

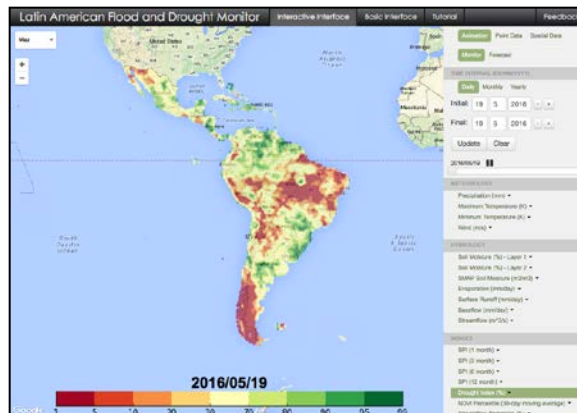
Overview of the Latin American and Caribbean Flood and Drought Monitor (LACFDM)

Justin Sheffield, Nate Chaney, Colby Fisher, Eric F. Wood
Princeton University

Enhancing Natural HAZARDS resilience in South America (ENHANS)

Advancing the implementation of the Latin American Flood and Drought Monitor at the national level

Santiago, Chile, May 23-24, 2016



Our Team

Justin Sheffield



Prof. Eric F. Wood



Nathaniel Chaney



Colby Fisher



Overview of Training Part of the Workshop

Day 1 (Morning):

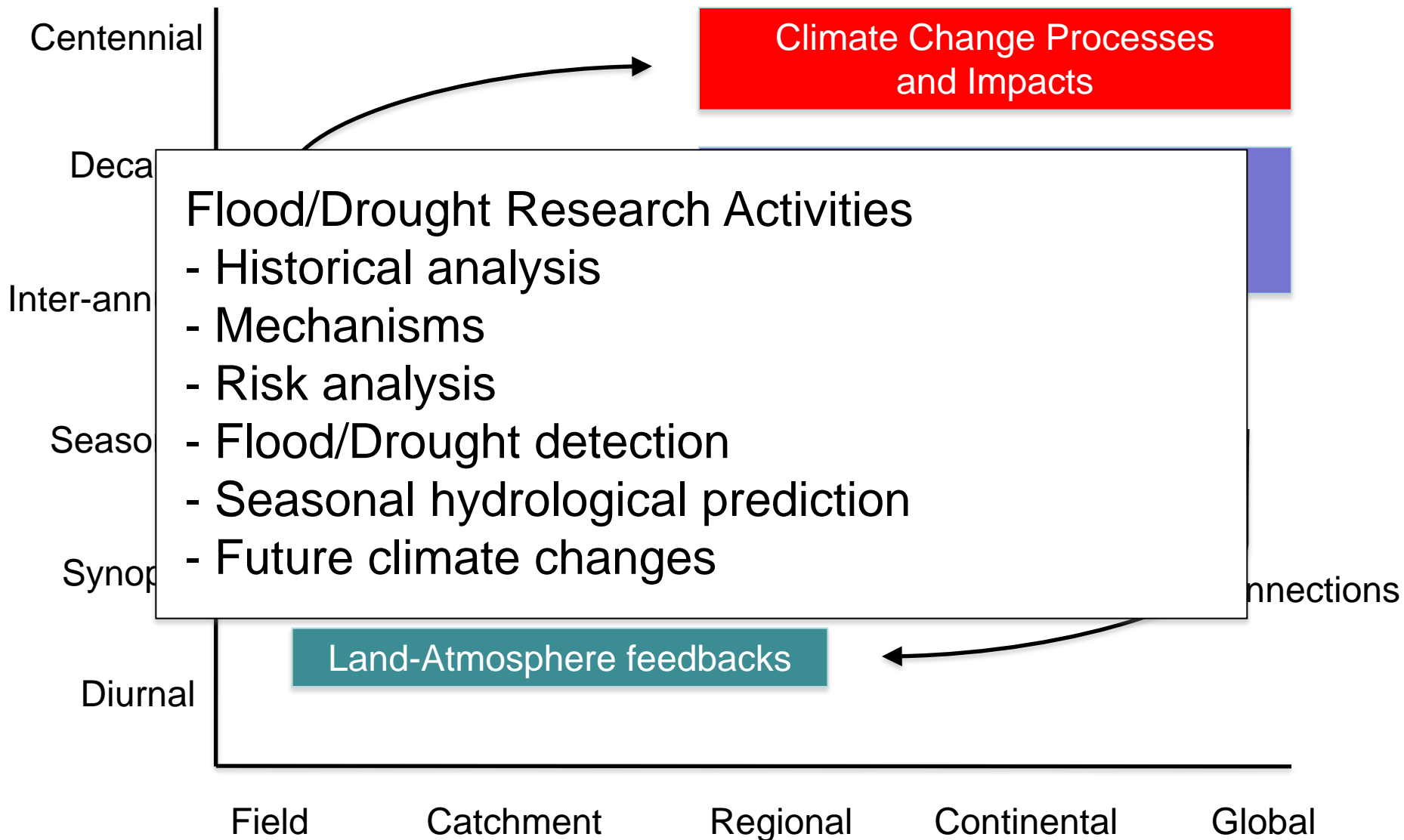
- **Background (Sheffield)**
- **Introduction to the LACFDM interface:** Introduction to the web interface; navigating the system; overview of products (**Chaney**)
- **Technical details of the LACFDM:** data, models, methods (**Chaney**)
- **Future plans** (what the current system can do and what it can't do) (**Sheffield**)

Day 1 (Afternoon):

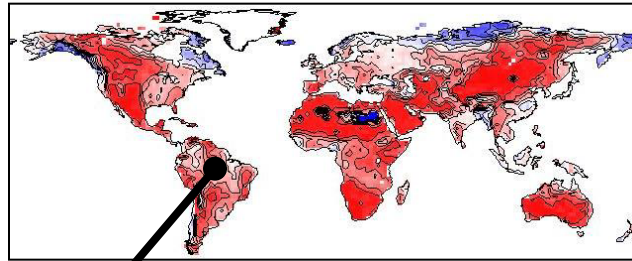
- **Hands-on training:** interactive interface; examples with monitor and forecast data (**Chaney**)
- **Hands-on exercises:** Case studies (e.g. recent drought/flood event) and validation exercises (**Chaney**)

Background on Research at Princeton University

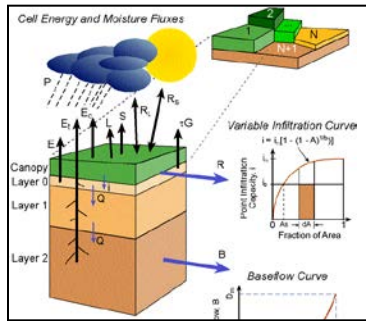
- Time and Space Scales of Processes



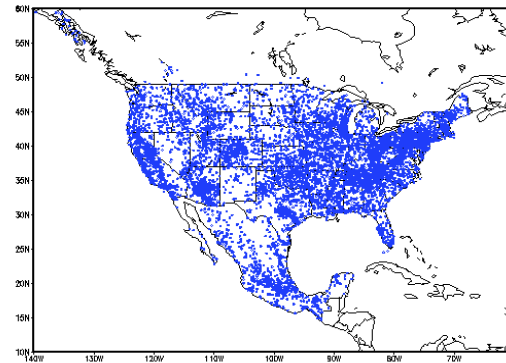
Data and Tools for Flood/Drought Monitoring and Prediction



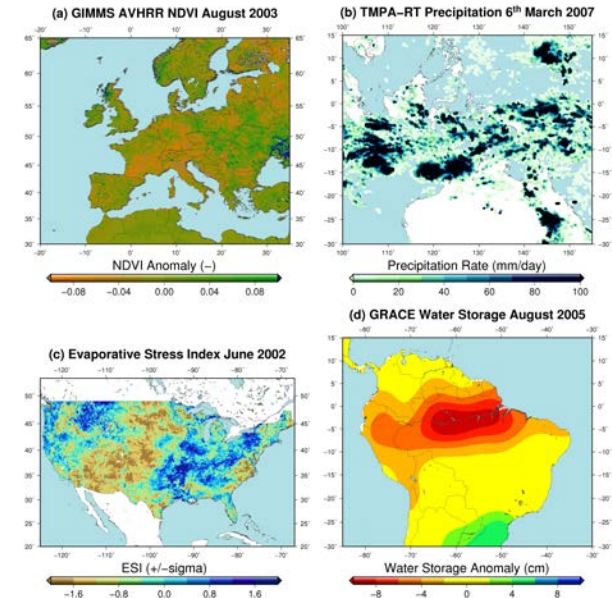
Hydrological Modeling



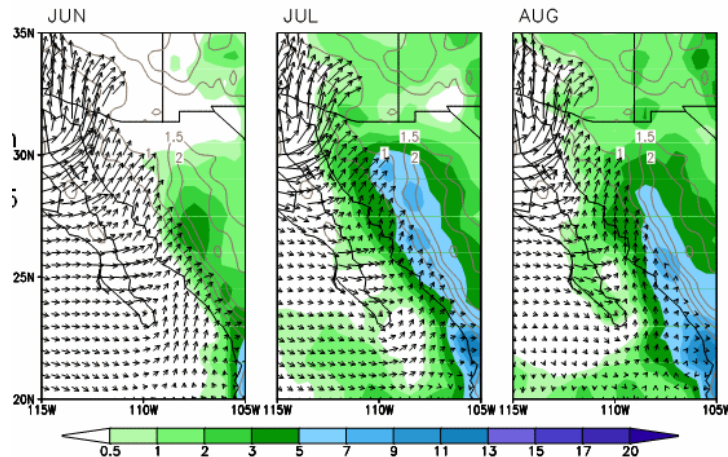
Ground Observations



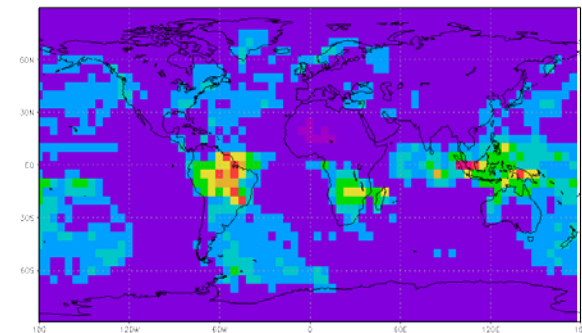
Satellite Remote Sensing



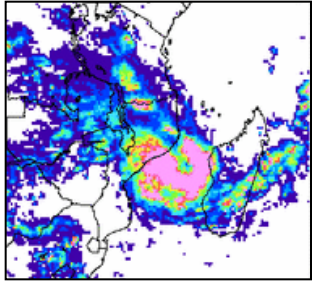
Reanalysis



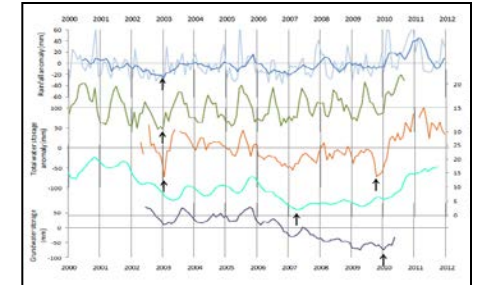
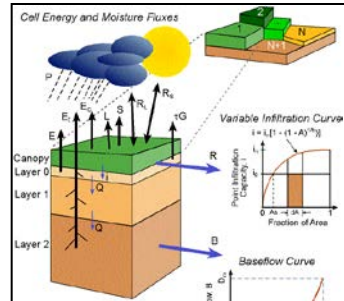
Regional/Global Climate Models, Statistical Prediction



Putting it all together: Hydrological Monitoring/Forecasting Systems



Real-time
Weather

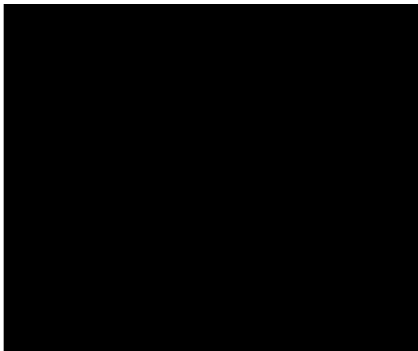


Hydrological
Variables,
Streamflow,
Drought
Indices

Initial
Conditions

Land surface
(hydrology)
models

Management/Mitigation

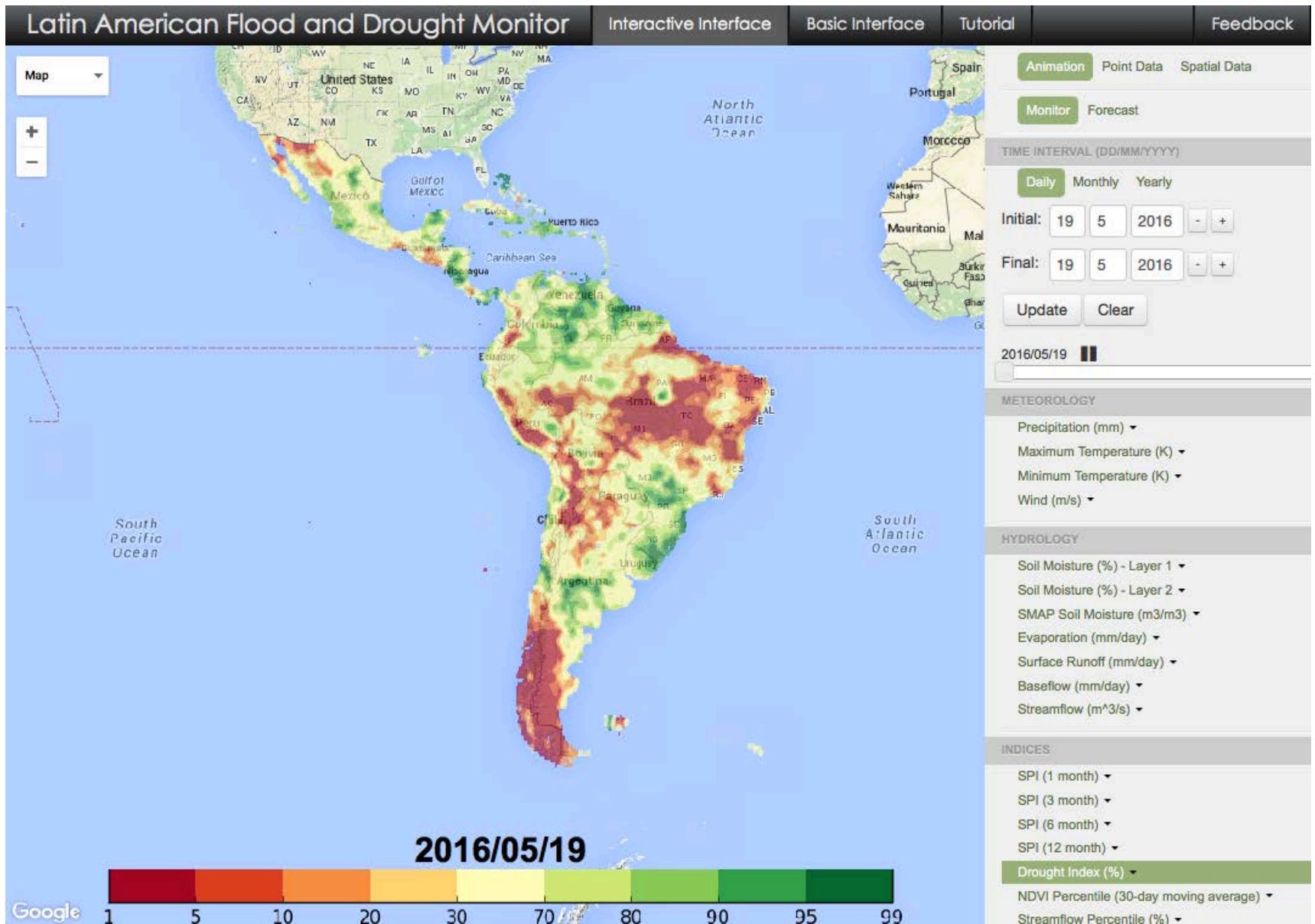




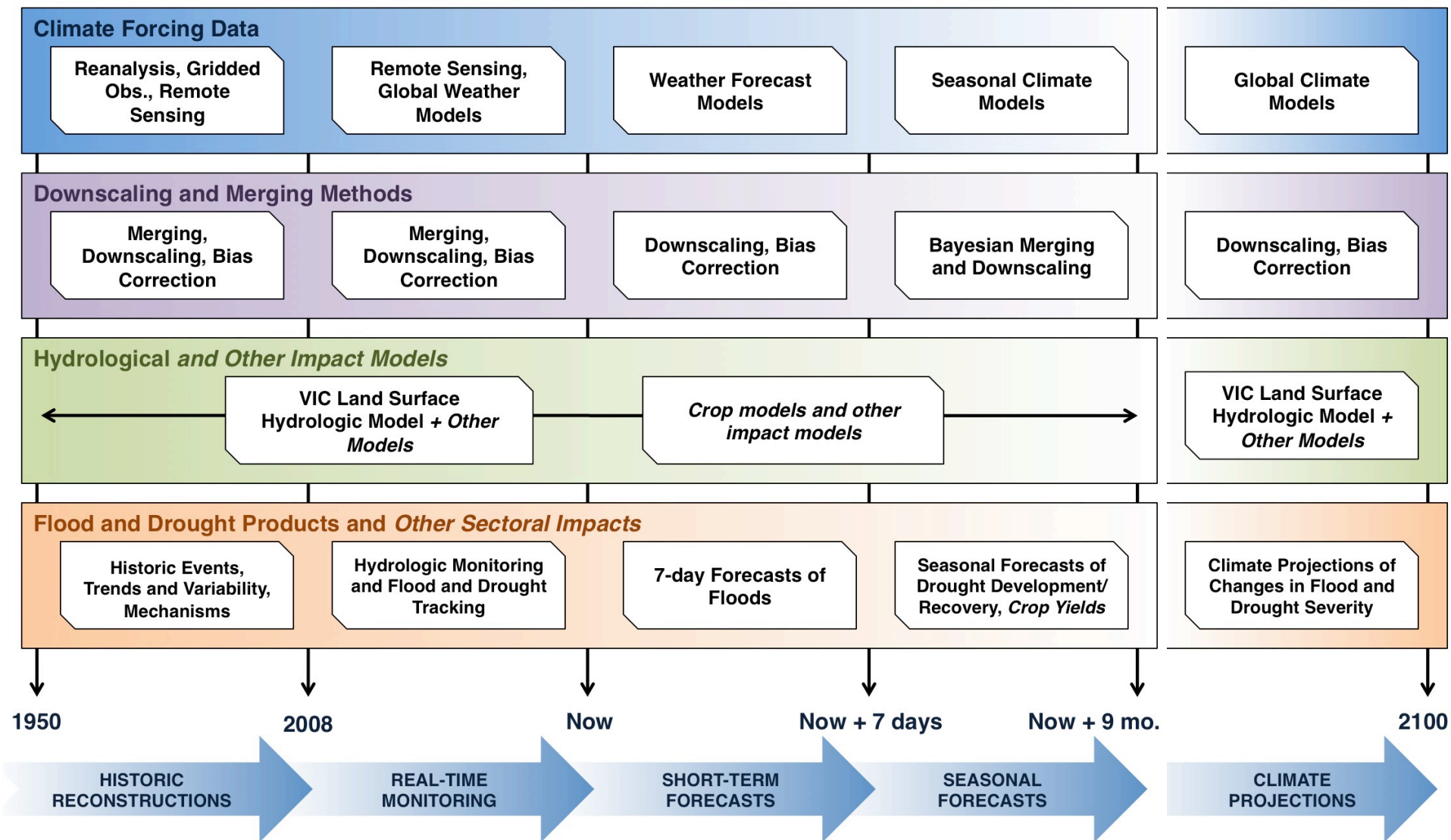
LAFDM

Latin American Flood and Drought Monitor

<http://stream.princeton.edu/LAFDM/WEBPAGE/>

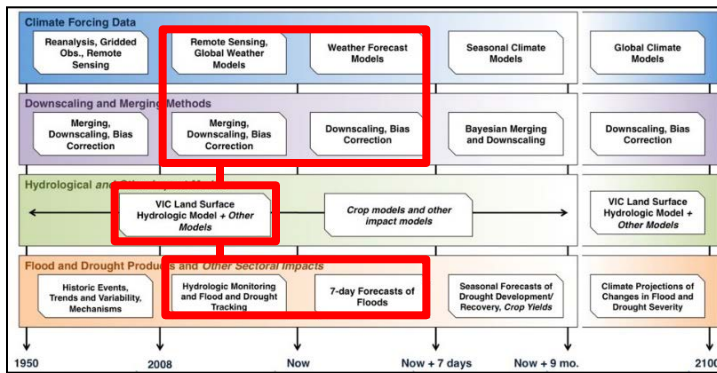


System Overview

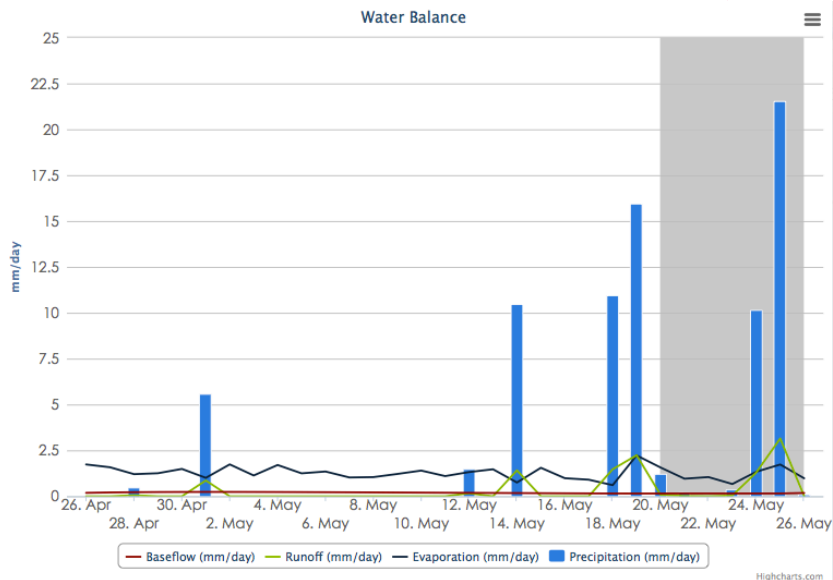


Sheffield, J., et al., 2014; A drought monitoring and forecasting system for sub-Saharan African water resources and food security. *Bull. Am. Met. Soc.*

Flood Forecasting with the LACFDM



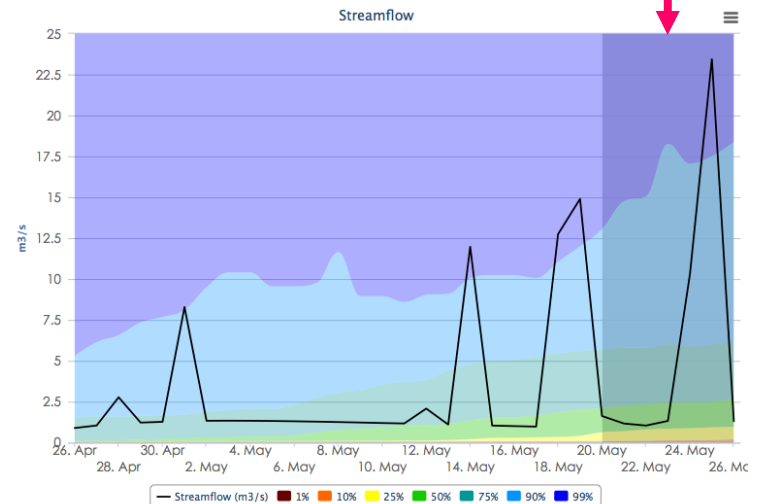
7-day precipitation forecast



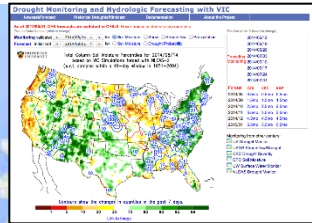
Initial Conditions

Hydrological models

Discharge Forecast



Expansion to a global monitoring capability



US Drought Monitor - 2006

CONUS 4km Monitor - 2016



Training and scoping workshops in Niger (2012, 2013), Kenya (2012), Chile (2014), Namibia (2015)



- Training in the use of the system
- Transfer of technology/knowledge exchange
- Operational servers – regional clients
- Validation, feedback and collaboration

