

AYER-DEVENS POCKET FOREST PROJECT

Curriculum and Lesson Plan Examples

In 2024 the Pocket Forest Project identified existing educational tools and lesson plans to use with the pocket forest project. We also began to incorporate targeted educational materials to meet the Commonwealth's grade 6-12 education standards and pilot activities in 2 local schools - Ayer Shirley Regional Middle School and Francis W. Parker Charter School - with a goal of maximizing engagement of students with the pocket forest sites in their communities and increase environmental literacy.

Students were involved in planning, monitoring, and maintenance of the pocket forests. Additional educational resources and lesson plans will be developed in 2024-25. The intent is to develop additional supporting tools and resources that will help foster greater climate and ecologic awareness and serve as a model for other communities/schools looking to combat climate change and integrate more natural systems with development.



Pocket Forest/ Tiny Forest/ Miyawaki Forest Resources

Earthwatch Tiny Forest Educational Resources (United Kingdom)

Earthwatch has established hundreds of Tiny Forests in the UK. They provide excellent examples of lesson plans specific to tiny/pocket forests which are used in the United Kingdom. These resources can be downloaded for free. Contact Beth (bethsuedmeyer@devensec.com) if you cannot access them or need help. <https://edu.earthwatch.org.uk/tinyforest>

IVN Tiny Forest Educational Resources(Netherlands)

IVN in the Netherlands has established many Tiny Forests and provide their handbook, online courses and other downloads, that will help you to create your very own Tiny Forest.

<https://www.ivn.nl/aanbod/tiny-forest/resources-and-downloads/>

Network of Nature Mini Forest Resources (Canada)

<https://networkofnature.org/mini-forests.htm>

Other Small Forest Organizations and Videos:

SUGi Project Miyawaki Forest

<https://www.sugiproject.com/blog/the-miyawaki-method-for-creating-forests>

Christian Science Monitor Video on Miyawaki Forests with from Bio4Climate

<https://www.csmonitor.com/Environment/2023/0922/Miyawaki-A-little-forest-with-a-towering-task-video>

Video from Small Forests, Big Benefits (PocketForests.org) Panel Discussion with Doug Tallamy

<https://www.youtube.com/watch?v=ZR6msaiS4PQ>

Pocket Forest Resources Arranged by Topic

GENERAL RESOURCES FOR SCHOOLS DOING FOREST WORK

Green Schoolyards of America

<https://www.greenschoolyards.org/educator-resources-forests>

<https://www.greenschoolyards.org/high-school-stewardship-lessons>

AIR POLLUTION

In the Air Curriculum, Missouri Botanical Garden, EarthWays

<http://www.lungsatwork.org/intheair/>

CITIZEN SCIENCE

Natural Inquirer Citizen Science Edition (2017)

<https://cdn.naturalinquirer.org/wp-content/uploads/2024/02/Citizen-Science.pdf>

20 Citizen Science Projects for Students of All Ages

<https://www.experientiallearningdepot.com/experiential-learning-blog/20-citizen-science-projects-for-students-of-all-ages>

Mass Audubon Community Science

<https://www.massaudubon.org/programs-events/community-science>

Buds, Leaves, & Global Warming

Help monitor plant growing seasons and how climate change affects them by submitting data.

iNaturalist

online platform designed to connect people like you to an entire community of nature enthusiasts. Users share sightings of plants, fungi, and animals and in return get identifications on what's in their images [iNaturalist](#)

Cornell Lab of Ornithology to promote eBird, a free online platform that lets birders record and share their observations while also contributing vital data to our [bird conservation programs](#).

The GLOBE Program

Science Education Program <https://www.globe.gov/>

CLIMATE CHANGE

Community Resources for Science – Climate Literacy Lesson Plans

<https://crscience.org/educators/readings-videos-other-resources/>

Resilient Mass Climate Data

<https://resilient.mass.gov/data/maps>

EPA Teaching Climate Change

<https://www.epa.gov/climate-change/climate-change-resources-educators-and-students>

[Climate Change | The National Environmental Education Foundation \(NEEF\) \(neefusa.org\)](#)

What climate change means for the Hudson River

<https://www.caryinstitute.org/eco-inquiry/teaching-materials/udson-river-ecology/weather-climate-climate-change/what-climate>

Mass Audubon Youth Climate Leadership Program

<https://www.massaudubon.org/our-work/climate-change/youth-climate-leadership-program>

“Climate Impact in the Nashua River Watershed: What is Happening and Actions We Can Take”.
In 2022, the NRWA presented this speaker series .

<https://nashuariverwatershed.org/programs-and-events.html>

Heat Island Effect

Albedo effect Heat Island – Science Friday

<https://www.sciencefriday.com/educational-resources/the-albedo-effect-urban-heat-islands-and-cooling-down-your-playground/>

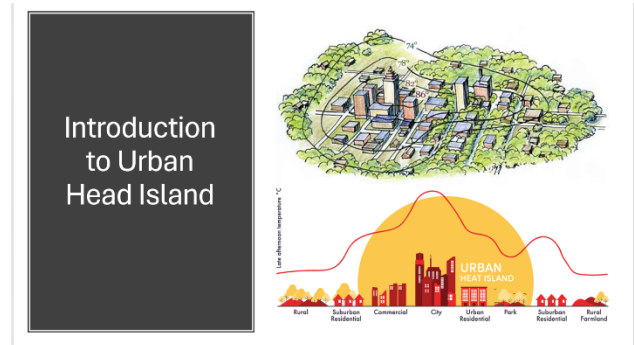
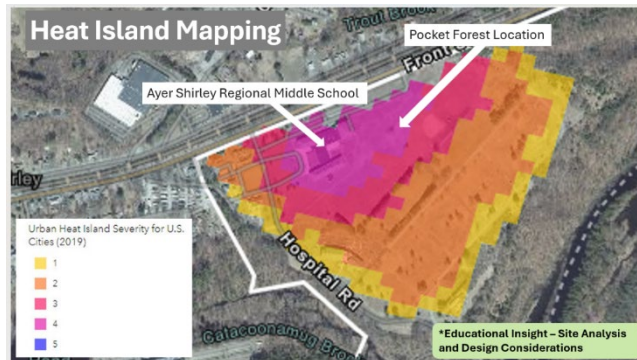
Urban Heat Island Maps

https://www.geoteach.org/projectGO/urban_heat_islands/lesson_two.php

Our data viewer for the Ayer -Devens Pocket Forest Project

<https://experience.arcgis.com/experience/5580825939b1408d8f56f7a8da912ded?org=bscgroup>

(Click layers in upper right blue bar (looks like paper stack)), then add Urban Heat Island in Layer Menu.



Additional Resources on Climate Data in MA <https://resilient.mass.gov/data/maps>

ECOLOGY, FOOD WEB, ANIMAL OBSERVATIONS

Eco Inquiry Curriculum – Who Eats What?

<https://www.caryinstitute.org/eco-inquiry/teaching-materials/schoolyard-ecology/who-eats-what>

An excellent field observation resource

https://www.caryinstitute.org/sites/default/files/public/downloads/lesson-plans/Appendix_A-Who_Eats_What_Guide.pdf

PHENOLOGY AND PLANT OBSERVATIONS

Natural Inquirer Nature Notes

<https://cdn.naturalinquirer.org/wp-content/uploads/2024/02/Natures-Notebook-Taking-a-Pulse-of-Our-Planet.pdf>

PLANT SCIENCE

Missouri Botanical Garden - Plant Lab

<https://www.missouribotanicalgarden.org/learn-discover/students-teachers/plantlab-student-scientists#13235>

Introduction and Glossary [Download Introduction and Glossary](#)

- **Botany and Biodiversity** [Download Botany and Biodiversity Unit](#)
[Go to Sample Virtual Session – Herbariums \(YouTube video\)](#)
- **Plants and People** [Download Plants and People Unit](#)
[Go to Sample Virtual Session – Plant discussion during Halloween \(YouTube video\)](#)
- **Ecology and Engineering** [Download Ecology and Engineering Unit](#)
- **BiodiverseCity** [Download Sample Activity: BiodiverseCity](#) [Download BiodiverseCity Game Pieces](#)

POLLINTORS

Community Science Projects with Pollinators, Xerces Society

<https://www.xerces.org/community-science>

Pollinator Pals Activity, Swaner Preserve and EcoCenter

https://swanerecocenter.org/files/SOLACE_Week_3_Pollinator_Pals.pdf

Resources to help identify Pollinators

- Bugnet for Insect Identification <https://www.bug-net.org/>
- Beecology (bumblebees) Citizen Science <https://beecology.wpi.edu/website/home>
- Tufts Pollinator Initiative Guides <https://sites.tufts.edu/pollinators/guides/>
- **Video – Native bee Identification, “The Bumblebees of Lincoln, MA”**
<https://theindwellingspider.wordpress.com/video/bombus-the-bumblebees-of-lincoln/>

SOIL

Soil: The nature water filter

<https://www.caryinstitute.org/eco-inquiry/teaching-materials/udson-river-ecology/udson-valley-social-ecological-system/soil-0>

All the Dirt on Soil

https://kidsgardening.org/resources/gardening-basics-all-the-dirt-on-soil/?utm_source=KidsGardening+Friends&utm_campaign=ee077b06f9-EMAIL_CAMPAIGN_2024_07_30_11_57&utm_medium=email&utm_term=0_0a82c9a42d-ee077b06f9-%5BLIST_EMAIL_ID%5D&mc_cid=ee077b06f9&mc_eid=20cbaa5425

Decomposition Nature Walk

https://kidsgardening.org/resources/garden-activities-decomposition-nature-walk/?utm_source=KidsGardening+Friends&utm_campaign=ee077b06f9-

EMAIL_CAMPAIGN_2024_07_30_11_57&utm_medium=email&utm_term=0_0a82c9a42d-ee077b06f9-%5BLIST_EMAIL_ID%5D&mc_cid=ee077b06f9&mc_eid=20cbaa5425

TREES

Project Learning Tree, Free Trees & Me Activity Guide and Lesson Plans

<https://www.plt.org/curriculum/preschool-learning-experiences-trees-nature/>

VARIOUS OTHER

[Curriculum Resources — Inside-Outside \(insideoutside.org\)](#)

[For Educators | Shelburne Farms](#)