# Winning without win-win?

**Recommendations on financial market strategies for Biodiversity and Nature** 





## About Preventable Surprises

Preventable Surprises is a 'think-do' tank focused on systemic ESG risks in the financial system. We are a global network of thought leaders and positive mavericks, professionals willing to challenge the status quo and persuade the financial sector to better address systemic risks. Legislators, regulators, the media, NGOs, and consumers each have a role to play in building a more transparent and sustainable market system, yet much of the power lies with corporations and their investors. Preventable Surprises focuses on institutional investors because, through the trillions of dollars in assets under their management, they have enabled corporate and market dysfunction and understand how to fix these problems.

## About Preventable Surprises' online dialogue on biodiversity

From 22-26 February 2021, Preventable Surprises hosted a virtual dialogue with close to ninety global participants from finance, science, policy, and civil society. The goals were to broker honest conversations and to build an investor agenda on biodiversity loss, commensurate with the scale of the crisis. Guided by daily provocations from experts on critical scientific, business and policy issues, this dialogue sought to identify gaps in practice and ambition and propose actionable solutions that investors and others can apply immediately. A summary of the dialogue is published separately.

## Authors

These recommendations were written by Jérôme Tagger and Tom Murtha. We are particularly grateful for the significant contributions of Preventable Surprises Senior Advisors Bill Baue (also the dialogue's lead moderator) and Raj Thamotheram, Research Fellow Nithya Iyer, and Alison Taylor. It reflects our learnings from the February 2021 dialogue but does not engage the responsibility of dialogue participants, nor is it meant to represent a consensus view.

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# **Executive Summary**



The biosphere supports life. Soon it may be on life support. Investors can make a meaningful contribution to changing the course of biodiversity and Nature loss if they set adequate ambitions, learn from the strengths and shortcomings of climate action, demonstrate leadership, and engage in proper collaboration. However, they should also understand that the growth models on which markets and capitalized retirements depend no longer work in a carbon constrained world, and that their unchecked power curbs their ability to behave responsibly. Preventable Surprises believes that new solutions are needed to overcome existing barriers to change. Buckminster Fuller reminds us, "You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete." In other words, it is time for social and technical innovation. It is also time to recognize that finance is one piece in larger economic, natural, and social systems, and that its role should never be viewed in isolation.

The following recommendations are Preventable Surprises' own take-aways from an online dialogue on setting an investor agenda on biodiversity hosted in February 2021, as well as from many more recent developments on Environmental, Social and Governance (ESG) finance and climate action. They do not represent a consensus view of the participants.

Preventable Surprises believes that new solutions, beyond current ESG finance approaches, are needed to address the biodiversity crisis and overcome barriers to change. Investors should focus on adequate levers, embrace the limits of their own interventions, and understand that ultimately their unchecked powers need to be curbed to address a systemic challenge of this magnitude. Deep market reforms will be required, but the urgency of the crisis makes intermediary solutions necessary.

## Ambitions

Investors should devote most of their energy on policy levers, globally and locally, to establish guardrails to stay within planetary boundaries. They should support goals to set aside 30% of Nature by 2030, protect key ecosystems and ensure half the earth's land mass and oceans become protected conservation areas by 2050.

Engagement with the private sector should focus on business transformation first and foremost. Current approaches focused on disclosure are too slow. Investors should require companies to stop and reverse negative impacts and then regenerate natural systems.

All data and disclosure should embrace context, moving away from a firm-centered approach (changes in a company's "Nature performance" year on year) to one that sets this performance in an economic, ecological, and social context.

## Design

Whether acting alone or in conjunction with others, investors should adopt 21st century governance principles. They should engage with scientists, stakeholders, and local communities. They should implement free prior and informed consent, co-creation, and gender parity.
Investors should organize around landscapes and ecosystems as they are doing in the Amazon rainforest.
They should adopt a culture of learning and innovation to make sure that the solutions they deploy are effective.
They should work at pace and scale in recognition of the urgency of biodiversity loss challenges, giving companies no more than two years to show meaningful course correction.

These recommendations are designed with a broad audience in mind - investors themselves, regulators, scientists, stakeholders, funders - all those with a stake in the success of financial market strategies for Nature. They draw from different disciplines, practices, and schools of thought. Applying its own medicine, Preventable Surprises does not profess to know better. Rather, the recommendations follow a deliberate intention to broaden the lens through which to view how markets and Nature interact, beyond ESG. They offer and invite contradiction. Feedback is invited, and welcome.

# Question: Can investors help systemic naturerelated problems?

Humankind is in the midst of a planetary emergency of unprecedented scale. Both the financial and real economy are exposed to dramatically increased levels of risk - with higher probability and higher likely impact. Human impacts on biodiversity are perilously close to, or possibly at, tipping points which, once reached, mean there is no return to previous states of Nature - those states that enabled the flourishing of human populations and civilizations in the Holocene. We are now running out of time to muster the resolve to stay in a safe operating space.

As responses to the emergency begin to emerge, so do crucial questions: can markets and investors play a meaningful role? What roles must they play? Market participants may be perplexed about what to do to address the ongoing assault on the integrity of the biosphere's natural systems. But the very nature of these questions contains the ferment of a response, revealing that a paradigm shift is required for the private sector to have meaningful impact.

Investors specifically should recognize that the premises on which they have built Environmental, Social and Governance (ESG) practices and climate action will only go so far, and, as some argue, may now be counterproductive<sup>1</sup>:

- Win-win narratives the promise of 'doing well by doing good' or efforts to insulate portfolios from ESG-related risks often carry a cost, which is a failure to contribute to the preservation of the biosphere. Why? Simply because they are trying to solve a different problem: protecting investors, as opposed to protecting nature (and, concomitantly, biodiversity, and societies).
- The dominant (voluntary) disclosure-based approach to ESG and climate is insufficient and, more importantly, too slow. It is quite telling that celebrated ESG wins rarely have to do with data and transparency (except sometimes at the regulatory level).
- The sort of technological innovation that could play a role like the one clean energy play on climate change is hardly bankable, or does not exist yet, as Blackrock CEO Larry Fink noted in a March 2021 conversation at the US Council on Foreign Relations<sup>2</sup>.
- In the 25+ years since the first Conference of the Parties (COP 1) to the Convention on Biological Diversity (CBD) in 1994, environmental markets, while part of the solution to our ecological emergency, have not been sufficient to stop the degradation of the natural capital that provides the ecosystem services on which humanity depends. Each time the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) produces a new Global Assessment, the news is dire:

"The health of ecosystems on which we and all species depend is deteriorating more rapidly than ever. We are eroding the very foundations of our economies, livelihoods, food security, health, and quality of life worldwide." (IPBES Chair, Sir Robert Watson, IPBES 2019 Global Assessment Report.) In 2021, a report by eminent ecologists, Corey Bradshaw, Paul Ehrlich, et. al., indicates deterioration of ecosystems continues to accelerate and leads to a "ghastly future," putting humanity in a far more dangerous situation than generally recognized.

As Preventable Surprises has long argued, institutional investors cannot trade or diversify their way out of systemic and systematic risks. Such is the case for biodiversity loss.<sup>3</sup> So what to do?

Our February 2021 dialogue recognized the need for more effective approaches to respond to the magnitude of environmental challenges, given the limits of current market and ESG solutions. But it did not - and neither does Preventable Surprises - dismiss the critical role of investors in addressing systemic issues. Rather, we call for new paradigms and starting points.

On the institutional side, participants called for much more immediate action by investors, companies, and crucially, governments. On the human side, it urged for more passion, collective agency, and empowerment. Short of rapid innovation, it is ingenuity and social innovation that can take the first steps. Social innovation also calls for a rethink of the financial system, likely not in time to address the urgent biodiversity crisis, but at the same time and until it works for all.

Our dialogue suggested dozens of tactical and strategic ideas. Our proposals build on the dialogue. They contain no silver bullets, but there are many winning strategies for action. We now call on Positive Mavericks<sup>4</sup> to relentlessly drive, encourage and promote real change, by stepping up to the task and acting on the most promising roads to sustainability.

# Ambition: economic transformation aligned with planetary boundaries

It should now be clear that investor success in responding to biodiversity loss hinges on our capacity to reframe the challenge and their contribution to it. Just as the "carbon bubble" and "stranded assets" have become frame-shifters for the climate emergency, "planetary boundaries<sup>5</sup>" and social foundations<sup>6</sup> must serve as guardrails<sup>7</sup> for both investors and civil society to take timely action on biodiversity loss. This requires new concepts and goals to be implemented. For "protected assets" to be recognized and safeguarded, we must find more ambitious and effective approaches to stewardship.

One clear take away from our dialogue is that market environmentalism - the idea that markets alone are sufficient for restoring local and global ecosystems - has not and cannot deliver by itself.

**1** Our first call is therefore towards effective local and global regulation that provides the guideposts and guardrails for economic activity to stay within planetary boundaries. Government engagement alone is insufficient - good government is at best an unstable currency - but it is necessary.

Investors have lately begun to embrace the importance of policy engagement, most visibly on climate action calling for governments to shift fiscal incentives ahead of the 2021 UN Climate Change Conference of Parties (COP26), as well as on biodiversity action -- as their engagement with the Brazilian government but also further downstream in the soy supply chain attest. Preventable Surprises believes that they can do so in a much more systematic way and, given the systemic implications of biodiversity loss, with or without reference to specific holdings or sovereign assets.

What would effective regulation look like? The designation of protected areas consisting of key ecosystems, e.g., larger parts of the Amazon, the Canadian Boreal Forest, the Great Barrier Reef, and the Mesoamerican Coral Reef. The world's largest environmental organization, IUCN, does much of the work to identify and assess the health of critical places on its Red List of Ecosystems.<sup>8</sup>

Policy engagement is a recognition that the responsibility for global environmental issues cannot and should not rest with the private sector alone. By calling on government intervention, investors can be explicit about the limits of their own interventions, the risks inherent to their own powers, and ask others to set or curb them.

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# 2 Alongside policy levers investors and corporations need to reduce their impacts and manage their dependencies on these ecosystems and develop regenerative practices across sectors. Our second call is therefore for investors and companies to focus on business transformation.

Here we can learn from climate action: the Climate Action 100+ (CA100+) collaboration, has shown how investors can engage companies on a large scale to target reduced impacts and dependencies on Nature. But CA100+ has yet to catalyze systemic change. Some would argue that it is a matter of time, but others have a strong case that time is of the essence. In addition, climate action relies on the market's capacity to address idiosyncratic characteristics that do not necessarily translate to all environmental issues and economic sectors: the greenhouse gas industrial complex is in decline because of disruptive innovation; oil producers' strategies focus on alternative products (plastics) or being the last ones standing; demand (particularly electric utilities) is concentrated. None or little of this applies in food and agriculture, in the chemical industry, mining, or real estate - all sectors with significant impacts on Nature, because innovation is lacking, and because you cannot easily scale down consumption, or the population. This calls for other solutions.

The Task Force on Climate-related Financial Disclosures (TCFD) and CA100+ also underscore that financial disclosure is insufficient to bring about necessary action. In fact, the focus on disclosure, however material, can too easily serve as a predatory delay<sup>9</sup> tactic to justify the status quo. Instead, investors should put their energies into requiring the transformation of essential sectors such as food, agriculture, water, as well as energy, extractives, or finance. In recognizing and addressing the greatest impacts and dependencies on biodiversity by sector and companies, we need to take into consideration our cumulative impacts on all the natural systems that constitute the biosphere. We must focus on companies whose activities collectively exceed the biosphere boundaries of the climate system, the ozone layer, the ocean, forested land, the nitrogen and phosphorus cycles freshwater, nutrients, "novel" entities, and aerosols<sup>10</sup>. Because technical innovation is lacking, Investors should mandate significant investment in regenerative innovation and ask companies to support relevant policies unequivocally. And just as they have not been prescriptive with, say, oil and gas corporate strategy on climate issues, they can, through shareholder resolutions, invite companies to set their own path within regulatory, ecosystem and planetary boundaries. Such resolutions could build on the Shareholder Commons' work on Beta Stewardship<sup>11</sup> and the templates of Follow This<sup>12</sup> or Say on Climate campaigns.<sup>13</sup>

**3** Our third ambition is a call for data and disclosure that takes context<sup>14</sup> into account. At firm level, this means corporations need to recognize, contextualize, measure, and address both corporate impacts and dependencies on Nature.

The use of ESG risk factors cannot evolve beyond box checking (and enable greenwashing) unless it incorporates meaningful sustainability, fit for purpose, and contextualized with respect to ecological and social thresholds. The call for data must follow the call for transformation, it should not precede it. We recommend the pioneering work of the United Nations Research Institute for Social Development (UNRISD) and Preventable Surprises partners at r3.0 as references for setting context for metrics.

Specifically, the United Nations Research Institute for Social Development (UNRISD) is hosting a multi-year project<sup>15</sup> to design and field-test next-generation indicators structured into three tiers that build on existing incrementalist indicators (Tier One) contextualized vis-a-vis ecological, social, and economic thresholds (Tier Two) as well as transformation factors (Tier Three).<sup>16</sup> Pilot organizations recently requested the addition of biodiversity indicators.<sup>17</sup> In response, r3.0 and partners launched a complementary pilot project:<sup>18</sup> the Biodiversity Performance Index (BPI)<sup>19</sup> is structured as a composite of 10 indicators (many of which companies and investors already track, including water and climate) in 3 categories: habitat loss, non-native species, and harvesting / predation. Results of the pilot will be published in 2022.

# What investors should be asking for A clear vision for corporate action to stop and reverse negative impacts and then regenerate natural systems along with an investor engagement agenda for ensuring companies act to achieve these goals - including developing tools and promoting the adoption of best practices for stopping and reversing the degradation of natural systems and, where and when possible, concurrently to regenerate the capacity of all natural systems that keep humanity within planetary boundaries and avoid irreversible and disastrous tipping points. Companies should commit to net zero loss of biodiversity (an essential measure of the health of ecosystems) by 2030, and net positive impact after 2030 to create a safe operating space for humanity. Align with national and global objectives for ecological preservation and restoration including the Biden Administration's goal of 30% of North America becoming protected conservation areas by 2030 and E.O. Wilson and others' vision of half the earth's land mass and oceans becoming protected conservation areas by 2050, a science-backed goal for ensuring a safe operating space for humanity. Mobilizing and directing investment to achieving the goal of a healthy biosphere and a stable climate as quickly

4 Mobilizing and directing investment to achieving the goal of a healthy biosphere and a stable climate as quickly as possible due to imminent tipping points.

# Design principles: innovation, learning, and 21st century governance

The recent launch of the Taskforce on Nature-Related Financial Disclosures<sup>20</sup> (TNFD, a voluntary disclosure framework like the TCFD) and proposals for a Nature Action 100+ (similar to Climate Action 100+) show that investors are working to replicate the model they applied to climate action, perhaps with marginal improvements.

But the investor focus on disclosure is insufficient and too slow. It is in sharp contrast to the directness of the Engine #1-led campaign to replace directors at Exxon at the 2021 Annual General Meeting (as an aside albeit an important one, asset owners would do well to collaborate on RfPs to make other Engine#1 vehicles emerge, thereby making clear to the market what change they really wish to see.<sup>21</sup> Nature and biodiversity loss also present much more diffuse, if equally existential, challenges than climate change for: they cannot be boiled down to an overarching metric (greenhouse gas in the atmosphere) and cut across many more sectors, populations and stakeholders. This requires a more iterative approach centered on learning. It is with these two observations in mind that we propose design principles for investor campaigns on Nature.

## 21st century governance

21st century challenges require 21st century governance for the institutions confronting them. Investors cannot make decisions that affect the planet's wellbeing on their own and without adequate information. They cannot make decisions about regions and ecosystems without the involvement and consent of local governments and populations - more so when countries with the highest biological wealth are consistently in the Global South. At local and global levels, engagement on Nature and biodiversity loss needs to be inclusive of and accountable to marginalized populations from the Global South to scientists and engage current and former regulators.<sup>22</sup> It should be as free as possible from interference (lobbying) and conflicts of interest. In 2021, free, prior, and informed consent is a baseline, co-creation with stakeholders a necessary ambition, gender balance a prerequisite. Like all the ideas Preventable Surprises advocates for in this report, modern governance is not a sufficient condition of success. There are complex and contradictory interests at stake in every system. But it is a necessary one: alongside science, history and philosophy show that justice and deliberation help societies make the most challenging decisions<sup>23</sup>.

## Organize around landscapes and ecosystems

Stating the obvious, populations live in landscapes, bioregions, or ecosystems. Economies and supply chains are built from and around them. Investors should do the same, so that their actions properly take this context into account.

The Amazon Rainforest provides a helpful lens: some investors have made it an organizing theme to frame questions for agriculture, deforestation, or mining. This approach can be deepened and systemized to other ecosystems and bioregions.

It is not exclusive and can also be coordinated with a sector-based shareholder resolution strategy for issues of global ecological concerns, such as neonicotinoids.

We envision that influential global funds - mega-managers or Sovereign Wealth Funds - could each take the lead with a particular region, continent or even a global ecosystem (e.g., land, air, ocean). This would help distribute the workload and foster leadership and accountability. Their actions would focus on transformation and include building alliances and coalitions among relevant stakeholders, local communities, scientists, and policymakers - using our 21st century governance approaches to ensure adequate information and proper deliberation.

## Innovation and learning

Collaboration is an important and necessary tool for investors, whether in goal setting or engagement. It provides an essential form of social license, whether for engagement with companies and in public policy, or for shared targets such as Net Zero or gender equality. But consensus has a cost. Collaboration is often weighed down by the least engaged interests in the search for agreement and risks blunting the impact of collaborative engagement. And when investors coalesce around consensus ideas, they become hard to renegotiate because of the reputational stakes the sector has placed in supporting these ideas. Such approaches fall short on two levels: one, because environmental sciences evolve quickly and constantly, putting investor responsiveness into question. Two, because investors innovate too and by doing so disrupt the consensus. There are many examples of this with climate change, in the form of the multiplication of collaborative campaigns, such as Say On Climate, Majority Action's Proxy Voting for a 1.5-degree world, and most recently Engine #1.

It is therefore fair to request that investors commit to learning and innovation. For example, we recommend they adopt a double loop culture<sup>24</sup> - one that "isn't only focused on doing things right, but also on doing the right things" and can shift objectives when new information appears. This may require different leadership, with the right temperament, humility, and appetite for the sort of career risk that comes with embracing uncertainty. Changing organizational cultures is of course a tall order and one that requires much more than can fit in a couple of paragraphs. But it is foundational to adapt to volatile, uncertain, complex, and ambiguous (VUCA) environments, and it is nowhere clearer than at the intersections of business, society, and the environment. Put simply, we believe that adaptation through learning and innovation can help investors catch up with the reality of the planet.

## Work at pace

Lastly, no engagement strategy can envision success without integrating in its design the urgency required to respond to biodiversity loss. Investors carry big sticks: they can vote against company directors, accounts, or auditors, and loudly or quietly should make it clear that they will do so, but most importantly in a timely fashion: every campaign should make it clear that, bar any new information, directors will be challenged

within two years if companies do not chart a meaningful path to transformation and set adequate short-term targets towards this transformation. The two-year span may seem arbitrary, but if the 2020s are meant to be a decade of action, then waiting for 2027 to act is a promise of failure. Instead, adapting winning strategies, and constantly re-adapting them, is a much better option.

This 21st century, characterized by accelerated environmental instability and uncertainty, demands transformative solutions. To avoid a ghastly future, we call on positive mavericks in every organization to catalyze action and innovation. The window for collective action will soon close. The most successful interventions will not stem from environmental alpha, but from individual determination and collective action. The financial sector's contribution needs to be relentless and humble, deft and nimble, and it needs to be now.

## On governing the commons:

## Thoughts and governance principles for a successful Nature Action 100

A recent proposal<sup>25</sup> for a Nature Action 100, an idea from a small group of financial professionals concerned designed to emulate Climate Action 100+, can help address biodiversity loss. During Spring 2021, a group of student researchers at Columbia University's School of International and Public Affairs (SIPA) worked with the World Bank to create a model for a Nature Action 100 initiative (Tom Murtha, a co-author of this report, was involved with this initiative.)<sup>26</sup>

While Climate Action 100 emerged after the Paris Climate Agreement on climate, this Nature Action 100 proposal came before the Conference of the Parties (COP) 15 to the Convention on Biological Diversity (CBD) in October 2021 in Kunming, China. The timing of a Nature Action 100 proposal appears aimed at enabling COP 15 to call for investors to join an initiative that provides a preliminary agenda for engagement on biodiversity.

NA100 targets both a vision and clear outcomes for biodiversity: net zero loss of biodiversity as soon as possible and net positive on biodiversity in the long term. We welcome this and believe that NA100 can best serve civil society by mobilizing collective action to achieve the CBD's 2030 Biodiversity Action Targets. The devil, as always, is not just in the details, but in the extent to which investors and corporations embrace these goals, and how they go about meeting them. The ambitions we propose should serve as a guide.

Such a collaboration further requires effective governance, and the single secretariat in the current proposal is essential for avoiding deadlock and compromises that impedes transformation of practices at all levels. Beyond the design ideas we propose in this guide, we also refer to elements adapted from *Elinor (Lin) Ostrom's Core Design Principles* below:

Lin Ostrom's Core Design Principles (CDPs) work together to promote pace, scale, and governance needed to initiate and organize collective action via productive, equitable, and collaborative groups/organizations.

**CDP1:** A shared identity and purpose. A transformative vision and action agenda for members avoids the traps of incrementalism that have contributed to the sub-optimal and unacceptable outcomes of many climate-focused initiatives to date. This promotes motivation and is important for coordinating action, including decision-making so everyone is working toward the same goals. It also involves clarifying group membership, so everyone knows who is in and out of the group.

**CDP2:** Equitable distribution of contributions and benefits. This is one way of avoiding some members doing all the work while others get the benefits (free riders). On a global basis, one way to implement this structure would be a worldwide system of taxation where free riders would pay for inaction on stopping the degradation of Nature and leaders would benefit. Just as global coordination on tax rates for corporations is necessary to eliminate tax avoidance, global coordination on Nature Action is needed because protecting the global commons transcends political boundaries making it too easy for free riders to shirk responsibility for a healthy planet.

**CDP3:** Fair and inclusive decision making. This is an important way to address issues of equity and impacts affecting those in the Global South, particularly indigenous peoples, whose cooperation and stewardship is best served through inclusion according to principles of free, prior, and informed consent (FPIC).

**CDP4:** Monitoring of agreed behaviors. This includes benchmarking and taking responsibility for achieving improvements over benchmarks within a specified time horizon. Requiring regular reports on work undertaken, goals met or missed and why, is a way to increase transparency and effectively monitor whether behavior is in accord with agreements.

**CDP5:** Graduated responses to helpful and unhelpful behavior. This might be as simple as a system of rules whereby a member failing to meet commitments is publicly demoted to a lower status in the tiered membership of the organization for reasons clearly stated and disclosed by the secretariat with an opportunity to regain a higher status once commitments are met. Graduated sanctions (sticks) for failing to meet commitments along with a tiered membership providing rewards (carrots) for meeting goals; perhaps along the lines of being a signatory (red), adopting time specific targets for action (green), and meeting specific targets (gold) and providing replicable models for best practices (platinum).

**CDP6:** Fair and fast conflict resolution. Conflict within an organization and externally with stakeholders is inevitable and should be anticipated. Ensuring everyone has the skills for navigating conflict is essential. Equally important is having in place procedures and processes for resolving conflicts.

**CDP7:** Authority to self-govern (according to principles 1-6). In the case of a Nature Action 100+ organization, this involves how the group maintains its autonomy in the face of outside pressure to conform and compromise to the old patterns and ways of doing business that led to the very problem, the degradation of nature, that the organization wants to stop. It also involves how the organization coordinates with other organizations, particularly corporations with the resources and motives to promote unnecessary compromise that enables predatory delay.

**CDP8:** Collaborative relations with other groups (using principles 1-7). This is implementing the core design principles 1-7 when organizing as a group of groups. For example, coalitions of NGOs, nation states, or companies should work together with the shared purpose of stopping the degradation of natural systems. It is the case that companies operating in a particular sector or industry having similar impacts and dependencies on natural systems need to focus on landscape scale actions to protect ecosystems. When a group of groups/organizations cooperate and can serve each other's interests through effective collaboration, then pace and scale of action increase.

**NB:** These governance rules and guidelines are taken directly from Paul Atkin's work at "Prosocial World<sup>27</sup>, Reasons for Understanding and Acting on the Eight Core Design Principles" originated by Elinor Ostrom, 1990, *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press and further discussed by David Sloan Wilson, 2019, *This View of Life: Completing the Darwinian Revolution*, Pantheon Books.

## Endnotes

- 1 <u>https://preventablesurprises.com/institutions/greenwish-the-wishful-thinking-undermining-the-ambition-of-sustainable-business-by-duncan-austin/</u>
- 2 <u>https://www.youtube.com/watch?v=RN-80D63ag4</u>
- 3 https://www.lse.ac.uk/granthaminstitute/news/exploring-the-links-between-biodiversity-loss-and-financial-stability/
- 4 <u>https://preventablesurprises.com/how/</u>

5 <u>https://www.stockholmresilience.org/research/planetary-boundaries.html</u> see also <u>https://www.nature.com/articles/461472a</u> and <u>http://</u> <u>science.sciencemag.org/content/347/6223/1259855</u>

- 6 https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(17)30028-1/fulltext
- 7 A term used by The Shareholder Commons <u>https://theshareholdercommons.com/</u>
- 8 https://www.iucn.org/theme/ecosystem-management/our-work/red-list-ecosystems
- 9 As coined by Alex Steffen: <u>https://medium.com/@AlexSteffen/predatory-delay-and-the-rights-of-future-generations-69b06094a16</u>

10 Rockstöm and Gaffney, Breaking Boundaries, 2021: <u>https://www.penguinrandomhouse.com/books/659581/breaking-boundaries-by-johan-rockstrom-and-owen-gaffney/</u>

- 11 <u>https://theshareholdercommons.com/beta-stewardship/</u>
- 12 https://www.follow-this.org/
- 13 <u>https://www.sayonclimate.org/</u>

14 The term "context" here refers to the principle of "Sustainability Context" established by the Global Reporting Initiative in 2002, which calls for reporters to assess "the performance of the organization in the context of the limits and demands placed on economic, environmental, or social resources at a macro-level." <u>https://www.r3-0.org/wp-content/uploads/2020/03/GRIguidelines.pdf</u>

15 https://www.unrisd.org/80256B3C005BB128/(httpProjects)/B2A0A8A40BE9308CC12583350053ACDF?OpenDocument

16 <u>https://www.unrisd.org/baue</u>

17 UNRISD based the scope of indicators on an existing indicator set developed by UNCTAD that did not cover biodiversity. <u>https://unctad.org/webflyer/guidance-core-indicators-entity-reporting-contribution-towards-implementation-sustainable</u>

18 https://www.r3-0.org/wp-content/uploads/2021/05/CSO-Manomet-r3-BiodiversityPiloting-Brochure.pdf

- 19 https://www.sustainableorganizations.org/Biodiversity-Performance-Index.pdf
- 20 https://tnfd.info/
- 21 https://www.nytimes.com/2021/06/09/business/exxon-mobil-engine-no1-activist.html

22 Former regulators are particularly interesting because they are well versed in government mechanics but hopefully free of the conflicts of interest and are past career risk considerations.

- 23 https://aeon.co/essays/how-can-habermas-help-us-think-about-climate-change
- 24 <u>https://journalofleadershiped.org/jole\_articles/double-loop-learning-a-concept-and-process-for-leadership-educators/</u>
- 25 <u>https://blogs.worldbank.org/psd/nature-action-100-proposal-targeted-investor-engagement-biodiversity</u>

26 A summary of the students' findings - including learnings from climate action and the full report - can be accessed via <u>https://www.sipa.</u> columbia.edu/academics/capstone-projects/nature-action-100-changinggreening-investor-behavior-protect-ecosystems

27 https://docs.google.com/document/d/1IWPv4vuaJhM\_m1×5ruTEeY5Y0BiGSGzGYVFdBkpuXul/edit

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