



**USDA Forest Service
WFWARP Staff
National Forest System**

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Topic: International Symposium on Soil Organic Matter Dynamics: Land Use, Management and Global Change, Colorado Springs, CO

Issue: Overview of the Symposium

Background: The first international symposium was held in France in 2007 to present the latest research on soil organic matter (SOM) across the world with presentations on recent findings and highlight future research directions. Over 260 participants from thirty three countries participated in the 2009 symposium. Colorado State University served as the local host along with NRCS, ARS, and the Rocky Mountain Research Station. The next international SOM symposium will be held in Belgium in 2011.

Highlights of the 2009 Symposium: The first day of the symposium included two field trips one to explore soils and ecosystems on Pikes Peak with the second to tour the bio-energy developments that were being conducted at the DOE Energy Laboratory in Lakewood, CO. The Pike's Peak tour included three ecological systems alpine, subalpine and montane. The area at the top of Pike's Peak was pretty desolate at an elevation of 14,111 feet especially on highly exposed sites. But in protected areas tundra was present and the vegetation composes of herbaceous and grass species along with sedges. Coniferous krummholz vegetation was also present in more protected areas. The soils were generally less developed and less than 12 inches thick over decomposed granite bedrock. The subalpine ecosystem was dominated by subalpine fir and some alder species. Soils were moderately deep and developed to around 20 inches. The montane ecosystem was composed of a variety of tree species including ponderosa pine, blue spruce, Douglas fir and aspen. The soils were deep and developed to 35 inches.

The symposium had several themes for the week including impact of climate change, soil disturbance influences and characterization techniques. I focused on SOM and climate change presentations. There were a number of posters presented as well.

Climate change influence on SOM is highly dependent on land management history and the ecosystem being discussed along with other parameters. Understanding the land-use is important due to the significance of soil disturbance's affect on SOM. Soil disturbance usually reduces SOM most notably in agricultural lands as well as urbanized areas. Temperature and moisture do not affect SOM decomposition as one might expect due to the amount and composition of the SOM present, microorganisms activity and the presence or absence of enzymes. The quality of the SOM is also an area of investigation. Labile SOM is the most volatile form of SOM. Non-labile SOM is the most stable form of SOM and is the form most resistant to climate change influences. Soil texture is another component in understanding climate change influence since clayey soils tend to stabilize SOM better than sandy soils. Understanding these various components are essential to understanding the affects of climate change on SOM. Many of the presentations offered their versions of models that might be useful in determining the affects of climate change on SOM into the future. The International SOM Dynamics Symposium abstracts are posted on the soil page of the WFWARP website at:

<http://www.fs.fed.us/biology/soil/index.html>

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