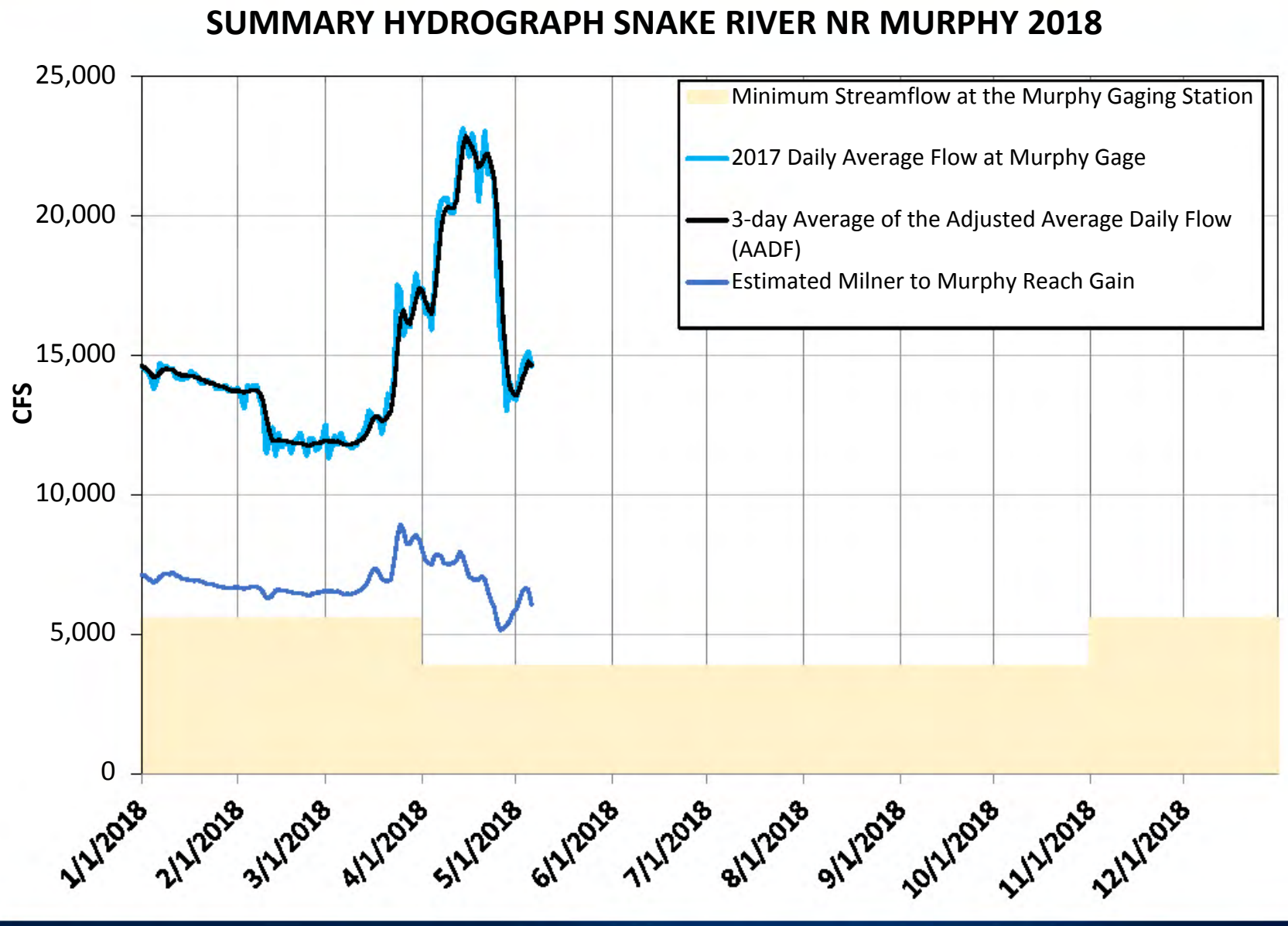
Swan Falls Forecast Tool
2018 Forecast
SFTWG Meeting
May 10, 2018

Overview

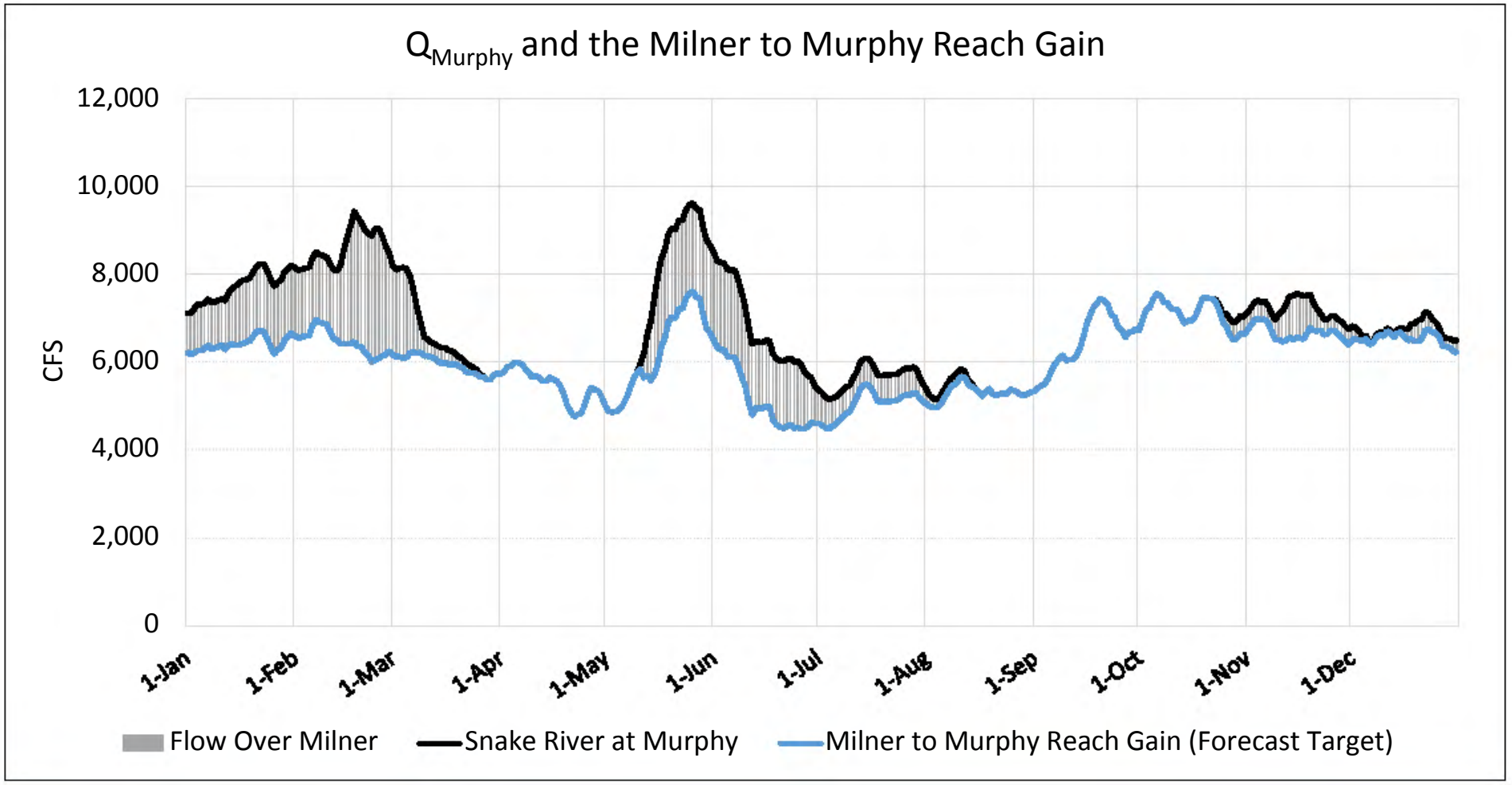
- Current AADF
- Swan Falls Forecast Tool (SFFT) Refresher
  - SFFT target
  - SFFT components
  - SFFT priority zone
- Hindcast
  - Forecast and Target comparison graphs (2013 – 2017)
  - SFFT Residual
- 2018 Forecast

Current AADF

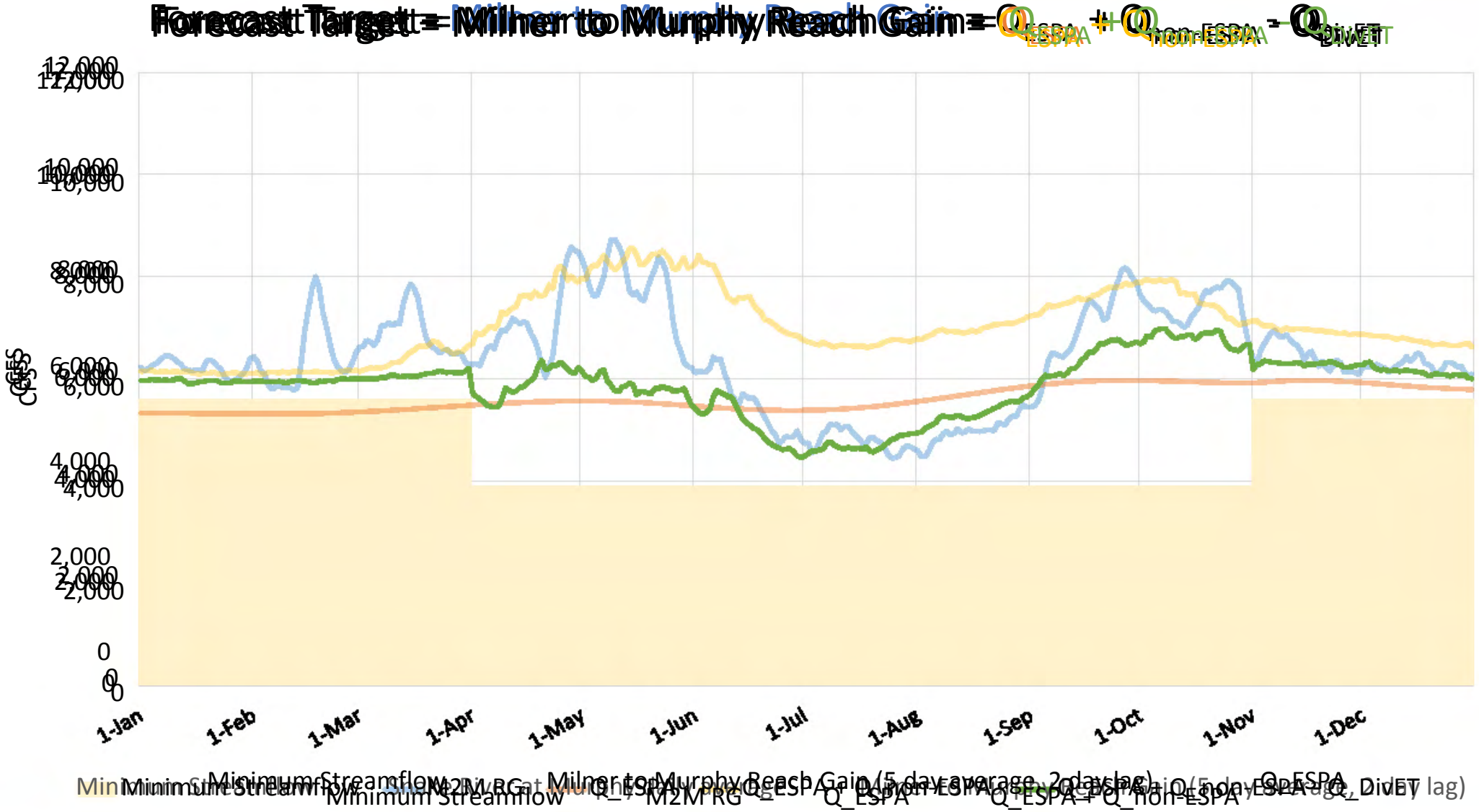


SFFT Refresher: Target

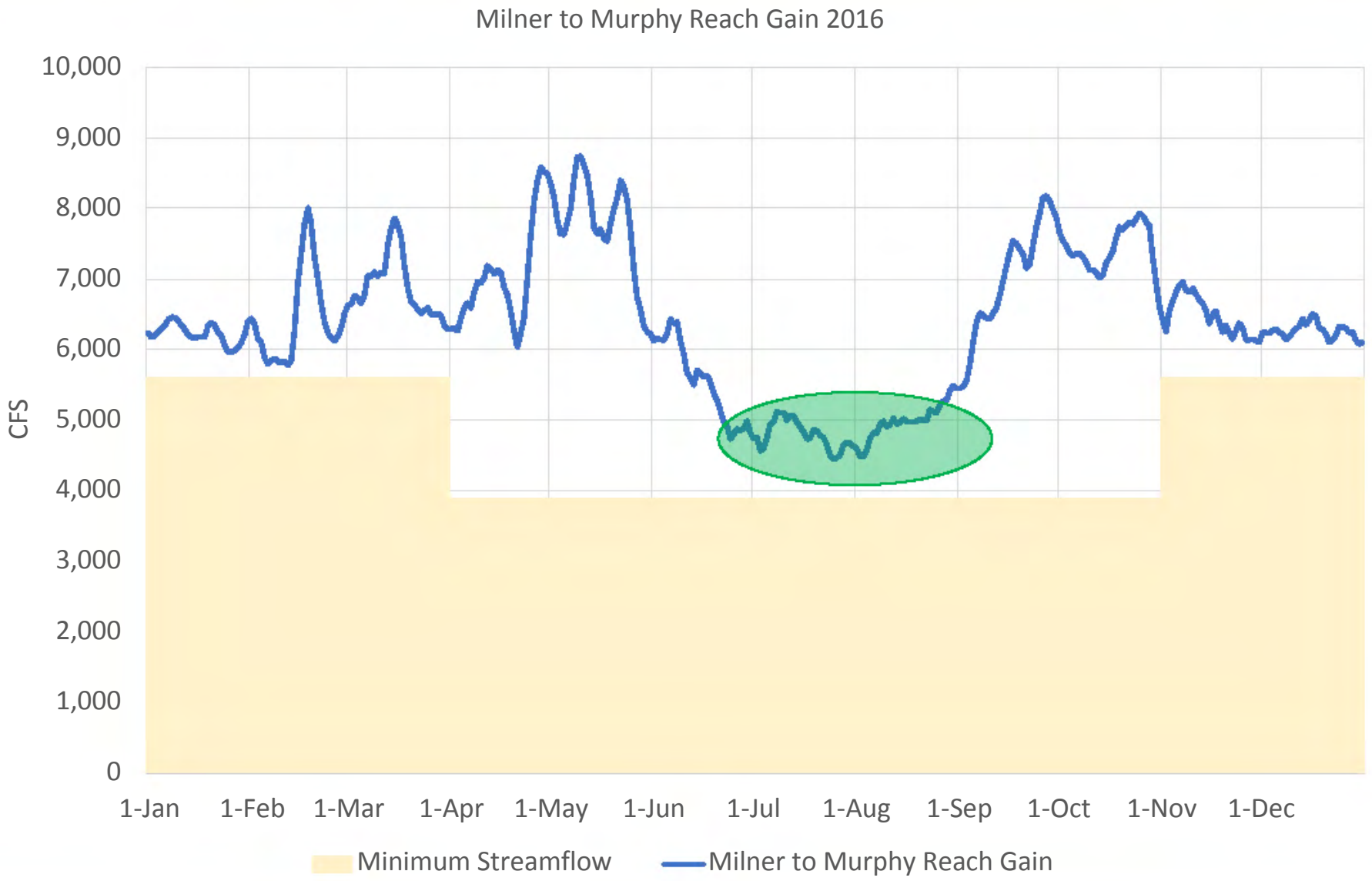
The Swan Falls Forecast Tool predicts the reach gain from Milner to Murphy. This is equivalent to the AADF when no flow is passing Milner.



SFFT Refresher: Components



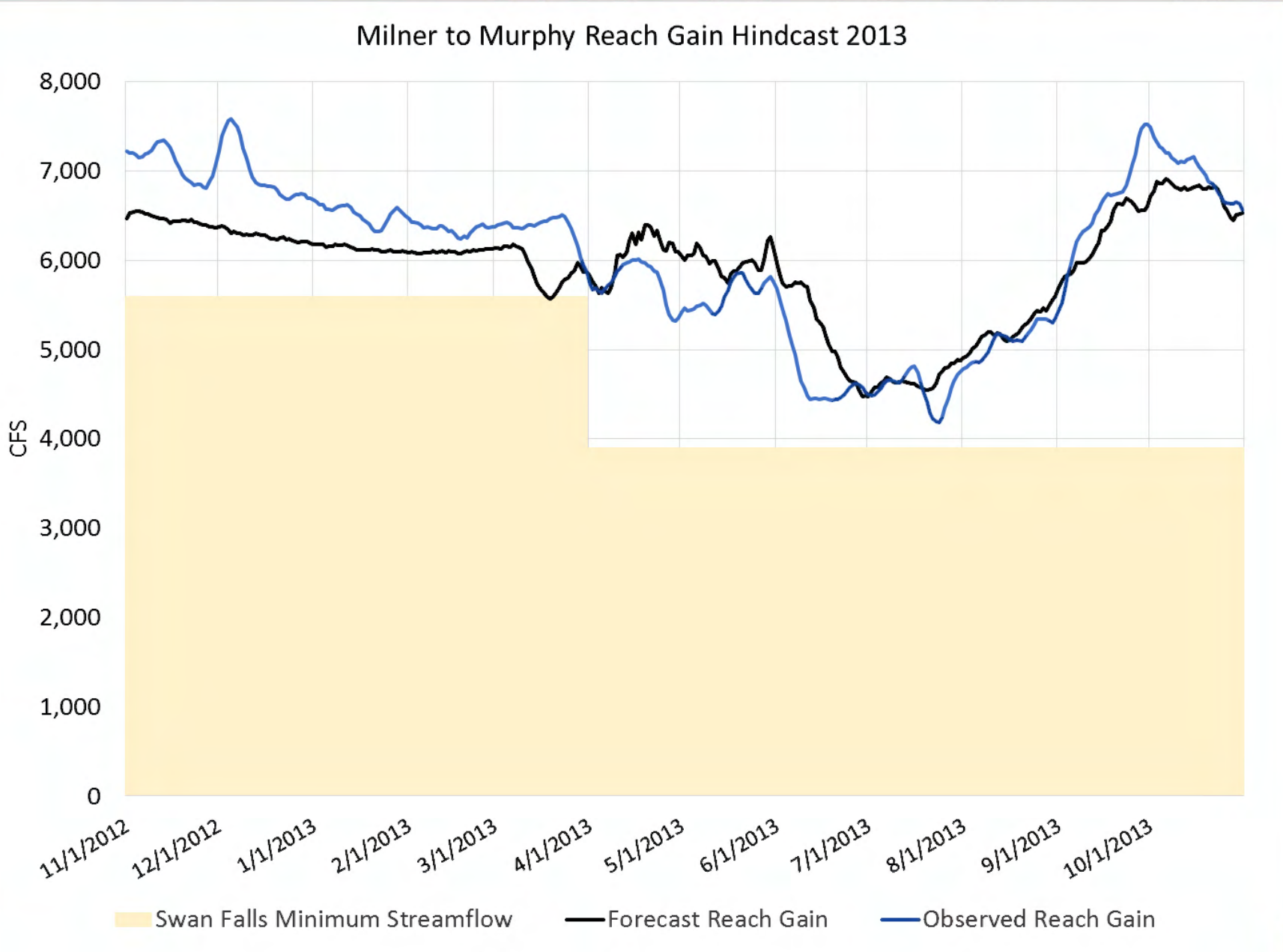
SFFT Refresher: Priority Zone



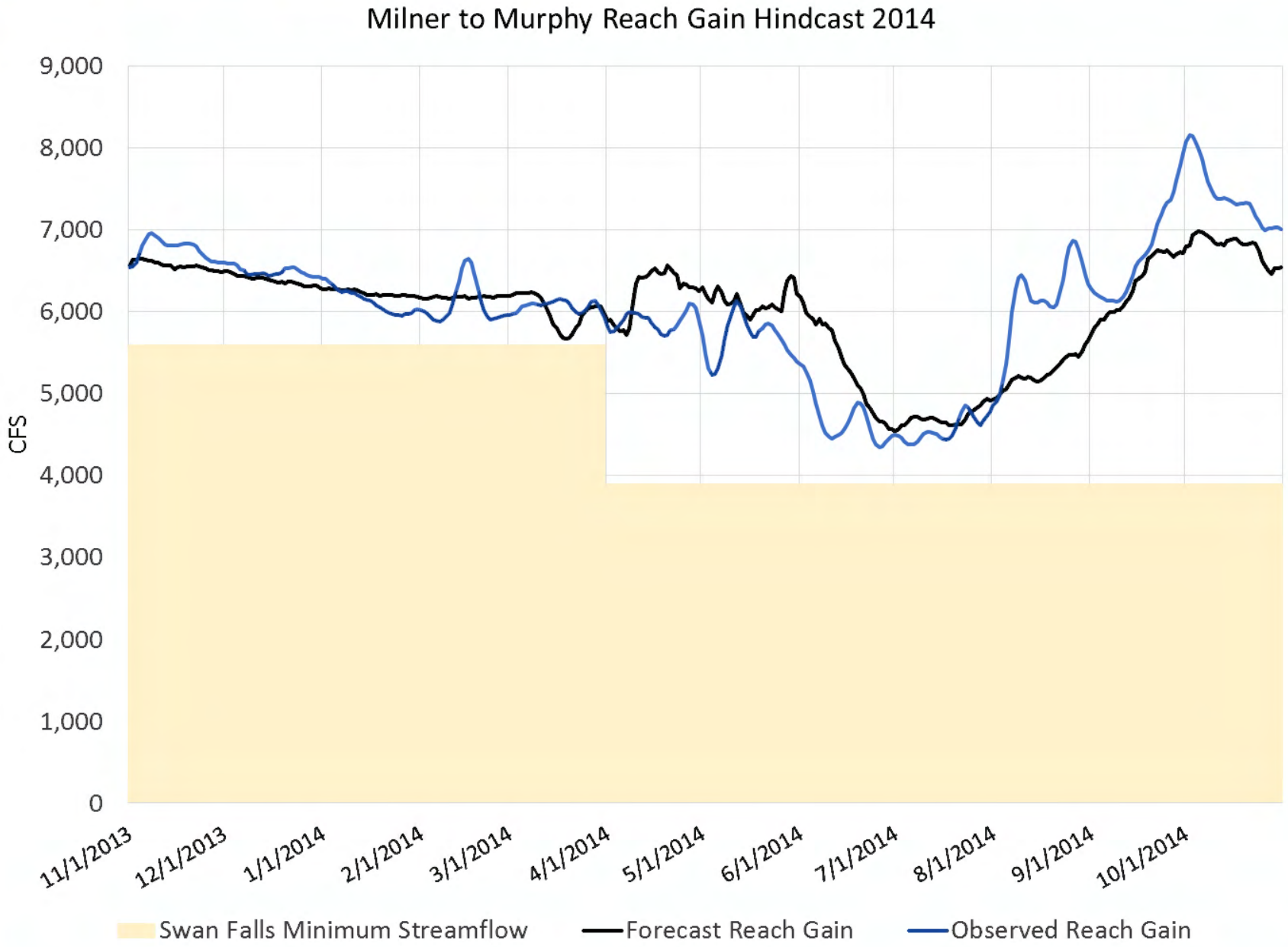
Hindcast and Residual Analysis

- Review SFFT perfomance
  - Hindcast review of previous 5 years
  - Residual analysis (2002 – 2017)
- Hindcast method
  - Input only data supplied to forecast
  - Limited to hindcast of 2002 - 2017
- Residual statistics
  - Residual = Model – Observed
  - Statistics calculated on the daily dataset (16 data points)
  - Interquartile range of residuals computed

Hindcast


Milner to Murphy Reach Gain Hindcast 2013
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
CFS
11/1/2012
12/1/2012
1/1/2013
2/1/2013
3/1/2013
4/1/2013
5/1/2013
6/1/2013
7/1/2013
8/1/2013
9/1/2013
10/1/2013
Swan Falls Minimum Streamflow
Forecast Reach Gain
Observed Reach Gain

Hindcast


Milner to Murphy Reach Gain Hindcast 2014
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
CFS
11/1/2013
12/1/2013
1/1/2014
2/1/2014
3/1/2014
4/1/2014
5/1/2014
6/1/2014
7/1/2014
8/1/2014
9/1/2014
10/1/2014
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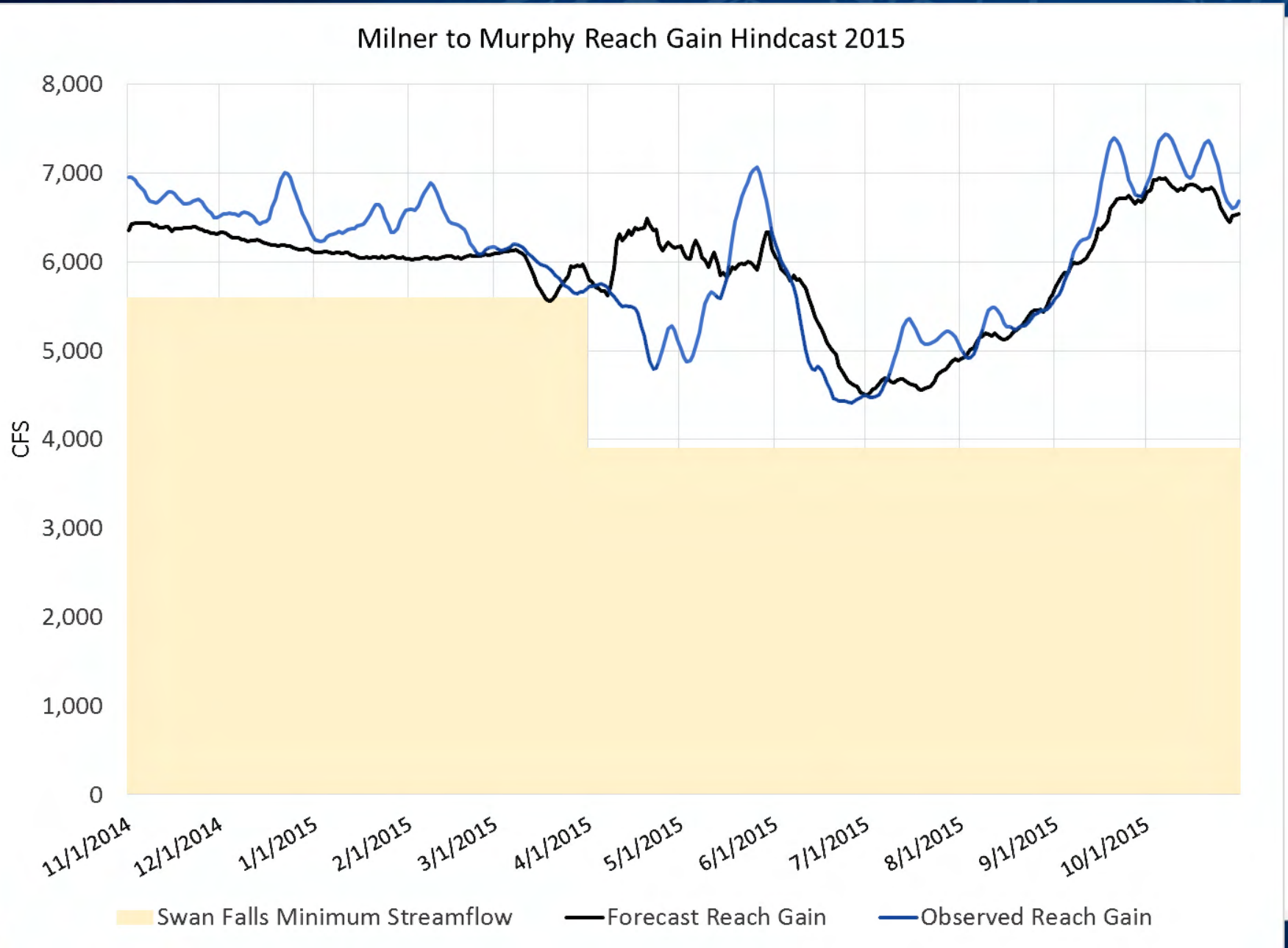
Hindcast


Milner to Murphy Reach Gain Hindcast 2015
8,000
7,000
6,000
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11/1/2014
12/1/2014
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2/1/2015
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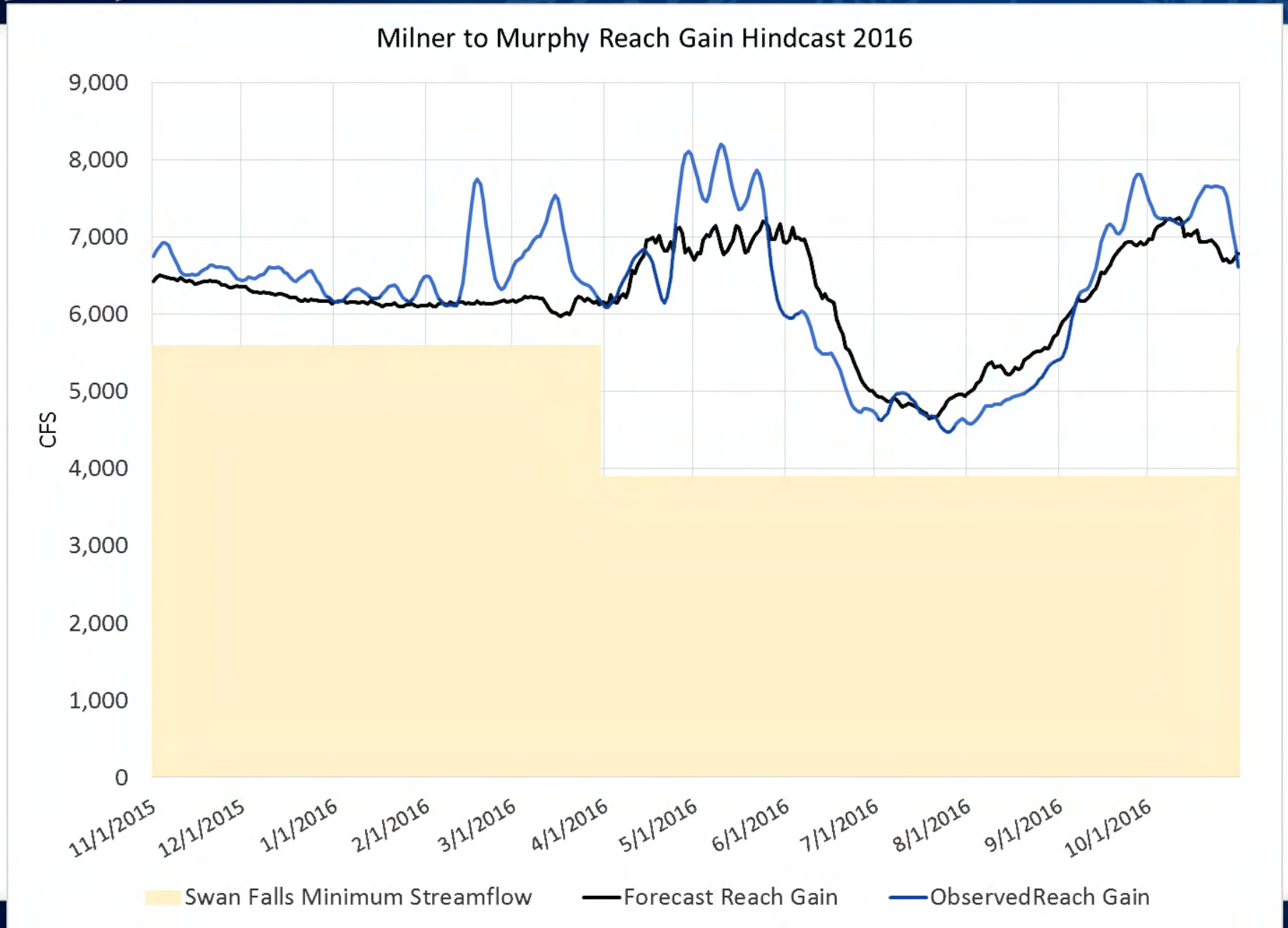
Milner to Murphy Reach Gain Hindcast 2016
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
CFS
11/1/2015
12/1/2015
1/1/2016
2/1/2016
3/1/2016
4/1/2016
5/1/2016
6/1/2016
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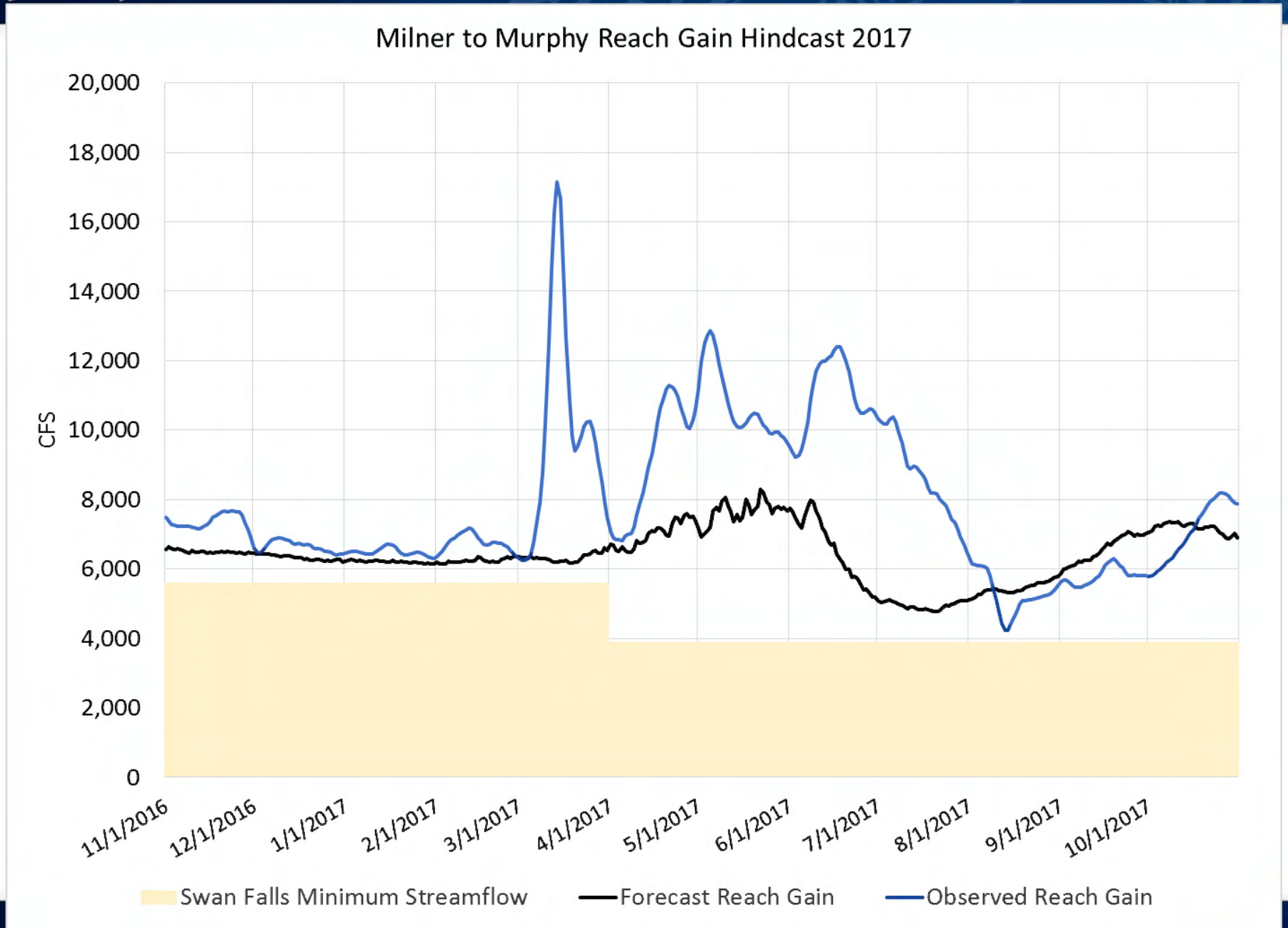
Hindcast


Milner to Murphy Reach Gain Hindcast 2017
CFS
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
11/1/2016
12/1/2016
1/1/2017
2/1/2017
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10/1/2017
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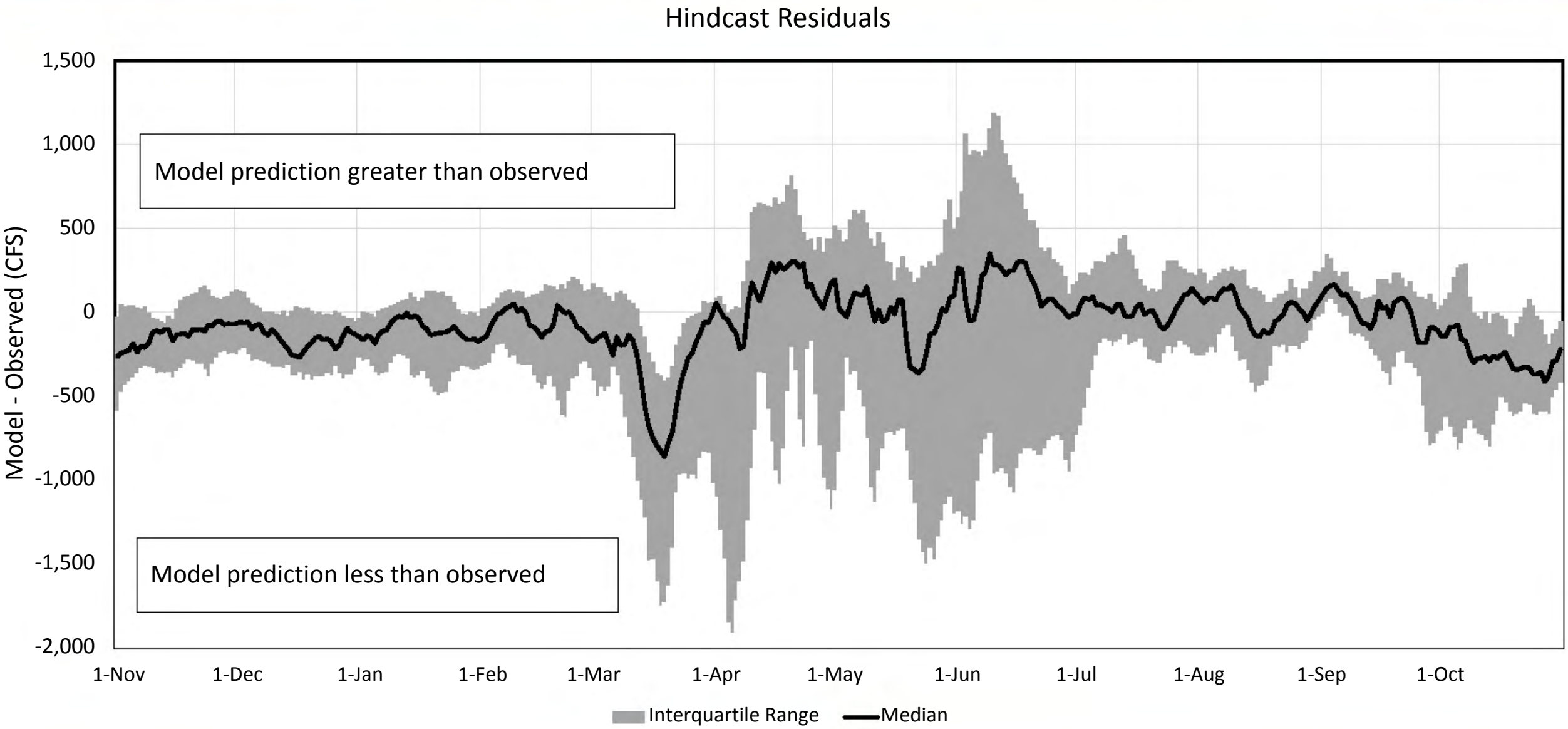
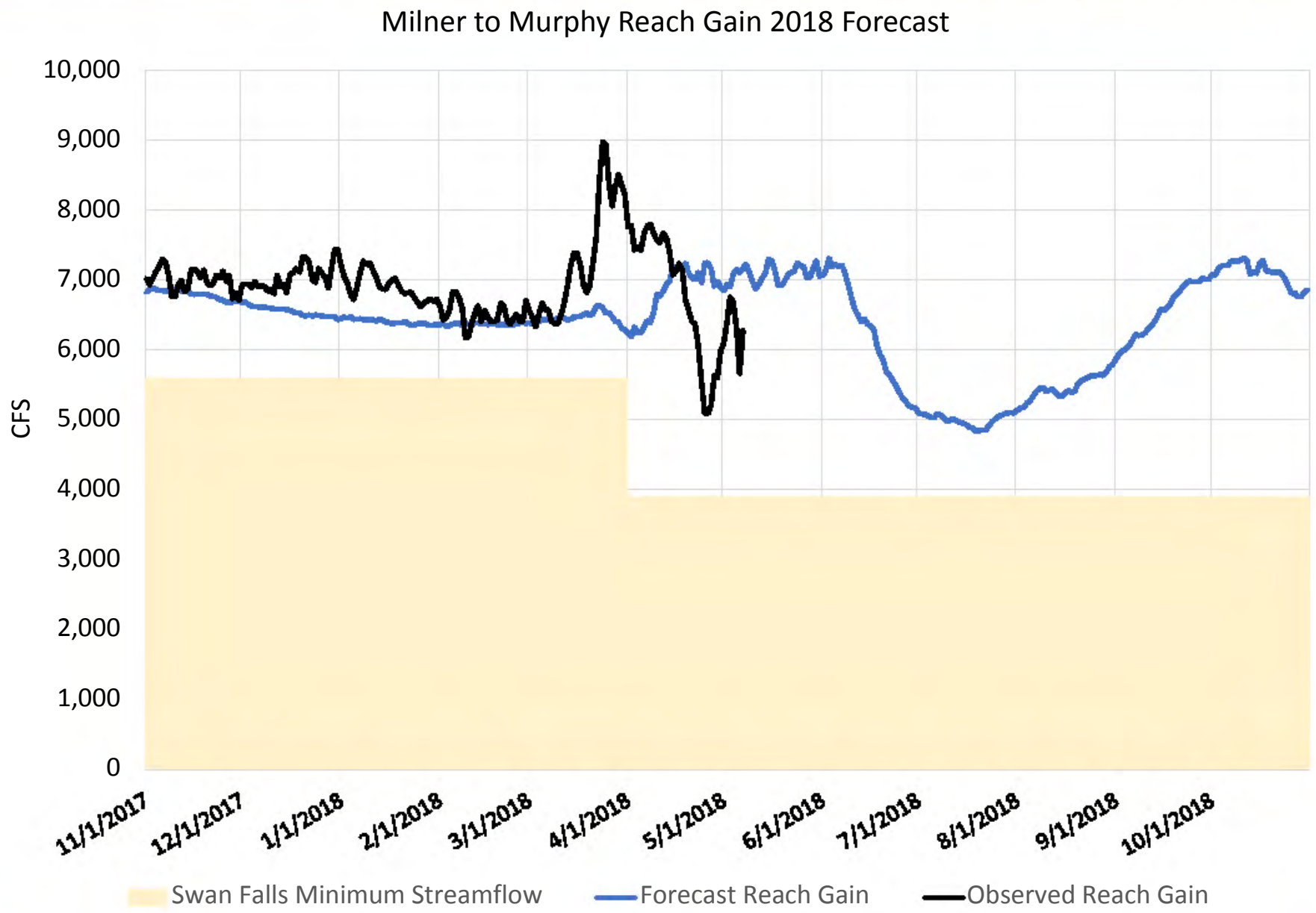
Residual Analysis



2018 Forecast



Future Direction

- Residual analysis
- Potential tool revision based on
  - Residual analysis
  - Q_non-ESPA component
  - Q_DivET early demand
- Add model validation to SFFT documentation
- Complete draft report
- Submit report to SFTWG for review

EOS: Hindcast with error