The Community Surface Dynamics Modeling System (CSDMS) has an ever-growing collection of reusable, plug-and-play components for earth surface process modeling that includes numerous components for spatial hydrologic and landscape evolution modeling. While components may represent any level of granularity from a simple function to a complete hydrologic model, the optimum level appears to be that of a particular physical process, such as infiltration, evaporation or snowmelt. It is at this level of complexity that researchers are most often interested in "swapping out" one method of modeling a process for another that differs in terms of required input, complexity, accuracy, or computational efficiency. CSDMS model components are designed for maximum reusability and strict adherence to this simple-sounding goal has proven to be a powerful decider when it comes to choosing between different design choices. For example, it determines key aspects of a component's interface, and the need for each component to have or manage its own state variables, input files, output files and help files. As a result, each component can be used either as a stand-alone "submodel" or as a component in some larger model. Components do not, however, need to be written in the same language because the CSDMS project employs a powerful language-interoperability tool called Babel. The purpose of this talk is to share a few lessons learned from the CSDMS project, to provide an overview of the many components that are currently available, and to briefly present performance results from a new fluvial landscape evolution algorithm.