

# Forests are Full of Sunlight: The Energy for Life

Notable notes in forest research at Oregon State University College of Forestry

**B**ecause all life on Earth begins with plants capturing energy from the sun, the living things that you see around you are essentially sunlight. Sunlight energy helps transform carbon dioxide in the air into living plant tissues made of carbon materials such as sugars, starches, and fibers. Plants and other photosynthetic organisms are the basis for most other forms of life. If a living thing is not a plant, then it probably either eats plant tissues or eats organisms that eat plant tissues. So, for example, when a squirrel eats an acorn, that acorn, which is made of carbon transformed by the use of sunlight energy, is used by the squirrel for energy to grow and maintain its own living processes. An owl might then snack on that squirrel, essentially consuming energy and carbon accumulated from the squirrel's lifetime of eating acorns. When the owl dies, the energy in that life form is used by worms, fungi, bacteria, scavengers. Life is a flow of energy that ultimately starts with sunlight. And we can track that cycle of energy by tracking the cycle of carbon.

Mark Harmon of OSU College of Forestry (Forest Ecosystems & Society) is a researcher who



is interested in tracking sunlight energy stored as carbon in the living biomass of forests. Why? Scientists are taking close accounting of carbon these days, he says, trying to learn if living things on the land and in the ocean can be a “carbon sink”—a place that over long periods of time removes carbon from the air and keeps it in living matter.

Reducing the amount of carbon in the air is important because the carbon dioxide level has been increasing over the last 150 years due to fossil fuel burning. The higher level of carbon dioxide in the air is contributing to the problem of global warming.

The good news is that some forests are carbon sinks that store huge amounts of carbon in live plant matter and in decomposing plant matter in the soil, Harmon says. The fact that beautiful, grand forests are made of carbon from the air, water, and sunshine is amazing. You could say that even when it's not sunny outside, the forests are still full of sunlight!



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