**Soils Working Group 1-3, Tuesday**

**Leaders**: Moorman, Strickland, Liebig

**Participants**: Huggins, Locke, Bryant, Spiegal, Steiner, Kravchenko, Silveira, Yost, Moorman, Strickland

**Summary of Discussion**

Did not address specific soil measurements (eg heat flux) required for eddy covariance measurements.

Suggestion to identify specific measurements needed to quantify or partially quantify the C, N and water cycles and associated LTAR metrics (eg N use efficiency); measure “stocks and flows” and quantify levels of uncertainty.

Discussed baseline characterization of soil properties and spatial/temporal variability; need for sample archival. Suggested that for many soil properties a 5 yr recurring sampling might me adequate. At the previous Beltsville meeting identified baseline soil measurements.

Discussed stratified random sampling. Suggestion that we could use new and developing sensing technologies or soil survey map units to develop sampling plan. This would inevitably result in site specific sampling plans. Will NRCS support soil characterization at LTAR sites?

**Decisions**

Baseline measurements, soil morphology, texture, bulk density, pH, EC, exchangable cations and CEC, total C and N, inorganic C, water release curves, aggregat size distribution and stability, biomass C and PLFA, and total and water extractable P. These would be measured at depth distributions proposed at Beltsville. (minimum to be defined)

Use of baseline measurements to establish the minimum number of samples based on statistical power analysis.

Priority Activities

1. Develop an approved plan for baseline sampling of soils to support the Common and Observatory experiments. Have sites implement baseline sampling and use that experience to refine the sampling protocol.
2. Refine list of soil measurements to support over-all LTAR research priorities.

Questions

Answers: This starts the development of a common LTAR strategy