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Hong Kong

In this issue:

Shark Fin Trade Overfishing Pink Dolphin Conservation

CONTENTS

PAGE 3	WORLDS'S HOPE: HONG KONG CORALS
PAGE 8	OVERFISHING IN HONG KONG
PAGE 12	450-MILLION-YEAR-OLD SPECIES: HORSESHOE CRABS IN HONG KONG
PAGE 16	SHARK FINNING IN HONG KONG
PAGE 20	HUMAN ACTIVITY AND DOLPHINS
PAGE 26	MORE ACTION URGED AS INVASIVE MARINE WILDLIFE THRIVES IN HONG KONG BAYS

WORLD'S HOPE:

HONG KONG CORAL REEFS?

Ihina Bhakta, Farah Daveau

CORAL REEFS AND THEIR BIOLOGICAL IMPORTANCE

From tiny unicellular protozoans to large sharks, Hong Kong is home to one of the world's most complex and highly productive marine ecosystems.

For thousands of years, reef building corals and coralline algae were essential for building up the Calcium Carbonate foundation in the reef system. A strong foundation built under highly specific requirements due to the sensitivity of reefs to changes in the physical environment.

Corals are very precious and fragile ecosystems; they are the nurseries of the seas and oases of marine life. Consisting of up to 30% of all marine diversity, which makes them crucial in the ecosystem and in marine environment food chains.

Preservation of corals should not only be driven by their necessity but also the ethical sense to preserve life on earth. Although human activity and negative by-products of non-sustainable development, have led to a rise in sea surface temperature by 0.5% and cataclysmic levels of coral bleaching.

The Pearl River, to the west of Hong Kong, has caused Hong Kong waters to become turbid and have a low especially towards salinity, its western shore. Along with this, Hong Kong's winter weather can cause temperatures to drop as low as 13 degrees Celsius or remain at an average of 16 degrees Celsius. These environmental impacts make Hong marine environment Kong's unsuitable for many coral species. Despite this, 84 coral species thrive in

Hong Kong water, earning their label as 'super-coral'.

In the South-eastern and southern parts of Hong Kong, including Ninepins, Sung Kong, Waglan, Cape D'Aguilar (South-eastern tip of Hong Kong Island), Lamma Island, Cheung Chau and Lantau Island, both coral cover and species richness are low. These corals do not form extensive beds and are mostly found as isolated heads among rocks and boulders.

These species mainly grow along the northeast and eastern shores where the waters are both sheltered and free from the influence of the Pearl River. The coral cover formation and formation 'styles' differ in both regions. Corals found on the north-eastern shores of the New Territories, do not form an extensive carbonate reef system. They come more in the form of coral communities with a high coral cover and high species richness. Especially in locations such as Tung Ping Chau, Kat O, Shelter Island, Check Chau and Hoi Ha Wan.



"Hong Kong is not an easy place for coral ... The water quality has improved a lot over the last decade which has given us one important condition to keep the corals healthy. However, there are some external factors like red tides and typhoons which could take away our efforts in a blink of an eye." Virko Yu, a PHD student commented.



Unlike other coral reefs, the ones in Hong Kong are more hardy, providing insight as to how they can be saved from extinction and preserved for future generations. These coral surviving a heavily 'apocalyptic environment' may mean hope for preservation of reefs elsewhere on the planet.

Research at HKU

This anomaly prompted many researches on these coral reefs to spring up, however, we are only looking into the findings of researchers at School of Biological Sciences and Swire Institute of Marine Science, The University of Hong Kong who developed a new method to determine what corals eat, this involves measuring how much prey it captures with stinging tentacles as well as how much food is provided by the photosynthetic algae inside their cells with the baseline of the results showing two partners share nutrients).

They also demonstrated that reliance on certain nutritional sources which underpin their bleaching susceptibility in warming oceans, providing implications for how coral reefs will change as climate change progresses. The corals dependent on photosynthesis will bleach faster while predatory corals can withstand warming temperatures longer.

Predatory nutrition can provide slight protection from bleaching; however, the scientists note that given sustained elevated temperatures, all the species in the study eventually bleached as more food doesn't protect them permanently, just buys them more time. Here is what David Baker, assistant professor at University of Hong Kong's Swire Institute of Marine Science, had to say:

"The results of our study help predict which coral species are more likely to survive as oceans warm. Unfortunately, what we found is that the most susceptible species are those that are commonly used in coral reef restoration efforts. To ensure long-term success reef the of rehabilitation. initiatives restoration should shift their focus to bleachingresistant species."

Dr David Baker supervised the study at HKU (whose results are mentioned above).

He also added: "Hong Kong's corals may be the strongest on Earth, as they have survived more than a century of coastal development" and "What we are seeing is that although climate change is a stress factor the impact is heterogeneous even between sites on the same reef. Local stresses such as sewage, sedimentation and overfishing also make an impact."



Invincible Coral Reefs

However, no matter how hardy, coral reefs in Hong Kong are not invincible.

In an area called Moon Island, the reefs had deteriorated so much that its coral communities had transformed into sand. Concerned by the severe degradation of the Hong Kong's reefs, the researchers wanted to create a *"substrate that can facilitate coral restoration, while conserving the local biodiversity."*

Thus, prompting a research team at the University of Hong Kong to create the first 3D-printed terracotta "reef tiles" which helps restore eroding coral communities on Hong Kong seabeds. The first clay tiles were placed on the seafloor at Hoi Ha Wan Marine Park in Sai Kung during a week-long deployment exercise in mid-July.

The experiment consists of installing 128 reef tiles, covering roughly 40 square metres in total, at three sites of coral disintegration within the marine park. The reef tiles are designed to mimic the natural shape of brain coral, with the team designing the hexagonal tiles with clay to minimise any artificial impact on the ocean's biodiversity: "Our hope is that the our planted corals can become big enough to stabilise themselves and form a natural habitat," Yu said. The team hope that said they the environmentally friendly terracotta tiles will erode and disappear into the seafloor when they are no longer needed, acting as a temporary support measure.

Tara Mission

This is what brought The Tara Mission to Hong Kong's coastlines which is routinely subject to all three of the local stresses.

The Tara Mission was a French scientific vessel, pioneered by fashion brand Agnes B. The vessel completed a two-year mission investigating the corals in the Pacific Ocean, where they picked up on Hong Kong's very resilient corals. Taranauts ultimately embarked on a mission for coral sampling local waters.

There was collection of plankton samples from 600 locations around the world with those on board saying, *"We are trying to establish how coral actually works, by sampling at 35 different reefs within three locations on each reef."*

A total 20,000 samples collected and 3,500 dives in a large scale over the Pacific Ocean with sediment and plankton samples were taken by the end of the collection process.



They travelled to Pier 9, after which Tara spent two day sampling at Ngo Mei Chau (Crescent Island), about two nautical miles northeast of Plover Cove, and at Sham Wan (Turtle Bay), in the south of Lamma Island where they targeted the coral *Porites lobata* common name known as lobe coral.

They concluded at the end of the mission, "In the end we get a picture of population, structure, symbiotic association with algae, bacteria, viruses, health or stress state."

Therefore, saying that the high tolerance of Hong Kong's coral makes them special and very captivating.

Overfishing in Hong Kong

Anannya Dixit, Margot Hamilton, Genevieve Gordon

Hong Kong is one of the largest consumers of seafood in the world. That said, how do restaurants and other seafood businesses source their seafood? What practices are used in doing so? Where does it come from? Is it sustainable? These are questions we do not often ask ourselves - and we should.

What is Overfishing?

Fishing is one of the main threats of ocean wildlife. This does not mean that fishing is inherently bad but when huge industrial fishing vessels catch large amounts of fish faster than they can replenish, it is called **overfishing**.

Who is to Blame for Overfishing?

Hong Kong is the **second largest** seafood consumer in Asia, and the eighth largest in the world. The seafood we consume is sourced from both local and international waters. According to the WWF, Hong Kong plays a key role in both the legal and illegal trade – the research reveals that the territory imports about 90% of all dried abalone from Africa, all of it believed to be specifically from South Africa. The implications are clear – consumers ordering dried South African abalone here have a very high chance of directly supporting products **poached** and **smuggled** from Africa. Hong Kong seafood consumers often indirectly support **unsustainable** and sometimes **illegal** fishing practices without realising.

When did Overfishing Become a Problem?

Overfishing itself has always been a problem. However, overfishing is seen to have started in the mid-20th century. International efforts to increase the **availability** and **affordability** of protein-rich foods led to concerted government efforts to increase fishing capacity. Favourable policies, loans, and subsidies spawned a rapid rise of big industrial fishing operations, which quickly supplanted local boatmen as the world's source of seafood.

Where does Overfishing Occur?

Since the mid-20th century, Hong Kong has been home to the species known as the "Hong Kong Grouper". However, with Hong Kong being the second biggest consumer of this species, Hong Kong has faced a massive depletion in fish stocks. This has led to Hong Kong becoming one of the largest importers of seafood in the world. This may seem like a viable solution to the problem, however their main supply comes from unsustainable fish farms in Indonesia, the Philippines, and Thailand, only contributing to the growing issue of overfishing.

Why does Overfishing Occur?

Once again, it is important to note that Hong Kong is one of the world's largest consumers of seafood. Overfishing usually occurs to supply the large demand for seafood quickly.

A More In-Depth Look

Why is Overfishing Considered Unstable?



Valuable fish stocks, as well as a whole host of other marine life, are severely threatened by overfishing. The global fishing fleet is 2-3 times larger than what the oceans can sustainably support. In other words, people are taking far more fish out of the ocean than can be replaced by those remaining. It is not just the fish we eat that are affected. Each year, billions of unwanted fish, and other animals, including dolphins, marine turtles, seabirds, sharks, and corals – die due to inefficient, illegal, and destructive fishing practices.

How Does Overfishing Impact Hong Kong from a Socio-Economic Perspective?

Demand for fish continues to increase around the world, and that means more businesses and jobs are dependent on dwindling stocks. Fish ranks as one of the most highly traded food commodities and fuels a \$362 billion global industry. Millions of people in largely, developing, coastal communities depend on the fishing industry for their livelihood and half the world's population relies on fish as a major source of protein. When fish disappear, so do jobs and coastal economies. High demand for seafood continues drive overexploitation to and environmental degradation, exacerbating this circular problem.



What are some solutions that have already been implemented?

The trawling ban, which came in force on 31 December 2012, was the first step towards saving our near-collapsing marine ecosystem, restoring devastated fish stocks, and moving towards sustainability. There are two kinds of trawling practices: midwater and bottom trawling. The latter is considered highly destructive since it involves dragging heavy nets along the seabed. The practice indiscriminately catches everything and destroy the seafloor. By implementing the ban, our marine life and habitats can finally catch a break and recover.

What are some more ways to be more sustainable?

You can be more sustainable by cutting down on your fish consumption, more specifically, fish sourced from Indonesia, and other unfeasible stocks. In addition, exclusively when necessary, buy seafood from sources that are guaranteed to be sustainable.



450-million-year-old species: Horseshoe Crabs in Hong Kong

Why are Horseshoe crabs important?

Paul De Klebnikoff, Anson Ip

Horseshoe crabs are an essential part of the ecology of coastal ecosystems and shallow waters. Their eggs are the major food source for shorebirds including the red knot, many fish species, and turtles. Some of these predators have evolved and their seasonal movements coincide with peak horseshoe crab spawning activity.

Other than their role in biodiversity, horseshoe crabs have been frequently used by the biomedical industry. Their copper based blue blood contains a substance called Limulus Amoebocyte Lysate (LAL) which forms gels in the presence of small amounts of bacterial toxins and is used to test for sterility of medical equipment and all injectable drugs. Subsequently, when you get a vaccination, surgery, or any injection you know things are not contaminated by any bacteria.

Humans have been exploiting these animals since LAL was discovered in 1977, since 2003, a synthetic substitute named "recombinant factor C (rFC)" for the LAL test became commercially available. However, the FDA did not license it as more testing is required, thus LAL is still required as the standard method for detecting the presence of bacterial endotoxins in drugs.

(Image below) Horseshoe crabs are drained of 30% of their blood, 30% of them die after the harvesting process.

Key to Covid-19 vaccine:

Amidst the scrambling to find a vaccine for the coronavirus, horseshoe crab blood is particularly relevant. The LAL extract is being used to test the several potential vaccines, some are worried that the increased demand in horseshoe crab blood will severely damage their numbers and the future use of LAL.

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What is happening to the horseshoe crabs?

The horseshoe crab is a species close to extinction, they live in an environment that is being disturbed by the airport as some of these animals live in Lantau Island, the airport has a negative effect on the lifespan of this species and is accelerating the rate of extinction of this species.

They were over-harvested for food in the past because of their eggs, used as fertilizer and fish bait, coastal development in Hong Kong waters and increased pollution results in lower reproduction and survival rate.

The harvesting of horseshoe crabs is a very profitable economic activity, as one quart, 0.946353 litres, can be sold at 15,000\$USD. A gallon of horseshoe crabs' blood can be sold at 60,000\$USD.



Where are horseshoe crabs found and how many are left?

Horseshoe crabs are found in shallow coastal waters, 3 species are found in Southeast Asia and one is in North America along the Atlantic coast.

There is no known number of their total population.

Fun Facts

- 1. They are genetically related to arachnids (spiders) and not crustaceans (crabs).
- 2. Approximately 500,000 horseshoe crabs are harvested annually.
- 3. Bleeding from the harvesting prevents female horseshoe crabs from spawning or can decrease the number of eggs they are able to lay.



In Hong Kong they have disappeared extensively 1980's. since the Sai Kung, Lamma Island and Lantau are the only few places left with horseshoe crabs. The number of horseshoe crabs in these places are decreasing over the years. According to City U's research in 2009 their population dropped 90% between 2002 and 2009.

Species found in Hong Kong



Tri-spine horseshoe crab (Tachypleus tridentatus) IUCN Conservation Status – Endangered (2019)

Mangrove horseshoe crab (Carcinoscorpius rotundicauda) IUCN Conservation Status – Data Deficient (1996)

How do we fix this?

Horseshoe crabs are a precious species as they are one of a kind, we should be careful about overharvesting them and start to treat them with more respect.



We can encourage the alternative to horseshoe crabs' blood for pharmaceutical companies, rFC, which is a synthetic alternative to horseshoe crabs derived from LAL. This would save and help horseshoe crabs, repopulate, and protect them. Another way to save horseshoe crabs' lives is, when mating on the beach, sometimes waves turn them on their back, this means that if another wave doesn't turn them back around, they will die as they will not be able to move. When seeing a horseshoe crab in that situation, carefully pick them up by the sides of the shell, not the tail, and put them back into the ocean.

Locally we should clean up debris from beaches so they can lay eggs, stop using them as fish bait and reduce the harvest for their blood so we can sustain the diminishing population of horseshoe crabs. Also, we can spread awareness on social media and in local journals.

Save Horseshoe Crabs!

Consider donating to OPCFHK to contribute to the horseshoe crabs.

SHARK FINNING IN HONG KONG

Alexander Dee, Nathan Turner

What is shark fishing?

Simply, Shark finning is the act of removing fins from sharks and discarding the rest of the shark back into the ocean. The sharks are often still alive when discarded, but without their fins they are unable to swim effectively, they sink to the bottom of the ocean and oftentimes are left in that spot to die.





The shark fin trade has been around for centuries. Hong Kong is the largest trading hub between China and other countries across the world, and accounts for about 50% of the global shark fin trade. To reduce the numbers of fins imported / exported, some airlines have instated a "No Shark Fin Carriage Policy", in the hope of having better control of the shark fin market. Shark finning increased since 1997 largely due to the increasing demand for shark fins for shark fin soups and traditional cures, particularly in China and its territories, and because of improved fishing technology and market economies.

Quick Facts

- 1. Shark finning kills a total of 100 million or more sharks globally per year
- 2. 181 shark species are Red listed as vulnerable, endangered, or critically endangered by the International Union for the Conservation of Nature (IUCN).
- **3.** Over 100 species are listed by the IUCN as endangered or threatened, only a few species are protected from illegal trade by the Convention of International Trade in Endangered Species of Fauna and Flora.

Statistics

Humans kill more than 100 million sharks worldwide each year. Including tens of millions of sharks killed for their fins. As apex predators, sharks help balance out ocean ecosystems and assists] in the maintaining a balanced food chain through feeding off of potential prey, preventing overpopulation of species and preventing prey species, and preventing prey species from becoming a limited resource.

Due to the weight and nature of a shark, shark finning vessels will only store and transport the fins, by far the most profitable part of the shark as the shark meat is bulky to transport mainly in an effort to increase profitability and maximum cash flow. Estimates of the global value of the shark fin trade range from **US\$540 million to US\$1.2 billion.**



Specifically in Hong Kong

Studies inside the Fragrant Harbour

A study conducted by the Kadoorie Farm & Botanic Garden scanned the local food markets with the intention of finding the sale of shark fins. According to the website documentation, "The study sampled over 500 bags of fin trimmings, purchased from a randomised selection of 334 shops in Sheng Wan and Sai Ying Pun over 4 years. Fin trimmings were used to avoid the high prices of whole fins and allowed more sharks to be sampled". The study found that a minimum of 76 different species of shark were present in the international fin trade, of which only one-third were listed as

Another study conducted by the hardworkers as the NGO Bloom in collaboration with the Stony Brook University investigates the effectiveness of regulations but in place that were supposed to control the trade of protected species, as listed by the IUCN. Many scientists tested the DNA of imported shark fins, then compared the results against reported number of accounted-for the species imported in Hong Kong. Their findings shed a spotlight onto the large discrepancy between the reported number of shark fins imported and the actual; listed number imported in Hong Kong, with many more protected species imported that are on record.



Solutions

- Ban the removal of fins at sea. In Africa shark finning is banned in Gambia, Guinea, Seychelles (without authorisation), Sierra Leone and South Africa. All shark fishing is banned in Congo-Brazzaville.
- Protective legislation is needed for endangered species of shark and rays
- Ban transhipment at sea transhipment is used to avoid proper catch reporting and to launder IUU cough fishing.
- Increase observer coverage on ships
- Improve the implementation of ports state measures to track down IUU fishing.



There are various methods to resolve shark finning, such as the banning of the practice. Many countries globally have banned shark finning, including the United States. In 2010, Congress passed the Shark Conservation Act, which states that all sharks must be brought to shore before their fins are removed, instead of removing them at sea. If all countries banned shark finning the sharks could recuperate and the populations would most likely rise to normality. Shark sanctuaries are also in place to better help the shark populations and to protect the different species. Some shark sanctuaries include the Palau Shark Sanctuary. The Palau Shark Sanctuary and the Marshall Island Shark Sanctuary was created in 2001 in end the killing of Palau's sharks, due to shark finning. The Marshall Islands shark sanctuary is one of the largest in the world and prohibits commercial shark finning and the sale of shark products.



Human Activity and Pink Dolphins

Marta Huneeus, Gianna Seaver

Hong Kong's pink dolphin (also known as the Chinese white dolphin) population is facing extinction. Over the last 30 years, the pink dolphin's population has been rapidly decreasing at an alarming rate. Researchers believe this is due to a number of things such as overfishing, pollution in water and most importantly the increasing ferry traffic and building of new infrastructure around the pink dolphin's habitat. Studies show that around 3000 square feet of habitat is crucial for around 2000 marine animals however Hong Kong's available marine space for the pink dolphins is about 600 square feet. With the ideal habitat size of 3000 sq. feet, studies show that the pink dolphin population could survive for at least another 40 generations or about 800 years.

However, the building of the Macau bridge to Hong Kong and the third runway in Hong Kong's airport is proving that this is not possible. The building of such infrastructure is detrimental to the dolphin population as it not only ruins their habitat but also causes such loud noise disturbances resulting in the pink dolphins having to find a new habitat. As a result of the dolphins having to find a new habitat, the risk of these pink dolphins being involved in ferry traffic is increased. Not only does building infrastructure pose a threat to the dolphin population, but also the amount of pollutants in the water. Research shows that pink dolphins who have young calves often have trouble keeping these calves alive as the milk provided is filled with pollutants front the ocean effectively killing the calf.

Furthermore, the pink dolphin's diet of fish is very similar to the fish diet and therefore due to overfishing it is becoming increasingly harder for pink dolphins to find their food. The pink dolphin was the official mascot of the handover ceremony when Hong Kong was returned to Chinese rule in 1997 and is incredibly important to Hong Kong's marine ecosystem. There are many organizations urging the government to maintain and protect the dolphins habitat however these urges have not been taken into consideration by the Hong Kong government resulting in the pink dolphin population facing extinction.

DATA

Researchers collect data for these pink dolphins through a line transect boat survey (presented in figure 1.2). This means researchers go one a boat and conduct a dolphin survey along a specific route. Normally 2 researchers look for dolphins whilst keeping track of time and observing any other environmental conditions. They record information on group sizes of pink dolphins, distance between the boats and dolphins etc and after all the data is inputted into a computer called DISTANCE which provides estimates of density and abundance of dolphins in surveyed areas. This means of Research shows Pink Dolphins are known to be in North Lantau waters near Castle Peak, Lung Kwu Chau and Sha Chau Marine Park, Chek Lap Kok and Tai O, also found in the waters south of Lantau, including Fan Lau and the Soko Islands.



FIG 1.2



FIG 1.1

However, Hong Kong waters are not the only place you can find pink dolphins, they also inhabit waters close to Guangzhou and other places in the south eastern part of china, this area is called the pearl river estuary (shown in FIG 1.1). According to a report made by the HKDCS, there are said to be around 2500 pink dolphins in the whole pearl river estuary with 300 frequenting Hong Kong waters. However, the publishing date of that article is unknown. According to a article from BBC more recent published in 2020, there were about 32 pink dolphins recorded in Hong Kong's waters. Furthermore, the BBC website stated that in 2004, the Pink Dolphin population was 143 seen in Hong Kong waters however in 2018 the population of pink dolphins in Hong Kong waters was a mere 32, a staggering 78% decrease in the last 14 years.

IMPACT

The Hong Kong pink dolphins are a key mascot of the city and as they decrease the city risks to face severe impacts from their extinction, including economic impacts.

The impact on tourist attractions

- 1. The Hong Kong Dolphin-Watch has plummeted, and the ecological tour operator is now only days away from going out of business. This group is the organisation running city's only excursions following governmental guidelines, as well as all of their profits going towards dolphin conservation charities to save Hong Kong's shrinking population of pink dolphins - If this organisation goes out of business it will be a horrible thing for the pink dolphin population as this is one of the few places who are constantly fighting for a better life for this endangered species
- 2. This would affect Tai O tourism board as Pink Dolphin tours account for 10% of tourism.





Their representation as mascots

The pink dolphins have become one of Hong Kong's most renowned animals. In 1997, Chinese white dolphins were chosen by the Hong Kong Celebrations Association as Hong Kong's official handover mascot. According to former association chairperson Raymond Wu, the dolphins' social nature reifies the animal's strong familial bond, hence signifying the drastic importance of this animal and mascot for the city of Hong Kong.

Effects in the food chain

The Chinese white dolphins (or pink dolphins) are keystone species and top predators, meaning that they carry the ecological role of monitoring the food chain in Hong Kong's region waters. A researcher in Hong Kong marine life and a present advocate for the safety of these dolphins warns, "If they become extinct, there may be an overpopulation of their prey down the food web (FIG 1.3), leading to an imbalance in the marine ecosystem. Some potential consequences include algae bloom, and in the long run, more frequent extreme climatic conditions as our ocean which helps regulate climate is adversely affected."

Effect of COVID-19

However, due to the travel restrictions in place as a result of Covid-19, there has been less marine traffic and therefore the pink dolphin's habitat has been much quieter. According to an SCMP video published on August 28th, pink dolphins which researchers had not seen for 4-5 years are back in Hong Kong waters. Researchers say dolphin sightings have gone up as much as 30% since March.



FIG 1.3: Pink Dolphins labelled "Sousa chinensis"

Solutions

There are many different organizations doing different things to help preserve the pink dolphins such as WWF, OPCFHK and the Hong Kong dolphin society. Below is a summary of what each organization does to help preserve and protect the pink dolphins.

Public Advocacy

- 1. WWF wants to initiate collaboration with mainland authorities on conservation of pink dolphins, urging the Hong Kong government to build southwestern Lantau and Soko island marine parks to conserve important dolphin habitats.
- 2. In addition, WWF is monitoring the building of the brother's island marine park which was a proposed compensation for the building of the Macau Zhuhai bridge.



- 3. They are also advocating for comprehensive strategic environmental assessment for Hong Kong western waters. This should be conducted by the government to make sure they are avoiding economically sensitive areas
- 4. They are also advocating for sustainable fisheries management through SAVE OUR SEAS (SOS) campaign. Their goal is to reduce threats of decreasing food supply for marine animals.

Reducing Impacts

- 1. Campaigning for greater dolphin protection
- 2. Providing comments and suggestions so potential environmental impacts can be avoided in the future
- 3. Striving to ensure impacts on environmentally sensitive areas are addressed

Research and Seminar



- 1. In 2008, WWF HK partnered with Whale and Dolphin conservation society and brought together a range of international pink dolphin experts to "review the information collected on the population (pink dolphin), gauge the stage of knowledge of the dolphin's biology and threats and map out future directions for research"
- 2. The panel made 25 recommendations from this event and is now used as a steering tool on how to effectively manage the pink dolphin population.
- 3. Since early 2010, WWF has been working with 2 Chinese mainland scientific institutes called south china sea fisheries research institute and third institute of oceanography. They conducted a 1-year Chinese white dolphin study in the south of china. The study aimed to investigate "the distribution, abundance and habitat use of the Chinese white dolphin in the western extent of Pearl river estuary areas". In addition, they interviewed fishermen to collect information about the occurrences of Chinese white dolphins.

Research and Seminar

- 1. Since 2006 Ocean Park conservation foundation has been collaborating with agriculture, fisheries and conservation department to investigate stranding cases in Hong Kong
- 2. In addition, the ocean park website urges its readers to report stranding cases, fund research and conservation projects, be a responsible dolphin watcher and most importantly cherish our ocean.

Hong Kong Dolphin Conservation Society

Education: A vital part of dolphin conservation is protecting the tragic state of the dolphin's population. However, this is lacking public recognition and support. HKDCS and green groups often hold talks, exhibitions, and contests for schools, publish different dolphin booklets and posters to promote public awareness of dolphins and the conservation of them. In addition, websites are available to allow students to access more information about the dolphin crisis

More action urged as invasive marine wildlife thrives in Hong Kong

bays

Augustin Vanderchmitt, Pablo Le Touze

The Hong Kong government must do more to prevent alien species from installing their presence in the city's bay area. Expert explicitly recommend for new regulations and laws to be implemented, regulating the flow of imported wildlife. Few to none have been enforced in the last decade which alarms researchers. The lack of funds as well as interest in this matter shows that the government have not yet acknowledged this issue.

The concerns come amid more siting of the invasive Sabah giant grouper (pictured below). This carnivorous fish created by scientists for food have colonized the colony's marine ecosystem. More often, its young are found in Hong Kong's harbours. "The government encourages universities and nongovernmental organisations to conduct research studies on invasive alien species through funding support" - Government

Spokesperson



A Sabah grouper in display at North Point ferry pier.

"Prevention is the most effective strategy" – Dr Michael Lau, WWF, Hong Kong

Alien species are those introduced outside their natural distribution

Dr Lau further explains that without the natural predators and competitors found in the original habitat, alien species can completely impose themselves and better deregulate the ecosystem up to a point where it might affect human beings. As one of the world's most famous trading hub, Hong Kong has seen multiple alien species being introduced, therefore we should act quick and make our government pass the right legislations before it is too late. Recommendations to introduce more legislation to regulate and control the import of wildlife in Hong Kong for food or pet trade were turned down by Agriculture, Fisheries and Conservation Department in favour of doing more on public education.

A department spokesman said the government was still at work on an inventory and would be conducting a preliminary risk assessment to better understand their impact on the local ecology, reports the South China Morning Post.

In low-lying wetlands and rivers, mosquitofish (pictured below) – initially imported to eat mosquito larvae are considered by the International Union for Conservation of Nature (IUCN) as worst alien native species such as the rice fish in streams. This has subsequently considerably deregulated the food chain as well as the ecosystem.



A group of mosquitofish