

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2009-2022 : 6 des 9 limites planétaires sont franchies

nature 2009

Explore content About the journal Publish with us

nature > features > article

Published: 23 September 2009

A safe operating space for humanity

Johan Rockström, Will Steffen, Kevin Noone, Åsa Persson, F. Stuart Chapin III, Eric F. Lambin, Timothy M. Lenton, Marten Scheffer, Carl Folke, Hans Joachim Schellnhuber, Björn Nykvist, Cynthia A. de Wit, Terry Hughes, Sander van der Leeuw, Henning Rodhe, Sverker Sörlin, Peter K. Snyder, Robert Costanza, Uno Svedin, Malin Falkenmark, Louise Karlberg, Robert W. Corell, Victoria J. Fabry, James Hansen, Brian Walker, Diana Liverman, Katherine Richardson, Paul Crutzen & Jonathan A. Foley [Show fewer authors](#)

Nature 461, 472–475 (2009) | [Cite this article](#)

413k Accesses | 7145 Citations | 1649 Altmetric | [Metrics](#)

Identifying and quantifying planetary boundaries that must not be transgressed could help prevent human activities from causing unacceptable environmental change, argue Johan Rockström and colleagues.

Summary



pubs.acs.org/est

2022



Policy Analysis

Outside the Safe Operating Space of the Planetary Boundary for Novel Entities

Linn Persson,* Bethanie M. Carney Almroth, Christopher D. Collins, Sarah Cornell, Cynthia A. de Wit,* Miriam L. Diamond, Peter Fantke, Martin Hassellöv, Matthew MacLeod, Morten W. Ryberg, Peter Sogaard Jorgensen, Patricia Villarrubia-Gómez, Zhanyun Wang, and Michael Zwicky Hauschild

Cite This: Environ. Sci. Technol. 2022, 56, 1510–1521

[Read Online](#)

Science 2015

Current Issue First release papers Archive About Submit manu

Planetary boundaries: Guiding human development on a changing planet

WILL STEFFEN, KATHERINE RICHARDSON, JOHAN ROCKSTRÖM, SARAH E. CORNELL, INGO FETZER, ELENA M. BENNETT, REINETTE BOOS, STEPHEN R. GARPENTER,

WIM DE VRIES | SVENRIK BÖRLIN +9 authors [Authors info & affiliations](#)

SCIENCE • 15 Jan 2015 • Vol 347, Issue 6223 • DOI:10.1126/science.1259855

149229 2974

Crossing the boundaries in global sustainability

The planetary boundary (PB) concept, introduced in 2009, aimed to define the environmental limits within which humanity can safely operate. This approach has proved influential in global sustainability policy development. Steffen *et al.* provide an updated and extended analysis of the PB framework. Of the original nine proposed boundaries, they identify three (including climate change) that might push the Earth system into a new state if crossed and that also have a pervasive influence on the remaining boundaries. They also develop the PB framework so that it can be applied usefully in a regional context.

nature reviews earth & environment

2022

Explore content About the journal Publish with us Subscribe

nature > nature reviews earth & environment > perspectives > article

Perspective | Published: 26 April 2022

A planetary boundary for green water

Lan Wang-Erlandsson, Arne Tobian, Ruud J. van der Ent, Ingo Fetzer, Sofie te Wierik, Miina Porkka, Arie Staal, Fernando Jaramillo, Heindriken Dahmann, Chandrakant Singh, Peter Greve, Dieter Gerten, Patrick W. Keys, Tom Gleeson, Sarah E. Cornell, Will Steffen, Xuemei Bai & Johan Rockström

Nature Reviews Earth & Environment 3, 380–392 (2022) | [Cite this article](#)

4797 Accesses | 6 Citations | 1010 Altmetric | [Metrics](#)

Abstract

Green water – terrestrial precipitation, evaporation and soil moisture – is fundamental to Earth system dynamics and is now extensively perturbed by human pressures at continental to planetary scales. However, green water lacks explicit consideration in the existing planetary boundaries framework that demarcates a global safe operating space for humanity.

nature

2023

Explore content About the journal Publish with us

nature > articles > article

Article | Open Access | Published: 31 May 2023

Safe and just Earth system boundaries

Johan Rockström, Joyeeta Gupta, Dahe Qin, Steven J. Lade, Jesse F. Abrams, Lauren S. Andersen, David I. Armstrong McKay, Xuemei Bai, Govindasamy Bala, Stuart E. Bunn, Daniel Ciobanu, Fabrice DeClerck, Kristie Ebi, Lauren Gifford, Christopher Gordon, Syezlin Hasan, Norichika Kanie, Timothy M. Lenton, Sina Loriani, Diana M. Liverman, Awaz Mohamed, Nebojsa Nakicenovic, David Obura, Daniel Ospina, ... Xin Zhang [Show authors](#)

Nature (2023) | [Cite this article](#)

137k Accesses | 1 Citations | 3979 Altmetric | [Metrics](#)

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2011 : une nouvelle extinction de masse des espèces

nature

[Explore content](#) ▾ [About the journal](#) ▾ [Publish with us](#) ▾ [Subscribe](#)

[nature](#) > [review articles](#) > [article](#)

Published: 02 March 2011

Has the Earth's sixth mass extinction already arrived?

[Anthony D. Barnosky](#) , [Nicholas Matzke](#), [Susumu Tomiya](#), [Guinevere O. U. Wogan](#), [Brian Swartz](#), [Tiago B. Quental](#), [Charles Marshall](#), [Jenny L. McGuire](#), [Emily L. Lindsey](#), [Kaitlin C. Maguire](#), [Ben Mersey](#) & [Elizabeth A. Ferrer](#)

Nature **471**, 51–57 (2011) | [Cite this article](#)

110k Accesses | **2130** Citations | **1241** Altmetric | [Metrics](#)

Abstract

Palaeontologists characterize mass extinctions as times when the Earth loses more than three-quarters of its species in a geologically short interval, as has happened only five times in

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2014 : la végétation n'est plus la meilleure amie de l'homme




nature **2014**

Explore content ▾ About the journal ▾ Publish with us ▾ Subscribe

nature > letters > article

Published: 05 February 2014

Drought sensitivity of Amazonian carbon balance revealed by atmospheric measurements

L. V. Gatti , M. Gloor , J. B. Miller , C. E. Doughty, Y. Malhi, L. G. Domingues, L. S. Basso, A. Martinevski, C. S. C. Correia, V. F. Borges, S. Freitas, B. Braz, L. O. Anderson, H. Rocha, J. Grace, O. L. Phillips & J. Lloyd

Nature **506**, 76–80 (2014) | [Cite this article](#)

14k Accesses | 328 Citations | 163 Altmetric | [Metrics](#)

nature **2015**

Explore content ▾ About the journal ▾ Publish with us ▾ Subscribe

nature > letters > article

Published: 18 March 2015

Long-term decline of the Amazon carbon sink

R. J. W. Brienen , O. L. Phillips, T. R. Feldpausch, E. Gloor, T. R. Baker, J. Lloyd, G. Lopez-Gonzalez, A. Monteagudo-Mendoza, Y. Malhi, S. L. Lewis, R. Vásquez Martínez, M. Alexiades, E. Álvarez Dávila, P. Alvarez-Loayza, A. Andrade, L. E. O. C. Aragão, A. Araujo-Murakami, E. J. M. M. Arets, L. Arroyo, G. A. Aymard, C. O. S. Bánki, C. Baraloto, J. Barroso, D. Bonal, ... R. J. Zagt + Show authors

Nature **519**, 344–348 (2015) | [Cite this article](#)

32k Accesses | 606 Citations | 1098 Altmetric | [Metrics](#)


nature **2015**

Explore content ▾ About the journal ▾ Publish with us ▾ Subscribe

nature > letters > article

Published: 04 March 2015

Drought impact on forest carbon dynamics and fluxes in Amazonia

Christopher E. Doughty , D. B. Metcalfe, C. A. J. Girardin, F. Farfán Amézquita, D. Galiano Cabrera, W. Huaraca Huasco, J. E. Silva-Espejo, A. Araujo-Murakami, M. C. da Costa, W. Rocha, T. R. Feldpausch, A. L. M. Mendoza, A. C. L. da Costa, P. Meir, O. L. Phillips & Y. Malhi

Nature **519**, 78–82 (2015) | [Cite this article](#)

14k Accesses | 361 Citations | 126 Altmetric | [Metrics](#)

Global Change Biology

Compositional response of Amazon forests to climate change

Adriane Esquivel-Muelbert , Timothy R. Baker, Kyle G. Dexter, Simon L. Lewis, Roel J. W. Brienen, Ted R. Feldpausch, Jon Lloyd, Abel Monteagudo-Mendoza, Luzmila Arroyo, Esteban Álvarez-Dávila, Niro Higuchi, Beatriz S. Marimon, Ben Hur Marimon-Junior, Marcos Silveira, Emílio Vilanova, Emanuel Gloor, Yadvinder Malhi, Jérôme Chave, Jos Barlow, Damien Bonal, Nallaret Davila Cardozo, Terry Erwin, Sophie Fauset, Bruno Hérault, Susan Laurance, Lourens Poorter, Lan Qie, Clement Stahl, Martin J. P. Sullivan, Hans ter Steege, Vincent Antoine Vos, Pieter A. Zuidema, Everton Almeida, Edmar Almeida de Oliveira, Ana Andrade, Simone Aparecida Vieira, Luiz Aragão, Alejandro Araujo-Murakami, Eric Arets, Gerardo A. Aymard, C. Christopher Baraloto, Plinio Barbosa Camargo, Jorcely G. Barroso, Frans Bongers, Rene Boot, José Luis Camargo, Wendeson Castro, Victor Chama Moscoso, James Comiskey, Fernando Cornejo Valverde, Antonio Carlos Lolo da Costa, Jhon del Aguila Pasquel, Anthony Di Fiore, Luisa Fernanda Duque, Fernando Elias, Julien Engel, Gerardo Flores Llampaço, David Galbraith, Rafael Herrera Fernández, Euridice Honorio Coronado, Wannes Hubau, Eliana Jimenez-Rojas, Adriano José Nogueira Lima, Ricardo Keichi Umetsu, William Laurance, Gabriela Lopez-Gonzalez, Thomas Lovejoy, Omar Aurelio Melo Cruz, Paulo S. Morandi, David Neill, Percy Núñez Vargas, Nadir C. Pallqui Camacho, Alexander Parada Gutierrez, Guido Pardo, Julie Peacock, Marielos Peña-Claros, María Cristina Peña-Mora, Pascal Petronelli, Georgía C. Pickavance, Nigel Pitman, Adriana Prieto, Carlos Quesada, Hirma Ramírez-Angulo, Maxime Réjou-Méchain, Zorayda Restrepo Correa, Anand Roopsind, Agustín Rudas, Rafael Salomão, Natalino Silva, Javier Silva Espejo, James Singh, Juliana Stropp, John Terborgh, Raquel Thomas, Marisol Toledo, Armando Torres-Lezama, Luis Valenzuela Gamarra, Peter J. van der Meer, Geertje van der Heijden, Peter van der Hout, Rodolfo Vasquez Martinez, Cesar Vela, Ima Célia Guimarães Vieira, Oliver L. Phillips ... See fewer authors

First published: 08 November 2018 | <https://doi.org/10.1111/gcb.14413> | Citations: 183


nature communications **2020**

Explore content ▾ About the journal ▾ Publish with us ▾

nature > nature communications > articles > article

Article | Open Access | Published: 09 November 2020

Tree mode of death and mortality risk factors across Amazon forests

Adriane Esquivel-Muelbert , Oliver L. Phillips, Roel J. W. Brienen, Sophie Fauset, Martin J. P. Sullivan, Timothy R. Baker, Kuo-Jung Chao, Ted R. Feldpausch, Emanuel Gloor, Niro Higuchi, Jeanne Houwing-Duistermaat, Jon Lloyd, Haiyan Liu, Yadvinder Malhi, Beatriz Marimon, Ben Hur Marimon-Junior, Abel Monteagudo-Mendoza, Lourens Poorter, Marcos Silveira, Emílio Vilanova Torres, Esteban Alvarez Dávila, Jhon del Aguila Pasquel, Everton Almeida, Patricia Alvarez Loayza, Ana Andrade, Luiz E. O. C. Aragão, Alejandro Araujo-Murakami, Eric Arets, Luzmila Arroyo, Gerardo A. Aymard, C. Michel Bakas, Christopher Baraloto, Plinio Barbosa Camargo, Jorcely Barroso, Lilian Blanc, Damien Bonal, Frans Bongers, René Boot, Foster Brown, Benoit Burban, José Luis Camargo, Wendeson Castro, Victor Chama Moscoso, Jerome Chave, James Comiskey, Fernando Cornejo Valverde, Antonio Lolo da Costa, Nallaret Davila Cardozo, Anthony Di Fiore, Aurelie Doudeain, Terry Erwin, Gerardo Flores Llampaço, Ima Célia Guimarães Vieira, ...

Rafael Herrera, Euridice Honorio Coronado, Isma Huamantla-Chunpimaco, Eliana Jimenez-Rojas, Timothy Killeen, Susan Laurance, William Laurance, Aurora Levesley, Simon L. Lewis, Karina Llana Lisboa Melgaco Ladocot, Gabriela Lopez-Gonzalez, Thomas Lovejoy, Patrick Meir, Casimiro Mendoza, Paulo Morandi, David Neill, Adriano José Nogueira Lima, Percy Nuñez Vargas, Edmar Almeida de Oliveira, Nadir Pallqui Camacho, Guido Pardo, Julie Peacock, Marielos Peña-Claros, Maria Cristina Peña-Mora, Georgía Pickavance, John Pipoly, Nigel Pitman, Adriana Prieto, Thomas A. M. Pugh, Carlos Quesada, Hirma Ramirez-Angulo, Simone Matias de Almeida Reis, Maxime Réjou-Méchain, Zorayda Restrepo Correa, Lily Rodriguez Bayona, Agustín Rudas, Rafael Salomão, Julio Serrano, Javier Silva Espejo, Natalino Silva, James Singh, Clement Stahl, Juliana Stropp, Yaron Swamy, Joey Talbot, Hans ter Steege, John Terborgh, Raquel Thomas, Marisol Toledo, Armando Torres-Lezama, Luis Valenzuela Gamarra, Geertje van der Heijden, Peter van der Meer, Peter van der Hout, Rodolfo Vasquez Martinez, Simone Aparecida Vieira, Jeanneth Villalobos Cayn, Vincent Vos, Roderick Zagt, Pieter Zuidema & David Galbraith + Show fewer authors

Nature Communications **11**, Article number: 5515 (2020) | [Cite this article](#)

14k Accesses | 31 Citations | 273 Altmetric | [Metrics](#)

“L’Amazonie pourrait devenir une source croissante de carbone en raison à la fois des émissions dues aux incendies et de la suppression des échanges nets de biomes [un ensemble d’écosystèmes d’une région] due à la sécheresse”. Gatti et al., 2014.

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2015-2017: des températures qui devraient excéder le seuil d'adaptabilité humaine

nature climate change 2015

[Explore content](#) [About the journal](#) [Publish with us](#) [Subscribe](#)

[nature](#) > [nature climate change](#) > [letters](#) > article

Published: 26 October 2015

Future temperature in southwest Asia projected to exceed a threshold for human adaptability

[Jeremy S. Pal](#) & [Elfatih A. B. Eltahir](#)

Nature Climate Change 6, 197–200 (2016) | [Cite this article](#)

14k Accesses | 346 Citations | 2277 Altmetric | [Metrics](#)

Abstract

A human body may be able to adapt to extremes of dry-bulb temperature (commonly referred to as simply temperature) through perspiration and associated evaporative cool

2017

ScienceAdvances

[Current issue](#) [First release papers](#) [Archive](#) [About](#)

HOME > SCIENCE ADVANCES > VOL. 3, NO. 8 > DEADLY HEAT WAVES PROJECTED IN THE DENSELY POPULATED AGRICULTURAL REGIONS OF SOUTH ASIA

RESEARCH ARTICLE | CLIMATOLOGY

[f](#) [t](#) [in](#) [v](#) [p](#) [e](#)

Deadly heat waves projected in the densely populated agricultural regions of South Asia

[EUN-SOON IM](#), [JEREMY S. PAL](#), AND [ELFATH A. B. ELTAHIR](#) | [Authors Info & Affiliations](#)

SCIENCE ADVANCES • 2 Aug 2017 • Vol 3, Issue 8 • DOI: 10.1126/sciadv.1608872

8038 1

[f](#) [t](#) [in](#) [v](#) [p](#) [e](#)

Abstract

The risk associated with any climate change impact reflects intensity of natural hazard and level of human vulnerability. Previous work has shown that a wet-bulb temperature of 35°C can be considered an upper limit on human survivability. On the basis of an ensemble of high-resolution climate change simulations, we project

nature climate change 2017

[Explore content](#) [About the journal](#) [Publish with us](#) [Subscribe](#)

[nature](#) > [nature climate change](#) > [letters](#) > article

Published: 19 June 2017

Global risk of deadly heat

[Camilo Mora](#), [Bénédicte Dousset](#), [Iain R. Caldwell](#), [Farrah F. Powell](#), [Rollan C. Geronimo](#), [Coral R. Bielecki](#), [Chelsie W. W. Counsell](#), [Bonnie S. Dietrich](#), [Emily T. Johnston](#), [Leo V. Louis](#), [Matthew P. Lucas](#), [Marie M. McKenzie](#), [Alessandra G. Shea](#), [Han Tseng](#), [Thomas W. Giambelluca](#), [Lisa R. Leon](#), [Ed Hawkins](#) & [Clay Trauernicht](#)

Nature Climate Change 7, 501–506 (2017) | [Cite this article](#)

23k Accesses | 600 Citations | 4851 Altmetric | [Metrics](#)

Abstract

Climate change can increase the risk of conditions that exceed human thermoregulatory capacity^{1,2,3,4,5,6}. Although numerous studies report increased mortality associated with extreme heat events^{1,2,3,4,5,6,7}, quantifying the global risk of heat-related mortality remains

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2017: une extinction des espèces plus conséquente que ce qu'envisageaient Barnosky et al. en 2011

PNAS PNAS

Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines

Gerardo Ceballos^{a,1}, Paul R. Ehrlich^{b,1}, and Rodolfo Dirzo^b

^aInstituto de Ecología, Universidad Nacional Autónoma de México, Mexico City 04510, Mexico; and ^bDepartment of Biology, Stanford University, Stanford, CA 94305

Contributed by Paul R. Ehrlich, May 23, 2017 (sent for review March 28, 2017; reviewed by Thomas E. Lovejoy and Peter H. Raven)

The population extinction pulse we describe here shows, from a quantitative viewpoint, that Earth's sixth mass extinction is more severe than perceived when looking exclusively at species extinctions. Therefore, humanity needs to address anthropogenic population extirpation and decimation immediately. That conclusion is based on analyses of the numbers and degrees of range contraction (indicative of population shrinkage and/or population extinctions according to the International Union for Conservation of Nature) using a sample of 27,600 vertebrate species, and on a more detailed

especially because many of those species were obscure and had limited ranges, such as the Catarina pupfish (*Megupsilon aporus*, extinct in 2014), a tiny fish from Mexico, or the Christmas Island pipistrelle (*Pipistrellus murrayi*, extinct in 2009), a bat that vanished from its namesake volcanic remnant.

Species extinctions are obviously very important in the long run, because such losses are irreversible and may have profound effects ranging from the depletion of Earth's inspirational and esthetic resources to deterioration of ecosystem function and services (e.g.,

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2017: des canicules inédites dans l'histoire humaine

ENVIRONMENTAL RESEARCH
LETTERS

LETTER • OPEN ACCESS

Future summer mega-heatwave and record-breaking temperatures in a warmer France climate

Margot Bador^{1,2,3,6}, Laurent Terray³, Julien Boé³, Samuel Somot⁴, Antoinette Alias⁴, Anne-Laure Gibelin⁵ and Brigitte Dubuisson⁵

Published 19 July 2017 • © 2017 IOP Publishing Ltd

[Environmental Research Letters](#), Volume 12, Number 7

Citation Margot Bador *et al* 2017 *Environ. Res. Lett.* **12** 074025



Figures ▾ References ▾

+ Article information

Abstract

28187 Total downloads



Turn on MathJax

Share this article



Abstract

1. Introduction

2. Data and method

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2018 : la possibilité d'une planète-serre inhabitable dans 100 ans

PERSPECTIVE

PNAS PNAS PNAS

PERSPECTIVE

Trajectories of the Earth System in the Anthropocene

Will Steffen^{a,b,1}, Johan Rockström^a, Katherine Richardson^c, Timothy M. Lenton^d, Carl Folke^{a,e}, Diana Liverman^f, Colin P. Summerhayes^g, Anthony D. Barnosky^h, Sarah E. Cornellⁱ, Michel Crucifix^{j,l}, Jonathan F. Donges^{a,k}, Ingo Fetzer^a, Steven J. Lade^{a,b}, Marten Scheffer^l, Ricarda Winkelmann^{k,m}, and Hans Joachim Schellnhuber^{a,k,m,1}

Edited by William C. Clark, Harvard University, Cambridge, MA, and approved July 6, 2018 (received for review June 19, 2018)

We explore the risk that self-reinforcing feedbacks could push the Earth System toward a planetary threshold that, if crossed, could prevent stabilization of the climate at intermediate temperature rises and cause continued warming on a “Hothouse Earth” pathway even as human emissions are reduced. Crossing the threshold would lead to a much higher global average temperature than any interglacial in the past 1.2 million years and to sea levels significantly higher than at any time in the Holocene. We examine the evidence that such a threshold might exist and where it might be. If the threshold is crossed, the resulting trajectory would likely cause serious disruptions to ecosystems, society, and economies. Collective human action is required to steer the Earth System away from a potential threshold and stabilize it in a habitable interglacial-like state. Such action entails stewardship of the entire Earth System—biosphere, climate, and societies—and could include decarbonization of the global economy, enhancement of biosphere carbon sinks, behavioral changes, technological innovations, new governance arrangements, and transformed social values.

Earth System trajectories | climate change | Anthropocene | biosphere feedbacks | tipping elements

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

1992-2020 : les interpellations de scientifiques à l'égard de la communauté internationale

1992

WORLD SCIENTISTS' WARNING TO HUMANITY

INTRODUCTION Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about.

THE ENVIRONMENT The environment is suffering critical stress:



person in five lives in absolute poverty without enough to eat, and one in ten suffers serious malnutrition.

No more than one or a few decades remain before the chance to avert the threats we now confront will be lost and the prospects for humanity immeasurably diminished.

WARNING We the undersigned, senior members of the world's scientific community, hereby warn all humanity of what lies ahead. A great change in our stewardship of the earth and the life on it is required, if vast human misery is to be avoided and our global home on this planet

In 1992, the Union of Concerned Scientists sent the World Scientists' Warning for endorsement to all scientists worldwide who had been awarded the Nobel Prize, and to national academy-level scientists in Africa, Canada, China, Europe, India, Japan, Latin America, Russia, the United Kingdom, and the United States.

Over 1700 scientists, including 104 Nobel laureates—a majority of the living recipients of the Prize in the sciences—signed the Warning. These men and women represent 71 countries, including all of the 19 largest economic powers, all of the 12 most populous nations, 12 countries in Africa, 14 in Asia, 19 in Europe, and 12 in Latin America. Below is a list of some of the scientists who signed the Warning.

BioScience

2017

Viewpoint

World Scientists' Warning to Humanity: A Second Notice

WILLIAM J. RIPPLE, CHRISTOPHER WOLF, THOMAS M. NEWSOME, MAURO GALETTI, MOHAMMED ALAMGIR, EILEEN CRIST, MAHMOUD I. MAHMOUD, WILLIAM F. LAURANCE, and 15,364 scientist signatories from 184 countries

Twenty-five years ago, the Union of Concerned Scientists and more

deforestation, and reverse the trend of collapsing biodiversity.

the urgent steps needed to safeguard our imperilled biosphere.

BioScience

2020

Viewpoint

World Scientists' Warning of a Climate Emergency

WILLIAM J. RIPPLE, CHRISTOPHER WOLF, THOMAS M. NEWSOME, PHOEBE BARNARD, WILLIAM R. MOOMAW, AND 11,258 SCIENTIST SIGNATORIES FROM 153 COUNTRIES (LIST IN SUPPLEMENTAL FILE S1)

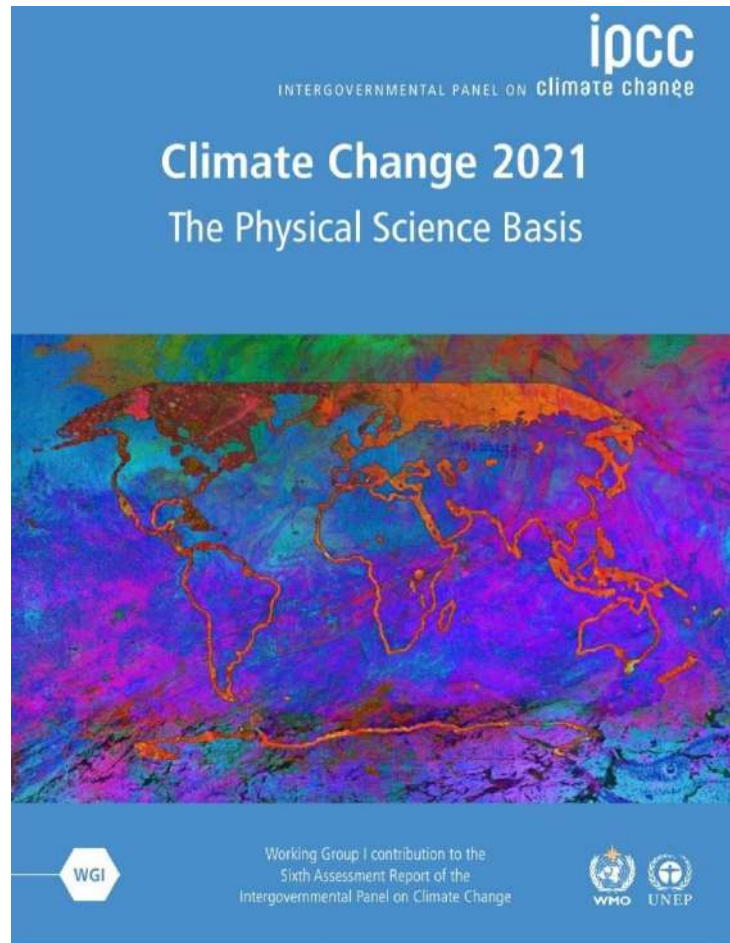
Scientists have a moral obligation to clearly warn humanity of any catastrophic threat and to "tell it like it is" On the basis of this obligation

as actual climatic impacts (figure 2). We use only relevant data sets that are clear, understandable, systematically collected for at least the last 5 years.

forest loss in Brazil's Amazon has now started to increase again (figure 1g). Consumption of solar and wind energy has increased 373% per decade, but

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2021-22 : sixième cycle d'évaluation du Giec – Rapport 1



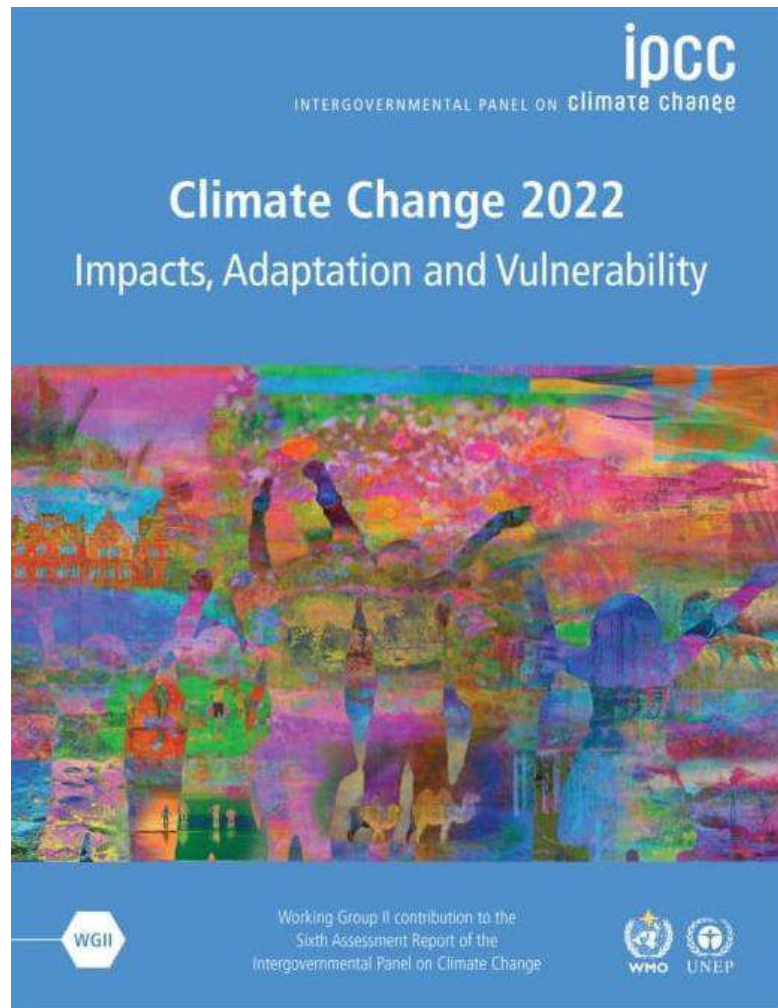
2021

Rapport de 3 949 pages,
rédigées par 234 chercheurs,
qui synthétisent 14 000 publications scientifiques

1. Les activités humaines ont indiscutablement un impact sur le dérèglement climatique actuel.
2. Celui-ci est plus rapide que ce que nous imaginions.
3. Des processus d'emballage sont en cours. Nous risquons de franchir des points de bascule dont l'ampleur des conséquences est imprévisible.
4. Des actions humaines radicales, auxquelles nous nous tiendrions fermement, peuvent maintenir le système Terre dans un état favorable à la vie (soit une augmentation de la moyenne des températures en deçà de +1,5 °C)

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2021-22 : sixième cycle d'évaluation du Giec – Rapport 2



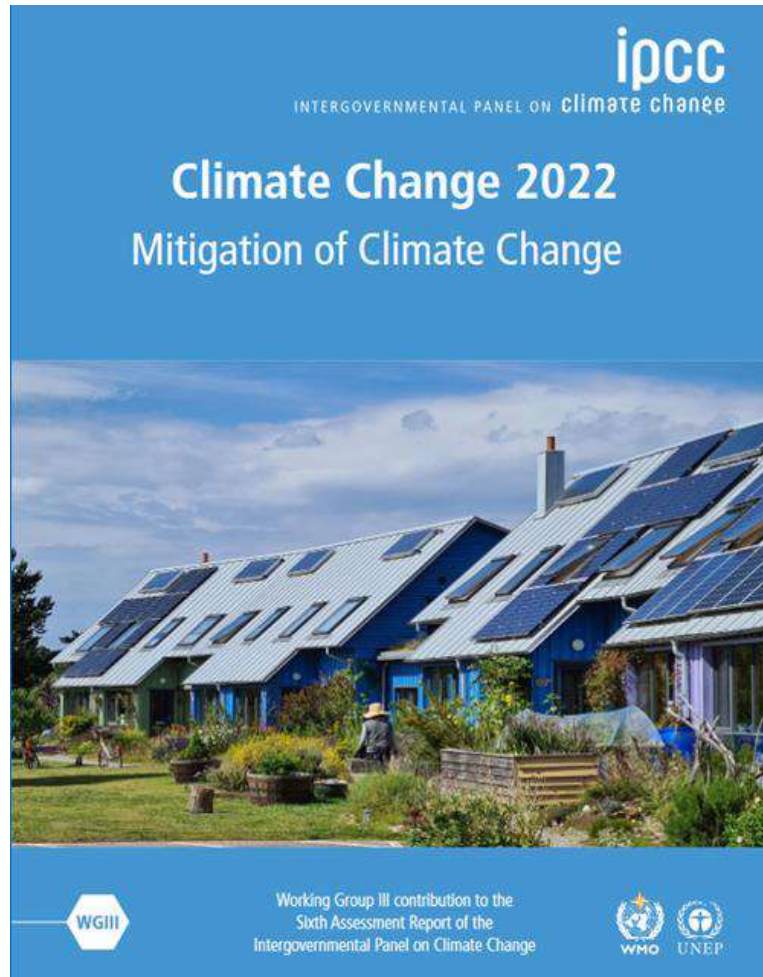
2022

Rapport de 3 675 pages,
rédigées par 270 chercheurs,
qui synthétisent 34 000 publications scientifiques

Le changement climatique fait peser sur les écosystèmes comme sur les sociétés des risques globaux : augmentation du taux de mortalité humaine du fait de la chaleur, des cyclones tropicaux, des mégafeux, des pertes de territoires habitables dues à l'élévation du niveau de la mer, des sécheresses et des inondations, des maladies, de la raréfaction de l'accès à de l'eau potable, ou encore de la fragilisation des infrastructures.

LES SAVOIRS BIOCLIMATIQUES CONTEMPORAINS

2021-22 : sixième cycle d'évaluation du Giec – Rapport 3



2022

Rapport de 2 913 pages,
rédigées par 239 chercheurs,
qui synthétisent 18 000 publications scientifiques

1. Mise au régime énergétique.
2. Nous devons agir immédiatement car la fenêtre nous permettant d'avoir un effet sur l'emballage climatique va se refermer rapidement.

QUELQUES OUVRAGES



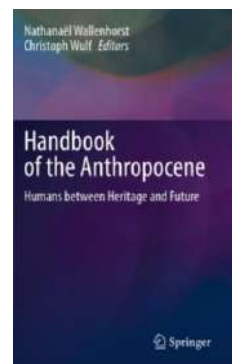
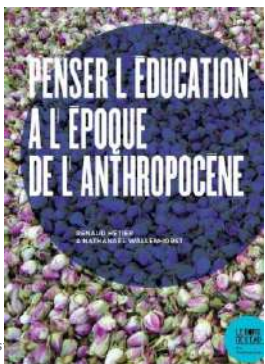
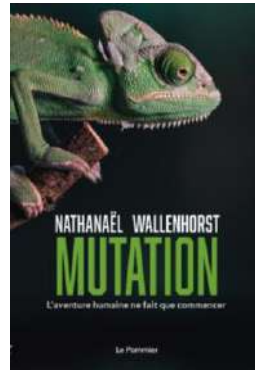
Nathanaël Wallenhorst



@N_Wallenhorst



nathanael.wallenhorst@uco.fr



NATHANAËL
WALLENHORST

ACTES SUD