

## The Rape of Our Oceans: The Story of Black Corals

Liberty N. Espectato

Last May 2011, the Philippine's Bureau of Customs confiscated illegal contrabands containing more than 21,000 pieces of black corals and other endangered species. These contrabands were concealed in two container vans and were suspected to have been harvested from the waters of Moro Gulf and Sulu Sea.

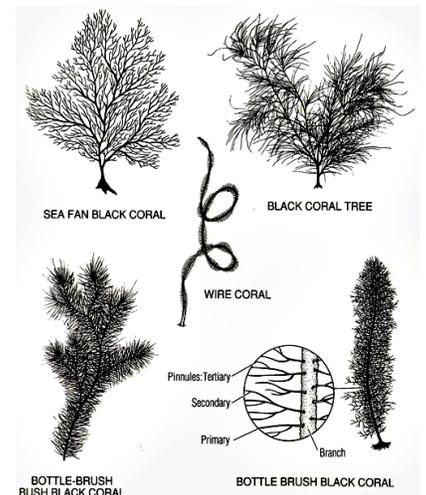
The crime, tagged as the "rape of the ocean", showed the grave destruction of the country's reef complex. According to a marine biologist from the Bureau of Fisheries and Aquatic Resources, only two or three colonies of black corals are found in one hectare of seabed. Based on the quantity of the black corals confiscated, it can be estimated that these corals were gathered from the area of about 7 thousand hectares of seabed.

What is a black coral?

Black coral is one of the coral species under the Order Antipatharia or tree-like corals. Its branch or skeleton has tiny spines, with color ranging from dark brown to black, thus its name. This type of coral grows in tropical waters within the 30-80 meters water depth. It takes more than 25 years for the black coral to mature and grow about one centimeter only in a month.

Black coral is included in the list of Appendix II of the Convention on International Trade in Endangered Species. This means that while it is not necessarily threatened of extinction at

present, it may become so unless trade is closely controlled. The Philippine Fisheries Code (Republic Act 8550) prohibits the gathering and selling of corals (Section 91, RA 8550). However, even with the presence of these laws, the illegal activity of gathering and selling of black corals still continues.



*Coral grows so slow. The fastest growth of its branch is only 5-10 cm in a year.*

Why are they gathering black corals?

The illegal harvesting of black corals can be attributed to the growing industry of exotic decorative species. Coral-accented jewelry and fashion accessories is getting more popular, thus, demand is increasing. Black coral is considered as a gemstone, the reason why it commands a high price in the market. In fact, it is considered as the state gem of Hawaii. These corals are usually used in jewelries like bracelets, rings, and necklaces.

What are we supposed to do?

Each of us has a responsibility in making sure that the illegal trade of black corals and other endangered species is stopped. We need to be vigilant in monitoring and reporting of illegal traders who operate in such business. Let's make their business unprofitable by not patronizing products that uses marine species like black corals.

As a saying goes, we did not inherit this world and all its natural resources from our forefathers; we borrowed them from our children. Let us make sure that we left something for them also.♦

*Do you know that...*



- ❖ *The Philippines has a reef area of 27,000 sq.km.*
- ❖ *There are 450 different species of corals found in the Philippines.*
- ❖ *Coral reefs give 15% or 170,000 t/yr of the total fish catch in the Philippines.*
- ❖ *The total economic value of the Philippine reef is estimated to be \$1.1 billion/year.*

Sources: <http://www.experiencefestival.com>; <http://newsinfo.inquirer.net>; <http://www.answers.com/topic/black-coral>; <http://www.flickr.com/photos>; [http://www.naturefoundationsxm.org/education/coral\\_reefs/black\\_coral.htm](http://www.naturefoundationsxm.org/education/coral_reefs/black_coral.htm)

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## Tragedy of the Fish: Who is to Blame?

Genna D. Serofia

We heard and read in the news about the massive death of fishes in Taal Lake. We call this tragedy FISH KILL for short. This incident not only happened in Taal Lake. The same tragedy occurred in Pangasinan (Bolinao and Anda), Laguna Lake and other parts of the Philippine waters.

What is this? Is this a natural phenomenon? If not, what is the reason and who is or are responsible for this to happen? What are the implications and the lessons this gives us? Are there solutions to this tragedy?

**Fish Kill** is the massive death of fish in the ocean. This usually takes place in areas where lots of fish cages and pens were constructed. Fish cages and pens where fish like bangus (chanos chanos), tilapia and other high valued fishes like seabass and grouper are raised and cultured. But why does this

usually occur in fish cages? Do the operators don't have sufficient knowledge on how to stop the tragedy because it happens again and again? There are many opinions and comments why fish kill generally takes place in fish cages.

The experts have observations and explanations to this. According to Senator Francis Pangilinan, fish kill is not a result of climate change nor a natural occurrence but it is man-made and also because of greed. He further stated that the major cause is overstocking. Dr. Gil Jacinto of the University of the Philippines (UP) Marine Science Institute noted that Taal Lake is jammed with 12,000 fish cages when the lake's capacity is only 6,000 cages. "We have exceeded the carrying capacity", he said. According to UP Professor Dr. Flor Lacanilao, there is a 'breach of carrying capacity'. He explained that "this is where multiple pens led to competition by fish for natural food and oxygen. Fish in the cages lack the oxygen they need because other organisms and plants growing under the water/sea also use the oxygen in order to live. This eventually led to stretching of rearing time and shrinking harvest. Worried about faltering income, the fish pen owners boosted feeds and increase stocks. This led to pollution and depletion of oxygen. Excess feeds and fish feces sink and accumulated at the bottom of the lake and decomposed through some bacteria that also use the dissolve oxygen available which cause massive fish kill especially in the cold weather of January and February." Others say that the reason is the change of temperature at the onset of rainy season after a long spell of summer which decreases the level of oxygen.

Fish kill brought a lot of adverse effects. Not only the fish pen operators are affected the most because of their millions of pesos investments. The workers in these pen cages are also affected because they lost their job. The many small fisherfolk who depend on the sea for their day-to-day earning and livelihood are affected. Even the ordinary people who buy and eat fish experience and feel the effects of fish kill.

The most important thing to look into is the effects of over construction of fish cages and fish kill to our ocean. Among others, with the construction of fish pens, the areas where the small and marginal fisherfolk fish narrowed and the navigational lanes reduced. The lake as a source of water supply of many households as well the irrigation canals was affected. The fishes in the seagrasses and coral reefs nearby the site of fish kill will likewise be killed. That is the reason why a lot of dead fishes not cultured in fish cages/pen were found dead.

Who will answer now to this tragedy? The operators who will still continue their practices regardless if this go on and on because they have gained so much already from the business in the past? Or is it the officials of the local and national government agencies who implement the laws, policies and regulations?

Each one, public institutions or private groups and individuals have the responsibility to look into when venturing into a cause. On the part of the government, they should have implemented strictly the laws regarding fish cages/pens constructions or business. They should review the existing laws so that any lapses can be given solutions. Their main concern should be the welfare of the many as well as the protection of our marine and coastal resources and environment. The private sector on the other hand, should also look into their social responsibilities. Greed is the root of this misfortune. It's a pity that because of greed and self interests, such devastation will happen and give us the "bocha" (double dead) fish to consume.♦

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# Fish Adaptation

Edna P. Abunal

Have you heard about fish adaptation? What is meant by fish adaptation? How is fish adapted to a particular environment? Which adaptations are important to fish survival?

Adaptation may refer to an organism that develops features which best suit their environment or to improve their chances of survival in a specific environment. All organisms have adaptations that help them survive. These organisms have special features that make them well suited to their habitat. Plants and animals have structures that serve different functions in growth and survival.

Many fishes have developed a number of physical and other specialized adaptations for life in a particular environment. It may either be structural adaptations or behavioral adaptations. Various structures of fish explain about the fish lifestyle. The most notable structural adaptation is the body shape. The body plan of fishes in reef habitats may differ from the basic body design that originated from another kind of habitat. Coral reef fishes with deep and lateral compressed body such as surgeon fish and parrotfish have the ability to make rapid turns and stop quickly to avoid predators. Like other living organisms, there is an interconnection between form and function in fishes.

Other structures such as mouth shape and orientation, fin and tail-shape, eye location and size may indicate about fish lifestyle. Coral reef fishes have specialized jaws, mouth and teeth for particular kinds of foods commonly found in coral reef habitats. The beak-like mouth of parrotfishes have the ability to scrape algae from hard coral surfaces; the forcep-like mouth armed with comblike teeth of butterfly fishes prey on a variety of invertebrate animals living near reef substrates; the keen eyesight, specialized mouth and spines of triggerfishes prevent them from becoming an easy prey.

Fish coloration is another important adaptation for many coral reef fishes. Color patterns or markings help them blend in their environments so as not to be seen by predators and potential prey and also to recognize potential mate. An example includes flatfish with skin coloration matching the surrounding habitat; the disruptive markings through the eye of an angel fish and the spots on the body of butterfly fish that resemble eyes; and the countershading in sharks that will make it hard for the prey to detect them. The territorial reef fish, "scorpionfish" displays warning coloration with their venomous spines.

New adaptations are needed when organisms encounter new environments and the process of developing adaptation occurs over many generations. However, when organisms are not suitable to their environment, they will move out of the habitat or die. The characteristics that help species survive in an environment are passed on to their future generations.

On the other hand, the organisms that are adapted to their environment are able to defend themselves from their enemies and respond to changes in the environment, lifestyle or relationships to other organisms, secure food and nutrients around them. ♦

Source: [www.Flmnh.ufl.edu/fish](http://www.Flmnh.ufl.edu/fish), [www.newworldencyclopedia.org](http://www.newworldencyclopedia.org)

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# Sharks in our Oceans: Friends or Enemies???

Ruby P. Napata

Sharks: one of the oldest forms of animals living in our oceans. They do not have bones like fishes do, instead they have cartilage. Also, they do not possess a swim bladder like fishes which aids in the swimming activity. Sharks use their big dorsal fins like the wings of the airplanes to aid them in swimming. But the support of their dorsal fin is not enough for their big bodies, thus, there's a need to use their liver for additional force to swim and keep the balance. There are beliefs that if sharks will not swim, they will sink and soon dead...but this is not true. Sharks are swimming continuously so that they won't sink in the depths of the ocean.

Sharks don't have gill covers thus they need to move so that they can breathe normally. But there are some kinds of shark that could breathe even without making any movement like the Tiger shark!



There are two ways the shark reproduces. First, those sharks which lay eggs and the second are those who give birth to their young ones. For those who are egg bearing, they usually attached it through some leaves in the ocean to hide it from predators like fishes. The sharks which gave birth are usually bigger in size (Whaler family), mature longer and gave birth in a very long interval. This is one of the reasons why shark could easily be over exploited.

With today's modern technology, fishing paraphernalia's and increase in the number of fishermen, increase fishing effort for sharks are evident. Sharks have a very low stock recruitment and have a very long recovery time when they experience overexploitation. This is because; they mature very late, have low fecundity, and have a complicated size/sex segregation and seasonal migration. There are a lot of challenges that were faced by coastal resource managers and concerned individuals or organizations what were conserving the sharks. This is because of the lack of catch effort and fish landing data, data on trade and some biological information. There is also an issue on by-catch which usually happens in tuna fishing using the drift gill nets.

Black market trades of shark fin, posses a huge threat to our sharks. Each year there are almost one million sharks taken away from the ocean because of this practice. Shark fin soup is one the most popular delicacies to the rich Chinese people. Aside from this, shark fin is one of the so-called traditional Asian cure or medicine.

As of today, there are 17 nations who banned shark fining and some countries are passing legislations regarding it. The World Trade Organization is in-charge in giving priority to make strict watch with business on shark fin. If they would not do this, we will just wake up one morning and find out that sharks in our oceans are all gone.

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Here in the Philippines, let us not wait for the time when all the sharks are gone to make our stand. All the creatures in the oceans have their purpose in the ecosystem and in the food web so it's high time for us to recognize them and make some action!♦

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## IFPDS Welcomes the New Director

Farisal U. Bagsit

The Institute of Fisheries Policy and Development Studies (IFPDS) held a turn-over ceremony last June 16, 2011 at the College of Fisheries and Ocean Sciences Conference Room at the Villadolid Hall. The ceremony was attended by Dean Carlos C. Baylon, outgoing Director Dr. Rodelio F. Subade, the new Director Dr. Jose P. Peralta and IFPDS Faculty, REPs and staff. Dr. Subade presented his accomplishments for the 3 years he has served the IFPDS and urged Dr. Peralta to continue the programs that has been started during his term. In response, Dr. Peralta expressed his appreciation of Dr. Subade's kind gesture for giving him a brief about the Institute's programs including proposals that are currently in the pipeline.



The Institute of Marine Fisheries and Oceanology (IMFO) and Institute of Fish Processing Technology (IFPT) also have new Directors, namely Dr. Nathaniel C. Añasco (IMFO) and Dr. Leticia J. Ami (IFPT) while Dr. Crispino A. Saclauso remains the Director of the Institute of Aquaculture.♦

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