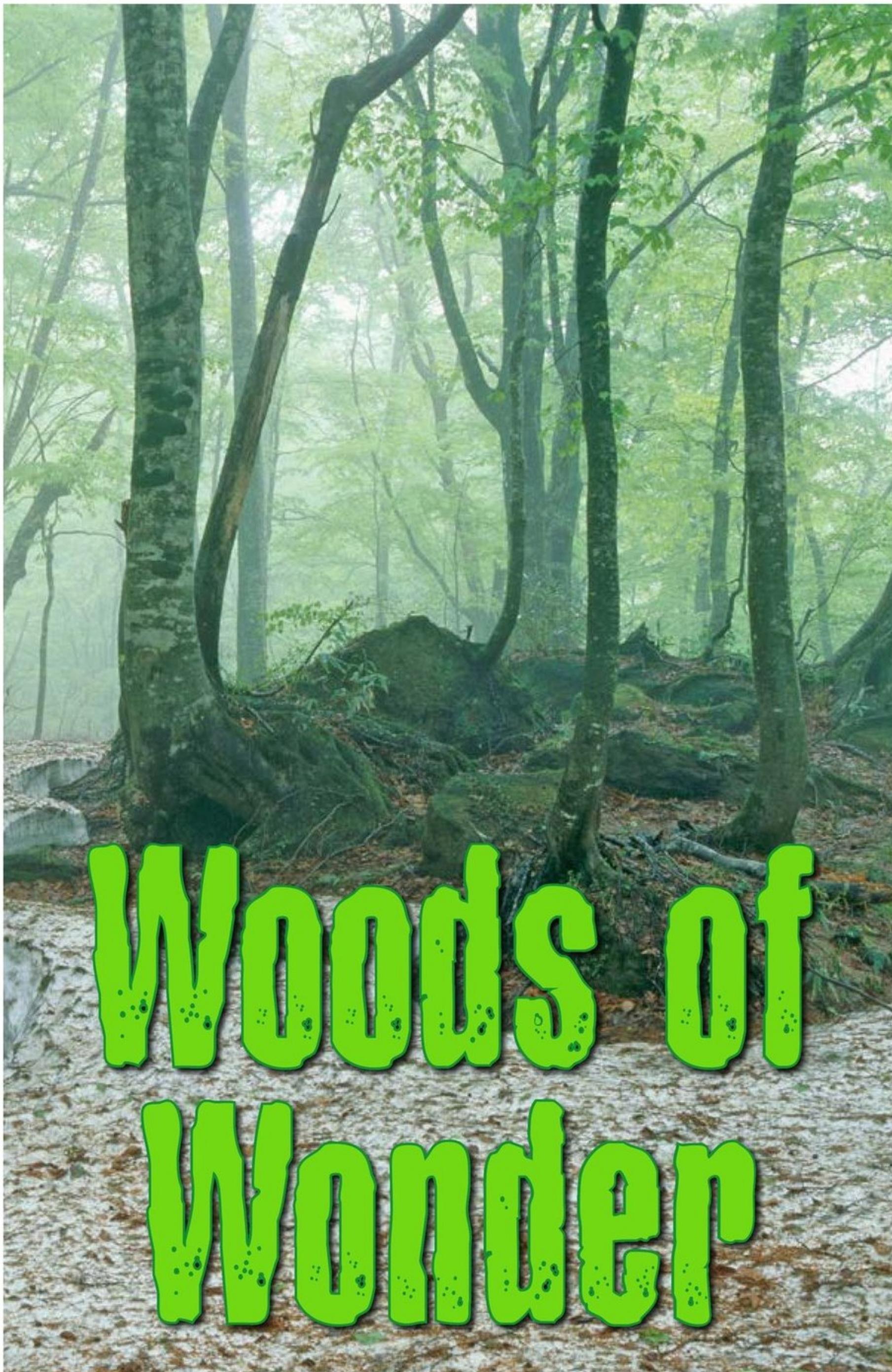


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Four Old-Growth Forests Around the World

Sequoia and Kings
Canyon National Parks,
United States

Great Smoky
Mountains National
Park, United States

Shirakami-Sanchi,
Japan

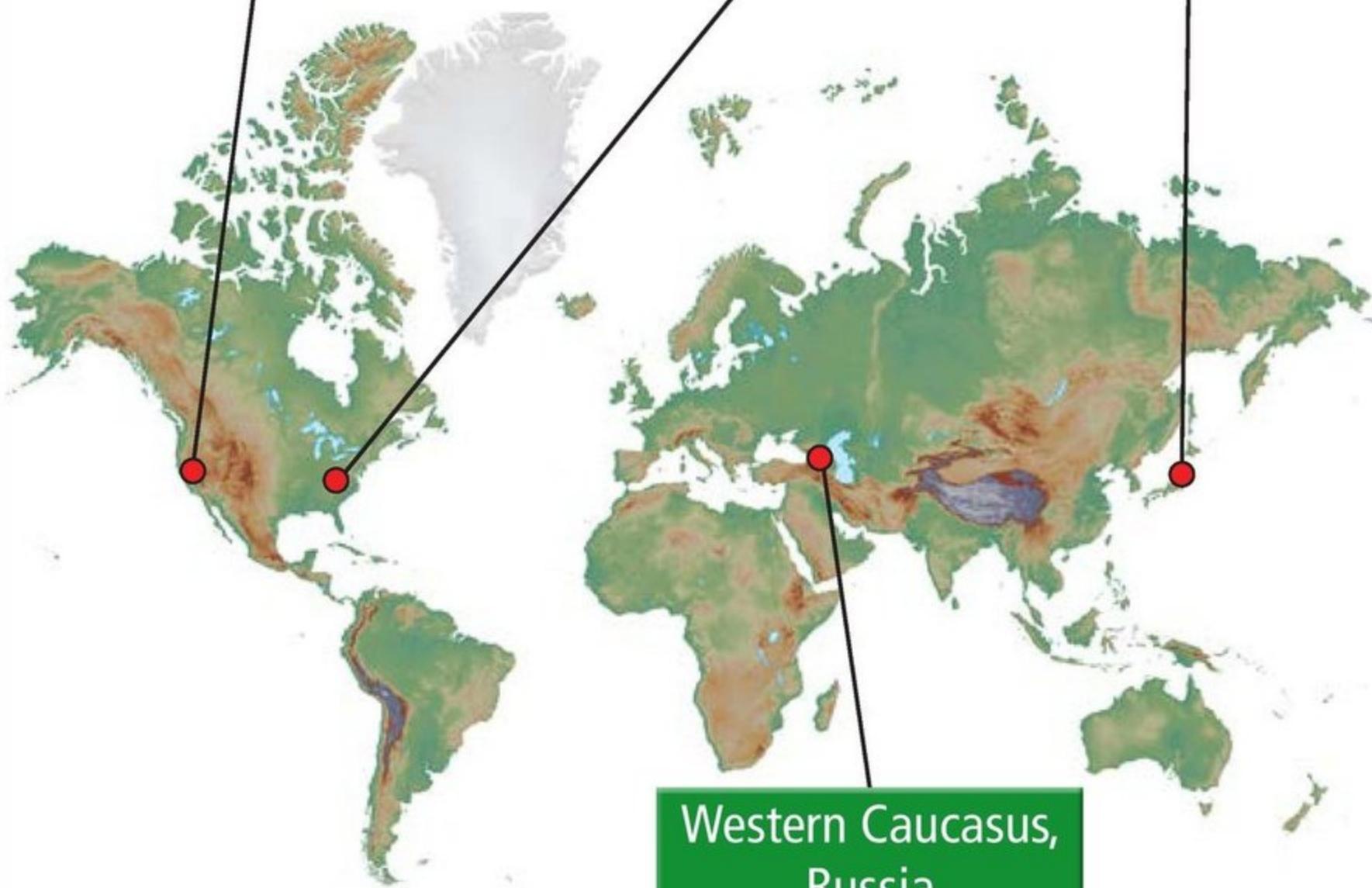
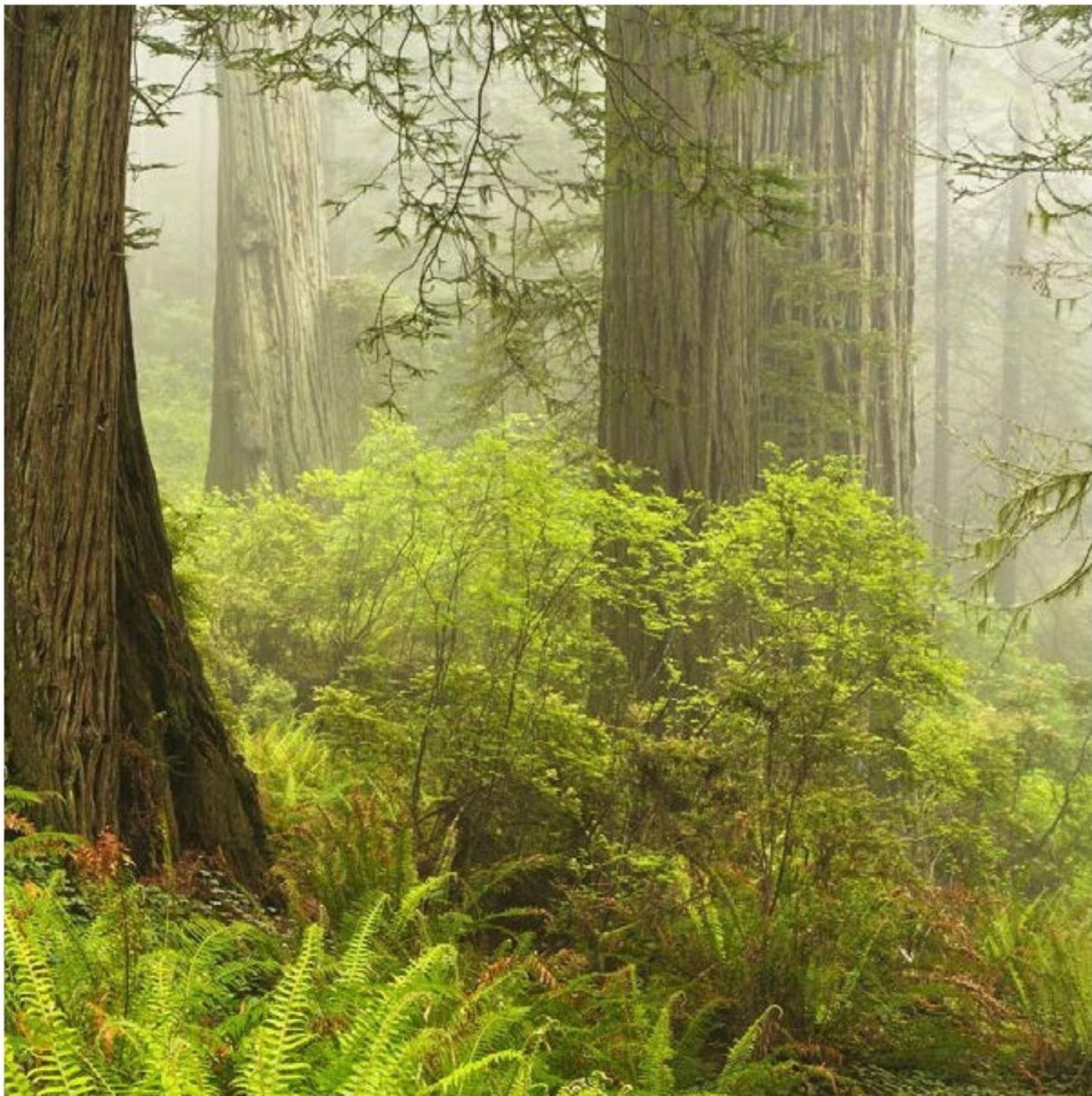


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Oh, That's Old!

Imagine you're in a dark, lovely forest. Trees with trunks wider than cars tower overhead. Smaller plants soak up what little light they can find. Pine needles and other dead leaves cover the ground. Like something out of a fairy tale, an **old-growth** forest is a place of wonder and mystery.

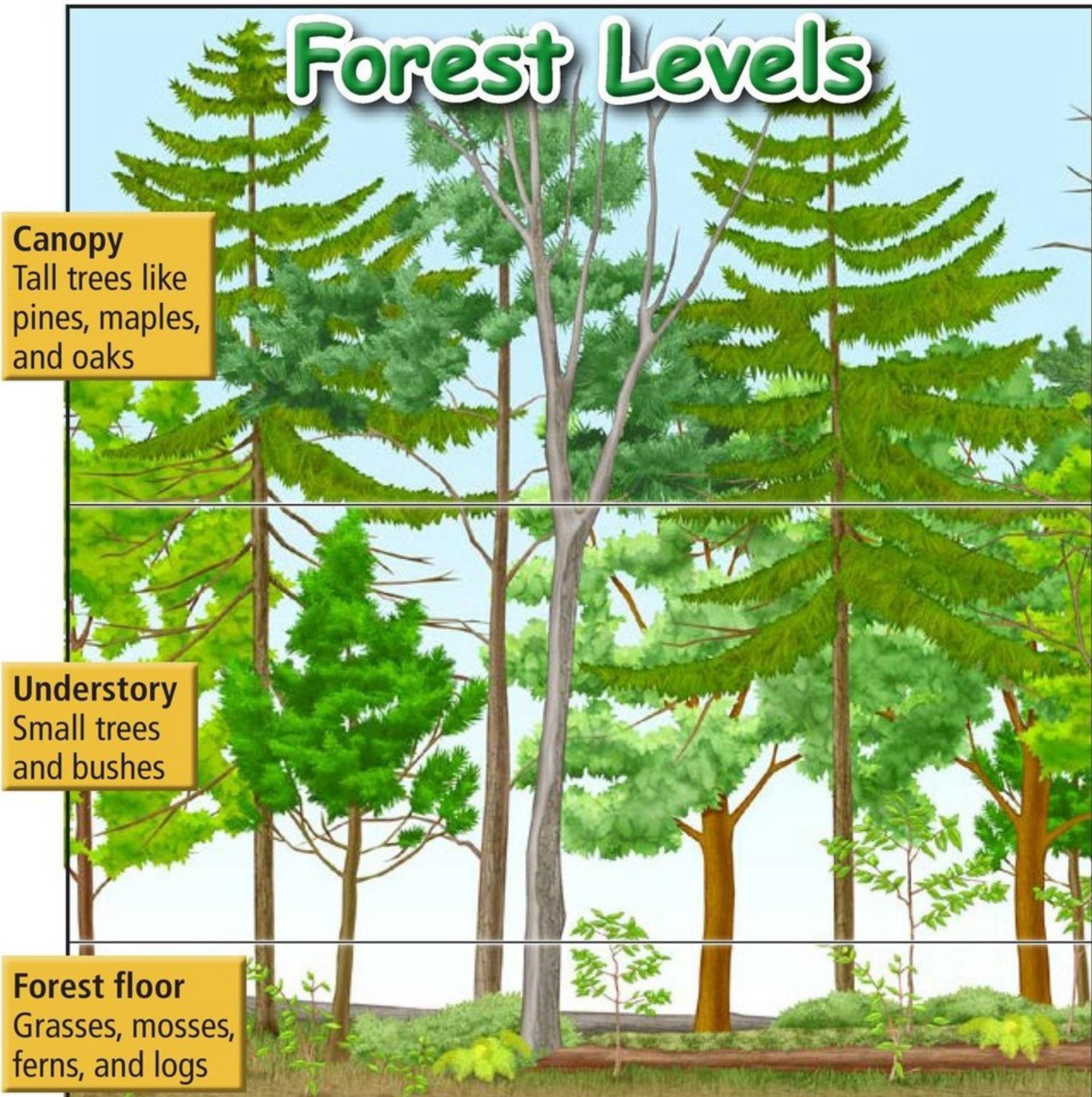
Some old-growth forests look like this scene. Others look very different. Some have only one type of tree, while others have many. Some have trees that seem to touch the sky. Others have trees shorter than a house.

Because of all these differences, scientists do not have one definition for an old-growth forest. However, they have found some things that many old-growth forests share.

Many scientists agree that an old-growth forest must be at least 150 years old. The trees within the forest might be many different ages, though, including large trees, both living and dead (or dying). Standing dead trees, called *snags*, and fallen trees provide food and shelter for different animals, plants, and fungi.



Looking up in an old-growth forest can make you dizzy!



The forest's **canopy** should have more than one layer. Fallen trees make holes in the canopy where young trees can find sunlight to grow.

Old-growth forests are some of the most beautiful and interesting places on Earth. By studying and taking care of them, we can learn a lot.

United States

Sequoia and Kings Canyon National Parks in California together cover more than 1,353 square miles (3,504 sq km). They hold more than 300 square miles

(777 sq km) of old-growth forest, made up mostly of **coniferous** trees. Among these are giant sequoias, found only in California. These huge trees are among the oldest on Earth. They can live for more than 3,000 years. A giant

sequoia known as the General Sherman Tree is the largest tree in the world.



The General Sherman Tree

The Pacific fisher lives in the parks' old-growth forest, under the thick canopy. It hunts birds and small mammals. Its favorite meal is porcupine. Because its habitat is limited to old-growth forests, some states are taking steps to protect it.



Sequoia vs. Redwood

Giant redwoods and giant sequoias both grow in California. They have the same color bark. Both are huge, but they're different.

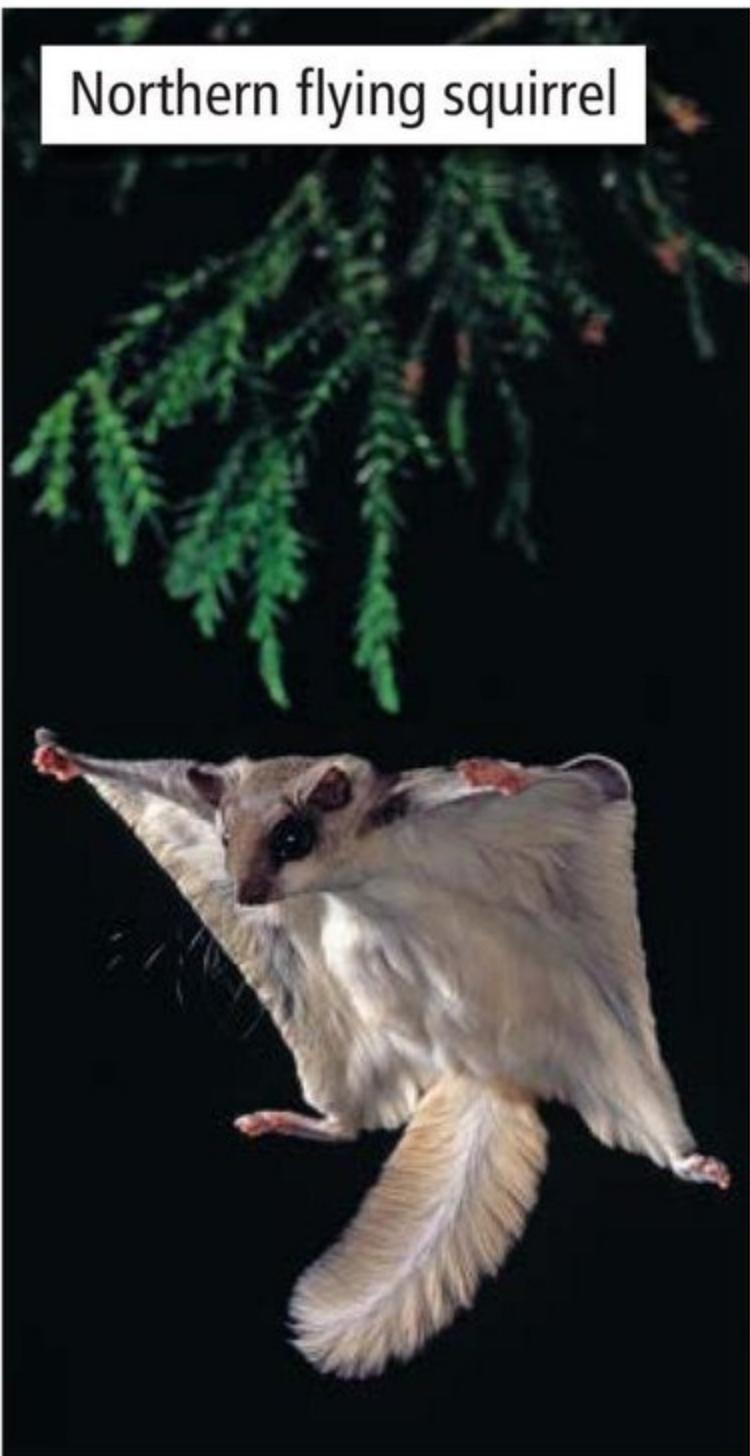
Giant redwoods are the tallest trees in the world. They can reach up to 378 feet (115 m)! Giant sequoias are the largest. At up to 40 feet (12 m) in diameter, a sequoia can grow almost twice as wide as a redwood.

Redwoods grow best in fog. Sequoias need dry heat for their cones to open. Redwoods grow near sea level. Sequoias grow at 5,000 to 7,000 feet (1,524 to 2,134 m).



Autumn is colorful in Great Smoky Mountains National Park.

Across the United States in North Carolina and Tennessee, Great Smoky Mountains National Park covers more than 800 square miles (2,072 sq km). Almost all of the park is forest. Old-growth forests only make up about a quarter of the park. **Deciduous** trees make up most of the old-growth forests in this area.

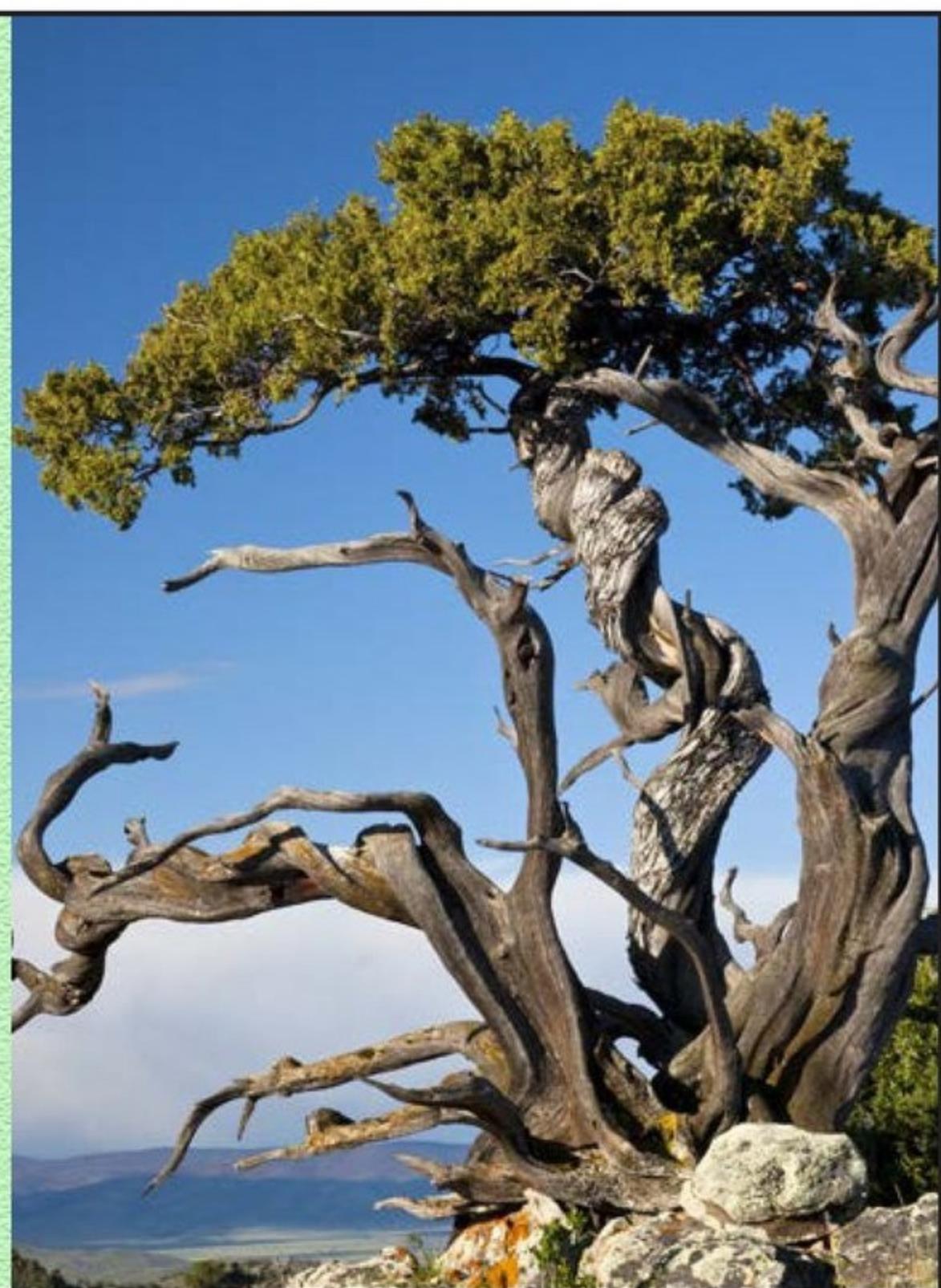


Northern flying squirrel

The **endangered** Carolina northern flying squirrel makes its home here. These small mammals don't really fly. They use skin attached to their front and back paws to glide. They mostly eat fungi but may also eat fruits and nuts. Without the old-growth forest, these animals would vanish.

Tough, Not Tall

Not all old-growth forests have towering trees. In some harsh places with wild and icy winds, pines, spruces, and other coniferous trees grow short and twisted. These trees are called *Krummholz*, a German word meaning "crooked wood." They are only about 6 feet (1.8 m) tall, but don't let their size fool you: Some are one thousand years old.





A Japanese beech tree reaches for the sun in Shirakami-Sanchi, Japan.

Japan

In the northern part of Japan is Shirakami-Sanchi. It's one of the last old-growth forests in East Asia. Made up mostly of beech trees, the area covers just 65 square miles (170 sq km) of the mountains. Forests like this one once covered most of northern Japan, but people have cut many down.

Shirakami-Sanchi has no trails or buildings, and animals in the area are protected. The forest is home to the Japanese serow. This goatlike animal is only found here and in two other small areas in Japan. More than 2,100 types of insects and 87 types of birds live in the forest. These include the black woodpecker, which is endangered in Japan.





Fallen trees like this fir can nurse along other plants in this old-growth forest in the Caucasus of Russia.

Russia

Russia's Western Caucasus area stretches about 1,062 square miles (2,750 sq km) from the Black Sea to the Caucasus Mountains. The area has many different plants and animals. Coniferous trees make up most of the forests.



Snow leopards

Different kinds of endangered animals make these forests their home. Some scientists think that a few endangered snow leopards live here. Scientists sometimes find signs of the large cats, such as paw prints and droppings. The endangered wisent has also been brought back into the forest.



Wisents are European bison.

Conclusion

Old-growth forests often have very complex **ecosystems**. They may have been supporting life for hundreds or thousands of years. Governments, national parks, and other groups protect many of these places. However, other old-growth forests, both small and large, are in danger. Human actions can damage or destroy these delicate environments.

Once gone, the beauty and scientific information that these old-growth forests hold may be lost forever.

Laws prevent logging in some old-growth forests but not others. People continue to debate how much protection is enough.



Glossary

canopy (<i>n.</i>)	the part of a forest where the tops of trees form a dense layer of leaves (p. 6)
coniferous (<i>adj.</i>)	of or relating to a group of mostly evergreen trees and shrubs that grow cones and have leaves shaped like needles or scales (p. 7)
deciduous (<i>adj.</i>)	having leaves that drop off in the fall and grow back in the spring (p. 9)
ecosystems (<i>n.</i>)	communities of living things together with their habitat (p. 15)
endangered (<i>adj.</i>)	in danger of dying out completely (p. 10)
old-growth (<i>adj.</i>)	of or relating to very old forests (p. 4)

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