

SUSTAINABLE FISHING & CATCHES (3.1)

OVERVIEW

Sustainable fishing is fishing that maintains fish stocks and the environment where fish live. [Overfishing](#) happens when too many fish are taken and a fish stock begins to decline. Fisheries found to be sustainable can be sold with the [Marine Stewardship Council blue fish tick label](#).

These activities explore in more depth the meaning of a sustainable catch and sustainable fishing. Learners also investigate the MSC principles used to assess fisheries as sustainable, with particular focus on Principle One requiring fishing companies to demonstrate a sustainable catch.

See slide set [Sustainable fishing and sustainable catch](#).

FOCUS QUESTIONS

- *What is sustainable fishing? What do we mean by a 'sustainable catch'?*

LEARNING OBJECTIVES

- Describe the idea of 'sustainable fishing' and a catch of fish that is a 'sustainable catch'

LOCATION

Indoors

DURATION

45+ minutes

LEVEL

Level 3-5+

CURRICULUM

Science, Social Science, Geography, Tikanga-ā-iwi. Pūtaiao, Hauora

Key competencies: Thinking; Managing Self; Relating to others

NEXT STEPS

This topic:

- Scientists & the Maximum Sustainable Yield (3.2)
- Fisheries Science Aotearoa (3.3)

Other topics:

- Well managed fisheries (5.1)
- Environmental impacts of fishing (4.2)

Prior learning:

- Overfishing (1.2)
- Sustainable fishing (1.4)



MATERIALS

- **Sustainable fishing and sustainable catch** slide set
- Video clips on '[Overfishing](#)' and '[Sustainable Fishing](#)'
- This **Teacher Outline**
- Copies of **Sustainable Fishing Concept Cards** (one per group) (page 6)
- Scissors
- Internet access for film clips and [Kahoot](#)
- Brainstorm template (slide 16) (answers are on slide 17)
- Cloze (fill in the gap) activity (slide 18)
- Copies of **Sustainable Fish Stock Worksheet**
- Paper and something to write with

PROCEDURE

1. WATCH the short film "[What is the MSC and why is certified seafood important](#)" [1:29] (slide 9). Discuss why it might be important to know where your kai moana comes from.
2. BRAINSTORM (use prior knowledge chart) what we already know of sustainable fishing (slide 10)
3. DISCUSS how this topic relates to me! Do I catch and eat fish? Do I know where the fish that I eat come from? Have these fish been caught sustainably? (slide 11).
4. DISCUSS the meaning of the terms sustainable catch and sustainable fishing (slide 11) and the standards the MSC uses to assess whether fisheries are sustainable or not! (slide 12).
5. INVITE a grandparent or kaumātua to visit & talk about how fishing has changed over time and what sustainability measures have been used locally over time to ensure sustainable fishing (Teacher notes slide 11).
6. WATCH the parts of the video clips on '[Overfishing](#)' and '[Sustainable Fishing](#)' (see slide 13 for links) (Each video is approx. 3 minutes).
7. What did you learn? Use the sustainable fishing concept cards (page 6) (NZC Level 3+) to MATCH the correct word to fill the correct gap OR give each learner one card and they have to find the fellow learner who has the match. Have learners write three sentences using as many of the new words as possible OR have them create their own vocab list and write their own definitions to each word.



8. Complete the QUIZ on [Kahoot](#) (MSC Sustainable Fishing Concepts). Put a timer on the activity to make it more fun!
9. DISCUSS how fisheries must meet three principles if they wish to be Marine Stewardship Council certified; the focus of this topic is principle 1 (topics 4 and 5 look at principles 2 &3).
10. WATCH a short film about the [three principles](#) [0:52] (slide 14).
11. WATCH the video clip [Sustainable Fish Stocks](#) [2:34] (slide 15).
12. READ, in pairs the reading provided as part of [Sustainable Fish Stocks Worksheet](#) (NZC Level 4+) and complete the questions on the worksheet (answers are provided at end of worksheet).
13. Use this information to complete the brainstorm chart (slide 16) (answers are on slide 17).
14. In pairs complete the cloze activity (slide 18).
15. DISCUSS any new words or concepts that are not fully understood.
16. INVESTIGATE and deepen the inquiry:
 - i. What do you think about sustainable fishing and the idea of a sustainable catch?
 - ii. Explain the difference between terms sustainable fishing (includes care of entire ecosystem) and sustainable catch (catching a sustainable number of fish so that fishing can continue indefinitely).
 - iii. How do you think attitudes to sustainable fishing have changed over time? Why should we even worry about sustainable fishing?
 - iv. Who's responsibility do you think it is to ensure that fishing is sustainable?
 - v. What would it be like if all fisheries were overfished and unsustainable?
 - vi. What would it be like if all fishing was sustainable?
17. REFLECT: What have we learnt? What more would we like to learn? How could we find this information?

KEY WORDS

Overfishing

Bycatch

Food web

Sustainable catch

Sustainable fishing

Ecosystem

Maximum Sustainable Yield

Scientists

Science

Reproduce



CURRICULUM LINKS

Nature of Science (Level 3-5)

- Understanding about science
- Investigating in science
- Communicating in Science
- Participating and Contributing

Living World (Level 3-5)

- Ecology

Science (Level 6+)

- Participating and Contributing
- Ecology

Social Science (Level 3-5)

- Understand how people make decisions about access to and use of resources (Level 3)
- Understand how exploration and innovation create opportunities and challenges for people, places and environments (Level 4)
- Understand how people's management of resources impacts on environmental and social sustainability (Level 5)

Geography (Level 6, 7, 8)

Relevant achievement standards related to:

- Geographic research
- Geographic issue of a global scale
- New Zealand contemporary issue
- Geographic concept: Sustainability

Tikanga-ā-iwi (Level 3-5)

- *Kotahi tonu te matua o te tangata Māori, ko Ranginui e tū nei, ko Papa-tū-ā-nuku e takoto nei.* Place and Environment
- *E tama, e hine, tangata i ākona ki te whare, tū ana ki te marae, tau ana.* The Changing World



- *E kore e ngaoko te rākau ki te tīkina i te pūtake whakangaoko ai engari, me tiki ki te matamata.* The Economic World

Pūtaiao

- The Natural World: The Biological Environment: Investigate the effect of human actions, and natural processes, on an Aotearoa ecosystem (Level 6)

Hauora

- Place and Environment: Explain how exploration presents opportunities and challenges for people, places, and environments (Level 4)

EXTENDING

1. ACT it out! Allocate each group one concept card and have them act it out. Other groups watch and try and guess which concept they are acting. Give them a role ... You are a fisherperson.. You are a fish.. You are a fish seller.. You are a fish consumer...
2. CREATE your own set of cards using [Quizlet](#).
3. RESEARCH the facts or concepts presented on one card further and present back to the class as a presentation, scientific poster, role play or online presentation using [Piktochart](#) or similar.



SUSTAINABLE FISHING CONCEPT CARDS



Overfishing

_____ is when a species of fish are fished too much and begin to decline

Overfished



Almost a third of global fish are _____



Bycatch



The term _____ is used when fishing boats accidentally catch fish and animals that they don't really want or shouldn't take



Foodweb

All sea life are connected in a _____ of prey and predator, each relying on the other to survive



Reproduce

Sustainable fishing is fishing in a responsible way making sure fish numbers do not drop below levels where they cannot _____ and grow faster than they are caught



Sustainable

_____ fishing also means making sure that fishing does not damage sea life and sea environments



**Ecosystem
[or wider environment]**

Information useful in determining if fishing is sustainable includes knowing the role of a fish in its _____ and when the fish will be most plentiful.

**Maximum Sustainable
Yield**



The _____ is scientific calculation that tells fishers how many fish they can catch without over fishing.



Maximum Sustainable Yield

To calculate the _____ fishers work with scientists to understand how a fishery population grows and shrinks over time. And how this is controlled by births, deaths, migrations in & out of fishery.

Bycatch



One way to reduce _____ is finding a time and place to catch only the fish that you want.



Seabirds

Bycatch [accidental catch] can be reduced in some fisheries by using bright coloured flags on fishing lines to scare _____ away



Nets

In other fisheries bycatch [accidental catch] has been reduced by using specially designed _____ that ensure smaller fish and sea creatures can escape