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LOMBARD ODIER

LOMBARD ODIER DARIER HENTSCH

A Donor's Guide to the Environment

contents

02/68 introduction

08/68 oceans

28/68 forests

48/68 freshwater

60/68 conclusions and next steps

> “ I went to the woods because I wished to live deliberately,
> to front only the essential facts of life,
> and see if I could not learn what it had to teach,
> and not, when I came to die, discover that I had not lived ”
>
> — Henry David Thoreau, Walden (1854) —

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WWF

introduction

Welcome to the Donor's Guide to the Environment.

In today's philanthropic landscape, committed donors take a local-to-global approach to the future of people and of our planet. As humankind tackles some of the toughest environmental challenges, concerned donors are coming together to understand the interactions between human activities and climate, how to leverage local experience and science, and how to best prepare for a sustainable future for the generations to come. Over the past few years, our organisations, WWF and Lombard Odier, have joined forces to raise awareness and facilitate engagement and funding in this field. We are proud of the progress we have made, separately and together, to increase the knowledge of challenges and solutions around the world.

WWF, a global leader in nature conservation, has long embraced this approach of collaboration, recognizing the need for all people across the planet to work together to tackle today's double crisis of climate change and nature loss. We have entered a planetary emergency that requires organizations to think and act bigger and faster – helping the world pull together to deliver a New Deal for Nature and People with science-based targets that address the crisis facing people and the planet. As a science-based organization, WWF contributes strongly to global discussions on the targets needed to tackle the loss of nature in the coming decade: preventing a human-induced mass extinction of species; protecting and restoring the natural spaces that are essential for biodiversity to thrive and ecosystems to function; challenging unsustainable human behaviours that are driving the increase of zoonotic diseases such as the coronaviruses; and creating a vastly more sustainable production and consumption model for our society, in balance with the planet – from the way we farm the land and fish the sea to how we harvest forests, extract minerals and build infrastructures. This complexity and interconnectedness creates many opportunities for philanthropists to focus on the most relevant and transformational priorities, committing funds and building partnerships for maximum impact.

Since the creation of Lombard Odier more than 220 years ago, the families leading the bank have consistently been involved in philanthropy and have shared their experience with clients. Created in 2008, Fondation Philanthropia facilitates clients' philanthropic engagement. The Foundation offers its donors a legal, financial and philanthropic framework for creating a bespoke project. It has already donated or committed funds for species and biodiversity protection, ocean conservation and environmental education across the globe.

Building on the success of the Donor Guide to Cancer in 2018, Lombard Odier is now helping philanthropists to focus on environmental issues.

Challenges linked to our future and our interdependence with our natural environment are increasingly high on donors' giving agendas. With environmental changes accelerating, philanthropists have scaled up their giving and are exceedingly diverse in their environmental interests, approaches and geographic foci. Today, we make this guide freely available to any partners or philanthropists wishing to better understand the challenges to the health of our planet, and to help us improve the ways in which a new relationship with nature can be developed for the benefit of future generations. The hope is that sound analysis will help focus philanthropic efforts and eventually make an impactful contribution to the solutions that human wisdom, progress and ingenuity will produce to reverse biodiversity loss and address threats to nature and, eventually, to human lives. We hope that this guide, intended as an initial step towards improved comprehension of the challenges, can inform and inspire would-be donors to make their own meaningful contributions to a global challenge. With our deepest gratitude, we thank all contributors for this collective creation.

Marco Lambertini,
Director General, WWF International

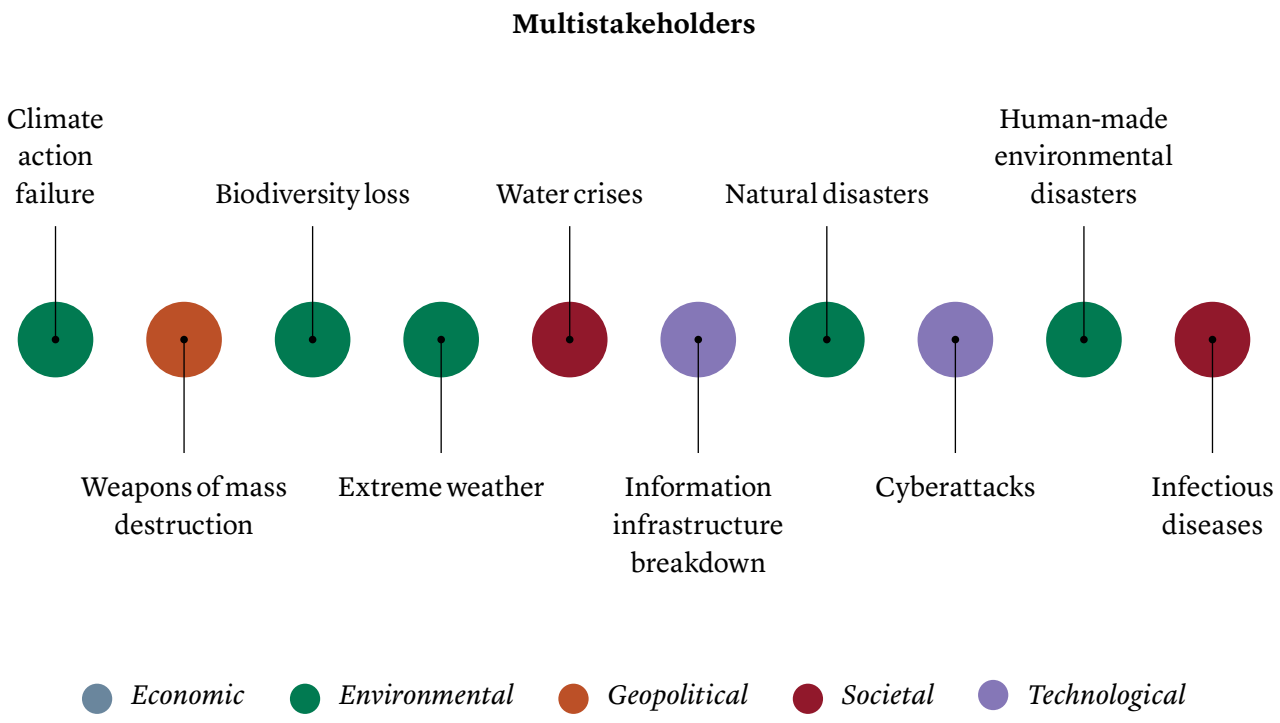
Denis Pittet,
Managing Partner, Lombard Odier Group
and President, Fondation Philanthropia

We live in an age of rapid and unprecedented planetary change. Greenhouse gas emissions have increased almost unchecked since 1950, leading to global warming. Species extinction rates are accelerating, eroding the very foundations of economies, livelihoods, food security, health and quality of life globally. Many scientists believe that humanity's ever-increasing consumption, and the resulting demand for energy, land and water, will impact the planet beyond repair in just a few short decades.

But the world is now understanding that by protecting nature, we are also protecting people and future generations, and we have an opportunity to change our course.

Figure 1: World Economic Forum's Global Risk Report 2020

Top 10 risks over the next 10 years
Long-Term Risk Outlook: Impact



Source: World Economic Forum

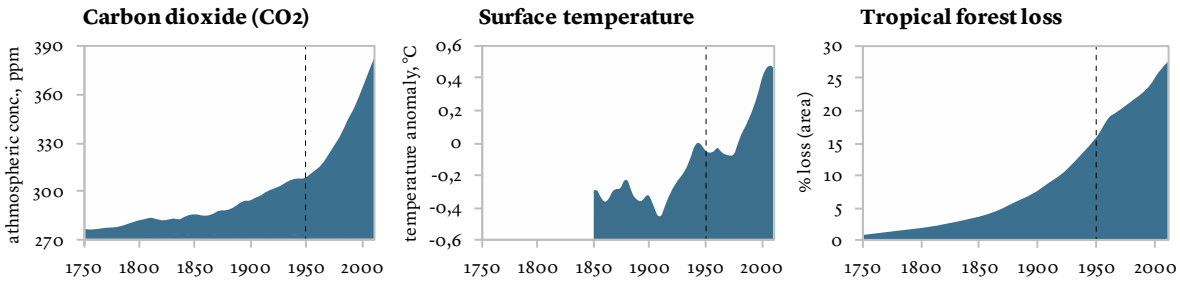
What is the current situation?

The UN's Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimates that the most likely and impactful global risks are linked to nature loss and climate change.[1] In 2020, for the first time ever, the top five risks identified by the World Economic Forum's annual Global Risk Report are all environmental,[2] including failure of climate action and major biodiversity loss (see Figure 1). This is unsurprising, given that human activities are estimated to have already caused approximately 1°C of global warming above pre-industrial levels, which is likely to reach 1.5°C between 2030 and 2052.[3] Globally, wildlife populations have declined by 60% on average since 1970.[4]

The effects of climate change

For most of human history before the Industrial Revolution in the 1760s, concentrations of carbon dioxide (CO_2) in the atmosphere hovered around 280 parts per million (ppm).[5] In April 2018, these levels reached 410 ppm.[6] Since the 1760s, mass deforestation and the burning of fossil fuels have released large quantities of greenhouse gases, which have remained in our atmosphere and trapped some of the heat leaving the planet (see Figure 2). This is drastically changing the Earth's ecosystems: melting ice sheets, acidifying the oceans, drying out forests and grasslands, and creating what is broadly described as climate change.

Figure 2: The increasing rates of change in Earth's systems since the Industrial Revolution.[4]



[1] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. *Global assessment report on biodiversity and ecosystem services*. Bonn, Germany: IPBES, 2019.

[2] World Economic Forum. *Global Risks Report 2020*. Geneva: World Economic Forum, 2020. Accessed on 16 March 2020 at https://www.weforum.org/reports/the-global-risks-report-2020.

[3] Intergovernmental Panel on Climate Change. *Special Report: Global Warming of 1.5°C*. Geneva: IPCC, 2018. Accessed on 16 March 2020 at https://www.ipcc.ch/sr15/.

[4] WWF. Living Planet Report 2018: *Aiming Higher*. Gland, Switzerland: WWF, 2018. Accessed on 16 March 2020 at https://wwf.panda.org/knowledge_hub/all_publications/living_planet_report_2018/.

[5] National Aeronautics and Space Administration. "Climate Change: How Do We Know?" 2020. Accessed on 16 March 2020 at https://climate.nasa.gov/evidence/.

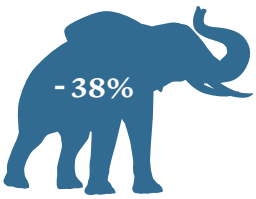
[6] World Meteorological Organisation. "Greenhouse gas concentrations in atmosphere reach yet another high." 25 November 2019. Accessed on 16 March 2020 at https://public.wmo.int/en/media/press-release/greenhouse-gas-concentrations-atmosphere-reach-yet-another-high.

What is biodiversity loss?

Biodiversity has been described as the 'infrastructure' that supports all life on Earth. In economic terms, this natural infrastructure is currently worth USD 125 trillion per year to humanity,[4] but the wasteful linear economic model of *take – make – dispose* is the driving force taking the planet to the very brink.

Only one-third of land on Earth is free from the impacts of human activities, a figure that is projected to decline to just one-tenth by 2050.[4] This land conversion to suit human activities has increased the rate of species extinction to between 100 and 1'000 times more than the standard rate of extinction before human pressure became a factor (see Figure 4).[3] This ongoing degradation has many impacts on species, the quality of habitats and the functioning of ecosystems, which can collectively be described as **biodiversity loss**.

Figure 3: The loss of biodiversity is measured using the Living Planet Index (LPI), which is based on scientific data from 14,152 monitored populations of 3,706 vertebrate species (mammals, birds, fish, amphibians and reptiles) from around the world.[4]



Terrestrial populations have declined by 38% between 1970 and 2016.

Freshwater populations have declined by 81% between 1970 and 2016.

Marine populations have declined by 36% between 1970 and 2016.

What are the drivers of climate change and biodiversity loss?

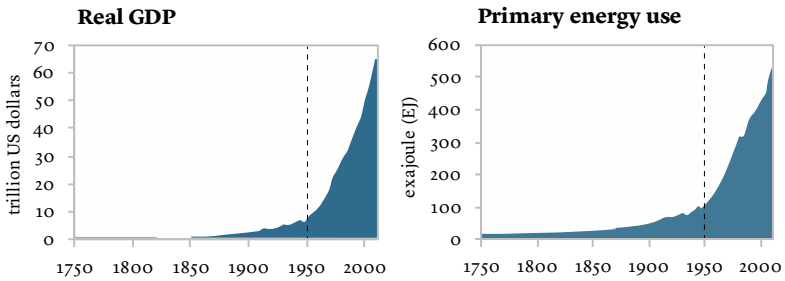
Scientists believe that the world is undergoing the **Great Acceleration**, a unique event in the 4.5-billion-year history of the planet. This Great Acceleration is characterised by explosive growth of the human population, which is approaching 8 billion globally, as well as the global economy, which has grown 30-fold since the 1760s.[7] It is unsurprising, then, that the greatest threats to biodiversity and the global climate are the overexploitation of natural resources and land conversion for agriculture, which are both driven by runaway human consumption. What is abundantly clear is that human development and wellbeing are reliant on healthy natural systems, and one cannot continue to enjoy the former without the latter (see Figure 4).

A New Deal for Nature and People 2020-2030

Humanity has begun a transition towards sustainable living. Now we need to focus on the scale and speed of this transition in order to decouple economic development from environmental degradation. There is no time to waste. More than ever, the planet needs responsive and responsible leadership with a deep commitment to inclusive development and equitable growth, both nationally and globally. There is a chance to bring the environmental and sustainable development agendas together and deliver an ambitious and science-based New Deal for Nature and People.

This donor guide uses three broad biomes—oceans, forests and freshwater—to convey areas of success and opportunities for further progress in the future. Nevertheless, each of the ten case studies in this guide represents a combination of interconnected themes, reaching issues such as food production, governance, finance, society, industry, technology and beyond.

Figure 4: An explosion of population growth and wealth have increased the pressure on the natural world.[4]



[7] Steffen, Will, Wendy Broadgate, Lisa Deutsch, Owen Gaffney, and Cornelia Ludwig. "The trajectory of the Anthropocene: The Great Acceleration." *The Anthropocene Review* 2, no. 1 (2015): 81-98.

oceans

Oceans supply half the oxygen we breathe and provide food and livelihoods for more than a billion people. By a conservative estimate, the goods and services the oceans provide - from fishing to tourism - are worth at least USD 2.5 trillion per year.[1] That would make the oceans the world's seventh-largest economy.

Oceans also benefit humans indirectly. They play a crucial role in keeping the planet's temperature balanced and drive weather, such as rainfall and winds. Coastal habitats also protect communities and cities from storms and erosion, and filter land-based pollution and nutrients.

But the oceans are in crisis. Centuries of overuse and neglect mean that we have already lost half of coral reefs and mangroves, some of the most productive habitats on Earth. According to the UN Food & Agriculture Organization (FAO), one out of every three assessed wild fish populations has been harvested beyond its limit.[2] Oceans have also absorbed most of the planet's warming—over 90%—and a significant amount of carbon pollution.[3]

The WWF 2018 Living Planet Report highlights the alarming state of the natural world upon which our societies and economies depend. The Living Planet Index (LPI), which measures trends in 10'380 populations of 3'038 vertebrate species, declined 52% between 1970 and 2010.[4] The 2018 LPI for marine populations showed a decline of 36% between 1970 and 2016.

[1] WWF. "Our Work: Oceans." 2019. Accessed on 2 March 2020 at https://wwf.panda.org/our_work/oceans/.

[2] FAO. *The State of World Fisheries and Aquaculture: Meeting the Sustainable Development Goals*. Rome: FAO, 2018. Accessed on 2 March 2020 at http://www.fao.org/3/i9540en/i9540en.pdf.

[3] Intergovernmental Panel on Climate Change (IPCC). Special Report: Global Warming of 1.5°C – *Summary for Policymakers*. Geneva: World Meteorological Organisation, 2018. Accessed on 2 March 2020 at https://www.ipcc.ch/sr15/chapter/spm/.

[4] WWF and Zoological Society of London. "Living Planet Index." 2014. Accessed on 2 March 2020 at www.livingplanetindex.org.

It is not too late to save the seas.
But if existing trends are not reversed,
the implications will be profound.

Overfishing, tourism, shipping and extractive industries are threatening not only the health of marine habitats and species, but also the Earth's fundamental life support system. People's health, ways of life and security are at risk. Pollution – from plastics to oil spills to agrochemicals – harms nature and contaminates food chains. Moreover, climate change is making the oceans hotter and more acidic, which could spell disaster for coral reefs, mangrove forests, polar regions (the cryosphere) and the rich variety of life they support.

While these separate pressures are alarming in their own rights, they also have a cumulative impact. For example, if the current rate of temperature rise continues, up to 90% of the world's coral reefs will be gone by 2050.[5] This would mean not only a major disruption to at least 25% of the biodiversity in the ocean, but also a huge increase in the loss of productive fisheries as well as significant impacts on industries such as tourism. The loss of reefs as barriers would increase the exposure of coastal areas to waves and storm systems.

Ocean protection and restoration are matters not only for governments, but also for communities and responsible businesses. They must all come together as partners to end damaging activities, preserve natural marine capital, produce resources like seafood and energy in a better way, and consume these resources more wisely.

Solutions do exist. They include smart fishing practices that eliminate bycatch, waste and overfishing; stopping harmful subsidies, incentives and unregulated fishing; protecting key habitats and a large enough portion of the ocean to enable the regeneration of its living resources while conserving iconic species and inspirational places; working with governments and the private sector to influence demand from consumers and retailers; and cutting carbon dioxide emissions that threaten a potentially catastrophic acidification of the ocean.[6]

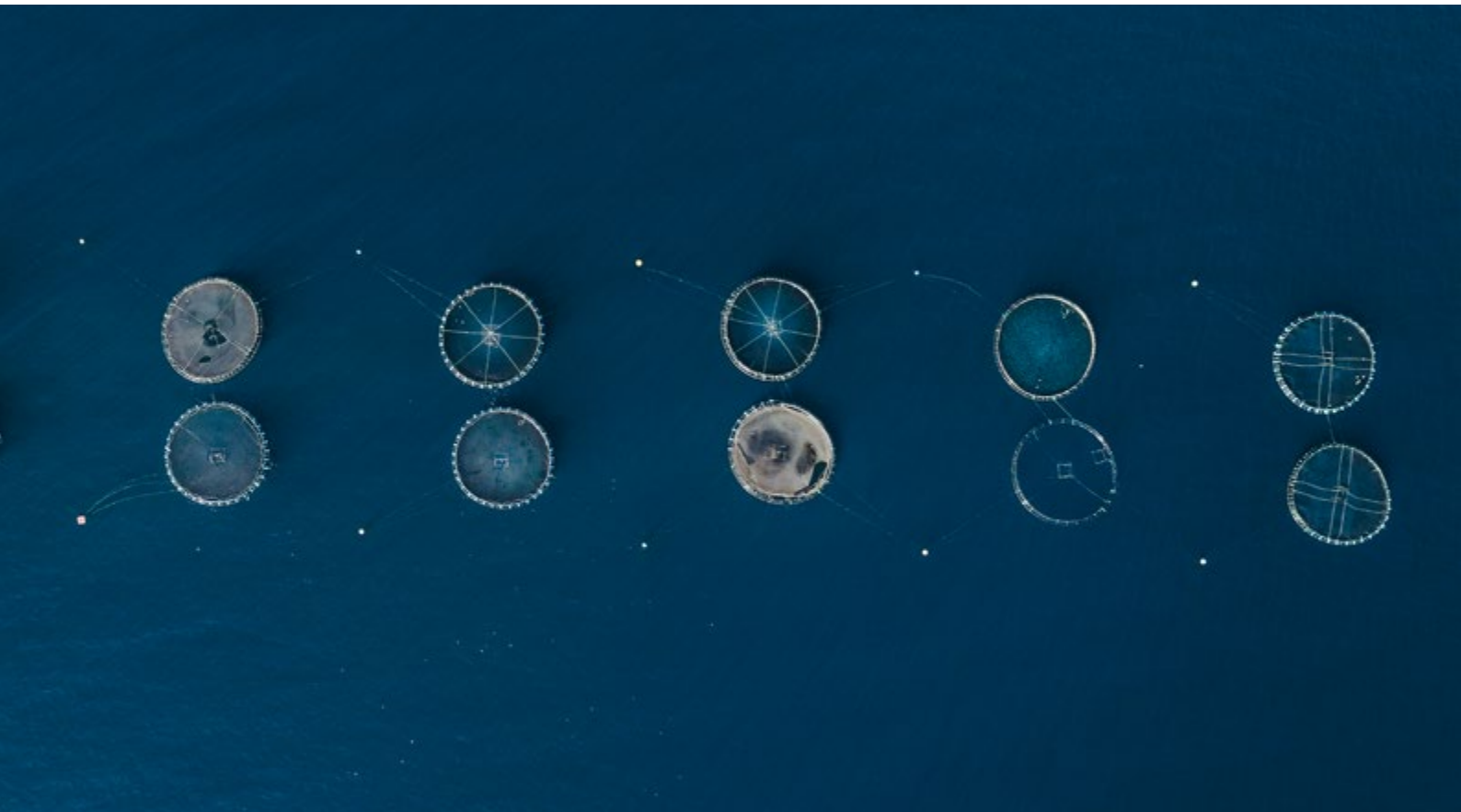
[5] IPCC, *Special Report: Global Warming of 1.5°C – Summary for Policymakers*.

[6] WWF. *Living Blue Planet Report: Species, habitats and human well-being*. Gland, Switzerland: WWF, 2015. Accessed on 2 March 2020 at http://ocean.panda.org/media/Living_Blue_Planet_Report_2015_Final_LR.pdf.

Stakeholders should also support existing initiatives, such as the Marine Stewardship Council (MSC) and the Aquaculture Stewardship Council (ASC), which work to improve fishing practices, ensure stocks are being managed sustainably, and minimise impacts on marine ecosystems and species.

It is not too late to save the seas. But if existing trends are not reversed, the implications will be profound – for the security, well-being and way of life of hundreds of millions of people; for local and global economies; and for the future generations who inherit this blue planet.

The following case studies illustrate some of the most visible changes happening in oceans today, and the work that is taking place around the world to promote the effective protection and sustainable use of the oceans, marine ecosystems and biodiversity.



Small-scale fisheries in the Mediterranean

Background

Globally, small-scale fisheries provide livelihoods for millions, essential nutrition to billions and contribute substantially to households, local and national economies and economic growth.[1]

In the Mediterranean, not only do small-scale fisheries account for more than half of all seafood caught, they also play an important role in local economies, as they represent over 60% of the Mediterranean fishing fleet, creating around 300'000 jobs.[2]

While overfishing continues to threaten fish stocks, the impacts of climate change, such as ocean acidification and increasing sea temperatures, pose equally challenging threats to marine ecosystems. They also threaten the survival of small-scale fishers and their families, whose livelihoods and income depend on dwindling catches. In the Mediterranean, the situation is even more precarious, due to decades of mismanagement and the current centralised, top-down structure of fishing practices.

By supporting small-scale fisheries, WWF is not only driving sustainable solutions for fish stocks and the fragile ecosystems that support them, but also empowering the communities that depend on them.

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[1] World Fish Center. "Illuminating Hidden Harvests." 2020. Accessed on 2 March 2020 at https://www.worldfishcenter.org/hidden-harvests.

[2] FAO. *The state of Mediterranean and Black Sea fisheries*. Rome: FAO, 2018. Accessed on 2 March 2020 at http://www.fao.org/3/ca2702en/CA2702EN.pdf.

[3] WWF. "Mediterranean Marine Initiative." 2019. Accessed on 2 March 2020 at www.wwfmmi.org/who_we_are/mediterranean_marine_initiative/.

[4] FAO. "Regional plan of action for small-scale fisheries in the Mediterranean and the Black Sea: a common commitment for the future." 26 September 2018. Accessed on 2 March 2020 at http://www.fao.org/gfcm/news/detail/en/c/1154586/.

Project Description

The project has three main components: co-management of fisheries, policy work with the European governments, and the development of sustainable tourism as an alternative to fishing.

Co-management - The General Fisheries Commission of the Mediterranean Sea (a body of the Food and Agriculture Organization, or FAO) and WWF are working with fishing communities to develop new models that enable the co-management of fisheries between governments and fishers. Under co-management, local fishers are given more responsibility in setting the rules that govern the use of fish stocks, and are brought into decision-making processes with local authorities to manage their fisheries. As a result, not only do fish stocks and biodiversity recover, but artisanal fishers also earn better incomes.

Co-management work is being carried out in over 20 sites in Algeria, Croatia, France, Greece, Italy, Slovenia, Spain, Tunisia, and Turkey. These nine countries represent more than 60% of the small-scale fisheries sector in the region.[3]

Policy work - In 2018, the European Commission, the General Fisheries Commission for the Mediterranean (GFCM), the government of Malta, the FAO and WWF launched the first-ever jointly developed 10-year Regional Plan of Action in the Mediterranean and Black Sea (RPOA-SSF).[4] The result was a declaration establishing the objectives, principles and concrete actions to ensure the long-term sustainability of small-scale fisheries.

Sustainable fishing tourism - This alternative income stream reduces the intensity of fishing activities, contributes to sustainable management of fishery resources, and promotes the cultural heritage of artisanal fishing. In 2014, WWF supported sustainable fishing tourism in Algeria and Tunisia with training for professional fishers in safety, communication, and tourism.

Small-scale fisheries in the Mediterranean

Outcomes

- **Co-management:** WWF, together with local partners including FAO and the Mediterranean Advisory Council (MEDAC), organises an annual meeting to share experiences and promote co-management. As an example, fishers have shared the successful implementation of no-take zone networks (areas that do not allow any fishing, mining, drilling, and other extractive activities to protect ecosystems, preserve cultural resources and sustain fisheries production). This has been successful with Turkish fishers, who introduced no-take zones in their management plans and reported having an increase in fishing revenue of over 180% after three years. The Turkish fishers then shared this knowledge with Croatian fishers, who have begun to include no-take zones in their management plans.

- **Policy:** The 10-year small-scale fisheries Regional Action Plan is in the implementation phases focusing on scientific research and data collection, value chain and market access, fishers' participation in the decision-making processes, the role of women and the effects of climate.

- **Sustainable tourism:** Professional fishers who spend more time with tourists and less time fishing for a living, have shifted their income source to an activity that generates significantly more revenue per fish caught. For example, in the Strait of Bonifacio Natural Reserve in Corsica, sustainable fishing tourism has led to a decrease in fishing by 15%.

Donor Opportunities

A commitment of USD 35'000 - 55'000 per year would further develop co-management sites identified and managed by WWF and local communities across the Mediterranean, particularly in Albania.

A similar commitment would expand the sustainable fishing tourism programme by opening new pilot sites in the Mediterranean, such as in Tunisia. Over one year, this investment would develop sustainable fishing tourism activities and to support fishers to assess innovative fishing techniques in one country.

A commitment of USD 60'000 would support WWF's efforts to strengthen fishers' capacities in environmental and tourism education, thereby creating local ambassadors for sustainable principles in the marine environment.

For more information:

www.wwfmmi.org

Human-polar bear conflict in the Arctic

Background

The Polar Regions, also known as the cryosphere, are warming faster than any other place on our planet.[1] This affects global temperatures and sea levels and has a direct impact on the Earth's climate. The Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change, confirms that since 1993, the rate of ocean warming has more than doubled.[2] Melting in the Polar Regions is threatening life everywhere and contributing to rising sea levels, changes in our climate and more frequent severe weather events.[3]

Nowhere on earth are the immediate effects of climate change felt so intensely than the Arctic.

Today, around 4 million people live permanently in the Arctic region, 10% of whom are Arctic Indigenous Peoples, whose ancestors have lived in the coastal areas for millennia.[4] Sharing this landscape is one of the planet's iconic animals: the polar bear. These bears rely on sea ice to access the seals that are their primary source of food.[3] As climate change causes summer sea ice to dwindle in the Arctic, the bears cannot hunt, and so head towards villages in search of food.[3]

Polar bear attacks on humans are rare, but there is evidence that they are increasing, with the incidence of near-misses, attacks on people, and damage to property on the rise.[5] In many instances, the bears are simply curious. In others, they are undernourished, frightened, or provoked. Human-polar bear encounters will increase as more polar bears spend longer periods of time on shore and as human activities in the Arctic increase, both of which come in response to longer ice-free seasons.[5] As such, the issue of conflict between humans and polar bears needs to be addressed.

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1 National Snow & Ice Data Centre. "All about Arctic Climatology and Meteorology." No date. Accessed on 2 March 2020 at https://nsidc.org/cryosphere/arctic-meteorology/index.html.

2 IPCC. *Special Report on the Ocean and Cryosphere in a Changing Climate*. Geneva: World Meteorological Organisation, 2019. Accessed on 2 March 2020 at https://www.ipcc.ch/site/assets/uploads/sites/3/2019/11/03_SROCC_SPM_FINAL.pdf.

3 WWF Arctic. "Conflict: How northern communities are keeping polar bears and people safe from conflict." No date. Accessed on 2 March 2020 at www.arcticwwf.org/species/polar-bear/conflict.

4 University of Lapland Arctic Centre. "Arctic Indigenous Peoples." No date. Accessed on 2 March 2020 at www.arcticcentre.org/EN/arcticregion/Arctic-Indigenous-Peoples.

5 Charlotte Margaret Moshøj. *On Thin Ice: Human-Polar Bear Conflicts in Ittoqqortoormiit*. Copenhagen: WWF Denmark, 2014. Accessed on 2 March 2020 at http://awsassets.wwfdk.panda.org/downloads/on_thin_ice.pdf.

Project Description

Human-polar bear conflict is a topic that receives limited support from NGOs given the large geographical scope of the project area (the entire Arctic Circle) and the increasing number of communities polar bears are in contact with. There is a pan-Arctic human-polar bear conflict working group, with local government and community member representatives from five Arctic countries (Canada, Greenland, Norway, Russia, and the United States). The greatest challenge for this group is to engage Arctic countries' national governments and increase their responsibilities in supporting the conflict mitigation methods.

These mitigation methods include eliminating attractants (i.e., anything that attracts polar bears, such as the smell of domestic waste), improving polar bear patrols in high-risk communities and using technology for early warning systems. In general, mitigation is the responsibility of local communities, who are the main actors in human-polar bear conflicts.

An example of successful implementation comes from the East Greenland village of Ittoqqortoormiit. Here, local patrollers hold the key to ensuring a safe environment for the community. On all-terrain vehicles, the patrollers use thermal imaging to search out polar bears approaching from a distance, giving the patrollers more time to choose the best non-lethal response and prevent escalation into conflict. For this task, the patrollers are equipped with binoculars, rifles, other non-lethal deterrents and flashlights.[5]

Elsewhere in the Arctic, waste management is a key issue for human-polar bear conflict. Polar bears are attracted by stored food, animal carcasses, dogs, dog food, and human waste in villages and communities. Waste management is an expensive problem to fix and can require major infrastructural overhauls. The design of bear-safe waste disposal and food storage systems suitable for transport to, and use in, the Arctic is therefore a priority.

Human-polar bear conflict in the Arctic

Outcomes

As a result of work across the Polar Regions, an average of seven deadly conflicts between people and polar bears are averted each year. In "high polar bear traffic" communities, as many as 200 bears are successfully deterred from settlements each year by patrols.

The pan-Arctic human-polar bear conflict working group has helped establish local community patrols, including training, equipment and salaries, in three Alaskan villages, one Canadian community, and three regions of Russia.

Once trained as patrollers, residents can diversify their work. For example, a patrol team in the community of Wales, Alaska, now contributes to research on polar bear populations by collecting polar bear hair samples from stations positioned around the village.

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Donor Opportunities

The next phase of human-polar bear conflict mitigation is to increase the number of communities supported in Russia. The most efficient way to support this is with the pan-Arctic human-polar bear conflict working group, with the activities implemented by the local communities.

A donation of USD 45'000 over three years would help to provide one Russian community access to, and training in, the tools and materials it needs to deter polar bears. Plans for such work are in place in Billings (Chukotka Autonomus Okrug (CAO)), Neshkan (CAO), Varnek (Nenets Autonomus Okrug (NAO)), Amderma (NAO) and Novaya Zemlya (Arkhangelsk Oblast).

USD 350'000 would support the trial and installation of thermal sensor systems that will detect polar bears and notify patrollers, to enable them more time to respond and deter the bears. This technology could be implemented in the community of Ryrcaipiy (CAO) and on Vaygach Island (NAO).

Finally, USD 250'000 would fund the elimination of attractants and the introduction of a proper waste management system in Ryrcaipiy (CAO). In the same town, USD 170'000 would cover the implementation of bear-safe food storage solutions.

For more information on the IPCC report:

https://www.ipcc.ch/srocc/

Blue Bonds for Conservation: Saving our oceans by refinancing debt

Background

The idea behind "Blue Bonds for Conservation" is simple: transforming debt into conservation action. In exchange for a country's commitment to protect up to 30% or more of its coastal waters, The Nature Conservancy (TNC) sets up deals to restructure national debt, directing new resources to protect reefs, fisheries, coastal wetlands and other ocean habitats.

In 2016 NatureVest, the conservation-investing unit of TNC, structured a ground-breaking debt conversion for marine conservation and climate adaptation with the government of the Seychelles. As a developing nation of 115 small islands off the coast of East Africa, the country is 99% ocean, and tourism and fishing are major parts of the economy. It is therefore vulnerable to the threats of climate change: severe storms and rising sea levels are battering coastal areas that attract tourists, warmer ocean temperatures are diminishing fish stocks, and increasing ocean acidity from rising carbon levels is destroying coral reefs. Like other small island developing nations, the Seychelles also faces high levels of sovereign debt.

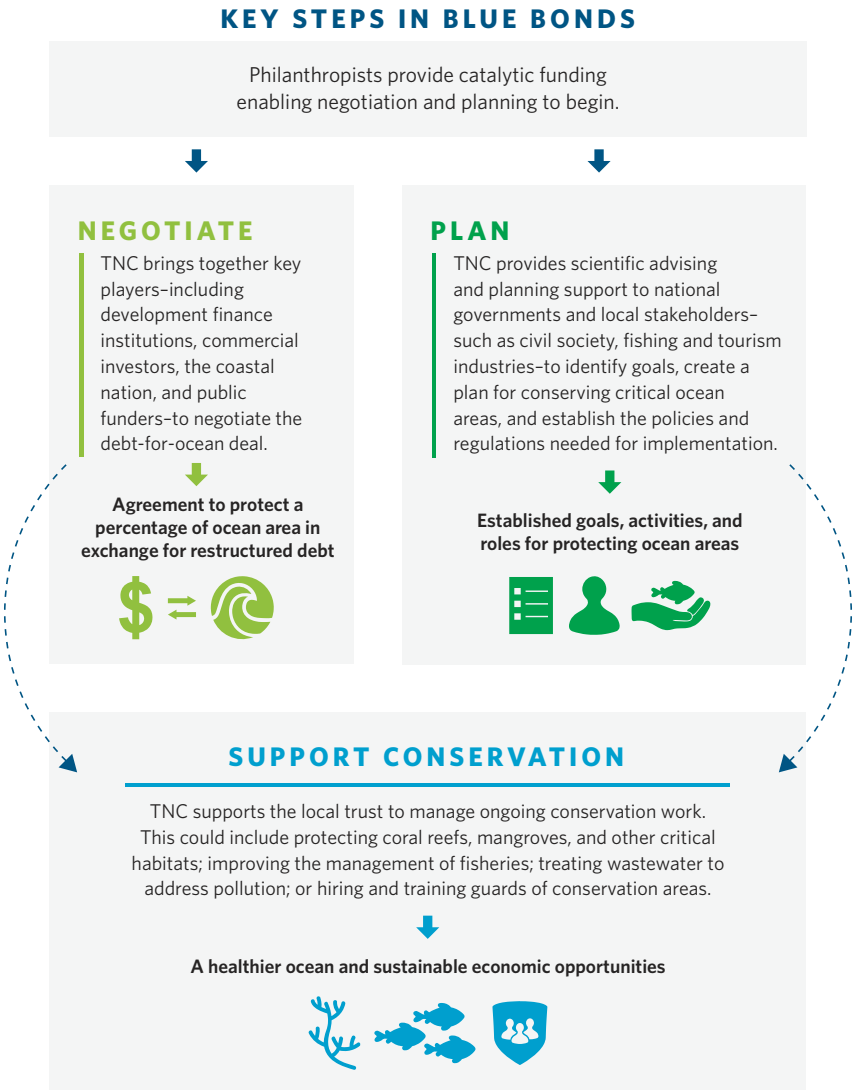
Project description

NatureVest played a leading role in creating the Seychelles Conservation and Climate Adaptation Trust to raise grant and loan capital for the debt conversion. In exchange, the Seychellois government committed to improved policies and increased investment around marine conservation and climate adaptation.

TNC worked with local partners to develop a marine spatial plan, identifying activities that combine conservation and sustainable economic opportunities. Today, it continues to play a leading role in the planning process, contributing planning expertise, science and project management.

How it works

In the Seychelles debt conversion, TNC raised a mixture of grants and repayable loans for a new in-country non-profit trust. The trust used the capital to extend a loan to the Seychelles government, which has a high debt burden and faces the imminent threat of climate change. Existing debt was repurchased from creditors and restructured with more favourable terms for repayment.



The trust uses the debt payments from the government to:

1. Repay the initial capital raised;
2. Fund ongoing conservation programming;
3. Capitalize an endowment to fund conservation, long after the debt is repaid.

In exchange, the government commits to improved policy and the deal creates increased investment in conservation.

The Seychelles Conservation and Climate Adaptation Trust raised USD 5 million in grant capital and USD 15.2 million in loan capital to extend a specific purpose loan to the Seychellois government to purchase USD 21.6 million of its sovereign debt (at a discount of USD 1.4 million). The debt conversion effectively redirects the Seychelles' debt payments from official creditors (Belgium, France, Italy, and the United Kingdom (under the Paris Club) to the newly created local trust, and restructures debt payments to more favourable terms.

Blue Bonds for Conservation: Saving our oceans by refinancing debt

Outcomes

To date, the Seychelles government has legally designated 410,000 square kilometers (158,000 square miles)— an area larger than Germany — as Marine Protection Areas, reaching the target of protecting 30% of ocean territory one year early. The Seychellois debt conversion has served as a pilot for similar models in island and coastal nations. TNC is now exploring opportunities in the Caribbean and coastal countries in Africa.

Tips for donors

TNC set a goal of raising USD 40.5 million in order to launch 20 deals over five years, which would fund the protection of four million square kilometres of ocean and generate USD 1.6 billion in long-term conservation financing. Thanks to a group of donors, including The Audacious Project (whose selection of the "Blue Bonds for Conservation" model in 2019 raised USD 19.5 million), TNC has raised USD 38 million to date, with gifts ranging from USD 10,000 to 10 million. The next challenge is to raise the final USD 2.5 million needed to reach the final target.

© James Morgan / WWF-US

What makes the "Blue Bonds for Conservation" model unique is that it is attractive to all partners:

- The country can reduce and redirect its debt with both a lower interest rate and funding to manage marine resources;
- Conservation outcomes can help provide better livelihoods, increased food security and protection from climate change impacts for communities;
- Development Finance Institutions or other public funders can achieve their own environmental and sustainable development missions;
- Investors can get commercial-rate repayment and triple-bottom-line impact outcomes; and
- Donors, critically, can get significant leverage for their philanthropy by setting up deals that ultimately put up to 40 times the philanthropic investment into conservation.

Philanthropy is the key that unlocks "Blue Bonds for Conservation"—without it, TNC simply does not have the capacity to work fast enough to meet its goals.

TNC uses this funding to build a fast-moving team that can engage multiple countries simultaneously to structure and close deals quickly; launch the science and planning work that turns a financial deal into a conservation success; and to assist countries in setting up the governance system to ensure long-term protection of huge areas of ocean.

For more information on The Nature Conservancy:

The Nature Conservancy

https://www.nature.org/en-us/

After nearly 70 years of on-the-ground action for conservation, The Nature Conservancy is one of the most effective and wide-reaching environmental organizations in the world. With 4,000 staff members, including over 400 scientists, working in 79 countries and territories today, TNC is rooted in sound science and adept at bringing people of differing views and interests together to find and implement nature-based solutions to our planet's greatest challenges.

The Plastics Pact

Background

The global plastic pollution crisis is threatening the natural environment on which we depend, impacting oceans, communities, wildlife, and people at an unprecedented rate. Our oceans contain 300 million tons of plastic and we add another 8 million every year.[1] Plastic is considered so disposable that 70% of all plastic ever produced is waste, and a significant proportion of this waste is mismanaged.[2] Of this mismanaged waste, 87% leaks into nature and becomes plastic pollution, covering coastal ecosystems, entangling wildlife and even being ingested by humans (an average person could be ingesting approximately five grams of plastic every week).[1]

Attempts to address the plastic crisis are failing, however, and our global system of plastic production, consumption and waste management must be overhauled. To stop plastic pollution at its source and end the flow of plastic into nature, we need bold action from a broad range of stakeholders, all working towards a comprehensive blueprint for change.[3]

Plastic waste and pollution have captured the attention of the public, governments and businesses around the world. Along with the search for solutions that can be scaled up, there is growing recognition that clean-ups, which seek to treat the symptoms, are not enough. We need to move away from today's linear take-make-waste model and fundamentally rethink the way we design, use, and reuse plastics.[4] A systemic shift towards tackling the root causes is required: a transition towards a circular economy for plastic, in which it never becomes waste or pollution.[4]

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[1] WWF. *No plastics in nature: Assessing plastic ingestion from nature to people*. Gland, Switzerland: WWF, 2019. Accessed on 2 March 2020 at http://awsassets.panda.org/downloads/plastic_ingestion_press_singles.pdf.

[2] Jonathan Amos. "Earth is becoming 'Planet Plastic.'" BBC News. 19 July 2017. Accessed on 2 March 2020 at https://www.bbc.com/news/science-environment-40654915.

[3] Ellen MacArthur Foundation. "Global Commitment." No date. Accessed on 2 March 2020 at https://www.newplasticseconomy.org/projects/global-commitment.

[4] Ellen MacArthur Foundation. "The Initiative – New Plastics Economy." 2019. Accessed on 2 March 2020 at https://www.newplasticseconomy.org/about/the-initiative.

[5] Ellen MacArthur Foundation. "Plastics Pact." No date. Accessed on 2 March 2020 at https://www.newplasticseconomy.org/projects/plastics-pact.

[6] Ministère de la Transition Ecologique et Solidaire. *National Pact on Plastic Packaging*. February 2019. Accessed on 2 March 2020 at https://www.gouvernement.fr/sites/default/files/locale/piece-jointe/2019/06/11_french-national-_pact-on-plastic-packaging_pdf_0.pdf.

Project Description

Many actors around the world are committed to meeting the challenge of a circular plastics economy. Implementing this vision requires a significant level of global and national collaboration, which is why the Ellen MacArthur Foundation (EMF) has created a global Plastics Pact network in line with its New Plastics Economy Global Commitment.[5]

The Plastics Pact is a network of initiatives that bring together key stakeholders at the national or regional levels to implement initiatives seeking to move towards a circular plastics economy. Each initiative unites governments, businesses, and citizens behind the common vision of eliminating problematic and unnecessary plastic items; innovating to ensure that the plastics we do need are reusable, recyclable, or compostable; and circulating the plastic we use to keep it in the economy and out of the environment. Importantly, landfills, incineration, and waste-to-energy conversions are not part of the circular economy target state.

A different NGO is responsible for each Pact. Pacts currently exist in Chile (managed by Fundación Chile), France (WWF-France), the Netherlands (Nederland Circulair!), Portugal (Portugal Associação Smart Waste), South Africa (WWF-South Africa and the South African Plastics Recycling Organisation) and the UK (EMF and the Waste and Resources Action Programme). The vision of the Plastics Pact is to expand the network with local initiatives around the globe, including soon-to-be launched Pacts in Malaysia and the United States (both currently managed by EMF).

An example of a national Pact is the French National Pact on Plastic Packaging.[6] Launched in 2019, it brings together a number of French retail and household good companies, NGOs, and the Ministry for the Ecological and Inclusive Transition (formerly the Ministry of Ecology).

The Plastics Pact

The Goals

To give an example, the goals of the French Pact are to:

- Define a list of packaging deemed problematic or unnecessary, as well as measures to eliminate it;
- Redesign packaging to make it all reusable, recyclable or 100% compostable by 2025;
- Recycle 60% of all plastic packaging by 2022;
- Incorporate an average of 30% recycled plastic into packaging by 2025;
- Eliminate hazardous chemicals from all plastic packaging;
- Lead awareness-raising and educational activities with the public on issues related to plastic pollution; and
- Ensure no plastic waste ends up in the environment.

Donor Opportunities

With a donation of USD 10'000 to 100'000 per year (reflecting varied implementation costs by country), donors would support the EMF and the emerging Pacts in Malaysia and the United States. These funds would cover activities including communications, materials and workshops.

Awareness and educational campaigns in current WWF Pact countries also need funding. A donation of USD 50'000 to 200'000 (reflecting the varied costs per country) would cover such costs for one year.

Donations of USD 500'000 or above would help fund different projects within the overall umbrella of waste management programmes in Malaysia (managed by EMF) or South Africa Pacts (managed by WWF). These programmes would pilot strong collection and sorting systems, to avoid incineration and reduce landfill usage.

Donors wishing to contribute between USD 40'000 and 120'000 annually would be able to fund staff in the secretariats of emerging Pact countries.

For more information:

www.ellenmacarthurfoundation.org

forests

Over one billion people live in and around forests, depending on them for fuel, food, medicines and building materials. They are home to 80% of the world's terrestrial biodiversity and provide livelihoods for many different human settlements, including 60 million indigenous people.[1]

Forests provide a multitude of ecosystem services that are critical to human welfare. These include absorbing harmful greenhouse gasses, providing clean water for drinking and other household needs, and protecting watersheds. They also reduce the amount of chemicals that reach waterways, slow coastal erosion, and serve as a buffer against natural disasters.[1]

But human impacts have already led to the loss of around 40% of the world's forests, causing around 10% of global warming.[2]

If business as usual continues, up to 170 million hectares of additional deforestation will occur by 2030. Even larger areas will continue to suffer from degradation, where the forest remains but its richness and health declines.[3] These global changes spell an uncertain future, not only for the biosphere, but for humanity itself - including our health. Land-use change, including deforestation and the modification of natural habitats is bringing wildlife, livestock and humans closer together. Facilitating the spread of diseases such as the virus COVID-19,[4] this proximity is thought to be responsible for nearly half of emerging zoonotic diseases.[5]

The biggest threats to forests are deforestation and forest degradation (the gradual process whereby the quality of a forest diminishes, its biomass declines and the number of species it supports decreases).[6]

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[1] WWF. "We need to Safeguard our Forests." 2019. Accessed on 2 March 2020 at wwf.panda.org/our_work/forests/importance_forests/.

[2] Frances Seymour and Jonah Busch. *Why forests? Why now? The science, economics and politics of tropical forests and climate change*. Washington, D.C.: Centre for Global Development, 2016. Accessed on 2 March 2020 at https://www.cgdev.org/sites/default/files/Seymour-Busch-why-forests-why-now-full-book.PDF.

[3] WWF. "Saving Forests at Risk." In WWF, *Living Forests Report*. Gland, Switzerland: WWF, 2015. Accessed on 2 March 2020 at http://awsassets.panda.org/downloads/living_forests_report_chapter_5_1.pdf.

[4] WWF. "The loss of nature and rise of pandemics." April 2020. Accessed 9 April 2020 at https://d2ouvy59p0dg6k.cloudfront.net/downloads/the_loss_of_nature_and_rise_of_pandemics___protecting_human_and_planetary_health.pdf.

[5] Loh et al. 2015. Targeting Transmission Pathways for Emerging Zoonotic Disease Surveillance and Control. Vector borne and zoonotic diseases 15(7):432-43. doi: 10.1089/vbz.2013.1563.

[6] IUCN. "Issues Brief: Deforestation and forest degradation." November 2017. Accessed on 2 March 2020 at https://www.iucn.org/sites/dev/files/deforestation-forest_degradation_issues_brief_final.pdf.

Forests provide a multitude of ecosystem services that are critical to human welfare.

© Neil Ever Osborne / WWF-US

The main cause of forest degradation is illegal logging.[3] The world loses 18.7 million acres of forests annually, the equivalent of 27 football fields per minute. Illegal logging not only leaves an obvious mark of destruction on forests, but it also strips the economic livelihood of local communities. In addition, governments and companies lose revenue that they could have generated through legal logging. The World Bank estimates that the global market loses USD 10 billion annually from illegal logging, with governments losing an additional USD 5 billion in revenues.[7]

The main causes of deforestation are the expansion of agricultural land, infrastructure developments, mining, land conversion and fires, which are often set to clear land for agriculture. Most global deforestation happens along 11 identified deforestation fronts.[3] These fronts are home to some of the richest biodiversity in the world, including endangered species such as orangutans, elephants and tigers. In the Amazon, for example, around 17% of the forest has been lost in the last 50 years, mostly due to forest conversion for cattle ranching and soy production.[3]

One high-profile and direct result of deforestation are the forest fires that have had devastating effects in recent years in the Amazon, the Democratic Republic of the Congo, Indonesia and Siberia. Each year, fires burn millions of hectares of forest worldwide. Fires are a natural process in the regeneration and renewal of ecosystems. However, 96% of the world's fires are now either deliberately lit or unintentionally caused by humans.[8] This creates a feedback effect. As more forests are cut down, the effects of climate change increase, drying out vegetation and increasing the risk of forest fires. In turn, these fires compound the effects of global warming because trees absorb and store carbon dioxide, and if they are cleared or even disturbed, they release carbon dioxide and other greenhouse gases. In 2019 and 2020, climate change and the resulting global heating exacerbated the annual droughts and heatwaves in Australia, making the season's bushfires the most catastrophic in generations.

The greatest impact will be felt if we stop deforestation. This will take coordinated efforts from many stakeholders and partners to make things happen on the scale needed, but it is possible. There is also an opportunity to help nature recover. By planting endemic tree species in the right places, forest regrowth can revitalise wild areas. It will mean engaging governments to create and implement strategies to manage and use forests responsibly. This will include eliminating

illegal and unsustainable logging through programmes such as Reducing Emissions from Deforestation and Forest Degradation (REDD+), a global initiative designed to offer financial incentives to developing countries for protecting their forests and reducing emissions of greenhouse gas pollutants, especially carbon dioxide.[9]

Businesses will need to ensure their supply chains are forest-friendly, and agribusinesses will need to be held accountable for their commitments to help conserve the world's forests and to ensure holistic management and policy solutions are brought to scale.

Financial institutions will need to amplify sustainable investment. The financing of roads, mines and other infrastructure around the world must take into account the value of forests when deciding where to create or expand infrastructure.

Local communities must also be clearly recognised and integrated as key forest stakeholders, and their involvement promoted in decision-making and sustainable management of forests. This will in turn generate positive outcomes for livelihoods, rural development and forest conservation. At the same time, consumers must reduce wasteful consumption and make better, more environmentally friendly choices.

The following case studies have been chosen to illustrate the changes that are happening at an ecosystem level. They showcase the power of collective action, ensuring forests continue to provide for people and nature, now and for generations to come.

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7 World Bank. *Strengthening Forest Law Enforcement and Governance: Addressing a Systemic Constraint to Sustainable Development*. Report No. 36638-GLB. Washington, D.C.: World Bank, August 2006. Accessed on 2 March 2020 at http://documents.worldbank.org/curated/en/330441468161667685/pdf/366380REVISED010Forest0Law01PUBLIC1.pdf.

8 Peter Hirschberger: *Forests Ablaze. Causes and effects of global forest fires*. WWF Germany, October 2016. https://mobil.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF-Study-Forests-Ablaze.pdf

9 FAO. "Reducing Emissions from Deforestation and Forest Degradation REDD+." No date. Accessed on 2 March 2020 at http://www.fao.org/redd/en/.

Heritage Colombia: Preserving Colombia's ancient forests

Background

As one of the Earth's most diverse countries, Colombia hosts close to 10% of the planet's biodiversity,[1] including jaguars, harpy eagles, Amazon river dolphins and the three-striped night monkey, to name just a few.

Rivers flow throughout the country's national parks and other protected areas, providing drinking water for nearly half of Colombia's inhabitants. These rivers also power nearly half of the country's hydroelectric energy facilities. Colombia's forests cover 52% of the country and store tremendous amounts of carbon, helping to keep the air clean and the climate stable.[1]

With the mix of such strong natural capital and biodiversity being at the core of the country's environmental agenda, one of the key components of the country's strategy for addressing deforestation and climate change - as well as for peace - is to strengthen and secure its system of protected areas. The main tool for doing this is the programme Heritage Colombia (HECO).[2]

The goal of HECO is to expand and effectively manage the country's natural capital in the Amazon, Andes, Orinoco, Pacific, and Caribbean regions, thanks to long-term funding.

The unique component of HECO is that it will not only focus on national parks, wildlife refuges, and other places officially categorized as "protected areas." It will also include the land adjoining the country's protected areas, such as Afro-Colombian communities' land, indigenous territories and farmer communities' land. This focus stems from an acknowledgment that natural resources, as well as the clean water and other services they provide, do not stop at the borders of protected areas.

[1] Convention on Biological Diversity. "Country profile: Colombia." No date. Accessed on 2 March 2020 at www.cbd.int/countries/profile/?country=co.

[2] WWF. "Earth for Life." 2020. Accessed on 2 March 2020 at www.worldwildlife.org/initiatives/earth-for-life.

Project Description

This initiative is being led by the Ministry of Environment and Sustainable Development (MADS) and Parques Nacionales Naturales, with the support of Patrimonio Natural, the Gordon and Betty Moore Foundation, Conservation International, the Wildlife Conservation Society and WWF.

At the heart of HECO is an innovative funding approach, Project Finance for Permanence, borrowed from the world of finance. This mechanism addresses an issue often seen in the conservation community: fragmented, insufficient, and short-term funding for the management of conservation areas.

With this approach, while donors commit funds to bring the plans to life, the funds are held back until the total fundraising goal has been reached. The government must also commit to financing and putting in place the policies and staffing needed to ensure project sustainability after the initial funding from donors runs out.

For HECO, this means that in addition to the donor funding, the Government of Colombia will contribute approximately USD 100 million during the first 10 years. This will come from 5% of the revenue from the country's carbon tax and innovative financial mechanisms that will ensure sustainability once the donor funding has been spent.

HECO will help reduce deforestation, which stems mainly from land grabs, speculation and illegal mining. Its aim is also to ensure that the country's forests are well-managed and, as a result, better able to, among other things, store and sequester carbon. Finally, it will include promoting climate-smart economic alternatives, including ecotourism, an exciting emerging opportunity for Colombia.

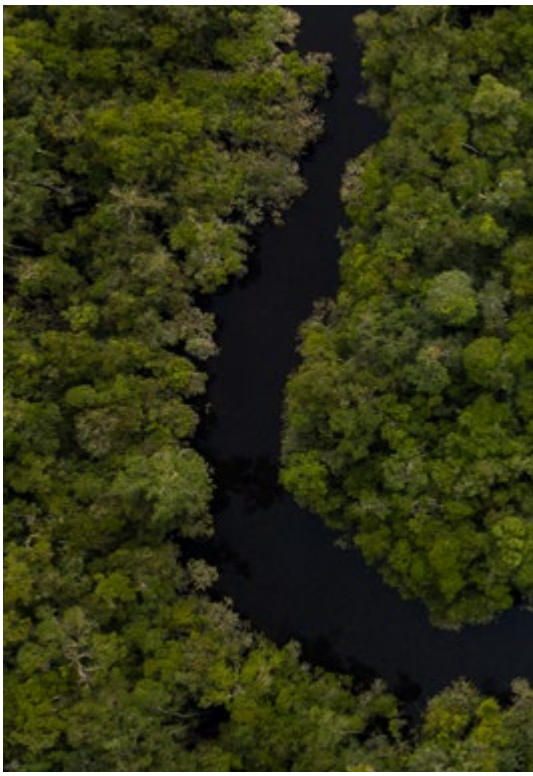
HECO is part of a global programme called Earth for Life, with projects in Brazil, Bhutan and Peru. The initiatives in Brazil, Peru and Colombia will permanently protect approximately 14% of the Amazon biome.[1]

Heritage Colombia: Preserving Colombia's ancient forests

Project Goals

Under HECO, Colombia aims to:

- Expand protected area coverage by 2 million hectares from its current coverage of 17 million hectares.
- Preserve almost 5 billion metric tons of carbon dioxide equivalent in the carbon stock in the standing forests of the target landscapes.
- Ensure a basic level of management for an additional 5 million hectares of recently created protected areas.
- Ensure effective management and governance of 23 existing protected areas in regions between the Amazon, Andes, and Orinoco ecosystems, as well as sustainable livelihoods in 25 million hectares of surrounding landscapes.



Donor Opportunities

The total donor fundraising target for the first 10 years of this initiative is USD 100 million, of which 75% are already close to being confirmed. A commitment of USD 1 million from private donors, over 4 years, would enable the required minimum level of institutional engagement in the programme, through lobbying, training and multi-stakeholder conferences.

For more information:

www.minambiente.gov.co

For more information on Earth for Life projects:

www.worldwildlife.org/initiatives/earth-for-life

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Biodiversity at risk: Wild tigers

Background

Eight out of ten land-dwelling species, and nearly 300 million people, live in forests.[1] As the world's population increases, forests and the biodiversity they hold are coming under more pressure than ever. Coupled with an unprecedented spike in illegal wildlife trade, many iconic animals, including tigers, are in critical danger.[2]

Tigers are a key "umbrella" species, a unique animal that plays a pivotal role in the health and diversity of the ecosystem.[3] Tigers are at the apex of the food chain and keep the population of wild ungulates (such as deer and buffalo) in check, thereby maintaining the balance between prey herbivores and the vegetation upon which they feed. In turn, this maintains an equilibrium in the forest ecosystem, its water sources, and ecosystem services like pollination. The presence of tigers in a forest is therefore an indicator of the ecosystem's well-being.

In 2010, as few as 3'200 tigers were left in the world, versus around 65'000 at the beginning of the 20th century.[4] In response to this, an ambitious species conservation goal, TX2, was set by the governments of the 13 Asian tiger range countries to double the number of wild tigers by 2022.

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[1] WWF. "Forests." 2019. Accessed on 2 March 2020 at www.worldwildlife.org/initiatives/forests.

[2] TRAFFIC. "Tigers: fighting the illegal trade in tigers and their products." 2020. Accessed on 2 March 2020 at https://www.traffic.org/what-we-do/species/tigers/.

[3] WWF India. "Why should we save tigers?" 2018. Accessed on 2 March 2020 at https://www.wwfindia.org/about_wwf/priority_species/bengal_tiger/why_save_the_tigers/.

[4] WWF. "Doubling wild tigers by 2022". 2020. Accessed on 3 March 2020 http://tigers.panda.org/tx2/.

Project Description

Rather than focusing on "saving" tigers at a site or country level, the approach of TX2 is to work across entire landscapes and encourage trans-boundary collaboration. To be successful, this approach depends on high-level political commitment and action, and on maintaining conservation as a top priority for world leaders. It will also be crucial that local communities and businesses that share a landscape with tigers actively support their conservation.

To combat illegal trade, which is one of the largest threats to tigers, TRAFFIC, the global wildlife trade experts, are working together with governments, enforcement agencies, the private sector and others, such as Fondation Philanthropia, to disrupt persistent illegal trade routes. In parallel, they seek to reduce demand for tiger parts through behaviour-change approaches in major Asian markets.

Wildlife protection, eliminating poaching and managing human-wildlife conflict are also priorities. As such, TRAFFIC emphasises training rangers and developing and adapting conservation policies, standards and technology.

Biodiversity at risk: Wild tigers

Outcomes

For the first time since the beginning of the 20th century, there has been a slowdown in the decline of tiger numbers, and based on latest estimates, the numbers may even be on the rise. This includes an increase from 121 in 2009 to 235 in 2018 in Nepal.[5] The government of India also announced an increase from 2'226 in 2015 to an estimate of 2'967 wild tigers in their national 2018 census.[6] In 2016, the Global Tiger Forum (an intergovernmental body campaigning to protect the tiger) estimated that there were nearly 3'900 tigers in the wild worldwide, up from 3'200 in 2010.[7]

The success stems from strong partnerships between governments, civil society, international organisations and local community organisations. In 2013, Nepal became the first country in the world to achieve zero poaching, covering not only tigers, but rhinoceroses and elephants, too.[8] In the 2018 *All-India Tiger Estimation*, which also included Nepal and Bangladesh, the three governments agreed to share survey data for better understanding of tigers' transboundary movement. This will help to understand tiger behaviour and movement and therefore help conservation efforts in all three countries.

In 2018, forest staff in India were trained to tackle wildlife-related cybercrime, as part of TRAFFIC's 'Cyber CLAW' partnership, which aims to build law enforcement capacity in the digital world. Additionally, over Global Tiger Day in 2018, a TRAFFIC-led digital campaign reached over 33 million viewers in China.[9] The tagline #TigerSavior became a trending topic on Chinese social networking site Sina Weibo, gathering public support against the illicit purchase and use of tiger products.

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[5] WWF International press release. www.wwf.panda.org/wwf_news/?335231/Nepal-set-to-become-first-country-to-double--wild-tiger-population. 2019

[6] WWF International: "New estimate for wild tigers in India." 29 July 2019. Accessed on 2 March 2020 at www.wwf.panda.org/wwf_news/press_releases/?350694/New-Estimate-for-Wild-Tigers--for-India.

[7] WWF. Global wild tiger population increases, but still a long way to go. Posted on 10 April 2016. Accessed on 3 March at https://wwf.panda.org/wwf_news/?265197/Global-wild-tiger-population-increases-but-still-a-long-way-to-go.

[8] WWF. How Nepal achieved zero poaching. Accessed on 3 March at http://tigers.panda.org/news/achieve-zero-poaching/.

[9] WWF. *Doubling Wild Tigers – TX2 Annual Report 2018*. Gland, Switzerland: WWF, 2019. Accessed on 2 March 2020 at https://issuu.com/wwftigers/docs/tigers_alive_annual_report_2018__sg.

Donor Opportunities

Donors would help law enforcement in all 13 tiger range countries to tackle the illegal tiger trade along key trade routes. USD 700'000 would improve cross boundary enforcement tools, such as the use of forensics by tiger rangers. Forensic training would allow these rangers to examine dead tigers, determine whether the cause of death was from human or natural causes, and collect evidence for possible criminal cases in the illegal wildlife trade.

In Malaysia, USD 100'000 would directly support anti-poaching patrol efforts in the Belum-Temengor Forest Complex, enabling at least two community patrol teams (of five rangers each) to clear and deter poaching in this tiger heartland for one year.

A contribution of USD 1.3 million would help to better understand the consumers of tiger parts and products in China, and develop targeted behaviour-change initiatives to reduce demand in China and in neighbouring countries. It would also aid in strengthening policies to prohibit trade in tigers, including from tiger farms that feed parts from global captive tigers into trade.

For more information:

TRAFFIC
the wildlife trade monitoring network

www.traffic.org

Global Tiger Forum:

GTF

www.globaltigerforum.org

Teaching and learning out in nature

Background

What is the true purpose of schooling? Arguably, to support each child in the best possible way to enable them to unleash their full potential. Learning out in nature, in a dynamic, multi-sensorial, real-world learning environment provides a strong and appropriate basis to best support this process. It also seems to help children to become competent and responsible human beings with increased respect for nature and a deep understanding of human-nature relationships and interdependencies. Environmental education reconnects children and young people with nature and raises their awareness of the world around them.

Children and young people who learn regularly outside the classroom solve complex math problems better, become more competent in communicating with other children, teachers and adults, move a lot more, are emotionally more stable, are more creative, and make more and different friends. In addition, learning out in nature decreases mental health problems in boys, reduces stress in pupils and teachers, and is a welcome antidote to our sedentary lifestyle. Some teachers also find that children with Attention Deficit and Hyperactivity Disorder (ADHD) cope better outside.

Project description

SILVIVA, the Swiss Foundation for Environmental Education, has started a long-term project in Switzerland, aiming to bring learning out in nature to as many Swiss school children as possible. SILVIVA is convinced that moving part of the schooling outside yields so many benefits, not just for the pupils, but also for the teachers and the wider community, that it needs to be widely available.

In order to be effective in a systemic way, the project aims to reach out to various stakeholders with appropriate support tools. The organisation supports teachers in their professional development and equips them with the necessary competences to teach all school subjects outside – with a teaching manual that helps them to teach their normal school curricula with little effort outside, and with hands-on courses where they get personal experience of how teaching and learning out in nature really works. SILVIVA staff coach and advise schools that want to integrate outdoor learning into their cultural DNA. They work together with teacher training institutions to help them acquire the competences needed to integrate nature-based learning into their institution's training curricula.

Researchers help SILVIVA to build the evidence base for learning outdoors – an important tool to legitimise this highly effective way of learning in the wider community and towards politicians and local authorities (which regulate schools in Switzerland). Finally, SILVIVA works with parents and headmasters to gain important buy-in.

Teaching and learning out in nature

Outcomes

The support manual for teachers, courses for teachers and schools, and an international support network are already gaining momentum. The intermediary goal is that by 2024 2'500 Swiss school classes (i.e., around 50'000 pupils) learn out in nature on a regular basis, once a week, all year round. A five-year research project with teacher training universities in Switzerland started in 2019. It aims to integrate learning in nature into initial teacher training in a systemic way. The research will produce guidance on the necessary competences for teachers and teacher trainers, if they aim to teach out in nature most effectively.

The long-term goal is that all Swiss schoolchildren benefit from the multiple advantages of learning in nature as part of their compulsory schooling. SILVIVA therefore cooperates with all the relevant stakeholders on various levels (teachers, pupils, headmasters, teacher trainers, education providers, parents, and politicians) in order to build commitment and ownership. Systemic anchoring only works if all the partners share the vision.

Donor Opportunities

Learning in nature is not an entirely new concept in Switzerland, but it is currently practiced in a haphazard way. The project aims to federate through a long-term effort and embed the practice in the Swiss school system. This change amounts to a small system change in how teaching and learning is practised. Ambitious projects like this one are only possible with dedicated support from donors who believe that we have to give our children the best possible foundation to raise to the sustainability challenges humanity faces today. Donors ready to commit to medium or long term, at ease with funding human resources, can make a crucial difference for the future of our children. A commitment of CHF 100'000 per year would enable a project coordinator to reach an additional 1'000 teachers and 20'000 schoolchildren.

SILVIVA

Stiftung | Fondation | Fondazione

"Learning in and with nature" is sustainable learning and promotes understanding of the relationship between humans and nature. As a trilingual competence centre, SILVIVA has been enabling education providers since 1985 to link nature and learning, in an efficient and evidence-based manner - strategically, methodically and conceptually; through both analogue and digital channels.

silviva

www.silviva.ch |
www.draussenunterrichten.ch

African Wildlife Foundation – Impact Investment Case Study

Background

The rapidly growing human population in Africa, combined with inefficient agricultural practices, widespread logging and illegal hunting, is causing wildlife and vast areas of natural wildlife habitat to be converted to environmentally unsustainable, low-income livelihoods. Africa's remaining natural heritage is facing unprecedented pressure from human activities, and rural communities along wildlife corridors are becoming more vulnerable to the effects of climate change.

A tourist and Masai artisan at the Asilia camp in Kenya

Project description

By supporting conservation businesses in critical ecosystems in Africa, African Wildlife Foundation (AWF) aims to deliver systematic and sustainable solutions to impact:

- Rural **communities**, by increasing their diversity, income and capacity to withstand nature-related shocks due to land degradation, climate change, overpopulation and resource scarcity;
- The **environment**, by improving the general health of ecosystems most critical in sustaining life- human, wildlife, biodiversity and business; and
- **Businesses'** ability to deliver scaled, sustainable and efficient solutions that are not at the detriment of Africa's natural heritage and complement other conservation efforts.

Headquartered in Nairobi, Kenya, AWF has nearly 6 decades of experience working to ensure wildlife and wild lands thrive in a modern Africa.

Okavango Capital, AWF's impact-investment partner, supports companies which tackle environmental degradation in Africa's most important ecosystems, and creates economic development opportunities for rural Africans. AWF launched its Conservation Bond in 2011, which raised USD 7 million from private investors and financed nine conservation businesses operating in sustainable agriculture and eco-tourism in East and Southern Africa.

In 2013, AWF made a USD 2 million 10-year term debt investment into Asilia, a growth-stage ecotourism company in Tanzania and Kenya. The investment was used to fund Asilia's growth and expansion, and included a pioneering rebate mechanism. The mechanism reduces the cost of capital by up to 2%, to incentivise Asilia to develop in under-served conservation areas that are economically and ecologically vulnerable.

African Wildlife Foundation – Impact Investment Case Study

Results

1. Asilia acts as a vehicle for sustainable economic development and job creation, with 23 camps across Kenya and Tanzania employing over 900 people. 97% of the employees are Africans, and 40% are locals from surrounding communities.

2. Asilia's Dunia camp is East Africa's first all-female-run safari camp. The camp seeks to empower women and change local perceptions of the capacity of women to work in a variety of roles, including tour guides, chefs, drivers and lodge managers.

3. Asilia generates annual revenues of USD 23 million and has generated compounded and revenue growth rates of more than 40% in the decade since its inception.

4. Asilia invests in surrounding communities by providing scholarships and skills acquisition trainings.

5. In 2017, Asilia expanded its camps into two previously underserved frontier landscapes in the Ruaha and Selous National Parks in remote southern Tanzania.

There were some challenges, such as the initial perception of the community towards an all-female-run safari camp and a funding gap for protected area management in Africa.

Donor Opportunities

- A USD 1 million investment would provide seed capital for new eco-lodges
- USD 500,000 provides seed capital for priority conservation businesses
- Grants ranging between USD 50,000-500,000 would provide business support and mentorship for conservation-friendly businesses

Target investment countries: Kenya, Tanzania, Zambia, Mozambique, Botswana

AFRICAN WILDLIFE FOUNDATION

www.awf.org

Tourists enjoying breakfast as the sun rises in an Asilia camp in Tanzania

freshwater

All life needs water. It is the most precious resource and we cannot live without it. Freshwater habitats—such as lakes, rivers, glaciers, streams, wetlands and aquifers— are home to a large proportion of the world's biodiversity: more than 10% of all known animals and about 50% of all known fish species.[1] Healthy freshwater environments supply water for drinking, growing crops, manufacturing, energy and transport. Freshwater fish provide an important source of protein and livelihoods for millions of people around the world. Freshwater habitats help to prevent erosion, dispose of waste and provide natural protection from flooding.

Despite the important role water plays for people and nature, it is a finite resource. Less than 1% of the world's water is fresh and accessible (not locked in ice or out-of-reach groundwater stores).[2] Many freshwater environments have been mismanaged, leading to damaged habitats and waterways drying out. Freshwater species are declining at an alarming rate, much faster than terrestrial or marine species.[3] Two-thirds of all natural wetlands have been destroyed, while dams and infrastructure developments have fragmented countless river systems, with fewer than 70 of the world's 177 longest rivers currently free-flowing.[3] As a result, groundwater stores are not recharged, biodiversity is lost as habitats change, migration is prevented and sediment transfer to deltas and flood plains is reduced, increasing the risk of floods and droughts.[4]

Freshwater ecosystems are threatened by many factors, including population growth, overfishing, changing consumption patterns, overdevelopment and climate change. These biomes are also under threat from agriculture (which accounts for about 70% of total water withdrawals),[3] industrial pollution and sewage leaking into rivers.

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[1] WWF. "Freshwater." No date. Accessed on 2 March 2020 at https://www.worldwildlife.org/initiatives/fresh-water.

[2] World Water Assessment Programme. *Water: a shared responsibility*. Nairobi: United Nations Environment Programme, 2006. Accessed on 2 March 2020 at https://unesdoc.unesco.org/ark:/48223/pf0000144409.

[3] WWF. *Living Planet Report - 2018: Aiming Higher*. Grooten, M. and Almond, R.E.A.(Eds). Gland, Switzerland: WWF, 2018. Accessed on 2 March 2020 at https://www.wwf.ch/sites/default/files/doc-2018-10/LPR2018_Full%20Report%20Pages_22.10.2018_0.pdf.

[4] FAO. *Climate change, water and food security*. FAO Water Report #36. Rome: FAO, 2011. Accessed on 2 March 2020 at http://www.fao.org/3/i2096e/i2096e.pdf.

Sustainable access to fresh water and sanitation leads to healthier people and economic growth.

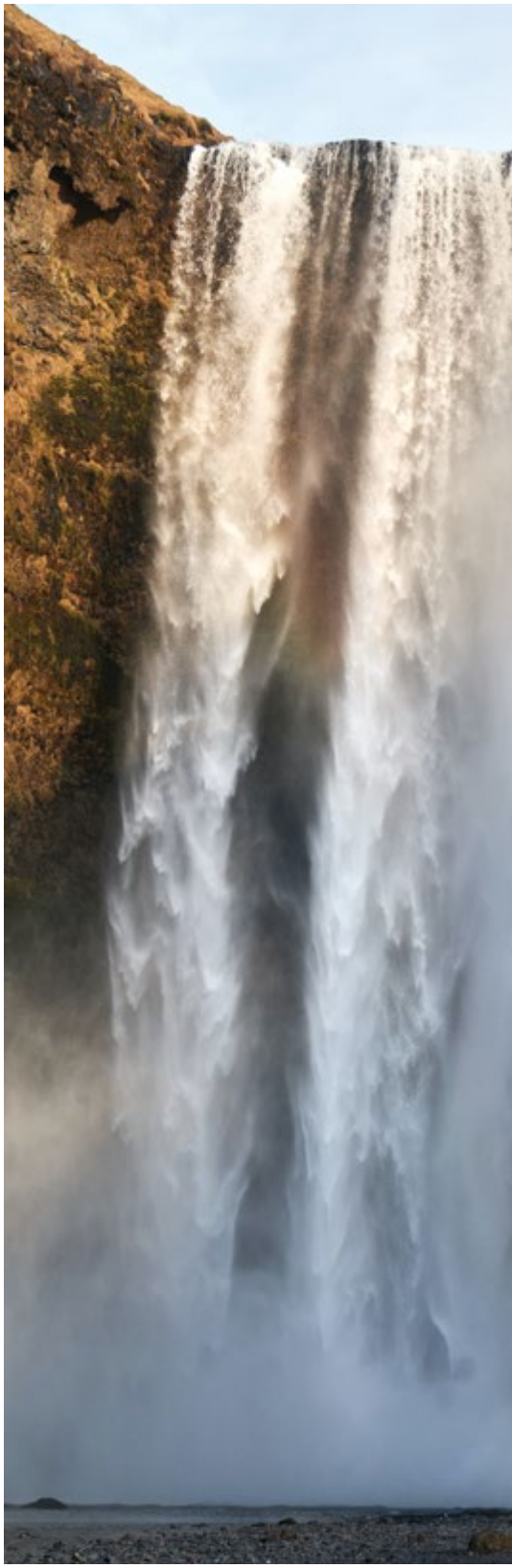
All of these processes affect humans, too. Climate change is impacting freshwater systems, as droughts and floods are occurring with greater frequency and intensity.[5] Degraded ecosystems – and the species that live in them – are less resilient to these climate impacts, and communities that depend on the services provided by healthy freshwater ecosystems are becoming increasingly vulnerable.[6] Today, nearly two billion people live in areas at risk of severe water scarcity.

The situation is deeply concerning, but it is still possible to turn things around and meet the freshwater needs of both people and nature, thereby providing a sustainable future for all.

Ultimately, what is needed is a transformation in the way water is managed. The only way this transformation will happen is if all major stakeholders – local communities, governments, businesses, NGOs and international financial institutions – start working together.

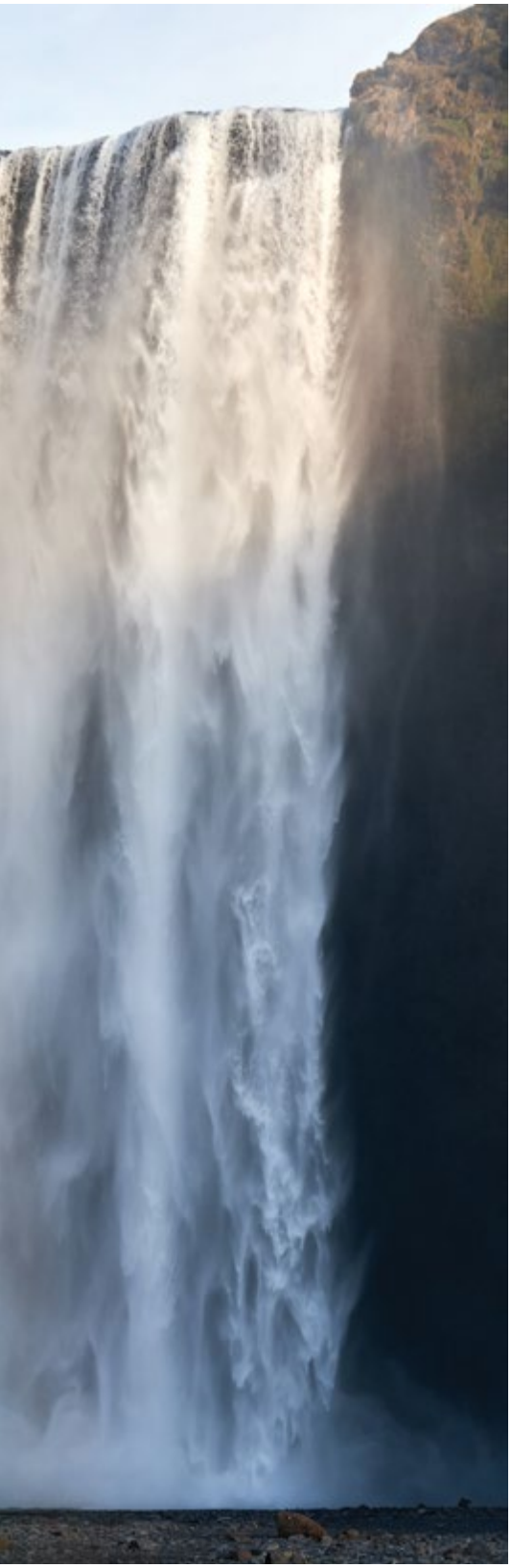
As the international community ramps up its efforts to meet the 2030 Sustainable Development Goals, governments must protect freshwater habitats and ensure everyone's right to enough clean water. At a national level, governments need to develop and enact better policies and regulations and commit to managing water resources, improving water quality, and protecting and restoring wetlands. They must also ensure that everyone has access to safe drinking water.

Holistic management and policy solutions must be brought to scale. Initiatives such as the United Nations' CEO Water Mandate, the Alliance for Water Stewardship's standard, the United Nations-supported Principles for Responsible Investment (PRI), the Ramsar Convention on Wetlands, and water foot-printing and mapping tools, such as the WWF Water Risk Filter, are all essential components in measuring, valuing and governing water.



[5] European Environment Agency. "Climate change and water – Warmer oceans, flooding and droughts." 30 August 2018. Accessed on 2 March 2020 at https://www.eea.europa.eu/signals/signals-2018-content-list/articles/climate-change-and-water-2014.

[6] Conservation International. "Freshwater Ecosystems." No date. Accessed on 2 March 2020 at https://www.conservation.org/priorities/fresh-water.



In order to develop a global framework for investment pathways, financial institutions will need to increase sustainable investment in bankable water solutions, linking better governance with investment in water-related infrastructure.

The business world is also a key stakeholder in helping to solve the world's water problems. The private sector must take collective responsibility for shared water resources (in the form of water stewardship), better understand its own water footprint and water-related risks, and embed the value of nature into business planning.

The global goal of conserving and protecting freshwater clearly requires local action with local partners. Sustainable access to fresh water and sanitation leads to healthier people and economic growth, which in turn facilitate improved environmental management. In other words, healthy communities help preserve a healthy planet, and a healthy planet is the foundation for healthy communities.

Simply put, collectively, we must start recognizing the wider value of freshwater.

Below are some case studies illustrating existing actions to combat the threats facing freshwater. These examples demonstrate that together we can look after this most vital resource to create a water-secure future.

Saving the sturgeon in the Danube

Background

Sturgeon are among the world's most valuable wildlife resources. These northern hemisphere fish can be found in large river systems, lakes, coastal waters and inner seas.[1] For people around the world, caviar (unfertilized sturgeon roe) is a delicacy. Sturgeon are a major source of income and employment, as well as an important element of the local food supply.

Unfortunately, sturgeon are also the most endangered species group on earth.[2] Of the eight species of sturgeon found in Europe, seven are currently considered critically endangered by IUCN,[3] representing the highest threat category before a species is deemed extinct in the wild. Only the Lower Danube and the Rioni River in Georgia still host self-sustaining populations today.

The sturgeon family has been around since the age of the dinosaurs, but is now on the edge of extinction due to overfishing, a flourishing illegal caviar trade and habitat loss. A wave of new hydropower dams, particularly in the Danube Basin, is also having a major impact on the future of this species.

Sturgeon need to migrate between rivers and seas and cross many national borders during their lives. They therefore represent a flagship species for free-flowing rivers and healthy, well-managed marine ecosystems. Sturgeon recovery cannot be achieved by individual countries: it is a true collective responsibility.

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[1] Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). "Sturgeons." 2018. Accessed on 2 March 2020 at https://www.cites.org/eng/prog/sturgeon.php.

[2] WWF. "The Sturgeon Initiative." 2020. Accessed on 2 March 2020 at https://wwf.panda.org/our_work/water/freshwater_inititiaves/sturgeon_initiative/.

[3] Council of Europe. *Pan-European Action Plan for Sturgeons*. Strasbourg: Council of Europe, 30 November 2018. Accessed on 2 March 2020 at https://rm.coe.int/pan-european-action-plan-for-sturgeons/16808e84f3.

Project Description

To keep sturgeon from extinction, there is a critical need to influence policies, stop the illegal caviar trade, collect more information and data, enhance the health of river systems, and breed and release sturgeon back into the wild.

Guiding the work in Europe is the Pan-European Sturgeon Action Plan,[3] endorsed by the Council of Europe, which provides a framework for urgently needed recovery measures. Organisations working on these issues include the World Sturgeon Conservation Society, TRAFFIC, UNEP, IUCN and WWF.

TRAFFIC, the leading non-governmental organisation working globally on illicit trade in wild animals and plants, is fighting the black market in key countries by collecting evidence of the illegal caviar trade, raising public awareness, and advocating for stronger enforcement policies. They also run programmes to stop illegal fishing by training and supporting enforcement agencies, such as border police and fishing authorities.

WWF's strategy is to maintain and protect the last existing key habitats, including spawning and nursery sites, from deterioration.

Long-term and sustainable solutions will be found by engaging local fishing communities to become active in sturgeon conservation, as well as by identifying alternative livelihood options for them.

WWF is also working to protect and restore sturgeon habitat by influencing local planning processes to prevent new harmful infrastructure, like dams, and protect important breeding areas and establish passage solutions; adapting existing dams to reconnect sturgeon migration routes; securing genetic diversity; and implementing scientifically monitored reproduction and release programmes.

Saving the sturgeon in the Danube

Outcomes

Many Danube Basin governments have made strong commitments to preserve the sturgeon, including fishing bans in Ukraine and Romania.

WWF is currently working with the Serbian and Romanian governments and local stakeholders to restore migration across the Iron Gates dams, two of the largest dams in Europe, which would double the range of sturgeon migration.

WWF is also working with relevant local authorities to support and promote restocking of sturgeon on the Lower Danube, with over 50'000 sturgeons released so far.[4]

In Germany, a European sturgeon reintroduction programme is ongoing in the River Elbe, along with one for Baltic sturgeon in the River Oder.

France has introduced a European Sturgeon National Action Plan, and recovery is ongoing in the River Gironde and its tributaries.

Donor Opportunities

With a donation to WWF of USD 110'000 annually for three years, donors could support the identification and confirmation of potential habitats in the Danube Delta and Dniester River in Ukraine. This would include tagging sturgeon individuals with hydro-acoustic or radio telemetry tags, which will allow investigators to track migrations. The results of the research will lead to an update of the official authority lists with fishing prohibition sites, and thus immediately increase the effectiveness of the respective authorities' enforcement controls.

In Bulgaria, USD 185'000 would help WWF to secure the data needed for the confirmation of habitat and increased protection of a nursery site in Vetre, as well as to continue ongoing annual monitoring expeditions to capture larvae in at least two locations for at least 40 days.

For further information:

www.panda.org/sturgeons

[4] WWF. *Saving Sturgeons. A global report on their status and suggested conservation strategy*. Gland, Switzerland: WWF, 2016. Accessed on 2 March 2020 at https://d2ouvy59p0dg6k.cloudfront.net/downloads/sturgeons_low_res_18_may_2016.pdf.

River dolphins and healthy freshwater habitats in Asia

Background

Free-flowing rivers are the freshwater equivalent of wilderness areas. They provide crucial habitats for a host of animals and support the survival of both people and nature. But human-made changes, such as farming, the construction of hydropower dams and the development of roads and infrastructure, are preventing rivers from remaining free-flowing, damaging the habitats wildlife depends on.[1] Where there are dense human populations, the impact on local river systems is greater. Asia and South America are witnessing significant infrastructural expansions, with hundreds of dams planned in the Amazon Basin and a very large dam (Sambor) planned for the lower Mekong.

One way to assess the health of these rivers is to track the populations of some of their inhabitants, such as river dolphins. River dolphins are in many ways ambassadors of river health: if their populations are thriving, it means that the water is clean, they have sufficient fish to eat, and there is enough water in the river to sustain them. Therefore, these iconic species are more than just enjoyable to look at: they tell us how we are treating the large river systems that sustain our own livelihoods. There are, however, only five existing species of river dolphins in the world today, and they are all endangered or critically endangered on the IUCN Red List of Threatened Species.[2]

One of these endangered species, the Irrawaddy Dolphin, exists in populations ranging from tens to only a few hundred individuals. The Irrawaddy Dolphin occurs in a patchy and fragmented distribution near coasts, estuaries and rivers in parts of the Bay of Bengal and some Southeast Asian rivers, including the Mekong, Irrawaddy and the Mahakam.[3]

Although the dolphins themselves are not directly sought after by fishers, they can fall prey to fishing gear or indiscriminate fishing methods. In several areas, there have been significant declines in the dolphins' range, as large numbers are killed by entanglement in gill nets and illegal fishing activities, including electrofishing. Habitat degradation and population fragmentation due to dam development has also severely affected the species. In Indonesia, mining and pollution by pesticides from palm oil plantations harm dolphin populations, while in Myanmar, major threats include dredging and mercury poisoning from hydraulic blasting techniques used in gold mining.[4,5]

Project Description

A strong global community of partners is necessary to secure the long-term future of river dolphins. A global alliance of core partners, including IUCN, the International Whaling Commission, Marine Mammal Commission and WWF, have therefore combined to launch the River Dolphin Initiative. The initiative will be implemented in three phases from 2019-2030.

The first phase (2019-2022) aims to build a global multi-stakeholder movement and gain political momentum to keep rivers healthy and free-flowing, and halt the decline in river dolphin numbers.

The second phase (2023-2026) will create more protected areas and sustainable fishing areas. This will include improving the management of the sixty existing protected areas and double the total area under protection from 4,5 to 9 million km^2. At the same time, the alliance will support activities to prevent construction of the Sambor and Stung Treng dams and introduce best practices with fishing communities.

The third phase (2027-2030) aims to convince governments to take a leadership role and secure funds through large-scale multilateral or multi-donor funding. This funding would focus on economic development and green investment guidance, particularly in relation to dams and other infrastructure.

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[1] WWF. "Free Flowing Rivers." No date. Accessed on 6 March 2020 at https://www.worldwildlife.org/pages/free-flowing-rivers.

[2] IUCN. "Red List of Threatened Species." 2019. Accessed on 13 March 2020 at www.iucnredlist.org.

[3] WWF. "Irrawaddy Dolphin." No date. Accessed on 13 March 2020 at https://www.worldwildlife.org/species/irrawaddy-dolphin.

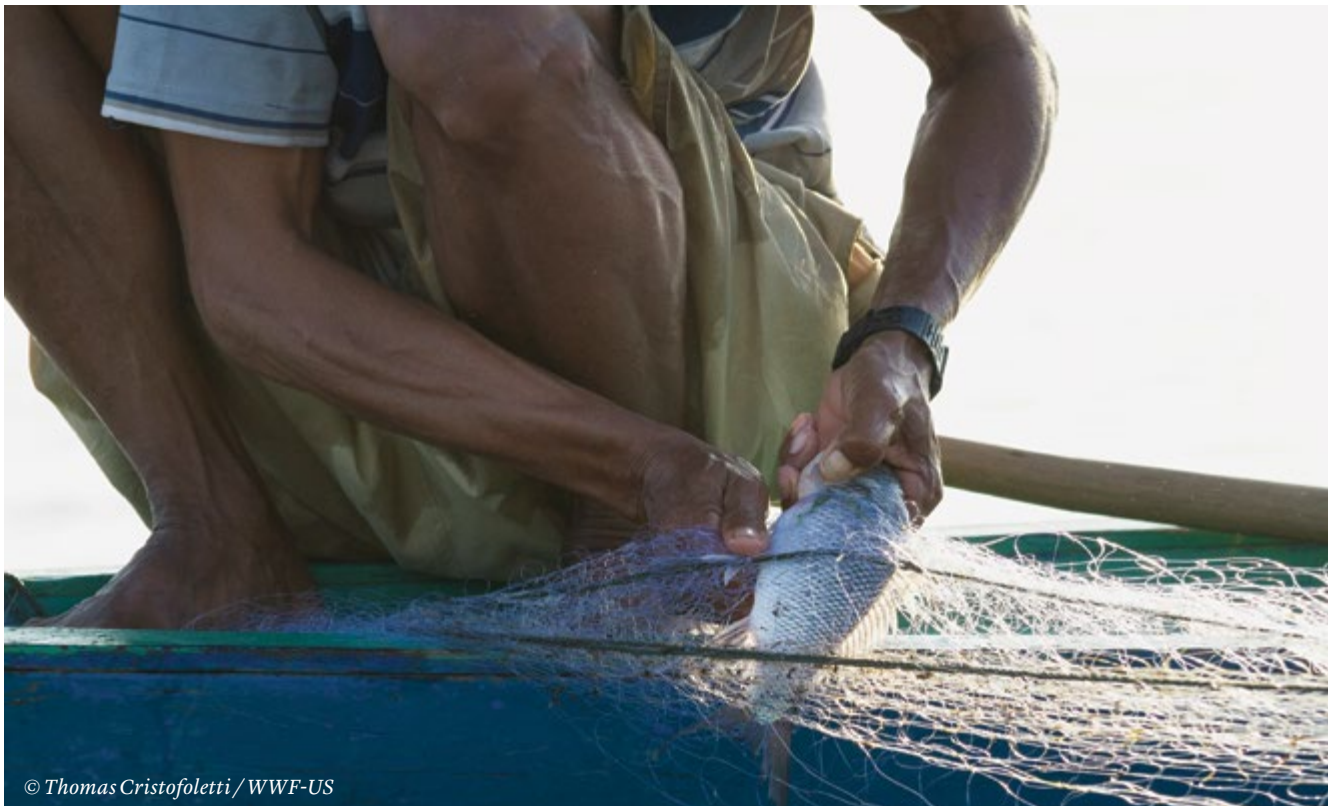
[4] Peter Thomas and Frances Gulland. *Report of the International Workshop on the Conservation of Irrawaddy Dolphins in the Mekong River*. Kratie, Cambodia: WWF, January 2017.

[5] WWF. *WWF's river dolphin initiative: Summary*. 2019. Accessed on 13 March 2020 at https://d20uvy59p0dg6k.cloudfront.net/downloads/river_dolphin_rivers_initiative_summary.pdf.

River dolphins and healthy freshwater habitats in Asia

Outcomes

By working closely with local communities, government agencies and climate change experts, the initiative can contribute to a crucial knowledge exchange of strategic actions to safeguard the survival of river dolphins. There are techniques and activities worth sharing that have worked at a local level. For example, in Cambodia over the last 15 years, community patrols and education activities around the threats gillnets pose to dolphins have been improving the sustainability of local fishing techniques. This has contributed to a population increase from around 60 to 92 individuals in 2017.
In Bangladesh from 2013-2015, a safety network of small-scale fishers was established to monitor gillnets and release trapped cetaceans.



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Donor Opportunities

In Myanmar, Cambodia and Indonesia, USD 150'000 annually for two years would help IUCN train and equip fishers to improve fishing practices, establish a rapid response team to rescue entangled dolphins in gillnets, and monitor dolphin populations. This funding would also support the development of community-based ecotourism activities, such as dolphin watching.

www.iucnredlist.org

IUCN is a membership Union composed of both government and civil society organisations. It harnesses the experience, resources and reach of its more than 1,400 Member organisations and the input of more than 15,000 experts. This diversity and vast expertise makes IUCN the global authority on the status of the natural world and the measures needed to safeguard it.

conclusion

The pace of change over the past 50 years has been extraordinary. The global economy has expanded four-fold, over a billion people have been lifted out of extreme poverty, we live significantly longer, and rates of infant and maternal mortality have plummeted.[1] However, this has been achieved at the expense of the health of our planet. Many of the activities that are currently central to human existence, including agriculture, travel and energy production, are directly driving the destruction of nature and contributing to the release of greenhouse gases that are then trapped in the Earth's atmosphere, heating our planet.[2]

The good news is that there is a growing awareness of these problems amongst governments, the business sector and the public, and there are already policies in place and new technologies that can contribute to limiting global temperature rise and help address the conservation and sustainable use of biodiversity. The way we produce and use energy, use our soils, protect coastal ecosystems and treat our forests will make or break our future.

[1] Dominic Kailash Nath Waughray and Marco Lambertini. "Why 2020 is the year to reset humanity's relationship with nature." World Economic Forum. 19 January 2020. Accessed on 4 March 2020 at https://www.weforum.org/agenda/2020/01/nature-risk-biodiversity-climate-ocean-extinction-new-deal/.

[2] United Nations. *The future is now: Science for Achieving Sustainable Development*. Global Sustainable Development Report 2019. New York: United Nations, 2019. Accessed on 4 March 2020 at https://sustainabledevelopment.un.org/content/documents/24797GSDR_report_2019.pdf.

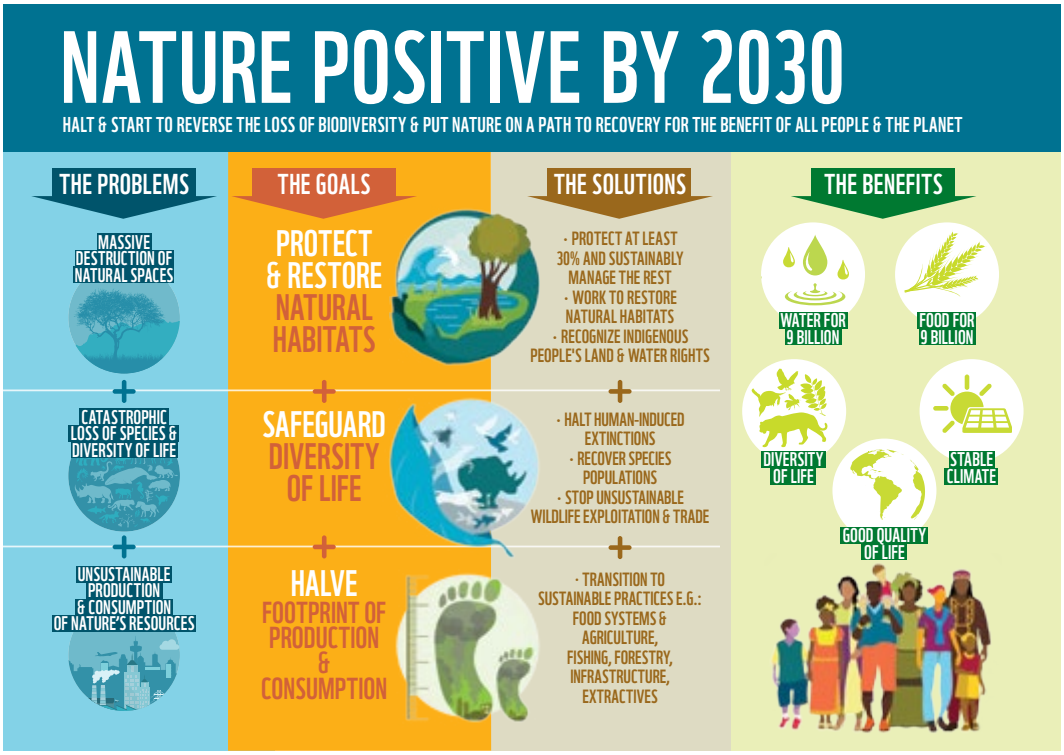
The path ahead

We need a new strategy – a time-bound, science-driven plan to save the diversity and abundance of life on Earth – paired with the Paris Climate Agreement, which would avoid catastrophic climate change, conserve species, and secure essential benefits provided by the ecosystems that sustain human life. This plan would halt the loss of biodiversity and put nature on a path to recovery by 2030.

Such an ambitious new plan would pave the way for the continuation of positive opportunities in countries like China, where environmental challenges are at a critical juncture. China's fast economic growth in the past two decades, dependent on fossil fuels as elsewhere around the globe, has polluted the air, water and soil to a damaging degree.[4] To tackle pollution, in 2013, the Chinese government introduced a national action plan on air pollution.[5] Later, green initiatives such as a project to "green the Belt and Road Initiative" (BRI) have been launched.[6,7] The BRI is an infrastructure initiative strengthening connections between Asia, Europe and Africa and boosting economic growth. If the BRI can be 'future-proofed' or greened, it would allow the global economy to continue benefiting humanity without sacrificing the natural world.

Globally, farmers already produce enough food to feed the Earth's current population.[8] However, 821 million people around the world are hungry,[9] and current food production methods are responsible for 25%-35% of anthropogenic greenhouse gas emissions.[10] Critical parts of any plan to address this imbalance will include using climate-smart methods like planting cover crops, which protect and enrich the soil; choosing efficient irrigation systems; and using rotational grazing, so livestock help keep grasslands and soils healthy. Additionally, the food industry must work with local communities and indigenous peoples to ensure forests and other habitats are not destroyed during food production. As consumers, we can all choose to eat healthy and diverse diets, buy sustainably sourced products and eliminate food waste.

Figure 1:
The problems, targets, solutions and benefits of a New Deal for Nature and People[3]



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[3] WWF. *2020: A New Deal for Nature and People*. 2019. Accessed on 13 March 2020 at https://d2ouvy59p0dg6k.cloudfront.net/downloads/newdeal_new_textv11lr.pdf.

[4] Sha Song. "Here's how China is going green." World Economic Forum. 26 April 2018. Accessed on 13 March 2020 at https://www.weforum.org/agenda/2018/04/china-is-going-green-here-s-how/.

[5] The Economist. "How China cut its air pollution." 25 January 2018. Accessed on 13 March 2020 at https://www.economist.com/the-economist-explains/2018/01/25/how-china-cut-its-air-pollution.

[6] WWF and HSBC. *Greening the Belt and Road Initiative: WWF's recommendations for the finance sector*. Gland, Switzerland: WWF, 2018. Accessed on 13 March 2020 at https://www.sustainablefinance.hsbc.com/mobilising-finance/greening-the-belt-and-road-initiative.

[7] Shouqing Zhu and Sha Song. "Three ways China can make the New Silk Road sustainable." World Economic Forum. 15 September 2018. Accessed on 13 March 2020 at https://www.weforum.org/agenda/2018/09/three-ways-china-can-make-the-belt-and-road-initiative-sustainable/.

[8] Eric Holt-Giménez et al. "We Already Grow Enough Food for 10 Billion People…and Still Can't End Hunger." *Journal of Sustainable Agriculture* 36 (2012): 595-598.

[9] World Health Organization. "Global hunger continues to rise, new UN report says." 11 September 2018. Accessed on 13 March 2020 at https://www.who.int/news-room/detail/11-09-2018-global-hunger-continues-to-rise---new-un-report-says.

[10] Amanda Stone. "The food-climate connection." WWF. 16 October 2019. Accessed on 13 March 2020 at https://www.worldwildlife.org/stories/the-food-climate-connection.

The path ahead

There is also hope in technology, which is already transforming how we identify, measure, track and value the many services and resources nature provides. For example, advances in blockchain technology could help consumers track the entire journey "from bait to plate" of high-value fish like tuna [11,12] (or other commodities from cocoa to diamonds), potentially revolutionising systems of certification and traceability. In China, tech giant Intel is harnessing the power of artificial intelligence to help protect wild tigers and their habitats.[13] This approach could simultaneously help promote carbon storage, protect vital watersheds and support communities in the surrounding tiger landscapes.

Young people today are also increasingly shaping the world they want to see. Greta Thunberg has become a household name, but there are many others whose combats go more unnoticed. They include Nina Gualinaga, an indigenous activist from the Ecuadorian Amazon who won WWF's top youth conservation award in 2018,[14] and Indian teenager Aditya Mukarji, who has helped replace more than 500'000 plastic straws in New Delhi. With half of the world's population under the age of 30, the voices of the younger generations are crucial to ensure that the environment remains at the top of the global agenda. Nature matters to these young people, and they are demanding action from world leaders.

The finance sector is stepping up to the challenge, especially in relation to climate change, with growth in disclosure efforts and sustainable finance initiatives. To date, over 500 organisations have expressed support for the Task Force on Climate-related Financial Disclosures (TCFD), which was established by the Financial Stability Board to identify the information needed by investors, lenders, and insurance underwriters to assess and price climate-related risks and opportunities.[15] As another example, more than 100 companies, representing US$5,4 trillion in assets under management, have signed the Cerrado Manifesto, which calls on soy and meat producers to prevent further deforestation.[16]

How much would it cost?

The Convention on Biological Diversity (CBD) estimates that up to US$440 billion is needed annually to fund the post-2020 UN Biodiversity Framework, a potential road map directing how we use, safeguard, restore and invest in biodiversity until 2030.[17] For context, US$440 billion is roughly equivalent to the 2019 GDPs of Austria or Argentina. Today, however, global expenditure on saving the planet's biodiversity amounts to only around US$52 billion annually.[18]

The estimated funds needed to protect our climate and halt the loss of biodiversity are enormous. While the majority of the funding will come from governments, there are tremendous opportunities for philanthropic donors to make a difference as well.

Philanthropy has a rare value. It is the catalyst that can ignite the groundswell that shifts our culture. It can fund and support visions, no matter what stage they are at, from the seed of a good idea to a fully-grown initiative. Philanthropic gifts can give innovative (and often higher-risk) ideas the time and resources they need to advance, thus playing the role of the bridge between vision and reality.

A philanthropic gift can be key to unlocking co-financing or finalising projects, and thus maximising returns for all stakeholders. Because the environment is complex and interconnected, philanthropists may find that joining funds and efforts allows them to achieve larger goals, as seen in the HECO (Heritage Colombia) case study.

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[11] Kate Whiting. "Blockchain could police the fishing industry." World Economic Forum. 12 February 2020. Accessed on 13 March 2020 at https://www.weforum.org/agenda/2020/02/blockchain-tuna-sustainability-fisheries-food-security/.

[12] WWF. "WWF-Australia and OpenSC." No date. Accessed on 13 March 2020 at https://www.wwf.org.au/get-involved/panda-labs/opensc#gs.yvtti9.

[13] Marco Lambertini. "Technology can help us save the planet. But more than anything, we must learn to value nature." 23 August 2018. Accessed on 13 March 2020 at https://www.weforum.org/agenda/2018/08/here-s-how-technology-can-help-us-save-the-planet/.

[14] WWF. "Environmental and indigenous rights activist to receive WWF's top youth conservation award." 8 May 2018. Accessed on 13 March 2020 at https://wwf.panda.org/?327434.

[15] Task Force on Climate-Related Financial Disclosures (TCFD). "TCFD Knowledge Hub." No date. Accessed on 13 March 2020 at https://www.tcfdhub.org/.

[16] FAIRR. "Cerrado Manifesto: Statement of Support." 2019. Accessed on 13 March 2020 at https://cerradostatement.fairr.org/about/.

[17] UN Convention on Biological Diversity. *High-level panel on global assessment of resources for implementing the strategic plan for biodiversity 2011-2020*. October 2012. Accessed on 13 March 2020 at https://www.cbd.int/financial/hlp/doc/communications/HLP%20on%20Resourcing%20the%20CBD%20Strategic%20Plan%202011-2020%20(summary).pdf.

[18] CGIAR. "How will we finance the New Deal for Nature?" 30 November 2018. Accessed on 13 March 2020 at https://www.cgiar.org/news-events/news/will-finance-new-deal-nature/.

How much would it cost?

Philanthropic giving is also a pivotal mechanism to support less-known, yet no less important, conservation efforts. The sturgeon, for example, is an icon in the freshwater world and acts as a barometer for the health of our rivers. That said, it does not attract mainstream attention commensurate with its ecological importance. This creates the opportunity for philanthropists to make a major impact on this species, protecting their intrinsic value to biodiversity.

Philanthropy can help raise awareness about specific causes. This can then have a wider effect, as governments respond to popular will. By backing the work of NGOs and other actors, and addressing the critical gaps, well-targeted, long-term environmental philanthropy can help shine a light on hidden challenges and emergent strategies. Once there is enough of a groundswell of support, politicians can respond. This is what happened with the emergence of plastics as one of the biggest issues in the environmental world. Science has known the problems that plastic pollution has had on nature since the 1990s.[19,20] But when organisations such as the Ellen MacArthur Foundation and Greenpeace, amongst others, came together with the support by philanthropic giving, a tipping point occurred, eventually leading governments, society and even global supply chains to make changes.

Increasingly, a philanthropic gift to any environmental cause is also an opportunity to have an impact on other areas of interest you may be considering. For example, in 2017 Fondation Philanthropia supported WWF's work on the illegal wildlife trade. Since then, and in the wake of the COVID-19 pandemic, it has transpired that one of the most important actions to prevent future zoonotic health pandemics is to eliminate illegal wildlife trade, a step Philanthropia's donation is already working towards.

Strategic philanthropic giving is increasingly playing a pivotal role in protecting the Planet's natural heritage for future generations, and we hope that this guide has inspired you to join in.

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[19] Peter G. Ryan and Coleen L. Moloney. "Marine litter keeps increasing." *Nature* 361 (1993): 23.

[20] David G. Ainley, William R. Fraser, and Larry B. Spear. "The Incidence of Plastic in the Diets of Antarctic Seabirds." *In Proceedings of the Second International Conference on Marine Debris: 2-7 April, 1989, Honolulu, Hawaii, Volume 1*, edited by the United States Department of Commerce, 682-691. Washington, D.C.: United States Department of Commerce, 1990.

Next steps with Lombard Odier Philanthropy Services

You may feel overwhelmed by all the options, but we are here to discuss your aspirations and help guide and connect you with the relevant partners. Based on our expertise in advising clients who wish to bring a meaningful contribution to build environmental resilience and transition toward a new relationship with our planet, we at Lombard Odier Philanthropy Services recommend you take these steps:

- **Define your philanthropic objectives** - set your priorities in terms of topic, but also geographic scope, mode of intervention and impact. This will help you find the niche that is relevant to you and the targeted issue.

- **Develop your giving strategy** - in this field, as in many, no donation is too small. Decide if you wish to help strengthen the means of action (capacity building); focus on providing more care, research or services; or promote their outcomes.

- **Marry passion with power of data** - try to balance the passion you feel for the cause with a data-based approach. It will help you select the right programme or project.

- **Collaborate and co-finance** - remember that in the case of the environment, joining forces with others and co-financing are crucial. This may be important when trying to reach a critical mass of resources in favour of a river-basin management scheme or when fighting against poaching of endangered species.

- **Share learning and achievements** - share what you learn with other like-minded donors and learn from them. Your advisor can help widen your circle of contacts in conservation circles or elsewhere.

- **Asset management strategy** - if in charge of a grant-making foundation, whether focused on the environment or not, discuss with your Board the opportunity to invest the capital in companies or funds that support novel solutions for the planet.

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WWF is one of the world's largest and most experienced independent conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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Printed on FSC paper Environment Birch 118 g/m²

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