

2050

Challenges for ecological restoration

An Cliquet

Symposium Francqui Chair Alexander Gillespie

2050 - Challenges for environmental law

Ghent - 5 February 2019



Émile Francqui

What will the future look like in 2050?
(with unchanged policies...)

The Trump Administration's War on Wildlife Should Be a Scandal

By Nick Tabor



With unchanged policies...

Jair Bolsonaro launches assault on Amazon rainforest protections

Executive order transfers regulation and creation of indigenous reserves to agriculture ministry controlled by agribusiness lobby



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DOSSIER KLIMAATACTIE



Joke Schauvliege (CD&V) over "klimaatpijbelars": "Ik voel mij gesterkt in het verdere beleid dat we moeten voeren"

Joris Truys
vr 25 jan 08:36
vr 25 jan 08:03

POLITICS 04/17/2017 10:34 am ET

Justin Trudeau A 'Stunning Hypocrite' On Climate Change, Says Top Environmentalist

The Canadian prime minister's support for the Keystone XL pipeline conflicts with his image as a progressive darling.

By Alexander C. Kaufman





Land degradation



Deforestation



Coral reefs dying



Mass extinction of species



Population of 9.8 billion



Millions of environmental refugees

A VISIT TO EARTH IN 2070 A.D.



SEEMS
THEY FAILED
ON THE WAY TO
SUSTAINABLE
DEVELOPMENT...

What will the future look like in 2050?
(with changed policies...)



“The next century will, I believe, be the era of restoration in ecology”. –E.O. Wilson (1992)



Restored landscapes

Janine 16



Restored species and habitats



Return of iconic species



Restored wild areas



Green cities



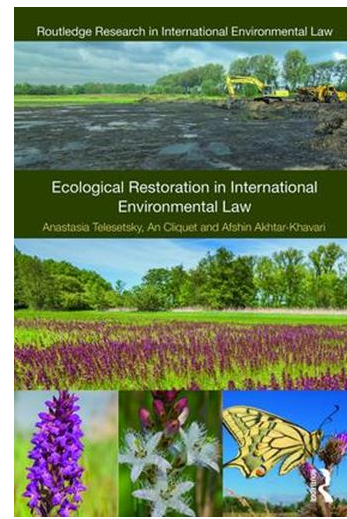
Ecological restoration is
restoring biodiversity



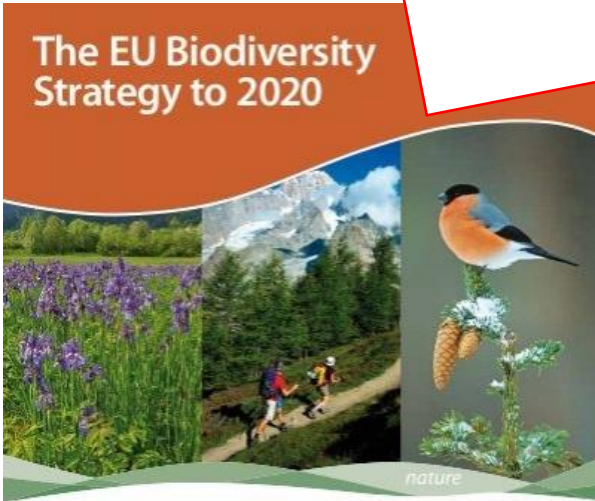
Ecological restoration is
restoring the connection
between people and nature



Path towards restoration?



Legal duty to restore



The EU Birds and Habitats Directives

For nature and people in Europe 



SCIENCE • CLIMATE CHANGE

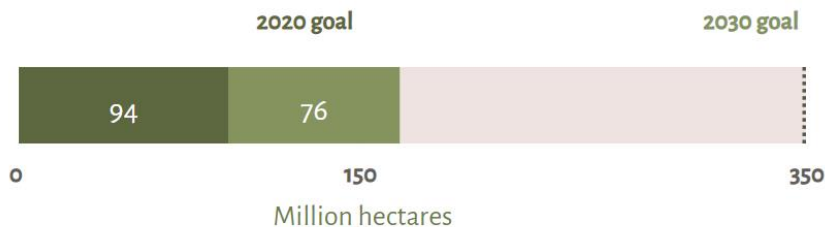
Why Restoring Nature Could Be the Key to Fighting Climate Change



The Bonn Challenge is a global effort to bring 150 million hectares of deforested and degraded land into restoration by 2020 and 350 million hectares by 2030.

How far we've come

170.43 million hectares pledged



Commitments



Potential

Climate benefit:
15.66 GtCO₂ sequestered

Economic activity:
48,424 million USD



What the world needs now to fight climate change: More swamps

September 12, 2018 11:37am BST Updated September 13, 2018 3:41pm BST

Freshwater cypress swamp, First Landing State Park, Va. VA State Parks, CC BY

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249

3.2k

“Drain the swamp” has long meant getting rid of something distasteful. Actually, the world needs more [swamps](#) – and [bogs](#), [fens](#), [marshes](#) and [other types of wetlands](#).

These are some of the most diverse and productive ecosystems on Earth. They also are underrated but irreplaceable tools for slowing the pace of climate change and protecting our communities from storms and flooding.

Scientists [widely recognize](#) that wetlands are extremely efficient at pulling carbon dioxide out of the atmosphere and converting it into living plants and carbon-rich soil. As part of a transdisciplinary team of nine wetland and climate scientists, we published a paper earlier this year that documents the [multiple climate benefits provided by all types of wetlands, and their need for protection](#).



Authors



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Disclosure statement

William Moomaw receives funding from Rockefeller Brothers Foundation. William Moomaw is affiliated with and serves as board chair of Woods Hole Research Center and The Climate Group North America. He is a board member of Earthwatch Institute, The Consensus Building Institute and The Nature Conservancy of Massachusetts. He also serves as a consultant to the Sustainability Advisory Board of Caterpillar Corporation.

Gillian Davies works for BSC Group, Inc. She receives funding from the Massachusetts Association of Conservation Commissions and the Massachusetts Environmental Trust. She has served on the Executive Boards of the International Society of Wetland Scientists, the New England Chapter of the Society of Wetland Scientists, and the Association of Massachusetts Wetland Scientists and is a member of these organizations. She is currently the chair of the Waters of the United States ad hoc Committee for the Society of Wetland Scientists. She also is a member of the Association of State Wetland Managers, the Society for Ecological Restoration and the Society of Soil Scientists of Southern New England.








CHALLENGES AHEAD

Not all 'restoration' is good



Once we plant these palm trees who's going to know the difference?

Unsufficient progress on current targets

	TARGET ELEMENTS	STATUS	COMMENT
 TARGET 15	At least 15 per cent of degraded ecosystems are restored, contributing to climate change mitigation and adaptation, and to combating desertification		Many restoration activities under way, but hard to assess whether they will restore 15% of degraded areas
	Extinction of known threatened species has been prevented		Further extinctions likely by 2020, e.g. for amphibians and fish. For bird and mammal species some evidence measures have prevented extinctions
 TARGET 12	The conservation status of those species most in decline has been improved and sustained		Red List Index still declining, no sign overall of reduced risk of extinction across groups of species. Very large regional differences

More than 26,500 species are threatened with extinction
 That is more than 27% of all assessed species.

AMPHIBIANS 40% 	MAMMALS 25% 	CONIFERS 34% 	BIRDS 14% 	SHARKS & RAYS 31% 	REEF CORALS 33% 	SELECTED CRUSTACEANS 27% 
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Take action Help us make The IUCN Red List a more complete barometer of life.

Mid-term review of the EU biodiversity strategy to 2020

EU assessment of progress towards the targets and actions

EU Biodiversity Targets (2020)

2020 Headline Target

Halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restore them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.

Progress at mid-term (2015)

No significant progress towards the target

Overall, biodiversity loss and the degradation of ecosystem services in the EU have continued since the EU 2010 biodiversity baseline, as confirmed by the 2015 *European environment - state and outlook report*. This is consistent with global trends and has serious implications for the capacity of biodiversity to meet human needs in the future. While many local successes demonstrate that action on the ground delivers positive outcomes, these examples need to be scaled up to have a measurable impact on the overall negative trends.

Mid-term review of the EU biodiversity strategy to 2020

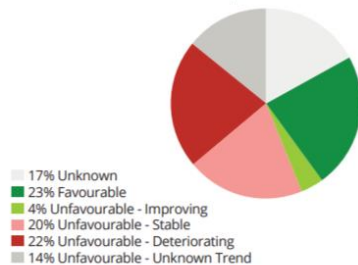
Key trends in status since the EU 2010 biodiversity baseline

Poor conservation status

Species

Overall, 23% of the EU-level species assessments are favourable and 4% are unfavourable but improving; 20% are stable, 22% are deteriorating and 17% are unknown.

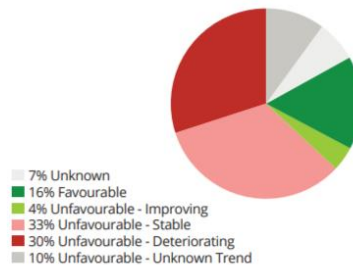
Conservation status and trends of species



Habitats

Overall, 16% of the EU-level habitat assessments are favourable and 4% are improving; 33% are unfavourable but stable. A further 30% are still deteriorating, which is a serious cause for concern. Only 7% of the assessments are unknown.

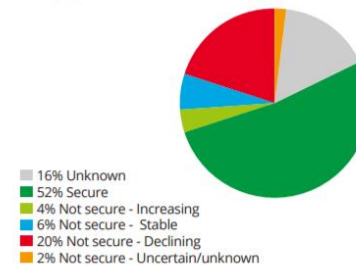
Conservation status and trends of habitats



EU bird population status and trends

Over half (52%) of the bird species assessments have a secure population status. Short-term trends indicate that some 4% of all bird species are non-secure but increasing, and 6% are stable, even if a further 20% are declining.

Birds' population status and short-term population trends



Ambition level is too low, with danger of extinction debt



Amazon's doomed species set to pay deforestation's 'extinction debt'

Ending forest clearance would not save some species from the effects of decades of destruction, scientists find




GRIFFITH LAW REVIEW, 2017
VOL. 26, NO. 2, 178–201
<https://doi.org/10.1080/10383441.2017.1355873>

 **Routledge**
Taylor & Francis Group

 Check for updates

Halting and restoring species loss: incorporating the concepts of extinction debt, ecological trap and dark diversity into conservation and restoration law

An Cliquet^a and Kris Decler ^b

Lack of financial means for restoration projects



Although benefits of restoration outweigh the costs



Contributed Paper

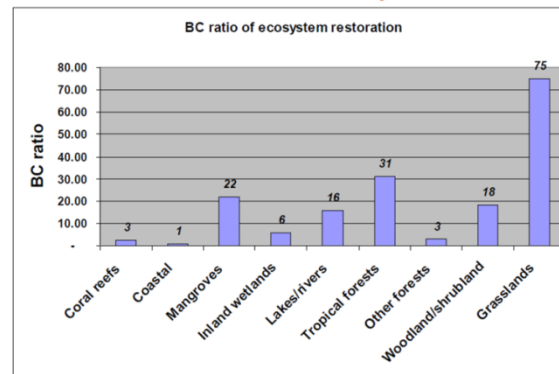
Benefits of Investing in Ecosystem Restoration

RUDOLF S. DE GROOT,* ¶ JAMES BLIGNAUT, † SANDER VAN DER PLOEG,* JAMES ARONSON, ‡ §
THOMAS ELMQVIST,** AND JOSHUA FARLEY † †

Net-Benefits of Ecosystem Restoration

Blignaut et al. screened 20.000 publ.; 95 selected for further analysis *

Benefit – Cost Ratio of Ecosystem Restoration



Grasslands: 75 x

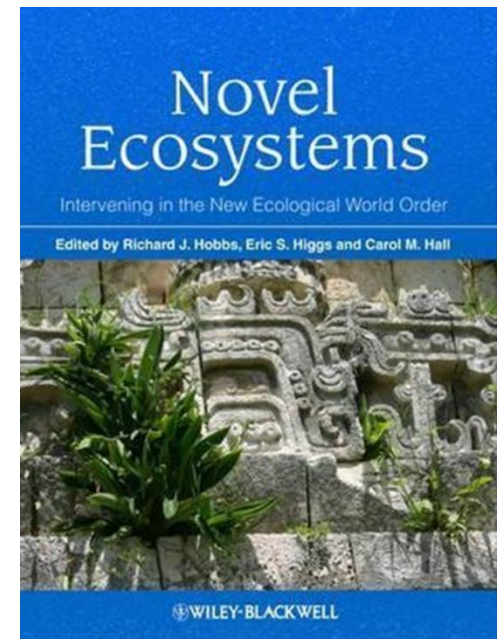
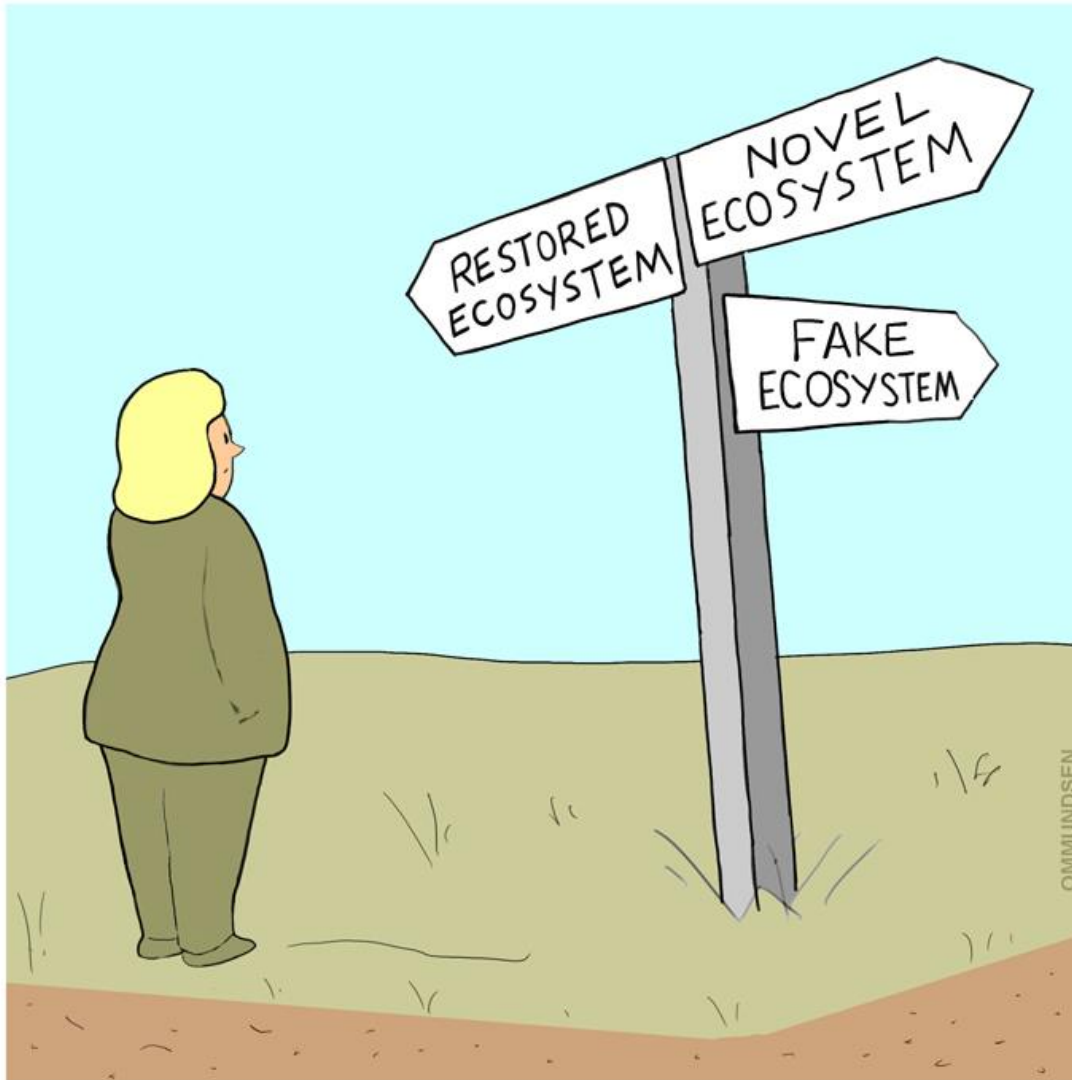
Coral reefs: 3 x

Assumptions: high cost scenario, average benefit scenario, time horizon = 40 years (including 10% annual operation costs; discount rate = 1 %)

Restoration to a historical reference system becomes more difficult in severely changed ecosystems



Concepts like novel ecosystem can undermine restoration policies



Scientific standards for restoration are necessary



INTERNATIONAL STANDARDS FOR THE PRACTICE OF
ECOLOGICAL RESTORATION – INCLUDING PRINCIPLES
AND KEY CONCEPTS

FIRST EDITION: December 2016

Tein McDonald, George D. Gann, Justin Jonson,
Kingsley W. Dixon



Current targets are not enough, more daring ideas are needed



Half-Earth is a call-to-action to commit
half of the planet's surface to nature.

WHY ONE HALF?



*"A brave expression of hope, a visionary blueprint for saving the planet."
—STEPHEN GREENBLATT, author of *The Swerve**

HALF- EARTH



*Our Planet's
Fight for Life*

EDWARD O.
WILSON

WINNER OF THE PULITZER PRIZE

If we conserve half the land and sea, 85% of
all species will be protected from extinction
and life on Earth enters the safe zone.

NATURE NEEDS HALF

You know what needs to be done: save nature and end the biodiversity crisis. What you might not know is how we're going to do it. The best contemporary science and traditional wisdom tell us that *nature needs half*. That may seem like a lot, but we have a plan for how to get there and transform the way society thinks about nature.

[Sign The Declaration](#)



Our Purpose

Protect 50% of the planet by 2030

WHAT WE DO

Nature Needs Half is an international coalition of scientists, conservationists, nonprofits, and public officials defending nature at the scale she needs to continue to function for the benefit of all life. And we've got a global ground game in place that will protect 50% of the planet by 2030, turning the tide in favor of Earth's life support systems and transforming society's relationship with nature, one ecoregion and country at a time.

[Help Achieve Half In Your Region](#)

Environment Climate change Wildlife Energy Pollution

Conservation
The Observer

Robin McKie Observer
science editor

Sun 18 Feb 2018 00:05 GMT



8,457

Should we give up half of the Earth to wildlife?



▲ The total number of orangutans in Borneo has fallen by 50% since 1970, according to a new study. Ralph Lee Hopkins/Getty Images/National Geographic
Populations of all kinds of wildlife are declining at an alarming speed. One radical solution is to create a global nature reserve

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Volume 67, Issue 6
June 2017

An Ecoregion-Based Approach to Protecting Half the Terrestrial Realm

Eric Dinerstein, David Olson, Anup Joshi, Carly Vynne, Neil D. Burgess, Eric Wikramanayake, Nathan Hahn, Suzanne Palminteri, Prashant Hedao, Reed Noss, ...
Show more

BioScience, Volume 67, Issue 6, 1 June 2017, Pages 534–545,
<https://doi.org/10.1093/biosci/bix014>

Published: 05 April 2017

Environment ► Climate change **Wildlife** Energy Pollution

Biodiversity

Make half of world more nature-friendly by 2050, urges UN biodiversity chief

Call by **Cristiana Paşca Palmer** comes ahead of a major biodiversity conference in Beijing in 2020

Jonathan Watts

Fri 13 Apr 2018 17:54 BST



1,524



▲ Cristiana Paşca Palmer, executive secretary of the Convention on Biological Diversity. Photograph: Herman n Jorge chege/IISD/ENB

At least half of the world should be made more nature-friendly by 2050 to ensure the wellbeing of humanity, according to the UN chief leading efforts to create a new global pact on biodiversity.

The call to strengthen the world's life support system comes ahead of a major conference in Beijing in 2020 that many hope will be the biodiversity equivalent of the [Paris climate agreement](#).

To reach the goal, nature reserves, ocean protected areas, restoration projects and sustainable land use regions should be steadily expanded by 10% every decade, said Cristiana Paşca Palmer, the executive secretary of the Convention on Biological Diversity.

Advertisement

Radical Conservation Conservation

Jeremy Hance

Thu 28 Jun 2018 16:17 BST

21,916 649

Scientists call for a Paris-style agreement to save life on Earth



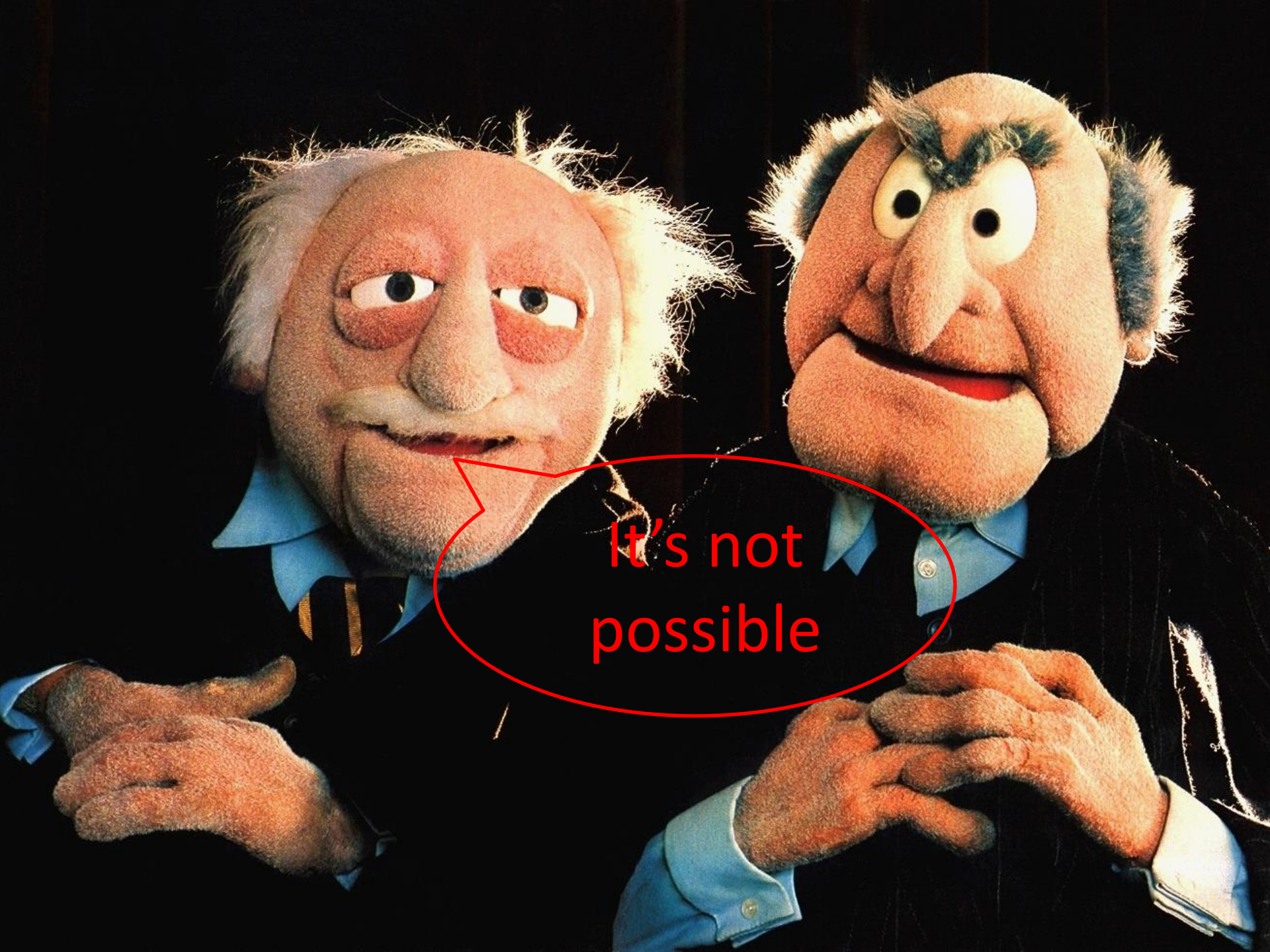
▲ Photograph: Xinhua / Barcroft Images

Conservation scientists believe our current mass extinction crisis requires a far more ambitious agreement, in the style of the Paris Climate Accord. And they argue that the bill shouldn't be handed just to nation states, but corporations too.

Let's be honest, the global community's response to the rising evidence of mass extinction and ecological degradation has been largely to throw crumbs at it. Where we have acted it's been in a mostly haphazard and modest way – a protected area here, a conservation program there, a few new laws, and a pinch of funding. The problem is such actions – while laudable and important – in no way match the scope and size of the problem where all markers indicate that life on Earth continues to slide into the dustbin.



**REALITY
CHECK
AHEAD**



It's not possible

But so was the abolishment of slavery

We, whose names are hereunder signed,
request a Meeting of such Inhabitants
of this Town and Neighbourhood as are
Friendly to the Mitigation and gradual

Abolition
OF
SLAVERY

THROUGHOUT THE
BRITISH DOMINIONS,

To be holden on Thursday, the 3rd day
of February next, at eleven o'clock, at
the George Inn, in Frome.

J. A. WICKHAM,
SAMUEL SAUNDERS,
J. W. LITTLE,
JOHN SHEPPARD,
CHARLES SMITH,
JOHN KINGDON,
T. H. SHEPPARD,

GEORGE KINGDON,
THOMAS BUNN,
W. H. MURCH,
T. W. SQUANCE,
FRANCIS ALLEN,
JAMES H. BYRON,
JOHN OLIVE.

And the achievement of women's rights



Hope for the future...

SKOLSTREJK
FÖR
KLIMATET



Conclusions

- There are legal duties and targets for ecological restoration in international law
- There are initiatives to restore nature in the fight against climate change
- Standards for restoration have been developed
- Challenges include:
 - Insufficient progress on implementation
 - Lack of ambition level
 - Lack of financial means
 - Certain concepts can undermine restoration policies

Recommendations

- More ambitious policy on restoration is necessary
- With new ideas:
 - Half Earth, Nature Needs Half
 - Paris Deal for Nature
- World wide protests on climate change create a momentum for a fundamental shift towards a sustainable and restored planet
- Restoration should play a vital role in both biodiversity and climate change law and policy