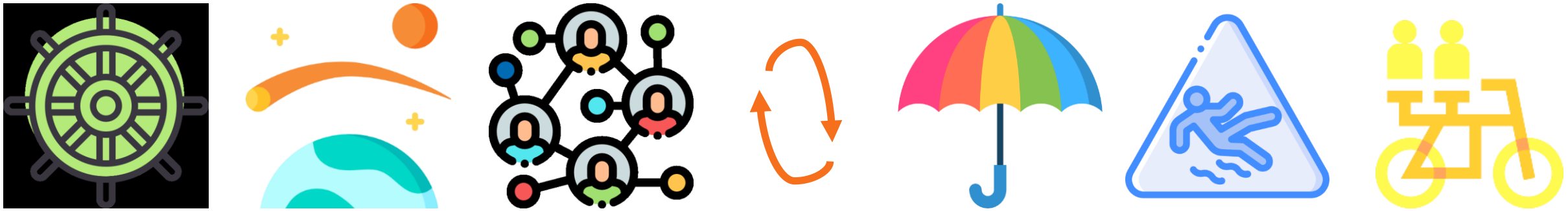
Eberswalde University
for Sustainable
Development

Governance, Administration and Management of Biosphere Reserves and Protected Areas

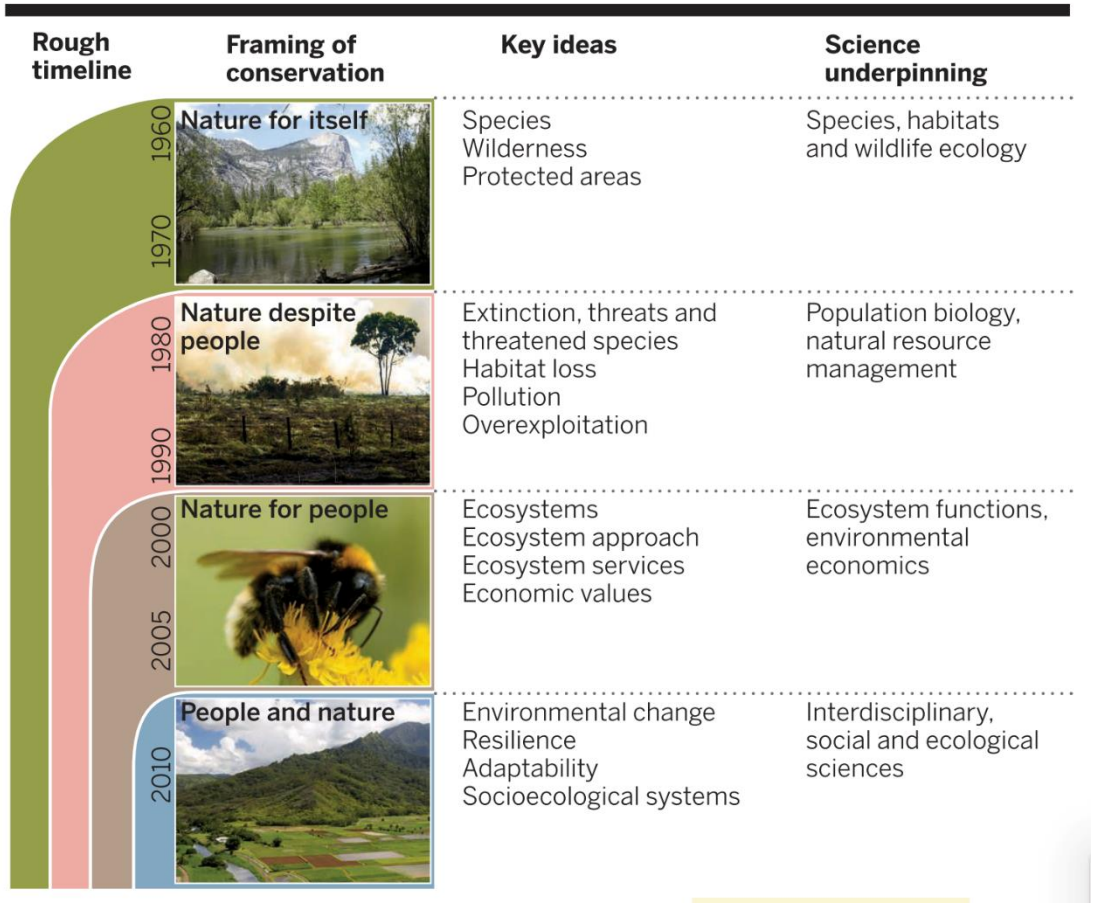
Prof. Dr. Erik Aschenbrand, Dr. Ana Filipa Ferreira



Comparing nature conservation concepts

Framings of conservation (Mace, 2014)

- Framing and purpose of conservation shifted over time
- Shifts reflect different ways of understanding the relationship between people and nature
- This results in different management and governance approaches



Mace, G. 2014. Whose conservation? Science 345(6204) 1558-1560

Aplet & Cole: The trouble with naturalness. Exercise

- Read the book chapter of Aplet & Cole
- Find the answers to the questions (next slide) in the text
- **Highlight the answers in the text**

Aplet & Cole: The trouble with naturalness. Questions

- Summarize the role of naturalness in (U.S.) park stewardship
- What are the differences between the 3 meanings/definitions of naturalness?
- How do the authors describe the approach to protected area management at the end of the 19th century?
- How is the position of the „Leopold report“ summarized in the text?
- Which position was introduced with the „wilderness act“?
- How do the authors describe the differnent meanings of naturalness in Leopold report and wilderness act?
- What indigenous influence on land was discovered and considered relevant for PA management?
- What is the non-equilibrium paradigm shift and how did in influence PA management?
- Explain Figure 2.1 and find other examples from your own experience for each of the boxes.
- Explain Figures 2.2 and 2.3

The Trouble with Naturalness in Protected Area Management

C&O Canal	Chesapeake Bay	Arctic refuge
Vacant Lot	Paul de Tornada Nature Reserve	Everglades
Downtown	Pine Plantation	Curtis Prairie

Freedom from Control: „Self-Willed" / Controlled

Novel — Pristine

Ecological Condition

Novel – Pristine: scale of „Historical Fidelity" – Historische Treue/Genauigkeit

Up – Paul de Tornada Nature Reserve (Portugal) © PATO
Left – Figure adapted from Aplet and Cole (2010, p.21):
„A conceptual model that arrays landscapes along two axes, from controlled to self-willed and from novel to pristine. The qualitites these axes represent are consistend with traditional definitions of naturalness. Their use clarifies the difference in meaning between freedom from intentional human control and maintenance of historical or undisturbed conditions".

Aplet, G.H. & Cole, D.N. (2010): The Trouble with Naturalness: Rethinking Park and Wilderness Stewardship. In: Cole&Yung (Eds.): Beyond Naturalness. Washington.

The Trouble with Naturalness in Protected Area Management

Freedom from Control

„Self-Willed“			
	C&O Canal	Chesapeake Bay	Arctic refuge
	Vacant Lot	Paul de Tornada Nature Reserve	Everglades
Controlled	Downtown	Pine Plantation	Wetland Meadow
	Novel		Inherited, threatened, valued

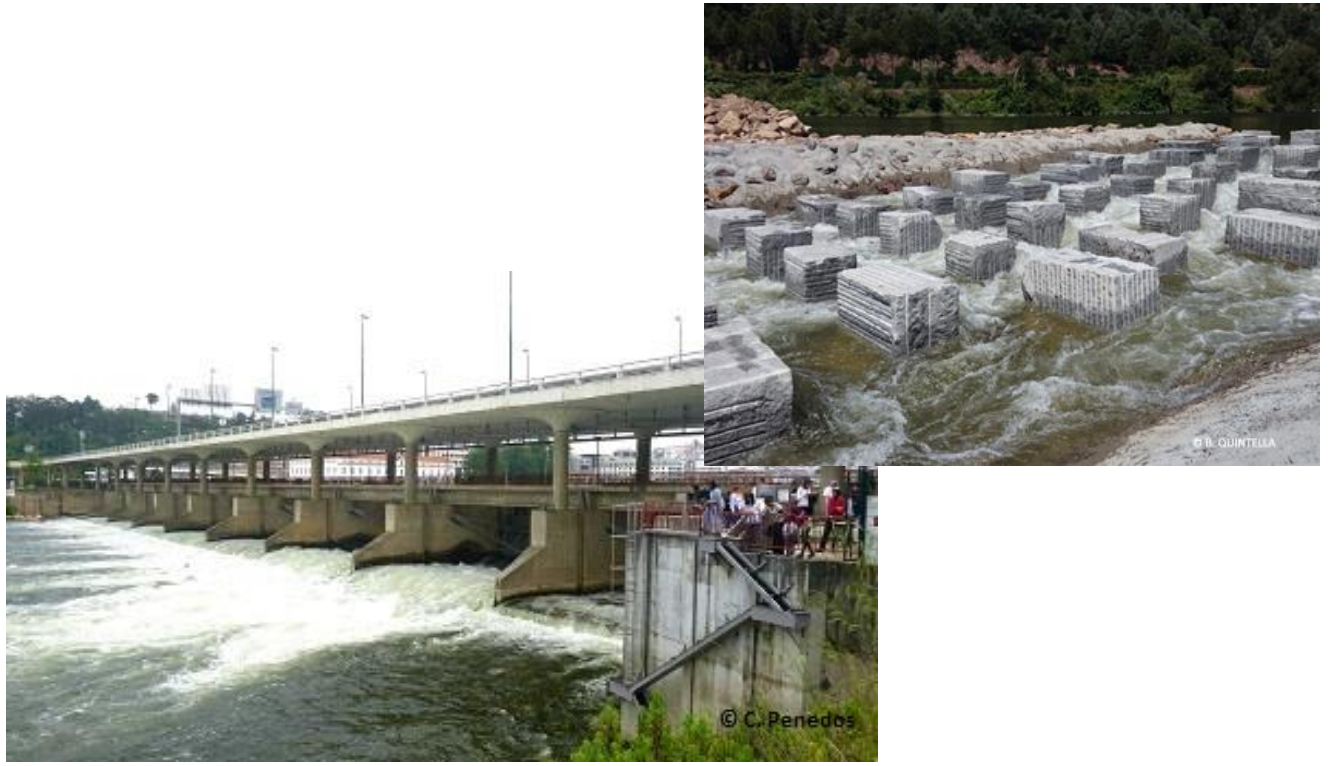
Ecological Condition

Restored wetland meadow in BR Spreewald

Aplet, G.H. & Cole, D.N. (2010): The Trouble with Naturalness: Rethinking Park and Wilderness Stewardship. In: Cole&Yung (Eds.): Beyond Naturalness. Washington.

The Trouble with Naturalness in Protected Area Management

Freedom from Control	Ecological Condition: Novel		Ecological Condition: Pristine
„Self-Willed"	C&O Canal	Chesapeake Bay	Arctic refuge
	Vacant Lot	Paul de Tornada Nature Reserve	Everglades
Controlled	Downtown	Mondego River Project	Curtis Prairie



Up – Rehabilitation of the longitudinal conectivity in the Mondego River (Portugal) © Apambiente and Universidade de Évora.
Link to video.
Left – Figure adapted from Aplet and Cole (2010, p.21)

Aplet, G.H. & Cole, D.N. (2010): The Trouble with Naturalness: Rethinking Park and Wilderness Stewardship. In: Cole&Yung (Eds.): Beyond Naturalness. Washington.

The Trouble with Naturalness in Protected Area Management

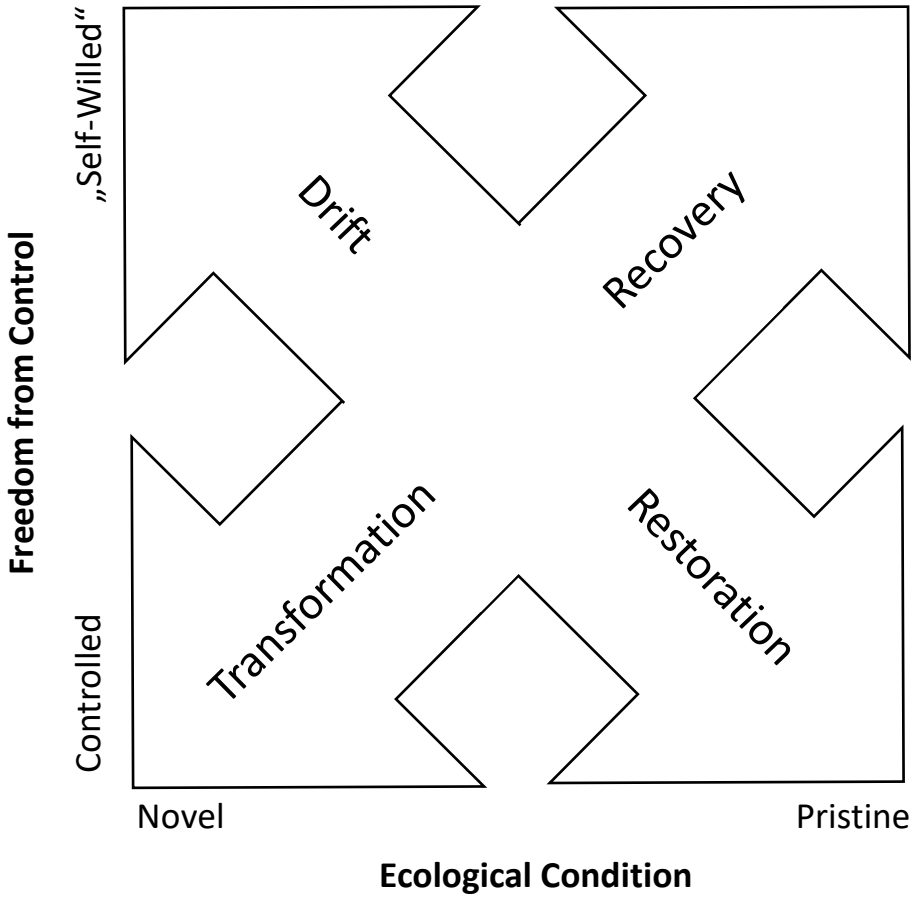


Figure from Aplet and Cole (2010, p.22):
„Like landscapes, stewardship options can be arrayed along two axes, from controlled to self-willed and from novel to pristine“.

Aplet, G.H. & Cole, D.N. (2010): The Trouble with Naturalness: Rethinking Park and Wilderness Stewardship. In: Cole&Yung (Eds.): Beyond Naturalness. Washington.

The Trouble with Naturalness in Protected Area Management

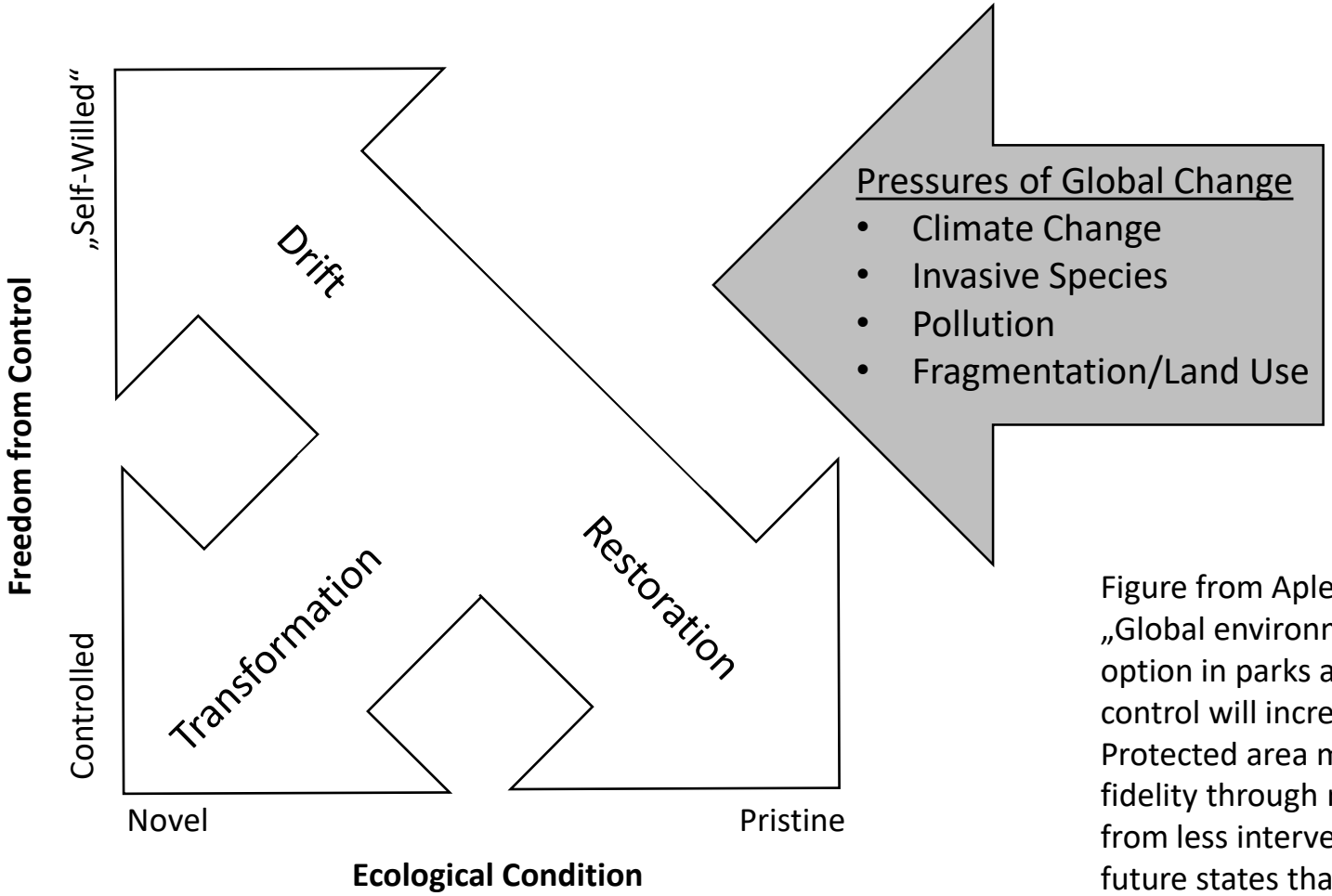


Figure from Aplet and Cole (2010, p. 24):
„Global environmental change precludes the ideal stewardship option in parks and wilderness: that release from human control will increase historical fidelity and pristineness. Protected area managers must choose to increase historical fidelity through restoration, accept the change that will result from less intervention and control, or transform ecosystems to future states that are not true to the past but will protect important values and be more resilient in the face of global change“.

Aplet, G.H. & Cole, D.N. (2010): The Trouble with Naturalness: Rethinking Park and Wilderness Stewardship. In: Cole&Yung (Eds.): Beyond Naturalness. Washington.

Invasive species management

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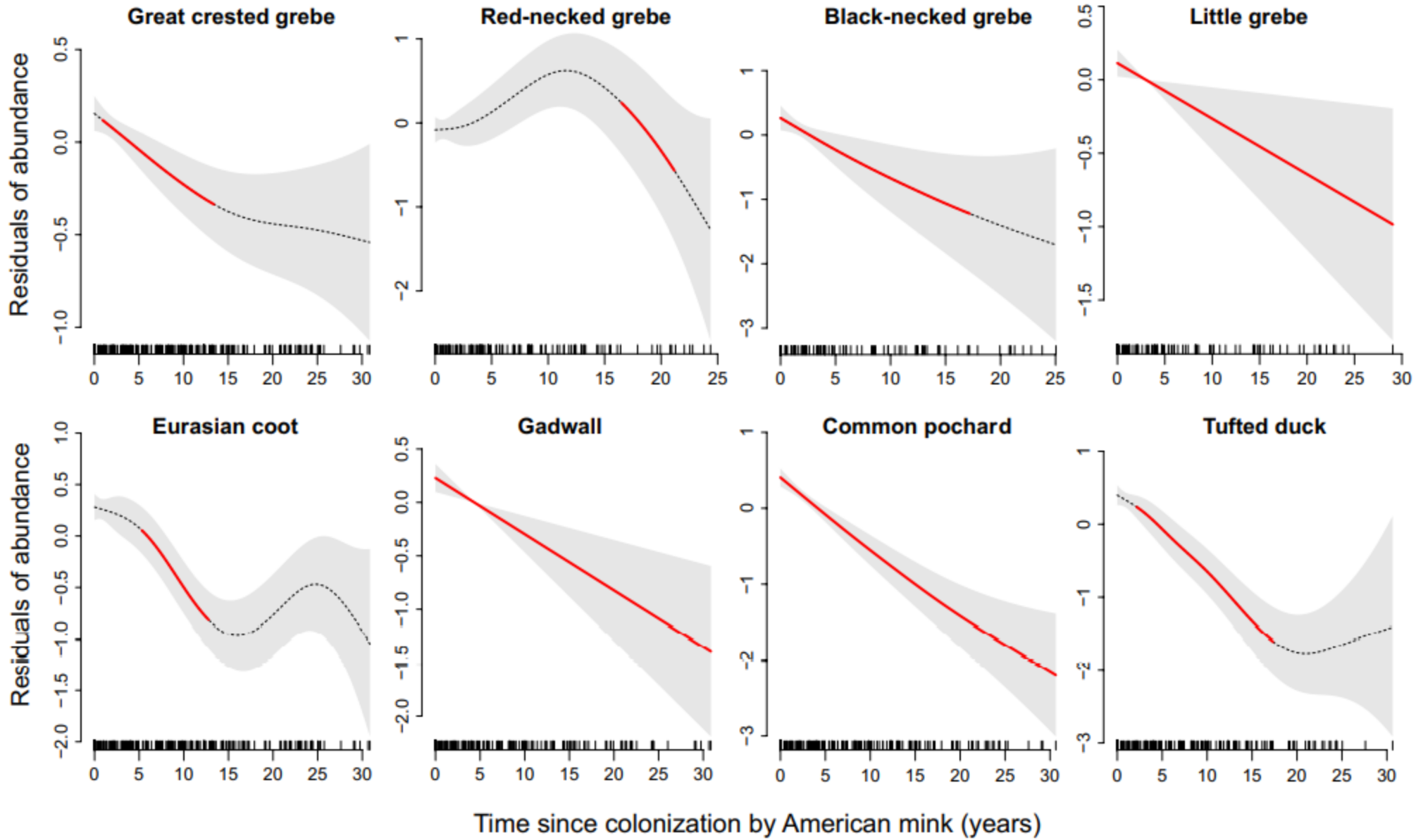
Check for updates

BIODIVERSITY RESEARCH

Diversity and Distributions WILEY

The expansion wave of an invasive predator leaves declining waterbird populations behind

Marcin Brzeziński[1] | Michał Żmihorski[2] | Marek Nieoczym[3] | Piotr Wilniewczyc[4] | Andrzej Zalewski[2]


Great crested grebe
Red-necked grebe
Black-necked grebe
Little grebe
Eurasian coot
Gadwall
Common pochard
Tufted duck
Residuals of abundance
Residuals of abundance
Time since colonization by American mink (years)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auer, Verkehrslage und Orte in der Nähe
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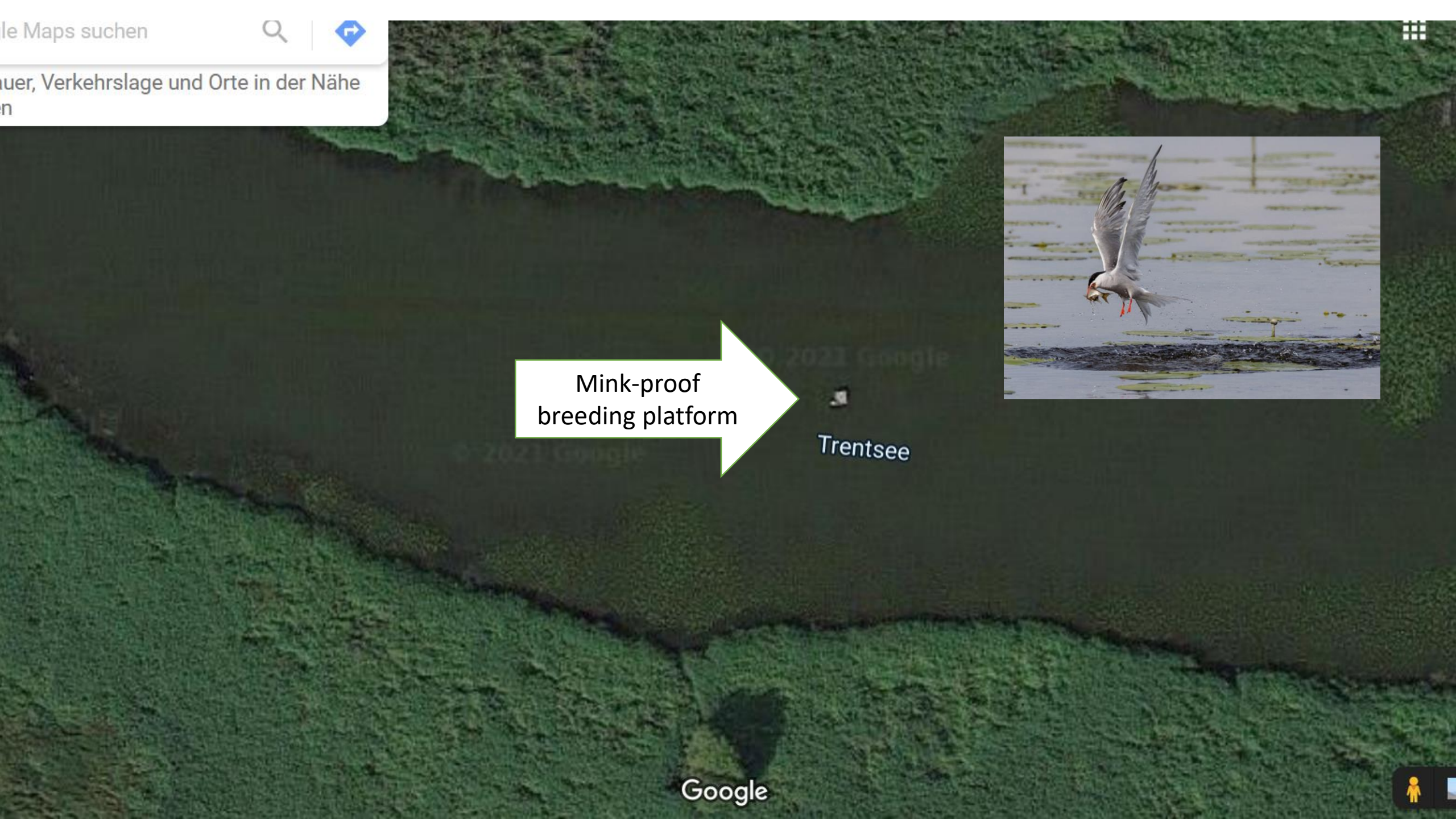
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Mink-proof
breeding platform
Trentsee
Google

Introduced species and **invasive species**

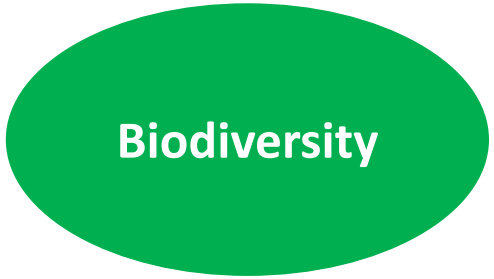
- Intentional introductions
- Unintentional introductions

Biological invasion: „individuals of a species not native to a region arrive with human assistance and establish an ongoing population. If the population then spreads in its new home, the phenomenon is called a *biological invasion* and the species is termed *invasive*, at least in this region“ (Simberloff 2013)

Check (any) list of invasive species and research information about one.

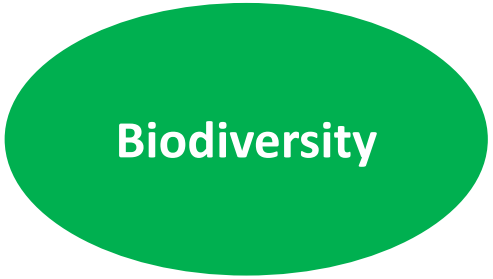
1. What is the problem?
2. How is it managed?

Simberloff, D. (2013): Invasive Species. What Everyone Needs to Know. Oxford University Press. 352 pp.


Biodiversity

Genetics
Variations within and among populations

Species/Populations



Ecosystems/Communities

Landscapes/Regions

„the whole package of genes, populations, species, and the cluster of interactions that they manifest“ (Daniel Janzen)
„the living resources of the planet“ (Paul Ehrlich)
„shorthand for all the richness of life“ (Reed Noss)
„you‘re talking about a subject that is literally as large as the world itself“ (Donald Falk)

All quotes from: Takacs, D. (1996, p. 51): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Definitions

David Ehrenfeld as quoted in Takacs 1996, p. 46:

„I dont have a definition of biodiversity. I‘ve tried very hard to stay away from formal definitions. When I deal with it in the journal [Conservation Biology, of which he was the founding editor] – and its one reason I don‘t much like the word – it obviously means to some people species diversity; other people expand that to include populations. To other people it means really genentic diversity, heterozygosity, allelic diversity, often within populations. To many people, it means variety of ecotypes or ecosystem types, landscape types. Obviously, it‘s all of those things. But mostly when I think of biodiversity, I think of plain, ordinary species diversity. And by the way, I don‘t really value it, value the term, as highly as some people do. **I think it‘s one of those wonderful catchwords like *sustainable development*, that, because it‘s vaguely defined, has a broad appeal**“

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Biodiversity

1986 – The term „Biodiversity“ was created to gain political influence

„People are slashing, hacking, bulldozing, burning, poisoning, and otherwise destroying huge swaths of life on Earth at a furious pace“ (Takacs 1996, 1)

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Biodiversity

What was before that?

1986 – The term „Biodiversity“ was created to gain political influence

Aldo Leopold, Rachel Carson → Shared intention → people need to see the world differently
Their diagnosis: people take nature for granted, it is just there forever

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Biodiversity

What was before that?

1986 – The term „Biodiversity“ was created to gain political influence

Aldo Leopold, Rachel Carson → Shared intention → people need to see the world differently
Their diagnosis: people take nature for granted, it is just there forever

„Carson further popularized the trend among ecologists of reifying nature as a concrete entity, in her case as „natural variety“.

Nature grew more tangible; it became a commodity that could be exchanged, valued, lost, gained, depleted, restored, quantified, scientized.

This reification was essential if we were to hang a price tag, or a broader value tag, on nature“ (Takacs 1996, p. 27).

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Biodiversity

1986 – The term „Biodiversity“ was created to gain political influence

„Yet a cadre of ecologists and conservation biologists has responded, vigorously promoting a new definition of nature: biodiversity – advocating it in Congress and on the *Tonight Show*; whispering it into the ears of foreign leaders; redefining the boundaries of science and politics, ethics and religion, nature and our ideas of nature“ (Takacs 1996, cover).

„These scientists have infused the environmental movement with new focus and direction, but by engaging in such activities, they jeopardize the societal trust that allows them to be public spokespersons for nature in the first place“ (Takacs 1996, cover)

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Biodiversity

1986 – The term „Biodiversity“ was created to gain political influence

„It was easy to do: all you do is take the ‘logical‘ out of biological“ (Walter G. Rosen as cited in Takacs 1996, p. 37)

„To take the logical out of something that is supposed to be science is a bit of a contradiction in terms, right? And yet, of course, maybe thats why I get impatient with the Academy, because they‘re always so logical that there seems to be no room for emotion in there, no room for spirit“ (Walter G. Rosen as cited in Takacs 1996, p. 37)

(The term Biodiversity was used first by Walter G. Rosen in 1986 as a contraction of biological diversity while planning for a US „National Forum on Biodiversity“ for the US Academy of the Sciences.)

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Biodiversity

Biodiversity – boundary work:

creating a boundary object

<u>Scientific sphere</u>

Aim: Directing research and funding more towards Zoology, Botany, Ecology, Conservation Biology

<u>Political sphere</u>

Aim: Ensuring Biosciences‘ say in political decisionmaking where Biodiversity is concerned

Creating the boundary object was certainly more than a strategy to strengthen political Influence. This process is driven by the firm conviction to stop destruction of non-human life on Earth (Piechocki et al. 2003).

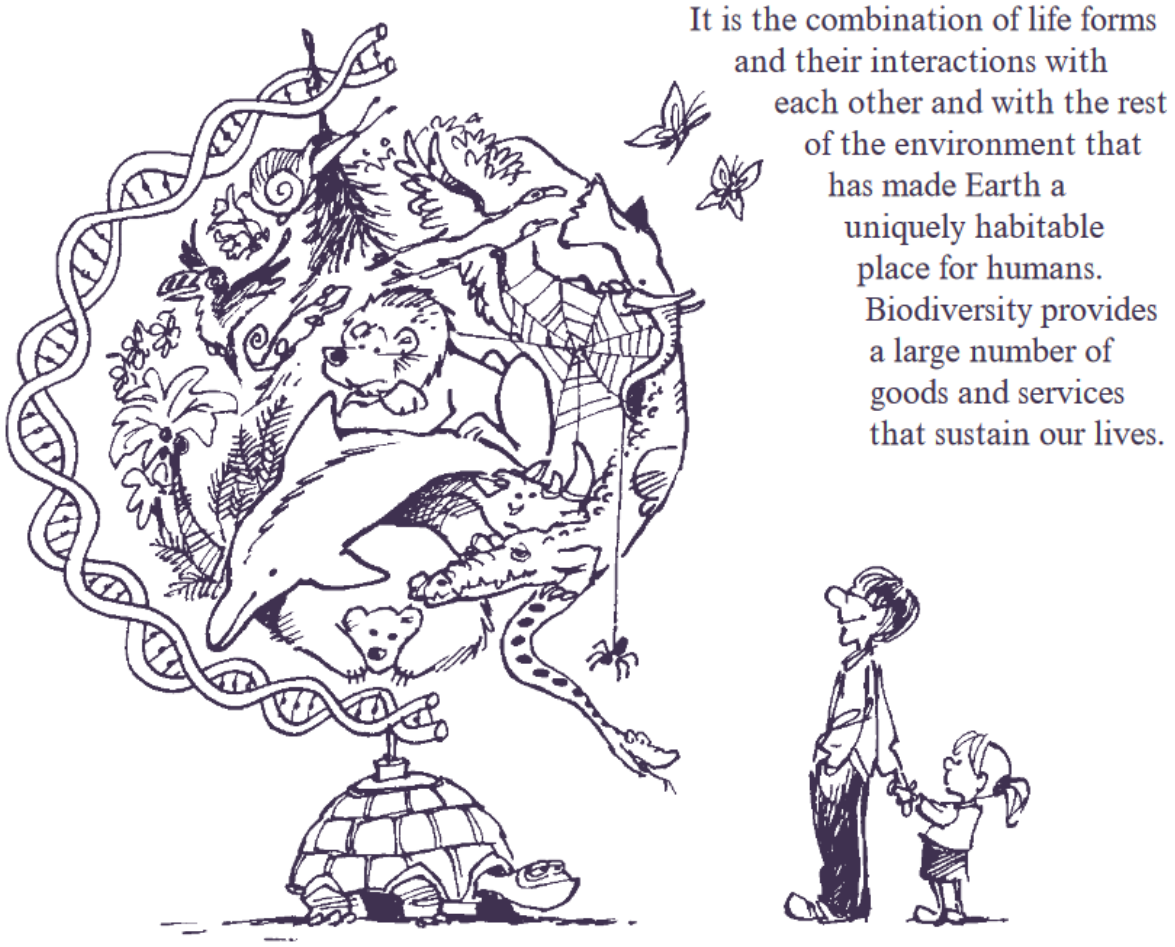
Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Piechocki, R./Eser, U./Potthast, T./Wierbinski, N./Ott, K. (2003): Vilmer Thesen zur Biodiversität.

Biodiversity

1992 – Biodiversity became a key term in politics and in science with the CBD

Biodiversity integrates science and politics



Source: Secretariat of the Convention on Biological Diversity (2000): Sustaining Life on Earth Report. https://www.cbd.int/doc/publications/cbd-sustain-en.pdf

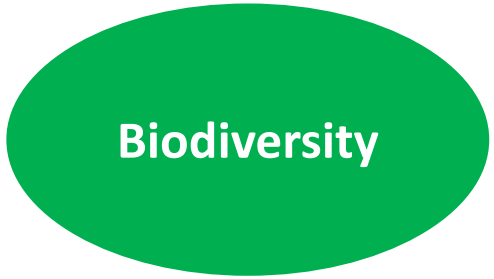
Convention on Biological Diversity

BIODIVERSITY CONVENTION

Biodiversity: Hybrid, comprises Facts and values

Treated as a natural scientific fact comprising all life on Earth.

Attributed a moral „intrinsic value“ – its protection is then seen as a collective moral duty.



Described as a resource. Sustainable use will ensure our and future life on Earth. (instrumental values)

Focus on human-ecosystem interactions – value not independent from humans (i.e. not intrinsic) but also not a mean (instrument) to something else - relational values.

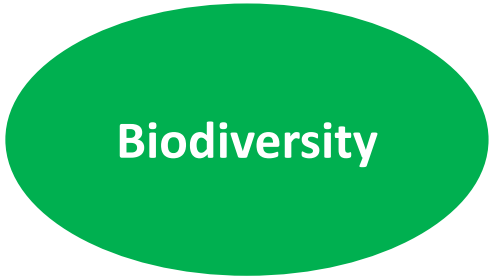
Chan et al. 2016: Why protect nature? Rethinking values and the environment. PNAS 113 (6): 1462-1465

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Piechocki, R./Eser, U./Potthast, T./Wierbinski, N./Ott, K. (2003): Vilmer Thesen zur Biodiversität.

Biodiversity: Values

Different ethical reasons for Biodiversity conservation



It is intuitively clear that Biodiversity is worth protecting

Biodiversity is a sort of diversity. Diversity is a value as such and hence worth being protected

Biodiversity is a generic term for what exists naturally. Everything that exists by nature has a moral intrinsic value.

In "strong" sustainability, biodiversity is part of the critical, i.e. not infinitely replaceable, natural capital → imperative for conservation

(In contrast, the concept of "weak" sustainability assumes that natural capital is in principle substitutable, e.g. in the context of technical innovations).

Takacs, D. (1996): The idea of Biodiversity. Philosophies of Paradise. John Hopkins University Press.

Piechocki, R./Eser, U./Potthast, T./Wierbinski, N./Ott, K. (2003): Vilmer Thesen zur Biodiversität.

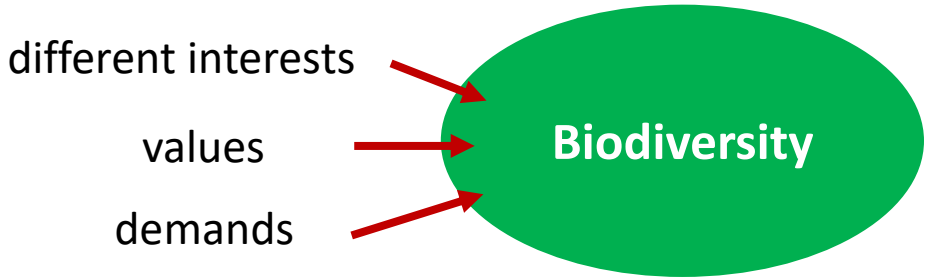
Biodiversity: Values
Conceptualizing

Controversies in CBD context: main conflicts around Biodiversity conservation

Where is the line of conflict?

humans against **nature?**

Different **groups of humans** with



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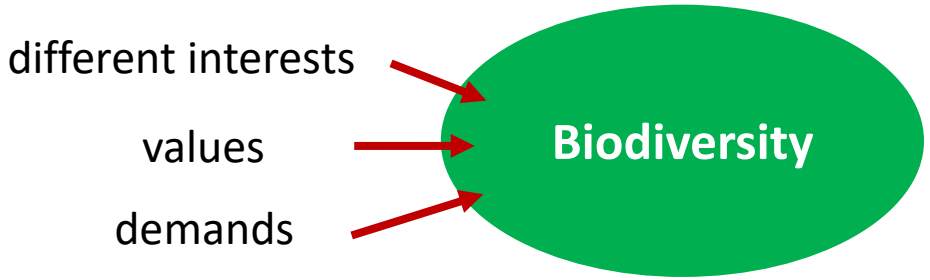

Ecology is expected to provide value-free knowledge in the form of hard facts that can contribute to efficient problem solving. Conservation Biology has created a solid ecological knowledge basis.
Such factual knowledge is essential, but it belies the fact that a scientific discipline cannot make (scientifically valid) statements about social value decisions (Pichocki et al. 2003).
→ Science **can** of course use its own power to engage and possibly shift discourses (to what extend it **should** do this is and always will be a debated issue).

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Piechocki, R./Eser, U./Potthast, T./Wierbinski, N./Ott, K. (2003): Vilmer Thesen zur Biodiversität.

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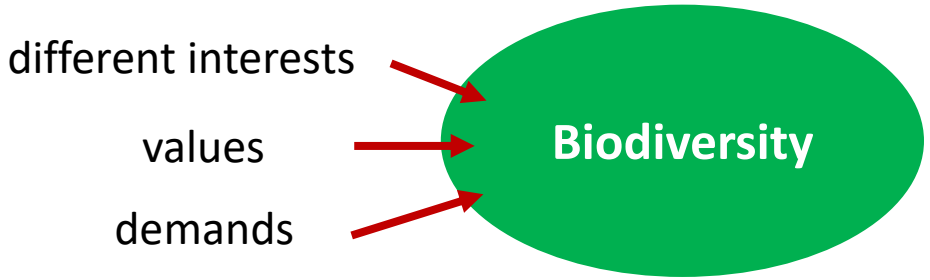

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Four main positions on saving nature in the Anthropocene

	Nature/culture dichotomies	**Beyond N/C dichotomies**
Capitalist	Mainstream conservation	New conservation
Beyond-capitalist	Neoprotectionism	Convivial conservation

Büscher & Fletcher 2019. Towards convivial conservation. Conservation and Society 17 (3)