

Importance of data quality and reliability:  
Bad data = Bad forecast

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**March 27, 2012**



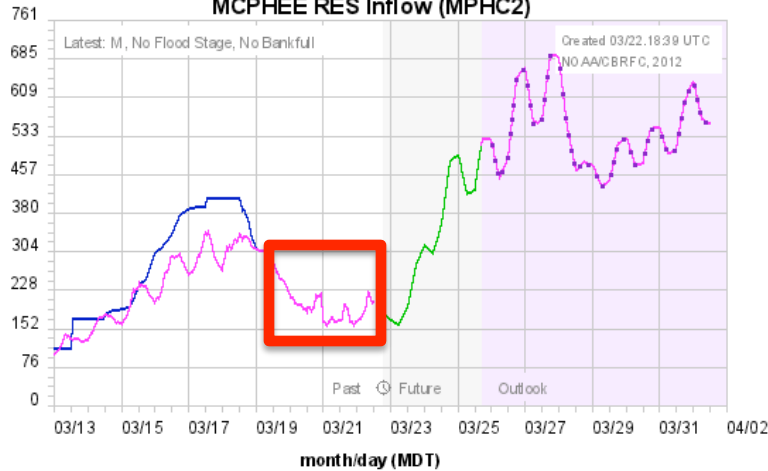
# Reliable data

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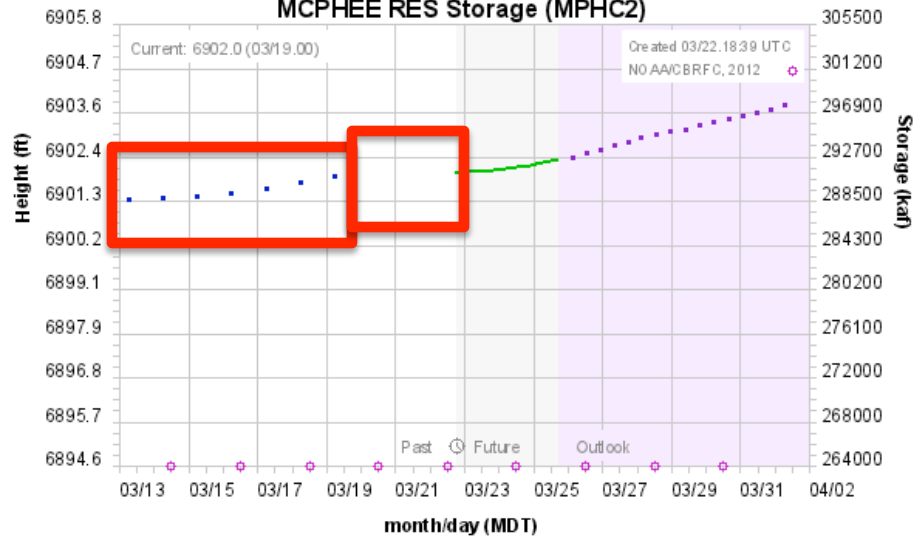
- Forecast quality – especially for peaks and daily forecasts – relies on:
  - High quality data – CBRFC forecasters identify bad data on a daily basis and omit it from forecast system
  - Reliable data – When we don't have current data, we extrapolate from what we know to create “simulated” values and use those rather than observed values.

# Example: Infrequent Updates

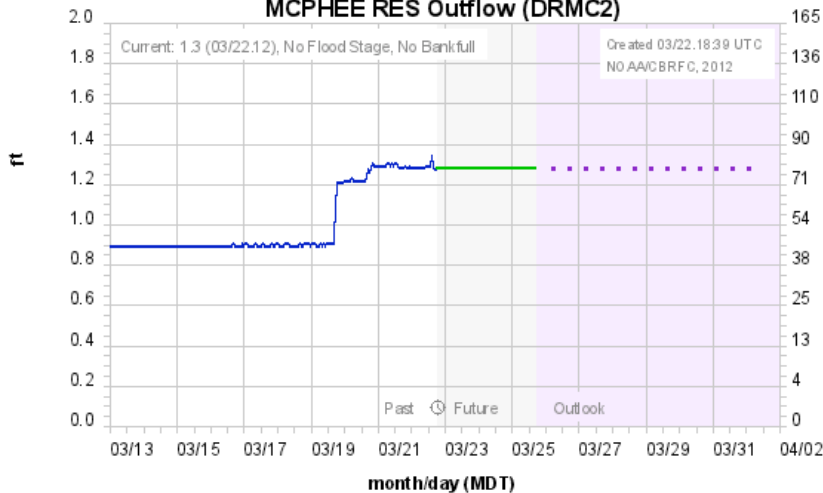
Colorado Basin River Forecast Center  
MCPHEE RES Inflow (MPHC2)



Colorado Basin River Forecast Center  
MCPHEE RES Storage (MPHC2)



Colorado Basin River Forecast Center  
MCPHEE RES Outflow (DRMC2)

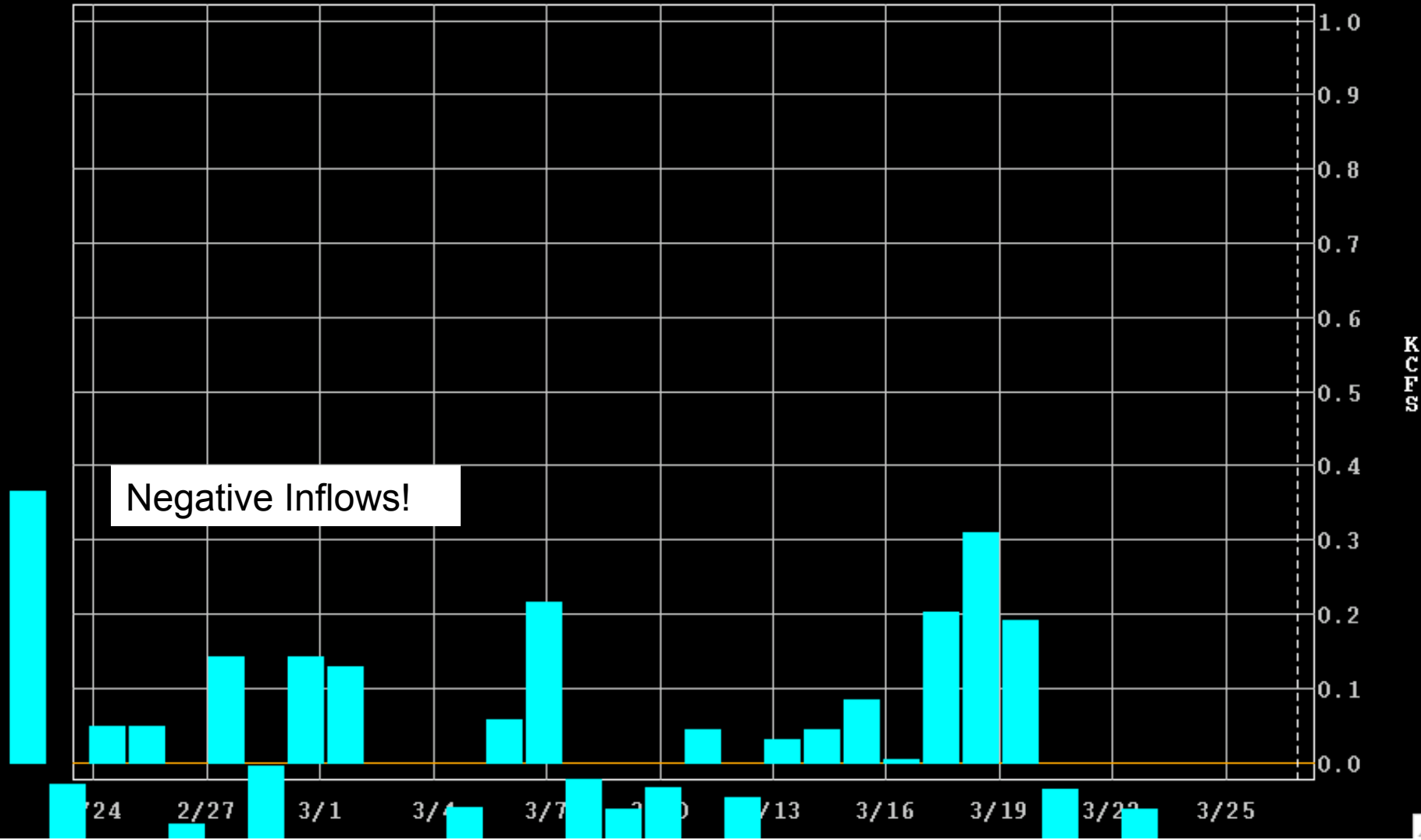


We get daily reservoir level data only once per week  
Inflow calculation relies on level data

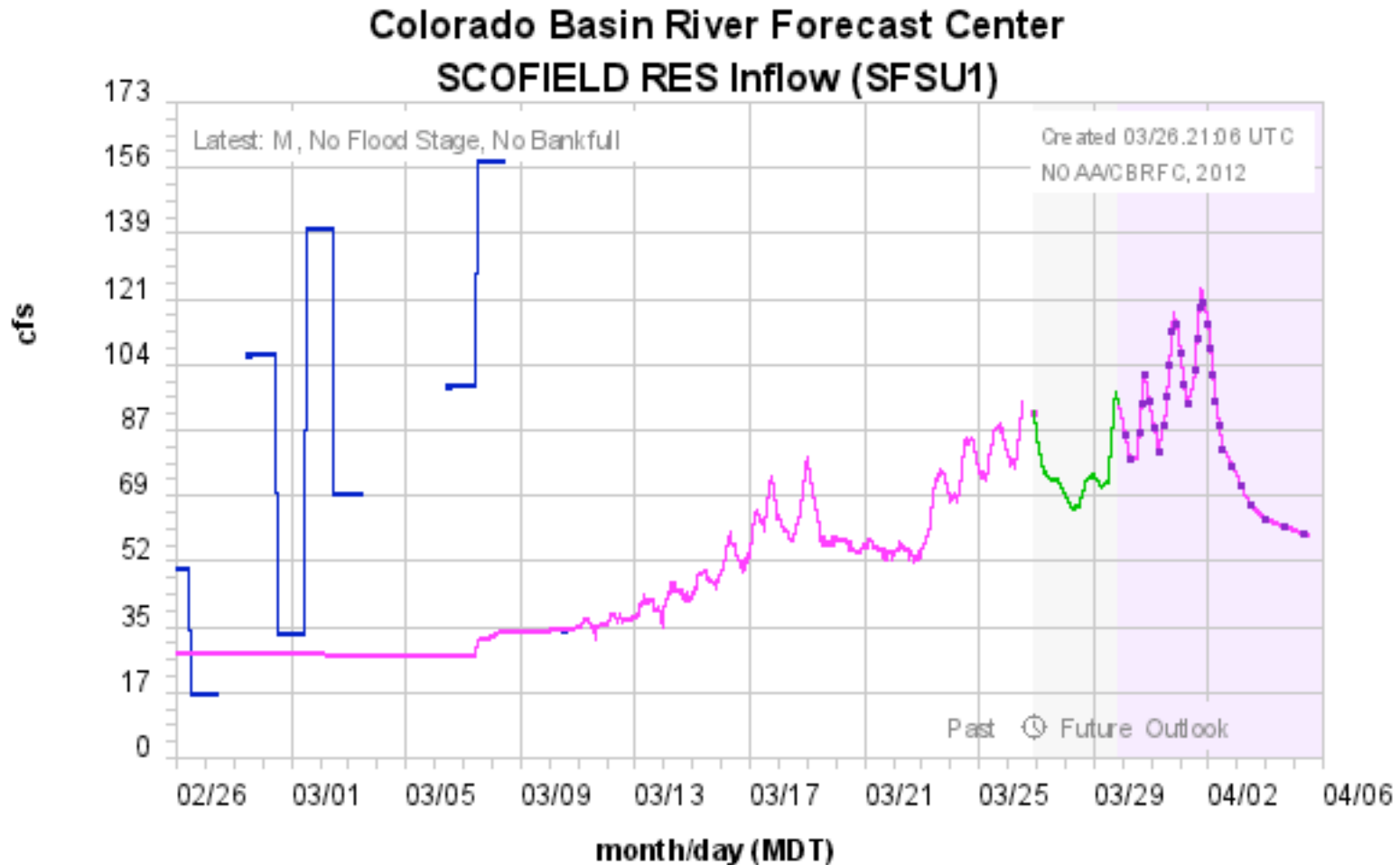


# Example: Bad Data

PRICE - SCOFIELD RES, SCOFIELD, NR  
SFSU1 QIDRZZZ DISCHARGE-INFLOW, DAILY, OBSERVED, STP/SAO  
Max= 0.4 at 02/24/2012 06Z  
Min= -0.2 at 03/22/2012 06Z



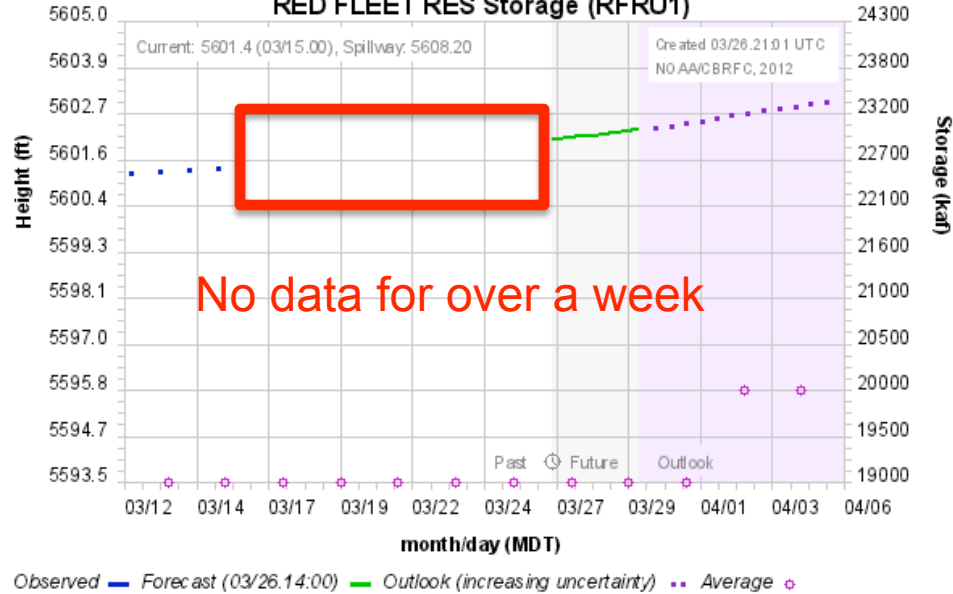
# Example: Bad Data (Con't)



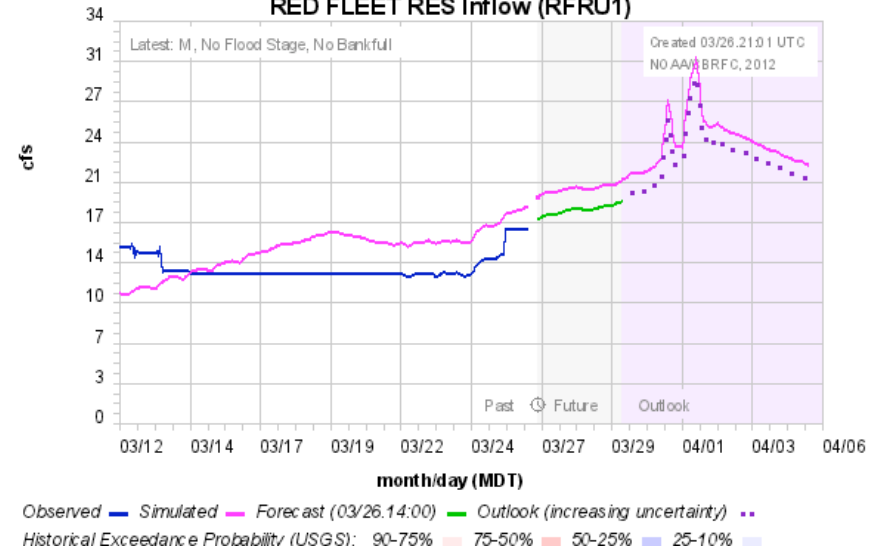


# Example: Missing Data

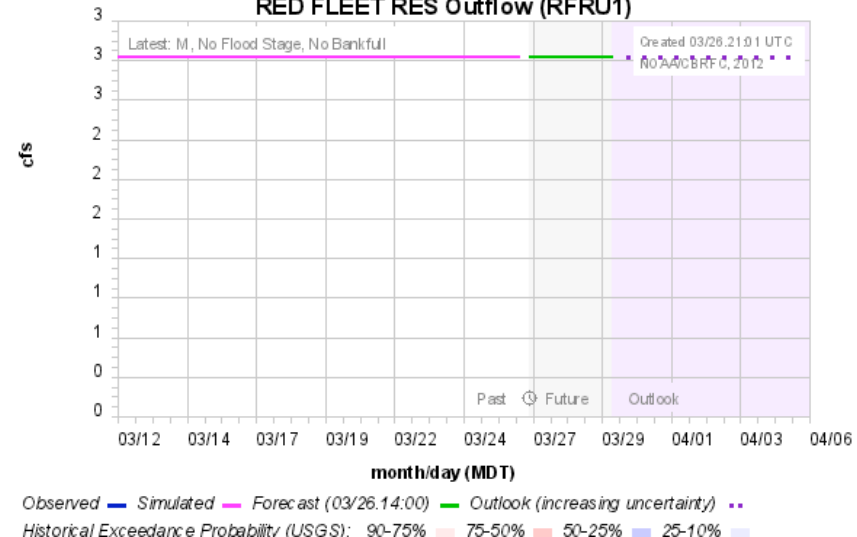
Colorado Basin River Forecast Center  
RED FLEET RES Storage (RFRU1)



Colorado Basin River Forecast Center  
RED FLEET RES Inflow (RFRU1)



Colorado Basin River Forecast Center  
RED FLEET RES Outflow (RFRU1)





# Near Future Release Schedules

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Real time observed data for reservoirs and diversions.

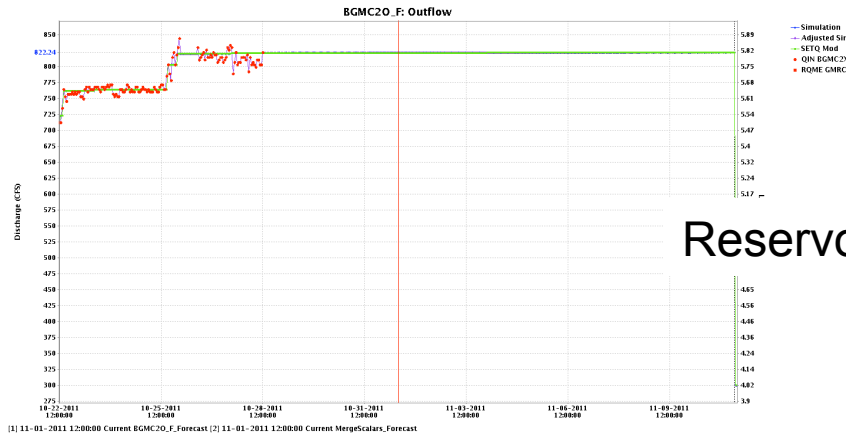
- Make sure our starting conditions are correct.

Short term (~10 day) reservoir release schedules and diversion plans.

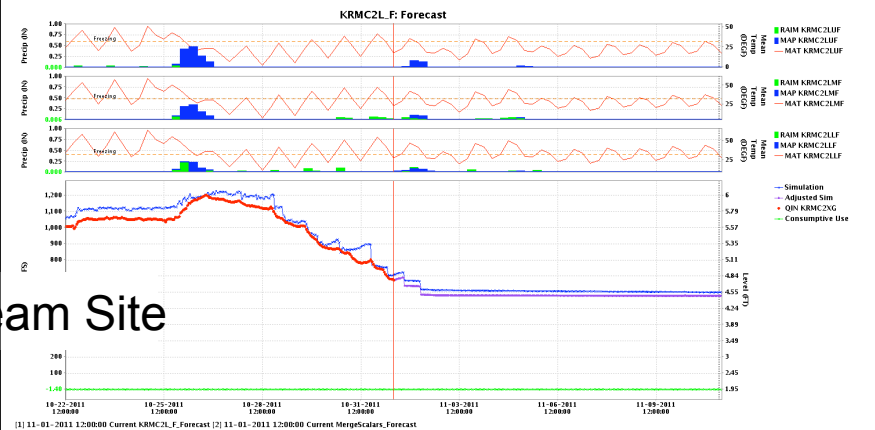
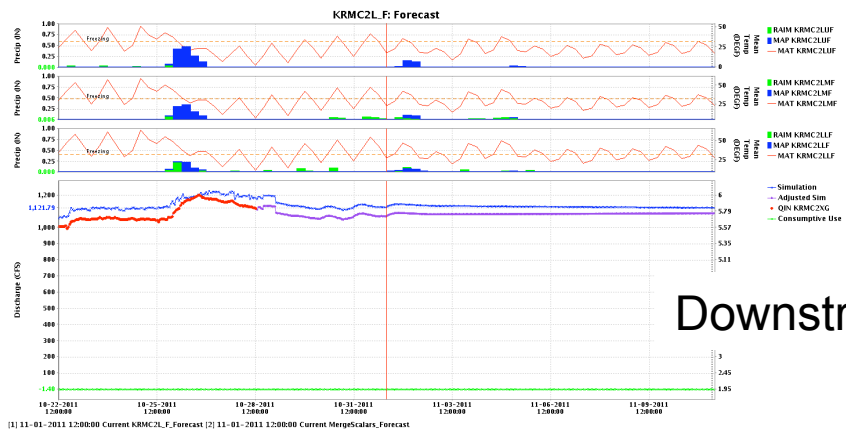
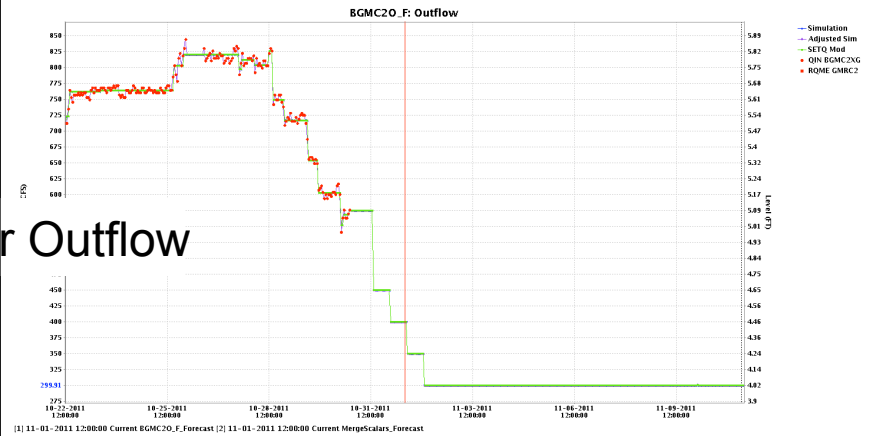
- Help with daily forecasting.
  - We assume current releases will remain constant if we have no other information (and not spilling).
  - Assume either current diversion levels or constant flow left in the river.
- Especially important when reservoir is getting close to spill, but reservoir operations are planned to avoid/reduce spill.
  - Our forecasts will show big rises downstream due to expected spill.

# Daily Forecasts – Releases

## No Release Schedule

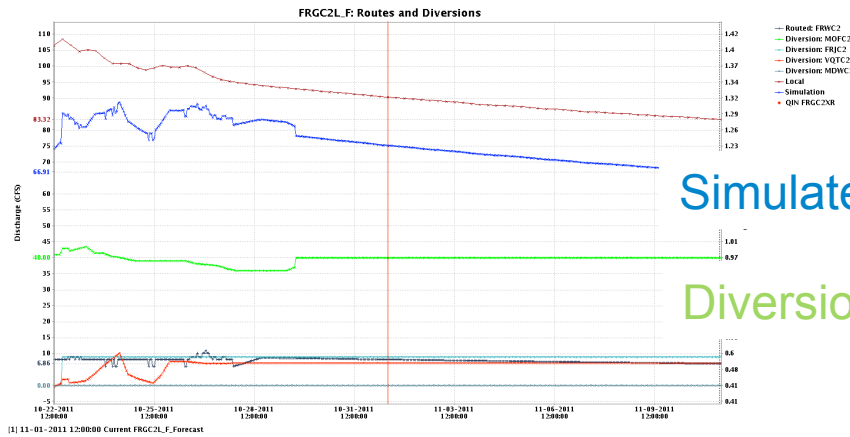


## Release Schedule





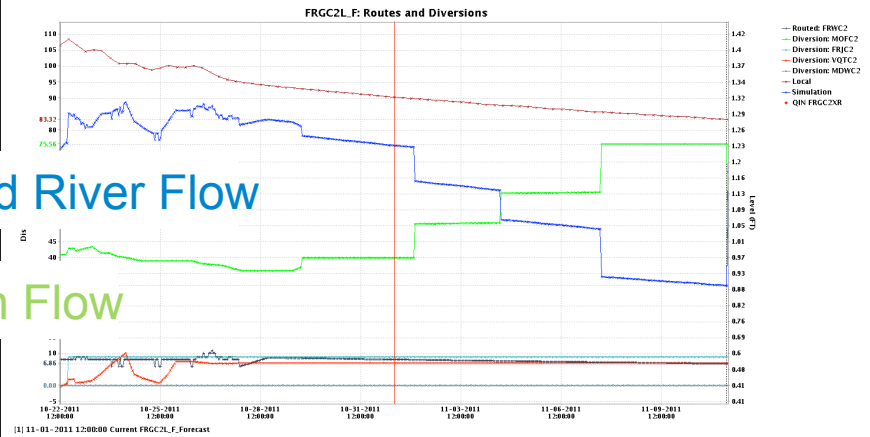
## Steady Diversion



Simulated River Flow

Diversion Flow

## Changing Diversion





# Example:

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