

Flowers and Pollinators

In spring, blackberry plants begin to flower. The flower's smell, size and colors attract a variety of pollinators such as bees, moths and butterflies. The pollinator's relationship with flowers can easily be seen as you walk along the trail.



How many pollinators can you find?



How many flowers can you find?



Feel the sun beaming through the trees!

Open... Canopy

When dead limbs and trees fall to the forest floor, openings are created in the **canopy** (forest ceiling). This allows more sunlight to reach **understory** (lower level) plants such as blackberries.



Can you find a woodpecker hole?



Can you find a snag? (standing dead tree)

Dead Trees: Good?

Standing dead trees, called **snags**, can 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.



Do you see any fallen logs?

Making Connections

Flowers become Fruit

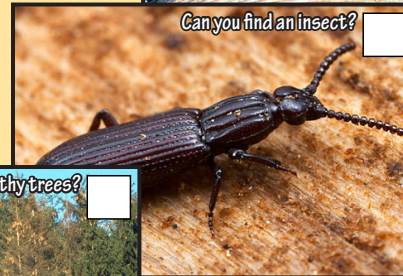
Many flowers depend on pollinators to reproduce. Pollinated blackberry flowers develop into tasty fruits. If you look closely, you can see the tips of the **stigmas** (female parts of the flower) poking out of the blackberries.



Can you find a plant with a fruit on it?

Deadly Relationships

When bark beetles bore into a pine tree they bring the blue stain fungi with them. Later, as bark beetle larvae develop, they feed on the fungi. Together, they act as a parasite and attack the tree's circulation... killing it.



Can you find an insect?

Nature's Recyclers

Along this trail a variety of fungi can be found **decomposing** (breaking down) everything from scat to leaf litter to fallen trees. The forest depends on decomposers such as fungi to "clean up" waste materials and recycle valuable nutrients back into the soil.



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



Do you see any unhealthy trees?



Watch out for animal scat!



How many animals have you seen?

Berry Berry Good - Fertilizer

Some plants depend on relationships with animals to disperse their seeds. Not only do animals such as birds, foxes, and black bears love the taste of blackberries, but their **scat** (poop) provides the seeds with a pocket of fertilizer in which to grow.

Tree Trials

Trees rely on decomposers to unlock the nutrients they need to be healthy. However, sometimes certain conditions cause trees to become weak. Unhealthy trees are vulnerable to attack from parasites and will eventually be decomposed.

Remember, Everything's Connected

In this brochure, only a few of the relationships found along the trail were discussed. Many more relationships are present. How many can you find? Here are some others you can search for:



I Lichen You!

Some fungi and algae "lichen" each other and help each other survive. In this relationship, 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).

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.

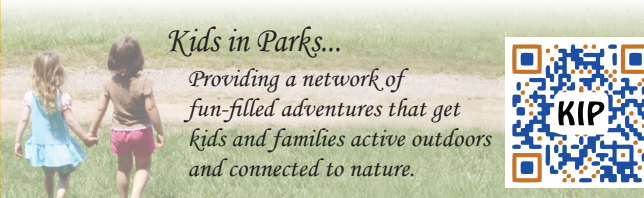
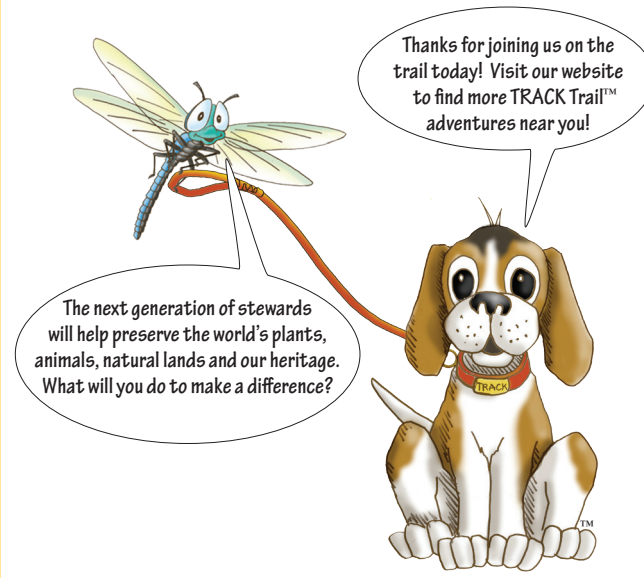


People and Nature

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!