2012 Northeast Region
Research Needs Committee

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1. Landscape and Soils across Appalachian High Mountain Ecosystems –
    - Maine to North Carolina
    - Involves study of ecosystem change; threatened and endangered species
    - Develop State and Transition Models for forest/ecosystem restoration
    - Improved mapping and characterization of soils
    - Cooperative work with Forest Service, university cooperators, NRCS state, MO, or MLRA office; others
    - Need to define area of project; identify needs and outcomes, partners, funding
    - <u>Potential research subprojects:</u>
        - Improved extraction procedure for plant available ("exchangeable/extractable") cations that measures availability in forest soils (tie to site index)
        - Characterization and interpretation of soil resistance and resilience
        - Influence of soil climate, landform, ect on organic/inorganic species in spodic horizons, especially Fe mineral species and abundance- outcome is understanding of soil behavior and interpretation
        - Characterization and interpretation of soil ecosystem services
        - Soil and landscape interpretations related to catastrophic events (landslides, flooding including flash flooding, liquefaction, etc.)

    Similar important projects in Canada that have success are (1) Watershed Evaluation of Best Management Practices (small watersheds in selected provinces that were diverse); and (2) Soil moisture project linked and funded by NASA

2. Soil Carbon
    - Soil Health
    - Use and application of RaCA data
    - Forms of C- Total C, inorganic vs organic, Humic, Fulvic acids; black C; forms versus soil type, horizon; sequestered soil C vs total C

3. Subaqueous Soils
    - Characterization, mapping, and interpretation of subaqueous soils
    - Nutrient and trace element fate and behavior in subaqueous soils

4. Urban/Surburban
    - Establish standards for mapping and minimum dataset.

5. Hydraulic properties of soils
    - What are the standard methods; is a simpler, more rapid method feasible?
    - What is the suggested intensity of measurements, experimental designs; eg., replications.