

Global Change

International Geosphere-Biosphere Programme

Issue 79 | October 2012

Arctic sea ice

Clouds to the rescue?

DebateGraph

Moving away from linear narratives

METHANE UP NORTH

Vigilance, not panic

Cover image

Aerial photograph of Arctic sea ice. The image shows thick, snow-covered ice floes (white) and thinner ice (darker and semi-transparent). The white stripes are layers of thin ice along the edges of the floes. Image courtesy NASA (the Digital Mapping System team and Operation IceBridge Arctic 2011).

REGULARS

3 Editorial

4 News

COVER STORY

12 Methane:

Not a damp squib, not yet a time bomb

Although Arctic methane sources deserve careful monitoring, there is no reason to panic just yet.

FEATURES

8 A silver lining to Arctic clouds?

Marine microbiota are the key to a negative feedback that could slow down the melting of Arctic sea ice.

16 Mapping a planet under pressure

DebateGraph moves away from linear narratives and provides a new way of analysing complex global challenges.

20 A Rio retrospective

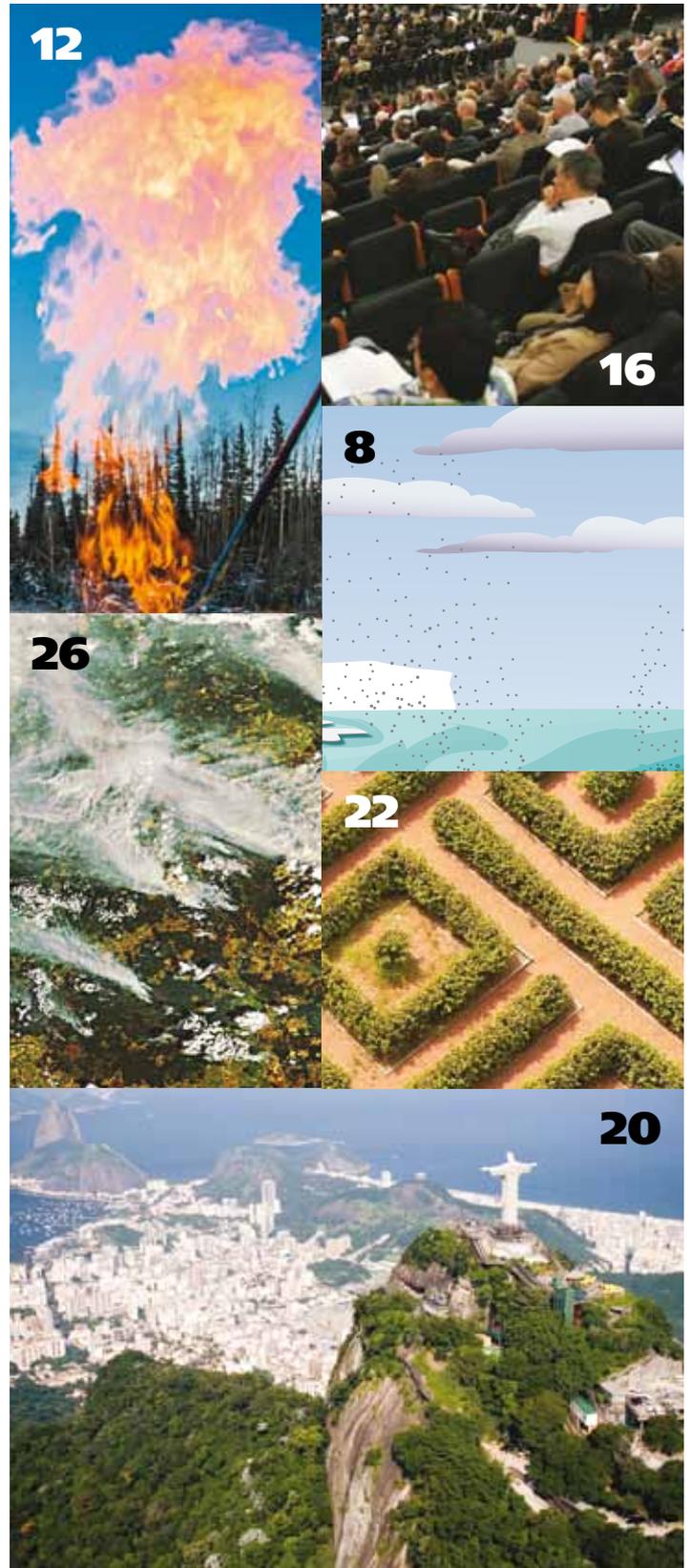
A realistic assessment of Rio+20 points to some limited but significant successes, not least for IGBP.

22 Earth-system science at a crossroads

The path ahead should combine the need for wider engagement with a continuing commitment to reason.

26 Zooming in over the northern latitudes

The European Space Agency is working with global-change researchers to better understand Eurasian boreal regions.



Global Change primarily publishes research and opinion from within the extensive IGBP network.

Published by:
IGBP Secretariat,
The Royal Swedish Academy of Sciences
Box 50005, SE-104 05, Stockholm, SWEDEN

To inform us of a change in address, email:
charlottew@igbp.kva.se

Printed by Bergs Grafiska, Sweden

ISSN 0284-5865

If you have an idea for a feature article or news, email Ninad Bondre.

Editor: Ninad Bondre
ninad.bondre@igbp.kva.se

Director of Communications: Owen Gaffney
owen.gaffney@igbp.kva.se

Graphic Designer: Hilarie Cutler
hilarie@igbp.kva.se



JOIN THE IGBP NETWORK WWW.IGBP.NET

IGBP core projects

Analysis, Integration and Modelling of the Earth System (AIMES)

Global Land Project (GLP)

International Global Atmospheric Chemistry (IGAC)

Integrated Land Ecosystem-Atmosphere Processes Study (iLEAPS)

Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)

Land-Ocean Interactions in the Coastal Zone (LOICZ)

Past Global Changes (PAGES)

Surface Ocean-Lower Atmosphere Study (SOLAS)

Global-environmental-change joint projects

Global Carbon Project (GCP)

Global Water System Project (GWSP)

Global Environmental Change and Human Health (GECHH)

Second synthesis topics

Ecosystem impacts of geoengineering

Megacities in the coastal zone

Nitrogen and climate

Earth-system impacts from changes in the cryosphere

Impacts from changes in the cryosphere on biota and societies in the arid Central Asia

Global environmental change and sustainable development: the needs of least-developed countries

The role of land-cover and land-use change in modulating climate

Air pollution and climate

ICSU's global-environmental-change programmes

DIVERSITAS – an international programme of biodiversity science

International Geosphere-Biosphere Programme

International Human Dimensions Programme on Global Environmental Change

World Climate Research Programme

Earth System Science Partnership

IGBP focuses the international research community on the planet's key biogeochemical processes – the carbon, oxygen, nitrogen, water, phosphorus and sulphur cycles. Our work includes understanding and predicting how these cycles are changing and the impact of human activities on them.



IGBP is an ICSU global-environmental-change programme.