



Biodiversity for a Livable Climate

Restoring Ecosystems to Reverse Global Warming

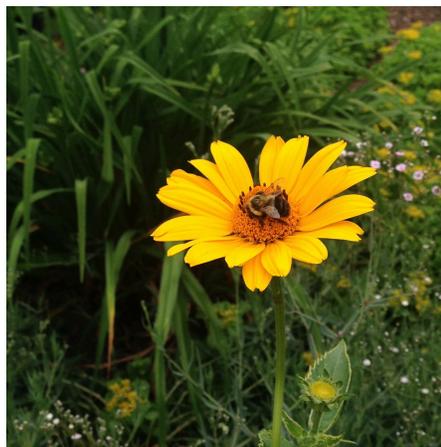
June-July 2022 Newsletter

Dear Friend,

What role does music play in your life? Are there times when you tend to listen to it more than others?

I've been reflecting on these questions quite a bit lately. I grew up in a musical family and witnessed from a very young age the power that music holds. Just like nature, music has the power to heal souls, build community, and energize hearts.

When I was in high school, my house was destroyed by ice dams during a particularly intense winter season. The thick ice and heavy snow compromised everything from the roof to the foundation of the home I had known since early childhood. After an emergency move, we stayed in a hotel and then in a trailer on our property until the house was restored back to a stable state a year later. Meanwhile, my family experienced several other major setbacks, from job loss to health challenges. I felt angry and stuck in place, constantly gasping for a breath of hope.



Once the trailer home arrived on our property, I found myself spending every afternoon outside soaking up the comfort of the woods I had grown up in, until deep into the evening. I fell in love with one particular album - Paul Simon's *Graceland* - and I played it over and over again until my phone's battery ran low. As I sat by the edge of the woods each night, I pondered what I could actually do to create positive change. I was upset about what was happening in my personal life, but I was also distressed about larger issues around me, from species extinction to global warming to fracking. I couldn't fix the house by

myself, but I was determined to find a way to take action for the environment. As I made a promise to the Earth that I would do everything I could to protect her, the beat of the music felt like a heartbeat for my activism, providing an endless flow of hope and motivation.

Since then, I've collected songs that have been key to keeping me going through both tough and joyful moments in my environmental activism. Now, every morning when I open up my laptop and begin my day's work advocating for climate change solutions with Bio4Climate, I turn on those songs and feel the power of the music driving me to do my best, most impactful work. For me, music accompanies action. It inspires and fuels me to keep going. It renews my hope and eases my anxiety.

During this particularly turbulent month of both promising and devastating news for people, animals, and the environment, I invite you to join me in leaning on the power of music to help us push on through.

If you'd like to listen in too, I invite you to sample my favorite nature-inspired songs, in the public playlist I created for you to enjoy. Here are the links , available on Spotify and YouTube:

[Spotify: Bio4Climate Nature Inspiration Playlist](#)

[YouTube: Bio4Climate Nature Inspiration Playlist](#)

With love and solidarity,
Abby



Abby Abrahamson
Community Engagement Coordinator

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GBH Forum Network Talk: [Drying Rivers and Drought: What we Can do in Massachusetts](#)

Tuesday, July 12 at 12pm ET

Drying Rivers and Drought: What We Can Do in Massachusetts

Zoom | Tuesday, July 12 | Noon ET



Beth Lambert

Director,
MA Division of Ecological Restoration



Danielle Dolan

Deputy Director,
Mass Rivers Alliance



Michal Kravčik

Author, *New Water Paradigm*
Founder, People and Water

hosted by Biodiversity for a Livable Climate and GBH Forum Network

Drought warnings in Massachusetts are a stark reminder that we are part of a global climate system where warming trends are accelerating. What can we learn by applying a global lens to our local and regional mitigation efforts?

Danielle Dolan, Deputy Director of the Mass Rivers Alliance, and Beth Lambert, Director of the Massachusetts Division of Ecological Restoration, will join Slovakian hydrologist and Goldman Environmental Prize winner Michal Kravčik in conversations about our connection to the global water crisis. Dr. Kravčik will introduce the new water paradigm, which explains the role of small water cycles and the importance of restoring them in urban, agricultural, and forest settings to prevent drought and floods, and to cool the planet.

The talk will be recorded and made available online through GBH Forum Network. [Register for free here.](#)

Bio4Climate Summer 2022 Course Offering

Systems Thinking & Scenarios - Tools for Creating Better Ecological Futures

Wednesdays, June 22 – September 7

12pm ET & 2pm ET



Biodiversity 6 is a 12-week course that began on Wednesday June 22nd. **All are welcome to register, even after the course has started!** Jim will teach two Zoom classes each Wednesday until early September: 12 noon to 2pm and 7pm to 9pm, both US Eastern time. You can attend either time, and the only prerequisite is curiosity!

Systems thinking is a way of zooming out and looking at the Big Picture. Writing scenarios is another tool used by planners, strategists, and futurists. Every extinction episode in Earth's evolutionary history has, in time, led to an emergence of greater biodiversity. Often the time scale is millions of years. With the vast new knowledge that is now available to us, could humans be a global force for the reemergence of healthy ecosystems on a much faster timeline - in centuries? Or decades? Let's find out.

To learn more about this course and to register, [click here](#).

Video: Rewilding our Planet Using the Miyawaki Method with Hannah Lewis & Maya Dutta

This June, our Compendium Editor and new author Hannah Lewis visited the Cambridge Public Library to discuss her recent book, *Mini-Forest Revolution: Using the Miyawaki Method to Rapidly Rewild the World*. Hannah was joined in conversation with Maya Dutta, project manager for the Danehy Park Miyawaki Forest planted in North Cambridge in September 2021. Together, they discussed the Miyawaki Method and the opportunities to use it to build cooler, greener, more resilient communities in Cambridge and beyond.

Click here to watch the event recording:



In the book, Lewis explains how tiny forests as small as six parking spaces grow quickly and are designed to be much more biodiverse than those planted by conventional methods. She explores the science that explains why Miyawaki-style mini-forests work, and shares their myriad environmental benefits: they help cool urban heat islands, establish wildlife corridors, build soil health, sequester carbon, create pollinator habitats, and more. [Click here to order your copy!](#)

Eco Restoration Stories Currently Inspiring Us

We believe it is important to amplify the enormous positive work people are doing in the world of eco restoration, and to pay tribute to those people already actively regenerating the lands around them. Check out this inspiring video by Andrew Millison featuring 5 impactful and successful ecological restoration stories:



New On The Bio4Climate Blog: [Using the Miyawaki Method to Rapidly Rewild our Communities](#)

Lately, you've heard a lot about Miyawaki forests, but do you still find yourself wondering what they are and where they come from? No worries - we've got you covered! Our Compendium Editor (and new author!) Hannah Lewis wrote a blog post on our website describing the Miyawaki method, how it works, and where it originates. Our Digital Communications Manager Tania Roa follows up the second part of the post with a beautiful review of Hannah's new book, *Mini-Forest Revolution*. Here's a small excerpt from her review:

For me, the most important aspect of the Miyawaki Method is the community-led mindset. Planting Miyawaki forests is not meant to be done by one person. This model is designed to incorporate as many people in the vicinity as possible. It's meant to be shared, and with that the benefits of the forest are replicated. By involving local communities, you inevitably spread the message of nature's climate solutions, the benefits of biodiversity, and the fact that humans are inextricably linked to other species.

You won't want to miss this post - [click here](#) to read more.

Staff Spotlight: Jed Katch

Here at Bio4Climate, our team is an intergenerational group of people with diverse backgrounds, stories, and perspectives. Each person brings a unique approach to the table, and we like to honor and highlight the value that their individuality brings to our work. In this month's staff spotlight, I am delighted to introduce you to our Director of Education, Jed Katch.



I knew I liked Jed from the moment I met him last summer, when I joined Bio4Climate as an intern. His voice is gentle yet strong, and he has a clear passion for bringing young people the best environmental education possible. A mark of a great educator, Jed maintains an open mind and is always willing to meet people wherever they are, to learn from them and collaborate with them, in our staff meetings and beyond! I consider it a great honor to work on a team with Jed in creating our youth outreach programming, and I was thrilled to meet with him on Zoom last week to talk about his passion for education, reasons for hope, and work with Bio4Climate.

When we met on Zoom, I had one question I was particularly eager to ask Jed: “Where did your interest in the environment begin?”

“I’ve always been interested in nature, but never had any formal training in natural sciences,” he replied. “However, the first Earth Day event in 1970 planted a seed of interest in protecting the environment for me.”

As an educator, his primary interest had always been related to teaching kids about historical issues and how we treat each other as *Homo sapiens*, but this started to grow into a related passion for teaching kids about how we treat nature. “My sense is that we really need to change our lifestyles and ways of thinking about the world we inhabit if we want a decent shot at keeping it,” Jed said.

When his college classmate and longtime friend (and our Executive Director), Adam Sacks, approached him about working to establish a youth education program at Bio4Climate, Jed began to see a clearer path towards getting involved with the climate movement.

Currently, Jed is working with the Polly Hill Arboretum on Martha’s Vineyard in Massachusetts to introduce children to the power of mycorrhizal fungi and their participation in the “wood wide web” as a network communication system. He is particularly interested in the work of forest scientist [Suzanne Simard](#) and hopes to share her discoveries with the children he works with. Jed is also a member of Bio4Climate’s Educational Task Force, where he is currently outlining a course he intends to offer next spring.

“It feels good to me to see people responding in ways that are healthy, positive, and caring. The extent to which I can support that - being able to work on a curriculum that will advocate for that in terms of people and nature - feels good to me,” Jed added.

We wrapped up our conversation on the topic of hope. Jed shared his reasons why we should maintain hope for the future of climate change. “There is a resiliency about nature. If we can have more respect for it and really change the way we function with it, then nature will rebound. That makes it possible to have a livable climate for future generations, which includes my grandkids and so many others.”

Want to learn more about the staff at Bio4Climate? [Click here!](#)

Compendium Notes

Below is a passage from our [Compendium of Scientific and Practical Findings Supporting Eco-Restoration to Address Global Warming](#). This article is from our [tenth issue](#), Volume 5 Number 2, (p. 21), published January 2022.

***Can large carnivores change streams via a trophic cascade?
Beschta & Ripple, 2020***

Wolves were wiped out of Yellowstone National Park by the 1920s, but reintroduced there in 1995-1996. This study assessed how important large carnivores are to wild ungulates' behavior and density, with secondary effects on plant communities, rivers and channels, and beaver communities. Focusing on the West and East Forks of Blacktail Deer Creek, the authors summarized the population trends of wolves, elk, and beaver; they also sampled the heights, recruitment, and browsing intensity of Geyer willow (a common local tall willow), measured dimensions of the channel, and ascertained beaver dam heights.

After wolves were reintroduced, the Rocky Mountain elk population decreased from 17,000 in 1994 to about 4,000 to 5,000 in recent years. As a result, their browsing intensity dropped enormously, which let the riparian willows grow taller; they are an important food web support and physical habitat for both terrestrial and aquatic wildlife species. The willow canopy cover over the water surface has also increased rapidly over the last two decades, and it plays a significant role in supporting the aquatic biota:

Canopy cover can reduce the amount of solar radiation reaching a stream, especially important during summertime periods when solar angles are high, day lengths are long, and flows are normally low, thereby mediating potential increases in water temperature. Furthermore, invertebrates in the canopies of near-channel willows provide food for fish and seasonal leaf-fall represents an important carbon base for aquatic invertebrates which, in turn, provide 'reciprocal flows of invertebrate prey' to adjacent terrestrial consumers [Beschta & Ripple 2020: 8].

Another benefit of protecting the riparian vegetation from herbivores is that stream banks become more stable. During the period without wolves, the elk ate far more of the stream-edge plants; as a result, the stream banks eroded and the rivers cut channels downward into their beds, deepening the active channels and possibly dissecting the landscape. This combination of eroding banks and channel incision led to the rivers overflowing their banks less often. . The channel incision lowered the water tables and reduced the amount of subsurface moisture in the flood plain vegetation during summer.

The return of wolves started the process of restoring the riparian vegetation, which in turn supported stream-dependent species such as beavers. With elks eating less of the vegetation, beavers had more food sources and materials to construct dams; gradually, the rivers regained their narrower and shallower channels that beavers prefer. Thus, along with the recovery of vegetation and channels, beavers returned in 2018, creating active dams to further rehabilitate the ecosystem.

If beaver populations continue to increase over time, the ecological effects of these 'ecosystem engineers' may well have a significant role in restoring riparian vegetation, floodplains, and channel dimensions for at least portions of northern range streams [Beschta & Ripple 2020: 9].

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?

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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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