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Level 6

Humans causing big shifts in freshwater locations

20th May, 2018

<https://breakingnewsenglish.com/1805/180520-freshwater.html>

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Please try Levels 4 and 5 (they are easier).

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THE ARTICLE

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

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: <https://www.washingtonpost.com/news/energy-environment/wp/2018/05/16/humans-are-causing-massive-changes-in-the-location-of-water-all-over-the-earth-nasa-says/>
<https://weather.com/science/environment/news/2018-05-17-nasa-satellites-human-fingerprint-shifts-global-freshwater>
<https://www.nasa.gov/press-release/nasa-satellites-reveal-major-shifts-in-global-freshwater>

WARM-UPS

1. FRESHWATER: Students walk around the class and talk to other students about freshwater. Change partners often and share your findings.

2. CHAT: In pairs / groups, talk about these topics or words from the article. What will the article say about them? What can you say about these words and your life?

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

Have a chat about the topics you liked. Change topics and partners frequently.

3. WATER WARS: Students A **strongly** believe there will be wars over water in the future; Students B **strongly** believe there won't. Change partners again and talk about your conversations.

4. RESOURCES: Are we in danger of using up Earth's resources? What would happen if we did? What can we do now? Complete this table with your partner(s). Change partners often and share what you wrote.

Resource	In danger?	Why?	Consequences	Solutions
Freshwater				
Oil				
Tuna				
Coal				
Cocoa				
Honey				

5. EARTH: Spend one minute writing down all of the different words you associate with the word "Earth". Share your words with your partner(s) and talk about them. Together, put the words into different categories.

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

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

VOCABULARY MATCHING

Paragraph 1

- | | |
|---------------|---|
| 1. massive | a. Strive to achieve or get something in the face of difficulty or resistance. |
| 2. equatorial | b. Enough; adequate. |
| 3. latitude | c. Very, very, very large. |
| 4. struggle | d. An abbreviation formed from the initial letters of other words and pronounced as a word. |
| 5. sufficient | e. Of, at, or near the equator (the imaginary line that goes round the middle of Earth). |
| 6. depleting | f. A line that goes from north to south on Earth. |
| 7. acronym | g. Using up the supply or resources of something. |

Paragraph 2

- | | |
|----------------|--|
| 8. shifting | h. More than is necessary, normal, or desirable. |
| 9. drastically | i. Changing, especially unpredictably. |
| 10. altered | j. In a way that is likely to have a strong or far-reaching effect. |
| 11. profound | k. The action of using something too much. |
| 12. overuse | l. Very great or intense. |
| 13. driver | m. Changed or caused to change in character or form, typically in a small but important way. |
| 14. excessive | n. Something which causes a particular phenomenon to happen or develop. |

BEFORE READING / LISTENING

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

1. TRUE / FALSE: Read the headline. Guess if a-h below are true (T) or false (F).

- 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**

2. SYNONYM MATCH:

Match the following synonyms. 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 |

3. PHRASE MATCH: (Sometimes more than one choice is possible.)

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

GAP FILL

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

The USA's space agency NASA has (1) _____ that human activity is responsible for a (2) _____ redistribution of freshwater across Earth. It said the redistribution is continuing as populations (3) _____ and demand for food increases. In particular, equatorial regions were drying, while tropical (4) _____ and higher latitudes were gaining water supplies. NASA warned that if this (5) _____ continued, many highly populated urban areas could struggle to find sufficient water in the future. NASA's claims are the (6) _____ of a 14-year study into shifting locations and depleting resources of freshwater. It was part of a (7) _____ conducted between 2002-2016 called GRACE, which is an (8) _____ for Gravity Recovery and Climate Experiment.

shift
mission
trend
confirmed
acronym
areas
massive
result

Researchers say that the shifting freshwater (9) _____ are the result of human activity. Jay Famiglietti, a (10) _____ of the research and the Senior Water Scientist at NASA's Jet Propulsion Laboratory, said: "The study shows that humans have really (11) _____ altered the global water landscape in a very profound way." He warned that: "The human (12) _____ is all over changing freshwater availability. We see it in large-scale (13) _____ of groundwater. We see it as a (14) _____ of climate change." Professor Famiglietti said at least 40 per cent of the 34 hot areas examined in the research were (15) _____ than two decades ago because of human activity, especially excessive groundwater (16) _____ for farming.

co-author
drastically
drier
overuse
pumping
patterns
driver
fingerprint

LISTENING – Guess the answers. Listen to check.

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

- 1) NASA has confirmed that human activity is responsible _____ redistribution
 - a. for a massively
 - b. for a massive
 - c. for a missive
 - d. for a mass sieve
- 2) the redistribution is continuing as populations shift and demand _____
 - a. for food increase
 - b. for food increased
 - c. for food increase is
 - d. for food increases
- 3) equatorial regions were drying, while tropical areas and higher _____ gaining
 - a. plaitudes were
 - b. multitudes were
 - c. attitudes were
 - d. latitudes were
- 4) many highly populated urban areas could struggle to _____ water
 - a. find surf fishing
 - b. find surf-fissure
 - c. find suffer shan't
 - d. find sufficient
- 5) the result of a 14-year study into shifting locations and _____
 - a. depleting resources
 - b. depletion resources
 - c. deplete in resources
 - d. deep pleat in resources
- 6) Researchers say that the shifting freshwater patterns are the _____ activity
 - a. results of humane
 - b. resultant of human
 - c. result of human
 - d. result of humane
- 7) really drastically altered the global water landscape in a very _____
 - a. prefund way
 - b. proof-found way
 - c. prof round way
 - d. profound way
- 8) He warned that: "The human fingerprint is all over changing _____."
 - a. freshwater availability
 - b. freshly water available
 - c. fresher water availability
 - d. refresh water available
- 9) We see it in large-scale overuse of groundwater. We see it as _____ climate change
 - a. add raver of
 - b. a driven off
 - c. a driver of
 - d. add river of
- 10) because of human activity, especially excessive groundwater _____
 - a. pump in for farming
 - b. pump ping for farming
 - c. plumping for farming
 - d. pumping for farming

LISTENING – Listen and fill in the gaps

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

The USA's space agency NASA has confirmed that human activity is responsible (1) _____ redistribution of freshwater across Earth. It said the redistribution is continuing (2) _____ and demand for food increases. In particular, equatorial regions were drying, while tropical areas (3) _____ were gaining water supplies. NASA warned that if this trend continued, many highly populated urban areas could (4) _____ sufficient water in the future. NASA's claims are the result of a 14-year study (5) _____ and depleting resources of freshwater. It was part of a mission conducted between 2002-2016 called GRACE, which (6) _____ for Gravity Recovery and Climate Experiment.

Researchers say that the shifting freshwater (7) _____ result of human activity. Jay Famiglietti, a co-author (8) _____ and the Senior Water Scientist at NASA's Jet Propulsion Laboratory, said: "The study shows that humans have really (9) _____ global water landscape in a very profound way." He warned that: "The human fingerprint is all over changing freshwater availability. We see (10) _____ overuse of groundwater. We see it (11) _____ of climate change." Professor Famiglietti said at least 40 per cent of the 34 hot areas examined in the research were drier than (12) _____ because of human activity, especially excessive groundwater pumping for farming.

COMPREHENSION QUESTIONS

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

1. What is the name of the organization that did the research?
2. Which regions are drying?
3. Which areas are gaining water?
4. How long did the study take?
5. What does GRACE mean?
6. What is Jay Famiglietti's job title?
7. In what way did a professor say humans changed water resources?
8. What did a professor say the overuse of groundwater was a driver of?
9. How many hot areas did the researchers look at?
10. What is responsible for pumping groundwater excessively?

MULTIPLE CHOICE - QUIZ

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

- 1) What is the name of the organization that did the research?
 - a) NUS
 - b) NATO
 - c) NASA
 - d) NAFTA
- 2) Which regions are drying?
 - a) equatorial regions
 - b) Antarctica
 - c) deserts
 - d) the tropics
- 3) Which areas are gaining water?
 - a) Antarctica
 - b) tropical areas
 - c) deserts
 - d) mountainous areas
- 4) How long did the study take?
 - a) 18 months
 - b) 40 years
 - c) 12 years
 - d) 14 years
- 5) What does GRACE mean?
 - a) Gravity Recovery and Climate Error
 - b) Gravity Recovery and CO2 Experiment
 - c) Gravity Recovery and Climate Experiment
 - d) Great Recovery and Climate Experiment
- 6) What is Jay Famiglietti's job title?
 - a) Chief Writer
 - b) Senior Water Scientist
 - c) CEO
 - d) Environmentalist
- 7) In what way did a professor say humans changed water resources?
 - a) in a dangerous way
 - b) in a roundabout way
 - c) in a sly way
 - d) in a profound way
- 8) What did a professor say the overuse of groundwater was a driver of?
 - a) overpopulation
 - b) climate change
 - c) desertification
 - d) growth
- 9) How many hot areas did the researchers look at?
 - a) 32
 - b) 34
 - c) 33
 - d) 35
- 10) What is responsible for pumping groundwater excessively?
 - a) farming
 - b) gold courses
 - c) water parks
 - d) industry

ROLE PLAY

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

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.

AFTER READING / LISTENING

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

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

fresh	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 activity. 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. TEST EACH OTHER: Look at the words below. With your partner, try to recall how they were used in the text:

<ul style="list-style-type: none">• confirmed• continuing• while• areas• 14• called	<ul style="list-style-type: none">• patterns• shows• way• scale• 34• pumping
--	---

FRESHWATER SURVEY

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

Write five GOOD questions about freshwater in the table. Do this in pairs. Each student must write the questions on his / her own paper.

When you have finished, interview other students. Write down their answers.

	STUDENT 1 _____	STUDENT 2 _____	STUDENT 3 _____
Q.1.			
Q.2.			
Q.3.			
Q.4.			
Q.5.			

- Now return to your original partner and share and talk about what you found out. Change partners often.
- Make mini-presentations to other groups on your findings.

FRESHWATER DISCUSSION

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

1. What did you think when you read the headline?
2. What images are in your mind when you hear the word 'fresh'?
3. Do you take having freshwater for granted?
4. What do you think of having to buy water?
5. What would you do if water was scarcer?
6. How can we use less water?
7. Who or what should use much less water?
8. What will happen to populated areas without water?
9. Why do we need so much water?
10. How fresh is the water in your area?

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FRESHWATER DISCUSSION

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

11. Did you like reading this article? Why/not?
12. What do you think of when you hear the word 'water'?
13. What do you think about what you read?
14. Should humans change all activity to conserve water?
15. How have humans "drastically altered the global water landscape"?
16. Should there be a big tax on water use?
17. What do you think of the taste of freshwater?
18. What do you think of bottled water?
19. What three adjectives best describe water?
20. What questions would you like to ask the scientists?

DISCUSSION (Write your own questions)

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

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____

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DISCUSSION (Write your own questions)

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

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____

LANGUAGE - CLOZE

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

The USA's space agency NASA has (1) _____ that human activity is responsible for a massive redistribution of freshwater across Earth. It said the redistribution is continuing as populations (2) _____ and demand for food increases. In particular, equatorial regions were drying, while (3) _____ areas and higher latitudes were gaining water supplies. NASA warned that if this trend continued, many highly populated (4) _____ areas could struggle to find sufficient water in the future. NASA's claims are the result of a 14-year study (5) _____ shifting locations and depleting resources of freshwater. It was part of a mission conducted between 2002-2016 called GRACE, which is an (6) _____ for Gravity Recovery and Climate Experiment.

Researchers say that the shifting freshwater (7) _____ 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 (8) _____ altered the global water landscape in a very profound way." He warned that: "The human (9) _____ is all over changing freshwater availability. We see it in large-scale overuse of groundwater. We see it as a (10) _____ of climate change." Professor Famiglietti said at (11) _____ 40 per cent of the 34 hot areas examined in the research were drier than two decades ago because of human activity, especially (12) _____ groundwater pumping for farming.

Put the correct words from the table below in the above article.

- | | | | | |
|-----|-----------------|-----------------|-----------------|-----------------|
| 1. | (a) confirmed | (b) conformed | (c) confined | (d) confounded |
| 2. | (a) shaft | (b) sieve | (c) shift | (d) sift |
| 3. | (a) topical | (b) typical | (c) tropical | (d) tapioca |
| 4. | (a) urbane | (b) suburban | (c) blurb | (d) urban |
| 5. | (a) onto | (b) unto | (c) into | (d) as to |
| 6. | (a) unison | (b) acronym | (c) affair | (d) impotent |
| 7. | (a) mosaics | (b) patterns | (c) templates | (d) designs |
| 8. | (a) caustically | (b) drastically | (c) plastically | (d) elastically |
| 9. | (a) newsprint | (b) blueprint | (c) fingerprint | (d) hoofprint |
| 10. | (a) devil | (b) diver | (c) deliver | (d) driver |
| 11. | (a) lust | (b) last | (c) lest | (d) least |
| 12. | (a) exultant | (b) exemplary | (c) expressive | (d) excessive |

SPELLING

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

Paragraph 1

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 mniisos conducted between 2002-2016
6. called GRACE, which is an royncma

Paragraph 2

7. shifting freshwater tertpsan
8. really rlalytcdias altered
9. in a very oourfnpd way
10. large-scale uerosev of groundwater
11. drier than two ededsac ago
12. especially exesveisc groundwater pumping

PUT THE TEXT BACK TOGETHER

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

Number these lines in the correct order.

- () supplies. NASA warned that if this trend continued, many highly populated urban
- () of freshwater across Earth. It said the redistribution is continuing as populations shift and demand for food
- () scale overuse of groundwater. We see it as a driver of climate change." Professor Famiglietti said at
- () conducted between 2002-2016 called GRACE, which is an acronym for Gravity Recovery and Climate Experiment.
- () 14-year study into shifting locations and depleting resources of freshwater. It was part of a mission
- () way." He warned that: "The human fingerprint is all over changing freshwater availability. We see it in large-
- (**1**) The USA's space agency NASA has confirmed that human activity is responsible for a massive redistribution
- () Researchers say that the shifting freshwater patterns are the result of human activity. Jay Famiglietti, a co-author of the
- () shows that humans have really drastically altered the global water landscape in a very profound
- () 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.
- () research and the Senior Water Scientist at NASA's Jet Propulsion Laboratory, said: "The study
- () areas could struggle to find sufficient water in the future. NASA's claims are the result of a
- () increases. In particular, equatorial regions were drying, while tropical areas and higher latitudes were gaining water

PUT THE WORDS IN THE RIGHT ORDER

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

1. confirmed activity has NASA human is that responsible .
2. massive redistribution of A Earth . freshwater across
3. Tropical latitudes gaining water . higher and areas were
4. populated could Many struggle . areas highly urban
5. part It mission a between was 2002-2016 conducted of
6. water Humans have drastically altered global the landscape .
7. all fingerprint is changing The human over availability .
8. of We large-scale in see groundwater . it overuse
9. were examined decades ago . drier Areas two than
10. for Especially groundwater farming . excessive pumping

CIRCLE THE CORRECT WORD (20 PAIRS)

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

The USA's space agency NASA has *conformed* / *confirmed* that human activity is responsible for a *missive* / *massive* redistribution of freshwater across Earth. It said the redistribution is *continuing* / *continuance* as populations shift and demand for food increases. In *particular* / *peculiar*, equatorial regions were drying, while *topical* / *tropical* areas and higher latitudes were gaining water supplies. NASA *warmed* / *warned* that if this trend continued, many highly populated *urbane* / *urban* areas could struggle to find sufficient water *in* / *on* the future. NASA's claims are the result of a 14-year study into shifting *locations* / *locale* and depleting resources of freshwater. It was part of a mission conducted between 2002-2016 called GRACE, *which* / *what* is an acronym for Gravity Recovery and Climate Experiment.

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

Talk about the connection between each pair of words in italics, and why the correct word is correct.

INSERT THE VOWELS (a, e, i, o, u)

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

T h_ U S A ' s s p_c_ _g_n c y N A S A h_s c_n f_r
m_d t h_t h_m_n _c t_v_t y _s r_s p_n s_b l_ f_r _
m_s s_v_ r_d_s t r_b_t__ n _f f_r_s h_w_t_r _c_r_s s
E_r t h . I t s__ d t h_ r_d_s t r_b_t__ n _s c_n
t_n__ n g _s p_p_l_t__ n s s h_f t _n d d_m_n d f_r
f__ d _n c_r__ s_s . I n p_r t_c_l_r , _q__ t_r__ l
r_g__ n s w_r_ d_r_y_n g , w h_l_ t_r_p_c_l _r__ s _n d
h_g h_r l_t_t_d_s w_r_ g__ n_n g w_t_r s_p p_l__ s .
N A S A w_r_n_d t h_t _f t h_s t_r_n d c_n t_n__ d ,
m_n y h_g h_l y p_p_l_t_d _r_b_n _r__ s c__ l_d s t
r_g g_l_ t_ f_n d s_f f_c__ n t w_t_r _n t h_ f_t_r_ .
N A S A ' s c_l__ m_s _r_ t h_ r_s_l_t _f _ 14 - y__ r
s_t_d y _n_t_ s h_f t_n g l_c_t__ n s _n d d_p_l_t_n g
r_s__ r_c_s _f f_r_s h_w_t_r . I t w_s p_r t _f _ m_s
s__ n c_n d_c_t_d b_t_w__ n 2002 - 2016 c_l_l_d
G R A C E , w h_c h _s _n _c_r_n y m f_r G_r_v_t y
R_c_v_r y _n d C_l_m_t_ E_x_p_r_m_n t .

R_s__ r_c_h_r_s s_y t h_t t h_ s h_f t_n g f_r_s h
w_t_r p_t_t_r_n s _r_ t h_ r_s_l_t _f h_m_n _c t_v_t y
. J_y F_m_g_l__ t_t_ , _c_ -__ t h_r _f t h_ r_s__ r_c
h _n d t h_ S_n__ r W_t_r S_c__ n_t_s_t _t N A S A '
s J_t P_r_p_l_s__ n L_b_r_t_r_y , s__ d : " T h_ s_t_d
y s h_w_s t h_t h_m_n s h_v_ r__ l_l y d_r_s_t_c_l_l y
_l_t_r_d t h_ g_l_b_l w_t_r l_n d_s_c_p_ _n _v_r y p
r_f__ n d w_y . " H_ w_r_n_d t h_t : " T h_ h_m_n
f_n g_r_p_r_n t _s _l_l _v_r c_h_n g_n g f_r_s h_w_t_r
_v__ l_b_l_t y . W_ s__ _t _n l_r_g_ - s_c_l_ _v_r_s_ _f
g_r__ n_d_w_t_r . W_ s__ _t _s _d_r_v_r _f c_l_m_t_
c_h_n g_ . " P_r_f_s_s_r F_m_g_l__ t_t_ s__ d _t l__ s_t
40 p_r c_n t _f t h_ 34 h_t _r__ s _x_m_n_d _n
t h_ r_s__ r_c h w_r_ d_r__ r t h_n t w_ d_c_d_s _g_
b_c__ s_ _f h_m_n _c t_v_t y , _s_p_c__ l_l y _x_c_s_s_v_
g_r__ n_d_w_t_r p_m_p_n g f_r f_r_m_n g .

PUNCTUATE THE TEXT AND ADD CAPITALS

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

the usas 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 nasas claims are the result of a 14year 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 coauthor of the research and the senior water scientist at nasas 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 largescale 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

PUT A SLASH (/) WHERE THE SPACES ARE

From <https://breakingnewsenglish.com/1805/180520-freshwater.html>

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 percent 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.

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 out more about this news story. Share what you discover with your partner(s) in the next lesson.

3. FRESHWATER: Make a poster about freshwater. Show your work to your classmates in the next lesson. Did you all have similar things?

4. CONSERVATION: Write a magazine article about all governments introducing laws to conserve freshwater. Include imaginary interviews with people who are for and against this.

Read what you wrote to your classmates in the next lesson. Write down any new words and expressions you hear from your partner(s).

5. WHAT HAPPENED NEXT? Write a newspaper article about the next stage in this news story. Read what you wrote to your classmates in the next lesson. Give each other feedback on your articles.

6. LETTER: Write a letter to an expert on freshwater. Ask him/her three questions about it. Give him/her three of your ideas on how we can conserve it. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

1. c 2. e 3. f 4. a 5. b 6. g 7. d
8. i 9. j 10. m 11. l 12. k 13. n 14. h

TRUE / FALSE (p.5)

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

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

1. NASA
2. Equatorial regions
3. Tropical areas
4. 14 years
5. Gravity Recovery and Climate Experiment
6. Senior Water Scientist
7. In a profound way
8. Climate change
9. 34
10. Farming

WORDS IN THE RIGHT ORDER (p.20)

1. NASA has confirmed that human activity is responsible.
2. A massive redistribution of freshwater across Earth.
3. Tropical areas and higher latitudes were gaining water.
4. Many highly populated urban areas could struggle.
5. It was part of a mission conducted between 2002-2016
6. Humans have drastically altered the global water landscape.
7. The human fingerprint is all over changing availability.
8. We see it in large-scale overuse of groundwater.
9. Areas examined were drier than two decades ago.
10. Especially excessive groundwater pumping for farming.

MULTIPLE CHOICE - QUIZ (p.10)

1. c 2. a 3. b 4. d 5. c 6. b 7. d 8. b 9. b 10. a

ALL OTHER EXERCISES

Please check for yourself by looking at the Article on page 2.
(It's good for your English ;-)