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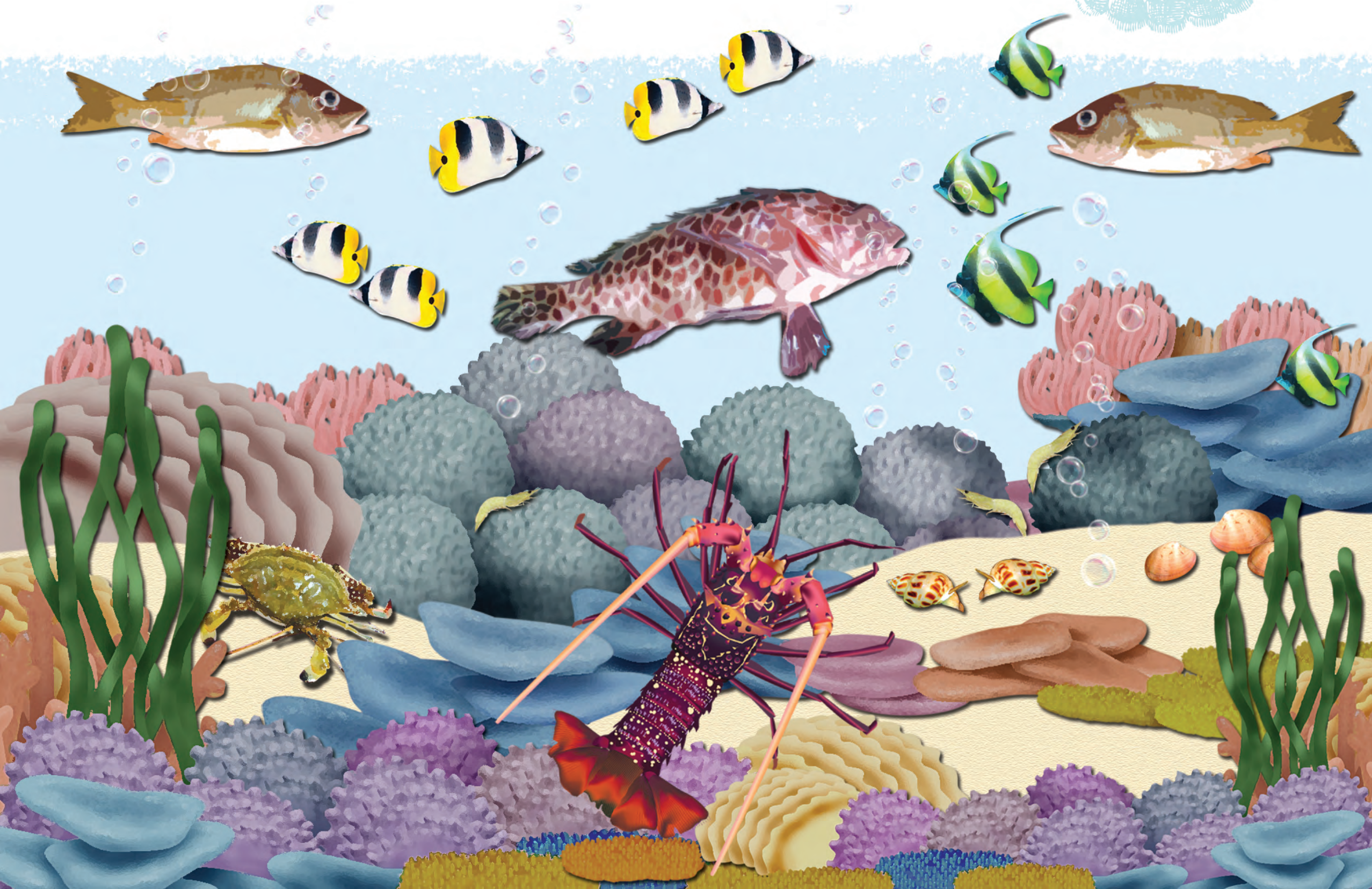
EDUCATION

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HEALTHY DIET

HEALTHY OCEAN



HELLO, I'm Hip the Seahorse, and I live in one of the coral communities in Hoi Ha Wan. Many of my fishy friends have been part of Chinese food culture for centuries and these days Hong Kong's citizens love seafood more than ever, particularly for celebratory banquets, business dinners and special festivals.



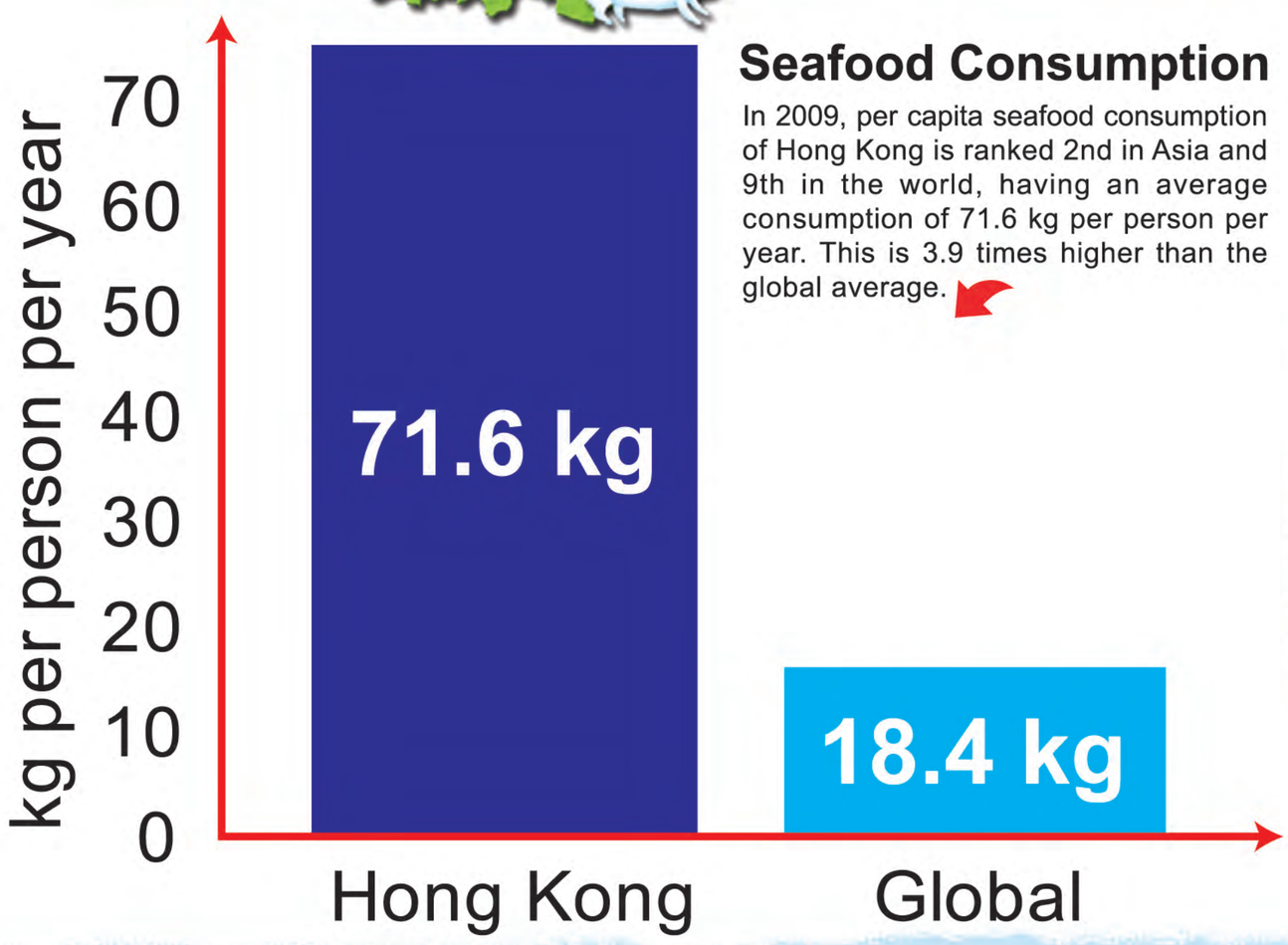
Yet how much do you know about the seafood you eat? Where do the fish come from? How are they caught? How does your love of fish and other seafood affect the marine environment?

I'm here to tell you a story, so that you can make some informed choices about how you consume seafood in the future.



Seafood Consumption

In 2009, per capita seafood consumption of Hong Kong is ranked 2nd in Asia and 9th in the world, having an average consumption of 71.6 kg per person per year. This is 3.9 times higher than the global average.





© WWF-Canon/Jürgen FREUND

Most of the seafood comes from other countries.

A diverse range of seafood is readily available in local markets in Hong Kong.



© Ariel Yeung

Due to the depletion of Hong Kong's own fisheries resources, Hong Kong relies heavily on import to sustain our huge demand for seafood. Today, up to 90% of seafood is imported and is coming from over 150 countries and territories worldwide.



The story begins ...

Wow Mum, there are so many yummy seafood dishes on the menu, it's hard to choose! I think I'll have the "Steamed Humphead Wrasse".

OK, Kate and I'll have the "Steamed Leopard Coral Trout" as it's the signature dish in this restaurant.

Delicious Seafood Restaurant

- Steamed Humphead Wrasse
- Steamed Leopard Coral Trout
- Sauteed Shrimp with Soy Sauce
- Scallop and Vegetables Stir-Fry
- Steamed Black Cod Fish with Picked Chinese Cabbage
- Fried Golden Threadfin Bream with Tomato
- Smoked Salmon Salad
- Rock Lobster Cream Cheese Logs
- Oven-Fried Orange Roughy
- Grilled Squid
- Dry Steamed Big Eye
- Deep-Fried Bombay Duck

Can I have the "Sauteed Shrimp with Soy Sauce" as well please Mum? You know how much I love seafood.

Alright then. The dishes are so tempting! Let's call the waiter over to take our order.

After the meal ...

Bill please!

I know for a fact that the seafood we ordered can be bought quite cheaply at the wet market. There must be some mistakes.

That'll be **a million Hong Kong dollars** please!

BILL
HK$1,000,000

A million Hong Kong dollars! You must be joking!

No. The cheap market prices don't take into account the real cost to the environment.

The dishes you have chosen came from unsustainable fisheries and were over-exploited, caught or farmed in an ecologically-unfriendly way. Take a look at exactly how the fish are caught before they end up in your stomach!

BILL
HK$1,000,000

What exactly do you mean by "the cost to the environment"? Why should you include this in our bill?

BILL
HK$1,000,000

OVERFISHING



Steamed Leopard Coral Trout

"When the amount of fish caught is more than the amount that can be replenished by the breeding activities of the adult fish population, overfishing occurs."



Leopard coral trout are often sold as live fish in restaurants and local markets in Hong Kong which are imported mainly from the Philippines, Malaysia and Indonesia. Due to the high demand for this species in Hong Kong and mainland China, together with the general lack of effective fishery management in their sourcing countries, population of this species is in decline. Today, a great proportion of its catch is composed of juvenile fish.

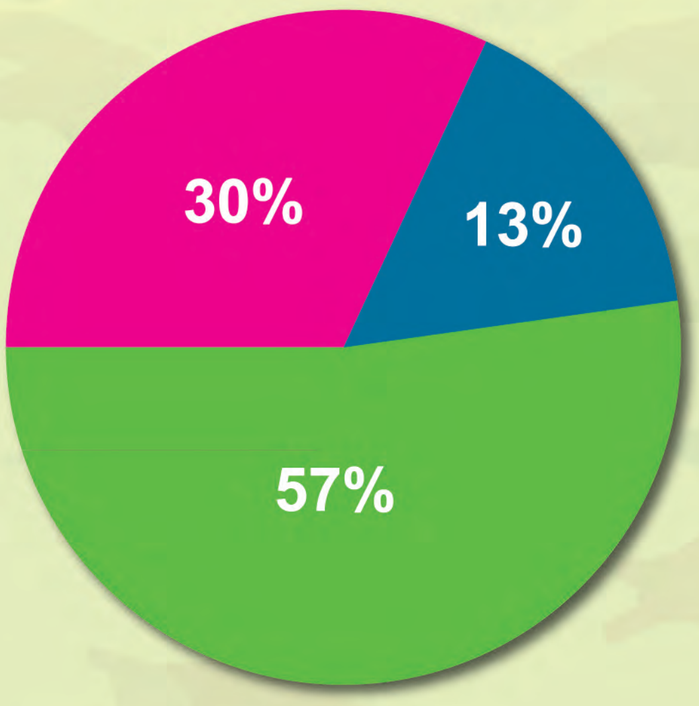
The catch of leopard coral trout has shown a declining trend in many countries. In the Philippines, juveniles are now heavily caught and sold after growing to a dish-size.



© Clarus Chu

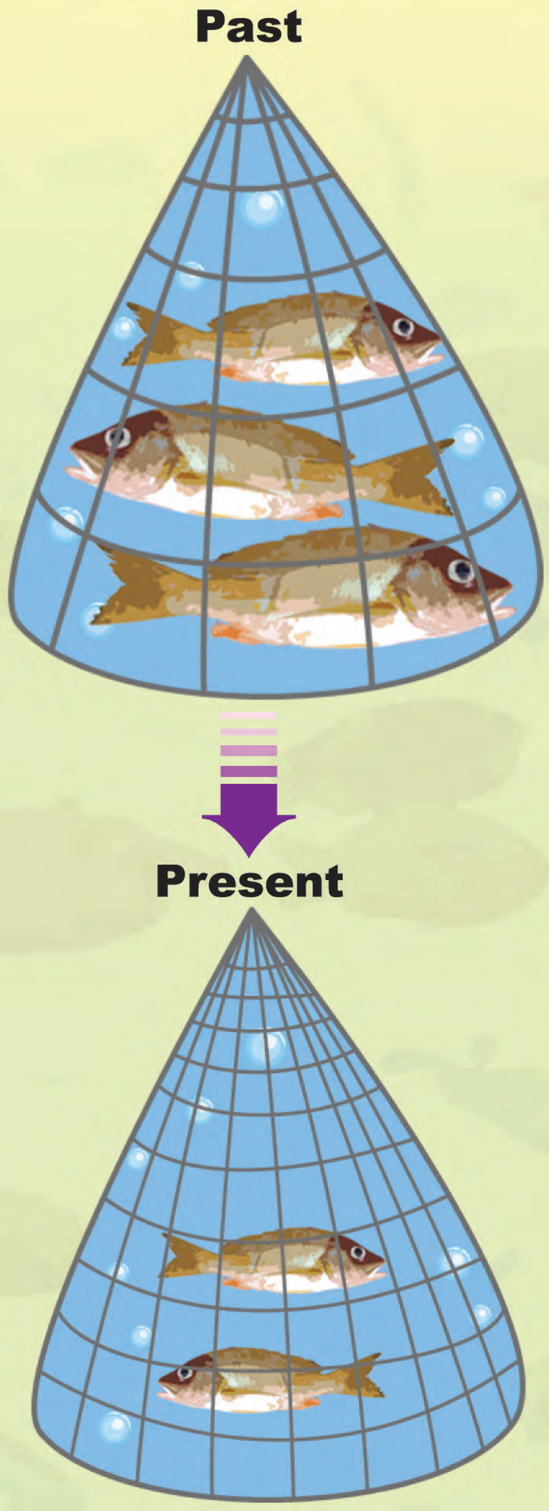
In 2009, 87% of global marine fisheries were already fully or over-exploited, meaning that there is no room for these fisheries to produce more or they are now producing less than what they can under a more sustainable fishing practice. Some scientists even speculated that if current situation continues, within a few decades, we might run out of seafood.

World's Fish Stocks



(Data from Food and Agriculture Organization of the United Nations, August 2012)

- **Fully Exploited**
- **Over-exploited**
- **Non-fully Exploited**





Squaretail coral trout

© AllenTo

Squaretail coral trout and Camouflage grouper are also victims of the overfishing problem in Southeast Asia



Camouflage grouper

© AllenTo

EFFECTS OF OVERFISHING





© WWF-Canon / Zeb HOGAN

Fish is an important source of animal protein for human. Globally, fish provides about 3 billion people with almost 20% of their intake of animal protein.

For the 6 countries in the Coral Triangle, more than 120 million people depend on the sea for food and income. They will be the hardest hit group if their marine resources continuously decline.



© WWF-Canon / Zeb HOGAN



The continuous decline in the number of live reef food fish is just the tip of the iceberg. Overfishing not only diminishes fish stocks and damages marine ecosystems, but it also affects the livelihood of many people who depend on fishing for a living. Let's take a look at the impact of overfishing in more detail.



© WWF-Canon / Jürgen FREUND

Reef fish are caught while they are still juveniles, this lowers the number of adult fish in the wild, and eventually reproduction rate declines.

The Coral Triangle represents six countries: Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor-Leste. This area is ecologically important as it is home to a myriad of marine life. However, the Coral Triangle is increasingly threatened by the huge demand from Asian countries such as Hong Kong for live reef food fish.



© WWF-Canon / Jürgen FREUND

© WWF-Canon / Jürgen FREUND

Hong Kong enjoys a seemingly endless supply of seafood from all over the world, which is hard for people to be aware of the threats to the marine environment caused by overfishing.

DESTRUCTIVE FISHING



© Stan SHEA / BLOOM

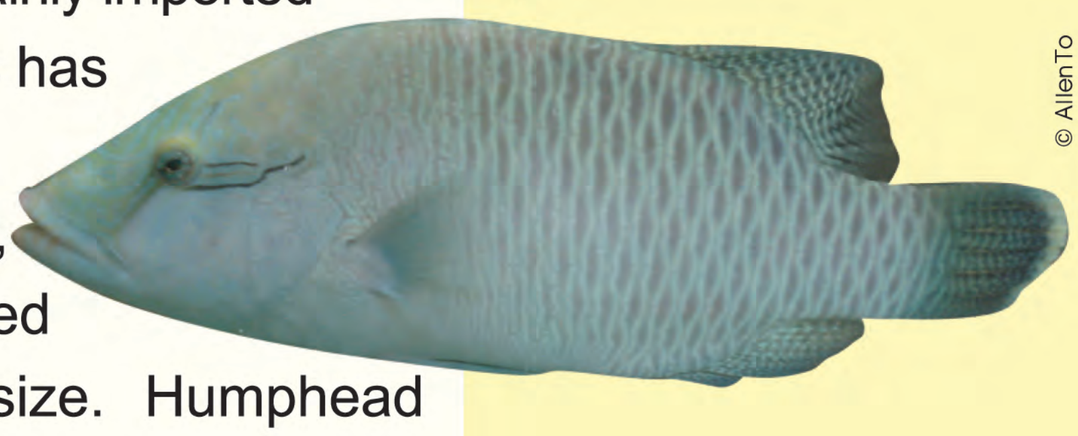
Use of fishing method that damages marine habitats.

Steamed Humphead Wrasse



Humphead wrasse is frequently seen in fish tanks of many restaurants. They are mainly imported from Indonesia, but this species has been heavily fished very widely and now over-exploited globally, as indicated by their decreased abundance and small body size. Humphead wrasse are sometimes caught using cyanide, which is toxic to other marine organisms that happen to be found nearby including corals.

Humphead wrasse lives in coral reef.



© AllenTo

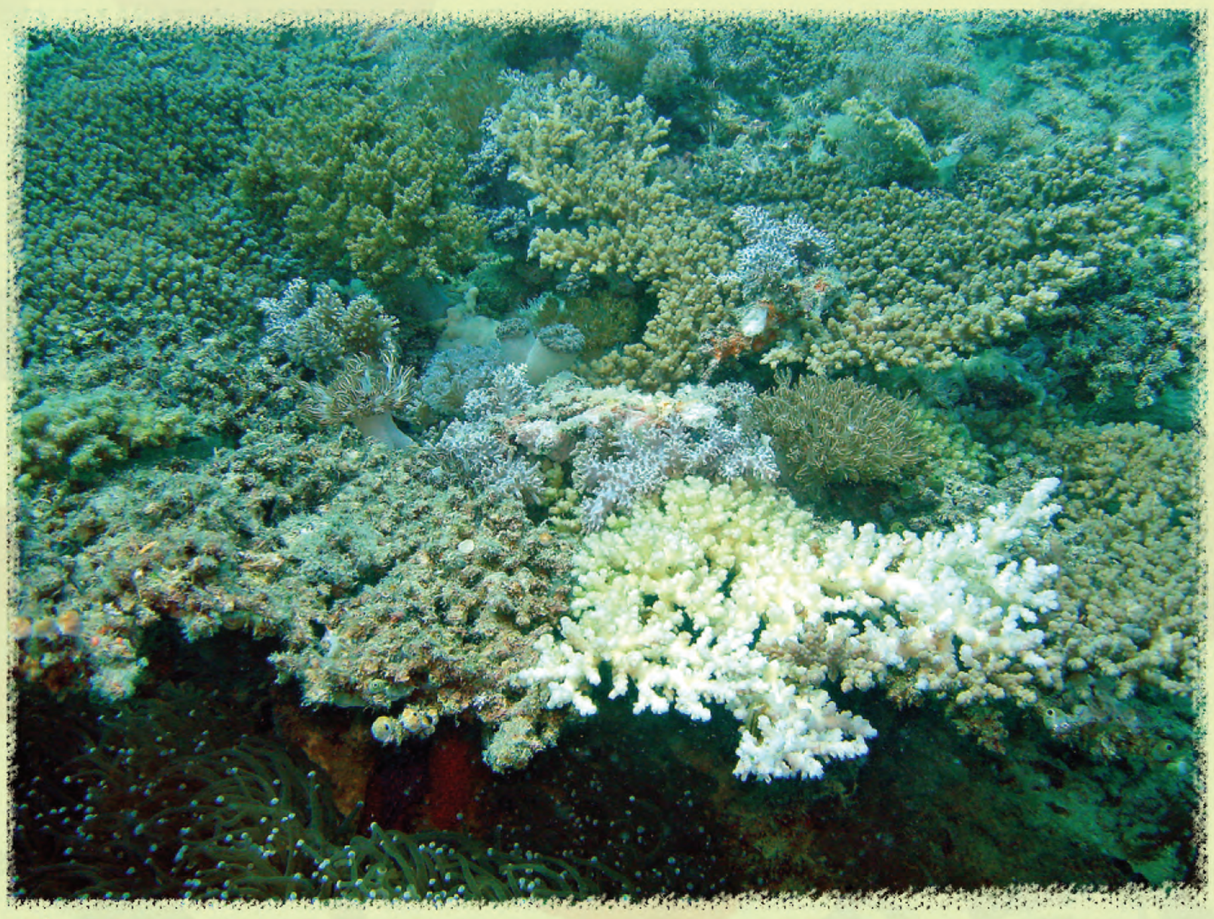
EFFECTS OF DESTRUCTIVE FISHING

Cyanide Fishing



© WWF-Canon / Jürgen FREUND

Fishers squirt sodium cyanide into the water to stun fish without killing them, making them easy to catch. However, the effects of cyanide on other organisms can be devastating.



© Paul Hodgson

For every live fish caught using cyanide, a square metre of its coral reef home is destroyed. The impact of the poison on the reef ranges from coral bleaching to death.

Dynamite Fishing



© WWF-Canon / Jürgen FREUND

Some fishermen have been injured or killed because the explosives they use have gone off before hitting the water.



© WWF-Canon / Jürgen FREUND

Dynamite fishing is another destructive method that uses dynamite or other explosives to indiscriminately kill fish of different sizes and species. Some float to the surface so they can be easily caught.



© WWF-Canon / Jürgen FREUND

The repeated destruction of marine habitats eventually leads to the complete absence of fish and a loss of livelihood for the fishermen.

Bottom Trawling

Dynamite fishing and bottom trawling are other forms of destructive fishing which damage the physical environment of the seabed, an important habitat for many species of fish.



Bottom trawlers catch fish by dragging nets across the seafloor, wiping out everything in its path. The damaging effects are much more pronounced when the seafloor is composed of rock or coral reef, rather than sand.



© WWF-Canon / Jürgen FREUND

Orange Roughy are caught by bottom trawling. It is an over-exploited species in Australasia, Namibia, Chile, the Northeast Atlantic and the South Indian Ocean.



© Australian Fisheries Management Authority

© WWF-Canon / Richard WILSON, Rockhopper

BYCATCH



Sauteed Shrimp with Soy Sauce

* Bycatch is the incidental catching of unwanted living marine organisms during fishing for targeted species.
* Most bycatch species end up dead before they are released back into the sea.



© Ariel Yeung

A haul of prawns from a trawling fishery generates a large amount of bycatch, because the individuals disperse instead of shoaling.

Shrimps are another species that are heavily harvested in the South China Sea. They are caught by shrimp trawl, a kind of bottom trawling method that usually brings in large amounts of bycatch - incidentally caught non-target species. Typically, most of the weight of caught organisms is bycatch and is wastefully discarded. Shrimp trawl has the highest discard/catch ratio of all fisheries.





© Clarus Chu / WWF Hong Kong

Fishermen sort out the wanted and unwanted species from a catch.



© Clarus Chu

The UN FAO estimates that 35% of the world's incidental and unwanted catch occurs in shrimp trawl fisheries, amounting to about 10 million metric tons every year, which is extremely wasteful.



© Clarus Chu / WWF Hong Kong

EFFECTS OF BYCATCH

Bycatch is recognised as one of the most serious environmental problems of modern commercial fisheries. Fishing practices that incidentally catch large numbers of unwanted organisms may drive some species close to extinction and disrupt the balance of marine ecosystems.





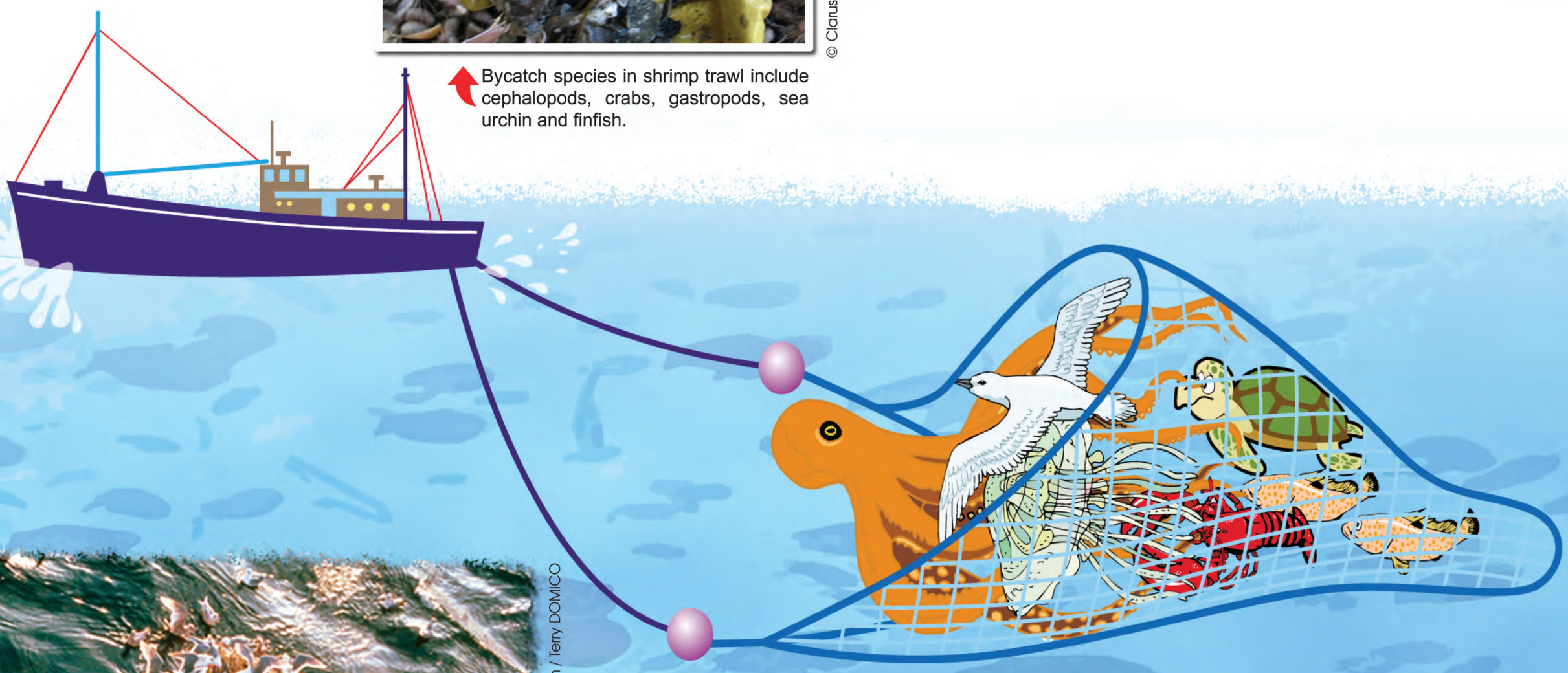
© WWF-Canon / Mike R. JACKSON

A major detrimental effect of bottom trawling is the capture and removal of small sized organisms and non-target species from the ecosystem, which are usually thrown back into the sea.



© Clarus chu

Bycatch species in shrimp trawl include cephalopods, crabs, gastropods, sea urchin and finfish.





© WWF-Canon / Terry DOMICO

A bottom trawler hauling up a net full of fish attracts the interest of seabirds. Seabirds may accidentally get caught.

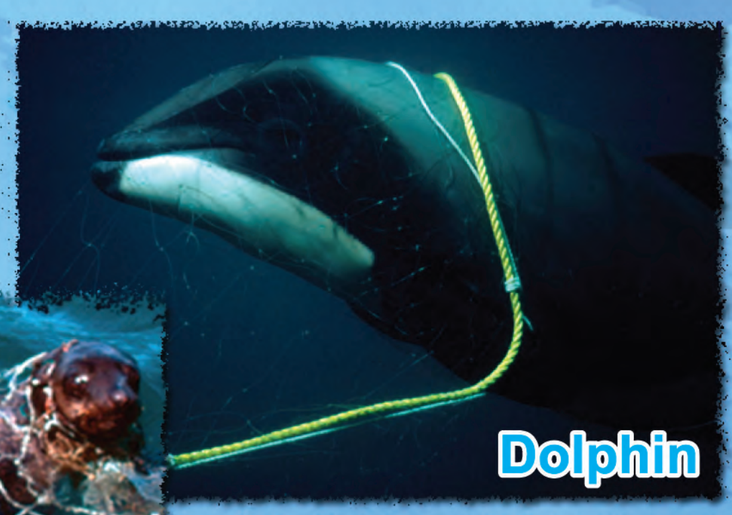


© WWF-Canon / Michel GUNTHER

It is estimated that several hundred thousand turtles are killed each year in the shrimp fisheries of Asia, South America and Africa.



© WWF-Canon / Sandra MBANEFO OBIAGO



© WWF-Canon / Stephen DAWSON

Nets trap and kill dolphins and seals.

I had no idea that fishing for the seafood I love is doing so much damage to the ocean.

Me too. I've never given the marine environment a second thought when choosing from the menu – I just eat what I enjoy the most.

Or perhaps your restaurant offers dishes made from seafood that is caught by more environmentally-friendly methods?

Does this mean we shouldn't eat seafood any more?



Don't worry!

You don't have to stop eating seafood completely. But you can show your concern for the marine environment by choosing "environmentally-friendly" seafood species recommended in this Seafood Guide. Some examples are listed on our restaurant menu here: black cod, scallops – to name just a few. The choices you make today are critical to protect our precious marine assets.

SEAFOOD GUIDE



With expert advice from several marine scientists, WWF has published a seafood guide to help you make informed choices when buying seafood or dining out. A species list has been compiled that categorises the impact that harvesting different seafood products has on the marine environment. Making the right choice has never been easier! This guide groups more than 70 of the most popular seafood species in Hong Kong into 3 categories:

建議 RECOMMENDED

品種 SPECIES	來源 ORIGIN	方法 METHOD
長鰭吞拿魚 Albacore tuna	加拿大/ 斐濟 Canada/ Fiji	
雪花鱈魚 Chilean sea bass	英屬南喬治亞島 South Georgia, UK	
鱈魚 Pacific cod	美國 US	
比目魚 Pacific halibut	美國 US	
藍尖尾鱈魚 Hoki	紐西蘭 New Zealand	
狹鱈魚 Pollock	美國 US	
三文魚 Pacific salmon	加拿大 Canada	
海蝦 Northern shrimp	加拿大 Canada	
龍躉 Giant grouper	香港 Hong Kong	* (室內 indoor)
東星斑 Leopard coral trout	澳洲昆士蘭 Queensland, Australia	

品種 SPECIES	來源 ORIGIN	方法 METHOD
波士頓龍蝦 Boston lobster	加拿大 Canada	
龍蝦 Rock lobster	澳洲昆士蘭 Queensland, Australia	
鮑魚 Abalone	澳洲 Australia	
鮑魚 Abalone	中國 China	
蜆 Clam	中國 China	
海參 Sea cucumber	加拿大西部 W Canada	
象拔蚌 Geoduck clam	加拿大/ 美國 Canada/ US	
蠔 Oyster	中國/ 美國 China/ US	
帶子 Scallop	中國/ 日本 China/ Japan	
帶子 Scallop	昆士蘭/ 西澳 Queensland/ W Australia	
翡翠螺 Whelk	加拿大 Canada	

野外捕撈 WILD CAUGHT　養殖 FARMED

想清楚 THINK TWICE

品種 SPECIES	來源 ORIGIN	方法 METHOD
三文魚 Atlantic salmon	愛爾蘭/ 挪威/ 蘇格蘭 Ireland/ Norway/ Scotland	
三文魚 Pacific salmon	美國 US	
銀鱈魚 Black cod	美國 US	
沙甸魚 Sardine	葡萄牙/ 西班牙 Portugal/ Spain	
黃鰭吞拿魚 Yellowfin tuna	印尼/ 菲律賓 Indonesia/ Philippines	
龍躉 Giant grouper	香港 Hong Kong	* (魚塘 pond)
鯪魚 Grass carp	中國 China	
烏頭 Grey mullet	香港 Hong Kong	*
寶石魚 Jade perch	香港 Hong Kong	*
紅鮸 Mangrove snapper	香港 Hong Kong	*
鯪魚 Mud carp	中國 China	

品種 SPECIES	來源 ORIGIN	方法 METHOD
黃鮁鱇 Pompano	香港 Hong Kong	*
石鮅 Star snapper	香港 Hong Kong	*
多寶魚 Turbot	中國 China	
泥鰂 White-spotted rabbitfish	南中國海 S China Sea	
海蝦 Prawn	澳洲昆士蘭 Queensland, Australia	
青蟹 Mud crab	中國 China	
鮑魚 Abalone	南非 S Africa	
海參 Sea cucumber	加拿大東部 E Canada	
帶子 Scallop	日本 Japan	
海膽 Sea urchin	南中國海 S China Sea	
刺參 Spiky sea cucumber	中國 China	

野外捕撈 WILD CAUGHT　養殖 FARMED

避免 AVOID

品種 SPECIES	來源 ORIGIN	方法 METHOD
藍鰭吞拿魚 Bluefin tuna	全球 Global	/
黃鰭吞拿魚 Yellowfin tuna	印尼/ 菲律賓 Indonesia/ Philippines (延繩釣 long-lining)	
魚子醬 (鱘魚) Caviar (sturgeon)	全球 Global	
雪花鱈魚 Chilean sea bass	全球 Global	
銀鱈魚 Black cod	美國 US (底拖網 bottom trawl)	
龍脷 Sole	紐西蘭 New Zealand	
劍魚 Swordfish	全球 Global	
芝麻斑 Areolate and Duskytail grouper	香港 Hong Kong	
杉斑 Camouflage grouper	東南亞 SE Asia	
龍躉 Giant grouper	香港 Hong Kong (網箱 sea cage)	
老鼠斑 High-finned grouper	東南亞 SE Asia	
紅斑 Hong Kong grouper	中國 China	
蘇眉 Humphead wrasse	東南亞 SE Asia	
東星斑 Leopard coral trout	東南亞 SE Asia	
青斑 Orange-spotted grouper	泰國 Thailand	
沙巴龍躉 Sabah grouper	馬來西亞 Malaysia	

品種 SPECIES	來源 ORIGIN	方法 METHOD
西星斑 Squaretail coral trout	東南亞 SE Asia	
老虎斑 Tiger grouper	東南亞 SE Asia	
大眼雞 Bigeye	南中國海 S China Sea	
紅衫魚 Golden threadfin bream	南中國海 S China Sea	
馬頭 Horsehead	南中國海 S China Sea	
白鯧 Silver pomfret	南中國海 S China Sea	
福壽魚 Tilapia	香港 Hong Kong	
黃花魚 Yellow croaker	中國 China	
瀨尿蝦 Mantis shrimp	南中國海 S China Sea	
海蝦 Shrimp	南中國海 S China Sea	
賽蝦 Shrimp	亞洲 Asia	o
紅花蟹 Red crab	南中國海 S China Sea	
響螺 Conch	美國 US	
墨魚 Cuttlefish	南中國海 S China Sea	
刺參 Spiky sea cucumber	日本 Japan	
魷魚 Squid	南中國海 S China Sea	

野外捕撈 WILD CAUGHT　養殖 FARMED

Recommended

Seafood comes from well-managed fisheries where seafood is caught or farmed in an ecologically-friendly way – the preferred choice for consumption.

Think Twice

Seafood comes from fisheries that are at risk of becoming unsustainable. Only consume this seafood occasionally. Green “recommended” seafood should be your first choice.

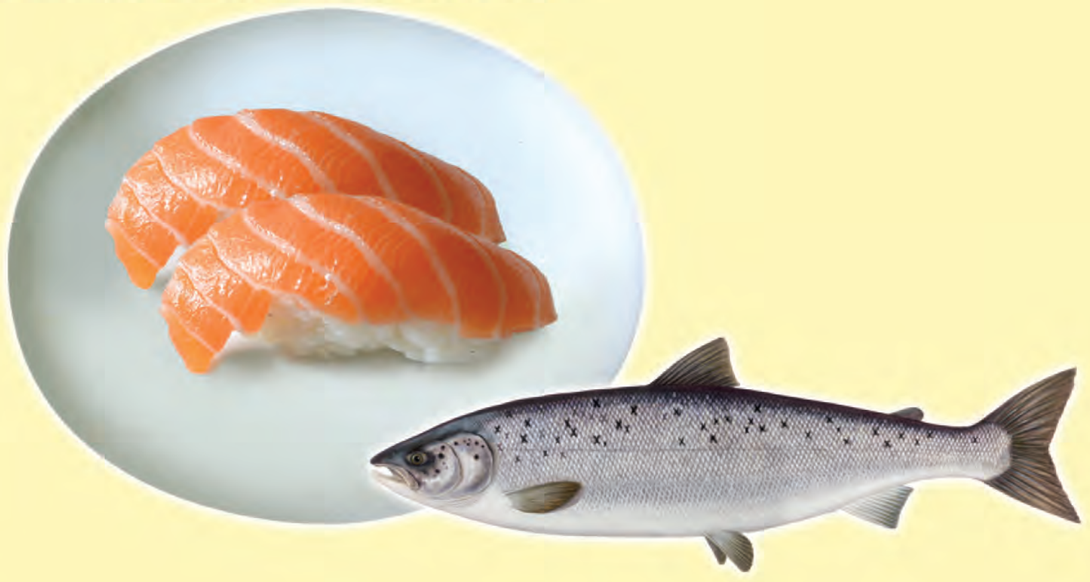
Avoid

Seafood comes from unsustainable fisheries, and is over-exploited, caught or farmed in an ecologically-unfriendly way. Avoid consuming seafood from this category.

Wild caught scallop from Australia



Farmed salmon from Norway



Wild caught leopard coral trout from Southeast Asia



RECOMMENDED



I strongly recommend the following dishes from your menu, as these seafood are caught or farmed in an ecologically-friendly way. What's more, these fisheries are well-managed which has a smaller impact to the environment. We can enjoy these dishes with a free conscience, safe in the knowledge that the seafood we consume today will also be there for future generations to appreciate without causing adverse harm to our marine heritage.



Steamed Black Cod with Pickled Chinese Cabbage

MSC-certified Black cod from Alaska, USA

Good Fishing Method

* Bottom long lining with low total bycatch.

Good Fishery Management

* Long-term population surveys in Alaska.

Healthy Stock Status

* Stock is not over-exploited.



Scallop and Vegetables Stir-fry

Wild caught scallop from Australia

Good Fishing Method

* Installation of devices to reduce the number of bycatch.

Good Fishery Management

* Fisheries in Australia are well managed and effective.

Healthy Stock Status

* Scallops have high growth rate and become adult in a very short time.

Did you know?

Marine Stewardship Council (MSC)

Knowing where our seafood comes from is important. Leopard coral trout stocks in Southeast Asia have been heavily exploited and sometimes cyanide is used to catch them; this fish should therefore be avoided at all costs. However, if the same species of fish comes from Australia, It is actually recommended because it is fished in a sustainable way. In Australia, fishermen use hook and line to catch Leopard coral trout, which reduces bycatch and any bycatch that are released have relatively higher survival rate.

To address this issue, the MSC has developed an environmental standard for sustainable and well-managed fisheries. It uses a product label to reward environmentally responsible fishery management and practices. Some MSC products are now available in Hong Kong.



Albacore tuna comes from sustainable fisheries certified to the MSC's environmental standard.

© Allen To

So now you
can appreciate the environmental
cost our seafood consumption is having on
the ocean. Unsustainable fishing is a global
problem, but it can begin to be solved if each one of us
decides to become a responsible consumer.

Avoiding species that are overfished and choosing
seafood from well-managed sustainable fisheries
will save many from extinction and actually
keep some dishes on the menu for future
generations to enjoy.

WWF

EDUCATION

HK



WWF's Mission

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

* **conserving the world's biological diversity**
* **ensuring that the use of renewable natural resources is sustainable**
* **promoting the reduction of pollution and wasteful consumption.**

For further information, please contact WWF Hong Kong

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Website: http://www.wwf.org.hk

The Seafood Guide can be downloaded from the WWF Seafood Guide website:

http://www.wwf.org.hk/seafood/en