Building Equity in Nature Based Solutions in MA Communities

EPA’s Soak Up The Rain Webinar
June 23, 2022
The Massachusetts Ecosystem Climate Adaptation Network is a community of practice for climate adaptation practitioners and researchers interested in ecosystem resilience and natural resource conservation in Massachusetts.

The goal of Mass ECAN is to build community, increase knowledge sharing, and foster collaboration among climate adaptation practitioners and researchers interested in ecosystem resilience and natural resources conservation across Massachusetts.

Mass ECAN’s “Mainstreaming Nature Based Solutions” workgroup works together collaborative efforts to identify and fill gaps in implementing nature based solutions across MA.

https://www.massecan.org/
Speakers

**Stefanie Covino** (she/her) manages the Blackstone Watershed Collaborative based at Clark University, which serves to improve climate resilience and watershed health in the bi-state watershed’s 39 communities. She has an MS in Environmental Science and Policy from Clark University and is a Keystone Cooperator and MVP Certified Provider. Her interests include land use planning, natural resource protection, ecological restoration, and equitable nature-based solutions to reduce climate hazards and improve community resilience. She can be reached at scovino@clarku.edu.

**Emma Gildesgame** (she/her) is the Climate Adaptation Scientist for the Massachusetts chapter of TNC, where she works with communities and partners to co-develop and implement equitable nature-based solutions that provide multiple benefits to nature and people at a pace that matches the urgency of climate change. Previously, she has worked on water quality planning and restoration, wetland restoration, and climate communication, and environmental science education. She has a Masters of Environmental Management from the Yale School of the Environment. She can be reached at emma.gildesgame@tnc.org.
Hillary B. King (she/her) – Central MA Regional Coordinator, MA EOEEA Municipal Vulnerability Preparedness Program // Bio: One of six Regional Coordinators who administer and provide technical assistance on MVP Grants, Hillary has a particular interest in researching nature-based solutions and sharing best practices to inspire the work of others. With a foundation in landscape architecture and planning, experience working with engineers and regulators on public infrastructure projects, and now working for the Commonwealth - Hillary’s work strives to assist communities to equitably plan for and achieve a more resilient future in our changing climate. Reach out at hillary.king@mass.gov or 617-655-3913.

Gretchen Rabinkin - Executive Director, Boston Society of Landscape Architects // Bio: Gretchen Rabinkin AIA, Affiliate ASLA is executive director of the Boston Society of Landscape Architects (BSLA) – the Massachusetts and Maine chapter of the American Society of Landscape Architects. The BSLA serves to connect, convene, and celebrate landscape architecture professionals and support the creation of resilient, equitable, and beautiful environments from the Berkshires to Bangor to Boston. A licensed architect and longtime educator, she has long worked at the intersection of students, organizations, and community groups to improve the public spaces of everyday experience. Reach out at gretchen@bslanow.org or 617-686-4362.

Perri Sheinbaum (she/her) - Tufts Urban and Environmental Policy & Planning Program // Bio: Perri Sheinbaum is a recent graduate of Tufts University’s Urban and Environmental Policy and Planning program, where she focused on climate justice and transportation planning. Her graduate thesis focused on highlighting case studies in Massachusetts that centered equity and justice Nature-Based Solutions. perri.sheinbaum@tufts.edu
Nature Based Solutions
Framework to discuss NBS in Massachusetts

Projects that restore, protect, and/or manage natural systems and/or mimic natural processes to address hazards like flooding, erosion, drought, and heat islands in ways that are cost-effective, low maintenance, and multi-beneficial for public health, safety, and well-being.
Mainstreaming Nature-Based Solutions (NBS) Expert Work Group

- Define NBS for work group communications
- Identify and remove barriers to widespread adoption
- Provide resources for municipalities, practitioners, other stakeholders
MassECAN NBS Resources

Massachusetts-based NBS Case Studies

Taking Cues from Nature to Adapt to Climate Change: A Communications Resource for Nature-based Solutions
Incorporating Equity
Incorporating Equity
Incorporating Equity?

Is ‘green gentrification’ driving displacement in East Boston? Researchers say yes, but locals push back

By Danny McDonald Globe Staff, Updated April 2, 2022, 4:01 p.m.

In Chelsea, cooling an urban heat island one block at a time

May 12, 2022 By Martha Bebinger

Members of the DCR's Urban and Community Forestry Program plant a cherry tree on Maverick Street in Chelsea, part of the “Chelsea Cool Block” project to help mitigate urban heat in the city. (Jesse Costa/WBUR)
Incorporating Equity

How are we incorporating equity in our work?

- Starting a conversation
- Defining equity in this project or process
- Educating ourselves on systemic racism
State & Municipal Scale: MVP Program
Climate resilience is the ability of a community to address the needs of its built, social, and natural environment to anticipate, cope with, and rebound stronger from events and trends related to climate change hazards.

Resilient communities don’t just recover—they continuously build capacity to reduce the impacts of future climate events.
Climate Resilience in Massachusetts

**MVP PROGRAM**
status as of 2/15/2022

**Planning Grants Process**
- 95% Participation
- 335 communities

**Action Grant Projects**
- FY 18: 37
- FY 19: 36
- FY 20: 52
- FY 21: 41
- FY 22: 66

**Total Awards:**
$65M+ to date

[https://resilientma.org/mvp](https://resilientma.org/mvp)
Core Principles for Climate Resilience

- Multiple benefits to a broad cross-section of the community
- Community outreach & engagement
- Address identified climate change impacts
- Proactive solutions supported by climate data
- Focus on Environmental Justice (EJ) Populations
- Project monitoring & maintenance for continued success
- Prioritize Nature-based Solutions
- Think outside the box (& borders)
- Knowledge Sharing (successes & failures)
Education and Outreach

Access MVP Toolkits
The MVP team created toolkits related to our core principles and other topics of interest that can be used when embarking on an MVP Planning Grant process and/or developing an Action Grant application. More toolkits are expected to be added in the future on other topics of interest.

- Nature-Based Solutions
- Environmental Justice & Equity
- Public Health & Healthcare
- Virtual & Remote Engagement

Recent Webinars and Trainings
- Municipal Vulnerability Preparedness Program
  MVP FY23 Pre-Request for Responses Webinar - March 2022 (slides here)
- Local and Regional Climate Adaptation Tools - January 2022 (slides here)
- Building Trust and Community Partnerships - January 2022 (slides here)

Older Webinars
- Community Engagement & Environmental Justice Webinar - January 2021
- Implementing Nature-Based Solutions Webinar Part 1 - January 2021
- Implementing Nature-Based Solutions Webinar Part 2 - February 2021
- Building Resilience Through Partnerships - February 2021
- MVP Planning Grant Municipal Training Webinar Recording - January 2020
Sharing Lessons Learned

Worcester Senior Center: Urban Rain Gardens At Work

Worcester FY20

AWARD $378,356

PROJECTTYPE Construction

CORE PRINCIPLES DEMONSTRATED

Employing Nature-Based Solutions
Pursuing innovative, transferable approaches

DESCRIPTION To address flooding and extreme heat hazards in a dense, largely impervious area of the city, Worcester incorporated nature-based solutions during a parking lot redesign of the Worcester Senior Center. Because the site was nearly 100% impervious with no stormwater management system, a hybrid approach was utilized— with a rain garden and bioswales installed to treat most of the light and moderate rain runoff, and an underground stormwater treatment system treating runoff from more intense rain events.

https://www.mass.gov/info-details/municipal-vulnerability-preparedness-program-action-grant-projects

Nashua River project open house https://climateresilient.wixsite.com/nashuariver

Education on the Coonamessett River https://www.crivertonrust.org/education-programs
Watershed Scale: Blackstone Watershed Collaborative
Blackstone Watershed

- 48 miles long
  - Drops 438’
- 475 square miles
  - 39 communities
  - 2 states
Indigenous Land

- Nipmuc Nation
- Pokanoket Nation
- Mashpee Wampanoag Tribe
- Narragansett Indian Tribe

Needs Assessment Report Figure 6: Regional Indigenous Lands (Native Land Digital 2021)

Centuries of careful land stewardship with close ties to the river
Industrial revolution & transformation

“America’s hardest working river”
“America’s most polluted river”

Slater Mill, America’s first water-powered cotton-spinning mill in Pawtucket, RI (c.1790)

A portion of the Blackstone Canal – created from and near the River to transport goods through 49 locks
While the water has gotten **cleaner**
...current challenges are growing

Water quality

Impervious surfaces
climate change exacerbates impacts

- increased temperature
- extreme precipitation
- increased drought
- nutrients
- flashy systems & flooding
- warmer waters
- impervious surfaces
- drinking water shortages
...and populations are still expanding

- 2020 Census: Worcester is fastest growing city in New England

- Watershed is in the sprawl frontier (*Losing Ground*)

- Population gains throughout urban and rural

NBEP’s State of the Bay Report 2017
Healthy communities depend on a healthy watershed

- recreation & tourism
- physical & mental health
- built infrastructure
- transportation
- municipal services
- nutrients
- warmer waters
- flashy systems & flooding
- drinking water shortages
Impacts are compounded & not felt equitably

- Heat islands
- Tree cover
- Asthma rates
- Flooding impacts
- Water quality

EJ Mapping tool: https://tinyurl.com/4mb7mfkz

Figure 7 from Needs Assessment Report
Historic lack of participation/representation in funding and projects

https://estuaries.org/snepgrantprogram/map/

https://www.mass.gov/service-details/the-division-of-ecological-restoration-project-map
“How can we help?”

BLACKSTONE RIVER WATERSHED NEEDS ASSESSMENT REPORT
FINAL REPORT
SEPTEMBER 2021

NARRAGANSETT BAY ESTUARY PROGRAM

- 2 years
- 8 meetings
- 140 people
- 40 organizations
- 11 govt agencies
A Shared Watershed with Shared Goals

Expanding the bike/greenway

Water chestnut management

Equitable access to waterways
A Shared Watershed with Shared Goals

Green jobs program for maintenance

Maximizing effectiveness of long-term monitoring programs

Culvert replacement
Working together to achieve more

- Fill in capacity gaps
- Prioritize projects
- Provide technical assistance
- Regional funding & grant mgmt
- Unified messaging
- Centralized place to meet & share
- Celebrating successes

Blackstone Canal, looking toward the Stanley Woolen Mill
Blackstone Commons

The Blackstone River is a commons - a resource shared by the community, to be kept open and protected for future generations.

Paddle: August 11-14, 2022

Letters to the River
Representing our watershed

- CMRPC **Imagine 2050** Steering Committee
- **MassECAN** Nature Based Solutions
- **MA Statewide Climate Change Assessment** Working Group
- **NBEP** Steering Committee
- Started 2014
- Formed after grant brought groups together
- 42 muni & 560 sq mi
- Hosted by RPA
- Meets monthly
- 0-1 staff
- Comprised of NGO, muni, FP
- No formal board

- Started 2018
- Formed when munis needed to work x-boundary
- 21 munis & 76 sq mi
- 600,000 people
- Hosted by NGO
- Several FT staff
- Munis only
- Formal structure

- Started 2021
- Formed after Report ID’ed minimal capacity
- 39 munis & 475 sq mi (2 states)
- Hosted by uni
- 1 FT staff
- 100+ partners
- No formal structure
Project Scale: Malden River Works
Why Equitable Nature-Based Solutions?

- **Community Buy-In**: Include those traditionally and historically excluded in processes.
- **Foster Collaboration**: Involve groups and stakeholders not in traditional environmental fields.
- **Mitigate Green Gentrification**: The increase in green space can lead to unintended consequences.
Climate Justice Framework

- Recognitional → Is there a diversity of people?
- Procedural → Is there equitable participation and knowledge?
- Distributional → Where are projects implemented?

Equity Considerations

Just Nature-Based Solutions
- Value Articulations
- Transformative Co-production
- Race and Class
Malden River Works

“Bringing together a new coalition of community leaders of color, environmental advocates, and government stakeholders in action to achieve a common goal: to create a climate resilient waterfront park on the Malden River for all”
Using Malden as a Model Case Study

Equitable Engagement Methods

- Creation of a Steering Committee
- Brought community into the fold from the beginning
- 6 community meetings throughout design process
- On publicly accessible land
- Intentional with outreach and inclusion
- Youth engagement
- Multiple surveys distributed

Fifth Public Meeting

Date: February 11th, 2021, 6:30PM-7:30PM
Location: Virtual - [Powerpoint Presentation]
Attendees: 68

Goal: To share an update on the next phase of the project and introduce new members of our design/engineering team.

Summary of Initial Presentations: The fifth public meeting, also held virtually due to COVID restrictions, began with a reflection about Black History Month and the historic significance of Kamala Harris as the first Black, South Asian, and woman Vice President of the US. This was followed by a recap on recent project activities and achievements, including a new Malden River Works website, participation in the MVP webinar about environmental justice communities, and the award of the MVP and MAPC grants for $200,000 to continue the...
Using Malden as a Model Case Study

What made it a unique project?

- Funded by multiple sources (MIT, MVP)
- Held community meetings prior to applying for grant and after
- Developed a final design proposal with the assistance of community input
Mass ECAN Case Studies
The Massachusetts Ecosystem Climate Adaptation Network Nature-Based Solutions Work Group has compiled the first in a set of case studies that showcase projects varying from conserving natural landscapes and restoring or enhancing ecosystems to increasing the natural elements within the built environment.

https://www.bslanow.org/nbscasestudies
**Case Study Template**

**Green Roofs on Fairmount Line Bus Shelters**

**PROJECT SUMMARY**

In the summer of 2014, these bus shelters along the Fairmount/Crandall Commuter Rail Line, near Forest Hills, were retrofitted with green roofs. The roofs help to improve air quality and reduce water runoff, provide cooler temperatures to combat urban heat islands. In addition to the ecological benefits, the project also trained and employed local youth through YouthBuild of Boston and the GAN Green Reads Program. Funding supported the project for a two-year period. However, Trevor Smith (Earth) believes there is huge potential with this and similar projects in the future.

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**Nature-Based Solutions Spectrum**

**Environment**

Nature-based solutions use natural systems or restore natural processes to address natural hazards and climate impacts like flooding, storms, drought, and heat islands.

**Solutions**

- **Conservation and Natural Areas**
- **Reforestation**
- **Green Infrastructure**

**NATURAL BASED SOLUTIONS CASE STUDY**

**Green Roofs on Fairmount Line Bus Shelters**

**LOCATION**

Boston, MA

**CLIMATE HAZARDS ADDRESSED**

- Flooding
- Heat island

**ACTION/TECHNIQUES**

- Green Roofs

**ECO BENEFITS**

- Erosion control
- Climatic benefits
- Improved air quality

**PROJECT STATUS**

- Completed, 2014
- 2014-2016, Phase II

**SCALABILITY**

- Cost: $0

**FUNDING**

- Endowment
- Direct grants

**PROJECT PARTNERS**

- YouthBuild of Boston
- Earth
- YouthBuild of Boston and GAN Green Reads Program

**CONTACT**

Trevor Smith

Send us your case study ideas:

https://tinyurl.com/NBScasestudy
Key Takeaways

- None of us has all the answers, but don't let that be an excuse not to start this work.
- Start early - ask to learn more about groups you want to engage with; invite them to a conversation without a specific ask, and ask these groups who is missing.
- Meet people where they are -- conceptually and geographically. Recognize lived experience as an essential expertise in the planning & design process.
- Be humble, be honest.
- Community-based Organizations can fill in a needed gap, but they’re often not eligible for funding, while munis are but don’t have capacity - we need to think about how to use coming funding sources to empower communities to really make a difference.
Thanks!

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