



August-September 2021 Newsletter

Dear Friend,

Autumn is upon us, and with it comes a gust of change. Where I currently live in Western Massachusetts, the whispers of change begin slowly with acorns dropping and the lush green leaves taking on a subtle yellow hue. Then it seems I wake up one morning and the visible world around me has changed completely, as if Mother Nature waved a magic wand overnight to reveal a new landscape filled with wonder. The trees boast vibrant colors of red, orange, yellow, purple, and green, and the whispers of the wind sing the song of change. The crunch of dried brown leaves under my shoes reminds me that it is time to slow down, reflect, and shed anything that no longer serves to make way for the new.



Photo by Jonathan Kemper

I began my journey at Bio4Climate this past May as their Social Media, Writing, and Online Outreach intern. I was immediately drawn to how the community of people here at Bio4Climate welcomes new ideas with open arms. Like the trees outside my window in autumn, I've observed that the Bio4Climate community makes a point of being receptive to new information and ideas.

Sometimes methods that worked well in the past no longer serve in the present moment and we retire them, like the autumn leaves detaching from tree branches, to make room for a budding new idea. We encourage one another to think outside the box of the mainstream climate conversation and look towards a new paradigm of ecosystem restoration and regeneration, all in the name of fostering a healthier, more just, livable Earth.

I am tremendously excited to be your new newsletter editor, and I have made it my mission to tap into this example of discovery and progress towards new ideas as I curate this bi-monthly piece for you to peruse and enjoy. In the spirit of the autumn season, whether you have been with Bio4Climate from the beginning or you are new to our beautiful forest, I invite you to read this newsletter as we all challenge one another to think beyond what we already know. One thing I have learned during my few months at Bio4Climate is that, even when we know a lot about a subject, it can be grounding to return to our roots and look at the world as if it was brand new, a blank canvas awaiting the paintbrush of new ideas and perspectives.

Into the woods of possibility,

A handwritten signature in cursive script that reads "Abby". The signature is written in black ink and is positioned centrally below the text "Into the woods of possibility,".

Abby Abrahamson
College Outreach Coordinator & Newsletter Editor

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Upcoming Events:

- October 6: Jim Laurie's [Bio #5 Course](#) Launches
- October 14: Fred Jennings' [Introduction to Ecological Economics](#) Course Begins
- October 18: GBH Forum Network Talk with Felicia Keesing on How Biodiversity Loss Fuels Pandemics (Registration link will be available soon on our website home page.)

[Cool The Earth: Green The Planet Fundraising Campaign](#)

Do you feel it getting hot in here?

Planet Earth is warming rapidly, and we know how to cool her down through ecosystem restoration and regeneration methods, but need your help so we can continue spreading the word.

This Fall, we are running our Cool the Earth: Green the Planet campaign to sponsor our upcoming courses, conferences, speaker series, and other education, advocacy, and rewilding work - including the expansion of Miyawaki forests. **Thanks to a generous matching grant, all one-time donations will be doubled, and monthly donations will be tripled!**

[Click Here To Donate](#)

The July 2021 Compendium Is Now Available



Good news! The July 2021 edition of our [Compendium of Scientific and Practical Findings Supporting Eco-Restoration to Address Global Warming](#) has been released. Our summaries of scientific articles in the Compendium will help you learn the facts about climate without having to read countless research studies cover to cover. (Unless you want to - we include the links and citations!)

In this ninth edition of the Compendium, we focused on the ecological roles of native plants. We also included discussions of

symbiosis, biophilia, and an Okanagan worldview of society. Keep scrolling to read a featured article from the Compendium in this newsletter, and click here to explore the publication: [July 2021 Compendium](#).

Nature's Solutions as National Policy: How Animals Shape Ecosystems

On September 18, Carl Safina, Fred Provenza, and Tania Roa joined us for Bio4Climate's second mini-conference of 2021 on implementing nature's solutions in climate policy. Watch the recording here:



How Biodiversity Loss Fuels Pandemics With Bard College Biology Professor Felicia Keesing

We are excited to introduce Felicia Keesing as the next speaker in our *Life Saves the Planet* lecture series through the GBH Forum Network on October 18 at 6pm ET!

COVID-19 is one of hundreds of infectious diseases that have emerged among humans in the past 75 years. Many of these diseases have something in common: they are "zoonotic," caused by pathogens that can be shared between humans and other vertebrate animals. But does this mean that animals are dangerous to us? Do areas rich in wildlife diversity serve as hotspots for disease emergence, and if so, what should we do about it? Keesing will describe what we know about the sources of new human diseases, and the surprising role of biodiversity loss in fueling new outbreaks.

For more information on Dr. Keesing click [here](#).

To read a recent article about Dr. Keesing's research, click [here](#).



Announcing the Bio4Climate Fall 2021 Course Offerings

Biodiversity for a Livable Climate is thrilled to introduce two new courses in Fall 2021!

[Biodiversity V: Maximizing Photosynthesis in Forests, Grasslands & Oceans: Cooling the Climate by Mastering the Carbon Cycle with Jim Laurie](#)



Photo by Karl Anderson

In this fifth course in the Biodiversity and Symbiosis series, Jim Laurie and the team of budding planetary restorers will take on the challenge of maximizing photosynthesis in forests, grasslands, and oceans. We will explore how this powerful process can rebalance the carbon cycle and work to cool the climate. This course begins on October 6, 2021 and will run for twelve consecutive Wednesdays, with a choice of afternoon (Noon-2 pm EST) or evening classes (7-9 pm EST). You are welcome to join at any time during the course. Jim will send class notes and home study opportunities every week.

[Introduction to Ecological Economics with Fred Jennings](#)

ECOLOGICAL ECONOMICS

presented by Fred Jennings

***A COURSE HOSTED BY
BIODIVERSITY FOR A LIVABLE CLIMATE***

October 4th to December 12th, 2021

This course will begin on Thursday, October 14, 2021 and run for eight weekly classes on Thursdays (skipping Thanksgiving) until December 9. There will be two sessions each week, from 12 – 2 pm ET and 7 – 9 pm ET for students to join. A full set of course materials will be provided to all who enroll. Fred Jennings, our Ecological Economist, will lead students in exploring the ecological foundations for economics and the economic mechanisms that can support healthy ecological function.

Wild Donkeys in Western Australia Improve Degraded Landscape

In a region of northwest Australia called the Kimberley, a wild donkey herd lives on a holistically managed landscape called [Kachana Station](#). The station's owners have conducted research that demonstrated how the wild donkeys have improved the health of the land in the past 20 years. Where the donkeys graze, the soil has improved, plants have returned, and wildfires are less intense and less frequent. [A major study documented that wild donkeys dig wells, which provide water to many wild animals such as marsupials, birds, and predators, and create nurseries for plants.](#)



Image: Wild donkeys, mares and their foals, on Kachana Station (by Arian Wallach)

Unfortunately, the Western Australian government is demanding that the owners of Kachana Station shoot the donkeys in their care, or risk facing major fines. Donkeys are not native to Australia, so the government sees them as nothing but 'pests.' However, it is clear that other wildlife, including native species and plants, benefit from the donkey's presence.

Bio4Climate has been working with people in Australia to spread awareness about Kachana Station's valuable ecosystem restoration research. Through interviews and a [petition](#), we are garnering international attention and will use this momentum to urge the Western Australian government to reconsider its demands. If Kachana Station is to continue its valuable holistic management, the wild donkeys must be kept alive.

Featured Video: *Dr. Arian Wallach: Wildlife Conservation and Wild Donkeys*



In this interview hosted by our very own Social Media Coordinator, Tania Roa, Dr. Arian Wallach discusses the importance of the wild donkey herd living in Kachana Station, a holistically managed landscape in northwestern Australia in a region called the Kimberley. Dr. Wallach discusses the importance of treating all living beings as sentient beings, and uses the wild donkeys as an example of the many benefits such creatures bring to Earth's ecosystems.

Featured Article: *Community gardening helps queer Ugandans heal from trauma*

By Caleb Okereke, Deutsche Welle News



Photo Credit: Tony BlackWolf

With the onset of the COVID-19 pandemic, communities around the globe were faced with the daunting task of adapting to a new way of life. Some found this challenge especially difficult. For people living in Kampala, Uganda, the nation's lockdown response to the pandemic led to significant food insecurity, particularly among members of the queer community who weren't able to rely on family members or the larger community for support due to discrimination over their LGBTQ+ identity.

The region has a history of violence and discrimination against the queer community that didn't stop for a pandemic: people who identified or were suspected of being queer faced police raids and arrests. To help solve this problem, a paralegal named Shawn Mugisha who also identifies as transgender founded FAMACE (Farming, Art, Mental Health Advocacy, Collaboration, and Ethical human-centered design). According to writer Okereke, "Its goal is to use sustainable agriculture to boost the resilience of Uganda's queer community and help victims of [abuse and discrimination](#) to help themselves." The program invites members of the queer community to participate in sustainable farming activities that have provided people with nutritious food during the pandemic-driven food scarcity, and changed lives for the better. **Read the full article [here](#).**

Compendium Notes

Below is a passage from our latest version of the [Compendium of Scientific and Practical Findings Supporting Eco-Restoration to Address Global Warming](#). This article is from our [ninth issue](#), Volume 5 Number 1, (pp. 18-19), published July 2021.

Interactions among plants and evolution, Thorpe et al. 2011

This review explores the question of whether interactions between plants drive evolutionary changes. "If such evolution is common, plant communities are not random assemblages of species." The topic is under-studied compared to interactions between plants and other living things.

Research on plant-consumer, plant-pollinator and plant-disperser interactions has been central to understanding the complex mutualistic and co-dependent interactions among species that structure communities. However, with some notable exceptions, interactions among plants have not been emphasized as processes that contribute to selection and evolution [Thorpe 2011: 730].

"The simplest interactions among plants are direct interactions, such as facilitation, resource competition and allelopathy" [Thorpe 2011: 731]. Facilitation occurs when one plant protects an adjacent plant, for example by providing shade from drought and heat, or offering protection from browsing by being thorny or toxic to herbivores or surrounding the facilitated plant. Allelopathy refers to

plants' release of toxic substances that suppress the growth of another organism, including other plants. In natural communities, any given plant may be interacting with several different plants at the same time.

Competition for sunlight, water, and nutrients drives niche differentiation in which species carve out particular spaces or timing within an ecosystem to obtain a share of limited resources. "The exceptionally rich body of ecological literature on the niche is based in part on the idea that competition can drive the evolution of niche differentiation, thus allowing species to coexist" [Thorpe 2011: 732].

Thorpe et al. refer to an example from a 1976 article by Parrish & Bazzaz, who "found that resource partitioning, as estimated from spatial overlap among root systems, was higher in stable prairie communities with a long community history than in early successional old-field communities composed of species without a common history" [Thorpe 2011: 731]. In other words, plants with a long history of coexistence will more efficiently divvy up resources than species lacking a common community history.

The primary hypothesis for positive diversity-ecosystem function relationships has been niche 'complementarity', the idea that different species or functional groups occupy niches different enough from each other to more fully utilize resources or space, increasing and stabilizing productivity, and making it more difficult for other species to enter the community [Thorpe 2011: 733].

The authors are somewhat inconclusive, however, about what drives niche complementarity (resource partitioning).

We do not yet know whether complementarity is produced by interactions causing evolutionary shifts in niche space (and thus coexistence and more complete resource use) or by sorting of the existing species pool [Thorpe 2011: 733].

Plants can also adapt to one another's allelopathic substances over time, a fact that contributes to the argument that plant-plant interactions produce evolutionary changes. "Recent experiments raise the possibility that some invaders may exude allelochemicals that are relatively ineffective against neighbors in natural communities, but highly inhibitory to plants in invaded communities" [Thorpe 2011: 734].

Reference:

Thorpe, Andrea S., Erik T. Aschehoug, Daniel Z. Atwater & Ragan M. Callaway, 2011, Interactions among plants and evolution, *Journal of Ecology* 99, <https://doi.org/10.1111/j.1365-2745.2011.01802.x>

Last But Not Least. . .

You're a valuable part of your community, ecosystem, and planet, and we're so thankful for you. Would you share the love and join our Eco-Restoration Team of Monthly supporters?

For the duration of our [Cool the Earth: Green the Planet](#) fundraiser, all one-time donations will be doubled and monthly donations will be tripled.

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All contributions help in our vital work to build a livable climate that sustains into the future. Many thanks!

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