An ecologist studies the relationship of living things with the living and nonliving environment. I study the forest vegetation, soils, climate, air quality, stream organisms, and water quantity and quality.

Dr. Carolyn Hunsaker

Ecologist

Ph.D., University of California

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Dr. Carolyn Hunsaker

Important Scientist Characteristics: Creativity and good record-keeping are the most important skills I use.

Example of a simple research question I have tried to answer: How much sediment comes down mountain streams? How much does sediment in mountain streams vary from year to year with different weather? Erosion is the process of wearing or washing away of soil. Sediment is soil particles carried along in streams and rivers. It is important to know the "natural" amount of soil and sediment erosion so we can compare it to the amount that may occur if we do not harvest trees or build roads correctly.

Technology or equipment used in research: To measure streamflow, we place a trough of fiberglass (similar to the one in my picture) in the stream to create even water flow. Then we use an instrument called a "bubbler" that pushes a bubble of air into the water in the trough. The bubbler measures how difficult it is to push air into the water, and that tells us the depth of the water. An equation enables us to turn this information into accurate streamflow, such as gallons per day.

Most Exciting Discovery
Most people think that air quality in the mountains is good. I measured nitrogen and ozone levels in the mountains, and found that they were high. These high levels were stressful to the vegetation. However, the organisms in the ecosystem were able to use the nitrogen so it was not entering into the stream water.

When did you know you wanted to be a scientist? In middle school, I was fascinated by the oceans, the interesting marine creatures, and the oceans' importance for Earth's health. I enjoyed watching ocean programs on TV and reading about Jacques-Yves Cousteau's adventures, especially his words of warning about damaging the environment. I wanted to make a difference and help "save" the environment.