

#NatureCools

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[Biodiversity for a Livable Climate](#) and some of the members of the [EcoRestoration Alliance](#) (which Bio4Climate helped found) have been assembling information and resources that tell the story of how healthy, functioning ecosystems help shed a significant amount of heat from the earth's surface to space (on the order of the amount of heat held in by GHGs, if not multiples thereof).

Note: Very recently the World Meteorological Organization issued a press release that lends urgency to the need for humanity to ***take actions that will help cool the planet in a very short timeframe***.¹ Luckily, nature has already evolved very powerful ways to do so. We can take action in our own yards and around the world to help accelerate nature's process of (re)greening bare ground. A patch of bare ground can be planted with seed or seedlings and be transformed in a matter of weeks or months from a heat source to green vegetation helping to move heat off the planet by evapotranspiration.

The resources collected below will help you understand the role nature plays – and that all of us could help accelerate the restoration of healthy functioning ecosystems. Some of the items are short videos, some are much longer webinars, some are forthcoming films that you could help us launch and promote. There are also a couple of articles that explain how we came to be fixed on greenhouse gases. Yes, the GHGs hold in heat, but they are only part of the story, and are likely not the most powerful tool we have now to cool the planet.

Finally, there is a section below about ways you can help.

The Role of Water

To start, please visit Bio4Climate's Hydrate page, which includes Jimi Sol Eisenstein's YouTube video, "Climate Change: The Water Paradigm"

Hydrate: the role of water - Biodiversity for a Livable Climate
<https://bio4climate.org/hydrate-the-role-of-water/>

¹ Global temperatures set to reach new records in next five years | World Meteorological Organization, 17 May 2023 - <https://public.wmo.int/en/media/press-release/global-temperatures-set-reach-new-records-next-five-years>

(and watch **Climate Change: The Water Paradigm** (3:04)
<https://youtu.be/Q8B4tST8ti8>)

The New Water Paradigm

The “New Water Paradigm” is a paradigm of natural water management. ... It involves the mobilization of millions of people in hundreds of thousands of decentralized water management projects worldwide. These diverse projects all have the goal of restoring and making best use of natural water cycles for regenerative ecosystem restoration. ... Most global water-related crises, such as water scarcity, drought, desertification, flooding, rising sea levels and climate change are symptoms of long-term mismanagement of rainwater and vegetation. This results in global disruptions to natural water cycles. Responding to these problems with industrial methods of control and mitigation is not a viable solution. These unsustainable methods can be superseded by the New Water Paradigm[.]²

To download the book, see **Water for the Recovery of the Climate - A New Water Paradigm** -
<http://waterparadigm.org/> .

Restoring Water Cycles to Naturally Cool Climates

Walter Jehne: Restoring Water Cycles to Naturally Cool Climates and Reverse Global Warming (2:15:23) [from July 19, 2017]
<https://www.youtube.com/watch?v=K4ygsdHJjdl>

Cooling the Climate Mess with Walter Jehne - YouTube
[Aug 30, 2019 at Cambridge Public Library]
<https://www.youtube.com/watch?v=IFViQIZF88c> [1:46:32]

Walter Jehne: Climate Solutions for a Blue Planet - YouTube
[Jan 21, 2021]
<https://www.youtube.com/watch?v=DQN9t-g2J-0> [1:21:20]

Cooling The Climate Mess With Soil And Water featuring Walter Jehne - YouTube
[April 2, 2022; part of Bio4Climate's Life Saves the Planet Speaker Series in partnership with GBH Forum Network]
<https://www.youtube.com/watch?v=t3rlkYUVq5c>

² The New Water Paradigm – Global Climate and Ecosystem Restoration -
<https://www.tamera.org/article-the-new-water-paradigm-global-climate-and-ecosystem-restoration/>

Hydrate the Earth

[Hydrate the Earth: the forgotten role of water in the climate crisis](#) is a short book by Ananda Fitzsimmons. She writes:

This is not a book for the hard core water savvy geeks that most of you are; it is a primer, a basic introduction for the general public. It would also be appropriate for high school students. The book was published by [Éditions La Butineuse](#) in France and as of this week it is more easily available outside of Europe through [Amazon](#). I think that this book could be a good resource for teaching an introduction to beginners and I have started to work on a study guide, compiling discussion topics, exercises and videos to go along with each chapter. If anyone is interested in collaborating on this project I would be delighted to have a few more minds behind it.

– Ananda Fitzsimmons, ananda@regenerationcanada.org

For more, please see Voices of Water for Climate - <https://bio4climate.org/voices-of-water/> .

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Two other short videos by Jimi Sol Eisenstein are also very informative:

The Role of Plants

How Plants Cool the Planet (5:15)

<https://www.youtube.com/watch?v=B-oJyInmTTo>

See esp. Hart Hagan's extended summary of Jimi Eisenstein's video, including citations to the scientific studies:

"How Plants Cool the Planet" A Video - Google Docs

<https://docs.google.com/document/d/1-RS9xPmlKJTbom3rw-xuap7e7X5hx6NntUhZAQZq9zg/edit>

The Biotic Pump

The Biotic Pump: How Forests Create Rain (2:55)

<https://www.youtube.com/watch?v=kKL40aBg-7E>

NEW 2025-02-13

Cool Insights - <https://lnkd.in/e4Hz-XwQ> -

<https://www.sciencedirect.com/science/article/pii/S0959378017300134?via%3Dihub> - Trees, forests and water: Cool insights for a hot world [authors include David Ellison, Douglas Sheil, Jan Pokorný]

NEW 2025-02-13

Even Cooler Insights - <https://lnkd.in/eEkxpXpf> -

<https://onlinelibrary.wiley.com/doi/10.1111/gcb.17195> - Even cooler - insights: On the power of forests to (water the Earth and) cool the planet, by David Ellison, Jan Pokorný, Martin Wild

NEW 2024-07-10

Bunyard, P.P., Collin, E., de Laet, R., et al. 2024. Restoring the earth's damaged temperature regulation is the fastest way out of the climate crisis. Cooling the planet with plants. *Int J Biosen Bioelectron*. 2024;9(1):7–15. <https://medcraveonline.com/IJBSBE/IJBSBE-09-00237.pdf>

Makarieva, A.M. and Gorshkov, V.G. 2006. Biotic pump of atmospheric moisture as driver of the hydrological cycle on land. *Hydrology and Earth Systems Sciences Discussions* 3:2621-73. <https://doi.org/10.5194/hessd-3-2621-2006>

For a fascinating deeper (and long) dive, see Dr. Anastassia Makarieva's webinar "**Global cooling from plant transpiration**" organized by [Bio4Climate](#) and others:

- Cleaned video: Global Cooling from Plant Transpiration: Mechanisms and Uncertainties - YouTube - <https://www.youtube.com/watch?v=NcDvVQOTuOw> [2:07:23]
- Raw video: Global cooling from plant transpiration: Mechanisms and uncertainties - YouTube - <https://www.youtube.com/watch?v=Z-92A55BdVc> [2:25:15]
- Email from Dr. Anastassia Makarieva - Resources for Webinar "Global cooling from plant transpiration" - Google Docs - https://docs.google.com/document/d/1IXgwCL-hTvoG6_OzwJiirqYJAia3YUzwHdnnttads_c0/edit

Biotic Pump : Anastassia Makarieva Interview [by Alpha Lo] - YouTube - <https://www.youtube.com/watch?v=BEjLKhCtrq> [1:37:50]

For more pertaining to Dr. Makarieva and her colleagues' work, see <https://bio4climate.org/?s=makarieva>

Biodiversity & Climate Regulation

Biodiversity Regulates Climate, by Alpha Lo

<https://climatewaterproject.substack.com/p/biodiversity-regulates-climate-part>

Cooling Climate Chaos

A three day symposium in partnership with [Bio4Climate](#) and the [EcoRestoration Alliance](#), was held on May 17, 18, and 19, 2023.

See this document for descriptions of the overall event and of each day's topics:

https://docs.google.com/document/d/1SMB_1nrEOfl6LtuvbcuvINRpunWxrLRS/edit

Recordings are available below. You will be prompted when you first visit any of these links to set up a free UbiVerse ID to access them. The first two recordings are the key ones to watch.

Cooling Climate Chaos — A Practical Path out of the Polycrisis II: The Strategy to get Humanity to Move - Rob de Laet [May 17, 2023]

Humanity Rising Day 699 - Recording - UbiVerse -

<https://ubiverse.org/documents/humanity-rising-day-699---recording>

Cooling Climate Chaos — A Practical Path out of the Polycrisis I: The Climate Solution - Peter Bunyard [May 18, 2023]

Humanity Rising Day 700 - Recording - UbiVerse -

<https://ubiverse.org/documents/humanity-rising-day-700---recording>

Cooling Climate Chaos — A Practical Path out of the Polycrisis III: Get on Board! - Eliza Collin, Peter Bruce-Iri [May 19, 2023]

Humanity Rising Day 701 - Recording - UbiVerse -

<https://ubiverse.org/documents/humanity-rising-day-701---recording>

Managing the Local Climate

Managing the Local Climate: A Third Way to Respond to Climate Change. 2023. Femke van Woesik, Frank van Steenbergen, Francesco Sambalino, Hugo Jan de Boer, Jean Marc Pace Ricci, and Wim Bastiaanssen. How to positively affect local climate and agroecological conditions with local interventions.

From the back of the book:

Drawing on practical examples supported by scientific evidence, this book demonstrates how preserving and managing local climates can complement global mitigation and adaptation as a third way to address the effects of climate change.

The book outlines the mechanisms that shape a local climate components and relevant micro meteorological processes and provide the building blocks for transforming micro- and mesoclimates. Setting out various monitoring methods that help measure and manage these processes, and explores many examples of successful local climate management from different geographies and shows how it is possible to improve a local climate with ingenuity and smart practice.

Film: “Regenerating Life” “Regenerating Life” is a forthcoming 3-part documentary film by John Feldman, [premiering October 14, 2023](#).

- Part 1: Water Cools the Planet
- Part 2: Life Sustains the Climate
- Part 3: Small Farms Feed the World

Regenerating Life: Support the Film, Support the Movement! - Biodiversity for a Livable Climate
<https://bio4climate.org/2023/06/09/welcome-to-regenerating-lifes-launch/>

Regenerating Life | Hummingbird Films
<https://hummingbirdfilms.com/regeneratinglife/>

See this 1-minute excerpt from the film:

What Drives the Greenhouse Effect | Hummingbird Films
<https://hummingbirdfilms.com/what-drives-the-greenhouse-effect/>

FBJ NOTES ON JOHN FELDMAN'S NEW FILM 'REGENERATING LIFE' Feb-Mar 2023.docx -
Google Docs [from Fred Jennings]
<https://docs.google.com/document/d/1rQnUMFQobqLAbhS-L07NAcXBEx96OKk-/edit>

Carbon Tunnel Vision

This paper by Christopher Haines explains how we became fixated on GHGs:

Greenhouse Gases: True, but Not the Whole Truth

Journal of Sustainability Education

http://www.susted.com/wordpress/content/greenhouse-gases-true-but-not-the-whole-truth_2022_07/

Article Summary:

The article provides a brief history of climate science and traces the growing recognition of a greenhouse gas threat. But if a pot is boiling over, should you take off the lid, or turn down the stove? Likewise, reducing greenhouse gases is an incomplete solution to planetary warming.

The impact of the “sun-warmed surface” on climate has been known for nearly 200 years. Scientific findings show that urbanism, water cycles, and land management practices impact climate. But the IPCC has failed to incorporate any of these perspectives into its models.

The Heat Planet paradigm addresses the actual cause of warming, providing a hopeful future, with opportunities to resolve overheating more completely, locally, and in a matter of months, years, or maybe decades, instead of centuries.³

For related presentations by Christopher Haines, see <https://bio4climate.org/?s=haines>

Robert Tulip’s challenge to the focus on rapid retirement of fossil fuels:

Challenge to the “Rapid Retirement of fossil fuels” (RR) Strategy, by Robert Tulip

<https://docs.google.com/document/d/1BVSIfTuGGwxgk0-ELpi20bpArryqQr6tlgv1JPCcEzU/edit#heading=h.ux3djgvy8qeb>

Here is another paper raising issues with our fixation on the greenhouse gases:

³ Boston Society for Architecture | Sustainability Education:... - <https://www.architects.org/events/565552/2023/02/21/sustainability-education-committee-greenhouse-gases-true-but-not-the-whole-truth-hybrid>

Plant Evapotranspiration Reduction Causes Global Warming, not CO2 GHG, by David Motes

<https://wryheat.wordpress.com/2021/04/20/plant-evapotranspiration-reduction-causes-global-warming-not-co2-ghg/>

The above is a link to an abstract of an original research paper written by David Motes, a chemical engineer with 43 years professional experience, which discusses nine problems with the Greenhouse hypothesis and then presents Motes' alternative hypothesis.

Here is a fascinating account by Rob Lewis of research undertaken by Millán Millán in Spain to determine why Southern Spain was drying out:

Millan Millan and the Mystery of the Missing Mediterranean Storms, by Rob Lewis

<https://www.resilience.org/stories/2023-07-17/millan-millan-and-the-mystery-of-the-missing-mediterranean-storms/>

Ways to Help

Dutchman Rob de Laet has been working to help restore the Amazon basin forests of northeast Brazil. You can learn more about his projects and how to support him here:

Work to Restore the Amazon Forests in Northeast Brazil (support Rob de Laet)
https://docs.google.com/document/d/1bZvtKg19Bz-EUoMuleZi14bPpal_SJhaWT6qH1TnWs/edit?usp=sharing

South African Linsey de Jager, as a Bio4Climate intern, has drafted a paper surveying more than a dozen groups in South Africa doing restoration. It is hoped her paper will serve as a model for what others could do in their own countries to identify restoration projects worthy of support.

Investment opportunities to regreen South Africa and help our future climate - 1st review ed.
https://docs.google.com/document/d/1YkzOPsMrsWgorEVz_vevKbwb74FVxh1uAthJLqGwaB0/edit?usp=sharing

Support Biodiversity for a Livable Climate - <https://bio4climate.org/donate/>

Support the EcoRestoration Alliance - <https://www.ecorestorationalliance.org/>

Other useful pages

GBH Forum Series “Life Saves the Planet”

<https://forum-network.org/series/life-saves-planet/>

This series explores the many ways that living systems create and regulate environmental conditions on our planet. Without a living system, Earth would be a dry barren rock, like Venus or Mars.

Life has created the planet as we know it, a place where all species, including humans, co-evolved. The symbiotic relationships that created this Eden are badly damaged. The Life Saves the Planet Series, presented by Biodiversity for a Livable Climate, [introduces] you to people (and other species) doing amazing work all over the planet to regenerate systems, repair crucial relationships, and make this a healthy place once again. Without this work being done at scale, we will not have a habitable home for very long.

Life Saves the Planet YouTube playlist

<https://www.youtube.com/playlist?list=PLsWWRqCX9eSbWv41gKMKojuXQ0fhNYQBt>

See especially:

- **Forum Network | No Trees, No Rain**
With climate scientists Anastassia Makarieva and Andrei Nefiodov (Petersburg Nuclear Physics Institute), botanist Jan Pokorny (co-author of the New Water Paradigm), and moderated by Jon Schull of the EcoRestoration Alliance.
<https://forum-network.org/lectures/no-trees-no-rain/>
- **Forum Network | Introducing the EcoRestoration Alliance**
With Ilse Köhler-Rollefson (co-founder of the League for Pastoral Peoples and Endogenous Livestock Development, Valer Clark (founder of Cuenca de los Ojos), John Dennis Liu (founder of Ecosystem Restoration Camps), and Jon Schull (ERA co-founder).
The EcoRestoration Alliance grew out of the work of Biodiversity for a Livable Climate. The Alliance is a rapidly growing global collaboration of scientists, thought leaders, conservationists, on-the-ground restoration practitioners and storytellers whose work challenges the prevailing view that reducing fossil fuel use at this late date can still result in the global cooling that we need.
<https://forum-network.org/lectures/introducing-ecorestoration-alliance/>

Bio4Climate’s “Life Saves the Planet” blog

<https://bio4climate.org/bio4climate-blog/>

How Life Saves the Planet // Biology Created the Earth - Biodiversity for a Livable Climate
<https://bio4climate.org/how-life-saves-the-earth/>

What Drives the Greenhouse Effect - Biodiversity for a Livable Climate
<https://bio4climate.org/2023/06/13/what-drives-the-greenhouse-effect/>

Hydrate: the role of water - Biodiversity for a Livable Climate
<https://bio4climate.org/hydrate-the-role-of-water/>

Forum Network | Introducing the EcoRestoration Alliance
with Ilse Köhler-Rollefson, Valer Clark, John Dennis Liu, and Jon Schull
<https://forum-network.org/lectures/introducing-ecore Restoration-alliance/>

Bio4Climate's *Compendium of Scientific and Practical Findings Supporting Eco-Restoration to Address Global Warming* ("The Compendium") contains a number of references about the role of plants in cooling. See <https://bio4climate.org/?s=cooling&compendium-only=on>

Hart Hagan's Water & Climate Facebook page
<https://www.facebook.com/groups/2879317608977919/>

Alpha Lo's Facebook page
<https://www.facebook.com/al.phalo.75>

EcoRestoration Alliance Facebook page
<https://www.facebook.com/groups/1156952835080122>

Managing for Rainfall (an explainer created by Hart Hagan, Dec. 14, 2022)
https://www.youtube.com/watch?v=zw0js_6V4jl

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