



Using Soil Maps as a Tool to Improve Geologic Maps

Eric C. Brevik (1) and Bradley A. Miller (2)

(1) Department of Natural Sciences, Dickinson State University, Dickinson, ND, USA (eric.brevik@dickinsonstate.edu), (2) Agronomy Department, Iowa State University, Ames, IA, USA, and Leibniz-Centre for Agricultural Landscape Research (ZALF) e.V., Institute of Soil Landscape Research, Müncheberg, Germany (millerba@iastate.edu)

The first soil maps were made by geologists and many early soil maps were surficial geology maps. After soil science became established as an independent scientific discipline, there has been a continued interplay between geologists and soil scientists, both fields benefiting from advancements made by the other. Where sufficiently detailed soil maps exist, researchers have been increasingly utilizing soil maps to assist in the improvement or construction of various types of maps more associated with geology. There is strong agreement between preliminary geology maps created from soil maps and traditional geology maps. This is primarily due to the influence of parent material on soil formation, and may also be due in part to the importance placed on parent material in some soil classification systems. Despite the results obtained when using soil maps to create surficial geology maps, there is a need for more quantitative studies to assess the degree of compliment between soil-based maps and traditional geology maps, expansion of the technique into a wider range of geologic and climatic environments, and more research in locations that use classification systems other than US Soil Taxonomy.