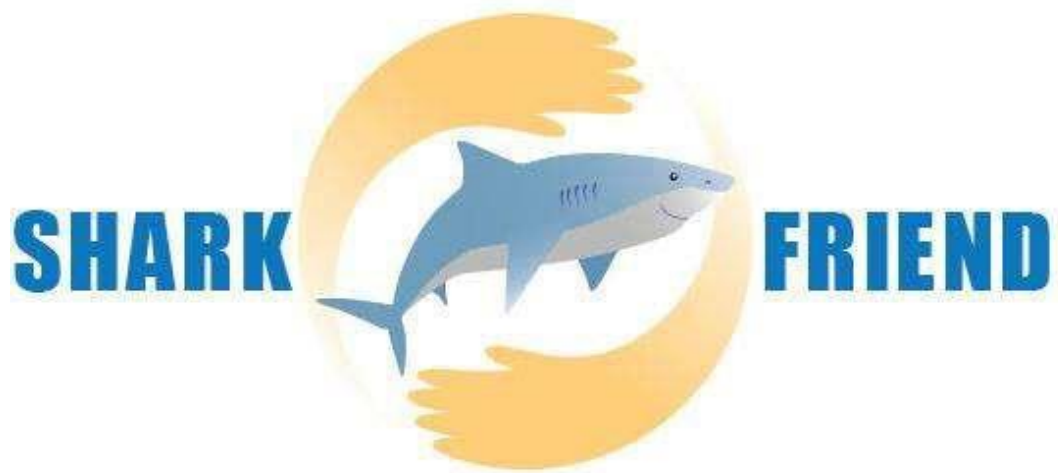


THE SHARK FRIEND
RECREATIONAL RESEARCH AND EDUCATION



ORGANIC METHODOLOGY OF CONSERVATION





THE SHARK FRIEND CONSERVATION

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Introduction

Be a shark's friend and listen to their voices

If only sharks were able to communicate with humans, most probably the first word will be 'Lets be friends'. *Sharkfriend* came with the purposes of listening to the sharks as a friend, not as predators or dangerous creatures. There are many organizations trying to save sharks but where are we at today? We are still at the same square trying to blame the fishing industry and trying to stop people from eating shark fin soup. Instead, we can sacrifice our ego and start educating ourselves by listening to them. What do they want and how do they feel when we interfere with their territory and reefs? Have we, the cleverest and most creative creatures on earth thought about this?

The *Shark friend* program will be focusing on research to attract sharks and make them stay near local reefs and educating locals to be friends with the sharks. The key to protecting sharks is not to enact heavy laws or start wars but create awareness through long term and integrative education. In order to make this successful, everyone must play a role. In education, the important elements include protecting and growing our reefs, monitoring human activities, and continuing scientific research. By educating people, as time goes by, sharks may procreate and live freely, thereby benefitting local industry and businesses via shark tourism.

The *Shark friend* program is designed with sustainability in mind since we want to contribute to the highest level of awareness in the future. We would like to invite local and international organization (or individuals) to support us to realize the program.

We aim to be the leader in shark conservation through joint efforts internationally. As divers or snorkelers, we are by nature ambassadors to the underwater world. *Shark friend* will guide you by providing you the techniques and knowledge in every shark dive, do research and collect data for future references.

Their existence depends on you

Sharks' numbers have shrunk rapidly worldwide for the last 20 years and out of the approximately 400 species of sharks, 75% have shrunk more than 50% in population; mostly due to overfishing and polluted seas. With nearly 100 millions sharks killed globally every year, and



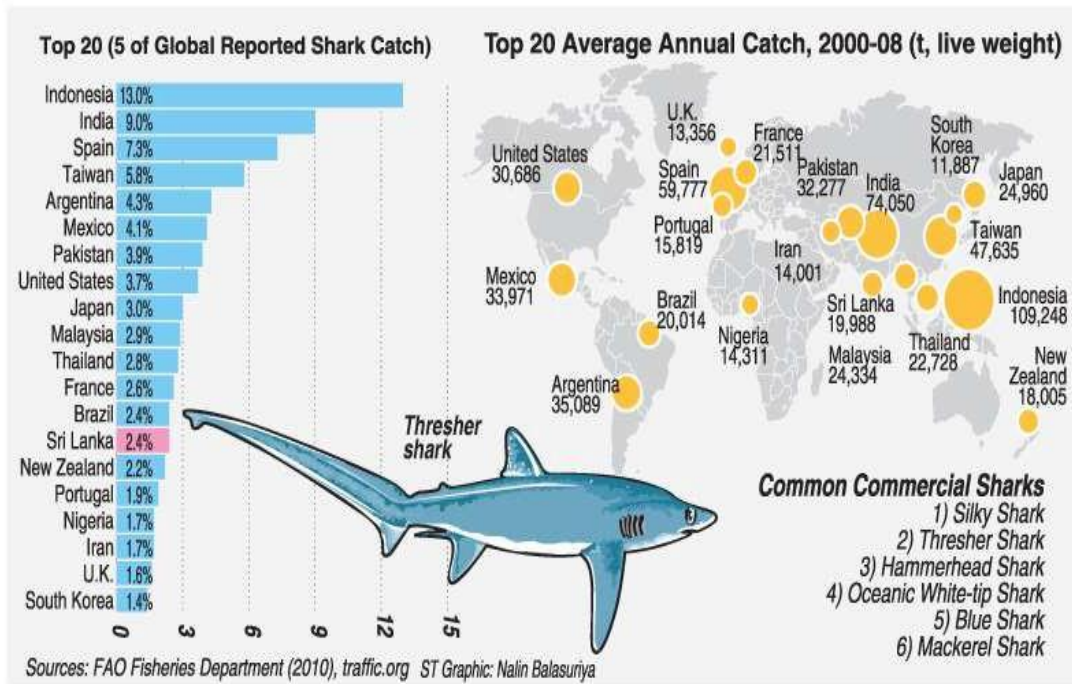
the breeding cycle taking between 2-3 years, the matters giving the high stress environments for the sharks. If this continues at this alarming pace, sharks will cease to exist; there will be no more Hammerhead, Thresher, Tiger or Blue shark.

Table: 20 endangered shark species list

Sharks in the Red List: 201			Red List			
#	English Name	Scientific Name	Mayor Code	Minor Code	Version	Trend
1	African Angelshark	<i>Squatina africana</i>	DD		3.1 (2001)	?
2	Angelshark	<i>Squatina squatina</i>	VU	A1abcd A2d	2.3 (1994)	↓
3	Angular angel shark	<i>Squatina guggenheim</i>	VU	A1bd A2d	2.3 (1994)	↓
4	Arabian catshark	<i>Bythaelurus alcocki</i>	DD		3.1 (2001)	?
5	Argentine Angel shark	<i>Squatina argentina</i>	DD		2.3 (1994)	?
6	Atlantic Ghost catshark	<i>Apristurus atlanticus</i>	DD		3.1 (2001)	?
7	Australian spotted catshark	<i>Asymbolus analis</i>	DD		3.1 (2001)	?
8	Banded catshark	<i>Halaelurus lineatus</i>	DD		3.1 (2001)	?
9	Barbeled houndshark	<i>Leptocharias smithii</i>	LR/nt		2.3 (1994)	?
10	Bareskin dogfish	<i>Centroscyllium kamoharai</i>	DD		3.1 (2001)	?
11	Bartail spurdog	<i>Squalus sp. nov. A</i>	DD		3.1 (2001)	?
12	Basking shark	<i>Cetorhinus maximus</i>	VU	A1ad A2d	2.3 (1994)	?
13	Bigeye sandtiger	<i>Odontaspis noronhai</i>	DD		2.3 (1994)	?
14	Bigfin catshark	<i>Apristurus sp. nov. B</i>	DD		3.1 (2001)	?
15	Bighead catshark	<i>Apristurus sp. nov. F</i>	DD		3.1 (2001)	?
16	Bizant river shark	<i>Glyphis sp. nov. A</i>	CR	C2a(i)	3.1 (2001)	↓
17	Black gulper shark	<i>Centrophorus isodon</i>	DD		3.1 (2001)	?
18	Black shark	<i>Centroscyllium nigrum</i>	DD		3.1 (2001)	?
19	Blackspot shark	<i>Carcharhinus sealei</i>	NT		3.1 (2001)	?
20	Blacktip reef shark	<i>Carcharhinus melanopterus</i>	LR/nt		2.3 (1994)	?

Shark protection progresses too slowly compared to the decline in shark populations. Surprisingly not only the developing or third countries have this issue, US and Japan are among the top catchers. Without sustainable fishery laws around the world, there is no chance for the sharks; the last hope is education for awareness.

Table: Top shark catchers



We need more enforcement for the protection of sharks and the laws should be imposed by the locals - the natural representative of sharks.

Table: Shark fins exporter to Hong Kong



Reported imported shark fin to Hong Kong increased by 6-8% in 2014



Interesting Shark facts

They existed over 400 millions years ago and went through great evolution.

They comprise over 400 different species.

Occupy mostly all types of water conditions.

The biggest is the whale shark (*Rhincodon or Rhiniodon typus*).

The smallest is the dwarf lantern shark (*Etmopterus perryi*).

The fastest swimming shark is the mako shark (60mph).

The sharks skeleton is made from cartilage, same as our nose structure.

They have very low blood Pressure.

No swim bladder.

Must keep on swimming to pump blood through their body.

Must keep on swimming to avoid sinking.

It takes between 2-3 years for every cycle to breed.

Nearly 100M sharks are killed globally every year.

Sharks are an apex predator (at the top of the food chain).

90% of the shark meat is wasted (after their fins are cut).

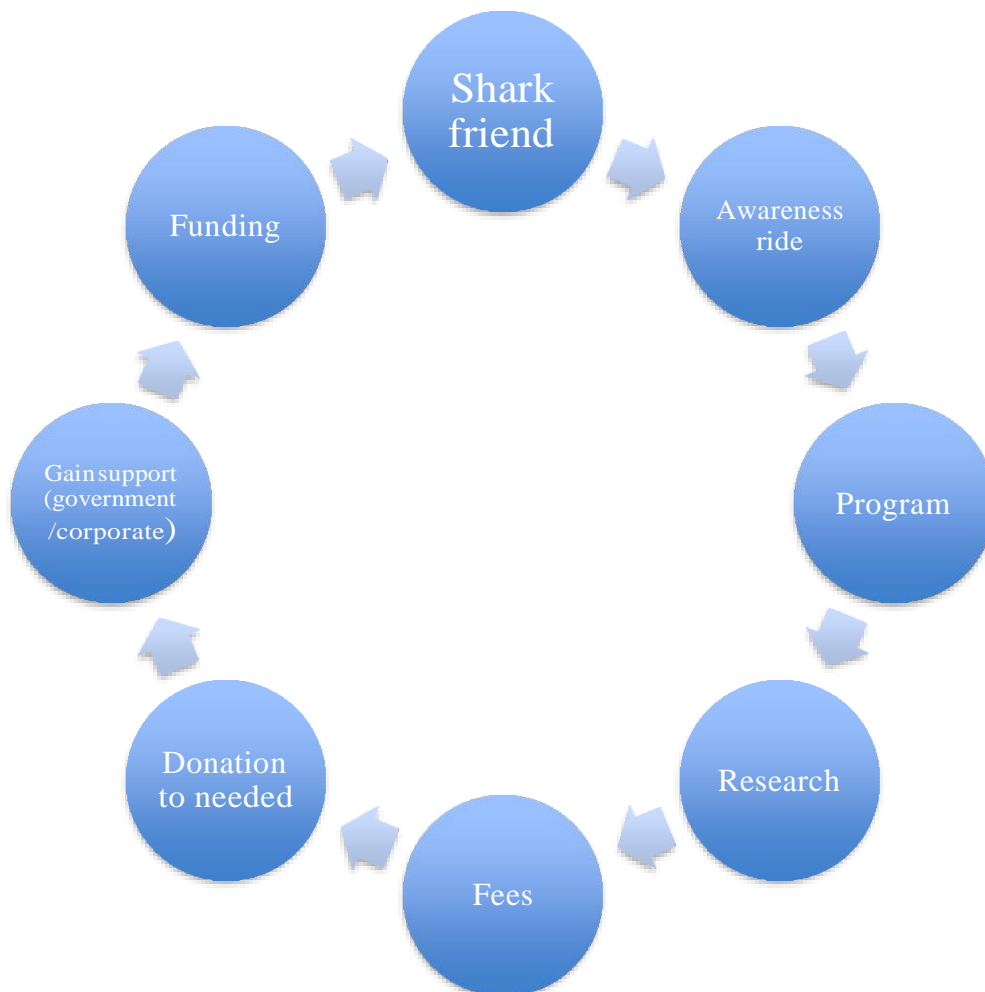
Man has most to fear compare to sharks.

The most dangerous sharks don't exist we are all friends.



Conservation

A new concept of conservation



The philosophy is simple: Help each other. An awareness ride (or any other activity suggested by you) will be done every year between October and Mac(?), during the ride, locals will be given presentations and talks. Our representative will send out information about why we need to be shark friends. Riders will be looking for new associates and support throughout the journey as well. Along with this, anyone interested will be able to join us immediately. Anyone interested (provided that they meets the prerequisites), would be able to sign up for the program, which will be held on Perhentian Island, Malaysia. Or other location upon request. We have other places in mind



for the future development. Programs fees will be imposed based on the duration and activities; all participants will be required to assist in our data collecting. Excess fees (profit) from the program will be donated to the needed such orphan house, old folks, cancer association, and school of hope. From there, Government or corporate will be involved in providing more new funding for shark friend. The chain is simple, the implementation? We shall see.

Awareness

Creating awareness through education will be the priority. Awareness campaign is an innovative outreach program created to educate the public about the importance of having sharks in our marine ecosystems. The program will involve a ‘shark aware’ program by the dive instructor comprising diving and snorkelling activities. In addition, we will invite the local universities as our research team. In the long run, we do hope to get some support internationally. Our research will not be limited domestically. As soon as we get funding, a global development will be disclosed.

Teachers / lecturers will be key in passing the message to the schools. They will be given the presentation kit consisting of information and updates of the research. Alongside teaching materials and kits, an integrative program syllabus will be developed by our professional team to accommodate with the progress. Shark diving and shark snorkelling will take place for daily operation while shark research will involve collecting data and observing sharks closely.

In term to promote the program, Biking and touring will be used as the promoting mechanisms. International endurance, domestic ride, inter-pacific tour all will be done accordingly to create shark awareness. Information and talks can be distributed during the journey, to the locals and tourists.

Shark friend is a unique program that been designed to fund the shark conservation and research, and the extra funding will be donated to the other organizations. It is easy to understand, we help shark, sharks help us, collaboration between friends. At the moment, there is not much funding available, all fees to be paid by participant individually.



Vision & Mission

- S Strong policies to ensure the continued existence of shark
- H Hesitation in using shark's products
- A Assist in Shark rehabilitation programs
- R Reserved the important reefs for sharks
- K Kits development for the awareness education

Finding solution to balance the marine ecosystem.
Observe and record sharks population/ species.
Ensuring sharks are more protected in the local area.
Create and provide a research platform for education.
Create opportunities for our future generations.
Exposing the importance of sharks in Eco- Tourism.
Clear all misperceptions and fear of sharks.
Develop a comprehensive shark education syllabus.
Observing the local area threat to shark specifically.

Projects

Up to date, we have couple of project on the field

- i. Stop shark feeding
It may be good, which translate into it may be bad as well. There is no proven theory on good or bad. The survey showed more shark's encountered, and turn to be more aggressive and closer to the divers and snorkelers. Surely it doesn't include anything solid yet, hence continuous study is needed. Further, there are proved that visitors has been feeding the shark with every single bad food(which mean not on their diet) such as expired sandwiches & plastics.
- ii. Whale shark route
Migration is a common routine for our lovely whale shark, the fact is they need to migrate in finding the soul-mate, keeping the giant in a bay or around small area wouldn't help. We are keeping the record of sightings, location, date, time, photo/video, size, time, water temperature. By having these details, we will integrated with Lunar calendar(based on the moon) to determine the best possible timing of the migration for the specifics area, the intention is clear, merely to understand how they live and provide the whale shark with better environment(avoid distortion), they deserved it. Our



volunteers is required to verify the details and keeping an up to date record for the sharing purposes. Speaking about why, by learning this migration accurately, we may be able to propose to the authority for the sustainable 'whale shark sighting', which in return controlling the numbers of visitors to certain dive spot and avoiding unnecessary direct contact with their habitats.

iii. Be friend to our earth

Let's face the fact that our ocean are mostly polluted, and its killing our marine life, which ended up reducing our shark population. In this initiative, we are working with celebrity's fan club to voice it out together. Via the dive centre, we encourage everybody to be the marine debris rangers by providing the mesh bag for every dive every day and act on the behalf of collection centre for recycling items.

iv. Coral nursery

Healthy and rich coral reefs providing oxygen, foods and maintain the chain for all marine life, 2nurseries had been created using 100% materials from our seabed, with the size of 5m X 2m, each could accommodate to 100-200 corals, the damaged corals that had been saved by our coral gardeners, a transplant side is also ready in perhentian. certainly, more nursery will be build and will used as training, quarantine & healing nursery. Imagine, the education underwater!

v. Aware ride

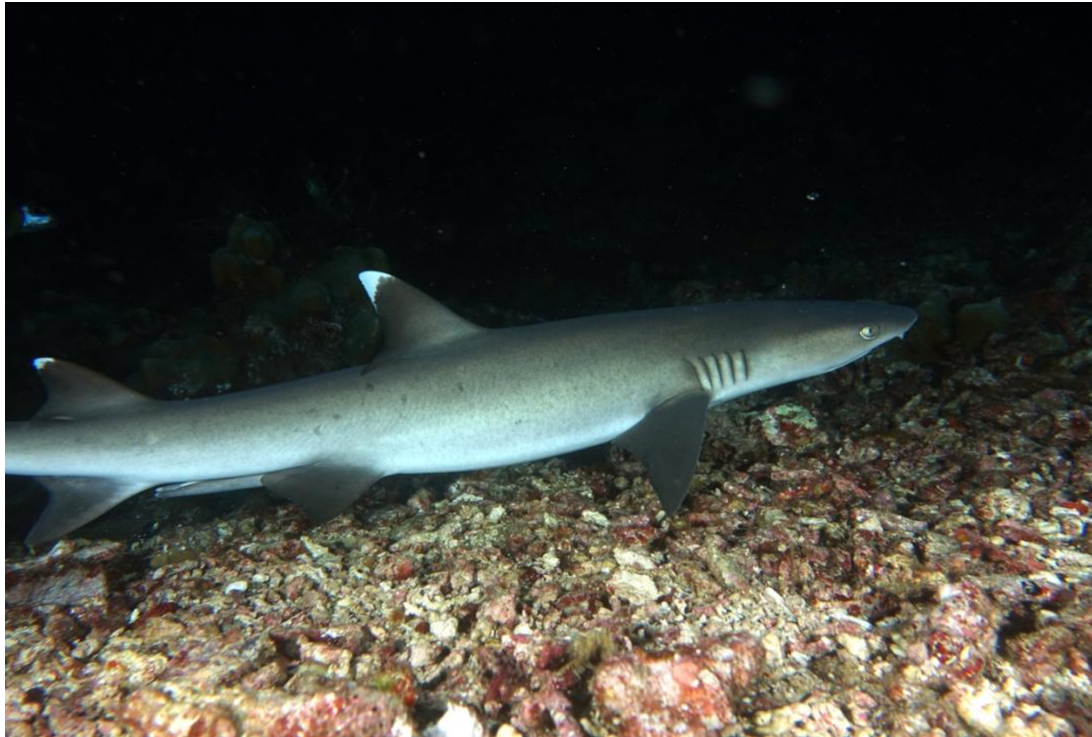
While we love underwater, we also love to be on land, as island based having limited time, we are making our monsoon period to ride to create awareness, go places, have fun and travel, stop and start some presentation or talk. We all learn by learning, sharing information.

vi. Black tip sightings

Excellent, our very first project that run by our trainer. Check out the update on our website. Should you are interested to start you own fun research or database contributor, please let us know.



Shark Eco-tourism



Did you know? Sharks bring in millions more alive than dead. Shark eco-tourism emphasizes how valuable sharks are when they are alive, millions of tourists want to see them and would be more than willing to contribute financially, and this method brings the tourists over and over again to be around sharks. Compare this with harvesting sharks for their body parts or fins to be more specific, thereby opting for a one time economic benefit. Eco-tourism seem to be much better option. It is considered as the best socio economics solution for shark survival.

Shark watching Industry has the biggest potential to support the shark conservation, as the revenue is bringing in more than shark fins itself, this happens to many local areas in the world including Bahamas, Australia and Palau. A study by Australian Institute of Marine Science concluded that a single living reef shark contribute to approximately \$1M dollars through their lifetimes, whereas a single reef shark is only worth approximately \$100 for the body part.



Table: Value of shark based diving

The location and value of shark -based diving industries			
Location	Activity	Value (per year)	Reference
Fiji	Sharks	US\$ 42.2 million	Vianna et al. 2011
Fr. Polynesia	Lemon shark	US\$ 5.4 million	Clua et al. 2011
Maldives	Sharks	US\$ 38.6 million	Martin et al. 2006
Palau	Sharks	US\$ 18 million	Vianna et al. 2012
Seychelles	Sharks	US\$ 4.5 million	Topelko and Dearden 2005
Seychelles	Whale Shark	US\$ 4.99 million	Rowat and Engelhardt 2007
South Africa	Tiger Shark	US\$ 1.7 million	Dicken and Hoskings 2009
South Africa	White Shark	US\$ 4.2 million	Hara et al. 2003
West Australia	Whale Shark	US\$ 5.5 million	Catlin et al. 2009

Scuba diving remains the main activity for shark watching, and the value and revenue increases every year for the participating countries. Unfortunately, there are more places that haven't realized the socio economic value of sharks, and facing over exploitation without any solutions or law enforcement. This is where we should stand strong together and help explain that eco-tourism will be able to help them in the long-term. They should be well informed that the revenue can be generated not only from shark watching itself, but also benefiting the tour operators, boats, restaurants, shops, dive centers, resorts and local communities indirectly.

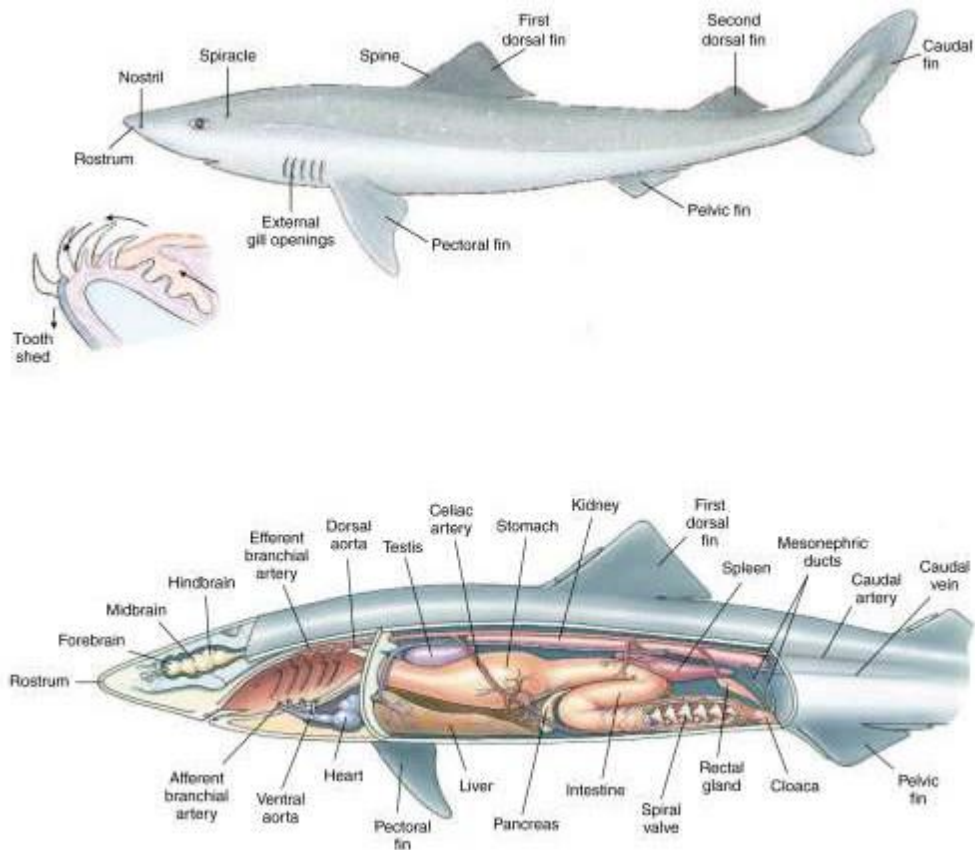
Education

Shark evolution & biology

The first primitive fossil of shark was dated about 420m years ago, this mean that the evolution of sharks began long before human being. The history of sharks goes back a long time but the term 'long time' doesn't even begin to cover it. Let's put it this way: dinosaurs lived during the Mesozoic Era which only began about 240m years ago. In easy word, sharks, with no doubt one of the oldest creature this planet has, They live in waters all over the world, in every ocean, and even in some rivers and lakes.



Table: General ANATOMY




Sharks are fish that have no bones, only cartilage. They have 5-7 gills (without gill covers, operculum) in front of their pectoral fins (on both sides). Shark tails are asymmetrical; the top lobe of tail is larger than the bottom lobe. The shark's jaw is not fused to the braincase and can enlarge to eat very large prey. Sharks have no swim bladder for buoyancy (like the bony fishes); an oily liver aids buoyancy. Sharks have an advanced electro receptive system that detects slight electrical fields.

The teeth and skin are modified placoid scales. A spiracle (a special gill slit that supplies oxygen directly to the eyes and brain) is present in front of the first gill. Sharks' teeth are replaceable when they've broken or worn out. Their intestines are short and compact and have an unusual structure; a spiral valve (shaped like a spiral staircase) fills the cylindrical intestines and allows absorption of the food in a short span of intestine.



Table: Shark comparison

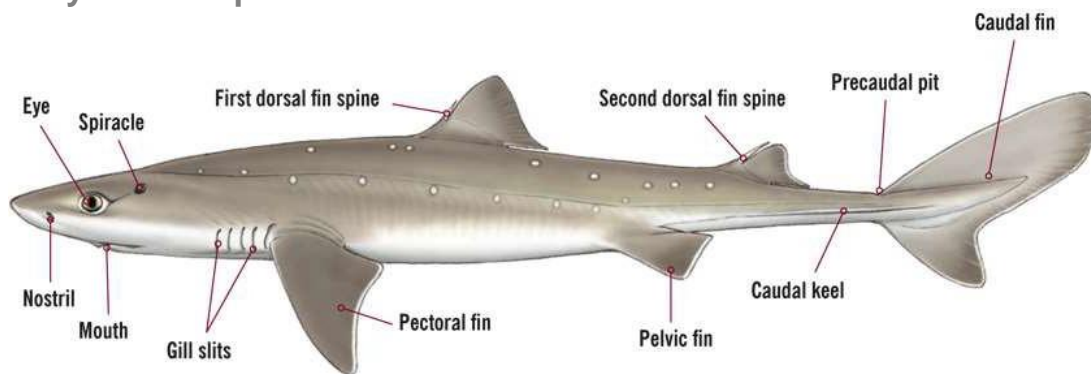
Comparison of Shark Orders



	Filled Sharks	Cow Sharks	Bramble Sharks	Dogfish Sharks	Angel Sharks	Saw Sharks	Bullhead Sharks	Carpet Sharks	Mackerel Sharks	Ground Sharks
Order	Olemydidaeiformes	Hexanchiformes	Echiorhiniformes	Squaliformes	Squaliiformes	Pristigasteriformes	Heterodontiformes	Diadobatiformes	Lamniformes	Carcharhiniformes
# Species	2	4	2	119	11	9	3	39	15	277
Anal fin	✓	✓					✓	✓	✓	✓
Fin spines				✓						
Dorsal Fin	1	1	2	2	2	2	2	2	2	2
# Gill slits	6	6 or 7	5	5	5	5 or 6	5	5	5	5
Famous Species	Filled Shark	Bonnethead Shark	Bramble, Hickory Shark	Gulper, Spiny Dogfish, Lantern, Pigmy	Pacific Angel Shark	Common Saw Shark	Port Jackson, Horn Shark	Whale, Nurse, Zebra, Carpet Shark	Great White, Basking, Mako, Megamouth, Thresher	Hammerhead, Catshark, Tiger, Bull Sharks
Unique Qualities	Eel-like shape; 3-cusped teeth; fully grown in gills	Codcomb-shaped bottom teeth	Thorn-like denticles over body	Many bioluminescent	Shovel eyes & upside of top of head; fleshy barbels	Long snout; long nasal barbels	Pronounced brow	Specialized nostrils; barbels	"keratin dental pattern"	Nictating eyelids
Habitat	Deep marine waters	Deep, often cold marine	Deep, marine, temperate to tropical	Marine; many bottom oriented	Marine; both temperate to tropical bottom	Mostly marine; temperate to tropical	Marine coastal bottom; temperate to tropical	Marine; mostly tropical	Marine; coastal to open ocean; cold temperate to tropical	Virtually every marine habitat; some estuaries
Body shape	Long, thin, eel-like	Rounded	Rounded	Rounded	Flattened	Slightly flattened	Rounded	Many Rounded; some flattened	Rounded	Rounded
Mouth	Terminal mouth; blunt snout	Underneath	Underneath	Underneath	Terminal mouth; blunt snout	Underneath; long blade like snout	Underneath	Underneath; short; ends before eyes	Underneath; extends well past eyes	Underneath
Reproduction			ovoviviparous					oviparous; egg case	ovoviviparous; some are oviparous	viviparous

Source: Shark saver

Body and Shape



Most sharks are considered to be fusiform shaped, spindle/torpedo shaped, tapering at each end creating a streamlined body. Though there are variations on this body type, it is the most common shark body type and the one we usually first think of. Skates and rays, who are related to sharks, usually differ in they are flattened or disc shaped.



Fins



Sharks have five rigid fins, which they can't fold down against their bodies (unlike bony fishes). Unlike bones in fish fins, shark fins are supported by soft, unsegmented rays of large collagen fibers called "ceratotrichia". The triangular dorsal fin atop the shark helps the shark with balance. Most species have two dorsal fins but some only have one. The tail fin of sharks is called the caudal fin and is considered heterocercal, meaning the top and bottom lobes are not symmetrical and the vertebral column extends upwards into the top lobe. Sharks move their caudal fins side to side to propel themselves forward. The caudal and pectoral fins roughly correspond to human arms and legs. On the bottom side of the shark, there are two other fins, the pelvic fin and the anal fin. The pelvic fin is associated with claspers, the male sexual organ, and in some species of sharks the anal fin is absent.

Skin



A shark's skin is made up of dermal denticles. These tiny tooth-like scales cover the shark, although they are absent on the underside of some species, and each has a sharp edged crown covered in enamel. Millions of these denticles cover the shark, making its skin feel rough to the touch. The denticles point backwards helping the shark swim efficiently and faster by reducing water resistance. As a shark grows it sheds and replacement scales grow through the skin. The dermal denticle in some species have evolved into specialized forms, like a dorsal fin spine that grows continuously and therefore can be used in age studies. The skin on females of some species is considerably thicker than males because the



males may hold the females during copulation which may inflict serious bites.

Electric Receptors



Sharks have receptors that are sensitive to electric fields. These receptors are called ampullae of Lorenzini. The ampullae are canals filled with a kind of jelly on the shark's head that are able to receive electric stimuli through the skin of the shark. The shark is able to 'read' minute changes in electric current in its environment through the ampullae. This is a sense every bit as developed and important to the shark as sight, hearing, smell, touch, and taste.

How does the shark use its electro-reception? When a fish or some other prey moves its muscles, there is a slight change in electric current. A fish that is wounded and struggling will produce a different amount of electricity. Sharks are able to sense this weak change in current through the water even before they might otherwise see or smell them, and before their prey can see the shark. All shark species use this electroreception ability to locate prey. Some species that enjoy bottom-dwelling fish or mollusks that bury themselves in the sand are able to locate these animals with their electro-sense.

Sharks also use their electro-sensors to help navigate the oceans. They are able to induce an electric current by their own movement across the earth's electromagnetic fields, and this helps them to determine and stay on course.

Gills





Most species of sharks have five pairs of gill slits on each side of their head, but a few have six or seven pairs. The gills are crucial to a shark's breathing system. By opening its mouth, water is drawn into the shark. The open mouth gives the appearance of a smile in many sharks.

When a shark closes its mouth, the water is forced over its gills and the tiny blood vessels in shark gills absorb oxygen from the water. To aid water flowing over its gills most sharks swim forward all the time, called ram ventilation, and is characteristic of more active open ocean sharks. If these sharks are trapped or forced to stop swimming, they can suffocate. Some sharks can actively pump water over their gills, called buccal pumping, while resting on a sandy bottom or under a ledge, like the nurse shark.

A simple way to distinguish a shark from a skate or ray is the position of the gill slits: they are on the sides of the head in sharks, while below the head near the mouth on skates and rays.

Jaw



A shark's upper jaw is not fused to its cranium. This means that their jaws can partially protrude from their head, orientating their teeth outward, maximizing the amount of prey. Sharks can open their mouth very wide, sometimes to nearly 180 degrees, to catch their prey (try opening your mouth and see how wide you can do this!).

Teeth





A shark's teeth are larger versions of the denticles covering a shark's body. Sharks are famous for their teeth, which they produce and shed throughout their life. They grow in rows and move forward on a conveyor belt-like system. The rate of tooth loss is very dependent on the individual species and time of year. A shark may produce, use, and shed as many as 6,000 teeth each year, and over a lifetime a shark may produce tens of thousands teeth! Shark's teeth are so hard, covered in resilient enamel, they are resistant to erosion (unlike shark's cartilaginous skeleton) which is why shark's teeth are so numerous in the fossil record. Different sharks have different shaped teeth depending on what food they eat. Sharks which eat fish have pointed teeth for 'catching' their prey, those that sometimes eat seals or sea lions have razor sharp teeth for cutting out manageable chunks of prey, sharks that eat shellfish and crabs have flat crushing teeth, and filter feeding sharks have greatly reduced teeth that they don't use, instead they utilize dermal denticles lining the gill plates and pharynx, a modification of gill rakers, long slender filaments that strain plankton from the water.

Neutral Buoyancy



The body tissues of a shark are denser and heavier than water, so naturally a shark would slowly sink. To compensate for this sharks have a light, cartilaginous skeleton and a big oil-filled liver. Sharks lack any trace of a swim bladder (the gas-filled buoyancy-control organ found in many bony fishes). Instead they use their oil-filled liver to reduce their over-all density and provide them with some ability to ascend and descend in water. An enormous liver dominates the shark body.

Skeleton





Fish such as tuna and mackerel have a skeleton made of bone (just like humans), but a shark skeleton is made entirely of cartilage (like human noses and ears). Cartilage is lighter and more flexible than bone, thus helping the shark to both stay neutrally buoyant and more easily flex its body to swim and navigate. At strategic points in a shark's body, hexagonal plates made up calcium salts add strength to the cartilage skeleton, such as in the jaws and the backbone.

Muscle



Sharks have two kinds of muscles. The first is a thin layer of red muscle, a slow contracting muscle layer used for cruising, just under their skin. This red muscle requires an oxygen rich blood supply. Red muscle works by breaking down fat stored in a shark's body. The second type is white muscle, a fast contracting muscle layer for bursts of speed, is found under the red muscle. White muscle doesn't require an oxygen-rich blood supply and works by using energy from the breakdown of glycogen (sugars).

Body Temperature

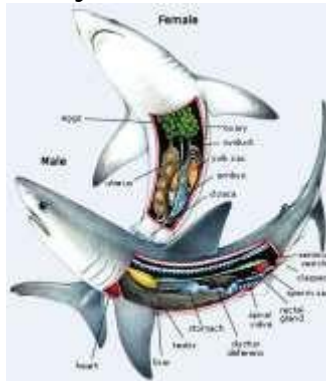


Most sharks pump large amounts of oxygenated blood around their body, feeding their muscles and producing heat. That heat is usually lost when the warm blood flows through the thin walls of the vessels in the gills to pick up oxygen from the colder sea water. These sharks are considered cold-blooded or ectothermic (their body temperature is the same as the surrounding water). Some sharks, like the Mako, White, Porbeagle, and Thresher, are warm-blooded, or endothermic, meaning they can maintain a core body temperature above that of the outside water temperature.



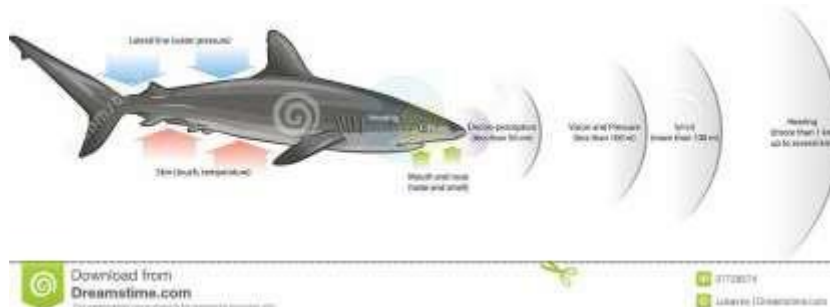
These sharks have developed a 'rete mirabile', a fine network of capillaries where cold oxygen-rich blood runs right next to, but in the opposite direction of, warm poorly oxygenated blood, exchanging heat that is carried back to the muscles, not lost to the sea. This adaptation makes them more efficient and faster growing than similar ectothermic sharks. Salmon shark's can sometimes elevate their body temperature about 21° C above the cold surrounding water temperature.

Body Waste



Unlike most vertebrates who simply excrete nitrogenous waste, sharks retain high concentrations of urea and trimethylamine oxide in their body tissue because they are important in regulating a shark's internal salt-to-water balance.

Shark Senses



Sharks are highly complex predators with extremely developed senses, they have seven senses includes smell, sight, sound, touch, taste, electroreception and pressure changes, these additional senses help them to survive in a diverse range of habitats, navigate the wide oceans, hunt prey and detecting a potential mates pheromones.



Reproduction



Sharks cycle for reproduction take between 2-3 years and some species of sharks only start the cycle to breed after 25 years. As the primitive creature, shark putting a large amount of effort in producing few well developed offspring that therefore have a higher survival rate. This mean there are capable of producing a number of larger young that have a much higher survival chances. Although their reproductive strategies have evolved to be more advanced than those bony fishes, the numbers of sharks declining rapidly due to human activities. All reproduction involves internal fertilization and there are 3 type of different process, which are oviparity (lay eggs and anchored to the seabed or attached to seaweed/reefs, while the embryo is developing), ovoviviparity (the female will carry them inside her body until they hatch and will then give birth to live young) and viviparity (The shark develops inside the mother's body, receiving nutrients and oxygen from the mother through an umbilical cord). Although sharks are capable to produce the well developed young sharks, their population still declining due to the massive impact from human activities.

The role of sharks in the marine ecosystem as apex predators

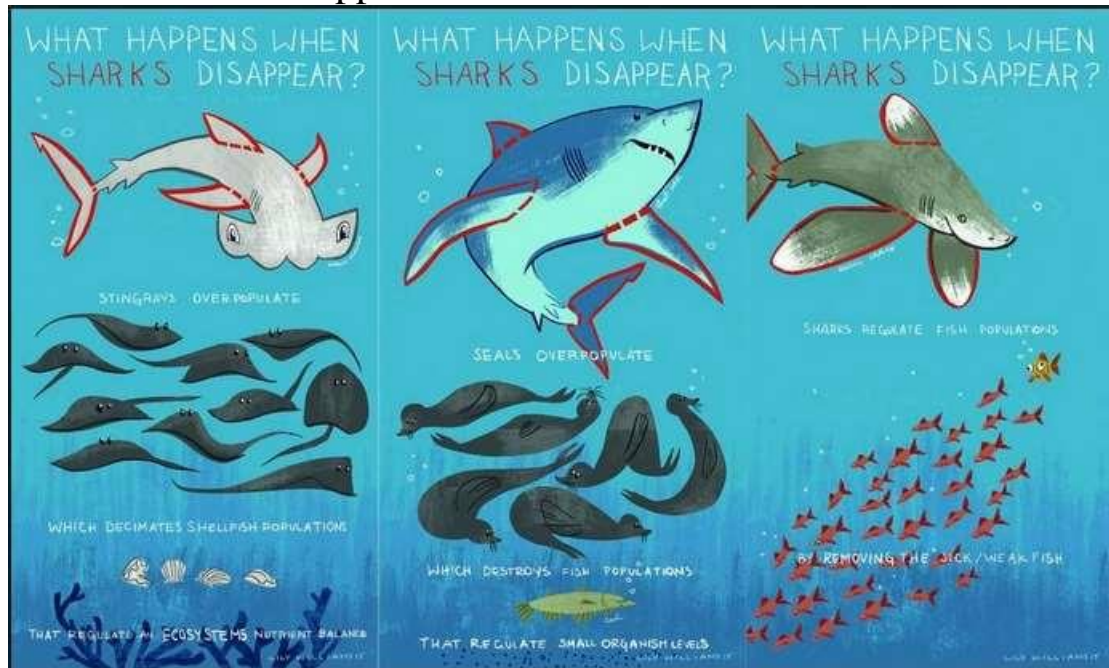
Threats to sharks mean threatening entire ecosystems. By joining the shark friend movement, we will learn the importance of sharks in protecting our marine ecosystems. Shark play a very important role in the oceans in a way that an average fish does not, they are at the top of the food chain in virtually every part of every ocean, in that role, they keep population of other fishes healthy and in proper proportion for their ecosystem. How do sharks keep the ocean healthy?

Sharks keep food webs in balance Predatory sharks prey on the sick and the weak members of their prey populations, and some also scavenge the sea floor to feed on dead carcasses. By removing the sick and the weak, they prevent the spread of disease and prevent outbreaks that could be devastating. Preying on the weakest individuals also strengthens the gene pools of the prey species. Since the largest,



strongest, and healthiest fish generally reproduce in greater numbers, the outcome is larger numbers of healthier fish.

Table: If sharks disappear



Sharks also keep sea grass beds and other vital habitats healthy, including the reefs. Sea grass grow in the shallow water, sharks present in the shallow water will mean that sea grass eater such as turtles and sea cows will avoid this area. In return, the sea grass and reefs provide a very healthy environment and shelter for the other small fishes, and the growing reefs means the ability to support the big population of fish, when the space grow bigger, these can also support bigger animals such turtles and sea cows.

Threats to sharks Population

Shark Finning for soup The center trade of shark fins in Asia is Hong Kong, and distributed to surrounding countries such China, Taiwan, Singapore and Japan. Serving shark fins during the meals symbolize the status for many; it shows status of respect and wealth. With the high population around Asia and the wrong cultures, it is nonetheless shark populations are decreasing. As the supply getting stress due to the low catches, prices of sharks fin increases and this attracting the new operators/fisherman to travel further to get the good catch. An average shark fin cost \$50-100 compare to their meat which is just average \$1-3, for the overloading issues for the boats, most operators/fisherman cut off the sharks fin and throw the shark body overboard. Although China (the biggest consumer for shark fin)



are fighting against the issues, unfortunately, the enforcement is still nowhere.



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Bycatch is the second largest threat to the sharks. Bycatch refers to the part of a catch that is not needed or undersized, due to the strict regulation to land the catch, most of it is dumped overboard. Some research believed that nearly 100m sharks are killed this way, and there is nothing from the enforcement department. Beside sharks, dolphin, whales and turtles are also the victims.

Human Impact Development, Pollution, coastal swimming devices, marine debris. Unfortunately, most of the development concepts aren't sustainable with the environment.

Program

I'm shark friend

Workshop & Course

Topic	I'm shark friend
Instructor	shark friend trainer
Minimum age	12 years old
Sites	Sharks area
Materials	e-book
Activities	Scuba diving / snorkelling / free diving
Maximum depth	30meters
Minimum for divers	Advanced diver with excellence buoyancy skills (minimum of 50dives is recommended)
Fees	Workshop US\$100 (1day) Course US\$300 (3days)



Section 1: Presentation

Presentation topic will cover the entire topic from Introduction, conservation, education, water Skills development, Research & Rehabilitation and action that can be taken. During this, the local area sharks will be introduced, participant may discuss with their representing instructor/personal about their personal intention.

Section 2: Water Skills development (scuba/snorkel)

Scuba diving activity Participant that no diving for more than 6 months is required to sign up for scuba review. This is mandatory to avoid ‘you damage more than what you save’; excellence buoyancy skills are required to join this program. Comprehensive courses are available to be a diver, fees will be imposed as usual for the courses, and we will integrate the activities. Our pro teams are conducting daily courses from the island.

Snorkeling activity Must be a good swimmer and able to do skin dive, as we do require participant to record the seeing. Snorkeling guide can be requested if needed. Volunteers will be given a slate (or camera can be rented) to record the seeing for the depth of 0-5m below. Shark appearance is crucial for this purpose; activities will be repeated at the same place if no shark are present. For the safety reason, a life jacket will be provided for individual snorkelers.

What’s up

Orientation

Presentation & dive/snorkeling

Discussion & self-plan for dive/snorkeling

Updates of conservation & water activity

Research and rehabilitation

Collecting data & research (involve water activity)

Water skills development will be conducted in the open sea, full set of dive gear or snorkeling gear will be provided (at some fees). Average depth for research is between 2-10meters depending on the visibility, occasionally, a deeper site is required for certain shark species, in this case, only divers will be allowed to involve.

During the water activities, the first thing to pay attention to is buoyancy control. Our dive pro will examine everyone for this purpose and a suggestion will be given if needed, shark friend will have the full right to reject any participant that does not meet the requirement, this is in order to avoid ‘we don’t want to damage more



than what we reserved'. Divers are also required to have full standard protection such wetsuit & glove.

Safety remains our top priority: a safety briefing will be given before any water activity

Research & Rehabilitation

Shark friend conservation program is dedicated to studying the biology, ecology, behaviour, and proper conservation of sharks and their relatives. Through field research by the underwater ambassadors, we will be able to record the their species, numbers, population, behaviour, patterns, food chain, health and so on, and laboratory research will be focusing on the biology, evolution and developing a more proper and appropriate conservation strategy in the future. Hence, attracting and growing the shark's population in the local area, by keeping the balance, the rehabilitation program will be able to contribute to the socio-economic of the specific surrounding. For the long-term initiatives, scientist study will be kept in proper record for the next generation references. The rehabilitation will start from isolated island of perhentian, located in Malaysia. A successful Fiji shark conservation will be modelled.

A few discussions with the local marine biologist & universities are in progress, with the commitment of shark conservation. Certain research will involve shark catch to study and educate the younger generation (to create awareness at earlier stage), they may need to touch and to have closer look in order to create love to sharks as our friend, this is mainly simply for scientific & education with no mean at any cost to disturb the sharks. Some GPS tag will be implement in the future to record the movement and behaviour of certain species of sharks, and will be done only by the professional team.

Feeding is another possible strategy to keep the sharks close to our heart and in the process of attracting more sharks to stay at suitable site, photography, and swimming with sharks will also take place. Once, the marine ecosystem back on track or in the balance situation again, research will take place for another area or species. Beside, coral study & research will be done at the same time to accommodate with the progress, as we believe, sharks keep the coral reefs healthier. The Final aim of the research is to provide a better place for sharks.



Action

Support our conservation efforts....

Through our awareness campaign, sharks will have better attention, and participants get deeper understanding about the creature. The conservation also designs for fun, teamwork, organizing, planning, platform for research and opportunity to get close to the sharks – a creature that exists way long before civilization.

Supporting shark friend mean supporting the local community in terms of long run education, knowledge about shark, and socio-economic. The circle will be progressing and contributing to brighter future for sharks and the shark's friend.

Individuals, groups, and corporate or public organization can do contribution to sharks conservation. This can be done through progressive continuous efforts, not just financially but also human resources, equipment and information.

Join our activities for fun and contribute toward the good cause and charity, sound great! Shark friend conservation volunteering program also design to meet the corporate CSR standard, which will allow CSR program to be held in the island.

Conservation program need funding, and it is not cheap, For the purpose of donation and keep shark friend in going, all activities will come with some fees, the fees will be charged accordingly. After covering the cost, the excess will be donated to the needed especially SCHOOL OF HOPE.

Support shark friend for shark conservation, sharks research, shark tourism, and become best friend forever.

What can we do to support?

Stop the threat-marine debris Keeping our ocean clean is important key for shark survival. Report any un-sustainable activity to the enforcement departments.

Record and report shark population from your local area Get wet and start your adventure, visit the closest area with sharks, sea or fresh



water (because sharks occupy most of the water), observe and record the species, population, and behaviour.

Assisting in shark rehabilitation by sharing information Visit one of the research or rehabilitation centre around the globe to get some information and understanding about how shark survive, bring the information to the world, kids, school, university, non-profit organization, clubs, or in other word- everywhere.

Financial donation Funding us by joining our activities/program in the island, get your first breathing underwater and create your first bubble. Come and have fun with us.

Exposing the importance of shark in our ecosystem Sharing is caring- expose the role of shark to our marine ecosystems, make use of your smart phone or devices by sharing the information via Facebook, twitter, YouTube, and many more.

Clear all misperception and fear of sharks Adopt a shark will make us become great friend, name a shark (real shark or shark toy), adopt, photograph, play & smile with it.

Highlight

- ❖ Corporate involvement via CSR for shark friend conservation in perhentian island
- ❖ International ride (cycling) 2020-21/ 2024-25, shark conservation awareness campaign.
- ❖ Appearance Dive expo 2020 onward (Domestic & International)
- ❖ Shark friend Trainers is on the way
- ❖ The shark friend conservation activities is made available daily for Perhentian island
- ❖ Local & International collaboration 2020 onward
- ❖ Coral nursery for shark



An Initiative By:



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Fees will be imposed in our programs. All proceeds will be channelled towards the shark conservation initiative, operational costs & supporting school of hope.

We have used some of the table and photos from the online sources, with the sources is printed on their table. We would like to thank you to those organization that sharing the information, and much apology in the case of any copyright issues, please let us know to remove the content.

We would like to express our gratitude for your time reading the above eBook, wishing you all the best for the year to come. For any suggestion, do please email us to one of the above address. Thank you.

Andy Lua
Founder of The Shark Friend