Marine Terraces of California: A natural laboratory to understand long-term biologic and geologic processes

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Along the beautiful coast of California you can often see the land rising from the sea in a stair step pattern. These features, called marine terraces, are the result of wave action, sea level change, and tectonic uplift. Each "step" above the ocean gets progressively older; the highest and oldest marine terraces can be more than 250,000 years old. Studying the soil within each terrace provide insights into geologic and biologic processes that are too slow to study in the laboratory. In this presentation we will discuss how marine terraces form, and how soil development changes each terrace's mineralogy (soil composition), hydrology (water movement), biology, and soil carbon. As always when studying natural landscapes, we found a few surprises.

Biography: Marjorie (Jorie) Schulz has worked for the US Geological Survey for several decades in several different projects, including studying how manganese crusts form on the ocean floors, the geochemistry of mineral weathering and soil development, and most recently how climate, fire, and time affect carbon dynamics in soil. Originally from Illinois, Jorie attend Knox College in Galesburg, Illinois, getting a BA in Geology. She did her graduate work at the University of Missouri, Columbia. Working at the USGS has provided a constant learning environment, giving her insights into many disciplines and allowing her to bring multidisciplinary insights to the projects she works on..