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Rewilding
THE GLOBAL ALLIANCE

ANIMATE *the* CARBON CYCLE

Supercharging Ecosystem Carbon Sinks to Meet the 1.5°C Target

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Northern Bluefin Tuna, Credit: Solvi Zankl

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Global Charter for Rewilding the Earth, wild11.org/charter.

Animating the Carbon Cycle, for more information.

The Global Rewilding Alliance, founded by
WILD

ANIMATE THE CARBON CYCLE

Supercharging Ecosystem Carbon Sinks to Meet the 1.5°C Target

The world community increasingly knows that the existential crisis of climate breakdown and species loss is holistic, affecting many sectors simultaneously and catastrophically, and can only be solved by exploring and deploying solutions that address diverse issues and yield multiple benefits. Finding and adopting such holistic solutions is required if human civilization is to avoid catastrophe, creating opportunities for game-changing practice and behavior for a more enlightened and prosperous future.

Gray Wolf, Credit: Staffan Widstrand

There is a critical bridge between biodiversity and climate that is increasingly recognized by scientists and civil society. It is that healthy populations of wild animal species can have a major - but currently underappreciated and undervalued - positive impact on carbon drawdown and storage. Indeed, research is now showing that by bringing wildlife back to significant, near historic levels, they have the potential to “supercharge climate mitigation”. This science is called: “Animating the Carbon Cycle.”

"Animating the Carbon Cycle" (ACC) accounts for the role wild animals play in controlling carbon exchange between ecosystems and the atmosphere through their foraging, by redistributing seeds and nutrients over vast land- and seascapes, and by trampling and compacting soils and sediments. Through these various activities, animals can enhance the carbon density of plant communities on land and in the sea, prevent massive CO2 releasing wildfires, protect against permafrost thawing, and enhance soil and sediment carbon retention through influence on microbial processes and chemical reactions.

The effects of animals can be significant. The Serengeti ecosystem has switched from being a major carbon source to a sink following the restoration of the wildebeest population to their historic levels. It now takes up between 1- 8 million tons (or 0.001 - 0.008 Gigatons, Gt) of carbon annually, which can make a significant contribution to offsetting the ***combined annual carbon emissions of Kenya and Tanzania from fossil fuel burning***. Protecting trophic cascades involving wolves, moose, and trees across the North American boreal region can contribute to the process of 150 million tons (0.15 Gt) of carbon taken up annually, the ***equivalent of 10% of United States' carbon emissions from fossil fuel burning***. Restoring forest elephants to historic levels in the Congo basin could result in 85 million tons (0.085 Gt) of carbon taken up annually, the ***equivalent of France's annual carbon emission from fossil fuel burning***. Restoring the whales to best current estimates of their historic pre-exploitation levels may have the potential to take up 450 million tons (0.45 Gt) of ocean carbon annually ***corresponding to the annual emissions of Russia – and more than entire Africa***. Despite overfishing, the biological functions of fish has been estimated contribute approximately 1.65 billion (1.65 Gt) tons annually to the global ocean carbon cycle, making up about 16 percent of the total carbon that sinks below the ocean's upper layers. This corresponds to ***twice the CO2 emissions of the EU-27***, with a huge potential

of mitigating the climate if we only would allow to rebuild the severely depleted fish stocks.

Linking biodiversity and climate mitigation via the ACC concept holds exciting and essential promise. Restoring/rewilding and conserving the functional role of vertebrate and invertebrate species can be a game changer by ***magnifying carbon uptake by 1.5 to 12.5 times*** (or perhaps even more!) across the world's terrestrial, freshwater and marine ecosystems.

We don't need yet another warning, as obvious and important as they are, because we all know the danger we are in and the consequences we face. However, this message is both an alert and a solution. The irrefutable truth is that if we treat nature as our partner – that means protecting intact natural systems that are the very foundation of carbon storage, and restoring /rewilding key areas to functionality – nature will work with us and the potential of our partnership is exponential. Combining nature-based solutions with an array of other technologies and changed human behaviors can revolutionize our results to change the trajectory of combat climate change.

We repeat the first priority of a simple solution: preserving still-intact nature and restoring functional ecosystems – rewilding! - at large scale. But it's urgent: only "2.8% of the land surface could be considered functionally intact". The situation for our seas is hardly any better.

Integrating the concept of "Animating the Carbon Cycle" into nature-based climate solutions will allow nature, climate and people to prosper. Carbon is managed, species are saved, and Indigenous Peoples who steward many of these intact areas will be supported and their cultures strengthened.

"Animating the Carbon Cycle" is the critical, missing link between biodiversity and climate change.

We, the signing parties, are a group of civil society organizations, scientists and supporting individuals committed to drive forward the concept of Animating the Carbon Cycle, to mainstream it in the discussions and decision-making processes relating to climate and biodiversity. We are prepared to share more information and practical methodologies to assure that this opportunity helps life on earth survive and thrive.

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