

Humans causing big shifts in freshwater locations

20th May, 2018



The USA's space agency NASA has confirmed that human activity is responsible for a massive redistribution of freshwater across Earth. It

said the redistribution is continuing as populations shift and demand for food increases. In particular, equatorial regions were drying, while tropical areas and higher latitudes were gaining water supplies. NASA warned that if this trend continued, many highly populated urban areas could struggle to find sufficient water in the future. NASA's claims are the result of a 14-year study into shifting locations and depleting resources of freshwater. It was part of a mission conducted between 2002-2016 called GRACE, which is an acronym for Gravity Recovery and Climate Experiment.

Researchers say that the shifting freshwater patterns are the result of human activity. Jay Famiglietti, a co-author of the research and the Senior Water Scientist at NASA's Jet Propulsion Laboratory, said: "The study shows that humans have really drastically altered the global water landscape in a very profound way." He warned that: "The human fingerprint is all over changing freshwater availability. We see it in large-scale overuse of groundwater. We see it as a driver of climate change." Professor Famiglietti said at least 40 per cent of the 34 hot areas examined in the research were drier than two decades ago because of human activity, especially excessive groundwater pumping for farming.

Sources: washingtonpost.com / weather.com / nasa.gov

Writing

What are the chances of water wars in the future? How can we stop them?

Chat

Talk about these words from the article.

space / agency / responsible / massive / equator / tropical / urban / resources / water / patterns human / activity / research / profound / fingerprint / availability / farming

True / False

- a) NASA conducted research into Earth's shifting water resources. T / F
- b) The tropics are becoming drier because of climate change. T / F
- c) No urban areas will have a problem getting water supplies. T / F
- d) GRACE means Gravity Recovery and Climate Experiment. T / F
- e) An author of the research works at a jet propulsion lab. T / F
- f) An author said our fingerprints have changed water distribution. T / F
- g) Over 40% of hot areas tested were drier than they were 20 years ago. T / F
- h) Farmers have not been pumping up too much groundwater. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|-----------------------|---------------------|
| 1. confirmed | a. far-reaching |
| 2. massive | b. move |
| 3. shift | c. consequence |
| 4. trend | d. disproportionate |
| 5. depleting | e. enormous |
| 6. result | f. extensive |
| 7. drastically | g. movement |
| 8. profound | h. verified |
| 9. large-scale | i. seriously |
| 10. excessive | j. exhausting |

Discussion – Student A

- a) Do you take having freshwater for granted?
- b) What do you think of having to buy water?
- c) What would you do if water was scarcer?
- d) How can we use less water?
- e) Who or what should use much less water?
- f) What will happen to populated areas without water?
- g) Why do we need so much water?
- h) How fresh is the water in your area?

BreakingNewsEnglish - The Mini Lesson

Phrase Match

1. NASA has confirmed that human activity
 2. a massive redistribution
 3. equatorial
 4. tropical areas
 5. many highly
 6. drastically
 7. in a very profound
 8. the human
 9. We see it as a driver
 10. excessive groundwater pumping
- a. regions
 - b. fingerprint
 - c. of climate change
 - d. populated urban areas
 - e. way
 - f. is responsible
 - g. for farming
 - h. of freshwater
 - i. altered
 - j. and higher latitudes

Discussion – Student B

- a) What do you think about what you read?
- b) Should humans change all activity to conserve water?
- c) How have humans "drastically altered the global water landscape"?
- d) Should there be a big tax on water use?
- e) What do you think of the taste of freshwater?
- f) What do you think of bottled water?
- g) What three adjectives best describe water?
- h) What questions would you like to ask the scientists?

Spelling

1. responsible for a ssmeavi redistribution
2. aqertloiau regions were drying
3. struggle to find efsfcinitu water
4. shifting locations and pnleegidt resources
5. It was part of a mniiisos conducted between 2002-2016
6. called GRACE, which is an royncma
7. shifting freshwater tertpsan
8. really rlalytcdias altered
9. in a very ourfnpd way
10. large-scale uerosev of groundwater
11. drier than two ededsac ago
12. especially exesveisc groundwater pumping

Answers – Synonym Match

1. h	2. e	3. b	4. g	5. j
6. c	7. i	8. a	9. f	10. d

Role Play

Role A – Homeowners

You think homeowners have the biggest responsibility to conserve water. Tell the others three reasons why. Tell them why their things don't have to conserve water. Also, tell the others which is the least damaging of these (and why): golf courses, farmers or car washes.

Role B – Gold Courses

You think golf courses have the biggest responsibility to conserve water. Tell the others three reasons why. Tell them why their things don't have to conserve water. Also, tell the others which is the least damaging of these (and why): homeowners, farmers or car washes.

Role C – Farmers

You think farmers have the biggest responsibility to conserve water. Tell the others three reasons why. Tell them why their things don't have to conserve water. Also, tell the others which is the least damaging of these (and why): golf courses, homeowners or car washes.

Role D – Car Washes

You think car washes have the biggest responsibility to conserve water. Tell the others three reasons why. Tell them why their things don't have to conserve water. Also, tell the others which is the least damaging of these (and why): golf courses, farmers or homeowners.

Speaking – Conservation

Rank these with your partner. Put what/who should conserve water most at the top. Change partners often and share your rankings.

- Farmers
- Water parks
- Car washes
- City fountains
- Parks
- Homeowners
- Industry
- Golf courses

Answers – True False

a	T	b	F	c	F	d	T	e	T	f	F	g	T	h	F
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Answers to Phrase Match and Spelling are in the text.