



# Παραλειπόμενα της εκπαιδευτικής διαδικασίας (στη Σχολή Πολιτικών Μηχανικών ΕΜΠ) Ροβιές 3-9 Ιουλίου 2023



Artificial intelligence & 3D printing. Ο ρόλος του μηχανικού  
Κλιματική αλλαγή  
Μεταβαλλόμενα τοπία (πυρκαγιές, μεταβολές χλωρίδας)  
Τοπία και έργα υποδομής  
Ο ρόλος του πλέγματος νερού-ενέργειας-τροφίμων

 campingrovies

Βόρεια Εύβοια, κάμπινγκ Ροβιές  
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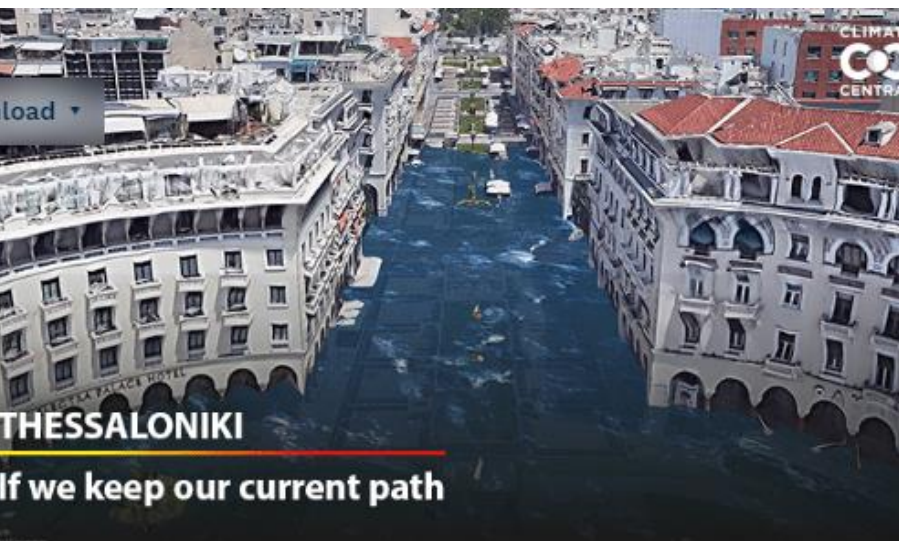
Δηλώσεις συμμετοχής  
email: [fvos@itia.ntua.gr](mailto:fvos@itia.ntua.gr)

Προθεσμία υποβολής δηλώσεων: 31.5.2023 (θέσεις περιορισμένες)



**ADDOPTML**

## Η επικοινωνία της “κλιματικής αλλαγής”



**Νίκος Μαμάσης**  
Τομέας Υδατικών Πόρων και Περιβάλλοντος  
Σχολή Πολιτικών Μηχανικών ΕΜΠ

# Η επικοινωνία της κλιματικής αλλαγής

- Μικρή ιστορία της κλιματικής αλλαγής
- Διακύμανση παγοκάλυψης
- Διακύμανση στάθμης θάλασσας
- Επιπτώσεις φυσικών καταστροφών
- «Επιστήμονες» και «κλιματική αλλαγή»
- Λογικές πλάνες στην επικοινωνία της «κλιματικής αλλαγής»
- Η επιβολή της «κλιματικής αλλαγής» στις κοινωνίες
- Αντί επιλόγου...



*Χαρακτηριστικά  
παραδείγματα αφηγημάτων*

# Μικρή ιστορία της κλιματικής αλλαγής

Αρχές του 20<sup>ου</sup> αιώνα: ο πλανήτης ψύχεται

## The New York Times

24-2-1895

**PROSPECTS OF ANOTHER  
GLACIAL PERIOD;** *Geologists Think  
the World May Be Frozen Up Again.*

7-10-1912

**SEES GLACIAL ERA COMING.;**  
*Prof. Schmidt Warns Us of an  
Encroaching Ice Age.*

28-9-1924

**MACMILLAN REPORTS SIGNS OF  
NEW ICE AGE;** *Explorer Brings Word  
of Unusual Movements of Greenland  
Glaciers -- Coal Deposits Show Polar  
Climate Was Once Tropical*

13-2-1929

**PRAGUE SCIENTISTS  
SEE CLIMATE CHANGING**

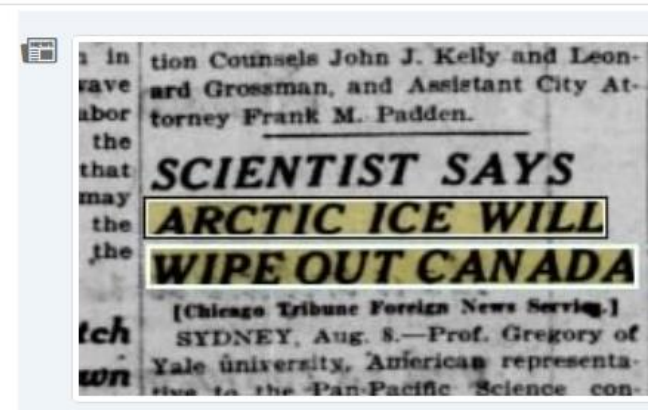
**Cold Winter, They Say, Means  
Shift From Maritime to Con-  
tinental Conditions.**

Special Correspondence of **THE NEW YORK  
TIMES.**

**PRAGUE, Feb. 13.**—Czechoslovakia  
has experienced this Winter its cold-

## Chicago tribune

9-8-1923



## Los Angeles Times

11-3-1929



# Μικρή ιστορία της κλιματικής αλλαγής

## 1930 έως 1960: ο πλανήτης θερμαίνεται

### The New York Times

27-3-1933

*America in Longest Warm Spell Since 1776; Temperature Line Records a 25-Year Rise*

10-8-1952

### OUR CHANGING CLIMATE

Largely through the publications of Dr. Hans W. Ahlmann, Swedish climatologist known the world over for his work in the Arctic regions, we have learned that the world has been getting warmer in the last half century. Spitsbergen's mean temperature was higher by ten degrees in 1950 than it was in 1900.

15-2-1959

*A WARMER EARTH EVIDENT AT POLES; Arctic Findings in Particular Support Theory of Rising Global Temperatures*

16-2-1938

### THE ARTIFICIAL PRODUCTION OF CARBON DIOXIDE AND ITS INFLUENCE ON TEMPERATURE

By G. S. CALLENDAR

(Steam technologist to the British Electrical and Allied Industries Research Association.)

(Communicated by Dr. G. M. B. DOBSON, F.R.S.)

[Manuscript received May 19, 1937—read February 16, 1938.]

Το 1938 γίνεται η σημαντική δημοσίευση του Άγγλου Gay Stewart Callendar η οποία ποσοτικοποιεί την άνοδο της θερμοκρασίας σε σχέση με τις εκπομπές CO<sub>2</sub>. Η δημοσίευση στηρίζεται σε αντίστοιχη εργασία του Σουηδού Svante Arrhenius του 1896.

LONDON, EDINBURGH, AND DUBLIN

PHILOSOPHICAL MAGAZINE

AND

JOURNAL OF SCIENCE.

[FIFTH SERIES.]

APRIL 1896.

XXXI. *On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground.* By Prof. SVANTE ARRHENIUS\*.

In conclusion it may be said that the combustion of fossil fuel, whether it be peat from the surface or oil from 10,000 feet below, is likely to prove beneficial to mankind in several ways, besides the provision of heat and power. For instance the above mentioned small increases of mean temperature would be important at the northern margin of cultivation, and the growth of favourably situated plants is directly proportional to the carbon dioxide pressure (Brown and Escombe, 1905). In any case the return of the deadly glaciers should be delayed indefinitely.

As regards the reserves of fuel these would be sufficient to give at least ten times as much carbon dioxide as there is in the air at present.

Η δημοσίευση καταλήγει ότι η καύση ορυκτών καυσίμων (άνθρακα και πετρελαίου) θα είναι καλό για την ανθρωπότητα για πολλούς λόγους. Για παράδειγμα η μικρή άνοδος της μέσης θερμοκρασίας θα είναι ευεργετική για τη γεωργία ενώ θα επιβραδύνει την επιστροφή των φονικών παγετώνων

# Μικρή ιστορία της κλιματικής αλλαγής

Δεκαετίες 1960 και 1970: ο πλανήτης ξανά-ψύχεται (global cooling)

## The New York Times

30-1-1961

*SCIENTISTS AGREE WORLD IS COLDER; But Climate Experts Meeting Here Fail to Agree on Reasons for Change*

After a week of discussions on the causes of climate change, an assembly of specialists from several continents seems to have reached unanimous agreement on only one point: it is getting colder.

18-7-1970

**The New York Times**  
NEW YORK, SATURDAY, JULY 18, 1970  
*U.S. and Soviet Press Studies of a Colder Arctic*

## The Los Angeles Times

24-12-1962

The Los Angeles Times · 24 Dec 1962, Mon · Page 11  
**End of World Feared With Another Ice Age**  
Science Must Find Way to Avert Big Freeze to Save Earth's Rapidly Growing Population

## The Washington Post

11-1-1970

*Colder Winters Held Dawn of New Ice Age*

9-7-1971

*U. S. Scientist Sees New Ice Age Coming*

# Μικρή ιστορία της κλιματικής αλλαγής

## Δεκαετίες 1960 και 70: ο πλανήτης ξανά-ψύχεται (global cooling)

1-12-1972

2-3-1973

24-6-1974

### Chicago Tribune

THE WORLD'S GREATEST NEWSPAPER

Sunday, March 2, 1973

It's getting colder

#### B-r-r-r-r: New Ice Age on way soon?

WASHINGTON (AP)—In the last decade, the Arctic ice and snow cap has expanded 12 per cent, and for the first time in this century, ships making for Iceland ports have been impeded by drifting ice.

In England, the average growing season is a week shorter than in 1950, and in the United States, the warm-blooded armadillo is retreating from the Midwest to the South.

In Africa, the Sahara is creeping southward and six years of drought in the Sahel region have only recently been interrupted by rain.

In the U. S., corn crops fell off last year because of a freakish combination of excess spring rains and summer drought: great floods ruined the Bangladesh harvest; drought ravaged large parts of India.

MANY CLIMATOLOGISTS see these signs as evidence that a significant

shift in climate is taking place—a shift that could be the forerunner of an Ice Age like that which gripped much of the Northern Hemisphere before retreating 10,000 years ago.

During that period, massive ice sheets half a mile thick spread down from the Arctic burying what is now Canada and the northern part of the U. S. Ice covered Scandinavia and reached into France, Germany, Austria and central Russia.

Equatorial regions became extremely dry because of the upset in weather balance and changing patterns of wind which create climate around the globe.

No scientists is forecasting a full-scale Ice Age soon, but some predict that in a few decades there might be little ice ages like the ones which plagued Europe with severe winters from 1430 to 1850.

At the very least, some experts foresee troublesome changes in global

### TIME ARCHIVE

1923 to the Present

Science

#### Another Ice Age?

Monday, Jun 24, 1974

In Africa, drought continues for the sixth consecutive year, adding terribly to the toll of famine victims. During 1972 record rains in parts of the U.S., Pakistan and Japan caused some of the worst flooding in centuries. In Canada's wheat belt, a particularly chilly and rainy spring has delayed planting and may well bring a disappointingly small harvest. Rainy Britain, on the other hand, has suffered from uncharacteristic dry spells the past few springs. A series of unusually cold winters has gripped the American Far West. While New England and northern Europe have recently experienced the mildest winters within anyone's recollection.

As they review the bizarre and unpredictable weather pattern of the past several years, a growing number of scientists are beginning to suspect that many seemingly contradictory meteorological fluctuations are actually part of a global climatic upheaval. However widely the weather varies from place to place and time to time, when meteorologists take an average of temperatures around the globe they find that the atmosphere has been growing gradually cooler for the past three decades. The trend shows no indication of reversing. Climatological Cassandras are becoming increasingly apprehensive, for the weather aberrations they are studying may be the harbinger of another ice age.

Fertile signs are everywhere—from the unexpected persistence and thickness of pack ice in the waters around Iceland to the southward migration of a warm-loving creature like the armadillo from the Midwest. Since the 1940s the mean global temperature has dropped about 2.7° F. Although that figure is at best an estimate, it is supported by other convincing data. When Climatologist George J. Kukla of Columbia University's Lamont-Doherty Geological Observatory and his wife Helena analyzed satellite weather data for the Northern Hemisphere, they found that the area of the ice and snow cover had suddenly increased by 12% in 1971 and the increase has persisted ever since. Areas of Baffin Island in the Canadian Arctic, for example, were once totally free of any snow in summer; now they are covered year round.

15-4-1973

21-7-1974

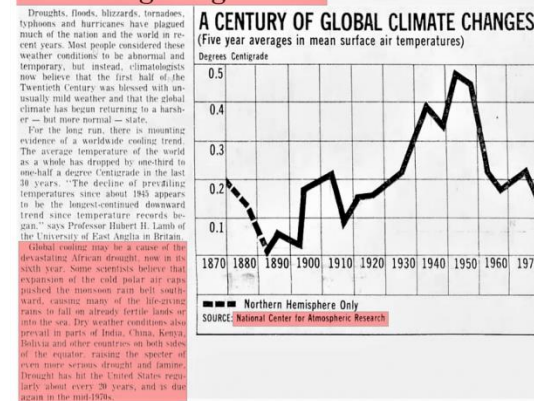
#### April 15, 1973 Sunday Post-Crescent E 3 Scientists predict new ice age

"We find that sea-surface temperatures in the Caribbean have attained their present levels only 2 per cent of the time during the last 450,000 years," declares John Imbrie of Brown University. "Clearly we are living in an unusual time and cannot, on the basis of past evidence, expect the present warm age to last much longer." Imbrie is part of CLIMPA, a new three-institution climatic research team (Brown, Columbia and Oregon State Universities) engaged in a global study of climatic change under sponsorship of NSF-IDOE.

#### Des Moines Sunday Register

July 21, 1974

#### World is getting cooler



Επιστολή διακεκριμένων επιστημόνων προς τον Πρόεδρο των ΗΠΑ σχετικά με την ψύξη του πλανήτη

BROWN UNIVERSITY Providence, Rhode Island • 02912

DEPARTMENT OF GEOLOGICAL SCIENCES (401) 853-2340

December 3, 1972

The President  
The White House  
Washington, D. C.

Dear Mr. President:

Aware of your deep concern with the future of the world, we feel obliged to inform you on the results of the scientific conference held here recently. The conference dealt with the past and future changes of climate and was attended by 12 top American and European investigators. We enclose the summary report published in Science and further publications are forthcoming in Quaternary Research.

The main conclusion of the meeting was that a global deterioration of climate, by order of magnitude larger than any hitherto experienced by civilized mankind, is a very real possibility and indeed may be due very soon. The cooling has natural cause and falls within the rank of processes which produced the last ice age. This is a surprising result based largely on recent studies of deep sea sediments.

Existing data still do not allow forecast of the precise timing of the predicted development, nor the assessment of the man's interference with the natural trends; it could not be excluded however that the cooling now under way in the Northern Hemisphere is the start of the expected shift. The present rate of the cooling seems fast enough to bring glacial temperatures in about a century, if continuing at the present pace.

The practical consequences which might be brought by such developments to existing social institutions are among others:

- 1) Substantially lowered food production due to the shorter growing seasons and changed rain distribution in the main grain producing belts of the world, with Eastern Europe and Central Asia to be first affected.
- 2) Increased frequency and amplitude of extreme weather anomalies such as those bringing floods, snowstorms, killing frosts etc.

Mr. President - 2 - December 3, 1972

With the efficient help of the world leaders, the research could be effectively organized and could possibly find the answers to the menace. We hope that your Administration will take decisive steps in this direction as it did with other serious international problems in the past. Meantime however it seems reasonable to prepare the agriculture and industry for possible alternatives and to form reserves.

It might also be useful for Administration to take into account that the Soviet Union, with large scientific teams monitoring the climate change in Arctic and Siberia, may already be considering these aspects in its international moves.

With best regards,

Georg J. Kukla  
Lamont-Doherty Geological Observatory

R. K. Matthews, Chairman  
Department of Geological Sciences

# Μικρή ιστορία της κλιματικής αλλαγής

## Δεκαετίες 1960 και 70: ο πλανήτης ξανά-ψύχεται (global cooling)

29-12-1974

### The New York Times

NEW YORK, SUNDAY, DECEMBER 29, 1974

A number of climatologists, whose job it is to keep an eye on long-term weather changes, have lately been predicting deterioration of the benign climate to which we have grown accustomed. They point to signs both great (a steady global cooling trend since World War II) and quaint (the southward retreat from Nebraska of the warmth-loving armadillo) to support their claim that the coming years will feature colder, more erratic weather.

Some recent warnings, from reputable researchers in Japan, Europe and the U.S., have so worried policy-makers that last January certain scientists at a meeting of the National Academy of Sciences proposed the evacuation of some six million people from their parched homelands in the Sahel region of Africa.

5-1-1978

### The New York Times

International Team of Specialists Finds No End in Sight to 30-Year Cooling Trend in Northern Hemisphere

28-4-1975

### Newsweek: The Cooling world

**SCIENCE**

#### The Cooling World

There are ominous signs that the earth's weather patterns have begun to change dramatically and that these changes may portend a drastic decline in food production—with serious political implications for just about every nation on earth. The drop in food output could begin quite soon, perhaps only ten years from now. The regions destined to feel its impact are the great wheat-producing lands of Canada and the U.S.S.R. in the north, along with a number of marginally self-sufficient tropical areas—parts of India, Pakistan, Bangladesh, Indonesia and Indonesia—where the growing season is dependent upon the rains brought by the monsoon.

The evidence in support of these predictions has now begun to accumulate so massively that meteorologists are hard-

reduce agricultural productivity for the rest of the century. If the climatic change is as profound as some of the pessimists fear, the resulting famines could be catastrophic. "A major climatic change would force economic and social adjustments on a worldwide scale," warns a recent report by the National Academy of Sciences, "because the global patterns of food production and population that have evolved are implicitly dependent on the climate of the present century."

A survey completed last year by Dr. Murray Mitchell of the National Oceanic and Atmospheric Administration reveals a drop of half a degree in average ground temperatures in the Northern Hemisphere between 1945 and 1969. According to George Kukla of Columbia University, satellite photos indicated a sudden, large increase in Northern Hemisphere snow cover in the winter of 1971-72. And

is change is at least as fragmentary as our data," concedes the National Academy of Sciences report. "Not only are the basic scientific questions largely unanswered, but in many cases we do not yet know enough to pose the key questions."

**Extremes.** Meteorologists think that they can forecast the short-term results of the return to the norm of the last century. They begin by noting the slight dip in overall temperature that produces large numbers of pressure centers in the upper atmosphere. These break up the smooth flow of westerly winds over temperate areas. The stagnant air produced in this way causes an increase in extremes of local weather such as droughts, floods, extended dry spells, long freezes, delayed monsoons and even a drop in temperature increases—all of which have a direct impact on food supplies.

"The world's food-producing system," warns Dr. James D. McElroy of NOAA's Center for Climatic and Environmental Assessment, "is much more sensitive to

**AREAS OF THE EARTH AFFECTED BY CLIMATIC CHANGE**

**AVERAGE TEMPERATURE CHANGE**

13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

1950 1955 1960 1965 1970

Source: National Center for Environmental Research

pressed to keep up with it. In England, farmers have seen their growing season decline by about two weeks since 1950, with a resultant overall loss in grain production estimated at up to 100,000 tons annually. During the same time, the average temperature around the equator has risen by a fraction of a degree—a fraction that in some areas can mean drought and desolation. Last April, in the most devastating outbreak of tornadoes ever recorded, 148 victims killed more than 300 people and caused half a billion dollars' worth of damage in thirteen U.S. states.

**Trends.** To scientists, these seemingly disparate incidents represent the advance signs of fundamental changes in the world's weather. The central fact is that after three quarters of a century of extraordinarily mild conditions, the earth's climate seems to be cooling down. Meteorologists disagree about the cause and extent of the cooling trend, as well as over its specific impact on local weather conditions. But they are almost unanimous in the view that the trend will

a study released last month by two NOAA scientists notes that the amount of sunshine reaching the ground in the continental U.S. diminished by 1.3 per cent between 1964 and 1972.

To the layman, the relatively small changes in temperature and sunshine can be highly unbecoming. Reid Bryson of the University of Wisconsin points out that the earth's average temperature during the great Ice Ages was only about 7 degrees lower than during its warmest era—and that the present decline has taken the planet about a sixth of the way toward the Ice Age average. Others regard the cooling as a reversion to the "little ice age" conditions that brought bitter winters to much of Europe and northern America between 1000 and 1900—years when the Thames used to freeze so solidly that Londoners roasted ovens on the ice and when iceboats sailed the Hudson River almost as far south as New York City.

Just what causes the onset of major and minor ice ages remains a mystery. "Our knowledge of the mechanisms of climatic

the weather variable than it was even five years ago." Furthermore, the growth of world population and creation of new national boundaries make it impossible for starving peoples to migrate from their devastated fields, as they did during past famines.

Climatologists are pessimistic that political leaders will take any positive action to compensate for the climatic change, or even to allay its effects. They conclude that some of the more spectacular solutions proposed, such as melting the arctic ice cap by covering it with black soot or diverting arctic rivers, might create problems far greater than those they solve. But the scientists see few signs that government leaders anywhere are even prepared to take the simple measures of stockpiling food or introducing the variables of climatic uncertainty into economic projections of future food supplies. The longer the planners delay, the more difficult will they find it to cope with climatic change once the results become grim reality.

—PETER DAVENNE with Barbara Myers

Newsweek, April 28, 1975

31-1-1977



9-3-1980

THE SUNDAY DISPATCH, Moline, Illinois

March 9, 1980

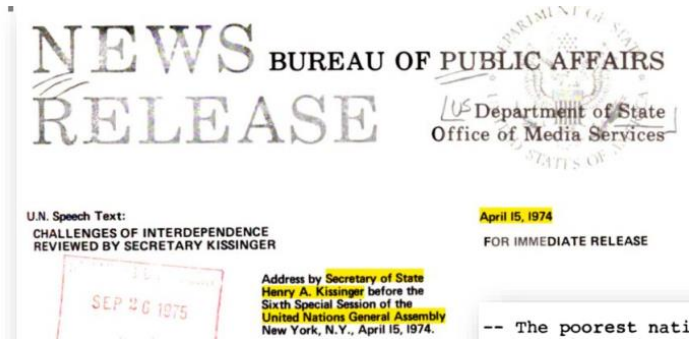
### New ice age may soon grip cooling Earth

SANTA MONICA, Calif. — Three winters ago, snow fell in Miami. Two winters ago, the Great Lakes and Mississippi Basin suffered deadly record cold. Last

# Μικρή ιστορία της κλιματικής αλλαγής

## Η κλιματική αλλαγή μπαίνει στην πολιτική ατζέντα

Έγγραφο του Κίσινγκερ (15/4/1974)



- The poorest nations, already beset by man-made disasters, have been threatened by a natural one: the possibility of climatic changes in the monsoon belt and perhaps throughout the world. The implications for global food and population policies are ominous. The United States proposes that the International Council of Scientific Unions and the World Meteorological Organization: urgently investigate this problem and offer guidelines for immediate international action.

## Αντίδραση WMO 23-5-1974

### Implications of possible climatic changes

5.6.25 The Executive Committee discussed a request from the Government of the United States of America to consider certain problems of climatic change in relation to the current and planned activities of WMO. This request had stemmed from a statement made by the Secretary-of-State at the sixth special session of the United Nations General Assembly in which he had called attention to the possibility of climatic changes which could have serious implications for global food and population policies. In this connexion, the Committee also noted the decision of the second session of the Governing Council of UNEP that the Executive Director should continue his activities relating to "outer limits", particularly climatic change.

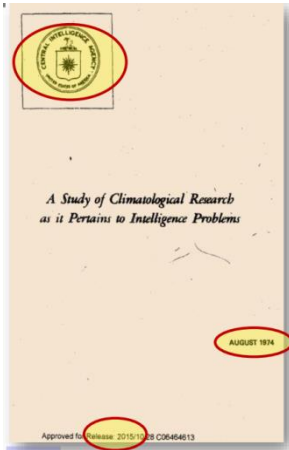
5.6.26 The Committee agreed that the question of climatic change was of great importance and that WMO should take the initiative in formulating a coherent programme for international action in this field. This programme could include studies of the following items:



# Μικρή ιστορία της κλιματικής αλλαγής

## Η κλιματική αλλαγή μπαίνει στην πολιτική ατζέντα

Έγγραφο της CIA (8/1974)  
για παγκόσμια ψύξη



### SUMMARY

The western world's leading climatologists have confirmed recent reports of a detrimental global climatic change. The stability of most nations is based upon a dependable source of food, but this stability will not be possible under the new climatic era. A forecast by the University of Wisconsin projects that the earth's climate is returning to that of the neo-boreal era (1600-1850)—an era of drought, famine, and political unrest in the western world.

As an example, Europe presently, with an annual mean temperature of 12°C. (about 53°F.), supports three persons per arable hectare. If, however, the temperature declines 1°C, only a little over two persons per hectare could be supported and more than 20 percent of the population could not be fed from domestic sources. China now supports over seven persons per arable hectare; a shift of 1°C. would mean it could only support four persons per hectare—a drop of over 43 percent.

A unique aspect of the Wisconsin analysis was their estimate of the duration of this climatic change. An analysis by Dr. J. E. Kutzbach (Wisconsin) on the rate of climatic changes during the preceding 1600 years indicates an ominous consistency in the rate of which the change takes place. The maximum temperature drop normally occurred within 40 years of inception. The earliest return occurred within 70 years. (Figure 8). The long-

Έγγραφο του NOAA (10/1974) για κλιματική αλλαγή  
αλλά με αντικρουόμενες απόψεις για θέρμανση ή ψύξη

Both the Little Ice Age and our own climatic era are relatively minor variations superimposed on long-term fluctuations between cold, glacial and warm, relatively brief, interglacial periods of the ice age in which we are now living. For most of the Earth's history our planet had no permanent ice cover. For more than two million years now, however, we have had permanent ice fields which alternately expand and contract. The last major glacial period ended about 10,000 years ago. Some climatologists think that the present cooling trend may be the start of a slide into another period of major glaciation, popularly called an "ice age."

Many other scientists disagree. J. Murray Mitchell, Jr., of the Environmental Data Service, a world authority on climatic change, comments, "We observe these trends, and we know they are real. But we can't find the central tendency, we just don't know how long they will last." Mitchell himself suspects that the present cooling trend will reverse itself rather soon.

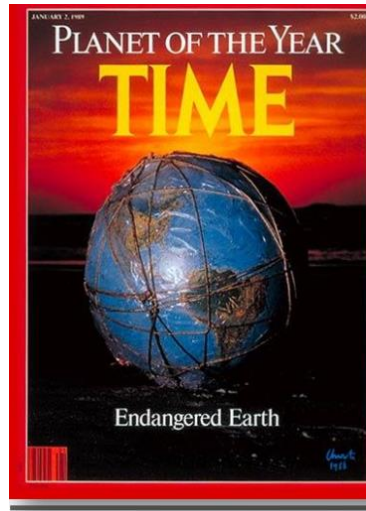
# Μικρή ιστορία της κλιματικής αλλαγής

1980 έως σήμερα: ο πλανήτης ξανά-θερμαίνεται (global warming)

19-10-1987



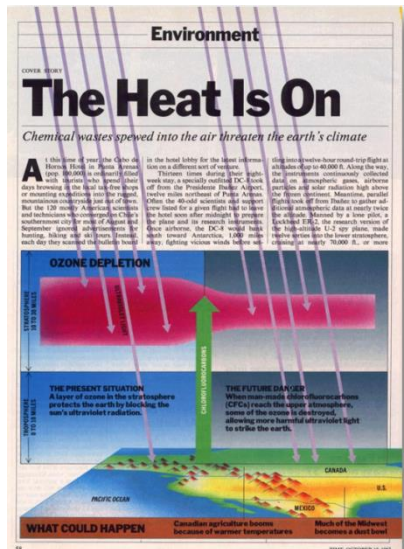
2-1-1989



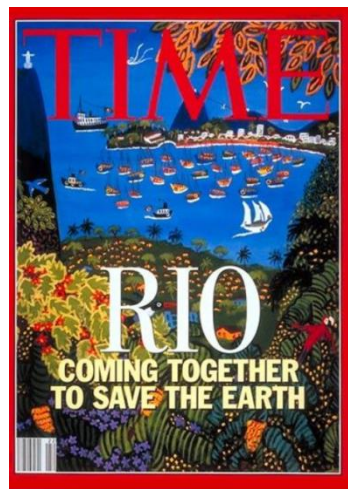
4-9-2000



1-6-1992



9-4-2001



# Μικρή ιστορία της κλιματικής αλλαγής

1980 έως σήμερα: ο πλανήτης ξανά-θερμαίνεται (global warming)

2006-2008



2019

2019



IDEAS CLIMATE CHANGE

**Angelina Jolie: Climate Change Is Already Displacing Millions of People. It's Our Responsibility to Help Them**

Angelina Jolie Sept. 12, 2019

**IDEAS** Jolie, a TIME contributing editor, is an Academy Award-winning actor and Special Envoy of the U.N. High Commissioner for Refugees

The technological sophistication of modern life masks a simple reality: we all need oxygen, water and food to survive. But the divide between those who have the resources they need to exist and those who don't only continues to grow. And with the growing specter of climate change, people who live in vulnerable regions like Oceania—the countries and territories within the southwest Pacific Ocean—face the loss of their livelihoods, homes and future.

Twenty-four million people globally are displaced within their countries each year on average because of climate- and disaster-related causes, and it's only getting worse: the likelihood of any of us being displaced in this way is twice what it was in the 1970s. This comes on top of unprecedented levels of forced displacement worldwide because of conflict and persecution.



© Christopher Cheng/Amphoto  
Aphai Logaitau and his family were relocated from their village due to the effects of climate change. Vanuatu's was the first place in Fiji to relocate, but it won't be the last.



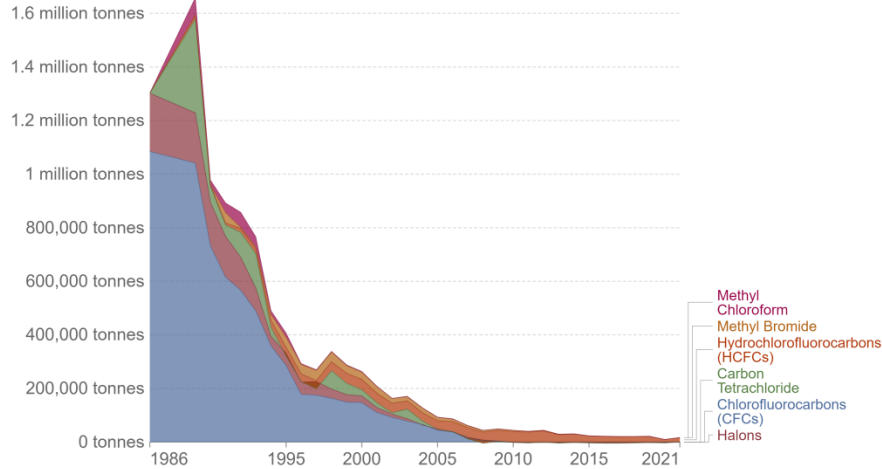
# Μικρή ιστορία της κλιματικής αλλαγής

## Τι έγινε τελικά με την τρύπα του όζοντος;

### Emissions of ozone-depleting substances, World

Annual consumption of ozone-depleting substances. Emissions of each gas are given in ODP tonnes<sup>1</sup>.

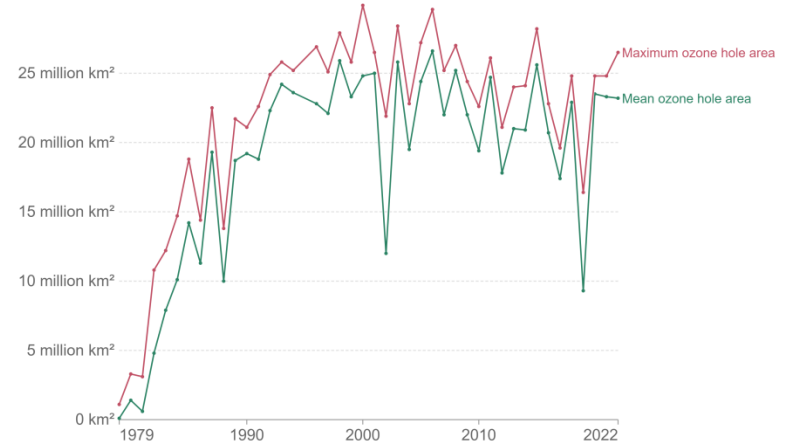
Our World in Data



### Antarctic ozone hole area

Annual maximum and mean Antarctic stratospheric ozone hole area, resultant from the emission of ozone-depleting substances.

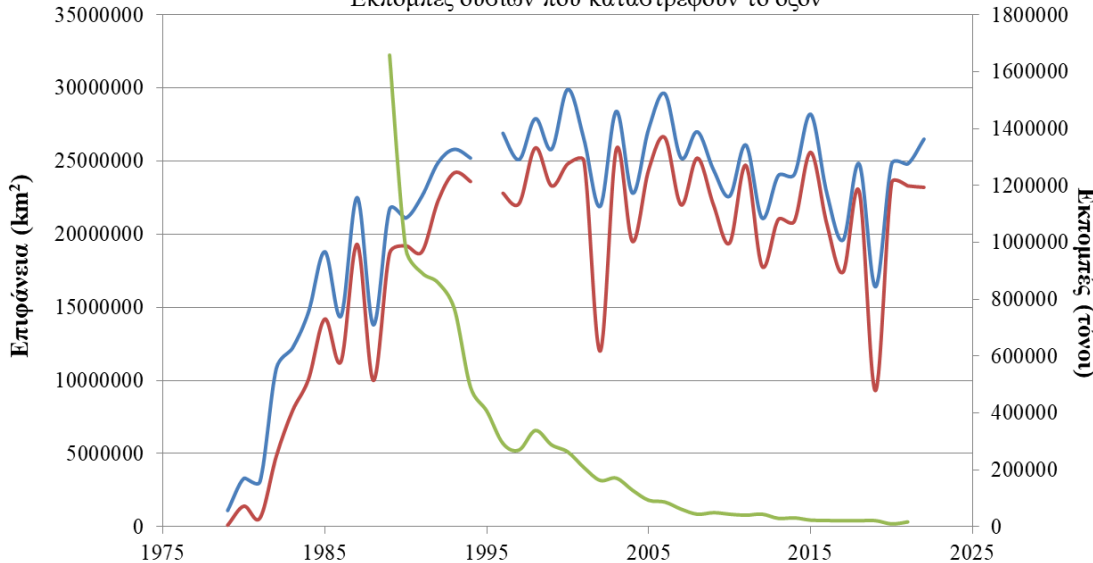
Our World in Data



Source: NASA Ozone Watch (2023)

OurWorldInData.org/ozone-layer • CC BY

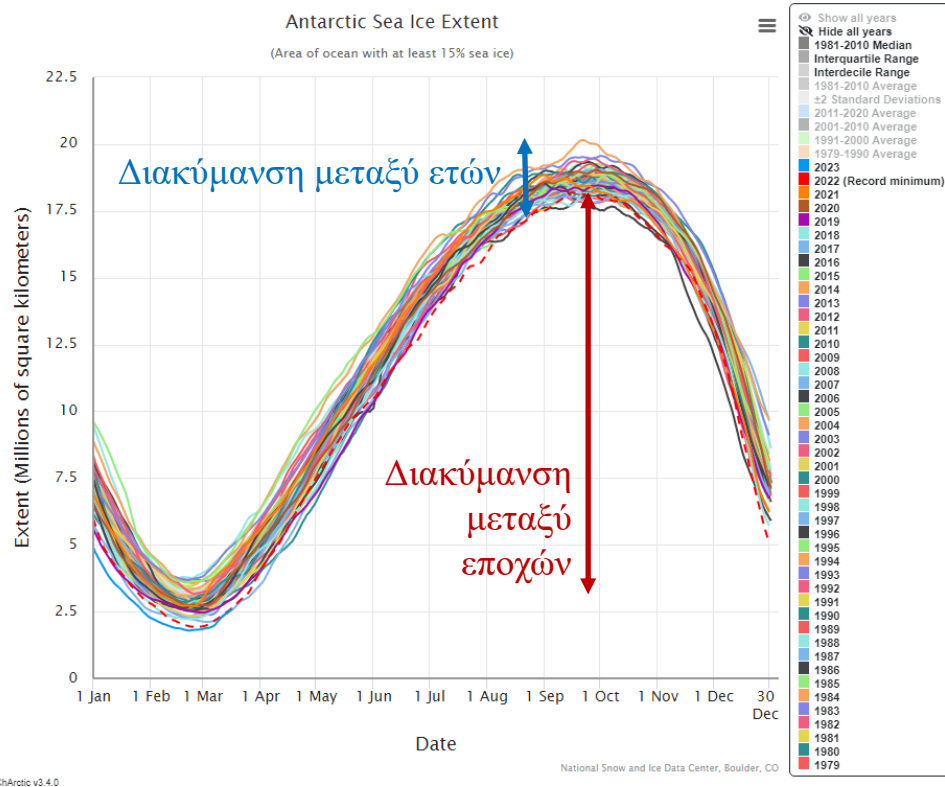
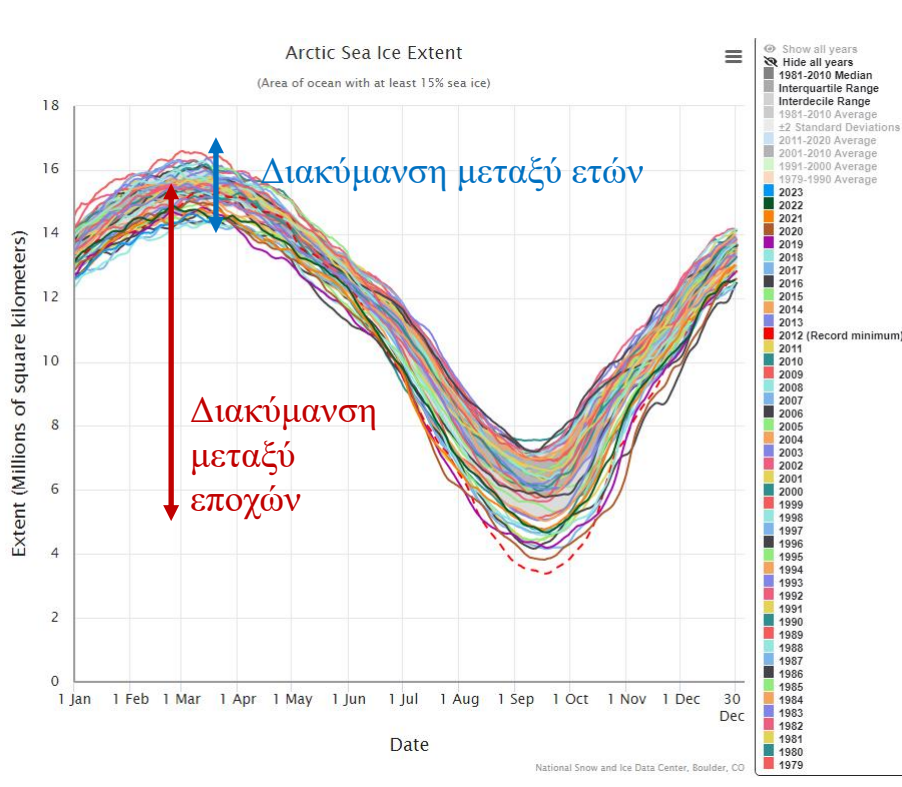
- Μέγιστη επιφάνεια τρύπας όζοντος
- Ελάχιστη επιφάνεια τρύπας όζοντος
- Εκπομπές ουσιών που καταστρέφουν το όζον



**Οι υπεύθυνες ενώσεις εκμηδενίστηκαν... αλλά η τρύπα παραμένει εκεί που την αφήσαμε**

# Διακύμανση παγοκάλυψης

## Μηναία διακύμανση θαλάσσιου πάγου στην Αρκτική και την Ανταρκτική



Η διακύμανση μεταξύ των εποχών είναι πολύ μεγαλύτερη από την ετήσια

<https://nsidc.org/arcticseaicenews/charctic-interactive-sea-ice-graph/>

# Διακύμανση παγοκάλυψης στο έτος

## Προβολή των φυσιολογικών εποχιακών διακυμάνσεων ως αποτελέσματα της «κλιματικής αλλαγής»

The Star Newspaper, 4/9/2009



**Nasa: Greenland, Antarctic ice melt worsening**

WASHINGTON: New satellite observations show that ice sheets in Greenland and western Antarctica continue to shrink faster than scientists thought and in some places are melting in summer months.

British scientists led the first two calculated changes in the height of the ice sheets but summer melt rates

... are thick, so they still have plenty of ice to burn through. But the drop in the lower is spreading up to parts of Antarctica, the yearly loss of snowing from 2003 to 2007 is 300 billion tons more than it was from 1995 to 2001.

These new measurements, based on 30 million laser readings from a NASA satellite, confirm what some of

effort. The question is how far will it go?" said the study's lead author Hansjakob Freiwald of the French Antarctic Survey.

"It's never happened that we've seen this much of the ice melting in the past. The study does not answer the crucial question of how much this summer melt will add to present

of years for these to disappear. As scientists watched ice shelves around the world melt earlier, some had thought the problem could slow or be temporary. The latest measurements eliminate "the need for such a pause," said Prof. Steve

University professor Richard Alley, who was not part of the study.

BBC, 9/3/2011



**BBC** Mobile News Sport Weather

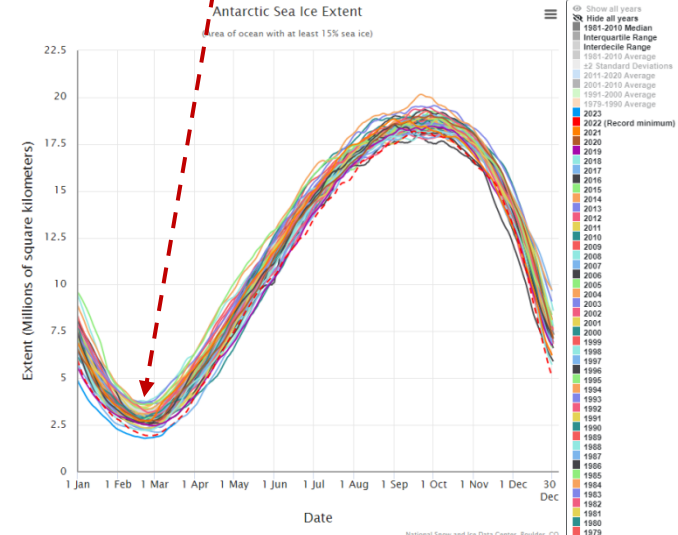
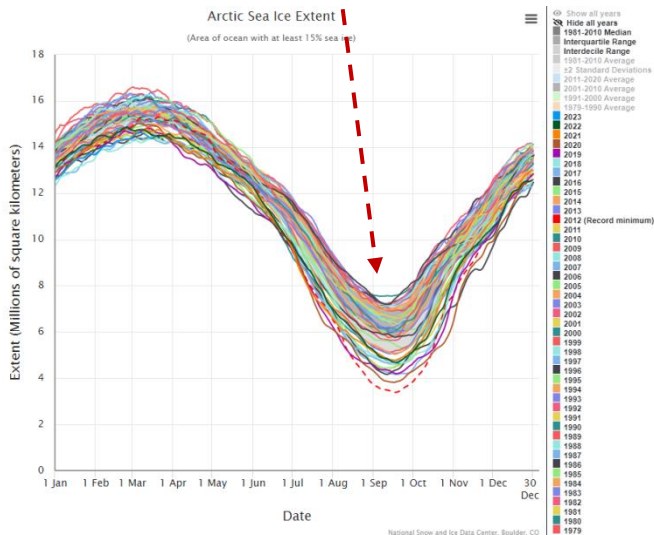
### NEWS SCIENCE & ENVIRONMENT

9 March 2011 Last updated at 12:07 GMT

## Polar ice loss quickens, raising seas

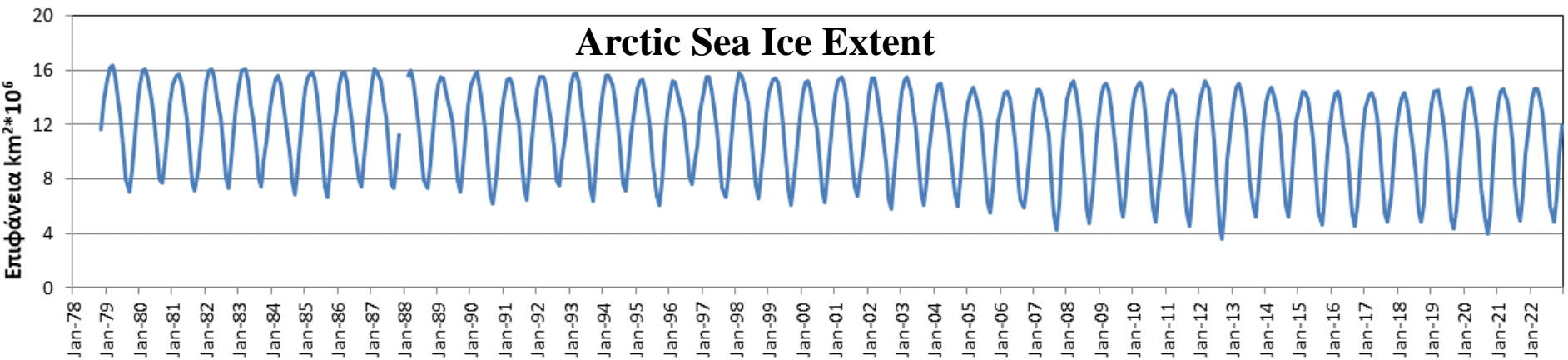
By Richard Black  
Environment correspondent, BBC News

ERIC RIGNOT / JPL



# Διακύμανση παγοκάλυψης

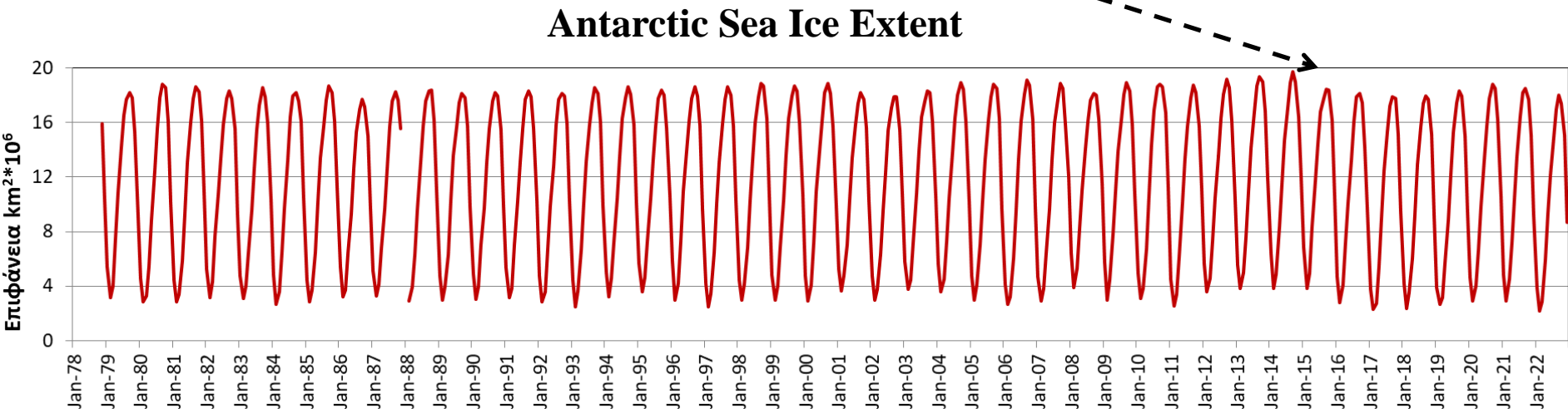
## Γιατί οι θαλάσσιοι πάγοι της Ανταρκτικής αυξάνονται σε έναν κόσμο που θερμαίνεται;



Harvard University  
<https://sitn.hms.harvard.edu> › flash › why-is-antarctica... ⋮

**Why is Antarctica's Ice Sheet Growing in a Warming World?**

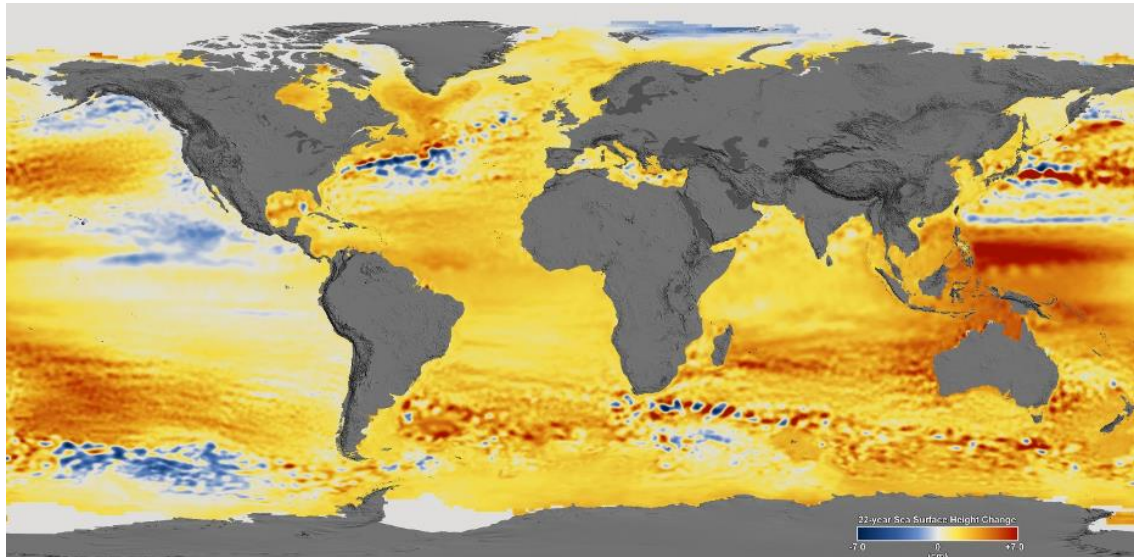
Feb 8, 2016 — According to the authors of the study, **the ice loss and ice gain** have different causes. The ice gains in the East Antarctic are not a new trend ...



# Διακύμανση στάθμης θάλασσας

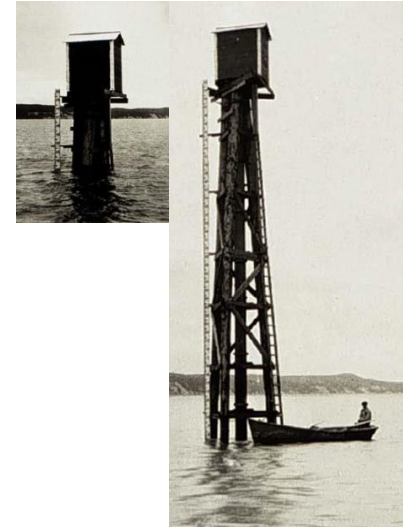
## Ποια είναι η «μέση» στάθμη θάλασσας;

Μεταβολή στάθμης θάλασσας 1992-2014



Data from the U.S./European Topex/Poseidon, Jason-1, and Jason-2 satellites. NASA'

Alaska, Διακύμανση στάθμης από παλίρροιες: 15 m



Η επιφάνεια των ωκεανών δεν είναι επίπεδη και η στάθμη αλλάζει με άλλους ρυθμούς στα διάφορα μέρη της γης. **Αλατότητα, βαρυτικές δυνάμεις, ρεύματα, μεταβολές θερμοκρασίας, παλίρροιες** επιδρούν σημαντικά στη στάθμη της θάλασσας σε κάθε σημείο της γης.

Η στάθμη της θάλασσας στα δύο άκρα της διώρυγας του Παναμά έχει υψομετρική διαφορά **20 cm**. Το νερό του Ατλαντικού είναι πυκνότερο λόγω της αυξημένης αλατότητας και η στάθμη της θάλασσας είναι χαμηλότερη από αυτήν του Ειρηνικού.

Σύμφωνα με δεδομένα της USA Environmental Protection Agency από το 1880 **η μέση στάθμη της θάλασσας αυξάνει με μέσο ρυθμό 1.64 mm/year**. Σε εργασία του ο Κουτσογιάννης υπολόγισε ότι **η μισή από αυτήν την αύξηση (0.82 mm/year) οφείλεται στην άντληση υπογείων νερών** που φεύγουν από τη στεριά και αναγκαστικά καταλήγουν στη θάλασσα.

D. Koutsoyiannis, Revisiting the global hydrological cycle: is it intensifying?, [Hydrology and Earth System Sciences](#), 24, 3899–3932, 2020.



# Διακύμανση στάθμης θάλασσας

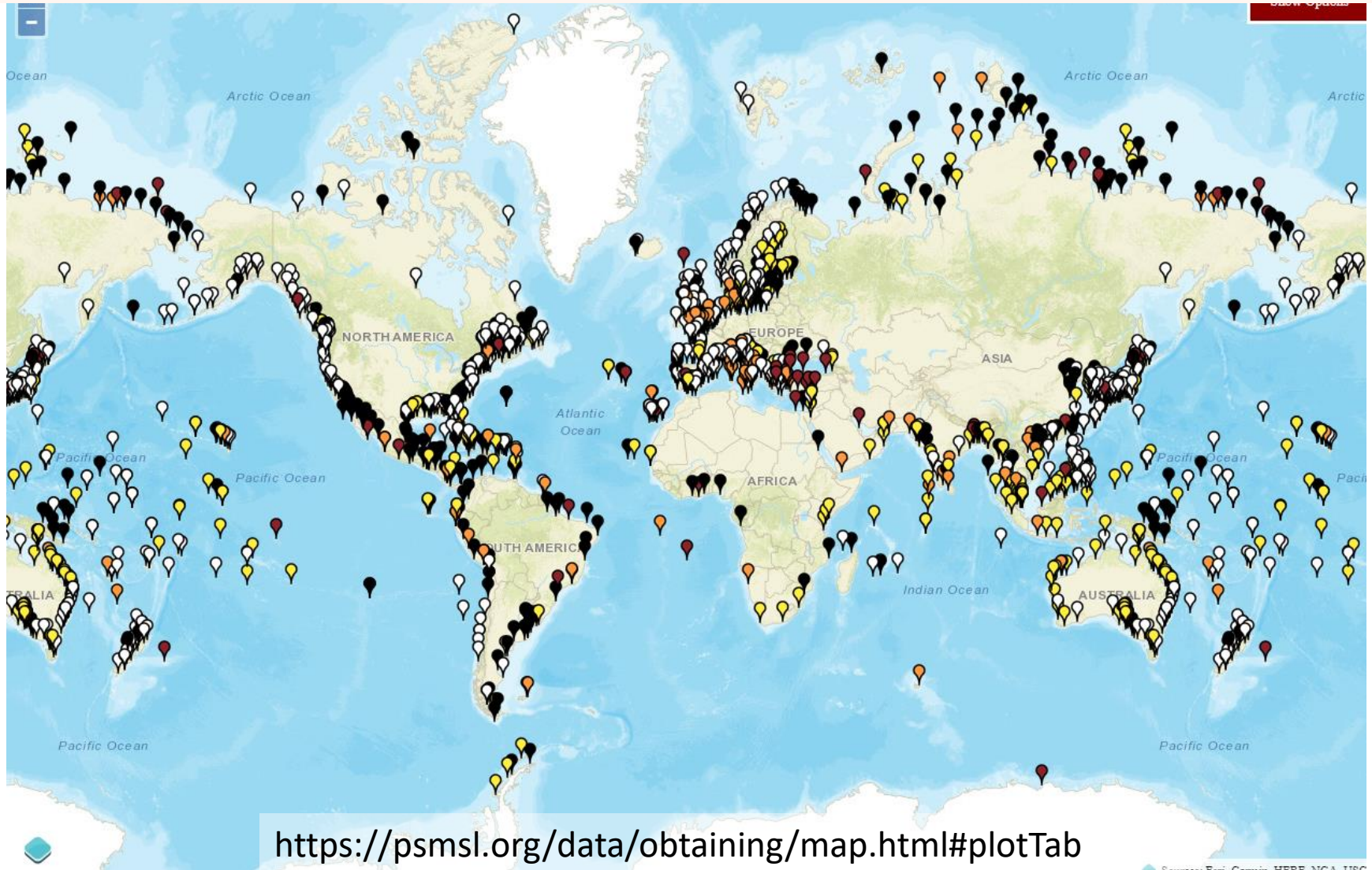
## Δίκτυο παλιρροιογράφων



Permanent Service for Mean Sea Level



National  
Oceanography  
Centre



<https://psmsl.org/data/obtaining/map.html#plotTab>

# Διακύμανση στάθμης θάλασσας

## Αιγαίο πέλαγος

Η Δήλος «κινδυνεύει»...

...αλλά η μέση στάθμη μειώνεται

Το γεγονός ότι η Δήλος βρίσκεται στο επίπεδο της θάλασσας δυσκολεύει τις προσπάθειες διάσωσης των μνημείων. Η μοίρα του νησιού έχει προδιαγραφεί από την **κλιματική αλλαγή**. Και από αυτή δεν θα γλυτώσει ούτε το ιερό του Απόλλωνα. Μέχρι το 2050 υπάρχει κίνδυνος χαθεί κάτω από το νερό. Jun 9, 2022

liberal.gr  
<https://www.liberal.gr/politismos/giati-ta-arhaia-tis-dil...>

Γιατί τα αρχαία της Δήλου κινδυνεύουν από την κλιματική αλλαγή

About featured snippets Feedback

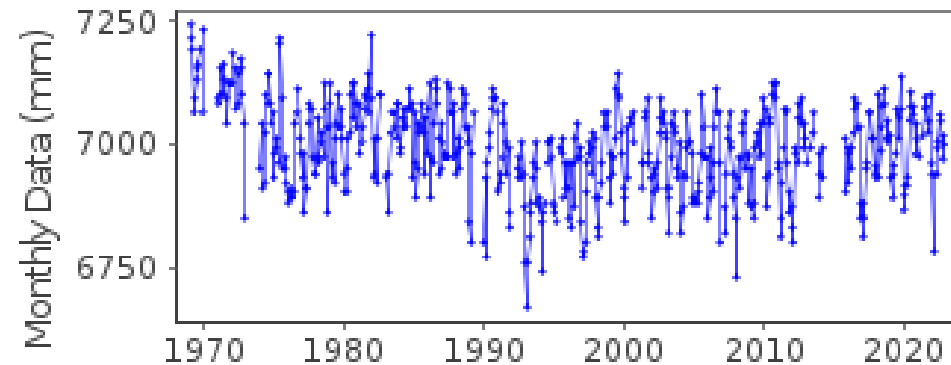
Euronews  
<https://gr.euronews.com/2022/06/06/translate-this-page>

Η Δήλος στο έλεος της κλιματικής αλλαγής

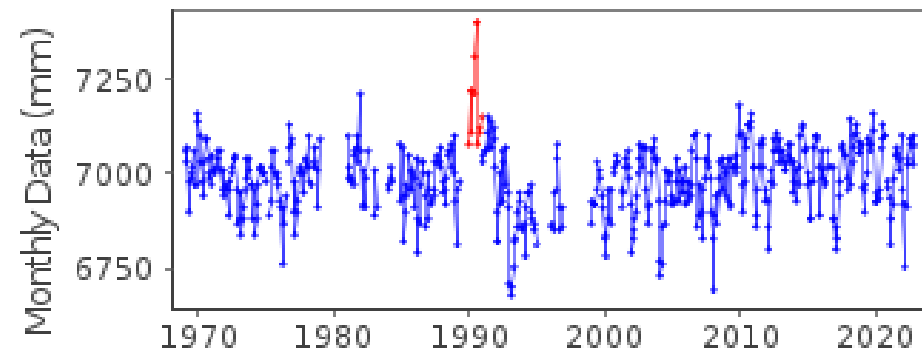
Jun 6, 2022 — Η **κλιματική αλλαγή** παραμένει η μεγαλύτερη ίσως απειλή για το ιερό νησί της **Δήλου**. Κάθε χειμώνα που περνά, κάθε κακοκαιρία προκαλεί ...

Δεδομένα παλαιογράφων Σύρου και Πειραιά από το 1969

Siros, Greece



Piraeus, Greece



# Διακύμανση στάθμης θάλασσας

Οι Μαλδίβες «κινδυνεύουν»... αλλά από tsunami



## Sea level rise

By 2050, 80% of the country could become uninhabitable due to global warming. In 1988, Maldivian authorities claimed that rising seas could entirely cover the nation within the next 30 years.

**Μεγέθη φαινομένων που έχουν παρατηρηθεί τις Μαλβίδες**

Εύρος Παλιρροιών: έως **1 m**

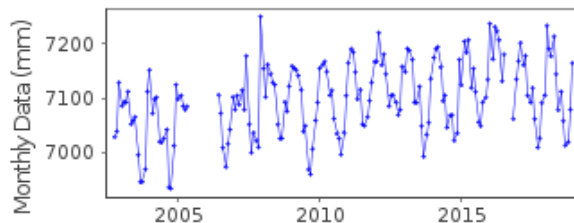
Storm surge: έως **1.3 m**

Κύματα: έως **3 m**

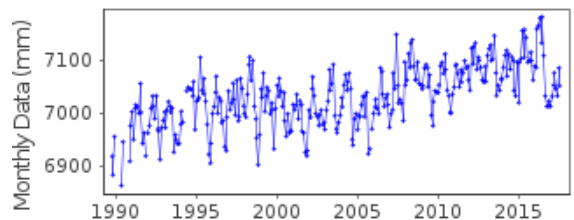
Τσουνάμι: έως **4 m**

**Μέση άνοδος στάθμης 5-10 cm**

Hanimadho,  
Maldives



Male-B,  
Maldives



**Τσουνάμι 26/12/2004:**

Ύψος κύματος 4 m - 106 νεκροί



# Διακύμανση στάθμης θάλασσας

Το Kiribati «κινδυνεύει»... αλλά από storm surge:

## KIRIBATI AND CLIMATE CHANGE

Kiribati, the first country rising sea levels will swallow up as a result of climate change

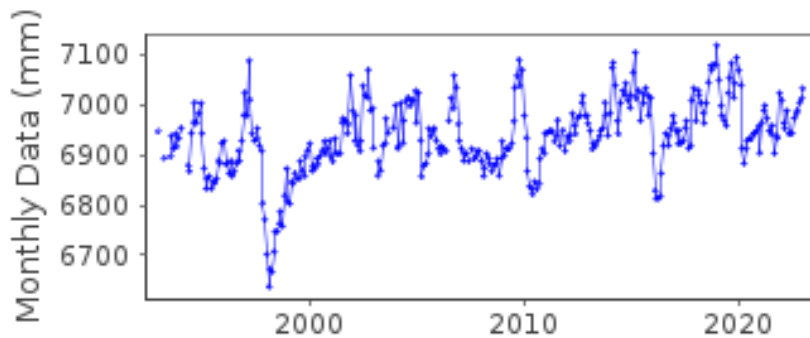


#nature

Global warming is causing glaciers and ice sheets to melt. The average sea level has risen 3.2 mm/year since 1993. This is catastrophic for islands and coastal regions. Especially in places like Kiribati, an idyllic Pacific atoll nation that seems destined to become the first victim of climate change.



Δεν παρατηρείται άνοδος της στάθμης θάλασσας



Μια τροπική καταιγίδα από τις 02 έως τις 4 Ιανουαρίου 2019 έφερε ισχυρές βροχές και καταιγίδες σε μέρη του Κιριμπάτι και των Νήσων Μάρσαλ. Οι αρχές προειδοποίησαν για πιθανό **storm surge άνω των 3 m**. Υπήρξαν αναφορές για πλημμύρες στα νησιά Tamana και Tarawa του Κιριμπάτι μετά από καταιγίδες και ισχυρές βροχοπτώσεις. Το Bonriki στην ατόλη Tarawa κατέγραψε **366,5 mm** βροχής σε **72 ώρες**.

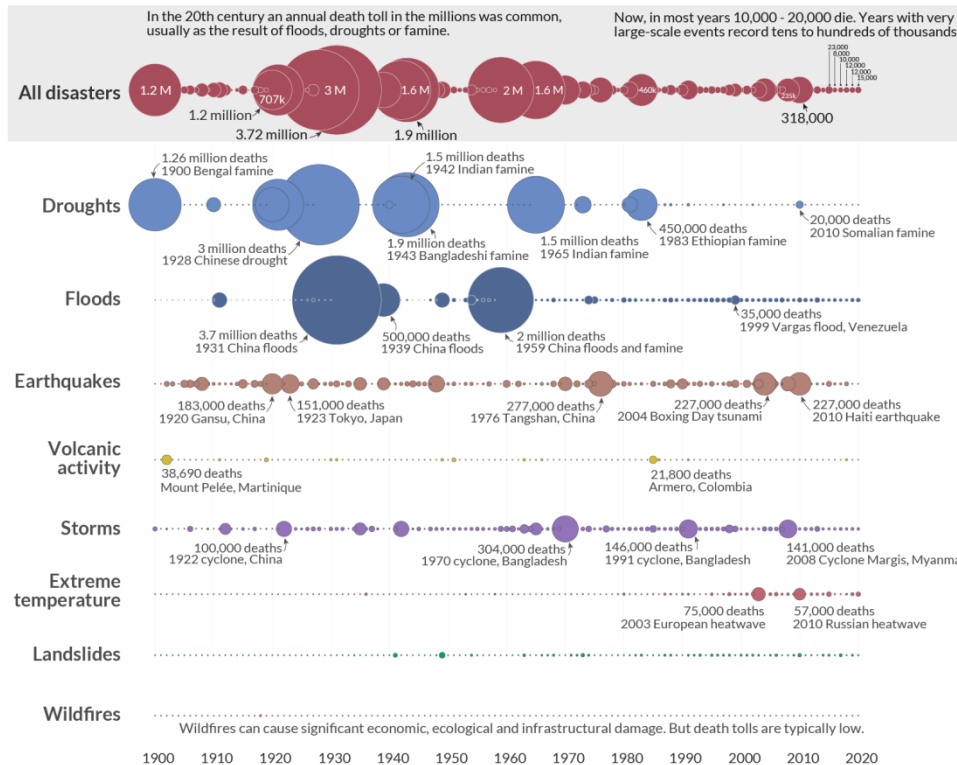
# Επιπτώσεις φυσικών καταστροφών

## Θάνατοι από φυσικές καταστροφές

### Global deaths from disasters over more than a century

The size of the bubble represents the estimated annual death toll. The largest years are labeled with this total figure, alongside large-scale events that contributed to the majority - although usually not all - of these deaths.

Our World in Data

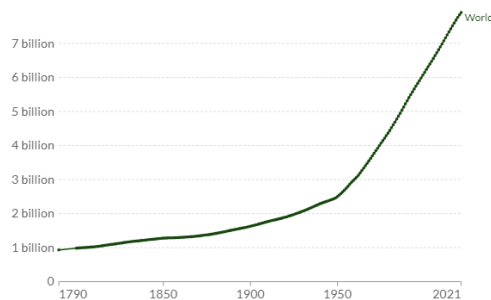


*Οι φυσικοί κίνδυνοι πάντα υπήρχαν, απλά έχουν αυξηθεί: (α) ο πληθυσμός και οι χρήσεις σε ευάλωτες περιοχές και (β) η ταχύτητα μετάδοσης των πληροφοριών*

*Οι νεκροί από φυσικές καταστροφές έχουν μειωθεί σημαντικά ενώ ο πληθυσμός από 1.6 δισ (1900) έφτασε τα 8 δισ (2022)*

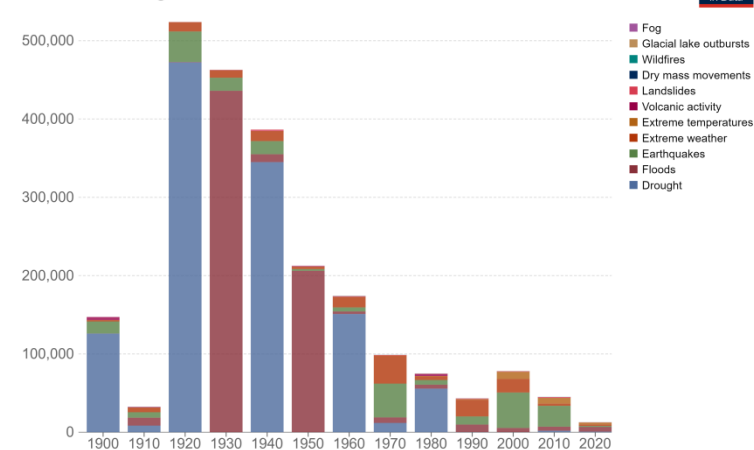
### Population, 1790 to 2021

LINEAR LOG Add country or region



Source: HYDE (2017); Gapminder (2022); UN (2022) OurWorldInData.org/world-population-growth • CC BY Note: Historical country data is shown based on today's geographical borders.

### Decadal average: Number of deaths from natural disasters, World



Our World in Data

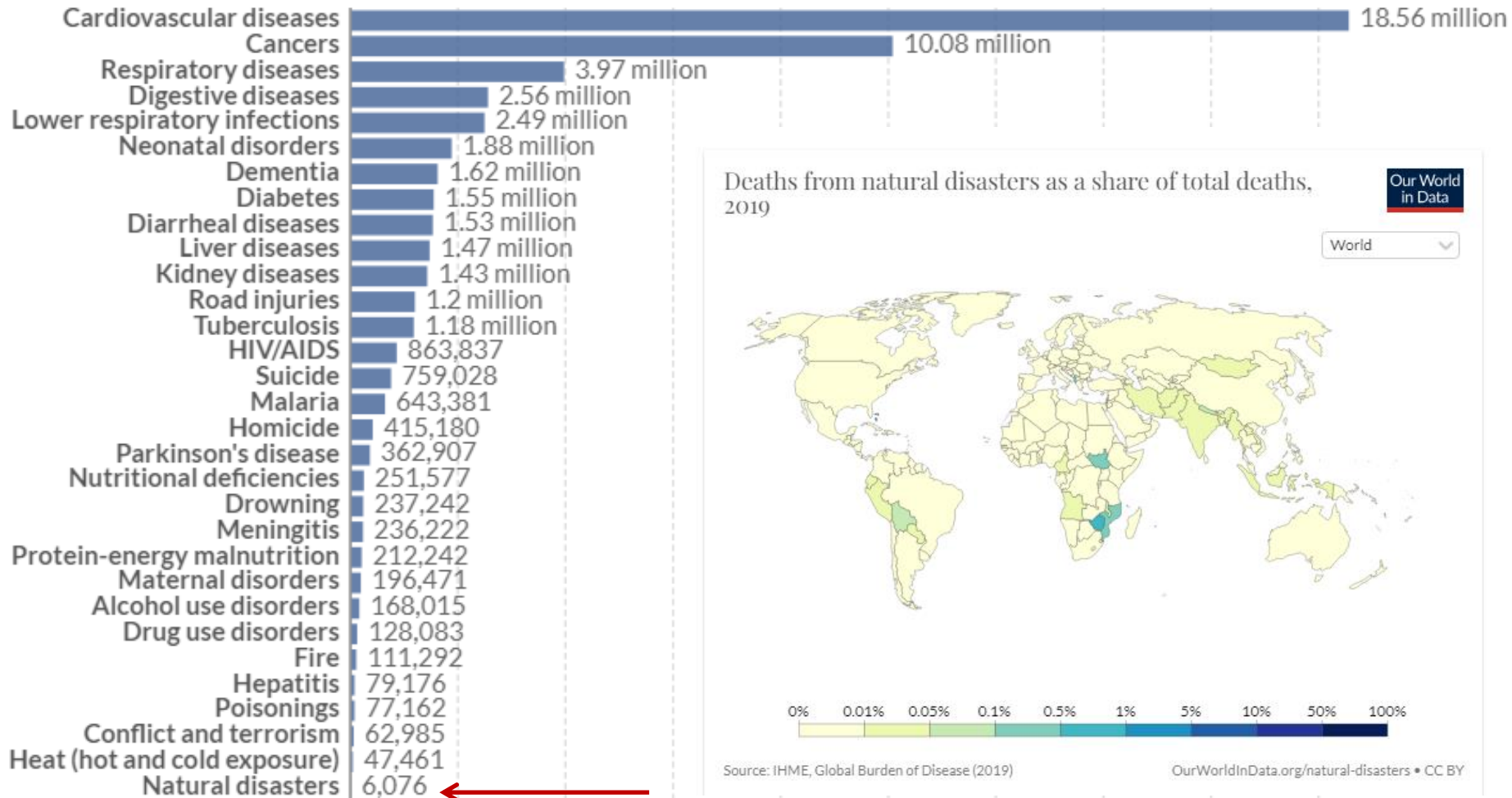
# Επιπτώσεις φυσικών καταστροφών

## Αριθμός θανάτων ανά αιτία στον κόσμο το 2019

Number of deaths by cause, World, 2019

Our World  
in Data

↔ Change country or region



# Επιπτώσεις φυσικών καταστροφών

## Χρονική εξέλιξη επεισοδίων φυσικών καταστροφών

Number of recorded natural disaster events, 1900 to 2022  
The number of global reported natural disaster events in any given year. This includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.

Our World in Data

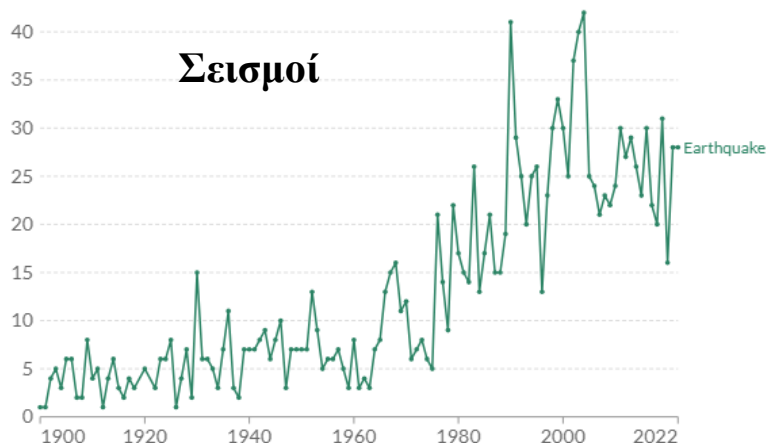
+ Add disaster category



Number of recorded natural disaster events, 1900 to 2022  
The number of global reported natural disaster events in any given year. This includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.

Our World in Data

+ Add disaster category



Number of recorded natural disaster events, 1900 to 2022  
The number of global reported natural disaster events in any given year. This includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.

Our World in Data

+ Add disaster category



Number of recorded natural disaster events, 1909 to 2022  
The number of global reported natural disaster events in any given year. This includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.

Our World in Data

+ Add disaster category



**Είναι φανερό ότι η αύξηση των επεισοδίων φυσικών καταστροφών συνδέεται άμεσα με την αύξηση της δυνατότητας καταγραφής τους και αναμετάδοσής τους**

# Επιπτώσεις φυσικών καταστροφών

## Αναμετάδοση από κάθε γωνία του πλανήτη

**Tweet που πληροφορεί για πλημμύρα στη Δυτική Αυστραλία με περίοδο επαναφοράς 100 έτη**



SBS News  
@SBSNews

Locals from the Kimberley region in Western Australia have been sharing videos of the one-in-100 year floods that have destroyed homes and displaced local wildlife.

The ADF have been deployed to help with evacuations as the flooding worsens.

Read more: [trib.al/G3IESWs](http://trib.al/G3IESWs)



### Απάντηση Δ. Κουτσογιάννη (8/1/2023)

- Κάθε ώρα συμβαίνει μια "one-in-100 year floods" σε κάποιο μέρος στη γη.
- Επιφάνεια ξηράς της γης:  $148 * 10^6 \text{ km}^2$
- Υπόθεση γεωγραφικής μονάδας όπου έχει νόημα να σημειώσουμε ότι συνέβη πλημμύρα:  $100 \text{ km}^2$
- Σύνολο γεωγραφικών μονάδων σε όλη την ξηρά  $148 * 10^6 / 100 = 1\,480\,000$
- Σύνολο ωρών 100ετίας:  $365 * 24 * 100 = 876\,000$ .
- $1\,480\,000 / 876\,000 = 1.7 > 1$ .
- *Άρα υπάρχει (και πάντα θα υπάρχει) αφθονία πλημμυρών για να βγάζουν το ψωμί τους οι δημοσιογράφοι, να απειλούν οι πολιτικοί και να τρομοκρατούνται οι ...πολίτες.*

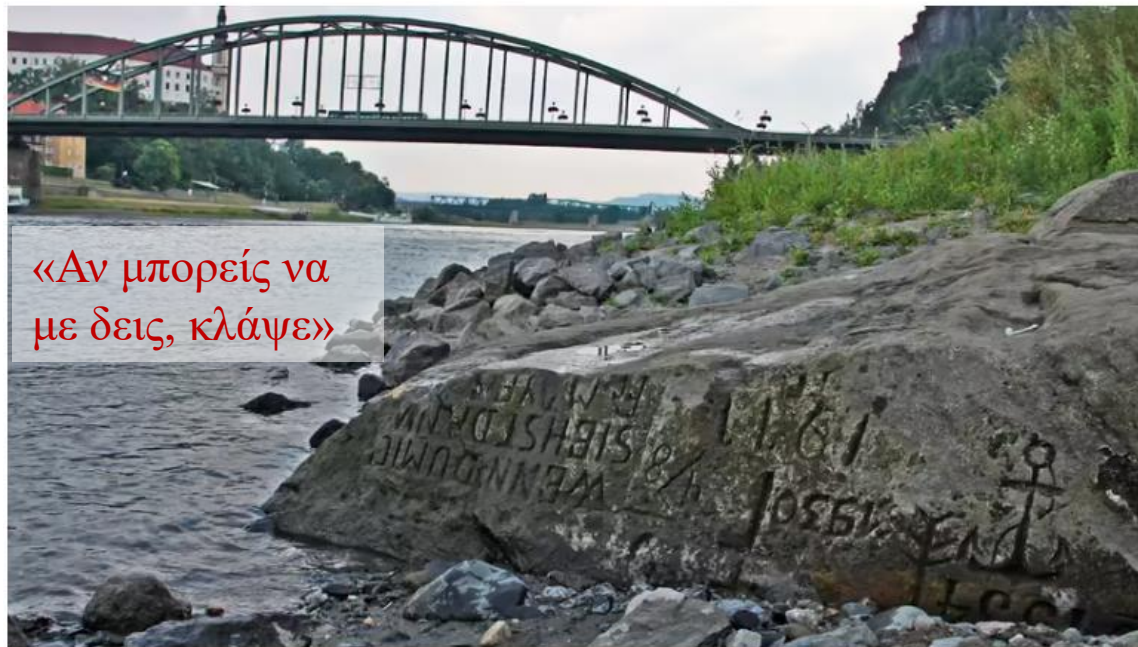


# Επιπτώσεις φυσικών καταστροφών

## Πέτρες της πείνας

### Emergence of Hunger Stones Signals Worst European Drought in 500 Years

By: Patrick J. Kiger | Sep 28, 2022



«Αν μπορείς να  
με δεις, κλάψε»

The hunger stone (the "Deciner Hungerstein") on the Elbe river in Děčín, Czech Republic has once again become visible in 2022. The stone shows markings of low water levels from different dates, the oldest legible inscription being from 1616. Older inscriptions (from 1417 and 1473, for example) were rubbed off over time by ships at anchor. WIKIMEDIA COMMONS (CC BY-SA 3.0 DE)

Οι επιγραφές στις πέτρες προφανώς φτιάχτηκαν σε αντίστοιχες ξηρασίες.

Όταν η δήλωση είναι:

**“το φαινόμενο είναι τόσο ακραίο που έχει 500 χρόνια να συμβεί”**

η απάντηση είναι

**“έχει ξανασυμβεί πριν 500 χρόνια”.**


Σύμφωνα με το άρθρο των Brázdil et.al, 2013, οι πέτρες φέρνουν ίχνη από ξηρασίες που συνέβησαν τα έτη: 1417, 1473, 1616, 1707, 1746, 1790, 1800, 1811, 1830, 1842, 1868, 1892 και 1893.

Ακόμη τα παλιά ίχνη φάνηκαν το 2018 και το 2022.

Brázdil, R., Dobrovolný, P., Trnka, M., Kotyza, O., Řezníčková, L., Valášek, H., Zahradníček, P., and Štěpánek, P.: Droughts in the Czech Lands, 1090–2012 AD, *Clim. Past*, 9, 1985–2002, <https://doi.org/10.5194/cp-9-1985-2013>, 2013.

# «Επιστήμονες» και «κλιματική αλλαγή»

Η επίδραση της «κλιματικής αλλαγής»... στις πολεμικές συγκρούσεις








ELSEVIER

Political Geography

Volume 60, September 2017, Pages 232-244

Political Geography

## Climate change and the Syrian civil war revisited

[Jan Selby](#)<sup>a</sup>  , [Omar S. Dahi](#)<sup>b</sup> , [Christiane Fröhlich](#)<sup>c,d</sup> , [Mike Hulme](#)<sup>e</sup> 

## Climate Change and Conflict

Annual Review of Political Science

Vol. 22:343-360 (Volume publication date May 2019)

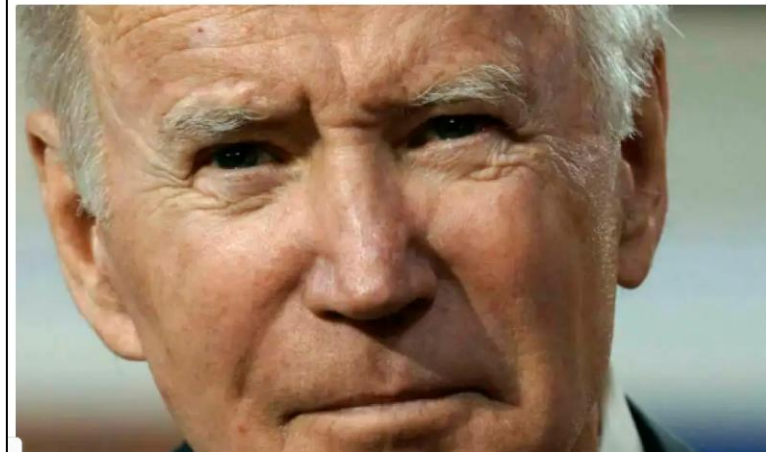
First published as a Review in Advance on March 18, 2019

<https://doi.org/10.1146/annurev-polisci-050317-070830>

Vally Koubi<sup>1,2</sup>

## Biden admin says climate change can 'force' military intervention

July 21, 2022 | Security



# «Επιστήμονες» και «κλιματική αλλαγή»

## Η επίδραση της «κλιματικής αλλαγής»... στην έμφυλη βία

[Home](#) > [Sustainable Policies and Practices in Energy, Environment and Health Research](#) >

### Climate Change and Gender-Based Violence: Outcomes, Challenges and Future Perspectives

[Sónia Maria Martins Caridade](#), [Diogo Guedes Vidal](#) & [Maria Alzira Pimenta Dinis](#)

Chapter | [First Online: 16 December 2021](#)

### Role of Climate Change in Exacerbating Sexual and Gender-Based Violence against Women: A New Challenge for International Law

**Article type:** Research Article

**Authors:** Desai, Bharat H.<sup>a,\*</sup> | Mandal, Moumita<sup>b</sup>

**Journal:** *Environmental Policy and Law*, vol. 51, no. 3, pp. 137-157, 2021

**Published:** 15 July 2021


← **Tweet**

 **Australian Ambassador for Women and Girls** ✓  
@AusAmbGender


The consequences of climate change can exacerbate the risk of sexual & gender-based violence, especially those facing intersecting forms of discrimination including Indigenous women & girls. Listen to 🇦🇺's [#HRC50](#) annual statement discussion on women's rights

# «Επιστήμονες» και «κλιματική αλλαγή»


## Η επίδραση της «κλιματικής αλλαγής»... στην εγκληματικότητα



Science of The Total Environment  
Volume 609, 31 December 2017, Pages 1041-1048



Impact of climate variability and change  
on crime rates in Tangshan, China

[Xiaofeng Hu](#)<sup>a</sup>  , [Jiansong Wu](#)<sup>b</sup>, [Peng Chen](#)<sup>a</sup>, [Ting Sun](#)<sup>c</sup>, [Dan Li](#)<sup>d</sup>

West J Emerg Med. 2012 Aug; 13(3): 239–246.

doi: [10.5811/westjem.2012.3.11746](https://doi.org/10.5811/westjem.2012.3.11746)

PMCID: PMC3415828


PMID: [22900121](https://pubmed.ncbi.nlm.nih.gov/22900121/)

### Temperature and Violent Crime in Dallas, Texas: Relationships and Implications of Climate Change

[Janet L. Gamble](#), PhD\* and [Jeremy J. Hess](#), MD, MPH†

# «Επιστήμονες» και «κλιματική αλλαγή»


## Η επίδραση της «κλιματικής αλλαγής»... στη συρρίκνωση των ειδών

 SpringerLink

[Home](#) > [Oecologia](#) > [Article](#)

Global change ecology – original research | [Published: 26 February 2019](#)

### Are animals shrinking due to climate change? Temperature-mediated selection on body mass in mountain wagtails

[Jorinde Prokosch](#), [Zephne Bernitz](#), [Herman Bernitz](#), [Birgit Erni](#) & [Res Altwegg](#) 

[Oecologia](#) **189**, 841–849 (2019) | [Cite this article](#)

Wiley Online Library

## Global Change Biology

Opinion |  [Free Access](#)

### Climate change and shrinking salamanders: alternative mechanisms for changes in plethodontid salamander body size

Grant M. Connette  John A. Crawford, William E. Peterman

First published: 31 January 2015 | <https://doi.org/10.1111/gcb.12883> | Citations: 40

[Published: 16 October 2011](#)

## Shrinking body size as an ecological response to climate change

[Jennifer A. Sheridan](#)  & [David Bickford](#) 

[Nature Climate Change](#) **1**, 401–406 (2011) | [Cite this article](#)

# «Επιστήμονες» και «κλιματική αλλαγή»

## Η επίδραση της «κλιματικής αλλαγής»... στη διανοητική υγεία

SYSTEMATIC REVIEW article

Front. Psychiatry, 06 March 2020

Sec. Public Mental Health

Volume 11 - 2020 | <https://doi.org/10.3389/fpsyt.2020.00074>

This article is part of the Research Topic

Ecological Disaster Neuropsychiatry

[View all 8 Articles >](#)

## The Impact of Climate Change on Mental Health: A Systematic Descriptive Review



Paolo Cianconi<sup>1\*</sup>



Sophia Betrò<sup>2</sup> and



Luigi Janiri<sup>1,3</sup>



ELSEVIER

Current Opinion in Psychology

Volume 32, April 2020, Pages 12-16



## Global climate change and mental health

[Lawrence A Palinkas](#) , [Marleen Wong](#)

# «Επιστήμονες» και «κλιματική αλλαγή»

## Η επίδραση της «κλιματικής αλλαγής»... στην πέτρα στο νεφρό

Article | [Open Access](#) | [Published: 10 January 2022](#)

### The impact of heat on kidney stone presentations in South Carolina under two climate change scenarios

[Jason Kaufman](#), [Ana M. Vicedo-Cabrera](#), [Vicky Tam](#), [Lihai Song](#), [Ethan Coffel](#) & [Gregory Tasian](#) 

Comment | [Published: 15 October 2020](#)

### The impact of climate change on kidney health

[Matthew A. Borg](#) & [Peng Bi](#) 

[Nature Reviews Nephrology](#) **17**, 294–295 (2021) | [Cite this article](#)

NEPHROLOGISTS SANS FRONTIÈRES | [VOLUME 92, ISSUE 3, P526-530](#),  
SEPTEMBER 2017



PDF [230]

## Climate change and kidney disease—threats and opportunities

[Katherine A. Barraclough](#)   • [Grant A. Blashki](#) • [Steve G. Holt](#) • [John W.M. Agar](#)

# «Επιστήμονες» και «κλιματική αλλαγή» Η επίδραση της «κλιματικής αλλαγής»... στον κορωνοϊό

**Ζερεφός: Πιθανότητα ο κορωνοϊός προέρχεται από λιώσιμο πάγων της Σιβηρίας - Ο πλανήτης εκπέμπει «SOS»**



Όπως δήλωσε υπάρχει σχετική εργασία δημοσιευμένη σε έγκυρο περιοδικό καθώς και σχετικό συνέδριο που έγινε στην Γερμανία και τη Νέα Υόρκη




## REVIEW article

Front. Med., 08 December 2021

Sec. Infectious Diseases: Pathogenesis and Therapy

Volume 8 - 2021 | <https://doi.org/10.3389/fmed.2021.769208>

## Did Climate Change Influence the Emergence, Transmission, and Expression of the COVID-19 Pandemic?

 Saloni Gupta<sup>1</sup>,  Barry T. Rouse<sup>2\*</sup> and  Pranita P. Sarangi<sup>1\*</sup>

<sup>1</sup> Department of Biosciences and Bioengineering, Indian Institute of Technology Roorkee, Roorkee, India

<sup>2</sup> Department of Biomedical and Diagnostic Sciences, College of Veterinary Medicine, University of Tennessee, Knoxville, Knoxville, TN, United States



# «Επιστήμονες» και «κλιματική αλλαγή»

## Η επίδραση της «κλιματικής αλλαγής»... στα πάντα

### WORLD ECONOMIC FORUM

7 unexpected side-effects of climate change, Dec 22, 2022

#### 1. Sex-changing lizards

This is creating concern among scientists that the males could become increasingly rare as temperatures keep rising, leaving the entire species at risk of extinction. So-called temperature-dependent sex determination also effects all crocodiles, most turtles and many fish.

#### 2. Shrinking goats

The Alpine Chamois mountain goat now weighs an average of 25% less than in the 1980s, reports Science Daily.

#### 3. Worse wine

At warmer temperatures, ripening is supercharged, leading to sweet, raisin-like flavour in grapes.”

#### 4. Much less coffee

Farmers in Brazil, the world’s biggest coffee exporter, have faced substantially lower yields of Arabica beans this year because of frosts and droughts, says Bloomberg.

#### 5. Bumpier plane trips

Air circulation patterns are becoming less predictable because of climate change, leading to much bumpier flights – so much so that turbulence has become the most common cause of airline accidents, the US National Transportation Safety Board’s (NTSB) Bruce Landsberg told Bloomberg last year.

#### 6. More lightning

One study has estimated that each 1C of warming could lead to a 12% rise in lightning strikes.

#### 7. Volcanoes erupting

Many glaciers cover the sides of active volcanoes. As these glaciers melt, the reduction in pressure on the Earth’s surface could alter the movement of volcanic magma and lead to more eruptions.

<https://www.weforum.org/agenda/2022/12/strange-unexpected-effects-climate-change/>

# Λογικές πλάνες στην επικοινωνία της «κλιματικής αλλαγής»

- ***Argumentum ad numerum*** (το επιχείρημα της πλειοψηφίας). **Αποδοχή** ως σωστής μιας θέσης επειδή την υποστηρίζουν οι περισσότεροι.  
π.χ. το 85% των ανθρώπων πιστεύουν στο θεό, άρα θεός υπάρχει
- ***Argumentum ad verecundiam*** (επίκληση στη γενική αυθεντία). **Χρησιμοποιείται το γενικό κύρος ή θέση του εκφραστή**  
π.χ. ο Αριστοτέλης υποστήριξε το γεωκεντρικό σύστημα και ότι ο αέρας είναι στοιχείο άρα οι θέσεις αυτές είναι σωστές
- ***Argumentum ad hominem*** (επιχείρημα κατά του προσώπου). **Απόρριψη μιας θέσης με βάση το ποιος το λέει**  
π.χ. ο Donald Trump δεν πιστεύει στην κλιματική αλλαγή άρα η κλιματική αλλαγή είναι εδώ
- ***Post hoc ergo propter hoc*** (μετά από αυτό άρα εξαιτίας αυτού). **Όταν κάτι γίνεται μετά από κάτι άλλο θεωρείται ότι το πρώτο προέκυψε εξαιτίας του δεύτερου.**  
π.χ. πρώτα έγινε η εκβιομηχάνιση και μετά αυξήθηκε η θερμοκρασία, άρα η άνοδος της θερμοκρασίας οφείλεται στην εκβιομηχάνιση
- ***Πλάνη της σύνθεσης*** (Αριστοτέλης). **Ένα μέρος του συνόλου είναι αληθές αλλά αυτό δεν ισχύει για το σύνολο.**  
π.χ. η ανθρωπογενής δραστηριότητα προκαλεί μόλυνση του περιβάλλοντος και την κλιματική αλλαγή
- ***Πλάνη της Διαίρεσης*** (Αριστοτέλης). **Εάν μια θέση ισχύει για το σύνολο τότε θα ισχύει και για ένα μέρος.**  
π.χ. ο καπνός που περιέχει αιωρούμενα και CO<sub>2</sub> είναι επικίνδυνος για την υγεία, άρα το CO<sub>2</sub> είναι βλαβερό για τον άνθρωπο

# Argumentum ad numerum (το επιχείρημα της πλειοψηφίας)

Ποσοστά των Αμερικανών που πιστεύουν (α) στην πνευματική ενέργεια αντικειμένων, (β) στους πνευματιστές (μέντιουμ), (γ) στην μετεμψύχωση και (δ) στην αστρολογία

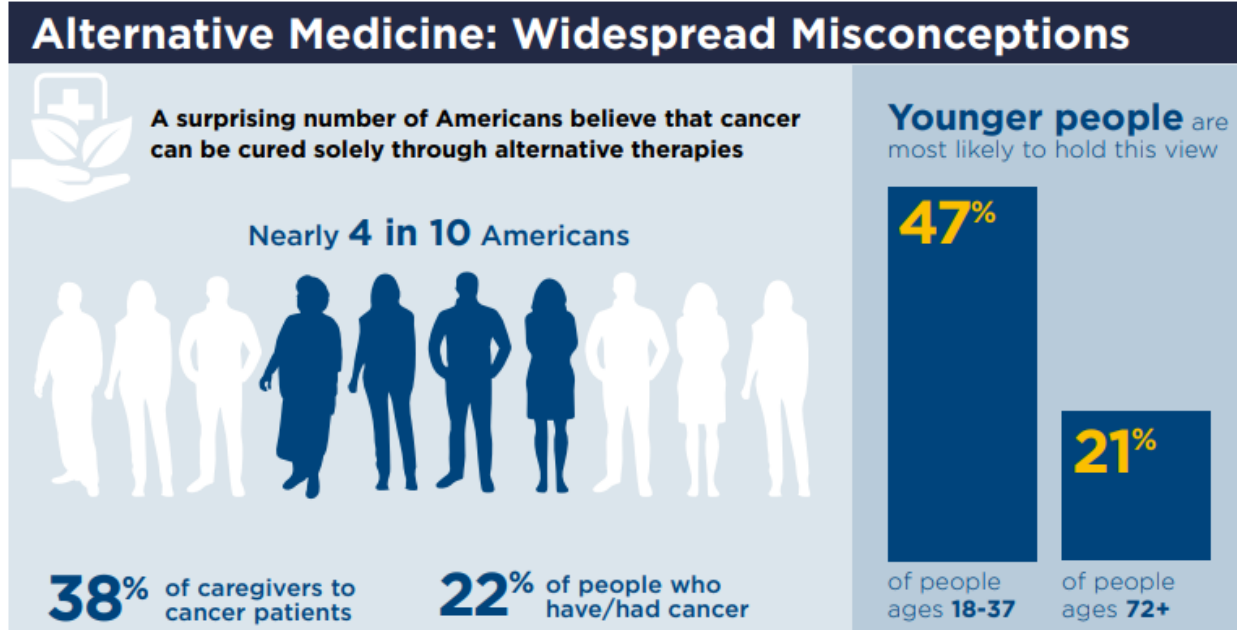
## Six-in-ten Christians, 'nones' hold at least one New Age belief

	Believe spiritual energy can be located in physical things	Believe in psychics	Believe in reincarnation	Believe in astrology	NET Believe in at least one
All U.S. adults	42%	41%	33%	29%	62%
Christian	37	40	29	26	61
Protestant	32	38	26	24	57
Evangelical	24	33	19	18	47
Mainline	43	44	33	30	67
Historically black	41	43	38	34	72
Catholic	47	46	36	33	70
Unaffiliated	47	40	38	32	62
Atheist	13	10	7	3	22
Agnostic	40	31	28	18	56
Nothing in particular	61	52	51	47	78

Source: Survey conducted Dec. 4-18, 2017, among U.S. adults.

# Argumentum ad numerum (το επιχείρημα της πλειοψηφίας)

Ποσοστά των Αμερικανών που πιστεύουν στη θεραπεία του καρκίνου αποκλειστικά με εναλλακτικές θεραπείες



# Argumentum ad verecundiam (επίκληση στη γενική αυθεντία)

## Ο Steve Jobs χρησιμοποίησε εναλλακτικές θεραπείες για να θεραπεύσει τον καρκίνο στο πάγκρεας

Science

### Steve Jobs chose herbal medicine, delayed cancer surgery



Apple CEO set on destroying Android, biography says

The Associated Press - Posted: Oct 20, 2011 7:56 PM EDT | Last Updated: October 23, 2011



'I really didn't want them to open up my body.'—Steve Jobs in the biography by Walter Isaacson

The book delves into Jobs' decision to delay surgery for nine months after learning in October 2003 that he had a neuroendocrine tumour — a relatively rare type of pancreatic cancer that normally grows more slowly and is therefore more treatable. Instead, he tried a **vegan diet, acupuncture, herbal remedies and other treatments he found online, and even consulted a psychic**. He also was influenced by a doctor who ran a clinic that **advised juice fasts, bowel cleansings** and other unproven approaches, the book says, before finally having surgery in July 2004.

## Ο Leonardo Dicaprio πολεμάει την κλιματική αλλαγή



Goal 13: Climate Action

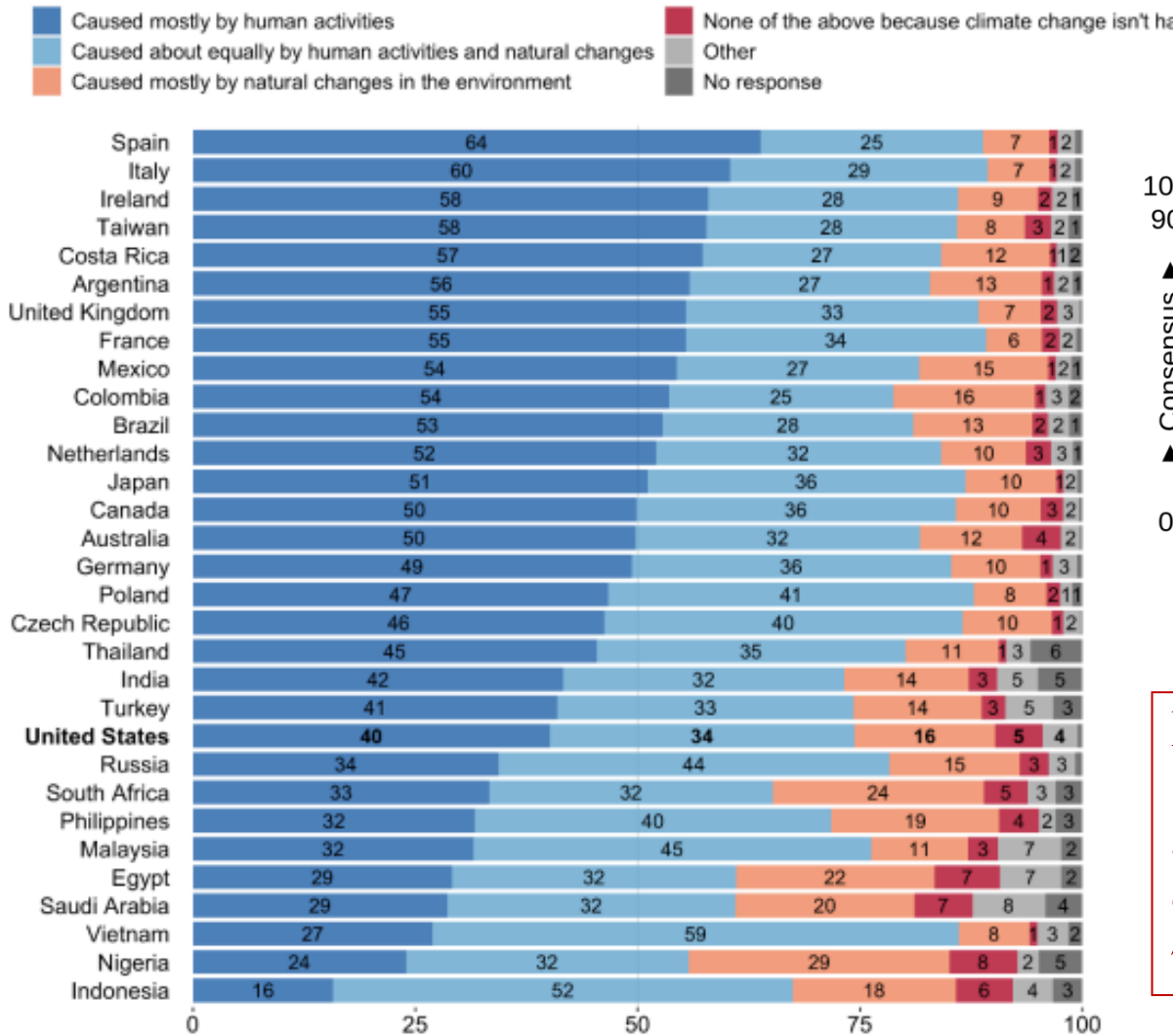
### HOW LEONARDO DICAPRIO BECAME A CLIMATE ACTIVIST

*From his childhood dream to become a marine biologist to meeting Al Gore, here's how the Hollywood star has been on a mission to save the planet for most of his life*

# Η επιβολή της «κλιματικής αλλαγής» στις κοινωνίες

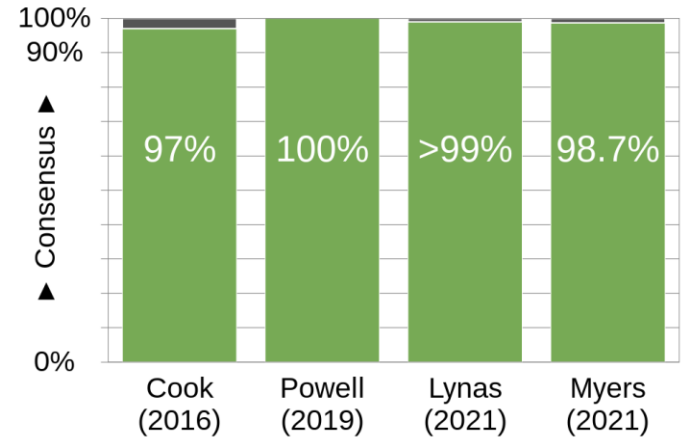
## Έρευνα του πανεπιστημίου του Yale

### Climate Change is Caused Mostly by Human Activities



## Έρευνες για αποδοχή της κλιματικής αλλαγής σε επιστημονικές εργασίες

Academic studies of scientific consensus on human-caused global warming



Η κλιματική αλλαγή είναι το μόνο αφήγημα όπου οι επιστήμονες το αποδέχονται σε μεγαλύτερα ποσοστά από το ευρύ κοινό

International Public Opinion on Climate Change.

Interview dates: 2-3/2021. 76,328 interviews from 31 countries.

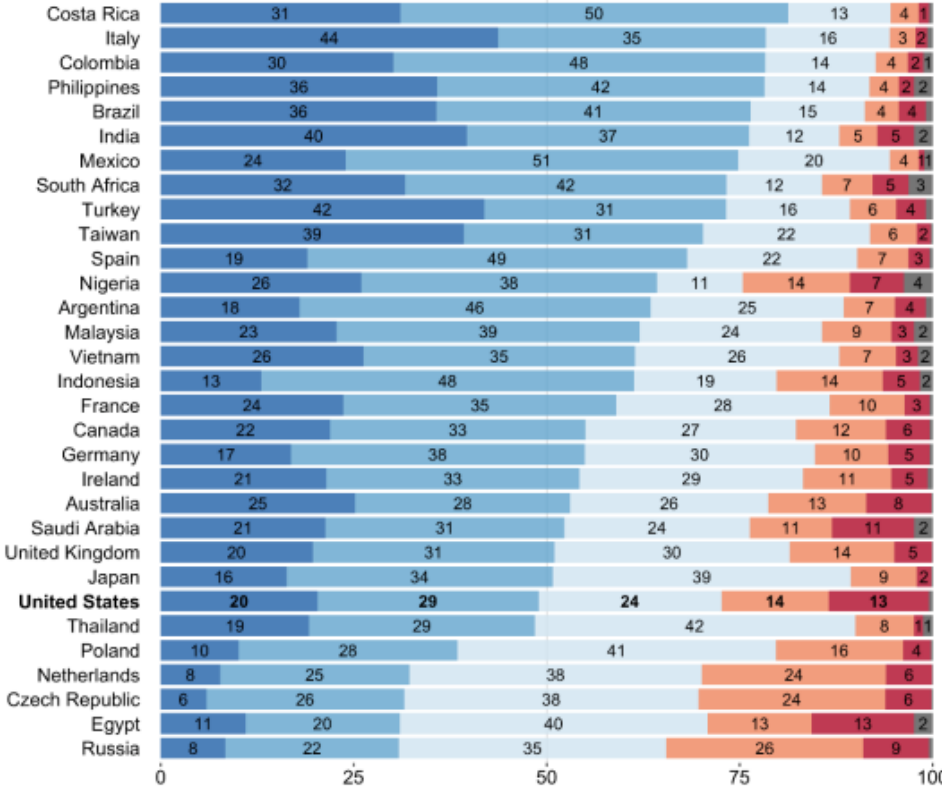
*Yale research team*

# Η επιβολή της «κλιματικής αλλαγής» στις κοινωνίες

## Έρευνα του πανεπιστημίου του Yale

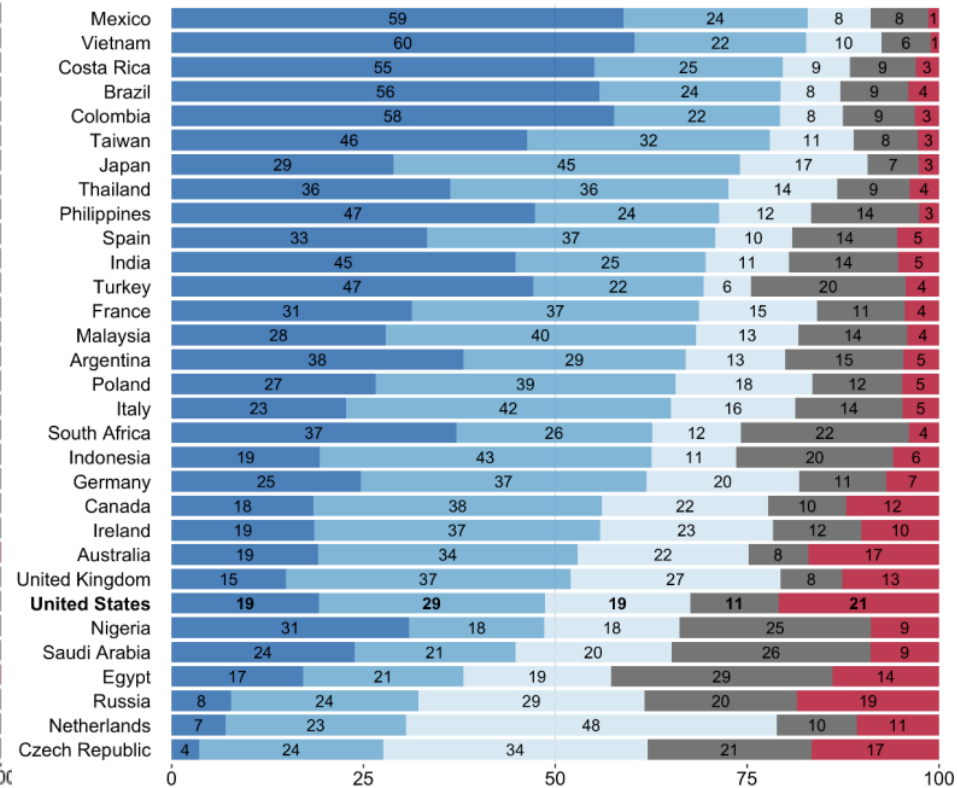
### Climate Change is Personally Important

Extremely important    Somewhat important    Not at all important  
 Very important    Not too important    No response



### Climate Change Will Be Personally Harmful

A great deal    Only a little    Not at all  
 A moderate amount    Don't know/No response



Η αποδοχή του αφηγήματος είναι μικρότερη όταν το ερώτημα γίνεται προσωπικό

# Η επιβολή της «κλιματικής αλλαγής» στις κοινωνίες

Έρευνα Pew Research Center (2/2019)

Η έρευνα αφορά τις διεθνείς απειλές και έγινε σε 25 χώρες

## TOP FOUR

Country	Global climate change	The Islamic militant group known as ISIS	Cyberattacks from other countries	North Korea's nuclear program	The condition of the global economy	U.S. power and influence	Russia's power and influence
+ Greece	90%	69%	63%	63%	88%	48%	33%
+ South Korea	86%	63%	81%	67%	74%	67%	44%
+ France	83%	87%	67%	55%	46%	49%	40%
+ Spain	81%	75%	59%	59%	57%	42%	41%

## MIDDLE FOUR

+ Netherlands	70%	67%	72%	39%	28%	37%	42%
+ Sweden	69%	61%	55%	41%	27%	34%	40%
+ Philippines	67%	79%	69%	61%	48%	29%	38%
+ Canada	66%	54%	57%	47%	41%	46%	32%

## BOTTOM FOUR

+ Poland	55%	59%	53%	53%	23%	18%	65%
+ Russia	43%	62%	36%	30%	40%	43%	*
+ Nigeria	41%	61%	47%	41%	49%	39%	33%
+ Israel	38%	47%	42%	36%	35%	15%	28%

Οι Έλληνες έρχονται πρώτοι στο φόβο για την κλιματική αλλαγή

Πηγή: D. Koutsoyiannis,  
A voyage in climate, hydrology  
and life on a 4.5-billion-years  
old planet,  
Self-organized lecture,  
[https://www.itia.ntua.gr/el/getfile/2036/1/documents/ClimateHydrology6\\_.pdf](https://www.itia.ntua.gr/el/getfile/2036/1/documents/ClimateHydrology6_.pdf)



# Η επιβολή της «κλιματικής αλλαγής» στις κοινωνίες

## Το νέο «προϊόν»

Η ΕΕ θα διαθέσει 600 δισεκατομμύρια ΕΥΡΩ κατά την περίοδο 2021-27

### Supporting climate action through the EU budget.

EU budget 2021-2027: Commission proposal to further **strengthen climate action**

The EU's 2021-2027 long-term budget, together with the NextGenerationEU recovery instrument, amounts to **€2.018 trillion in current prices** (€1.8 trillion in 2018 prices).

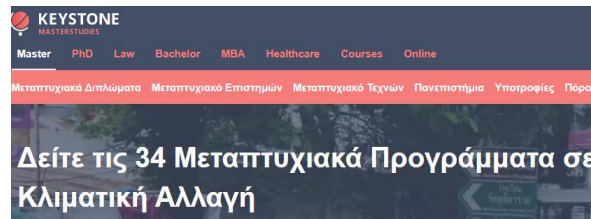
**30% of the EU budget will be spent to fight climate change.**

Πηγή: [https://climate.ec.europa.eu/eu-action/funding-climate-action/supporting-climate-action-through-eu-budget\\_en](https://climate.ec.europa.eu/eu-action/funding-climate-action/supporting-climate-action-through-eu-budget_en)

## Μετονομασίες υπουργείου



## Νέα μεταπτυχιακά



- Οικολογική Μηχανική και Κλιματική Αλλαγή, Πανεπιστήμιο Αιγαίου
- Αειφορικά Γεωργικά Συστήματα Παραγωγής και Κλιματική Αλλαγή, ΑΠΘ
- Νερό, Βιόσφαιρα και Κλιματική Αλλαγή, ΕΚΠΑ
- Κλιματική Κρίση και Τεχνολογίες Πληροφορικής και Επικοινωνιών, Πανεπιστήμιο Πειραιώς

## Τεράστιος αριθμός επιστημονικών εργασιών

Αναζήτηση όρων στο Google Scholar (2/4/2023)

- “climate change”  
2.870.000 εργασίες
- “climate crisis”  
307.000 εργασίες
- “climate emergency”  
87.000 εργασίες

# Η επιβολή της «κλιματικής αλλαγής» στις κοινωνίες

## Βρώση εντόμων με στόχο τη μείωση των αερίων θερμοκηπίου

ΕΚΤΕΛΕΣΤΙΚΟΣ ΚΑΝΟΝΙΣΜΟΣ (ΕΕ) 2023/58 ΤΗΣ ΕΠΙΤΡΟΠΗΣ

της 5ης Ιανουαρίου 2023

για την έγκριση της διάθεσης στην αγορά προνυμφών *Alphitobius diaperinus* (μικρός αλευροσκώληκας) κατεψυγμένων, αποξηραμένων, σε μορφή πολτού και σε μορφή σκόνης ως νέου τροφίμου και για την τροποποίηση του εκτελεστικού κανονισμού (ΕΕ) 2017/2470

### Άρθρο 1

Επιτρέπεται η διάθεση προνυμφών *Alphitobius diaperinus* (μικρός αλευροσκώληκας) κατεψυγμένων, αποξηραμένων, σε μορφή πολτού και σε μορφή σκόνης στην αγορά της Ένωσης.

Οι προνύμφες *Alphitobius diaperinus* κατεψυγμένες, αποξηραμένες, σε μορφή πολτού και σε μορφή σκόνης περιλαμβάνονται στον ενωσιακό κατάλογο νέων τροφίμων που έχει θεσπιστεί με τον εκτελεστικό κανονισμό (ΕΕ) 2017/2470.



### Approval of fourth insect as a Novel Food

#### What is the economic impact of the market?

At present, insects as foods represent a very small niche market in the EU.

The environmental benefits of rearing insects for food are founded on the high feed conversion efficiency of insects, **less greenhouse gas emissions**, less use of water and arable lands, and the use of insect-based bioconversion as a marketable solution for reducing food waste.

# Η επιβολή της «κλιματικής αλλαγής» στις κοινωνίες

## Μην κάνετε παιδιά, αποσταθεροποιείτε το κλίμα

The Washington Post  
Democracy Dies in Darkness

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Climate Environment Weather Climate Solutions Climate Lab Green Living Business of Climate

## Should you not have kids because of climate change? It's complicated.

Some researchers have claimed the best thing to do for the environment is to have fewer children. The truth is more complicated.



Analysis by [Shannon Osaka](#)  
Climate zeitgeist reporter  
December 2, 2022 at 6:00 a.m. EST



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**The Ethicist**

## Is It Wrong to Bring a Child Into Our Warming World?

The magazine's Ethicist columnist on personal responsibility and climate change.

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🏠 > Magazine > Issue: 16 October 2021 > Features

Tom Woodman

## Having a child is the grandest act of climate destruction

📖 From magazine issue: 16 October 2021

SUSTAINABLE FUTURE

## Climate change is making people think twice about having children

Sam Shead  
@SAM\_L\_SHEAD

### KEY POINTS

- Analysts at Morgan Stanley said in a note to investors last month that the "movement to not have children owing to fears over climate change is growing and impacting fertility rates quicker than any preceding trend in the field of fertility decline."
- Some people are choosing not to have children because they fear that that doing so will amplify global warming while others are concerned about extreme weather events their children may have to endure and the knock-on effects.

# Αντί επιλόγου...

**Γιατί γίνονται όλα αυτά;**

## Στρέβλωση ενεργειακού μίγματος

Η συστηματική πλύση εγκεφάλου από ΜΜΕ και κυβερνήσεις για τον **«κίνδυνο»** της «κλιματικής αλλαγής προωθεί **«δράσεις»** αντιμετώπισής της (επιδότησεις ΑΠΕ, εμπόριο ρύπων, χρηματιστήριο ενέργειας) ώστε να προωθούνται πηγές ενέργειας που συνήθως είναι **ιδιωτικές** (φυσικό αέριο, ΑΠΕ, εισαγωγές) σε βάρος άλλων που συνήθως είναι **δημόσιες** (άνθρακας, υδροηλεκτρικά, πυρηνικά). **Η ενέργεια από κοινωνικό αγαθό μετατρέπεται σε εμπόρευμα.**

## Μεταφορά των ευθυνών για τη μετρίαση των επιπτώσεων των φυσικών καταστροφών από τις κυβερνήσεις στους πολίτες μέσω του κλίματος

Οι επιδράσεις των φυσικών κινδύνων στην ανθρωπότητα μπορούν να μετριαστούν σημαντικά από τα τεχνικά έργα. Η απόδοση των φυσικών κινδύνων στην κλιματική αλλαγή απενοχοποιεί τις κυβερνήσεις για την απουσία έργων υποδομής ειδικά σε τριτοκοσμικές χώρες και **μεταφέρει την ευθύνη στο σύνολο του πληθυσμού.** Αντίστοιχα η μετανάστευση για πολιτικούς και κοινωνικούς λόγους συγχέεται σκόπιμα με το κλίμα λες και θα υπάρχουν **κλιματικοί μετανάστες** που θα προέρχονται από τη **Νεβάδα** η το **Ντουμπάι.**

## Δημιουργία νέου προϊόντος

Στο νέο προϊόν διατίθενται **τεράστια χρηματικά ποσά** σε «επιστήμονες» και ιδιωτικές εταιρείες, δημιουργούνται εκατομμύρια θέσεις εργασίας, γράφονται **χιλιάδες μάταιες επιστημονικές εργασίες** και **προσαρμόζεται η γνώση** ώστε να εξυπηρετήσει το κυρίαρχο αφήγημα.

# Αντί επιλόγου...

## Γιατί γίνονται όλα αυτά;

### Έλεγχος της νεολαίας κατευθύνοντάς την σε αγώνες για λάθος πράγματα

Το οικολογικό κίνημα που είχε αναπτυχθεί τη δεκαετία του 1990 έπρεπε να βρει νέους στόχους που να έχουν απήχηση στη νεολαία των πλούσιων δυτικών κοινωνιών. Έτσι προέκυψε ο κίνδυνος της κλιματικής αλλαγής που είναι υπεύθυνη για κάθε κακό στον πλανήτη. Διάφορες δομές εκμεταλλεύονται την **ευαισθησία** και την **επαναστατικότητα** των νέων ανθρώπων για να τους κατευθύνουν σε μάταιους αγώνες και δράσεις οι οποίες ευνοούν επιχειρηματικά και γεωπολιτικά **συμφέροντα**. Με αυτόν τον τρόπο τους απομακρύνουν από τα **πραγματικά κοινωνικά προβλήματα**.

### Χειραγώγηση του πληθυσμού να αποδέχεται οποιεσδήποτε πολιτικές με πρόσχημα την σωτηρία του πλανήτη

Έχει πια παγιωθεί η άποψη (έχει γίνει κοινή λογική) στον πληθυσμό ότι η **κλιματική αλλαγή ευθύνεται για «όλα»**. Αυτό έχει σαν αποτέλεσμα να είναι εύκολη η χειραγώγηση του πληθυσμού ώστε να αποδεχτεί **«κάθε» πολιτική που θα «σώσει» τον πλανήτη**. Άλευρα από έντομα, έλεγχος γεννήσεων, χρηματιστήριο «ρύπων», πρόστιμα στους φτωχούς λαούς που «εκπέμπουν», ανάπτυξη μεθόδων γεωμηχανικής είναι μερικές μόνο από τις πολιτικές που θα μπορούσαν να εφαρμοστούν. Ο κύριος στόχος δεν είναι η αντιμετώπιση της κλιματικής αλλαγής αλλά η χειραγώγηση του πληθυσμού να αποδέχεται το παράλογο

### Επιβολή του στρεβλού μηνύματος περί ενός σταθερού φυσικού περιβάλλοντος

Η **αβεβαιότητα είναι βασικό στοιχείο** της φύσης και οι δράσεις «επαναφοράς» των φυσικών μεταβλητών σε «επιθυμητά» όρια **επιβάλλει** την εικόνα ενός **σταθερού, ελεγχόμενου και προβλέψιμου μέλλοντος**.

# Αντί επιλόγου...

**Όταν οι πλούσιοι μάχονται την κλιματική αλλαγή...**

**Davos: 1 in 10 travelled by private jet to meeting designed to tackle climate change**



**οι φτωχοί αγωνίζονται για την επιβίωση...**



Dzaipi transit centre in northern Uganda,

**και προσεύχονται για την κλιματική αλλαγή**

A screenshot of a Bloomberg.com article. The main image shows several faces of wealthy individuals (billionaires) integrated into a green, botanical illustration of plants and butterflies. Below the image, the text reads: 'These Billionaires Made Their Fortunes by Trying to Stop Climate Change'. A 'Visit' button is visible on the right.

The header of the Compassion in Action website. It features the organization's logo on the left and navigation links: 'Pray &amp; Connect', 'Get Involved', 'Donate', 'About Us', 'Log in', and 'Sponsor a Child'.

## 5 Powerful Prayers for Climate Change

For the sake of future generations, we need to act practically and turn to God in prayer. Pray with us five short prayers for climate change.



### Prayers for COP26 and COP27

Father, we pray that the decisions made during COP26 won't be empty words ...

## Αντί επιλόγου...



**Whenever you find yourself on the side of the majority, it is time to pause and reflect**

**Κάθε φορά που βρίσκεστε στο πλευρό της πλειοψηφίας, είναι καιρός να σταματήσετε και να αναλογιστείτε**

**Mark Twain**