

### Guiding Pollinators

Many flowers depend on relationships with pollinators to reproduce. A flower's size, shape, color and smell attracts unique pollinators. Some flowers, such as the flowers of rhododendrons, have nectar guides that are visible to insects through ultraviolet light. These guides act as road signs, directing pollinators to the flower's sweet nectar.



How many types of flowers can you find?



How many pollinators can you find?



Can you find a spider on its web?

### Caught in the Web of Life

On their daily journeys to find nectar and food, many flying insects get caught in the web of life - the spider's web that is. Different spiders build different types of webs - spiral orb webs, sheet webs, tangle webs, and funnel webs are a few examples.



Can you spot a bird's nest in a tree?

### Connecting Nature's Building Materials

Not only do many bird species eat spiders, some depend on spider webs to build their nests. Many species of hummingbird construct their nests by connecting spider webs and lichens. They use the sticky spider webs to weave materials together and to anchor their nests to the tree's branch. Spotting a hummingbird's nest in a tree is tricky since they're about the size of a golf ball.



Find a lichen growing on a stick or rock.



Smellawildflower.

### Making Connections

We are an intricate part of nature's relationships. Our actions affect everything, from the bees that pollinate our flowers and food crops to the soil we walk on as we hike through the forest. During your hike today, take your time, stop to smell a flower and...

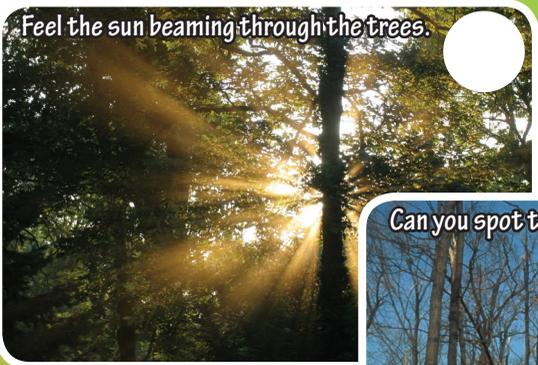
# Get Connected

### I Lichen You!

A lichen is an organism formed by a relationship between algae and fungus. The fungus protects the algae from adverse conditions, and in exchange the algae provides the fungus with food. This is an example of mutual symbiosis (when two different organisms help each other survive).



How many types of mushrooms can you find? (don't touch!)



Feel the sun beaming through the trees.

### A Healthy Home

Mountain forests are home to a variety of plants that require different amounts of nutrients, water and sunlight. Each plant finds its preferred home among the slopes, valleys, peaks and streamsides. Sometimes though, weather events can change the perfect forest home into a mess of stumps and logs.

### Open... Canopy!

During strong wind storms or cold winter ice storms treetops often crash down to the forest floor. The damaged trees and plants crushed by fallen limbs are affected negatively, but other plants are helped by the holes in the canopy. These holes allow more sunlight to reach understory plants such as wildflowers.



Can you spot trees with storm damage?



Can you find a vista of the forest?



Can you find any mycelium?



Can you find a "Turkey Tail" fungi?

### Fungi Feed Forests

Fungi help break down and decompose everything in the forest, from dead trees and fallen logs to leaf litter. Fungi have large, underground networks of "roots" called mycelium that attach themselves to the roots of plants and trees. The plants provide water for the fungi, and the fungi help the plants gather nutrients. Fungi "fruits," or mushrooms, provide food for many insects and animals.

# Remember, Everything's Connected

Only a few of the relationships found along the trail were discussed in this brochure. Since everything's connected, many more relationships are present. How many more can you find? Here are some others you can search for:



## Dead Trees: Good?

Dead trees, called **snags**, can often provide for more life than living trees. This is because many types of insects live inside dead trees, providing a valuable food source for animals such as woodpeckers and bears. As dead trees decompose, they release nutrients back into the soil for use by future generations of plants and trees, thus completing the cycle.

## Killing Trees Softly

Have you seen any tufts of "cotton" on the underside of a hemlock tree's leaves? These are the egg sacs of the hemlock wooly adelgid, a tiny insect parasite that was accidentally introduced to the United States from Asia in the 1920s. When the adelgid's eggs hatch, the larvae suck the phloem (food) out of the tree, killing it.



## People and Nature

We also have a relationship with nature. When you go to the market to buy an apple, remember that the apple was once a flower pollinated by insects. Your home, constructed of wood, rock, or brick, came from items harvested from nature. Take the time to slow down and experience your natural world. And remember, everything in nature is connected... even us!



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# Nature's Relationships

## Everything's connected

"When we try to pick out anything by itself, we find it hitched to everything else in the Universe."  
- John Muir



Although this brochure will not guide you to specific locations along the trail, it will tell you a story to help you discover some of the relationships found in nature. Use the pictures and text to locate as many of these relationships as you can. Keep your eyes open and have fun!