

The UN Decade on Ecosystem Restoration

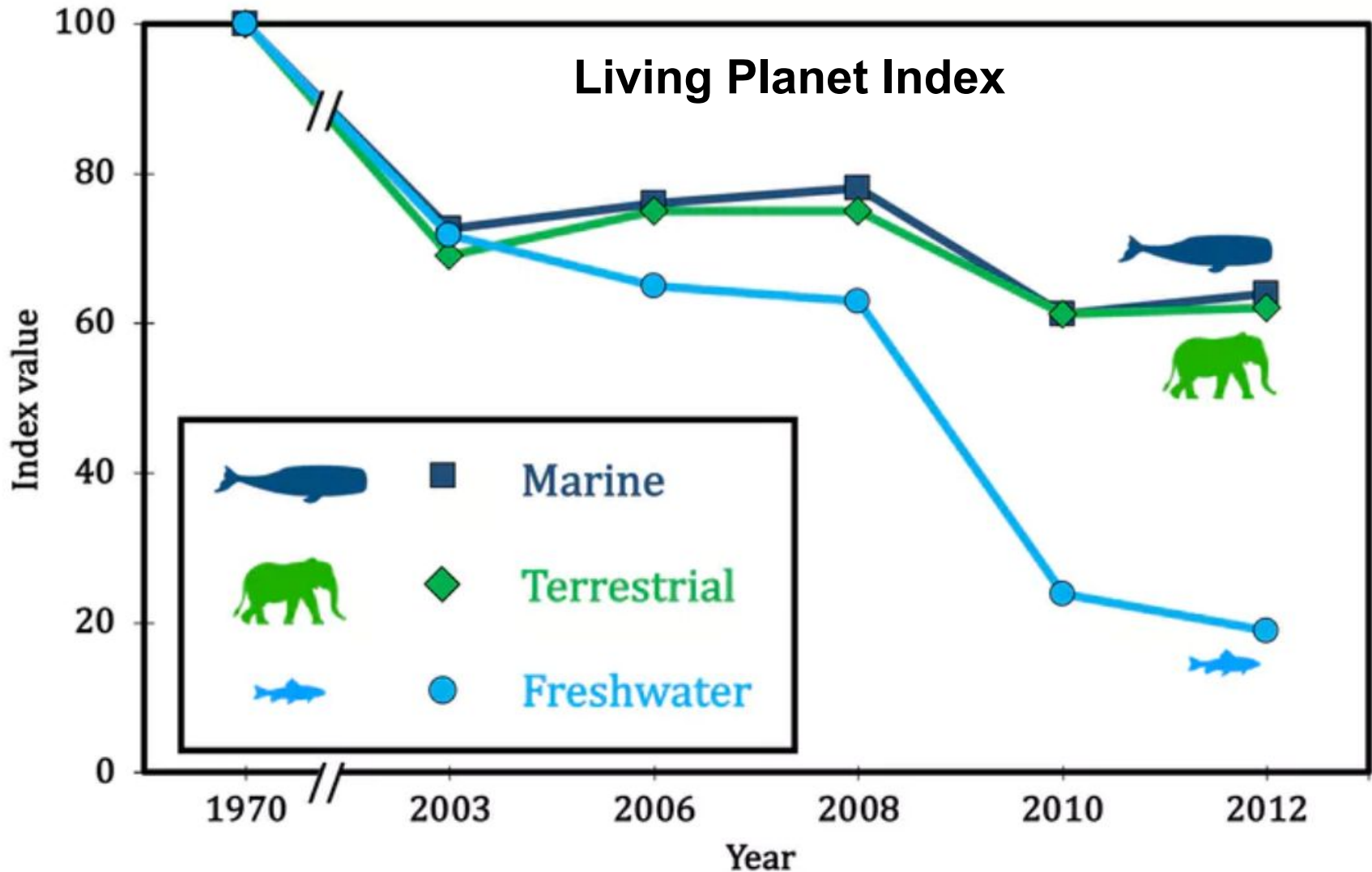
A critical perspective



Dr. Steven J. Cooke

Canadian Centre for Evidence-Based Conservation
Carleton University, Ottawa, Canada





nature sustainability

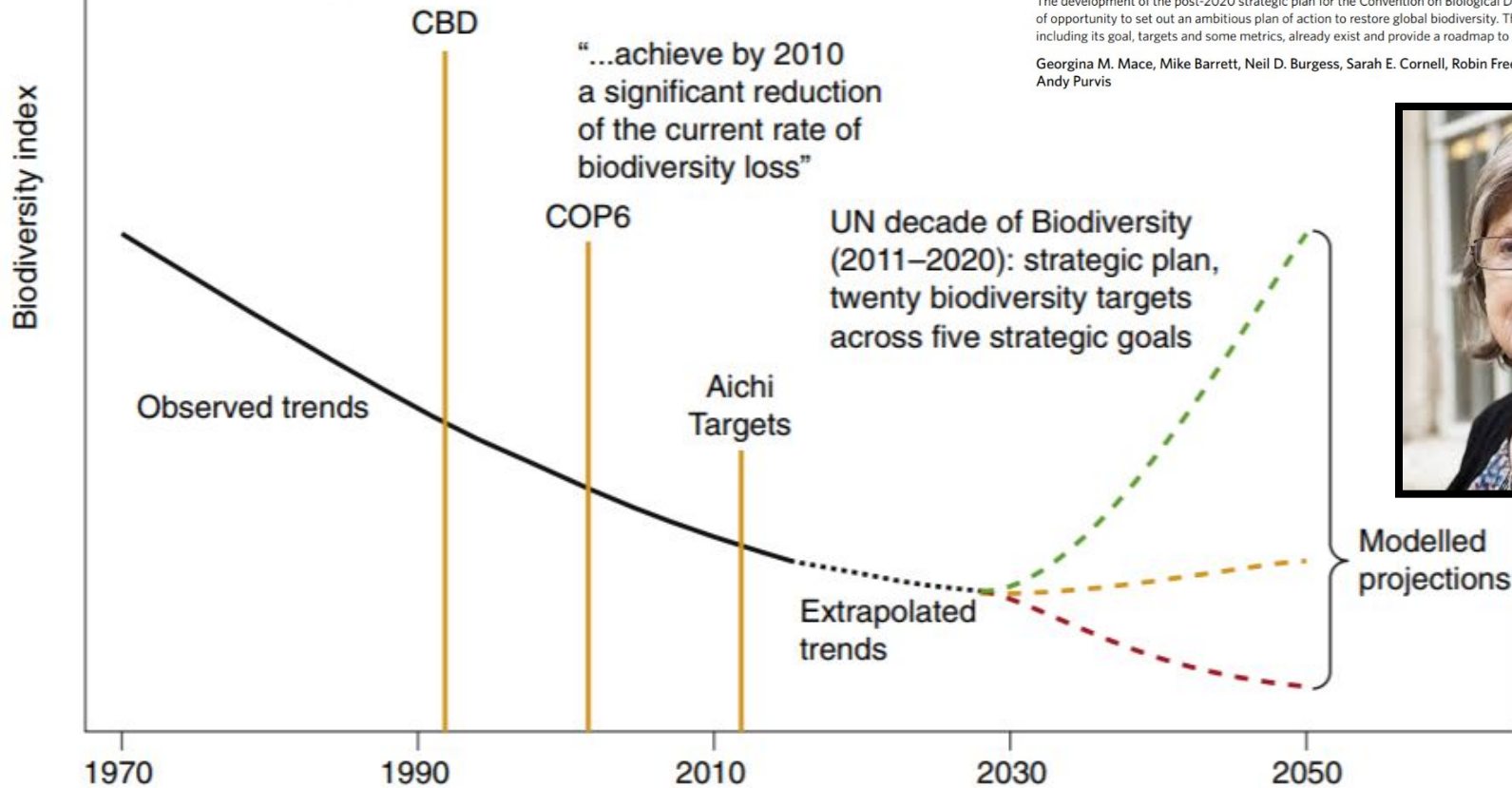
“Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity; Integrate [...] the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies”

comment

Aiming higher to bend the curve of biodiversity loss

The development of the post-2020 strategic plan for the Convention on Biological Diversity provides a vital window of opportunity to set out an ambitious plan of action to restore global biodiversity. The components of such a plan, including its goal, targets and some metrics, already exist and provide a roadmap to 2050.

Georgina M. Mace, Mike Barrett, Neil D. Burgess, Sarah E. Cornell, Robin Freeman, Monique Grooten and Andy Purvis





UN DECADE

ON

**ECOSYSTEM
RESTORATION**

2021-2030

Received: 17 April 2019 | Revised: 3 October 2019 | Accepted: 7 October 2019

DOI: 10.1111/csp2.129

PERSPECTIVES AND NOTES

Conservation Science and Practice
A Journal of the Society for Conservation Biology

WILEY

We have a long way to go if we want to realize the promise of the “Decade on Ecosystem Restoration”

Steven J. Cooke¹  | Joseph R. Bennett¹ | Holly P. Jones² 

- **ecological restoration is still in its infancy and remains an emerging discipline where the science and practice are often poorly aligned**
- **great urgency to determine what works so that we can embark on a decade of ecological restoration that is evidence-based and effective**

The UN Decade on Ecosystem Restoration MUST be more than just planting trees!!!





Exploring the Potential Impact of Conservation Themed Initiatives Related to “The Day Of”, “Year Of”, or “Decade Of” (Carleton/U Ottawa Grad Student Project)

- *Did you turn your lights off for Earth Hour? How did you support Black History Month? Did you know it's the Year of the Forest? How is the decade on Biodiversity already over?*
- *N=327 since 1957 from UN alone!!!*
- *Lack of clear goals; Limited evaluation; Rare use of change models*

Protect what we have

- Almost always preferable to avoid having to restore in the first place
- Protecting and buffering key habitats and ecosystems from human impact should be viewed as a central aspect of the UN DER



Engage in large-scale (both in terms of space, time and replication) science to generate the best possible evidence base


- Would have been visionary to have combined the announcement of the UN DER with a coordinated and well-funded science program focused on priority topics and ecosystems.**
- Lost opportunities for large-scale comparative studies**

Restoration Ecology

THE JOURNAL OF THE SOCIETY FOR ECOLOGICAL RESTORATION

INVITED STRATEGIC ARTICLE

**Evidence-based restoration in the Anthropocene—
from acting with purpose to acting for impact**

Steven J. Cooke^{1,2,3} , Andrew M. Rous^{1,2}, Lisa A. Donaldson^{1,2}, Jessica J. Taylor^{1,2},
Trina Rytwinski^{1,2}, Kent A. Prior⁴, Karen E. Smokorowski⁵, Joseph R. Bennett^{1,6}

Identify what seems to work, consider how it can be scaled (up or down), share it, and study it

- Restoration success stories can be framed as “bright-spots” which have been touted as a grass-roots approach to achieving a good “Anthropocene”
- Room for much creativity and harnessing the expertise of on-the-ground practitioners BUT such expertise should be combined with rigorous experimentation or adaptive management (need more sharing mechanisms)



www.youtube.com

The recipe for a
good Anthropocene
| Elena Bennett |
TEDxCERN -
YouTube

Adopt a best-practices approach to restoration science to ensure that we have the opportunity to learn from restoration projects

- Lack of monitoring and science to evaluate success**
- Funders (& regulators) should recognize the inherent value in allocating some of the budget to monitoring and science**
- Monitoring and science have to be good enough to contribute to the evidence base in a meaningful way**



Mine the existing evidence base

- Systematic review and meta-analysis techniques can be used to determine what works and what doesn't**
- Some restoration interventions simply do not work e.g., placement of in-stream structures fail to benefit salmonid populations** *Stewart et al. 2009 J Appl Ecol*
- Can identify the characteristics of science that is of sufficient quality to be considered part of the evidence base**



Cochrane Trusted evidence.
Informed decisions.
Better health.



Collaboration for
Environmental
Evidence

Anchor decisions in a sober evaluation of benefits, risks and uncertainties

- Restoration activities are often initiated despite missing key pieces of information**
- Without examination of potential risks and benefits, there is no way of knowing whether limited \$ resources are being wisely spent on a restoration project**
- Full accounting of benefits, risks and uncertainties would help determine the aspects of a project where reducing uncertainty could alter key decisions**



Strengthen partnerships between practitioners and scientists to create a community of practice

- Need for better partnerships between practitioners and scientists to support restoration practice and learn from it**
- Human dimension research focused on understanding what practitioners need and providing forums for them to interact with scientists and peers from other regions could be profitable for creating a community of practice**



Seize the opportunity to engage the public

- UN DER is a platform to inform the public about the need for restoration, and in doing so hopefully build public and political will for ecosystem protection**
- Ample opportunities to involve volunteers in hands-on restoration or in monitoring**
- Planning at the global, national and local levels is needed to determine how to best seize this opportunity (could achieve the “restorative culture” called for by Cross et al. 2019 Rest Ecol)**





Received: 2 July 2019 | Revised: 26 October 2019 | Accepted: 28 October 2019

DOI: 10.1111/csp2.145

LETTERS AND COMMENTS

Conservation Science and Practice Open Access
A Journal of the Society for Conservation Biology

WILEY

The Decade on Ecosystem Restoration is an impetus to get it right

Truman P. Young¹ | Mark W. Schwartz² 

“We largely agree with Cooke et al.”

We focus on three, more hopeful, points:

- 1. Although far from perfect, ecological restoration has made great headway as a science, with and sometimes without formal measures of evidence-based success**
- 2. Partial restoration success is common and is not necessarily a failure**
- 3. We ought not allow imperfections in knowledge and execution preclude what the planet needs, and that is serious dedication to restoring degraded systems**

Given uncertainties about future environmental conditions, what approaches best enable recovery or maintenance of an ecosystem's adaptive capacity and resilience? *Suding An Rev Ecol Evol 2011*

