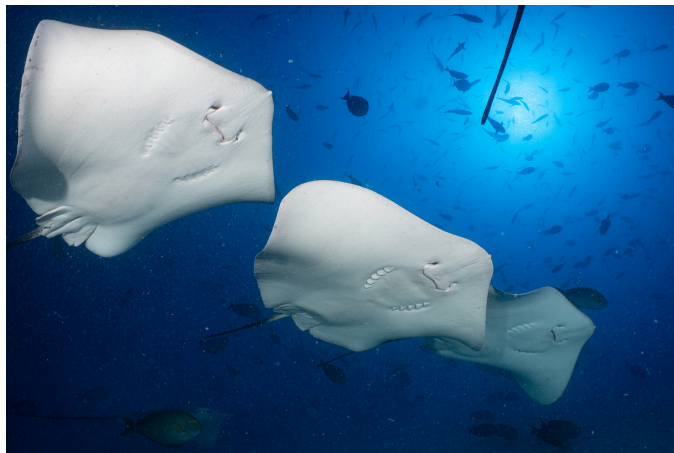
****Each scholarship covers 1500€ per LOCAL participant.**

The above fee **includes**:

- Transfer on the boat from/to Male airport
- Food and lodging onboard the M/Y Island Safari 2: full board treatment and accommodation in multiple rooms.
- Transportation by Liveaboard captain to all dive sites and atolls
- Lectures, practical and field activities (2 dives per day) included in the workshop program
- Water and American coffee free
- Beach towel and bath/shower towel
- Daily water activity
- Excursions on deserted islands and fishing villages
- Assistance by White Waves, MaRHE Center, and Shark Research Mexico staff

The above fee **does not include**:

- Flight to/from Maldives (Male International Airport)
- 10% service charge is applied to all extras purchased on board, in accordance with current regulations, per person per week, to be paid directly on the boat by cash or bank transfer (no cards).
- Mandatory service fee on board 120 USD per person per week to be paid directly on the boat. The fee requested should be in USD; payment in a different currency is subject to a commission of € 5
- Tax on tourist goods and services and green tax of €200
- Nitrox €70 per week (optional)
- Possible rental of diving equipment (weights and weight belts are included)
- Passport issuing or renewal costs, if any
- Anything else not specified above



REGISTRATION

To proceed with the registration, you are asked to **fill in the Google form**, which you can find at the following link:

REGISTRATION FORM

After completing the online questionnaire through the Google form, please send an email to **workshop.marhe@unimib.it** specifying in the subject: "Name Surname - Shark workshop registration" and **attaching**:

- A good quality color scan of your passport as a .jpg file (first 2 pages containing personal data), naming the file with Surname_Name_SW26.
- Your CV
- Motivation letter (not mandatory)

IMPORTANT: you will have to wait for our confirmation before purchasing your flight.

Since participants will be selected based on applicants' experience and interests, we will give you the green light to purchase flights and proceed with the fee payment.

The maximum number of participants is set to **20 people**.

FLIGHT TICKETS

You will be responsible for purchasing the flight. The choice of airline is yours; the important thing is to be at the airport in Male, Maldives, on the day and at the time specified (we will share the necessary information with you once you are registered).

Pay attention when purchasing flight tickets, as mistakes (incorrect flight dates, etc.) cannot be refunded.

Furthermore, to proceed and ensure proper organization of the airport pickup, kindly send us a copy of your flight ticket by email to workshop.marhe@unimib.it.

THE REGISTRATION DEADLINE IS FIXED FOR
26 JUNE 2026

Appendix 1

MEDICAL STATEMENT

Please carefully read the medical statement; you will need to fill it out only once on the boat. Should you reply YES to any of the questions, you are required to present a medical certificate following a Physical Examination by your doctor. This must be obtained before traveling to the Maldives.

The purpose of this Medical Questionnaire is to find out if you should be examined by your doctor before participating in recreational diving. A positive response to a question does not necessarily disqualify you from diving. A positive response means that there is a preexisting condition that may affect your safety while diving and you must seek the advice of your physician prior to engaging in dive activities. Please answer the following questions on your past or present medical history with a **YES** or **NO**. If you are not sure, answer **YES**. If any of these items apply to you, we must request that you consult with a physician prior to participating in scuba diving. Your instructor will supply you with an RSTC Medical Statement and Guidelines for Recreational Scuba Diver's Physical Examination to take to your physician.

<input type="checkbox"/> Could you be pregnant, or are you attempting to become pregnant?	<input type="checkbox"/> Dysentery requiring medical intervention?
<input type="checkbox"/> Are you presently taking prescription medications? (with the exception of birth control or anti-malarial)	<input type="checkbox"/> Any dive accidents or decompression sickness?
<input type="checkbox"/> Are you over 45 years of age and can answer YES to one or more of the following?	<input type="checkbox"/> Inability to perform moderate exercise?
<ul style="list-style-type: none"> <input type="checkbox"/> Currently smoke a pipe, cigars or cigarettes <input type="checkbox"/> Have a high cholesterol level <input type="checkbox"/> Have a family history of heart attack or stroke <input type="checkbox"/> Are currently receiving medical care <input type="checkbox"/> High blood pressure <input type="checkbox"/> Diabetes mellitus, even if controlled by diet alone 	<input type="checkbox"/> Head injury with loss of consciousness in the past 5 years?
Have you ever had or do you currently have...	<input type="checkbox"/> Recurrent back problems?
<input type="checkbox"/> Asthma, or wheezing with breathing, or wheezing with exercise?	<input type="checkbox"/> Back or spinal surgery?
<input type="checkbox"/> Frequent or severe attacks of hayfever or allergy?	<input type="checkbox"/> Diabetes?
<input type="checkbox"/> Frequent colds, sinusitis or bronchitis?	<input type="checkbox"/> Back, arm or leg problems following surgery, injury or fracture?
<input type="checkbox"/> Any form of lung disease?	<input type="checkbox"/> High blood pressure or take medicine to control blood pressure?
<input type="checkbox"/> Pneumothorax (collapsed lung)?	<input type="checkbox"/> Heart disease and/or attack?
<input type="checkbox"/> Other chest disease or chest surgery?	<input type="checkbox"/> Angina, heart surgery or blood vessel surgery?
<input type="checkbox"/> Behavioral health, mental or psychological problems (Panic attack, fear of closed or open spaces)?	<input type="checkbox"/> Sinus surgery?
<input type="checkbox"/> Epilepsy, seizures, convulsions or take medications to prevent them?	<input type="checkbox"/> Ear disease or surgery, hearing loss or problems with balance?
<input type="checkbox"/> Recurring complicated migraine headaches or take medication to prevent them?	<input type="checkbox"/> Recurrent ear problems?
<input type="checkbox"/> Blackouts or fainting (full/partial loss of consciousness)?	<input type="checkbox"/> Bleeding or other blood disorders?
<input type="checkbox"/> Frequent or severe suffering from motion sickness ?	<input type="checkbox"/> Hernia?
	<input type="checkbox"/> Ulcers or ulcer surgery ?
	<input type="checkbox"/> A colostomy or ileostomy?
	<input type="checkbox"/> Recreational drug use or treatment for, or alcoholism in the past 5 years?

The information I have provided about my medical history is accurate to the best of my knowledge. I agree to accept responsibility for omissions regarding my failure to disclose any existing or past health condition.

Date: _____ Signature: _____

