

Case Study Summary

This Case Study connects with our Lesson Plans: Illegal, Unreported and Unregulated (IUU) Fishing 1-3. It focuses on our campaign Operation Milagro, working in the Gulf of California with the Mexican Navy to protect the Vaquita.

This Case Study takes 20 minutes to complete.



Subjects relevant to

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

Learning objectives

- Understand what IUU fishing activity is taking place.
- Determine the impacts it is having on marine species.
- Understand the impacts of illegal fishing gear.

Preparation

- This case study has been designed to supplement our main lessons. It can be stopped at any time should you wish to include your own discussion/questions or incorporate the lesson activities.
- 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.



SEA SHEPHERD CASE STUDY: OPERATION MILAGRO

CASE STUDY GUIDE: SECONDARY SCHOOL (Age 11 – 16)

Lesson plan

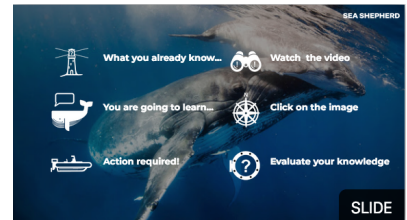
Slide 1 Introduction

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 and ALD are two issues Sea Shepherd is working on to help protect the ocean and marine life.



Slide 2 Lesson action icons

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



Slide 3 Operation Milagro

Operation Milagro began in 2015, working in Mexico, in the upper Gulf of California, to help protect the nearly extinct Vaquita. There are less than 20 of them now left.



Slide 4 Gulf of California

The map shows the location of the Gulf of California and the Sea of Cortez.





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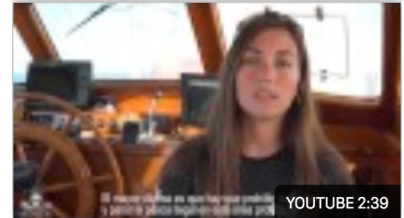
Slide 5 Vaquita

The vaquita (*Phocoena sinus*) is considered to be the world's smallest cetacean. They are found in the northernmost tip of the Gulf of California also known as the Sea of Cortez. This UNESCO World Heritage Site is home to a rich ecosystem, that include a wide range of endemic and migratory species.

Despite the obstacles they face to survive the vaquita, with less than 20 left, continue to fight against extinction.

This video (2.38 min) explains the reason for Sea Shepherd's campaign and why the vaquita is facing extinction.

<https://www.youtube.com/watch?v=s5GcqV4TQwY&list=PLNMnNu36NAjgcyD532wDBEeKZJhobLbOv&index=123>



Slide 6 Vaquita

This video shows a vaquita caught in an illegal net by poachers, showing the danger they face everyday.

<https://www.youtube.com/watch?v=BlS6yb1T6FQ&list=PLNMnNu36NAjgcyD532wDBEeKZJhobLbOv&index=1>



Slide 7 Totoaba

The vaquita has been put at risk due to the illegal fishing activity in the gulf, targeting totoaba fish. Similar in size to the vaquita, the totoaba is also endangered having been targeted by poachers. The totoaba swim bladder is a popular ingredient for herbal remedies in Asia, attracting a high price that encourages illegal poaching.



Slide 8 Sea Shepherd's fleet

Since 2015, Sea Shepherd's fleet: the *Farley Mowat*, *Sam Simon*, *White Holly*, *Sharpie* and *John Paul DeJoiria* have all been involved in the Milagro campaign. The Sea Shepherd fleet will continue to patrol and protect the vaquita refuge to save this critically endangered marine mammal and other species that inhabit the Upper Gulf of California.

Show this video (0.51 min) which shows some of the Sea Shepherd fleet work on Operation Milagro

<https://www.youtube.com/watch?v=NI4QWGSV9oM&list=PLNMnNu36NAjgcyD532wDBEeKZJhobLbOv&index=63>





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Slide 9 Removing illegal nets

One of the key activities the ships are undertaking is removing illegal nets from the area and collecting old nets left behind. Sea Shepherd are working with government enforcement officers and the Mexican Navy to remove these nets and stop illegal poachers in the area. During the campaign Sea Shepherd crews have not only been able to remove the nets but save the lives of entangled whales, sharks, totoaba and other species caught in the nets.

Show this video (1.44 min) which shows gillnets being removed.

<https://www.youtube.com/watch?v=ED6uvyThCHw&list=PLNmnu36NAjgcyD532wDBEeKZJhobLbOv&index=113>



YOUTUBE 1:45

Slide 10 Drones

Through the use of high-tech drones, sonar, and crew-invented “phantom ray”, Sea Shepherd locates, identifies, and retrieves the illegal nets, which can be up to 600 meters long and 15 feet deep. Crew identify, document, and release the animals trapped in the nets. When a dead totoaba is found, the whole fish is destroyed to prevent the poachers from gaining any profit from it



YOUTUBE 1:43

Show this video (1.42 min), which shows how drones are used to detect illegal fishing activity:

<https://www.youtube.com/watch?v=FUIXjdZDntQ&list=PLNmnu36NAjgcyD532wDBEeKZJhobLbOv&index=81>

Slide 11 Over 100 miles of net removed

Up to 2019, Sea Shepherd has run five campaigns to save the vaquita, removing about 1,000 pieces (over 100 miles) of illegal fishing gear from the Sea of Cortez, costing the poachers and the cartels that employ them nearly one million USD dollars in fishing gear. 3,400 animals have been rescued alive from the nets. Thousands more protected by the removal of these nets from their habitat.



By 2019, after 5 years of campaigns, over 1,000 pieces of illegal fishing gear removed

SLIDE

Slide 12 Whale caught in nets

Show this video (5.22 min) which shows Sea Shepherd crew working with the Mexican Navy to save a humpback whale caught in nets. It took the crews 4 hours to free this whale.

<https://www.youtube.com/watch?v=L49AbW3wvJY&list=PLNmnu36NAjgcyD532wDBEeKZJhobLbOv&index=107>



YOUTUBE 5:23



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Slide 13 1,000 nets retrieved

Show this video (5.05 min) and hear from Sea Shepherd volunteers from around the world, working on Operation Milagro. See them working to remove illegal nets and saving marine life, as Sea Shepherd reached the milestone of having removed 1,000 illegal nets. The fight continues to save the vaquita.

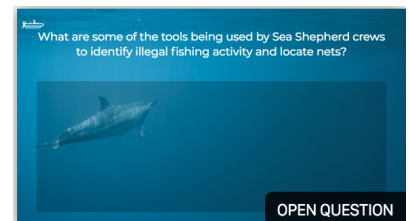
<https://www.youtube.com/watch?v=epklmFwzn1c&list=PLNmNu36NAjgcyD532wDBEeKZJhobLbOv&index=12>



Slide 14 Question

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

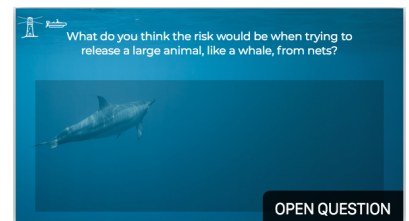
“What are some of the tools being used by Sea Shepherd crews to identify illegal fishing activity and locate nets?”



Slide 15 Question

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

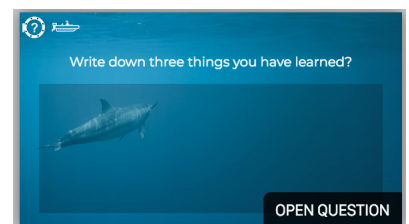
“What do you think the risks would be of trying to release a large animal, like a whale, from nets?”



Slide 16 What did you learn?

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

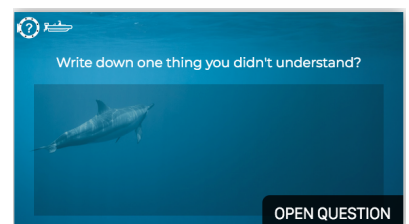
“Write down three things you have learned?”



Slide 17 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?”





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[Slide 18 Close](#)



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.