



Recent Advances in the GLIMS Glacier Database

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Glaciers are shrinking almost without exception. Glacier losses have impacts on local water availability and hazards, and contribute to sea level rise. To understand these impacts and the processes behind them, it is crucial to monitor glaciers through time by mapping their areal extent, changes in volume, elevation distribution, snow lines, ice flow velocities, and changes to associated water bodies. The glacier database of the Global Land Ice Measurements from Space (GLIMS) initiative is the only multi-temporal glacier database capable of tracking all these glacier measurements and providing them to the scientific community and broader public.

Here we present recent results in 1) expansion of the geographic and temporal coverage of the GLIMS Glacier Database by drawing on the Randolph Glacier Inventory (RGI) and other new data sets; 2) improved tools for visualizing and downloading GLIMS data in a choice of formats and data models; and 3) a new data model for handling multiple glacier records through time while avoiding double-counting of glacier number or area. The result of this work is a more complete glacier data repository that shows not only the current state of glaciers on Earth, but how they have changed in recent decades. The database is useful for tracking changes in water resources, hazards, and mass budgets of the world's glaciers.