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Climate change threatens fish populations

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19 November, 2005

THE ARTICLE

Climate change threatens fish populations

A new report from the World Wildlife Fund (WWF) reveals that fish populations are under increasing threat from global warming. The report "Are we putting our fish in hot water?" describes how climate change is causing temperatures to rise in rivers, lakes and seas. This means less food and oxygen for marine life, stunted fish growth and fewer offspring. The report says that temperate fish such as salmon, catfish and sturgeon cannot spawn if winter temperatures do not drop below a certain level. Warmer water also means fish could mass migrate to cooler areas, where the temperature resembles their normal habitat. This could impact on many species' ability to survive. Some species will become extinct if the water temperature rises by a degree or two.

WWF director Andrew Lee said: "Climate change increases the pressure on fish populations that are already strained to the limit by over-fishing in the marine environment. We must act urgently to reduce both carbon dioxide emissions and fishing pressures to protect fish populations as they are one of the world's most valuable biological, nutritional and economic assets." Forty percent of the world's people are reliant on fish for basic sustenance and a main source of protein. Dr Richard Dixon, director of WWF Scotland spoke ahead of next week's UN Climate Change Conference in Montreal. He said: "If we fail to secure deeper reductions in greenhouse gas emissions we will increase the pressures on fish and the billions of people that depend on them."

Source: http://www.wwf.org.uk/filelibrary/pdf/int_hotfish_ma.pdf

WARM-UPS

1. I'M A FISH: You are now a fish. Spend one minute thinking about your life as a fish. Walk around the class and talk to the other "fish" about being a fish. What do you do all day? What do you worry about? What are your plans for the weekend? What do you think about global warming and hotter water?

2. EXTINCTION: If climate change continues to make the world warmer, many species will become extinct. How would your life change if the following creatures disappeared? How would their disappearance affect the world?

- Shellfish
- Frogs
- Sea fish
- Dogs
- Elephants
- Chickens
- Ants
- Pigs

3. CHAT: In pairs / groups, decide which of these topics or words are most interesting and which are most boring.

WWF / fish / hot water / temperatures / rivers / lakes / seas / oxygen / salmon / natural habitat / fishing / economic assets / protein / Scotland / greenhouse gases

Have a chat about the topics you liked. For more conversation, change topics and partners frequently.

4. FISH: Spend one minute writing down all of the different words you associate with fish. Share your words with your partner(s) and talk about them. Together, put the words into different categories.

5. FISH CHAT: Student A is a fish. Student B is a fisherman/woman. Role play a conversation between the two. Change partners often. Students A may also talk with each other and "compare notes". Students B may do likewise.

6. FISHY OPINIONS: Do you agree with these opinions on fish and fishing? Talk about them with your partner(s).

- a. Humans will become extinct if fish become extinct.
- b. Fish will never disappear. There'll always be enough to feed the world.
- c. Reports and conferences will not change government actions to help fish.
- d. Most people think fish will somehow survive and the problem will disappear.
- e. The USA Government is acting criminally in not cutting CO2 emissions.
- f. In many ways, people are the same as fish.
- g. Hobby fishing should be banned to help protect fish populations.
- h. The fishing industry will find new ways to breed endangered fish.

7. FISH JOKE: What do you call a fish with no 'eyes'? (See "Answers" section to find out.)

BEFORE READING / LISTENING

1. TRUE / FALSE: Look at the article's headline and guess whether these sentences are true (T) or false (F):

- | | |
|--|-------|
| a. A new report says global warming will kill all fish within ten years. | T / F |
| b. A WWF report recommends putting fish in hot water. | T / F |
| c. Salmon cannot spawn if winter temperatures do not drop sufficiently. | T / F |
| d. A two-degree rise in temperature will make some species extinct. | T / F |
| e. A WWF director said over-fishing is not a problem. | T / F |
| f. The director said fish are valuable economic investments. | T / F |
| g. Nearly 14 percent of people depend on fish for basic sustenance. | T / F |
| h. Billions of people will suffer if greater pressure is put on fish. | T / F |

2. SYNONYM MATCH: Match the following synonyms from the article:

- | | |
|---------------|----------------|
| a. hot water | history |
| b. offspring | discharges |
| c. spawn | nourishment |
| d. resembles | young |
| e. extinct | dependent |
| f. strained | corresponds to |
| g. emissions | trouble |
| h. reliant | stretched |
| i. sustenance | achieve |
| j. secure | reproduce |

3. PHRASE MATCH: Match the following phrases from the article (sometimes more than one combination is possible):

- | | |
|---|--------------------------------------|
| a. under increasing | winter temperatures do not drop |
| b. stunted fish | migrate to cooler areas |
| c. catfish and sturgeon cannot spawn if | in greenhouse gas emissions |
| d. fish could mass | on fish for basic sustenance |
| e. species will become extinct | threat from global warming |
| f. fish populations that are already | of people that depend on them |
| g. act urgently to reduce both | strained to the limit |
| h. people are reliant | growth |
| i. fail to secure deeper reductions | carbon dioxide emissions and fishing |
| j. pressures on fish and the billions | if the water temperature rises |

WHILE READING / LISTENING

GAP FILL: Put the words in the column on the right into the gaps in the text.

Climate change threatens fish populations

A new report from the World Wildlife Fund (WWF) _____ that fish populations are under increasing threat from global warming. The report "Are we putting our fish in hot water?" describes how climate change is _____ temperatures to rise in rivers, lakes and seas. This means less food and _____ for marine life, _____ fish growth and fewer offspring. The report says that temperate fish such as salmon, catfish and sturgeon cannot spawn if winter temperatures do not _____ below a certain level. Warmer water also means fish could mass _____ to cooler areas, where the temperature resembles their normal _____. This could impact on many species' ability to survive. Some species will become extinct if the water temperature rises by a _____ or two.

causing
degree
reveals
drop
stunted
habitat
oxygen
migrate

WWF director Andrew Lee said: "Climate change increases the pressure on fish populations that are already strained to the _____ by over-fishing in the marine environment. We must _____ urgently to reduce both carbon dioxide emissions and fishing pressures to protect fish populations as they are one of the world's most valuable biological, _____ and economic assets." Forty percent of the world's people are _____ on fish for basic sustenance and a _____ source of protein. Dr Richard Dixon, director of WWF Scotland spoke _____ of next week's UN Climate Change Conference in Montreal. He said: "If we _____ to secure deeper reductions in greenhouse gas emissions we will _____ the pressures on fish and the billions of people that depend on them."

reliant
limit
ahead
nutritional
increase
main
fail
act

LISTENING

Listen and fill in the spaces.

Climate change threatens fish populations

A new report from the World Wildlife Fund (WWF) _____ that fish populations are under increasing _____ from global warming. The report "Are we putting our fish in hot water?" describes how climate change is causing temperatures to rise in rivers, lakes and seas. This means less food and oxygen for marine life, _____ fish growth and fewer _____. The report says that temperate fish such as salmon, catfish and sturgeon cannot _____ if winter temperatures do not drop below a certain level. Warmer water also means fish could mass _____ to cooler areas, where the temperature resembles their normal habitat. This could _____ on many species' ability to survive. Some species will become _____ if the water temperature rises by a degree or two.

WWF director Andrew Lee said: "Climate change increases the pressure on fish populations that are already _____ to the _____ by over-fishing in the _____ environment. We must act urgently to reduce both carbon dioxide emissions and fishing pressures to protect fish populations as they are one of the world's most _____ biological, nutritional and economic assets." Forty percent of the world's people are _____ on fish for basic sustenance and a main source of protein. Dr Richard Dixon, director of WWF Scotland spoke ahead of next week's UN Climate Change Conference in Montreal. He said: "If we fail to _____ deeper reductions in greenhouse gas emissions we will increase the pressures on fish and the billions of people that _____ them."

AFTER READING / LISTENING

1. WORD SEARCH: Look in your dictionaries / computer to find collocates, other meanings, information, synonyms ... for the words **'hot'** and **'water'**.

- Share your findings with your partners.
- Make questions using the words you found.
- Ask your partner / group your questions.

2. ARTICLE QUESTIONS: Look back at the article and write down some questions you would like to ask the class about the text.

- Share your questions with other classmates / groups.
- Ask your partner / group your questions.

3. GAP FILL: In pairs / groups, compare your answers to this exercise. Check your answers. Talk about the words from the gap fill. Were they new, interesting, worth learning...?

4. VOCABULARY: Circle any words you do not understand. In groups, pool unknown words and use dictionaries to find their meanings.

5. STUDENT "GLOBAL WARMING" SURVEY: In pairs / groups, write down questions about global warming and fish.

- Ask other classmates your questions and note down their answers.
- Go back to your original partner / group and compare your findings.
- Make mini-presentations to other groups on your findings.

6. TEST EACH OTHER: Look at the words below. With your partner, try to recall exactly how these were used in the text:

- reveals
- hot
- growth
- spawn
- mass
- ability
- pressure
- act
- assets
- reliant
- ahead
- secure

DISCUSSION

STUDENT A's QUESTIONS (Do not show these to student B)

- a. Did the headline make you want to read the article?
- b. What do you think about fish populations being in danger of extinction?
- c. Is it just fish that are in hot water because of climate change?
- d. How much attention do you pay to new reports on climate change?
- e. Do you think fish populations will survive by migrating to cooler waters?
- f. Would temperature change ever make you consider emigrating?
- g. What should governments do about over-fishing?
- h. What would be the environmental impact of a few fish species becoming extinct?
- i. Don't you think people could switch to eating tuna or chicken if all the salmon, catfish and sturgeon disappeared?
- j. When was the last time you were in hot water?

STUDENT B's QUESTIONS (Do not show these to student A)

- a. Did you like reading this article?
- b. What do you think about what you read?
- c. Do you think we still have time to save the fish populations?
- d. How bad would it be if all salmon disappeared from the world?
- e. Do you suffer from "environmental report fatigue"?
- f. What would it mean for the economy of your country if fish populations became decimated or extinct?
- g. Do you think governments are more concerned about losing votes from the fishing industry than losing the fish populations?
- h. George W. Bush thinks scientists will find a way of reducing CO2 emissions and industry can continue polluting. What do you think?
- i. Which do you think is more important, the car industry or the survival of catfish?
- j. Did you like this discussion?

AFTER DISCUSSION: Join another partner / group and tell them what you talked about.

- a. What was the most interesting thing you heard?
- b. Was there a question you didn't like?
- c. Was there something you totally disagreed with?
- d. What did you like talking about?
- e. Which was the most difficult question?

SPEAKING

FISH ROLE PLAY: Should industries reduce pollution levels to help some fish species breathe a little better and have more young?
Team up with classmates who have been assigned the same role to develop your roles and discuss ideas and “strategies” before the role play begins. Introduce yourself to the other role players.

Role A – MARINE ENVIRONMENTALIST

You believe many fish species are living on borrowed time. If CO2 emissions are not drastically cut soon, many fish species will quickly become extinct. This may soon be irreversible. Such changes in the marine environment will be catastrophic for humans. Science will not be able to replace the food caused by the death of the oceans and rivers.

THINK OF MORE REASONS WHY CO2 SHOULD BE CUT TO HELP FISH.

Role B – CAR COMPANY EXECUTIVE

You are fed up with environmentalists telling us the world will die. Millions of species have died over the years. It’s called evolution. Most fish populations will migrate to where they can breed. Fish are not stupid. To cut CO2 emissions means harming industries, which provide incomes and food to millions of families.

THINK OF MORE REASONS WHY FISH WILL BE OK.

Role C – FISHERMAN

You are not worried about your livelihood. You have seen no change in the number of fish you catch each year. There will always be plenty of fish. The oceans are too big to be affected by global warming. You think scientists produce reports just to become famous. You do think CO2 should be cut.

THINK OF MORE REASONS WHY FISH WILL BE OK.

Role D – A FISH

You are Chief Fish Officer of the South Atlantic Fish Against Global Warming Society. You know things are getting serious. Icebergs are melting, rivers are drying up, millions of your cousins have disappeared because of over-fishing. You heard it is because of humans’ stupidity and greed. Let the humans know what is really happening in the oceans and rivers.

THINK OF MORE REASONS WHY CO2 SHOULD BE CUT TO HELP YOU.

Change roles and repeat the role play. Comment in groups about the differences between the two role plays.

Discuss what should be done about saving fish populations.

HOMEWORK

1. VOCABULARY EXTENSION: Choose several of the words from the text. Use a dictionary or Google's search field (or another search engine) to build up more associations / collocations of each word.

2. INTERNET: Search the Internet and find more information on the WWF report. Share your findings with your class in the next lesson. Did you all find out similar things?

3. RESPONSIBILITIES: Who is responsible for saving the fish populations? Write down a few of the responsibilities of the following people:

- George W. Bush
- The CEO of a worldwide supermarket chain
- You
- The boss of a fishing union
- The CEO of General Motors
- The owner of a sushi restaurant.

Explain what you wrote to your classmates in your next lesson. Did you all write about similar things?

4. LETTER: You are a fish. Write a letter to the organizers of the UN Climate Change Conference. Tell them about how global warming is changing your environment. What should they do to help save fish populations and the whole world? Show what you wrote to your classmates in the next lesson. Did you all write about similar things?

ANSWERS

FISH JOKE:

fsh

TRUE / FALSE:

a. F b. F c. T d. T e. F f. F g. F h. T

SYNONYM MATCH:

a. hot water	trouble
b. offspring	young
c. spawn	reproduce
d. resembles	corresponds to
e. extinct	history
f. strained	stretched
g. emissions	discharges
h. reliant	dependent
i. sustenance	nourishment
j. secure	achieve

PHRASE MATCH:

a. under increasing	threat from global warming
b. stunted fish	growth
c. catfish and sturgeon cannot spawn if	winter temperatures do not drop
d. fish could mass	migrate to cooler areas
e. species will become extinct	if the water temperature rises
f. fish populations that are already	strained to the limit
g. act urgently to reduce both	carbon dioxide emissions and fishing
h. people are reliant	on fish for basic sustenance
i. fail to secure deeper reductions	in greenhouse gas emissions
j. pressures on fish and the billions	of people that depend on them

GAP FILL:

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A new report from the World Wildlife Fund (WWF) **reveals** that fish populations are under increasing threat from global warming. The report "Are we putting our fish in hot water?" describes how climate change is **causing** temperatures to rise in rivers, lakes and seas. This means less food and **oxygen** for marine life, **stunted** fish growth and fewer offspring. The report says that temperate fish such as salmon, catfish and sturgeon cannot spawn if winter temperatures do not **drop** below a certain level. Warmer water also means fish could mass **migrate** to cooler areas, where the temperature resembles their normal **habitat**. This could impact on many species' ability to survive. Some species will become extinct if the water temperature rises by a **degree** or two.

WWF director Andrew Lee said: "Climate change increases the pressure on fish populations that are already strained to the **limit** by over-fishing in the marine environment. We must **act** urgently to reduce both carbon dioxide emissions and fishing pressures to protect fish populations as they are one of the world's most valuable biological, **nutritional** and economic assets." Forty percent of the world's people are **reliant** on fish for basic sustenance and a **main** source of protein. Dr Richard Dixon, director of WWF Scotland spoke **ahead** of next week's UN Climate Change Conference in Montreal. He said: "If we **fail** to secure deeper reductions in greenhouse gas emissions we will **increase** the pressures on fish and the billions of people that depend on them."