

Appendix A – Ochlockonee River Model Calibration

This appendix provides detailed calibration plots for each station and parameter available for the Ochlockonee River water quality model.

Time Series – provides a comparison of the all the measured data to the model simulated data over the entire simulation period for visual inspection. If any measured data had a remark code indicating below detection it will appear as flagged data and will be represented by a blue dot. Flagged data is not considered in the quantitative statistical calculations.

Probability Distribution – provides a comparison of the probability distribution of measured and simulated data. This method uses paired measured and simulation data to determine the probability curve.

1 to 1 – plots the paired measured and simulated values against one another. The red line represents a perfect calibration, the blue line represents the linear fit of measured/simulated fit.

Statistics –

- Num Obs – represents the number of measurements used in calculation
- R^2 – correlation coefficient between sim and obs.
- NSE – Nash-Sutcliffe efficiency between sim and obs,
- RMSE – root mean square error
- d – Index of Agreement
- Percentiles – provides a numeric comparison of the percentile distribution of sim and obs.

Annual Analysis -- For flow, total nitrogen, total phosphorus and chlorophyll a annual boxplots are presented for the simulation period for each station. The black dots represent the measured data, the blue box and whiskers represent the model simulated results. The whiskers represent the range of the model simulated results. Average model simulated results are represented by a green dot, average measured data is represented by a red diamond.

For chlorophyll a, total nitrogen and total phosphorus annual boxplot figures are present to illustrate model performance year by year.

Flow Calibration

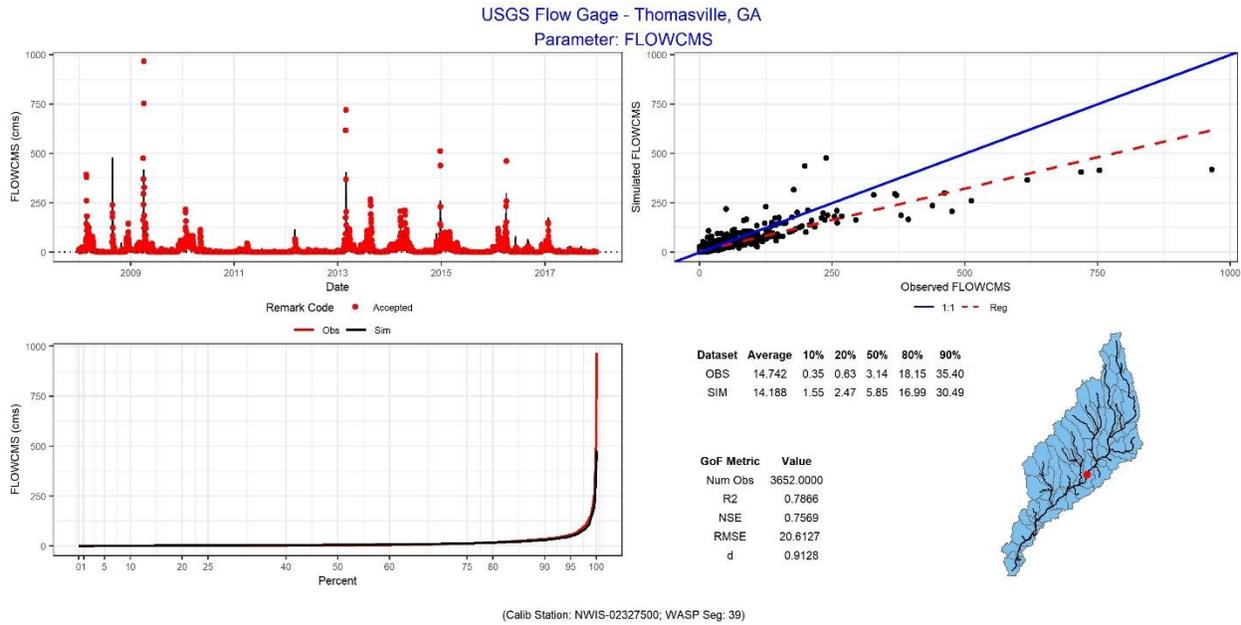


Figure 1 USGS 02327500 Ochlockonee River near Thomasville, GA

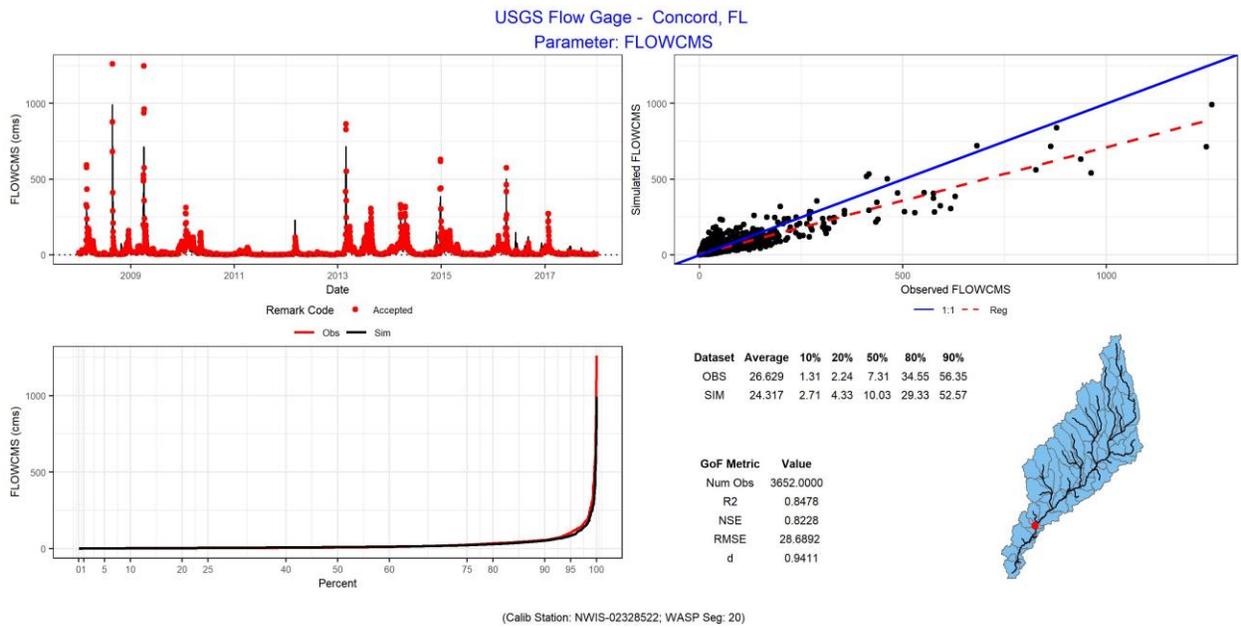
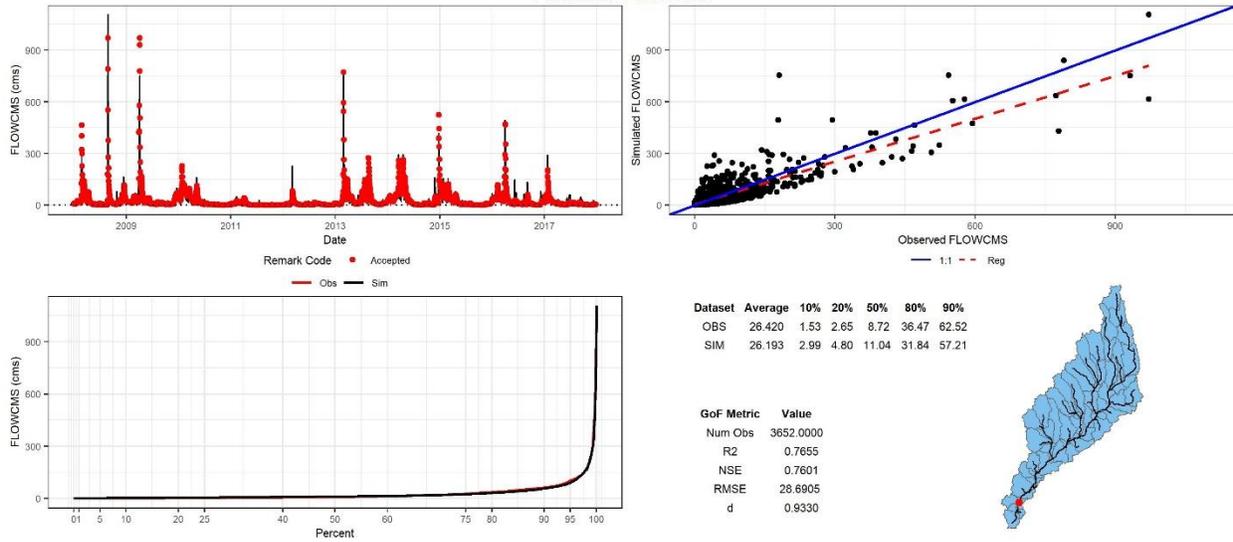


Figure 2 USGS 02328522 Ochlockonee River near Concord, FL

USGS Flow Gage - Havana, FL
Parameter: FLOWCMS



(Calib Station: NWS-02329000, WASP Seg: 9)

Figure 3 USGS 02329000 Ochlockonee River near Havana, FL

FLOWCMS (Annual Comparison)

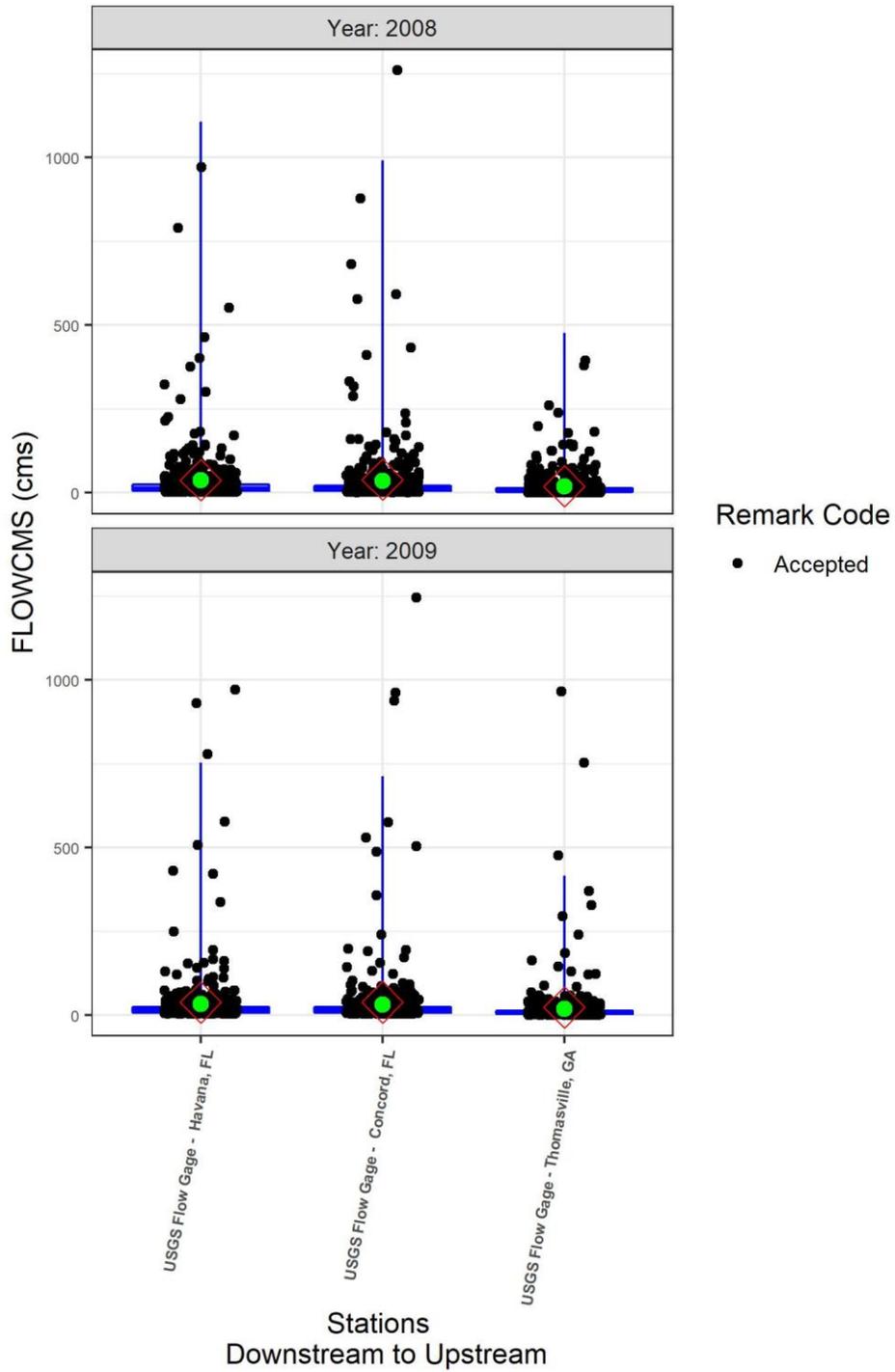


Figure 4 Ochlockonee River Flow Comparison Observed vs. Simulated 2008-2009

FLOWCMS (Annual Comparison)

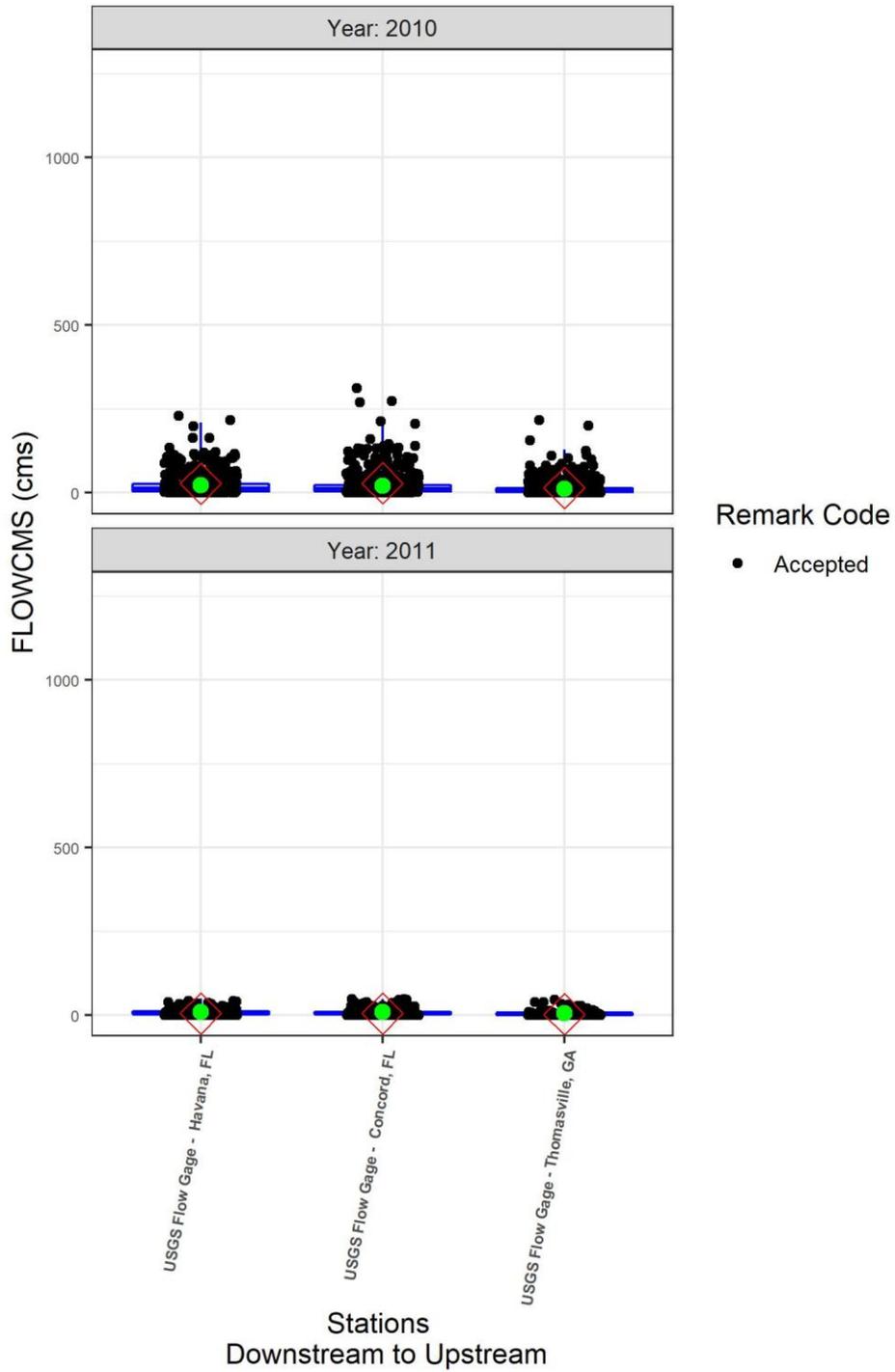


Figure 5 Ochlockonee River Flow Comparison Observed vs. Simulated 2010-2011

FLOWCMS (Annual Comparison)

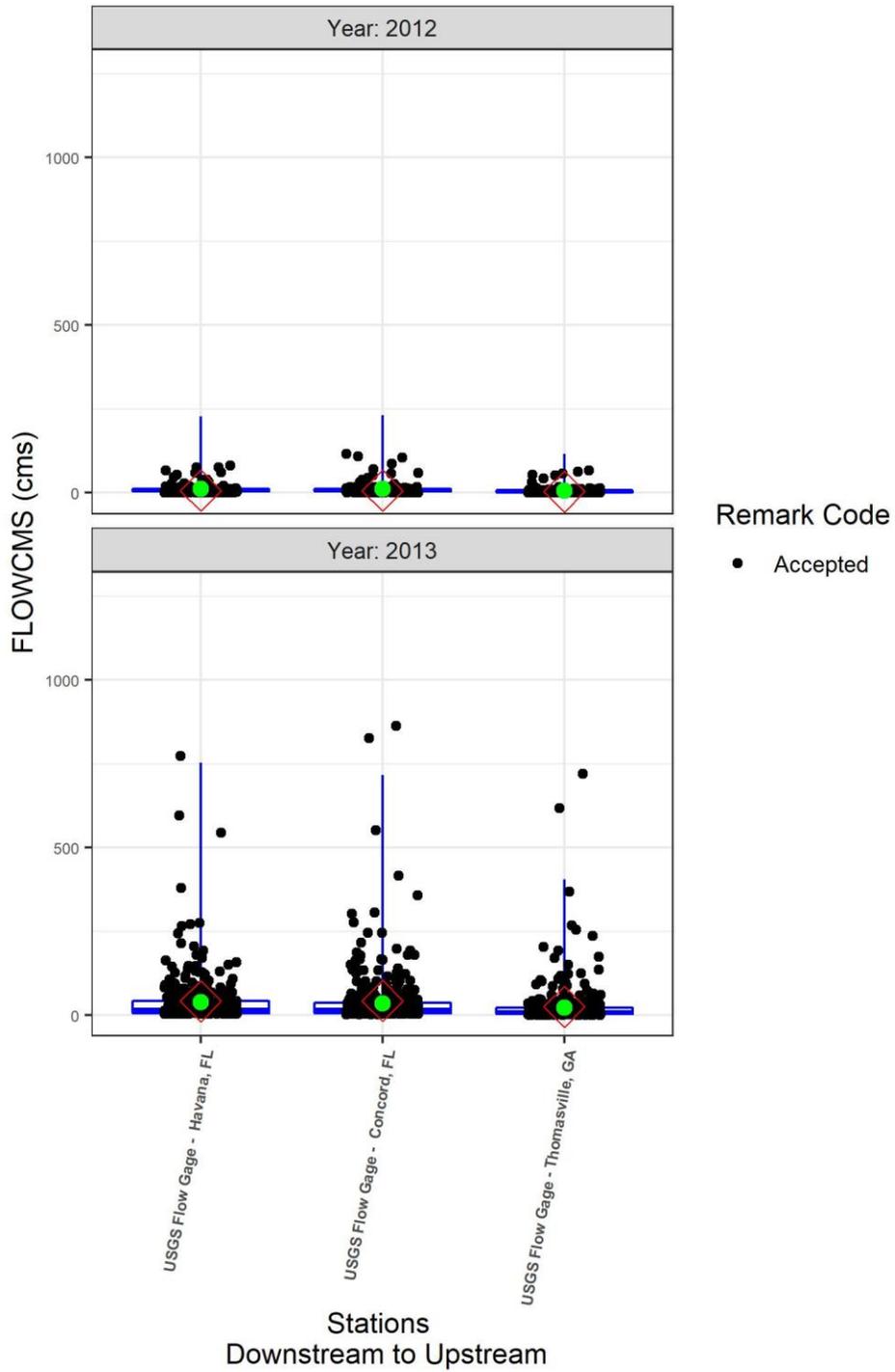


Figure 6 Ochlockonee River Flow Comparison Observed vs. Simulated 2012-2013

FLOWCMS (Annual Comparison)

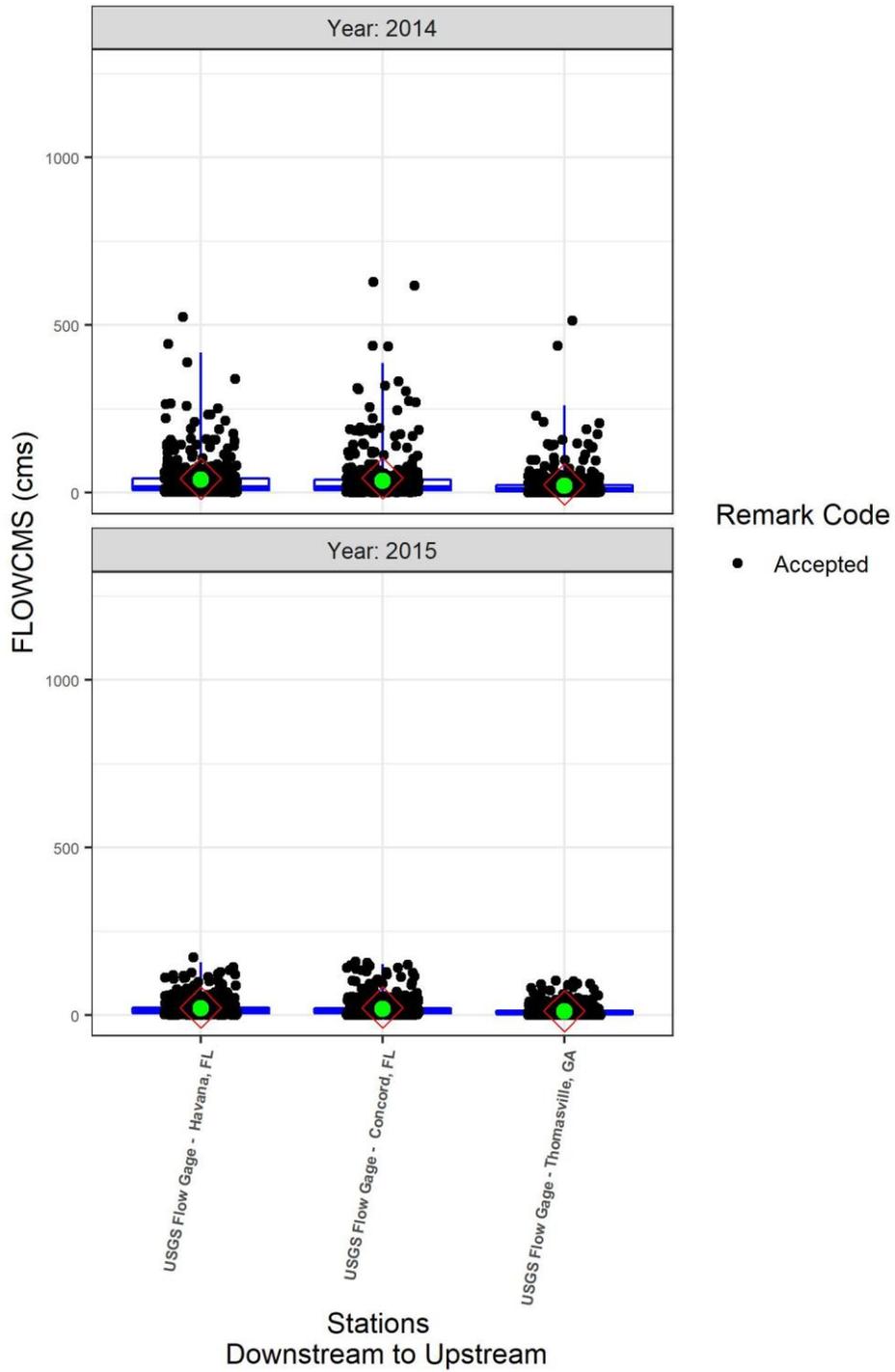


Figure 7 Ochlockonee River Flow Comparison Observed vs. Simulated 2014-2015

FLOWCMS (Annual Comparison)

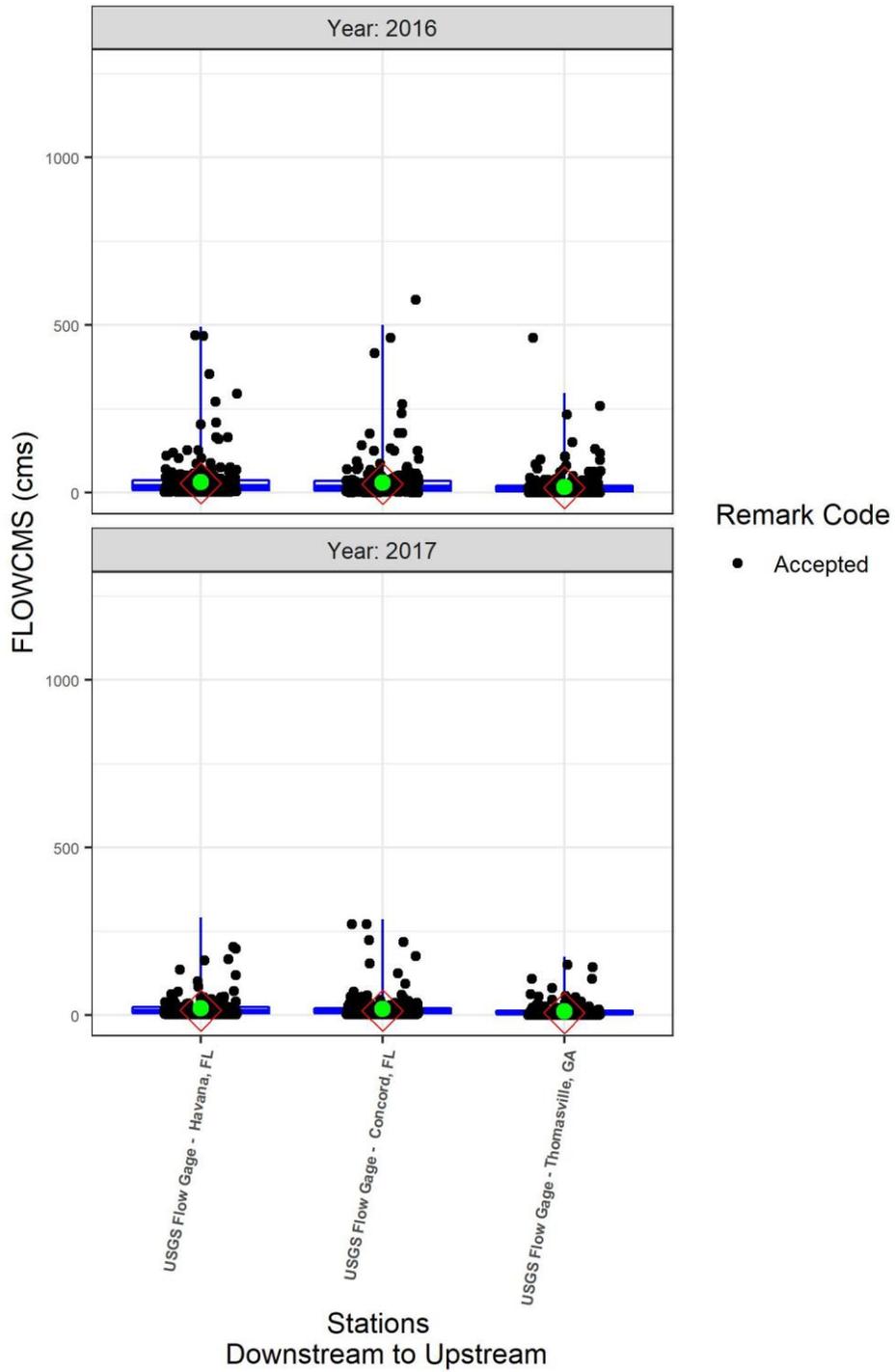


Figure 8 Ochlockonee River Flow Comparison Observed vs. Simulated 2016-2017

Water Quality

Total Nitrogen

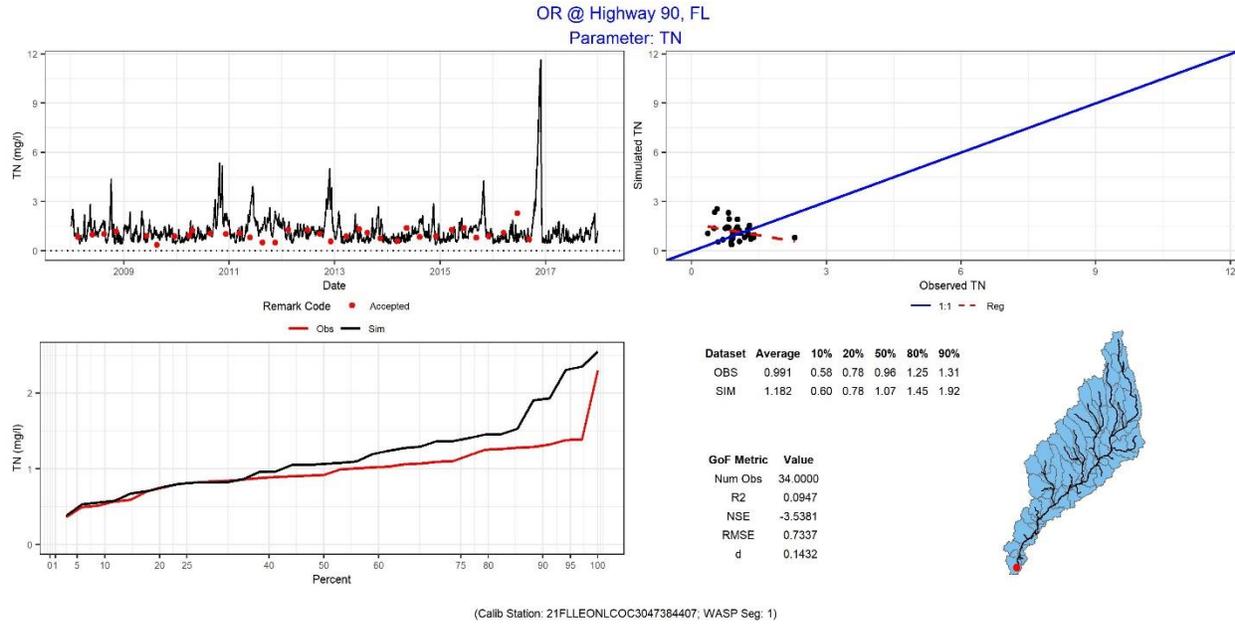


Figure 9 Total Nitrogen - Ochlockonee River at Highway 90, FL

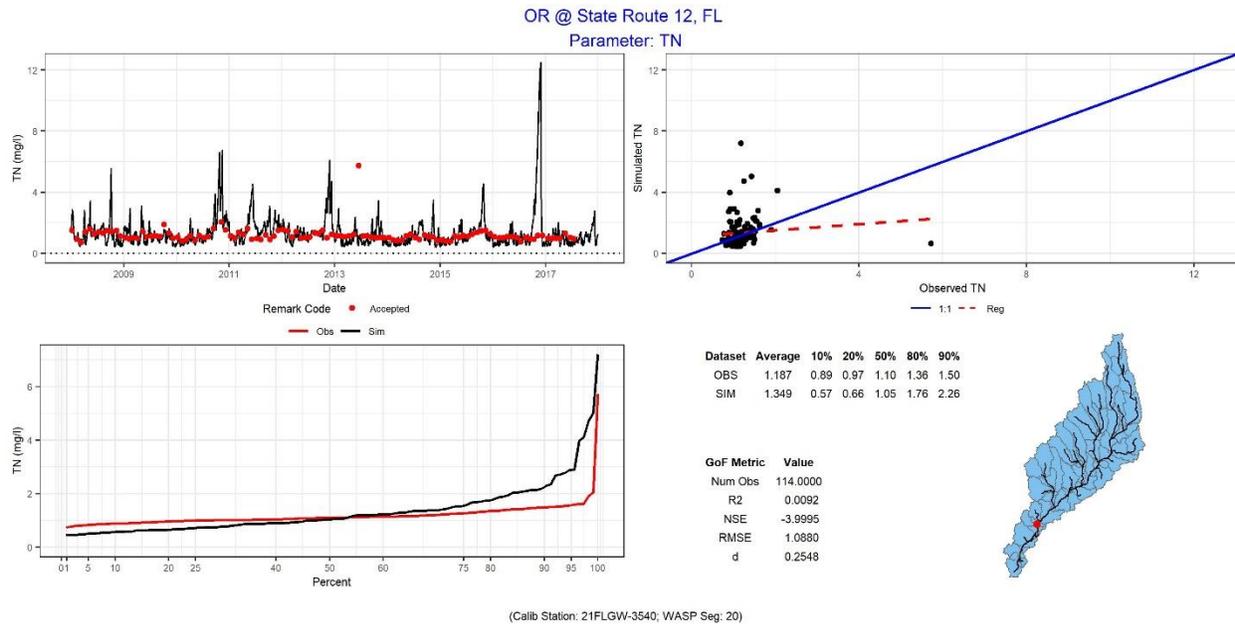
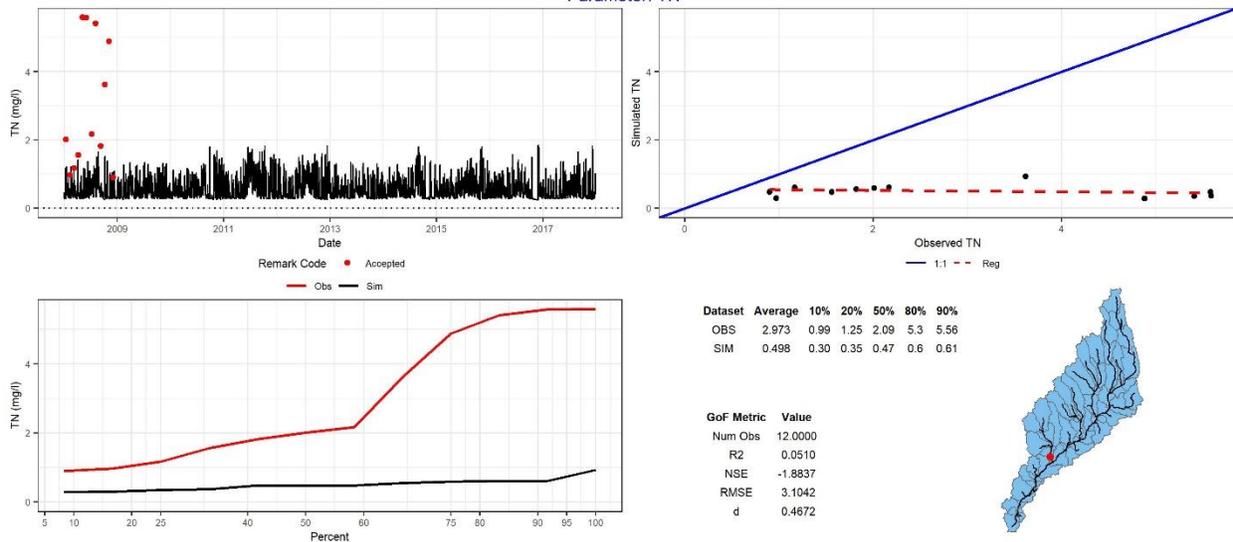


Figure 10 Total Nitrogen - Ochlockonee River at State Route 12, FL

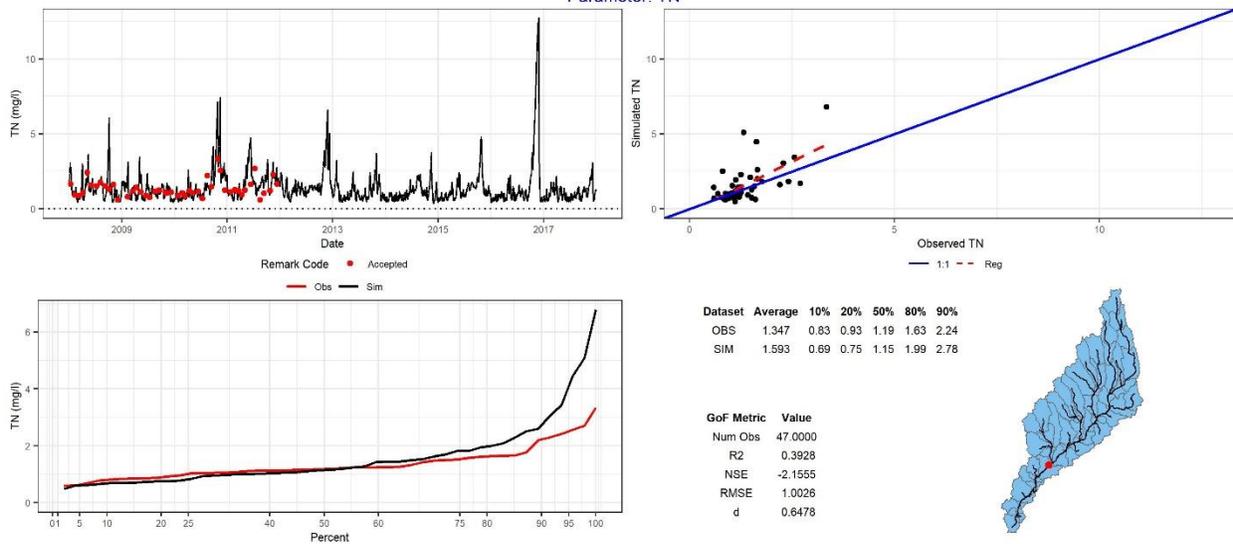
Tired Creek @ CR 151 nr Reno, GA
Parameter: TN



(Calib Station: RV-10-3384; WASP Seg: 138)

Figure 11 Total Nitrogen - Tired Creek at County Road 151 near Reno, GA

OR @ Hadley Ferry Rd, GA
Parameter: TN



(Calib Station: RV-10-3386; WASP Seg: 25)

Figure 12 Total Nitrogen - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

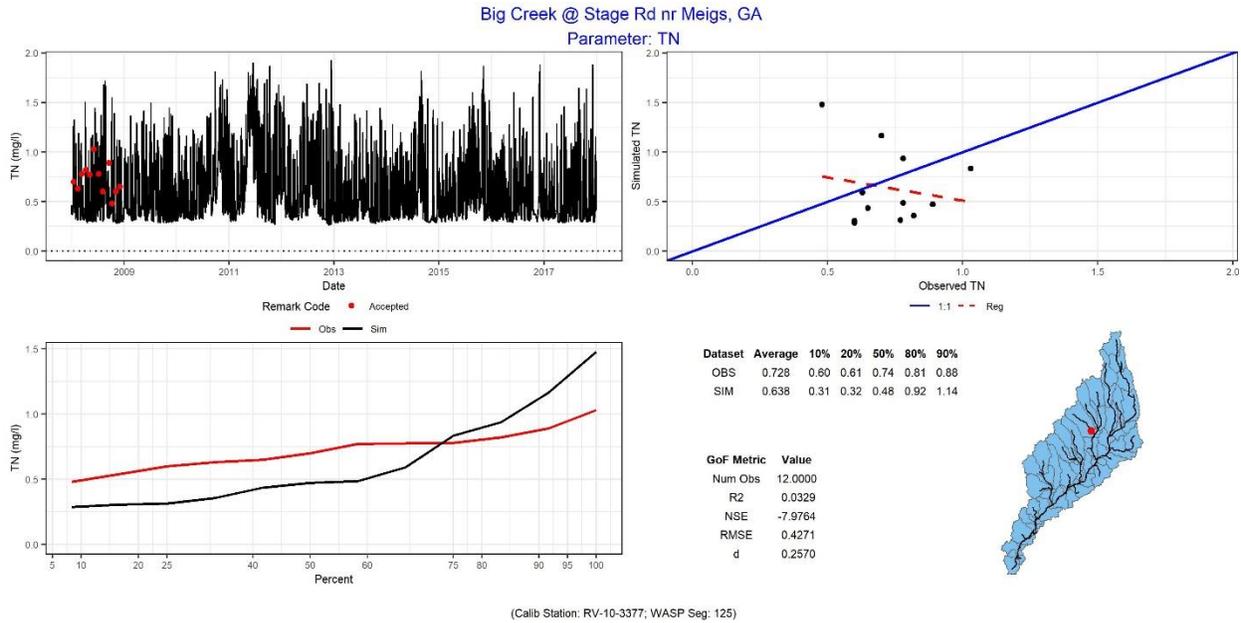


Figure 13 Total Nitrogen - Big Creek at Stage Road near Meigs, GA

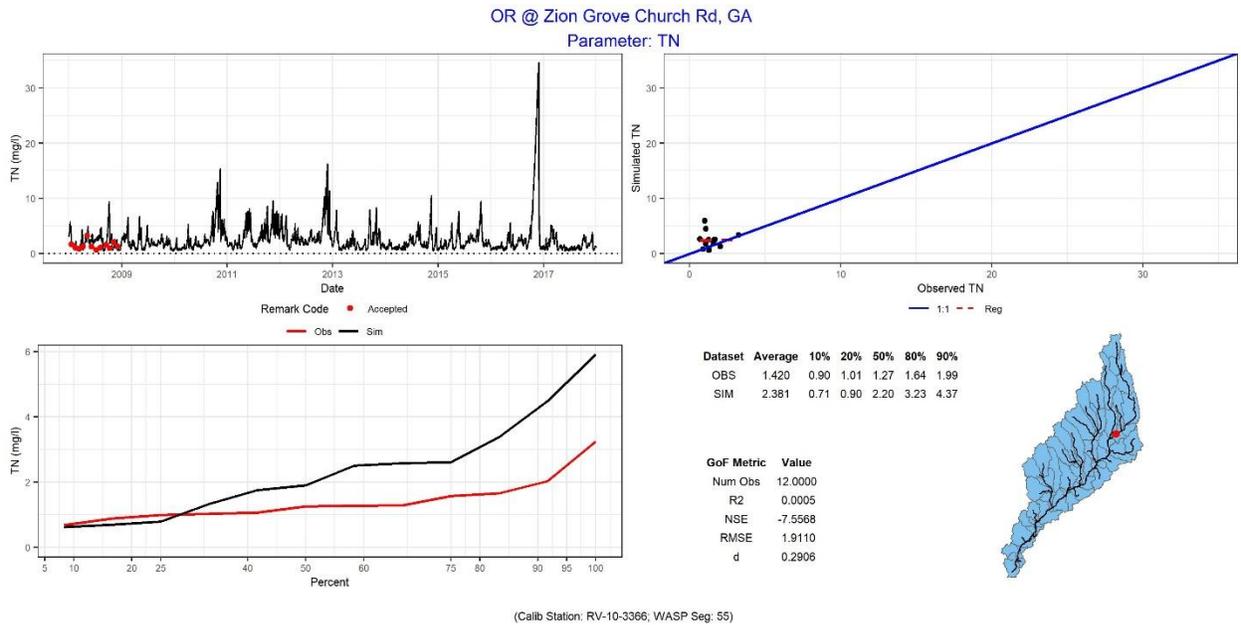


Figure 14 Total Nitrogen - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

TN (Annual Comparison)

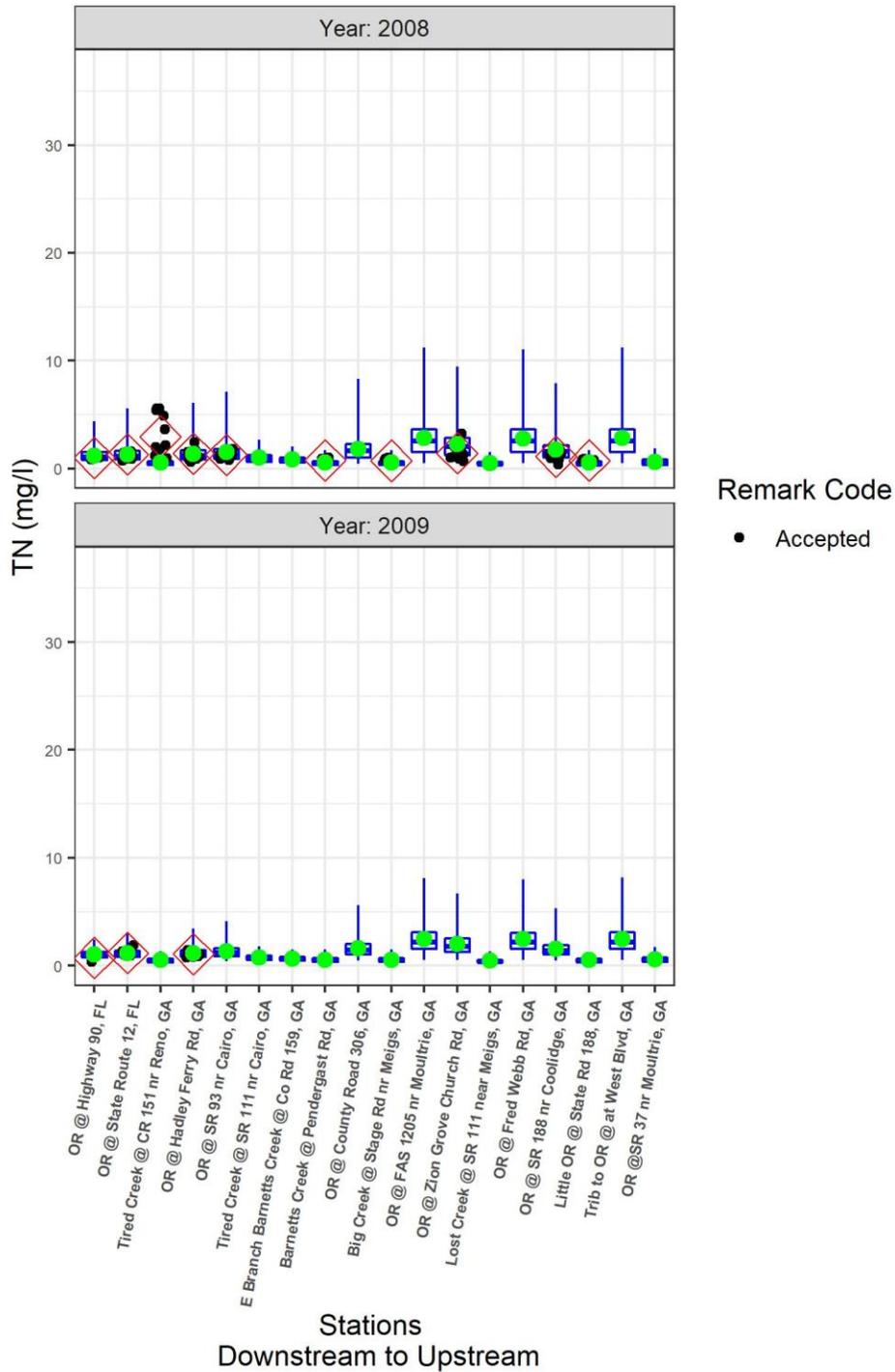


Figure 15 Ochlockonee River Total Nitrogen Comparison Observed vs. Simulated 2008-2009

TN (Annual Comparison)

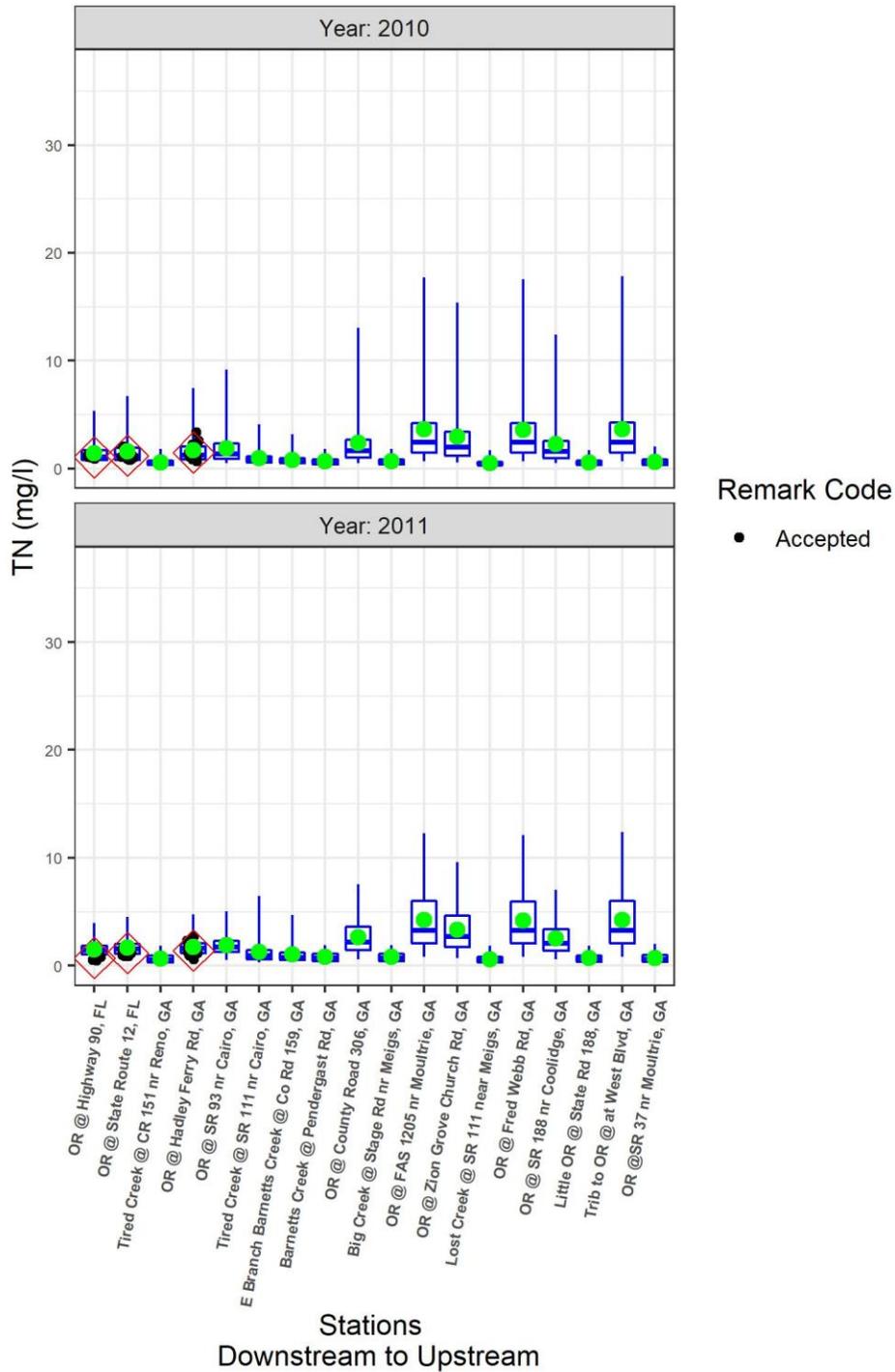


Figure 16 Ochlockonee River Total Nitrogen Comparison Observed vs. Simulated 2010-2011

TN (Annual Comparison)

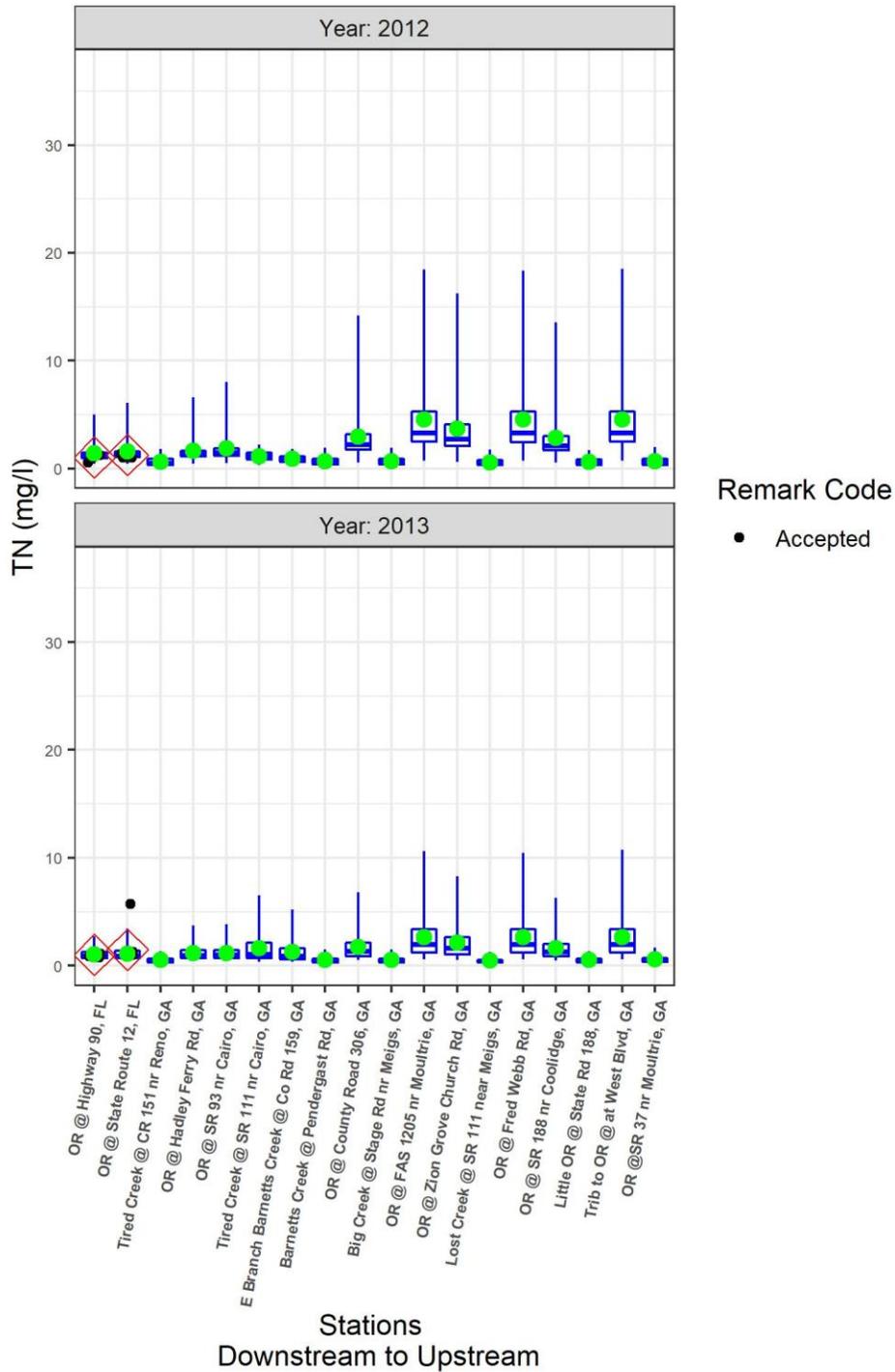


Figure 17 Ochlockonee River Total Nitrogen Comparison Observed vs. Simulated 2012-2013

TN (Annual Comparison)

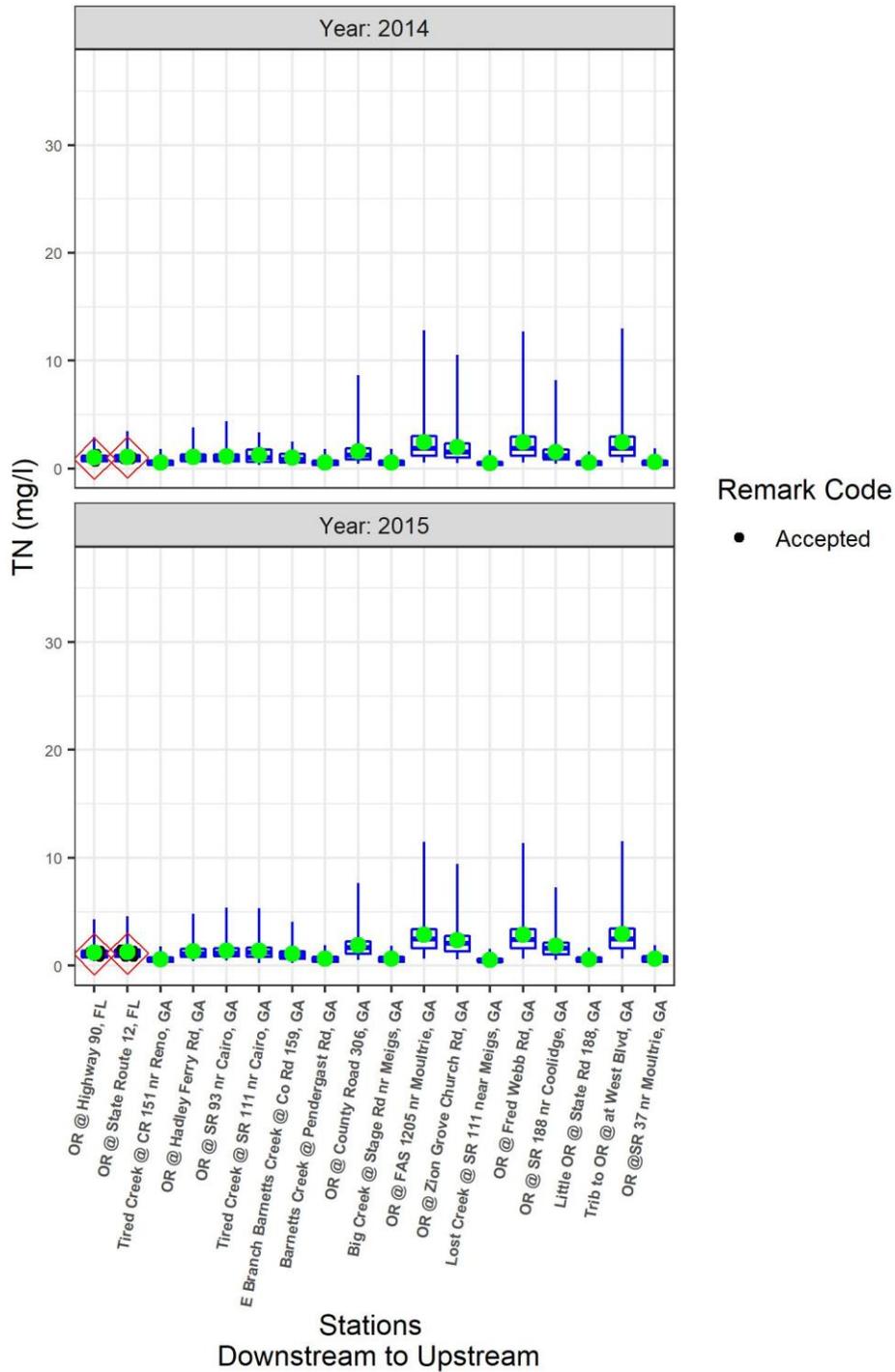


Figure 18 Ochlockonee River Total Nitrogen Comparison Observed vs. Simulated 2014-2015

TN (Annual Comparison)

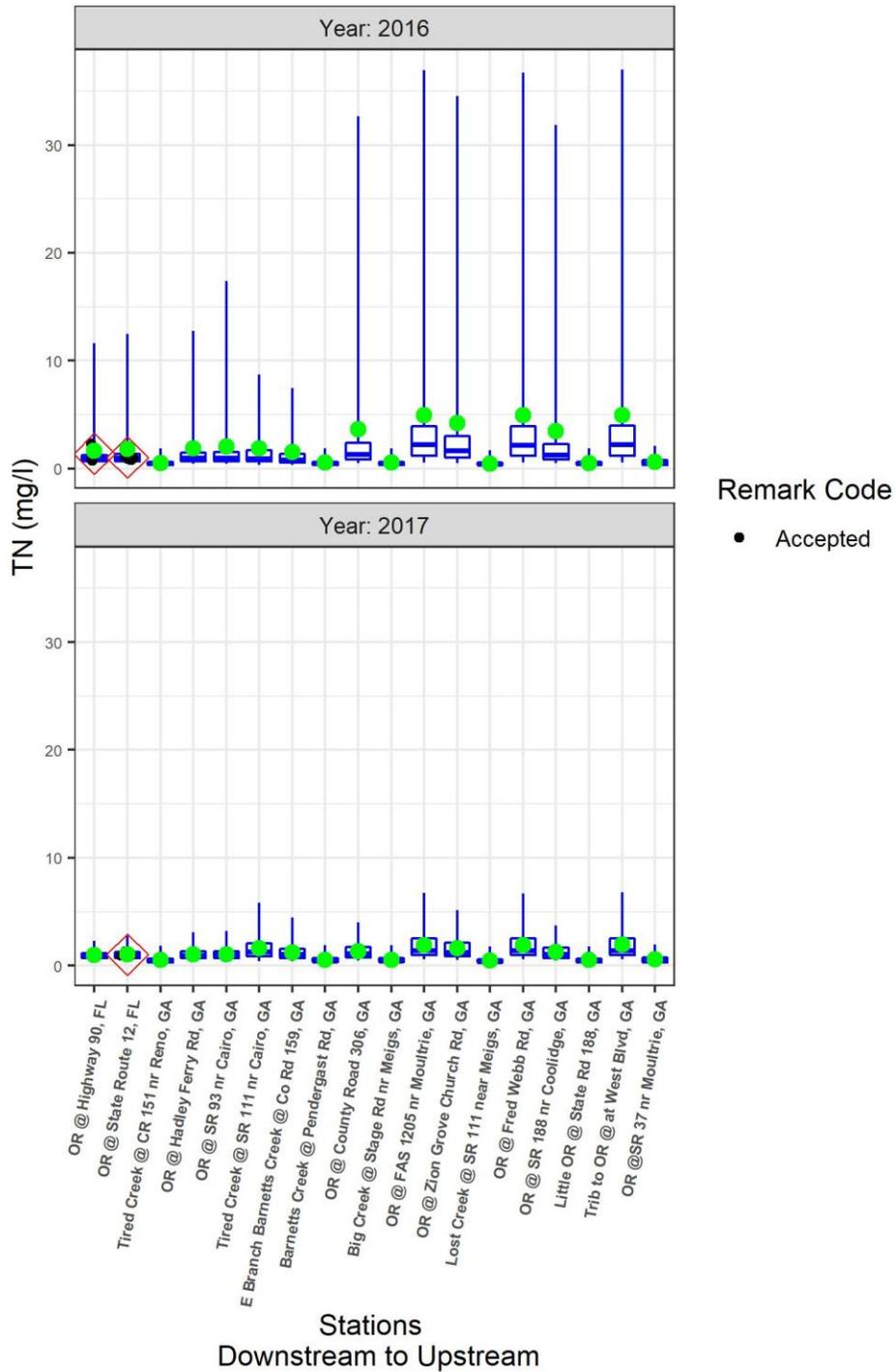


Figure 19 Ochlockonee River Total Nitrogen Comparison Observed vs. Simulated 2016-2017

Ammonia

OR @ Highway 90, FL
Parameter: NH4

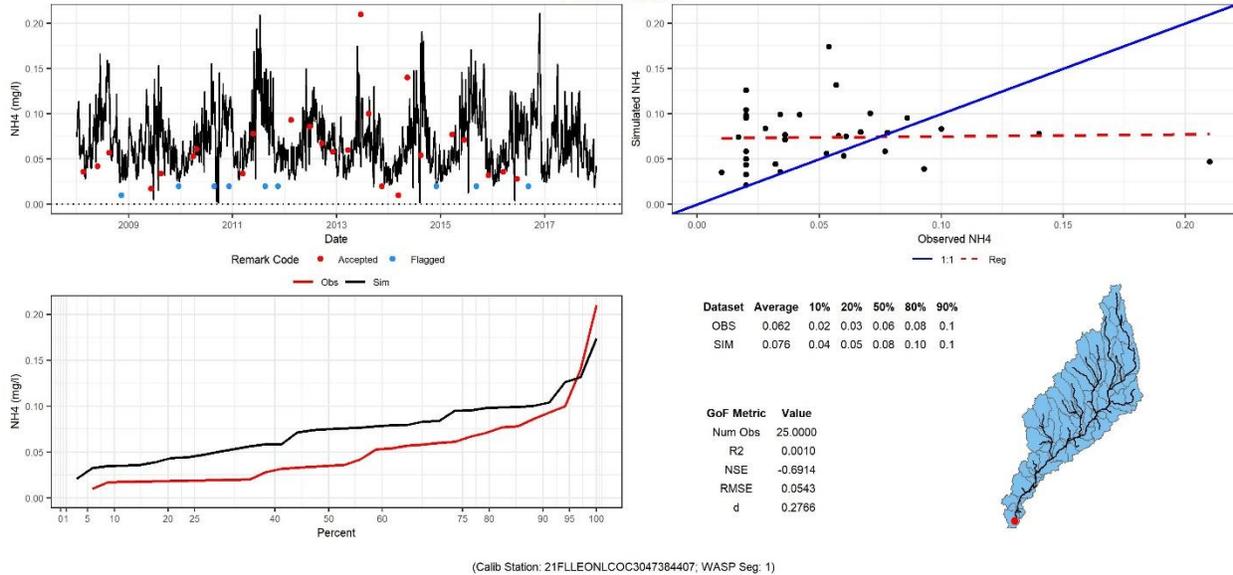


Figure 20 Total Nitrogen - Ochlockonee River at Highway 90, FL

OR @ State Route 12, FL
Parameter: NH4

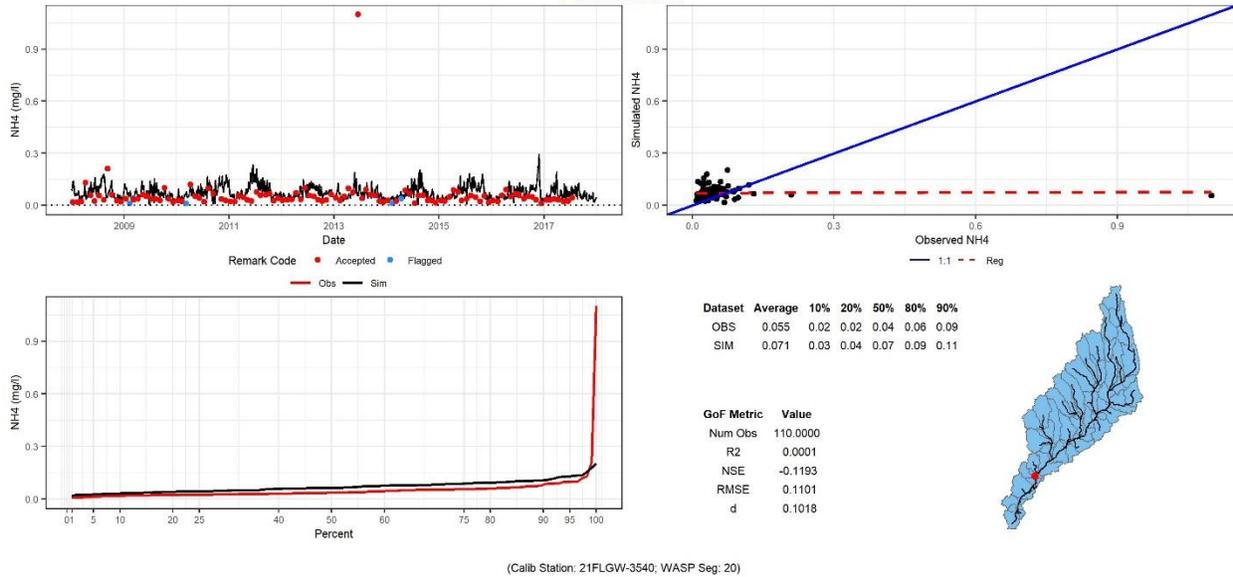
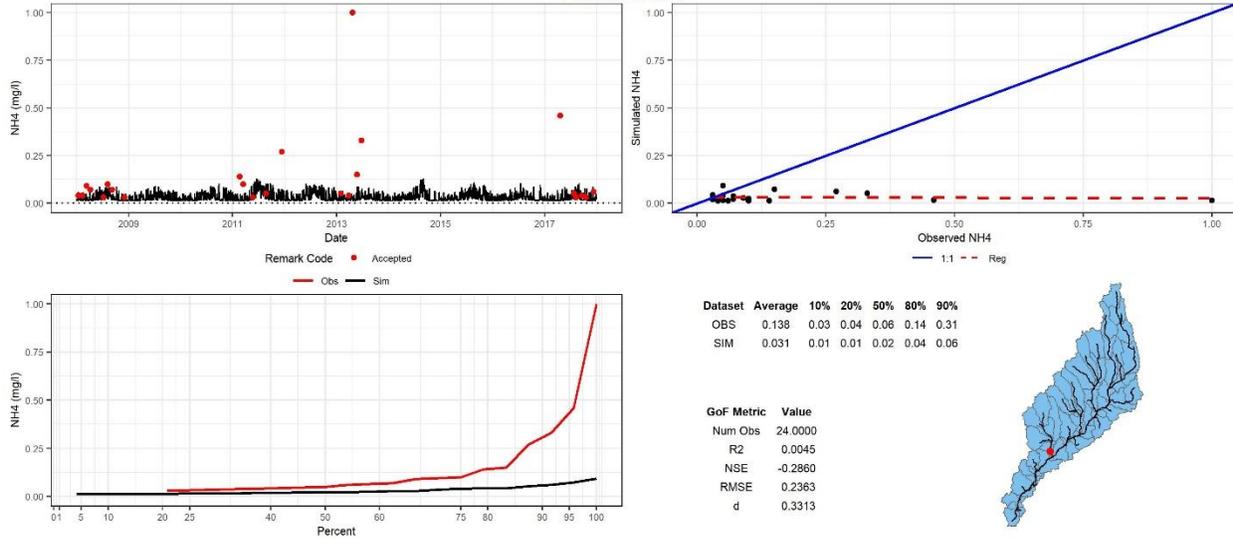


Figure 21 Ammonia - Ochlockonee River at State Route 12, FL

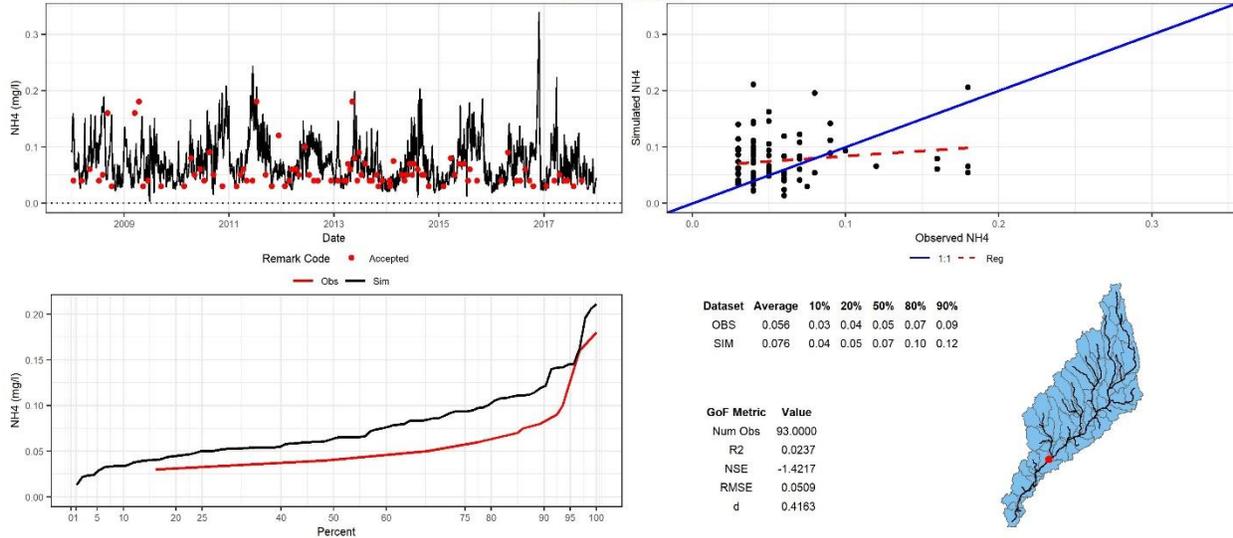
Tired Creek @ CR 151 nr Reno, GA
Parameter: NH4



(Calib Station: RV-10-3384; WASP Seg: 138)

Figure 22 Ammonia - Tired Creek at County Road 151 near Reno, GA

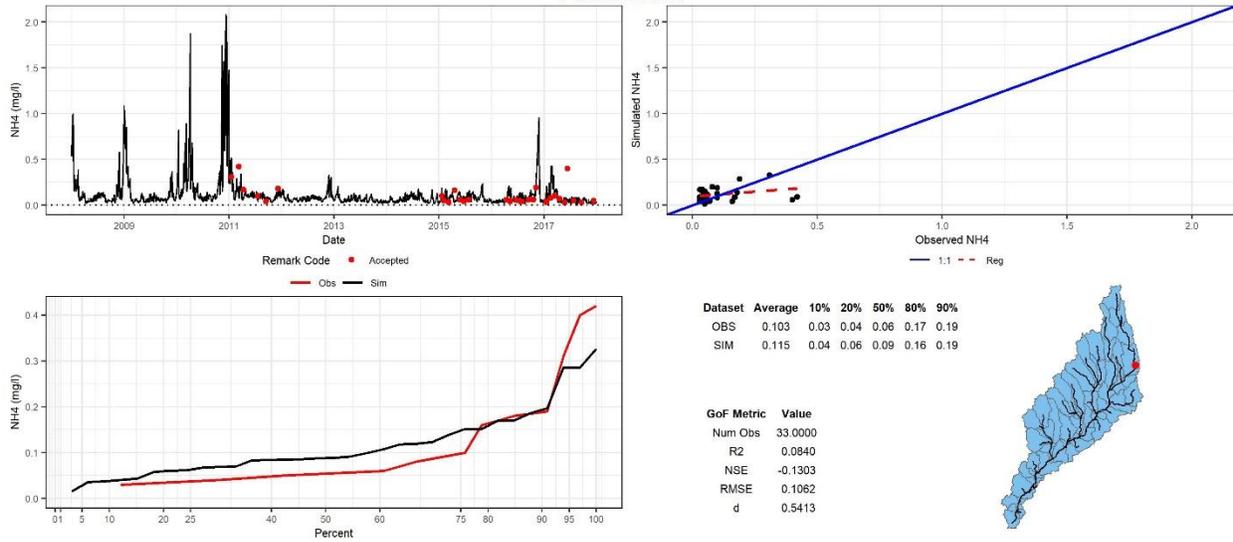
OR @ Hadley Ferry Rd, GA
Parameter: NH4



(Calib Station: RV-10-3386; WASP Seg: 25)

Figure 23 Ammonia - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

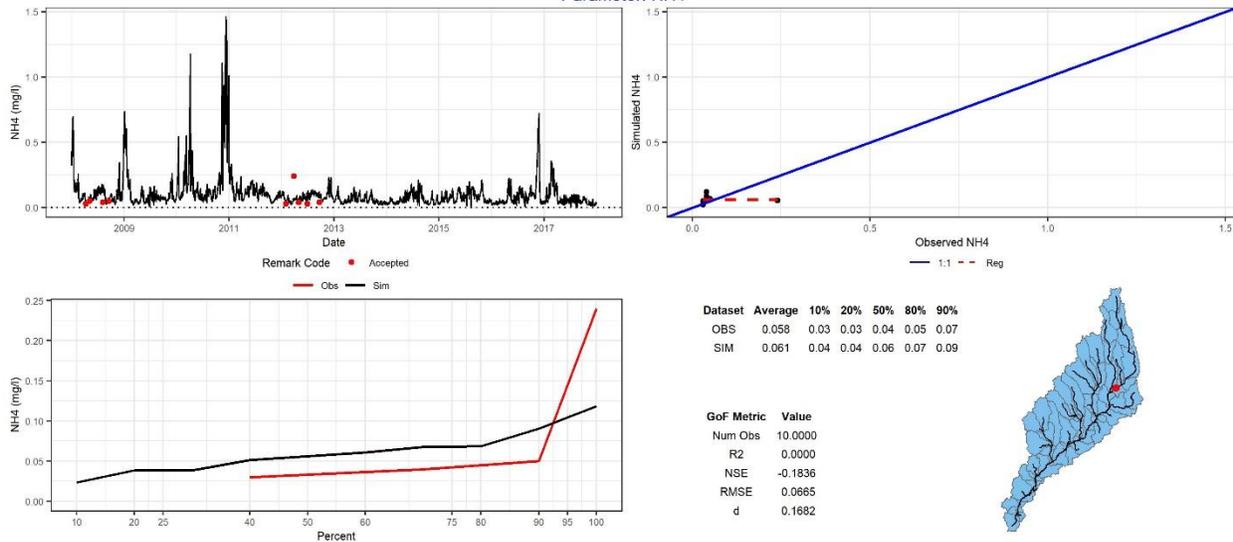
OR @ FAS 1205 nr Moultrie, GA
Parameter: NH4



(Calib Station: RV-10-3365; WASP Seg: 60)

Figure 24 Ammonia - Ochlockonee River - FAS 1205 near Moultrie, GA

OR @ Zion Grove Church Rd, GA
Parameter: NH4



(Calib Station: RV-10-3366; WASP Seg: 55)

Figure 25 Ammonia - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

Nitrate

OR @ Highway 90, FL
Parameter: NO3O2

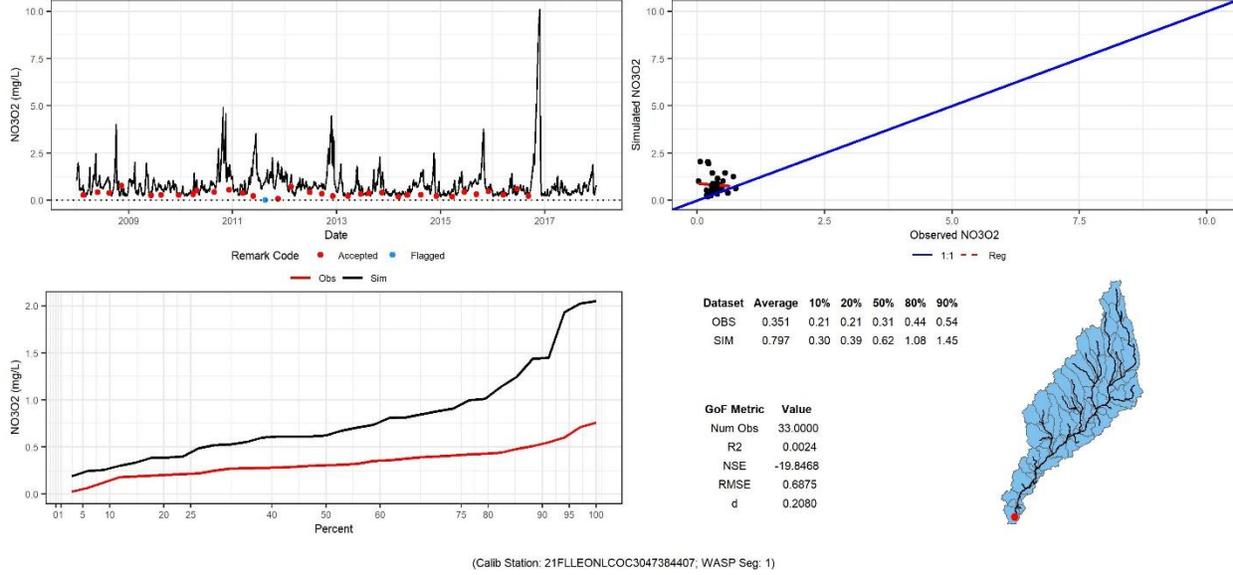


Figure 26 Nitrate - Ochlockonee River at Highway 90, FL

OR @ State Route 12, FL
Parameter: NO3O2

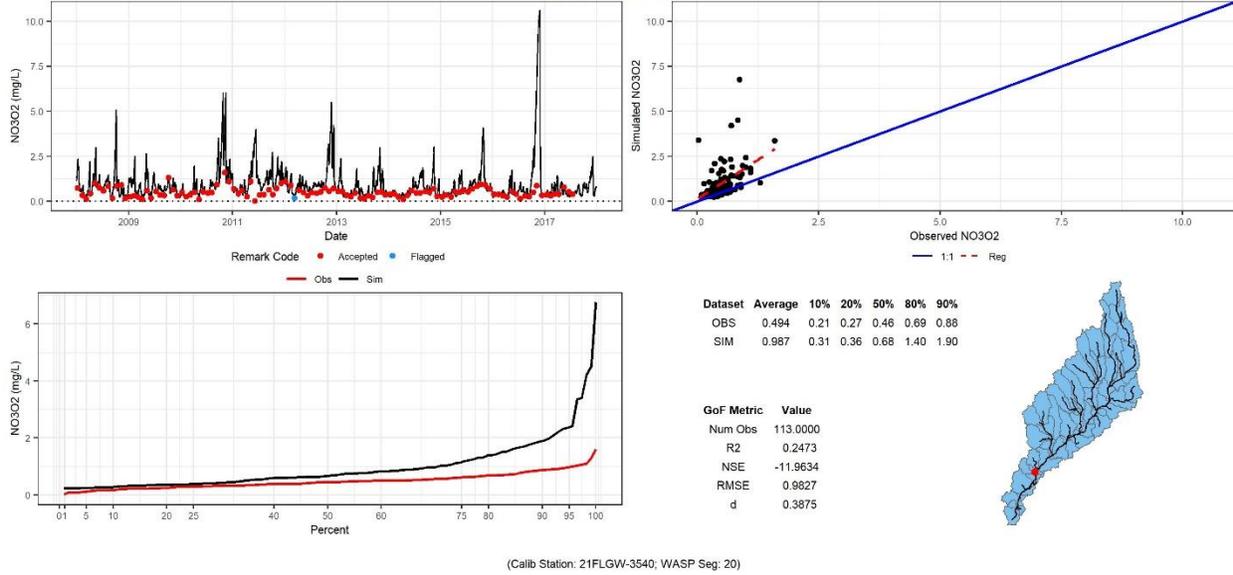
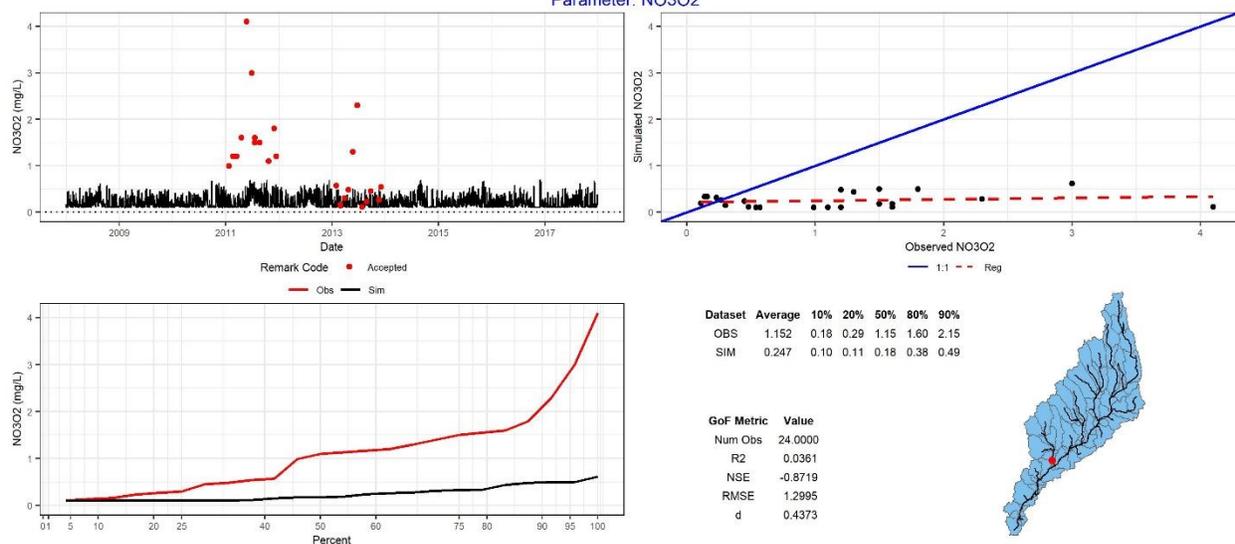


Figure 27 Nitrate - Ochlockonee River at State Route 12, FL

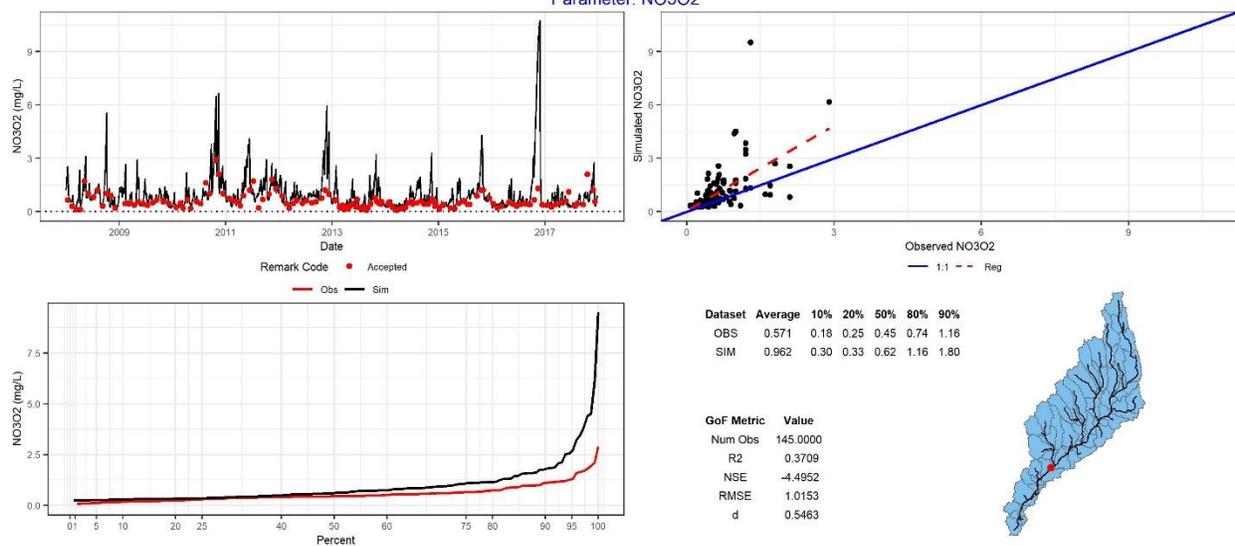
Tired Creek @ CR 151 nr Reno, GA
Parameter: NO3O2



(Calib Station: RV-10-3384; WASP Seg: 138)

Figure 28 Nitrate - Tired Creek at County Road 151 near Reno, GA

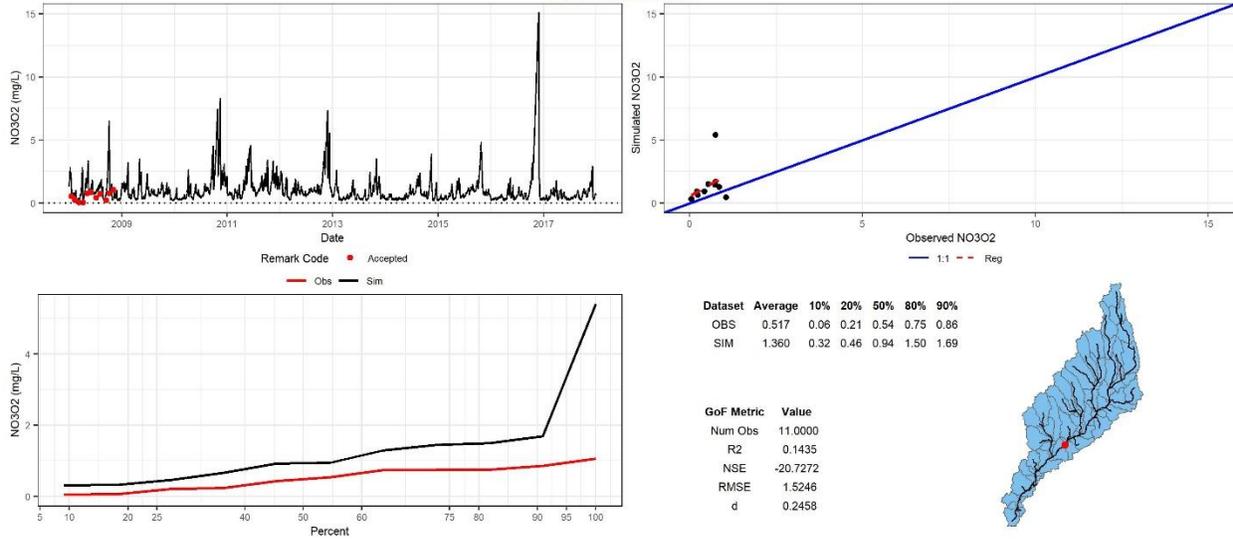
OR @ Hadley Ferry Rd, GA
Parameter: NO3O2



(Calib Station: RV-10-3386; WASP Seg: 25)

Figure 29 Nitrate - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

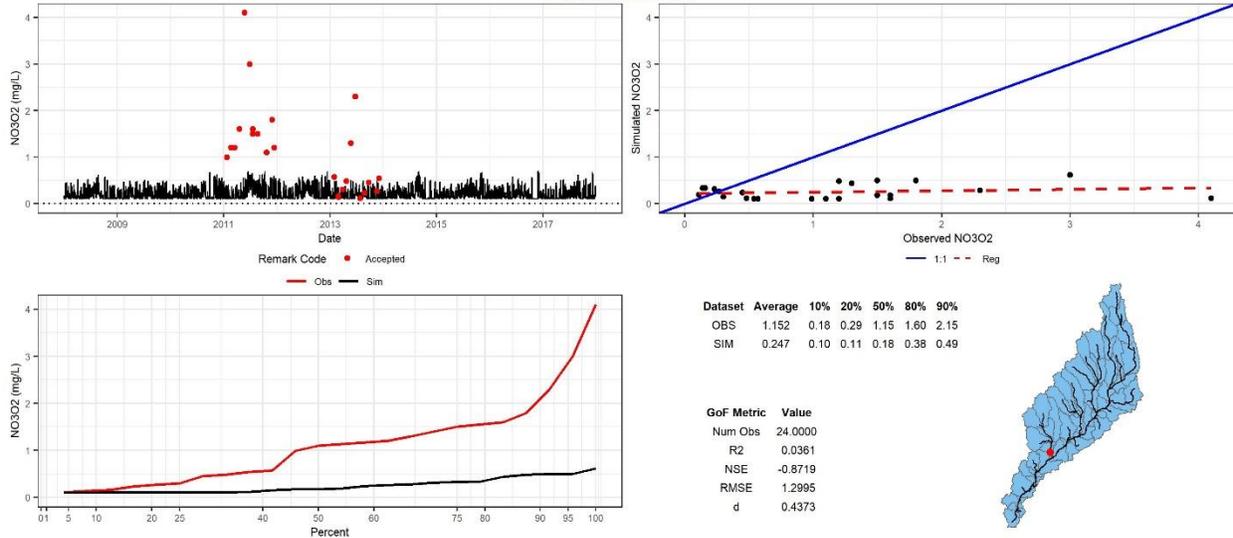
OR @ SR 93 nr Cairo, GA
Parameter: NO3O2



(Calib Station: RV-10-3383; WASP Seg: 32)

Figure 30 Nitrate - Ochlockonee River - SR 93 near Cairo, GA

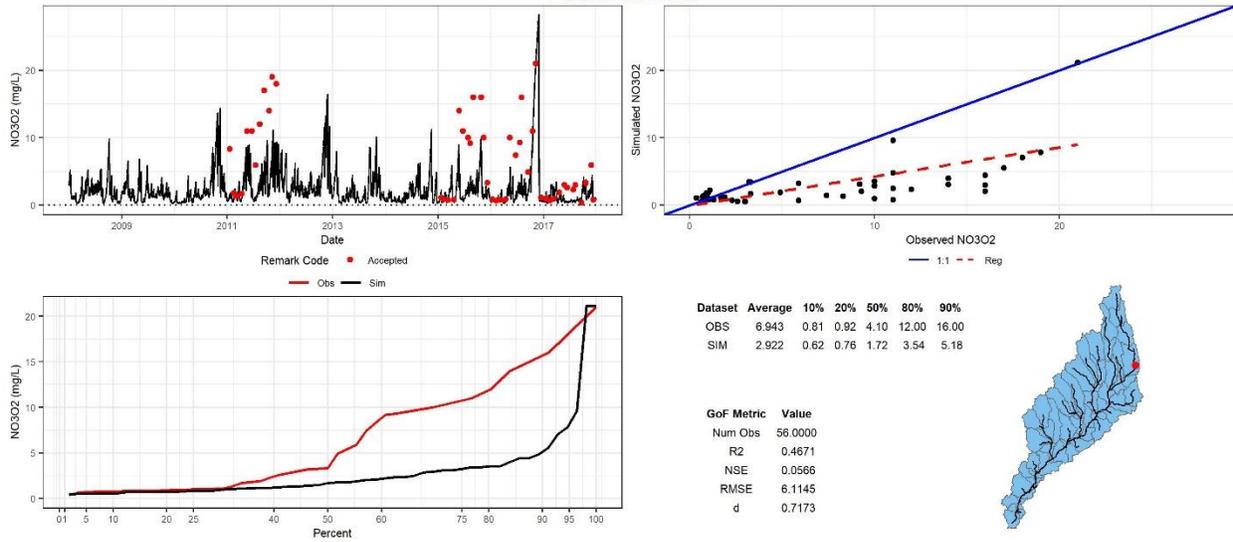
Tired Creek @ CR 151 nr Reno, GA
Parameter: NO3O2



(Calib Station: RV-10-3384; WASP Seg: 138)

Figure 31 Nitrate - Tired Creek at County Road 151 near Reno, GA

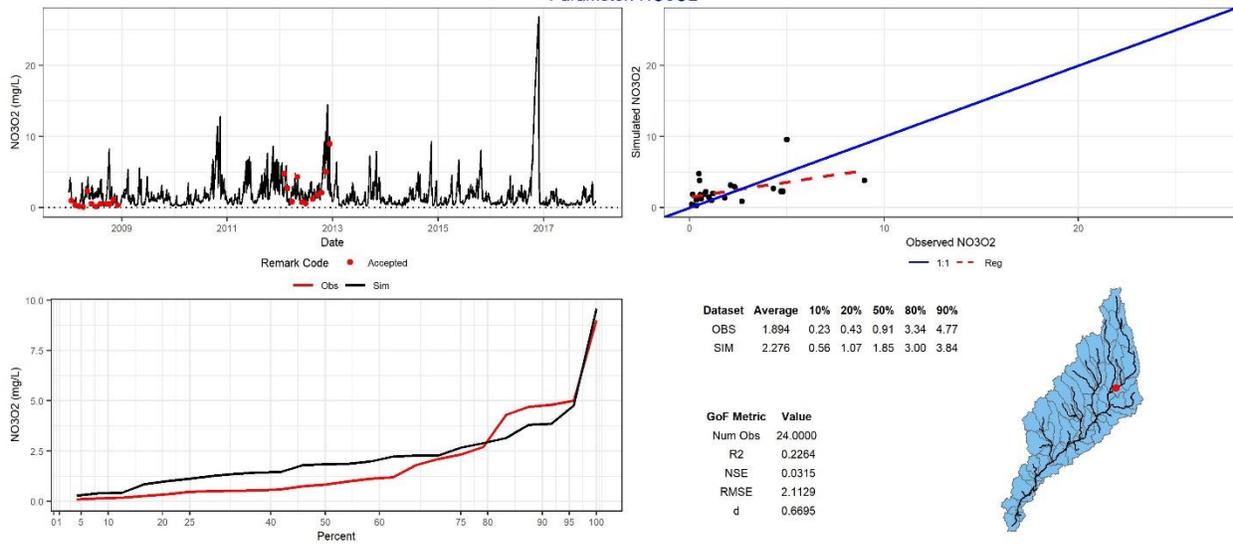
OR @ FAS 1205 nr Moultrie, GA
Parameter: NO3O2



(Calib Station: RV-10-3365, WASP Seg: 60)

Figure 32 Nitrate - Ochlockonee River - FAS 1205 near Moultrie, GA

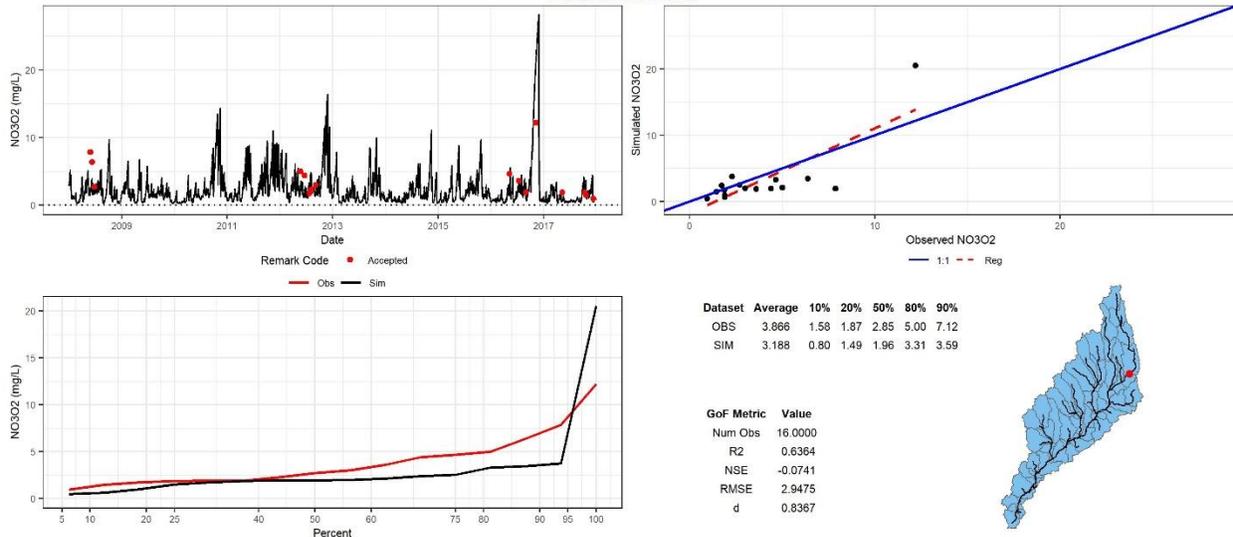
OR @ Zion Grove Church Rd, GA
Parameter: NO3O2



(Calib Station: RV-10-3366, WASP Seg: 55)

Figure 33 Nitrate - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

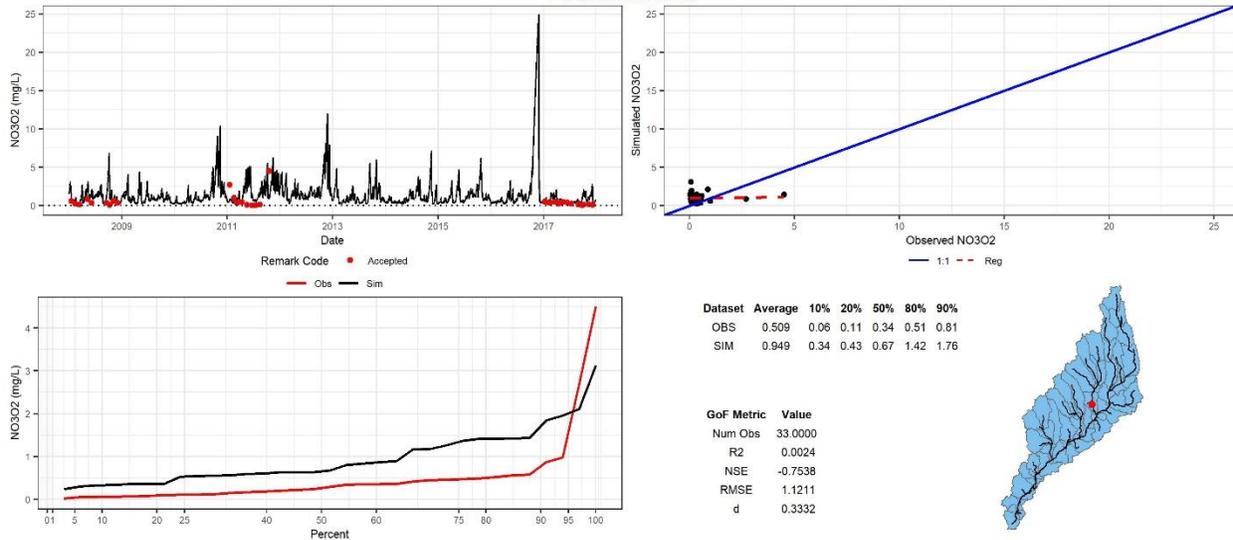
OR @ Fred Webb Rd, GA
Parameter: NO3O2



(Calib Station: RV-10-3407; WASP Seg: 58)

Figure 34 Nitrate - Ochlockonee River at Fred Webb Rd, GA

OR @ SR 188 nr Coolidge, GA
Parameter: NO3O2



(Calib Station: RV-10-3371; WASP Seg: 51)

Figure 35 Nitrate - Ochlockonee River at SR 188 near Coolidge, GA

Total Phosphorus

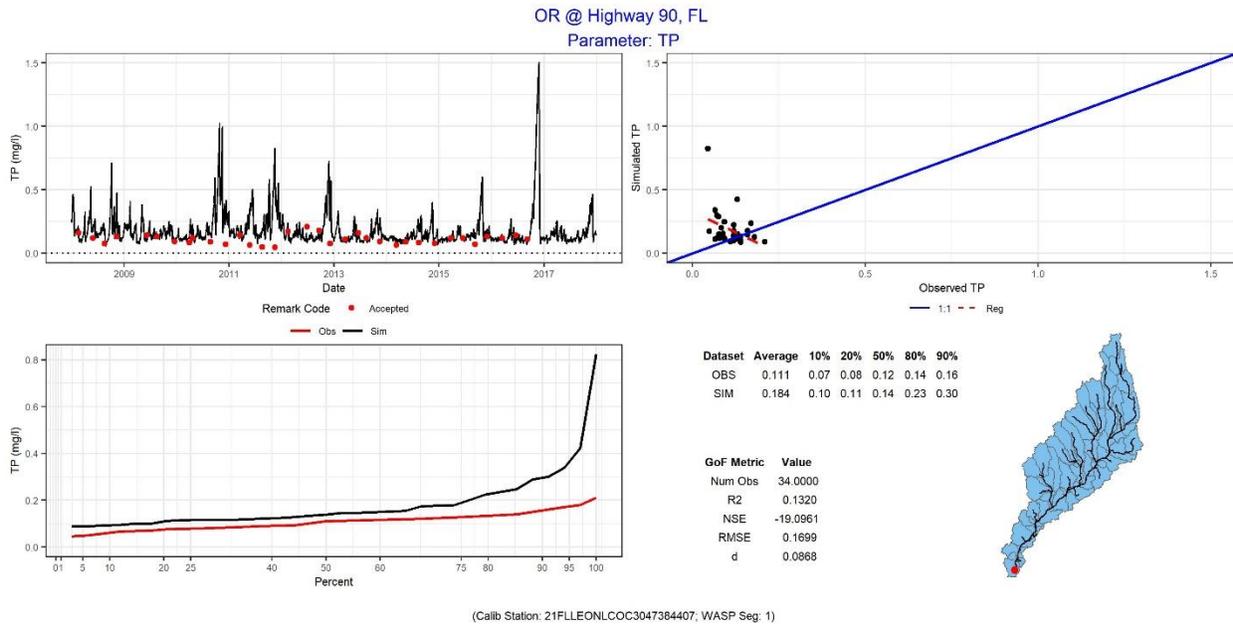


Figure 36 Total Phosphorus - Ochlockonee River at Highway 90, FL

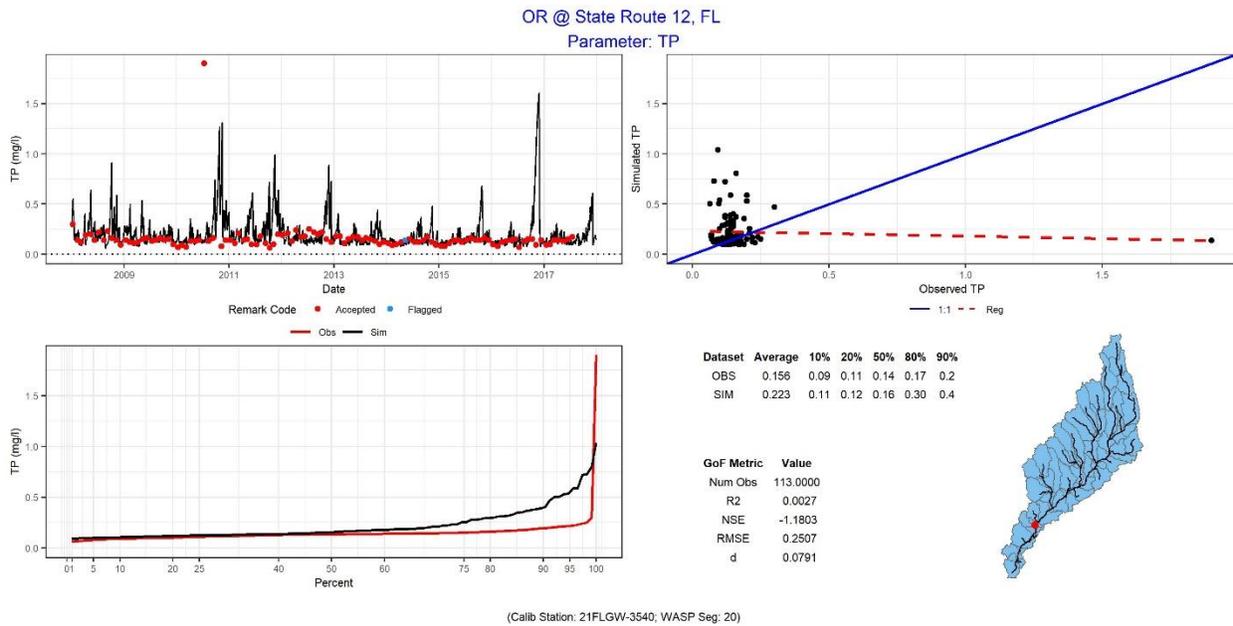
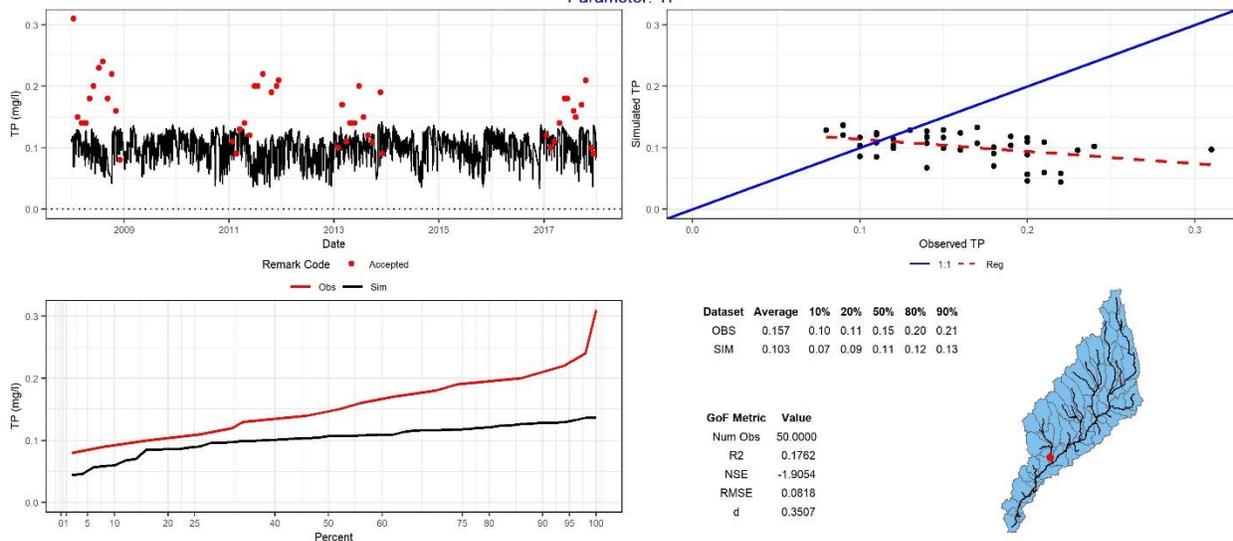


Figure 37 Total Phosphorus - Ochlockonee River at State Route 12, FL

Tired Creek @ CR 151 nr Reno, GA

Parameter: TP

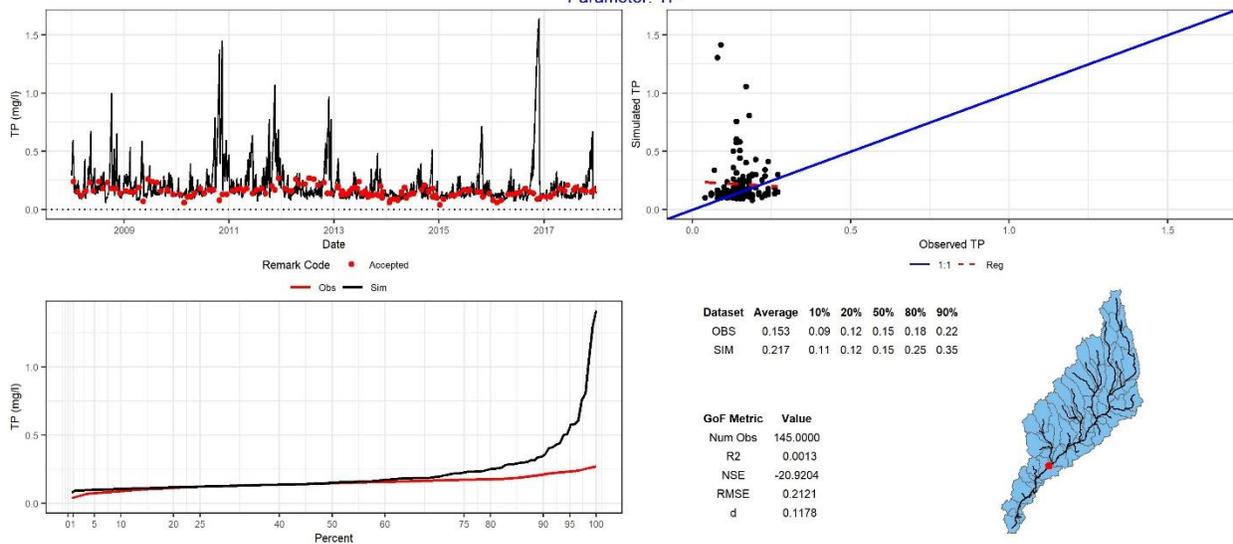


(Calib Station: RV-10-3384; WASP Seg: 138)

Figure 38 Total Phosphorus - Tired Creek at County Road 151 near Reno, GA

OR @ Hadley Ferry Rd, GA

Parameter: TP



(Calib Station: RV-10-3386; WASP Seg: 25)

Figure 39 Total Phosphorus - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

OR @ SR 93 nr Cairo, GA
Parameter: TP

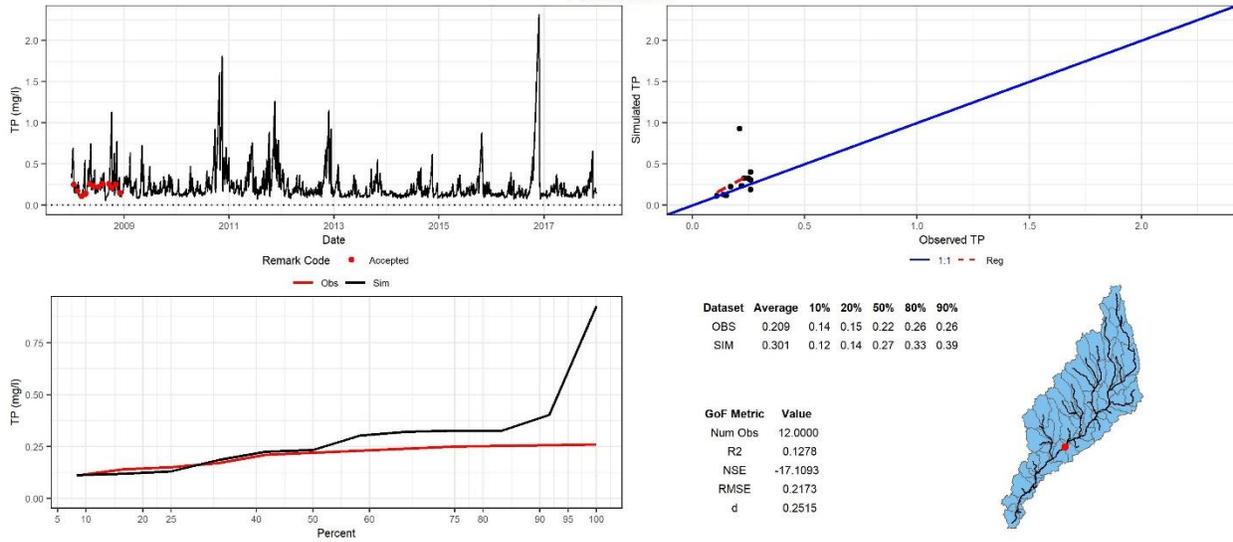


Figure 40 Total Phosphorus - Ochlockonee River - SR 93 near Cairo, GA

Tired Creek @ SR 111 nr Cairo, GA
Parameter: TP

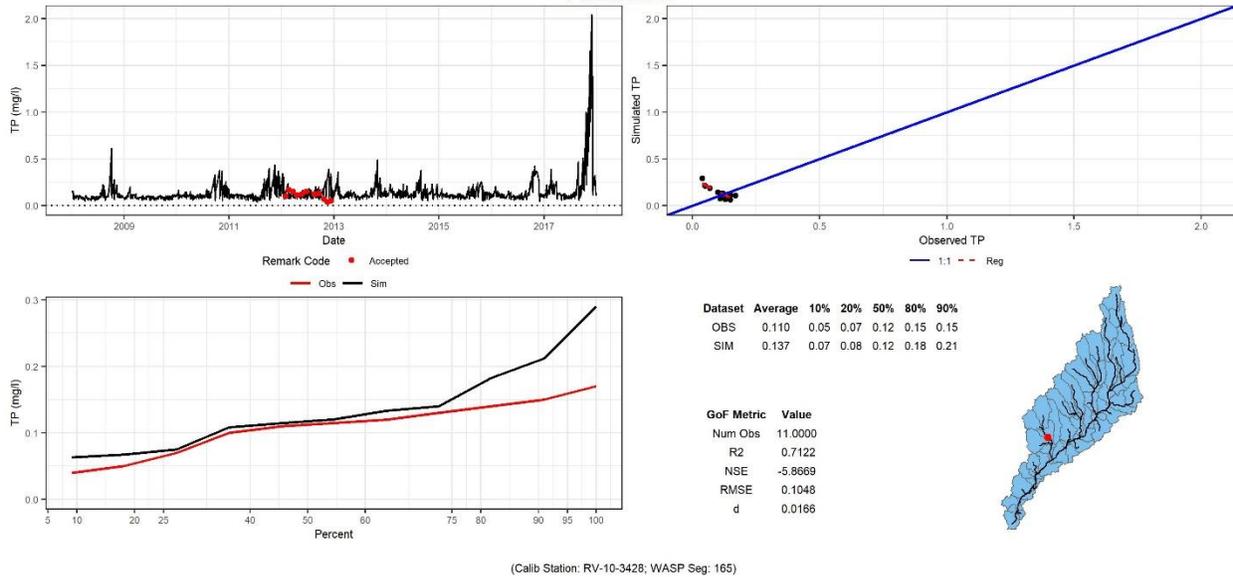


Figure 41 Total Phosphorus - Tired Creek at State Road 111 near Cairo, GA

Big Creek @ Stage Rd nr Meigs, GA
Parameter: TP

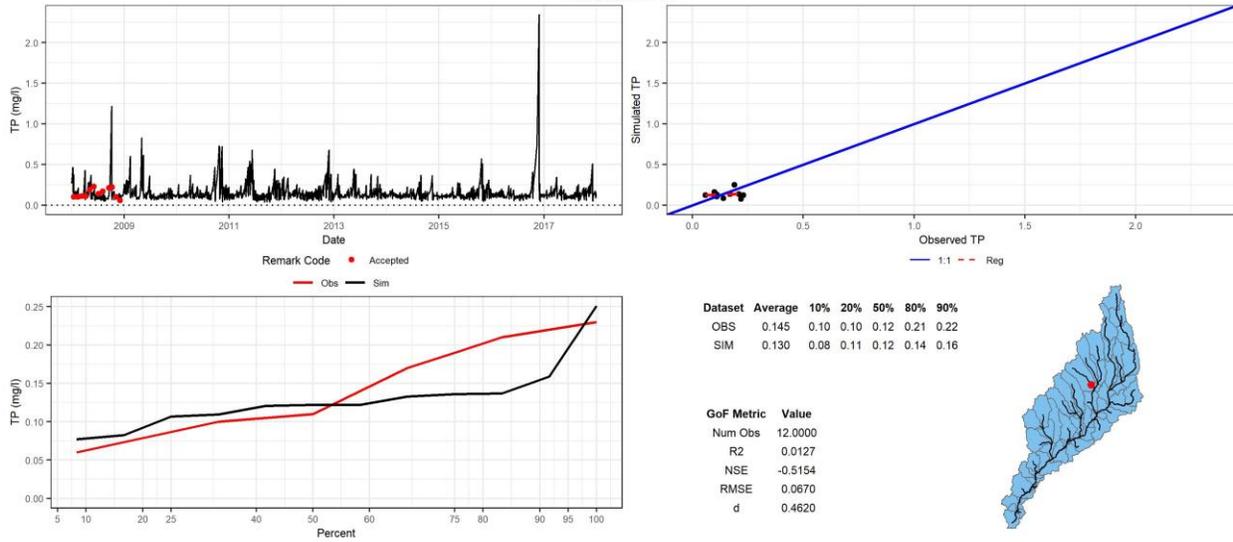


Figure 42 Total Phosphorus - Big Creek at Stage Road near Meigs, GA

OR @ FAS 1205 nr Moultrie, GA
Parameter: TP

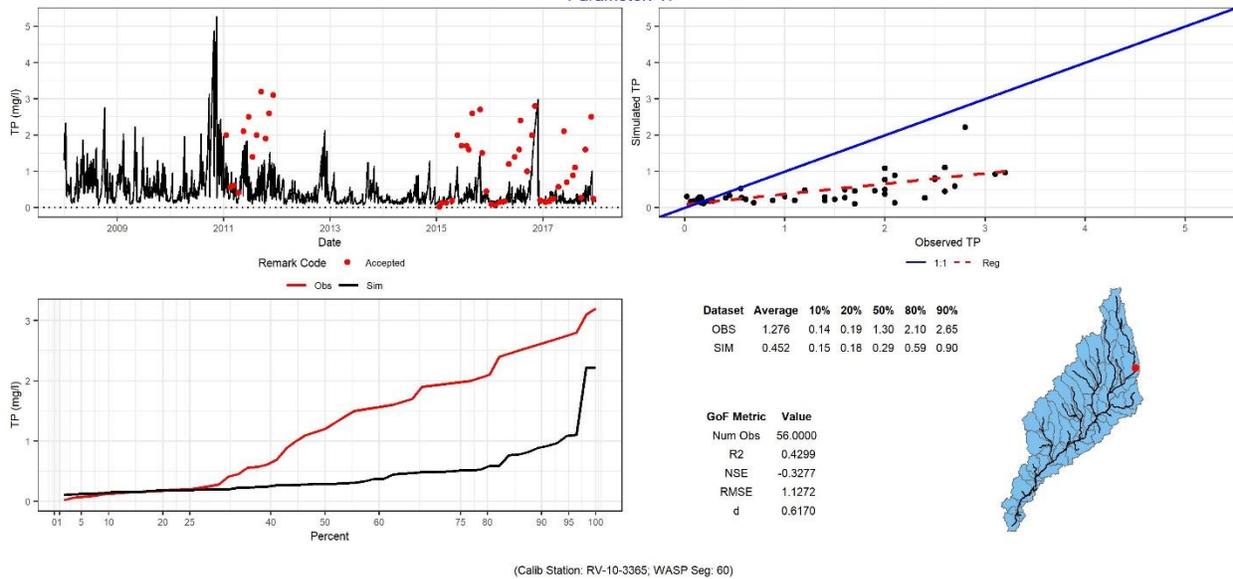
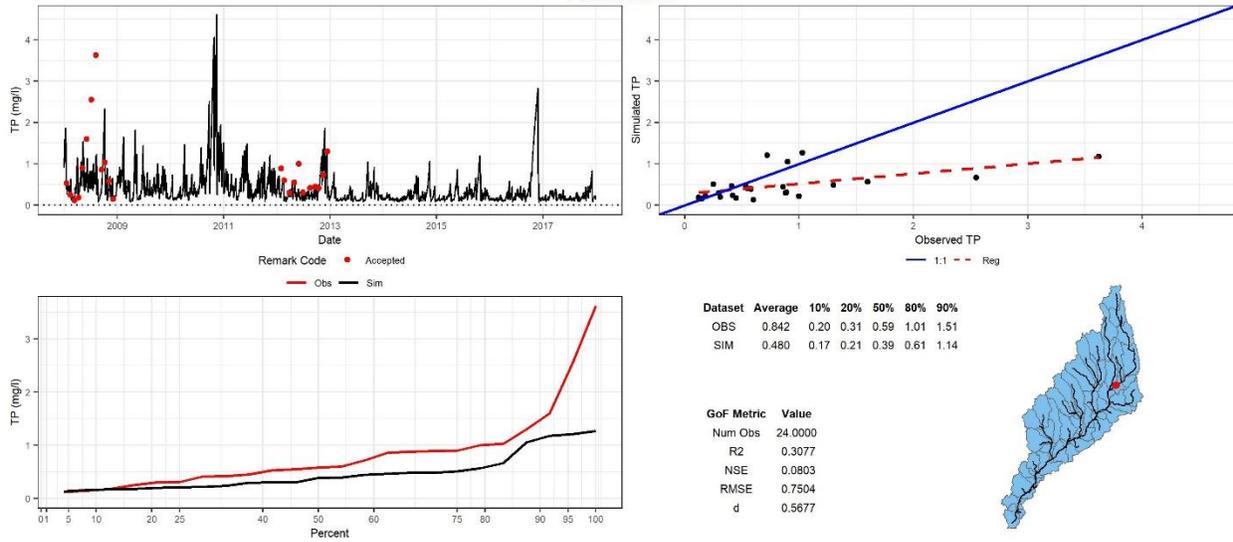


Figure 43 Total Phosphorus - Ochlockonee River - FAS 1205 near Moultrie, GA

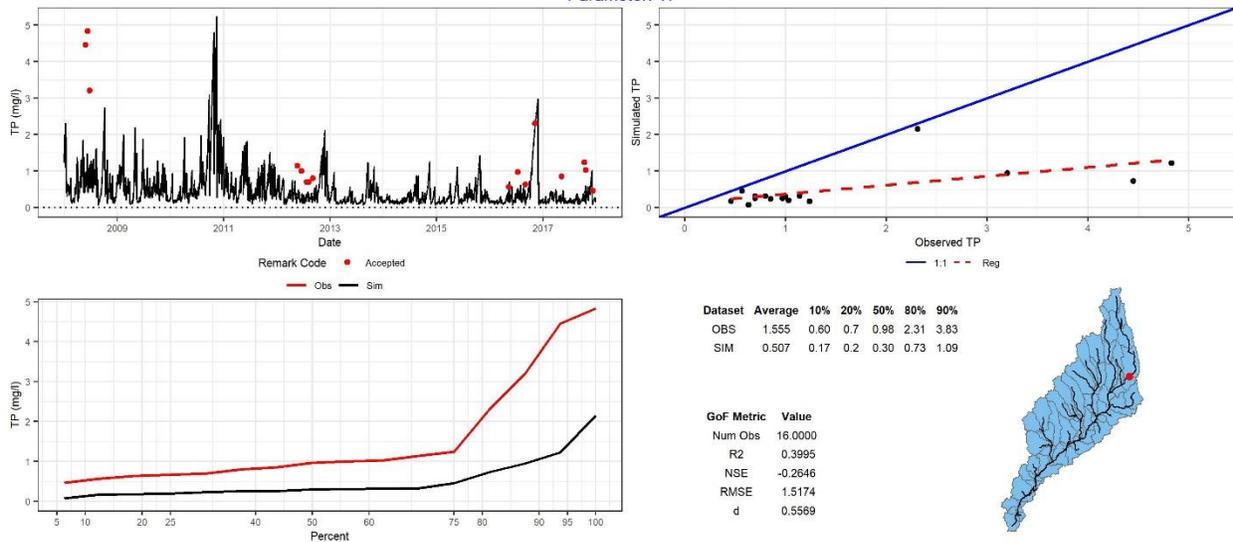
OR @ Zion Grove Church Rd, GA
Parameter: TP



(Calib Station: RV-10-3366; WASP Seg: 55)

Figure 44 Total Phosphorus - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

OR @ Fred Webb Rd, GA
Parameter: TP



(Calib Station: RV-10-3407; WASP Seg: 58)

Figure 45 Total Phosphorus - Ochlockonee River at Fred Webb Rd, GA

OR @ SR 188 nr Coolidge, GA
Parameter: TP

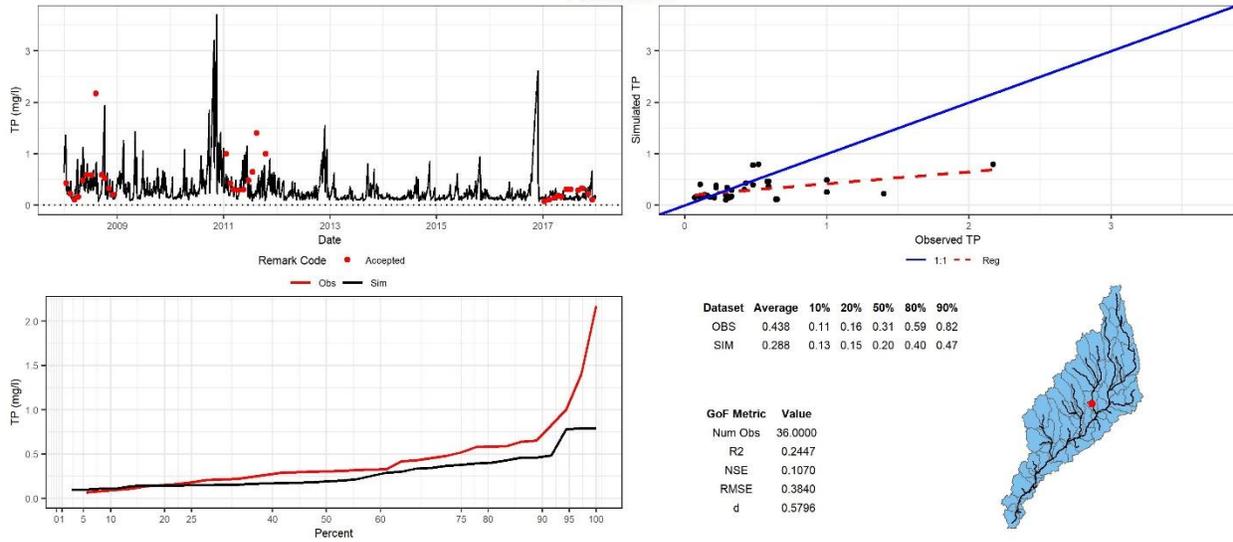


Figure 46 Total Phosphorus - Ochlockonee River at SR 188 near Coolidge, GA

Trib to OR @ at West Blvd, GA
Parameter: TP

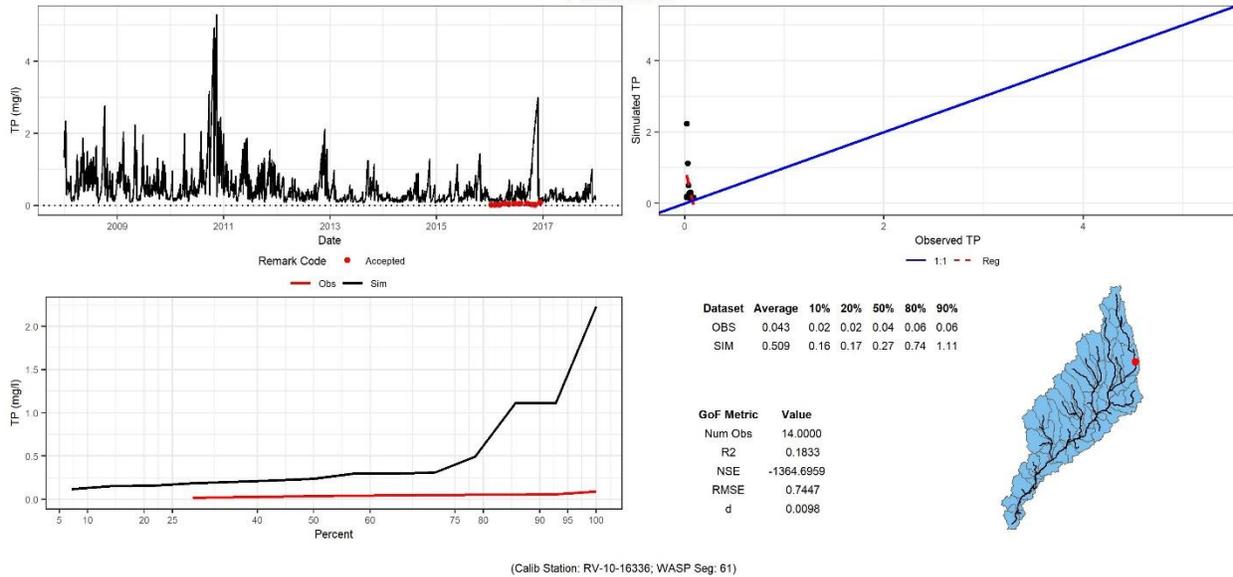
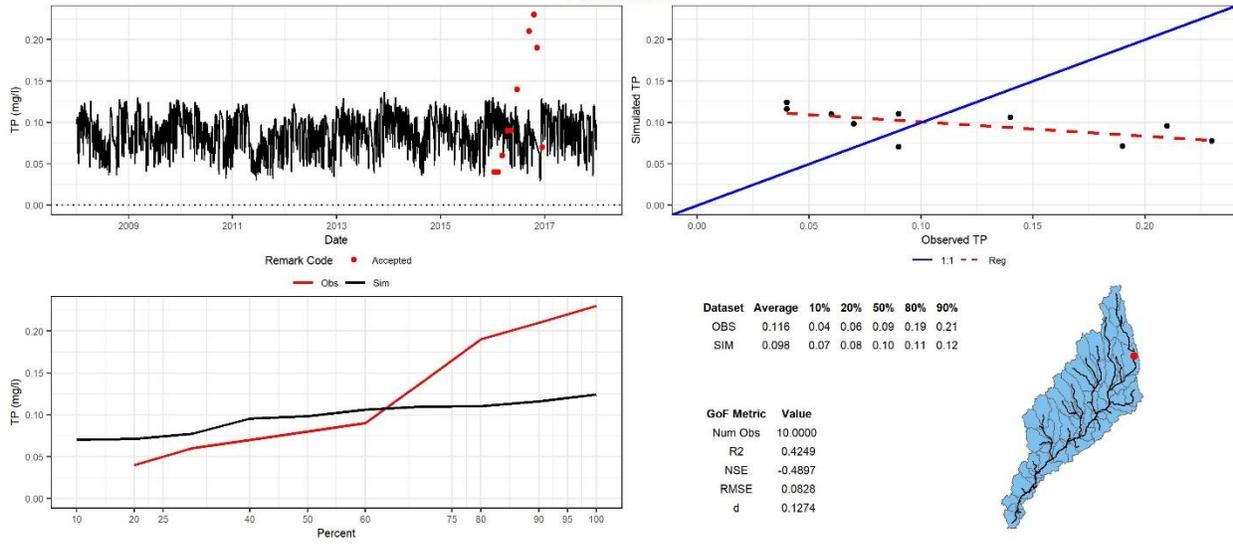


Figure 47 Total Phosphorus - Trib to Ochlockonee River at West Blvd near Moultrie, GA

OR @SR 37 nr Moultrie, GA
Parameter: TP



(Calib Station: RV-10-16328; WASP Seg: 62)

Figure 48 Total Phosphorus - Ochlockonee River @ SR 37 near Moultrie, GA

TP (Annual Comparison)

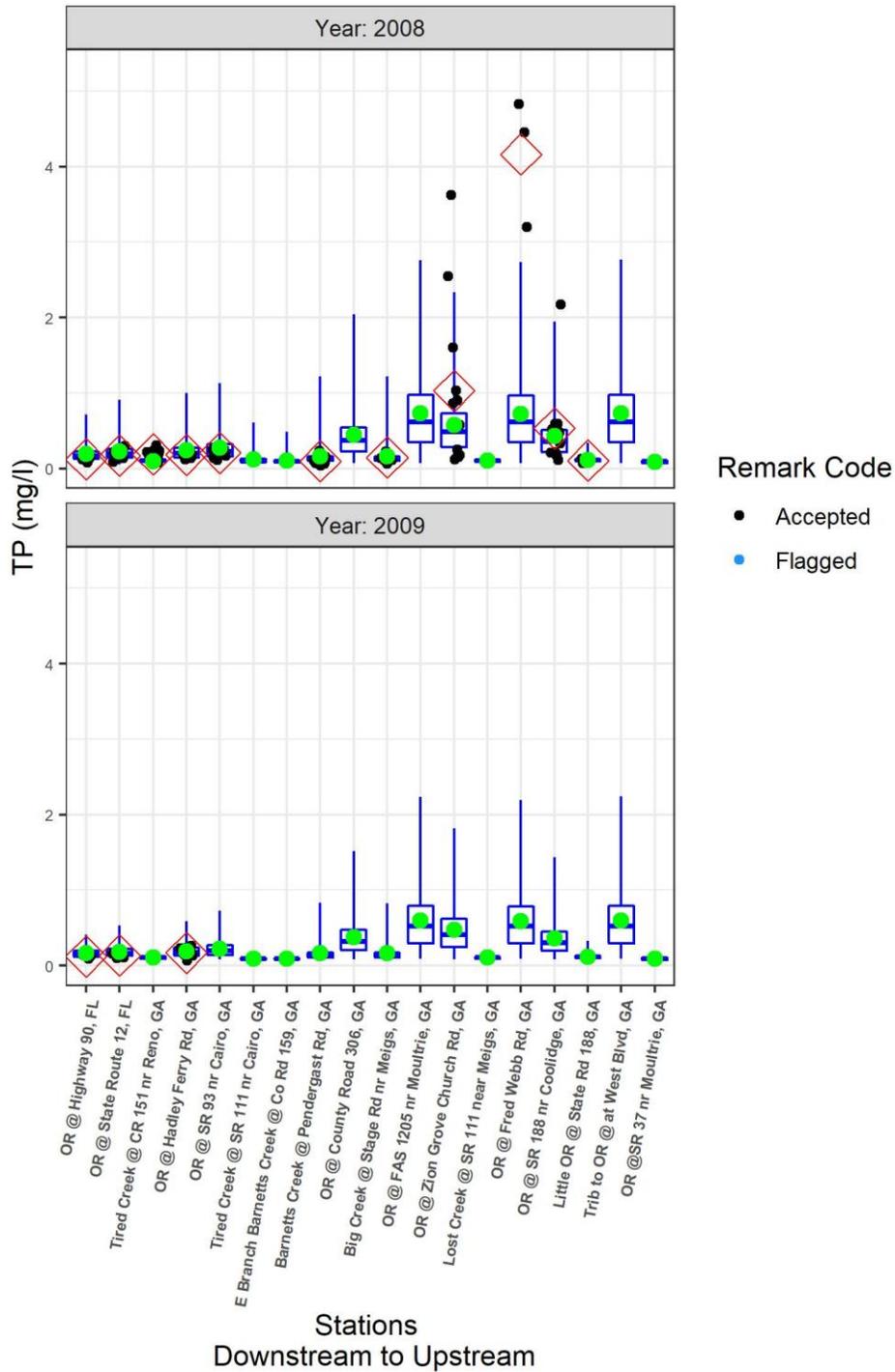


Figure 49 Ochlockonee River Total Phosphorus Comparison Observed vs. Simulated 2008 - 2009

TP (Annual Comparison)

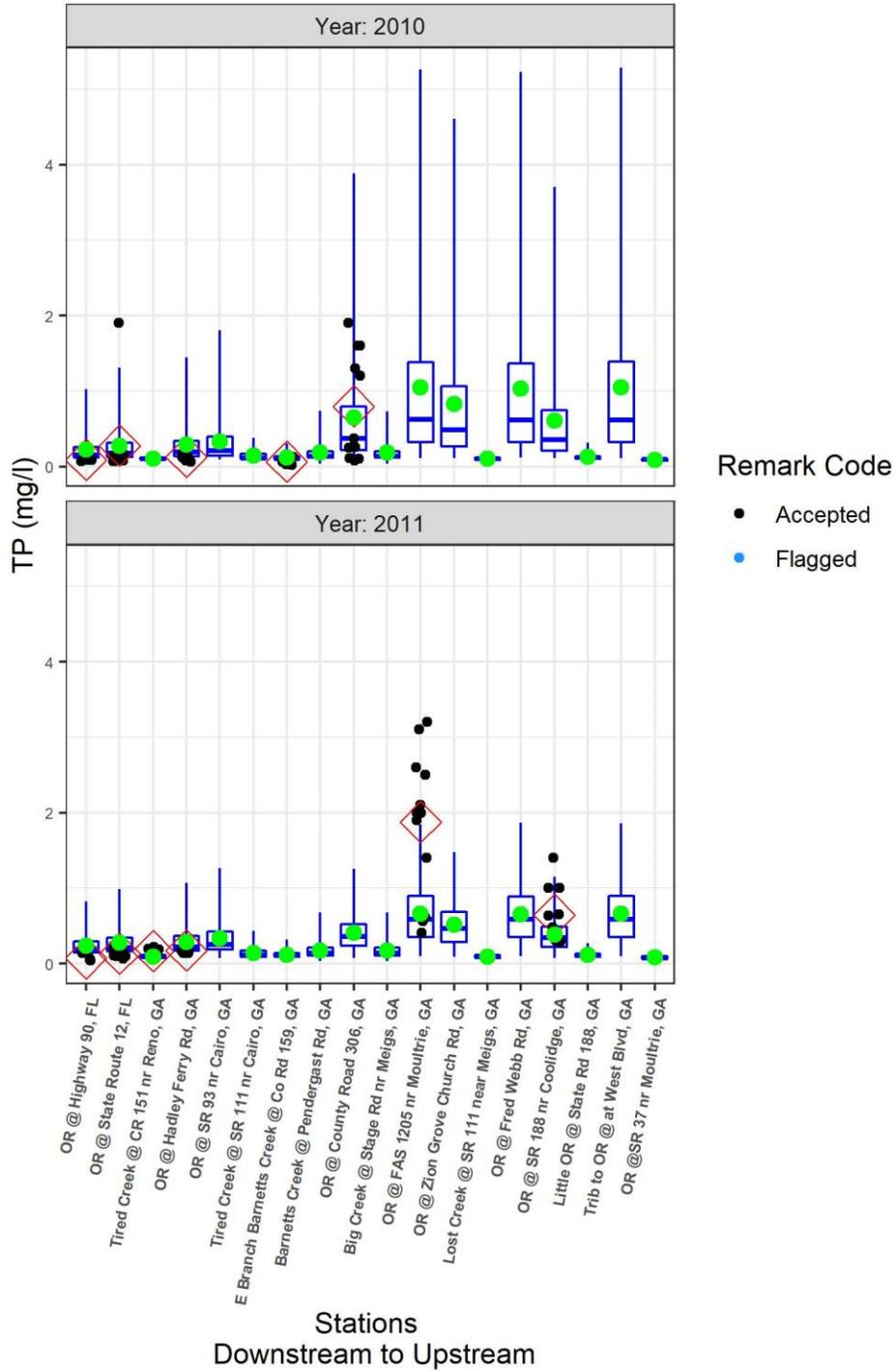


Figure 50 Ochlockonee River Total Phosphorus Comparison Observed vs. Simulated 2010 - 2011

TP (Annual Comparison)

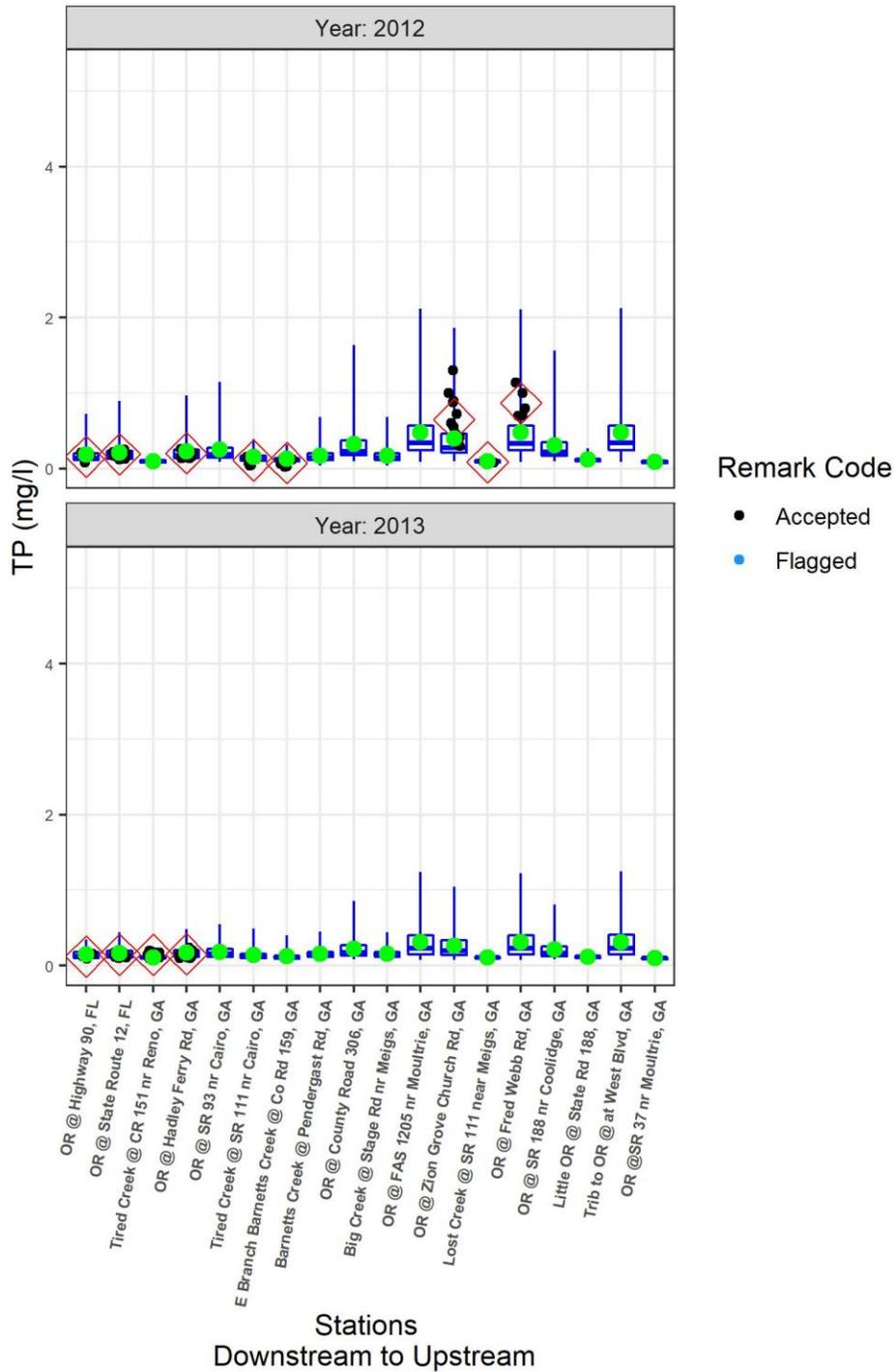


Figure 51 Ochlockonee River Total Phosphorus Comparison Observed vs. Simulated 2012 - 2013

TP (Annual Comparison)

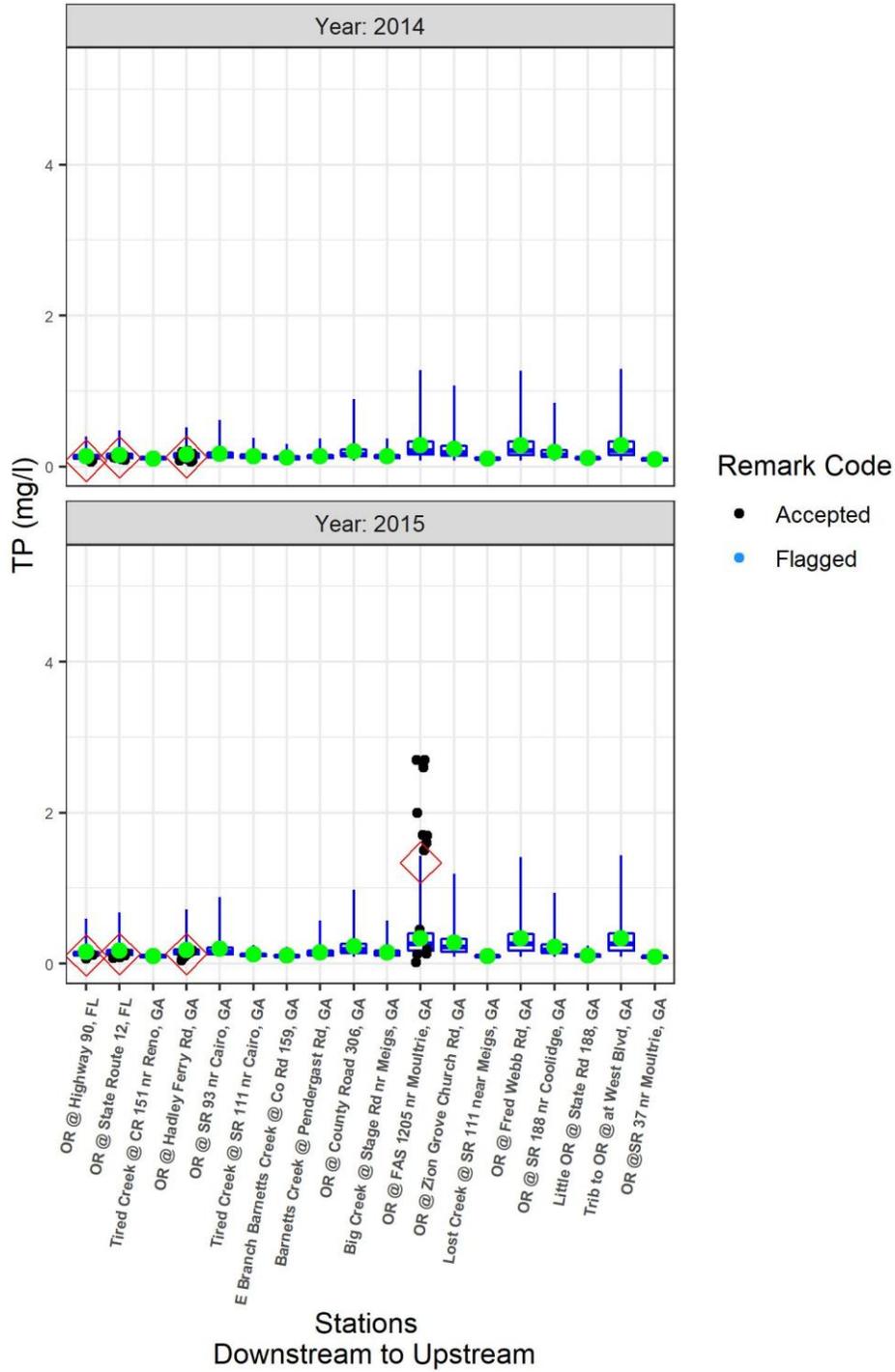


Figure 52 Ochlockonee River Total Phosphorus Comparison Observed vs. Simulated 2014 - 2015

TP (Annual Comparison)

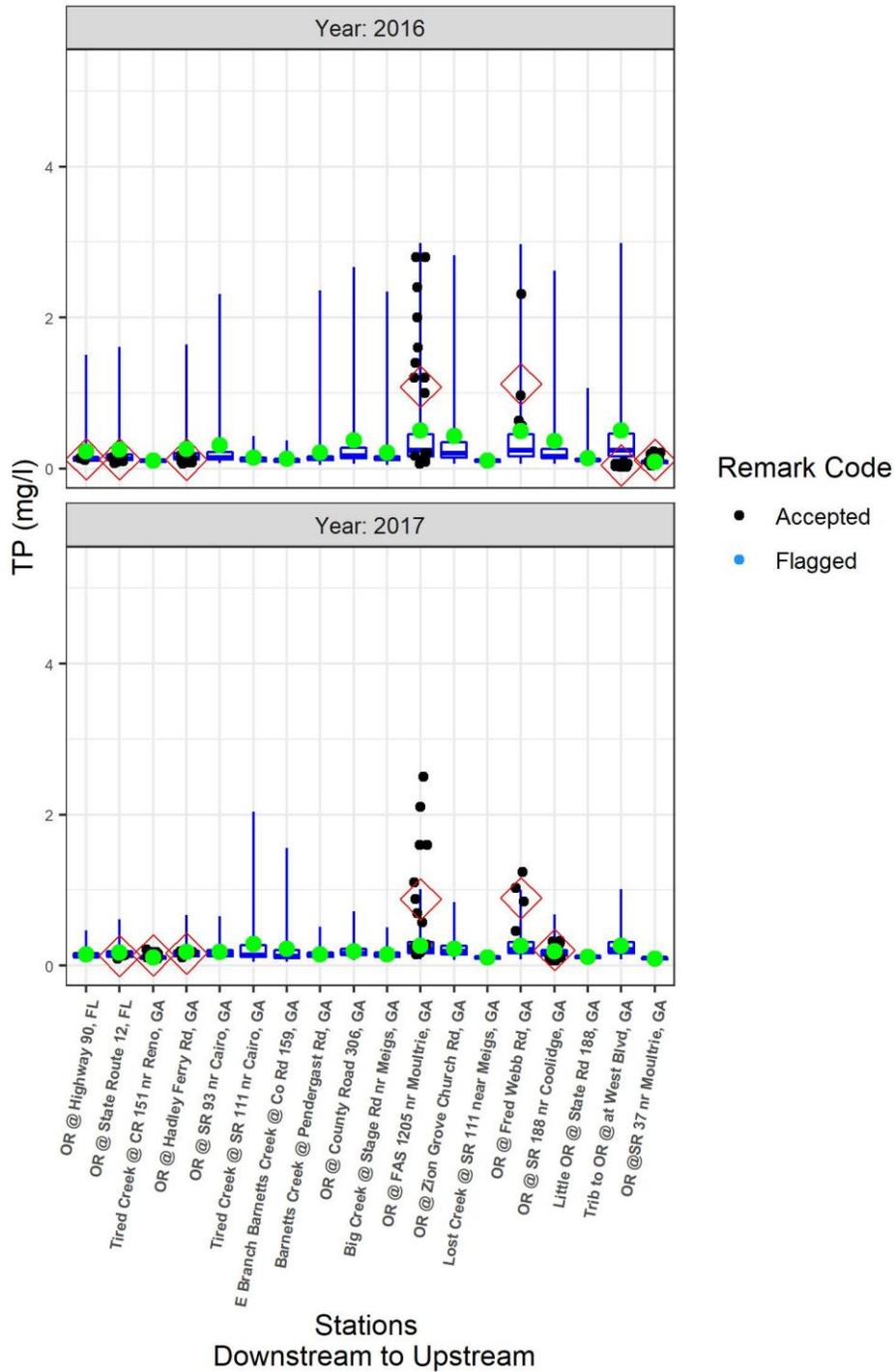


Figure 53 Ochlockonee River Total Phosphorus Comparison Observed vs. Simulated 2016 - 2017

Chlorophyll a

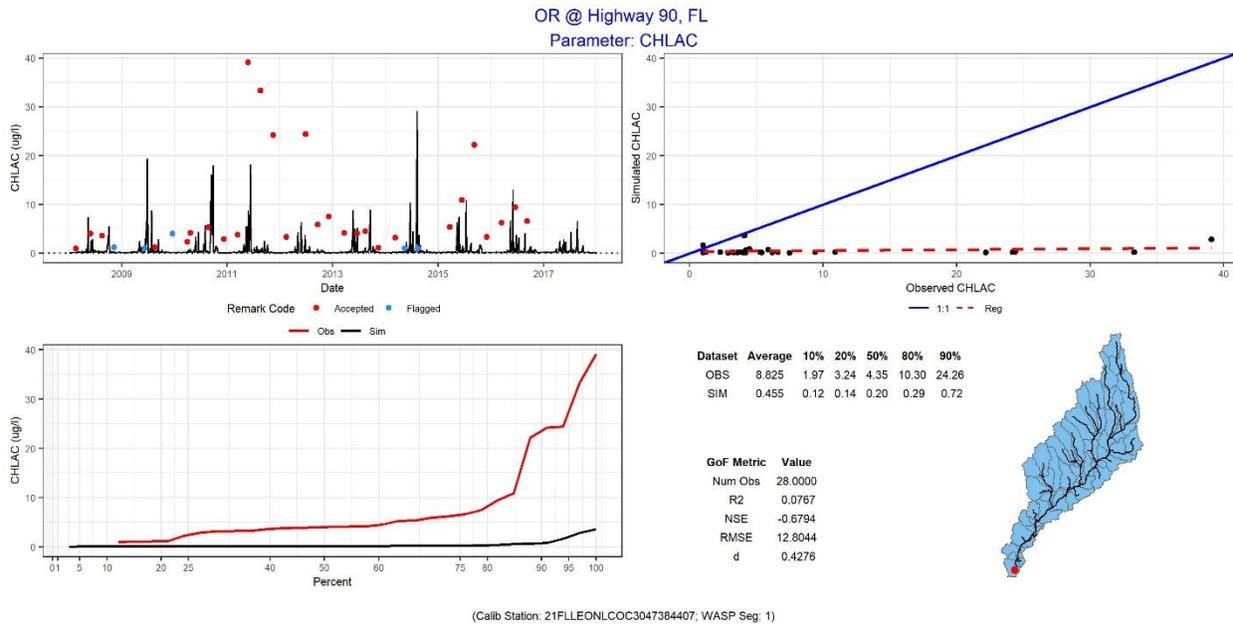


Figure 54 Chlorophyll a - Ochlockonee River at Highway 90, FL

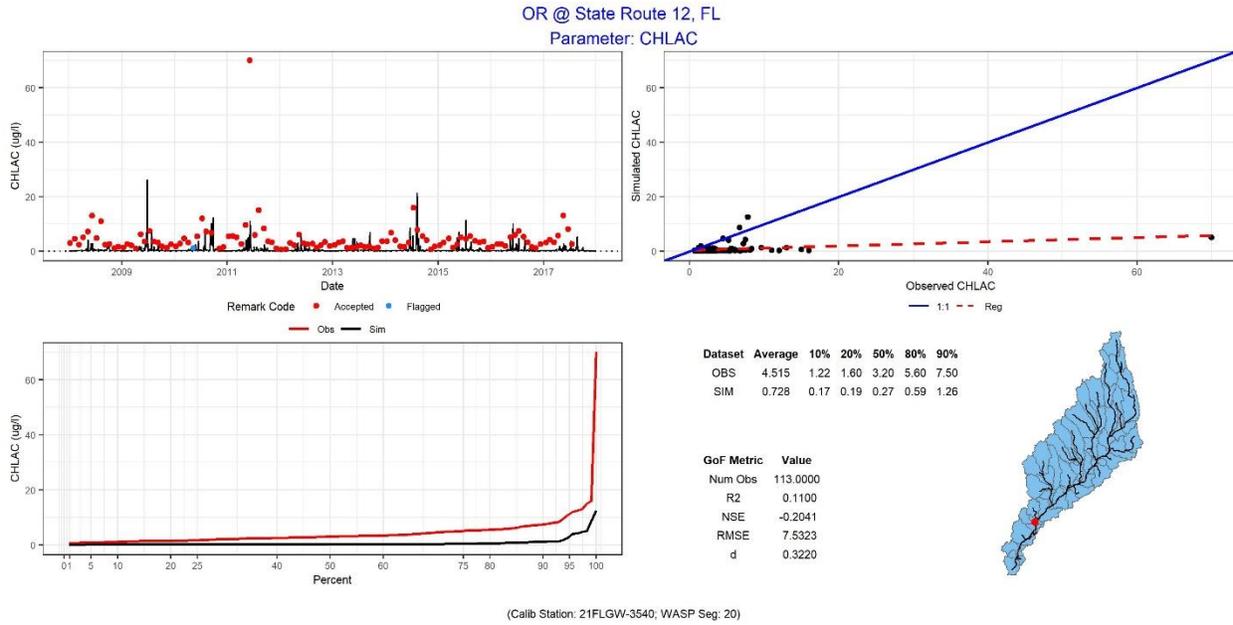


Figure 55 Chlorophyll a - Ochlockonee River at State Route 12, FL

CHLAC (Annual Comparison)

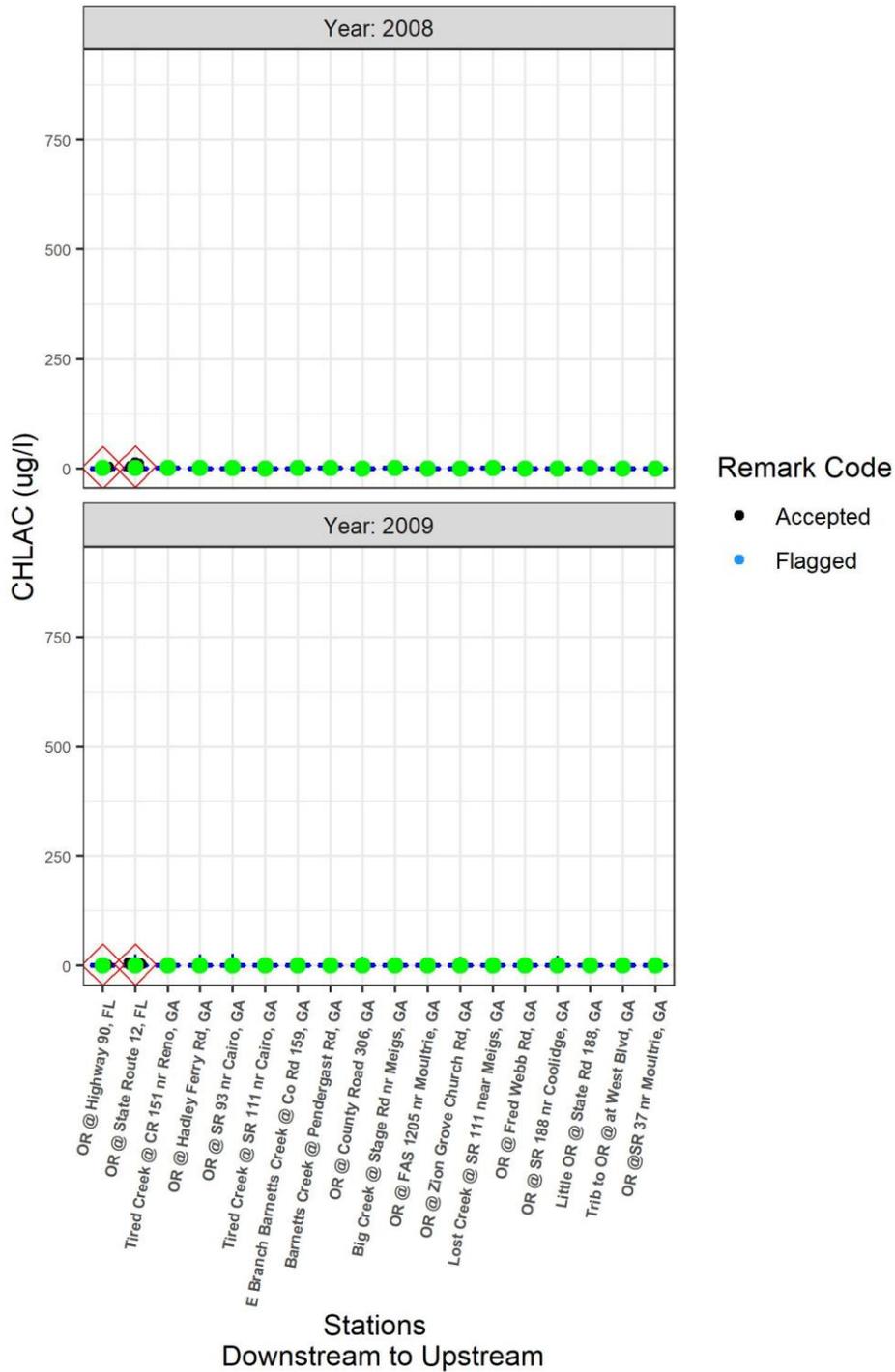


Figure 56 Ochlockonee River Chlorophyll a Comparison Observed vs. Simulated 2008 - 2009

CHLAC (Annual Comparison)

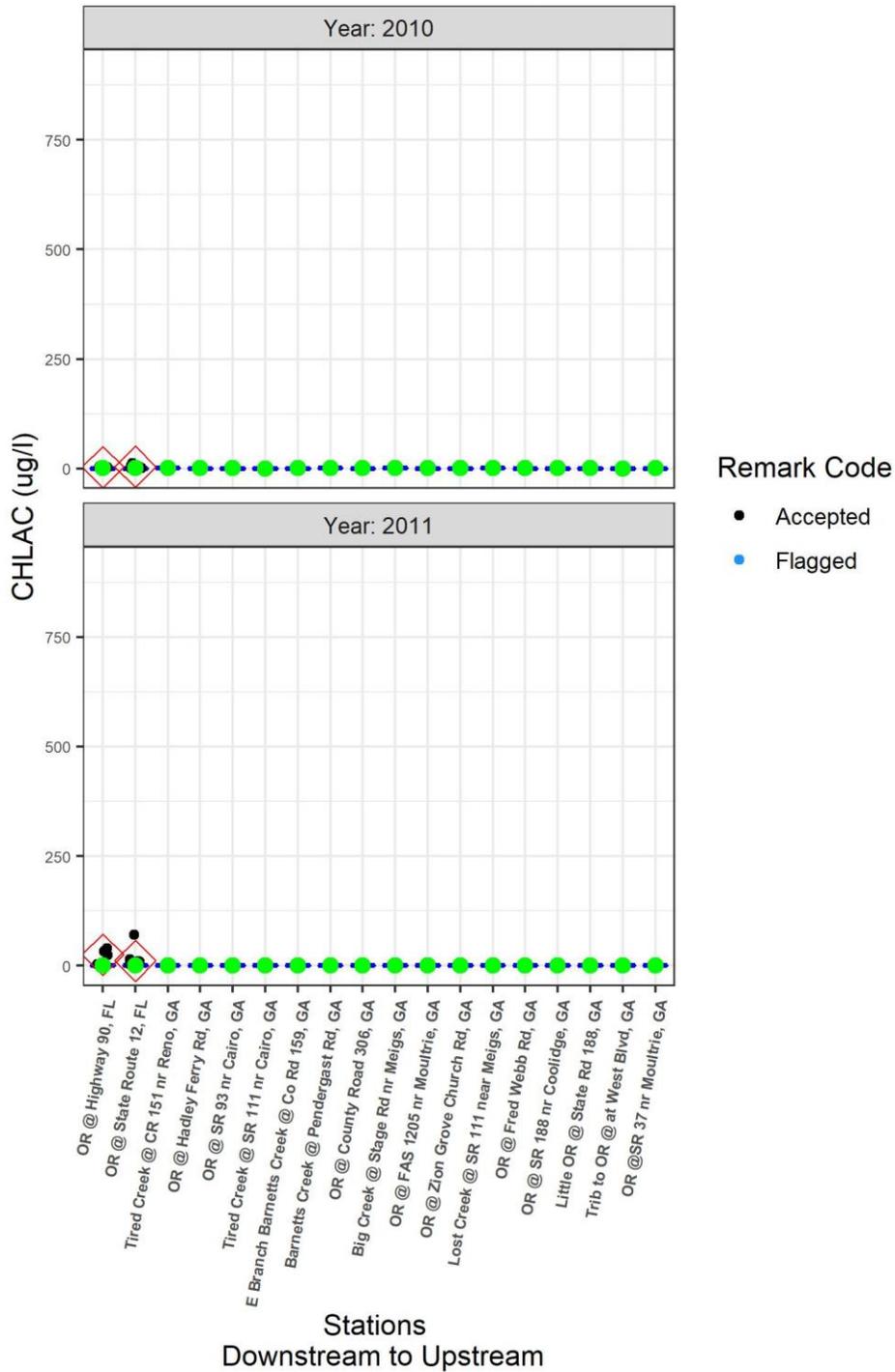


Figure 57 Ochlockonee River Chlorophyll a Comparison Observed vs. Simulated 2010 - 2011

CHLAC (Annual Comparison)

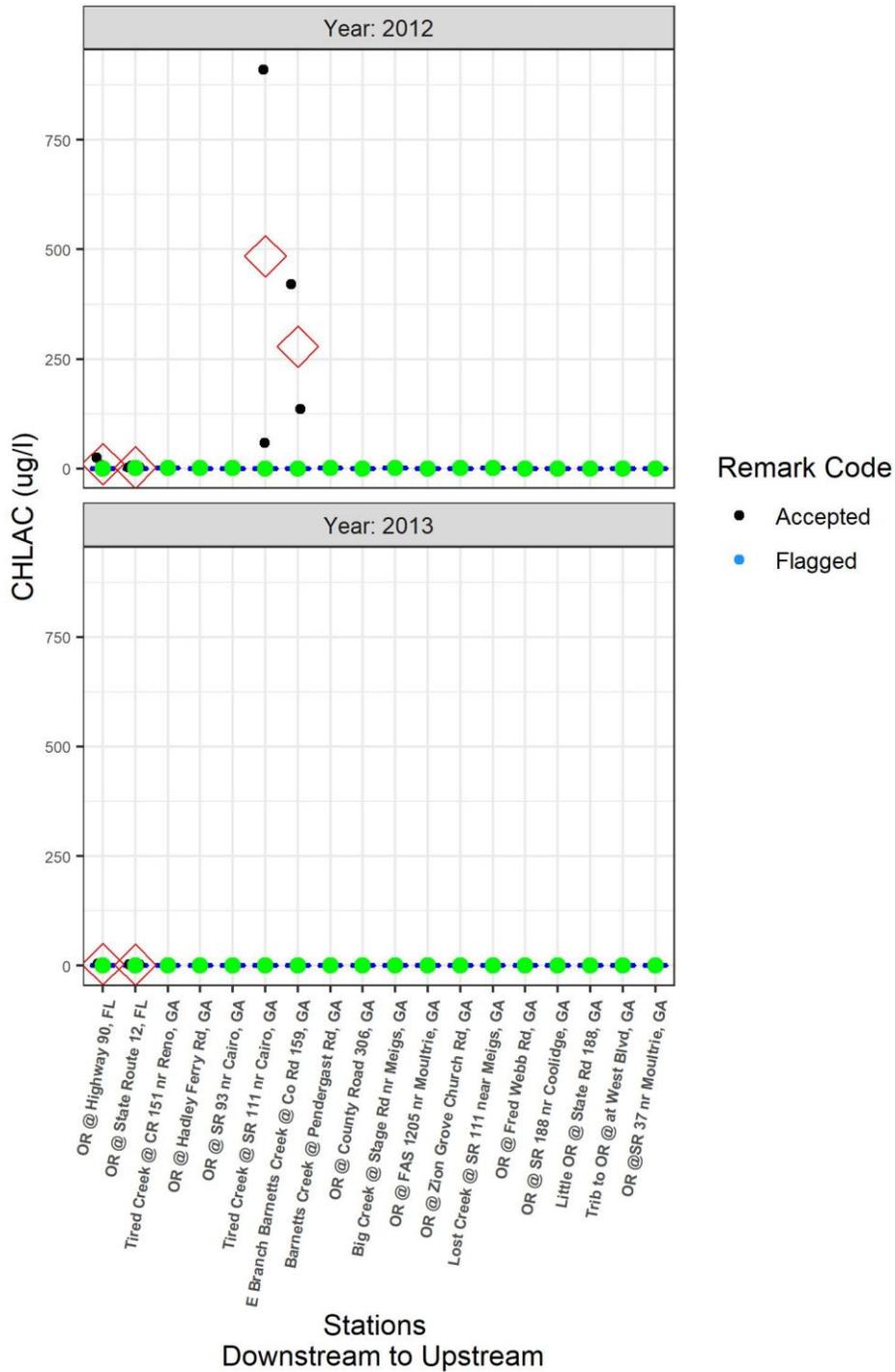


Figure 58 Ochlockonee River Chlorophyll a Comparison Observed vs. Simulated 2012 - 2013

CHLAC (Annual Comparison)

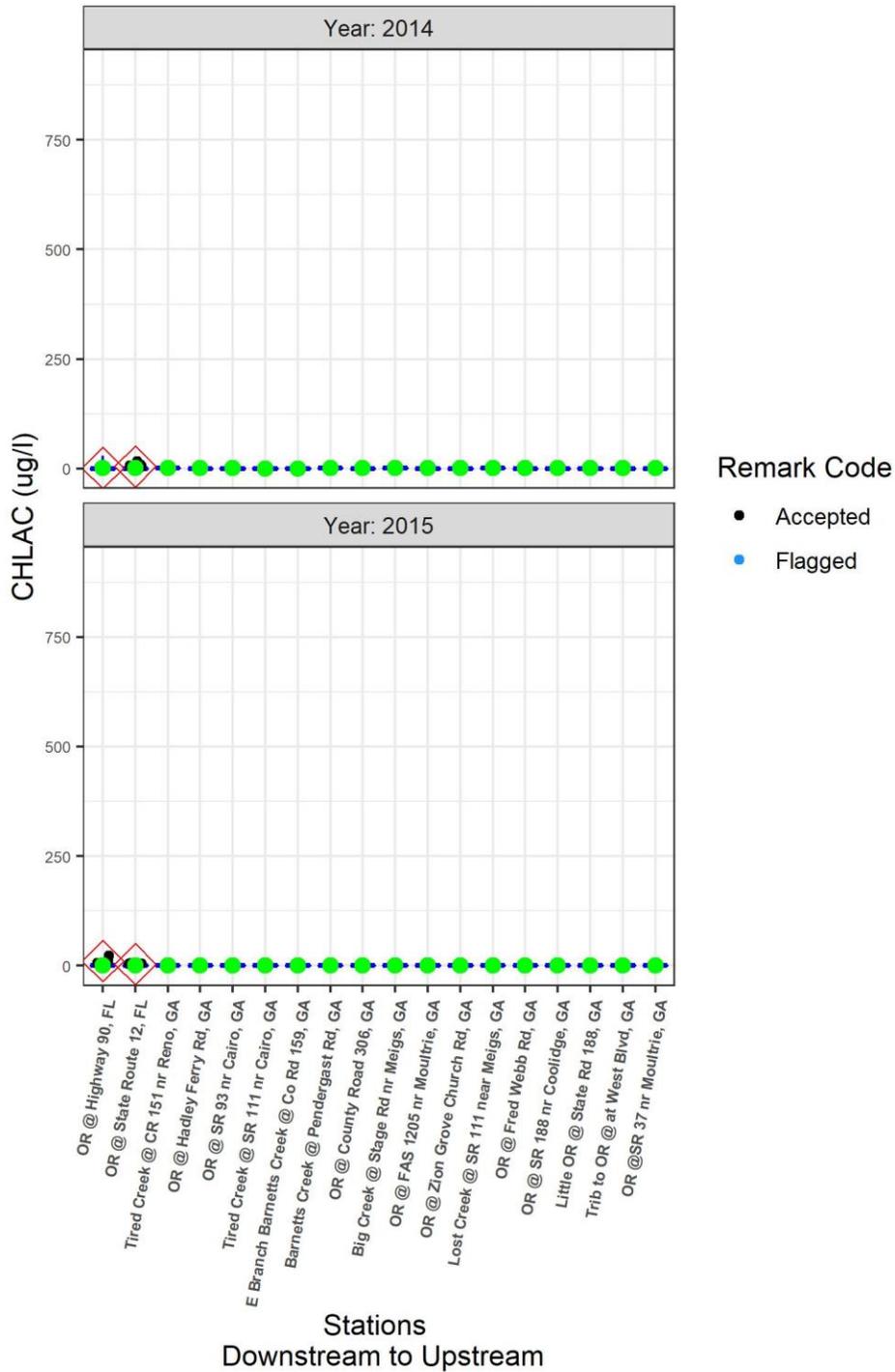


Figure 59 Ochlockonee River Chlorophyll a Comparison Observed vs. Simulated 2014 - 2015

CHLAC (Annual Comparison)

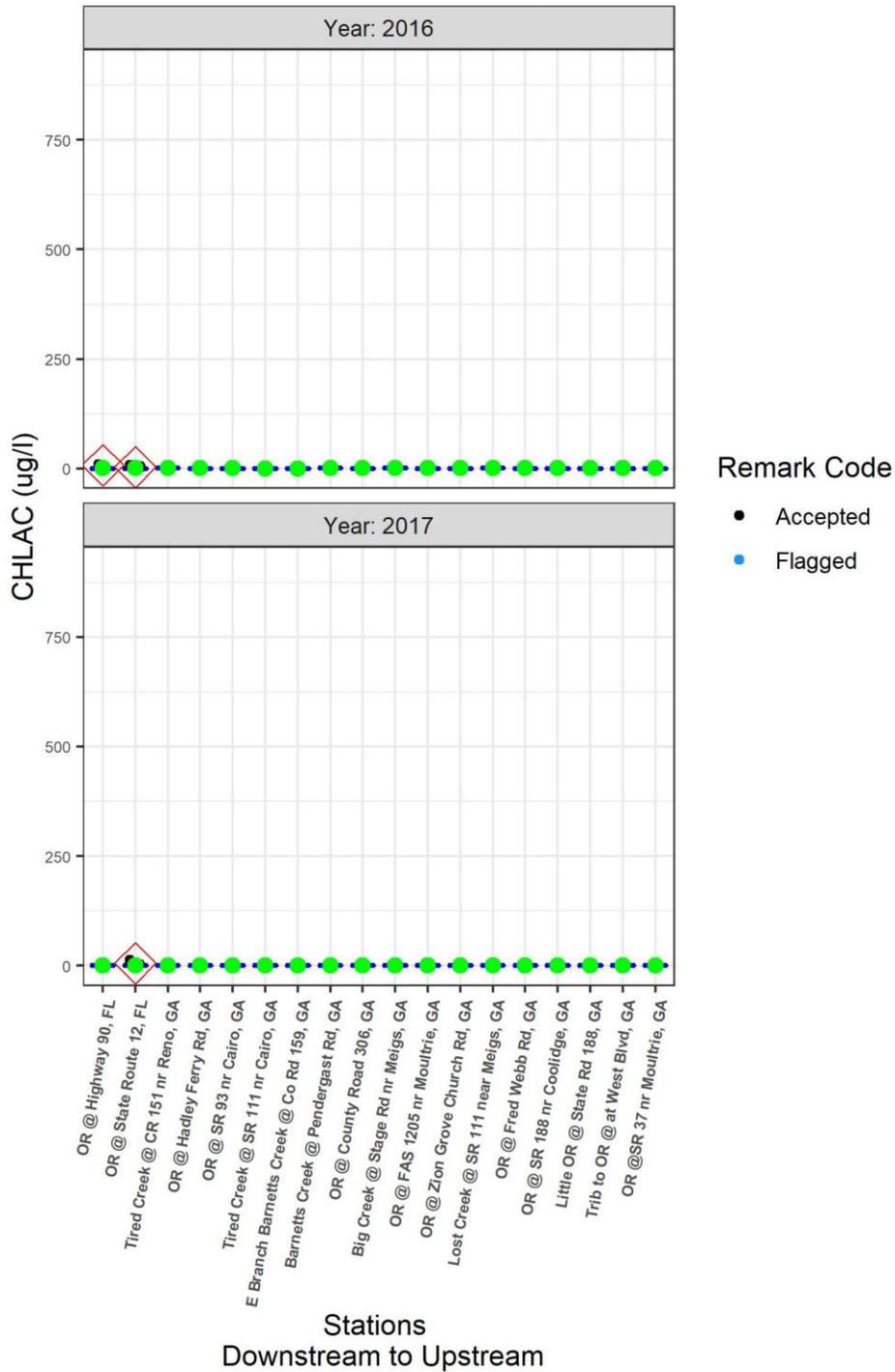


Figure 60 Ochlockonee River Chlorophyll a Comparison Observed vs. Simulated 2016 - 2017

Dissolved Oxygen

OR @ Highway 90, FL
Parameter: DO

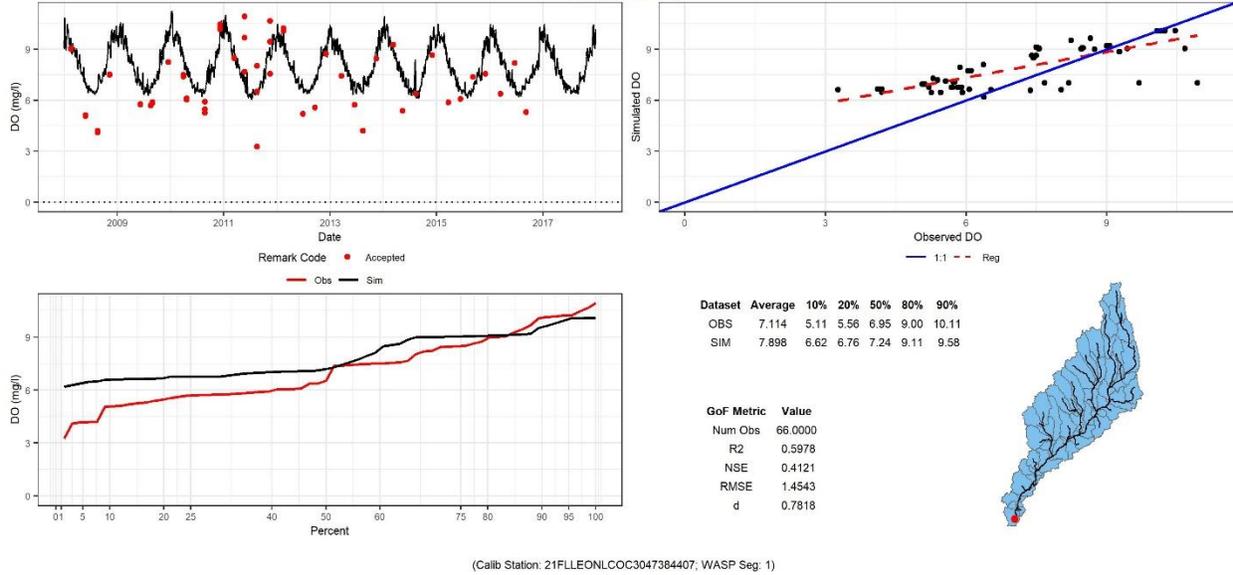


Figure 61 Dissolved Oxygen - Ochlockonee River at Highway 90, FL

OR @ State Route 12, FL
Parameter: DO

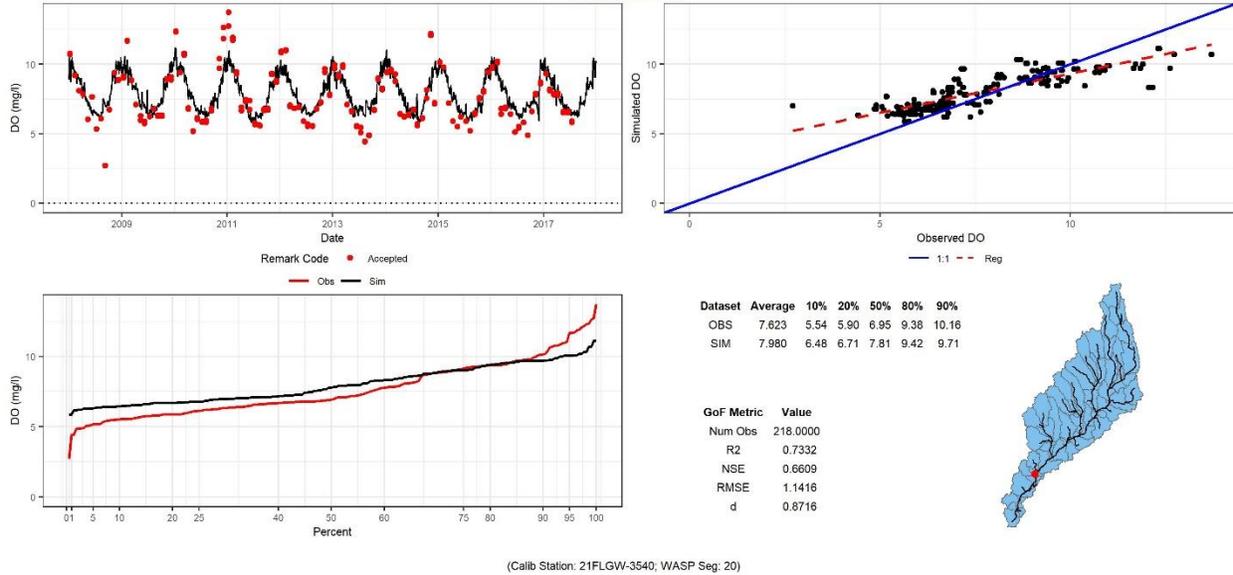
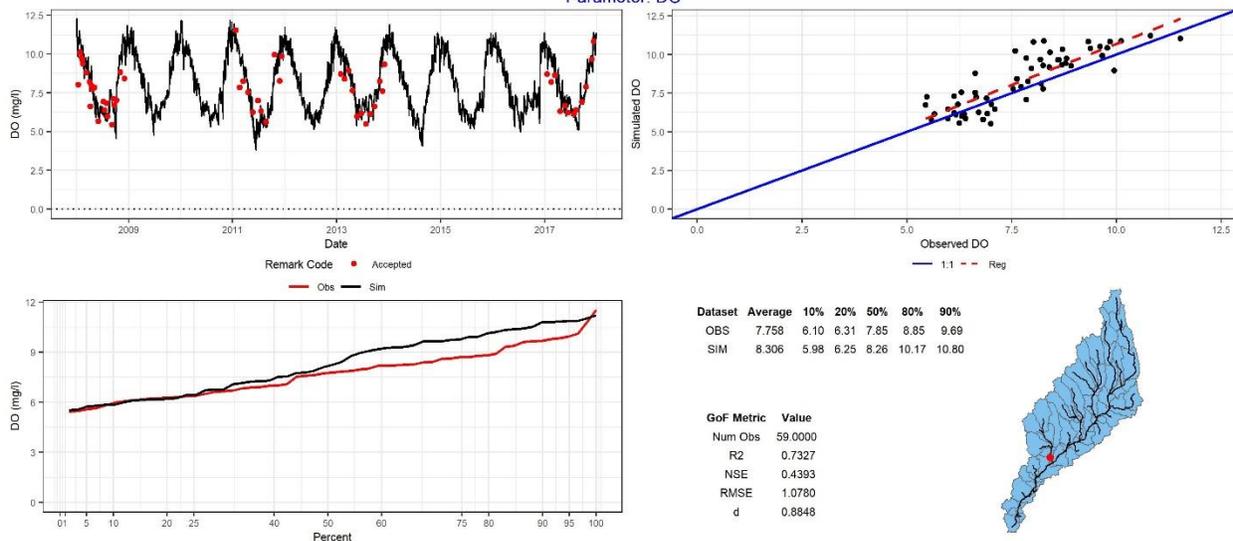


Figure 62 Dissolved Oxygen - Ochlockonee River at State Route 12, FL

Tired Creek @ CR 151 nr Reno, GA

Parameter: DO

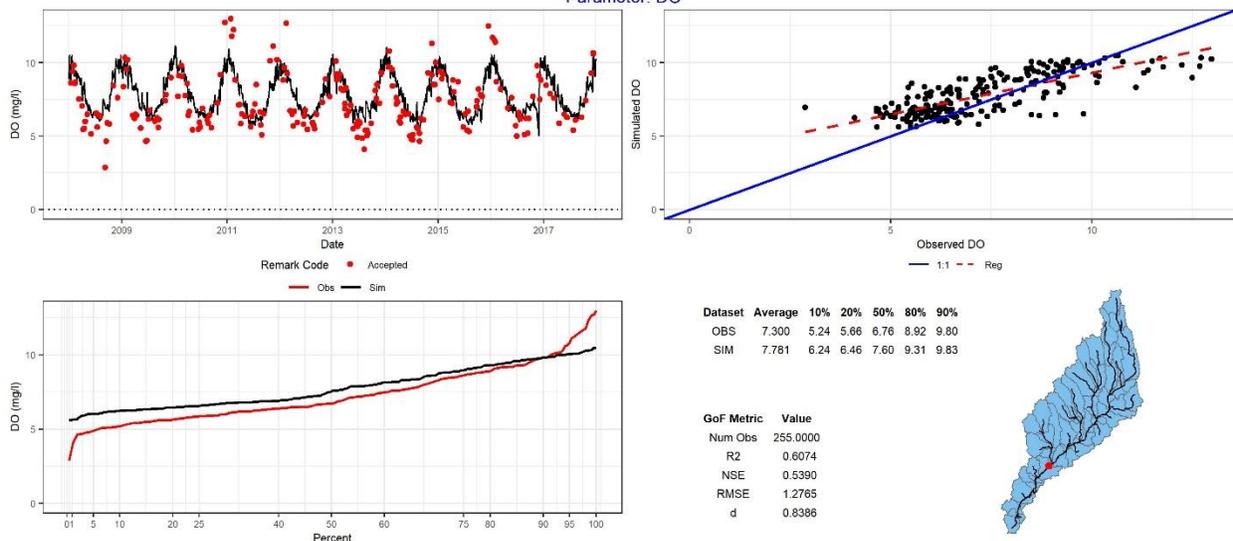


(Calib Station: RV-10-3384; WASP Seg: 138)

Figure 63 Dissolved Oxygen - Tired Creek at County Road 151 near Reno, GA

OR @ Hadley Ferry Rd, GA

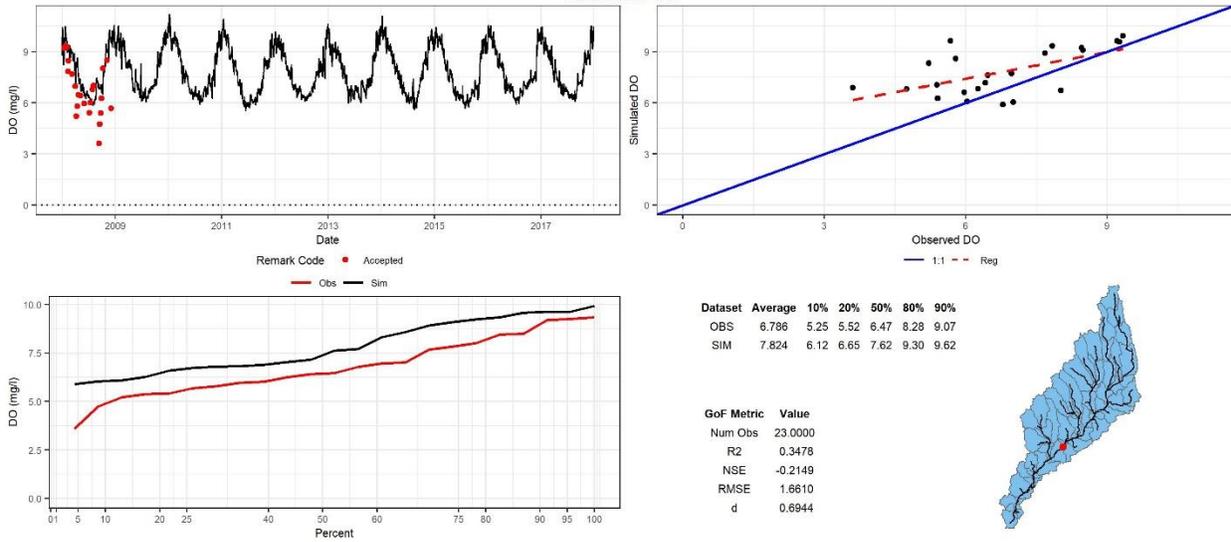
Parameter: DO



(Calib Station: RV-10-3386; WASP Seg: 25)

Figure 64 Dissolved Oxygen - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

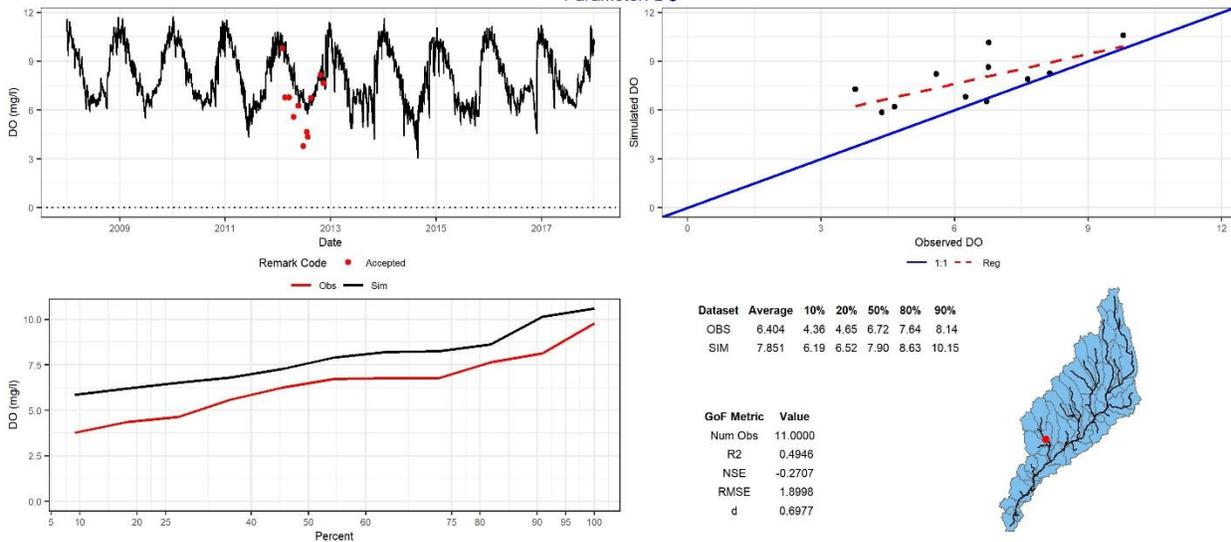
OR @ SR 93 nr Cairo, GA
Parameter: DO



(Calib Station: RV-10-3383; WASP Seg: 32)

Figure 65 Dissolved Oxygen - Ochlockonee River - SR 93 near Cairo, GA

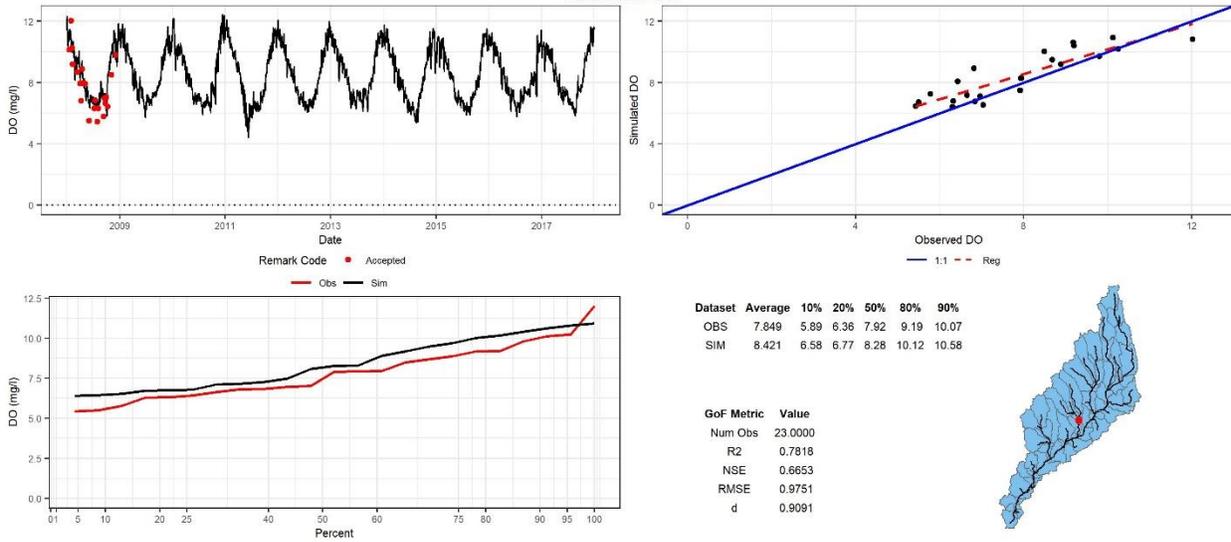
Tired Creek @ SR 111 nr Cairo, GA
Parameter: DO



(Calib Station: RV-10-3428; WASP Seg: 165)

Figure 66 Dissolved Oxygen - Tired Creek at State Road 111 near Cairo, GA

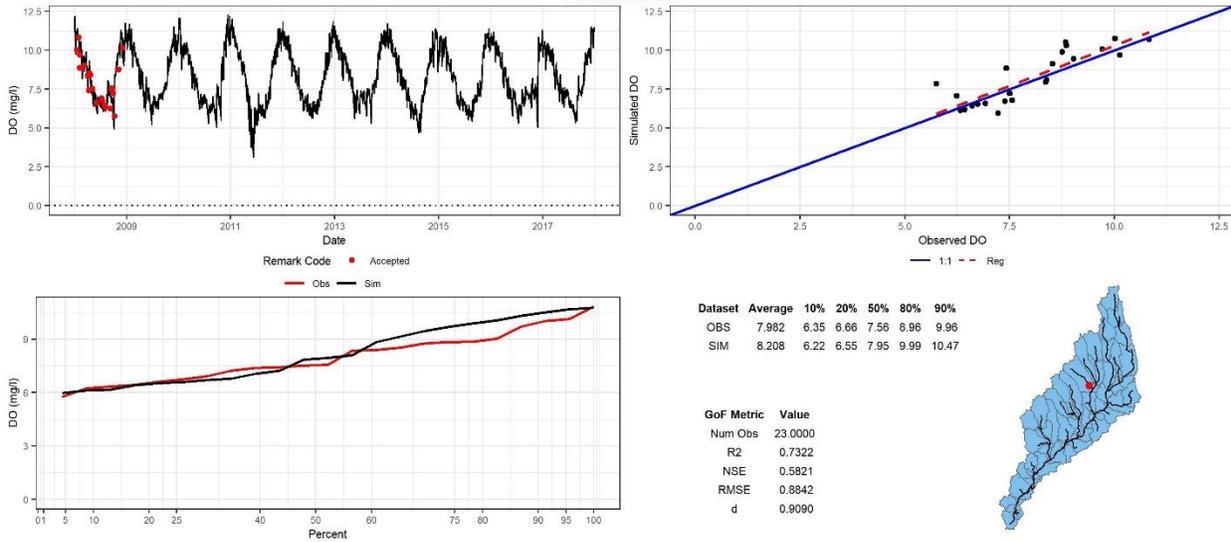
Barnetts Creek @ Pendergast Rd, GA
Parameter: DO



(Calib Station: RV-10-3380; WASP Seg: 127)

Figure 67 Dissolved Oxygen - Barnetts Creek at Pendergast Rd. / Old Thomasville Rd.

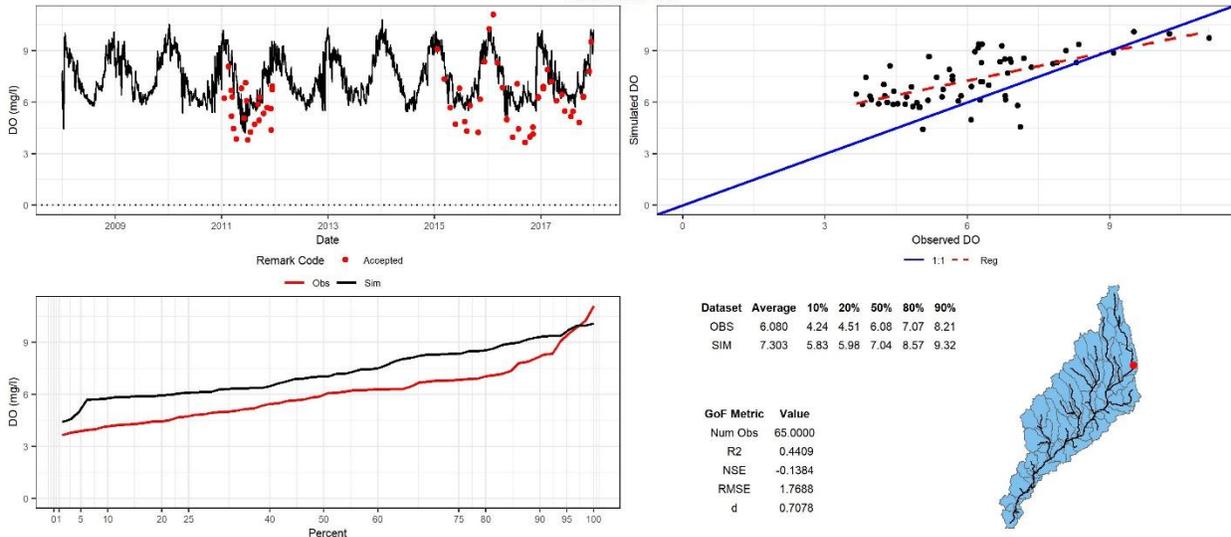
Big Creek @ Stage Rd nr Meigs, GA
Parameter: DO



(Calib Station: RV-10-3377; WASP Seg: 125)

Figure 68 Dissolved Oxygen - Big Creek at Stage Road near Meigs, GA

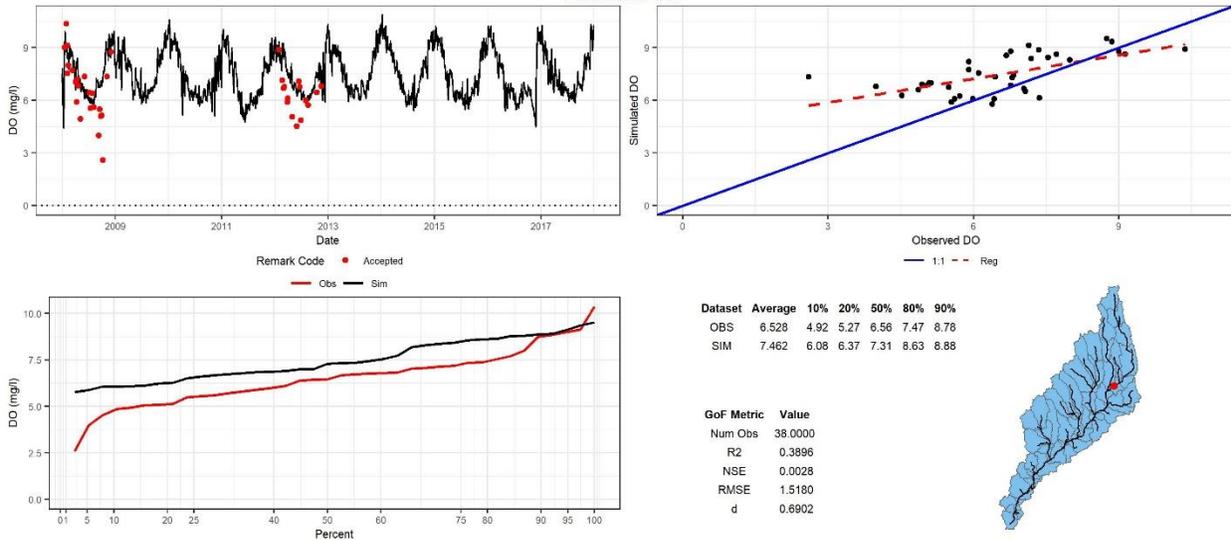
OR @ FAS 1205 nr Moultrie, GA
Parameter: DO



(Calib Station: RV-10-3365; WASP Seg: 60)

Figure 69 Dissolved Oxygen - Ochlockonee River - FAS 1205 near Moultrie, GA

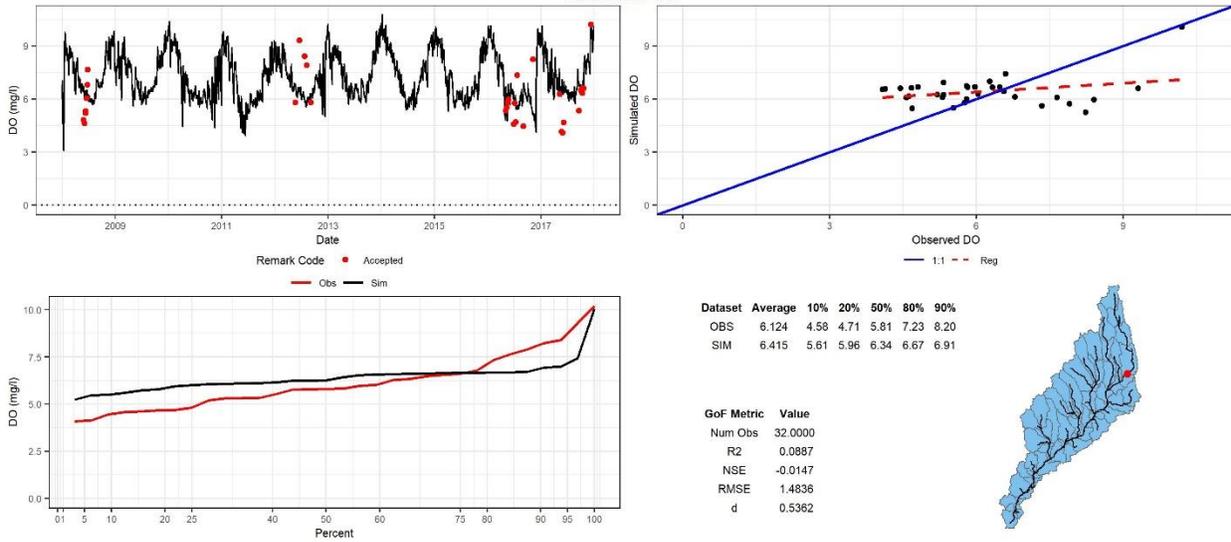
OR @ Zion Grove Church Rd, GA
Parameter: DO



(Calib Station: RV-10-3366; WASP Seg: 55)

Figure 70 Dissolved Oxygen - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

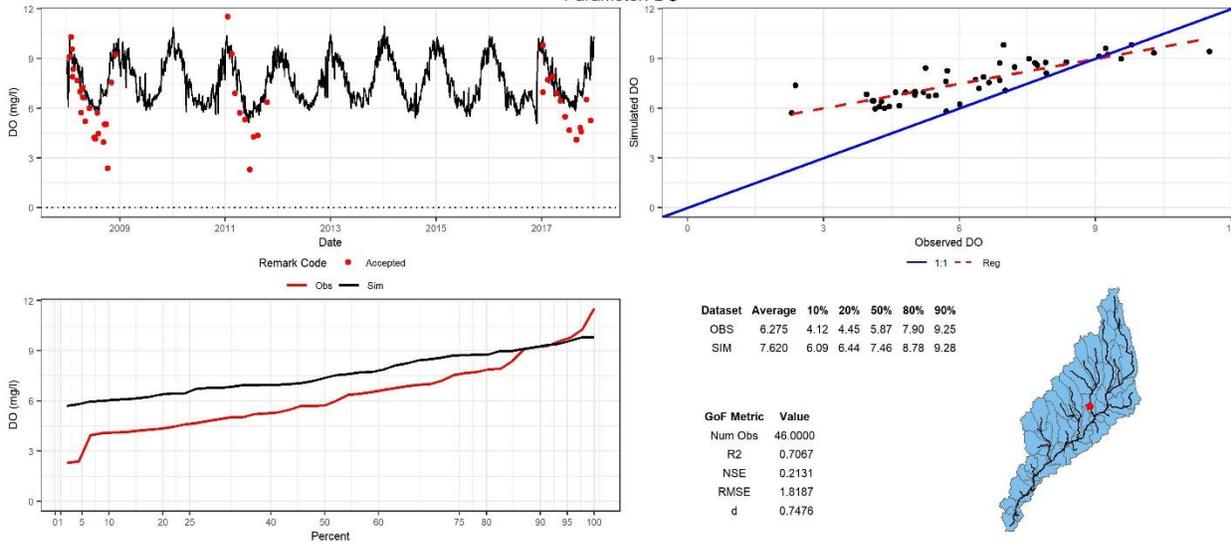
OR @ Fred Webb Rd, GA
Parameter: DO



(Calib Station: RV-10-3407; WASP Seg: 58)

Figure 71 Dissolved Oxygen - Ochlockonee River at Fred Webb Rd, GA

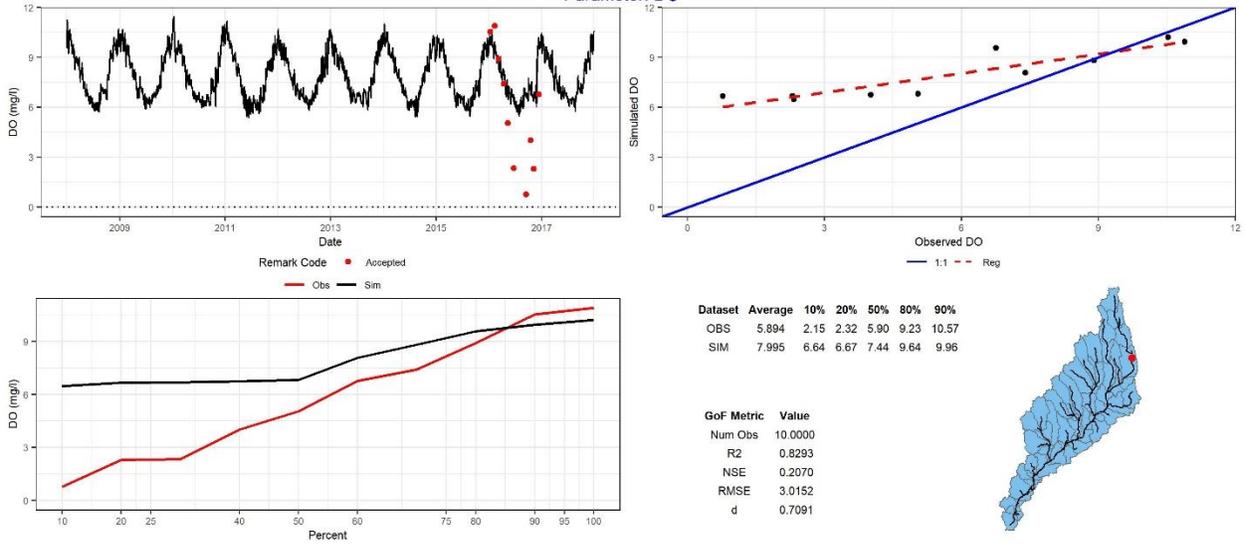
OR @ SR 188 nr Coolidge, GA
Parameter: DO



(Calib Station: RV-10-3371; WASP Seg: 51)

Figure 72 Dissolved Oxygen - Ochlockonee River at SR 188 near Coolidge, GA

OR @SR 37 nr Moultrie, GA
Parameter: DO



(Calib Station: RV-10-16328; WASP Seg: 62)

Figure 73 Dissolved Oxygen - Ochlockonee River @ SR 37 near Moultrie, GA

Carbonaceous Biochemical Oxygen Demand

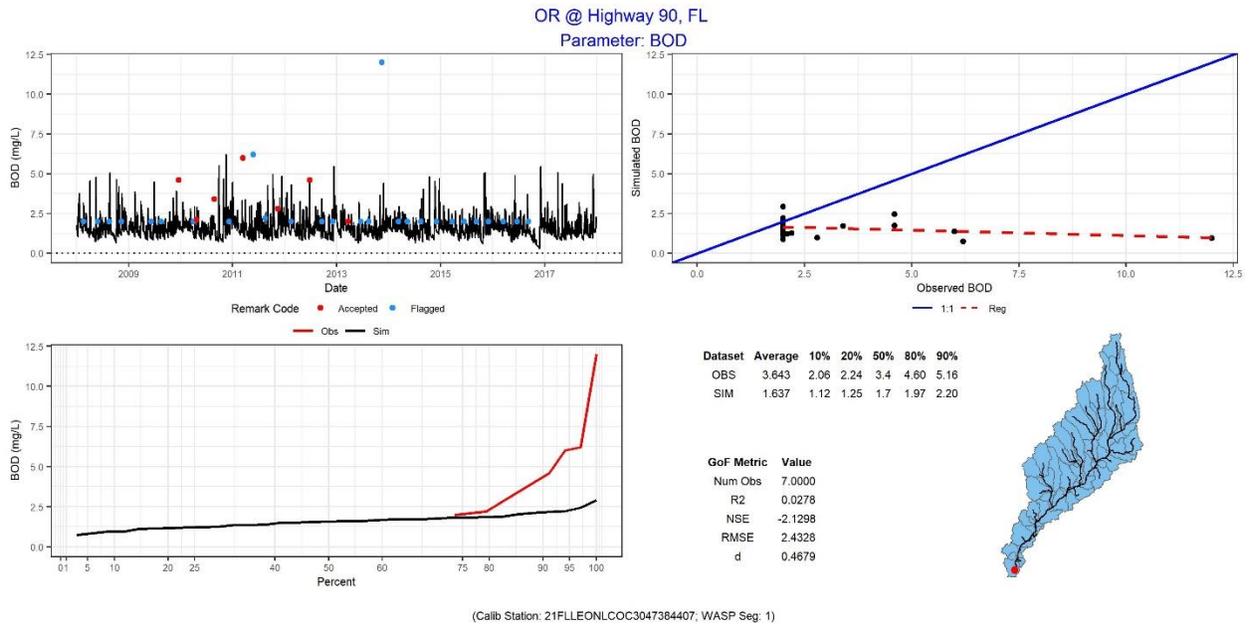


Figure 74 CBOD - Ochlockonee River at Highway 90, FL

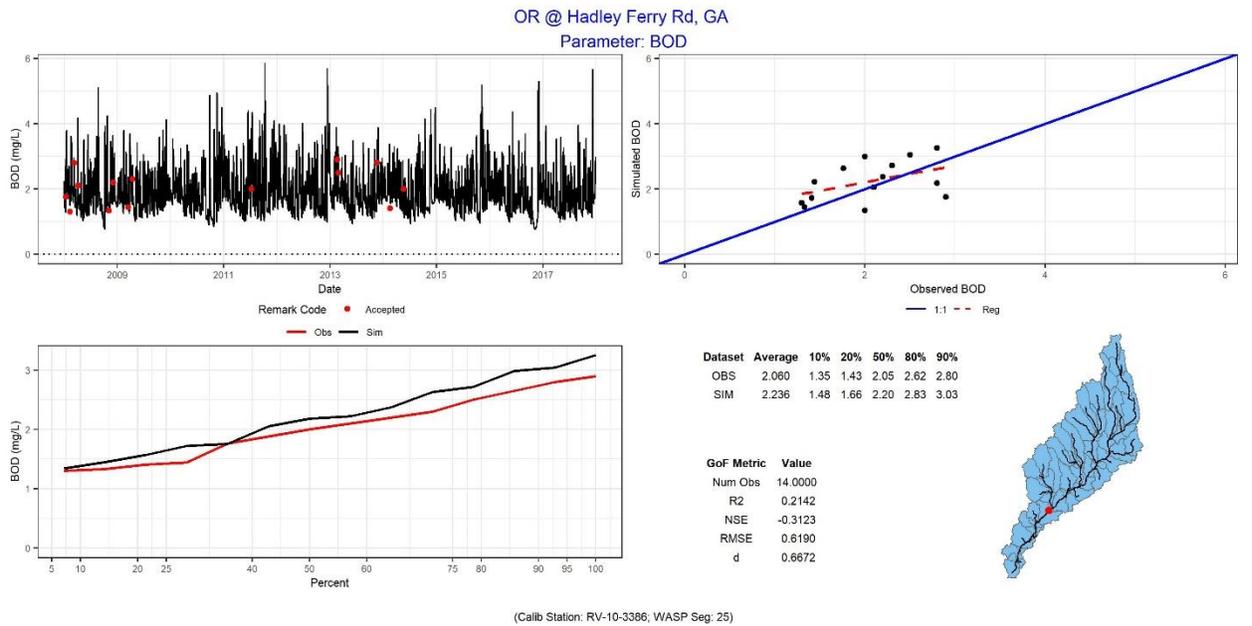
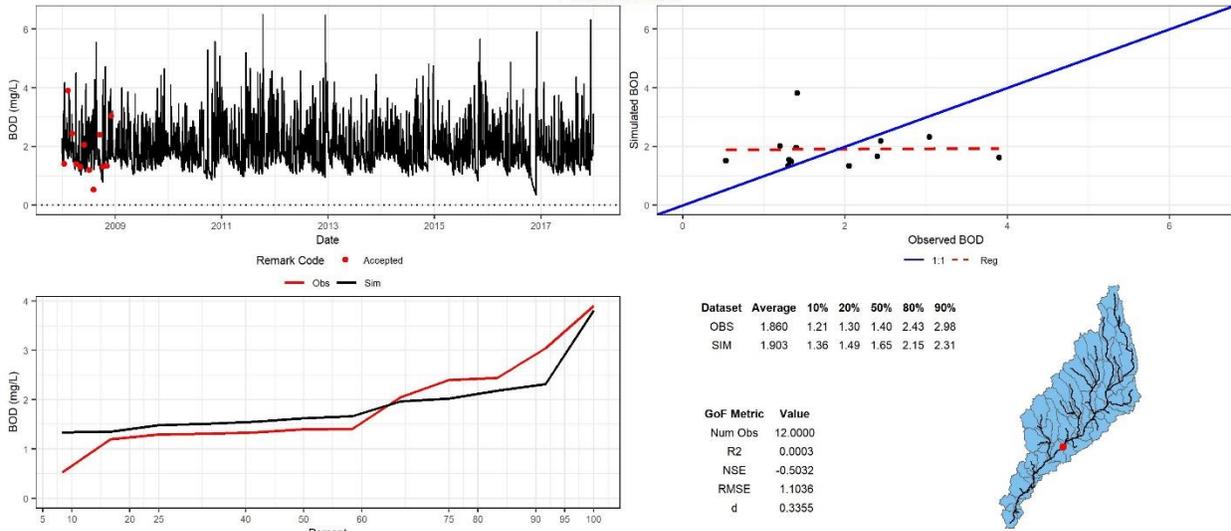


Figure 75 CBOD - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

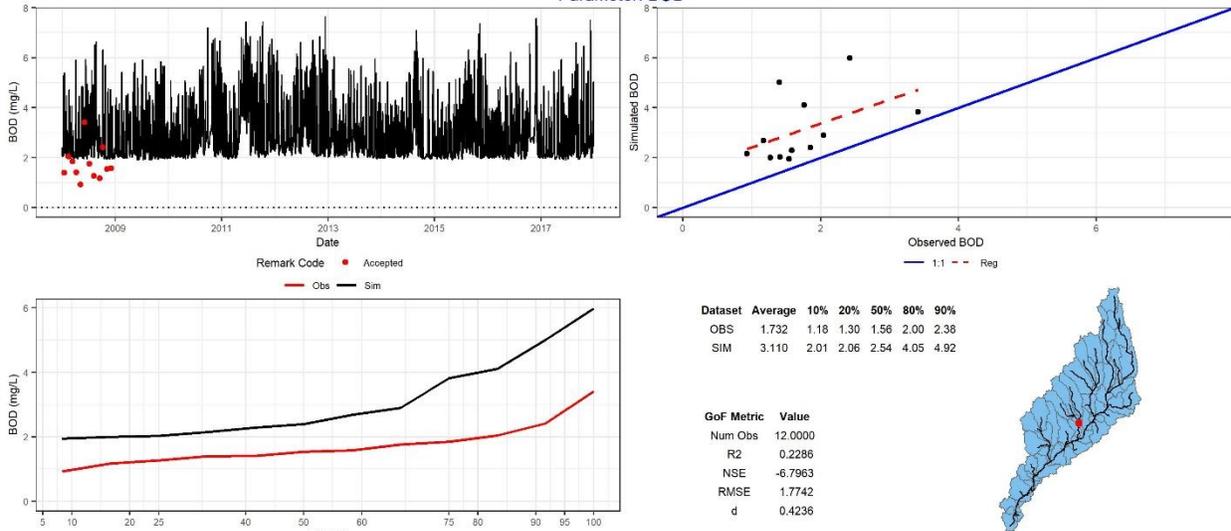
OR @ SR 93 nr Cairo, GA
Parameter: BOD



(Calib Station: RV-10-3383; WASP Seg: 32)

Figure 76 CBOD - Ochlockonee River - SR 93 near Cairo, GA

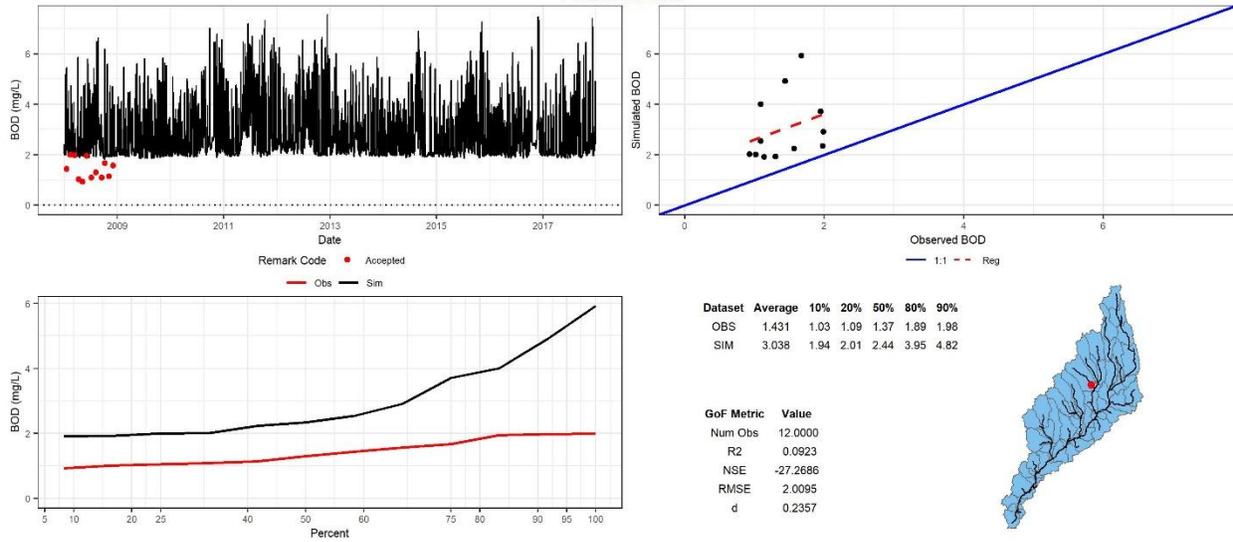
Barnetts Creek @ Pendergast Rd, GA
Parameter: BOD



(Calib Station: RV-10-3380; WASP Seg: 127)

Figure 77 CBOD - Barnetts Creek at Pendergast Rd. / Old Thomasville Rd.

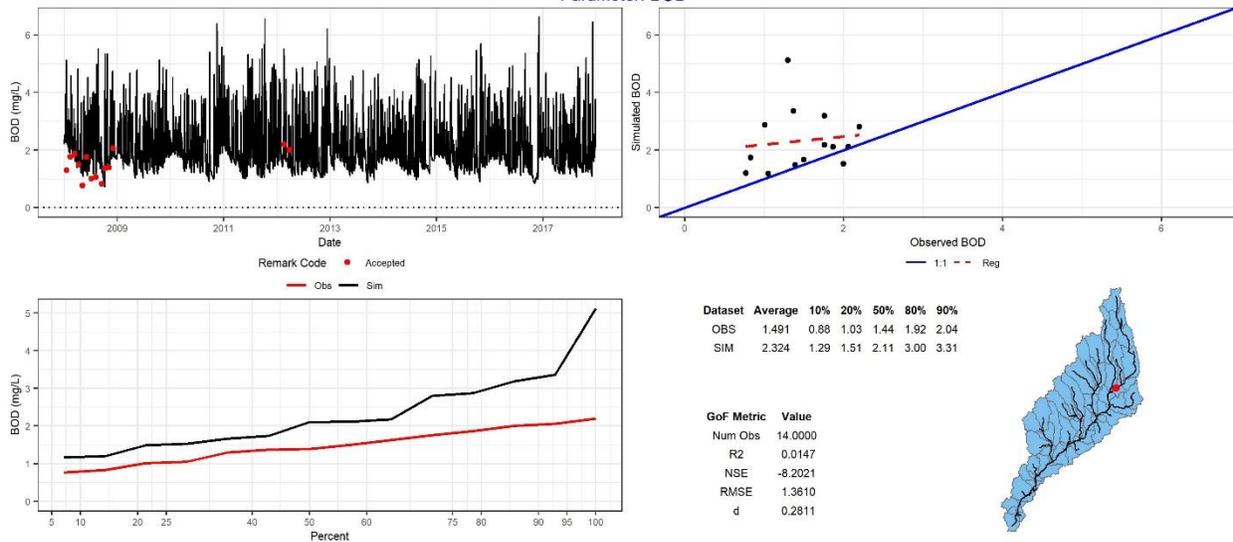
Big Creek @ Stage Rd nr Meigs, GA
Parameter: BOD



(Calib Station: RV-10-3377; WASP Seg: 125)

Figure 78 CBOD - Big Creek at Stage Road near Meigs, GA

OR @ Zion Grove Church Rd, GA
Parameter: BOD



(Calib Station: RV-10-3366; WASP Seg: 55)

Figure 79 CBOD - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

OR @ SR 188 nr Coolidge, GA
Parameter: BOD

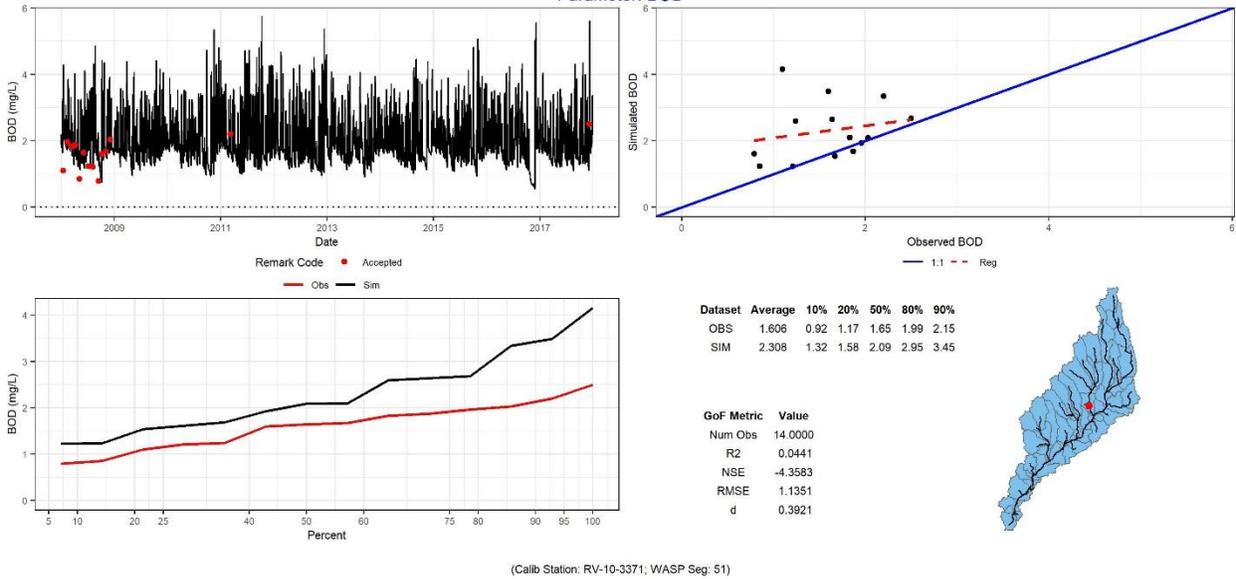


Figure 80 BOD - Ochlockonee River at SR 188 near Coolidge, GA

Total Suspended Solids

OR @ Highway 90, FL
Parameter: TSS

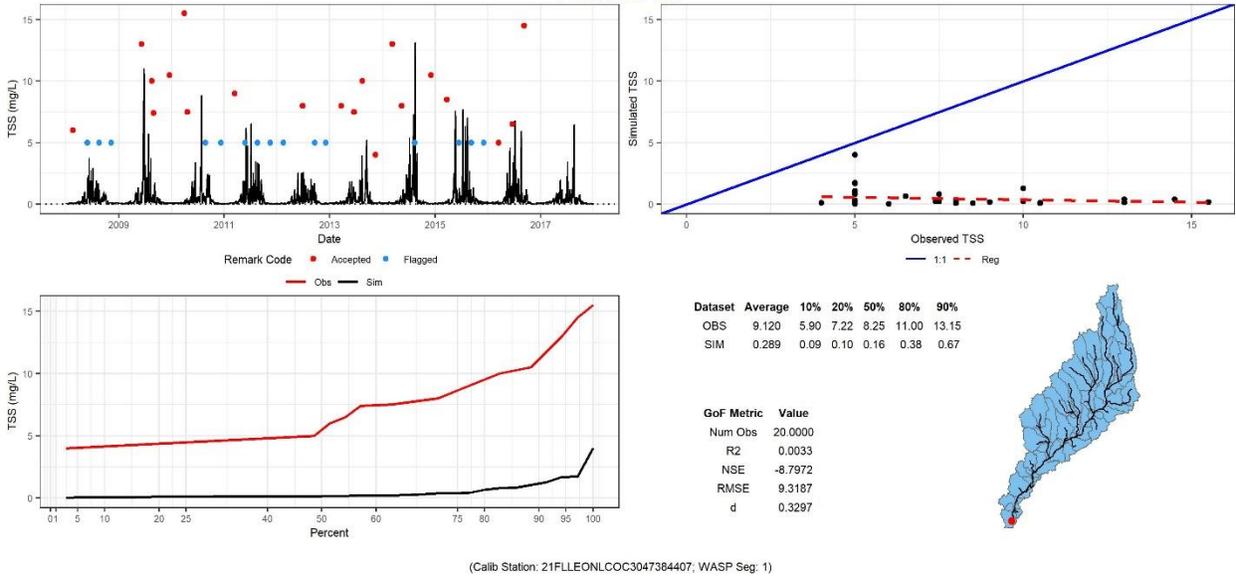
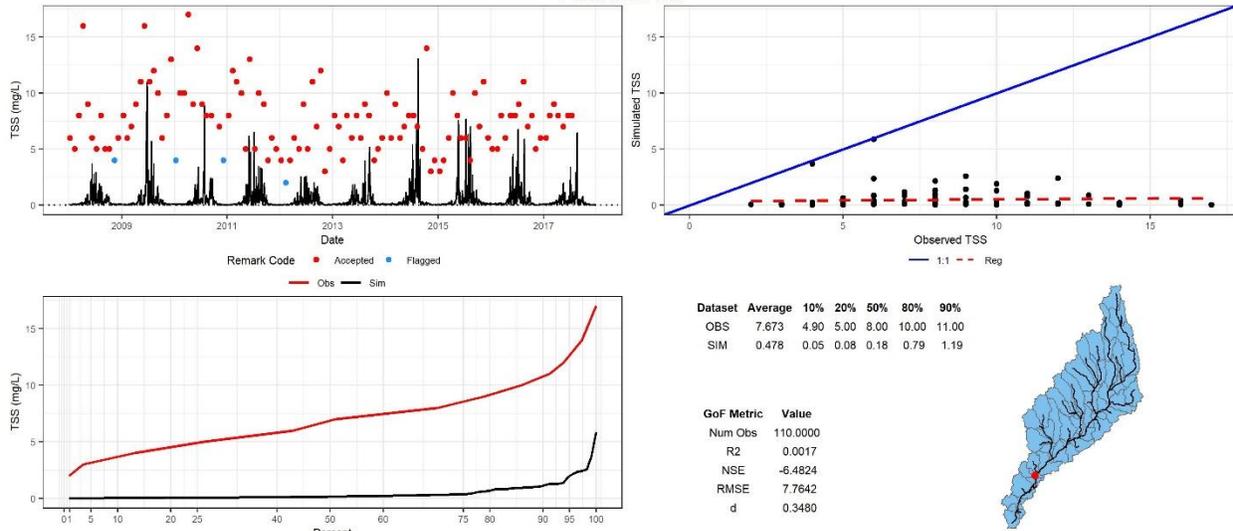


Figure 81 TSS - Ochlockonee River at Highway 90, FL

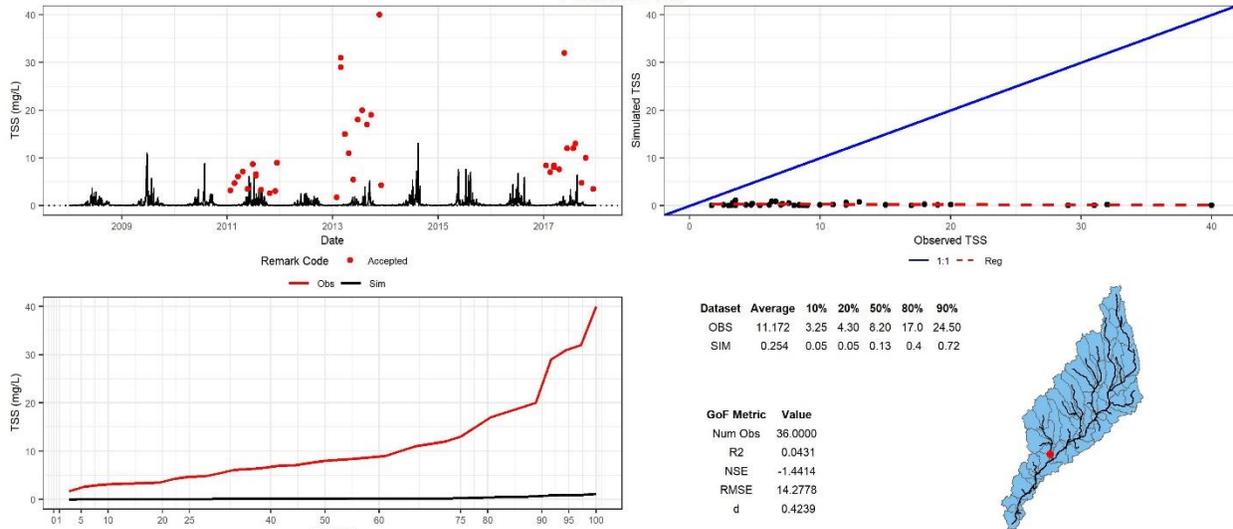
OR @ State Route 12, FL
Parameter: TSS



(Calib Station: 21FLGW-3540; WASP Seg: 20)

Figure 82 TSS - Ochlockonee River at State Route 12, FL

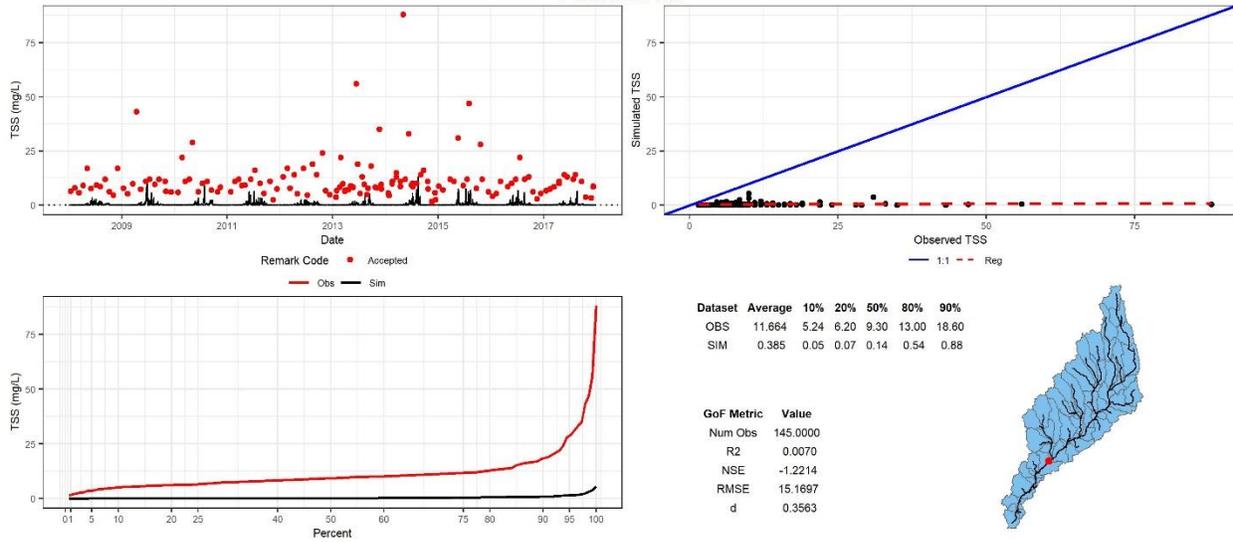
Tired Creek @ CR 151 nr Reno, GA
Parameter: TSS



(Calib Station: RV-10-3384; WASP Seg: 138)

Figure 83 TSS - Tired Creek at County Road 151 near Reno, GA

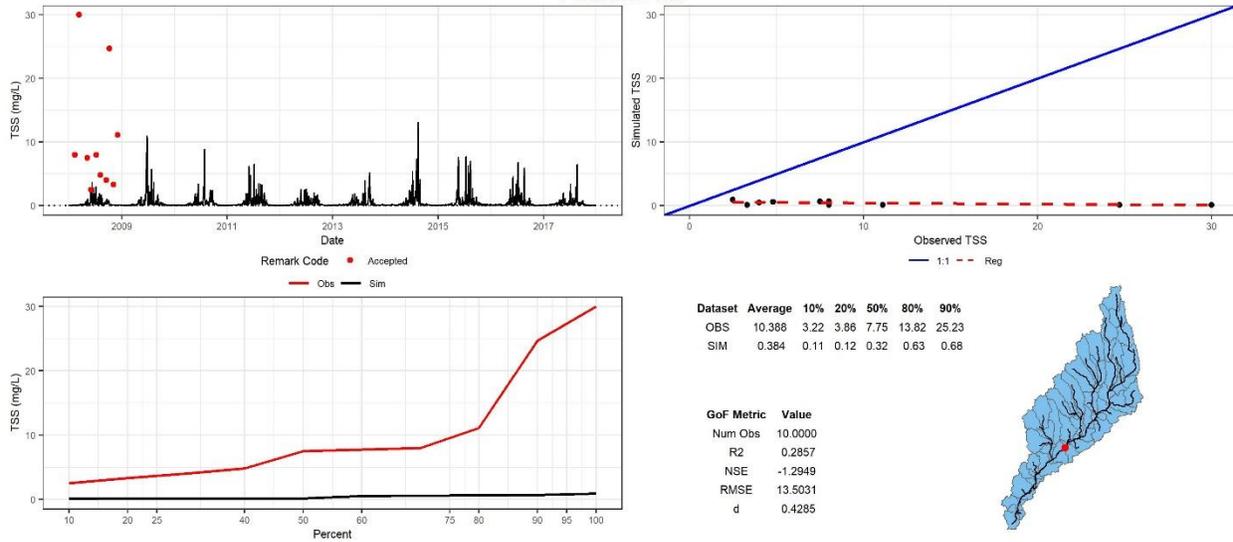
OR @ Hadley Ferry Rd, GA
Parameter: TSS



(Calib Station: RV-10-3386; WASP Seg: 25)

Figure 84 TSS - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

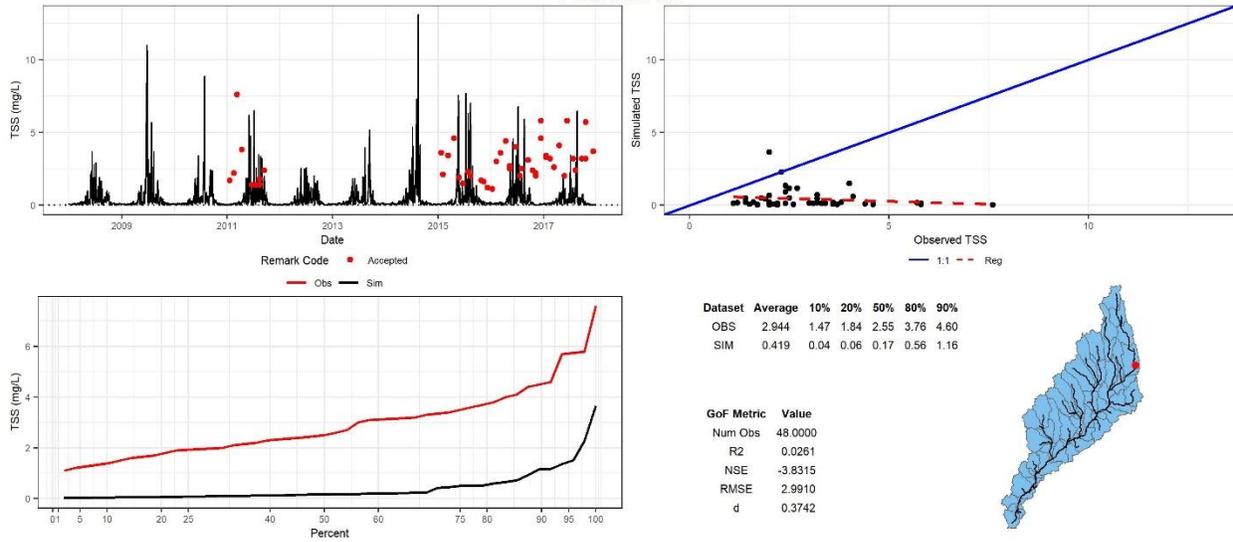
OR @ SR 93 nr Cairo, GA
Parameter: TSS



(Calib Station: RV-10-3383; WASP Seg: 32)

Figure 85 TSS - Ochlockonee River - SR 93 near Cairo, GA

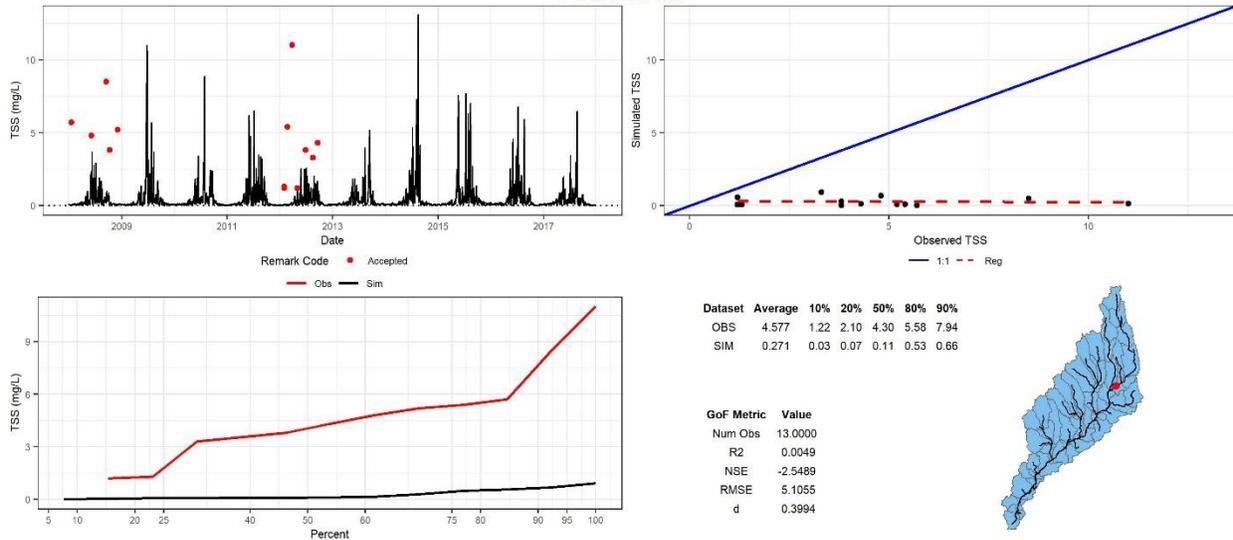
OR @ FAS 1205 nr Moultrie, GA
Parameter: TSS



(Calib Station: RV-10-3365; WASP Seg: 60)

Figure 86 TSS - Ochlockonee River - FAS 1205 near Moultrie, GA

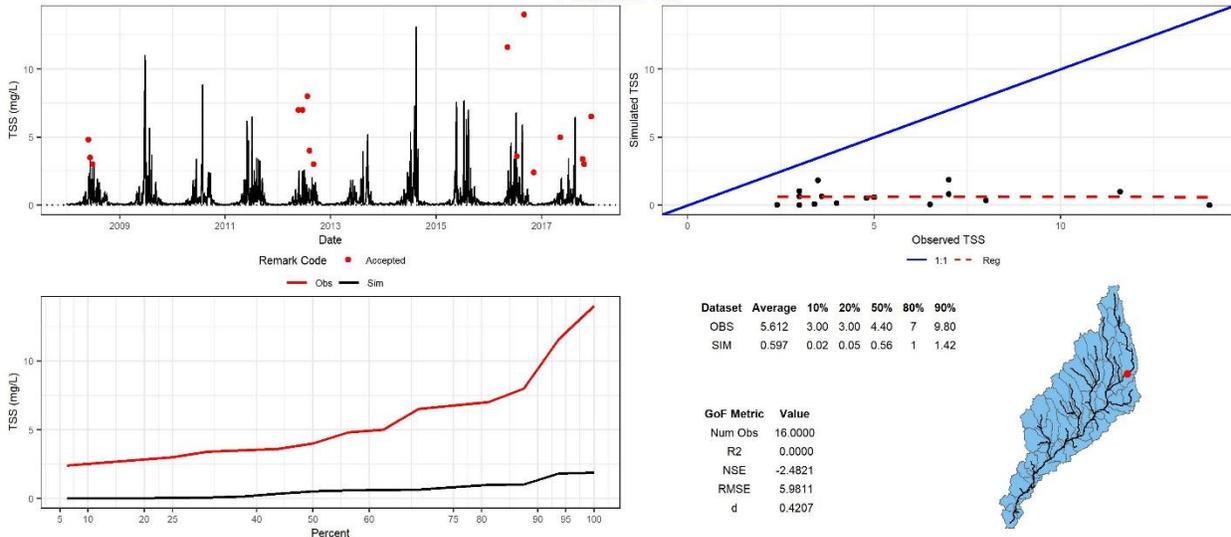
OR @ Zion Grove Church Rd, GA
Parameter: TSS



(Calib Station: RV-10-3366; WASP Seg: 55)

Figure 87 TSS - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

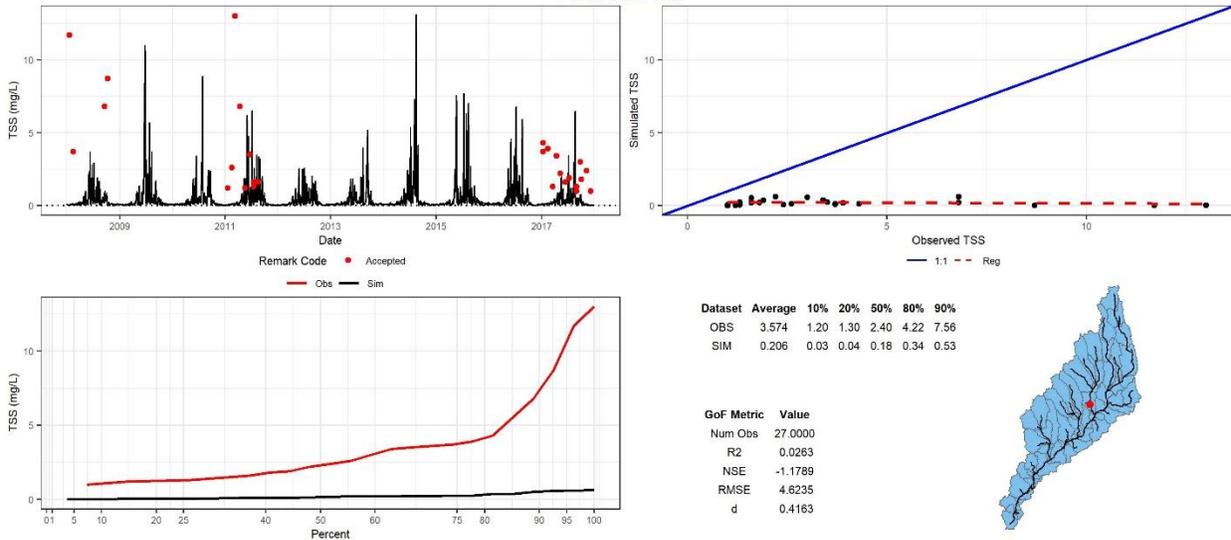
OR @ Fred Webb Rd, GA
Parameter: TSS



(Calib Station: RV-10-3407; WASP Seg: 58)

Figure 88 TSS - Ochlocknee River at Fred Webb Rd, GA

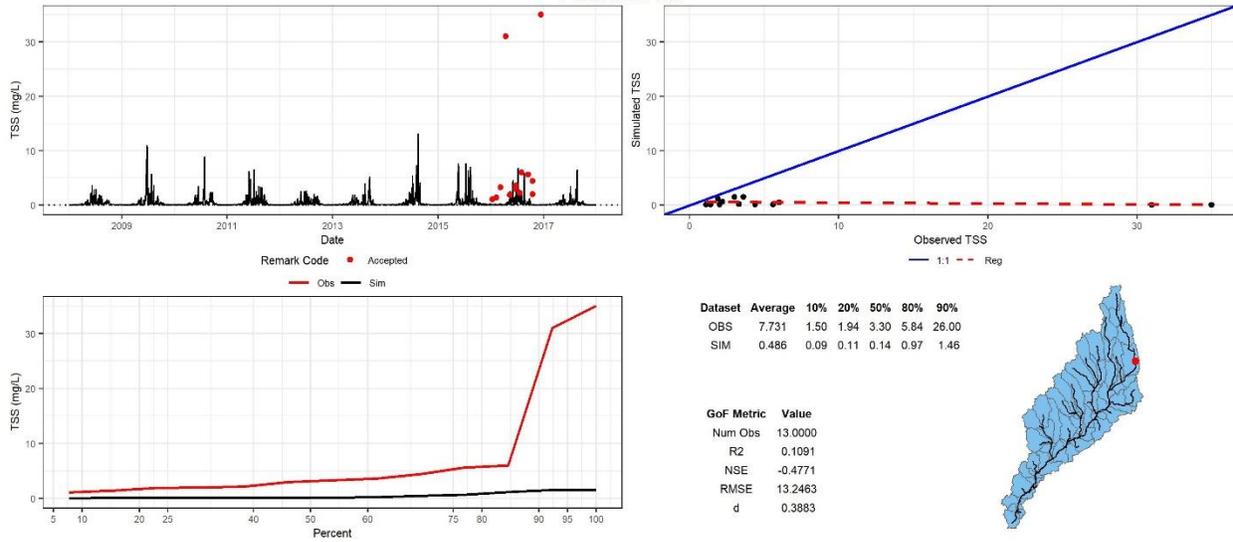
OR @ SR 188 nr Coolidge, GA
Parameter: TSS



(Calib Station: RV-10-3371; WASP Seg: 51)

Figure 89 TSS - Ochlocknee River at SR 188 near Coolidge, GA

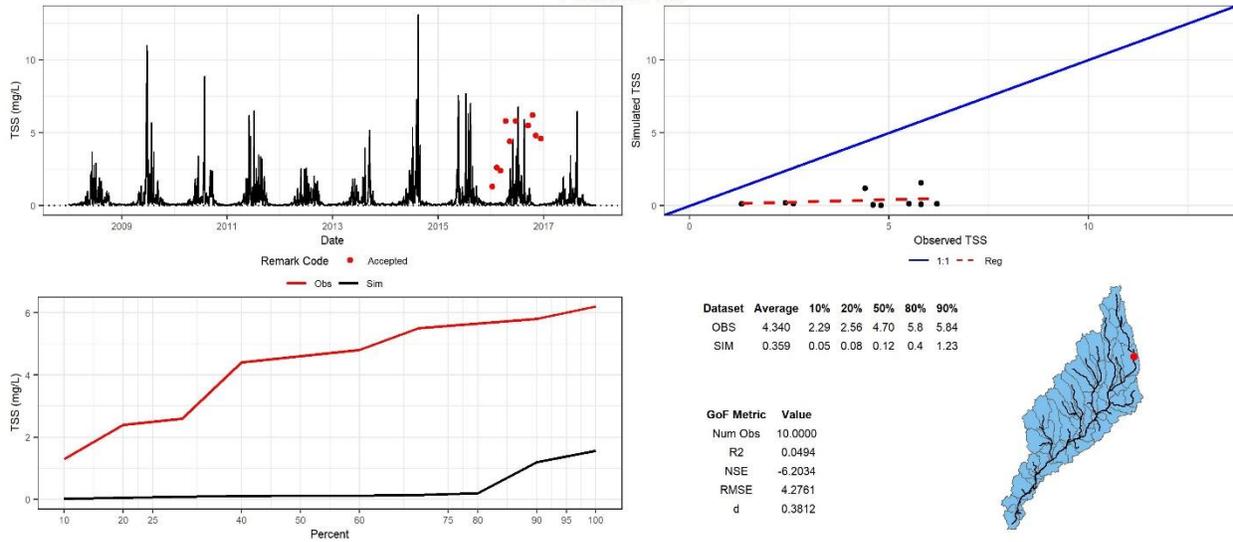
Trib to OR @ at West Blvd, GA
Parameter: TSS



(Calib Station: RV-10-16336; WASP Seg: 61)

Figure 90 TSS - Trib to Ochlockonee River at West Blvd near Moultrie, GA

OR @SR 37 nr Moultrie, GA
Parameter: TSS



(Calib Station: RV-10-16328; WASP Seg: 62)

Figure 91 TSS - Ochlockonee River @ SR 37 near Moultrie, GA

Temperature

OR @ State Route 12, FL
Parameter: TEMP

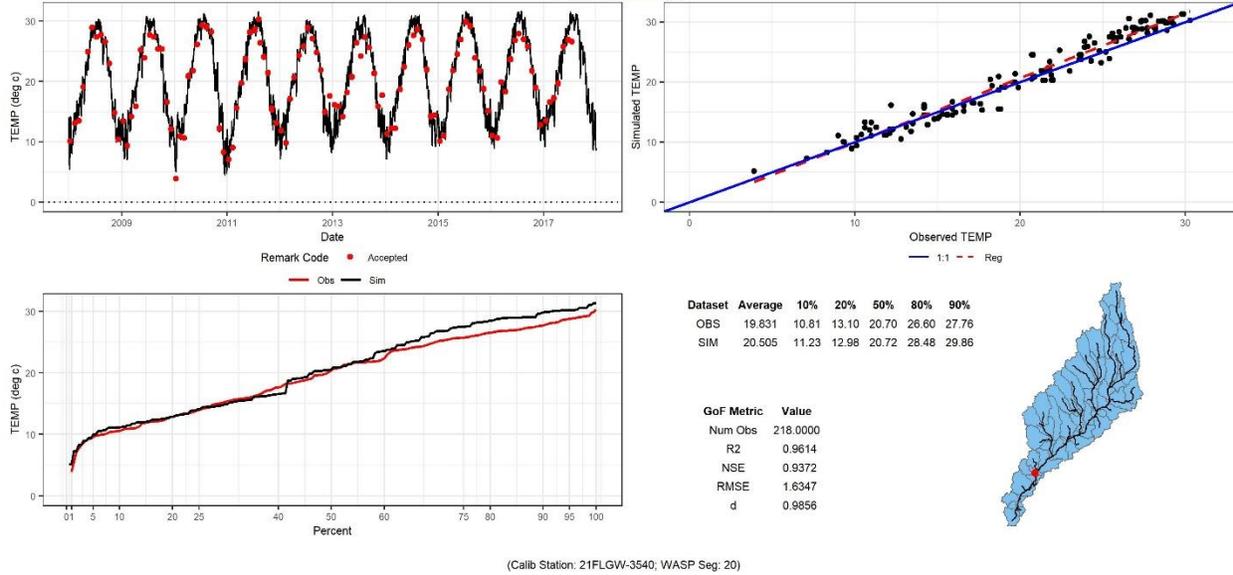


Figure 92 Water Temperature - Ochlockonee River at State Route 12, FL

Tired Creek @ CR 151 nr Reno, GA
Parameter: TEMP

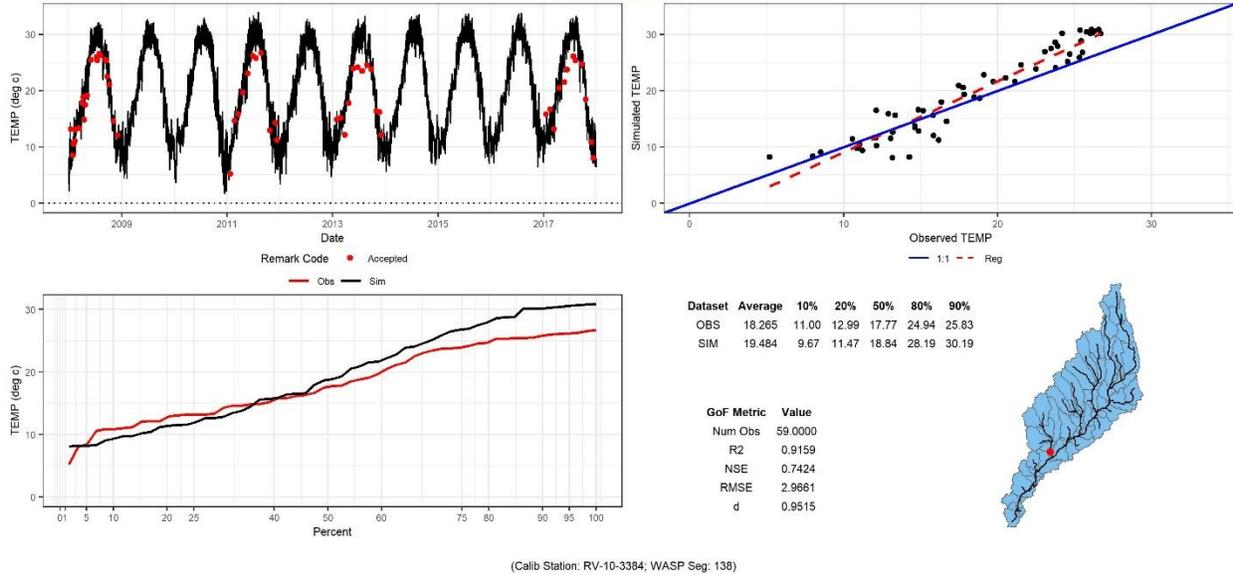
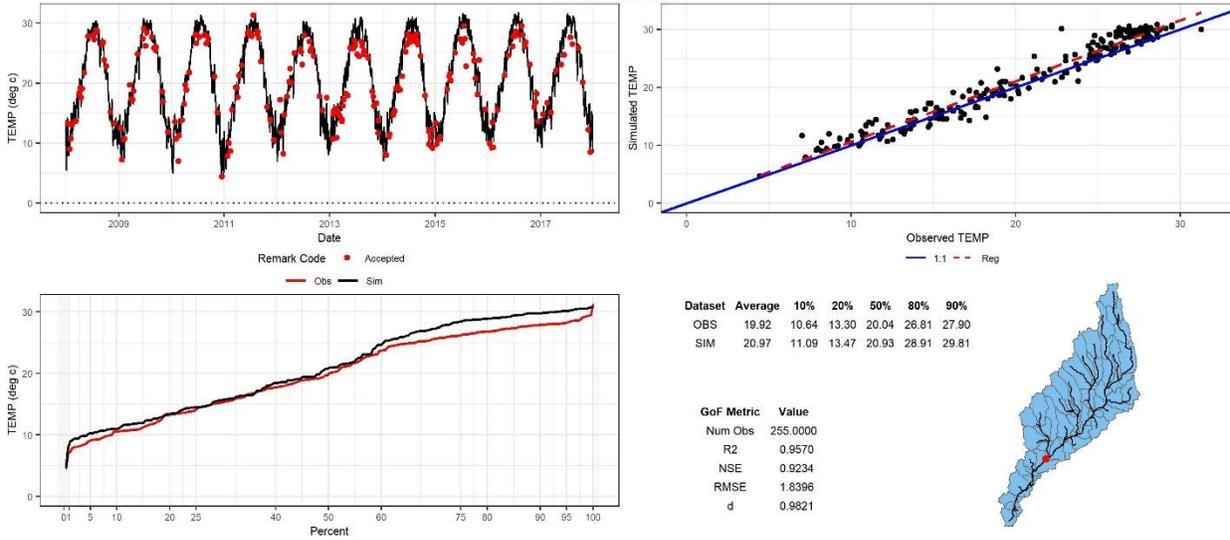


Figure 93 Water Temperature - Tired Creek at County Road 151 near Reno, GA

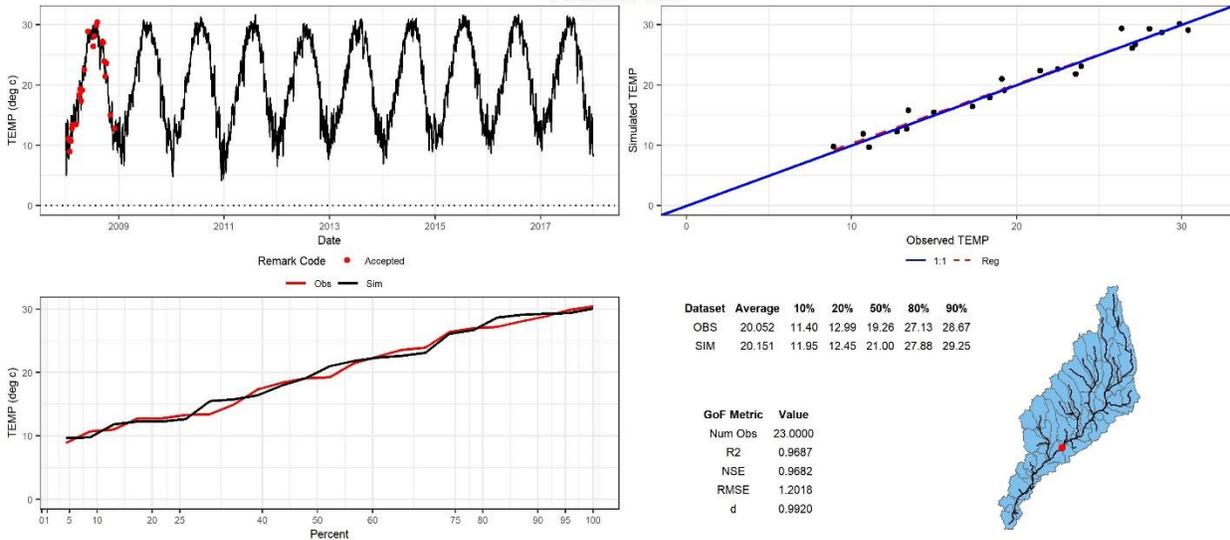
OR @ Hadley Ferry Rd, GA
Parameter: TEMP



(Calib Station: RV-10-3386; WASP Seg: 25)

Figure 94 Water Temperature - Ochlockonee River @ Hadley Ferry Rd. nr Calvary, GA

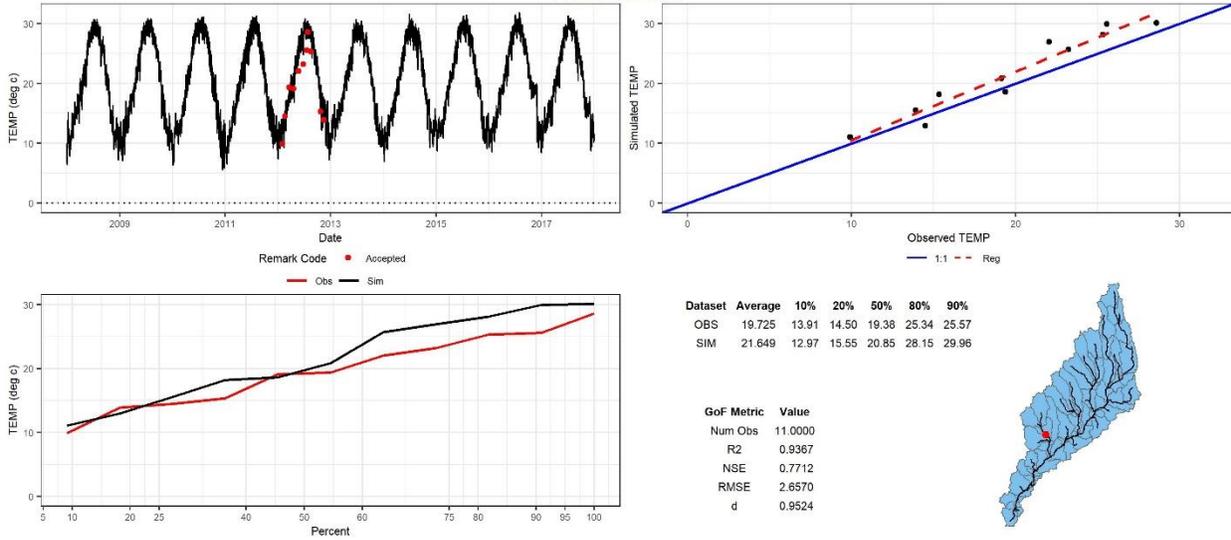
OR @ SR 93 nr Cairo, GA
Parameter: TEMP



(Calib Station: RV-10-3383; WASP Seg: 32)

Figure 95 Water Temperature - Ochlockonee River - SR 93 near Cairo, GA

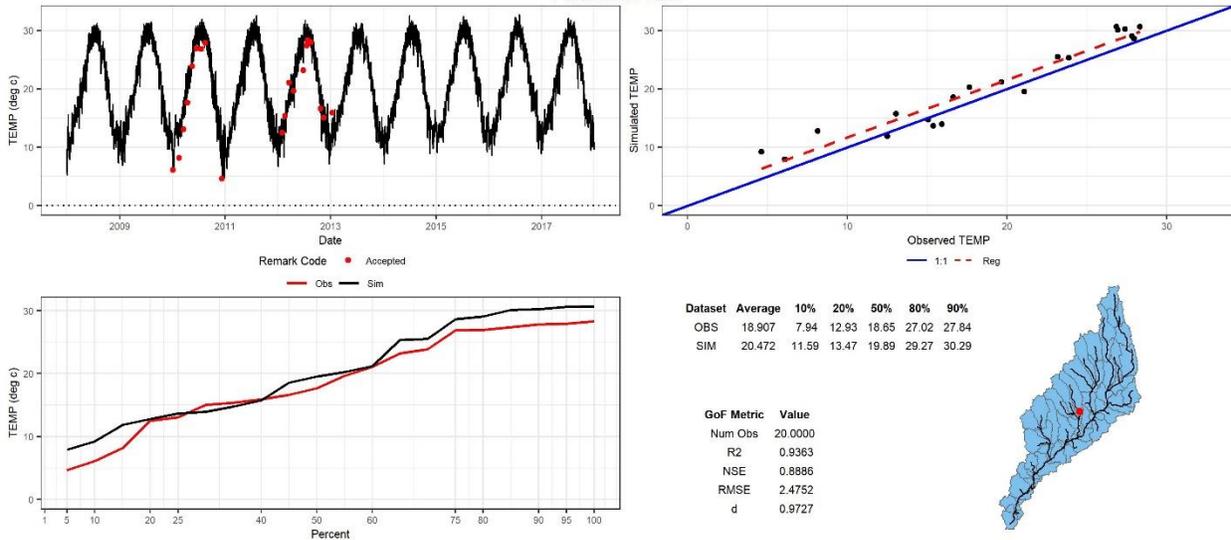
Tired Creek @ SR 111 nr Cairo, GA
Parameter: TEMP



(Calib Station: RV-10-3428; WASP Seg: 165)

Figure 96 Water Temperature - Tired Creek at State Road 111 near Cairo, GA

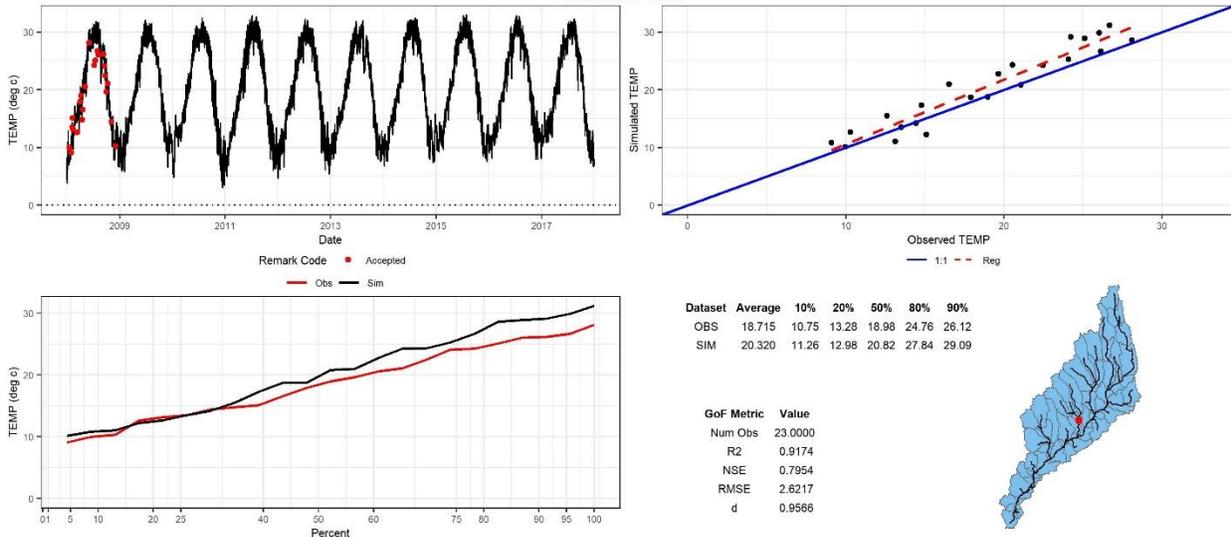
E Branch Barnetts Creek @ Co Rd 159, GA
Parameter: TEMP



(Calib Station: RV-10-3420; WASP Seg: 161)

Figure 97 Water Temperature - East Branch Barnetts Creek @ Co Rd 159 nr Ochlockonee, GA

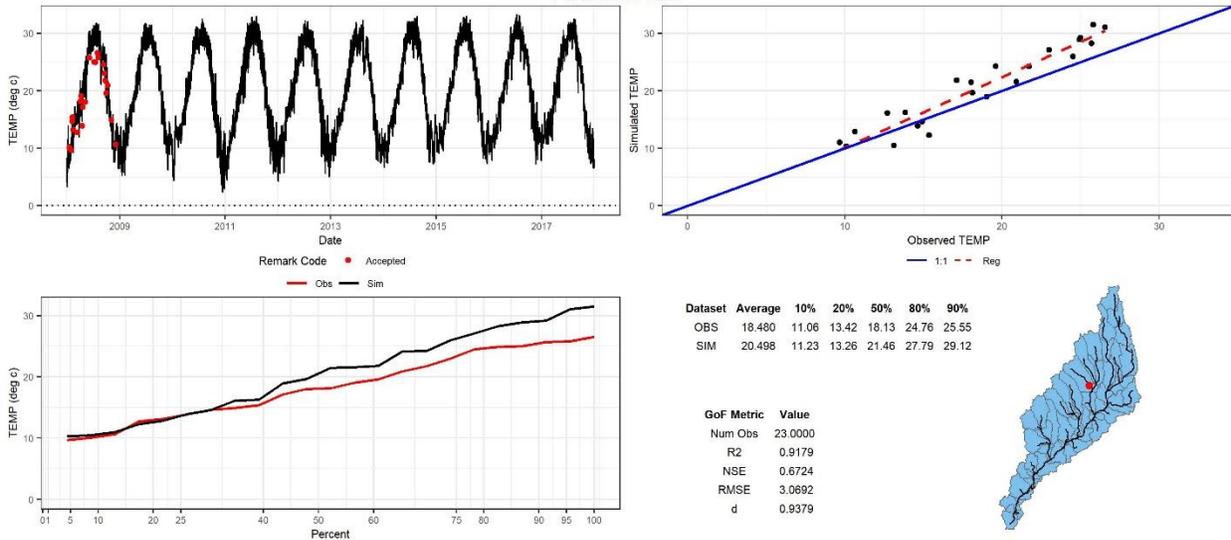
Barnetts Creek @ Pendergast Rd, GA
Parameter: TEMP



(Calib Station: RV-10-3380; WASP Seg: 127)

Figure 98 Water Temperature - Barnetts Creek at Pendergast Rd. / Old Thomasville Rd

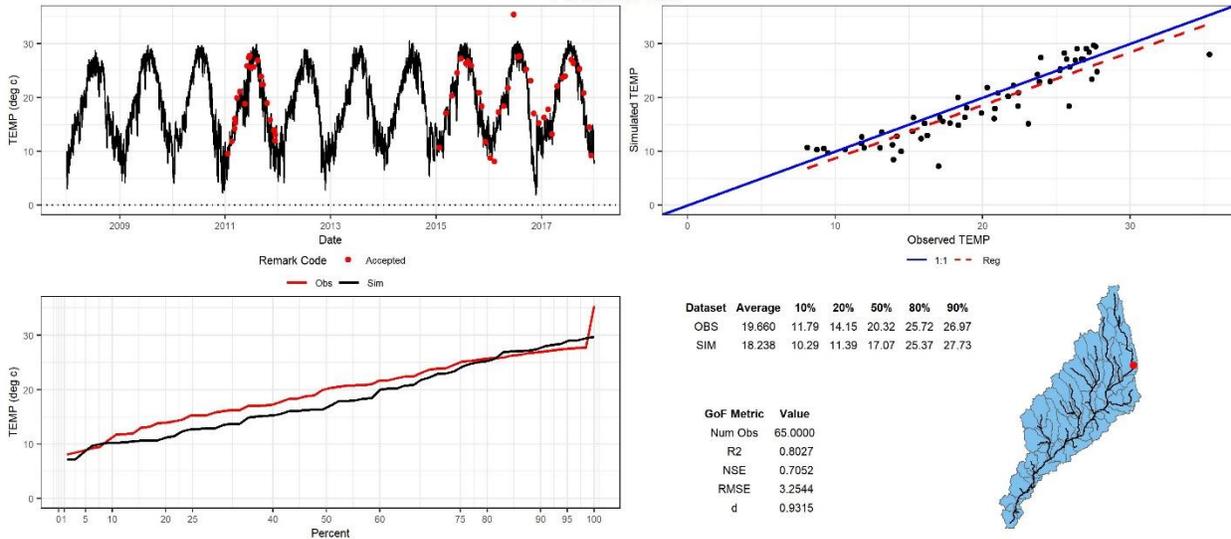
Big Creek @ Stage Rd nr Meigs, GA
Parameter: TEMP



(Calib Station: RV-10-3377; WASP Seg: 125)

Figure 99 Water Temperature - Big Creek at Stage Road near Meigs, GA

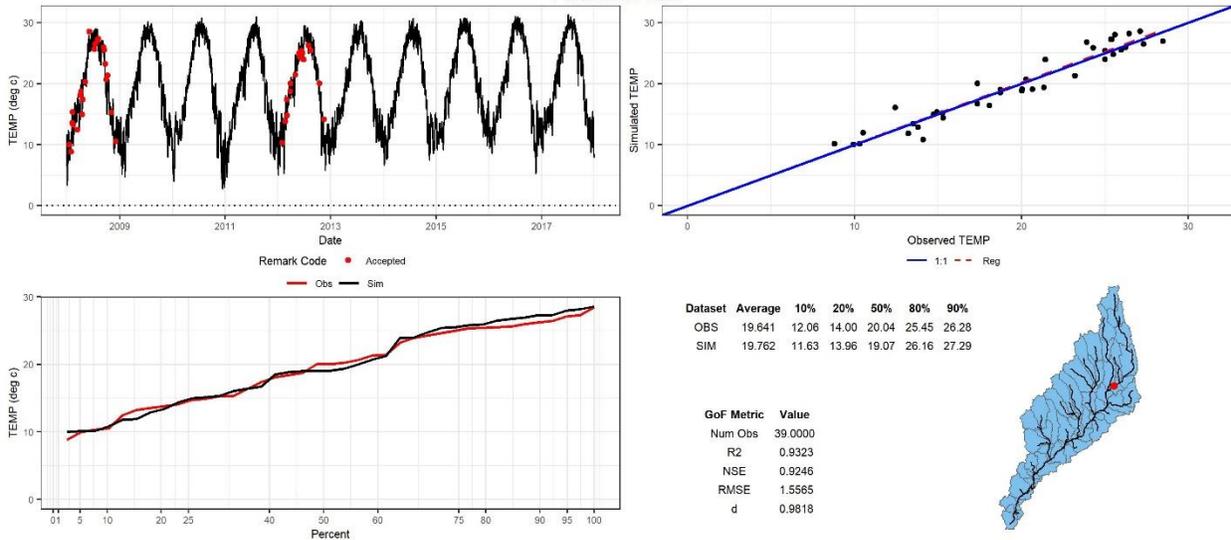
OR @ FAS 1205 nr Moultrie, GA
Parameter: TEMP



(Calib Station: RV-10-3365; WASP Seg: 60)

Figure 100 Water Temperature - Ochlockonee River - FAS 1205 near Moultrie, GA

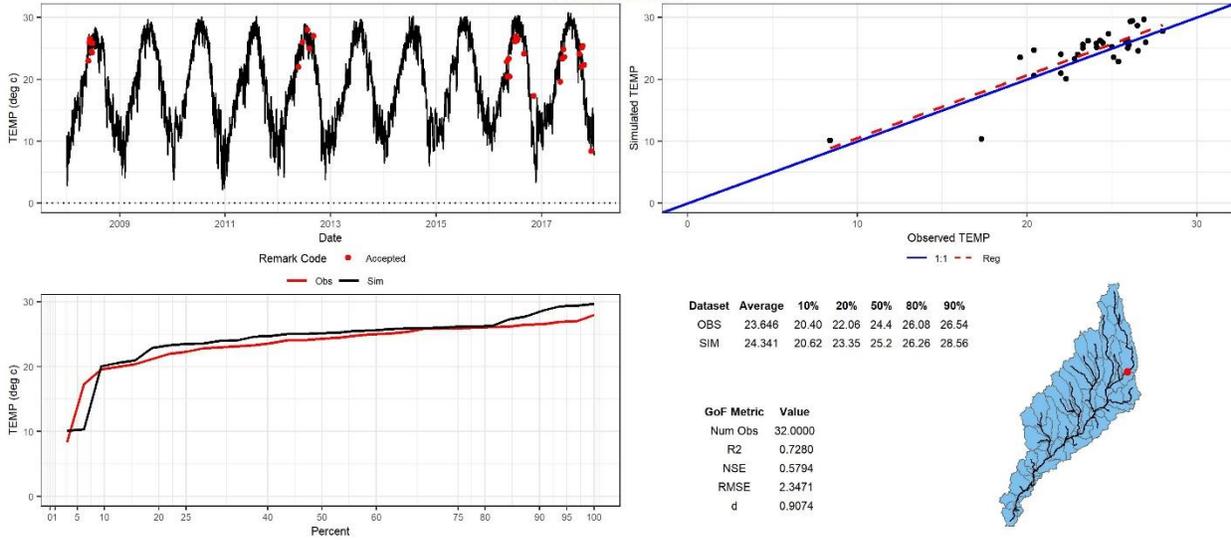
OR @ Zion Grove Church Rd, GA
Parameter: TEMP



(Calib Station: RV-10-3366; WASP Seg: 55)

Figure 101 Water Temperature - Ochlockonee River at Zion Grove Church Rd. near Coolidge, GA

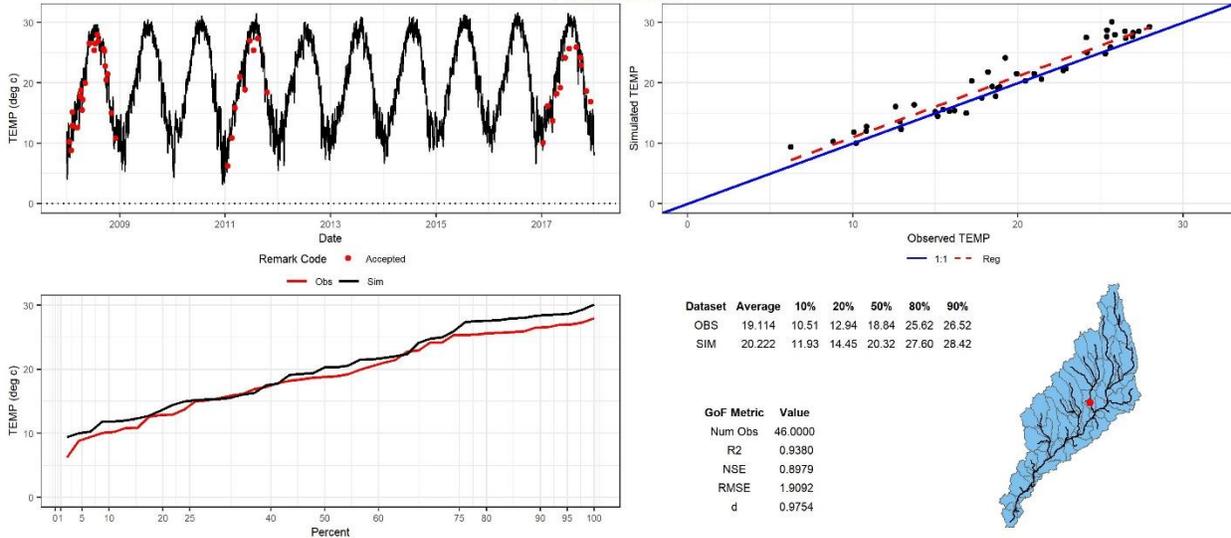
OR @ Fred Webb Rd, GA
Parameter: TEMP



(Calib Station: RV-10-3407; WASP Seg: 58)

Figure 102 Water Temperature - Ochlockonee River at Fred Webb Rd, GA

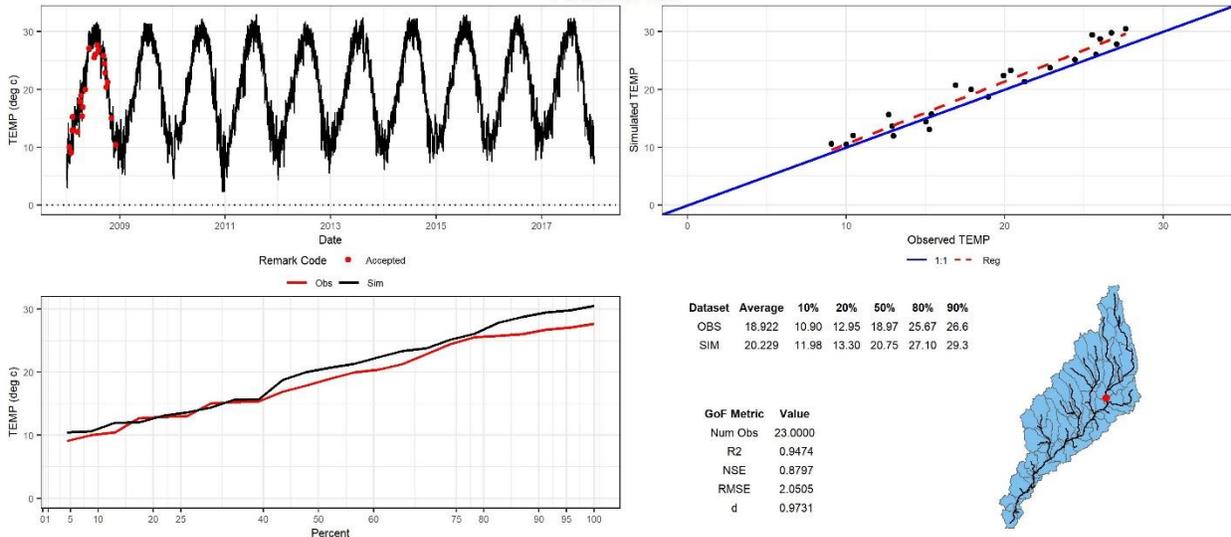
OR @ SR 188 nr Coolidge, GA
Parameter: TEMP



(Calib Station: RV-10-3371; WASP Seg: 51)

Figure 103 Water Temperature - Ochlockonee River at SR 188 near Coolidge, GA

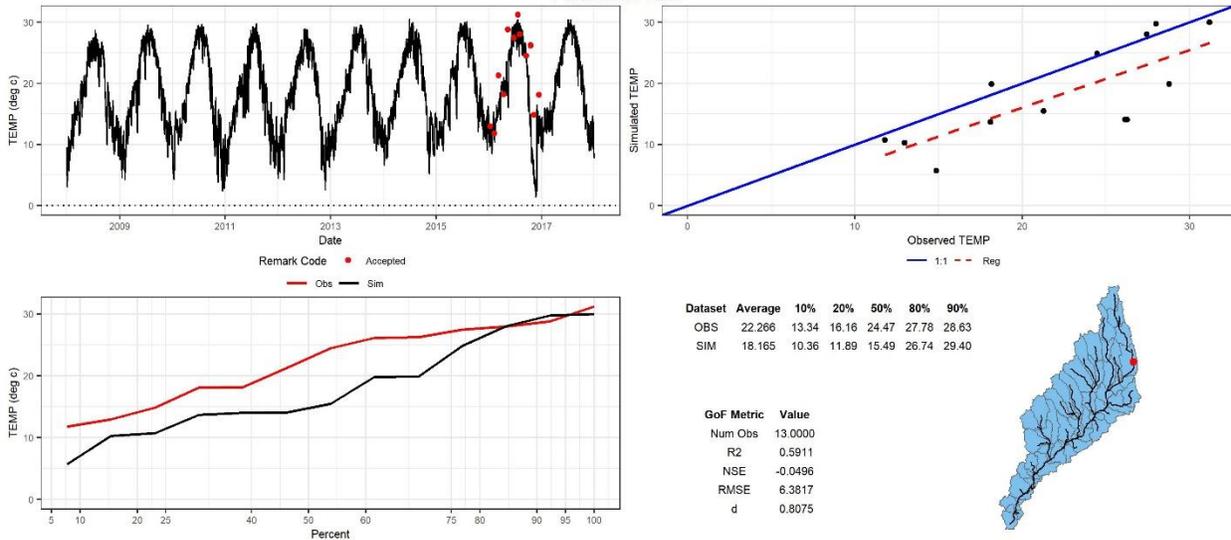
Little OR @ State Rd 188, GA
Parameter: TEMP



(Calib Station: RV-10-3375; WASP Seg: 108)

Figure 104 Water Temperature - Little Ochlocknee River at State Rd 188 nr Ochlocknee, GA

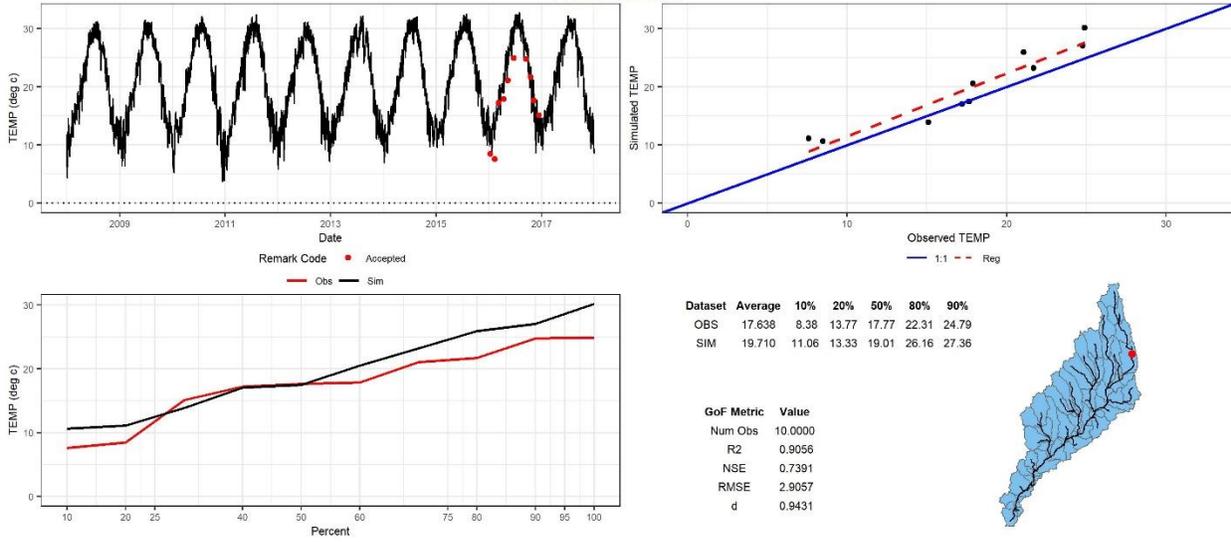
Trib to OR @ at West Blvd, GA
Parameter: TEMP



(Calib Station: RV-10-16336; WASP Seg: 61)

Figure 105 Water Temperature - Trib to Ochlocknee River at West Blvd near Moultrie, GA

OR @SR 37 nr Moultrie, GA
Parameter: TEMP



(Calib Station: RV-10-16328; WASP Seg: 62)

Figure 106 Water Temperature - Ochlockonee River @ SR 37 near Moultrie, GA

Appendix B – Little River Model Calibration

This appendix provides detailed calibration plots for each station and parameter available for the Little River water quality model.

Time Series – provides a comparison of the all the measured data to the model simulated data over the entire simulation period for visual inspection. If any measured data had a remark code indicating below detection it will appear as flagged data and will be represented by a blue dot. Flagged data is not considered in the quantitative statistical calculations.

Probability Distribution – provides a comparison of the probability distribution of measured and simulated data. This method uses paired measured and simulation data to determine the probability curve.

1 to 1 – plots the paired measured and simulated values against one another. The red line represents a perfect calibration, the blue line represents the linear fit of measured/simulated fit.

Statistics –

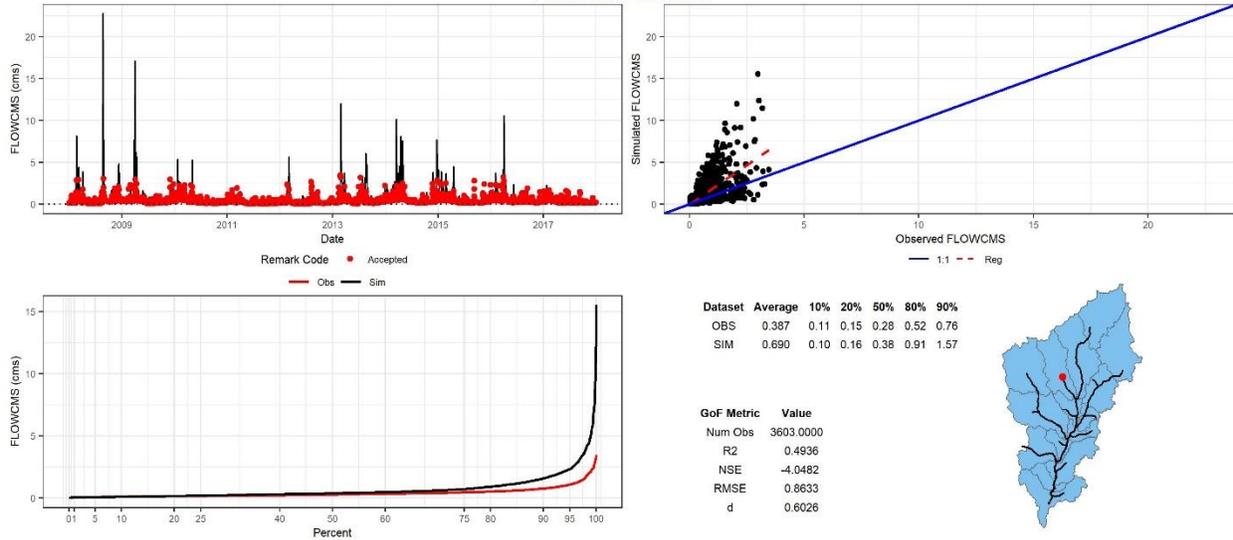
- Num Obs – represents the number of measurements used in calculation
- R^2 – correlation coefficient between sim and obs.
- NSE – Nash-Sutcliffe efficiency between sim and obs,
- RMSE – root mean square error
- d – Index of Agreement
- Percentiles – provides a numeric comparison of the percentile distribution of sim and obs.

Annual Analysis -- For flow, total nitrogen, total phosphorus and chlorophyll a annual boxplots are presented for the simulation period for each station. The black dots represent the measured data, the blue box and whiskers represent the model simulated results. The whiskers represent the range of the model simulated results. Average model simulated results are represented by a green dot, average measured data is represented by a red diamond.

For chlorophyll a, total nitrogen and total phosphorus annual boxplot figures are present to illustrate model performance year by year.

Flow Calibration

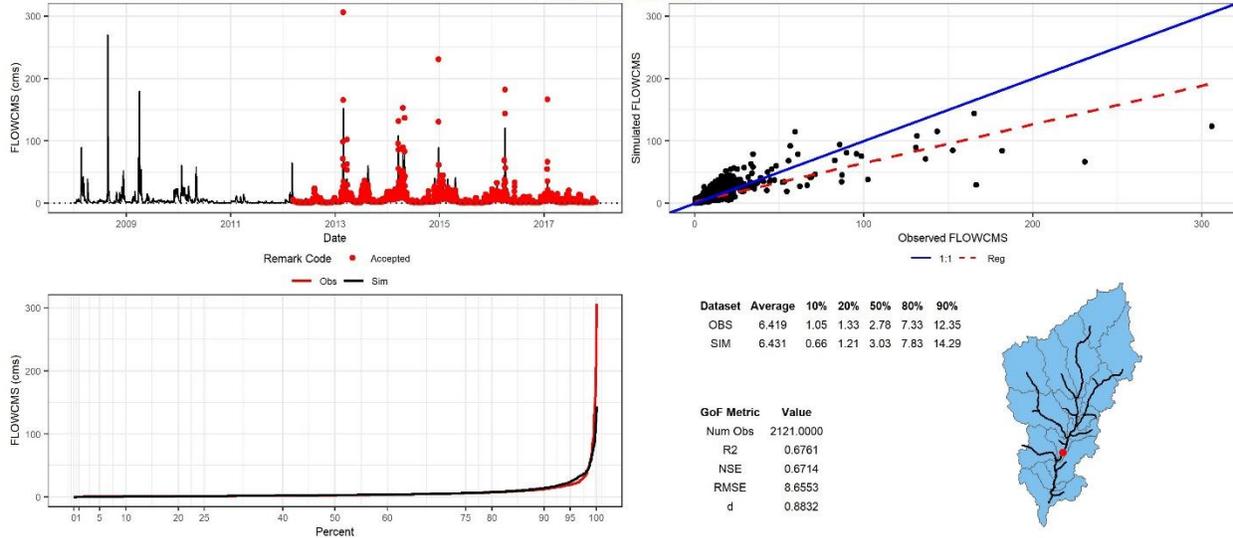
USGS Flow Gage - Attapulgus, GA
Parameter: FLOWCMS



(Calib Station: NWIS-02329342; WASP Seg: 78)

Figure 107 USGS 02329342 Little Attapulguss Creek at Attapulgus, GA

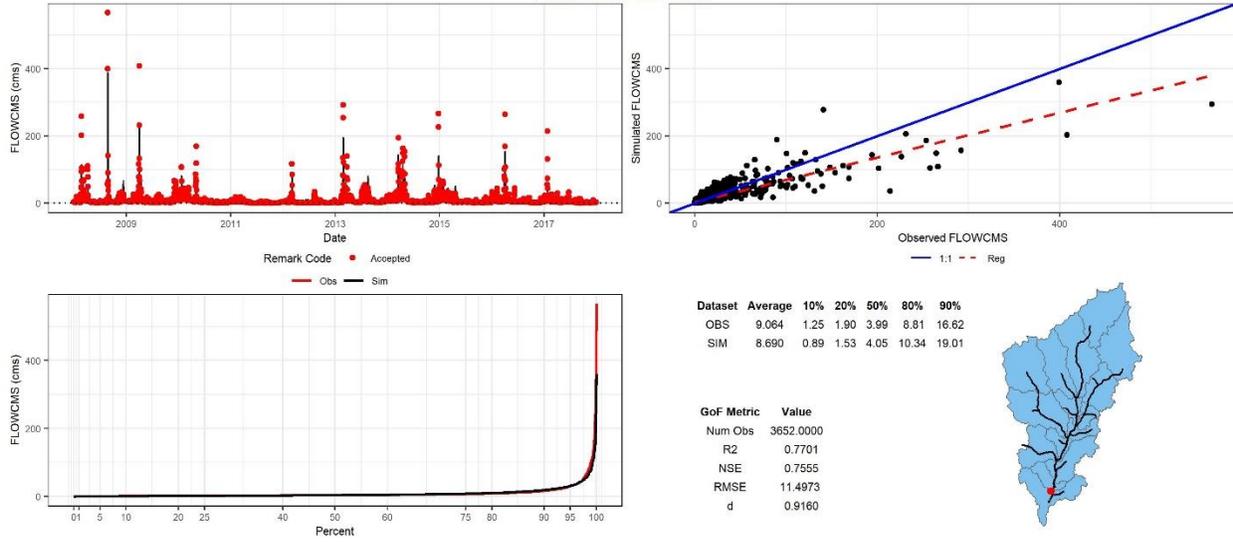
USGS Flow Gage - Quincy, FL
Parameter: FLOWCMS



(Calib Station: NWIS-02329500; WASP Seg: 17)

Figure 108 USGS 02329500 Little River near Quincy, FL

USGS Flow Gage - Midway, FL
Parameter: FLOWCMS



(Calib Station: NWS-02329600, WASP Seg: 4)

Figure 109 USGS 02329600 Little River near Midway, FL

FLOWCMS (Annual Comparison)

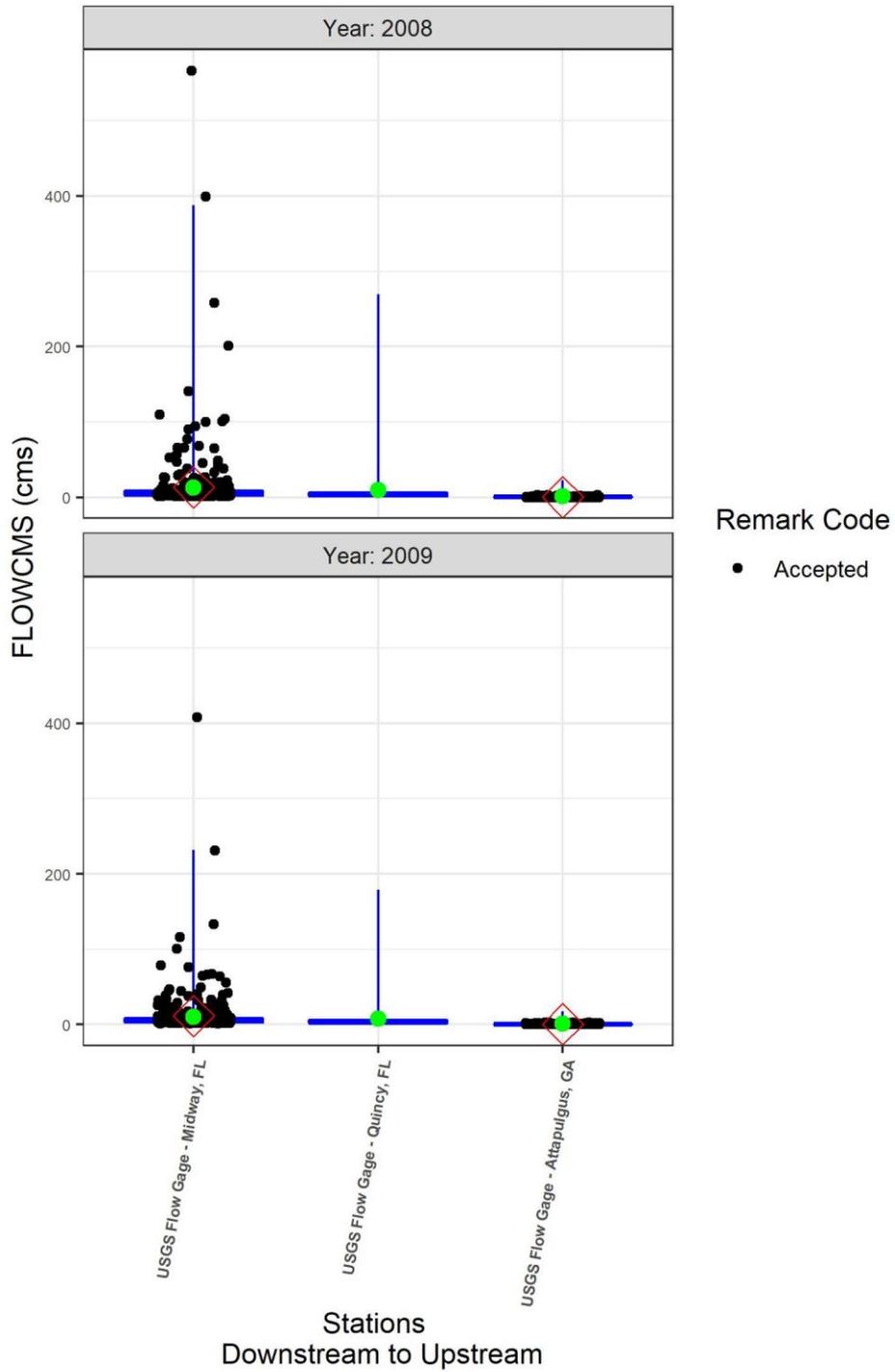


Figure 110 Little River Flow Comparison Observed vs. Simulated 2008-2009

FLOWCMS (Annual Comparison)

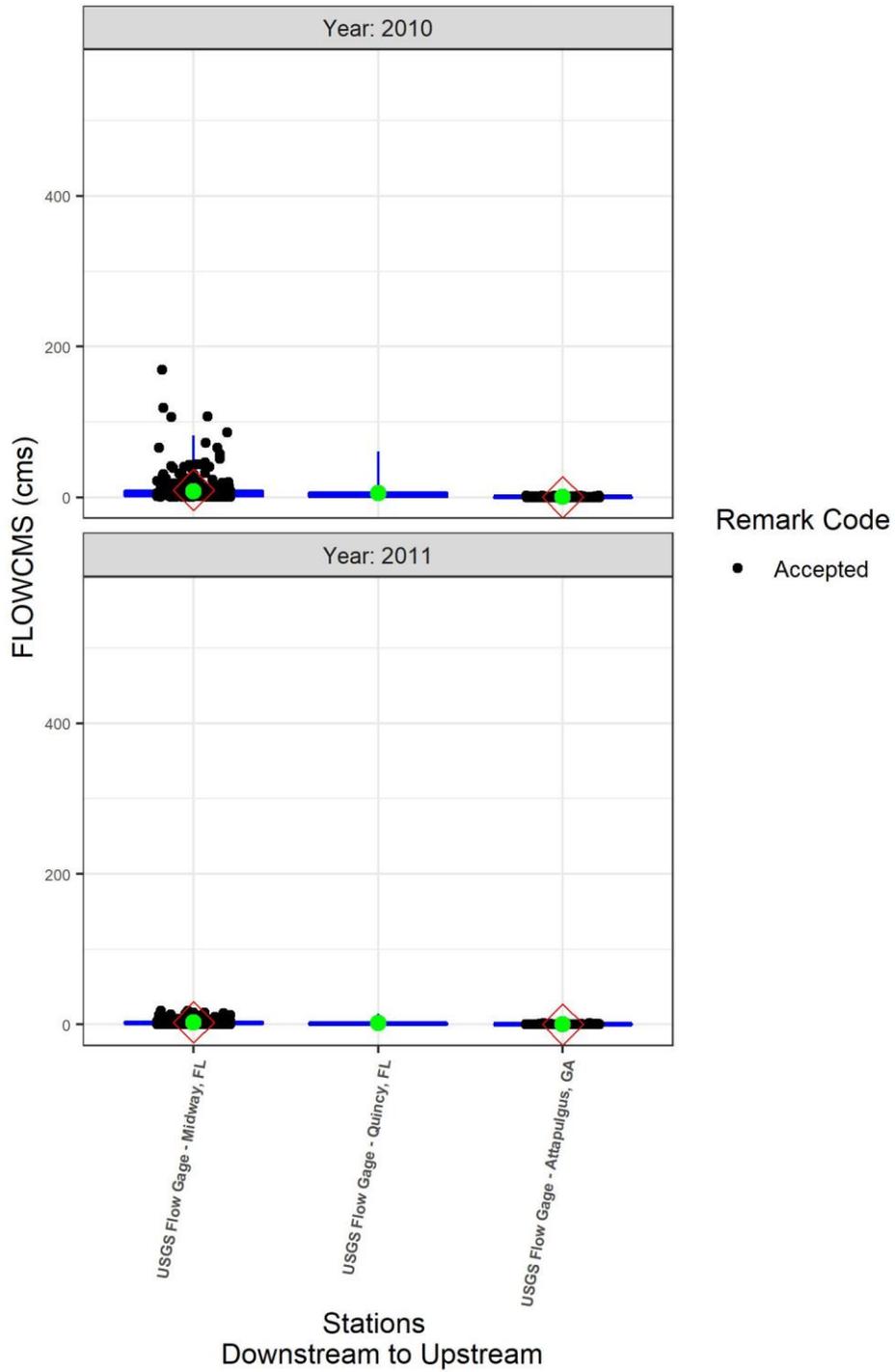


Figure 111 Little River Flow Comparison Observed vs. Simulated 2010-2011

FLOWCMS (Annual Comparison)

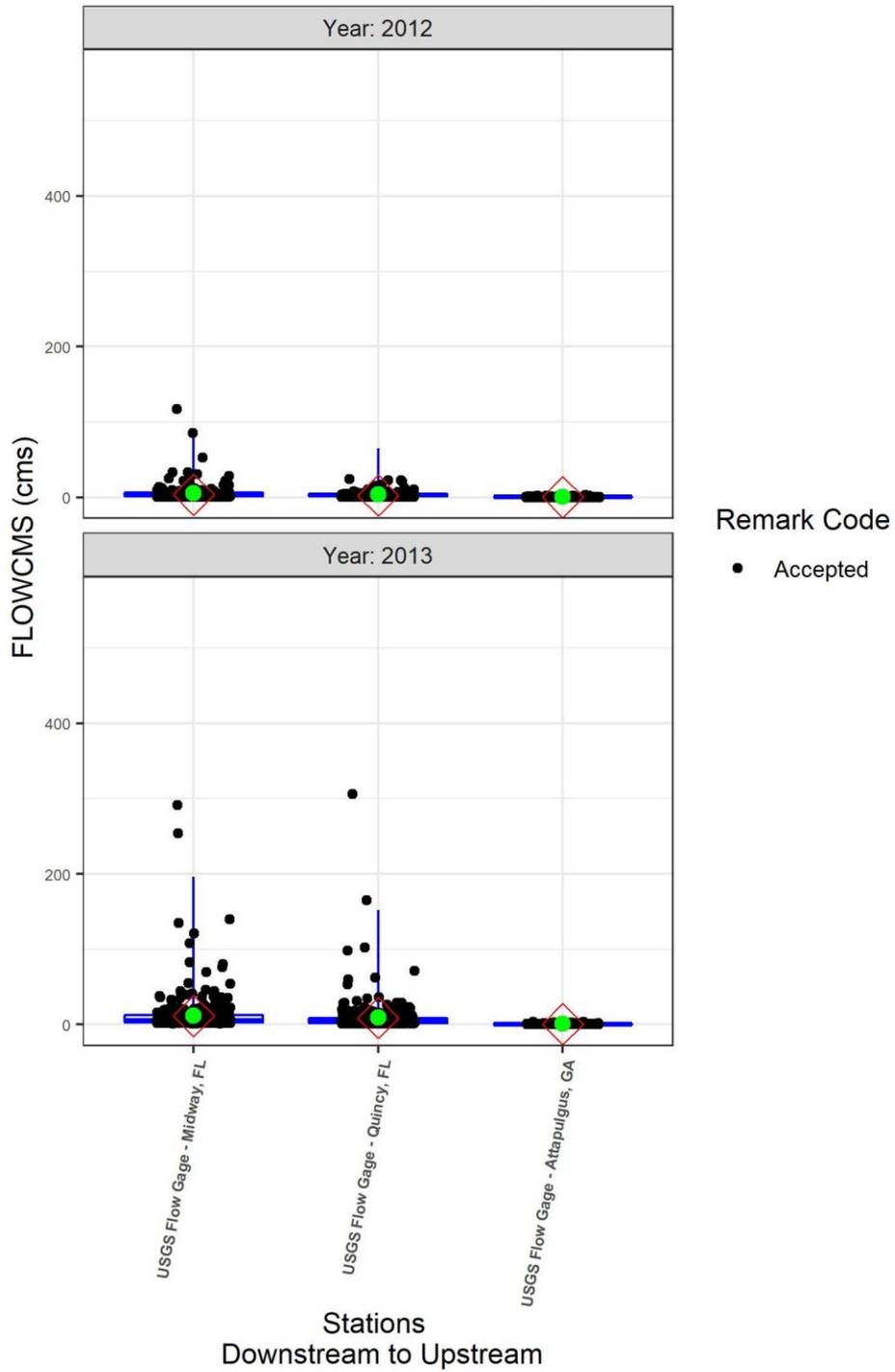


Figure 112 Little River Flow Comparison Observed vs. Simulated 2012-2013

FLOWCMS (Annual Comparison)

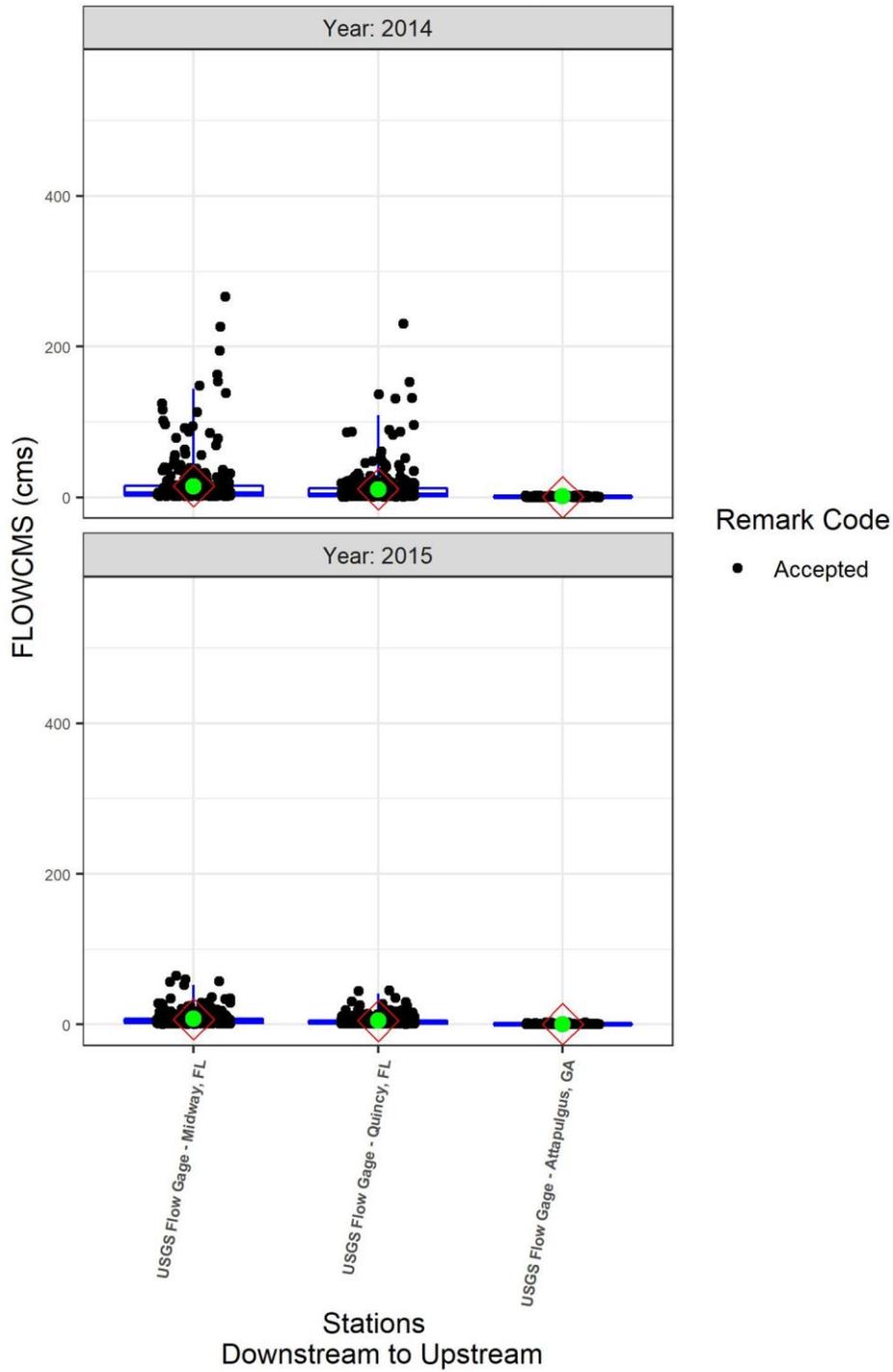


Figure 113 Little River Flow Comparison Observed vs. Simulated 2014-2015

FLOWCMS (Annual Comparison)

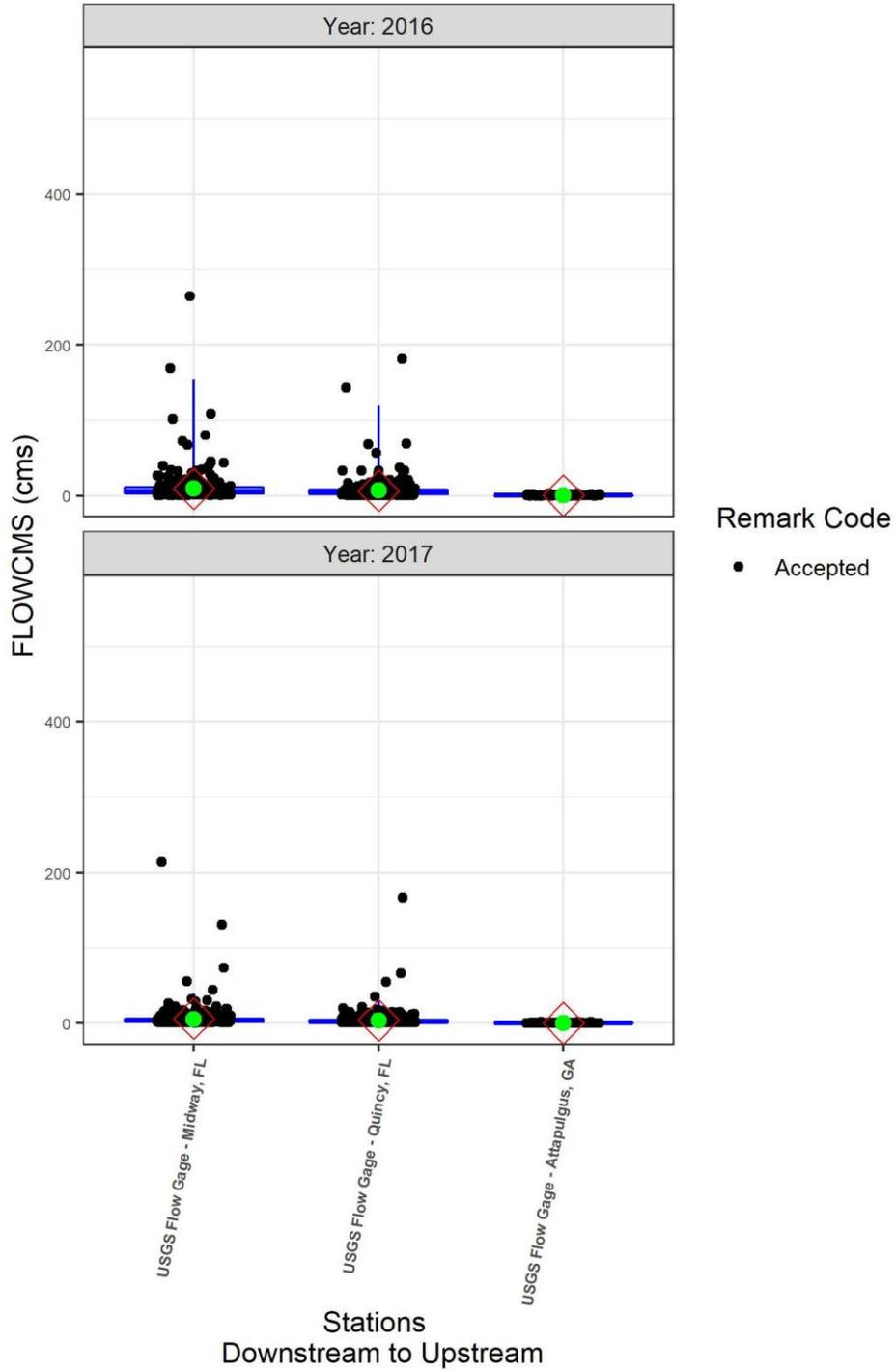


Figure 114 Little River Flow Comparison Observed vs. Simulated 2016-2017

Water Quality

Total Nitrogen

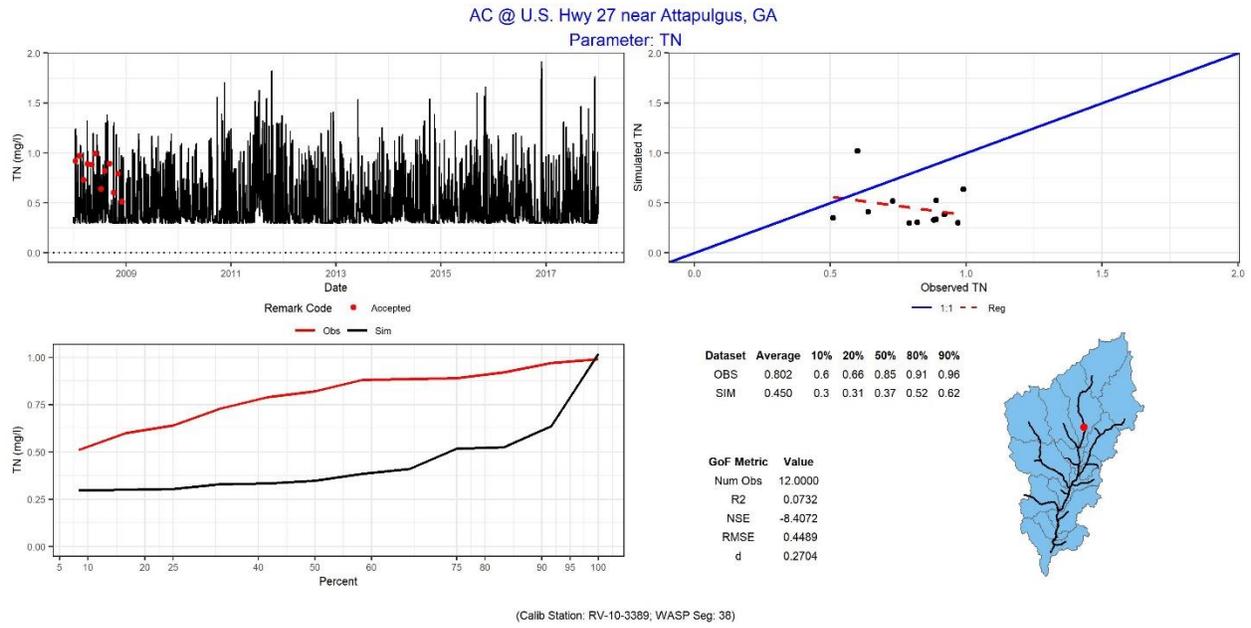


Figure 115 Total Nitrogen - Attapulcus Creek at U.S. Hwy 27 near Attapulcus, GA

TN (Annual Comparison)

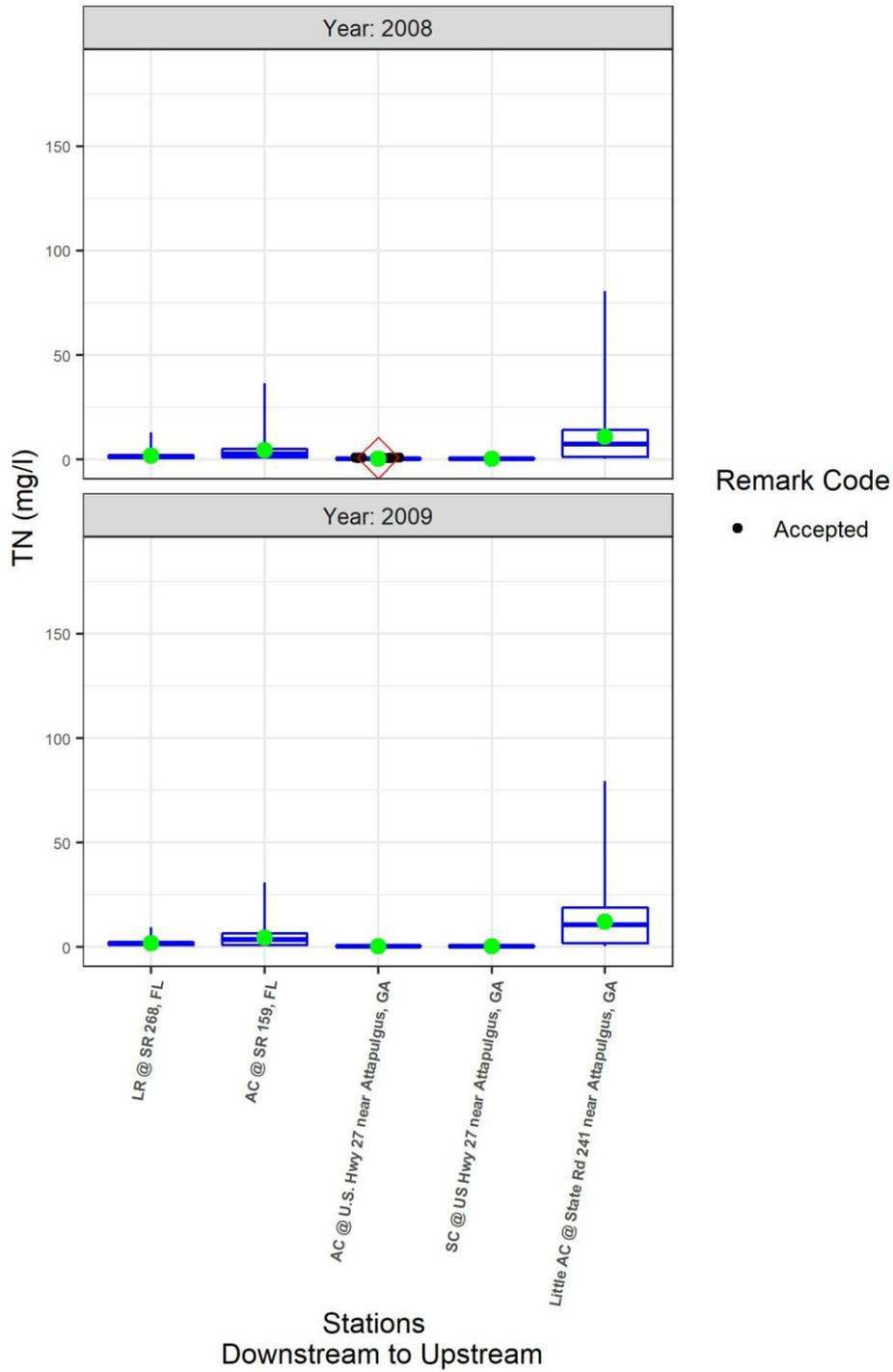


Figure 116 Little River Total Nitrogen Comparison Observed vs. Simulated 2008-2009

TN (Annual Comparison)

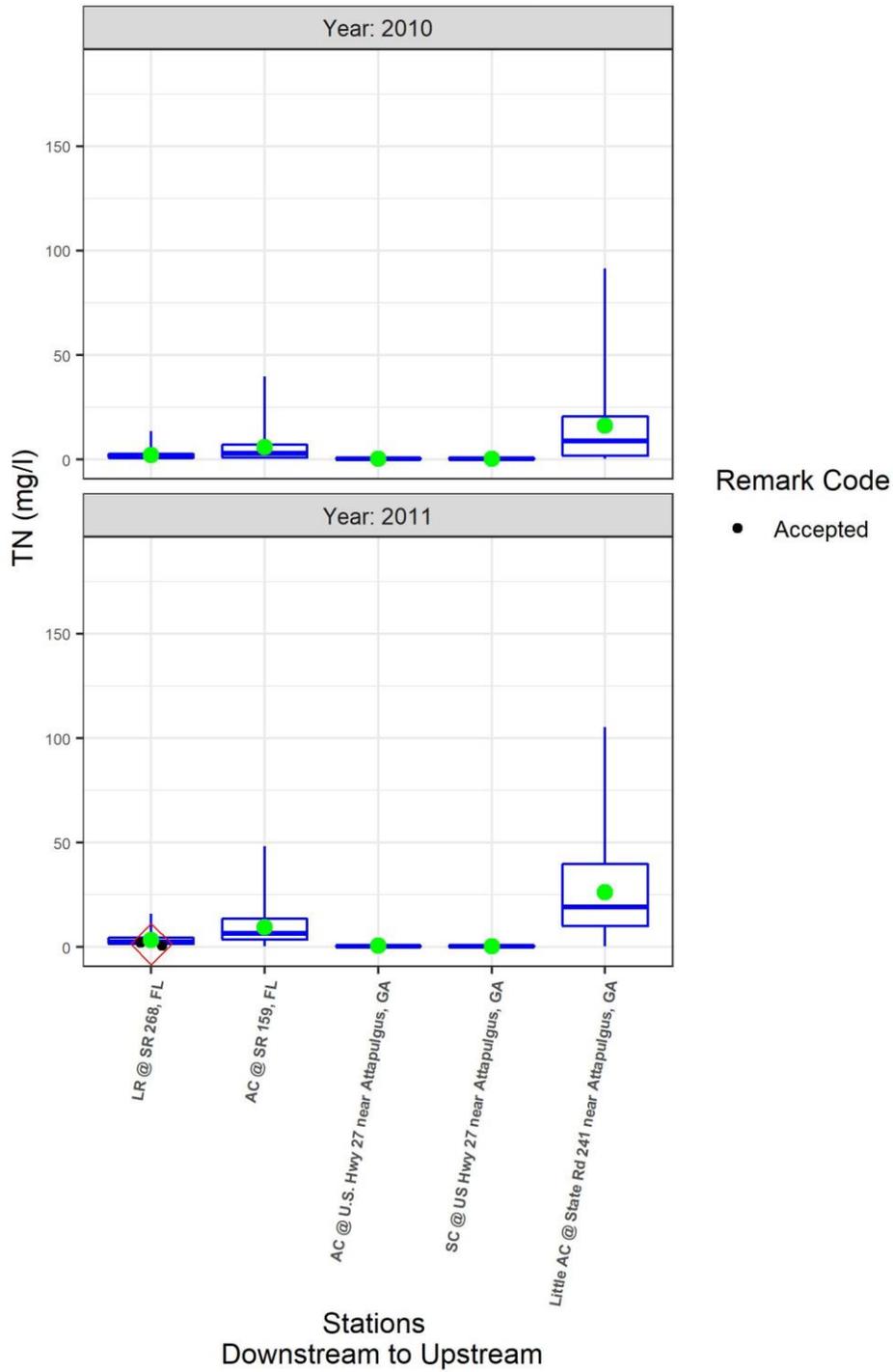


Figure 117 Little River Total Nitrogen Comparison Observed vs. Simulated 2010-2011

TN (Annual Comparison)

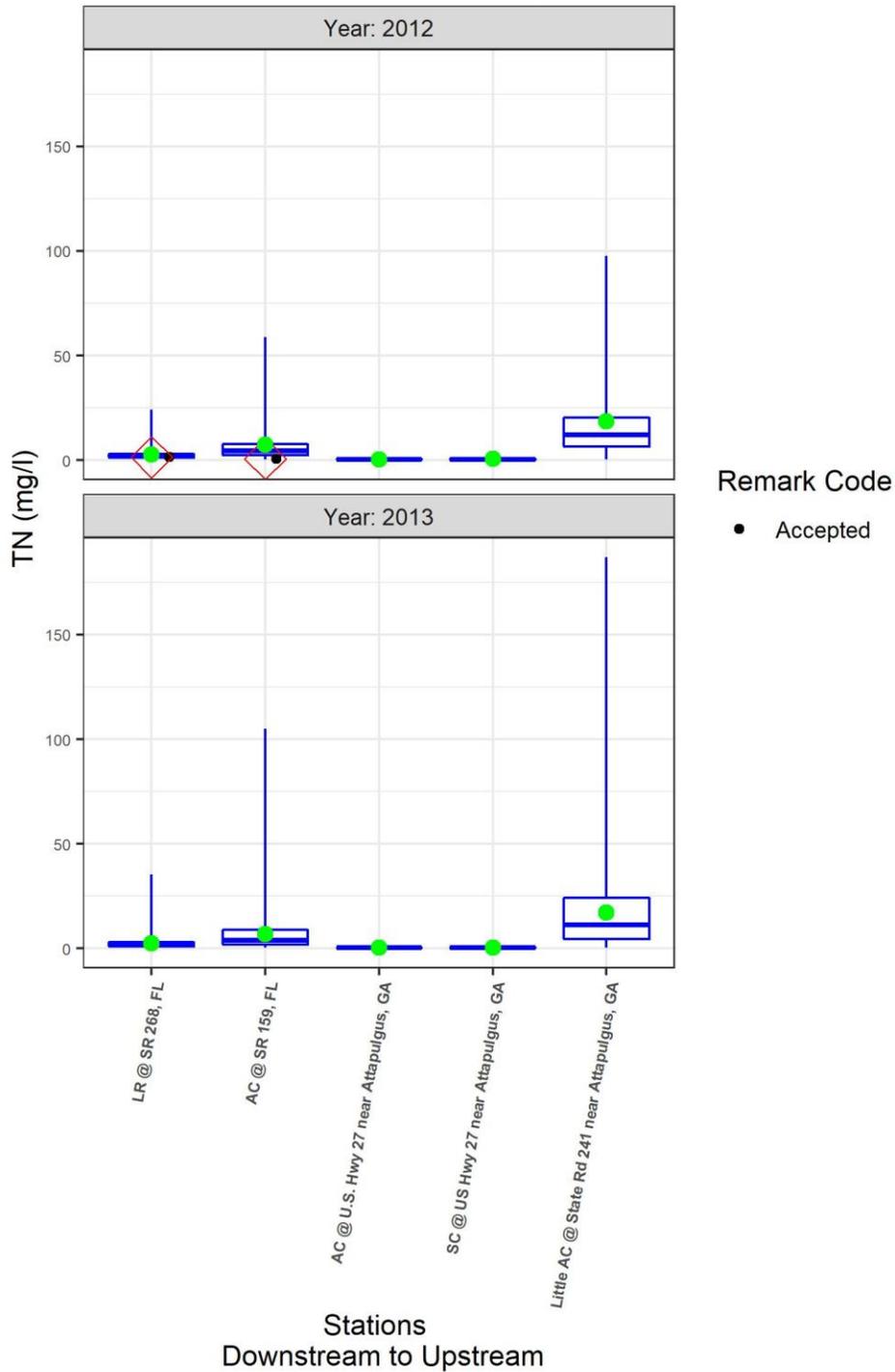


Figure 118 Little River Total Nitrogen Comparison Observed vs. Simulated 2012-2013

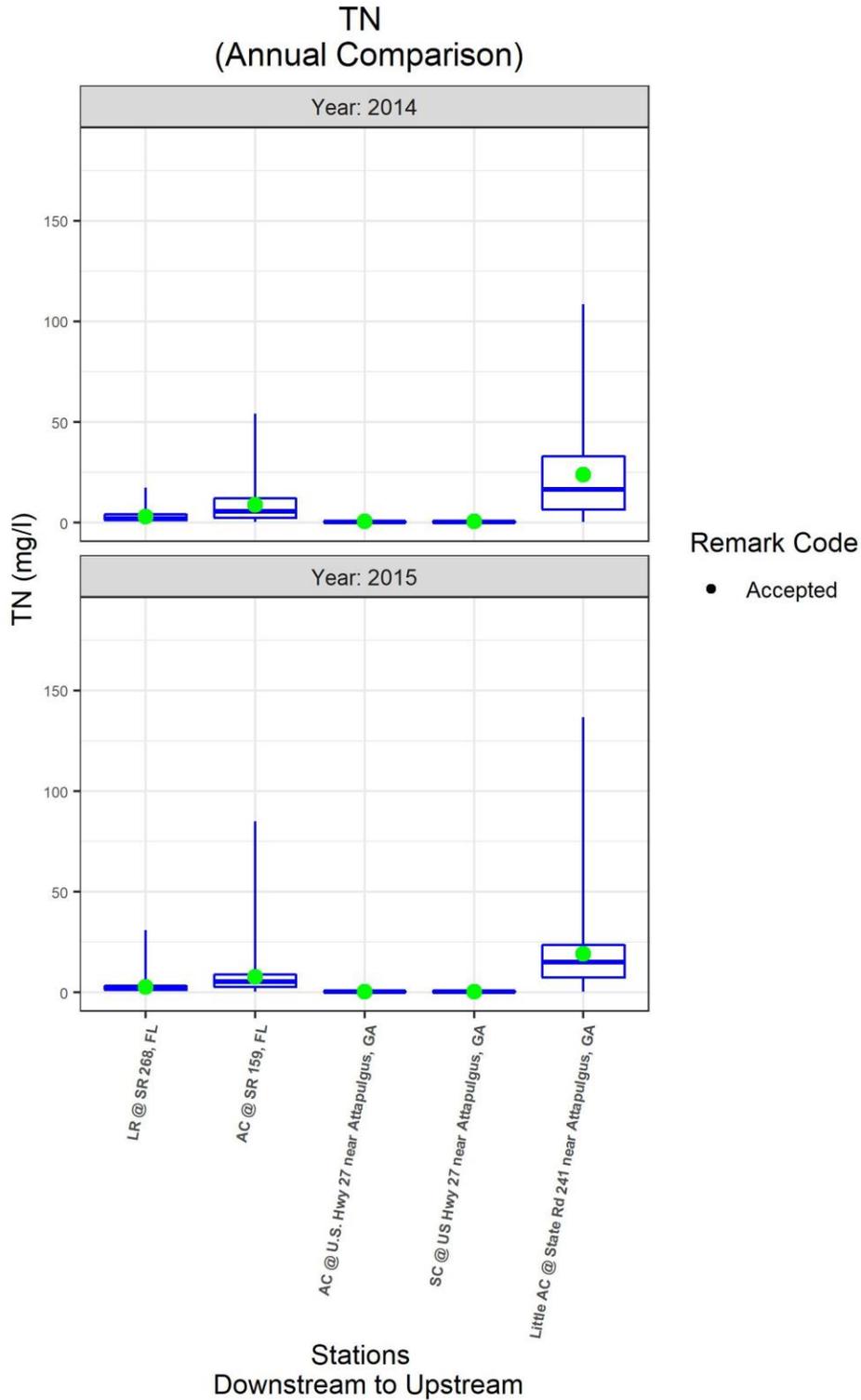


Figure 119 Little River Total Nitrogen Comparison Observed vs. Simulated 2014-2015

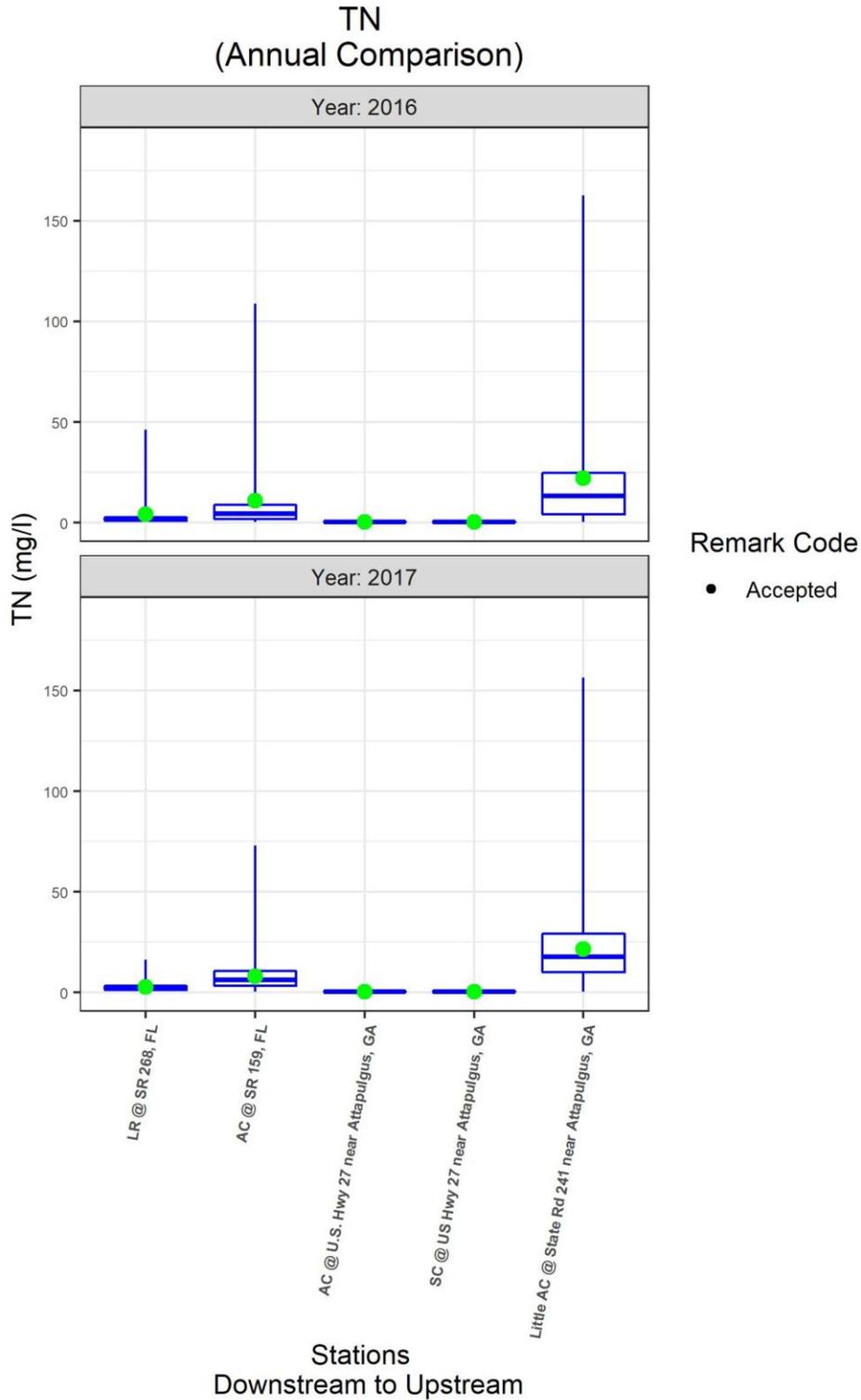


Figure 120 Little River Total Nitrogen Comparison Observed vs. Simulated 2016-2017

Ammonia

AC @ U.S. Hwy 27 near Attapulgus, GA
Parameter: NH4

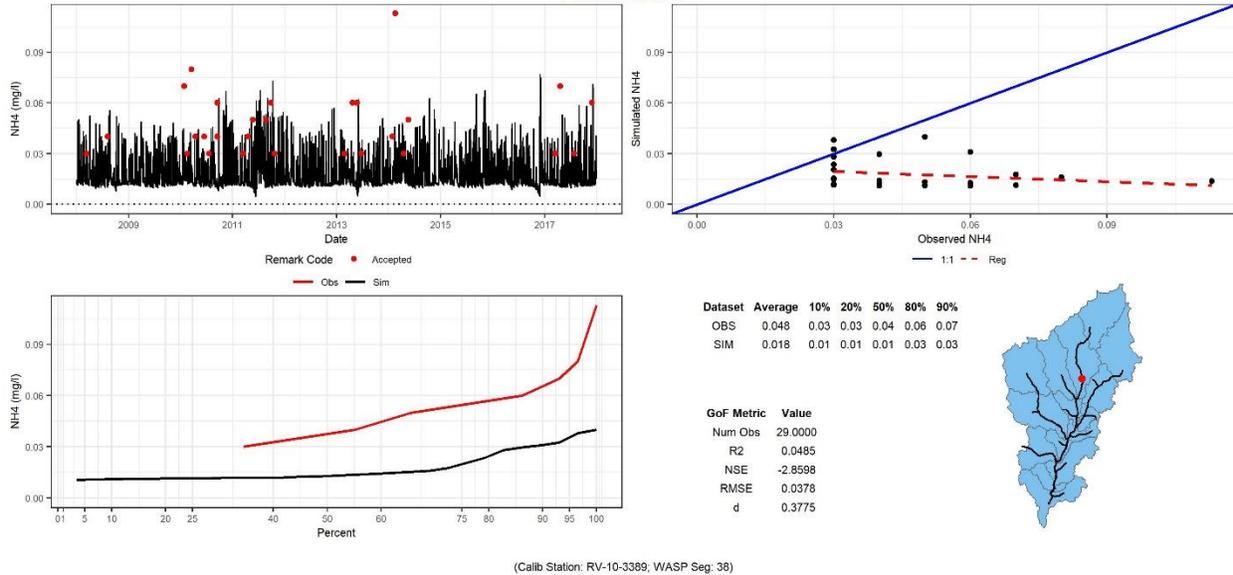


Figure 121 Ammonia - Attapulgus Creek at U.S. Hwy 27 near Attapulgus, GA

SC @ US Hwy 27 near Attapulgus, GA
Parameter: NH4

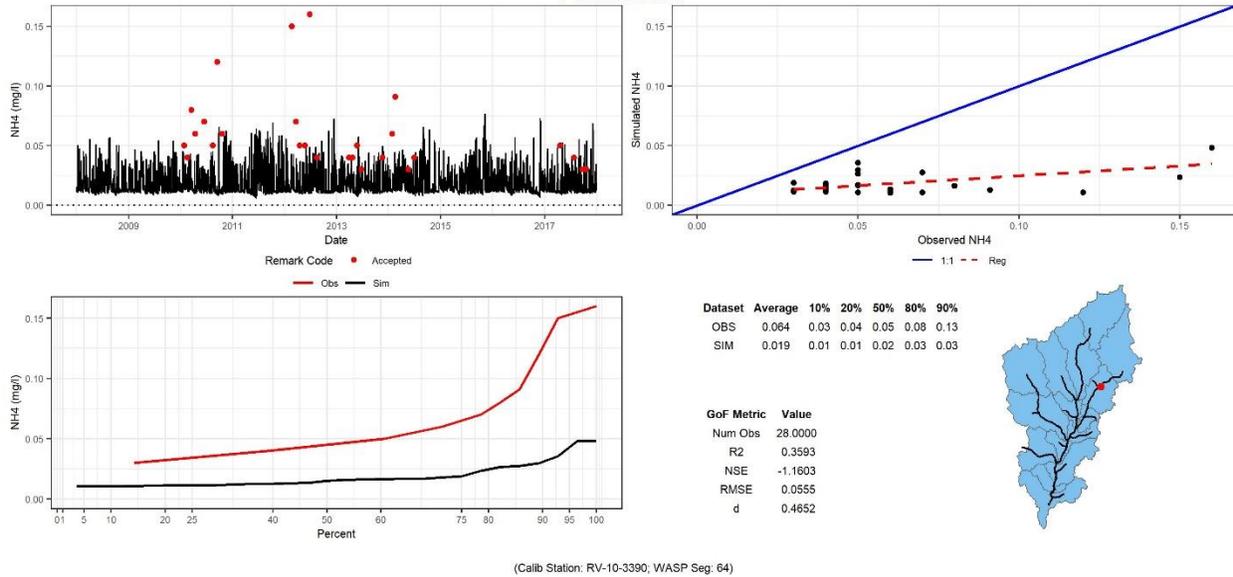
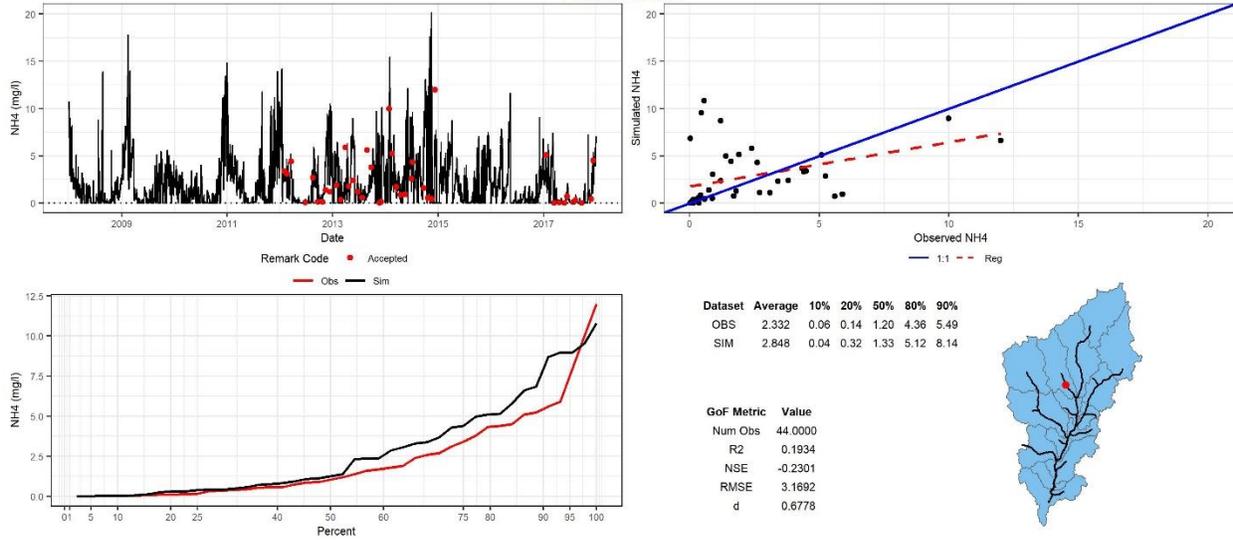


Figure 122 Ammonia - Swamp Creek at US Hwy 27 near Attapulgus, GA

Little AC @ State Rd 241 near Attapulgus, GA
Parameter: NH4

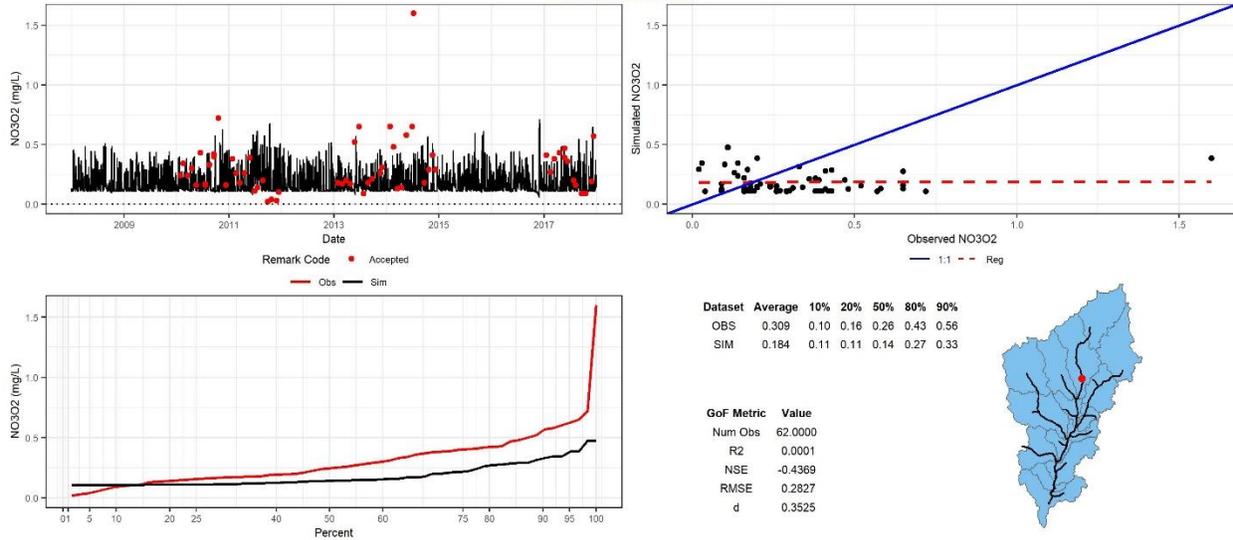


(Calib Station: RV-10-3423; WASP Seg: 76)

Figure 123 Ammonia - Little Attapulgus Creek at State Rd 241 near Attapulgus, GA

Nitrate

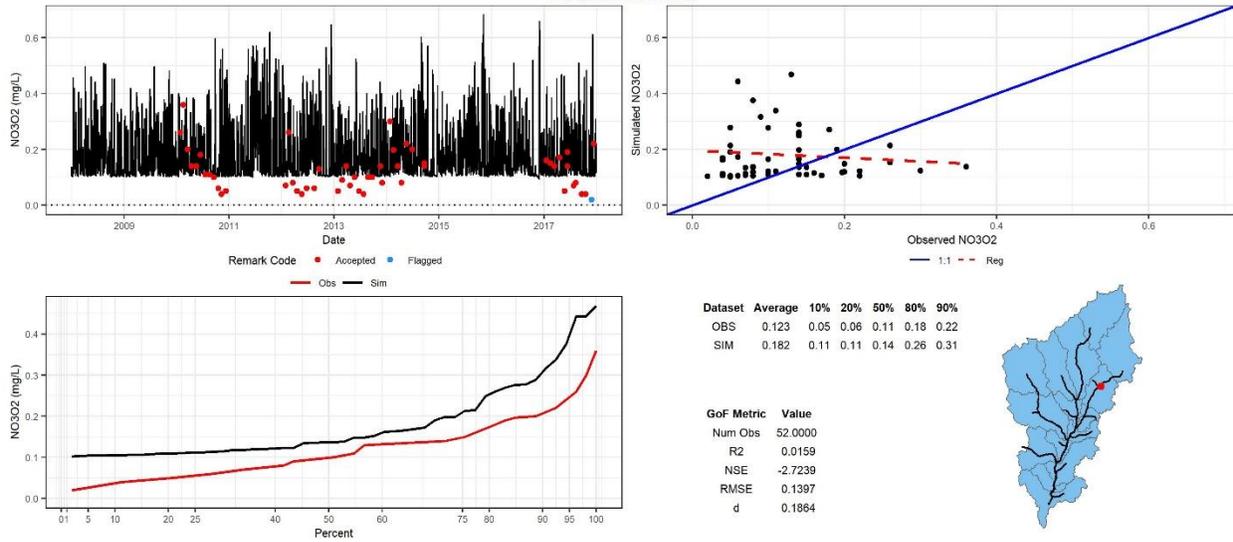
AC @ U.S. Hwy 27 near Attapulgus, GA
Parameter: NO3O2



(Calib Station: RV-10-3389; WASP Seg: 38)

Figure 124 Nitrate - Attapulgus Creek at U.S. Hwy 27 near Attapulgus, GA

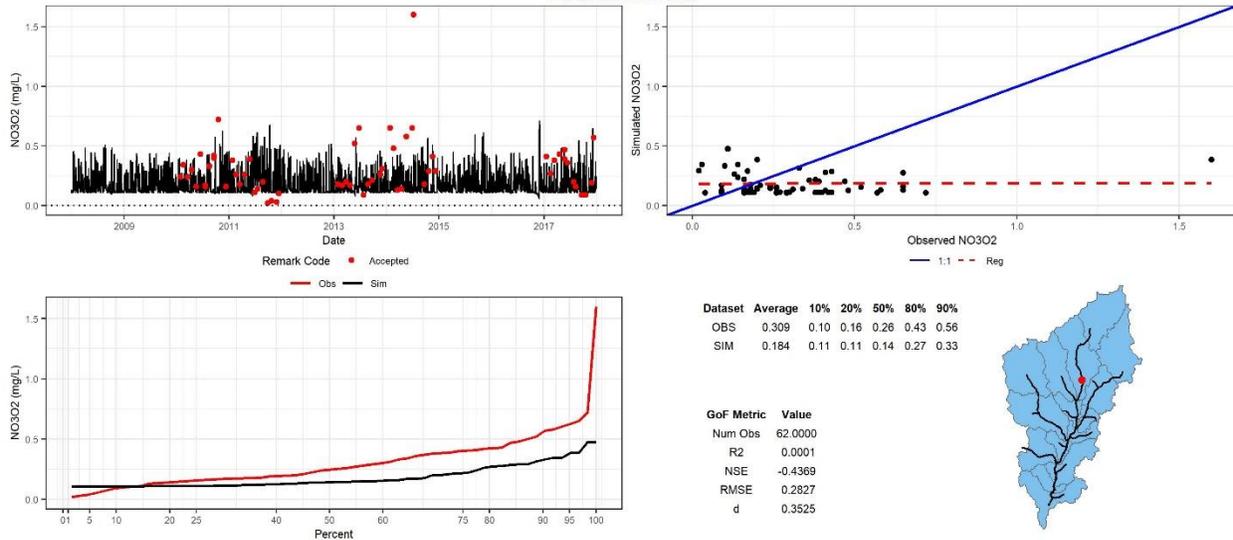
SC @ US Hwy 27 near Attapulgus, GA
Parameter: NO3O2



(Calib Station: RV-10-3390, WASP Seg: 64)

Figure 125 Nitrate - Swamp Creek at US Hwy 27 near Attapulgus, GA

AC @ U.S. Hwy 27 near Attapulgus, GA
Parameter: NO3O2



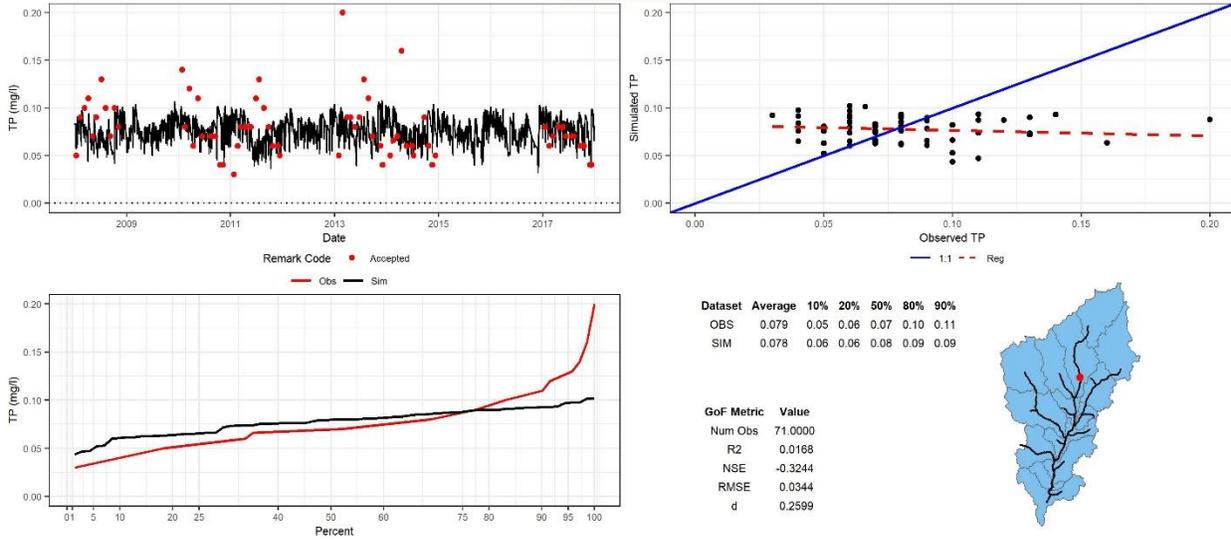
(Calib Station: RV-10-3389, WASP Seg: 38)

Figure 126 Nitrate - Attapulgus Creek near Attapulgus, GA

Total Phosphorus

AC @ U.S. Hwy 27 near Attapulgus, GA

Parameter: TP

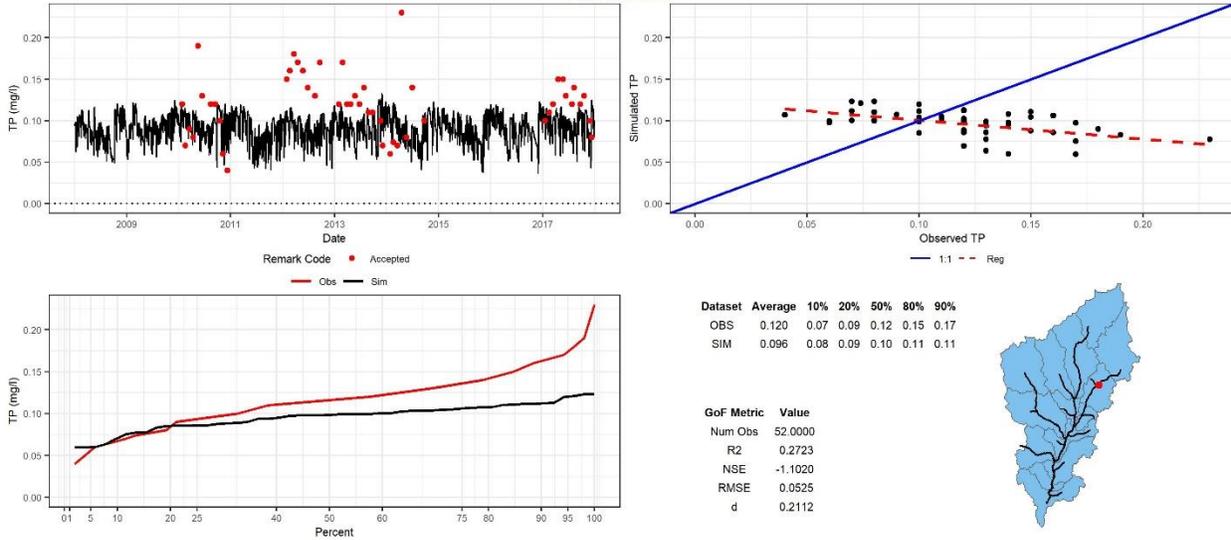


(Calib Station: RV-10-3389; WASP Seg: 38)

Figure 127 Total Phosphorus - Attapulgus Creek at U.S. Hwy 27 near Attapulgus, GA

SC @ US Hwy 27 near Attapulgus, GA

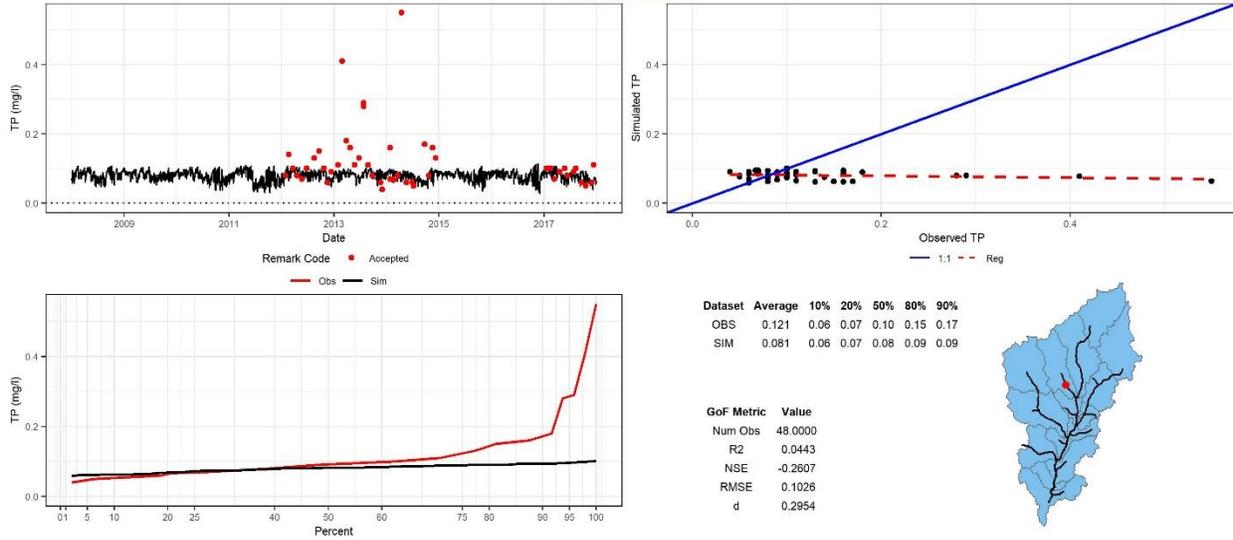
Parameter: TP



(Calib Station: RV-10-3390; WASP Seg: 64)

Figure 128 Total Phosphorus - Swamp Creek at US Hwy 27 near Attapulgus, GA

Little AC @ State Rd 241 near Attapulgus, GA
 Parameter: TP



(Calib Station: RV-10-3423; WASP Seg: 76)

Figure 129 Total Phosphorus - Little Attapulgus Creek at State Rd 241 near Attapulgus, GA

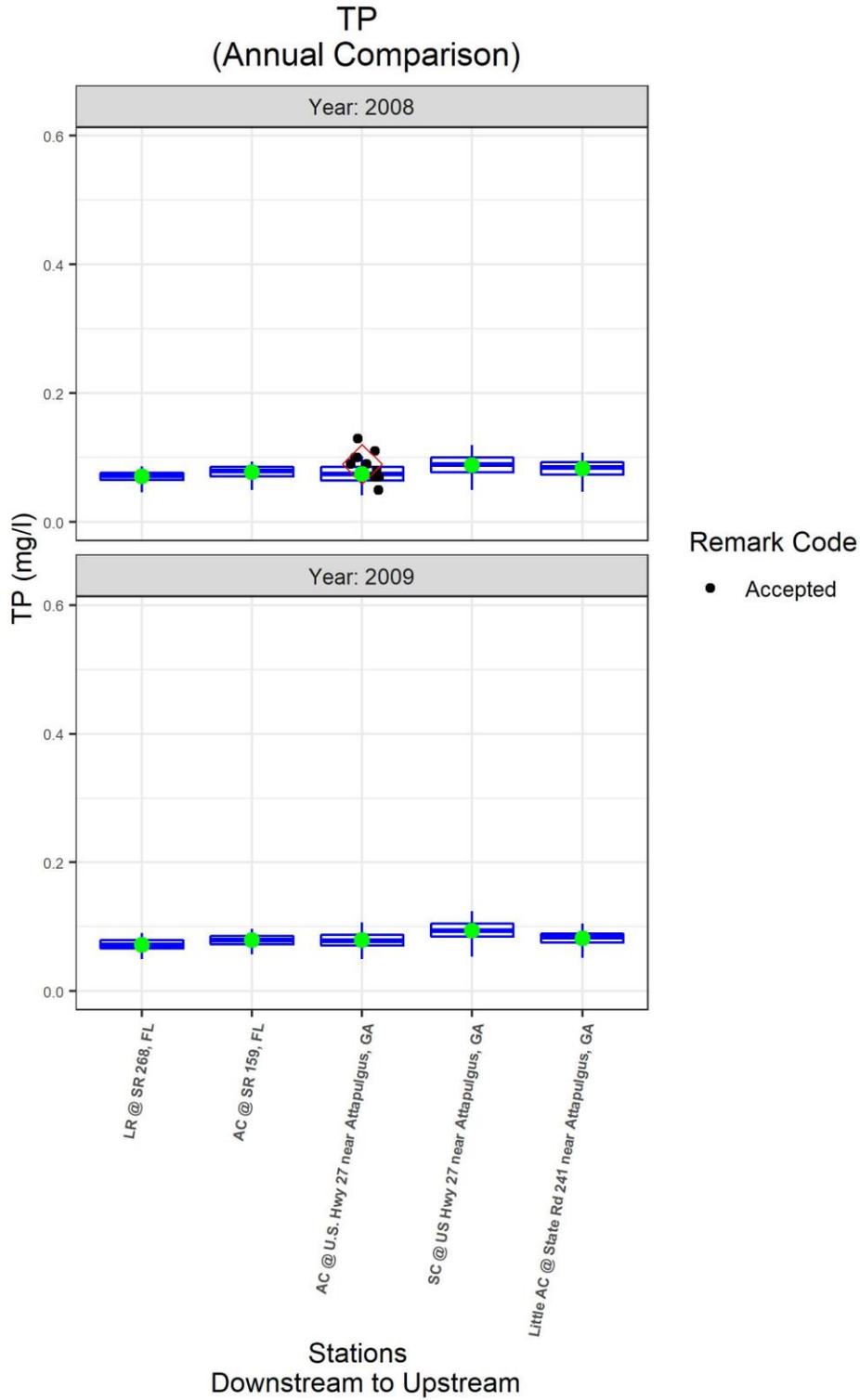


Figure 130 Little River Total Phosphorus Comparison Observed vs. Simulated 2008-2009

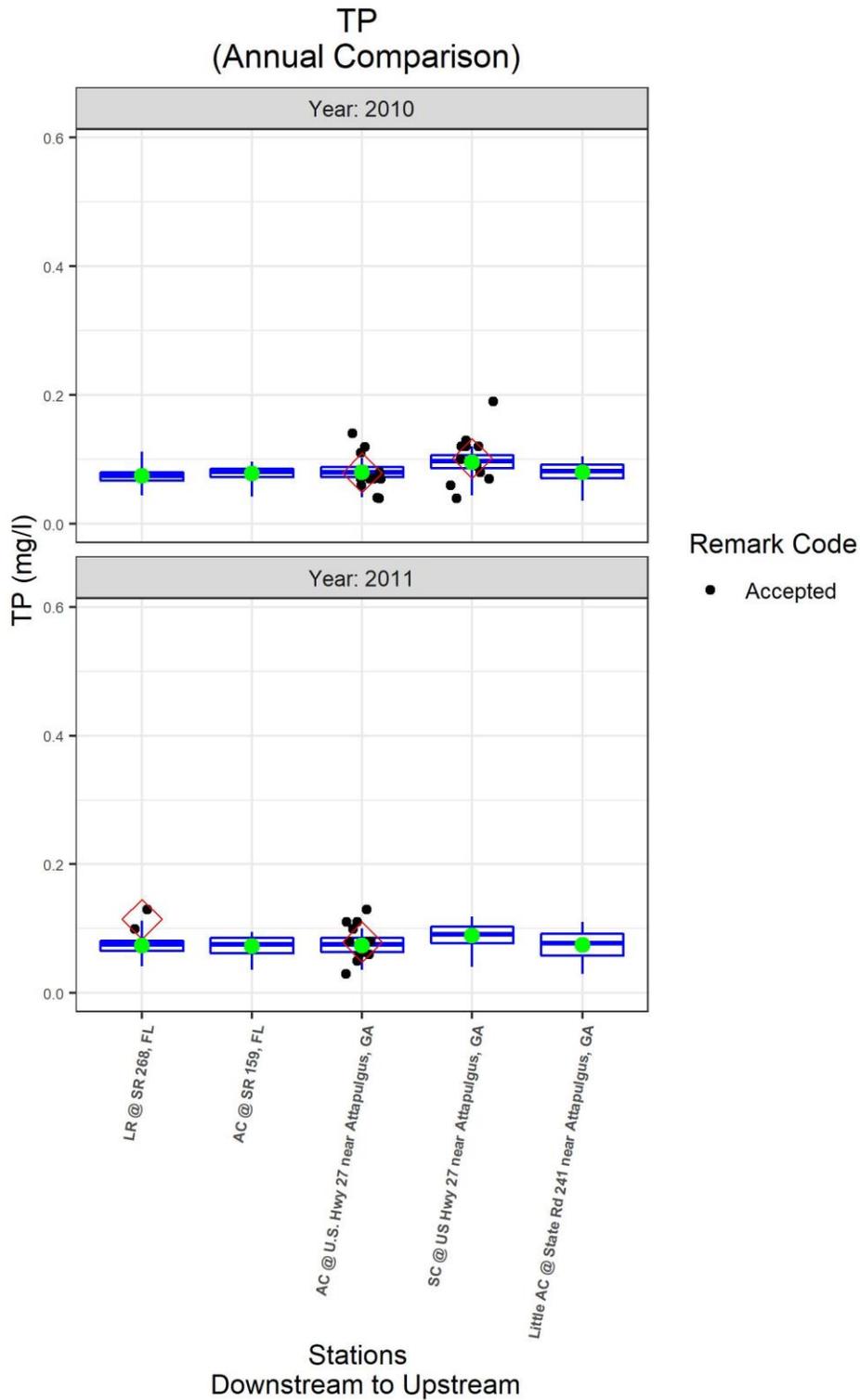


Figure 131 Little River Total Phosphorus Comparison Observed vs. Simulated 2010-2011

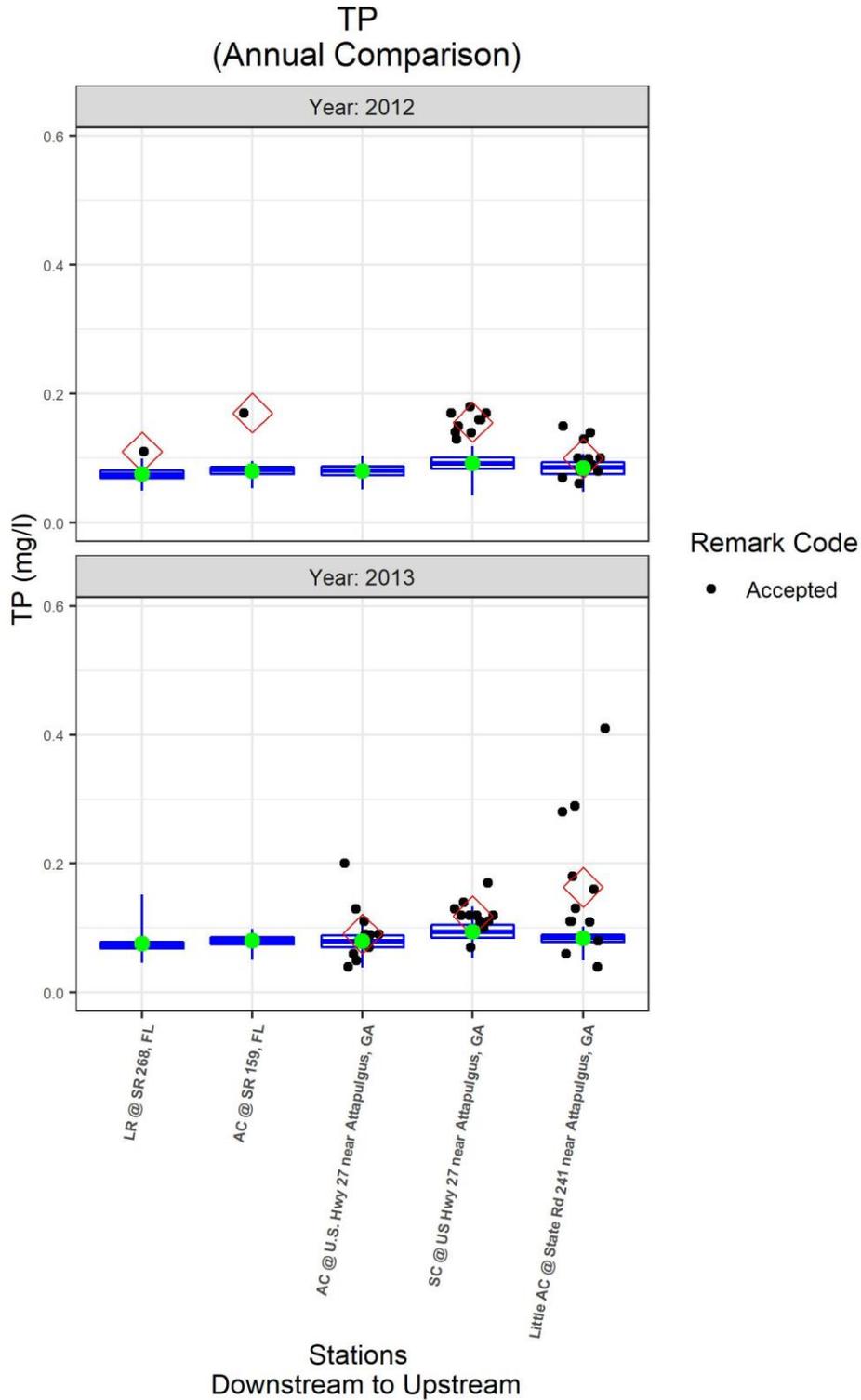


Figure 132 Little River Total Phosphorus Comparison Observed vs. Simulated 2012-2013

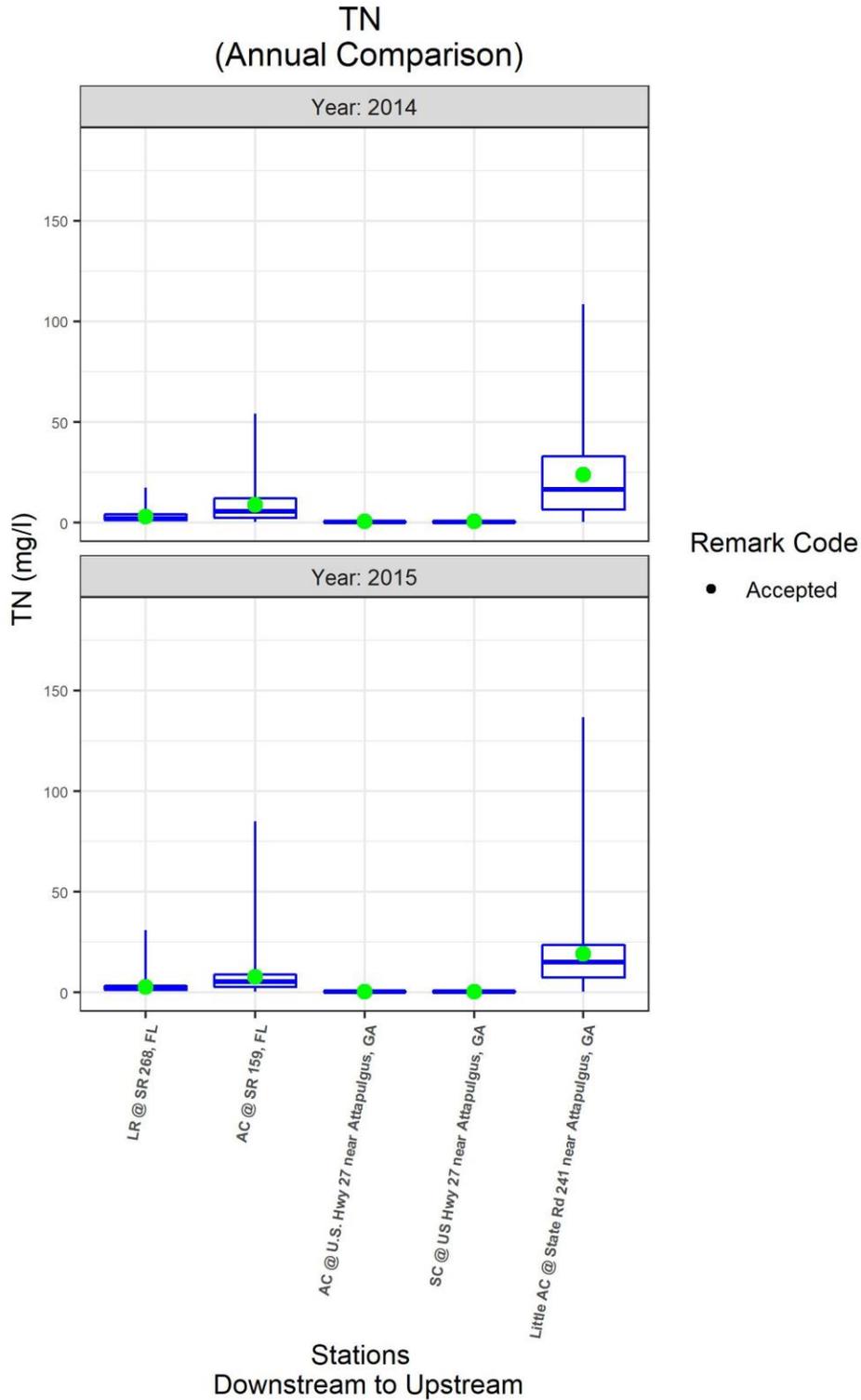


Figure 133 Little River Total Phosphorus Comparison Observed vs. Simulated 2014-2015

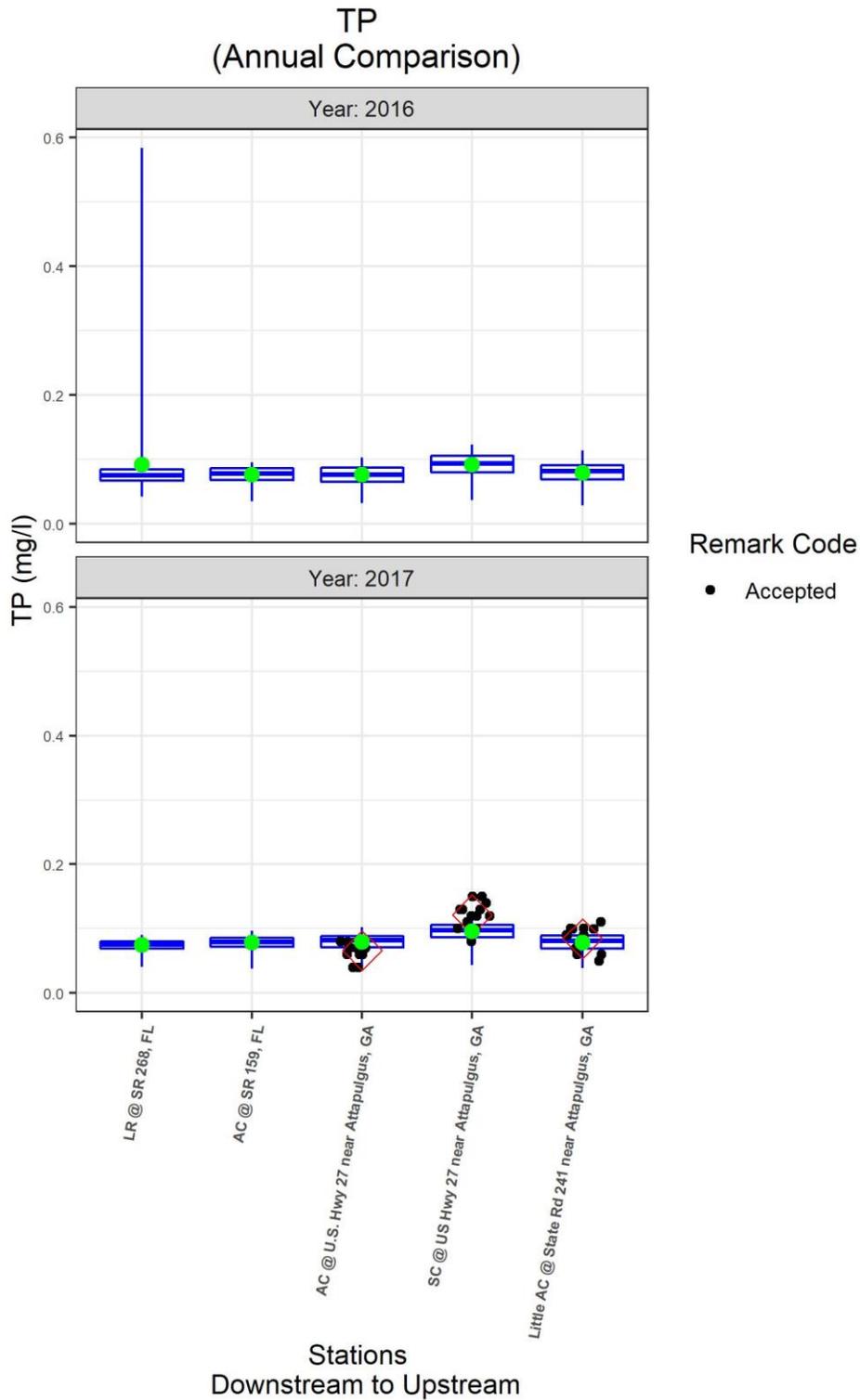


Figure 134 Little River Total Phosphorus Comparison Observed vs. Simulated 2016-2017

Chlorophyll a

Little AC @ State Rd 241 near Attapulgus, GA
Parameter: CHLAC

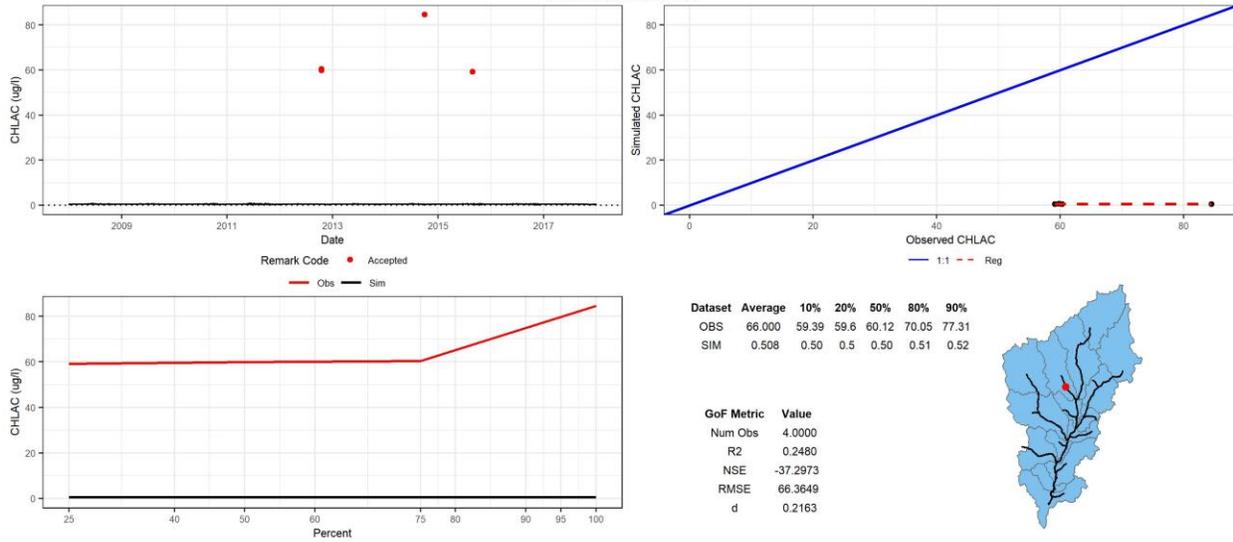


Figure 135 Chlorophyll a - Little Attapulgus Creek at State Rd 241 near Attapulgus, GA

LR @ SR 268, FL
Parameter: CHLAC

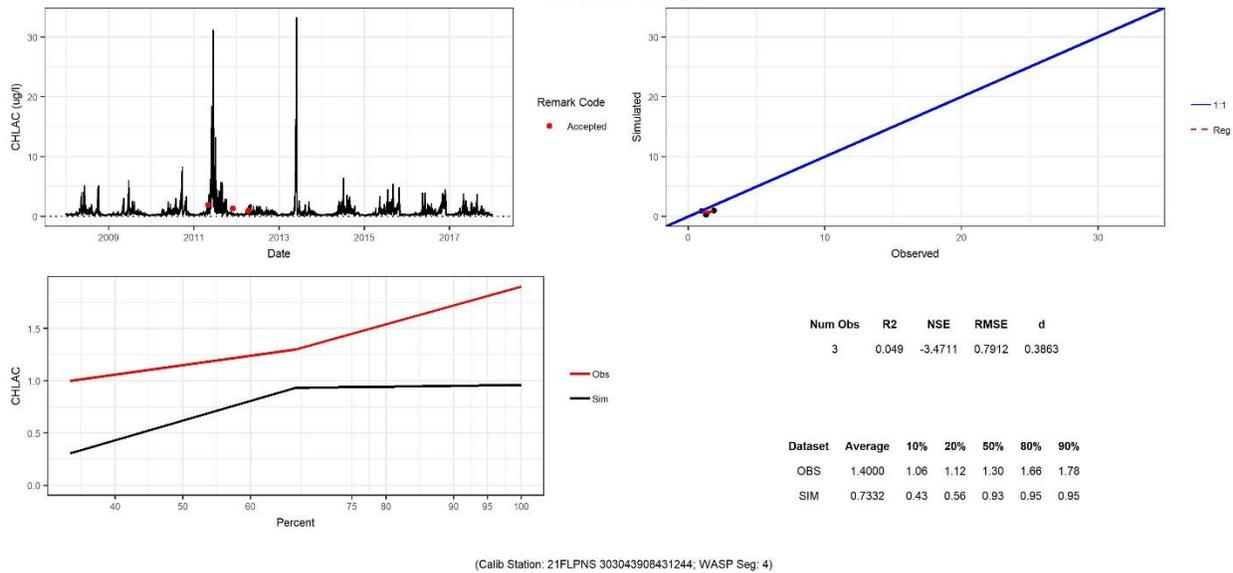


Figure 136 Chlorophyll a - Little River at SR 268, FL

CHLAC (Annual Comparison)

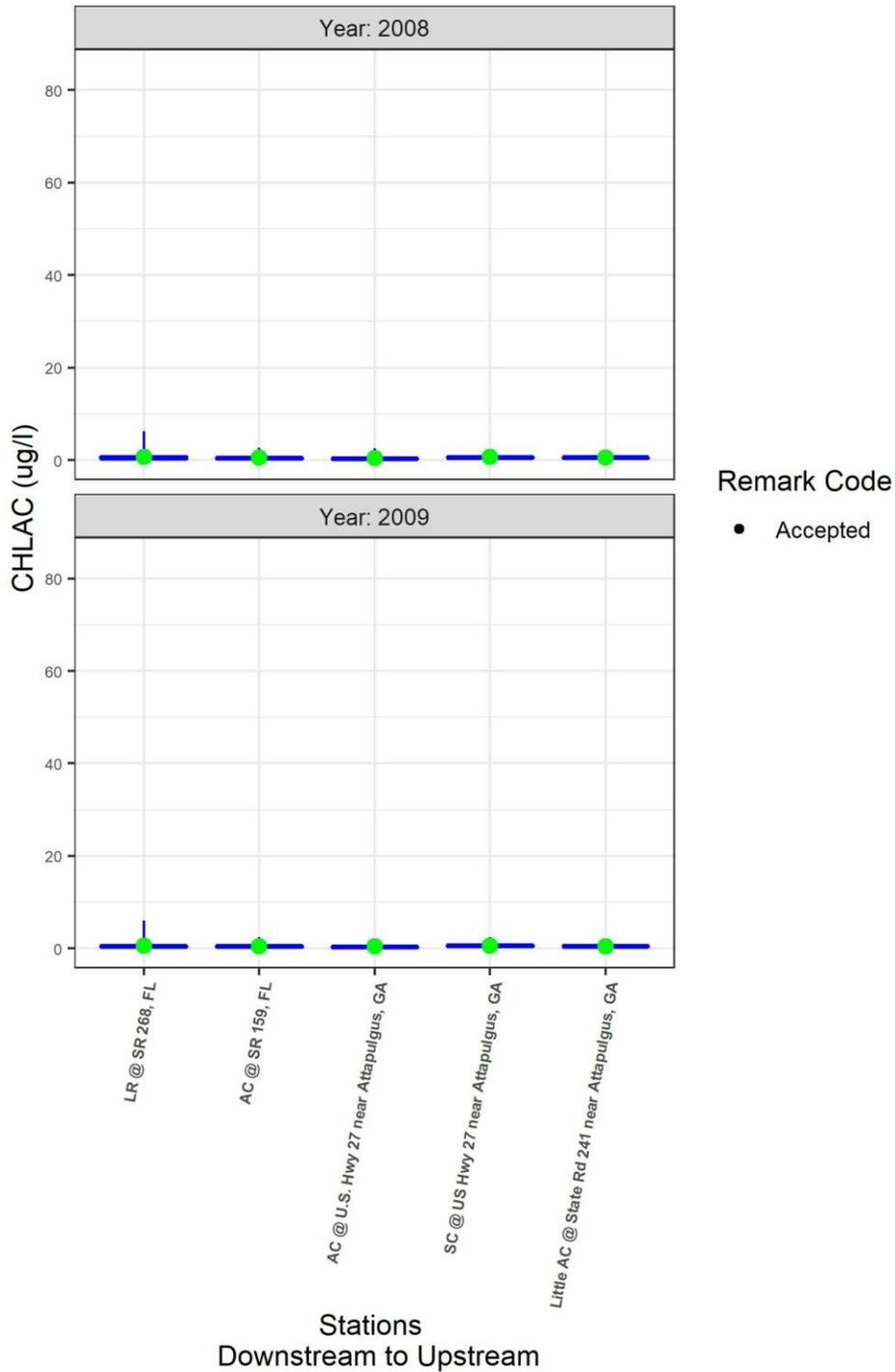


Figure 137 Little River Chlorophyll a Comparison Observed vs. Simulated 2008-2009

CHLAC (Annual Comparison)

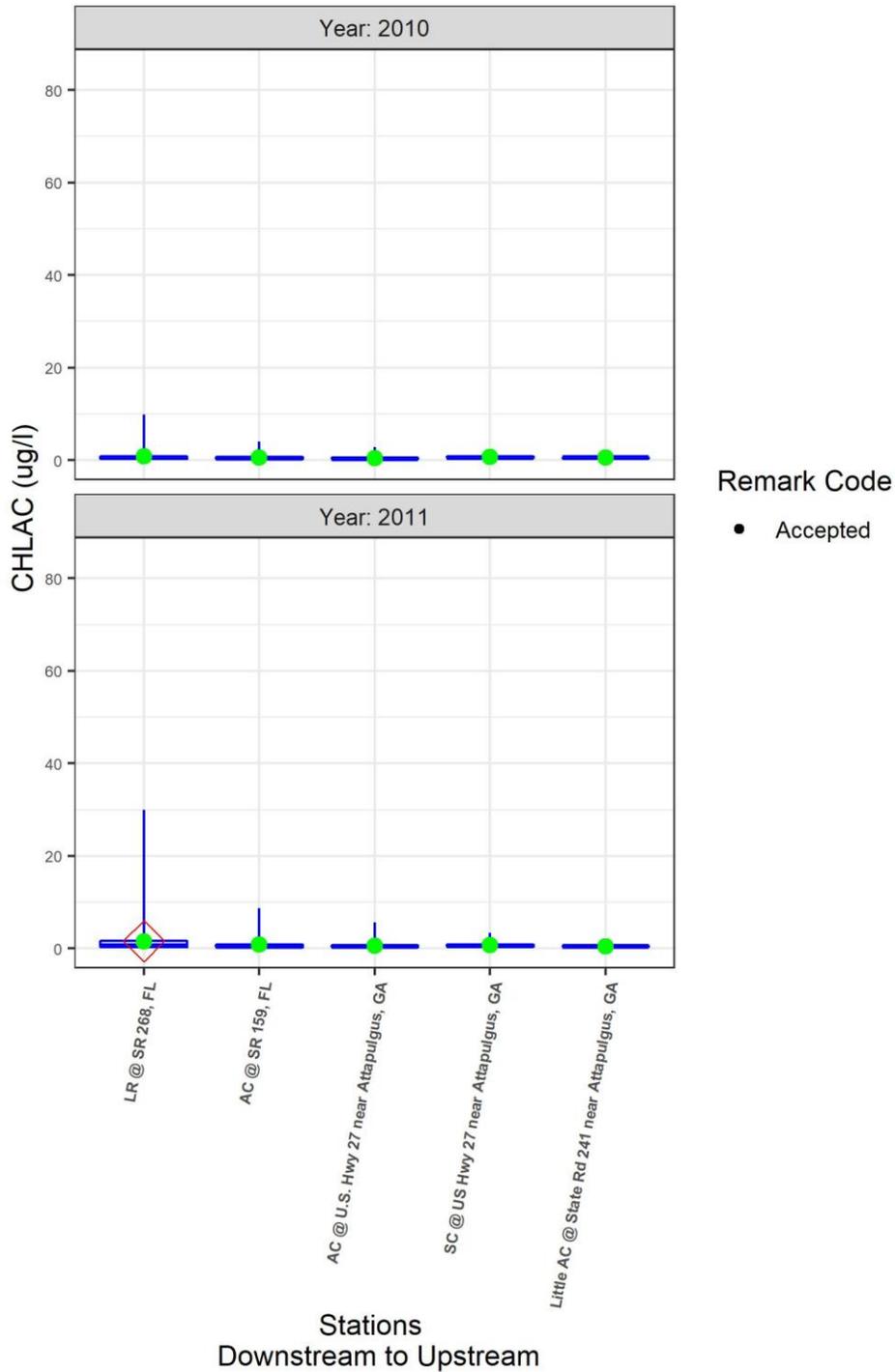


Figure 138 Little River Chlorophyll a Comparison Observed vs. Simulated 2010-2011

CHLAC (Annual Comparison)

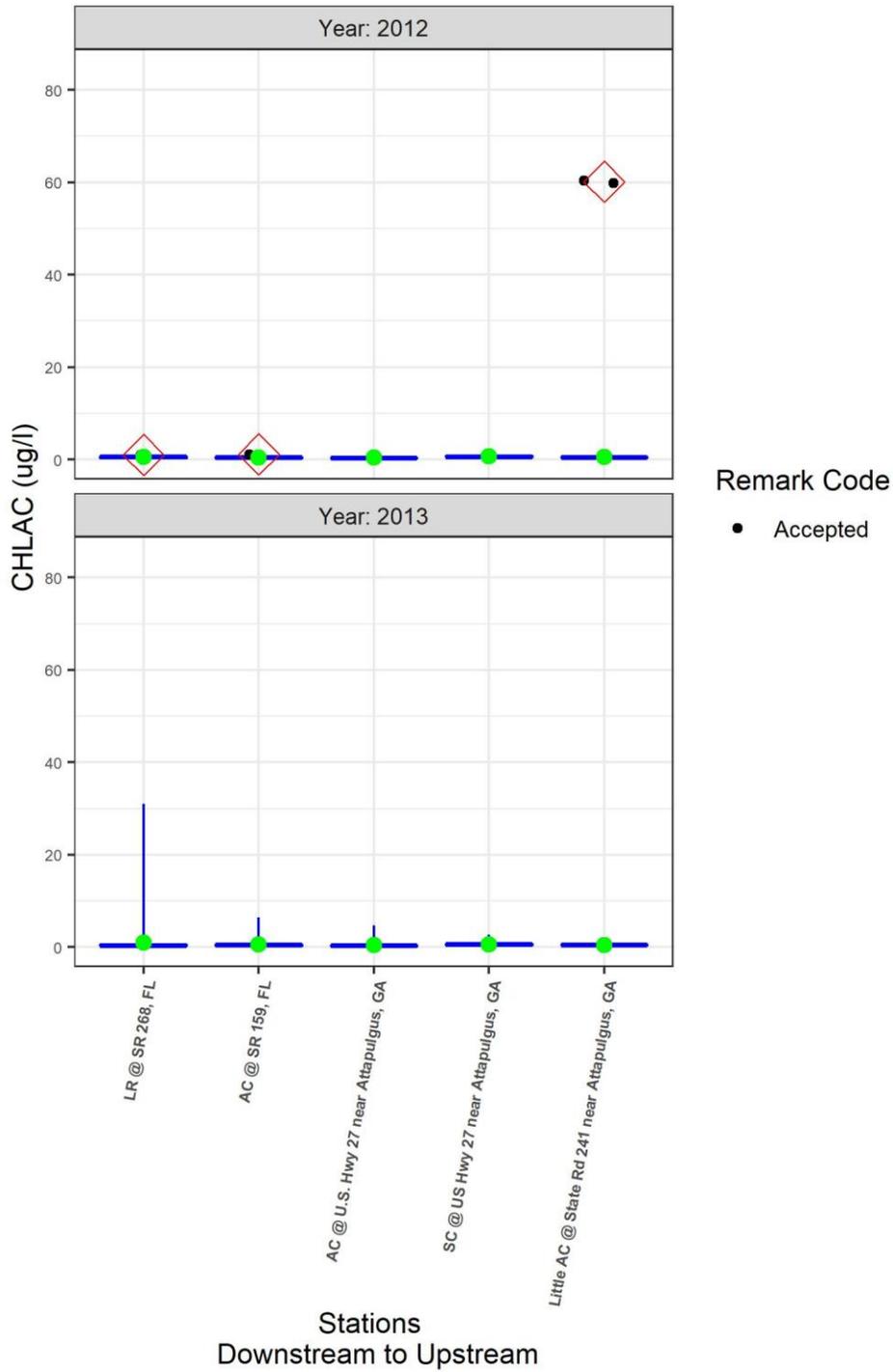


Figure 139 Little River Chlorophyll a Comparison Observed vs. Simulated 2012-2013

CHLAC (Annual Comparison)

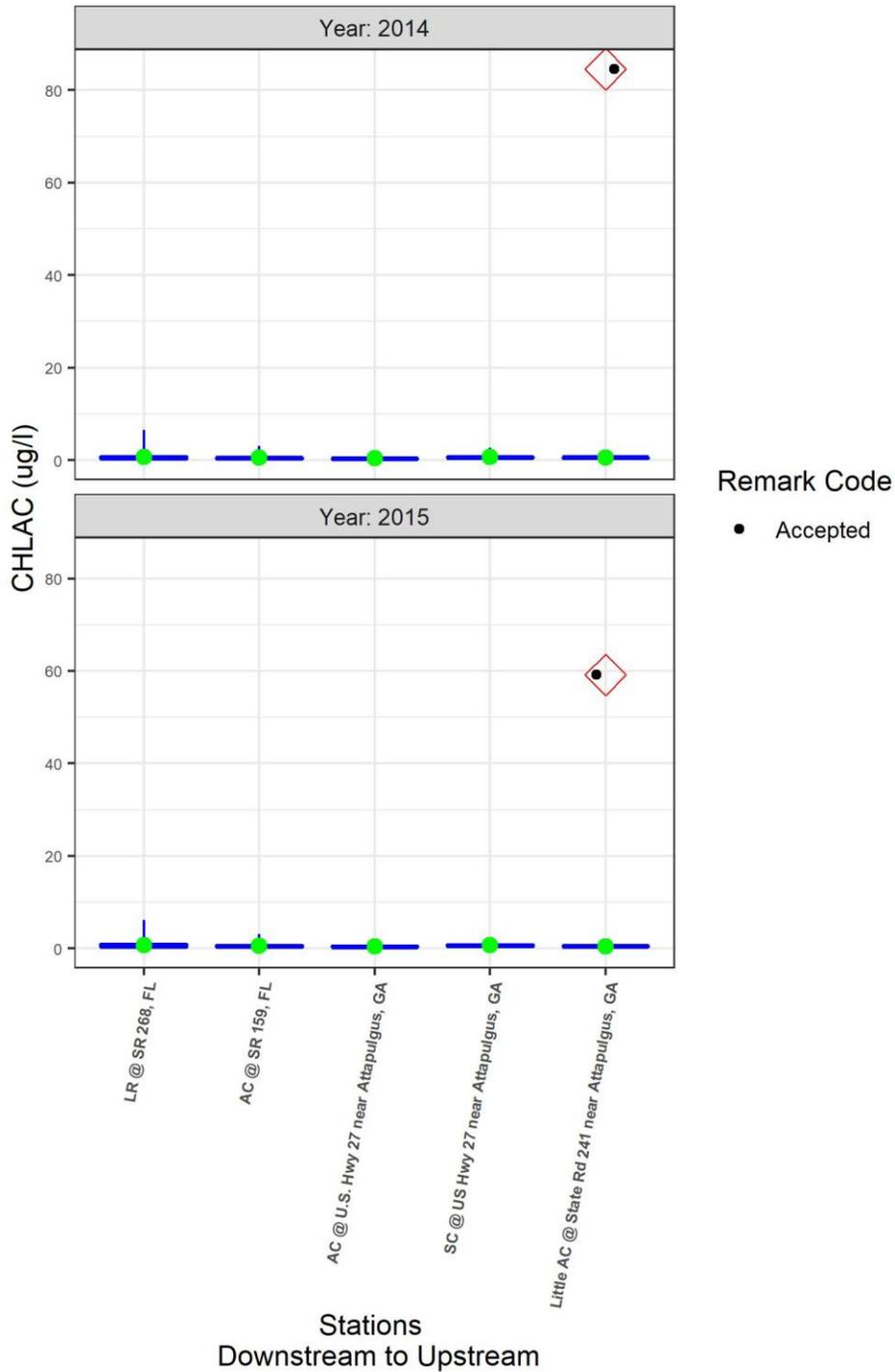


Figure 140 Little River Chlorophyll a Comparison Observed vs. Simulated 2014-2015

CHLAC (Annual Comparison)

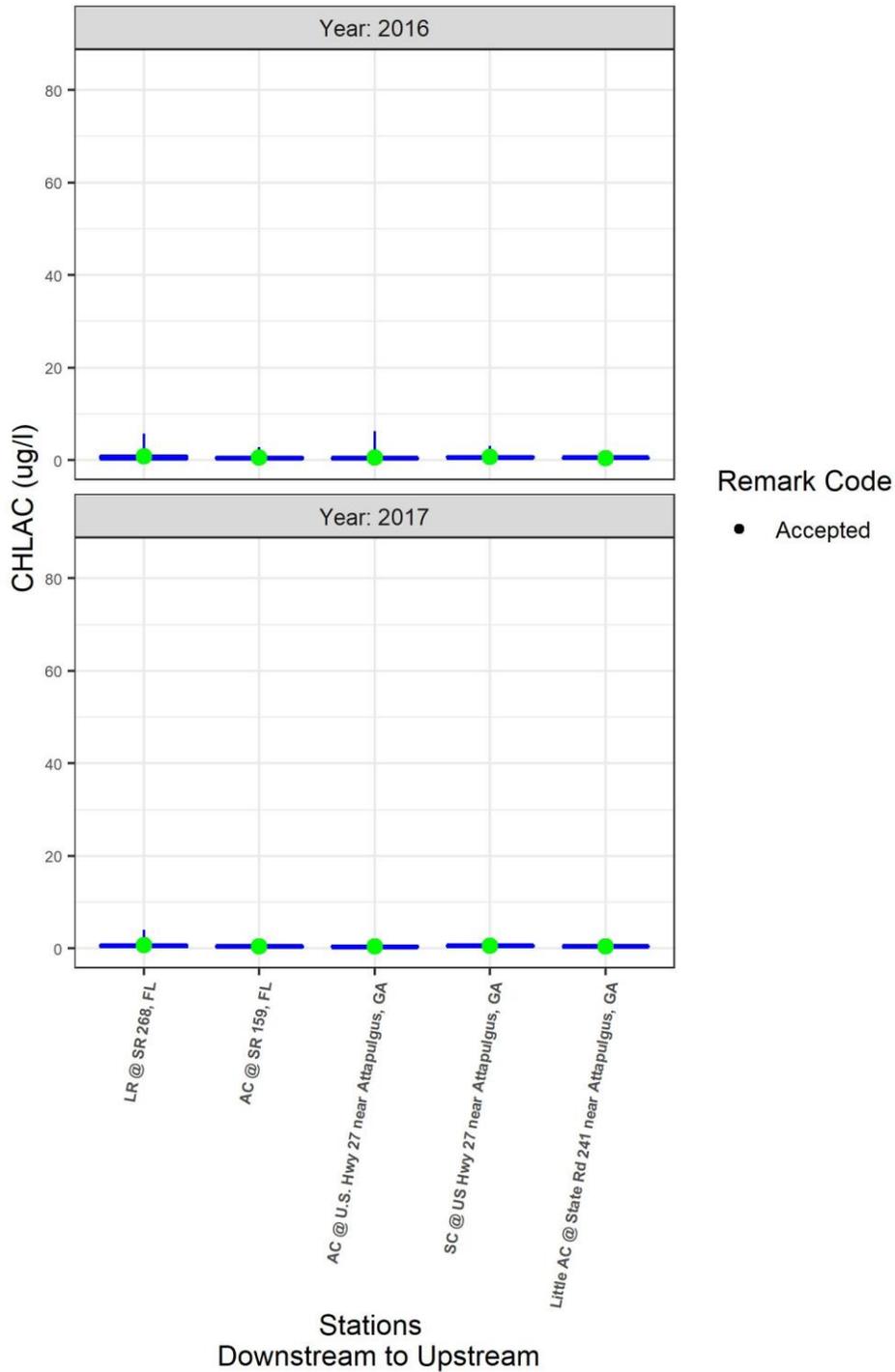


Figure 141 Little River Chlorophyll a Comparison Observed vs. Simulated 2016-2017

Dissolved Oxygen

AC @ U.S. Hwy 27 near Attapulgus, GA
Parameter: DO

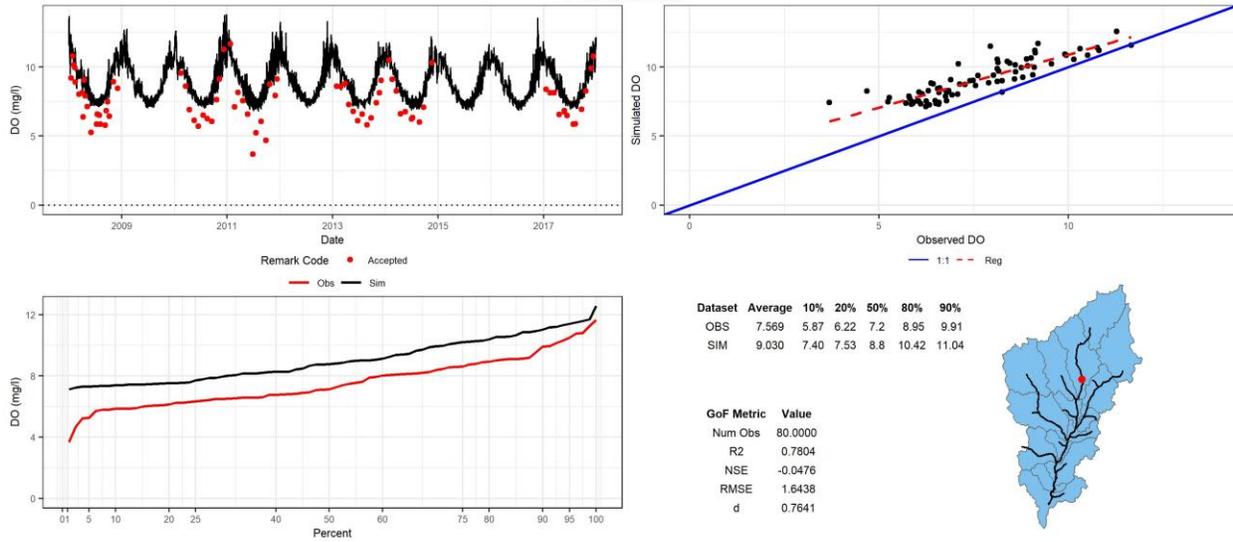


Figure 142 Dissolved Oxygen - Attapulgus Creek at U.S. Hwy 27 near Attapulgus, GA

SC @ US Hwy 27 near Attapulgus, GA
Parameter: DO

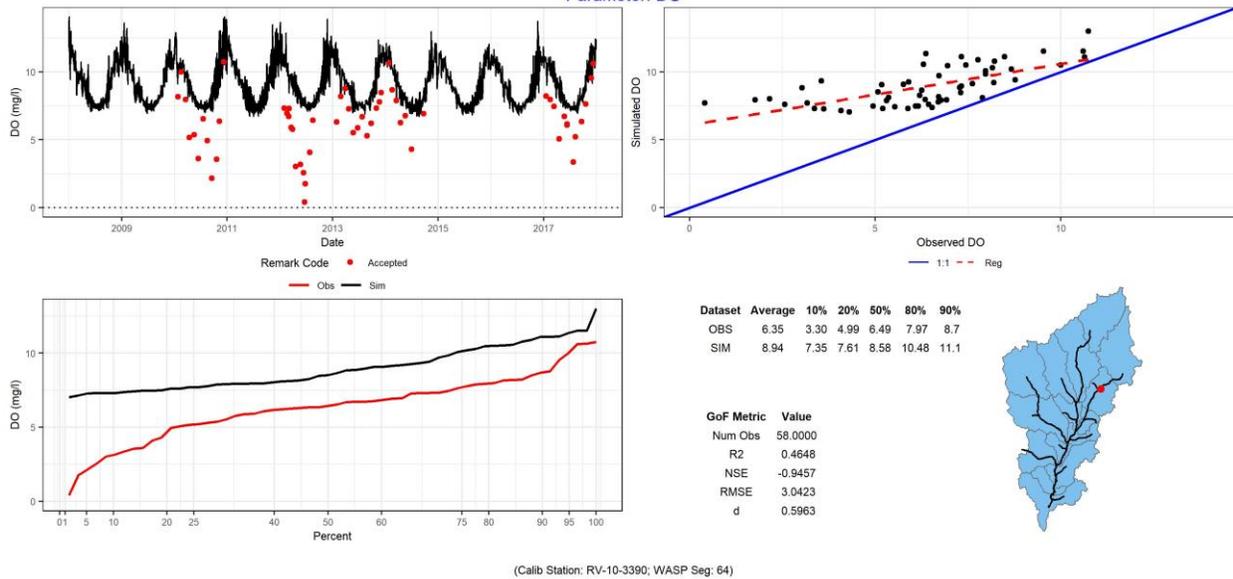
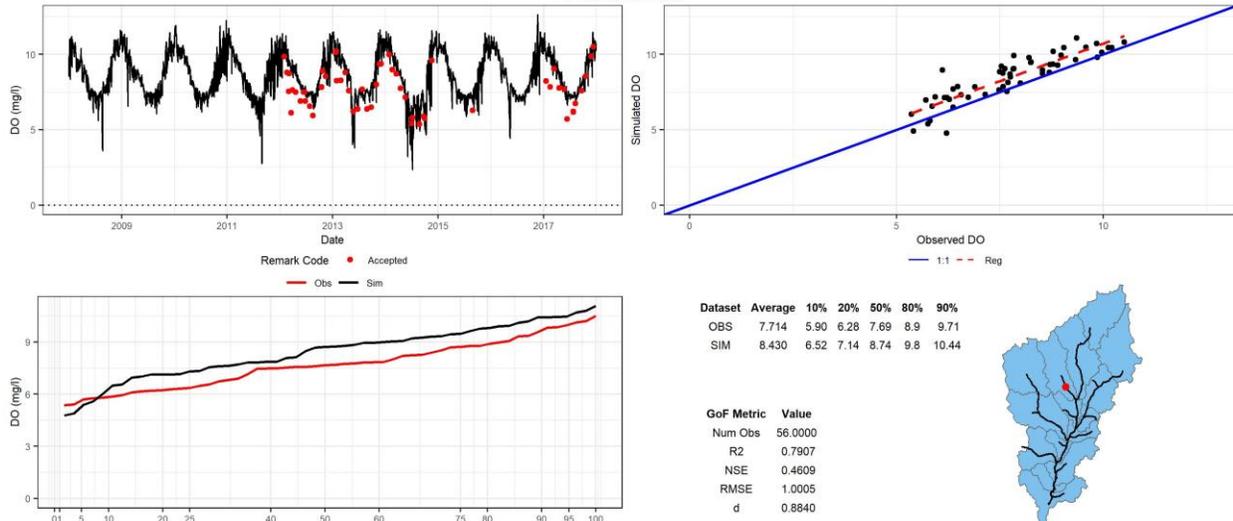


Figure 143 Dissolved Oxygen - Swamp Creek at US Hwy 27 near Attapulgus, GA

Little AC @ State Rd 241 near Attapulgus, GA
Parameter: DO

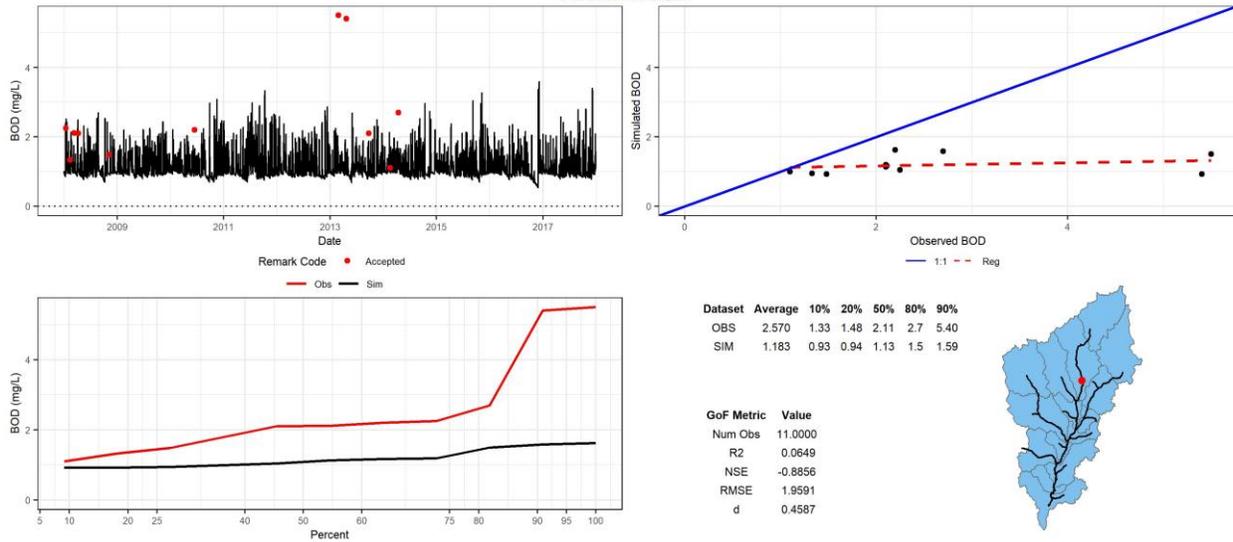


(Calib Station: RV-10-3423; WASP Seg: 76)

Figure 144 Dissolved Oxygen - Little Attapulgus Creek at State Rd 241 near Attapulgus, GA

Carbonaceous Biochemical Oxygen Demand

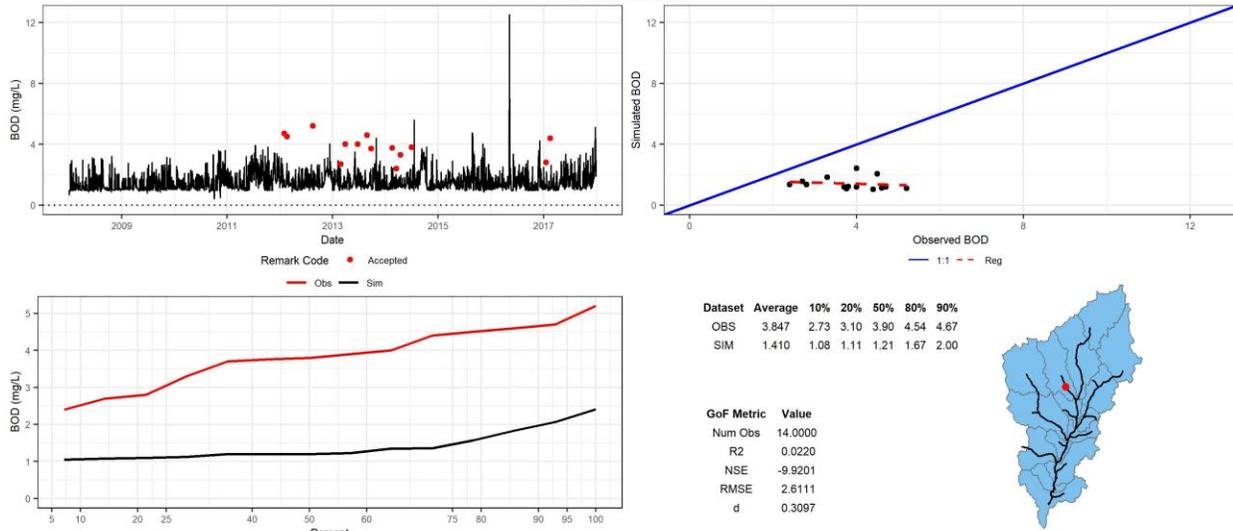
AC @ U.S. Hwy 27 near Attapulgus, GA
Parameter: BOD



(Calib Station: RV-10-3389; WASP Seg: 38)

Figure 145 CBOD - Attapulgus Creek at U.S. Hwy 27 near Attapulgus, GA

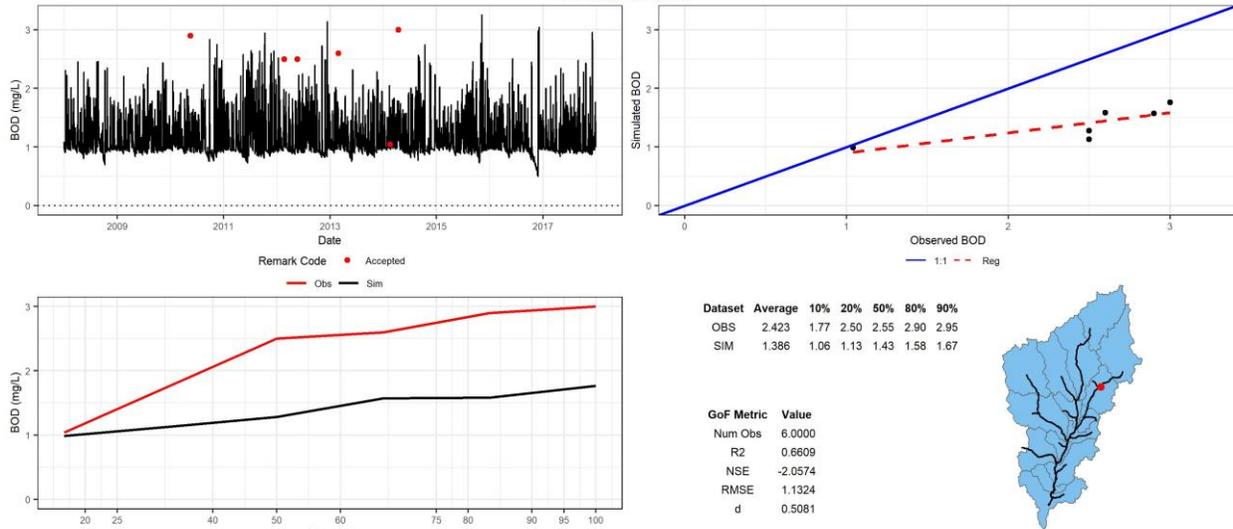
Little AC @ State Rd 241 near Attapulgus, GA
Parameter: BOD



(Calib Station: RV-10-3423; WASP Seg: 76)

Figure 146 CBOD - Little Attapulgus Creek at State Rd 241 near Attapulgus, GA

SC @ US Hwy 27 near Attapulgus, GA
Parameter: BOD



(Calib Station: RV-10-3390; WASP Seg: 64)

Figure 147 Stamp Creek at US Highway 27 Near Attapulgus, GA

Total Suspended Solids

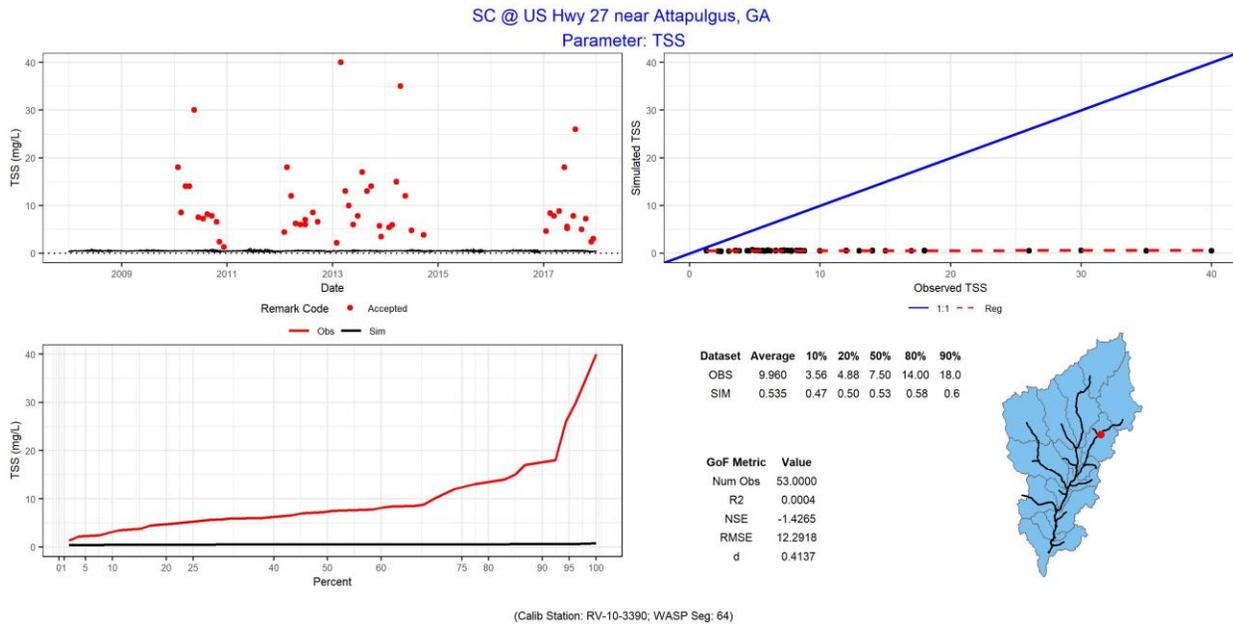


Figure 148 TSS - Swamp Creek at US Hwy 27 near Attapulgus, GA

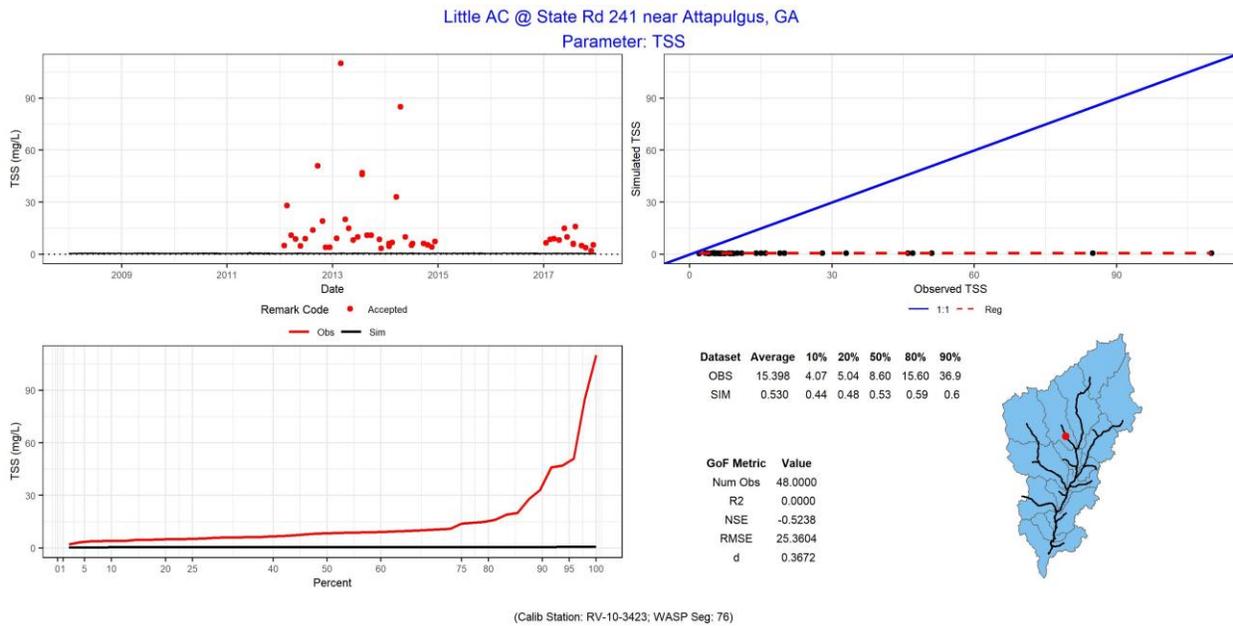


Figure 149 TSS - Little Attapulgus Creek at State Rd 241 near Attapulgus, GA

Temperature

AC @ U.S. Hwy 27 near Attapulgus, GA

Parameter: TEMP

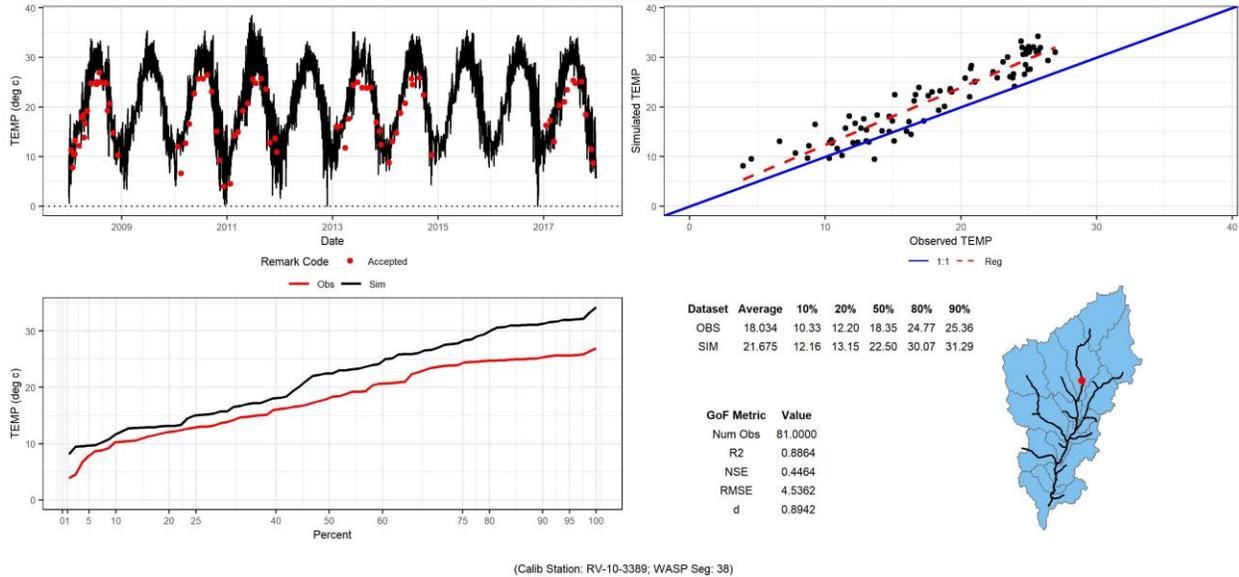


Figure 150 Water Temperature - Attapulgus Creek at U.S. Hwy 27 near Attapulgus, GA

SC @ US Hwy 27 near Attapulgus, GA

Parameter: TEMP

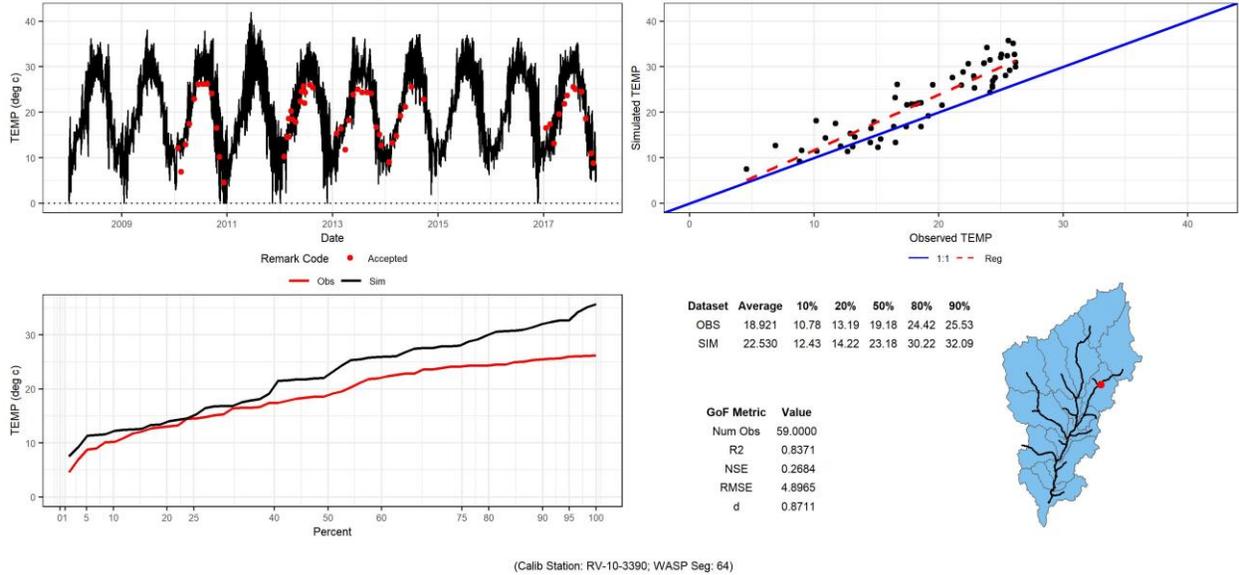
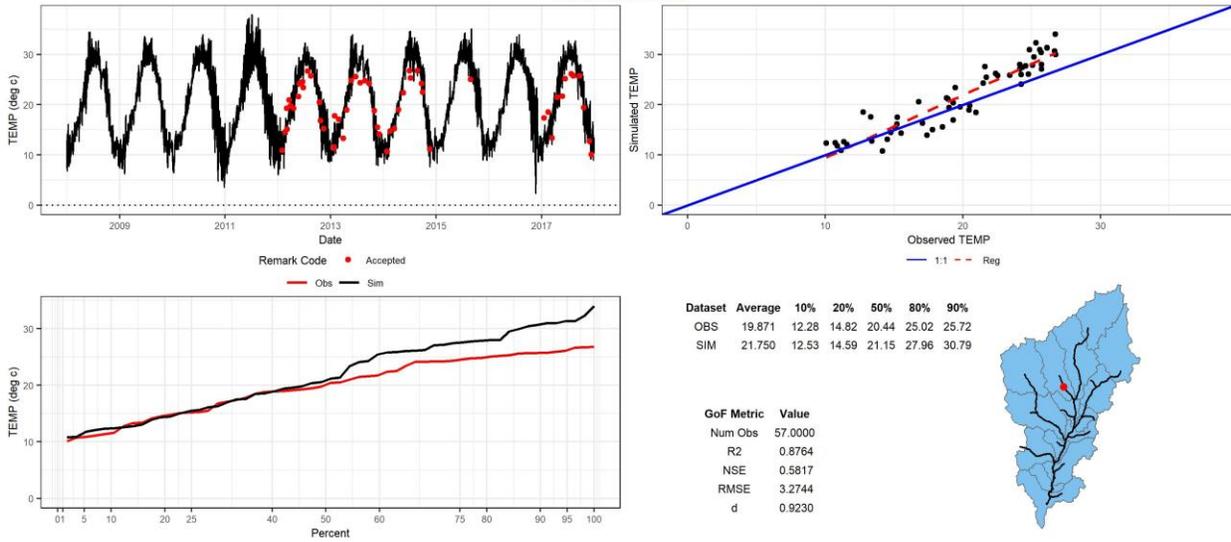


Figure 151 Water Temperature - Swamp Creek at US Hwy 27 near Attapulgus, GA

Little AC @ State Rd 241 near Attapulgus, GA
 Parameter: TEMP



(Calib Station: RV-10-3423; WASP Seg: 76)

Figure 152 Water Temperature - Little Attapulgus Creek at State Rd 241 near Attapulgus, GA

Appendix C – Lake Talquin Hydrodynamic and Water Quality Calibration

This appendix provides detailed calibration plots for each station and parameter available for the Lake Talquin water quality model.

Time Series – provides a comparison of the all the measured data to the model simulated data over the entire simulation period for visual inspection. If any measured data had a remark code indicating below detection it will appear as flagged data and will be represented by a blue dot. Flagged data is not considered in the quantitative statistical calculations.

Probability Distribution – provides a comparison of the probability distribution of measured and simulated data. This method uses paired measured and simulation data to determine the probability curve.

1 to 1 – plots the paired measured and simulated values against one another. The red line represents a perfect calibration, the blue line represents the linear fit of measured/simulated fit.

Statistics –

- Num Obs – represents the number of measurements used in calculation
- R^2 – correlation coefficient between sim and obs.
- NSE – Nash-Sutcliffe efficiency between sim and obs,
- RMSE – root mean square error
- d – Index of Agreement
- Percentiles – provides a numeric comparison of the percentile distribution of sim and obs.

Annual Analysis -- For flow, total nitrogen, total phosphorus and chlorophyll a annual boxplots are presented for the simulation period for each station. The black dots represent the measured data, the blue box and whiskers represent the model simulated results. The whiskers represent the range of the model simulated results. Average model simulated results are represented by a green dot, average measured data is represented by a red diamond.

For chlorophyll a, total nitrogen and total phosphorus annual boxplot figures are present to illustrate model performance year by year.

Dam Outflow

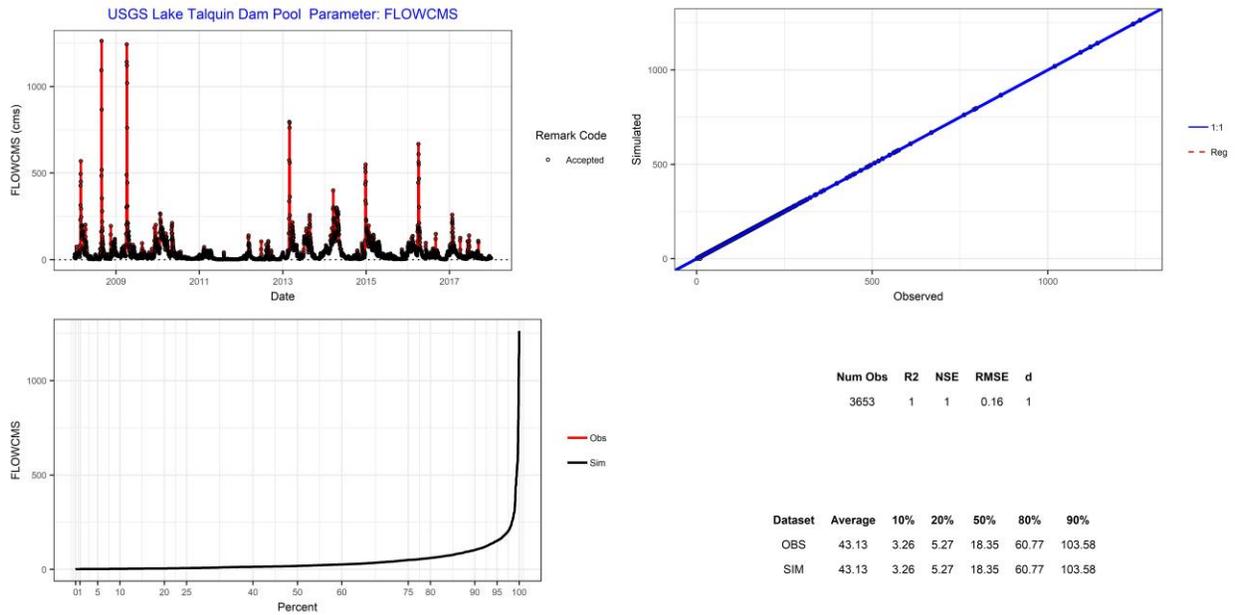


Figure 153 Lake Talquin Outflow at the Dam

Water Surface Elevation

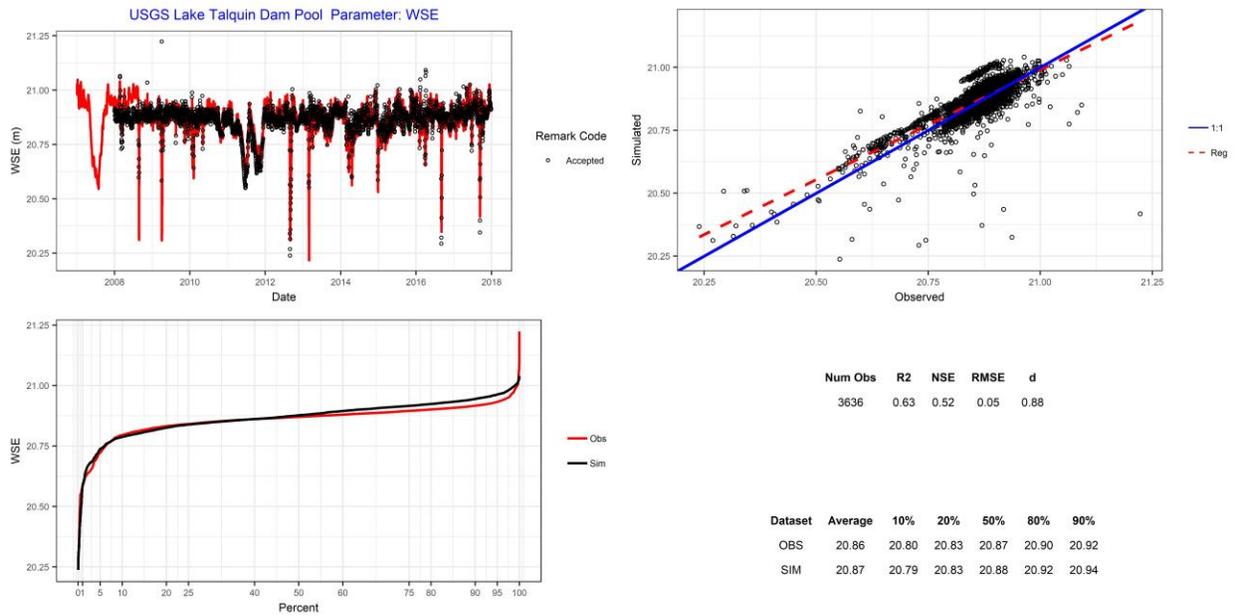
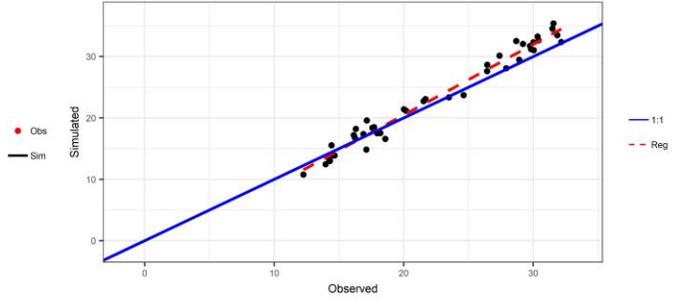
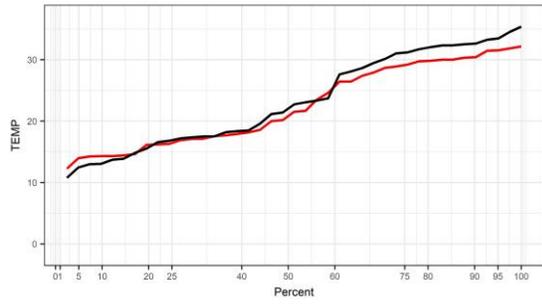
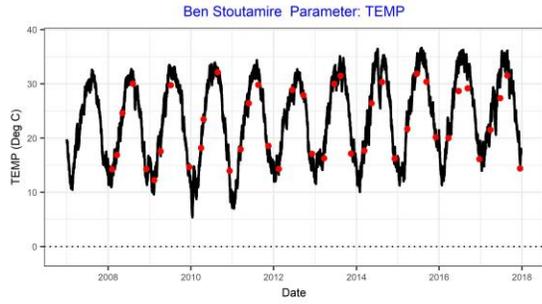


Figure 154 Lake Talquin Water Surface Elevation

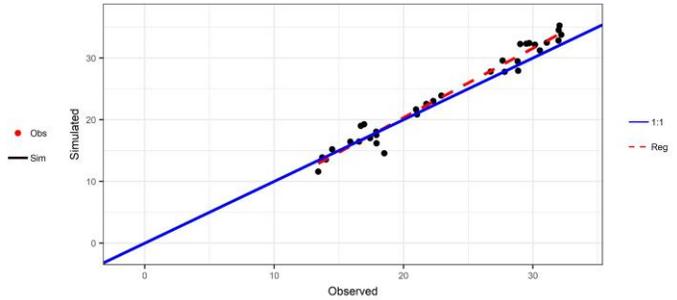
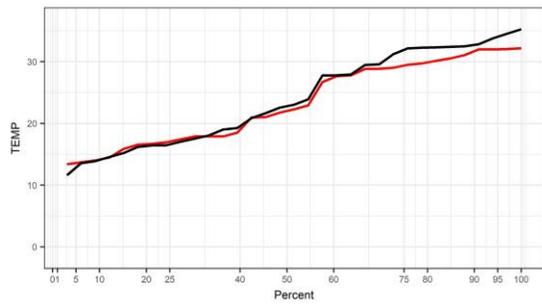
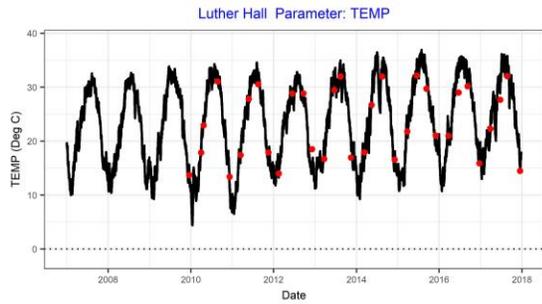
Water Temperature



Num Obs	R2	NSE	RMSE	d
41	0.98	0.95	1.77	0.98

Dataset	Average	10%	20%	50%	80%	90%
OBS	22.48	14.32	16.21	21.53	29.83	30.41
SIM	23.34	13.72	16.58	22.72	32.06	32.64

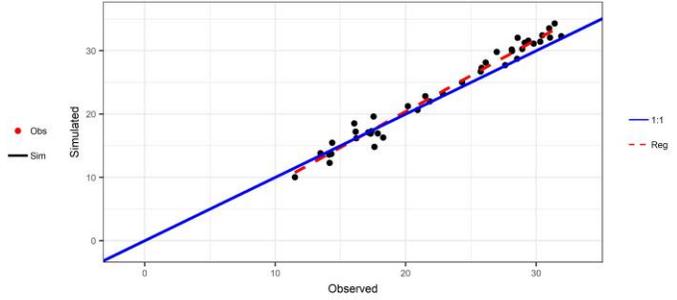
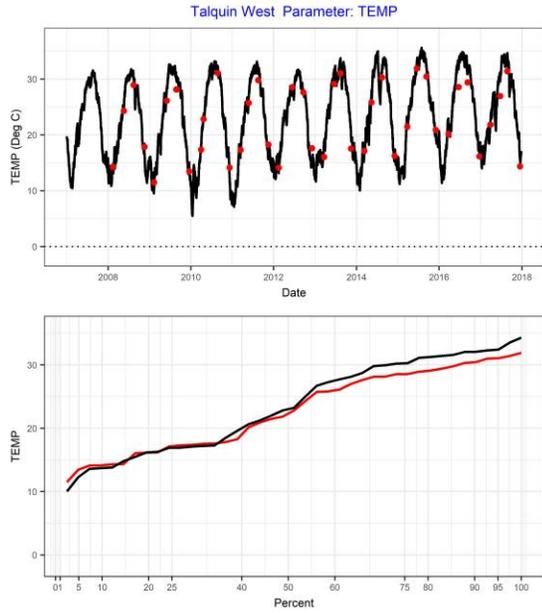
Figure 155 Water Temperature – Lake Talquin at Ben Stoutamire



Num Obs	R2	NSE	RMSE	d
33	0.97	0.95	1.7	0.99

Dataset	Average	10%	20%	50%	80%	90%
OBS	23.29	14.77	16.80	22.30	29.98	31.80
SIM	24.02	14.70	16.46	23.05	32.30	32.76

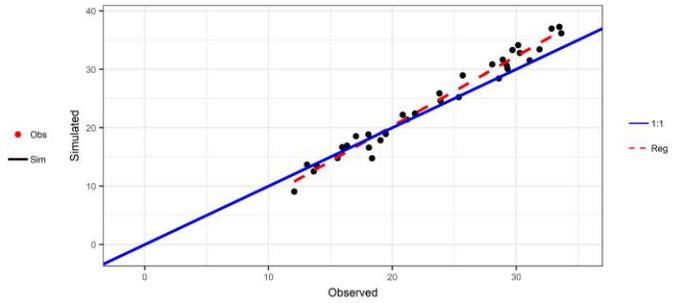
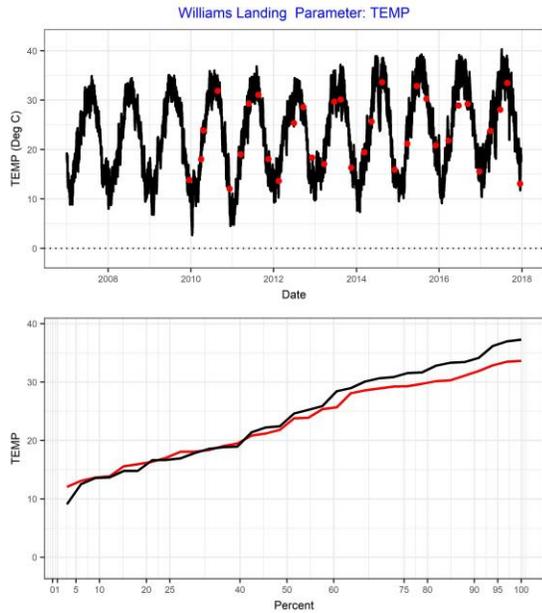
Figure 156 Water Temperature – Lake Talquin at Luther Hall



Num Obs	R2	NSE	RMSE	d
41	0.98	0.95	1.6	0.99

Dataset	Average	10%	20%	50%	80%	90%
OBS	22.78	14.30	16.22	22.84	29.12	30.46
SIM	23.56	13.81	16.30	23.23	31.27	32.08

Figure 157 Water Temperature – Lake Talquin at Talquin West



Num Obs	R2	NSE	RMSE	d
33	0.97	0.93	2.09	0.98

Dataset	Average	10%	20%	50%	80%	90%
OBS	23.35	14.21	16.63	23.80	29.97	31.73
SIM	24.28	13.90	16.64	24.62	32.35	34.01

Figure 158 Water Temperature – Lake Talquin at Williams landing

Total Nitrogen

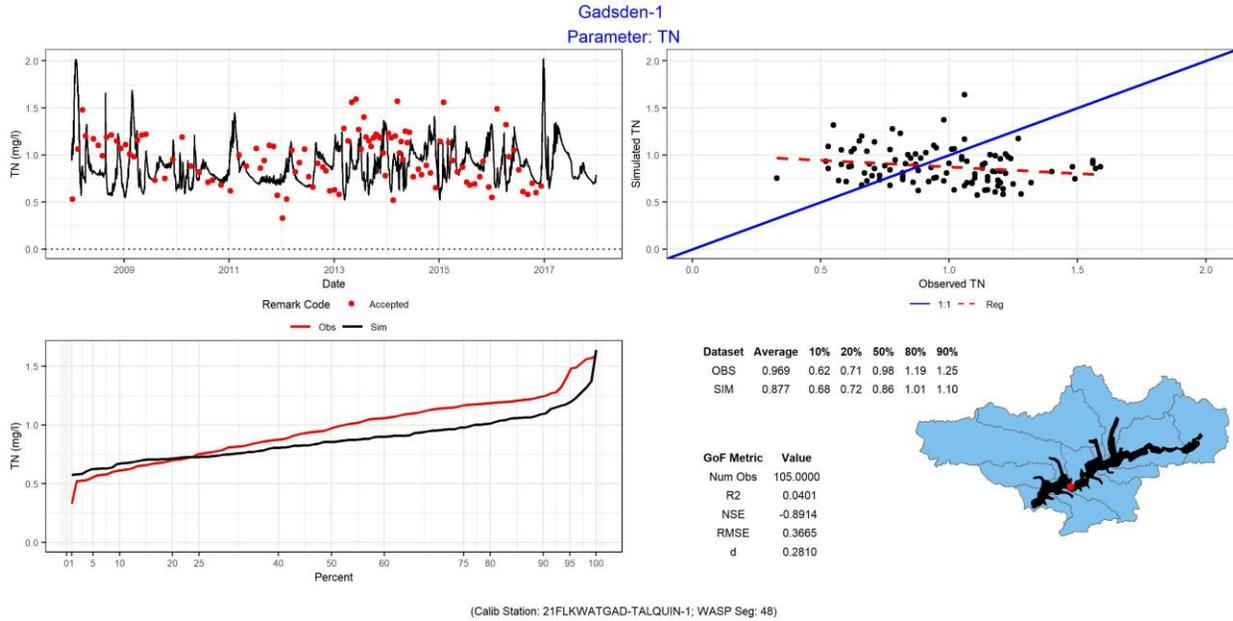


Figure 159 Total Nitrogen – Lake Talquin at Gadsden 1

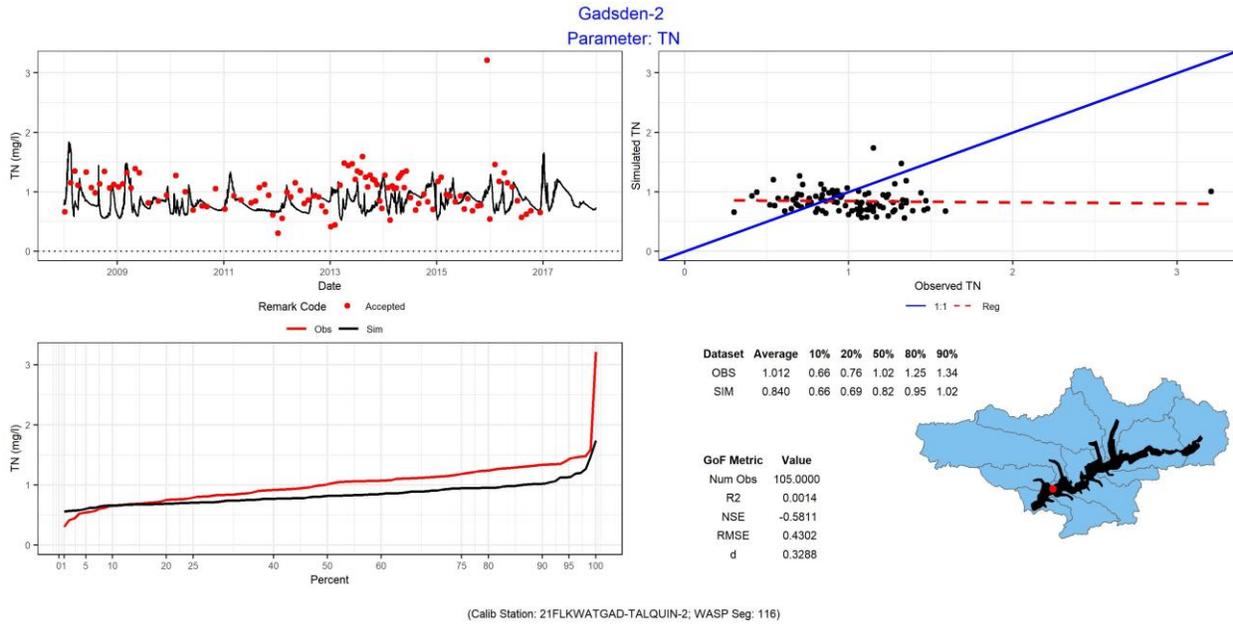
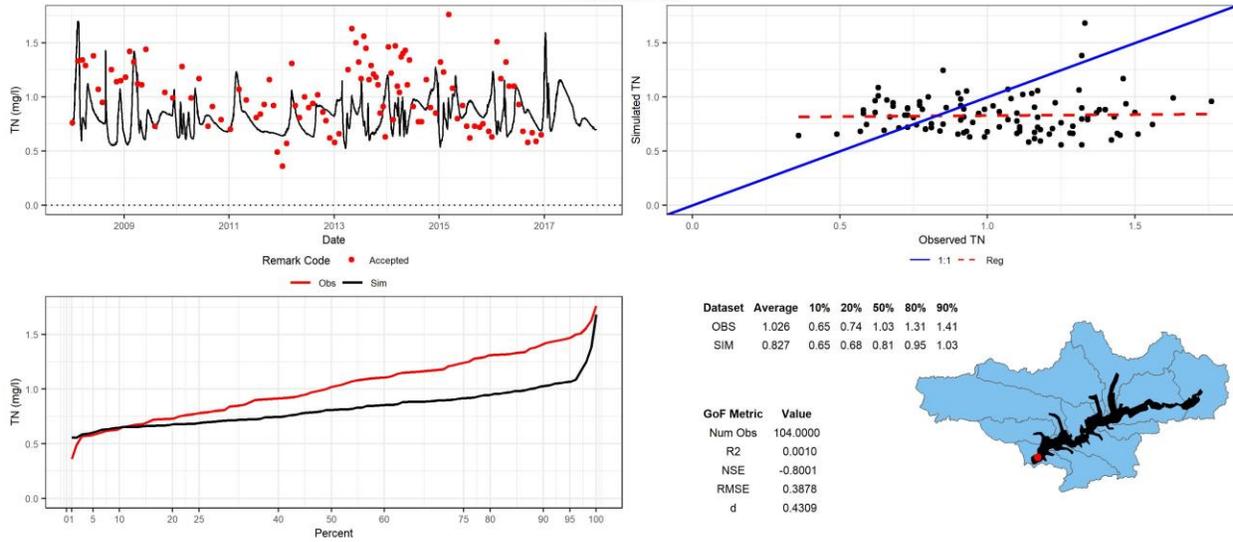


Figure 160 Total Nitrogen – Lake Talquin at Gadsden 2

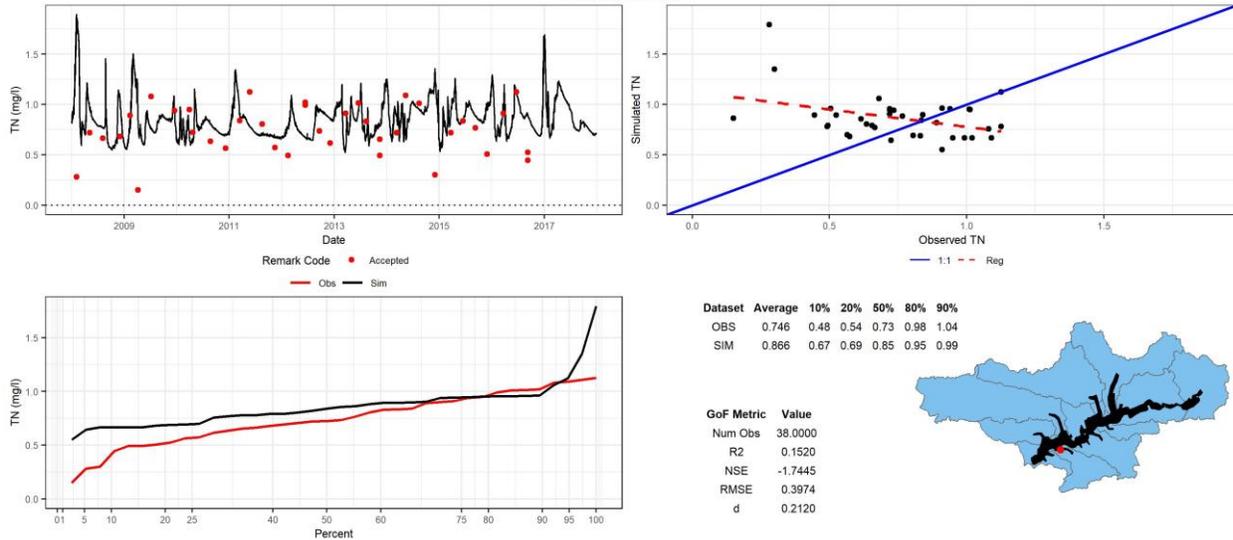
Gadsden-3
Parameter: TN



(Calib Station: 21FLKWATGAD-TALQUIN-3; WASP Seg: 39)

Figure 161 Total Nitrogen – Lake Talquin at Gadsden 3

Ben Stoutamire
Parameter: TN



(Calib Station: 21FLEONLCO3040784610; WASP Seg: 46)

Figure 162 Total Nitrogen – Lake Talquin at Ben Stoutamire

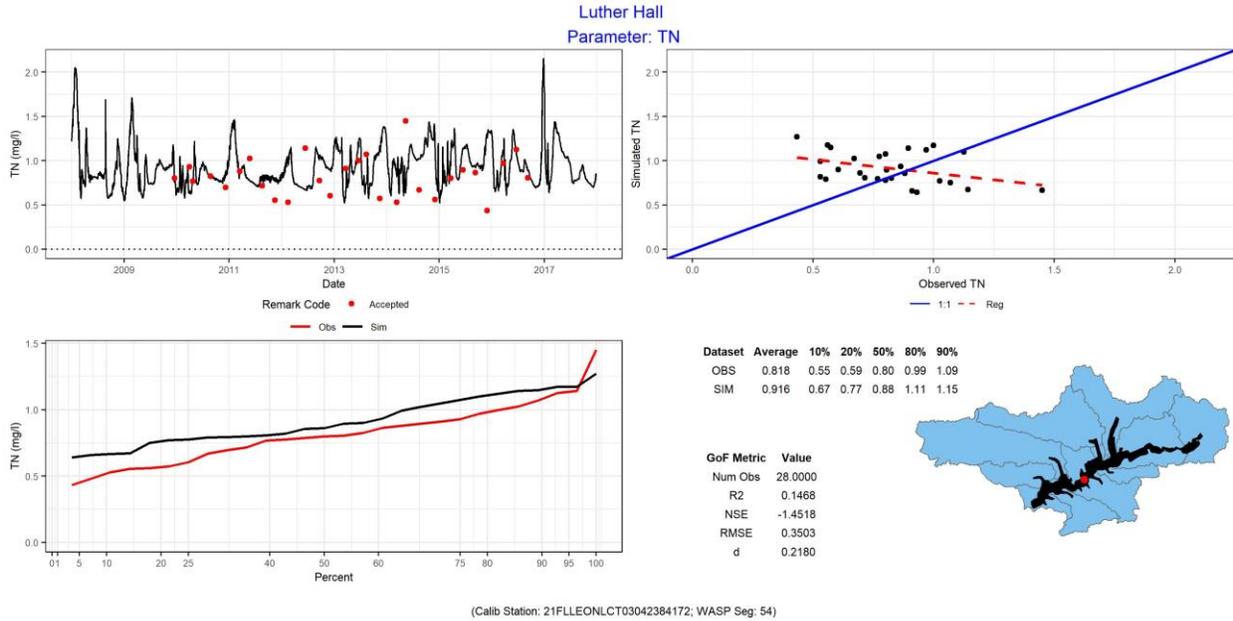


Figure 163 Total Nitrogen – Lake Talquin at Luther Hall

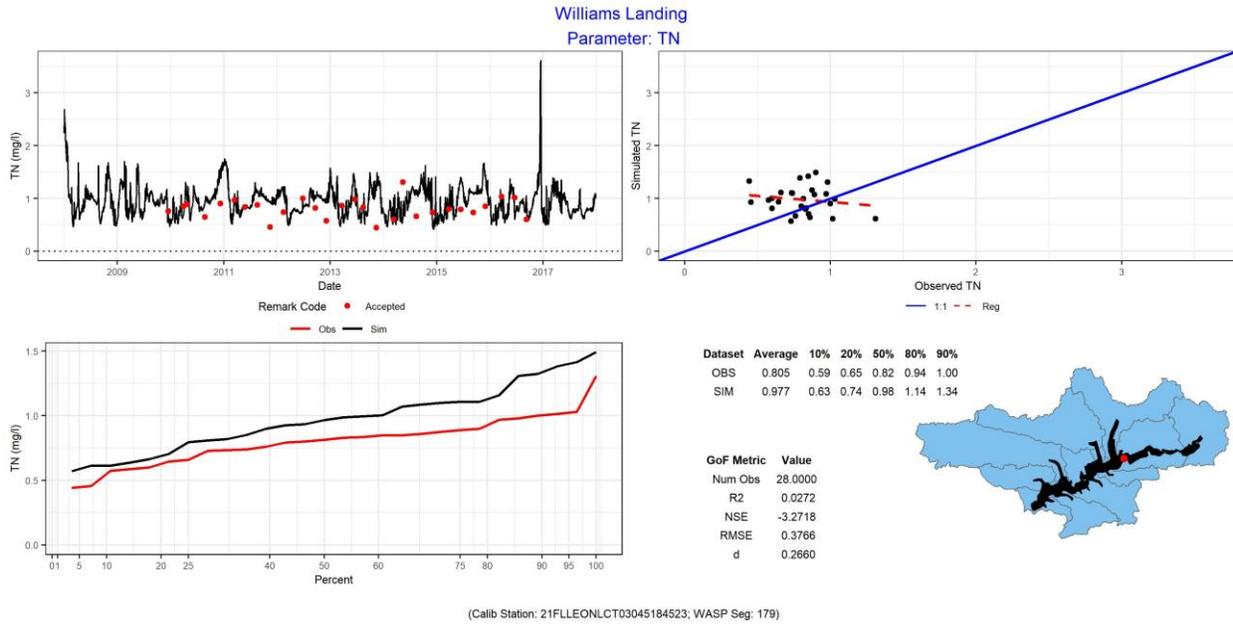


Figure 164 Total Nitrogen – Lake Talquin at Williams Landing

Little River Arm
Parameter: TN

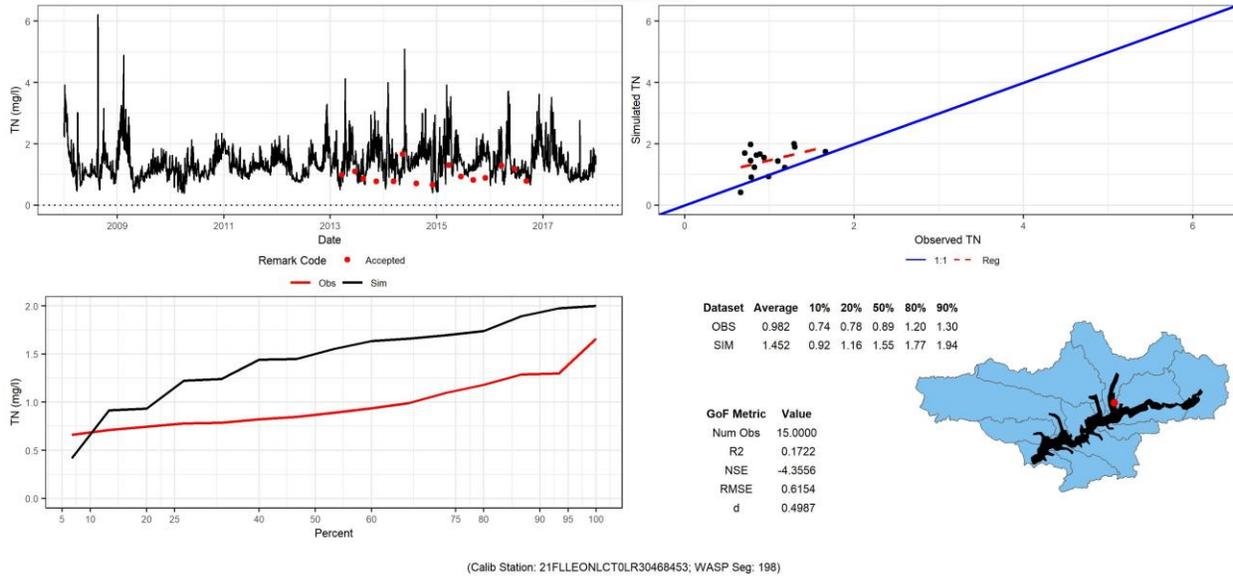


Figure 165 Total Nitrogen – Lake Talquin at Little River Arm

Talquin West
Parameter: TN

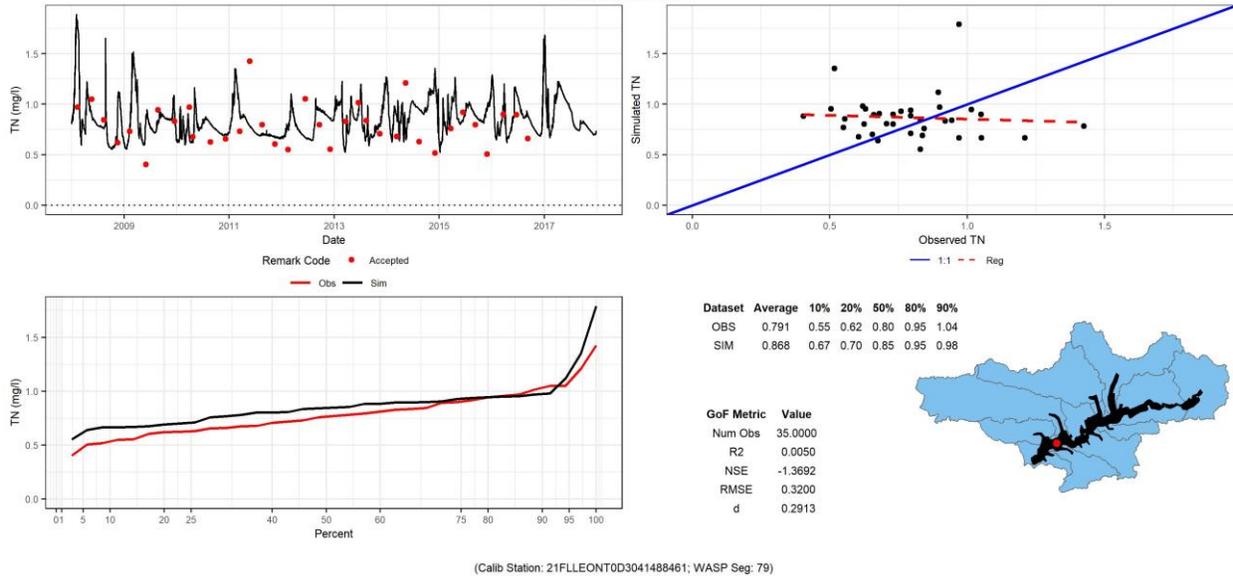


Figure 166 Total Nitrogen – Lake Talquin at Talquin West

TN (Annual Comparison)

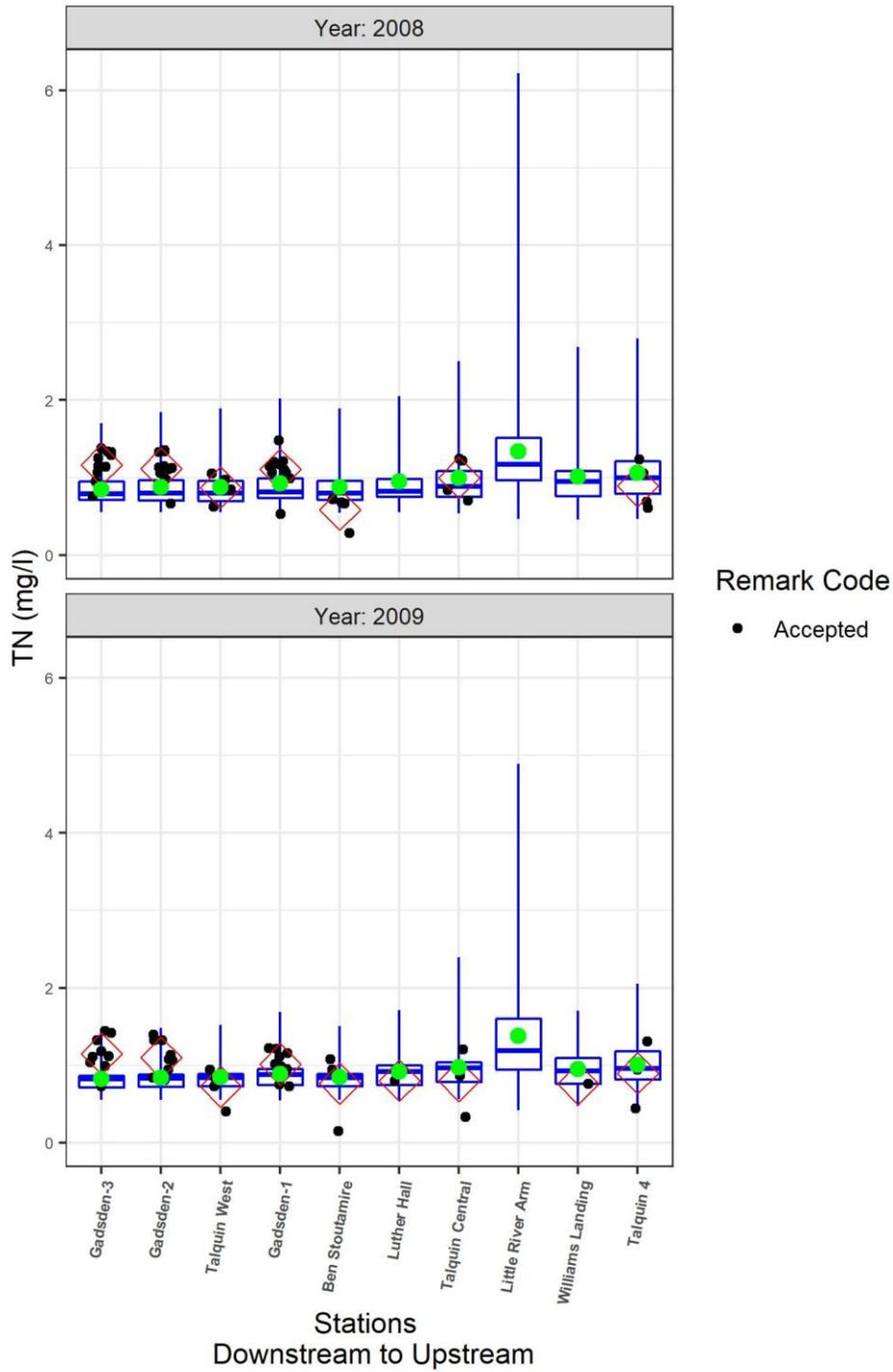


Figure 167 Lake Talquin Total Nitrogen Comparison Observed vs. Simulated 2008-2009

TN (Annual Comparison)

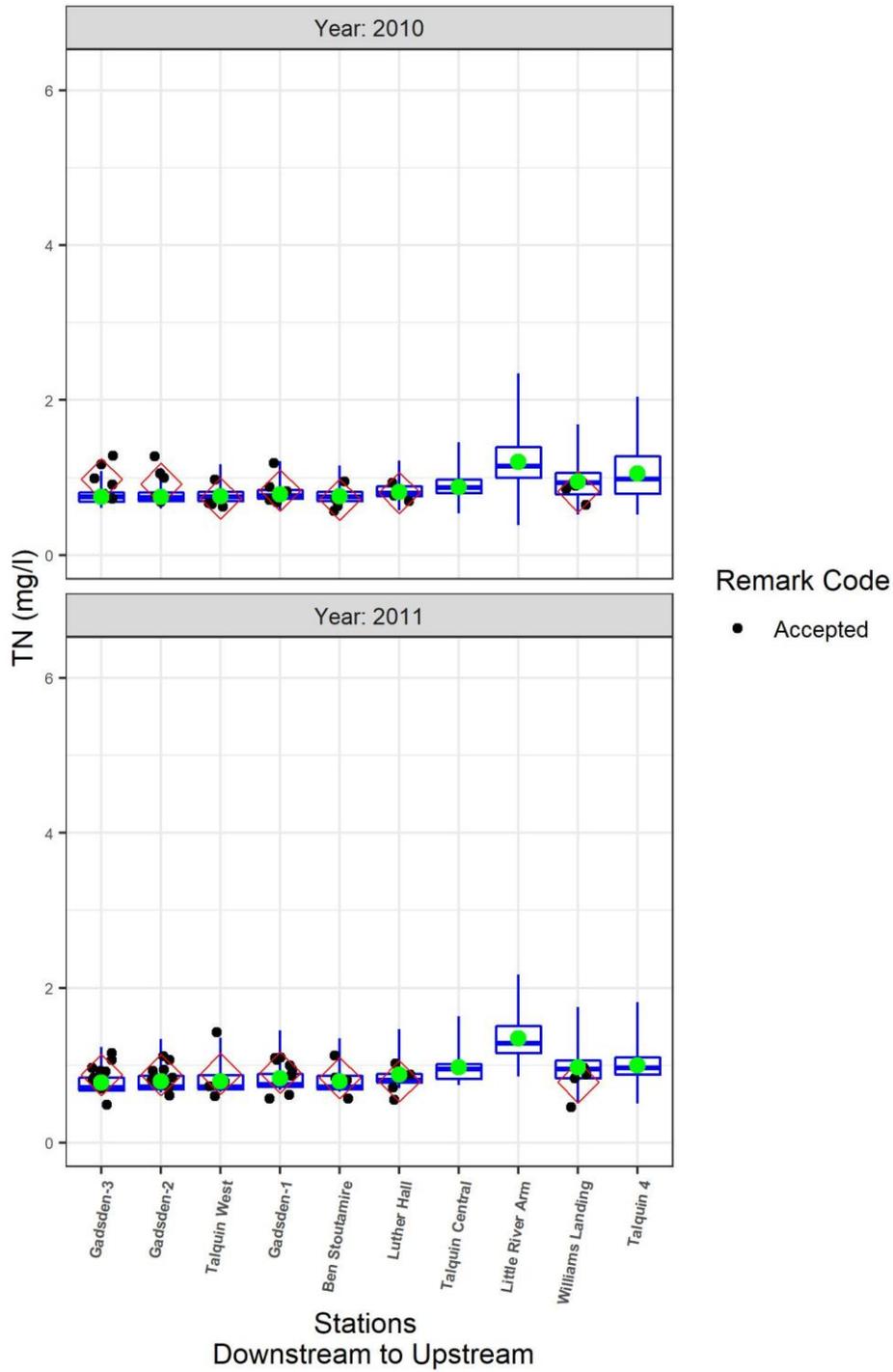


Figure 168 Lake Talquin Total Nitrogen Comparison Observed vs. Simulated 2010 - 2011

TN (Annual Comparison)

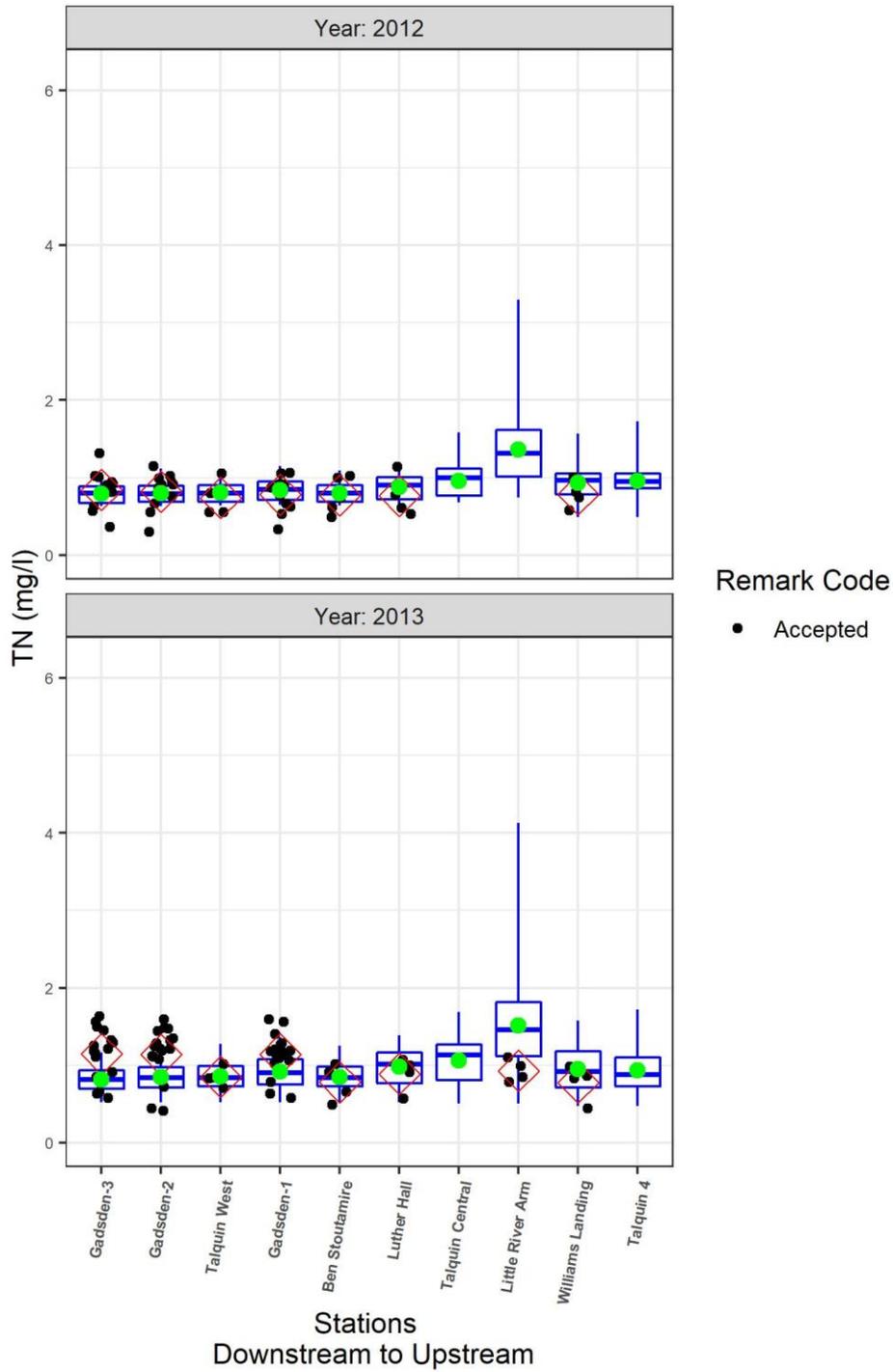


Figure 169 Lake Talquin Total Nitrogen Comparison Observed vs. Simulated 2012 - 2013

TN (Annual Comparison)

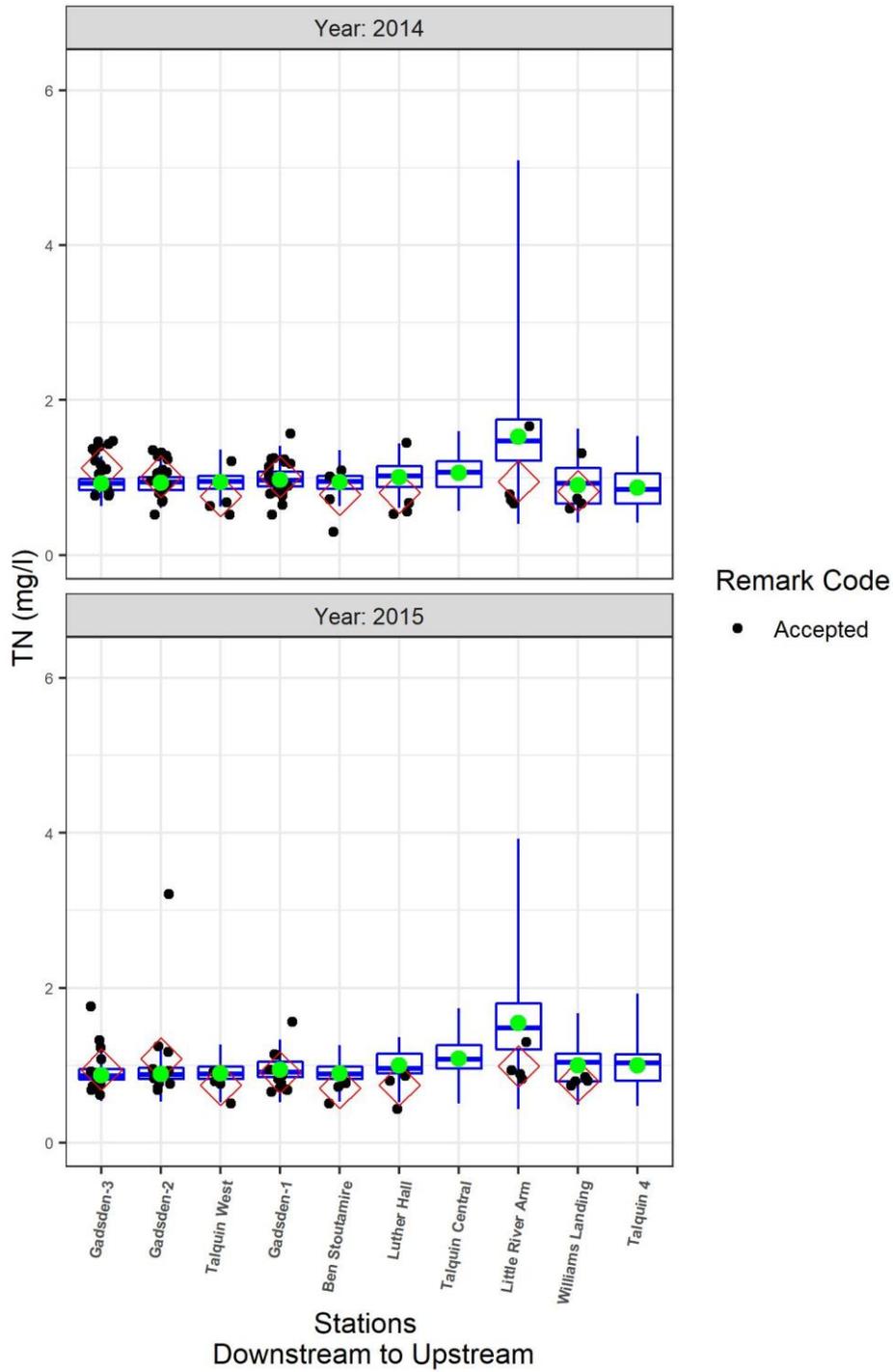


Figure 170 Lake Talquin Total Nitrogen Comparison Observed vs. Simulated 2014 -2015

TN (Annual Comparison)

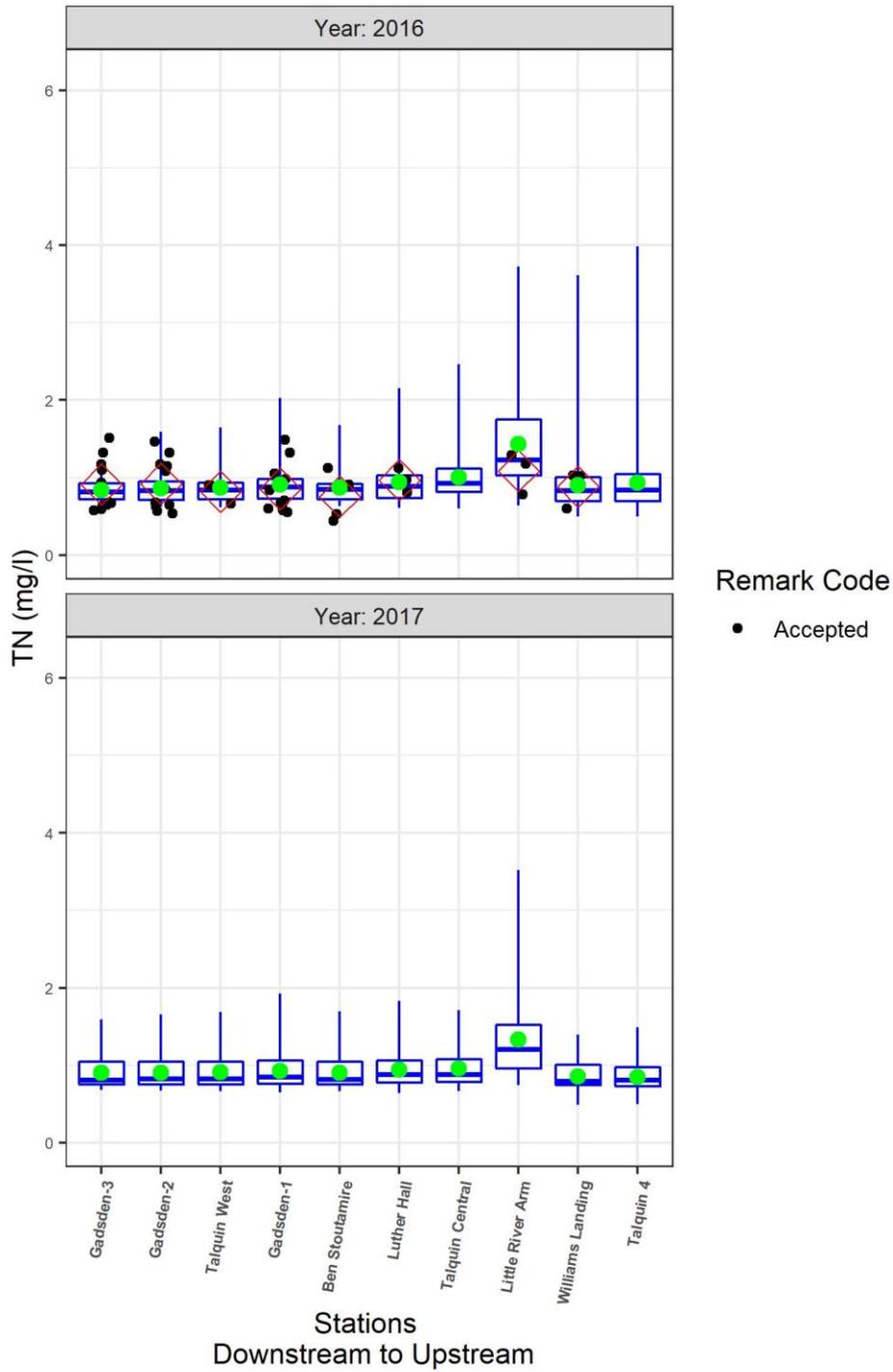


Figure 171 Lake Talquin Total Nitrogen Comparison Observed vs. Simulated 2016 - 2017

Ammonia

Ben Stoutamire
Parameter: NH4

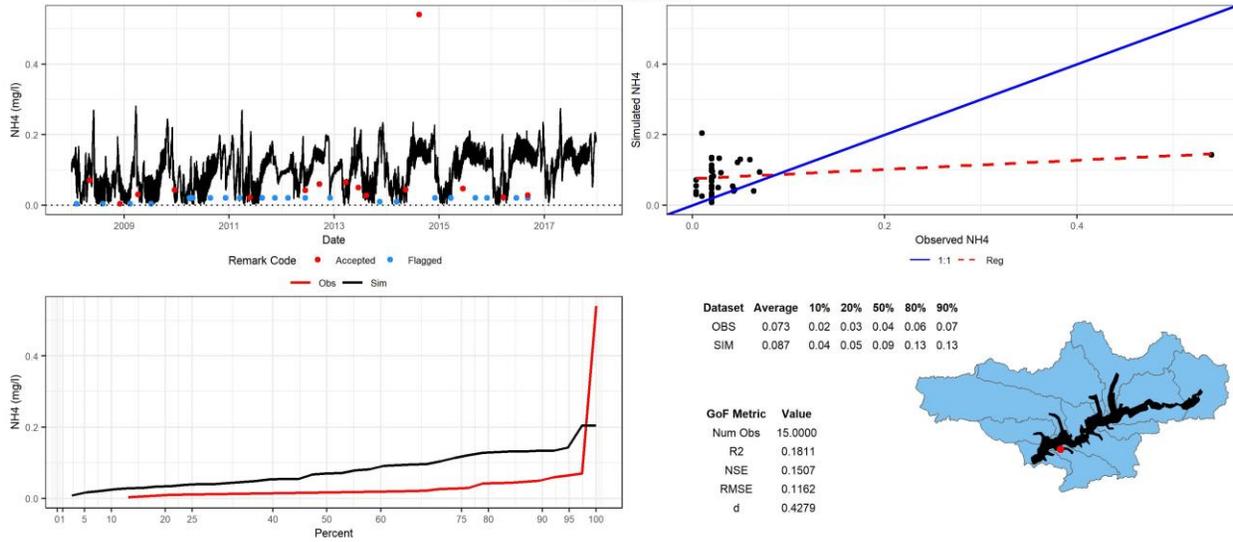


Figure 172 Total Nitrogen – Lake Talquin at Ben Stoutamire

Luther Hall
Parameter: NH4

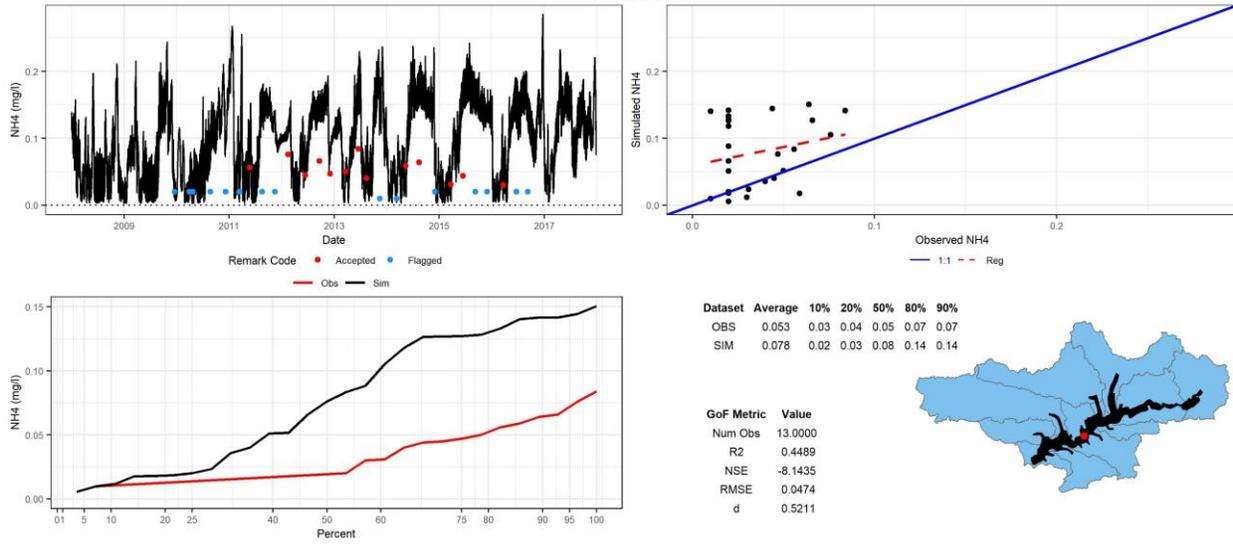
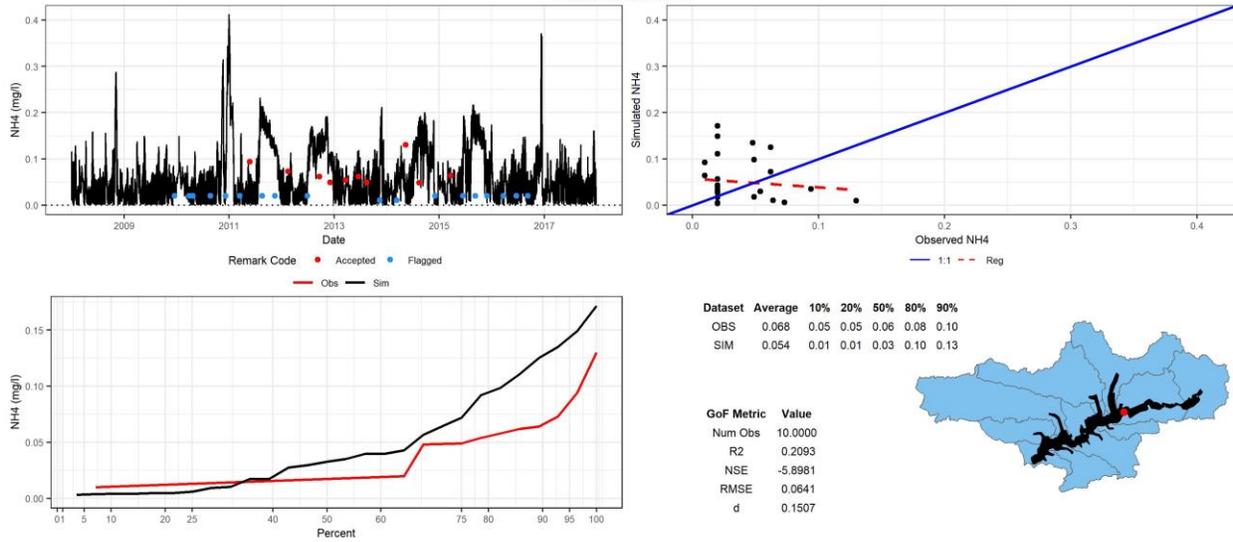


Figure 173 Total Nitrogen – Lake Talquin at Luther Hall

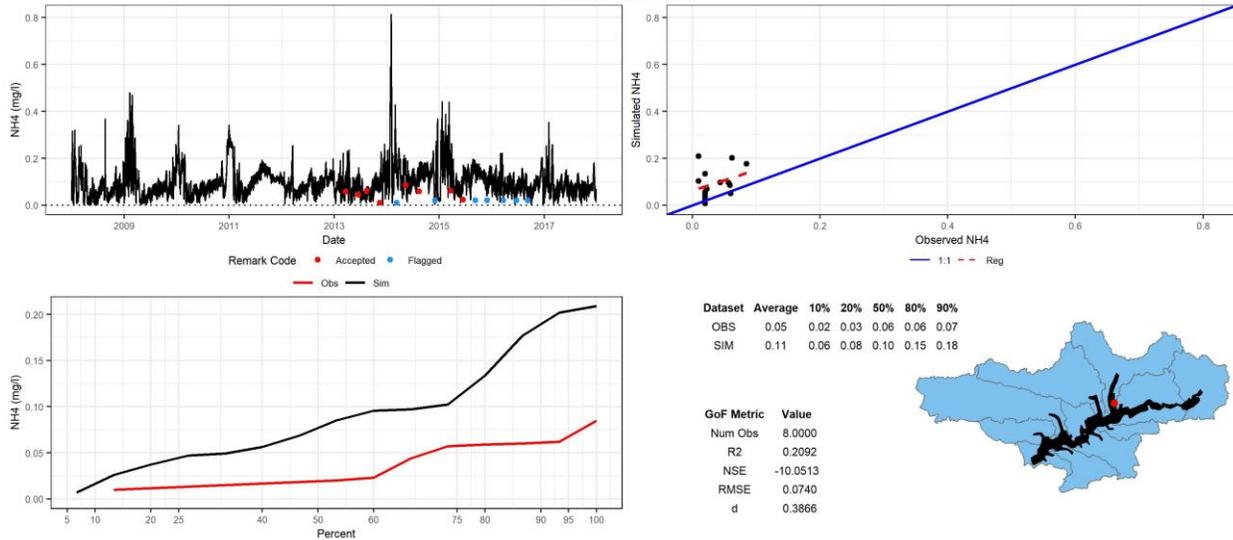
Williams Landing
Parameter: NH4



(Calib Station: 21FLLEONLCT03045184523; WASP Seg: 179)

Figure 174 Total Nitrogen – Lake Talquin at Williams Landing

Little River Arm
Parameter: NH4



(Calib Station: 21FLLEONLCTLR30468453; WASP Seg: 198)

Figure 175 Total Nitrogen – Lake Talquin at Little River Arm

Talquin West
Parameter: NH4

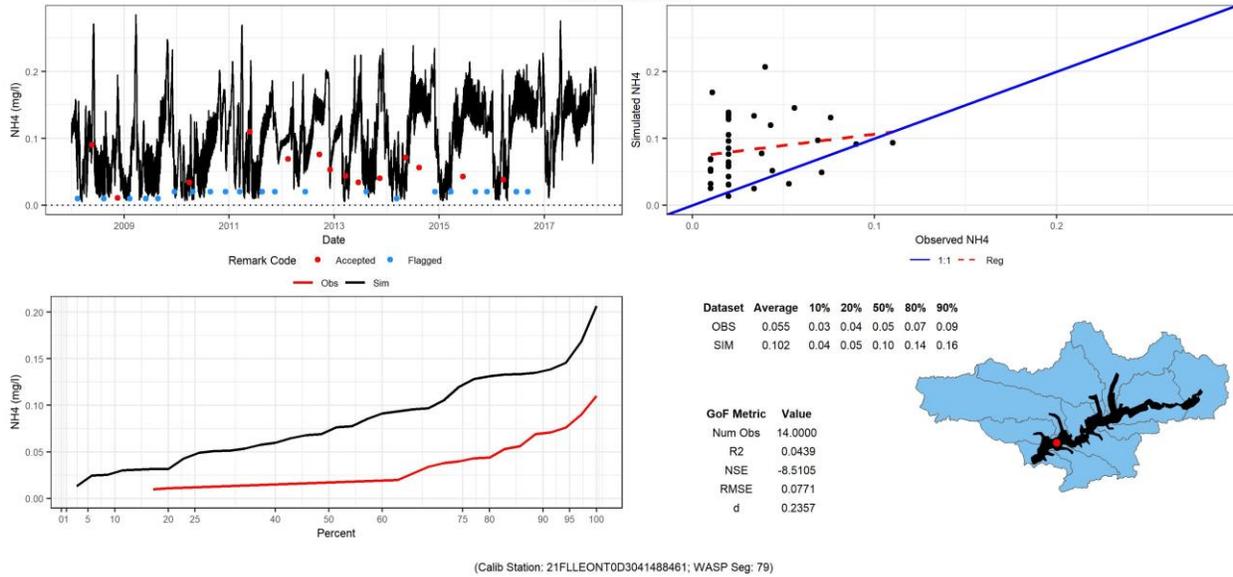


Figure 176 Total Nitrogen – Lake Talquin at Talquin West

Nitrate

Ben Stoutamire
Parameter: NO3O2

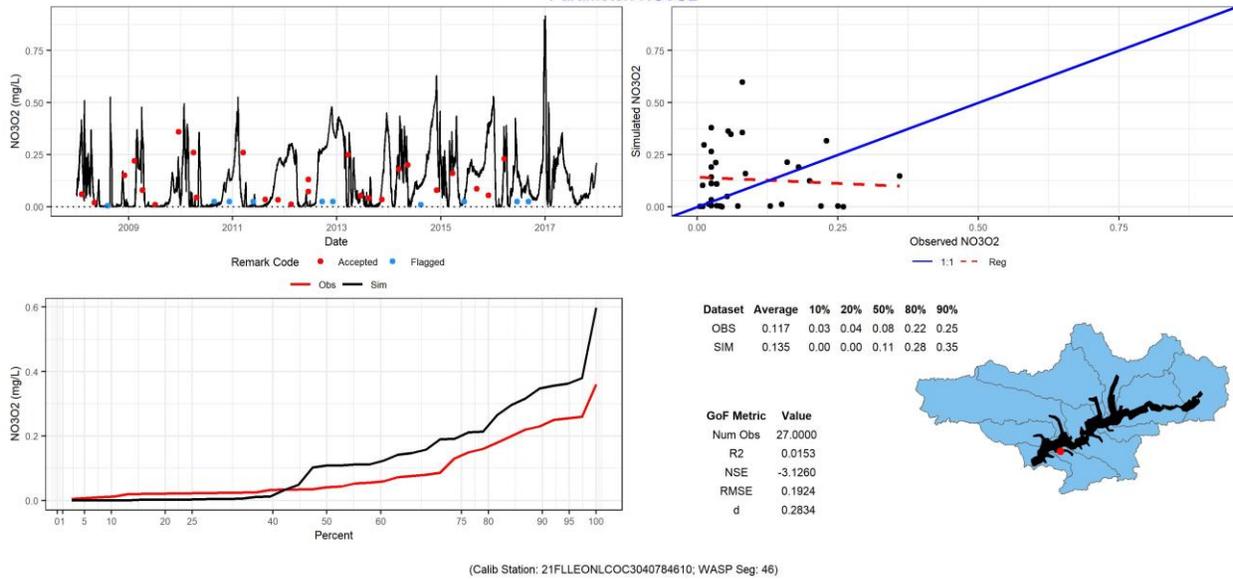


Figure 177 Nitrate – Lake Talquin at Ben Stoutamire

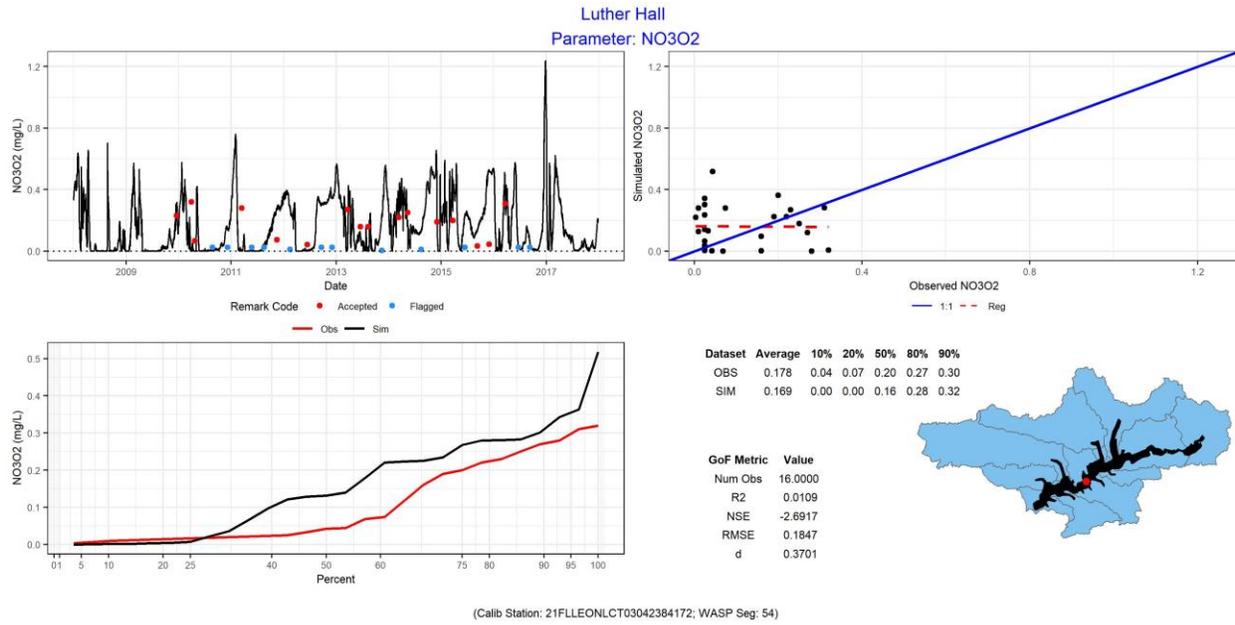


Figure 178 Nitrate - Lake Talquin at Luther Hall

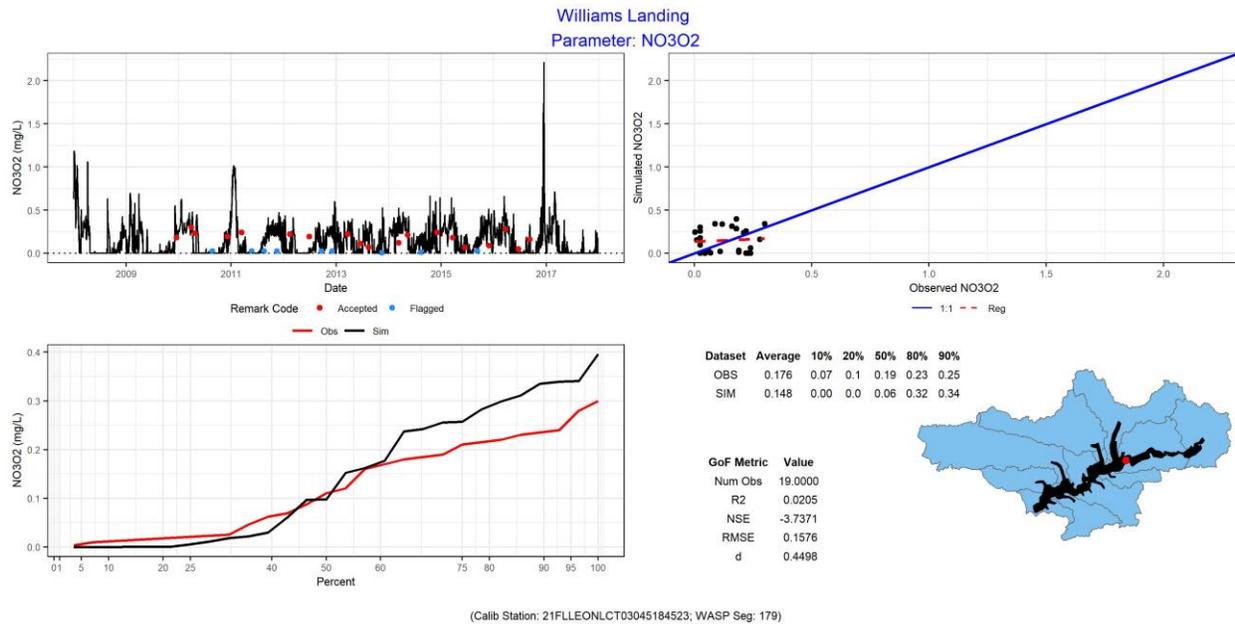


Figure 179 Nitrate – Lake Talquin at Williams Landing

Little River Arm
Parameter: NO3O2

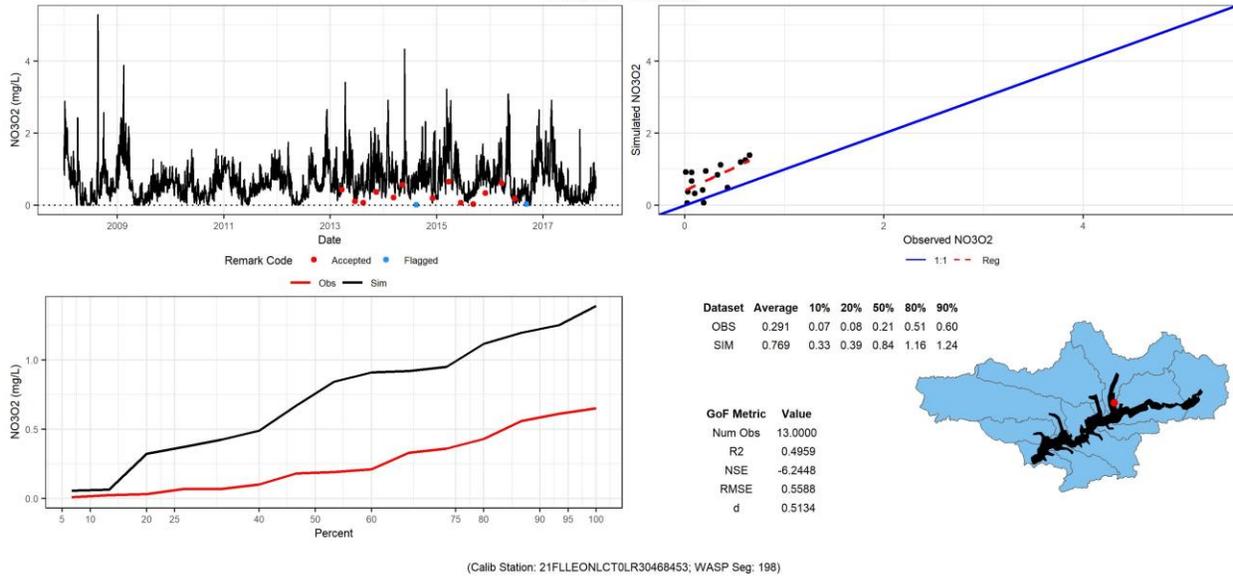


Figure 180 Nitrate – Lake Talquin at Little River Arm

Talquin West
Parameter: NO3O2

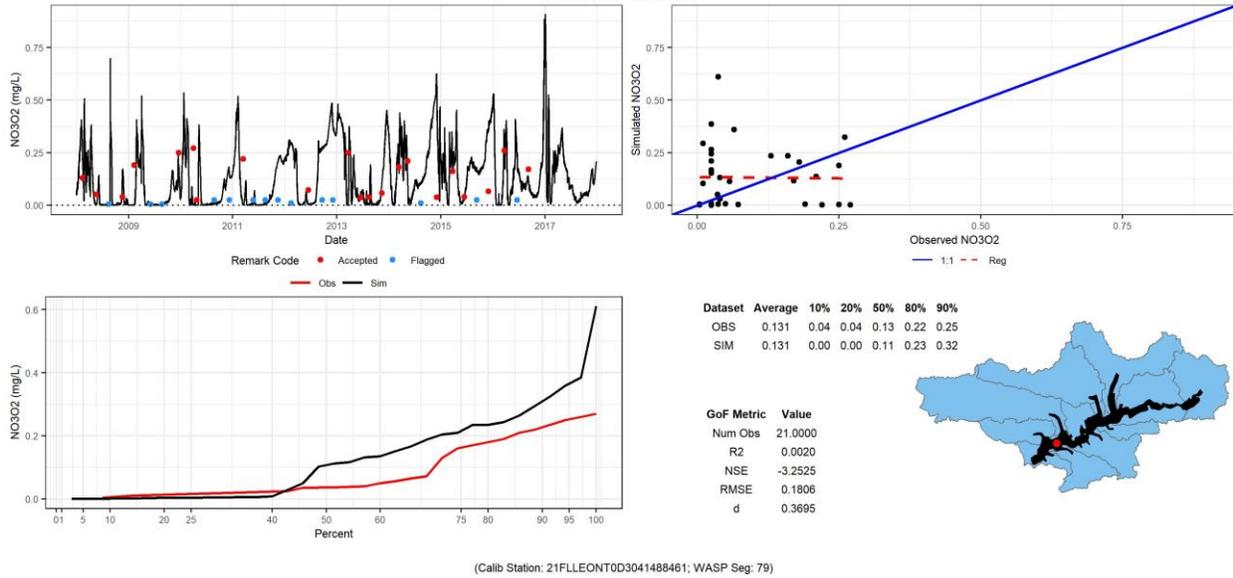


Figure 181 Nitrate – Lake Talquin at Talquin West

Total Phosphorus

Gadsden-1
Parameter: TP

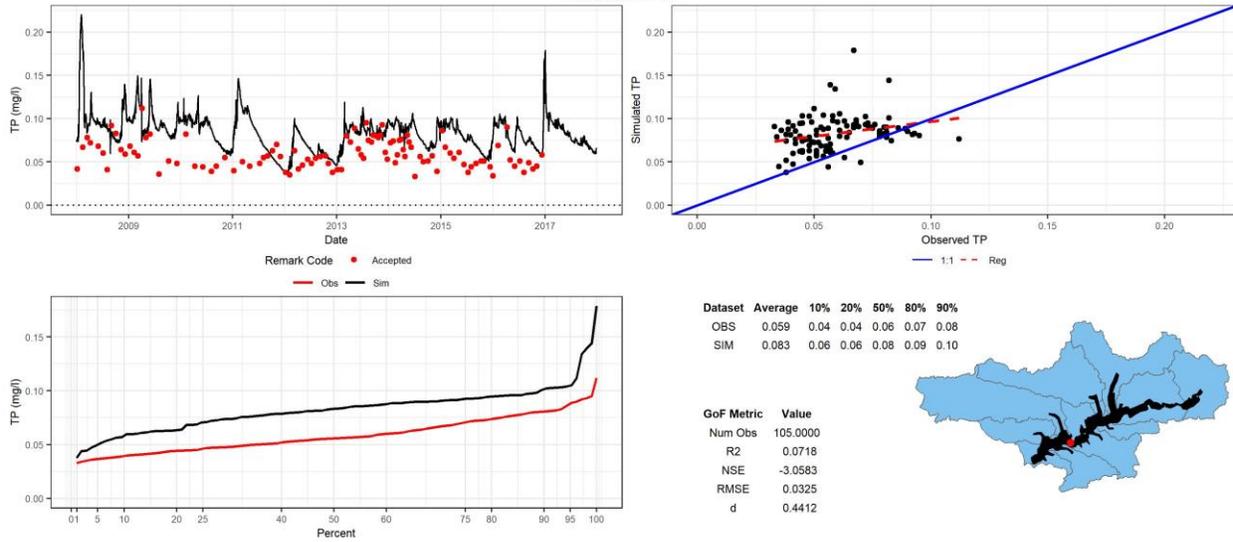


Figure 182 Total Phosphorus – Lake Talquin at Gadsden 1

Gadsden-2
Parameter: TP

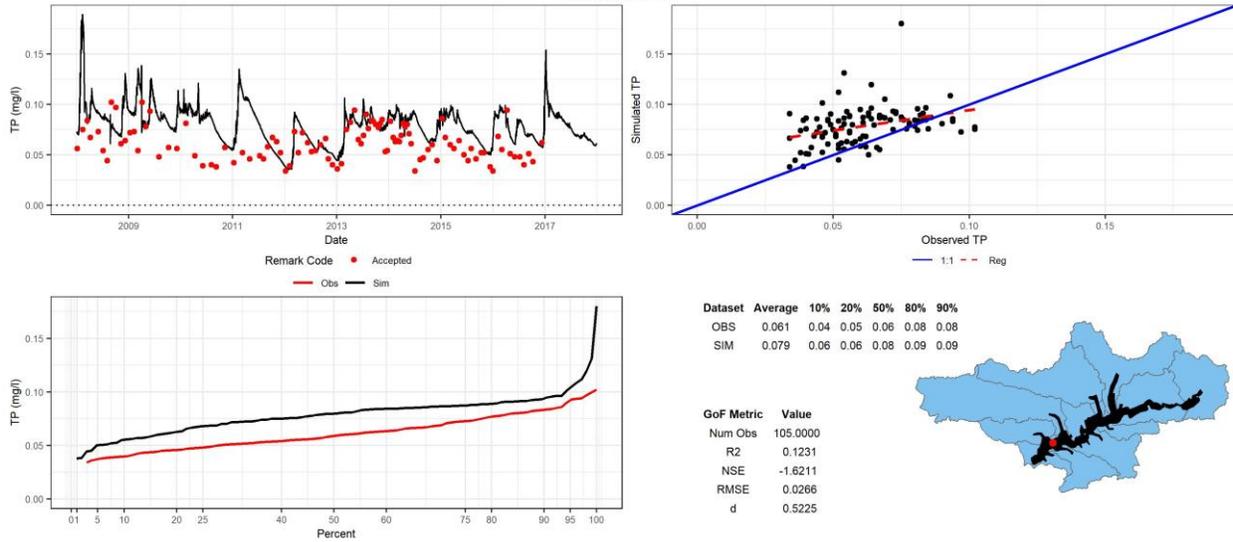


Figure 183 Total Phosphorus – Lake Talquin at Gadsden 2

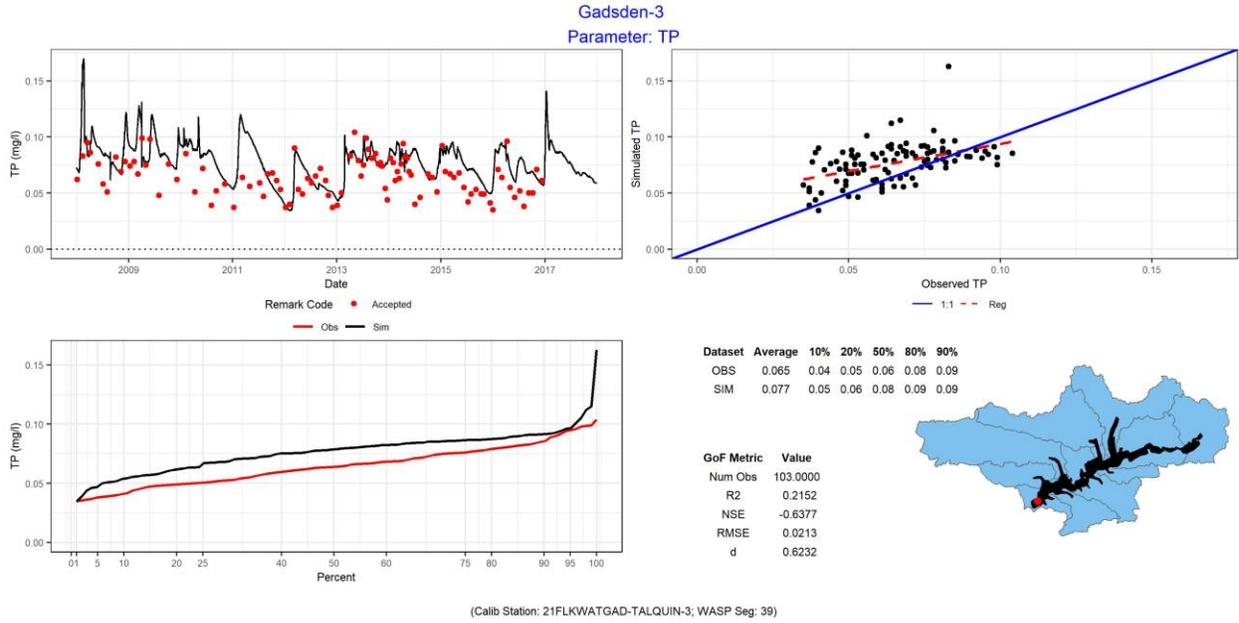


Figure 184 Total Phosphorus – Lake Talquin at Gadsden 3

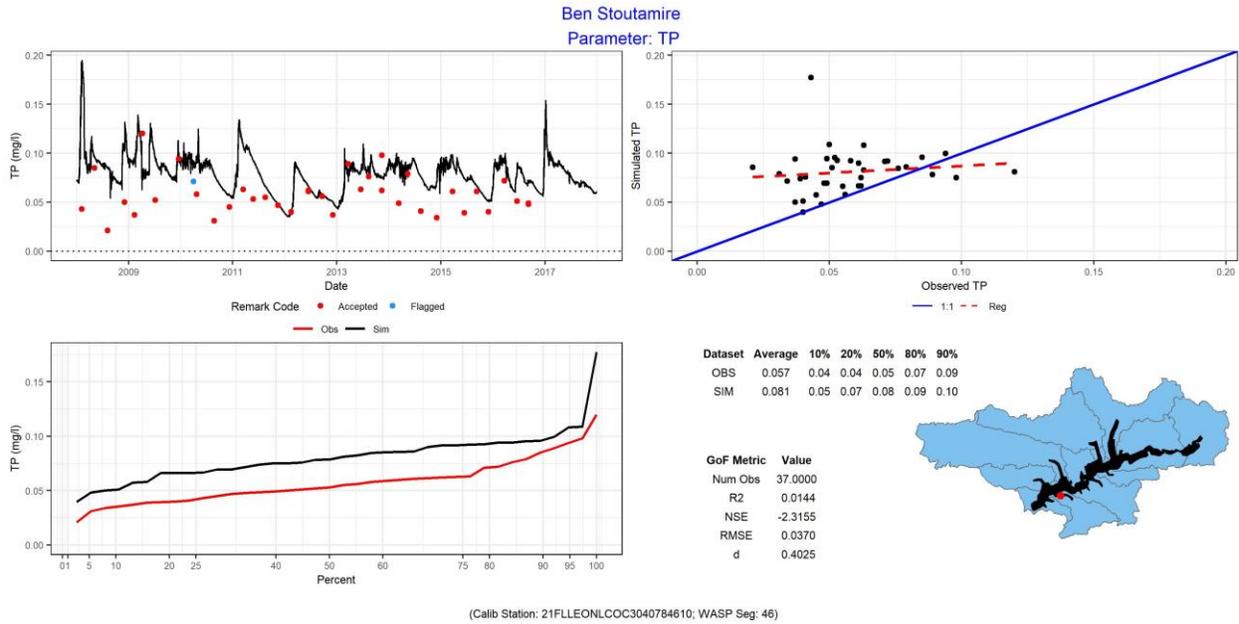


Figure 185 Total Phosphorus – Lake Talquin at Ben Stoutamire

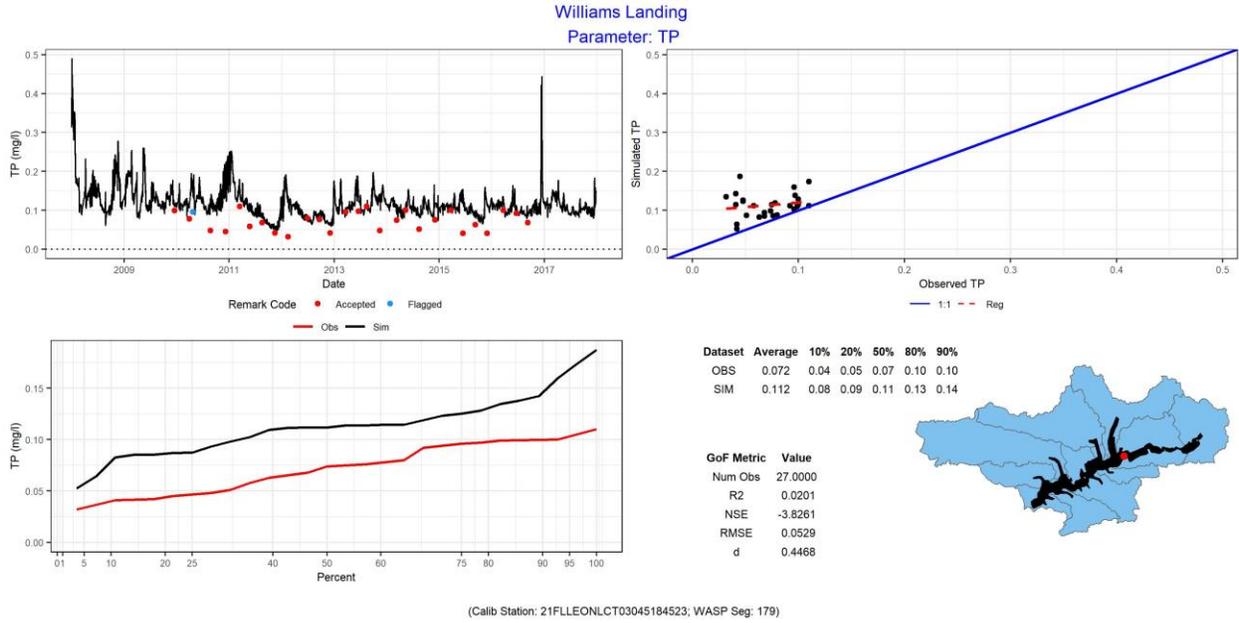


Figure 186 Total Phosphorus – Lake Talquin at Williams Landing

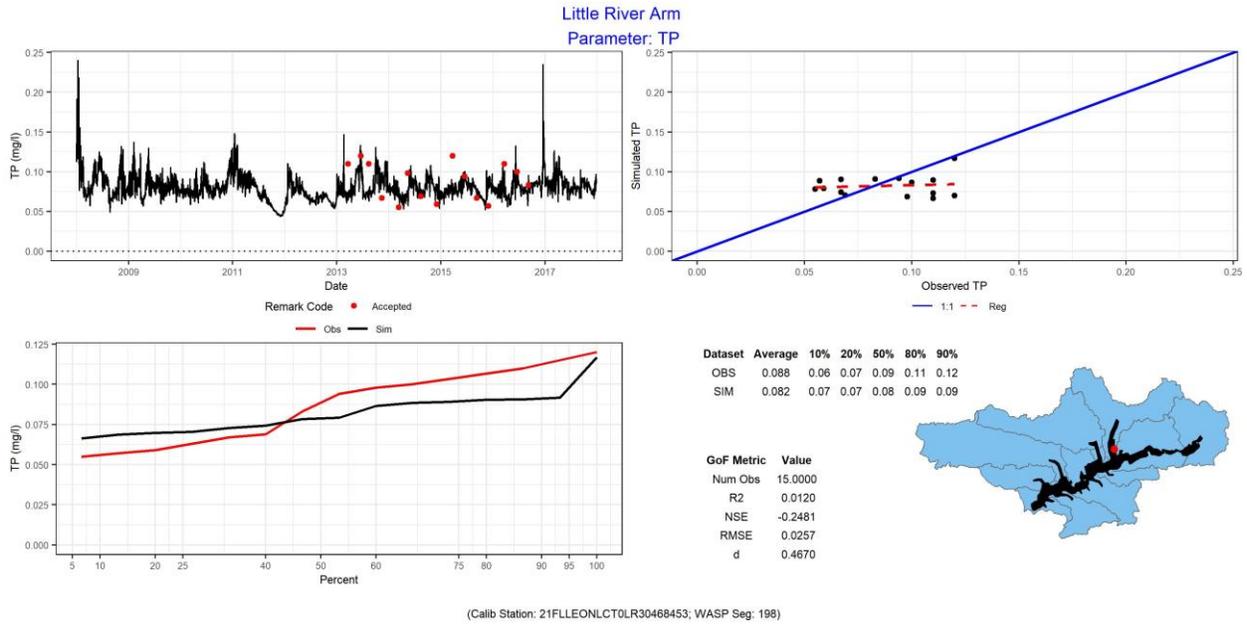


Figure 187 Total Phosphorus – Lake Talquin at Little River Arm

Talquin West
Parameter: TP

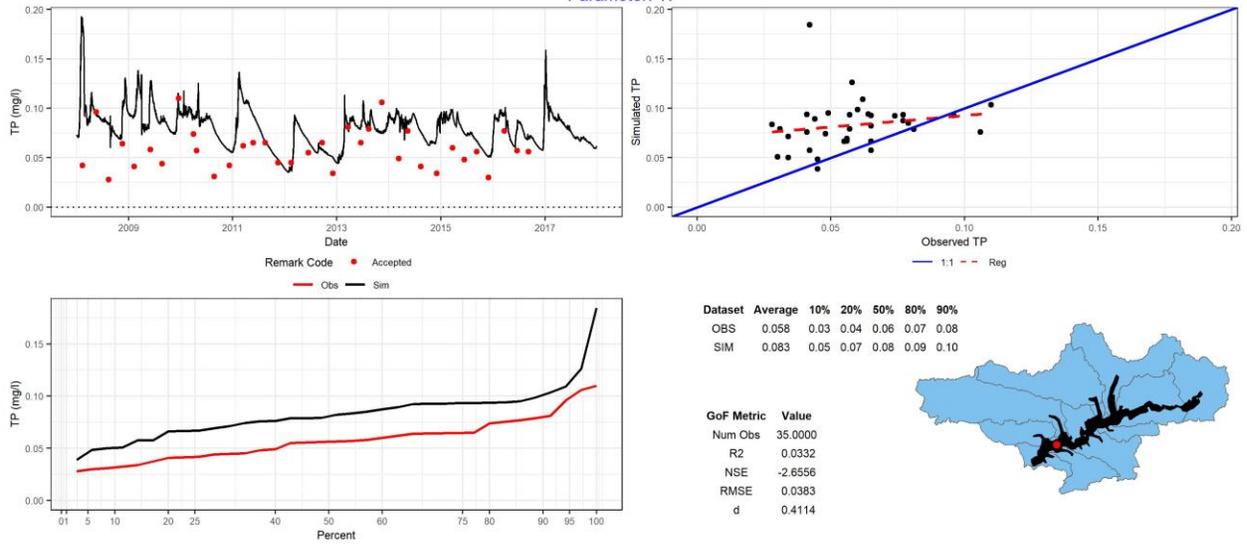


Figure 188 Total Phosphorus – Lake Talquin at Talquin West

TP (Annual Comparison)

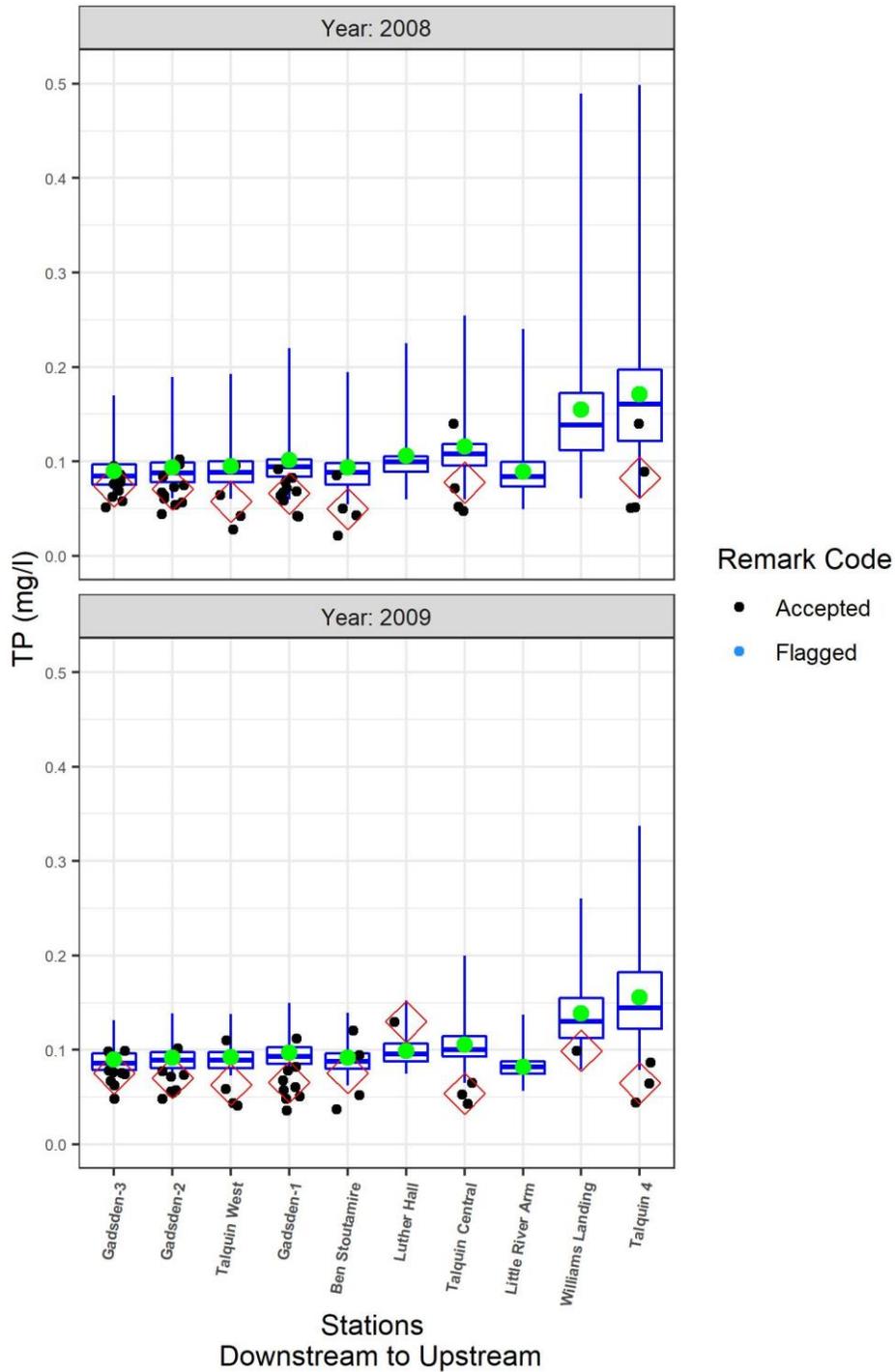


Figure 189 Lake Talquin Total Phosphorus Comparison Observed vs. Simulated 2008-2009

TP (Annual Comparison)

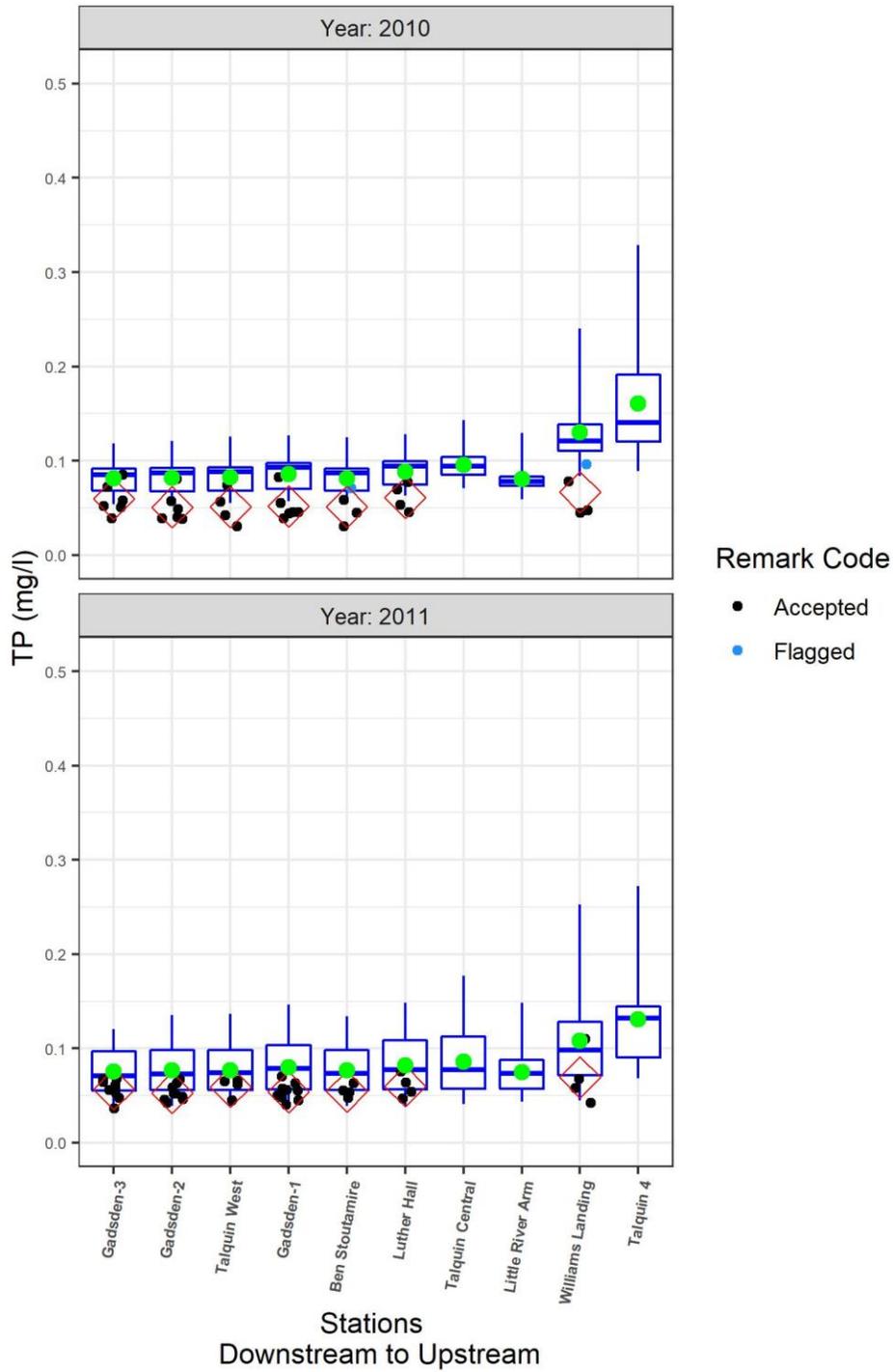


Figure 190 Lake Talquin Total Phosphorus Comparison Observed vs. Simulated 2010 - 2011

TP (Annual Comparison)

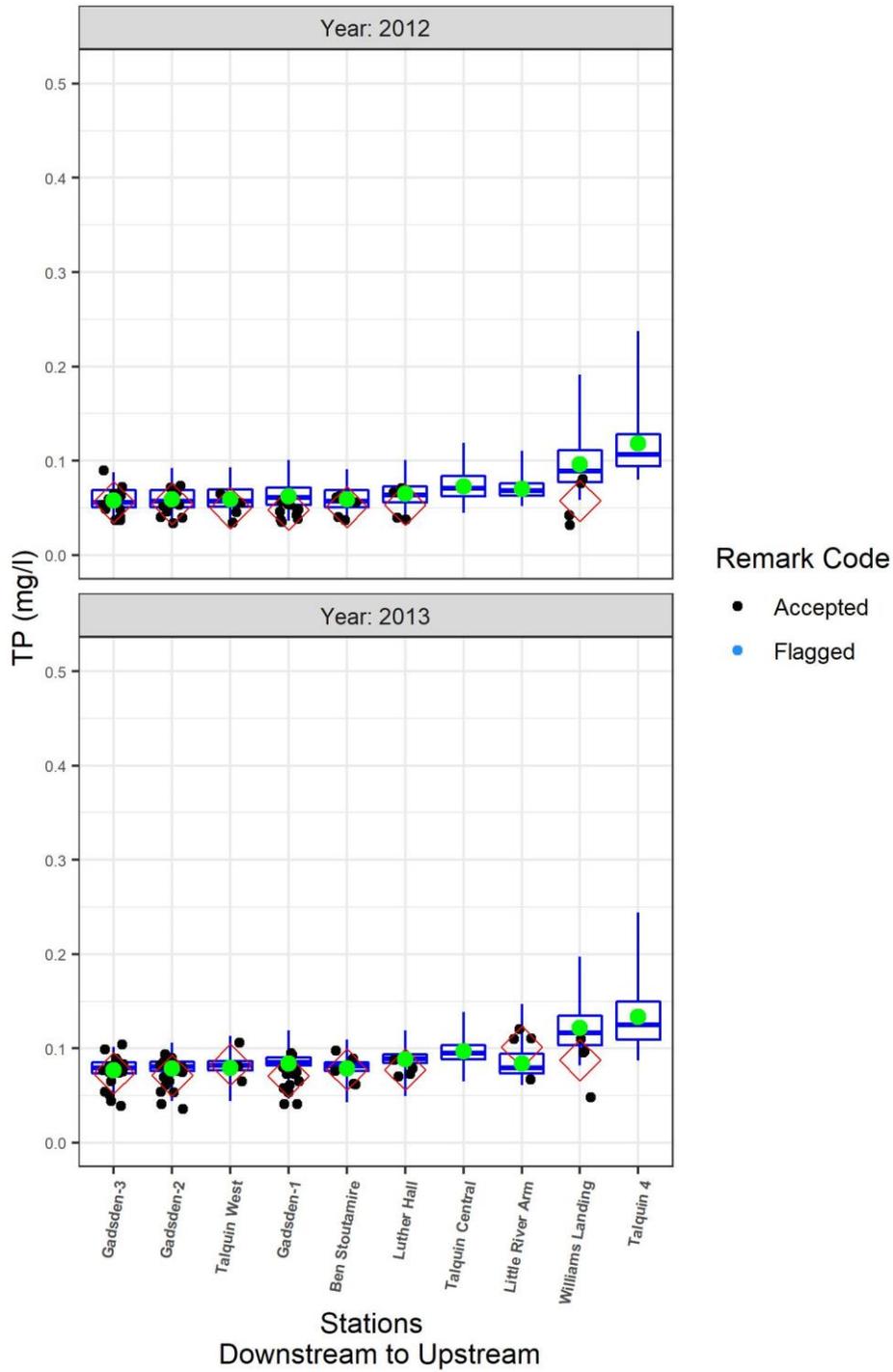


Figure 191 Lake Talquin Total Phosphorus Comparison Observed vs. Simulated 2012 - 2013

TP (Annual Comparison)

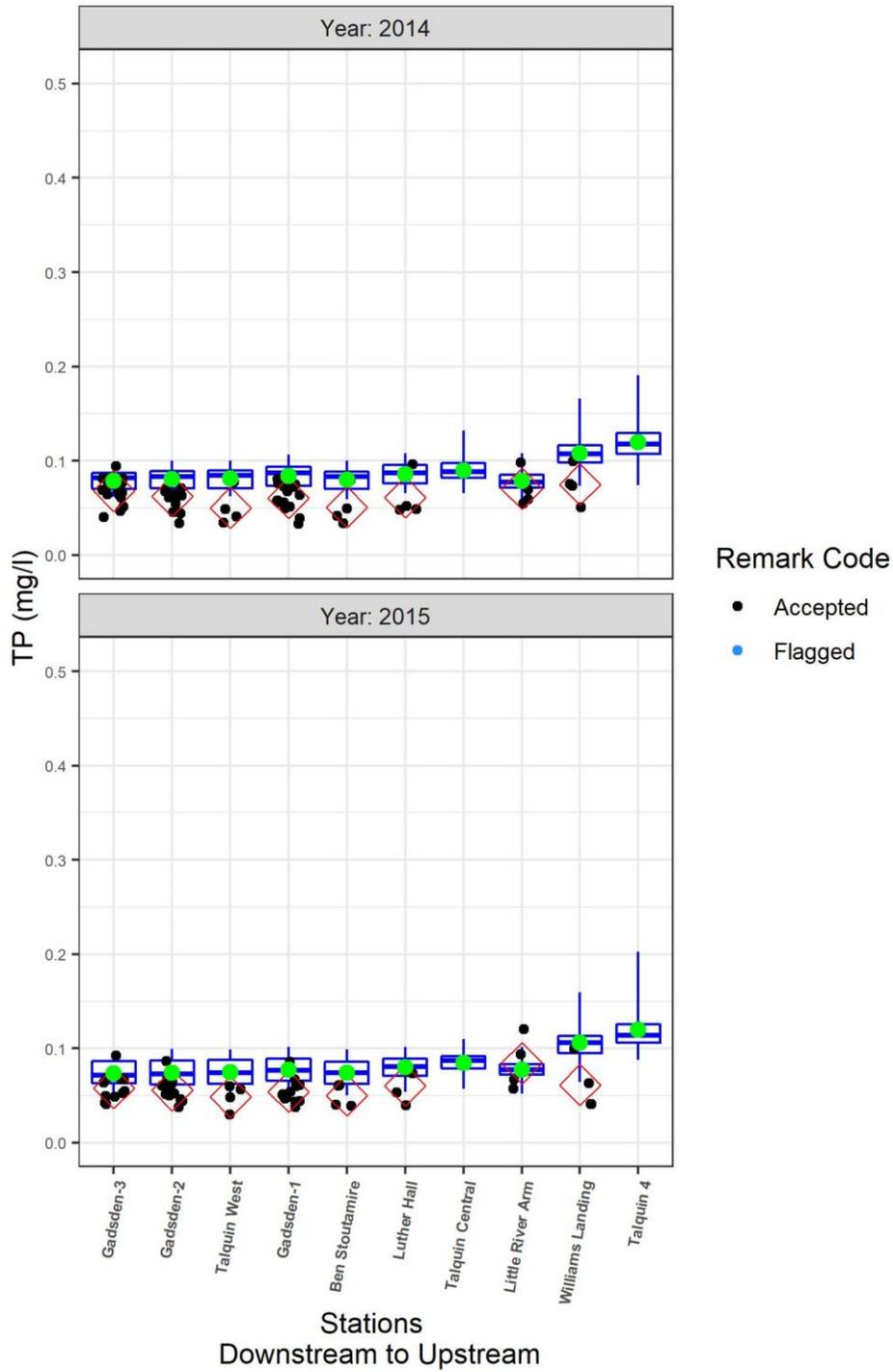


Figure 192 Lake Talquin Total Phosphorus Comparison Observed vs. Simulated 2014 -2015

TP (Annual Comparison)

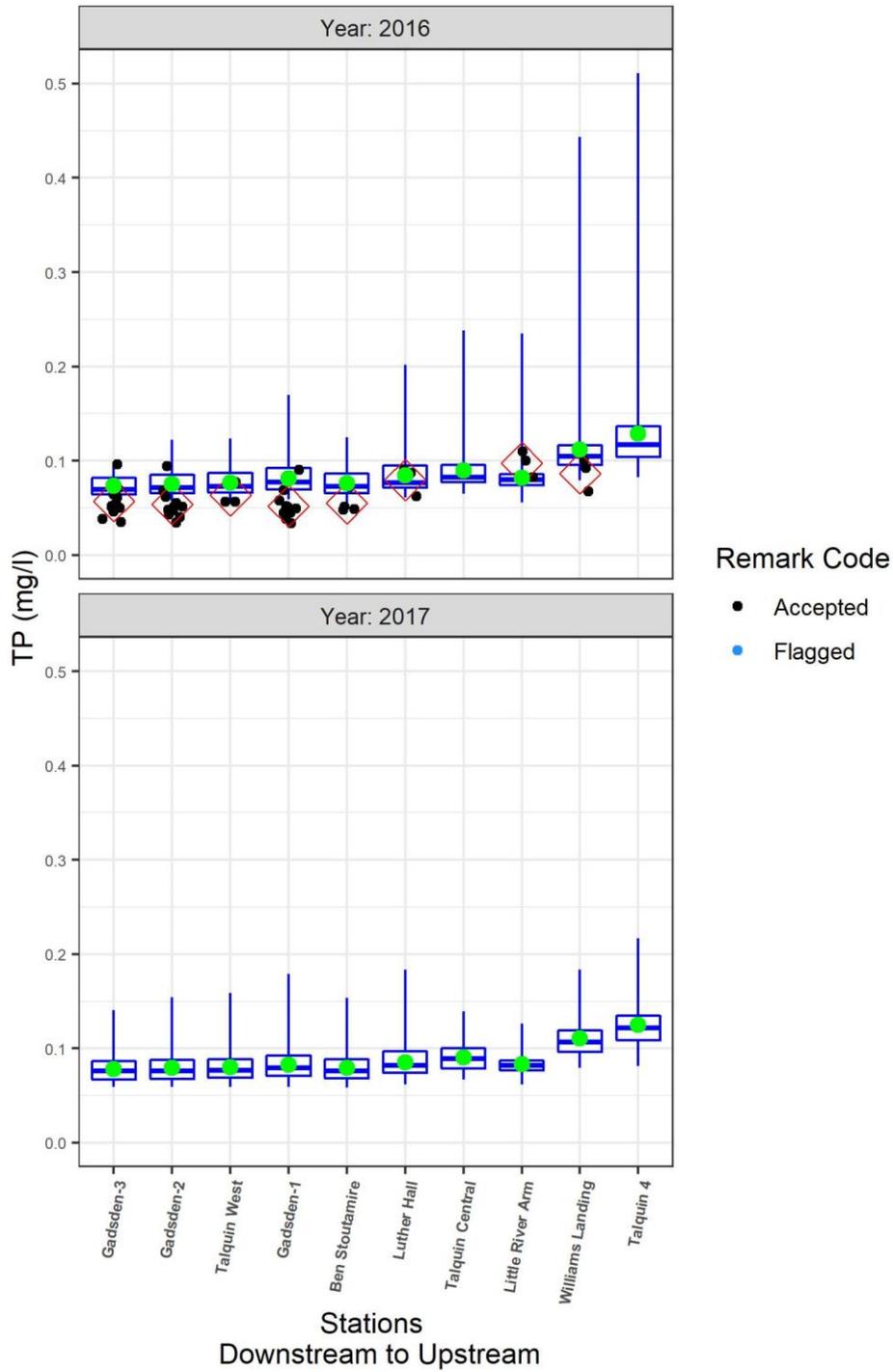
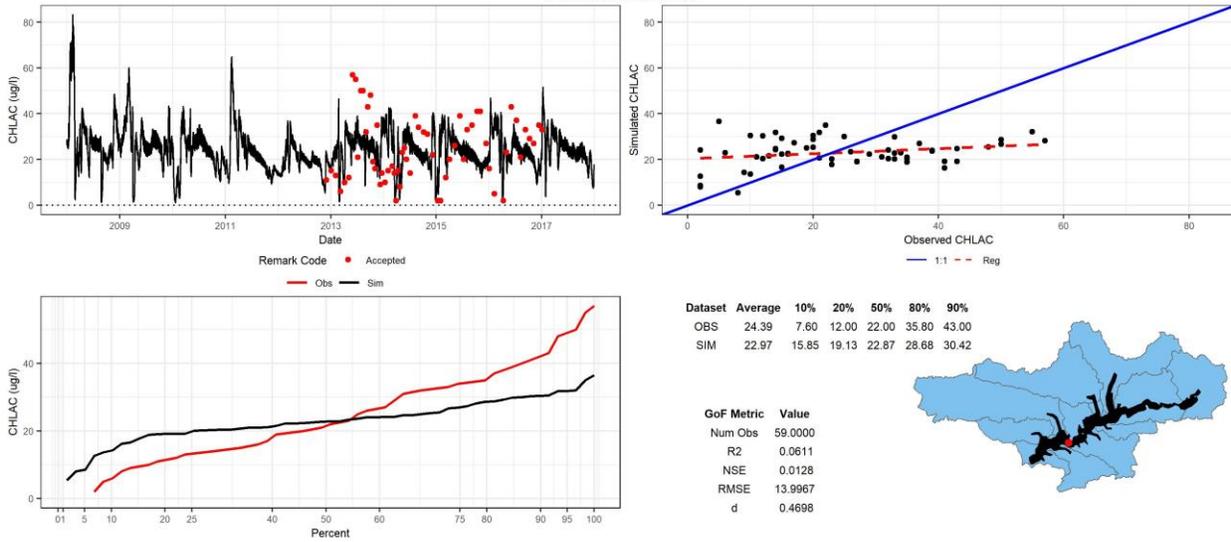


Figure 193 Lake Talquin Total Phosphorus Comparison Observed vs. Simulated 2016 - 2017

Chlorophyll a

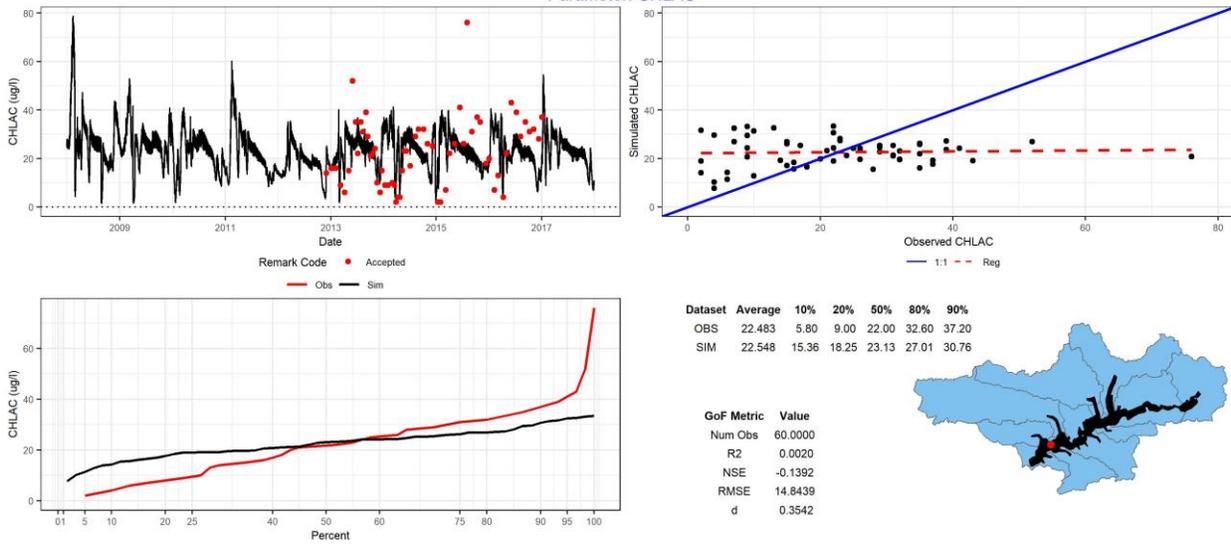
Gadsden-1
Parameter: CHLAC



(Calib Station: 21FLKWATGAD-TALQUIN-1; WASP Seg: 48)

Figure 194 Chlorophyll a – Lake Talquin at Gadsden 1

Gadsden-2
Parameter: CHLAC



(Calib Station: 21FLKWATGAD-TALQUIN-2; WASP Seg: 116)

Figure 195 Chlorophyll a – Lake Talquin at Gadsden 2

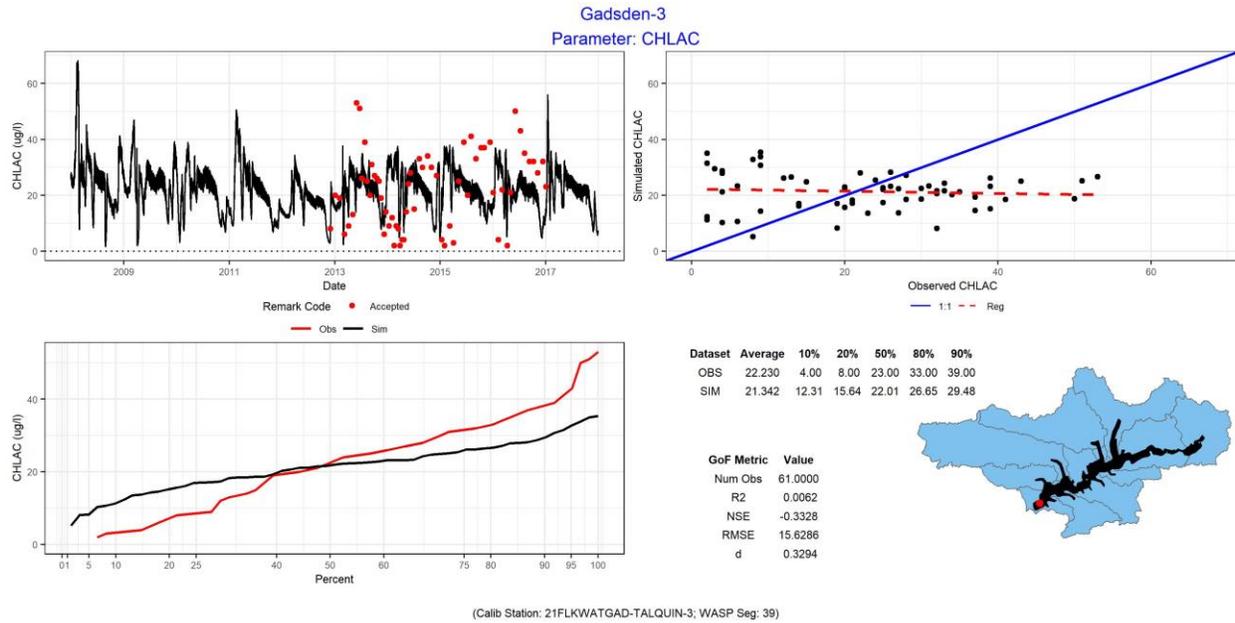


Figure 196 Chlorophyll a – Lake Talquin at Gadsden 3

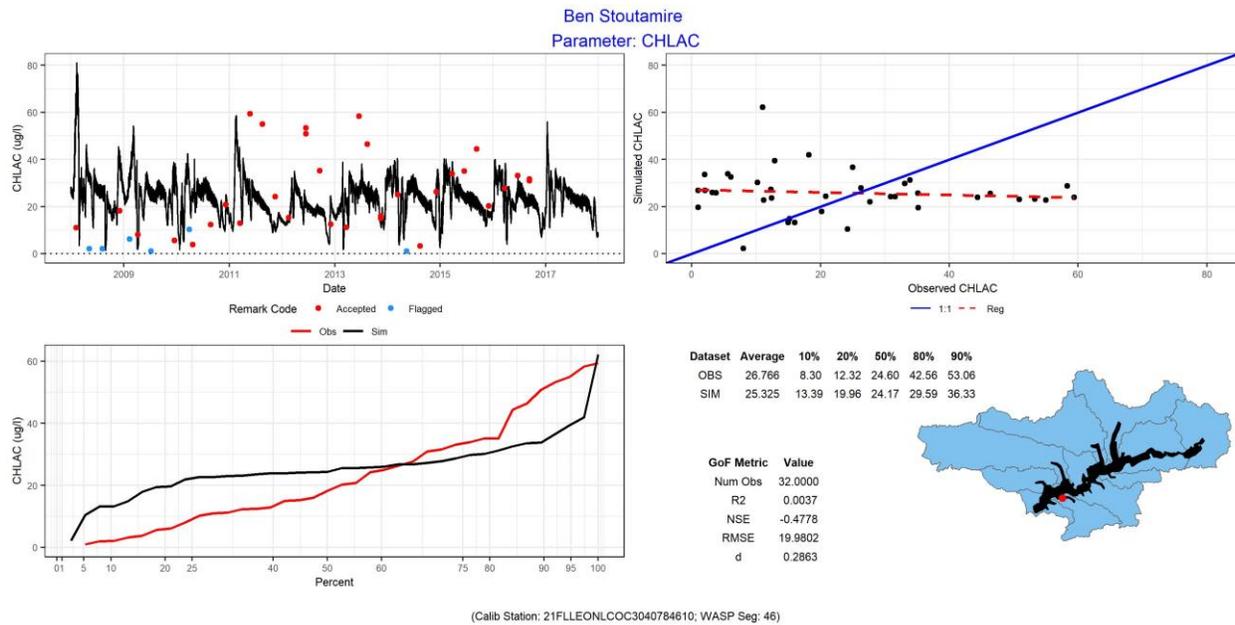


Figure 197 Chlorophyll a – Lake Talquin at Ben Stoutamire

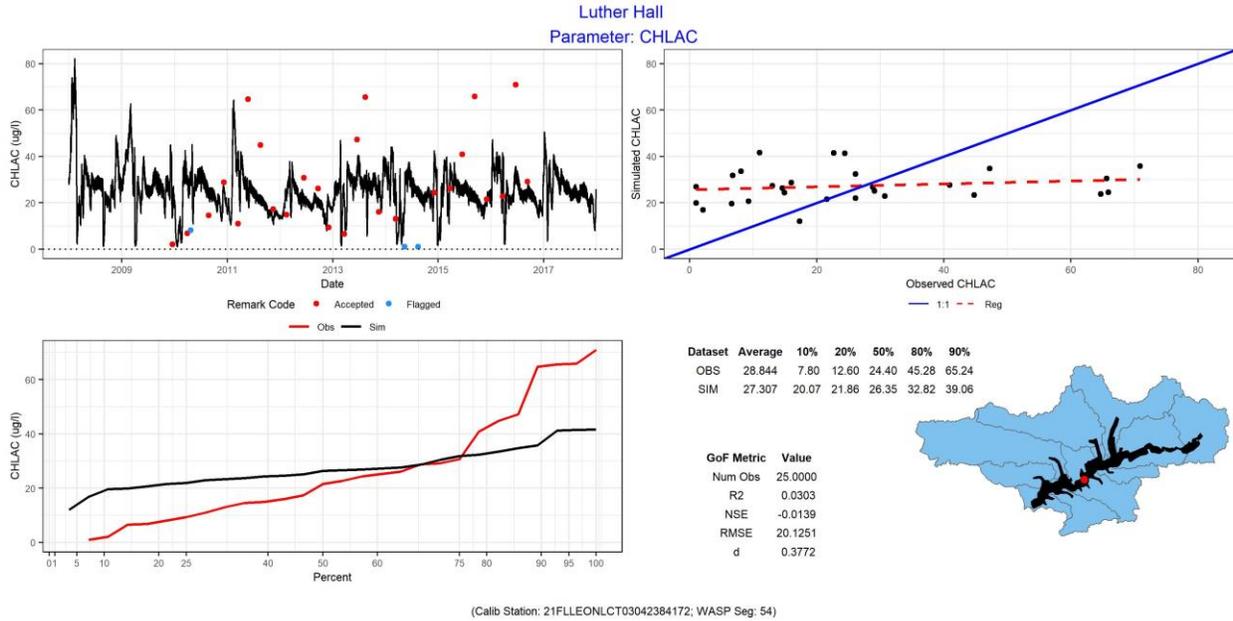


Figure 198 Chlorophyll a – Lake Talquin at Luther Hall

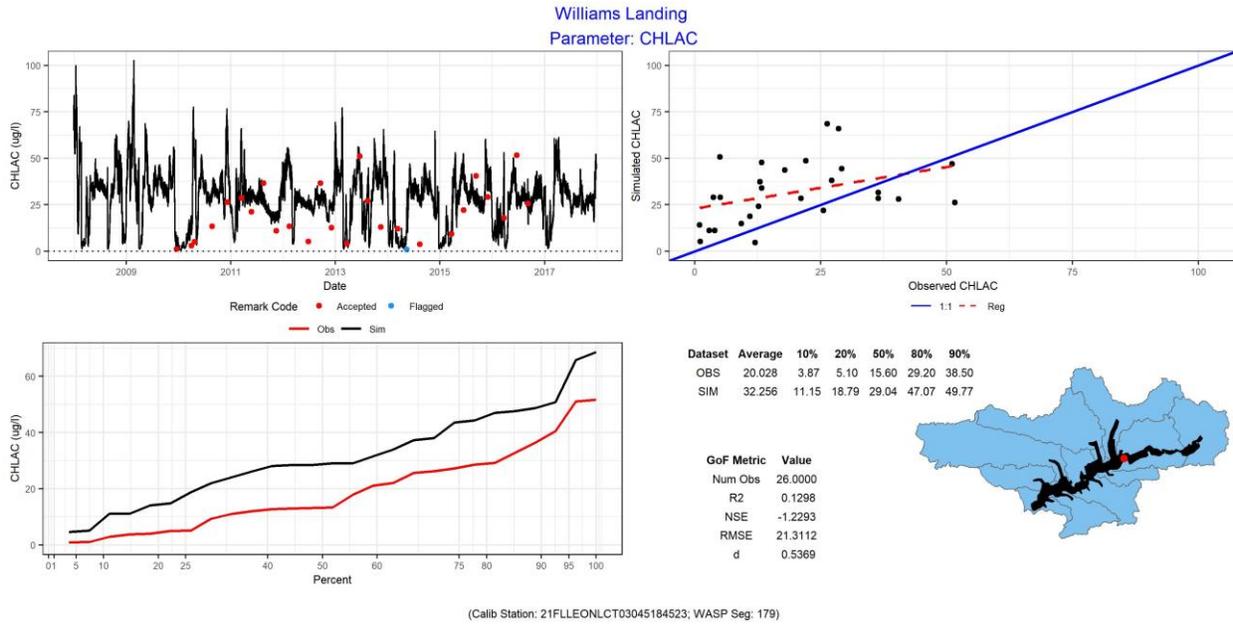
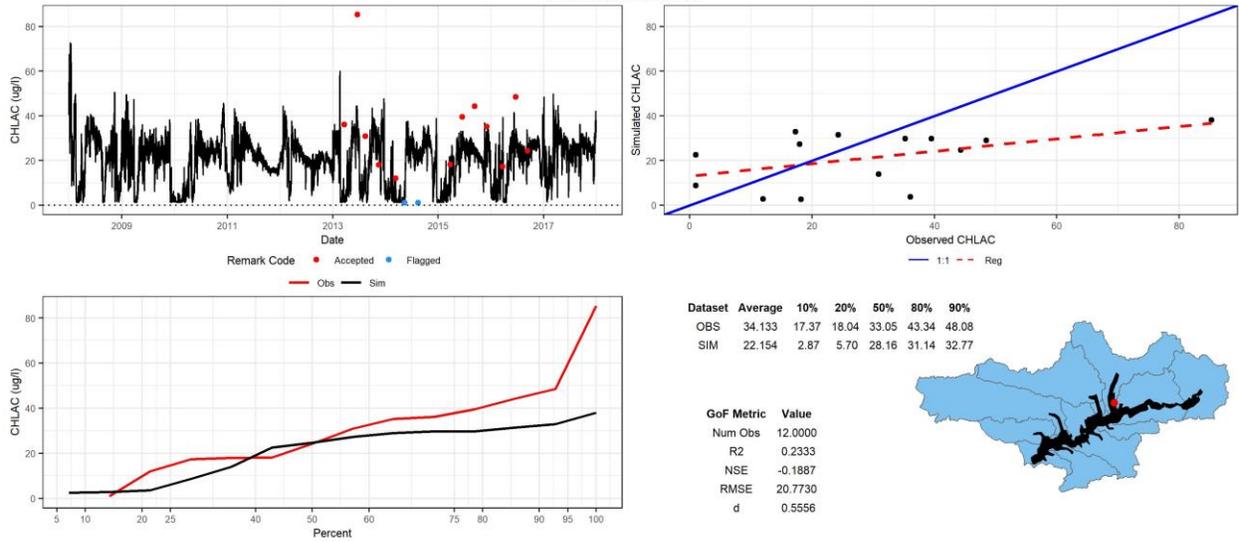


Figure 199 Chlorophyll a – Lake Talquin at Williams Landing

Little River Arm
Parameter: CHLAC



(Calib Station: 21FLLEONLCTOLR30468453; WASP Seg: 198)

Figure 200 Chlorophyll a – Lake Talquin at Little River Arm

CHLAC (Annual Comparison)

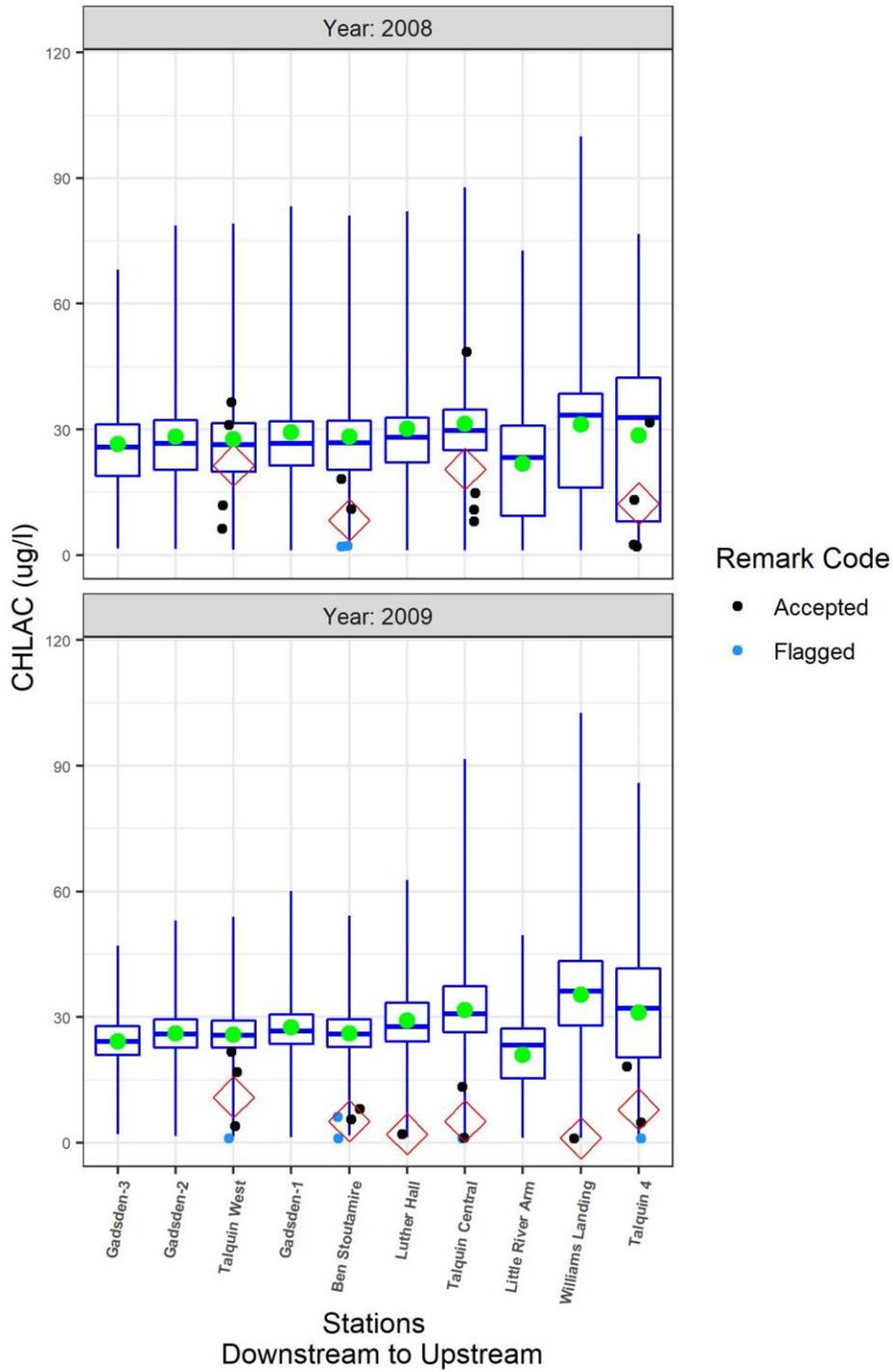


Figure 201 Lake Talquin Chlorophyll a Comparison Observed vs. Simulated 2008-2009

CHLAC (Annual Comparison)

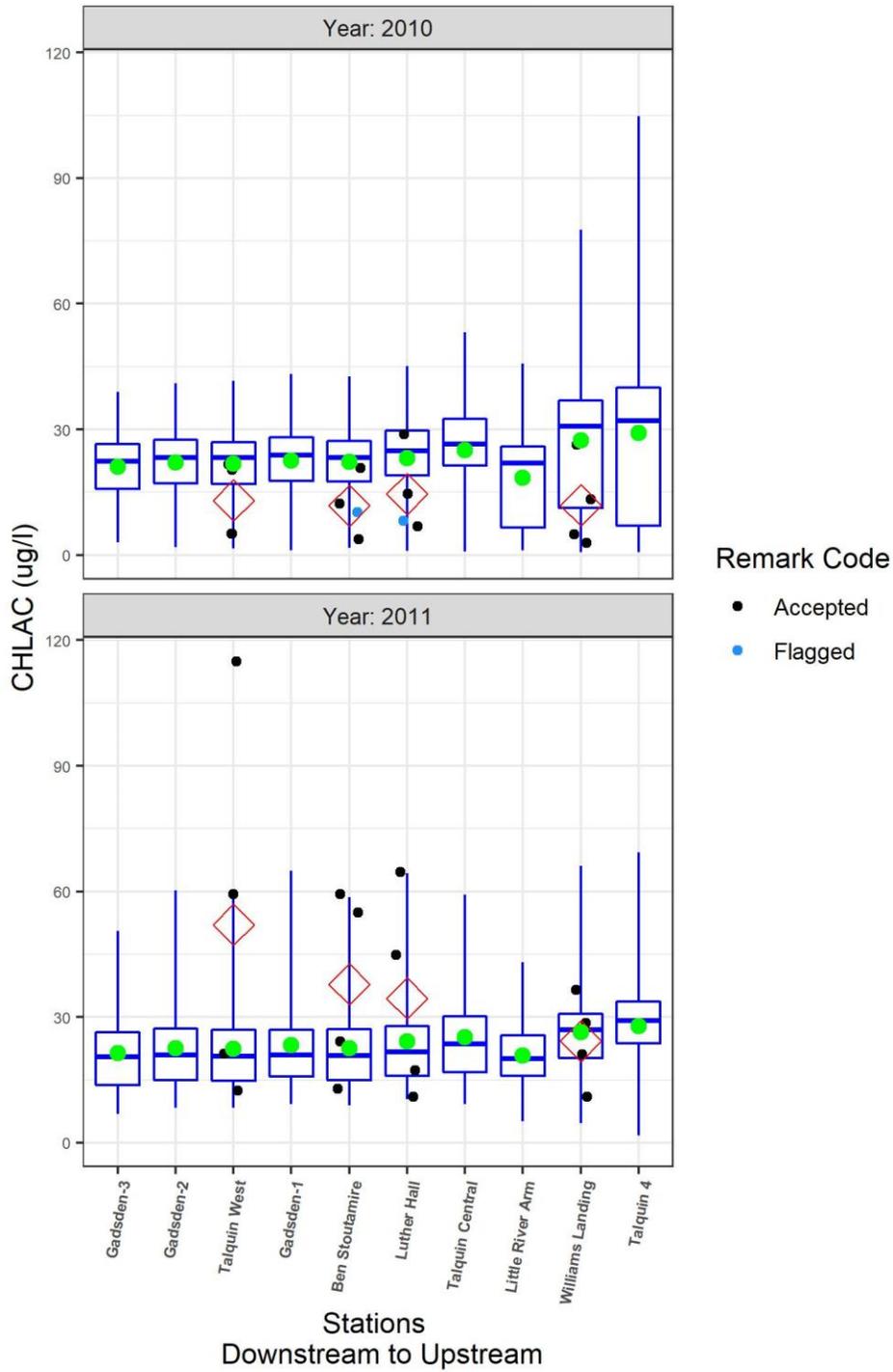


Figure 202 Lake Talquin Chlorophyll a Comparison Observed vs. Simulated 2010 - 2011

CHLAC (Annual Comparison)

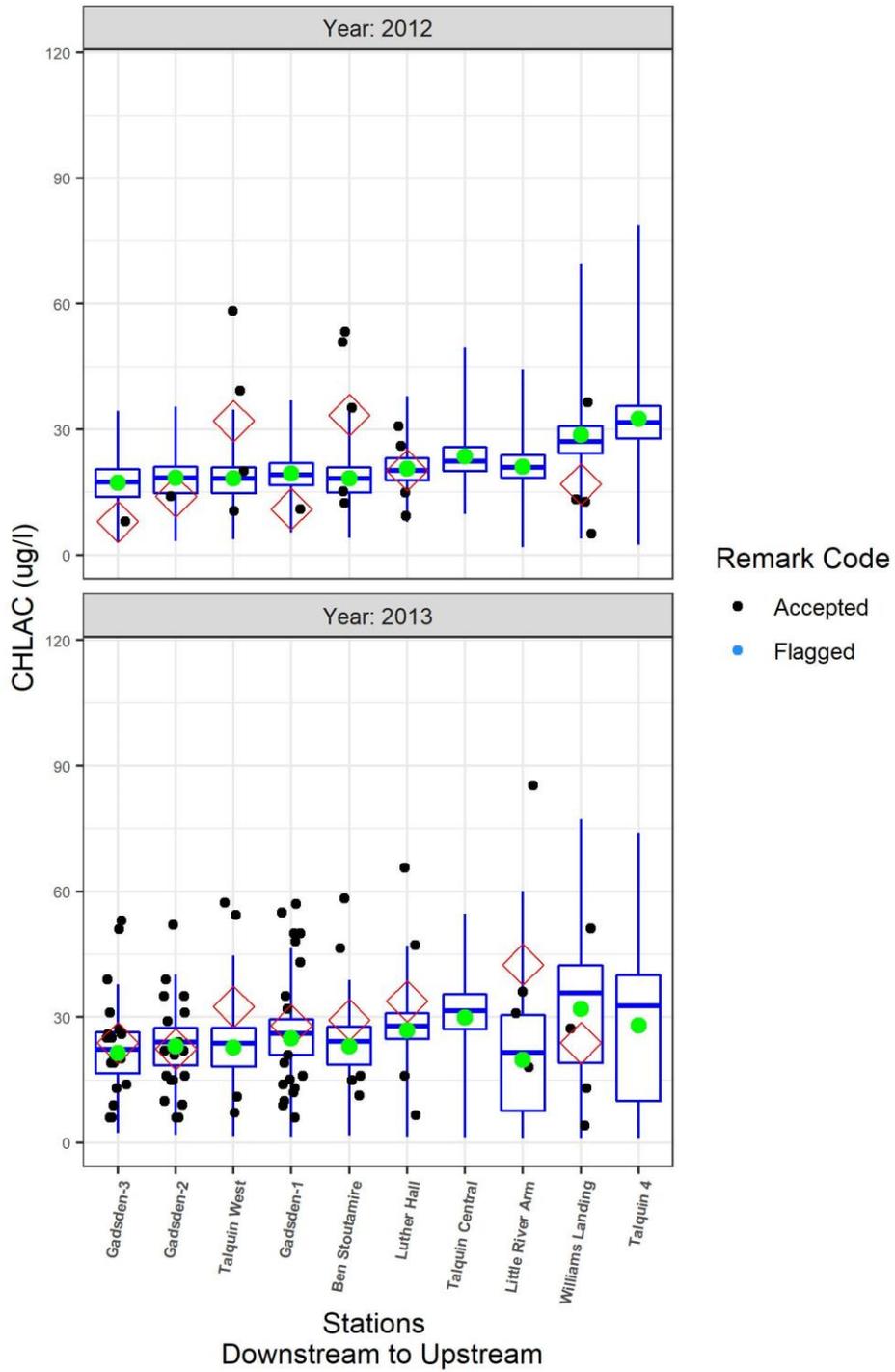


Figure 203 Lake Talquin Chlorophyll a Comparison Observed vs. Simulated 2012 - 2013

CHLAC (Annual Comparison)

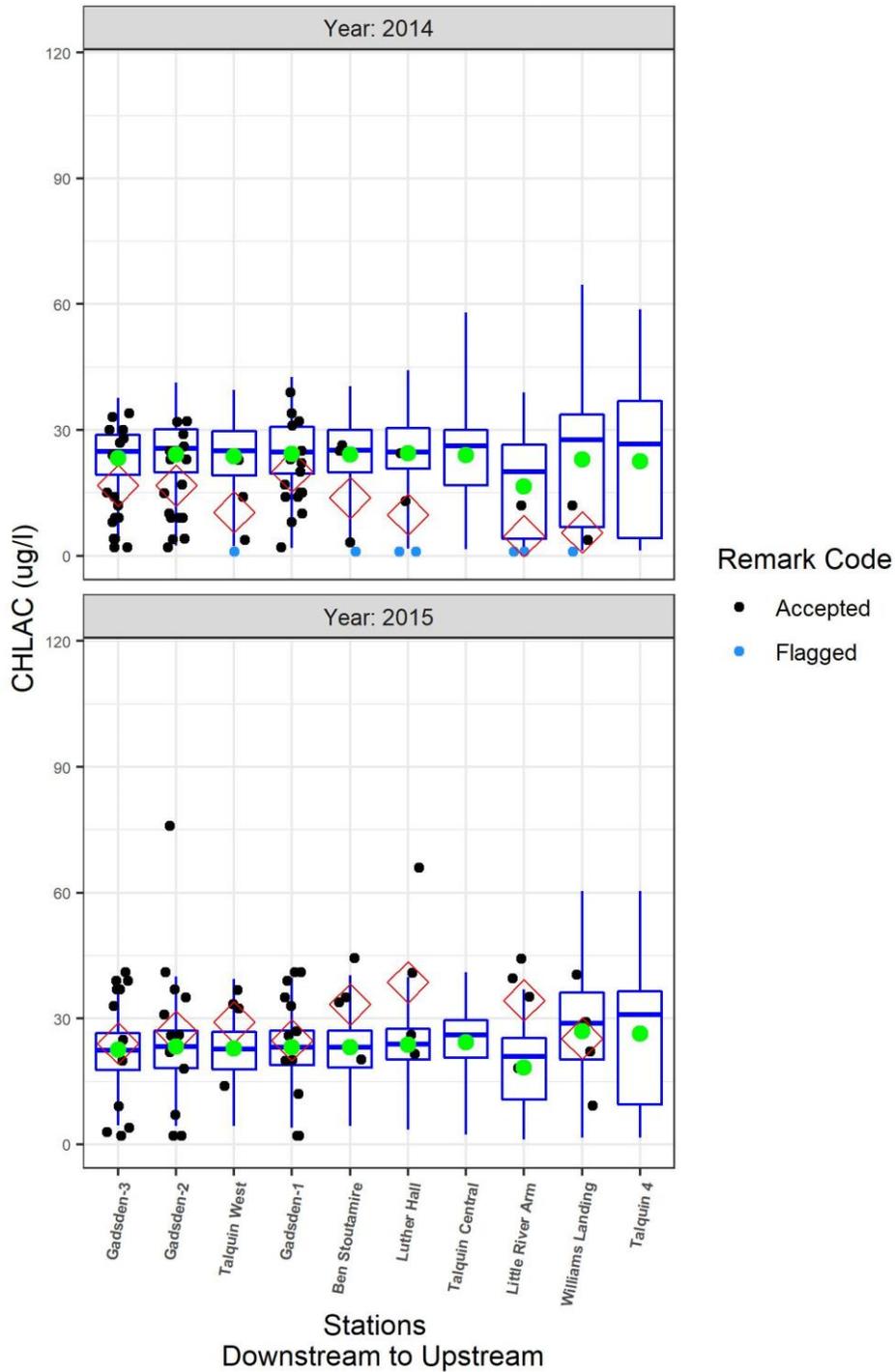


Figure 204 Lake Talquin Chlorophyll a Comparison Observed vs. Simulated 2014-2015

CHLAC (Annual Comparison)

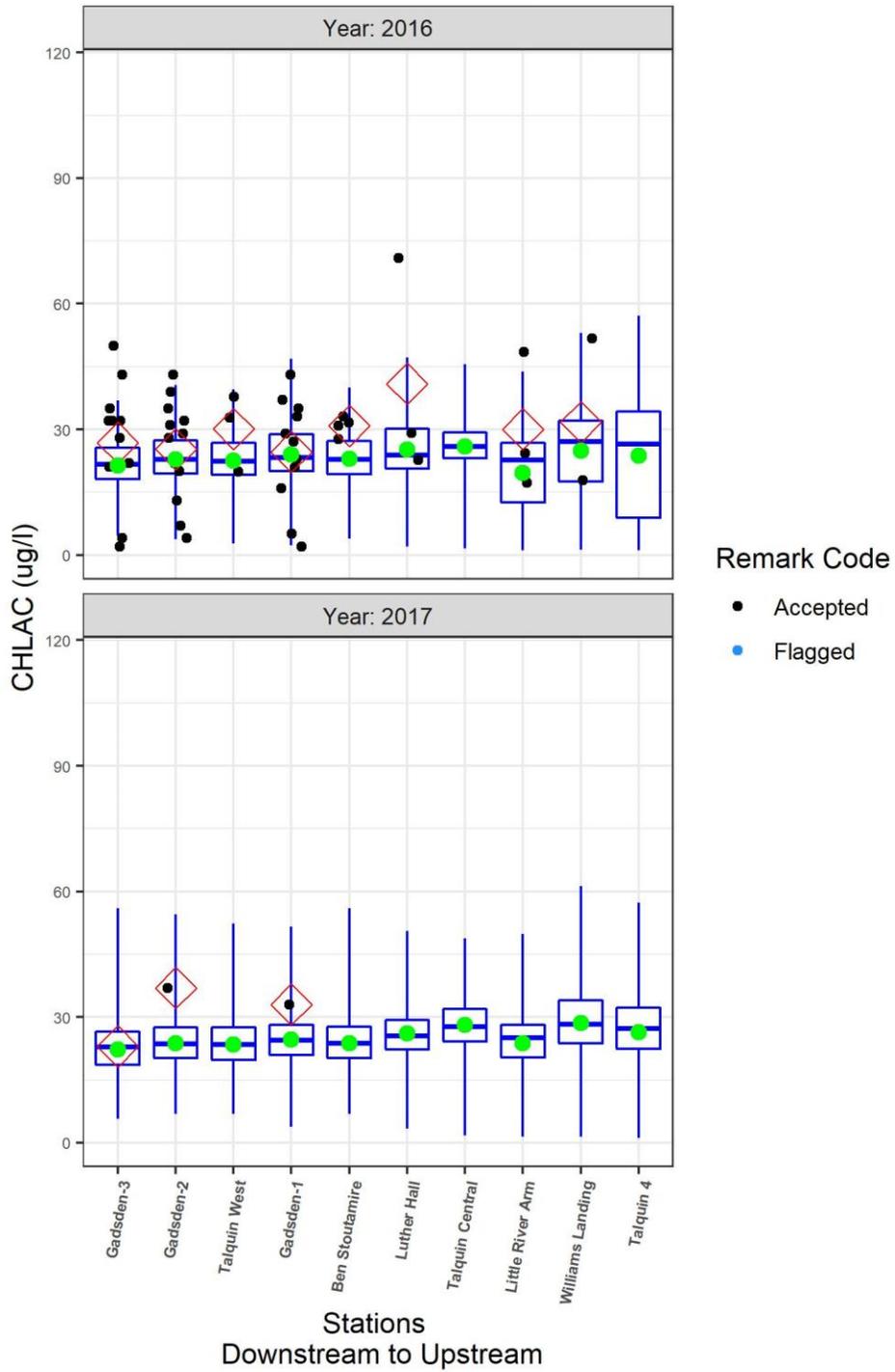


Figure 205 Lake Talquin Chlorophyll a Comparison Observed vs. Simulated 2016 - 2017

Ammonia

Ben Stoutamire
Parameter: NH4

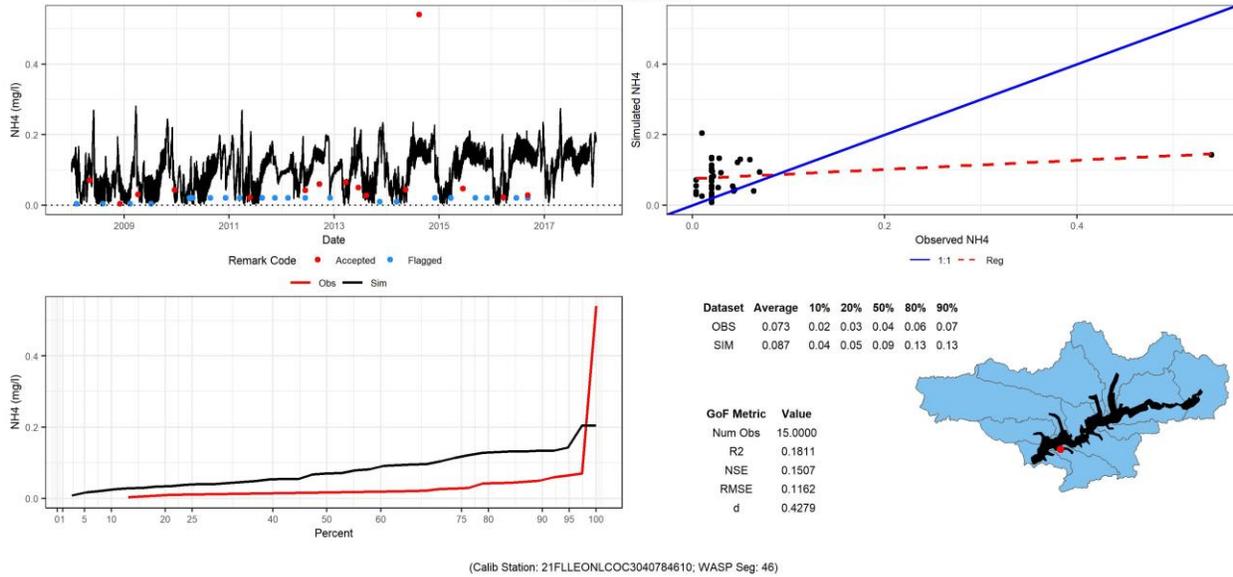


Figure 206 Ammonia – Lake Talquin at Ben Stoutamire

Luther Hall
Parameter: NH4

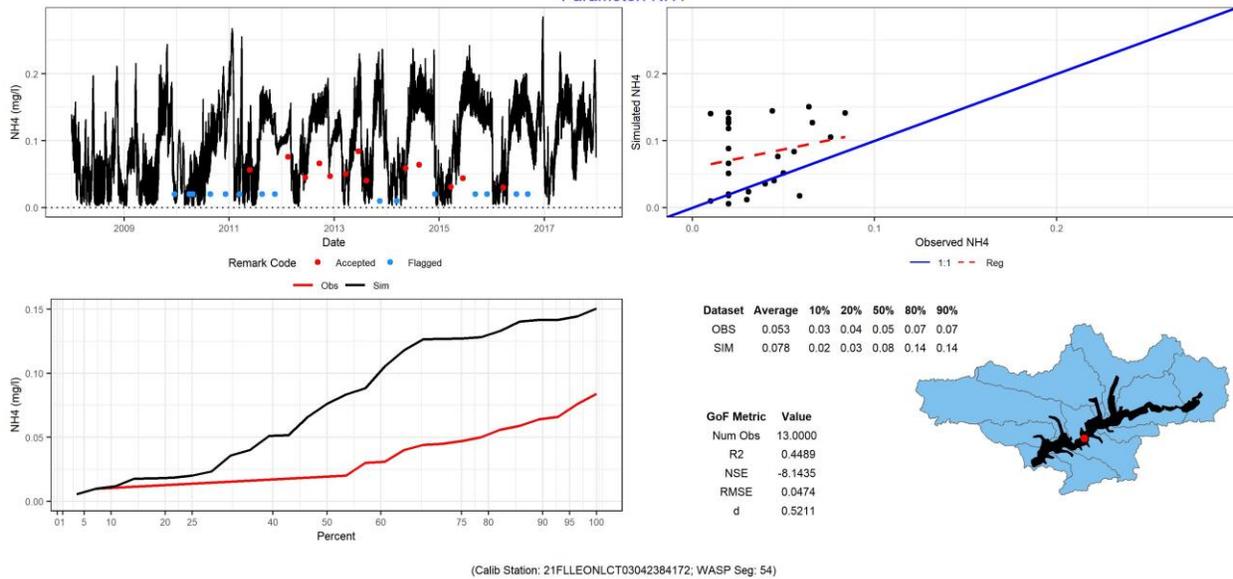
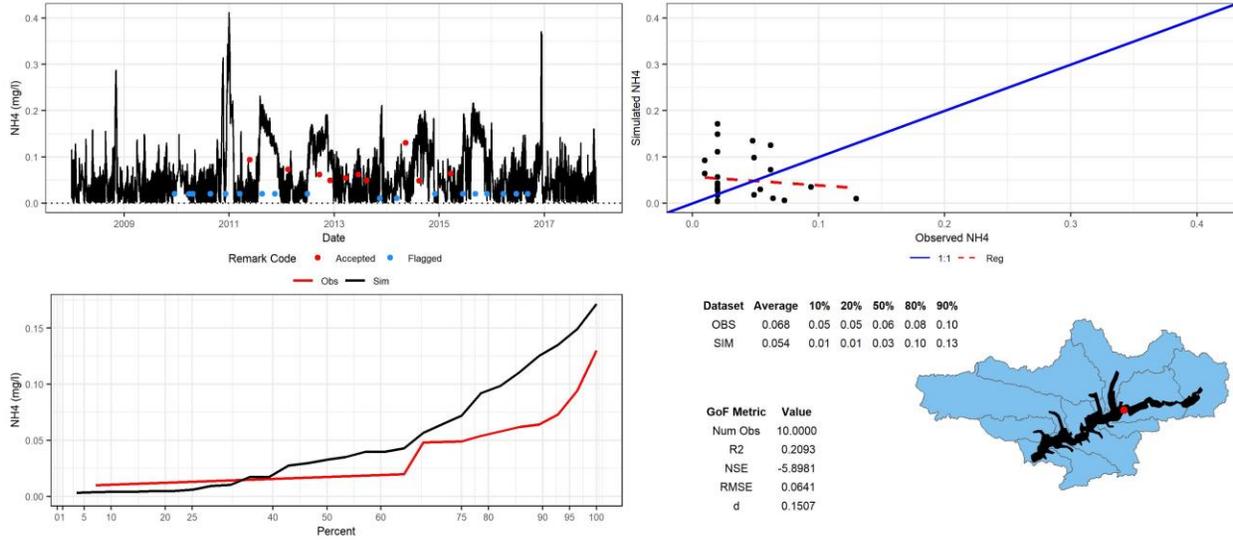


Figure 207 Ammonia – Lake Talquin at Luther Hall

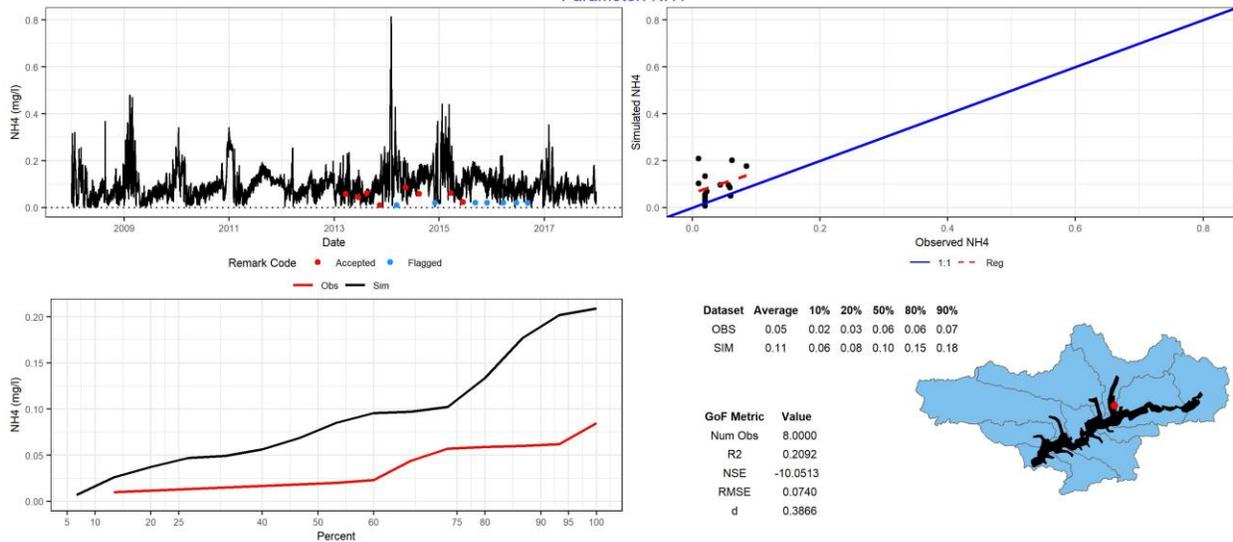
Williams Landing
Parameter: NH4



(Calib Station: 21FLLEONLCT03045184523; WASP Seg: 179)

Figure 208 Ammonia – Lake Talquin at Williams Landing

Little River Arm
Parameter: NH4



(Calib Station: 21FLLEONLCT0LR30468453; WASP Seg: 198)

Figure 209 Ammonia – Lake Talquin at Little River Arm

Talquin West
Parameter: NH4

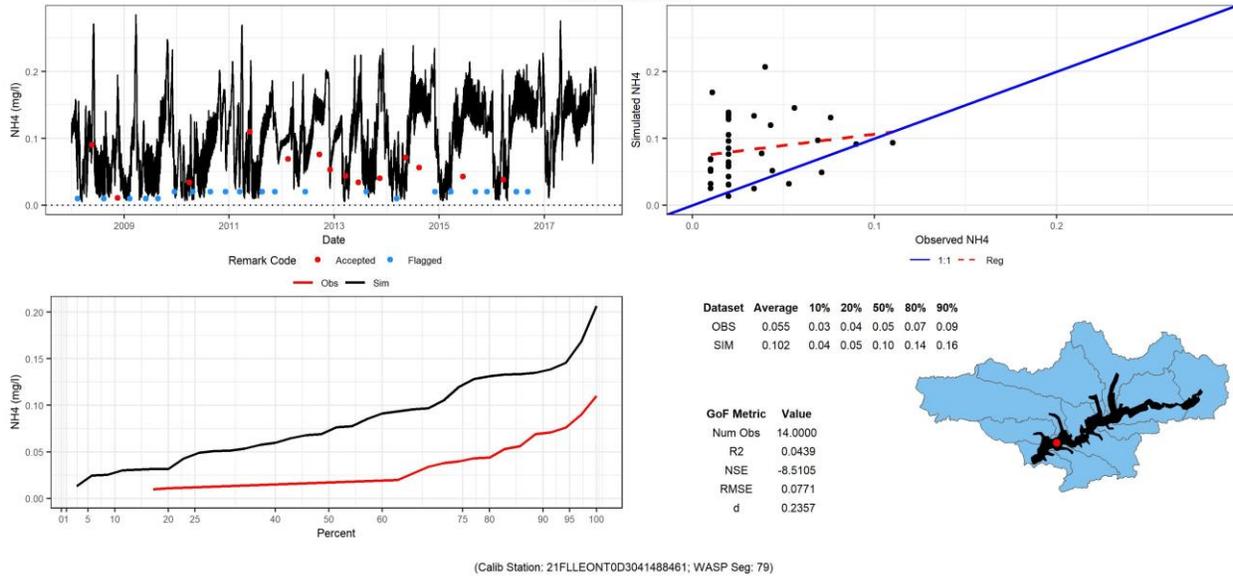


Figure 210 Ammonia – Lake Talquin at Talquin West

Dissolved Oxygen

Ben Stoutamire
Parameter: DO

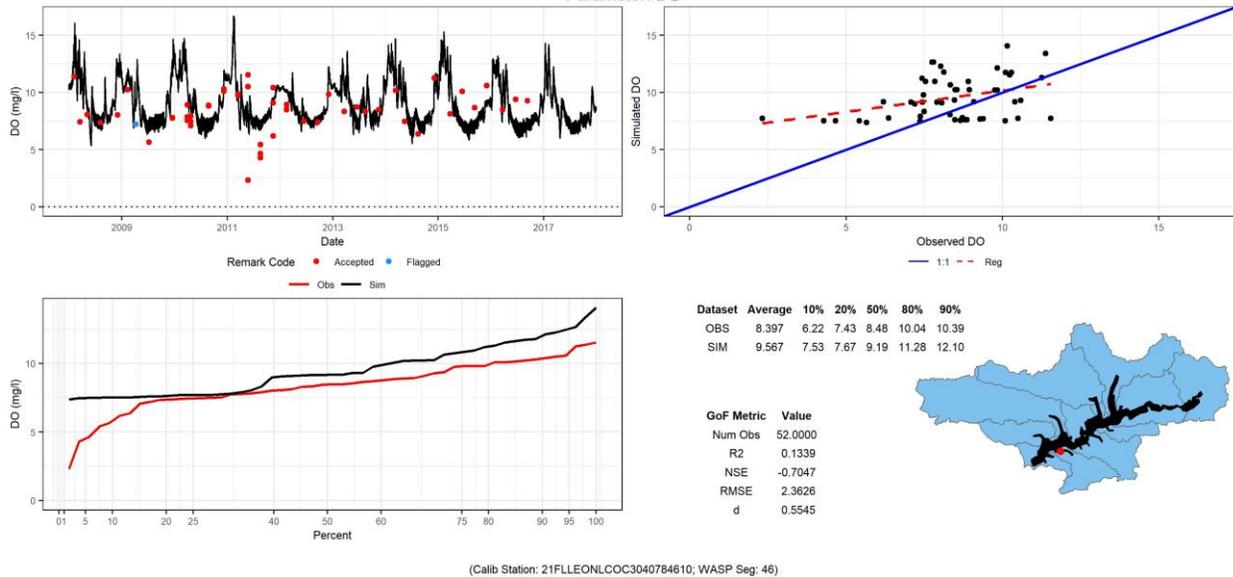
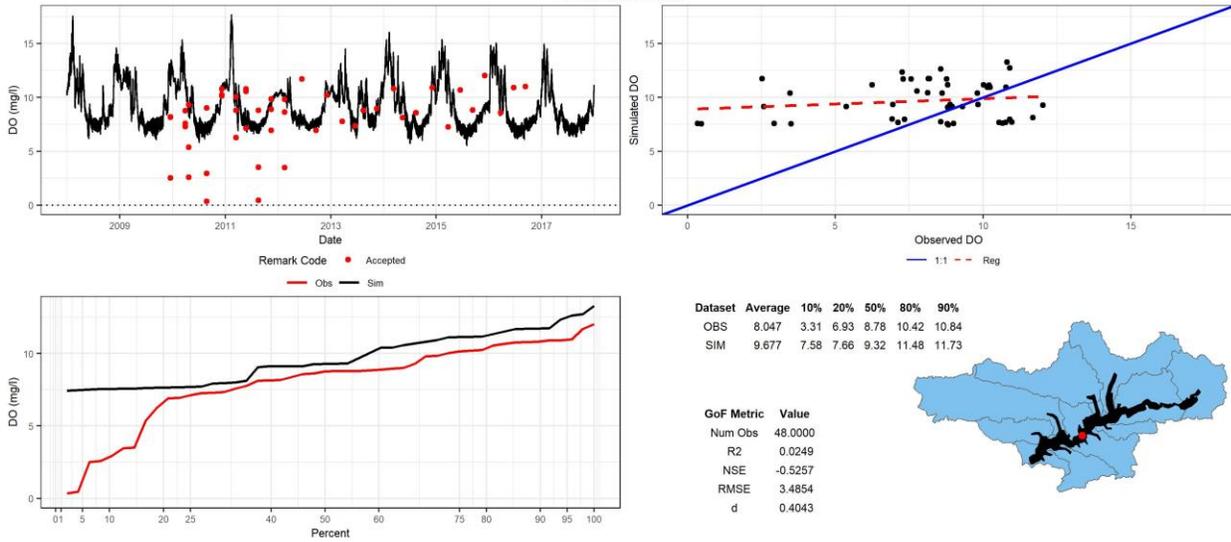


Figure 211 Dissolved Oxygen – Lake Talquin at Ben Stoutamire

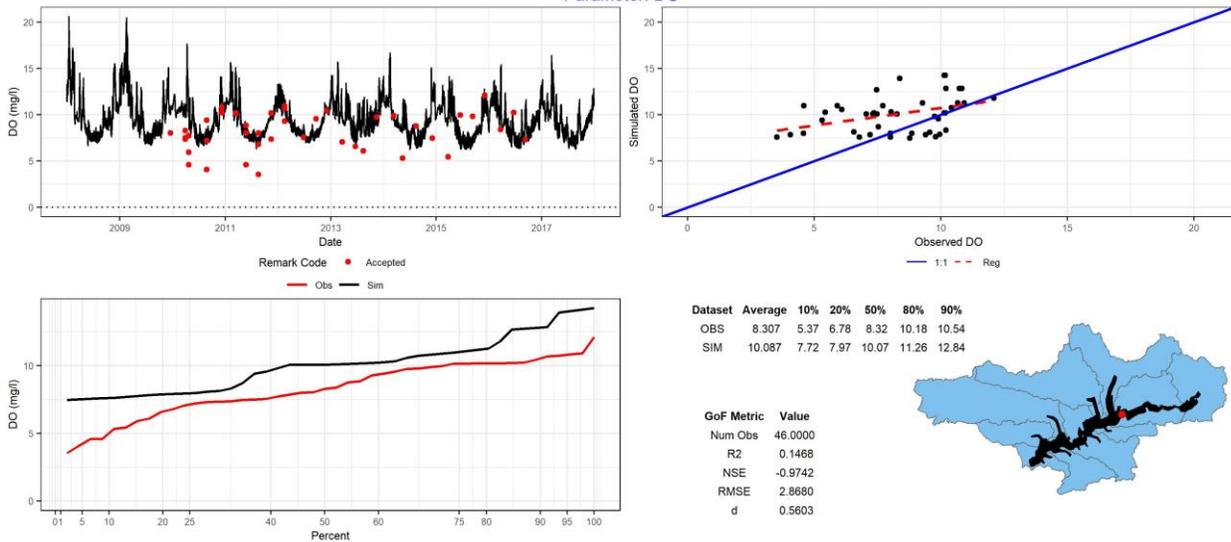
Luther Hall
Parameter: DO



(Calib Station: 21FLLEONLCT03042384172; WASP Seg: 54)

Figure 212 Dissolved Oxygen – Lake Talquin at Luther Hall

Williams Landing
Parameter: DO



(Calib Station: 21FLLEONLCT03045184523; WASP Seg: 179)

Figure 213 Dissolved Oxygen – Lake Talquin at Williams Landing

Talquin 4
Parameter: DO

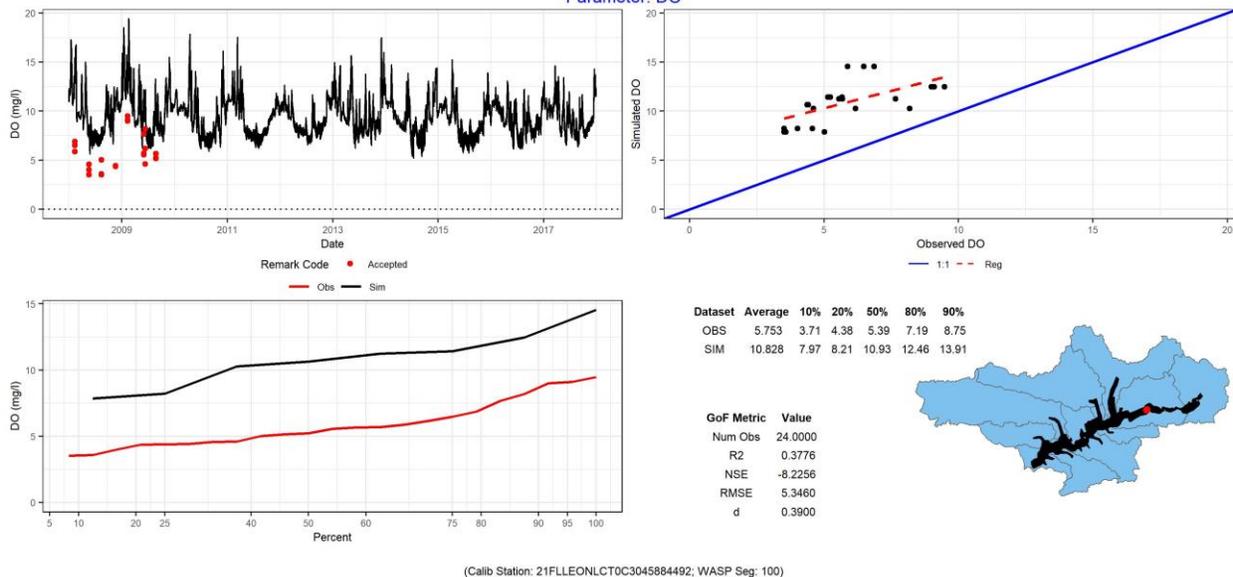


Figure 214 Dissolved Oxygen – Lake Talquin at Talquin 4

Little River Arm
Parameter: DO

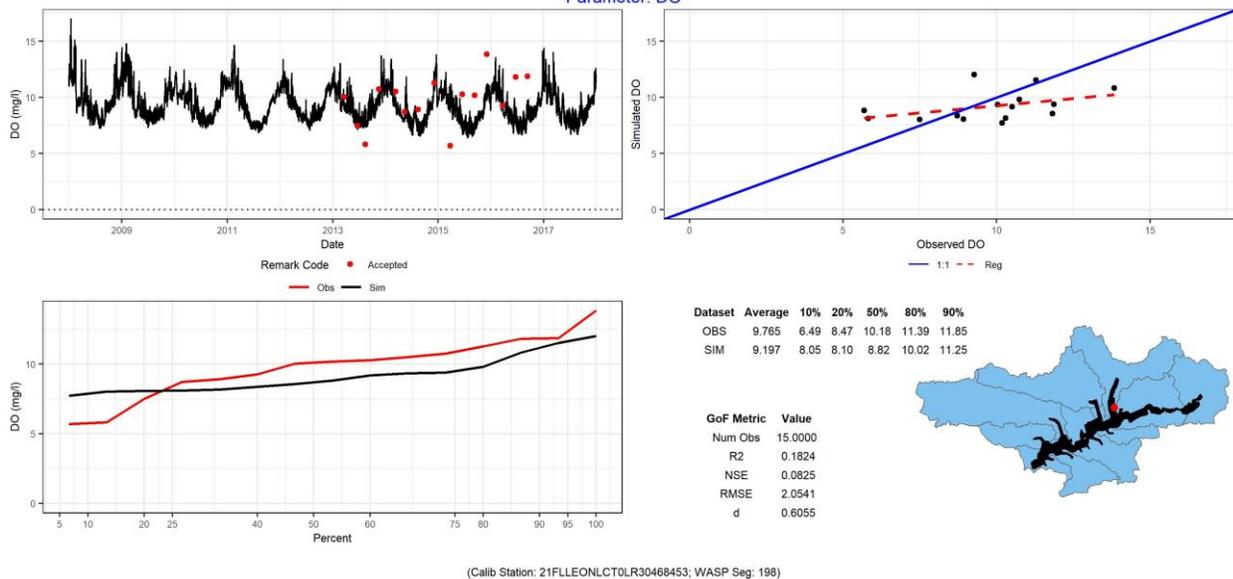
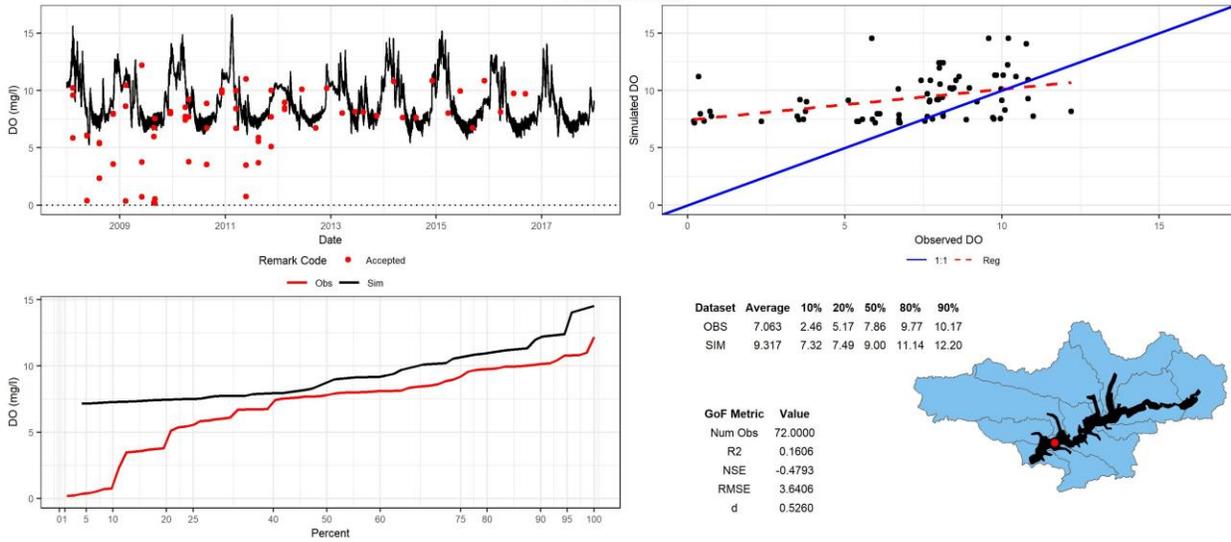


Figure 215 Dissolved Oxygen – Lake Talquin at Little River Arm

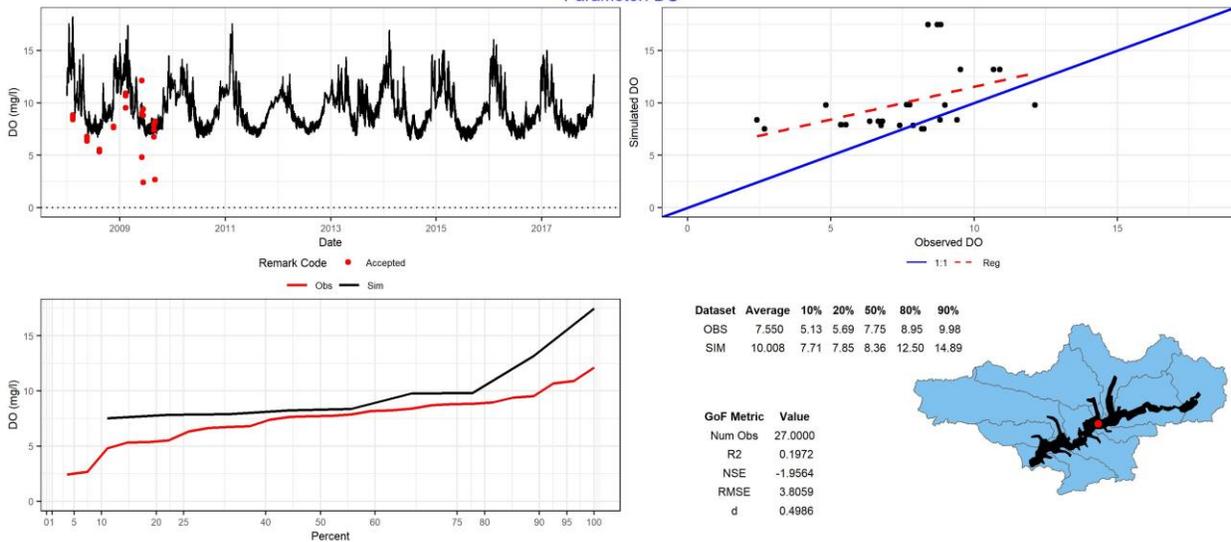
Talquin West
Parameter: DO



(Calib Station: 21FLLEONTD3041488461; WASP Seg: 79)

Figure 216 Dissolved Oxygen – Lake Talquin at Talquin West

Talquin Central
Parameter: DO



(Calib Station: 21FLLEONT0E3044084556; WASP Seg: 169)

Figure 217 Dissolved Oxygen – Lake Talquin at Talquin Central

Carbonaceous Biochemical Oxygen Demand

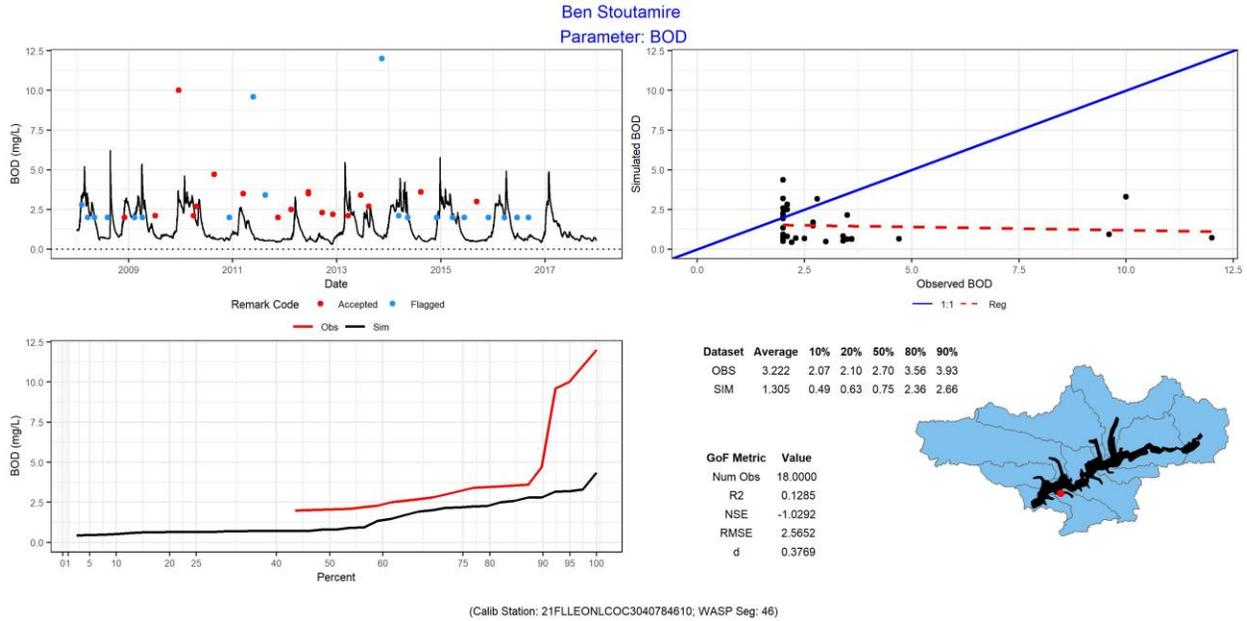


Figure 218 CBOD – Lake Talquin at Ben Stoutamire

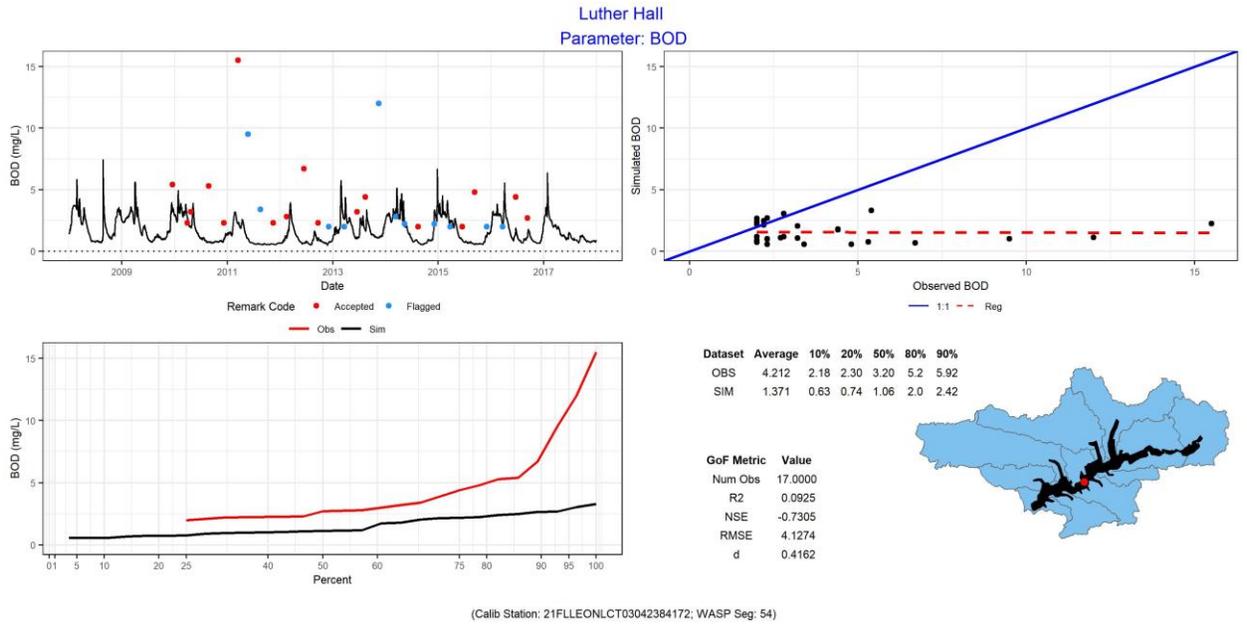
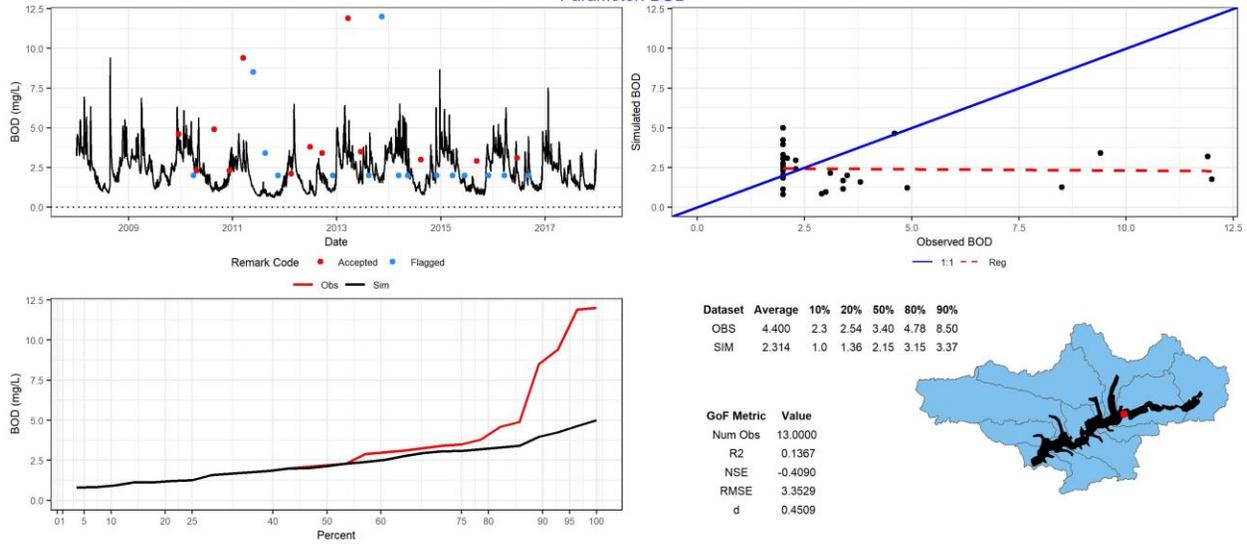


Figure 219 CBOD – Lake Talquin at Luther Hall

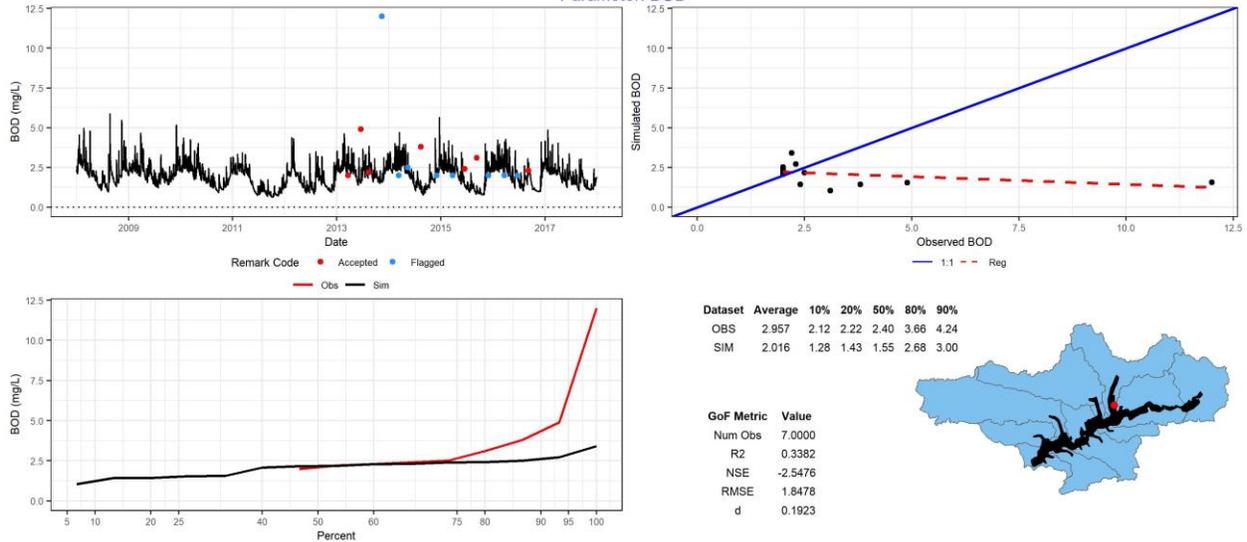
Williams Landing
Parameter: BOD



(Calib Station: 21FLLEONLCT03045184523; WASP Seg: 179)

Figure 220 CBOD – Lake Talquin at Williams Landing

Little River Arm
Parameter: BOD



(Calib Station: 21FLLEONLCTOLR30468453; WASP Seg: 198)

Figure 221 CBOD – Lake Talquin at Little River Arm

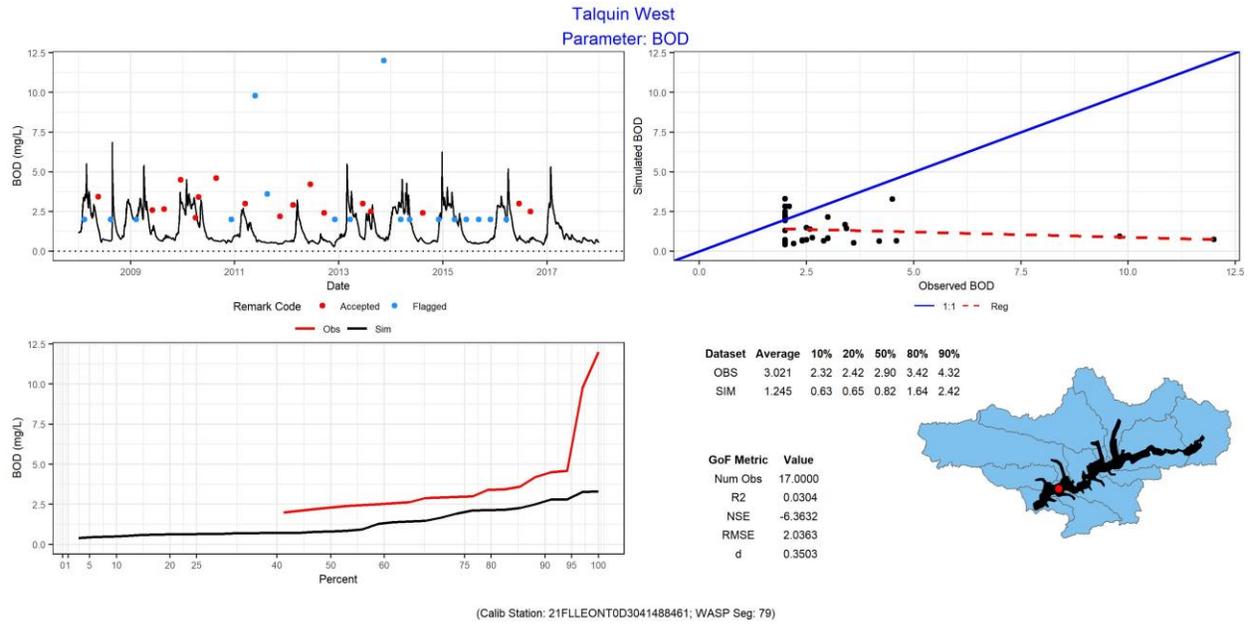


Figure 222 CBOD – Lake Talquin at Talquin West

Total Suspended Solids

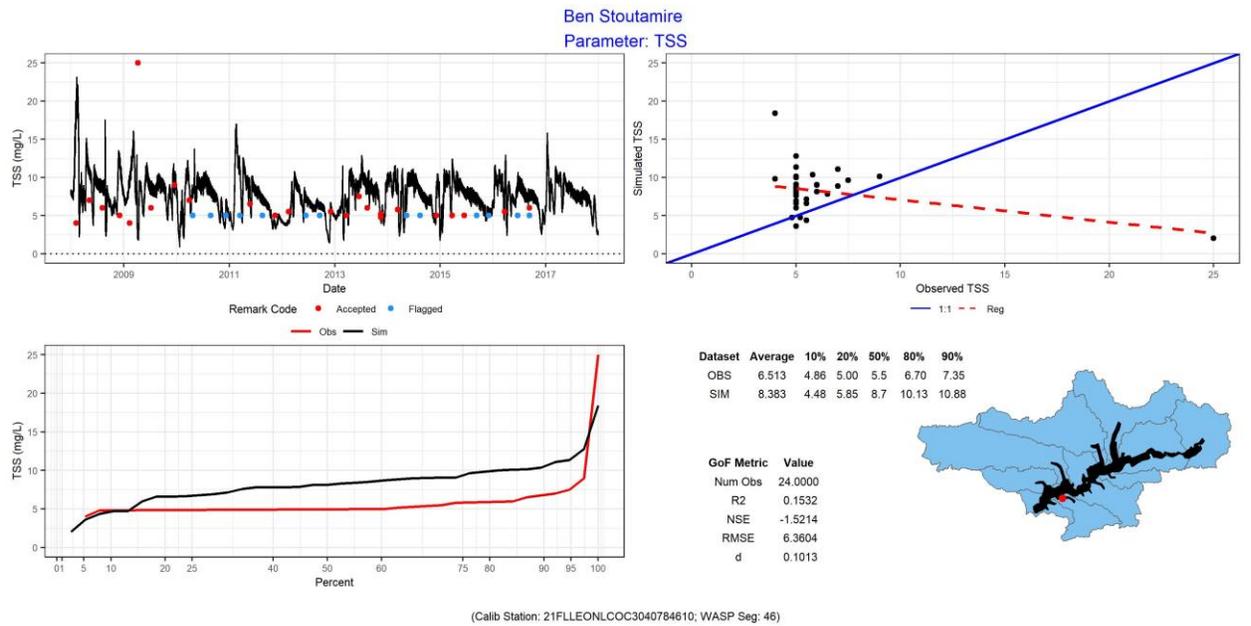
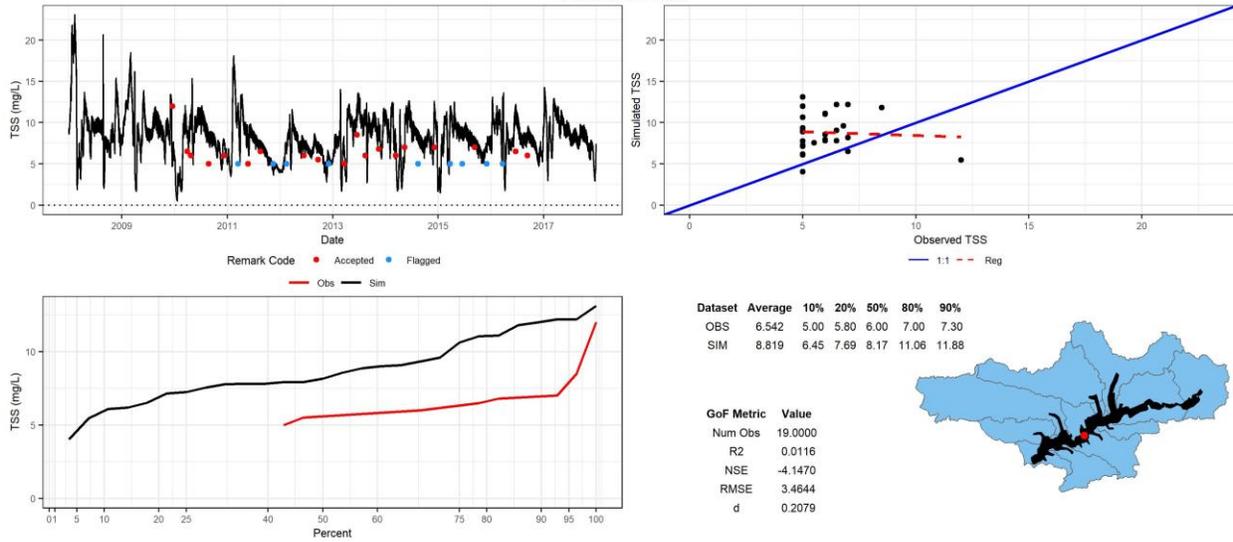


Figure 223 TSS – Lake Talquin at Ben Stoutamire

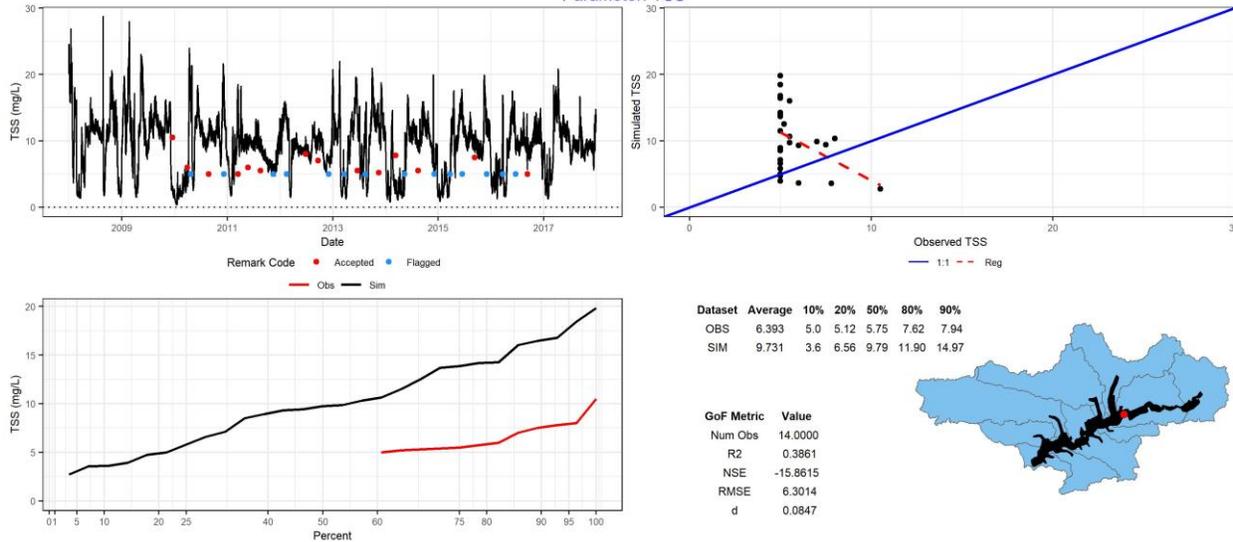
Luther Hall
Parameter: TSS



(Calib Station: 21FLLEONLCT03042384172; WASP Seg: 54)

Figure 224 TSS – Lake Talquin at Luther Hall

Williams Landing
Parameter: TSS



(Calib Station: 21FLLEONLCT03045184523; WASP Seg: 179)

Figure 225 TSS – Lake Talquin at Williams Landing

Little River Arm
Parameter: TSS

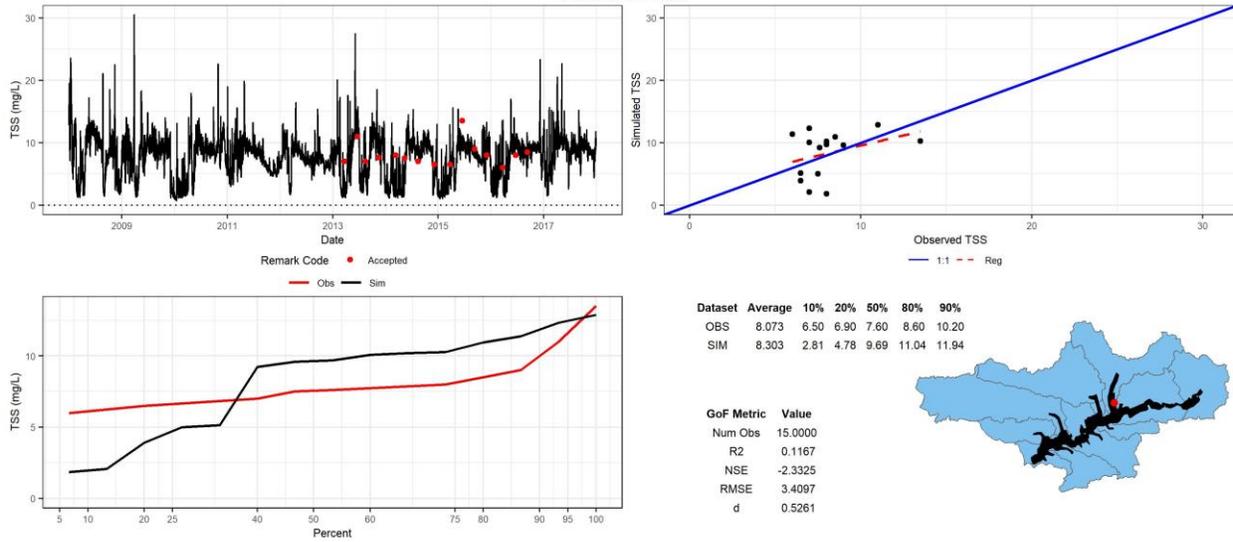


Figure 226 TSS – Lake Talquin at Little River Arm

Talquin West
Parameter: TSS

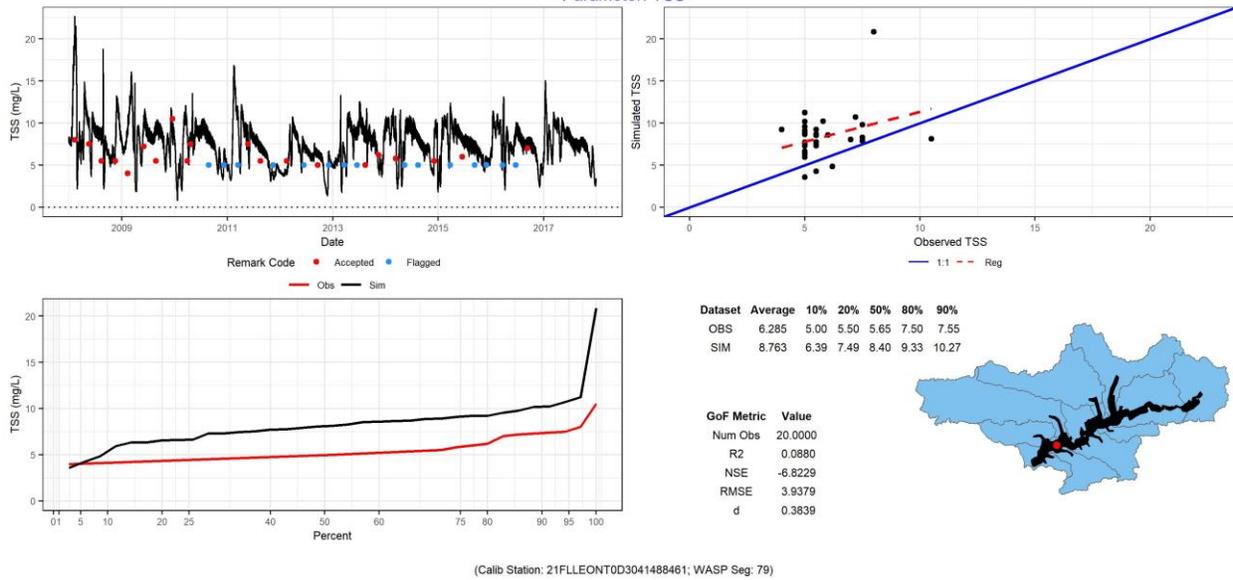


Figure 227 TSS – Lake Talquin at Talquin West