



March 2019 Newsletter

Greetings!

On March 15 youth from all over the world spoke for the planet they want to live on. From Berlin to Kampala, the urgency of a more healthy, sustainable and livable earth was clear in their call for the future.

Greetings! we are witnessing a time when children, young enough to be in preschool, are waking up to the realities of a frightening and uncertain future. The good news is that **they are taking an active role in fighting for a world they want to grow up in.**



This isn't the first time in history that young people have gone on strike for issues that deeply affected them. Susan Campbell Bartoletti's [Kids on Strike!](#) has wonderful examples of such action in the labor movement of the 19th century. It is a testament to the indomitable power of youth when it comes to inspiring the courage to change in all of us.

And our team was truly inspired by the incredible energy at the Boston [Youth Climate Strike](#) on March 15!

Earlier this month the United Nations declared [2021-2030 to be the Decade of Ecosystem Restoration](#). This is an important step in scaling up efforts to restore degraded ecosystems as essential in providing food and water security, as well as in enhancing biodiversity. *Bringing back the natural functioning of these ecosystems can help us all move towards a livable climate.*



Youth gather outside the State House in Boston, MA. March 15, 2019. Photo credit: Adam Sacks

Well, as a 24-year-old, I'm certainly here for that, as are millions around the world!

There's much to look forward to if we get to work now....



Manjulika Das, Project Manager

□ Read on to Discover . . .

- *Coastal Wetlands and Carbon Sequestration
 - *The Ecological Success following Maine's Dam Removal
 - *Jim Laurie - Biologist and Future Thinker
 - *Victor Wallis and the Red-Green Revolution - *this Sunday!*
 - *Music, Sound and Nature discussion at the New England Conservatory
 - *Tar Sands Songbook Benefit Concert
 - *Sponge Cities in China
-

The Wetland Miracle

Wetlands perform a variety of important ecosystem functions. They reduce the impacts of storms and floodwater, recharge groundwater supplies, absorb pollutants and improve water quality, and support an abundant diversity of wildlife. A recent study shows that coastal wetlands are of great benefit to coastal cities that are facing the imminent threat of sea-level rise.



A new study, published in the journal *Nature* on March 7, 2019, looked at how coastal wetlands worldwide react to rising sea levels. **The study found that when faced with rising sea-levels, coastal wetlands actually store carbon more effectively than forests do.** "They may be the sleeping giants of global carbon sequestration", says lead author Kerrylee Rogers from the University of Wollongong in Australia. "Preservation of coastal wetlands is critical if they are to play a role in sequestering carbon and mitigating climate change". How does the carbon sequestration potential of these wetlands increase as sea levels rise? [Read the article to find out more.](#)

The Removal of the First Dam in American History and

the Ecological Success that Followed in Maine



The Edwards Dam, built in 1837 on the Kennebec River in Maine, was the first functioning hydroelectric dam to be removed in the history of the United States. Though building a dam was a concern for fisheries of the lower Kennebec River, the push for industrialism prevailed and the dam was built to power mills along the river.

One effect of the dam was visible almost immediately: it stopped the migration of several fish-species that used to swim more than 40 miles from the Atlantic Ocean to spawn in the Kennebec River and its tributaries. From a flourishing river hosting millions of fish such as alewife, shad, herring, Atlantic salmon, and striped bass, as well as otters, eagles and other animals that depended on these fish for food, it became a wastewater drainage system.

As fish production in the river declined, the river's condition only got worse in the 1900s when it became a dumping ground for toxic waste from paper mills and municipal sewage. Declining oxygen levels in the river resulted in massive fish die-offs. By the 1960s, the Kennebec had become so polluted that no one even thought to swim or fish in it anymore. But things changed with the passage of the national Clean Water Act in 1972.

Between 1972 and 1990, the state of Maine spent \$100 million on water-treatment facilities to clean up the river, resulting in widespread interest in river restoration and water quality. In the 80s, dam removal became a point of focus as environmental groups believed that this would be the best hope for a full-scale river restoration to take place. For social and political reasons, however, few believed that it would be possible to remove the dam.



The Kennebec Coalition, made up of several nonprofits - American Rivers, the Atlantic Salmon Federation, the Natural Resources Council of Maine, and Trout Unlimited and its Kennebec Valley chapter - made strong arguments for removing the Edwards Dam. Ultimately it prevailed: in 1997 the Federal Energy Regulatory Commission voted not to renew the dam's license, and the dam was removed in 1999.

The [removal of the Edwards dam](#) had a seismic impact on both the ecology of the river

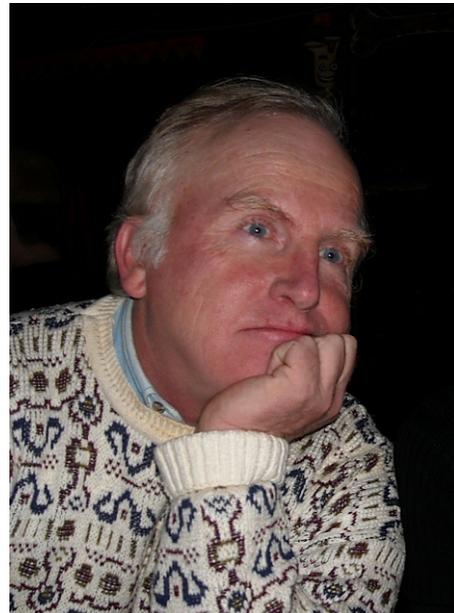
and the town's relationship with it. The river quality immediately improved and the fish returned. In particular, once the alewives returned, they were followed by the otters, bears, mink, bald eagles, osprey and blue herons. The return of insects like mayflies and stoneflies was a strong indicator that the river's water quality had improved, and the river gradually began to meet the higher water quality standards. Townspeople in Augusta benefited from the restored river as well, as a park and trails were built along the waterfront and people could now use the river for recreation.

But the effects of the dam didn't end there. People all over the country started to make similar efforts as they recognized the many advantages that dam removal could have in bringing back rivers and the economies of nearby towns. [Read more about this story and the different dam removals and restoration projects that have taken place since then.](#)

Staff Notes - Introducing . . .

. . . Jim Laurie - Biologist and Future Thinker

Jim Laurie is a restoration ecologist and co-founder of Biodiversity for a Livable Climate. After graduating from Rice University, he served as a Medical Service Corps Officer in the U.S. Army from 1972 to 1975. Jim then worked in the chemical industry in Houston, Texas until 1995 where he was a laboratory technical training supervisor.



In 1988, Jim first met John Todd, a biologist and pioneer in ecological design, at the New Alchemy Institute on Cape Cod. In 1992, he attended a two-week ecological design course given by John Todd near the Woods Hole Research Centers. When Jim witnessed the floating windmills that John had built to clean the waters in Flax Pond near Harwich, Massachusetts, he was inspired to start similar ecologically-driven experiments at the chemical plant in Houston. Learning from John and the evolutionary biologist, Lynn Margulis, Jim built small biodiverse ecosystems to clean toxic wastewater at the chemical plant in Texas. These natural systems broke down even recalcitrant compounds like ammonia, chloroform, and BPA to very low levels. The “shared wisdom” came from self-organizing ecologies of microbes linked with plants, and animals.

While in Texas, Jim also met Allan Savory, a biologist from Zimbabwe and New Mexico who was helping ranchers reverse desertification with his Holistic Management process. Jim spent many weekends driving to West Texas and New Mexico to learn more from ranchers who were practicing Holistic Management. Here he found that they were quadrupling grazing herd sizes while, at the same time, restoring grasslands to once barren landscapes.

In 1995, Jim moved to Vermont to manage the South Burlington “Living Machine.” John Todd had designed this project in a large greenhouse to treat 80,000 gallons of raw municipal sewage per day without the use of chemicals. Jim later headed for Maryland to build a lab and “clean room” to grow mushrooms. During this time, he studied the work of Paul Stamets, who had just written *Mycelium Running* (2005) stressing how critical mycorrhizal networks are for the health of forests and topsoil.

It was upon these foundations of ecological thinking and design that Biodiversity for a Livable Climate came into being five years ago. Climate change had become a major concern in



New England, but there was little understanding that global warming was a symptom of the loss of biodiversity. Jim has been determined to make ecological restoration of grasslands, wetlands, and forests a centerpiece for future planning. Keeping the ground covered on agricultural lands and creating "Living Shorelines" as sea level rises are also essential.

Jim with his homeschool students, 2014

In recent years, Jim has dedicated his efforts to teaching and spreading the message of restoration. He started homeschool classes in the summer of 2014 teaching AP Biology, AP Environmental Science and Restoration Ecology. Some of his students have spoken at four Bio4Climate conferences between 2015 and 2017. Jim speaks fondly of the "Symbiosis Team," as his homeschool students were called, and feels lucky for the people he's met and the experiences he has had along the way. He continues to teach, train, and inspire all ages in recognizing that biodiversity is the key to the human future, and that our species can only thrive if we rapidly shift to a symbiotic world view. We are not in competition with nature, but we are co-creators of what will follow.

Save The Date - Don't Miss These Events!

Music, Sound & Nature In an Age of Environmental Degradation



**Monday, March 25 2019 at 4:00pm
New England Conservatory, Pierce
Hall**

Presented by the 2050 Forum, the Intercultural Institute, and the Music History Department—a roundtable discussion with Jeff Todd Titon on the future of music & sound in the face of climate disruption.

What is the sound of climate change?

How does the musician's role change if human culture is viewed from within nature, not outside of it?

For more information about this event visit:
<https://necmusic.edu/events/music-sound-nature-age-environmental-degradation>

Victor Wallis on the Red-Green Revolution: The Politics and Technology of Ecosocialism

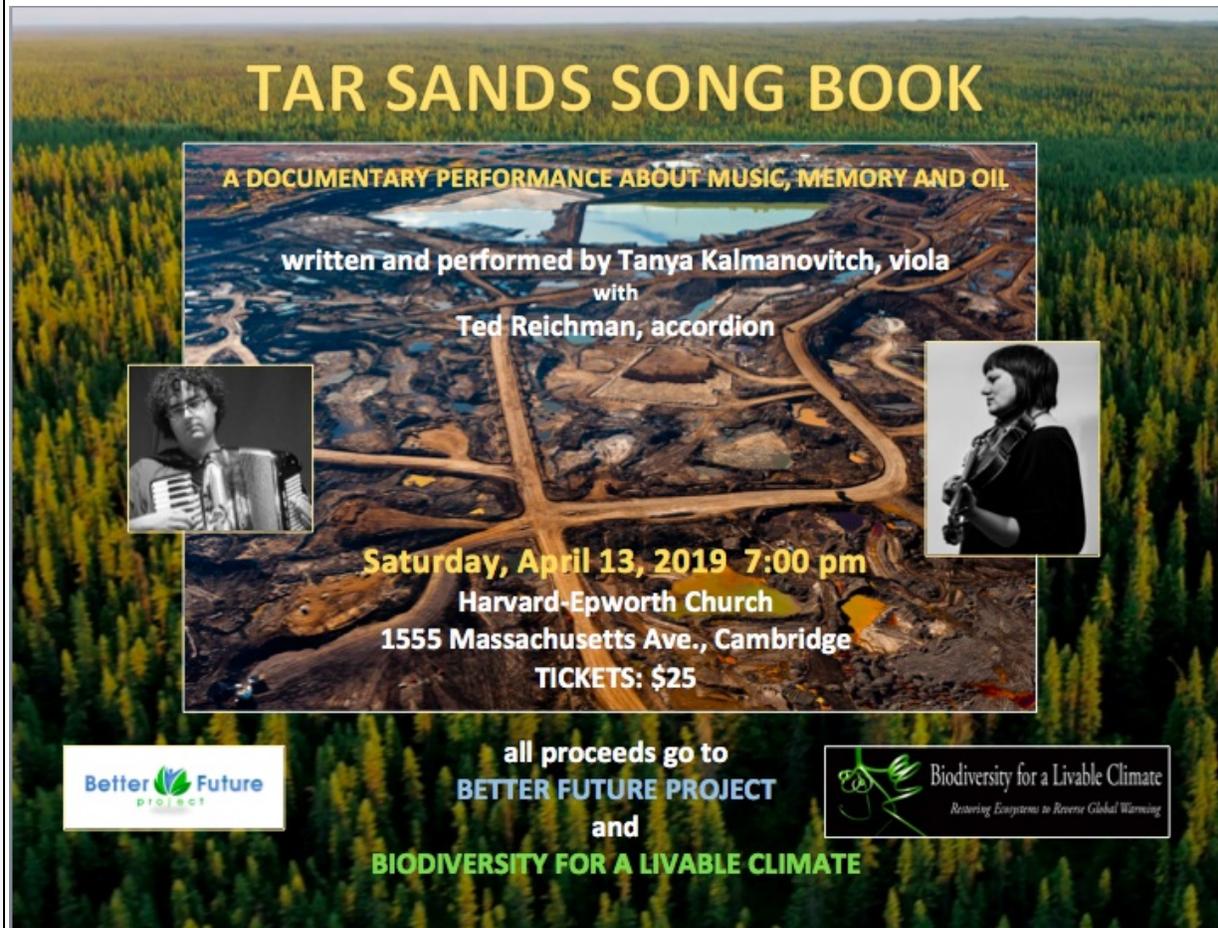
**A Meetup on Sunday, March 24, 2019
6-9 p.m., Cambridge, MA**

Victor Wallis teaches history and politics at the Berklee College of Music. He was for twenty years the editor of *Socialism and Democracy*. He is also the author of *Democracy Denied: Five Lectures on*

U.S. Politics (2019) and of many articles on ecological and political issues.

He is a frequent guest on broadcast and podcast talk shows, and has been invited to lecture in Brazil, China, and France.

For more details on the meetup and what Victor will be talking about [click here](#).



TAR SANDS SONG BOOK

A DOCUMENTARY PERFORMANCE ABOUT MUSIC, MEMORY AND OIL

written and performed by Tanya Kalmanovitch, viola
with
Ted Reichman, accordion

Saturday, April 13, 2019 7:00 pm
Harvard-Epworth Church
1555 Massachusetts Ave., Cambridge
TICKETS: \$25

all proceeds go to
BETTER FUTURE PROJECT
and
BIODIVERSITY FOR A LIVABLE CLIMATE



An illuminating work of documentary theater, [The Tar Sands Songbook](#) asks us to reconsider our unseen relationships with oil. Creator Tanya Kalmanovitch knows these relationships all too well. Born in Fort McMurray, Canada, near the site of the Athabasca Oil Sands, the world's largest bitumen reservoir, she made her decision to become a musician as a teenager because "it had nothing to do with oil."

[Tanya Kalmanovitch](#) is a Canadian violinist, ethnomusicologist and educator. Her career has become a broad platform for artistry and advocacy. Kalmanovitch's uncommonly diverse interests converge in the fields of improvisation, social entrepreneurship, and social action with projects that explore the provocative cultural geography of locations around the world.



Though she is based in Brooklyn, her layered artistic research practice has rewarded her with extended residencies in India, Ireland, Afghanistan, Turkey, and Siberia.

And . . .

Here's another excerpt from our [Compendium of Scientific and Practical Findings Supporting Eco-Restoration to Address Global Warming](#). The article below is from [our latest issue](#), January 2019, Vol. 2 No. 2 (pp. 16-17):

Sponge Cities, China

Severe flooding in many cities across China, such as a major 2012 Beijing flood, influenced the Chinese government to announce the Sponge Cities Initiative in 2014. After the national government identified 16 cities as pilot sites, they another 14 cities, including Beijing.

The sponge city concept represents a paradigm shift in flood management away from current systems with impervious surfaces and chutes that are meant to swiftly drain a city after a storm. By contrast, a sponge city aims to manage stormwaters by vastly increasing the amount of soft, permeable surfaces that can absorb water where it falls, filter it, and store it in vegetation, ponds and aquifers.

According to the “Guideline of Sponge City Construction”, the approach aims to increase the area of urban land able to absorb surface water discharges by approximately 20%, and to retain or reuse approximately 70% of urban stormwater by 2020; and further reuse up to 80% of stormwater by 2030s. This means that the ideology of the Sponge City concept is not only addressing urban flood risk, but also taking a proactive approach to collection, purification and reuse of urban stormwater in Chinese cities to address future climatic extremes (floods and droughts) [Chan 2018: 3-4].

The Lingang/Nanhui district of Shanghai is building streets with permeable pavement (which allows water to percolate into the ground), and planting rain gardens between lanes of traffic, as well as some 400,000 square meters of rooftop gardens. In another city Qunli, the 84-acre stormwater park consists of a wetland surrounded by newly constructed filtering ponds. These collect and filter the city’s stormwater runoff before slowly releasing it into the wetland, which in turn recharges groundwater. Earthen mounds are planted in cottonwood trees, and a system of elevated pathways through the park allows people to enjoy the space.

Inspiration for Qunli Stormwater Park and several other sponge city landscape design features comes from the ancient water management practices of Chinese peasants. According to landscape architect and sponge city advocate Yu Kongjian, peasants

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constructed simple terraces in combination with ponds to regulate flood and drought.

“On sloping ground in monsoon regions these water catchments are critical,” Yu explains in an essay explaining the sponge city concept [Yu 2017: 29]. "Ironically, these centuries-old productive landscapes have given way to urbanization. Fine terraces are leveled into ... planes called developable land; small ponds are drained and replaced with underground drainage systems; ponds and dikes give way to mechanical farming. The centuries-old ecosystem balance is broken, leading to flood, drought and habitat loss. Grey infrastructure haunts Chinese cities, while high maintenance landscapes with ornamental planting make broad scale landscape change unaffordable".

China's 'sponge cities' are turning streets green to combat flooding:

<https://www.theguardian.com/world/2017/dec/28/chinas-sponge-cities-are-turning-streets-green-to-combat-flooding>

“Sponge City” in China: a breakthrough of planning and flood risk management in the urban context, Land Use Policy:

<https://www.sciencedirect.com/science/article/abs/pii/S0264837717306130>

Sponge cities: rediscovering the wisdom of the peasant, Landscapes/Paysages Spring/Printemps 2017: <https://www.csla-aapc.ca/landscapes-paysages/back-issues>.

[Compendium downloads](#) are free!

Last but not least . . .

You're concerned about the current state of the Earth, and we are working for you, our young people, and the diverse web of life we all rely on.

Not to put too fine a point on it, we just want to say that we're a small non-profit doing **BIG** things.

Your support and involvement are very important! Please be sure to . . .



. . . and a monthly donation is **especially** appreciated . . .

Many thanks!

See what's happening on our social sites:

