



USFS – NASA Virtual Pitch Fest / June 3, 2020

**THE POTENTIAL FOR NEAR-TERM ITERATIVE
FORECASTING TO ADVANCE USFS LAND-
MANAGEMENT AND DECISION SUPPORT**
By: Ecological Forecasting Initiative

About Me

 Michael Dietze
Boston University

 Forest dynamics & disturbance,
Ecological forecasting

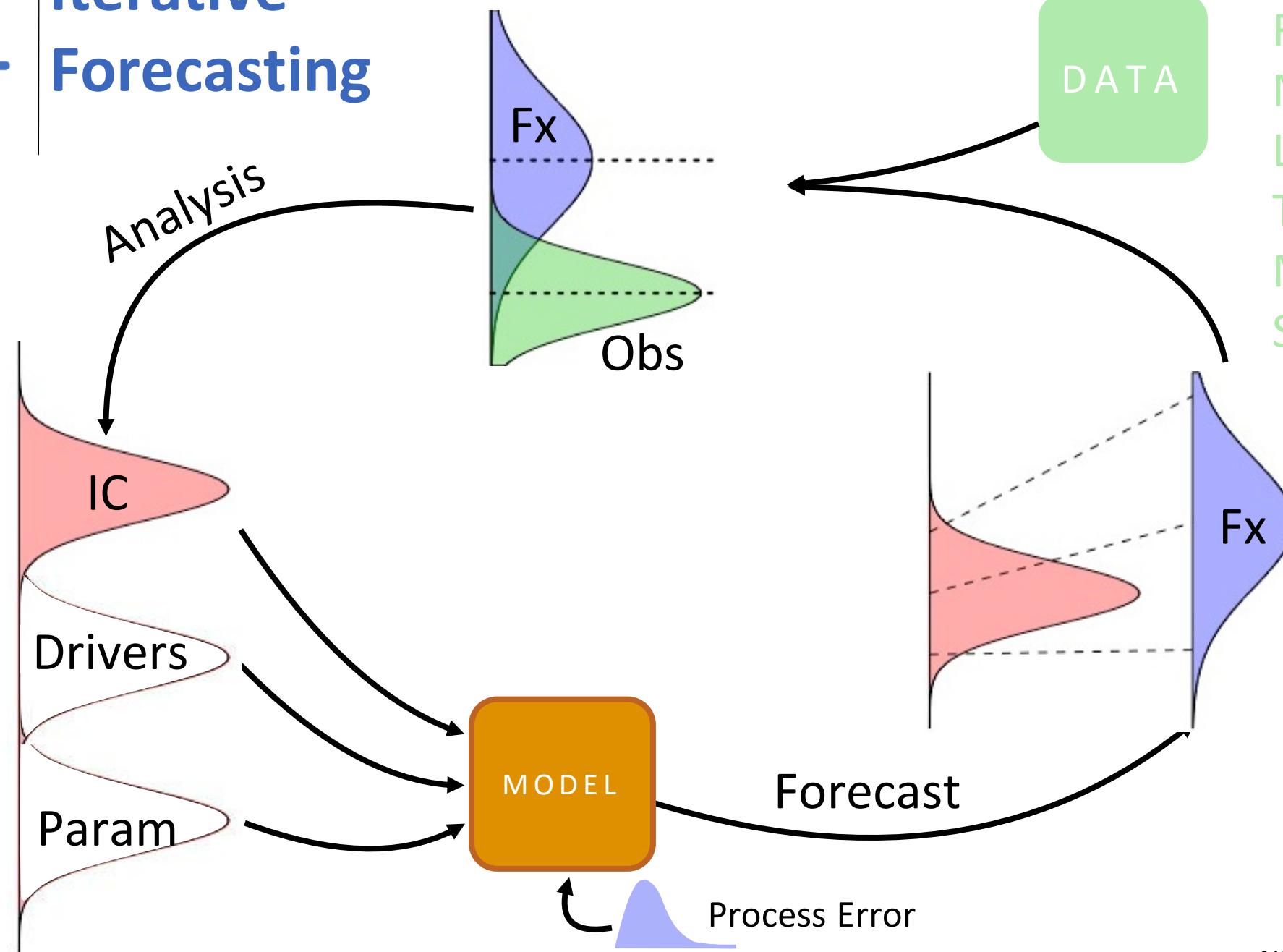
 Andy Fox Joint Center for Satellite Data Assimilation
Quinn Thomas Forest Resources, Virginia Tech
Shawn Serbin Remote Sensing, Brookhaven
Melissa Kenney Institute on the Environment, UMN
Eric Lonsdorf Natural Capital Project, UMN

 ecoforecast.org
@eco4cast

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Iterative Forecasting



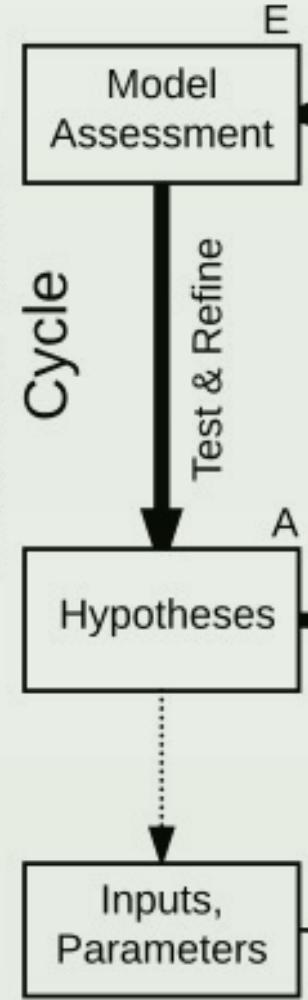
Field (e.g. FIA)
Multi/Hyperspec
Lidar, Radar
Thermal
Microwave
SIF, etc.

NASA 80NSSC17K0711

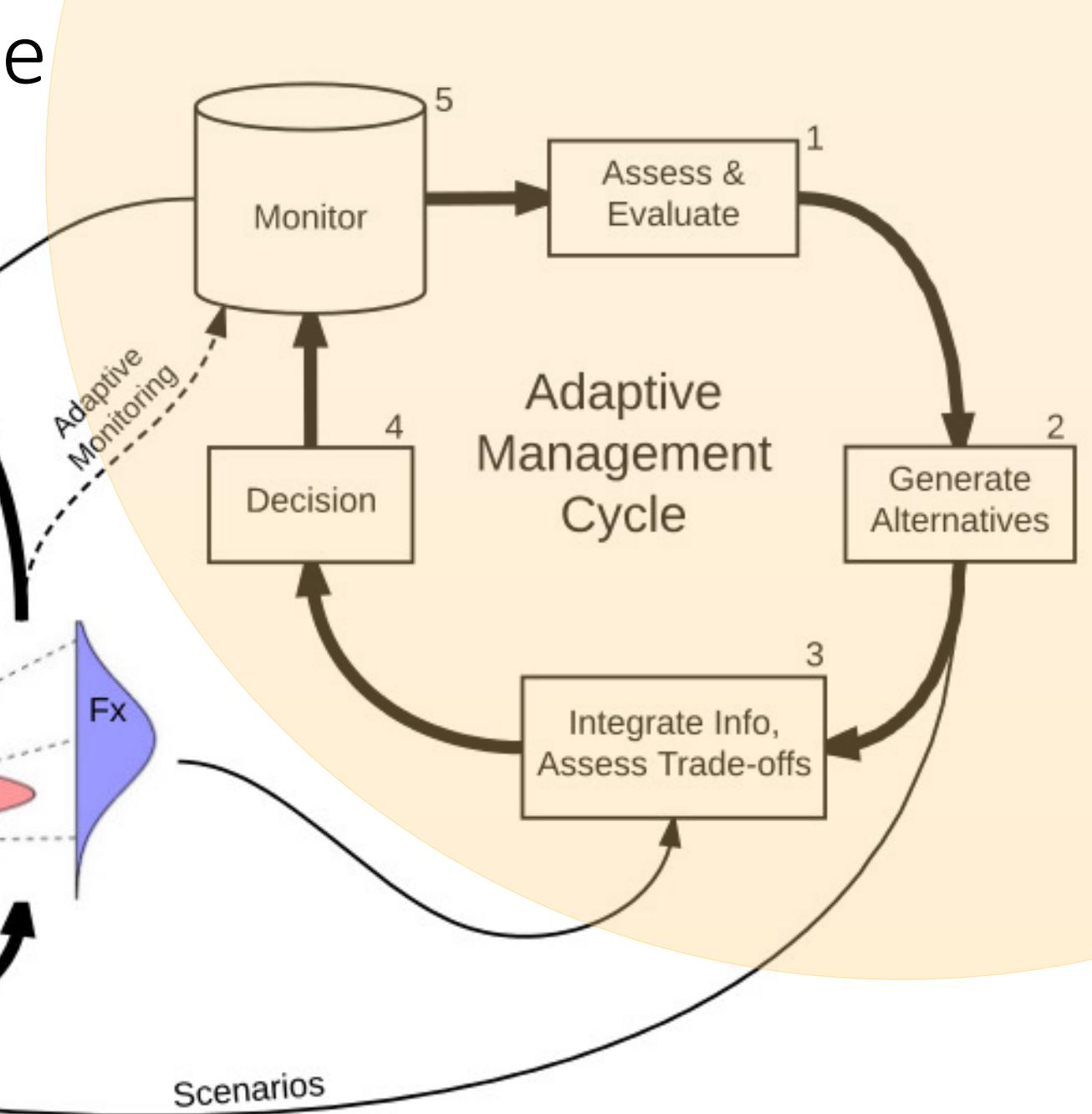
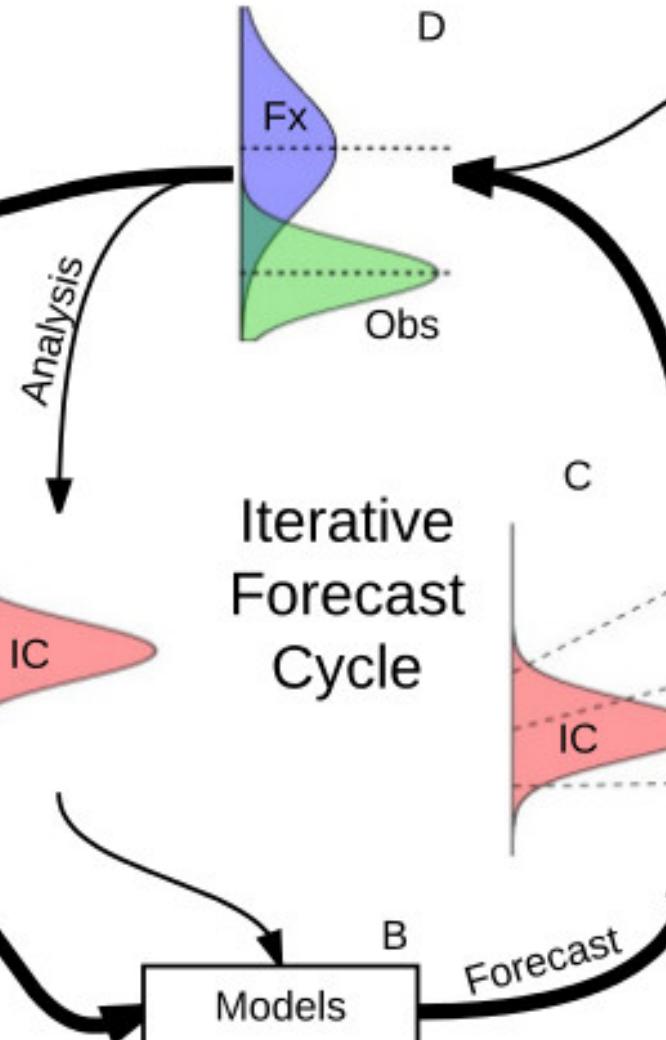
NSF 1458021, 1638577, 1926388

Decision + Science

Scientific Method Cycle



Iterative Forecast Cycle

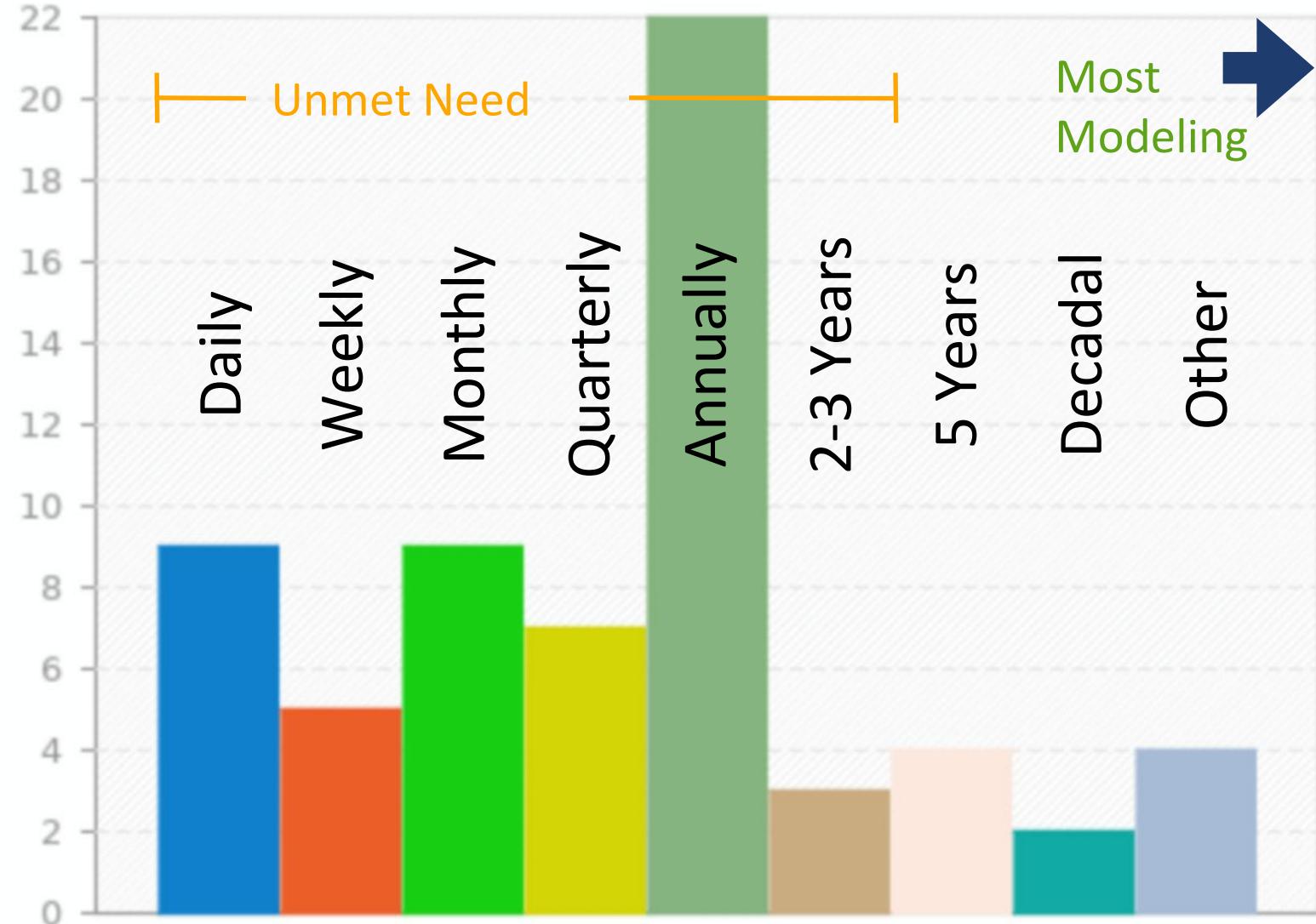


NASA Carbon Monitoring Stakeholder Survey

data courtesy Edil Sepulveda Carlo



IDEAL FREQUENCY



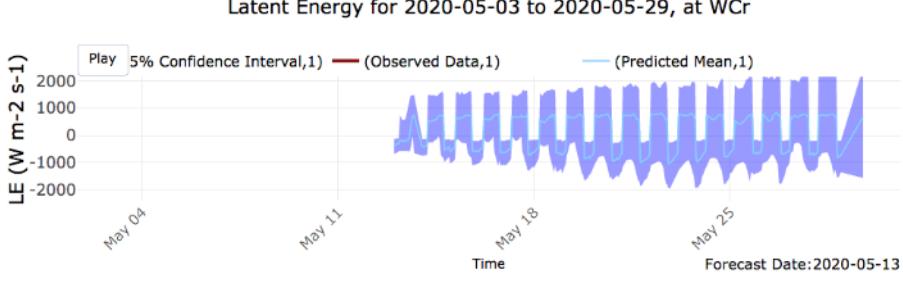
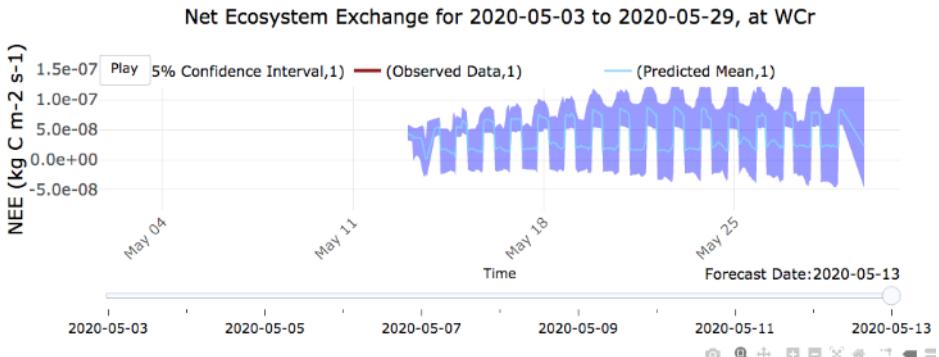


Experiment

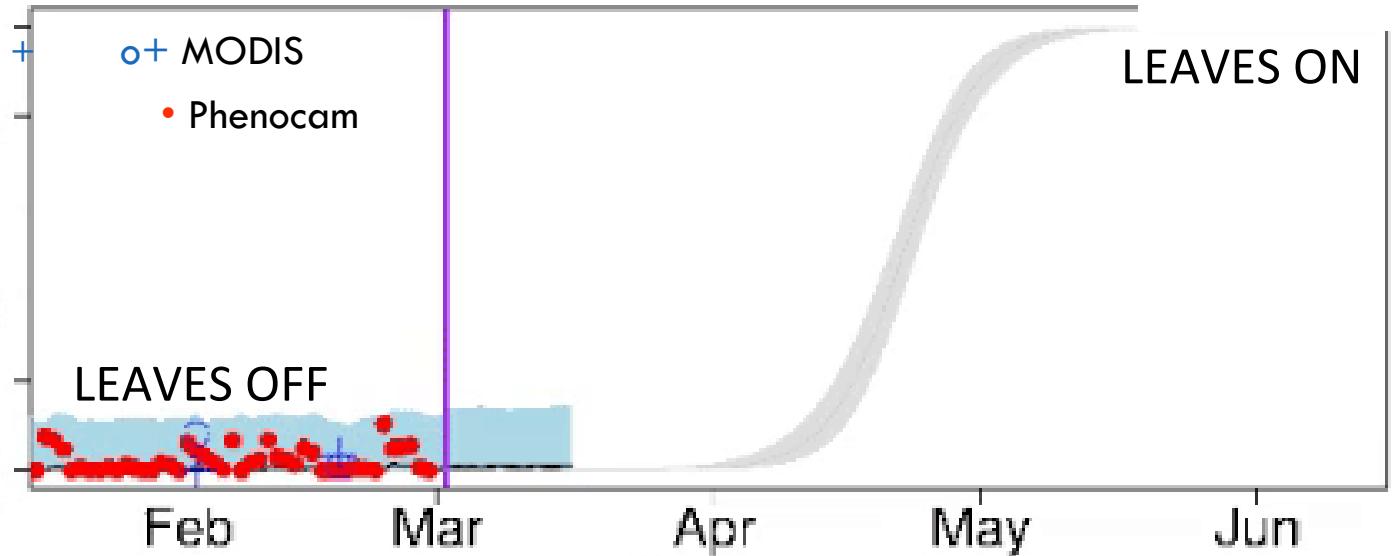
Experiment

Experiment

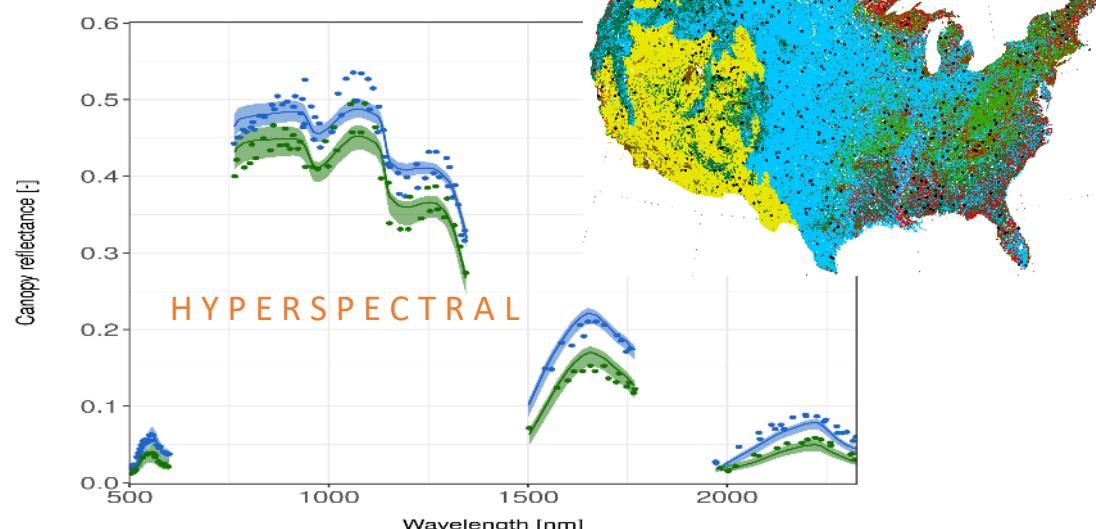
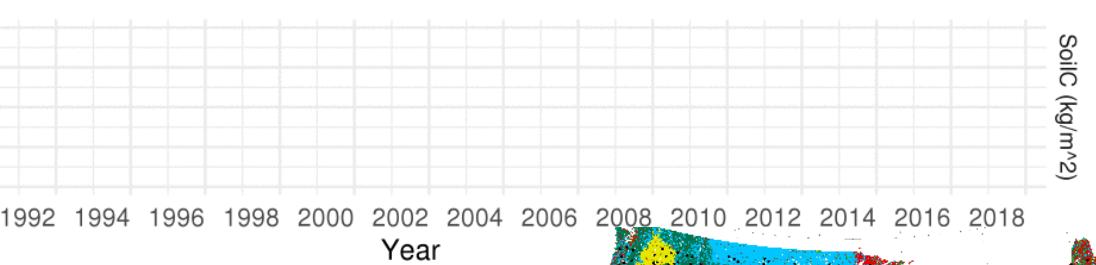
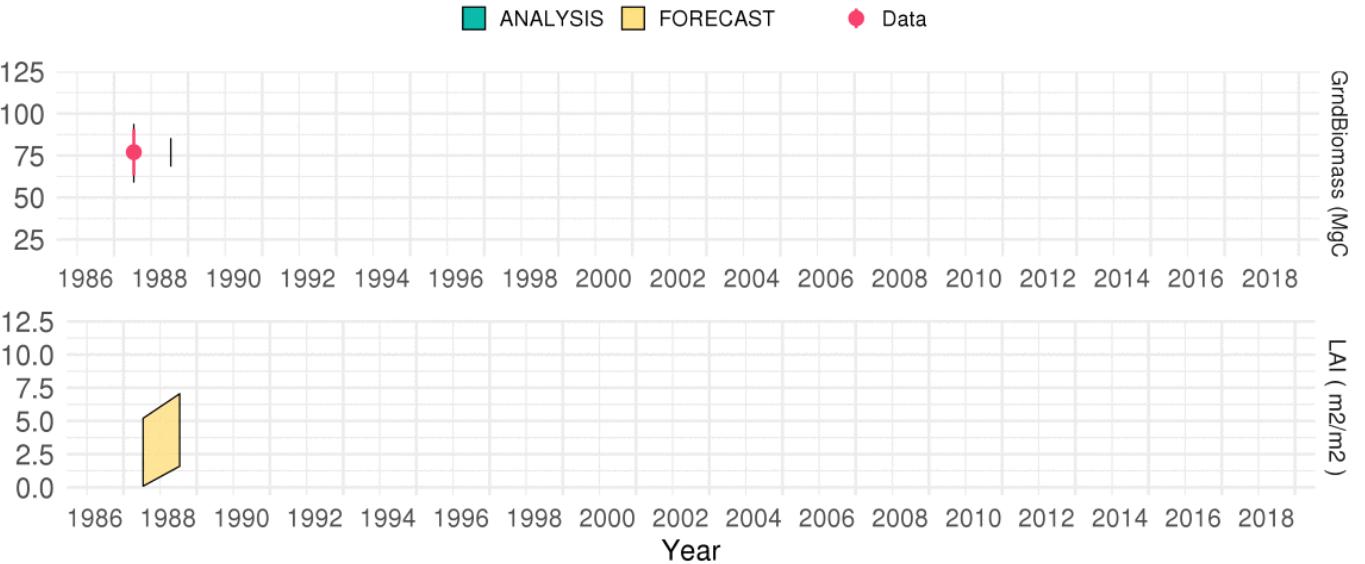
16-DAY CARBON AND WATER FORECAST

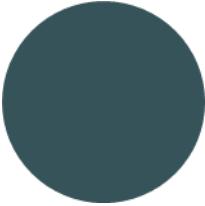


PHENOLOGY



Black Hills site level example





Thank You!



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Next steps:

- Scale up existing forecasts
- Integrate more Remote Sensing constraints
- Work with USFS to develop decision tools
- Expand to new forecasts