Terrestrial Ecosystems—Surficial Lithology of the Conterminous United States

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Introduction

As part of an effort to map terrestrial ecosystems, the U.S. Geological Survey (USGS) has generated a new classification of the lithology of surficial materials to be used in creating maps depicting standardized, terrestrial ecosystem models for the conterminous United States. The ecosystems classification used in this effort was developed by NatureServe (Comer and others, 2003). A biophysical stratification approach, developed for South America (Sayre and others, 2008) and now being implemented globally (Sayre and others, 2007), was used to model the ecosystem distributions. This ecosystem mapping methodology is transparent, replicable, and rigorous (Sayre and others, 2009). Surficial lithology strongly influences the differentiation and distribution of terrestrial ecosystems, and is one of the key input layers in this biophysical stratification.

These surficial lithology classes were derived from the USGS map "Surficial Materials in the Conterminous United States," which was based on texture, internal structure, thickness, and environment of deposition or formation of materials (Soller and Rehels, 2004). This original map was produced from a compilation of regional surficial and bedrock geology source maps using broadly defined common map units for the purpose of providing an overview of the existing data and knowledge. For the terrestrial ecosystem effort, the 28 lithology classes of Soller and Rehels (2004) were generalized and then reclassified into a set of 17 lithologies that typically control or influence the distribution of vegetation types (Kruscheberg, 2002).

This map depicts a smoothed and generalized image of these final 17 surficial lithology classes. **Additional information about this map and any data developed for the ecosystems modeling of the conterminous United States is available online at: <http://mssc.cr.usgs.gov/ecosystems/>.**

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EXPLANATION Lithology Classes

- Carbonate residual material
- Noncarbonate residual material
- Alkaline intrusive volcanic rock
- Silicic residual material
- Extrusive volcanic rock
- Colluvial sediment
- Glacial till, clayey
- Glacial till, loamy
- Glacial till, coarse textured
- Glacial outwash and glacial lake sediment, coarse textured
- Glacial lake sediment, fine textured
- Hydric, peat and muck
- Eolian sediment, coarse textured (sand dunes)
- Eolian sediment, fine textured (glacial loess)
- Saline lake sediment
- Alluvium and fine-textured coastal zone sediment
- Coastal zone sediment, coarse textured
- Water
- State boundaries

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