

(Birds continued)

It is hard to pinpoint the exact cause of population decline, but there are many things you can do to help! You can collect data for NH Audubon, keep your cats indoors, avoid using pesticides, or create a bird-friendly yard by planting bushes, trees and other plants that provide food, protection, nesting spots, and resting spots during migration.

Interactive: How many different bird calls can you hear? Can you describe or repeat them? Do they sound like they are coming from low on the forest floor, or high in the canopy? ☀️

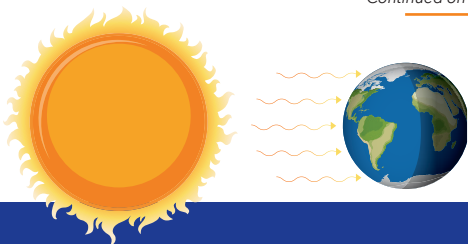
Trees: Climate Heroes 4

Solar Fact: Approximately 173,000 terawatts (trillions of watts) of solar energy strikes the Earth continuously, which is more than 10,000 times the world's total energy use!

The trees along this walking path are beautiful to look at, but also serve many purposes. These trees provide food and a habitat for animals, keep groundwater clean by soaking up rain and capturing pollutants, and take in carbon while releasing oxygen, just to name a few of their roles!

Only about five percent of the tree consists of its leaves, but through the process of photosynthesis, leaves pull

Continued on back →



(Trees: climate heroes continued)

carbon dioxide out of the air, which along with water and the sun's energy, is used to create sugars that feed the tree and oxygen that is released back into the air. It is estimated that one large tree can provide a day's worth of oxygen for up to four people!

Trees are also Climate Heroes. Carbon dioxide is a greenhouse gas that traps heat from the sun, which at current high levels is driving climate change. But in just one year, a mature tree can absorb more than 48 pounds of carbon dioxide from the atmosphere. To calculate the amount of carbon sequestration (the process of capturing and storing atmospheric carbon dioxide), scientists look at the number of leaves, where photosynthesis takes place, but also at the diameter and height of the tree.

Interactive: Use your sense of sight to find a tree that you think is absorbing the most carbon dioxide. ☀️

This project was partially funded by the NH DOE's Renewable Energy Fund

The goal of NH Solar Shares is to share the sun with local families who would benefit from the cost savings of solar energy, as well as providing clean energy for our community. Ten participants receive a monthly credit on their electricity bill based on this site's solar generation. There is no cost to participate.

For more information about how to become a Solar Shares participant, to volunteer or donate:

nhsolarshares@plymouthenergy.org

www.nhsolarshares.org

www.plymouthenergy.org

603-536-5030

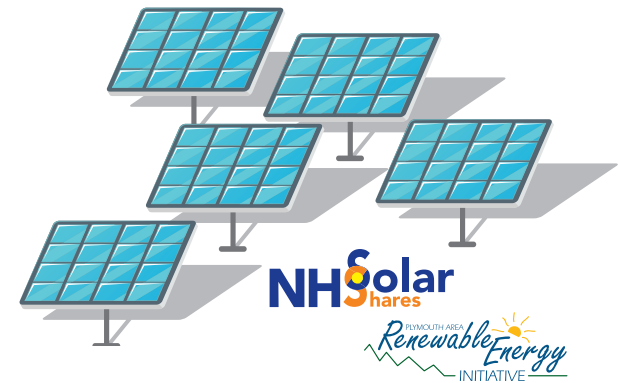
Welcome to the Solar Trail

How much power is the solar array generating?

Our ninety, 320 watt solar photovoltaic (PV) panels with Enphase microinverters are generating over **34,000 kWh** annually. That's enough electricity to charge 3527 cell phones every day for a year! Or to power 4 or 5 homes for a year!

Solar installers describe this as a **28.8 kW PV** system. This is calculated by using the number of panels multiplied by the DC rating of the panel.

The equation for our solar energy system is:
90 solar panels x 320 Watts (W) = 28,800 W
or 28.8 kilowatts (kW)



This trail is brought to you by NH Solar Shares, a program of PAREI.

Starting the Trail: Focusing your senses 1



Solar Fact: When the sun's energy hits your skin, it triggers your brain to release a hormone called serotonin.

Increased levels of serotonin can boost your mood and help you feel calm and focused.

"Look deep into nature, and then you will understand everything better." ~ *Albert Einstein*

As you walk the trail, try to notice what you see, hear, feel, and smell along the way. Follow these prompts to take in your new surroundings.

See: Look around and note five things that you see. Can you see something big? Something small?

Hear: What are the sounds that you hear? Note four different sounds. Can you hear the leaves rustling? Can you hear different bird calls?

Feel: Note three things that you can feel. It might be the wind on your skin, the feel of your clothes, or even a small insect that paid you a visit!

Smell: Take a deep breath. Note two different smells. Are any of the smells subtle, like decomposing leaves?

Repeat this experience as you walk through the woods, and enjoy your walk on the Solar Trail! ☀

Trees: A variety of life around us 2

Solar Fact: Deciduous trees like oaks tend to absorb about 50% more carbon than a conifer of the same size.

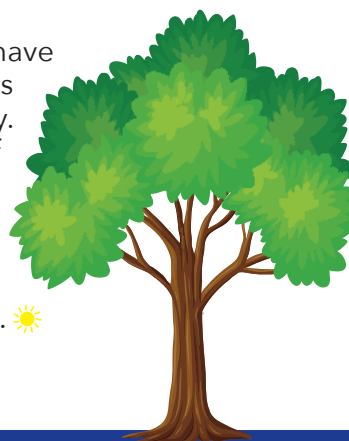
New Hampshire is the second most forested state in the US, with 83% of land covered in forest, and 86 native species of trees. The white birch tree, *Betula papyrifera*, is the state tree of New Hampshire. The 5 most abundant tree species in order are: red maple, white pine, hemlock, balsam fir, and sugar maple.

Interactive: How many different tree species can you identify? Here are some tips to help you:

Conifers bear cones and have needle-like leaves. Use your sense of sight and touch to identify the conifers along the trail.

- **Spruces are Spiky!** Their needles are spiky and square-shaped
- **Firs are Flat!** Firs have flat needles and will be soft when you touch them
- **Pines come in Pairs** (or more!): Pine needles are found in bundles of two or more

Deciduous trees have flat and thin leaves that shed annually. Use your sense of sight and touch to see how many different deciduous trees are along the trail. ☀



Birds: A chorus of song 3

Solar Fact: Birds from more than 50 families sunbathe, including birds of prey, doves, finches, and more. The sun helps birds warm up, dry their feathers, and control parasites living on their skin and feathers.



According to the National Audubon Society, the forests of New England have the highest diversity of breeding birds anywhere in the country! Roughly 190 species of birds breed in New Hampshire and many use the forest for food, protection, and nesting sites.

Different birds and nesting sites can be found in each of the forest layers, or strata, along the Solar Trail. In order to avoid competing for resources, bird species find their niche in a community, and each bird is well adapted to its niche. For example, the Ovenbird, Hermit Thrush, and Ruffed Grouse all nest on or close to the forest floor, while birds such as the Blackburnian Warbler construct their nests high up in the canopy, at the end of a branch of spruce, fir, or hemlock.

Of the 190 breeding bird species in New Hampshire, roughly 80 are decreasing in number while 60 are increasing and 30 have stable populations. Bird species that nest in shrubby or grassland habitats or migrate long distances are showing the biggest decline in population.

