

Lesson Summary

Overfishing is emptying the ocean, with 90% of fisheries already overfished. Illegal fishing is having a big impact. This lesson explains the term IUU and the factors contributing to overfishing.

This lesson will take approx. 45 mins.



Subjects relevant to

English, Geography, History, Math, Science and Social Science.

Learning objectives

From this lesson students will:

- Understand and explain what IUU fishing activity means.
- Explore the impacts IUU fishing is having on marine species.
- Understand the term overfishing and explain what is driving demand.
- Discuss ways students can help address the issue.

Preparation

- This lesson has been designed to provide a complete lesson, but can be stopped at any time and split over multiple lessons, should you wish to include your own discussion/questions or incorporate the lesson activities.
- Definitions of key terms have been provided at the end of the guide to assist with the learning process.
- Each lesson has case study options showing Sea Shepherd campaigns, including videos to provide students with a firsthand experience of ocean conservation in action.
- Depending on whether students are working in a classroom or remotely, you can choose to discuss questions in the class or use the online learning app.
- This digital lesson has an interactive option called student devices. If you choose this option ask the students to bring their mobile phones or tablets to the lesson.
- Should you choose the interactive option, it will run a quiz during the lesson. Recommendation: only use this interactive option in classes of up to 30 students.
- Students can sign up on their mobile device to the www.LessonUp.app. They will be asked for a PIN code (this will appear automatically on slide 3 and will also show at the bottom of the screen). Students who sign up under a false name may be removed by the teacher.
- Students who do not have a mobile device can join the quiz with another student.
- If student devices is turned ON, you can opt to turn the sound and the share screen ON or OFF. Further on you can choose if you want to 'show ranking after each quiz' question. Doing so will create a competitive element, but it can be distracting. Recommendation: turn the 'show ranking after each quiz' OFF.
- The abovementioned options will also show if you click on the PIN code at the bottom of the screen.

Lesson plan

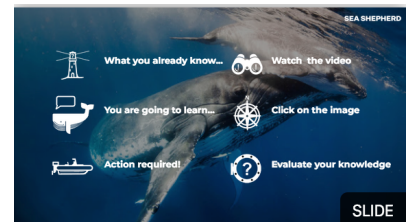
Slide 1 Introduction

This lesson is provided by Sea Shepherd. Sea Shepherd was founded in 1977 and is a marine conservation organisation working to protect the oceans and marine wildlife. Sea Shepherd works globally on a range of issues impacting the oceans, running numerous direct action campaigns each year. IUU is one area Sea Shepherd is working on to help stop illegal fishing and reduce by-catch.



Slide 2 Lesson action icons

During the lesson we will use these icons to identify the learning actions.



Slide 3 Lesson introduction

In this lesson we explain what IUU fishing is and the impact overfishing is having on the ocean.

INTERACTIVE JOIN – ask students to go to www.LessonUp.app



Slide 4 What do you already know?

Ask students to answer the following question using www.LessonUp.app or discuss in the classroom.

“What do you already know about illegal fishing?”



ILLEGAL, UNREPORTED AND UNREGULATED (IUU) FISHING LESSON 1

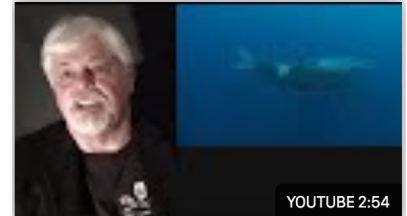
TEACHERS GUIDE: SEONDARY SCHOOL (Age 11 – 16)

Slide 5 Empty ocean by 2050

Scientists estimate that by 2050 the ocean ecosystem will be on the verge of collapse, empty of fish and marine wildlife, unless urgent action is taken on the issues impacting on the oceans and marine wildlife.

Show this video (2.53min), which explains how important all species are to our planet.

<https://www.youtube.com/watch?v=TLcA31VRIRU>



Discuss the video with the class and what it means.

Slide 6 High demand for fish

One of the reasons for this is overfishing of the ocean. It is estimated that over 100 million tons of fish is caught each year. Fish is the largest traded commodity in the world.



Slide 7 Why do you think the demand for fish is so high?

Ask students to complete their answer to the following question using the www.LessonUp.app or discuss in classroom.

“Why do you think the demand for fish is so high?”

Part of the reason is the demand for different products, not just human consumption.

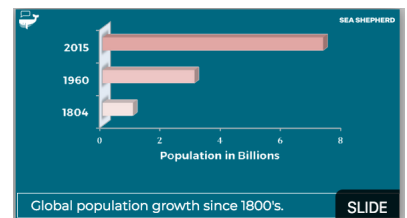
Explain that during the lesson we will explore some of these reasons and find out why.



Slide 8 Growing population

Overfishing is a result of the growing demand for seafood as our global population rapidly increases.

The global population has risen from 1 billion in 1804 to 3.04 billion in 1960 to 7.3 billion people in 2015. While the global population is rapidly increasing, our resources including from the ocean are decreasing. It is estimated that over 3 billion people use fish as their main protein source.



ILLEGAL, UNREPORTED AND UNREGULATED (IUU) FISHING

LESSON 1

TEACHERS GUIDE: SEONDARY SCHOOL (Age 11 – 16)

Slide 9 90% of predatory fish species are gone

The result of commercial fishing activities is that over 90% of global fisheries have now been exploited or overexploited. Which means, according to UN data, that less than 10% of global fisheries are deemed to have healthy numbers. Now 90% of the predatory fish, including sharks, tuna, albacore, icefish, swordfish and grouper are gone.



Slide 10 Illegal, Unreported and Unregulated (IUU) Fishing

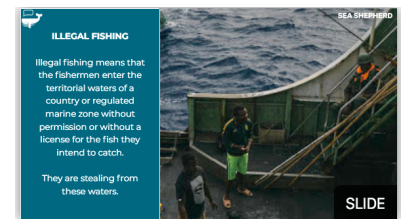
The growing demand for seafood supports the illegal fishing trade. IUU fishing activity has big impact on the ocean ecosystem.

Let's look at what IUU fishing means.



Slide 11 Illegal fishing

Illegal fishing means that the fishermen enter the territorial waters of a country or regulated marine zone without permission or without a license for the fish they intend to catch. In basic terms they are stealing from these waters.

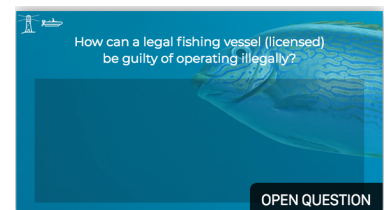


Slide 12 Question

Ask students to answer the following question using www.LessonUp.app or discuss in the classroom.

“How can a legal fishing vessel (licensed) be guilty of operating illegally?”

Answer – A licensed vessel could still be caught catching other fish species they have no license for, or taking amounts in excess of their quota, or fishing in areas they are not allowed to fish in.



Slide 13 Unreported fishing

Unreported means that a fishing vessel may have a license with an allocated quota for fishing a particular species, such as tuna, but then catches more than their quota and they fail to report it.

When vessels are inspected the information recorded in the fishing log books are compared against what is in the fish holds of the vessel to determine if the catch has been reported correctly.

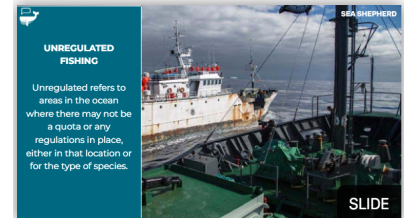


Slide 14 Unregulated fishing

Unregulated refers to areas in the ocean where there may not be a quota or any regulations in place, either in that location or for the type of species.

There are areas of the ocean that are not subject to any regulation, generally because they are not controlled by a particular country or form part of any regulated zone. Fishing vessels can head to these areas knowing no one is likely to be patrolling or monitoring fishing activity.

Regulating the fishing industry is a huge task, given the size of the oceans and the scale of commercial fishing operations. There are thousands of illegal fishing vessels out at sea at any moment in time.



Slide 15 Rate of illegal fishing

The United Nations estimates that 30% of the global fishing catch is considered to be from Illegal, Unreported and Unregulated (IUU) fishing. This amount varies by region from 15% to 40%.



Slide 16 Question

Ask students to answer via www.LessonUp.app or discuss in the classroom.

“Why do you think the rate of illegal fishing varies between regions?”

Suggested answers:

- Not all countries are able to patrol their waters to prevent illegal activity.
- It depends on the fish species in their waters and which are currently being targeted.
- Regulations in place to protect the area, such as marine parks.
- Whether the area has already been overfished.



Slide 17 What species are targeted?

Commercial fishing operations are targeting high value species such as tuna and albacore, as well as sharks.



Slide 18 Sharks

One species under threat from overfishing by the illegal trade are sharks. Sharks are being targeted in high numbers, with over 100 million killed each year. Shark finning and shark liver oil are the main causes for the illegal trade. Shark fins are used to make soup or herbal remedies. Shark liver oil is used in a variety of products, including health and sports supplements.



Slide 19 Endangered sharks

There are around 400 known shark species. 143 shark species are currently listed as endangered, for 210 species there is not sufficient data available to determine their status but many are in decline. That leaves only 47 shark species that are currently known to have healthy populations.



Slide 20 Sea Shepherd

Show video (4.30min) from Sea Shepherd Operation Sola Stella—this campaign summary introduces the issue of IUU in Liberia and shark liver oil poachers. It also introduces some concepts for the next lessons on how illegal vessels operate.

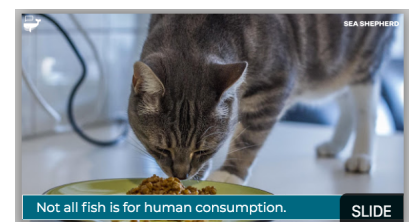
<https://www.youtube.com/watch?v=2TFsjz8ilPg&list=PLx1pnhQVtbbCvG-aU-car7H5sOSemUTeP&index=7>



Slide 21 Causes of overfishing

In addition to our growing population what else is driving demand?

Not all the fish caught is for direct human consumption, a portion is used to feed other animals such as domestic pets, like cats, farmed animals like pigs, or farmed marine wildlife like prawns, salmon and tuna.



United States government data shows about 40% of the catch entering the USA is used as feed for farmed animals.

2.48 million tons of fish are used by the global cat food industry every year. Domestic house cats eat more fish, especially tuna, than the world's seals.

Slide 22 Scale of industrial fishing

The increasing demand for fish and a desire to make it more cost effective, cheaper for consumers, saw the development of large scale industrial fishing vessels during the mid 1900's. The vessels and nets were developed to dramatically increase the size of the fishing catch. The number of fishing fleets has also dramatically increased since the 1950's.

With reducing fish numbers, so is the catch. The fishing fleets have doubled in size since 1950's, but the catch has reduced.



Slide 23 How can you help protect the ocean and marine wildlife?

With the extent of overfishing and illegal activity it is important to find ways to stop this happening. What do you think you could do to help?

Ask students for their ideas on what they can do.

The biggest impact we can all have is by reducing the demand for seafood. Our growing population and increasing demand for seafood is what drives the commercial fishing industry and IUU fishing activity.



Slide 24 Reducing demand

One area to help protect sharks is to help stop the sale of shark products, like shark fin soup or shark liver oil and protect millions of sharks each year.

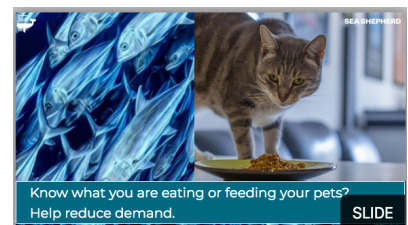
Ask students for ideas on how this could be achieved.



Slide 25 Reducing demand

Know what you are eating and what you feed your pets. Is what you are eating adding to species becoming endangered. Find out where the fish you eat comes from and how it is caught. Are there alternatives you could choose?

In IUU Lesson 3 we will discuss the issue of by-catch by the commercial fishing industry, which results in the unnecessary deaths of thousands of whales, dolphins, turtles and sharks each year.



Slide 26 Protecting fish species

Find out which fish are in the oceans or rivers in your area. Have they been impacted by fishing, are there measures in place to protect them into the future? If not, find out what action you can take to help protect them.



Slide 27 Harmful products

What you use could be impacting on marine wildlife – have you considered the impacts of products like krill oil, fish oil and shark cartilage tablets, fish food, cat and dog food.

We already discussed shark products, but what about krill or fish oil. What impact would overfishing of krill have on other marine wildlife, like whales?

Ask students how they could help reduce the demand for these products and educate the public on their impacts on other marine wildlife?



Slide 28 Other suggestions

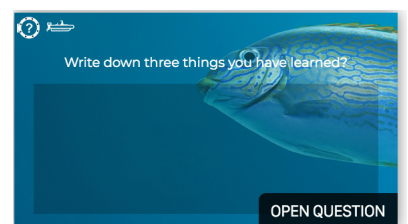
Ask students if they have any other ideas on what they could do to help stop overfishing.



Slide 29 What did you learn?

Ask students to answer the following question using www.LessonUp.app or discuss in the classroom.

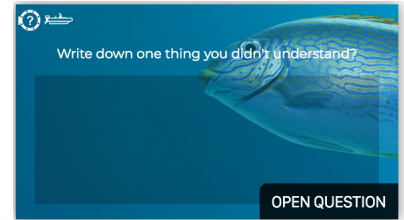
“Write down three things you have learned?”



Slide 30 What don't you understand?

Ask students to answer the following question using www.LessonUp.app or discuss in the classroom.

"Write down one thing you didn't understand?"



Slide 31 Next lesson

The next lesson on IUU we will discuss the regulations in place to protect the ocean and marine wildlife, and ways that IUU activity is being detected.



Slide 32 Close

Close



Resources

The State of World Fisheries and Aquaculture (2016)
Food and Agriculture Organisations of the United Nations.

Case Study Options

Case Study – Operation Albacore
Case Study – Operation By-catch
Case Study – Operation Driftnet
Case Study – Galapagos Islands
Case Study – Operation Icefish
Case Study – Operation Milagro
Case Study – Operation Siso
Case Study – Operation Sola Stella

Key Definitions

IUU – Illegal Unreported and Unregulated Fishing.

Illegal fishing - means that the fishermen enter the territorial waters of a country or regulated marine zone without permission or without a license for the fish they intend to catch.

Unreported - means that a fishing vessel may have a license with an allocated quota for fishing a particular species, such as tuna, but then catches more than their quota states and without reporting the extra catch.

Unregulated - refers to areas where there may not be a quota or any regulations in place, either in that location or for the type of species.

By-catch - is basically anything that is caught in fishing nets or on lines that the fishermen don't want or are not allowed to legally sell.

Ecosystem - a biological community of interacting organisms and their physical environment.

Endangered - seriously at risk of extinction.

Extinction - the state or process of being or becoming extinct. No longer in existence.

Overfishing - depletion of fish numbers by excessive fishing.

Overfished populations - depleted the numbers of fish in specific area because of excessive fishing. Even though these numbers could still be considered sustainable, they could ultimately lead to the collapse of fisheries.

Poaching - illegally hunt or catch (marine mammals or fish) that is not one's own or in contravention of official protection.

YOUR FEEDBACK

We value your feedback and would be pleased to hear your thoughts about this lesson and activities. Any comments, suggestions or requests for further information can be sent to education@seashepherdglobal.org