



Teachers notes

Can we run out of fish?

Background information

Fish are an enormously important renewable natural resource, providing the principal source of protein for approximately 1 billion people. Fifty per cent of the world's population lives within 100 kilometres off the coast and in Australia 75% lives within 50 kilometres. For this reason the oceans play a significant role in the lives of most people, providing food, income through fisheries and associated industries, and recreation. In Australia fisheries and agriculture make up \$1.8 billion of the Gross National Product.

The oceans have long been seen as an endless supply of fish and other products. Covering 71% of the planet and containing 80% of the world's life forms, surely the chances of depleting resources must be impossible. But, unfortunately, the impossible has happened.

Currently, 15 out of the world's 17 largest fisheries are either over-fished or in trouble. In fact, nearly 70% of our major marine fish stocks are over-fished or at their biological limit. Of major continuing concern is the huge number of marine creatures that are killed for nothing—as the by-catch of non-target species. This can be up to 50% of the catch and not only includes other fish species, but crustaceans, molluscs, birds and even mammals such as dolphins.

The major causes for the decline include over-harvesting and the destruction and pollution of fish breeding grounds. Correct management of this natural resource obviously includes the retention of clean breeding grounds, but the control of over-harvesting is a complex problem. Most people in the fishing industry want a sustainable industry and are striving towards solutions which include international fishing treaties/agreements on quantities, times when fishing is permitted (allowing for regeneration of stocks) and regulating types of machinery used (e.g. moves to reduce by-product catch and decrease the destruction of ocean beds by reducing/eliminating trawling).

Fortunately, all legislative changes which regulate fisheries around the world are moving towards solutions in sustainability, and thereby protecting not only this wonderful natural resource but also the livelihood of people in the industry.

Discussion points

- Explain what is meant by over-harvesting and habitat destruction. Are these problems shared by other renewable resources? Give examples.
- What do you think happens to fishing by-product?
- Suggest how the fishing industry could endeavour to manage its resources.

Websites

www.kidsnet.org/seaweb

www.seaweb.org

www.abc.net.au/oceans/alive.htm
(Australian site)

www.aquanet.com

Indicator

- Reads and understands informational text about sustaining renewable resources.

Outcome links

National	NSW	Vic.	WA	Qld	SA
3.5, 3.6, 3.7, 3.8a, 4.5, 4.7, 4.8a	RS3.5, RS3.6, RS3.8	ENRE0301, ENRE0302, ENRE0304, ENRE0307, ENRE0308	R3.1, R3.3, R3.4, R4.1, R4.3, R4.4	*	3.1, 3.3, 3.7, 3.11, 3.12

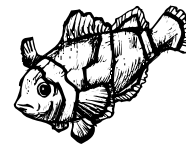
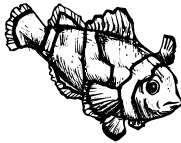


Can we run out of fish?

Fish provide food and income for people in many countries around the world. Because fish reproduce rapidly and the oceans are so large, fish are a wonderful renewable resource.

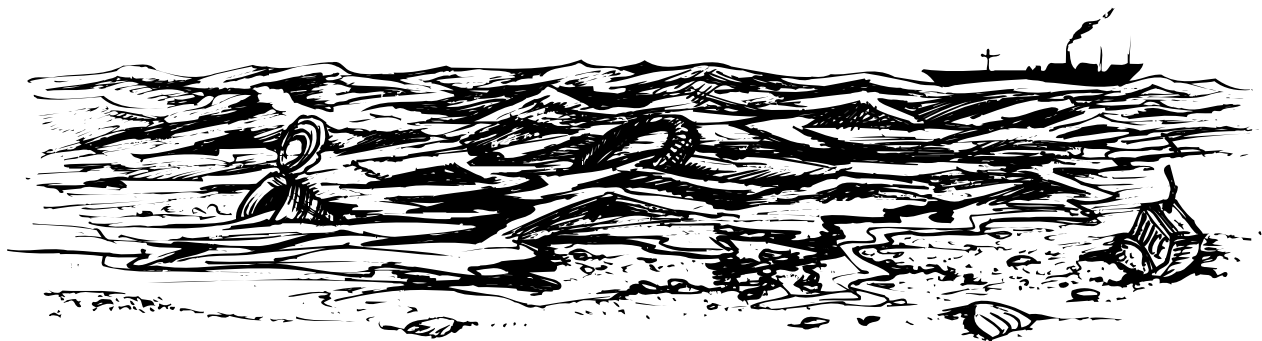
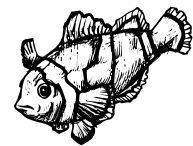
But, is it possible that a renewable resource could be damaged so badly that it runs out? The answer is yes, and that is exactly what is happening with fish. There is a decline of about one-third of the catch of major commercial fish. This is the result of two main problems:

1. Over-harvesting—when more fish are taken than can be reproduced.
2. Habitat destruction and pollution of coastal wetlands, sea grasses and coral reefs which provide breeding grounds for about two-thirds of the world's fish.



So when we are thinking about taking resources from the environment to meet our needs, we need to be careful about what we are doing. We have to consider the correct management of renewable resources to ensure that we do not damage that resource in some way. This should never be the case with things like solar power (because the sun doesn't run out) and wind power (because there will always be wind), but it can affect other renewable resources such as timber needed to build houses.

Certainly the poor management of fish harvesting around the world is a good example of why we must quickly improve the way we look after our renewable resources. It doesn't just mean reducing the amount of fish we catch, but also the way we treat the whole of the Earth's environment.





Answers

1. (a) and (c)

S	C	A	V	L	H	E	U	Y	K	D
N	O	I	R	H	A	B	I	T	A	T
T	U	L	F	M	R	R	N	Q	L	M
E	N	E	A	S	Y	E	C	U	A	A
D	T	N	Z	R	E	E	O	X	I	N
E	R	I	T	E	S	D	M	T	C	A
G	L	S	D	T	I	E	N	R	G	
A	E	C	G	I	N	H	P	E	E	
M	S	E	N	V	N	G	O	W	M	M
A	I	D	N	O	G	A	J	C	M	E
D	E	S	T	R	U	C	T	I	O	N
B	O	R	A	P	I	D	L	Y	C	T

- (b) (i) decline—fall, gradual loss
(ii) commercial—for financial return rather than artistry
(iii) harvesting—reaping or gathering in of grain or other product
- (c) (i) over-harvesting (ii) habitat destruction
2. (a) There has been a decline of about one-third of the catch of major commercial fish.
(b) Answers will vary
(c) Fish and timber are potentially renewable resources—they will only be renewable if carefully monitored. The sun and the wind are renewable and cannot be affected by the activities of humans.
(d) Answers will vary

Indicators

- Identifies and understands the meaning of new words.
- Extracts relevant information about sustaining renewable resources.

Outcome Links

National	NSW	Vic.	WA	Old	SA
3.5, 3.6, 3.7, 3.8a, 4.5, 4.7, 4.8a	RS3.5, RS3.6, RS3.8	ENRE0301, ENRE0302, ENRE0304, ENRE0305, ENRE0306, ENRE0307, ENRE0308	R3.1, R3.3, R3.4, R4.1, R4.3, R4.4	*	3.1, 3.3, 3.7, 3.11, 3.12

* Refer to curriculum documents on <http://www.qscq.edu.au>



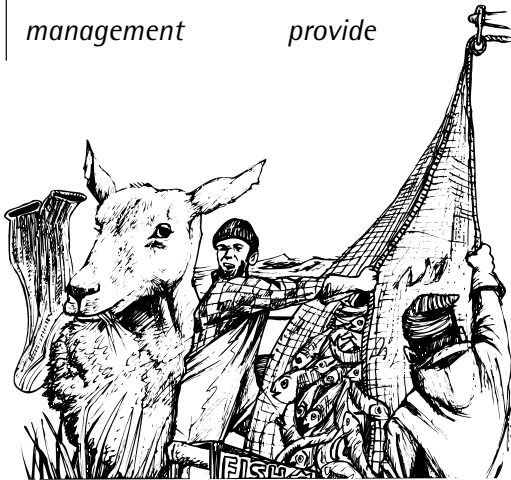
Can we run out of fish?

1. Complete these activities.

(a) Find each new word in the puzzle.

New words

- | | |
|-------------------|-------------------|
| <i>income</i> | <i>countries</i> |
| <i>rapidly</i> | <i>damaged</i> |
| <i>decline</i> | <i>commercial</i> |
| <i>breeding</i> | <i>solar</i> |
| <i>management</i> | <i>provide</i> |



S	C	A	V	L	H	E	U	Y	K	D
N	O	I	R	H	A	B	I	T	A	T
T	U	L	F	M	R	R	N	Q	L	M
E	N	E	A	S	V	E	C	U	A	A
D	T	N	Z	R	E	E	O	X	I	N
E	R	I	T	E	S	D	M	T	C	A
G	I	L	S	D	T	I	E	N	R	G
A	E	C	G	I	I	N	H	P	E	E
M	S	E	N	V	N	G	O	W	M	M
A	I	D	N	O	G	A	J	C	M	E
D	E	S	T	R	U	C	T	I	O	N
B	O	R	A	P	I	D	L	Y	C	T

(b) Write meanings for these words. Use a dictionary to help you.

(i) decline _____

(ii) commercial _____

(iii) harvest _____

(c) There are three extra words hidden in the puzzle which are reasons why there has been a decline in the number of fish in our oceans. Can you find them?

(i) over-_____

(ii) h_____

d_____

2. Answer these questions.

(a) How much of a decline in the catch of major commercial fish has there been?

(b) Name another renewable resource which may be threatened.

(c) How are the renewable resources of the sun and wind different from the renewable resources of fish and timber?

(d) How do you think the decline in fish could be reversed?

