The United States is home to a vast natural watersystem of rivers and lakes. Interwoven is a large artificial system of drain tiles and ditches. The porous boundary between these systems transmits fertilizers, antibiotics, pesticides, hormones, and other chemicals. In addition, erosion may lead to topsoil loss.

Funding for mitigation, rehabilitation, and conservation is often allocated at the state or national level, yet the system is so complex, and the data so large, that existing tools cannot analyze it at this scale.

The goal, then, is to produce new algorithms which will enable GIS tools to quickly analyze terabytes or more of data. This, in turn, will facilitate landscape optimization.

The resolution of DEMs is increasing

Comparison vs. Other Algorithms

Datasets Employed

Results

Barnes, R. 2016. Non-divergent flow accumulation for trillion cell digital elevation models on desktops or clusters. In Review.
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