Global Flood Risk from Advanced Modeling and Remote Sensing

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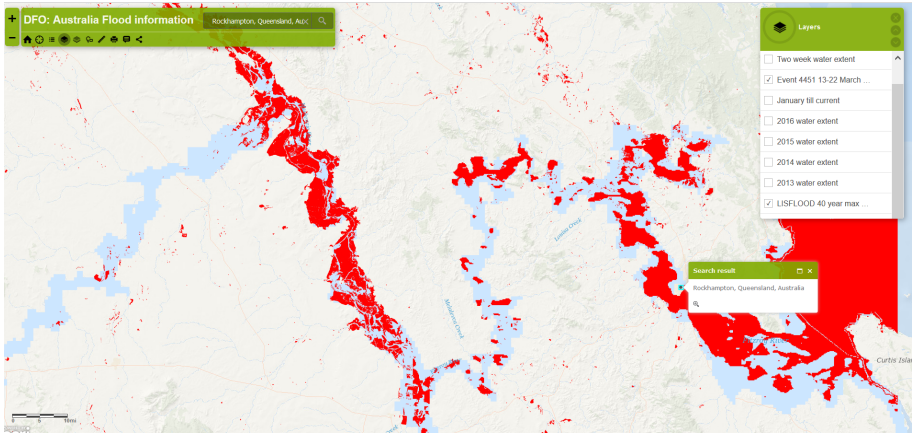
Objective

- Develop capability to model and visualize predictions of flooding caused by climate change impacts on:
  - Sea level rise, intense rainfall and large tropical storms
  - Mean annual flood and 30-year flood
  - Estimated mapped flood risk on the ground
  - Other watershed-specific assessments
- Leverage advances in remote sensing spatiotemporal resolution, and techniques in blending coarse imaging with fine-scale hydrologically-conditioned digital topography and the Google Earth Engine



Dartmouth Flood Observatory WMS web client in action during the Australia event. Blue is 40 year LISFLOOD-FP model data and red is satellite data.

Accomplishments

- Demonstrated method for modeling flood risk on a global scale
  - Completed model simulations over Australia, Africa and CONUS, including calibration and validation
  - Demonstrated to NASA Disaster Response Program
- Supported by remote sensing validation, integrated modeling and remote sensing data to produce state-of-the-art risk information supported by remote sensing validation
  - Implemented and installed geo-data server and hydrologic/hydrodynamic models
  - Creates map products for end users by running the model with near real time remote sensing data

Co-Is/Partners: P. Bates, University of Bristol; K. Andreadis, G. Schumann, JPL; A. Kettner, CU

TRL_{in} = 4 TRL_{out} = 6