Delta Turbidity ANN Model (DASM-T) Development Using DSM-2: Phase 3 Results

Appendices

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APPENDIX A: FLOW-TURBIDITY RELATIONSHIPS AT BOUNDARY LOCATIONS

A.1 SACRAMENTO RIVER AT FREEPORT

Define three flow-turbidity relationships that are approximately based on an RMA analysis of suspended sediment data from USGS for Sacramento River at Freeport (RMA, 2013). Assume linear interpolation to provide continuous turbidity values as a function of flow.

Flow Range cfs	Low (50%)	Mid (75%)	High (90%)
< 10,000	10	10	10
10,000-20,000	20	20	30
20,000-30,000	35	50	100
30,000-40,000	65	100	260
40,000-50,000	90	120	310
50,000-60,000	90	130	310
60,000-70,000	90	130	230
>70,0000	90	130	200

A.2 SAN JOAQUIN RIVER AT VERNALIS

Define two flow-turbidity relationships that are loosely based on an RMA analysis of suspended sediment data from USGS for San Joaquin River at Vernalis (RMA, 2013). Assume linear interpolation to provide continuous turbidity values as a function of flow.

Flow Range cfs	Low (50%)	High
<3,000	20	80
3,000-4,000	20	90
4,000-5,000	20	110
5,000-6,000	20	110
6,000-10,000	20	110
10,000-20,000	20	80
>20,000	15	50

A.3 YOLO BYPASS

Define three flow-turbidity relationships that are loosely based on an RMA analysis that is based on a WARMF simulation of water years 1975-2012 (RMA, 2013). Assume linear interpolation to provide continuous turbidity values as a function of flow.

Flow Range cfs	Low	Mid	High
<100	25	35	75
100-1,000	40	50	110
1,000-10,000	50	85	370
10,000-30,000	50	90	250
>30,000	70	110	210

A.4 COSUMNES RIVER

Define three flow-turbidity relationships that are loosely based on an RMA analysis that is based on a WARMF model historical simulation of water years 1975-2012 (RMA, 2013). Assume linear interpolation to provide continuous turbidity values as a function of flow.

Flow Range cfs	Low	Mid	High
<100	10	10	10
100-300	10	10	40
300-500	10	10	70
500-1,000	10	20	80
1,000-3,000	20	40	110
3,000-5,000	50	70	120
>5,000	80	100	150

A.5 MOKELUMNE RIVER

Define the following flow-turbidity relationship that is loosely based on an RMA analysis that is based on a WARMF simulation of water years 1975-2012 (RMA, 2013). Assume linear interpolation to provide continuous turbidity values as a function of flow.

Flow Range cfs	Low	Mid	High
<100	2	3	4
100-1,000	3	5	7
>1,000	4	7	10

A.6 CALAVERAS RIVER

Define three flow-turbidity relationships that are loosely based on an RMA analysis that is based on a WARMF simulation of water years 1975- 2012 (RMA, 2013). Assume linear interpolation to provide continuous turbidity values as a function of flow.

Flow Range cfs	Low	Mid	High
<100	10	20	40
100-400	10	20	50
400-1000	20	40	80
>1000	30	60	100

APPENDIX B: FLOW-TURBIDITY RELATIONSHIPS AT BOUNDARY LOCATIONS

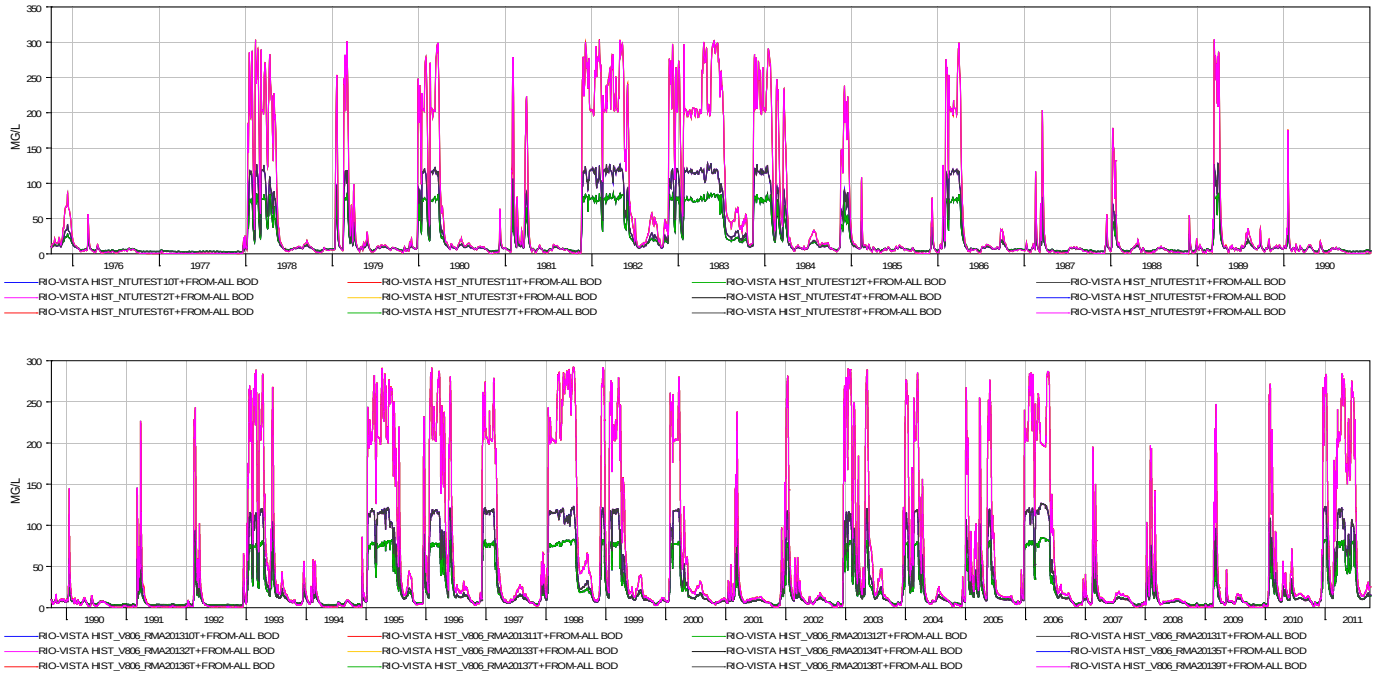


Figure B-1 *DSM2 simulated turbidity under twelve boundary conditions at Sacramento River at Rio Vista. Each line in this plot corresponds to a single boundary condition in Table 2-1.*

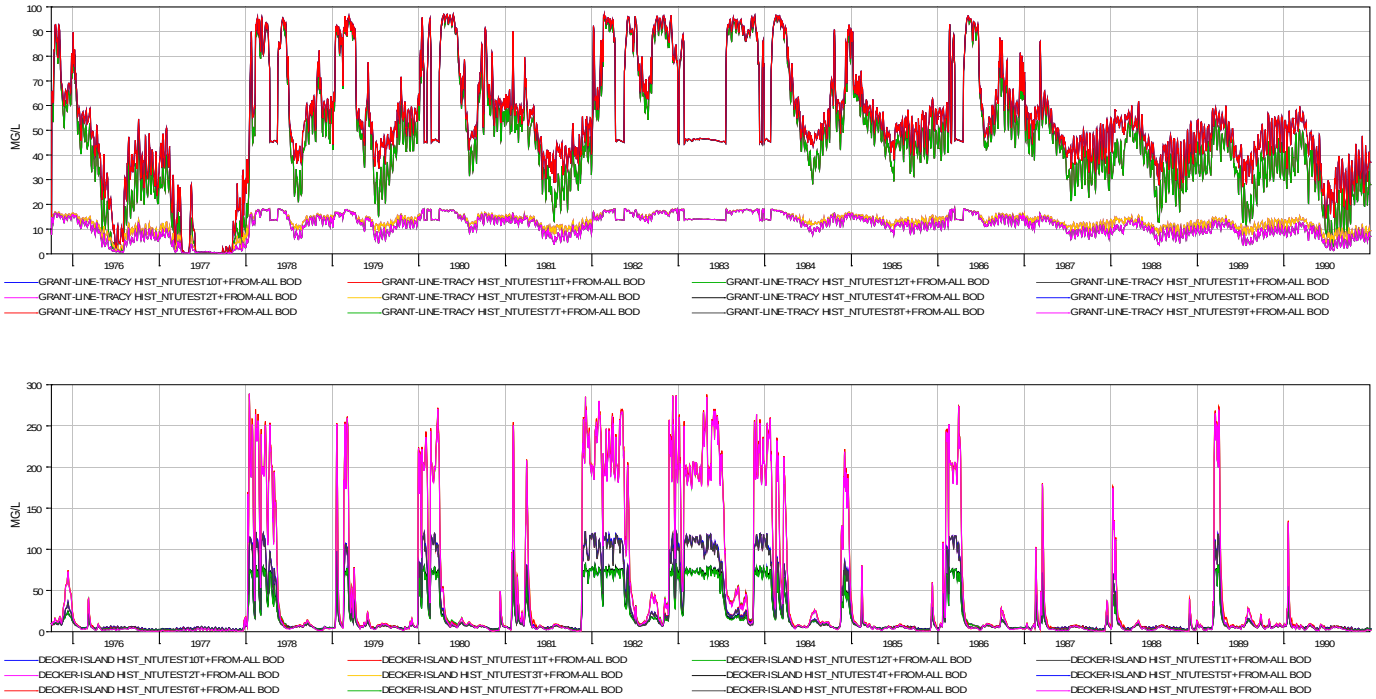


Figure B-2 DSM2 simulated turbidity under twelve boundary conditions at San Joaquin River at Decker Island

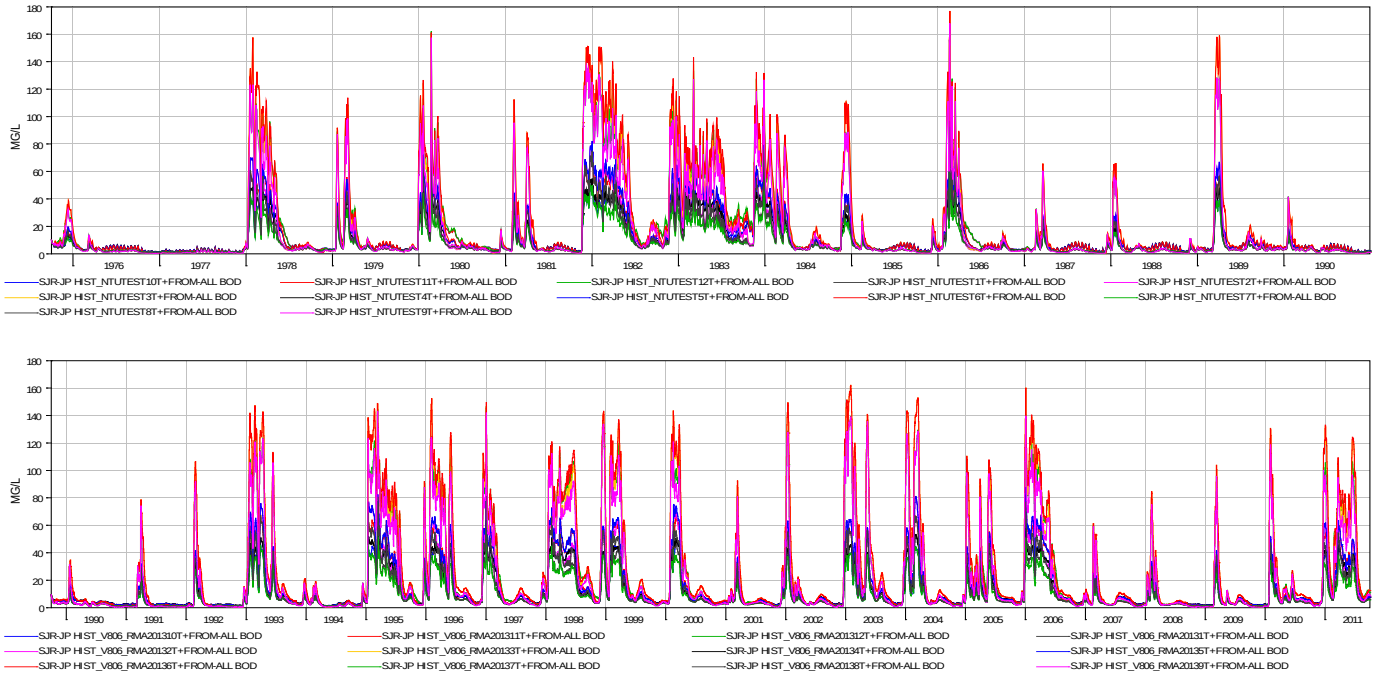


Figure B-3 DSM2 simulated turbidity under twelve boundary conditions at San Joaquin River at Jersey Point

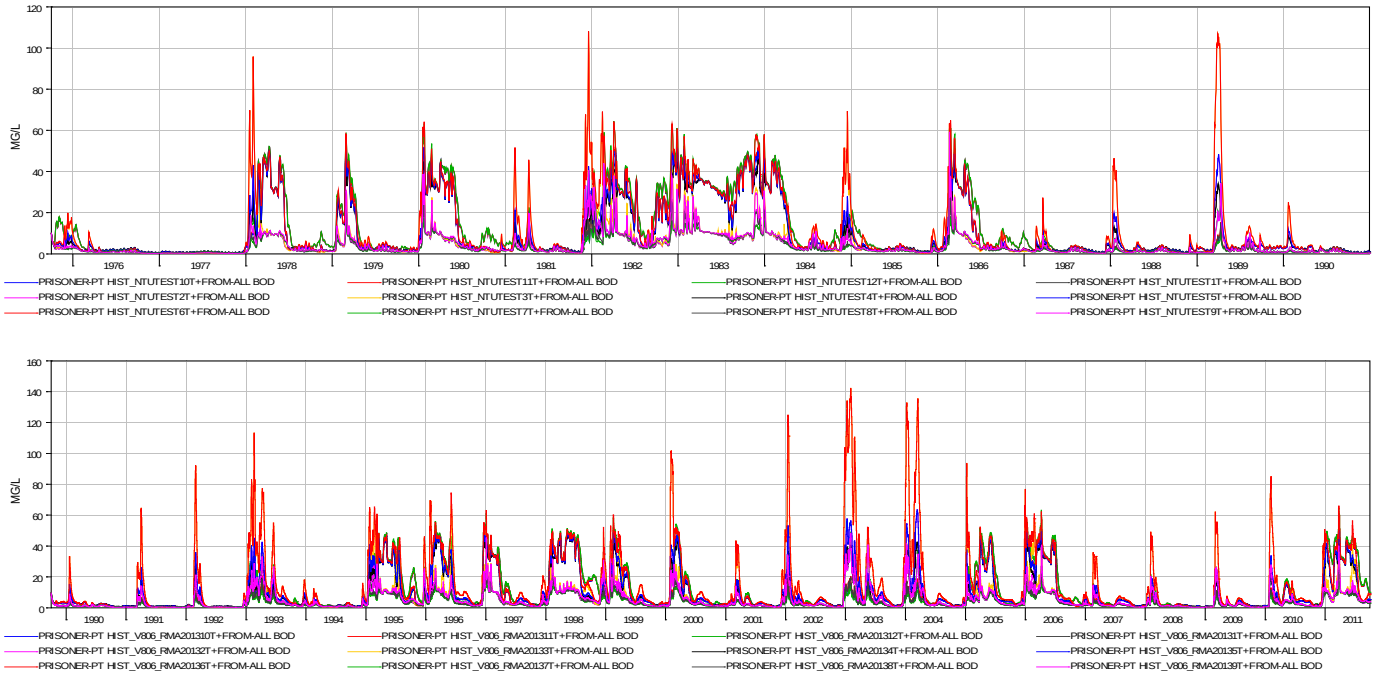


Figure B-4 DSM2 simulated turbidity under twelve boundary conditions at San Joaquin River at Prisoner's Point

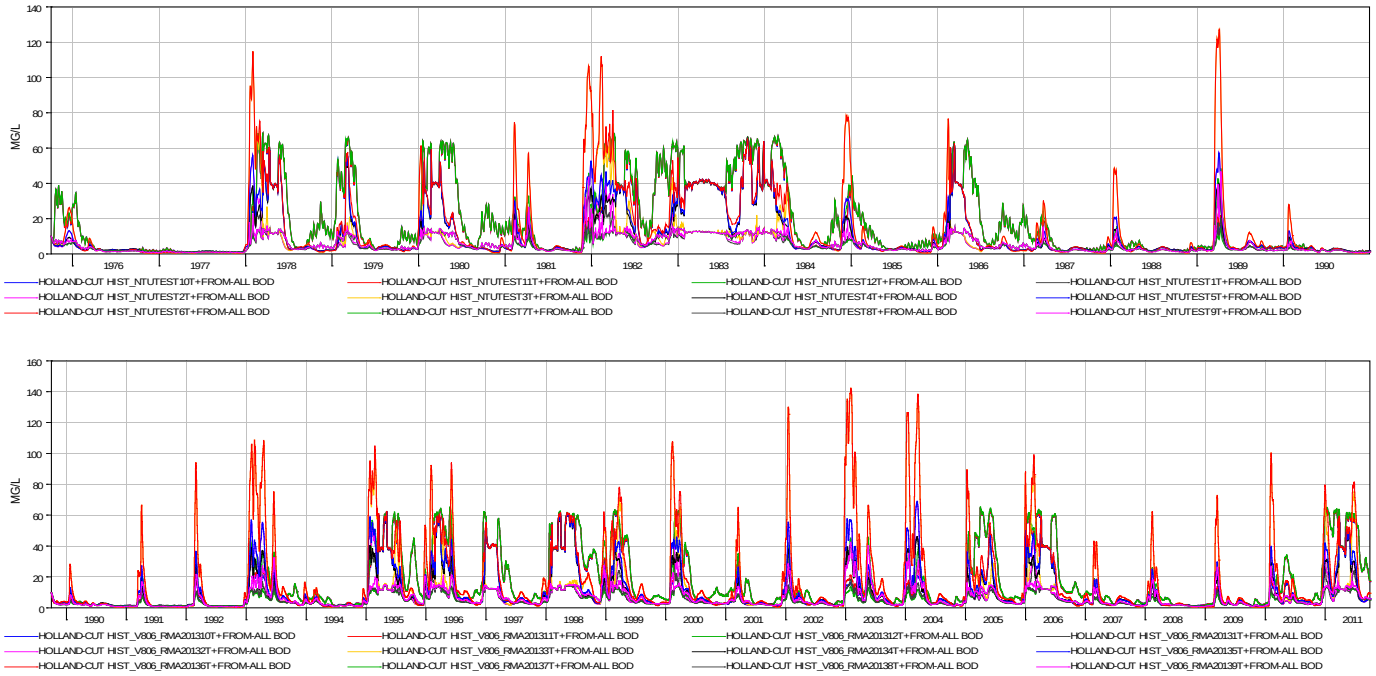


Figure B-5 DSM2 simulated turbidity under twelve boundary conditions at Old River at Holland Cut

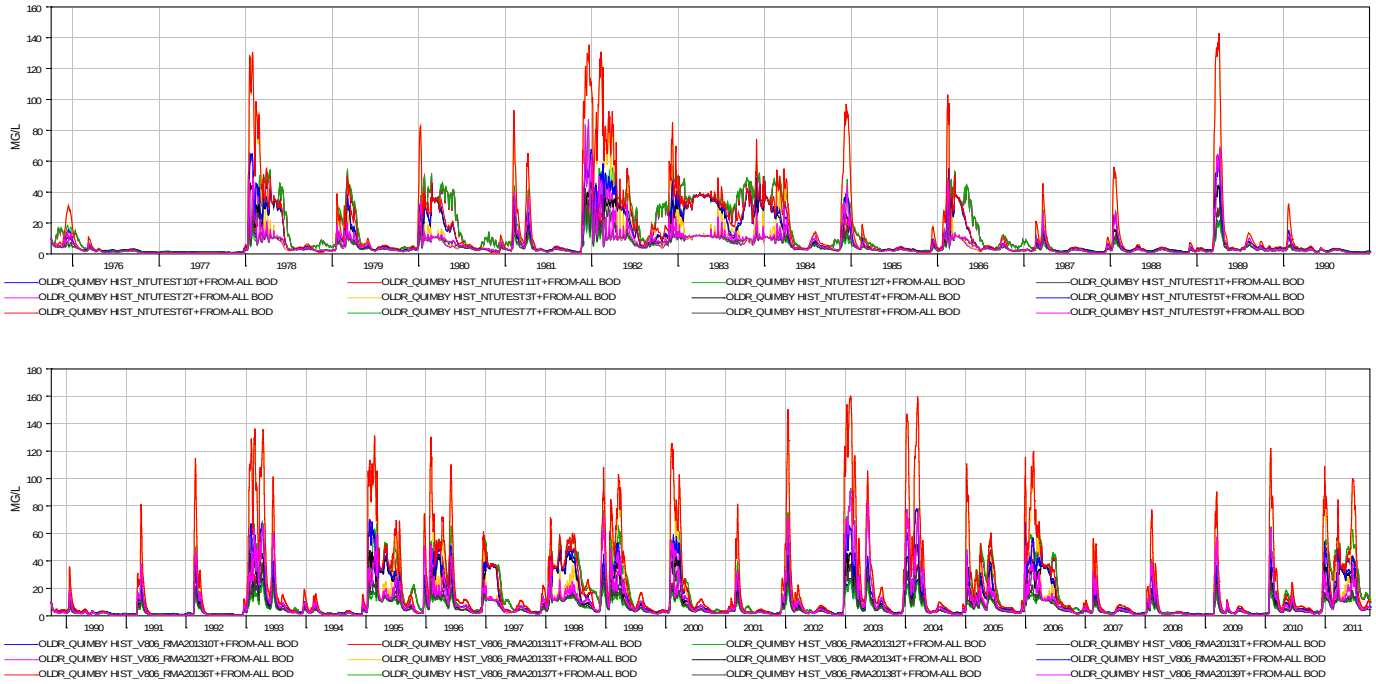


Figure B-6 DSM2 simulated turbidity under twelve boundary conditions at Old River at Quimby Island

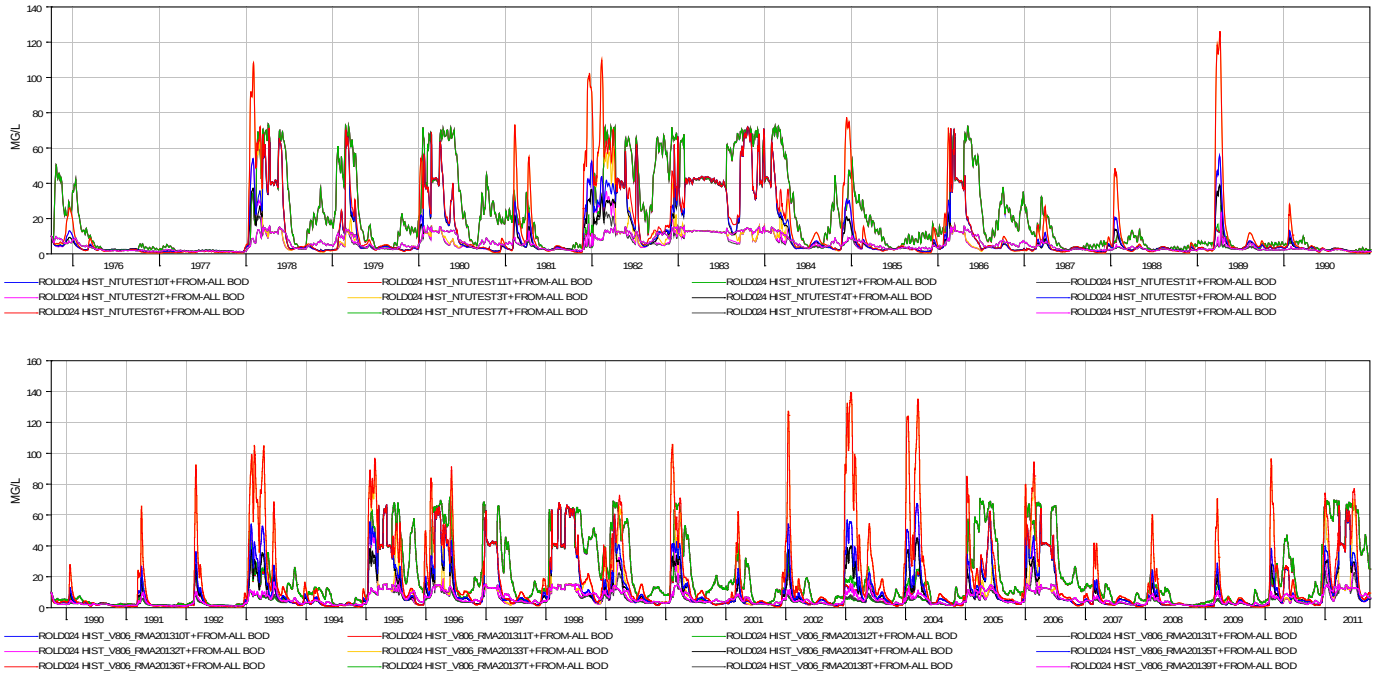


Figure B-7 DSM2 simulated turbidity under twelve boundary conditions at Old River at Bacon Island

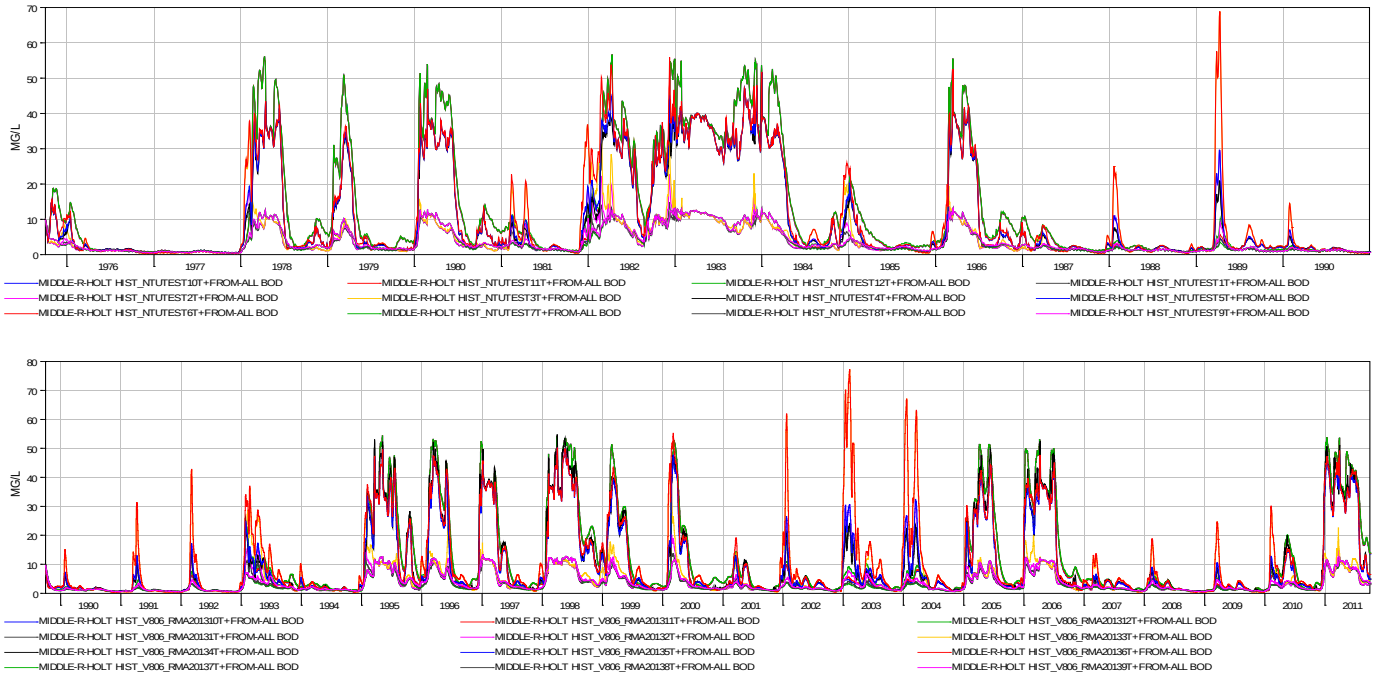


Figure B-8 DSM2 simulated turbidity under twelve boundary conditions at Middle River at Holt

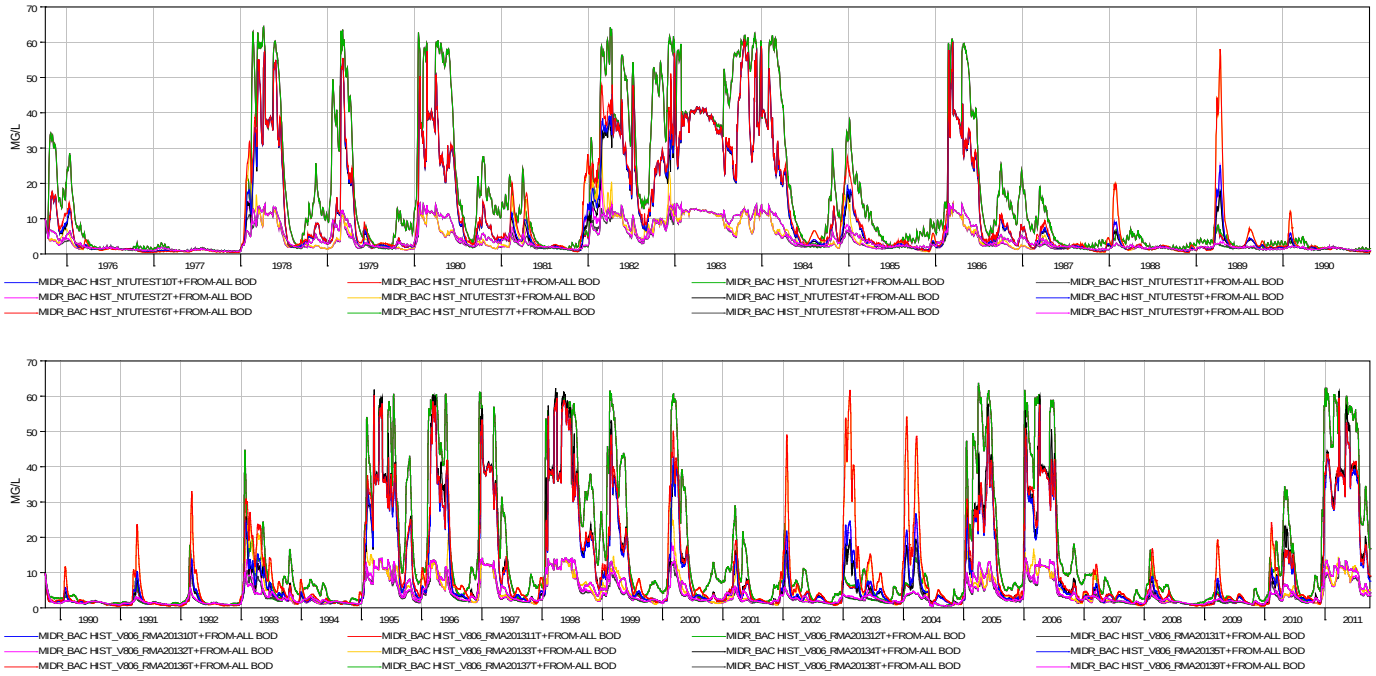


Figure B-9 DSM2 simulated turbidity under twelve boundary conditions at Middle River at Bacon Island

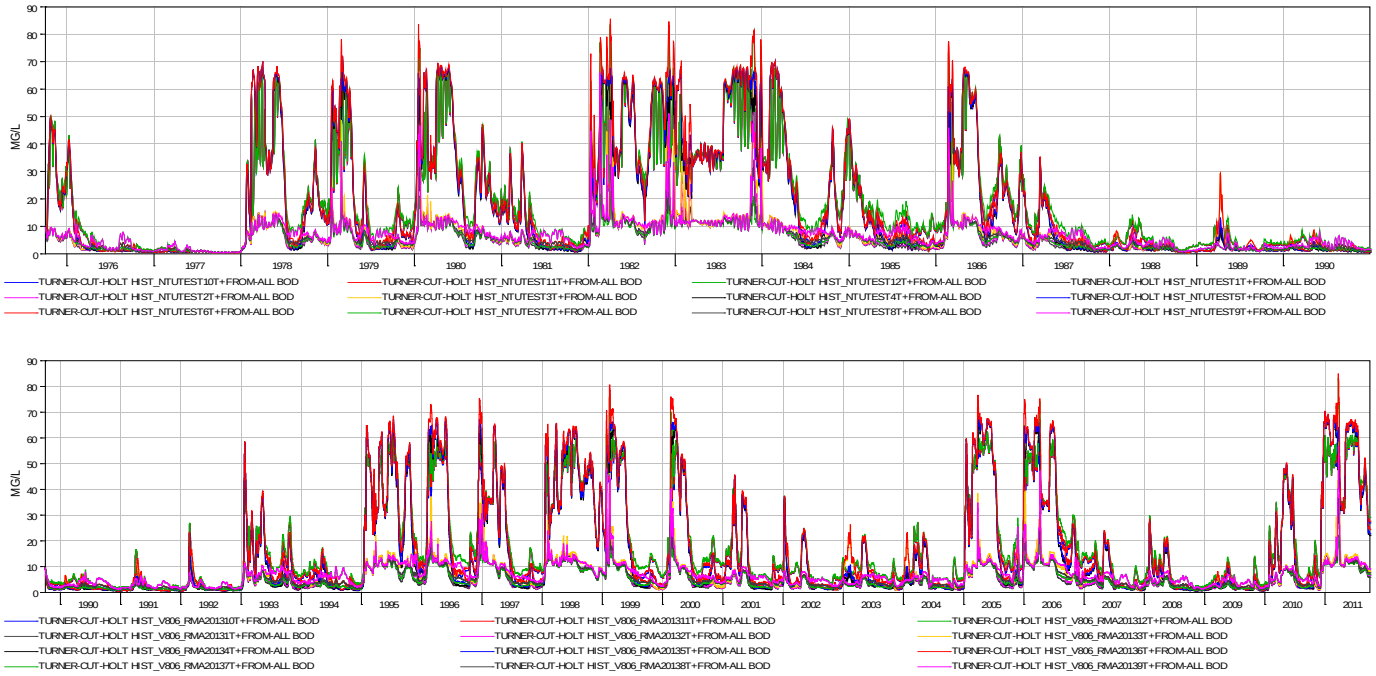


Figure B-10 DSM2 simulated turbidity under twelve boundary conditions at Turner Cut at Holt

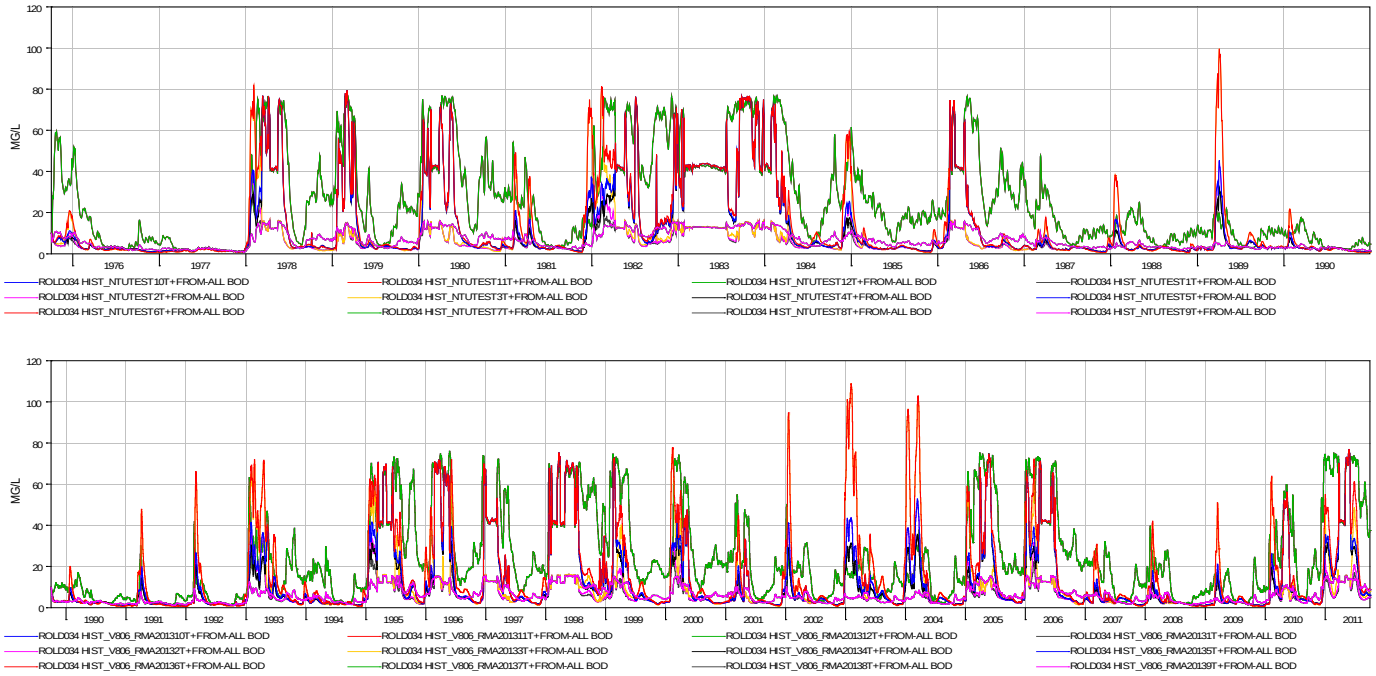


Figure B-11 DSM2 simulated turbidity under twelve boundary conditions at Old River at Hwy 4

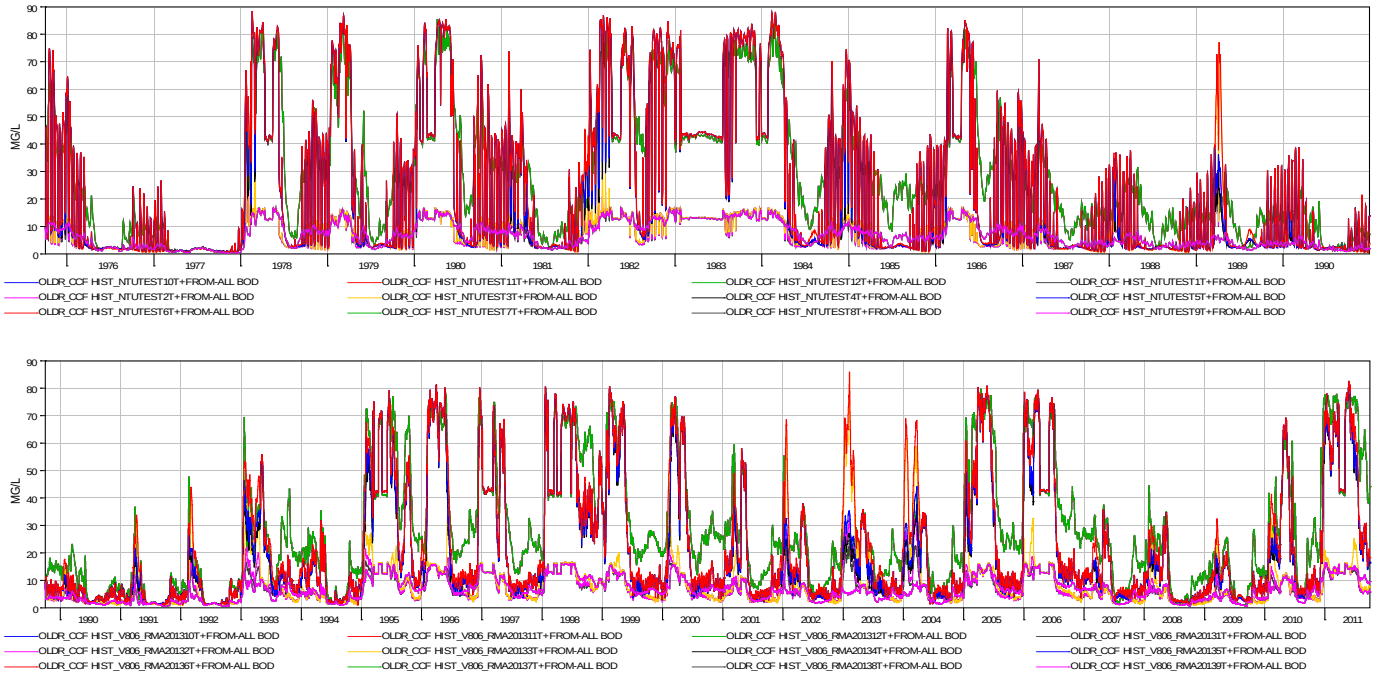


Figure B-12 DSM2 simulated turbidity under twelve boundary conditions at Old River at Clifton Court Intake

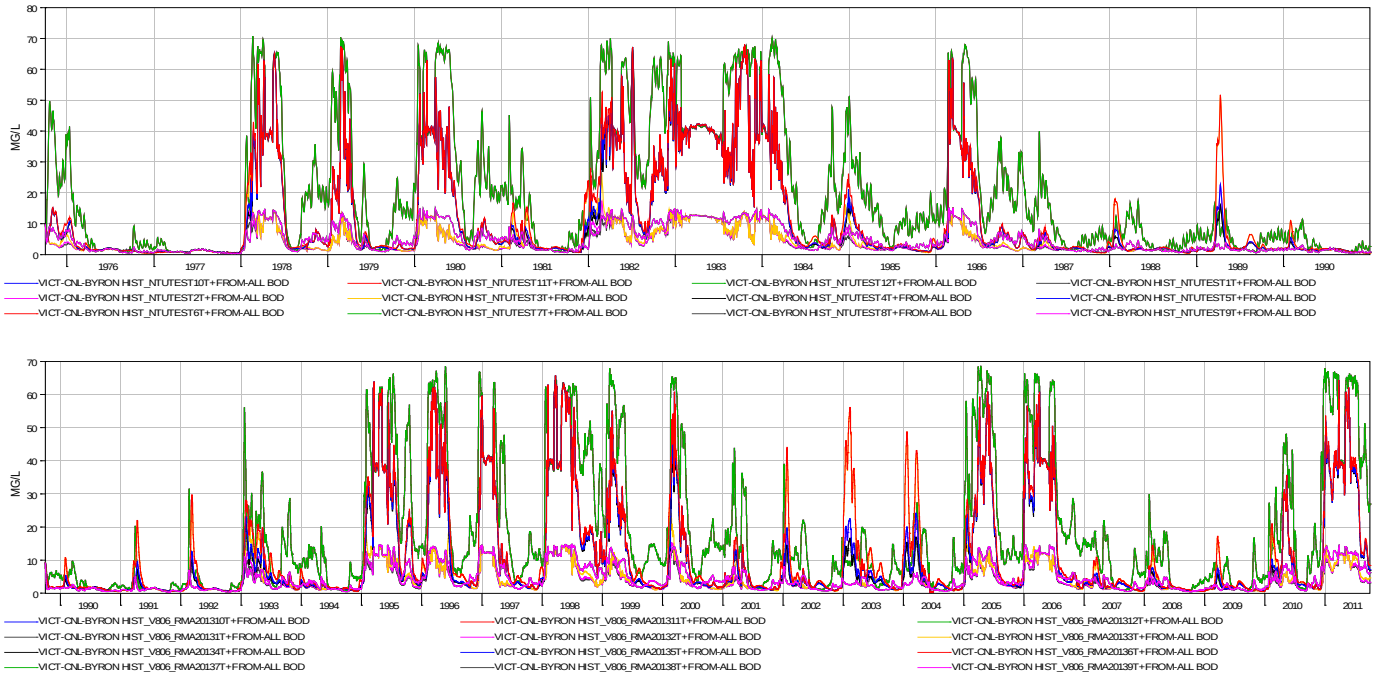


Figure B-13 DSM2 simulated turbidity under twelve boundary conditions at Victoria Canal

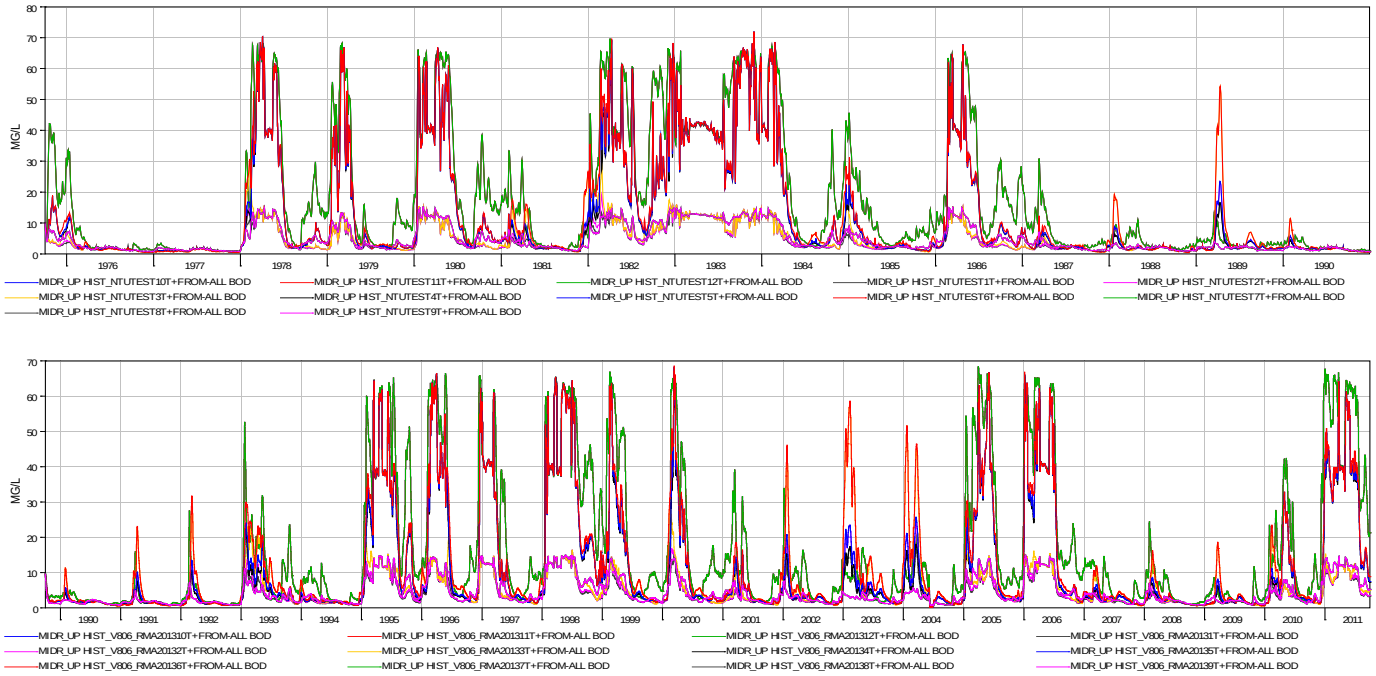


Figure B-14 DSM2 simulated turbidity under twelve boundary conditions at Middle River at Union Point

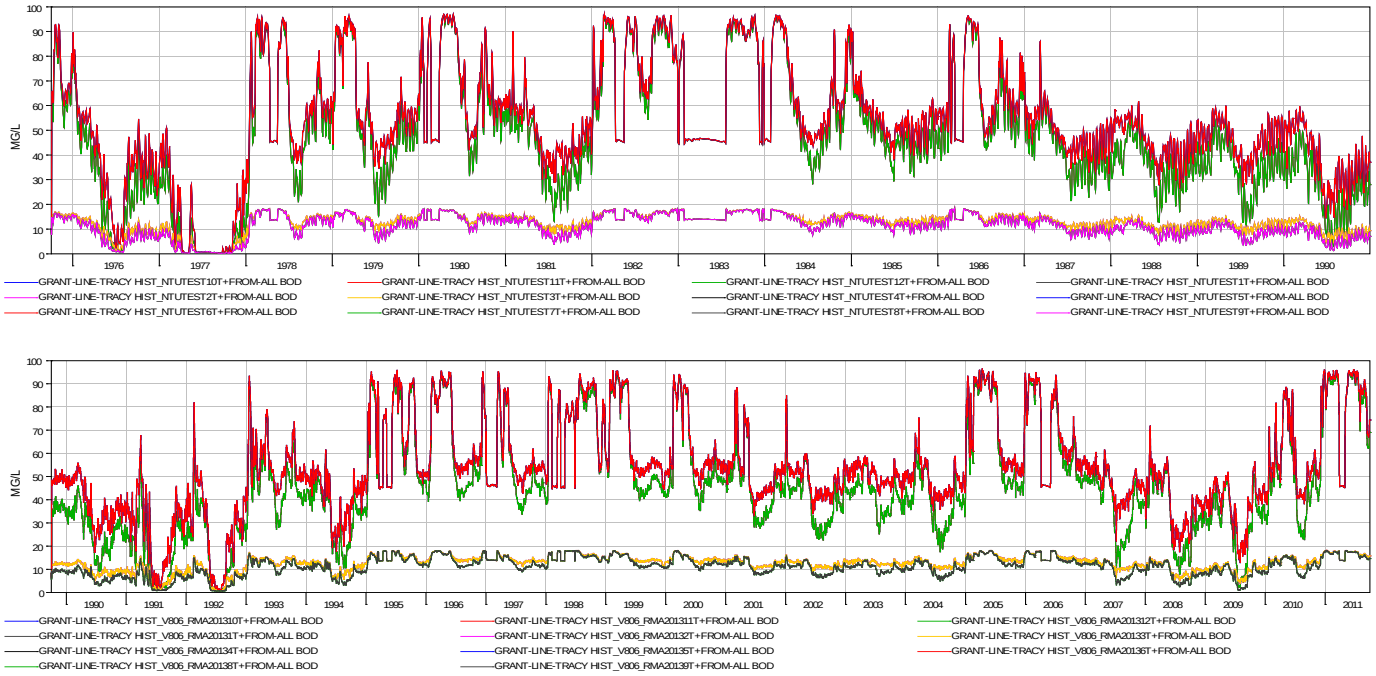


Figure B-15 DSM2 simulated turbidity under twelve boundary conditions at Grant Line Canal at Tracy

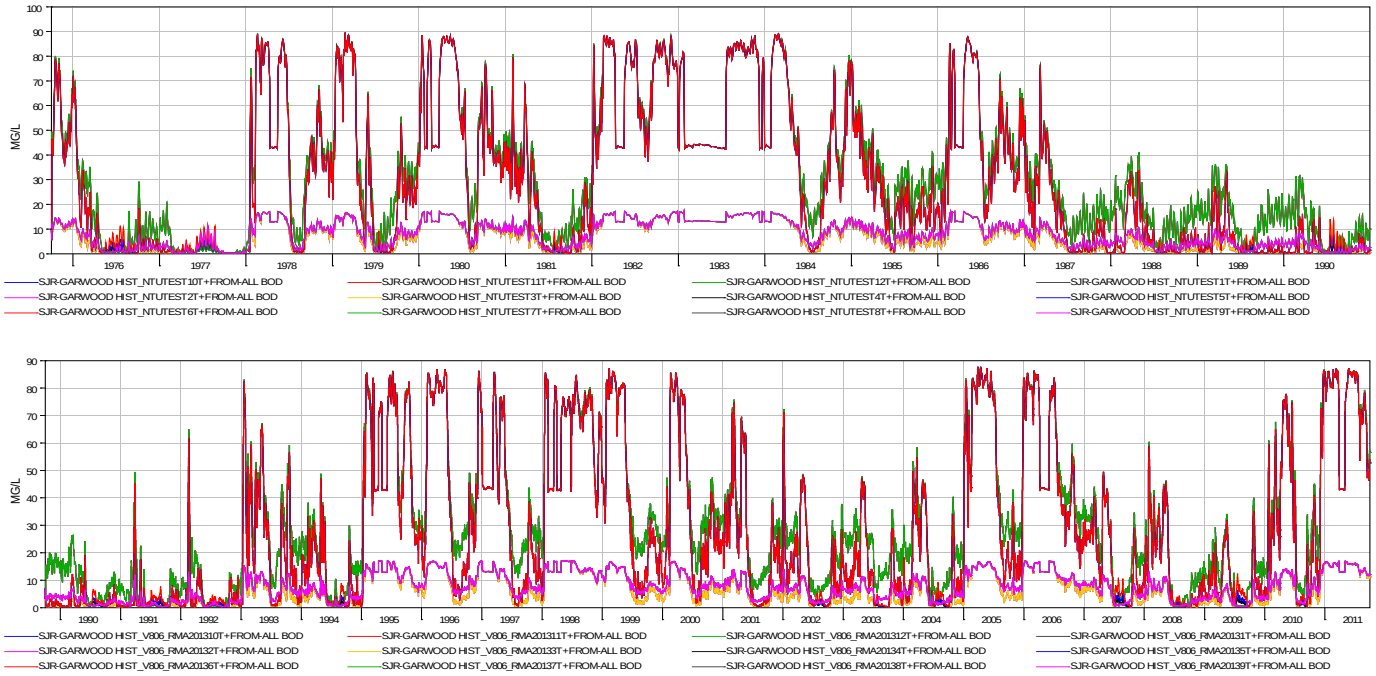


Figure B-16 DSM2 simulated turbidity under twelve boundary conditions at San Joaquin River at Garwood

APPENDIX C: COMPARISON OF ANN AND DSM2 SIMULATED TURBIDITY AT 16 TARGET LOCATIONS FOR FEED-FORWARD NETWORKS

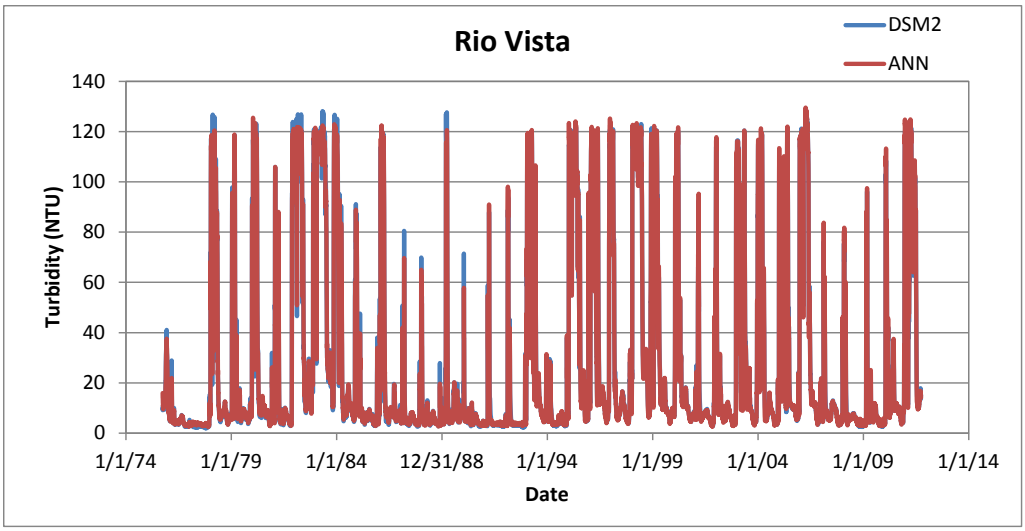
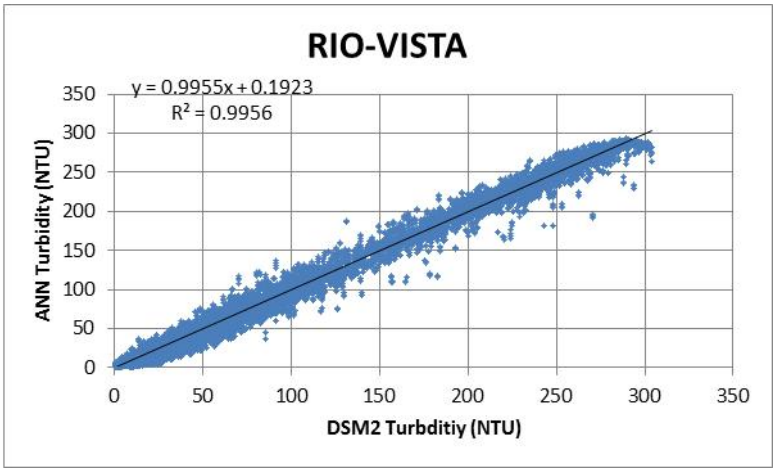


Figure C-1 *DSM2 and ANN simulated time-series turbidity at Sacramento River at Rio Vista (scenario 5)*



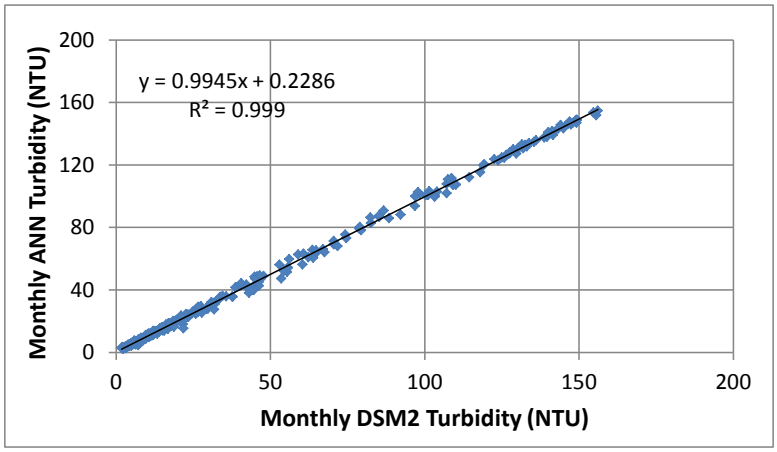


Figure C-2 *DSM2 and ANN simulated daily and monthly turbidity at Sacramento River at Rio Vista (all data).*

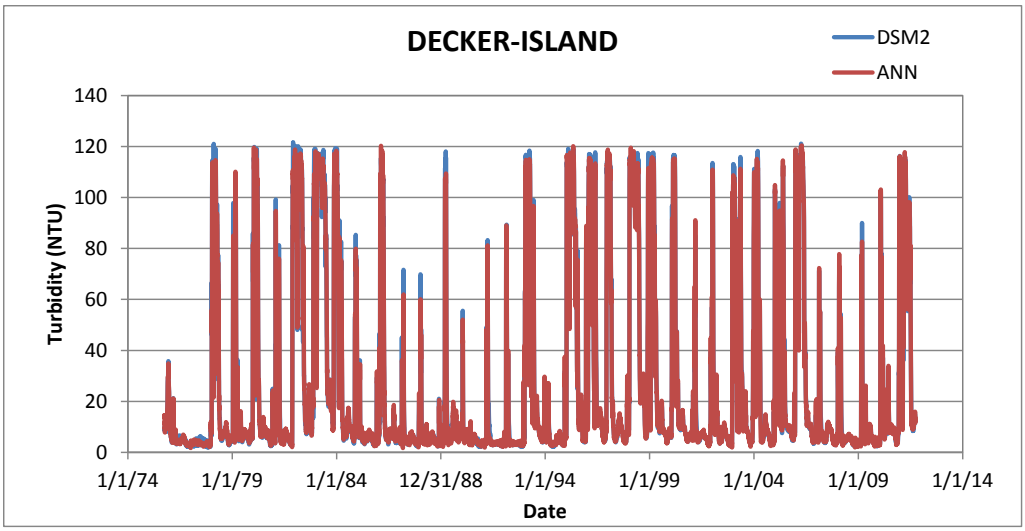


Figure C-3 DSM2 and ANN simulated turbidity at Decker Island (scenario 5)

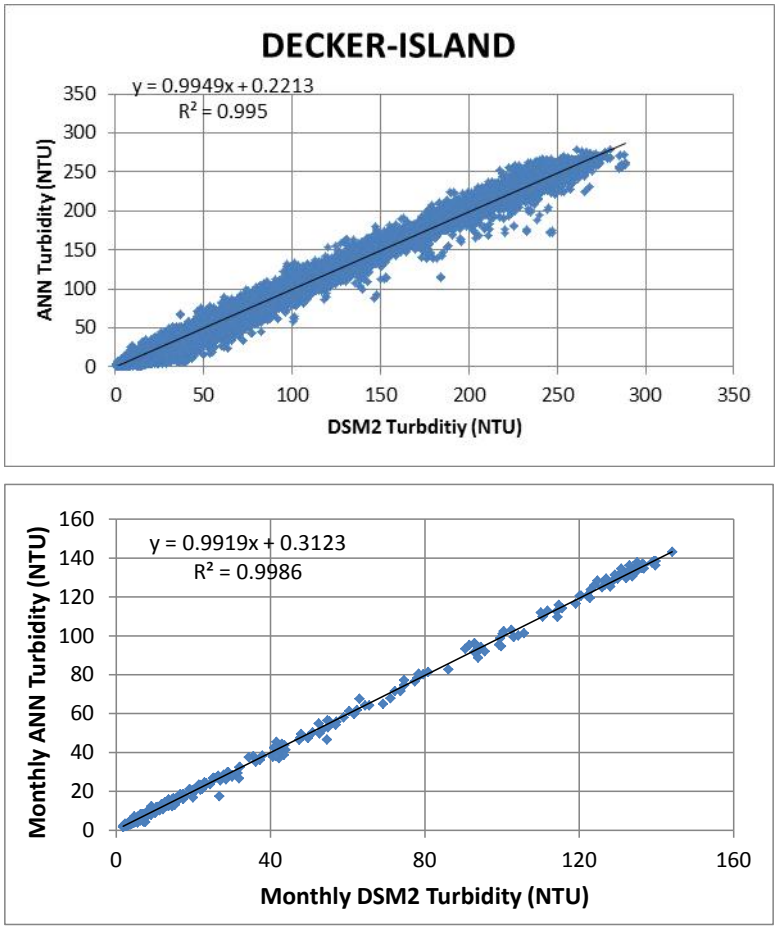


Figure C-4 DSM2 and ANN simulated daily and monthly turbidity at Decker Island (all data).

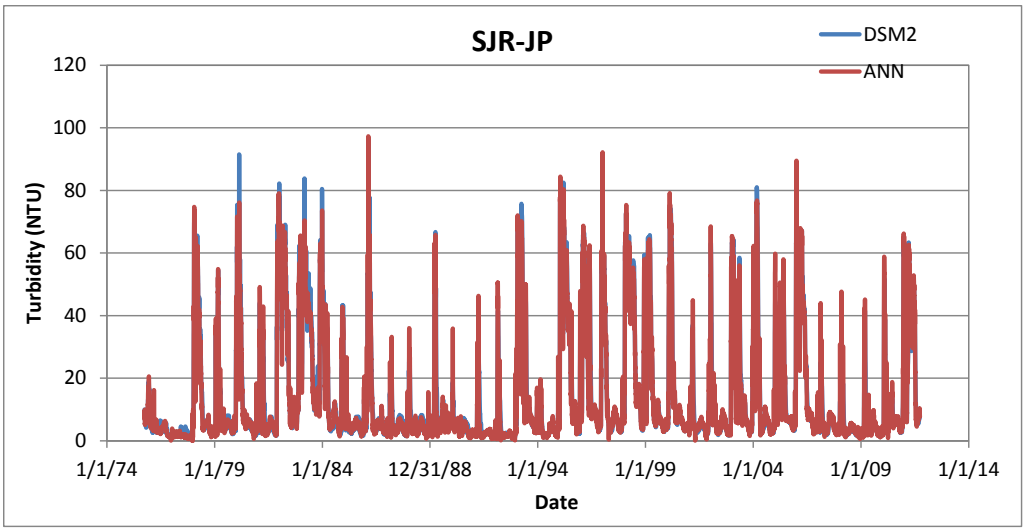


Figure C-5 DSM2 and ANN simulated turbidity at San Joaquin River at Jersey Point (scenario 5)

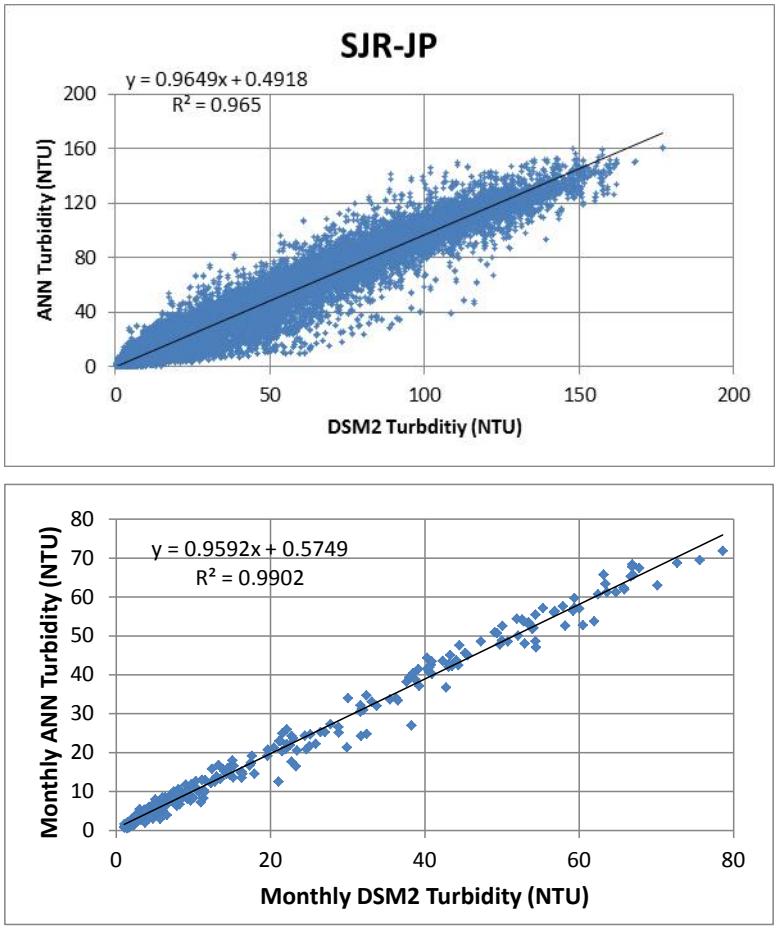


Figure C-6 DSM2 and ANN simulated daily and monthly turbidity at San Joaquin River at Jersey Point (all data).

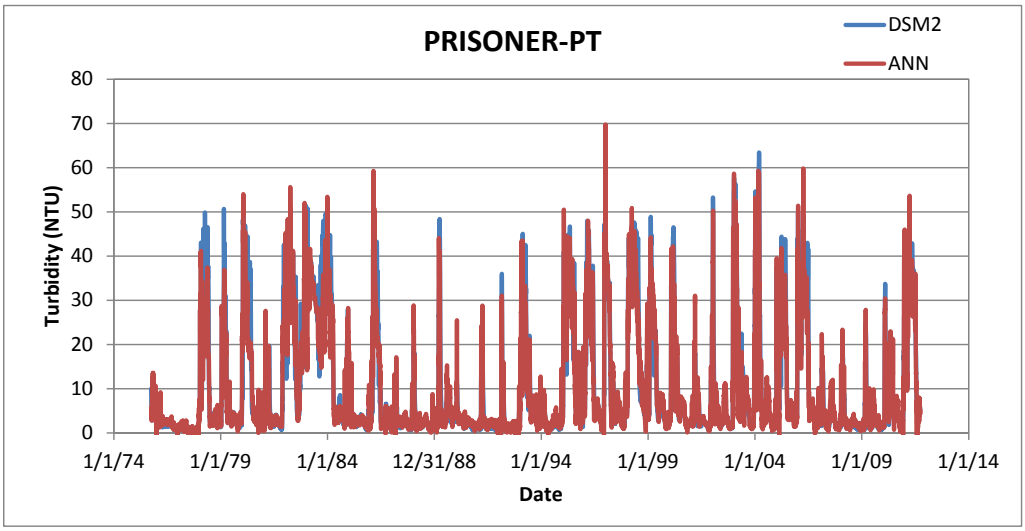
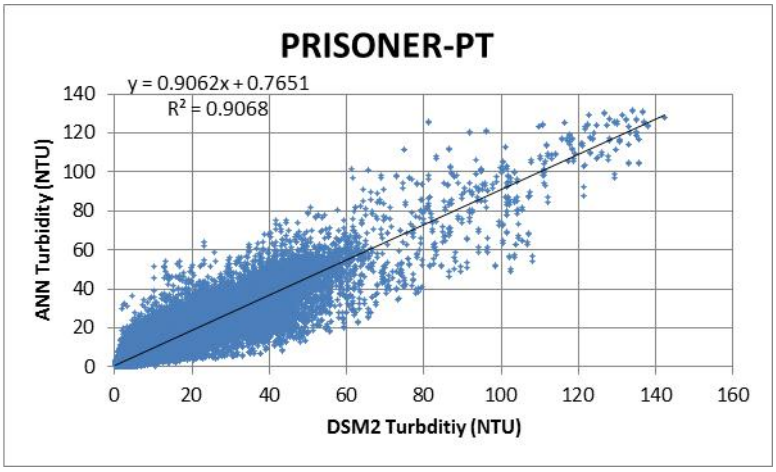


Figure C-7 *DSM2 and ANN simulated turbidity at San Joaquin River at Prisoner's Point (scenario 5)*



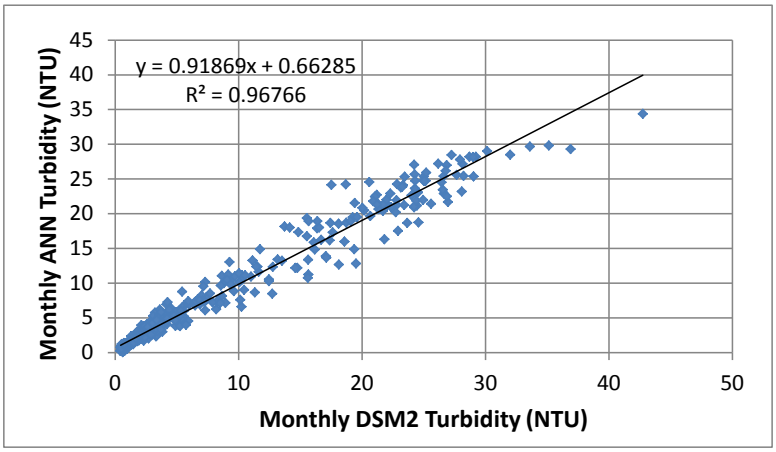


Figure C-8 *DSM2 and ANN simulated daily and monthly turbidity at San Joaquin River at Prisoner's Point (all data).*

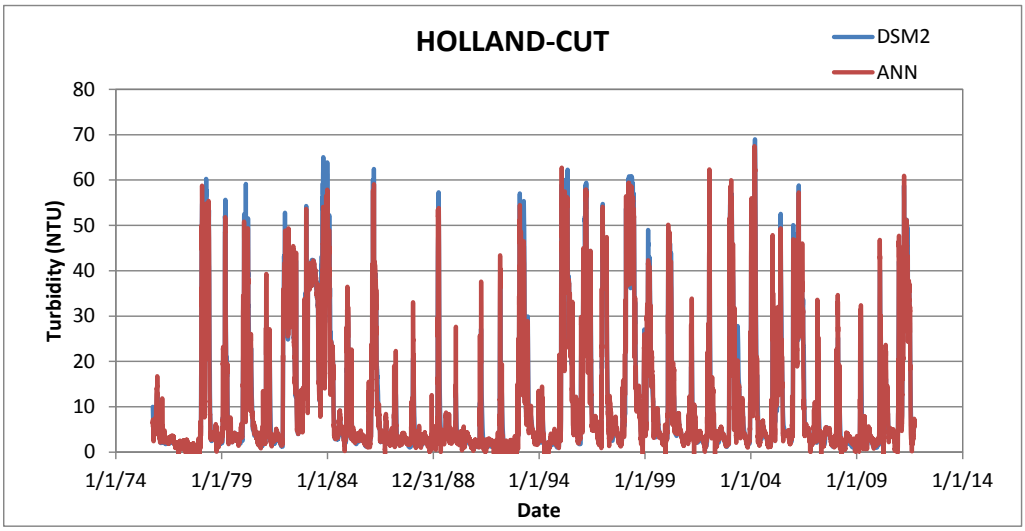


Figure C-9 DSM2 and ANN simulated turbidity at Old River @ Holland Cut (scenario 5)

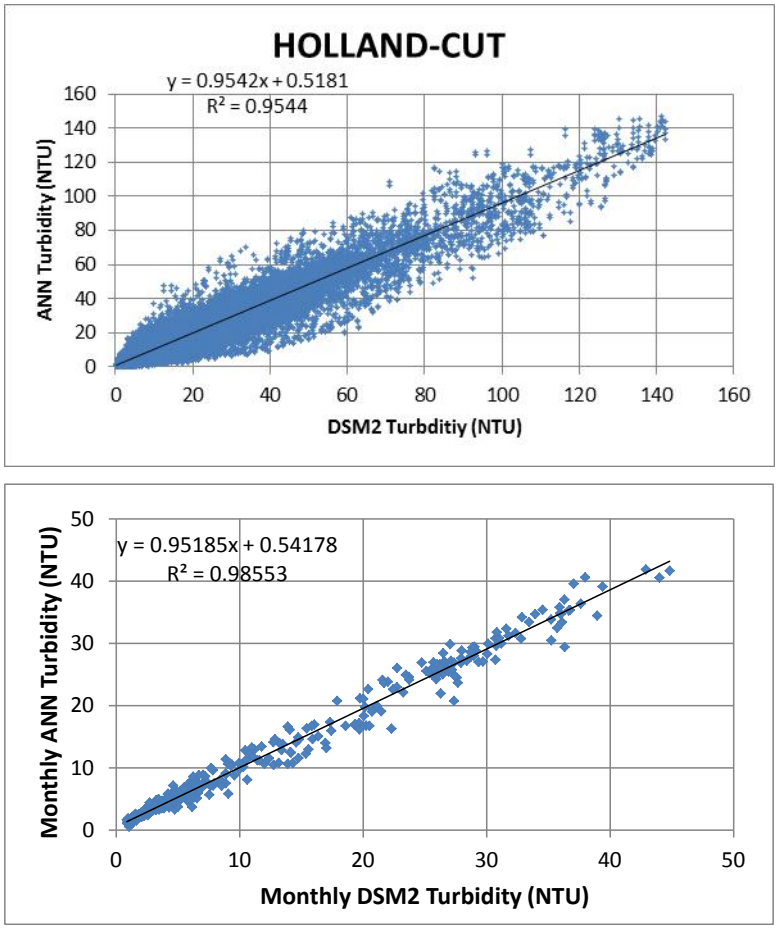


Figure C-10 DSM2 and ANN simulated daily and monthly turbidity at Old River at Holland Cut (all data).

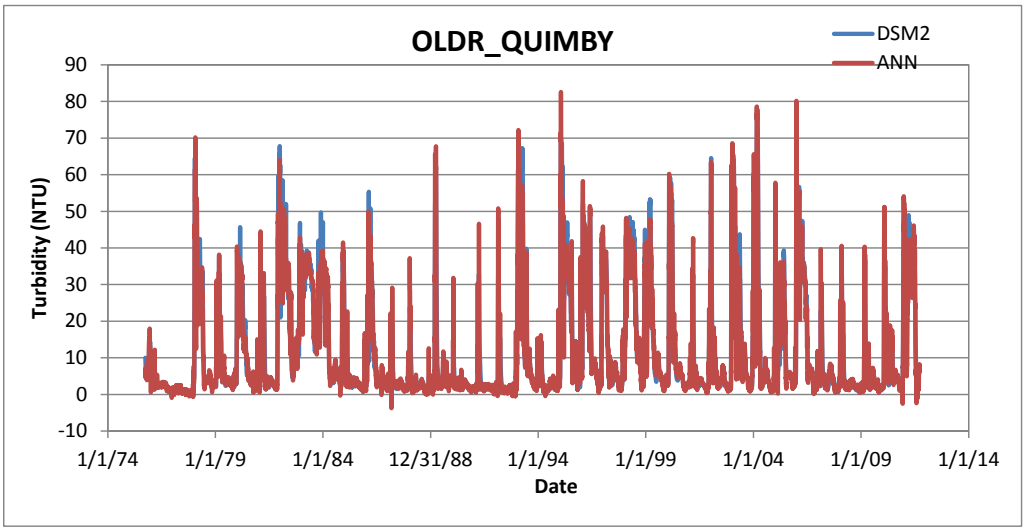


Figure C-11 DSM2 and ANN simulated turbidity at Old River at Quimby Island (scenario 5)

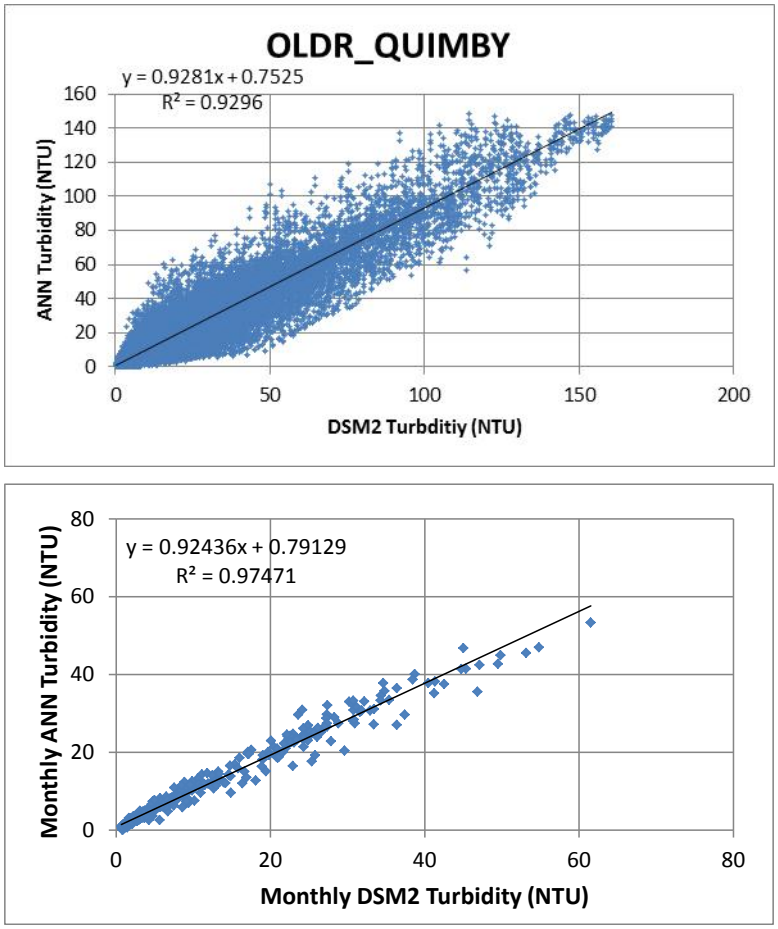


Figure C-12 DSM2 and ANN simulated turbidity at Old River at Quimby Island (all data)

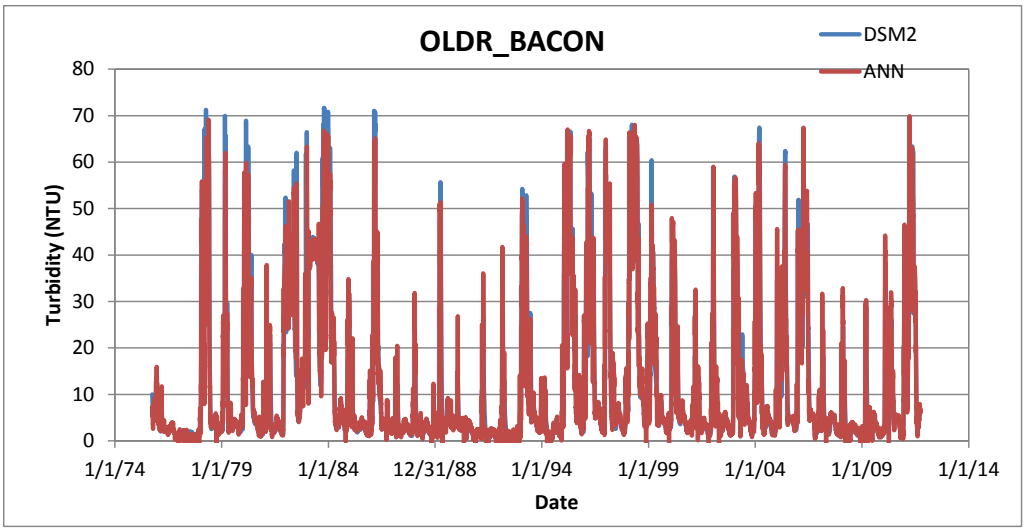


Figure C-13 DSM2 and ANN simulated turbidity at Old River at Bacon Island (scenario 5)

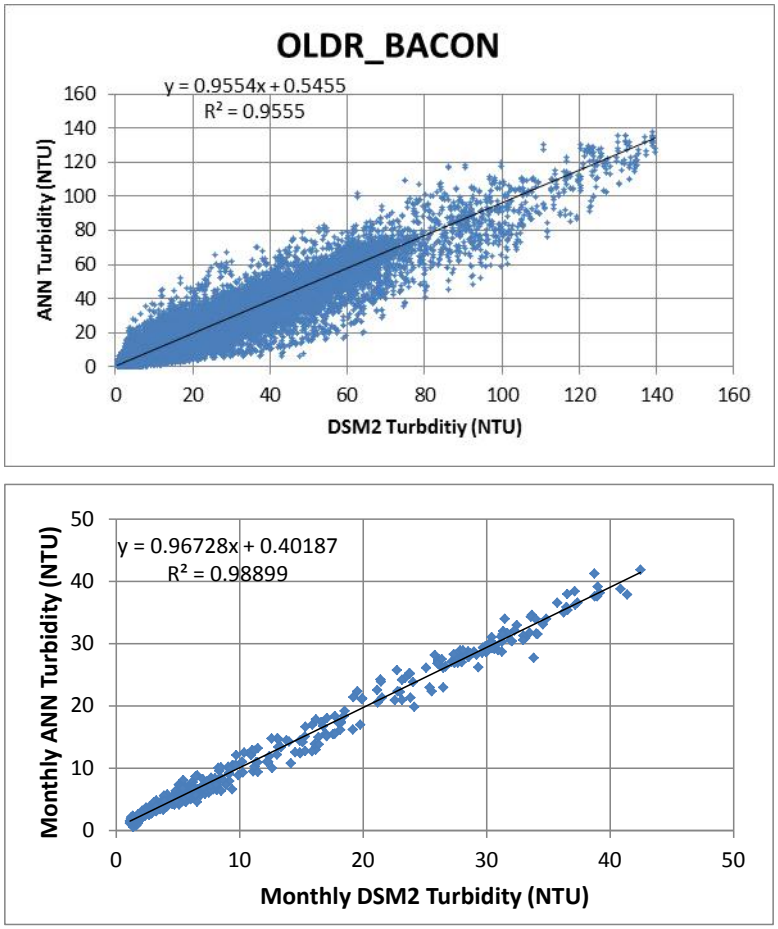


Figure C-14 DSM2 and ANN simulated turbidity at Old River at Bacon Island (all data)

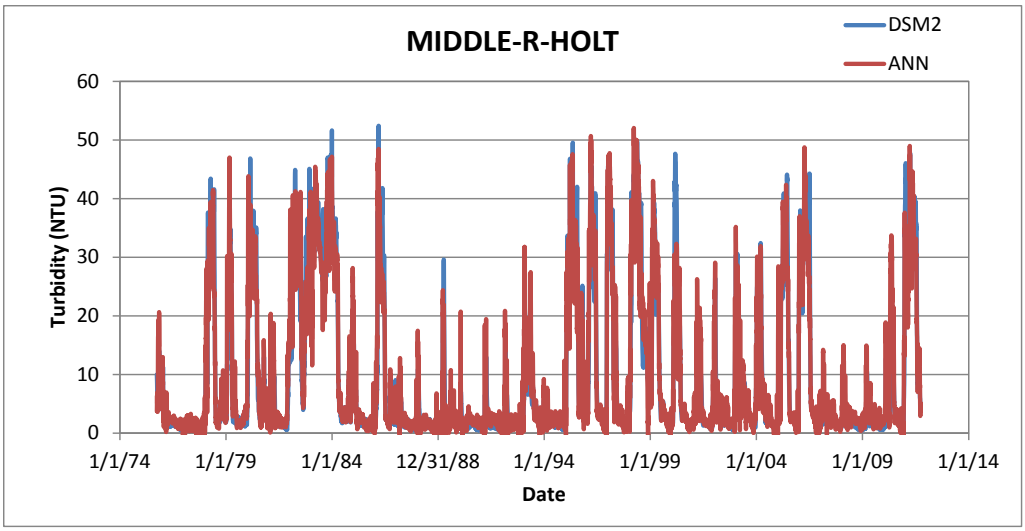
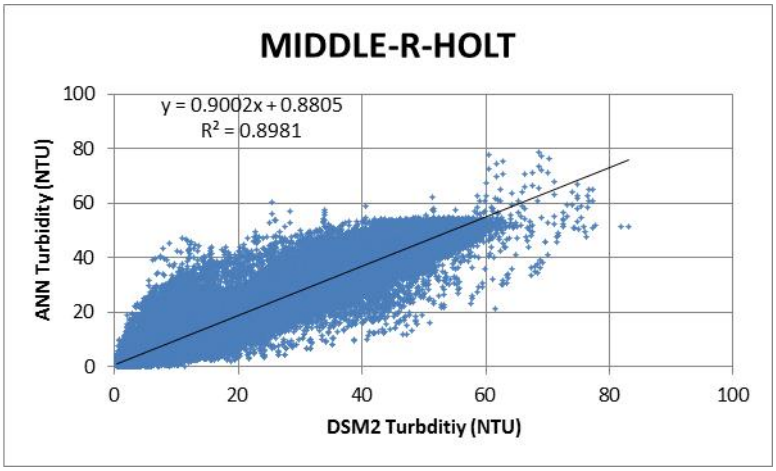


Figure C-15 DSM2 and ANN simulated turbidity at Middle River at Holt (scenario 5)



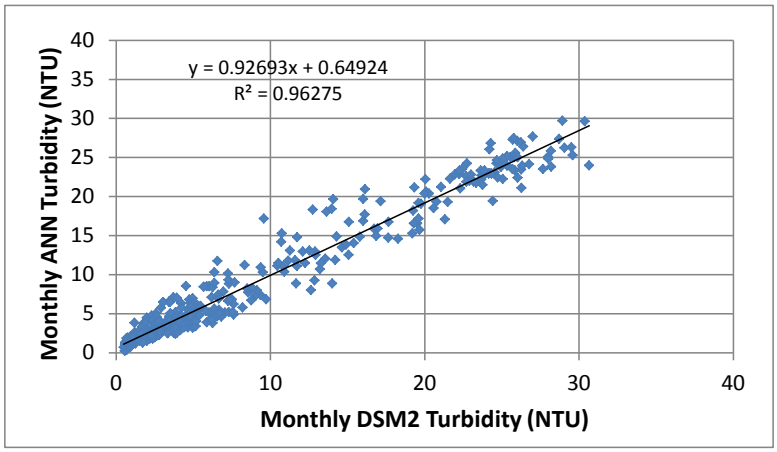


Figure C-16 DSM2 and ANN simulated turbidity at Middle River at Holt (all data)

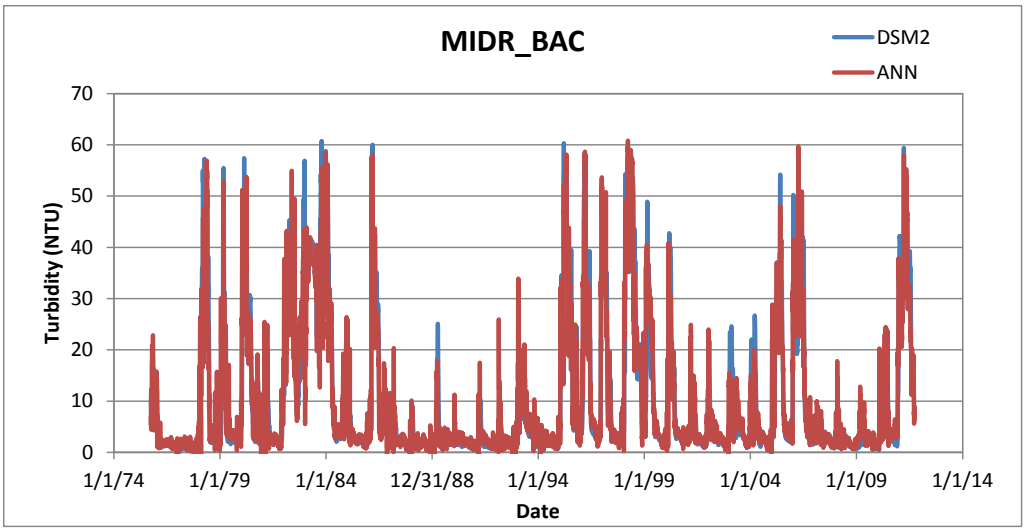


Figure C-17 DSM2 and ANN simulated turbidity at Middle River at Bacon Island (scenario 5)

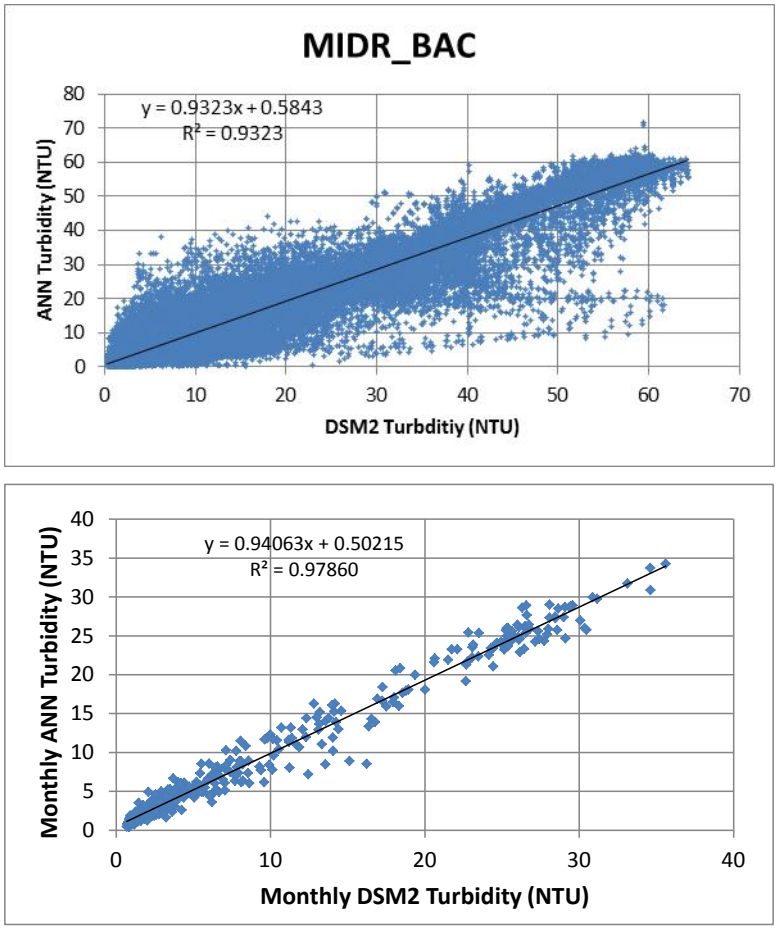


Figure C-18 DSM2 and ANN simulated turbidity at Middle River at Bacon Island (all data)

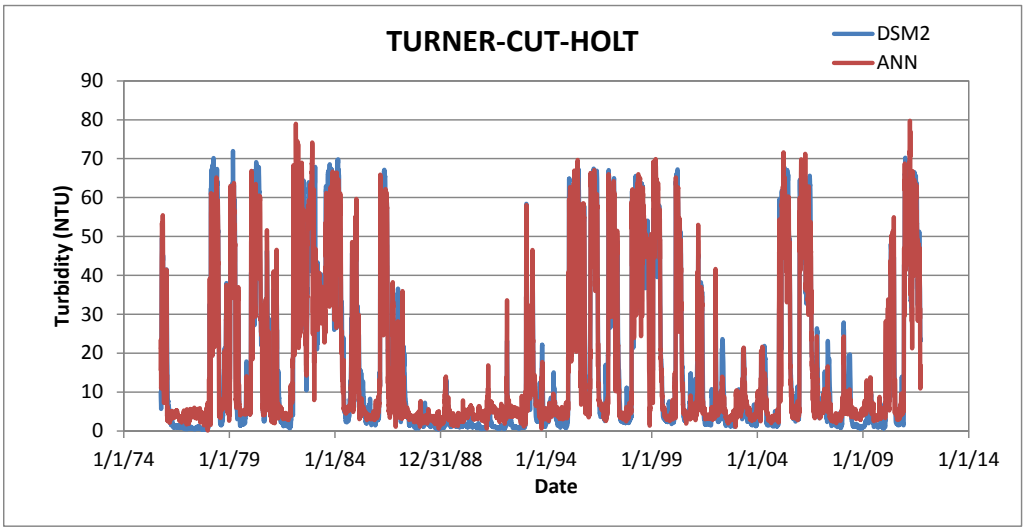


Figure C-19 DSM2 and ANN simulated turbidity at Turner Cut at Holt (scenario 5)

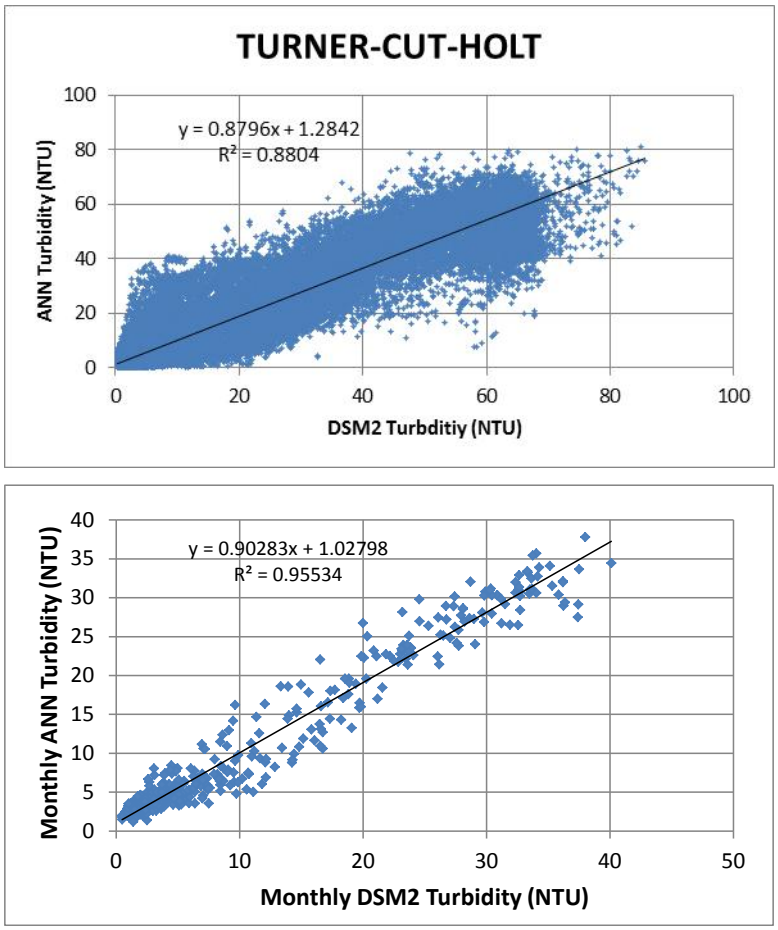


Figure C-20 DSM2 and ANN simulated turbidity at Turner Cut at Holt (all data)

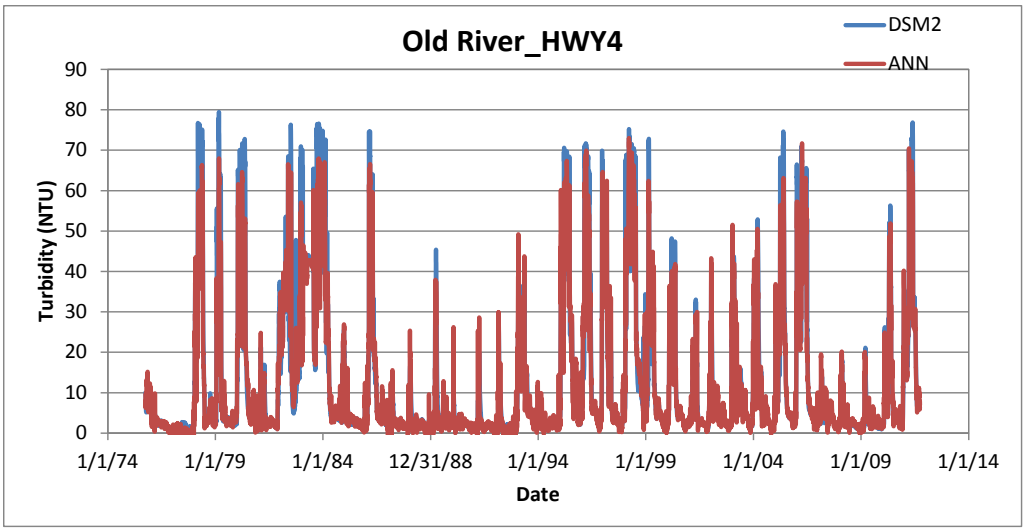
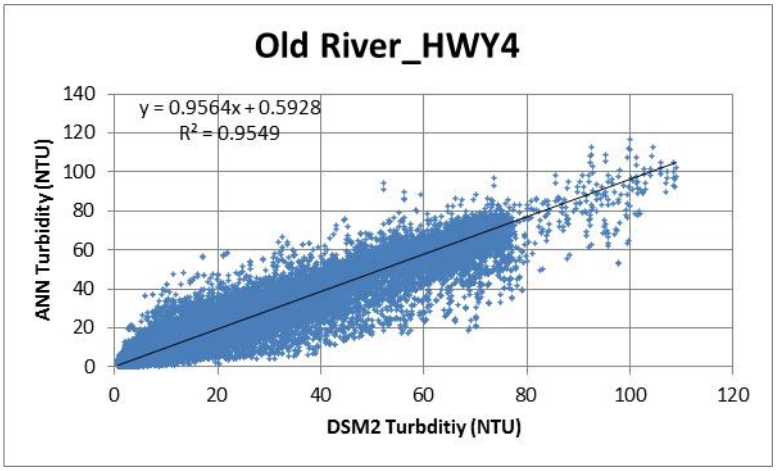


Figure C-21 DSM2 and ANN simulated turbidity at Old River at Highway 4 (scenario 5)



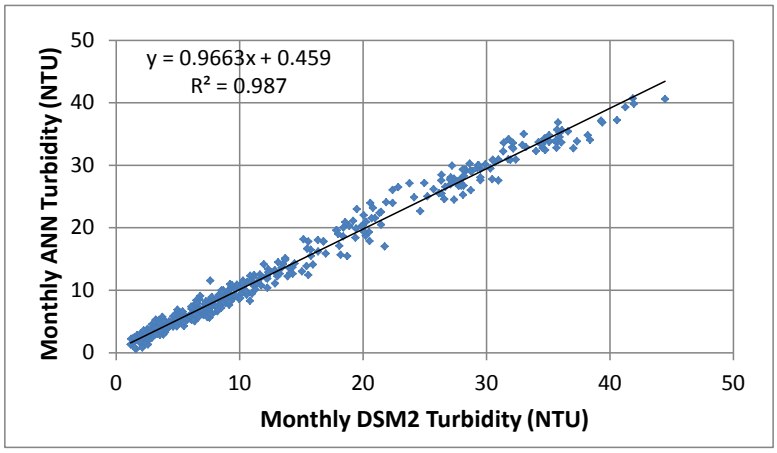


Figure C-22 DSM2 and ANN simulated turbidity at Old River at Highway 4 (all data)

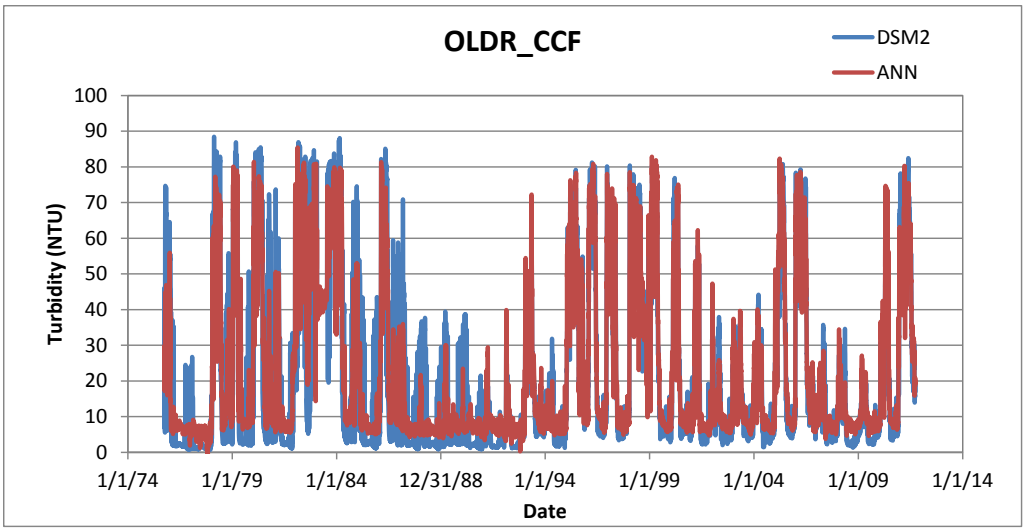


Figure C-23 DSM2 and ANN simulated turbidity at Old River at Clifton Court Intake (scenario 5)

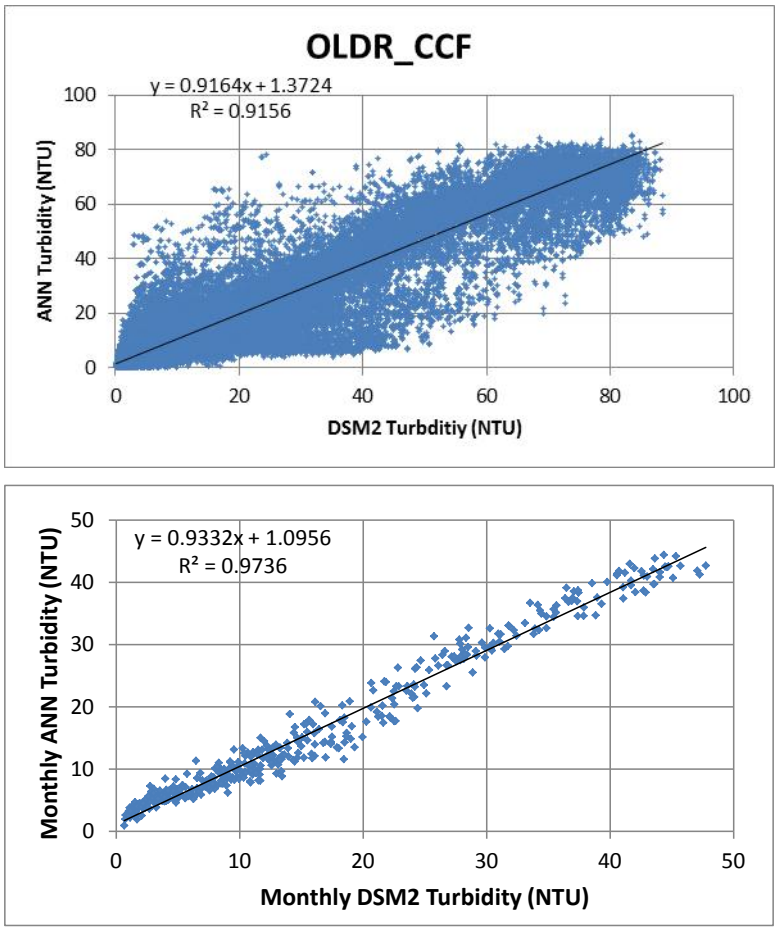


Figure C-24 DSM2 and ANN simulated turbidity at Old River at Clifton Court Intake (all data)

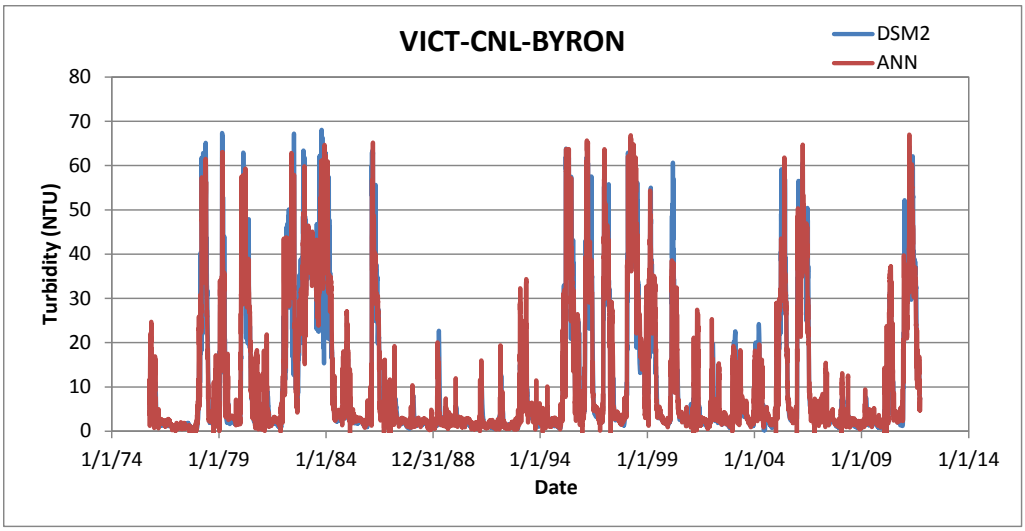


Figure C-25 DSM2 and ANN simulated turbidity at Victoria Canal (scenario 5)

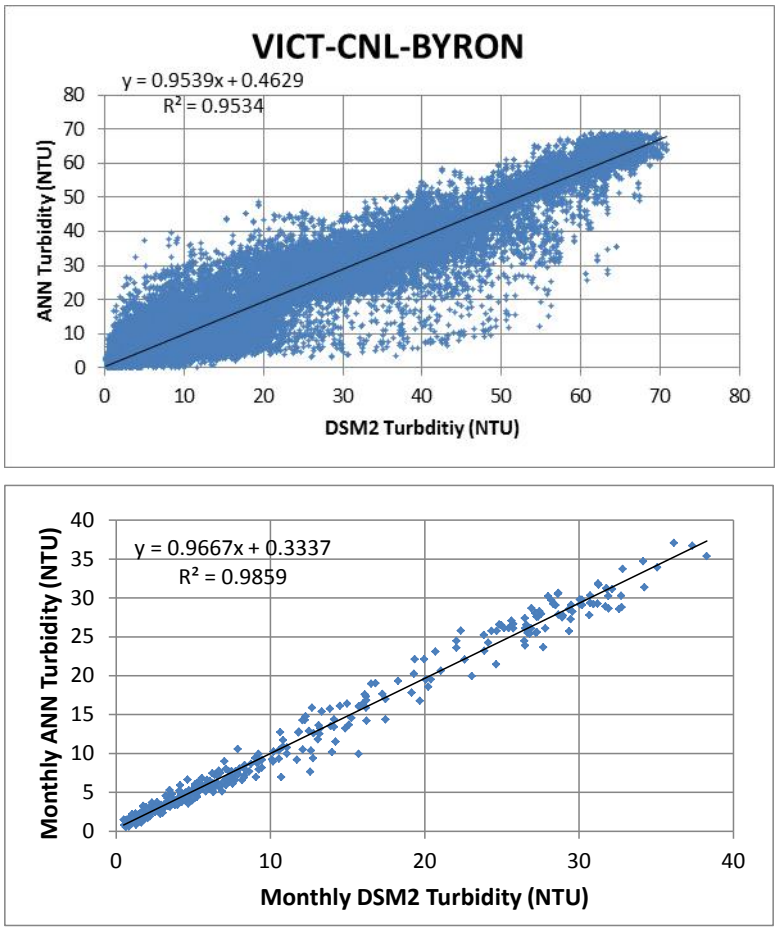


Figure C-26 DSM2 and ANN simulated turbidity at Victoria Canal (all data)

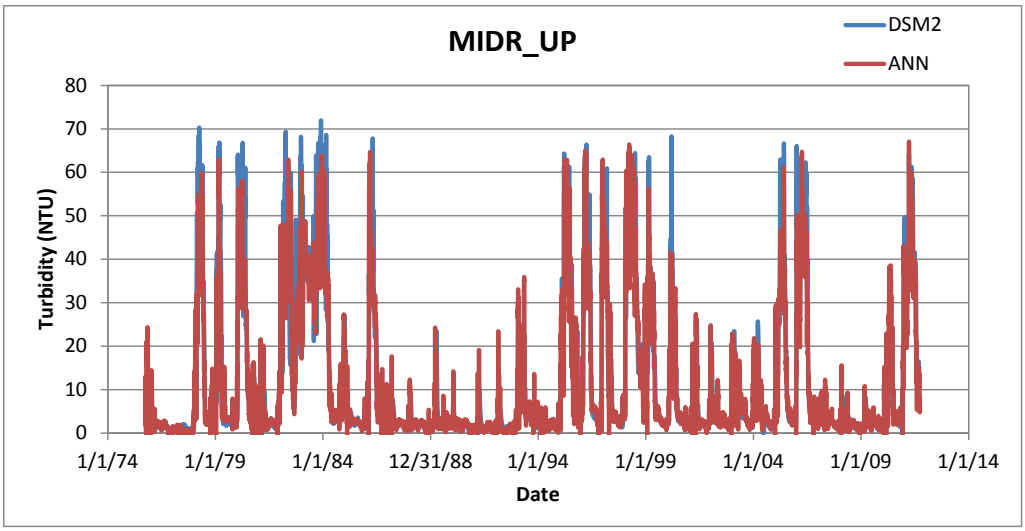
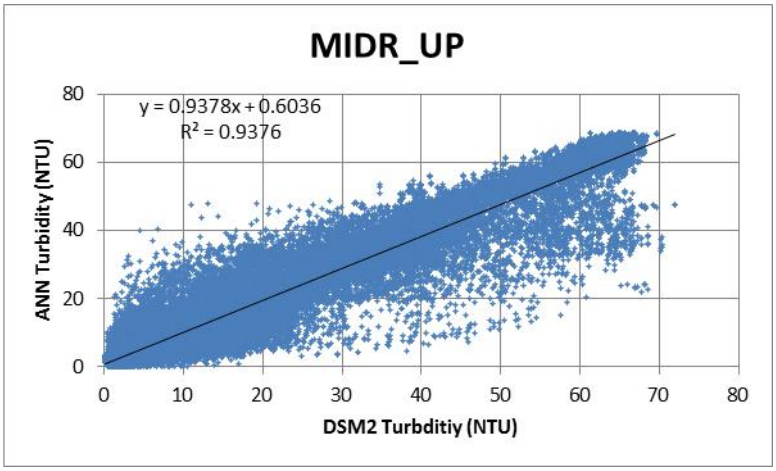


Figure C-27 DSM2 and ANN simulated turbidity at Middle River at Union Point (scenario 5)



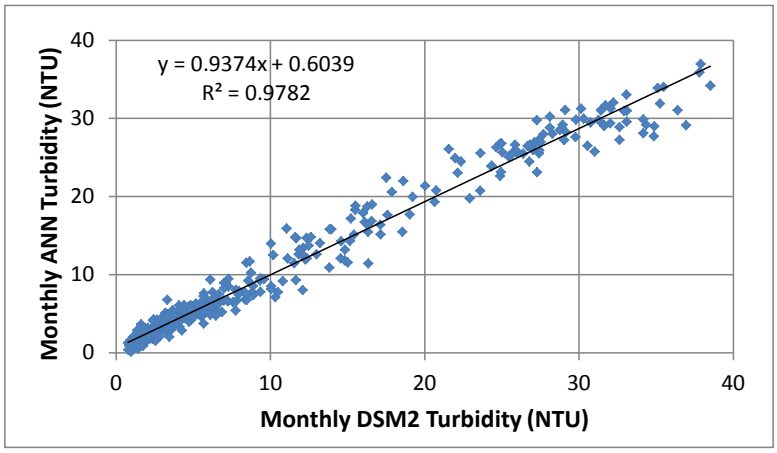


Figure C-28 DSM2 and ANN simulated turbidity at Middle River at Union Point (all data)

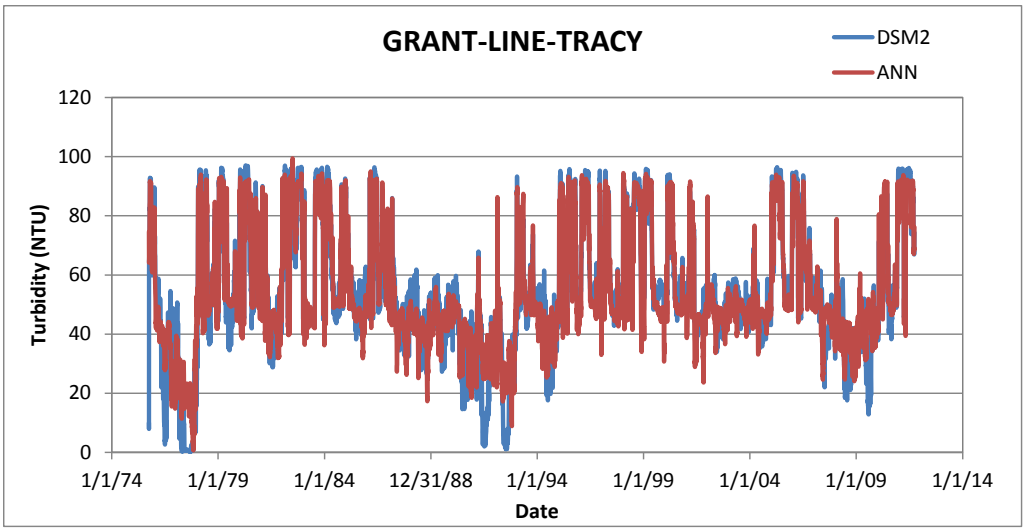
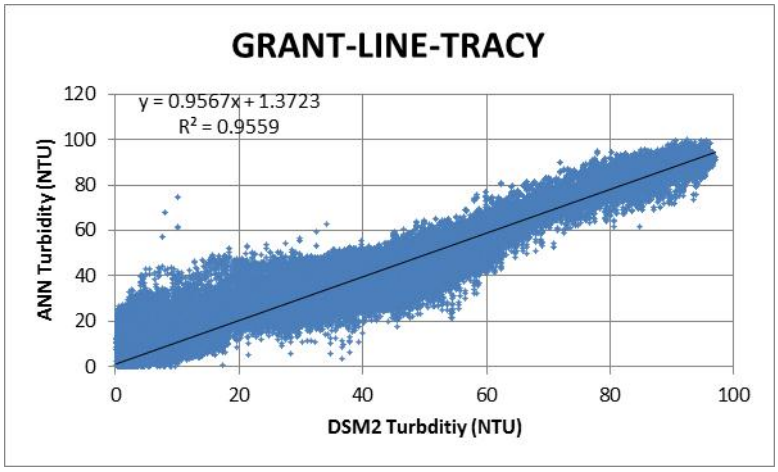


Figure C-29 DSM2 and ANN simulated turbidity at Grant Line Canal at Tracy (scenario 5)



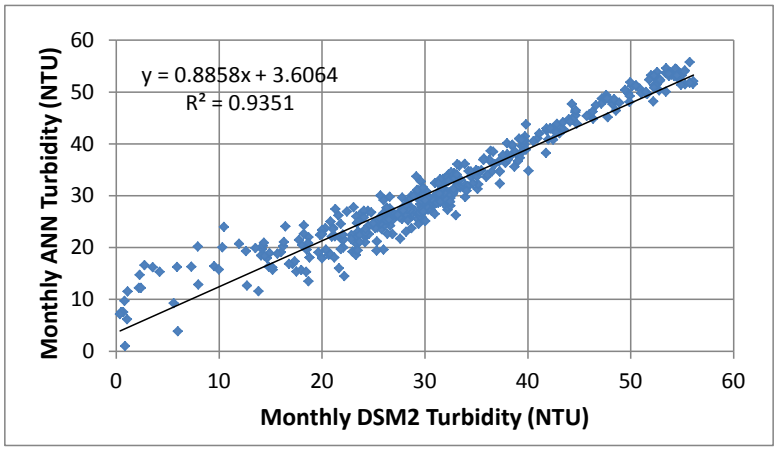


Figure C-30 DSM2 and ANN simulated turbidity at Grant Line Canal at Tracy (all data)

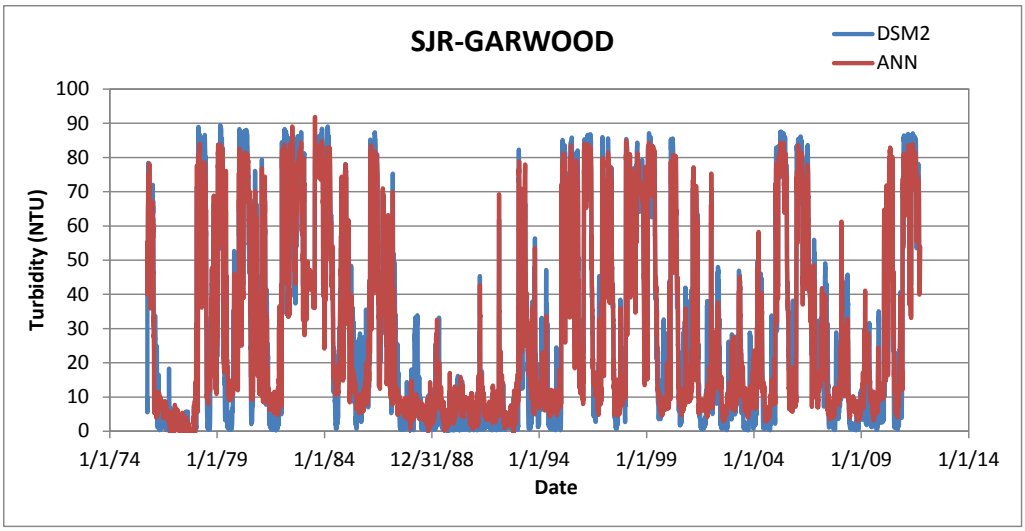


Figure C-31 DSM2 and ANN simulated turbidity at San Joaquin River at Garwood (scenario 5)

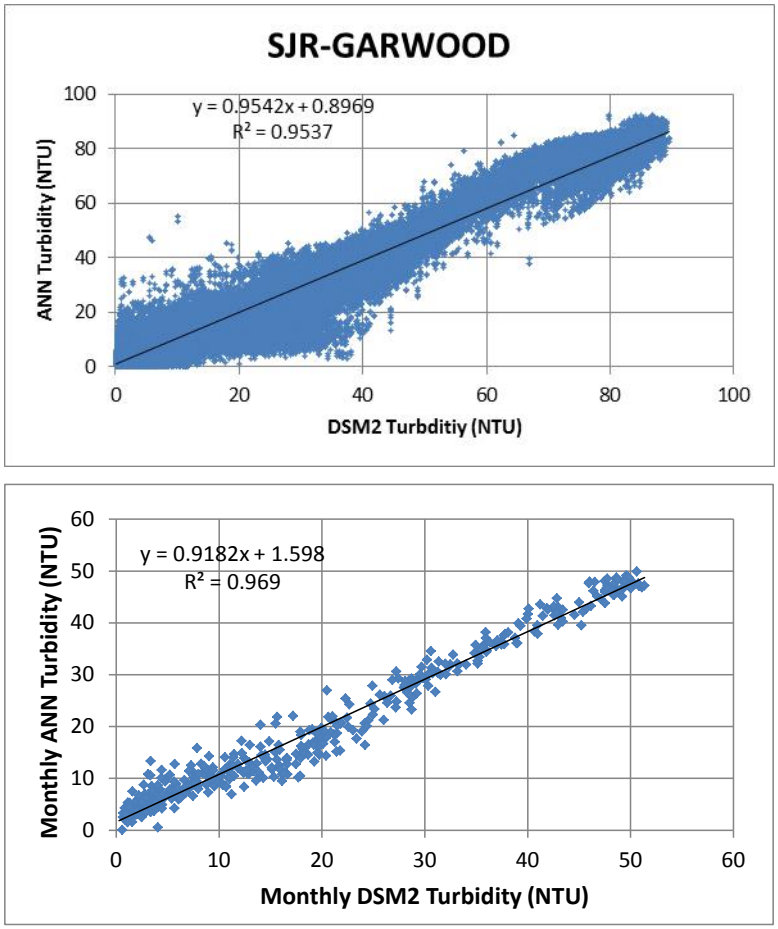


Figure C-32 DSM2 and ANN simulated turbidity at San Joaquin River at Garwood (all data)

APPENDIX D: COMPARISON OF ANN AND DSM2 SIMULATED TURBIDITY AT 16 TARGET LOCATIONS FOR NARX MODEL

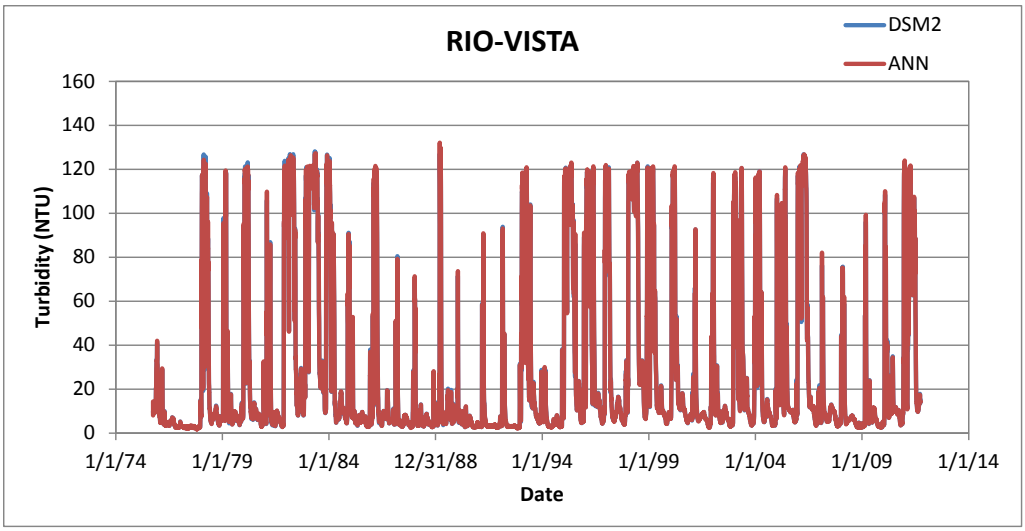


Figure D-1 *DSM2 and ANN simulated time-series turbidity at Sacramento River at Rio Vista (scenario 5)*

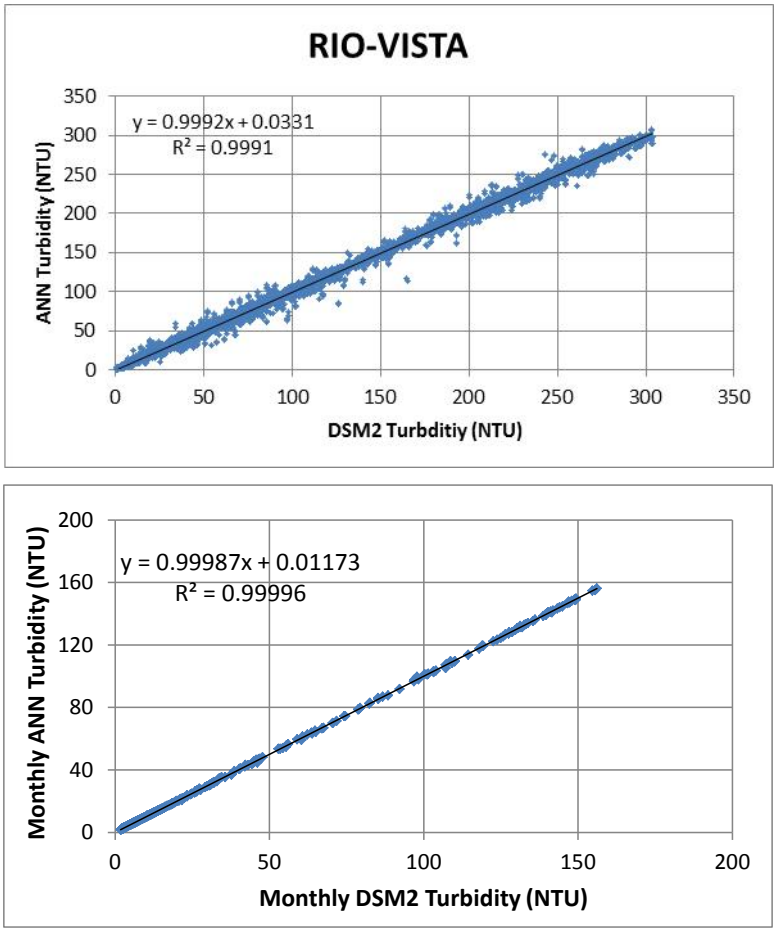


Figure D-2 *DSM2 and ANN simulated daily and monthly turbidity at Sacramento River at Rio Vista (all data).*

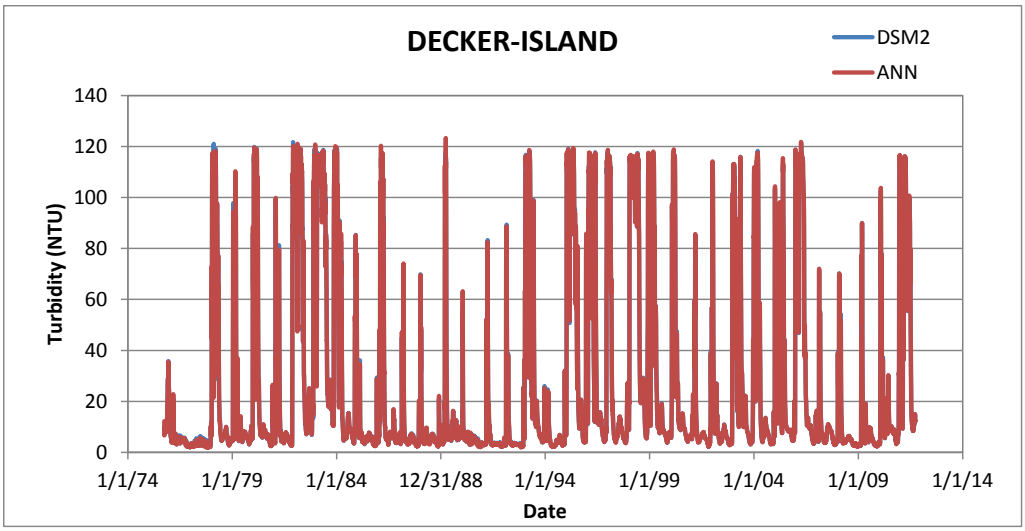


Figure D-3 DSM2 and ANN simulated turbidity at Decker Island (scenario 5)

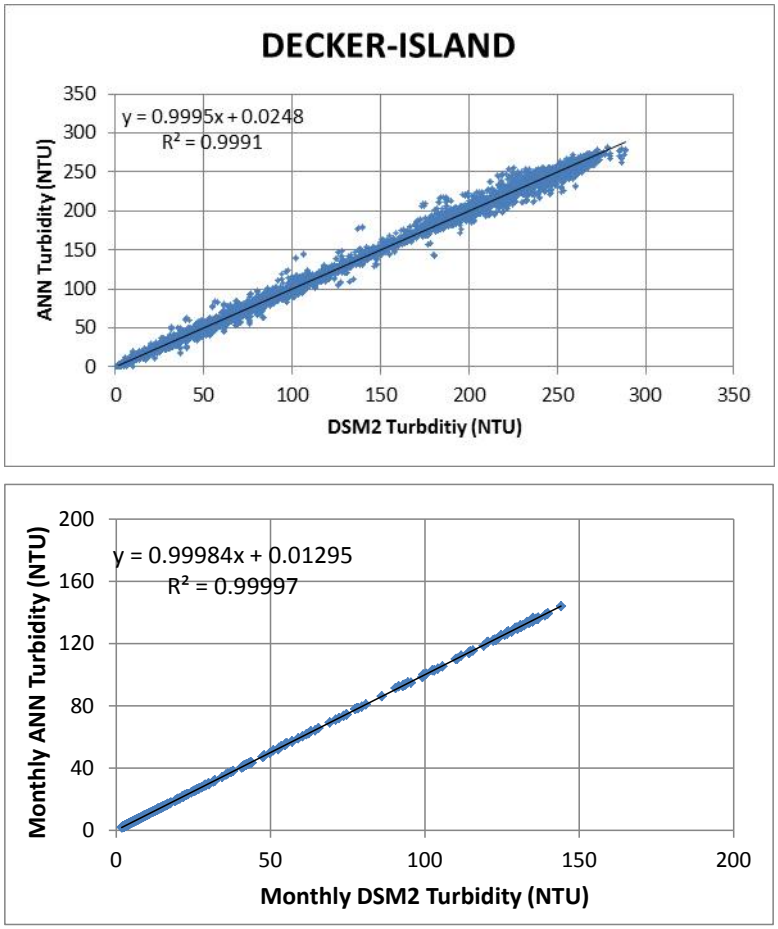


Figure D-4 DSM2 and ANN simulated daily and monthly turbidity at Decker Island (all data).

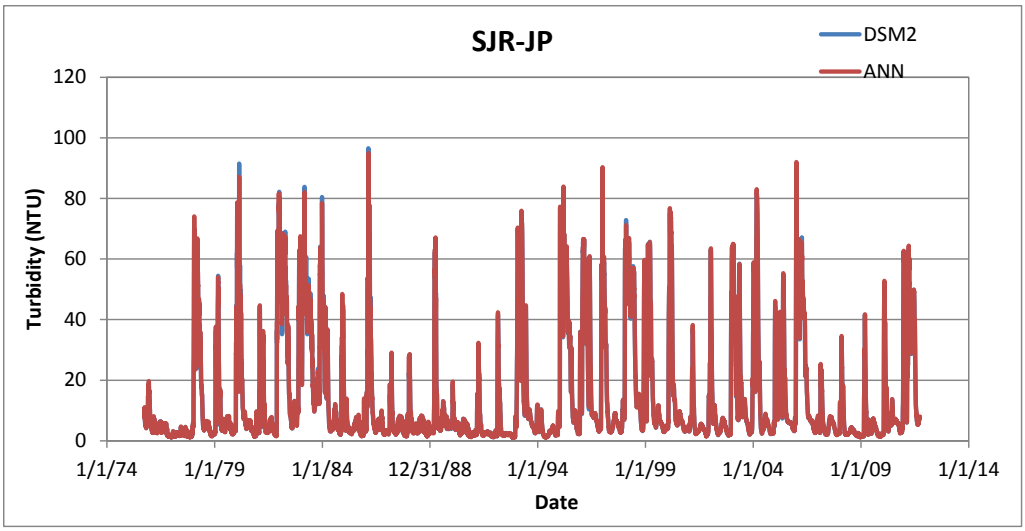
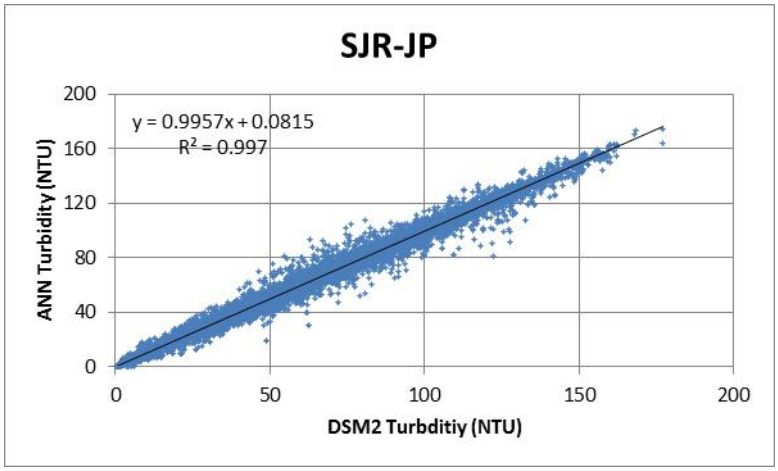


Figure D-5 DSM2 and ANN simulated turbidity at San Joaquin River at Jersey Point (scenario 5)



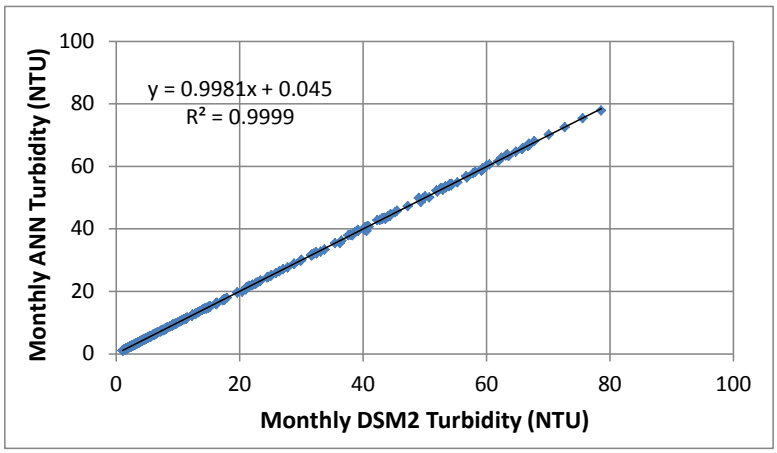


Figure D-6 DSM2 and ANN simulated daily and monthly turbidity at San Joaquin River at Jersey Point (all data).

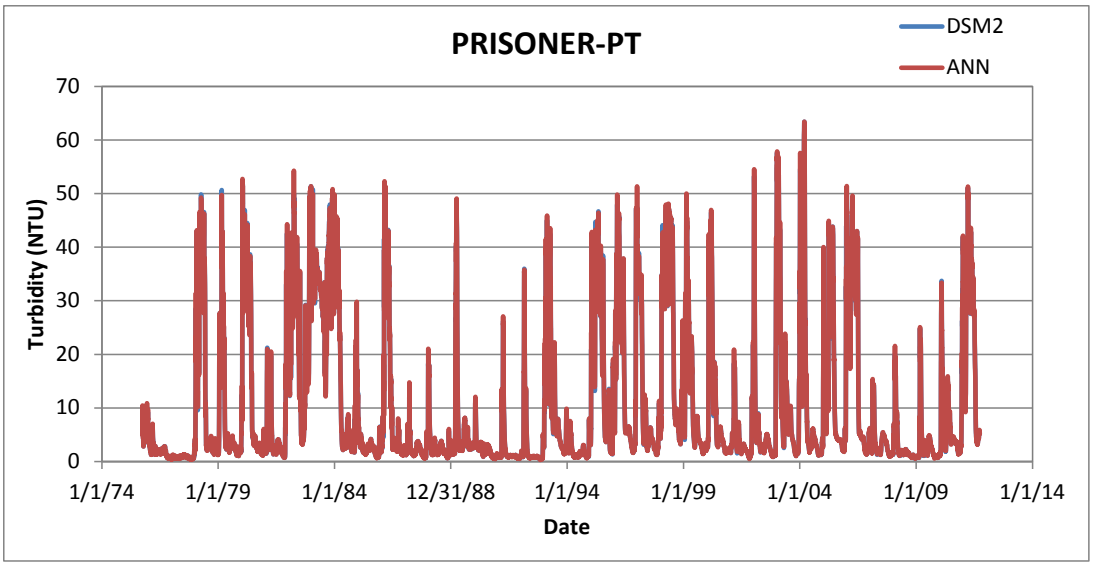


Figure D-7 DSM2 and ANN simulated turbidity at San Joaquin River at Prisoner's Point (scenario 5)

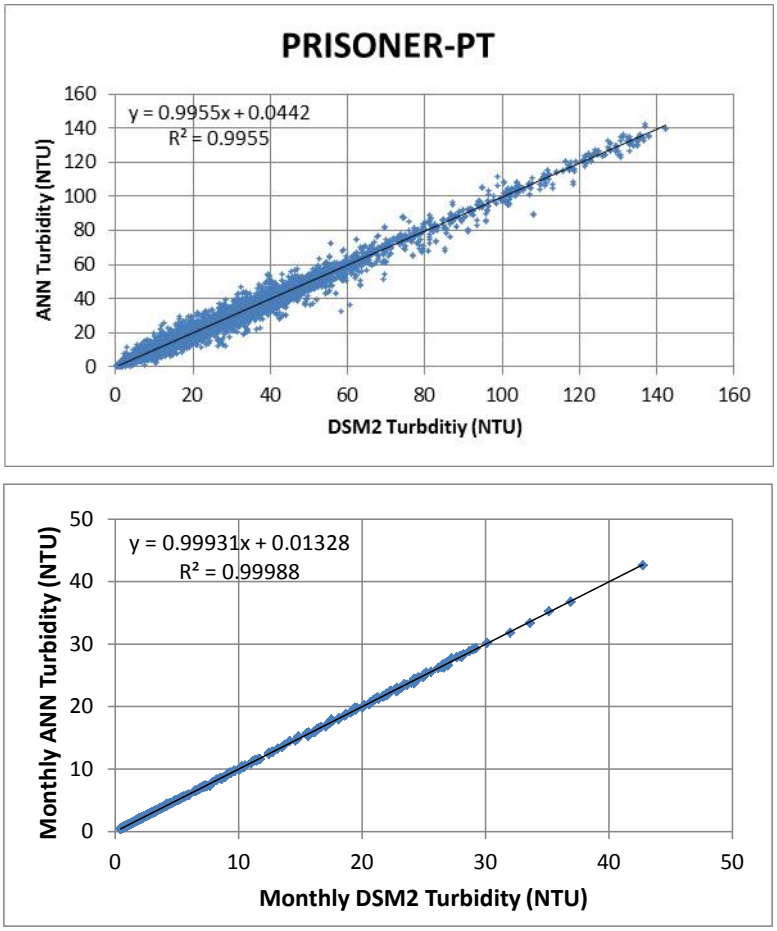


Figure D-8 DSM2 and ANN simulated daily and monthly turbidity at San Joaquin River at Prisoner's Point (all data).

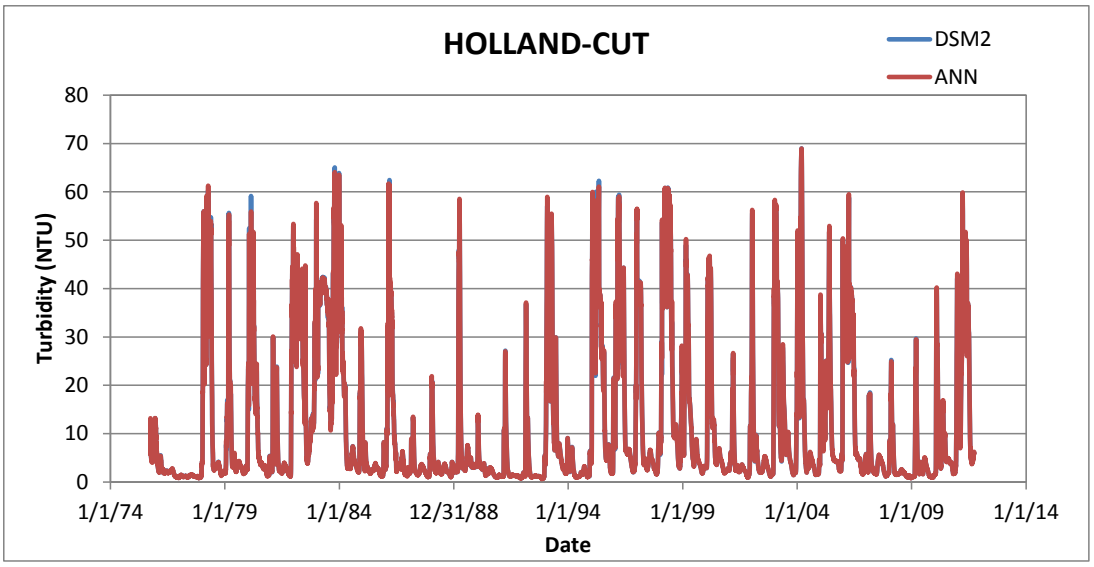


Figure D-9 DSM2 and ANN simulated turbidity at Old River @ Holland Cut (scenario 5)

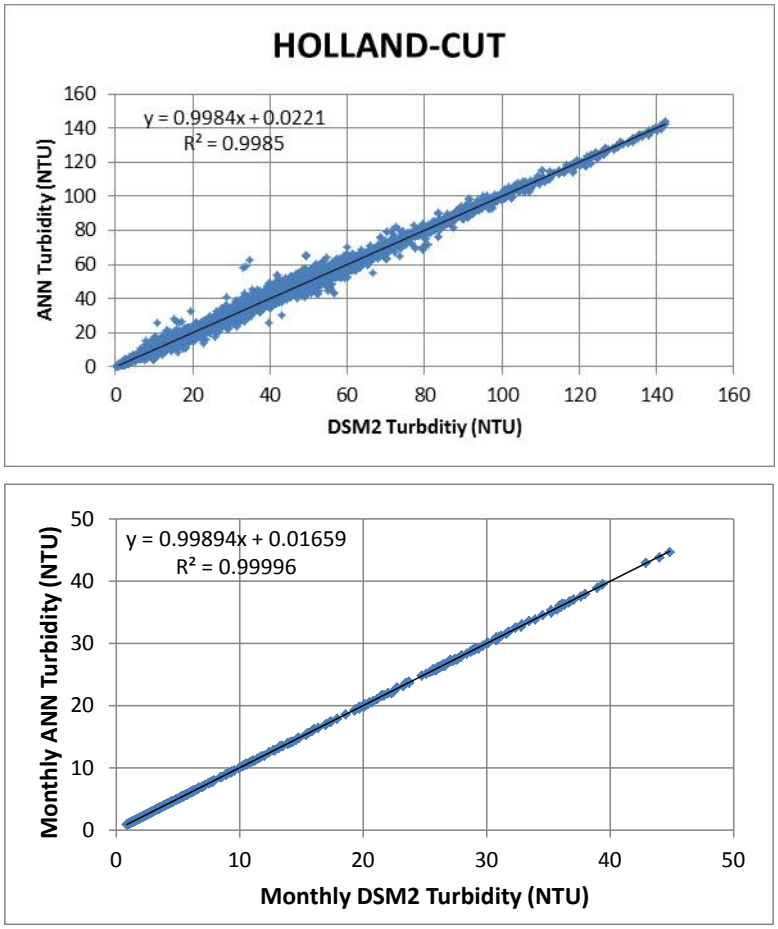


Figure D-10 DSM2 and ANN simulated daily and monthly turbidity at Old River at Holland Cut (all data).

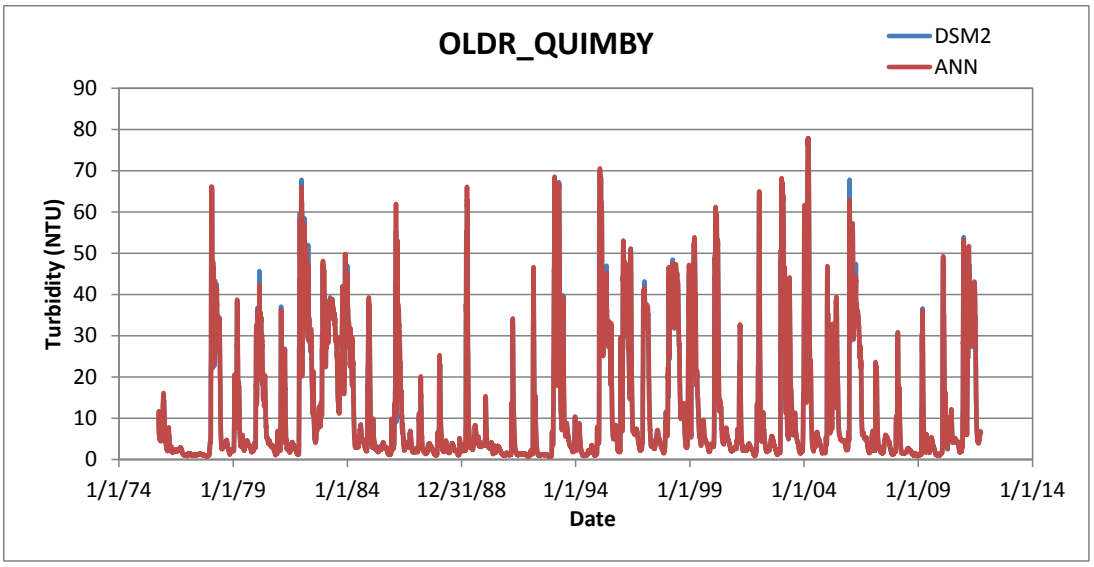


Figure D-11 DSM2 and ANN simulated turbidity at Old River at Quimby Island (scenario 5)

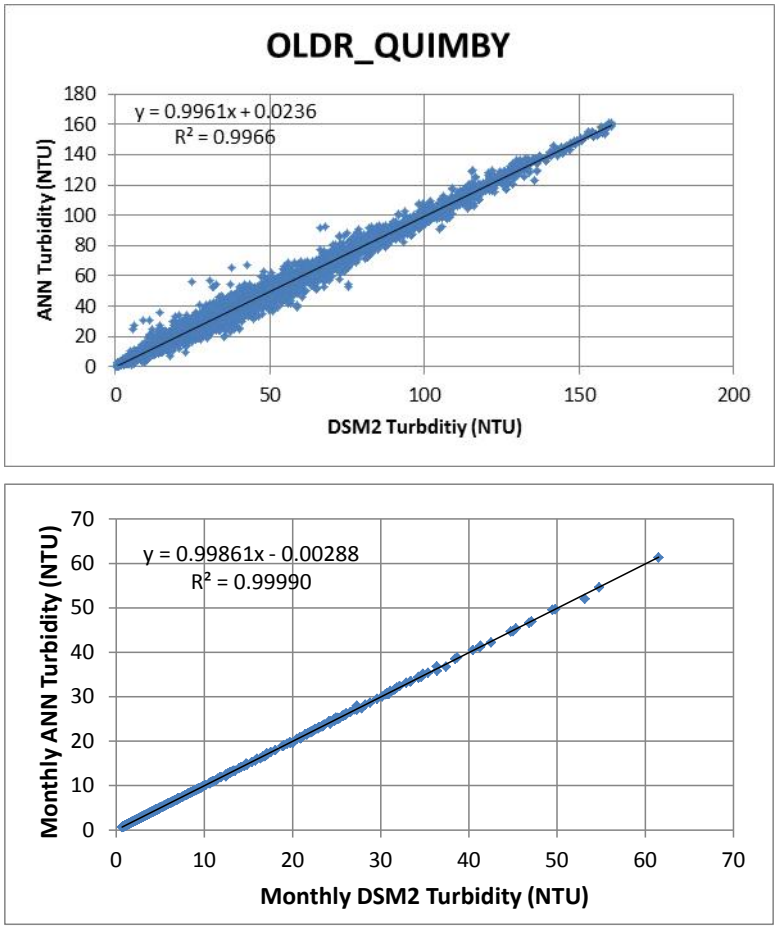


Figure D-12 DSM2 and ANN simulated turbidity at Old River at Quimby Island (all data)

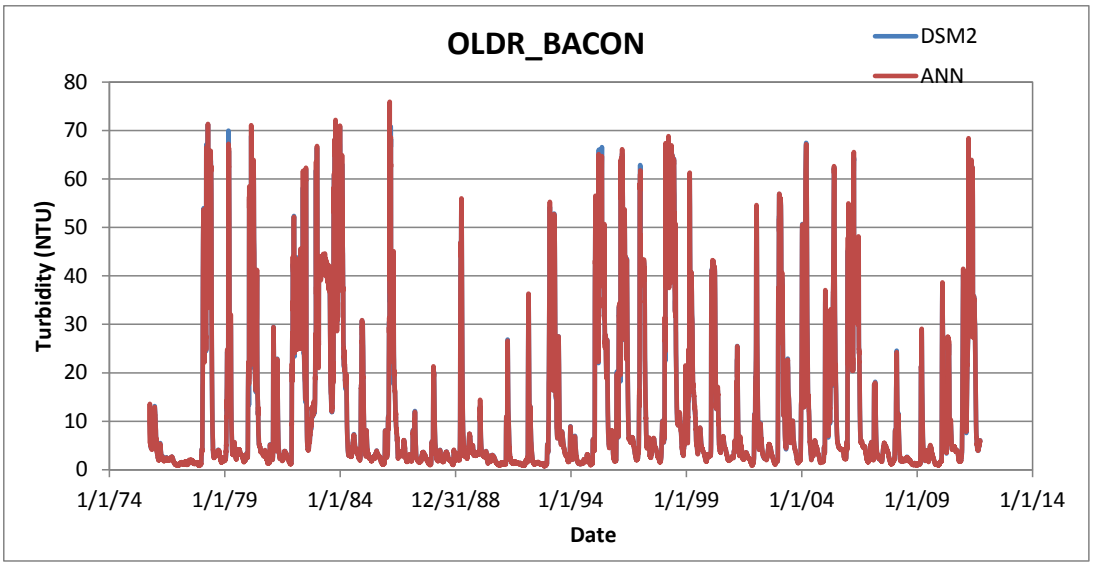


Figure D-13 DSM2 and ANN simulated turbidity at Old River at Bacon Island (scenario 5)

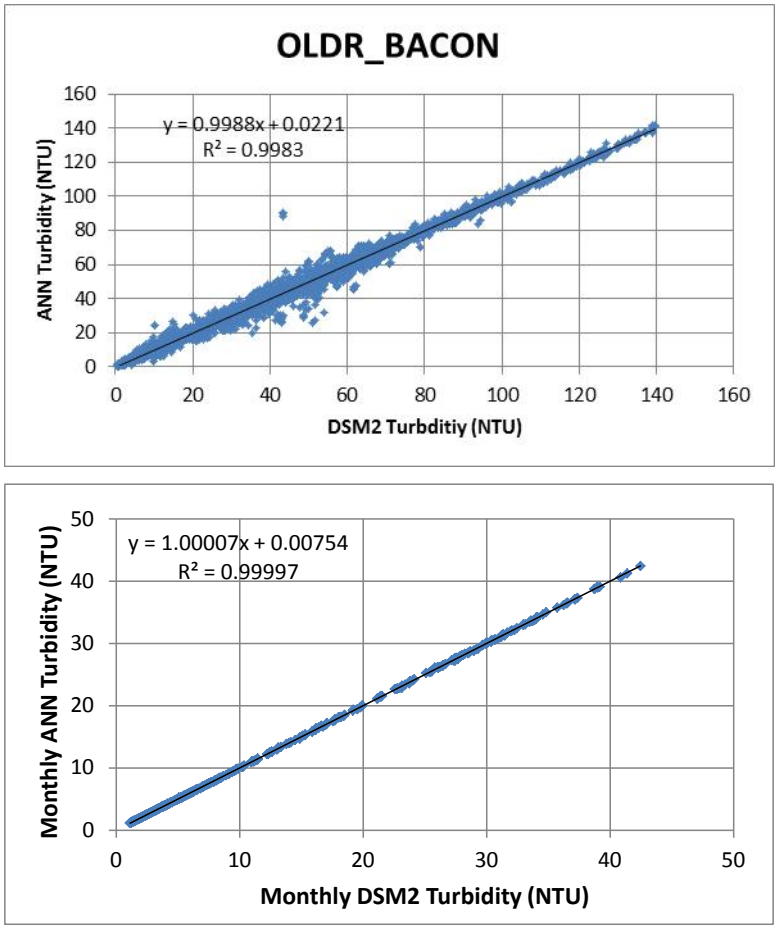


Figure D-14 DSM2 and ANN simulated turbidity at Old River at Bacon Island (all data)

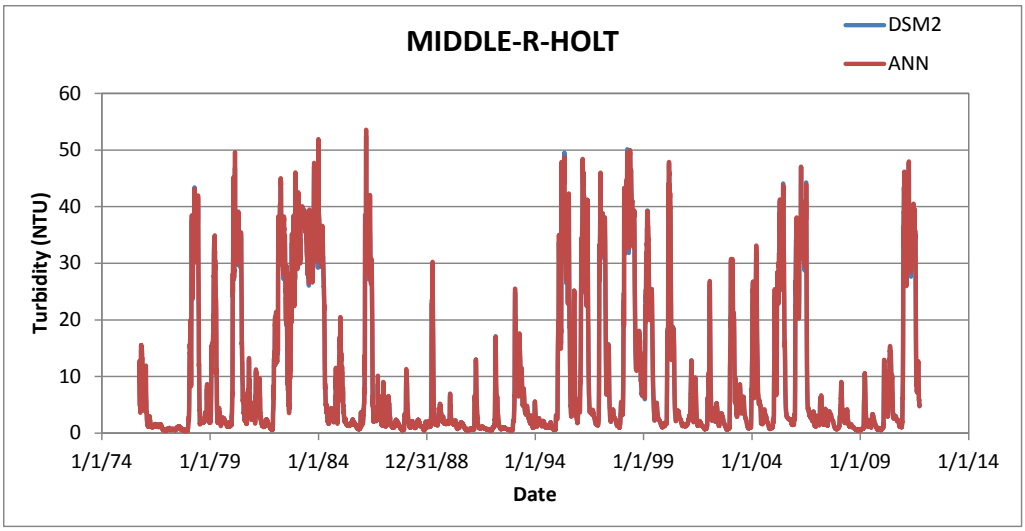
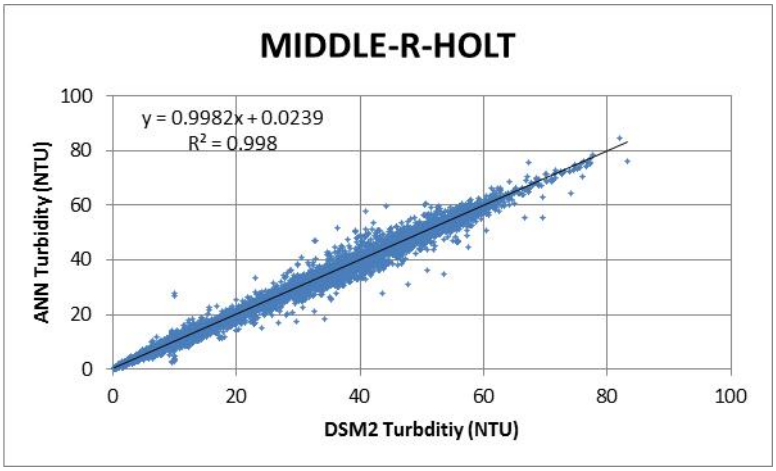


Figure D-15 DSM2 and ANN simulated turbidity at Middle River at Holt (scenario 5)



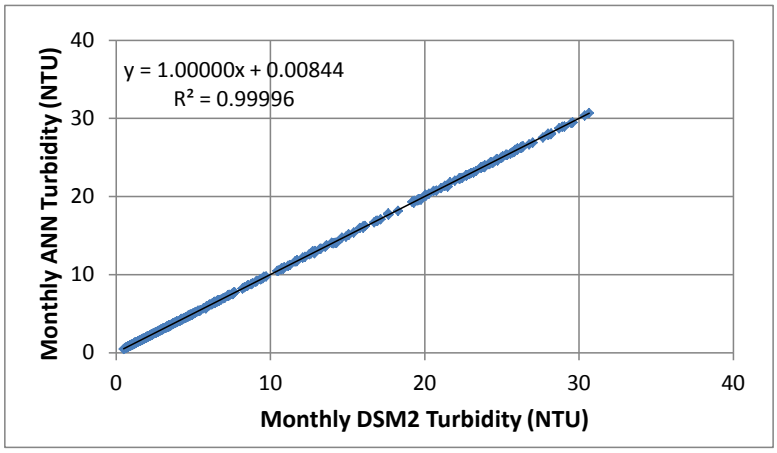


Figure D-16 DSM2 and ANN simulated turbidity at Middle River at Holt (all data)

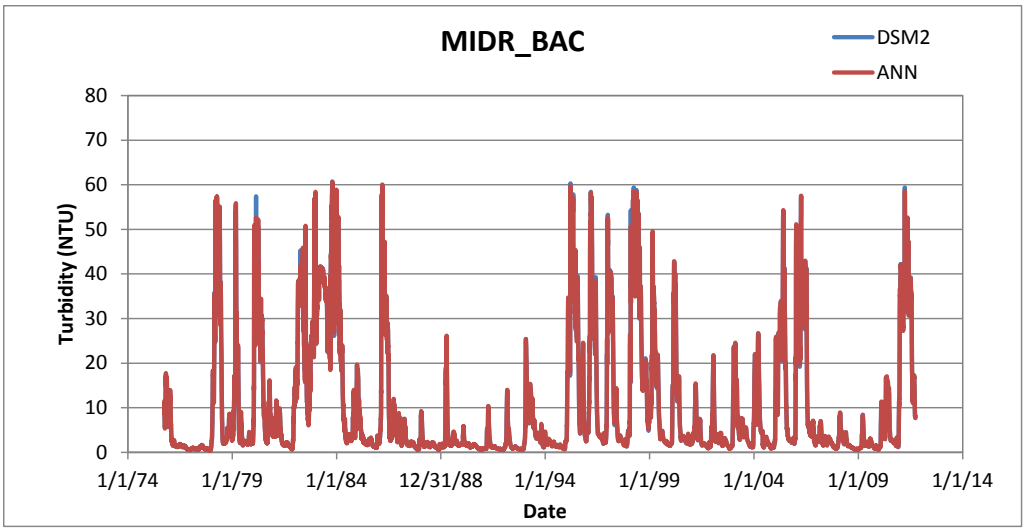


Figure D-17 DSM2 and ANN simulated turbidity at Middle River at Bacon Island (scenario 5)

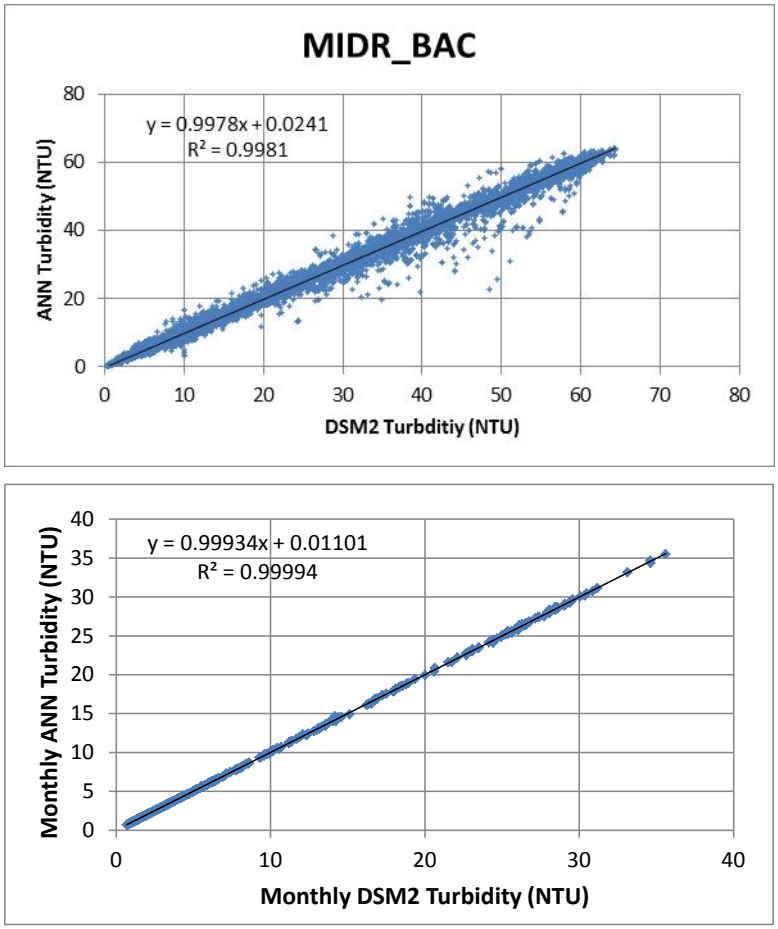


Figure D-18 DSM2 and ANN simulated turbidity at Middle River at Bacon Island (all data)

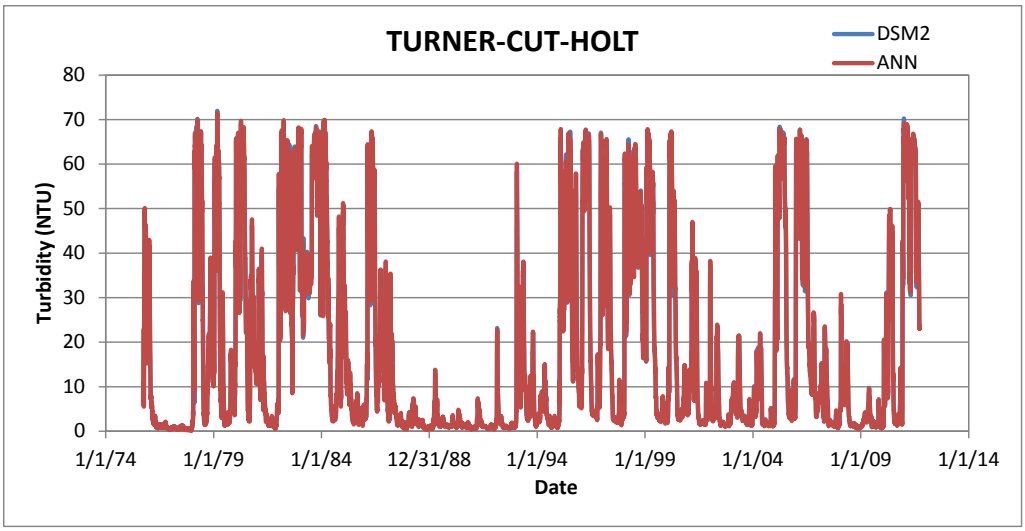
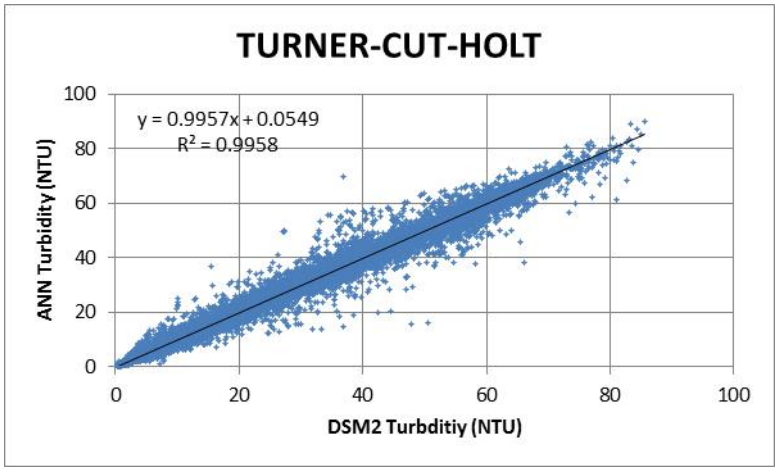


Figure D-19 DSM2 and ANN simulated turbidity at Turner Cut at Holt (scenario 5)



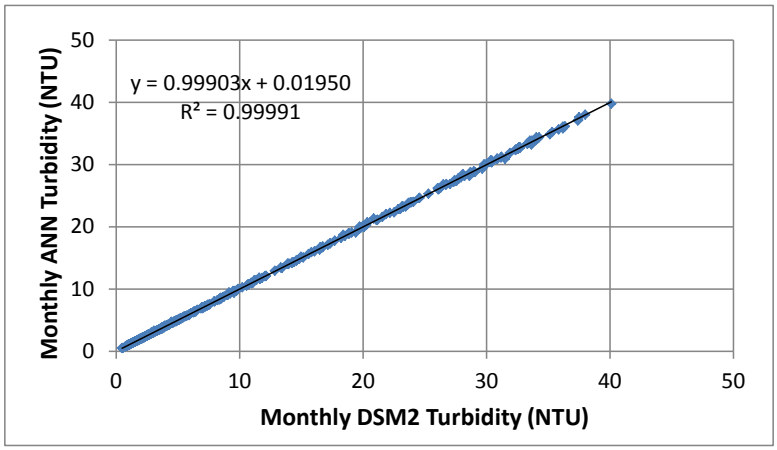


Figure D-20 DSM2 and ANN simulated turbidity at Turner Cut at Holt (all data)

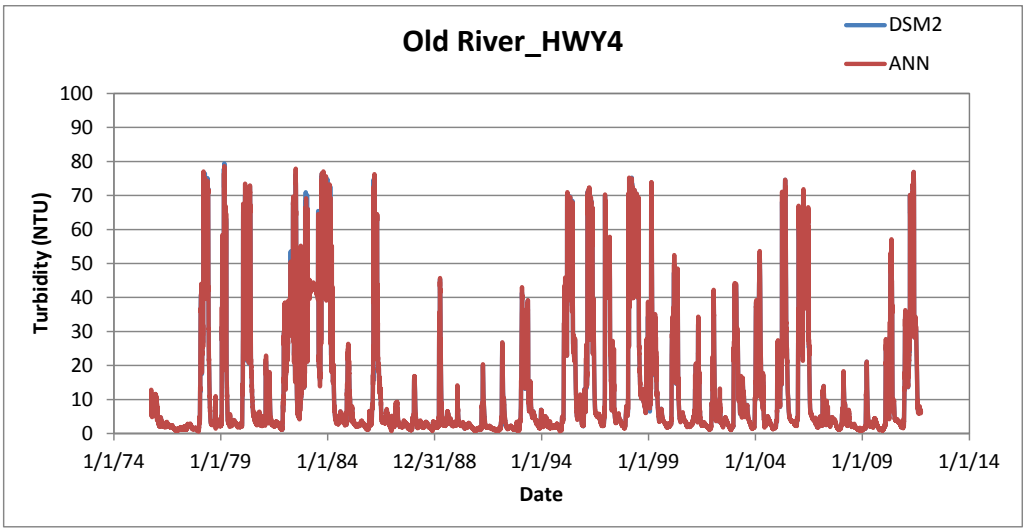
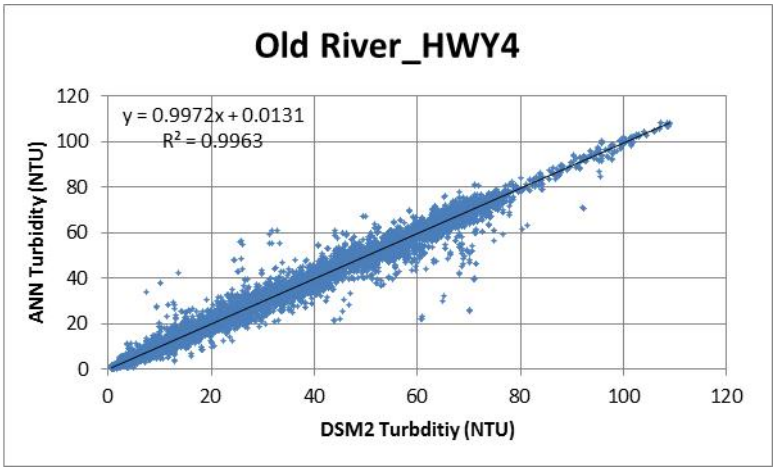


Figure D-21 DSM2 and ANN simulated turbidity at Old River at Highway 4 (scenario 5)



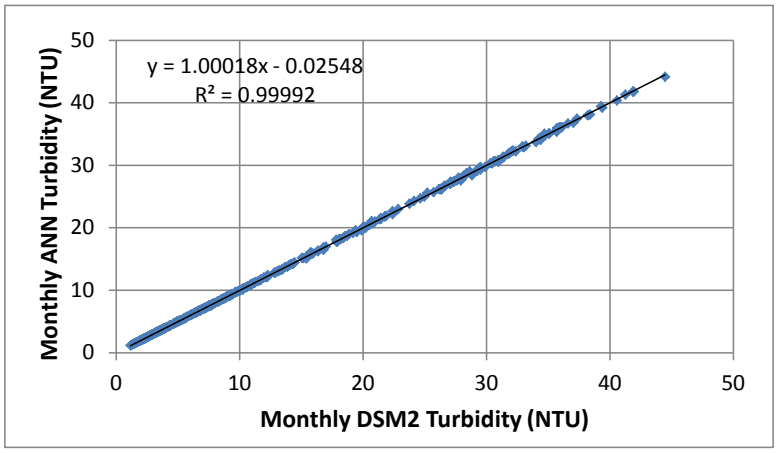


Figure D-22 DSM2 and ANN simulated turbidity at Old River at Highway 4 (all data)

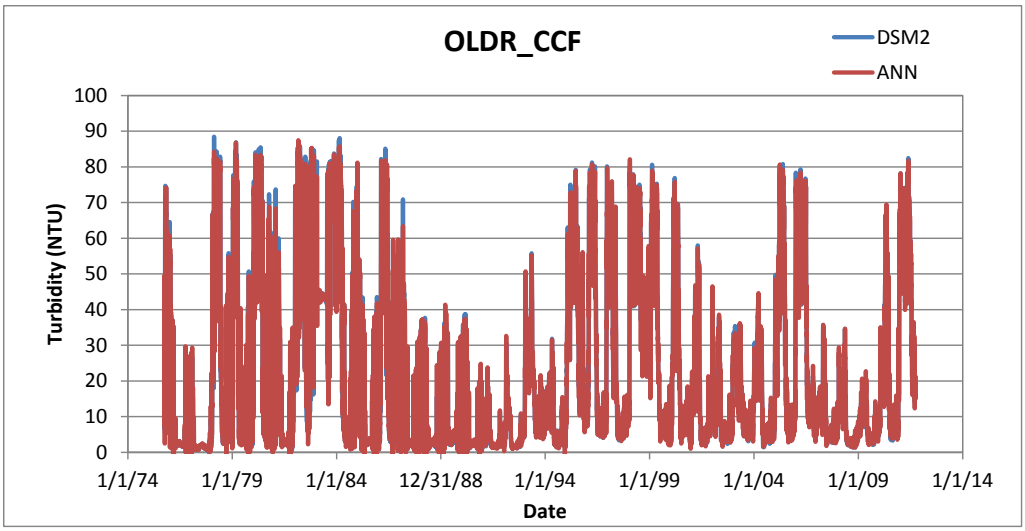


Figure D-23 DSM2 and ANN simulated turbidity at Old River at Clifton Court Intake (scenario 5)

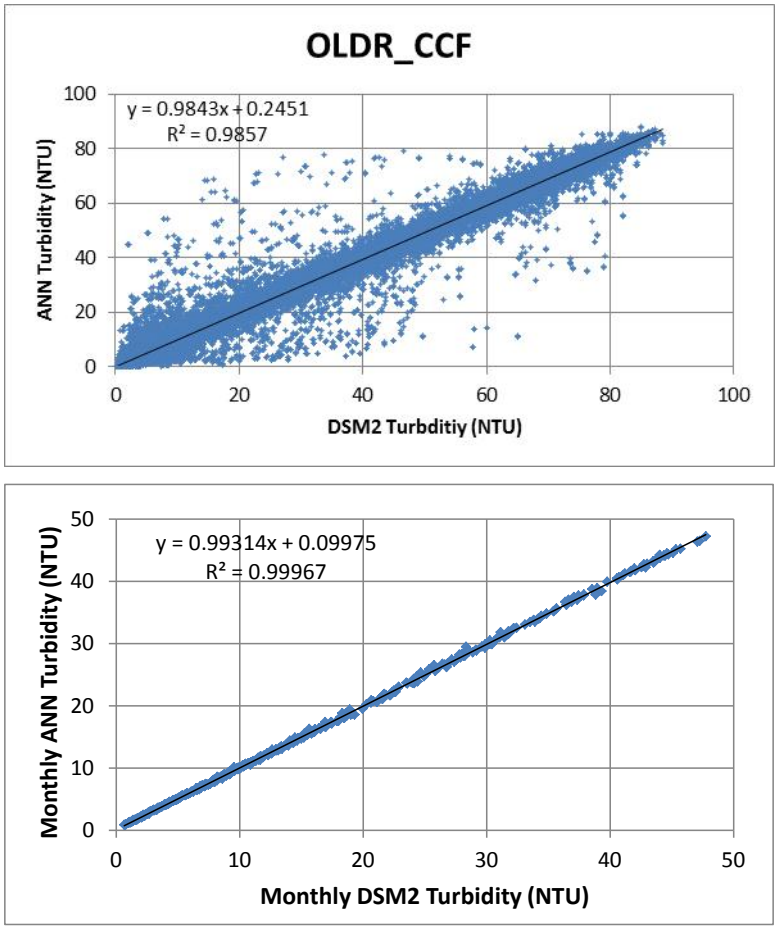


Figure D-24 DSM2 and ANN simulated turbidity at Old River at Clifton Court Intake (all data)

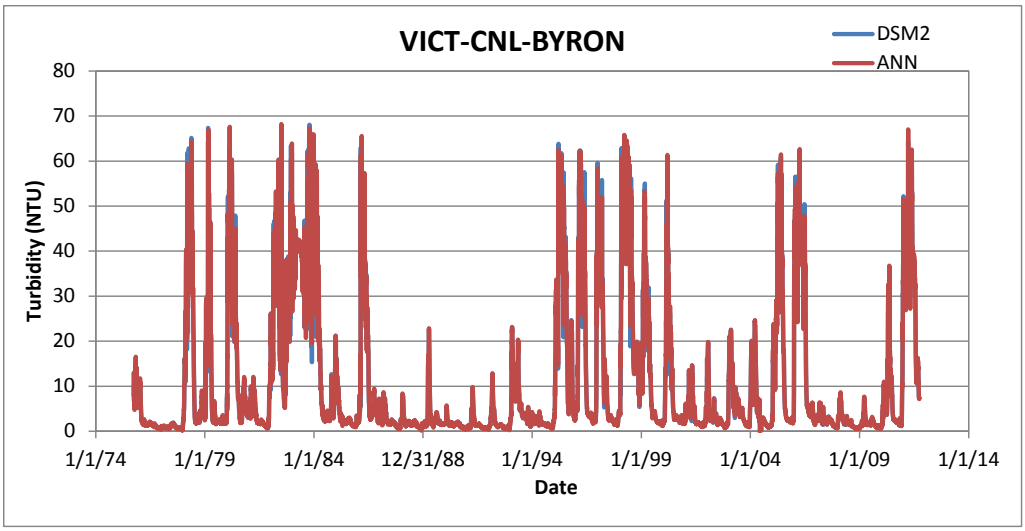
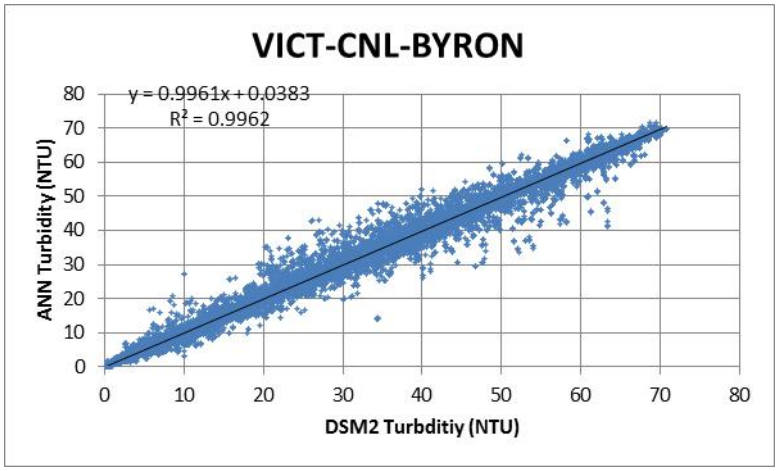


Figure D-25 DSM2 and ANN simulated turbidity at Victoria Canal (scenario 5)



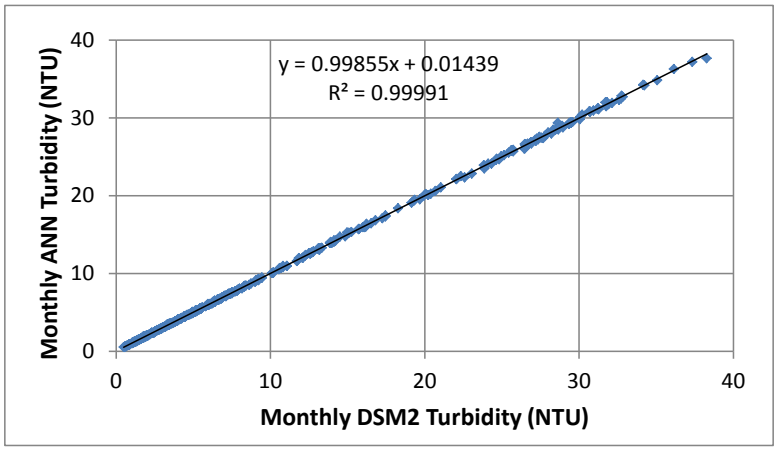


Figure D-26 DSM2 and ANN simulated turbidity at Victoria Canal (all data)

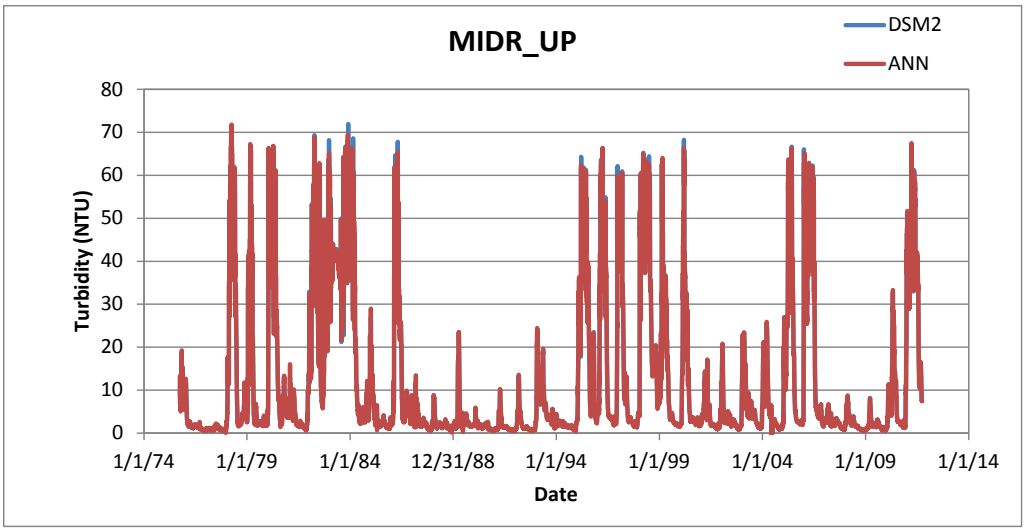
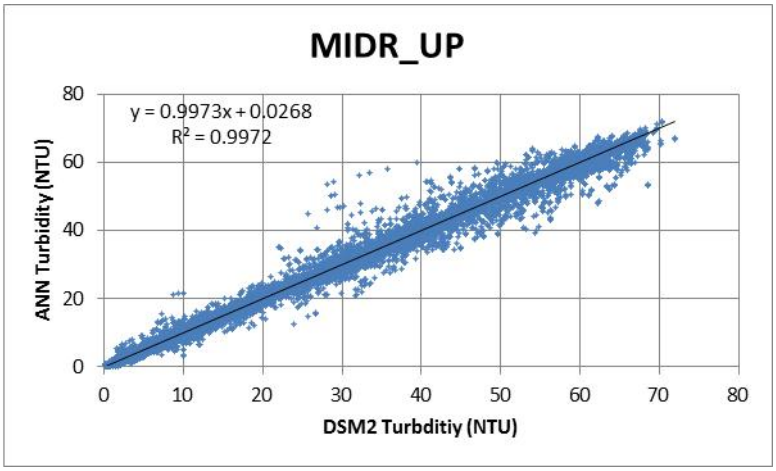


Figure D-27 DSM2 and ANN simulated turbidity at Middle River at Union Point (scenario 5)



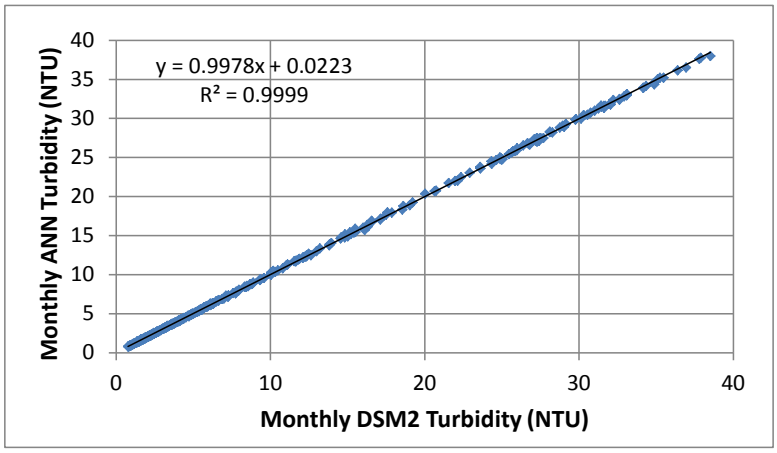


Figure D-28 DSM2 and ANN simulated turbidity at Middle River at Union Point (all data)

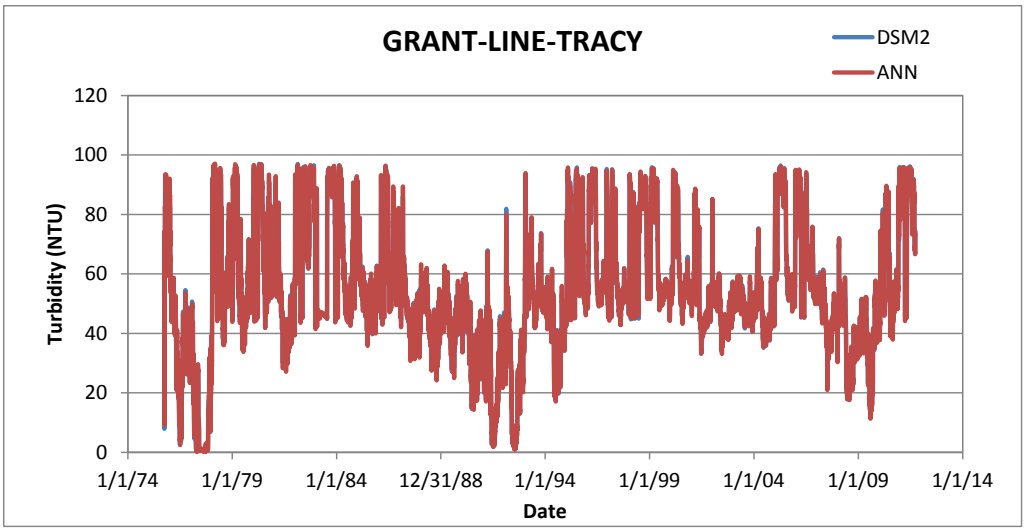


Figure D-29 DSM2 and ANN simulated turbidity at Grant Line Canal at Tracy (scenario 5)

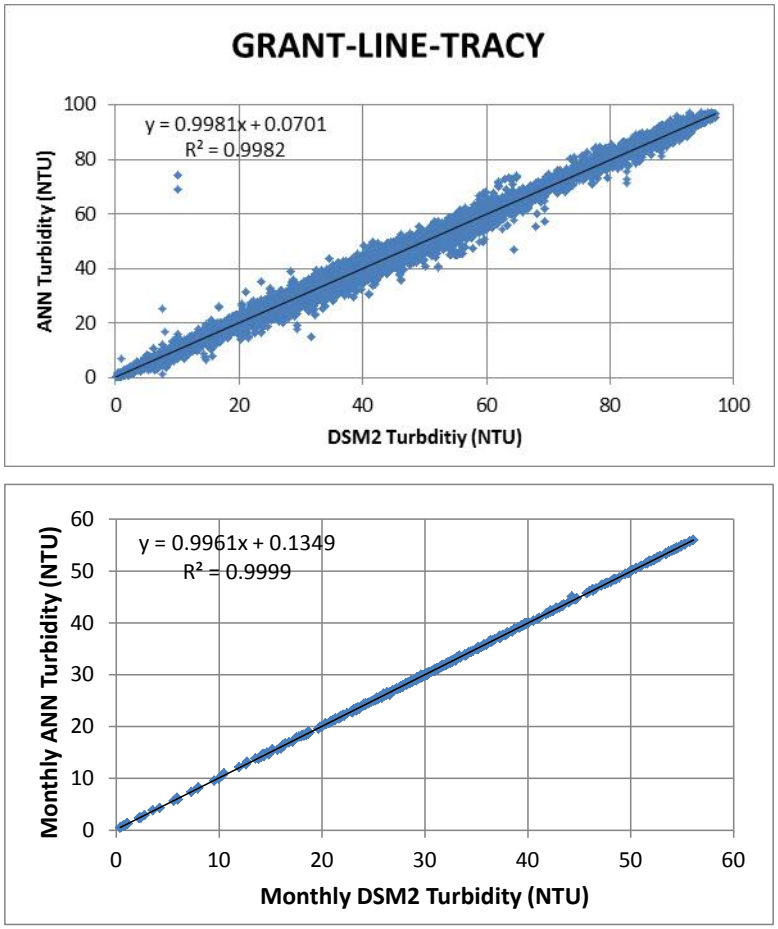


Figure D-30 DSM2 and ANN simulated turbidity at Grant Line Canal at Tracy (all data)

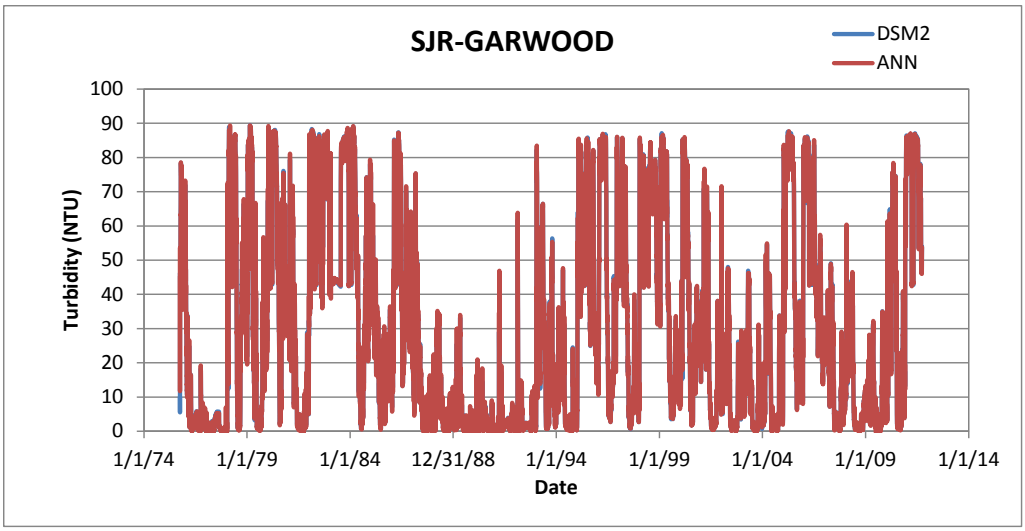


Figure D-31 DSM2 and ANN simulated turbidity at San Joaquin River at Garwood (scenario 5)

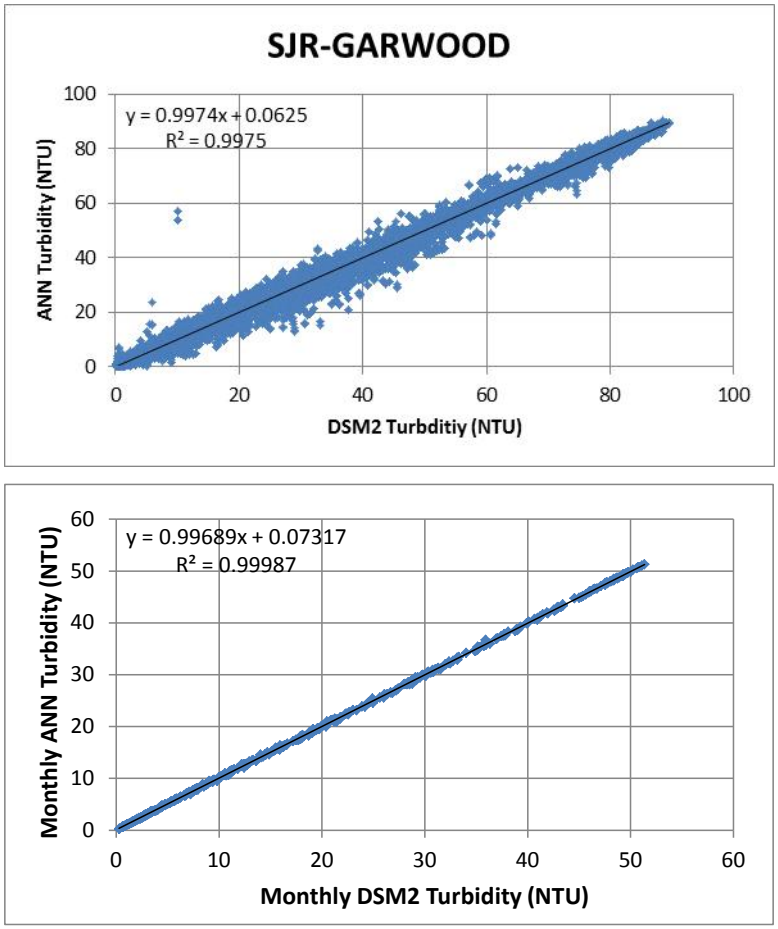


Figure D-32 DSM2 and ANN simulated turbidity at San Joaquin River at Garwood (all data)

APPENDIX E: RESIDUAL ANALYSIS FOR FEED-FORWARD NETWORKS

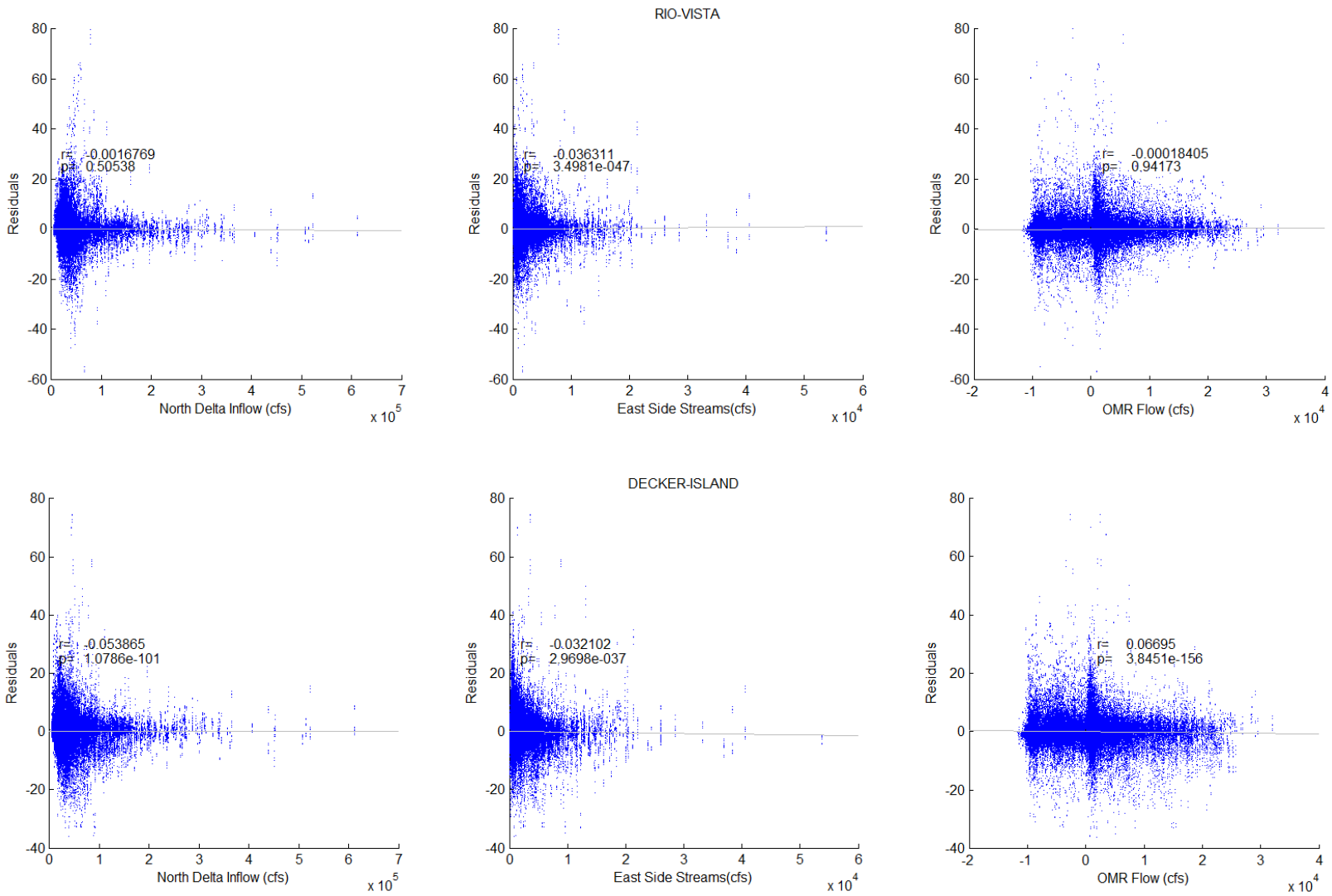


Figure E-1 Correlation between residuals and inputs of flow to the ANN model

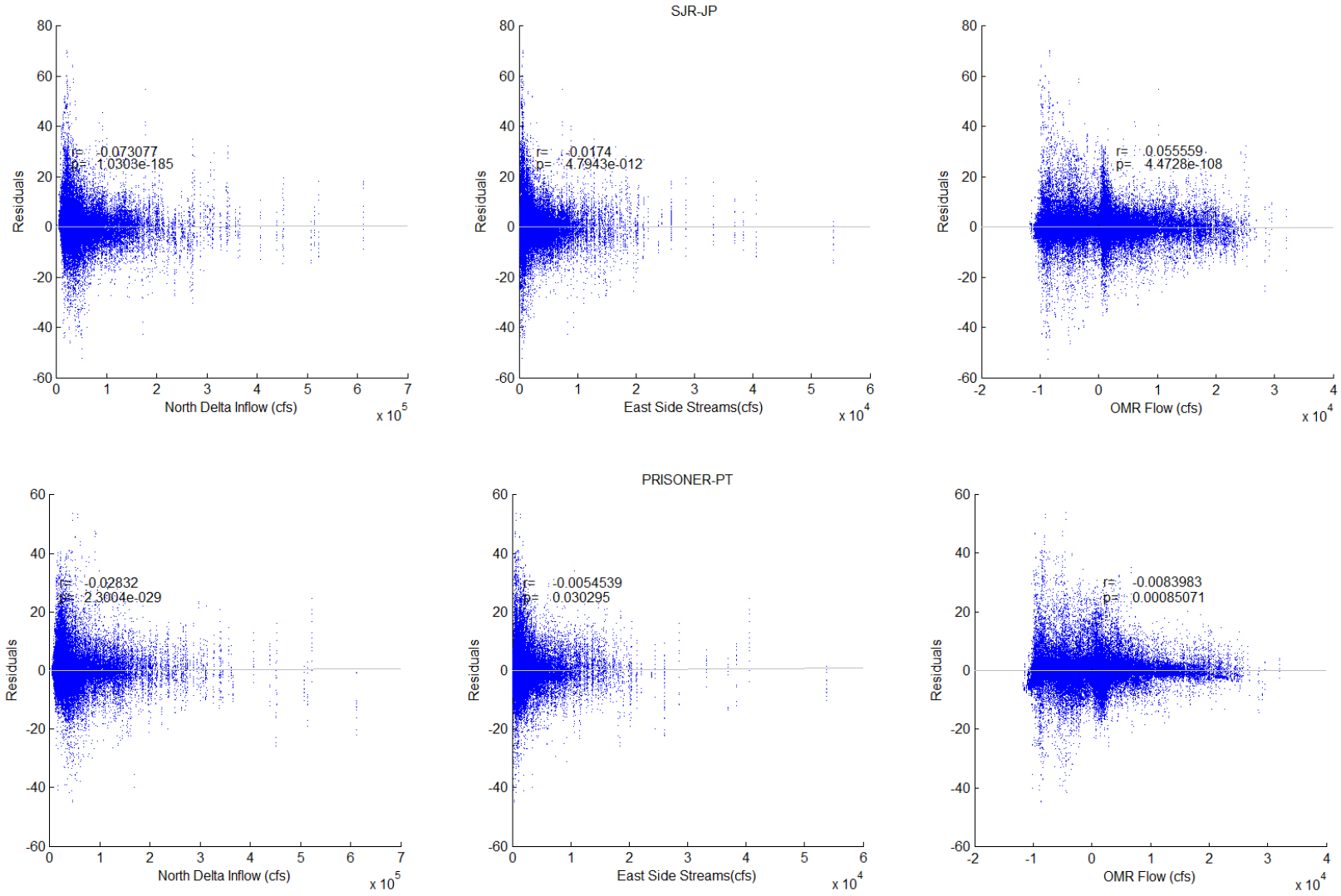


Figure E-1 (continued) Correlation between residuals and inputs of flow to the ANN model

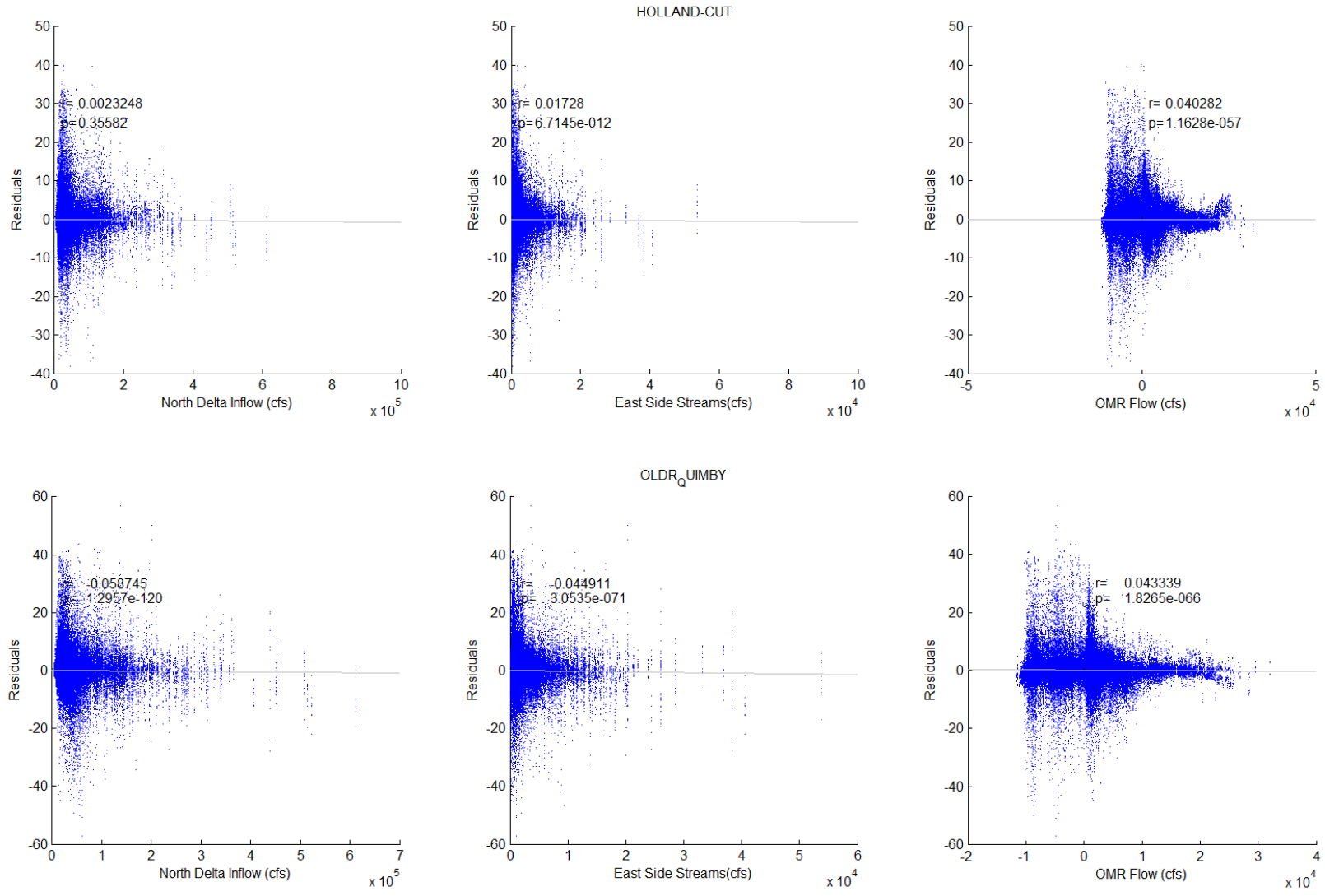


Figure E-1 (continued) Correlation between residuals and inputs of flow to the ANN model

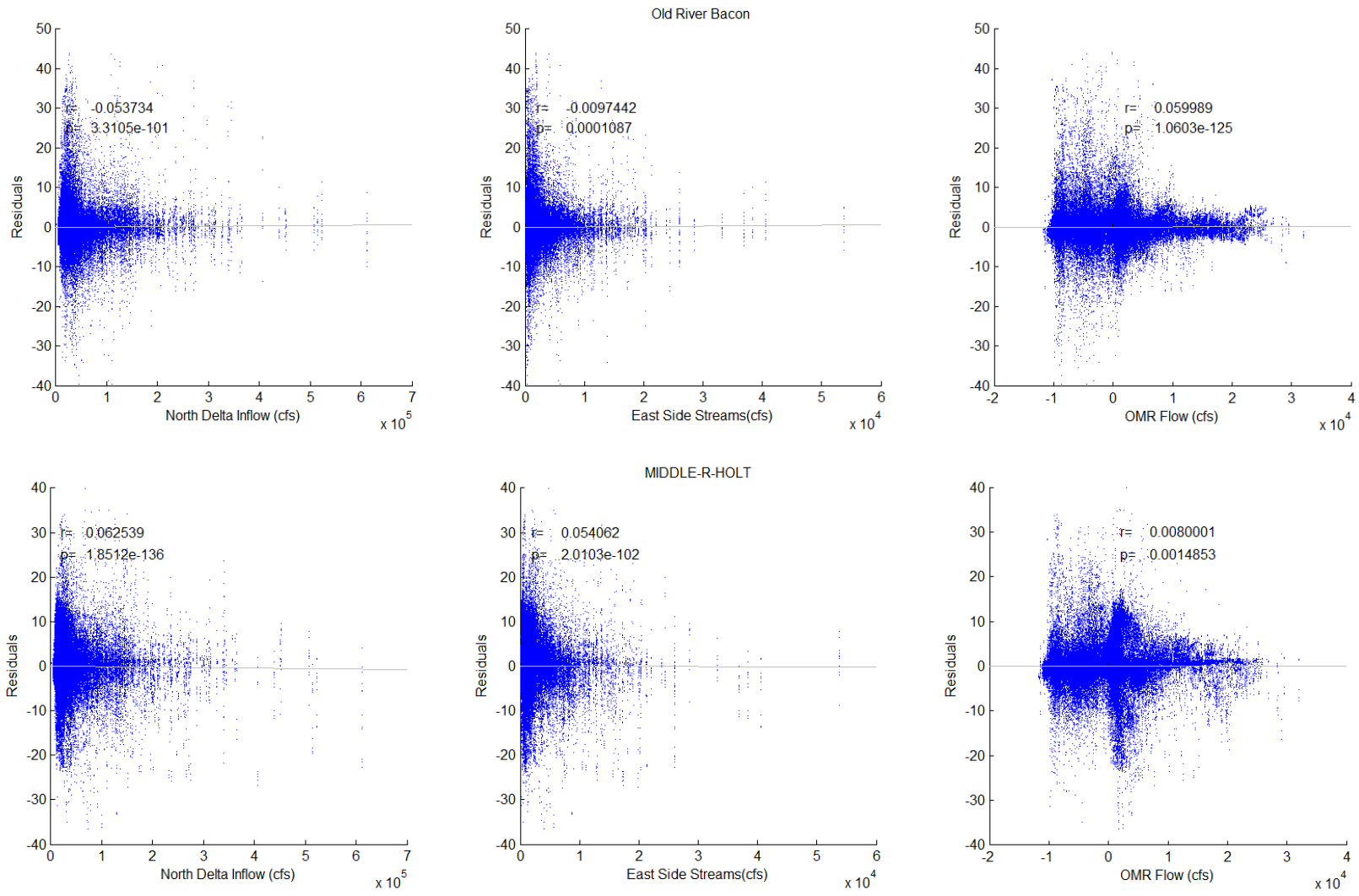


Figure E-1 (continued) Correlation between residuals and inputs of flow to the ANN model

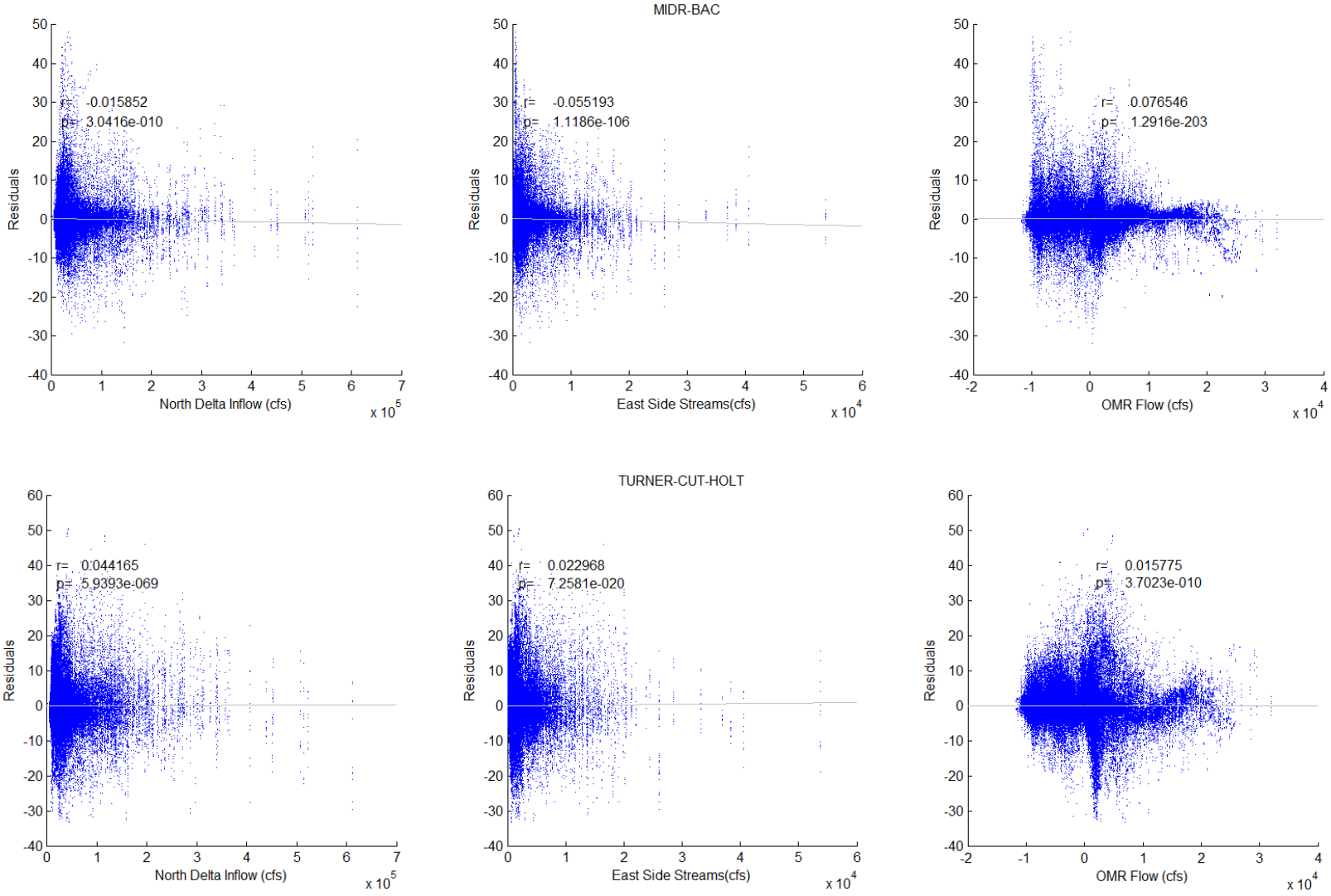


Figure E-1 (continued) Correlation between residuals and inputs of flow to the ANN model

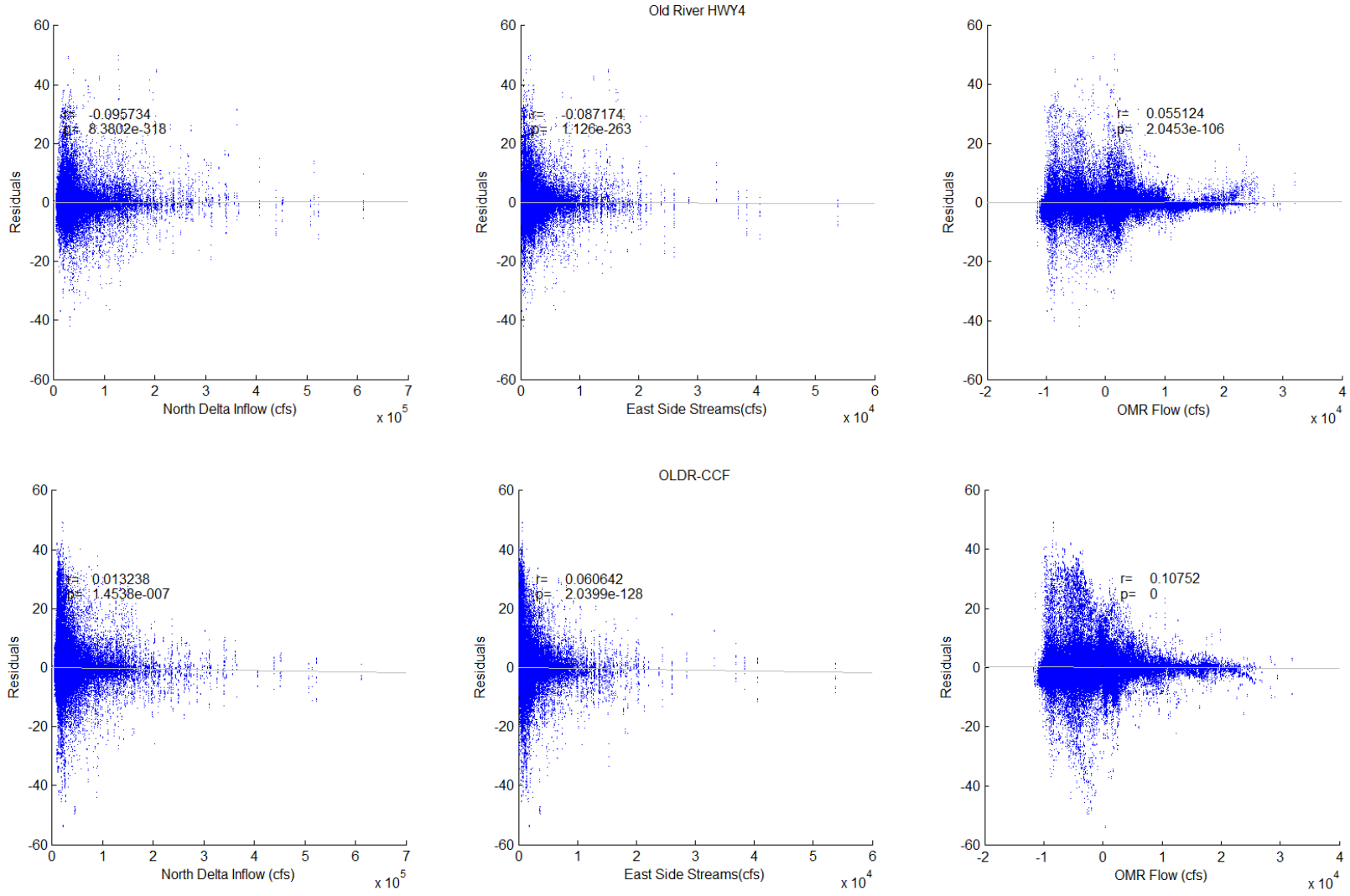


Figure E-1 (continued) Correlation between residuals and inputs of flow to the ANN model

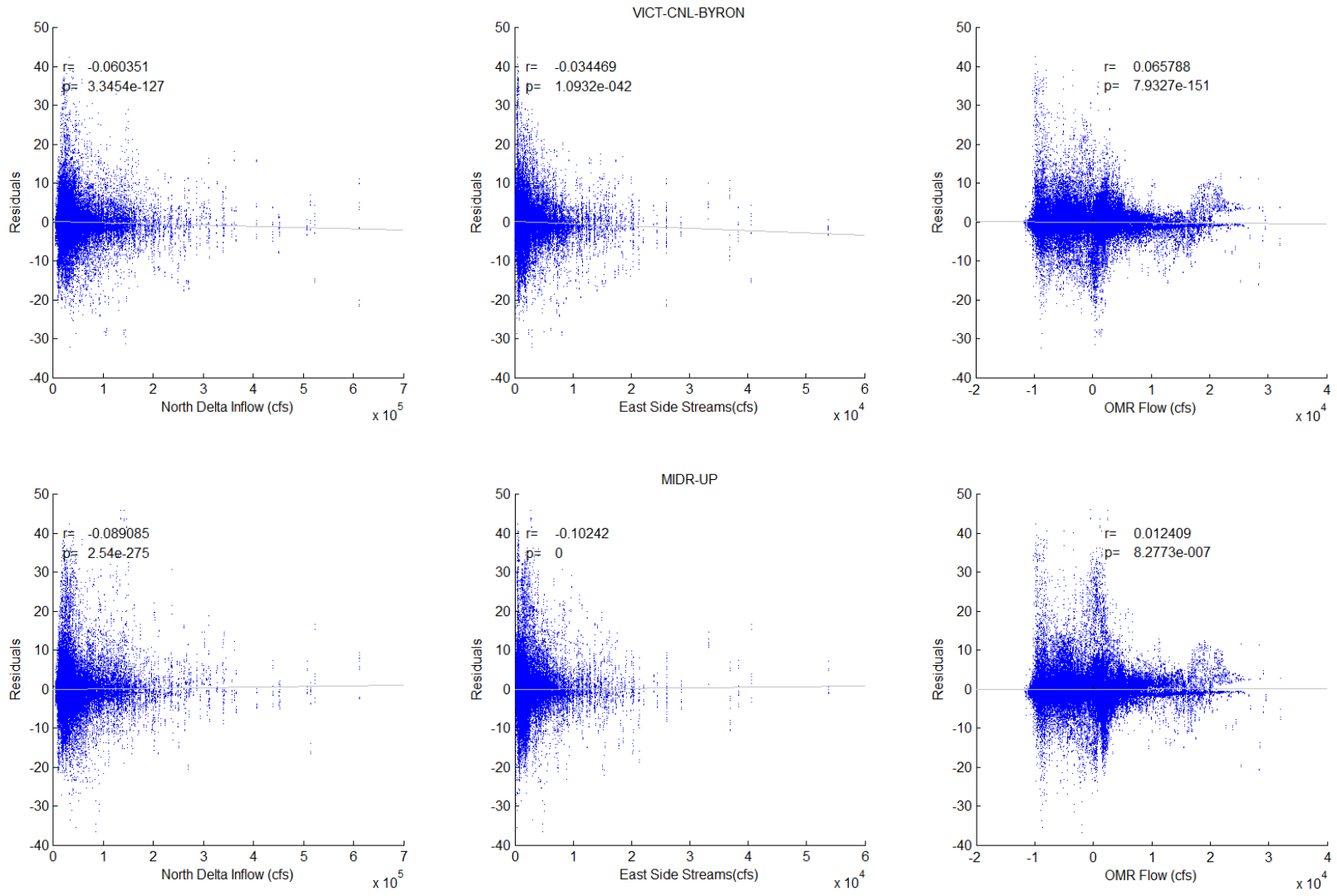


Figure E-1 (continued) Correlation between residuals and inputs of flow to the ANN model

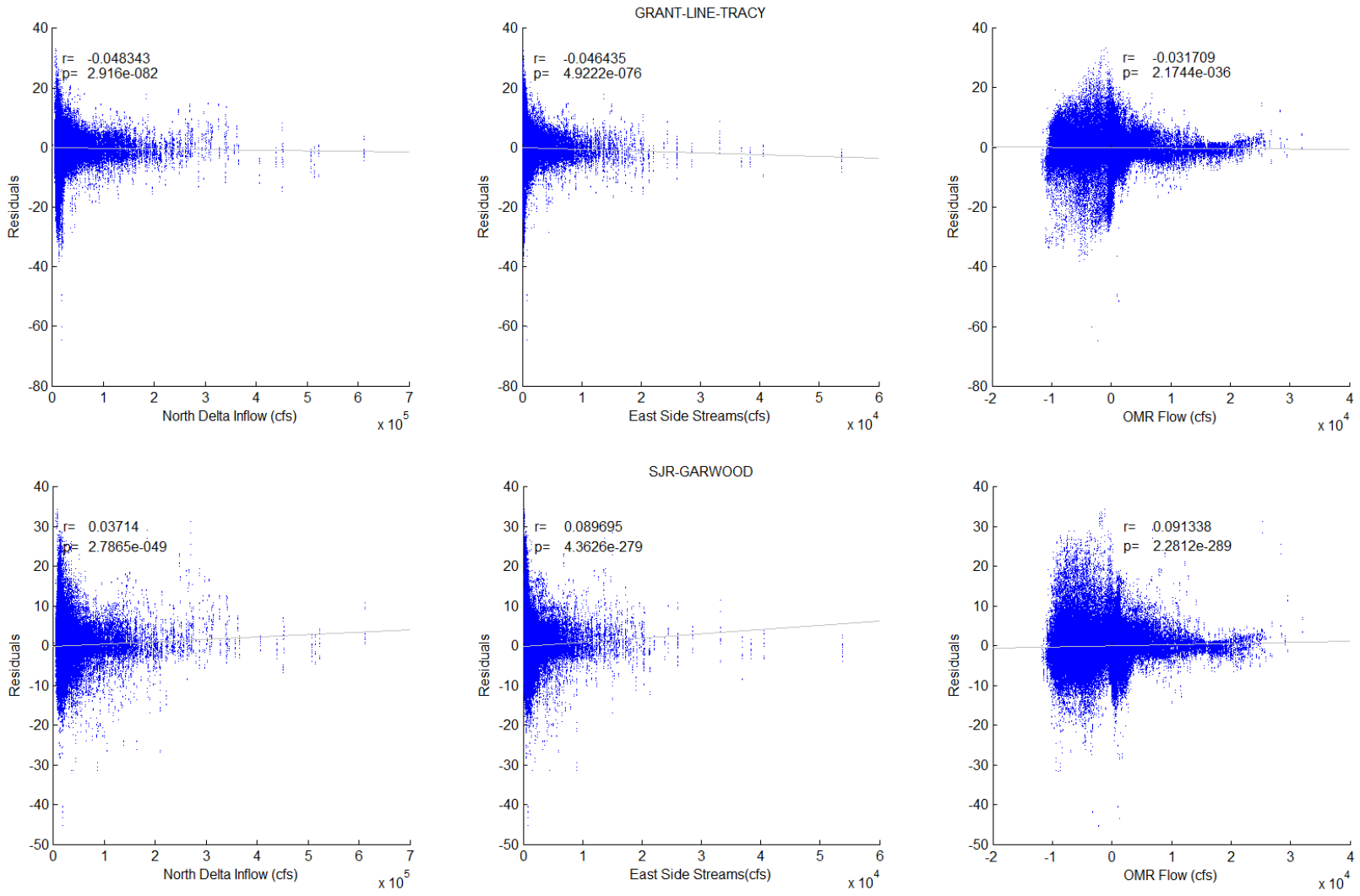


Figure E-1 (continued) Correlation between residuals and inputs of flow to the ANN model

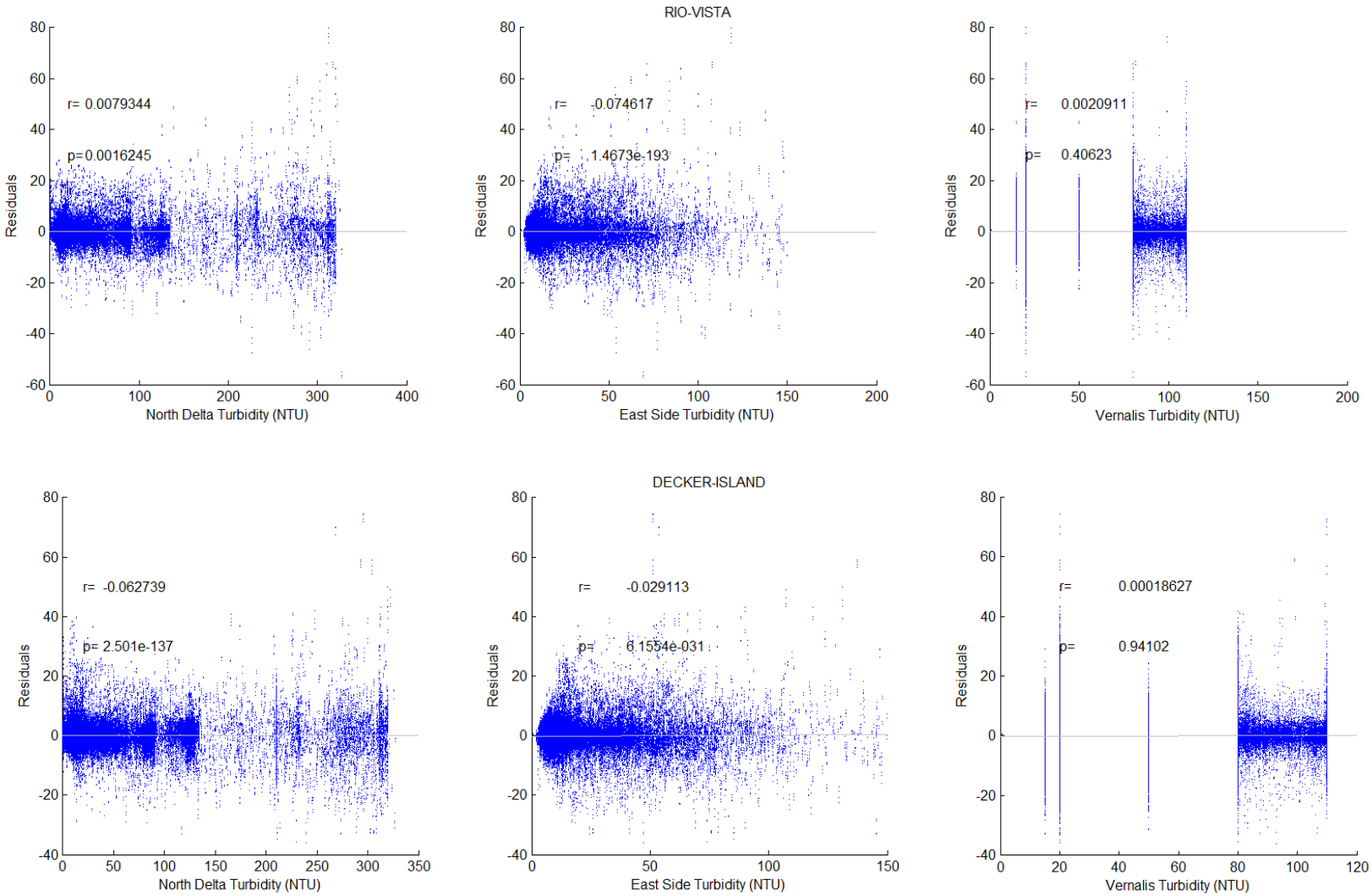


Figure E-2 Correlation between residuals and inputs of turbidity to the ANN mode

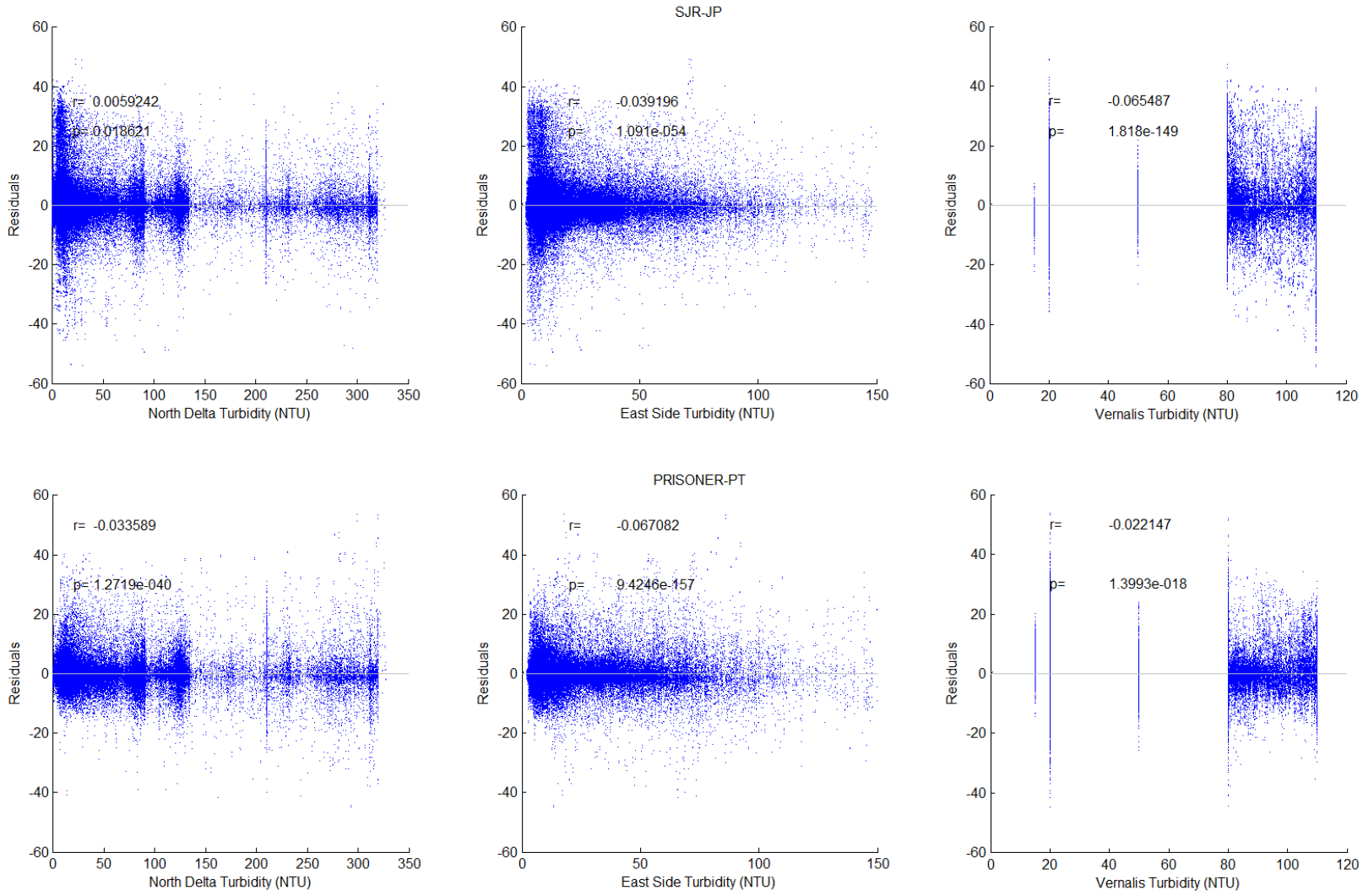


Figure E-2 (continued) Correlation between residuals and inputs of turbidity to the ANN mode

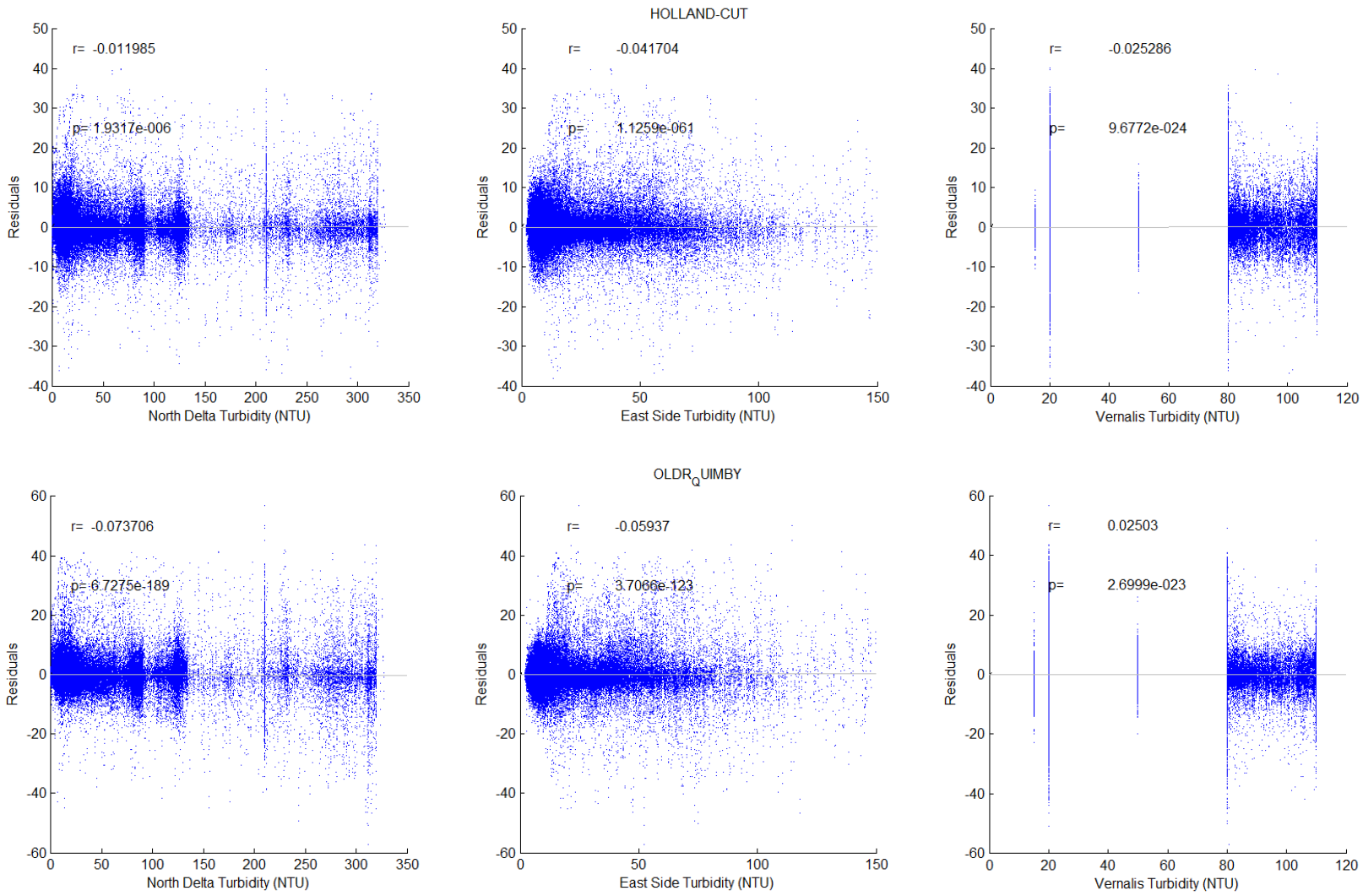


Figure E-2 (continued) Correlation between residuals and inputs of turbidity to the ANN mode

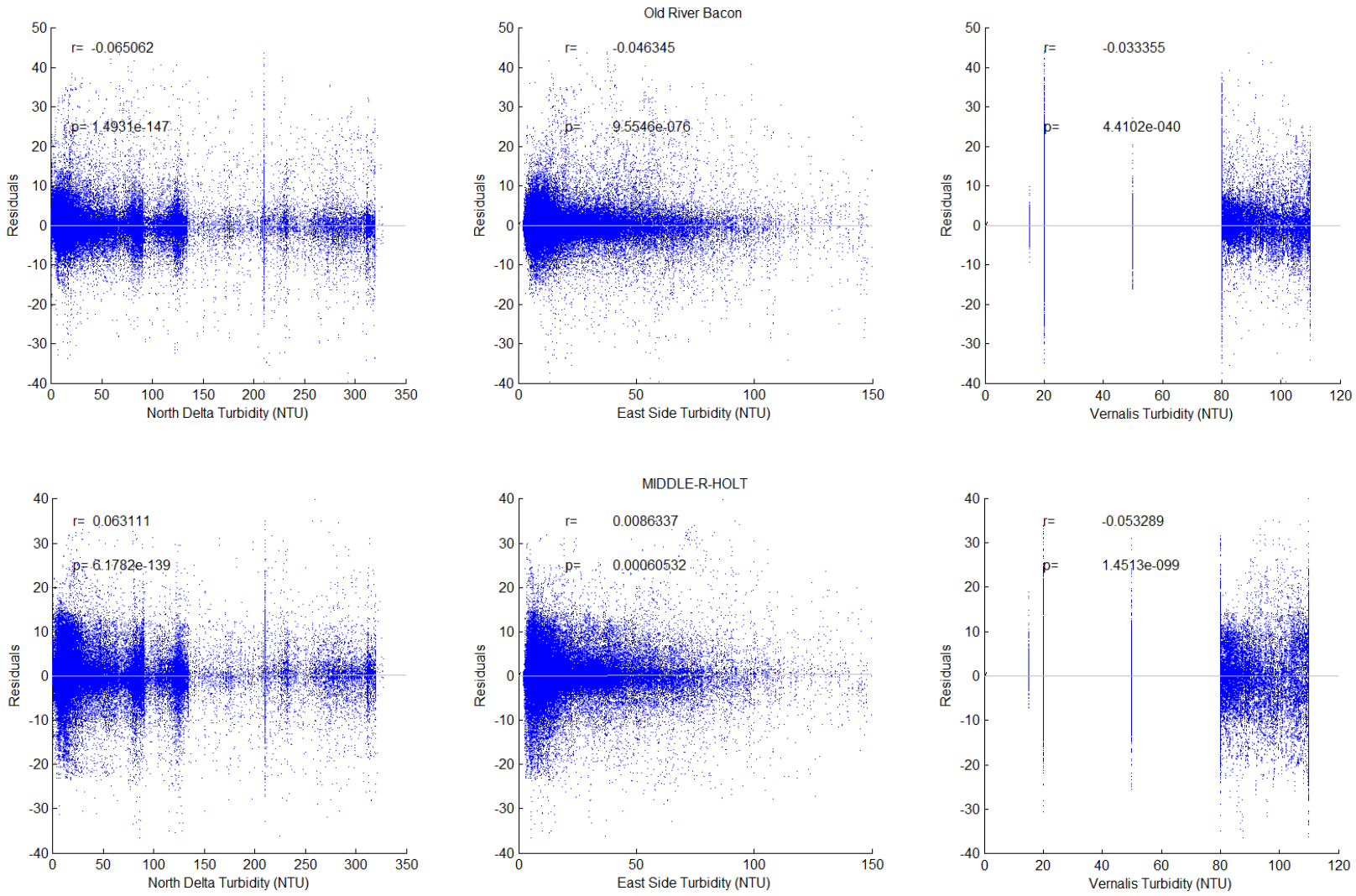


Figure E-2 (continued) Correlation between residuals and inputs of turbidity to the ANN mode

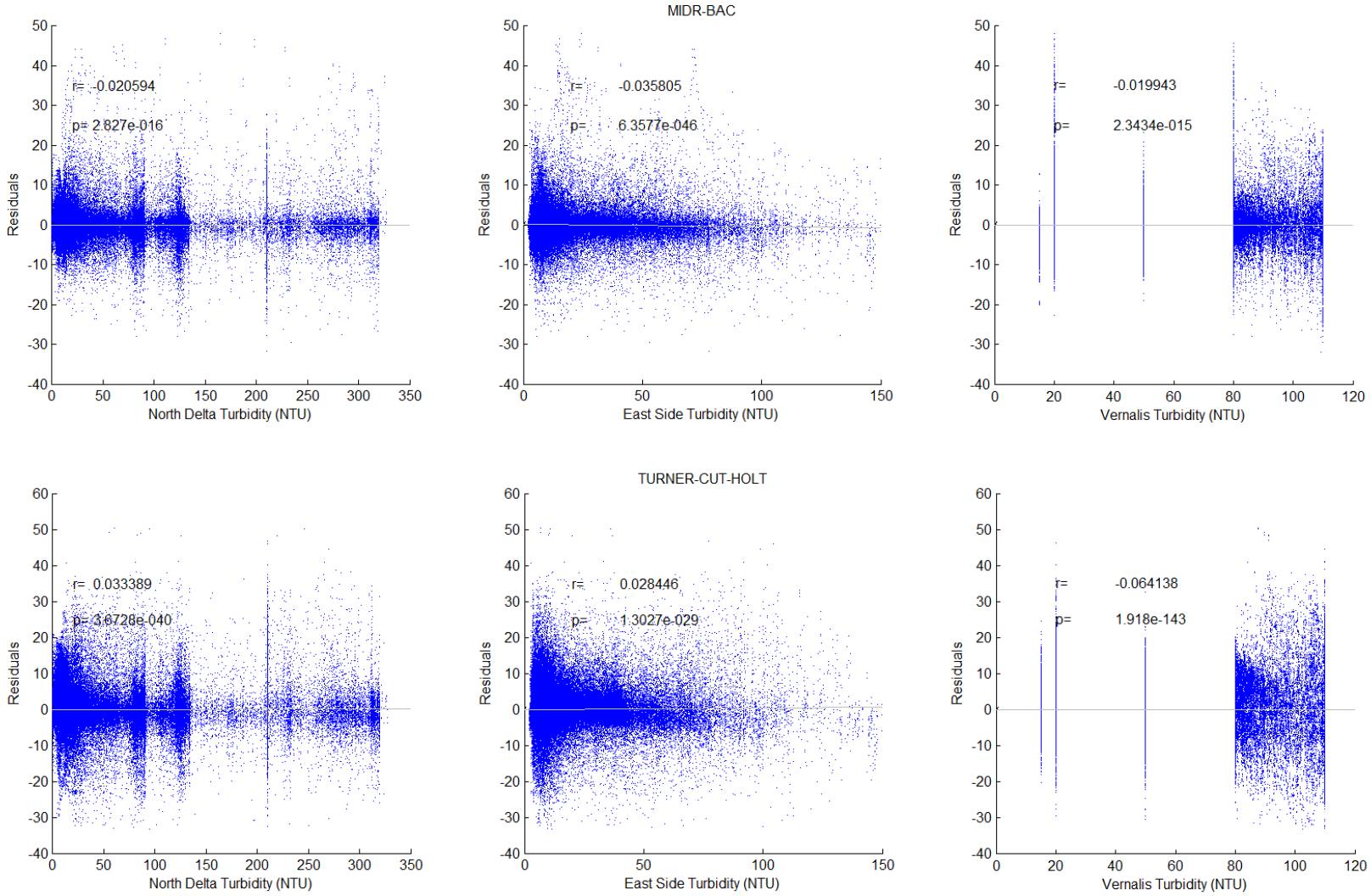


Figure E-2 (continued) Correlation between residuals and inputs of turbidity to the ANN mode

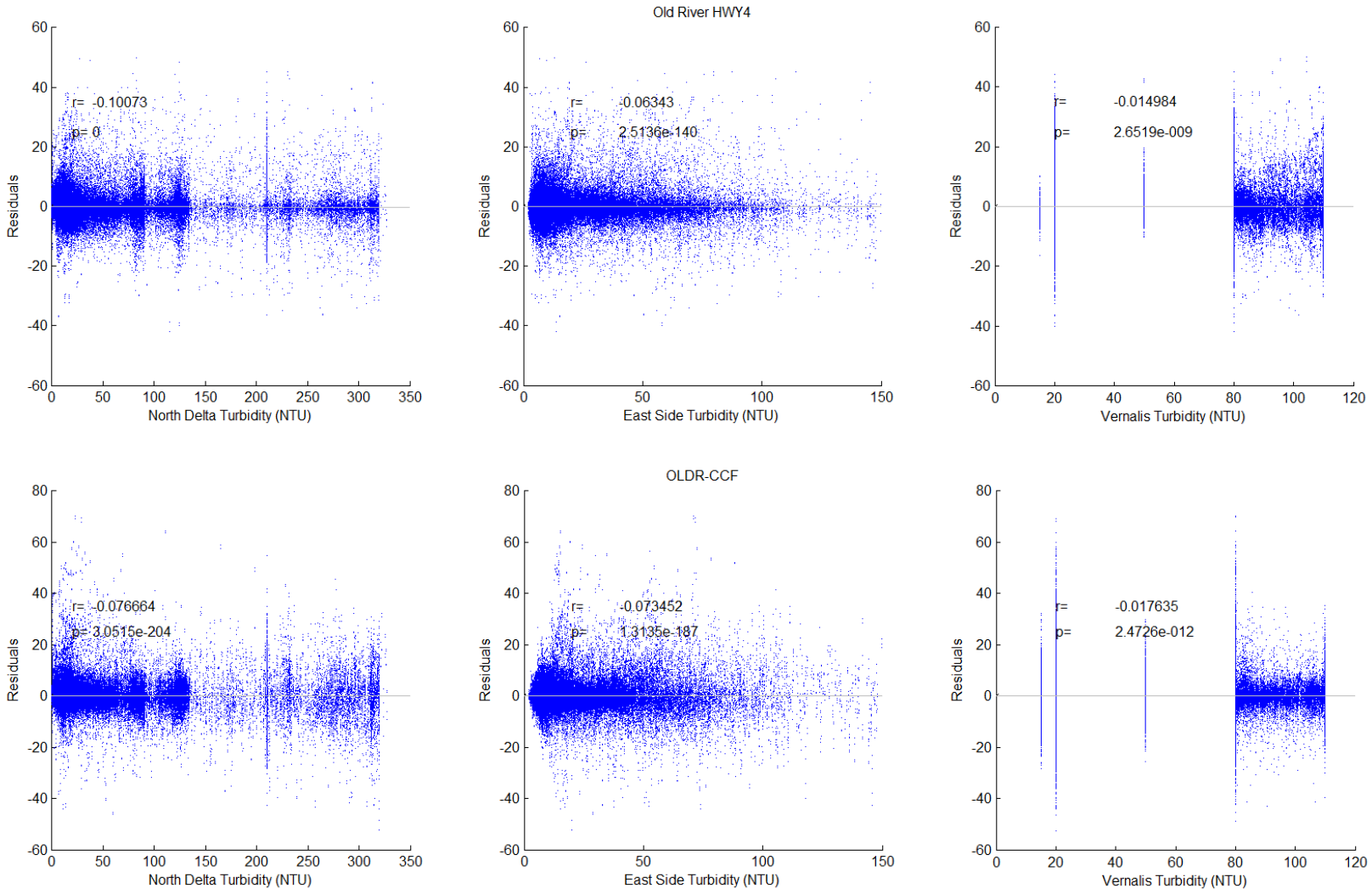


Figure E-2 (continued) Correlation between residuals and inputs of turbidity to the ANN mode

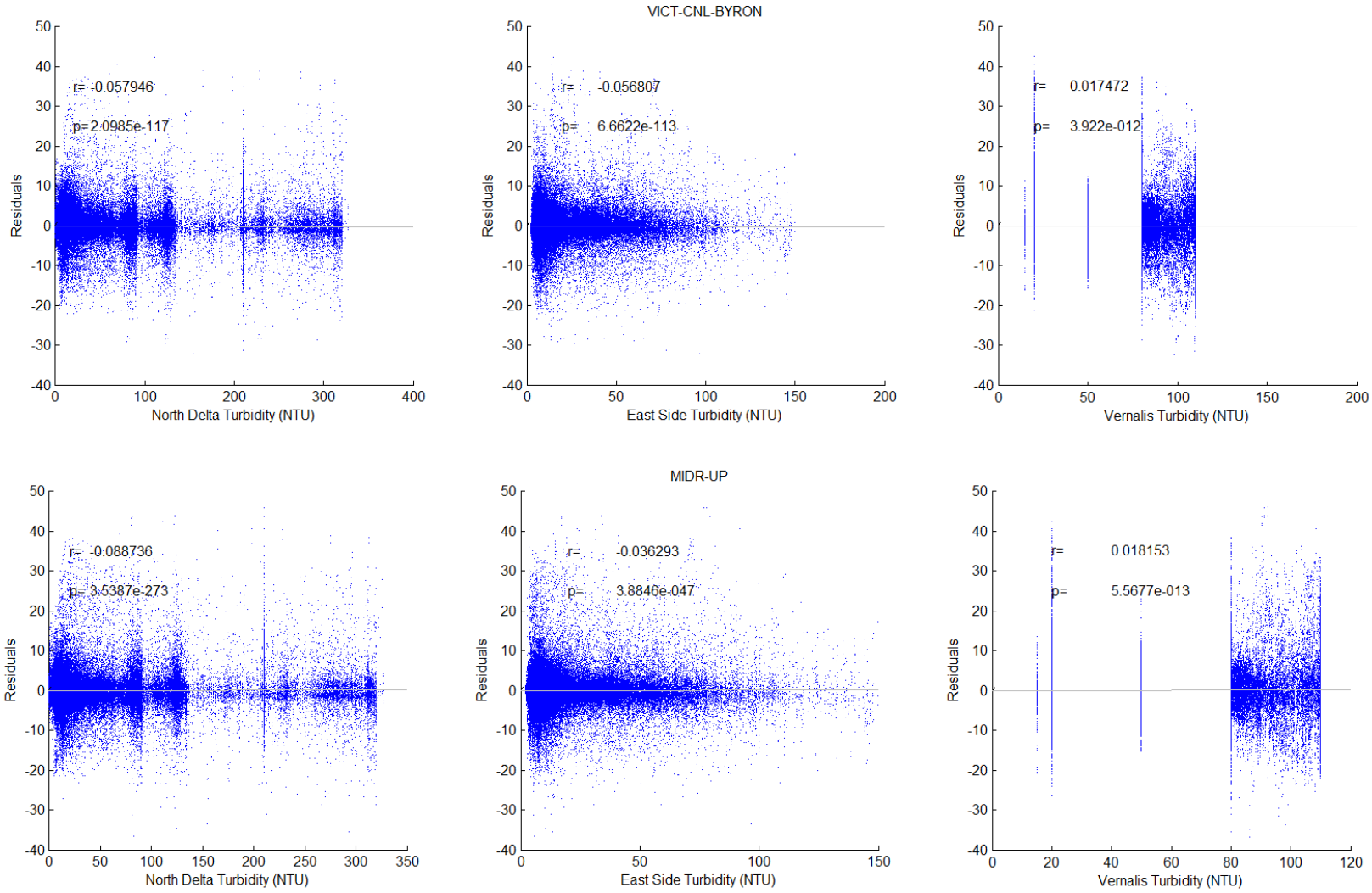


Figure E-2 (continued) Correlation between residuals and inputs of turbidity to the ANN mode

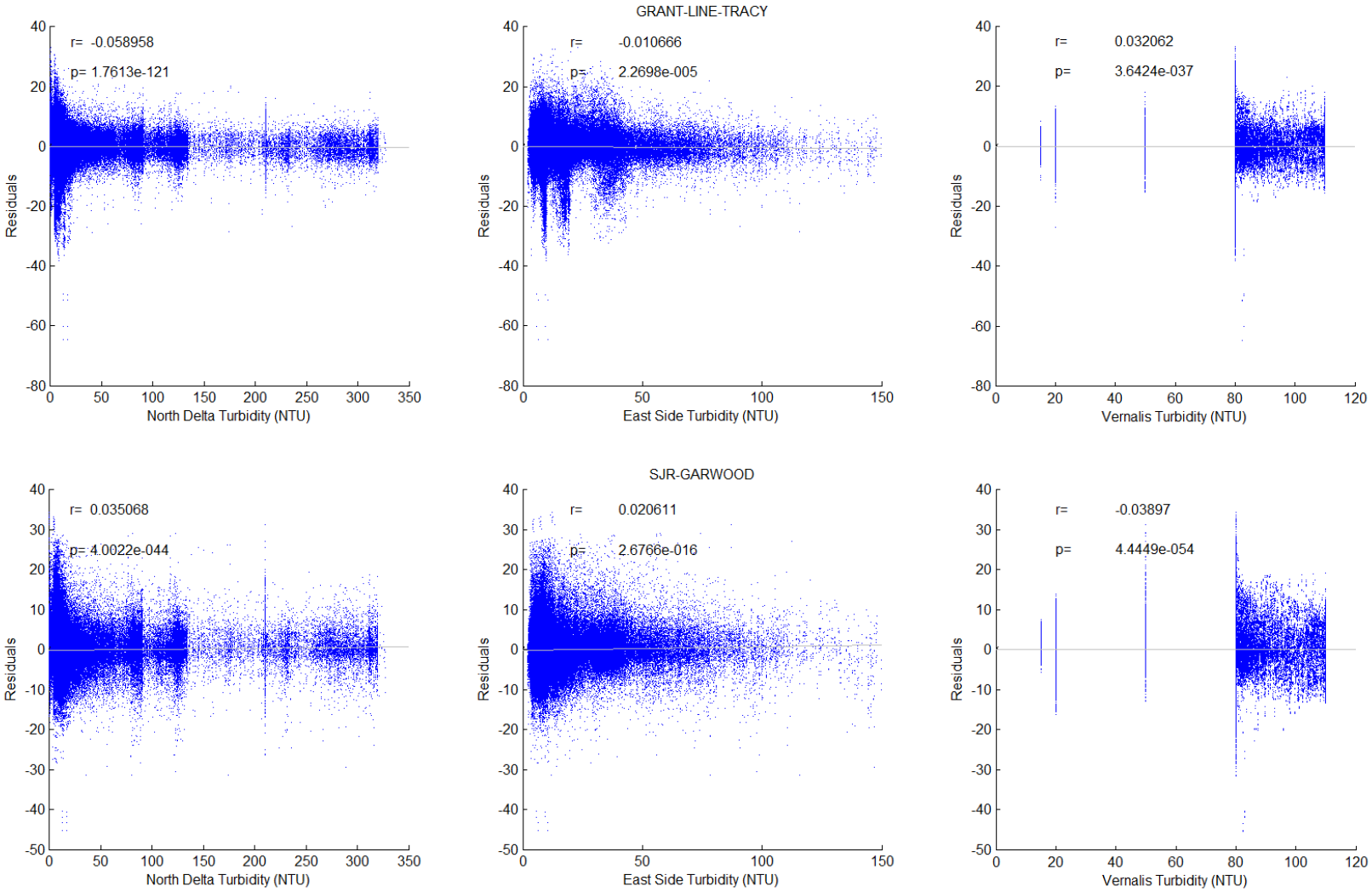


Figure E-2 (continued) Correlation between residuals and inputs of turbidity to the ANN mode

APPENDIX F: RESIDUAL ANALYSIS FOR NARX NETWORKS

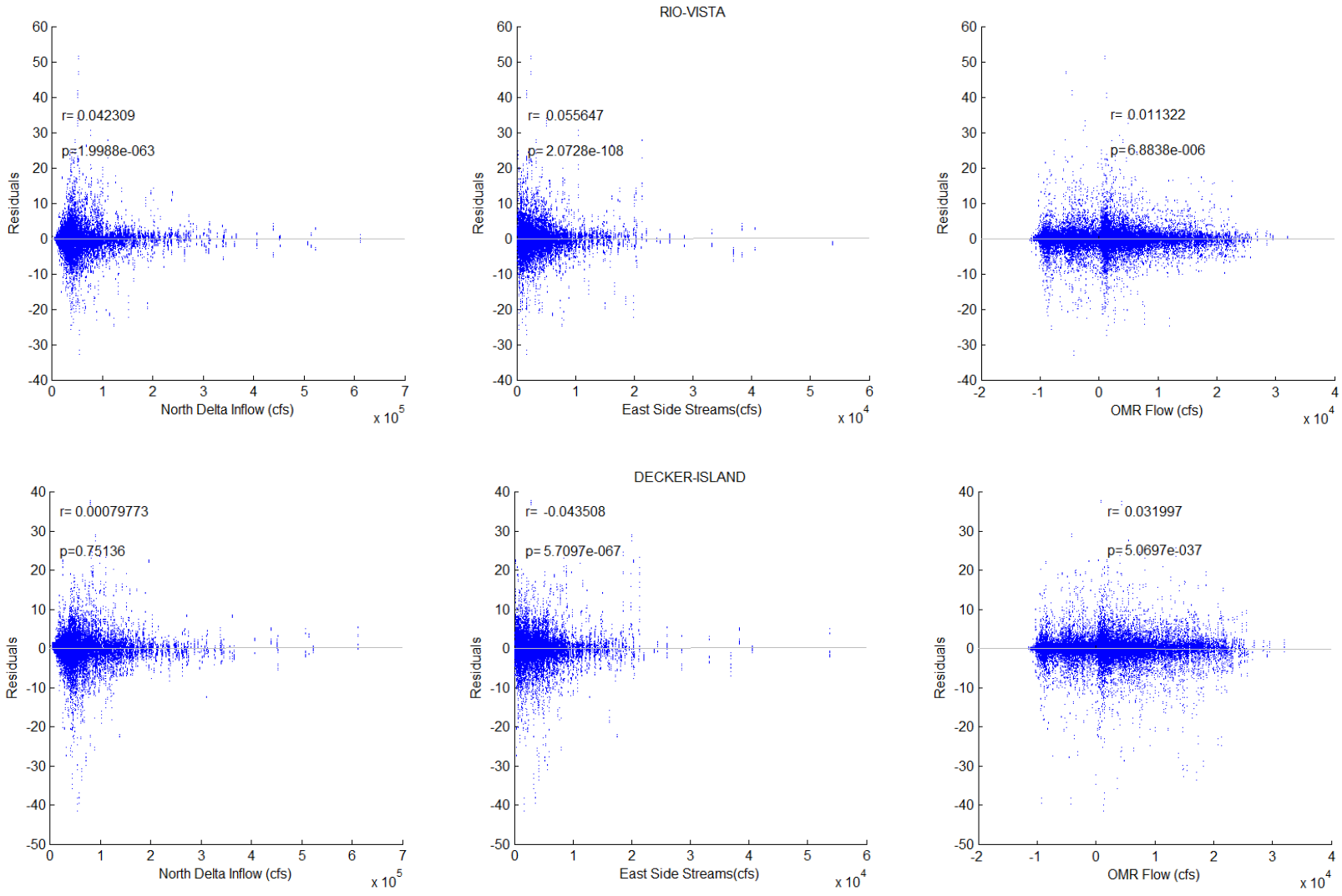


Figure F-1 Correlation between residuals and inputs of flow to the ANN model

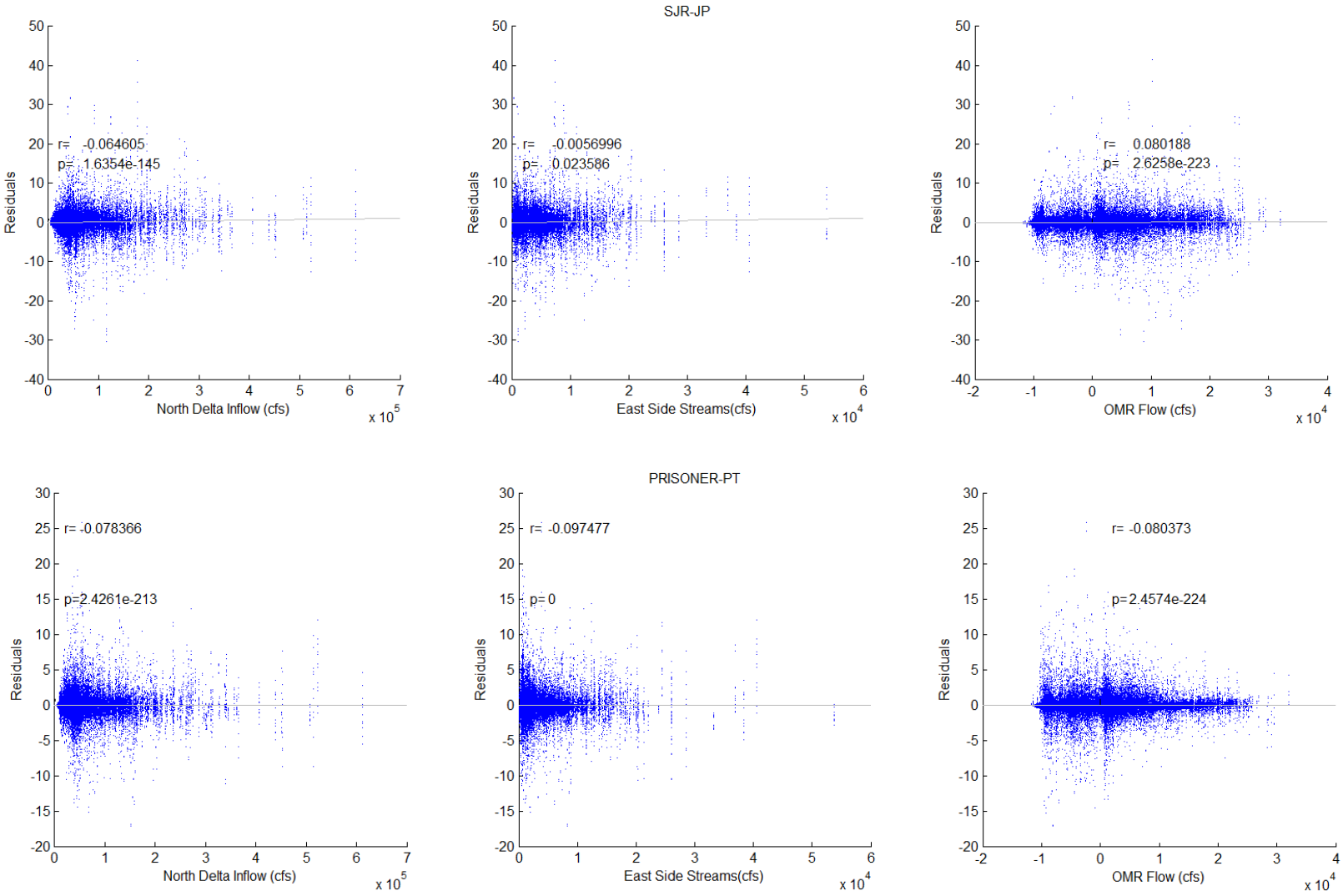


Figure F-1 (continued) Correlation between residuals and inputs of flow to the ANN model

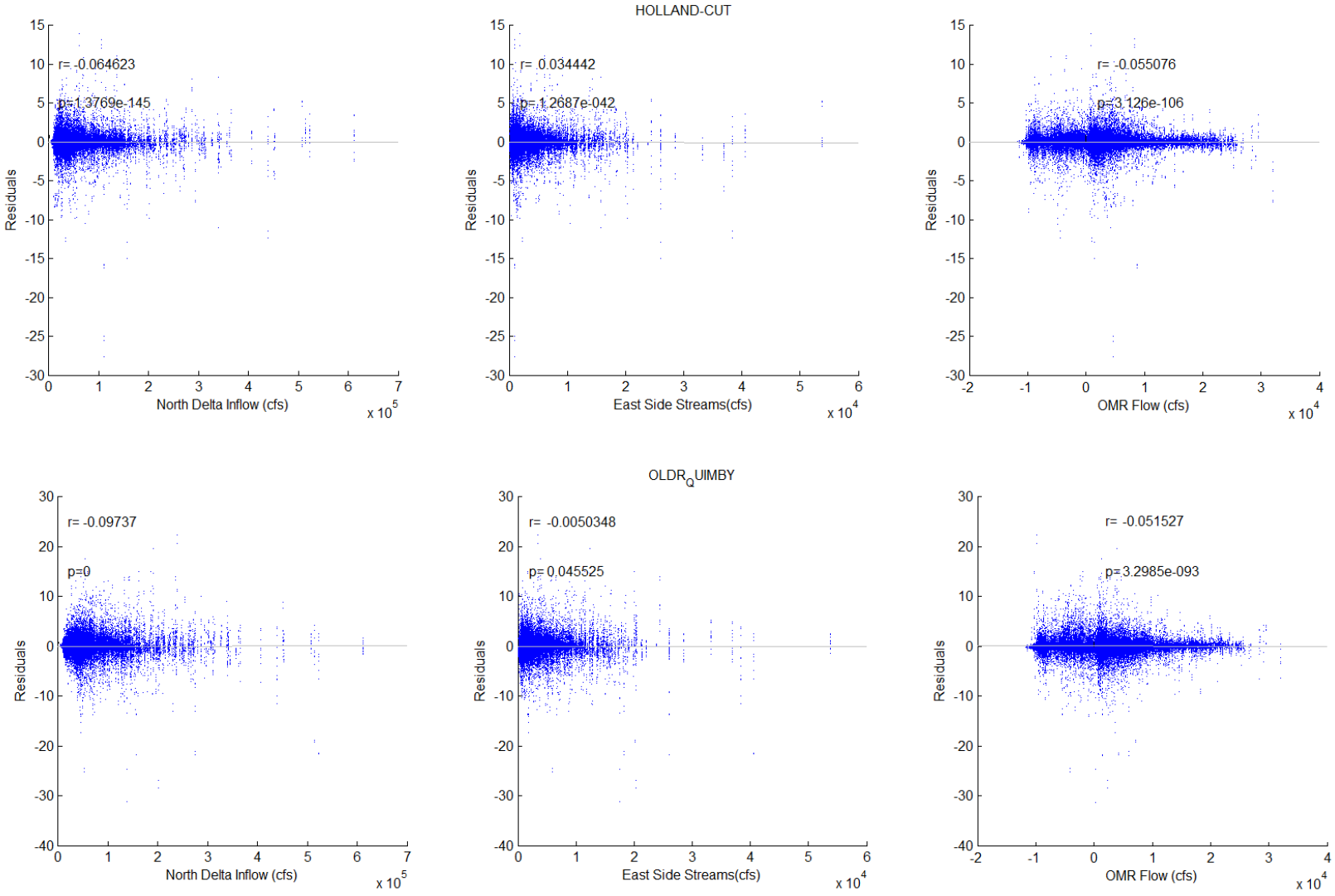


Figure F-1 (continued) Correlation between residuals and inputs of flow to the ANN model

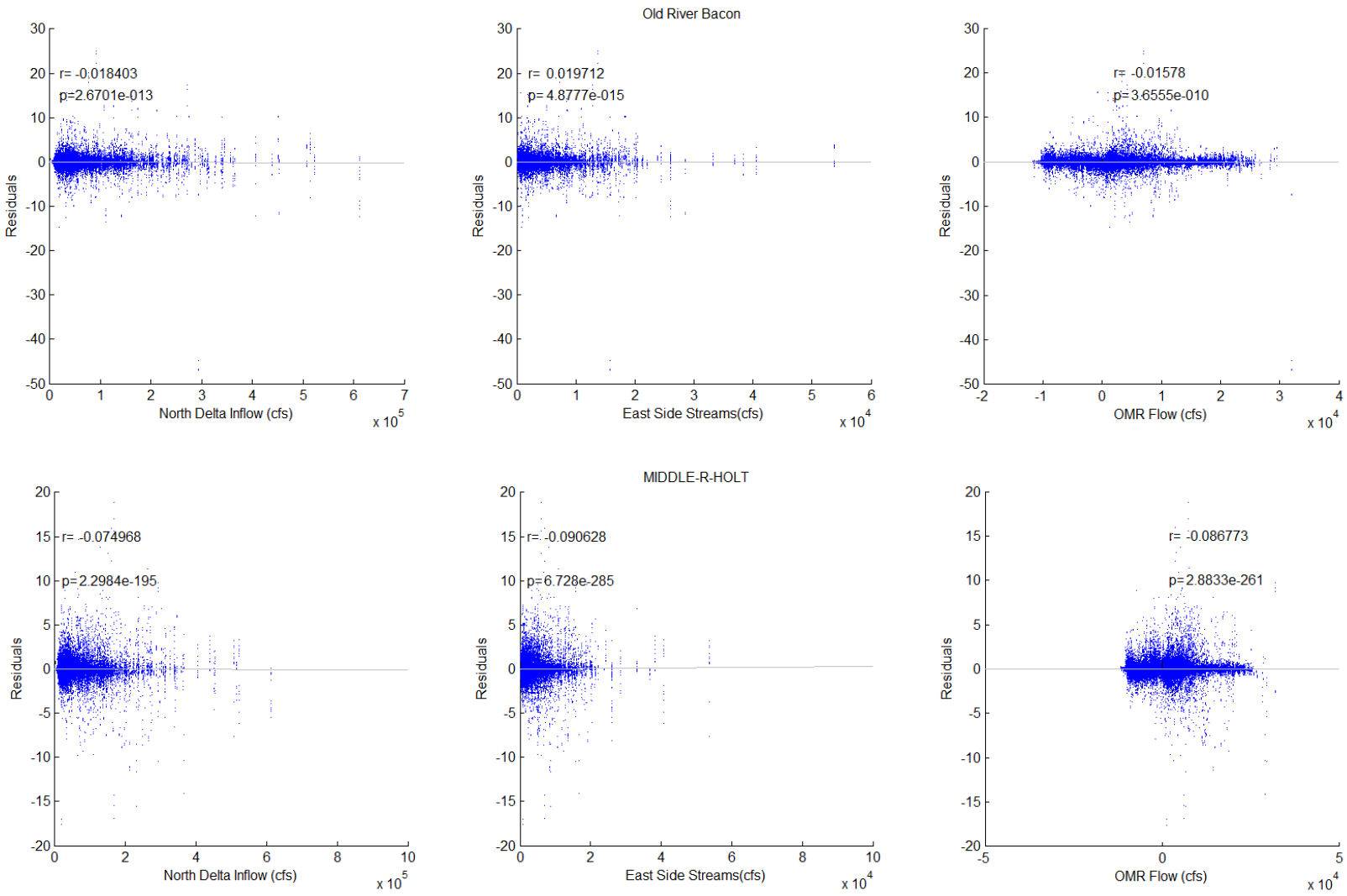


Figure F-1 (continued) Correlation between residuals and inputs of flow to the ANN model

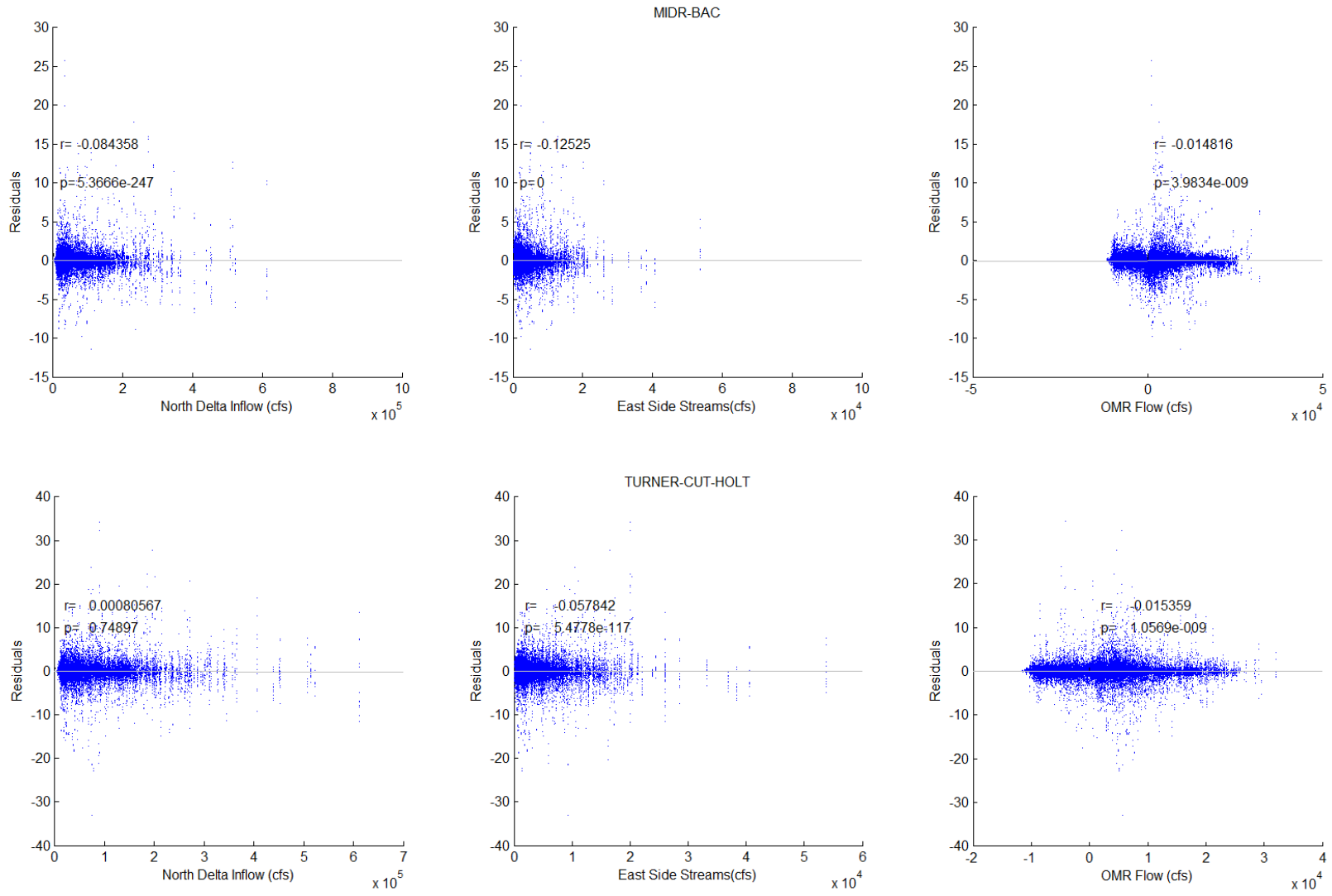


Figure F-1 (continued) Correlation between residuals and inputs of flow to the ANN model

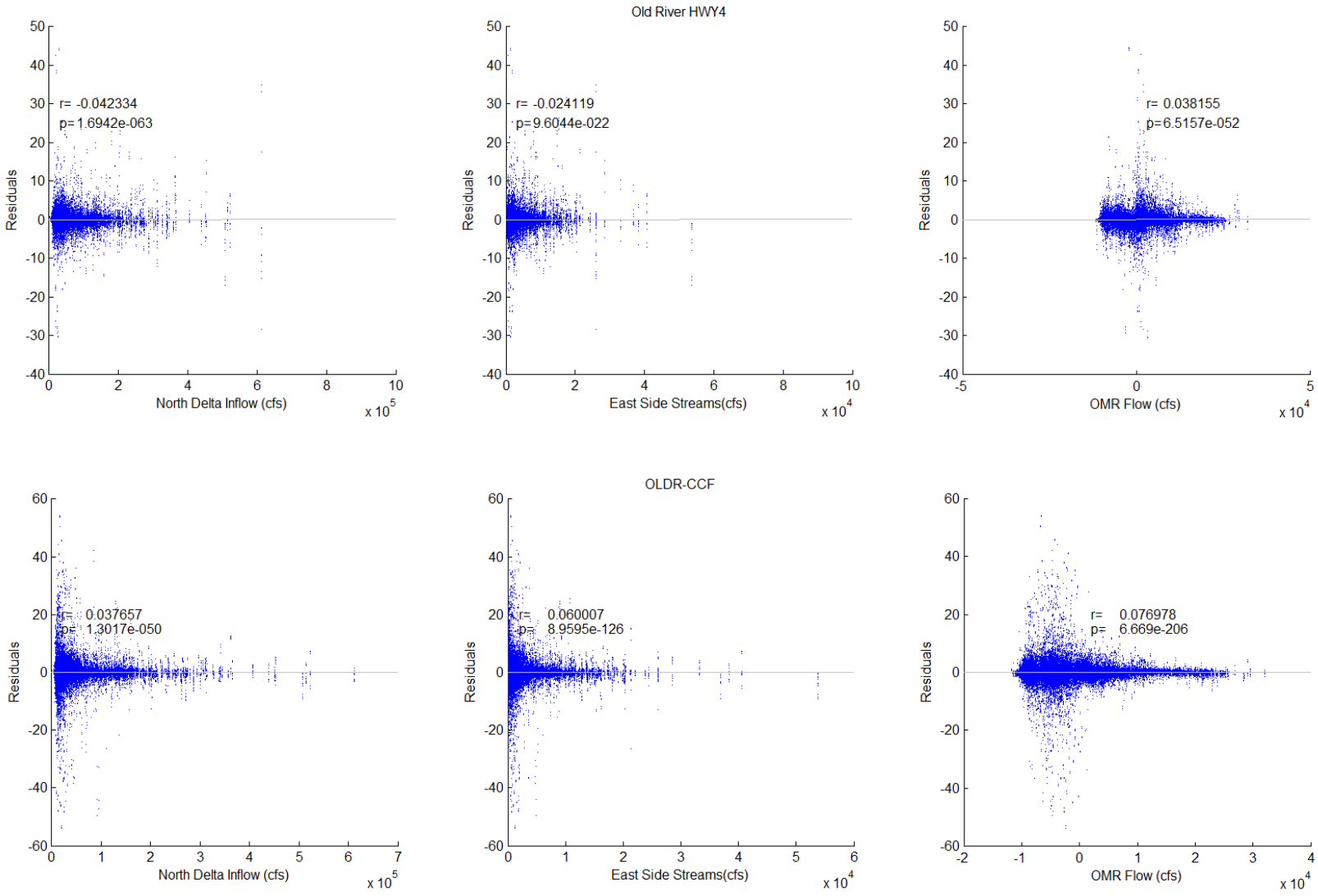


Figure F-1 (continued) Correlation between residuals and inputs of flow to the ANN model

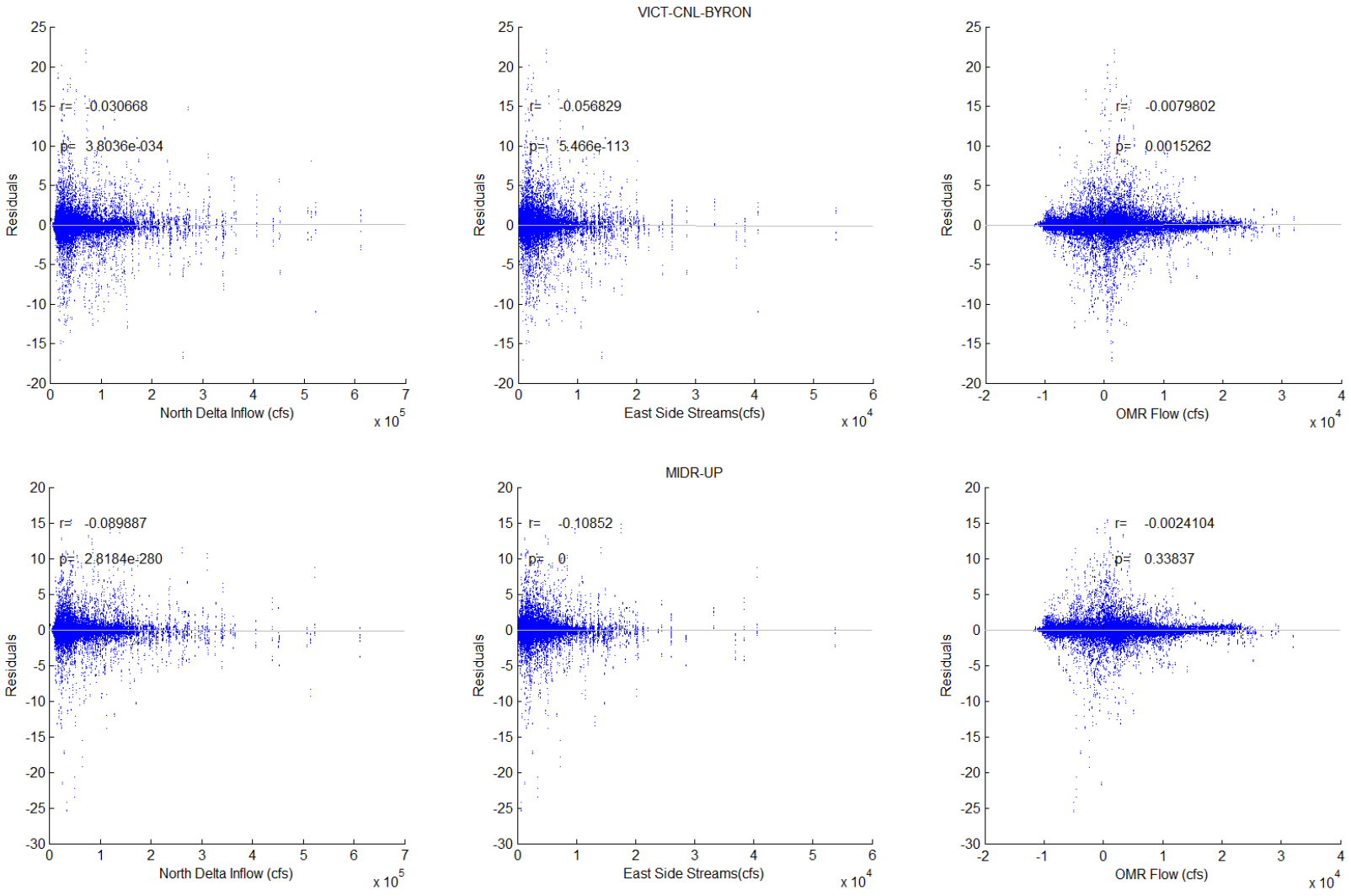


Figure F-1 (continued) Correlation between residuals and inputs of flow to the ANN model

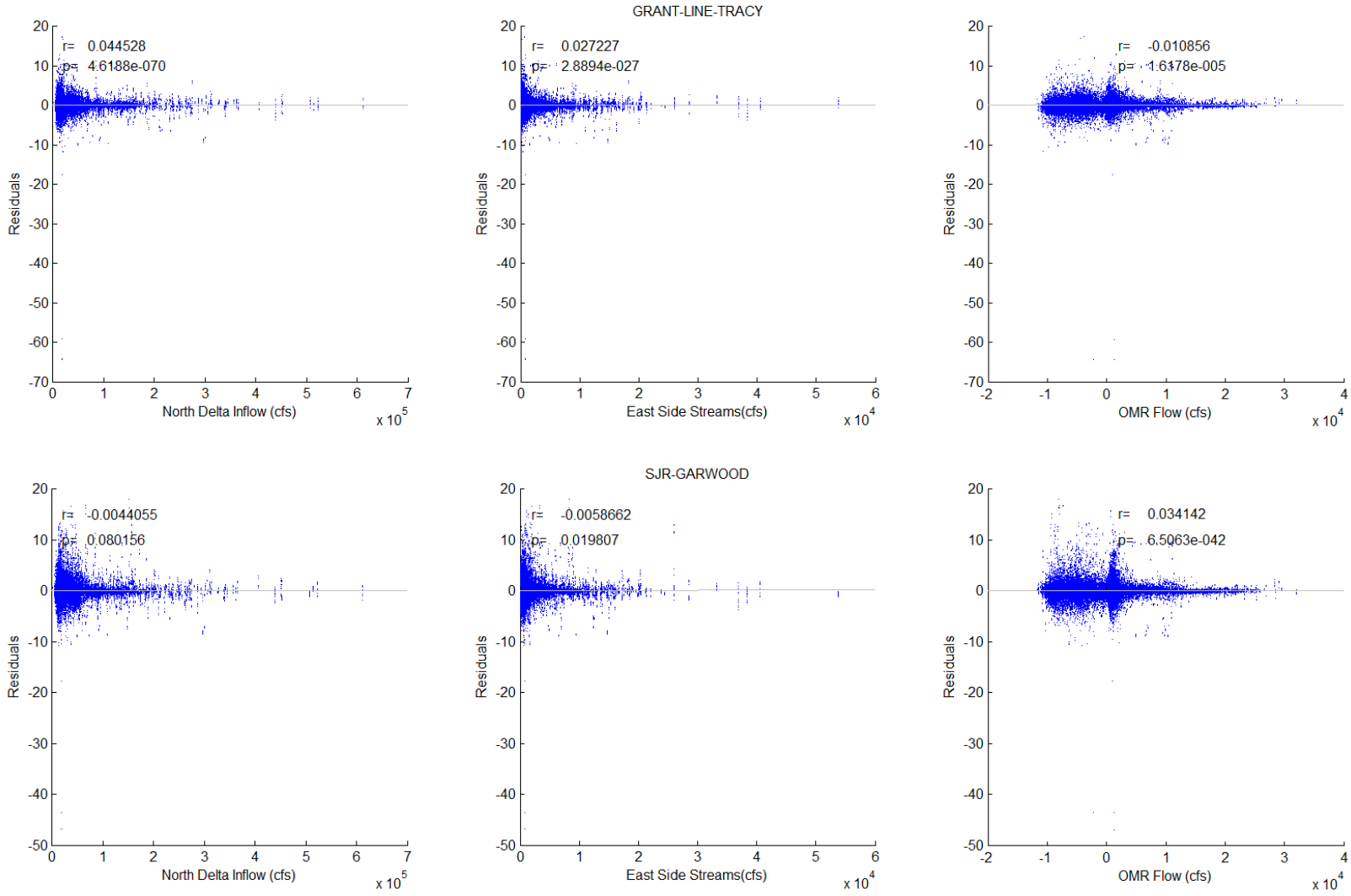


Figure F-1 (continued) Correlation between residuals and inputs of flow to the ANN model

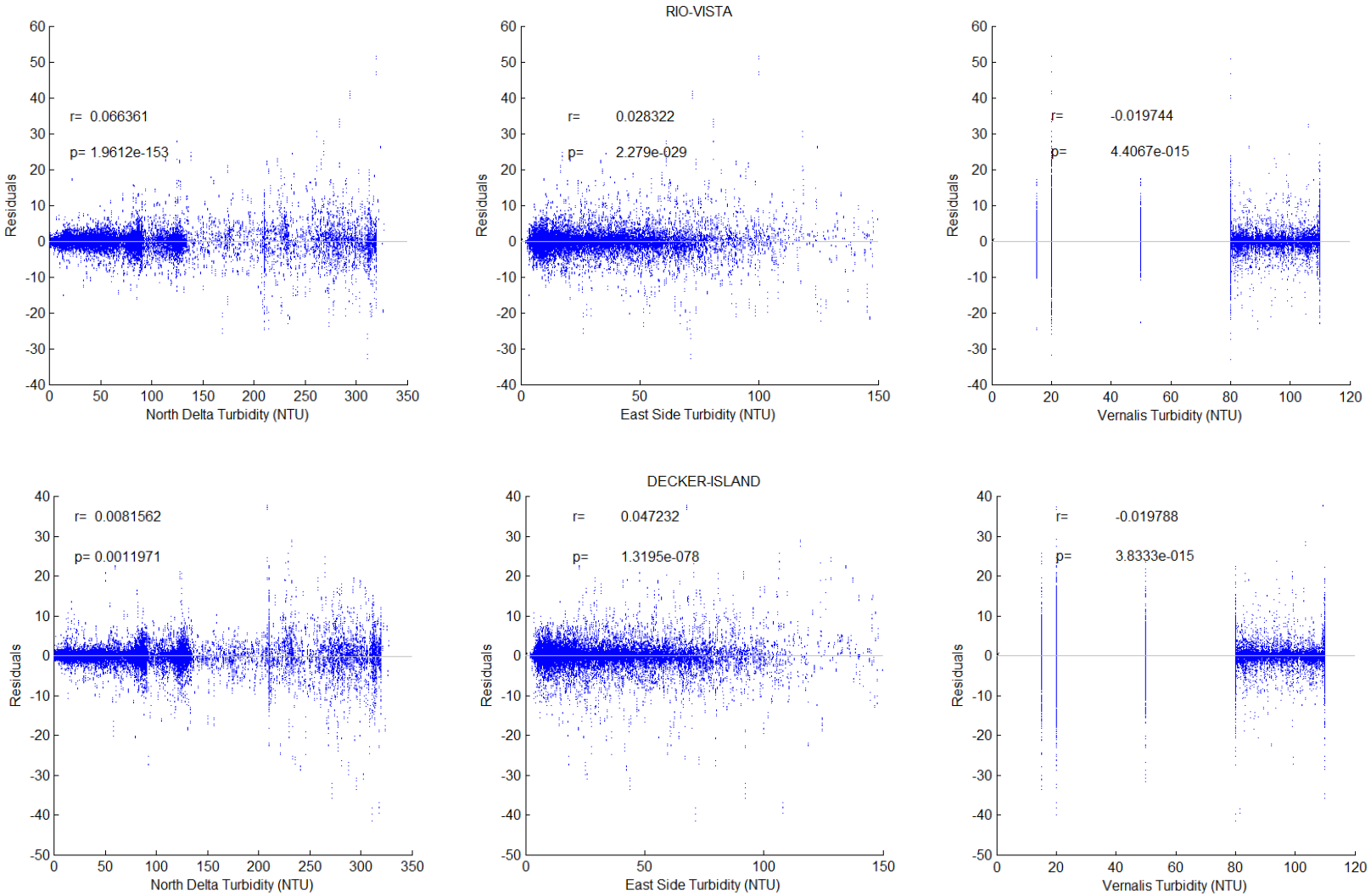


Figure F-2 Correlation between residuals and inputs of turbidity to the ANN model

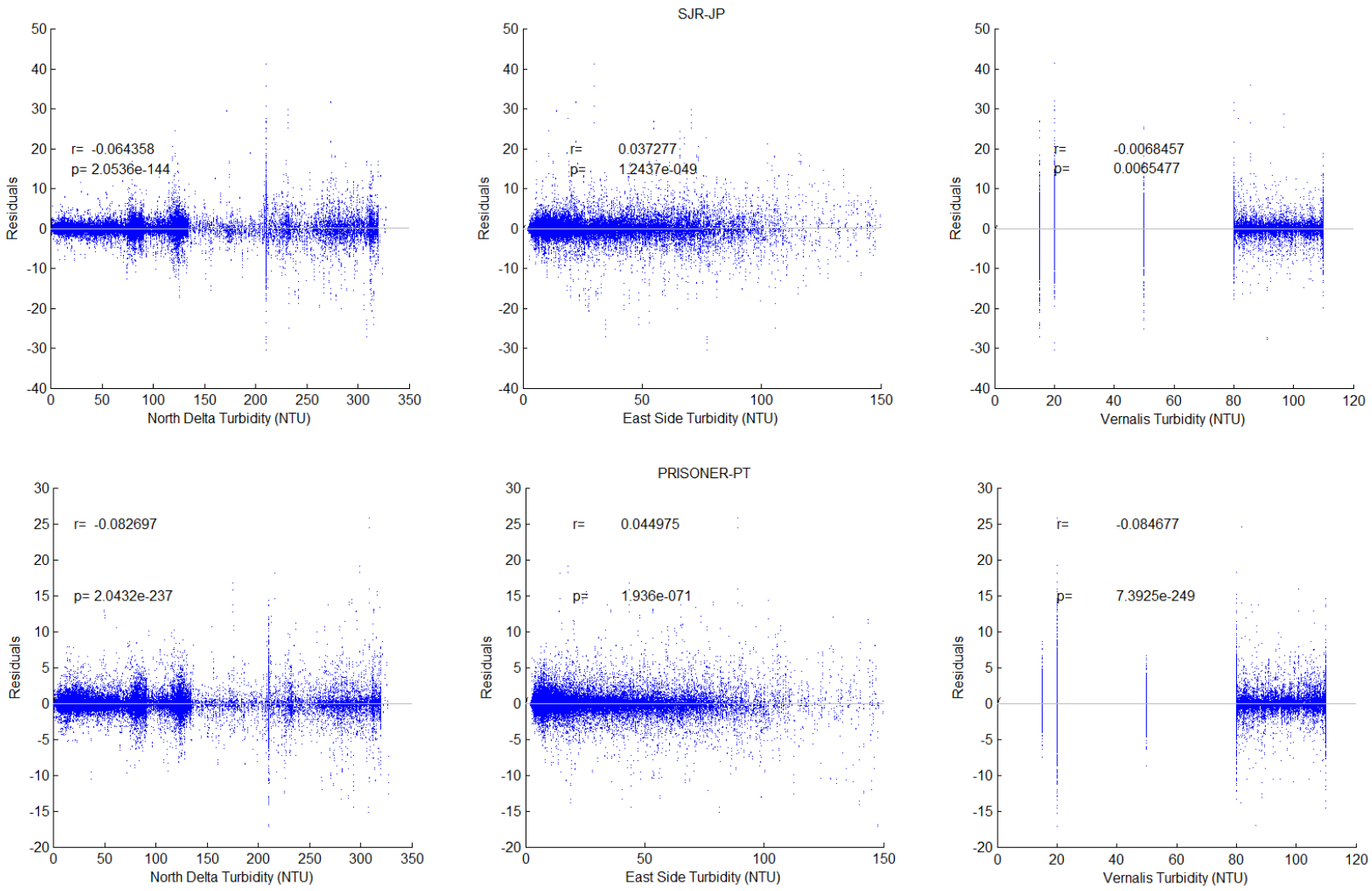


Figure F-2 (continued) Correlation between residuals and inputs of turbidity to the ANN model

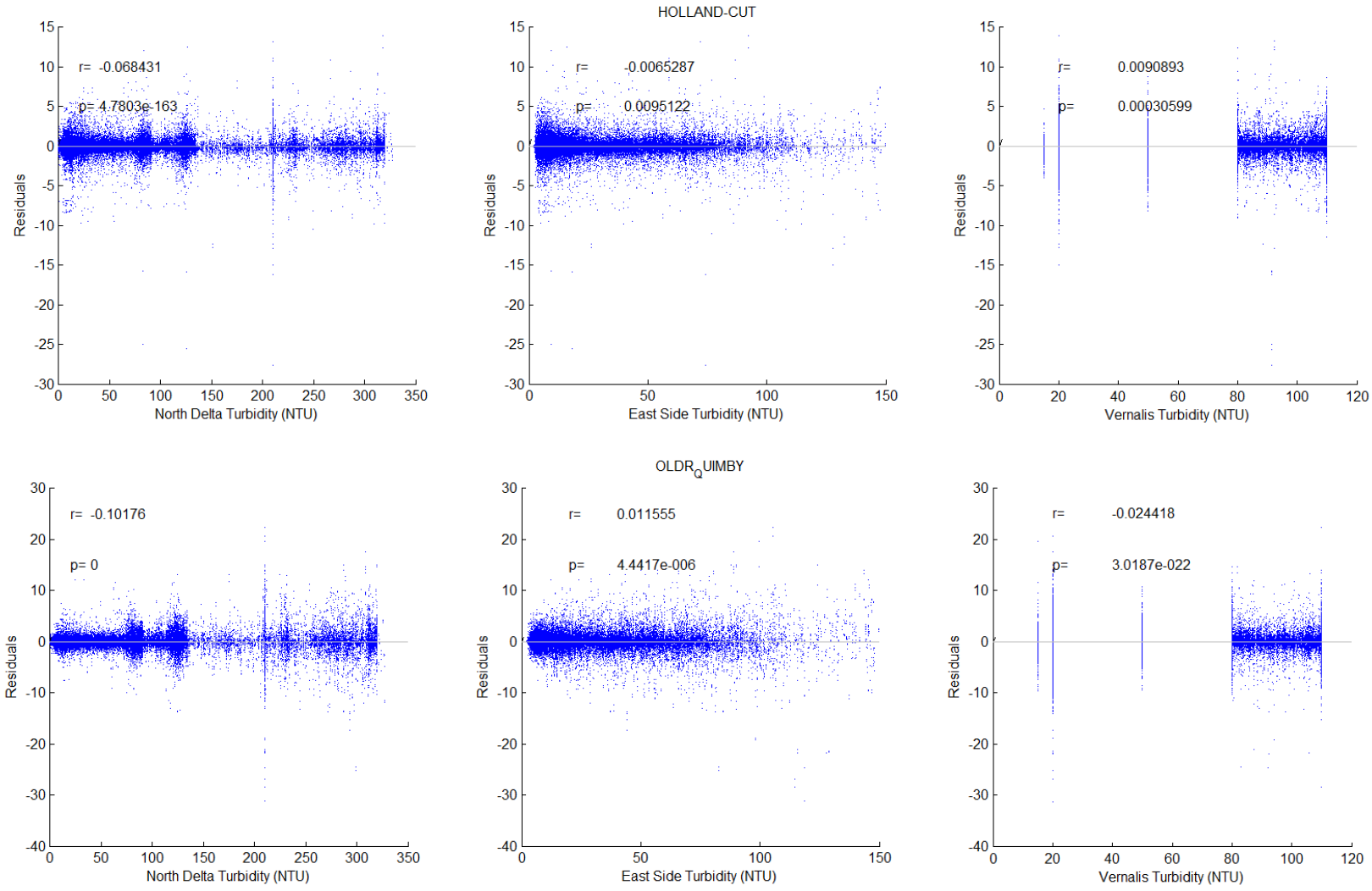


Figure F-2 (continued) Correlation between residuals and inputs of turbidity to the ANN model

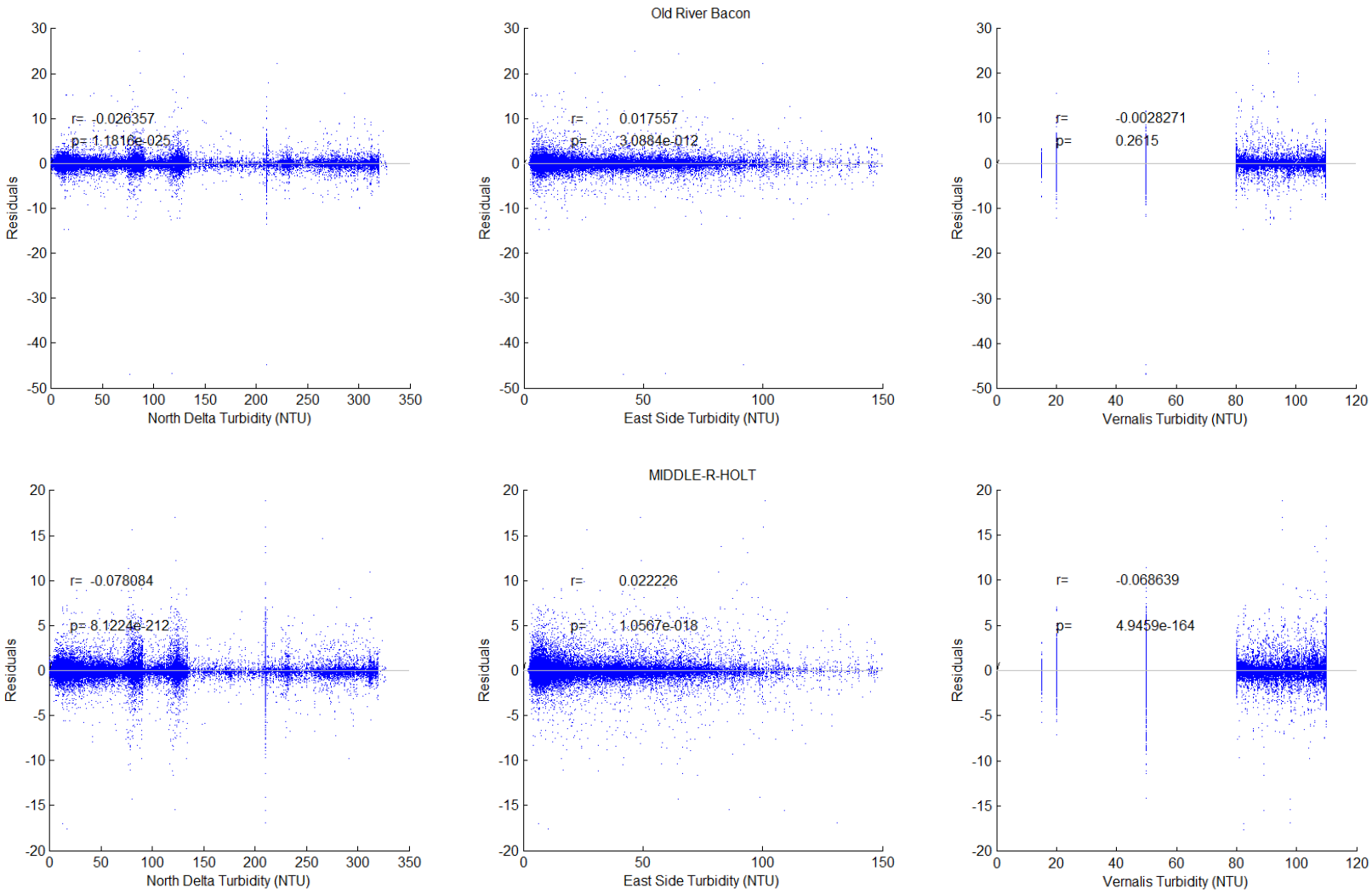


Figure F-2 (continued) Correlation between residuals and inputs of turbidity to the ANN model

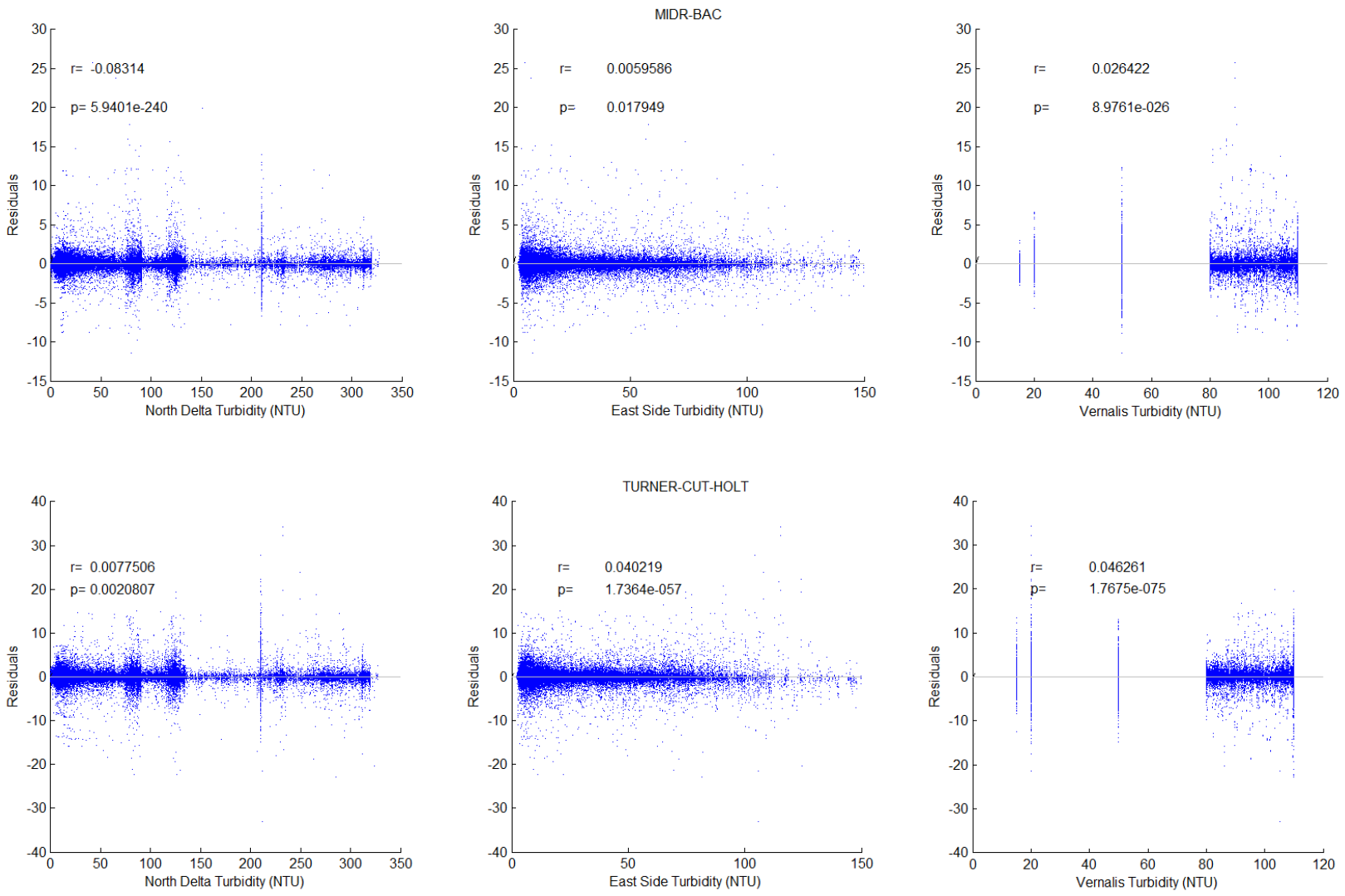


Figure F-2 (continued) Correlation between residuals and inputs of turbidity to the ANN model

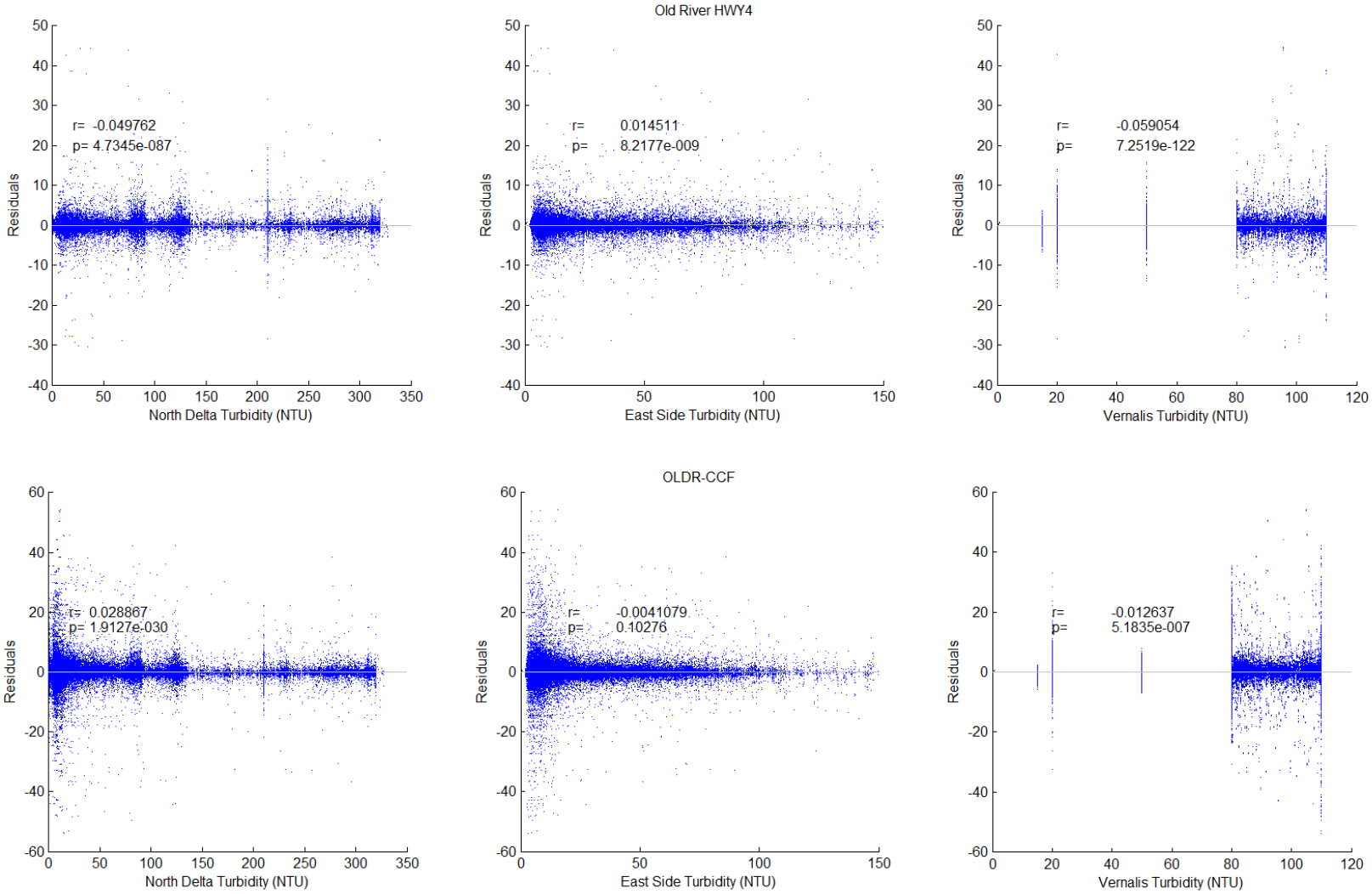


Figure F-2 (continued) Correlation between residuals and inputs of turbidity to the ANN model

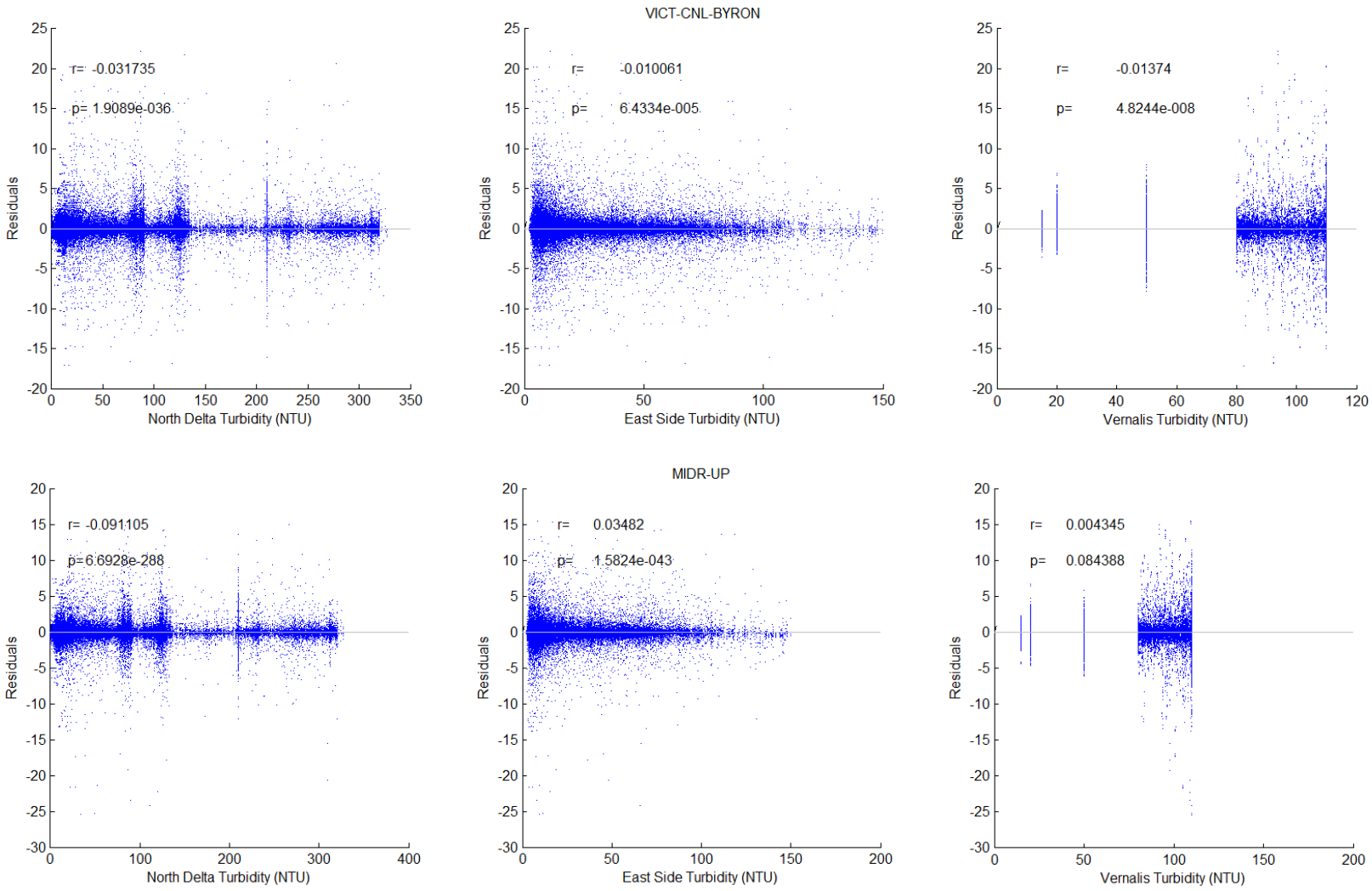


Figure F-2 (continued) Correlation between residuals and inputs of turbidity to the ANN model

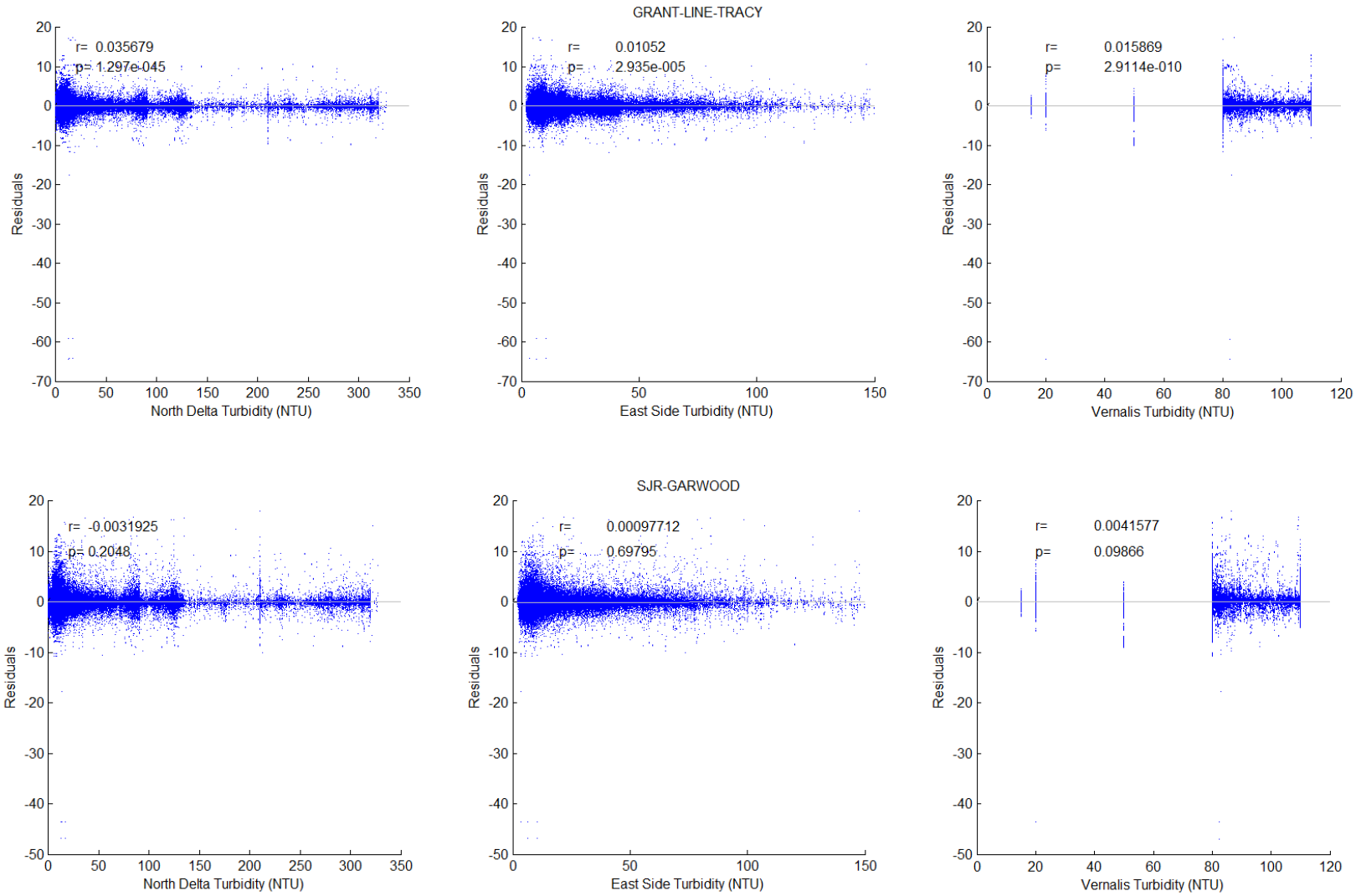
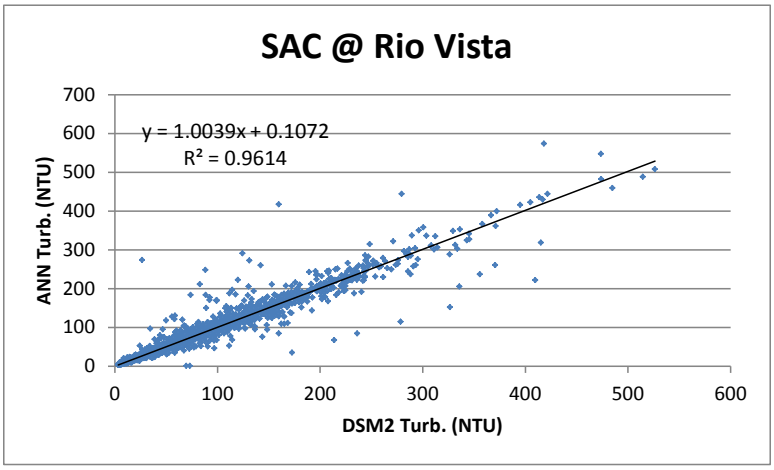
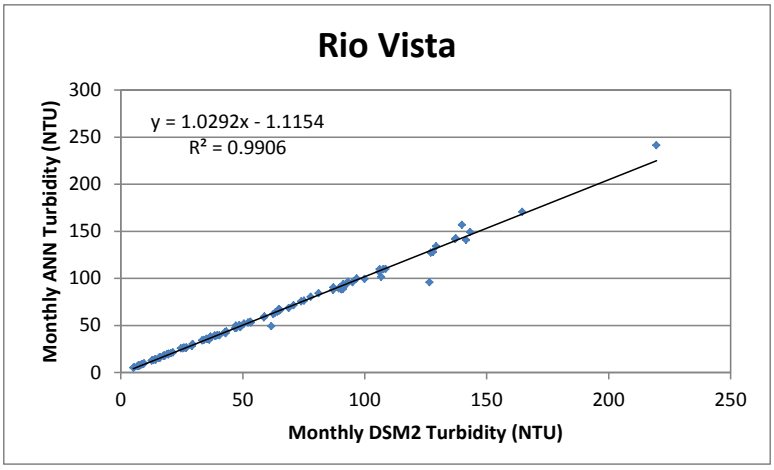
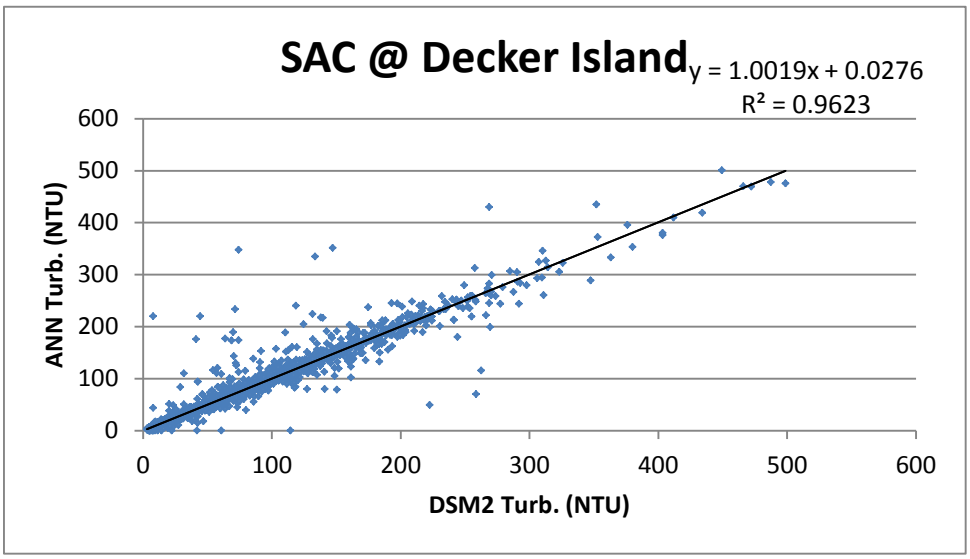


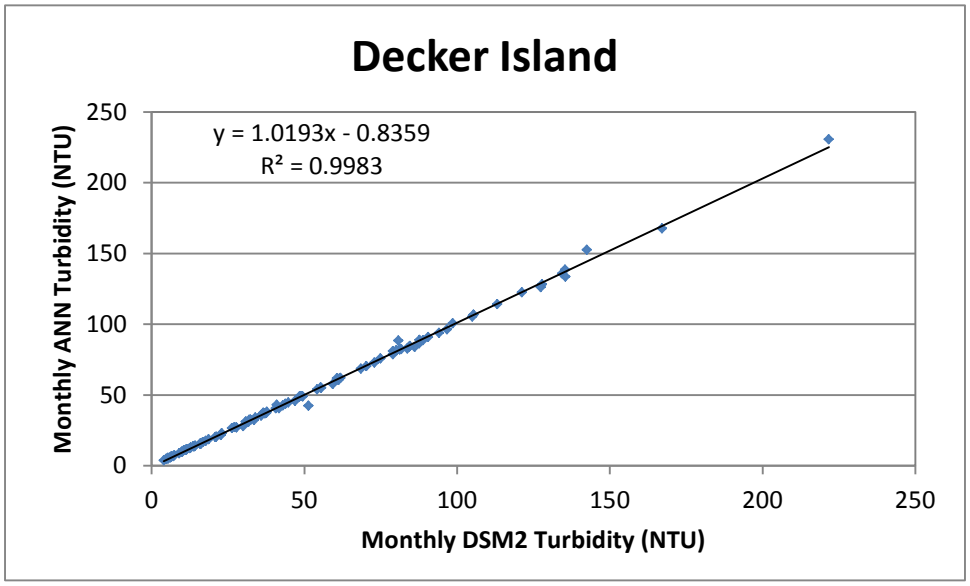
Figure F-2 (continued) Correlation between residuals and inputs of turbidity to the ANN model

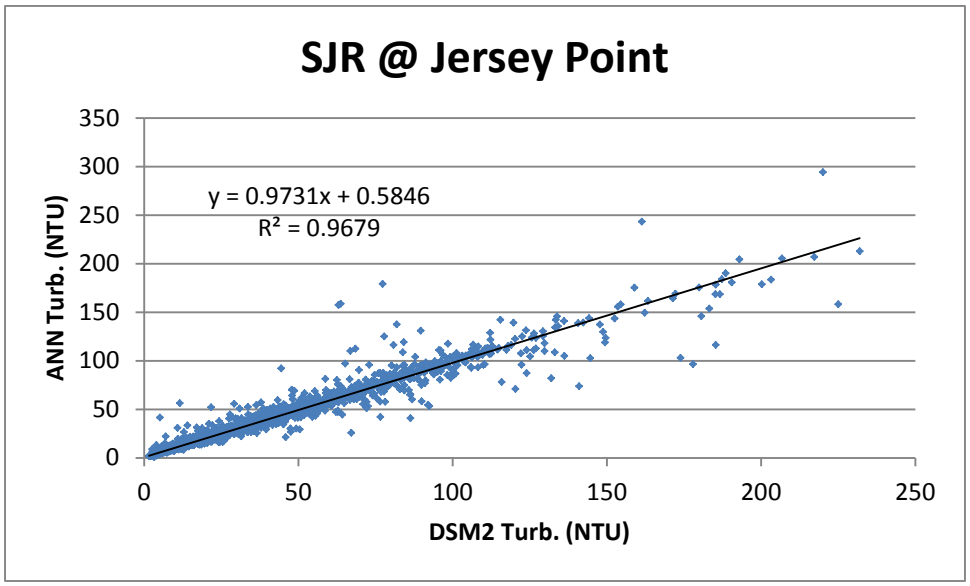
APPENDIX G: COMPARISON OF ANN SIMULATED AND DSM2 MULTIYEAR SIMULATION

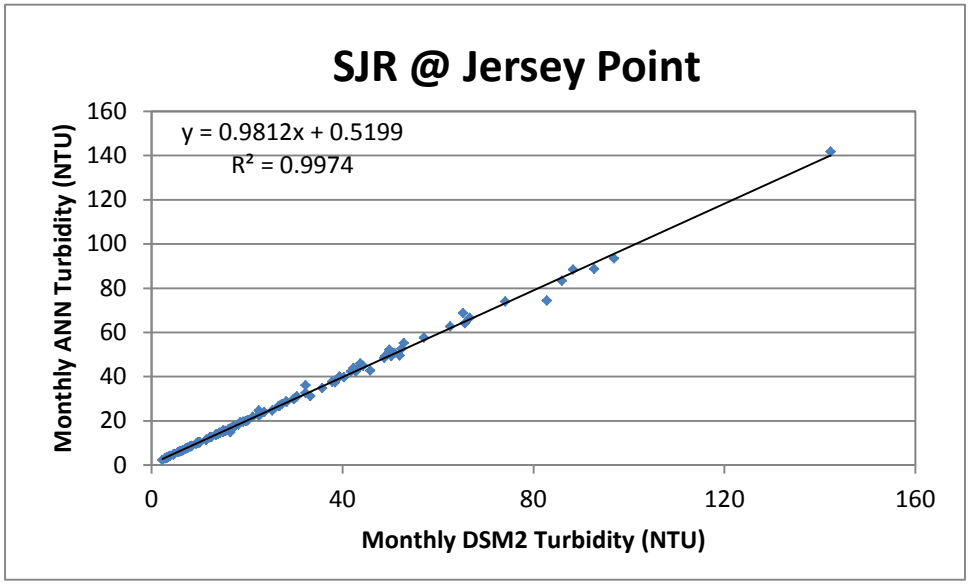


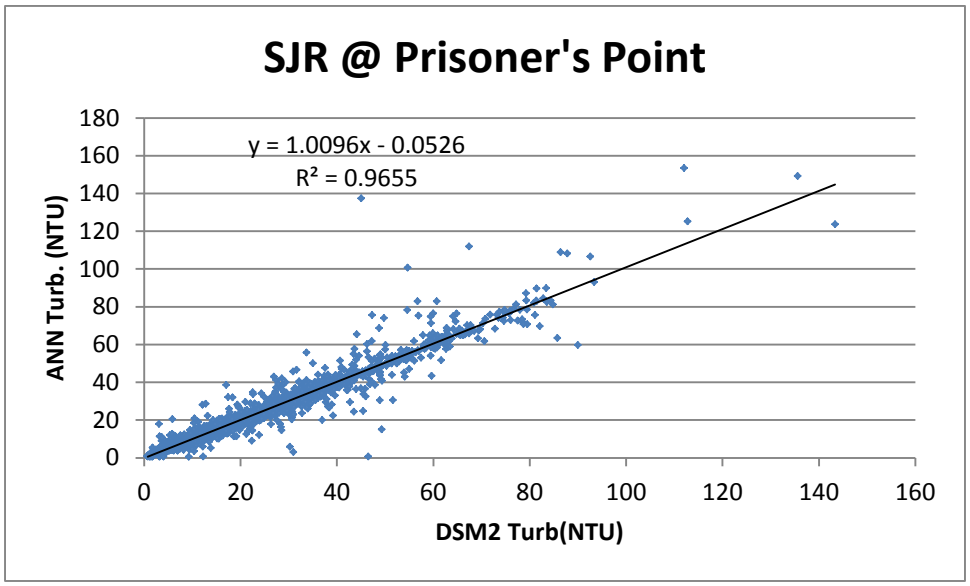


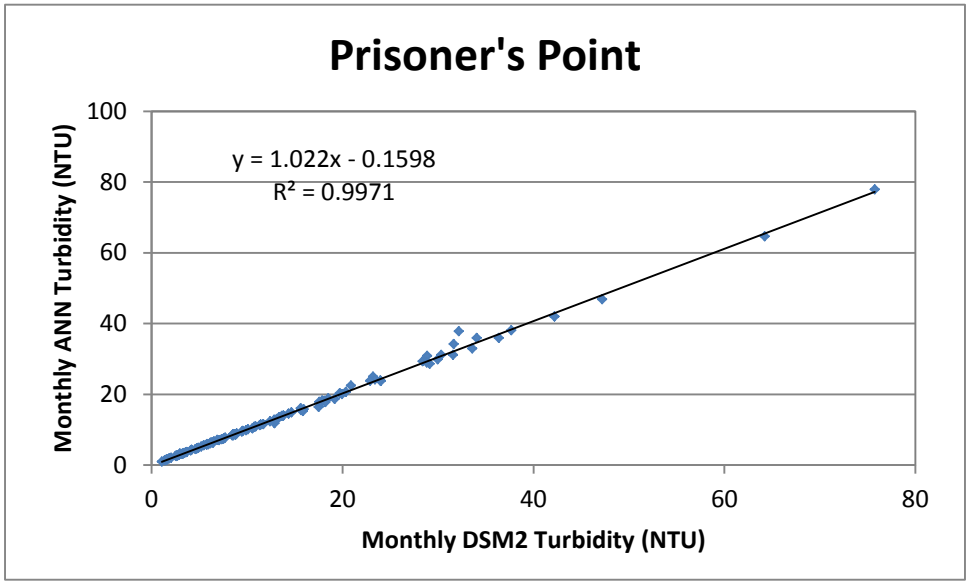

SAC @ Decker Island
y = 1.0019x + 0.0276
R² = 0.9623
ANN Turb. (NTU)
DSM2 Turb. (NTU)
0
100
200
300
400
500
600

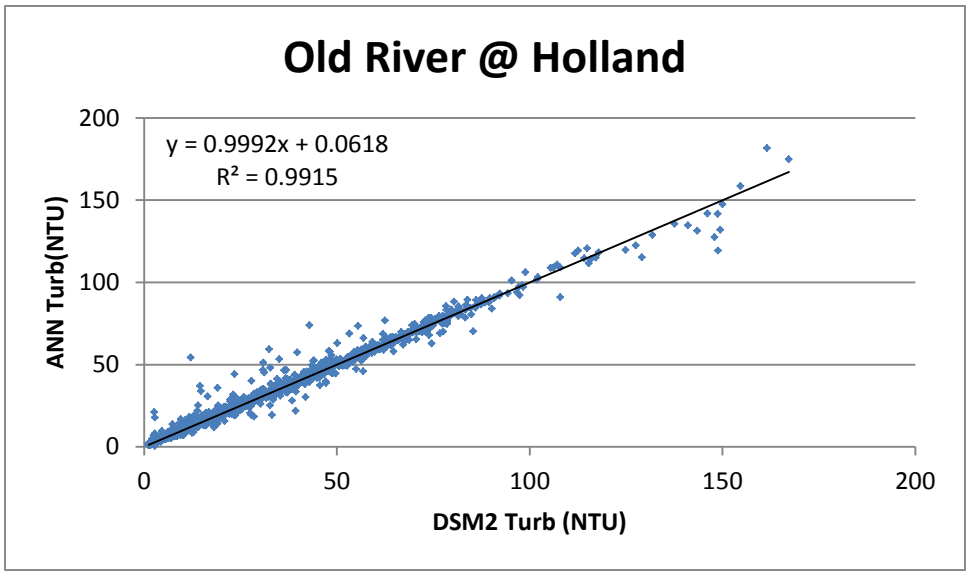

Decker Island
y = 1.0193x - 0.8359
R² = 0.9983
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
50
100
150
200
250

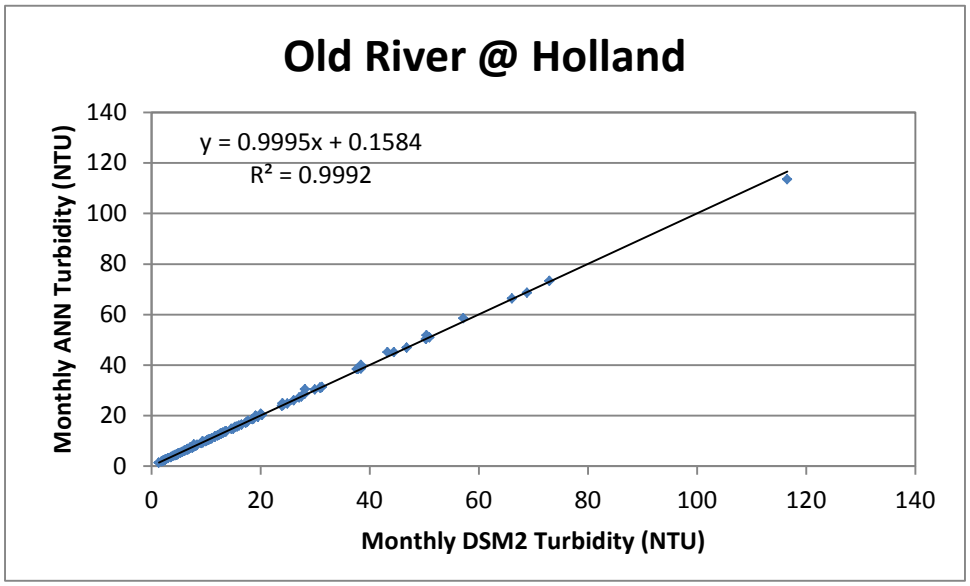

SJR @ Jersey Point
y = 0.9731x + 0.5846
R² = 0.9679
ANN Turb. (NTU)
DSM2 Turb. (NTU)
0
50
100
150
200
250
300
350

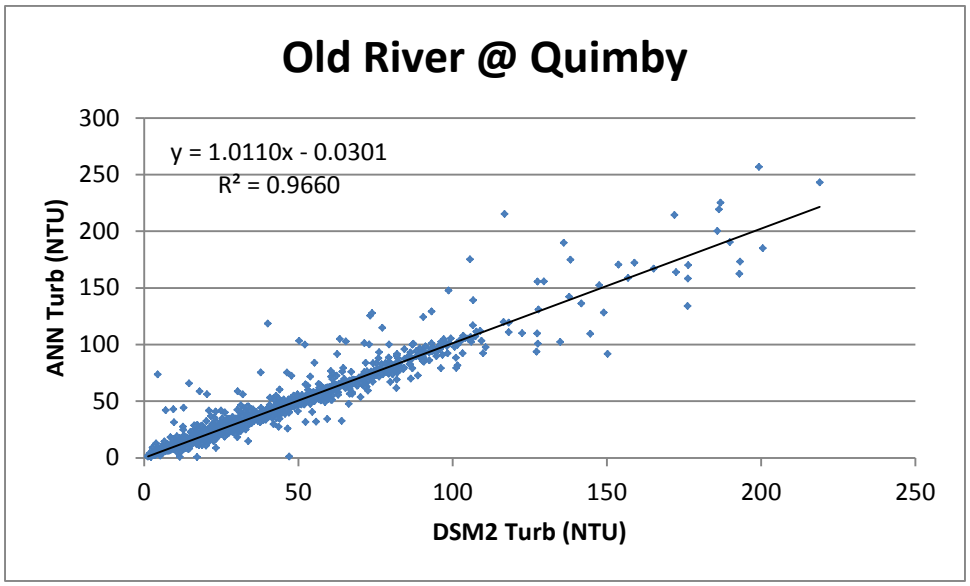

SJR @ Jersey Point
y = 0.9812x + 0.5199
R² = 0.9974
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
20
40
60
80
100
120
140
160

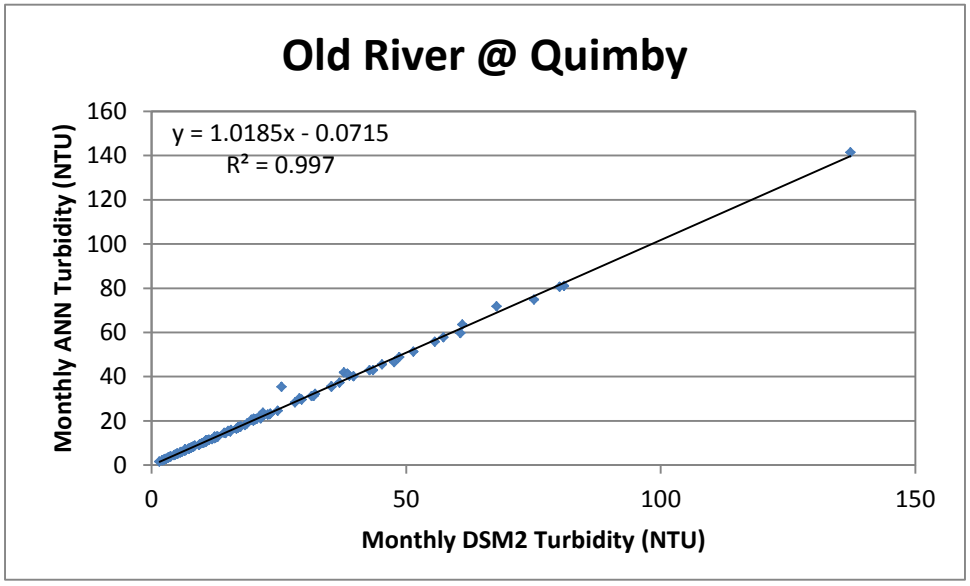

SJR @ Prisoner's Point
y = 1.0096x - 0.0526
R² = 0.9655
ANN Turb. (NTU)
DSM2 Turb(NTU)
0
20
40
60
80
100
120
140
160
180

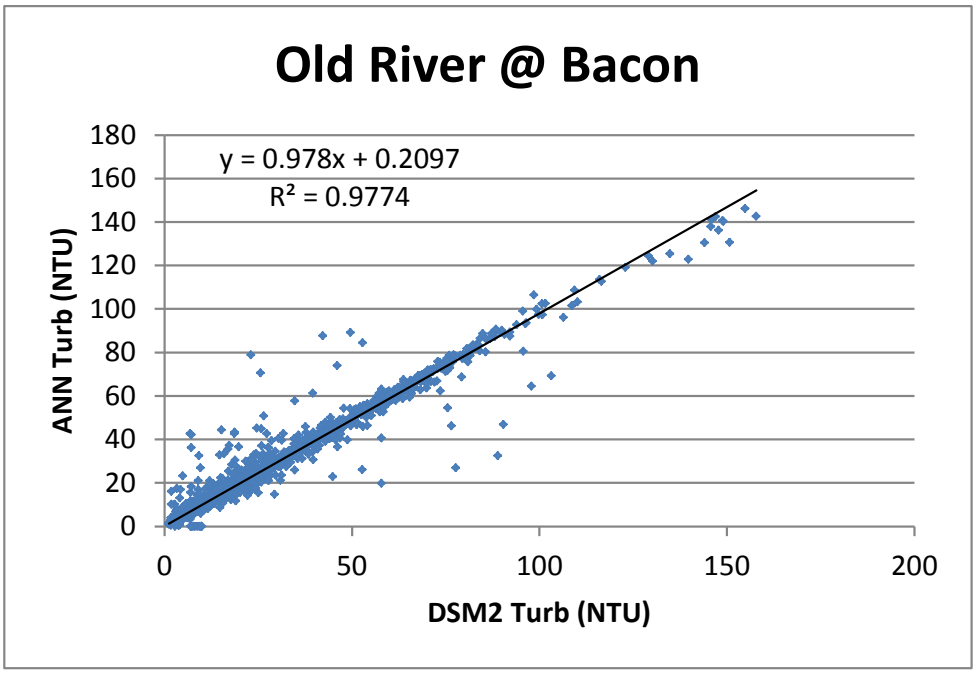

Prisoner's Point
y = 1.022x - 0.1598
R² = 0.9971
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
20
40
60
80
100

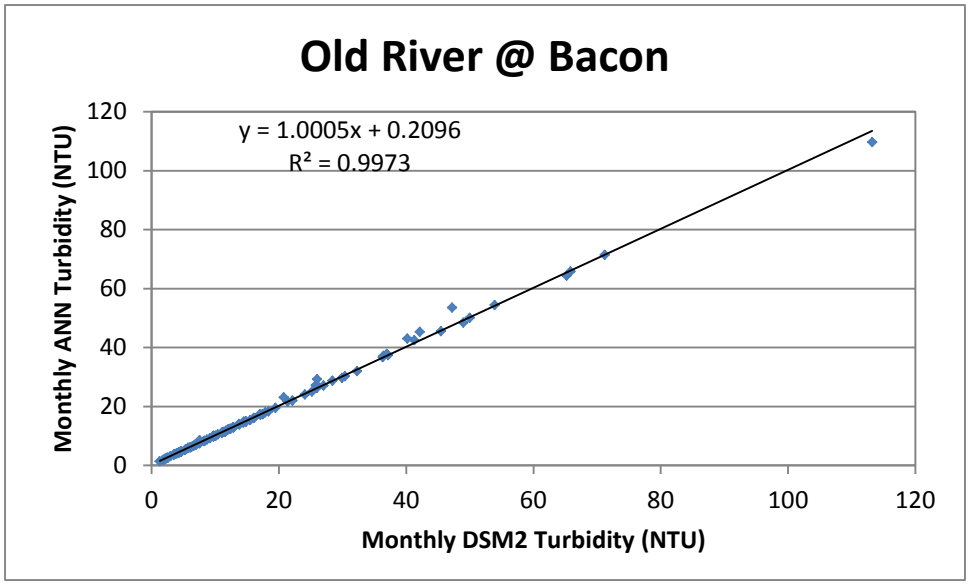

Old River @ Holland
y = 0.9992x + 0.0618
R² = 0.9915
ANN Turb(NTU)
DSM2 Turb (NTU)
0
50
100
150
200

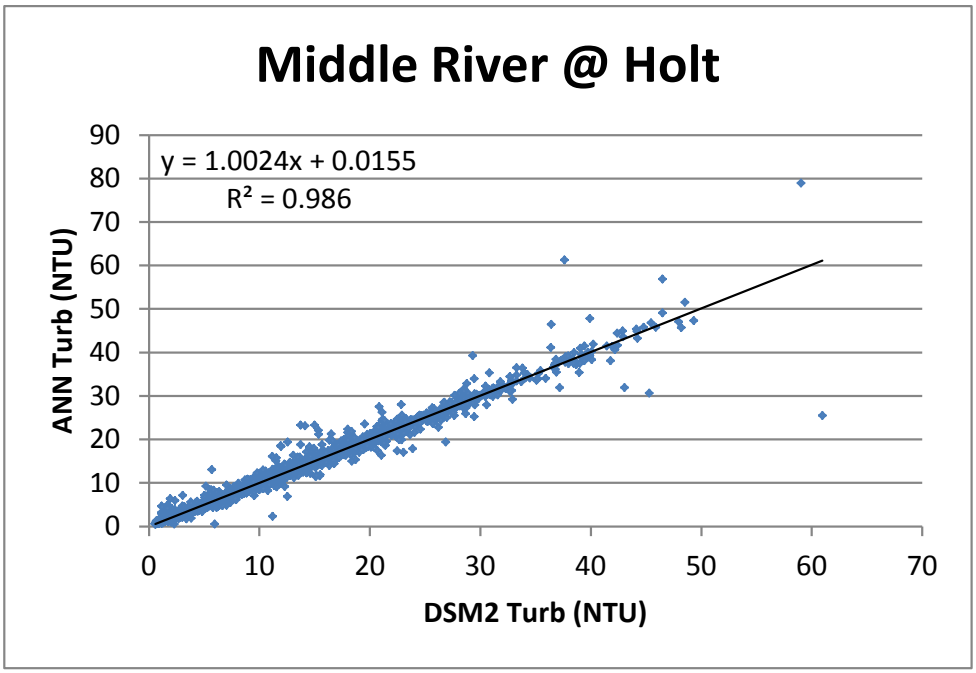

Old River @ Holland
y = 0.9995x + 0.1584
R² = 0.9992
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
20
40
60
80
100
120
140

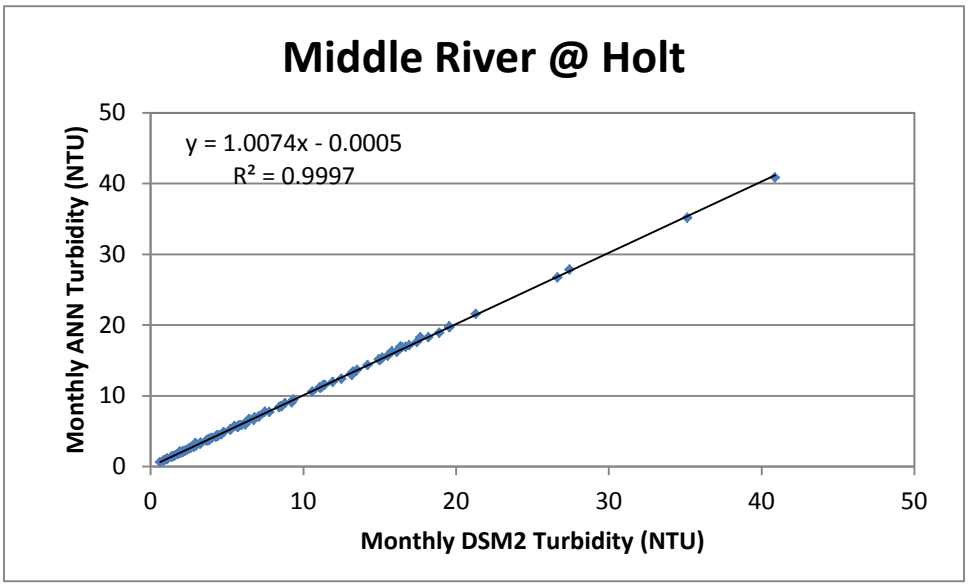

Old River @ Quimby
y = 1.0110x - 0.0301
R² = 0.9660
ANN Turb (NTU)
DSM2 Turb (NTU)
0
50
100
150
200
250
300

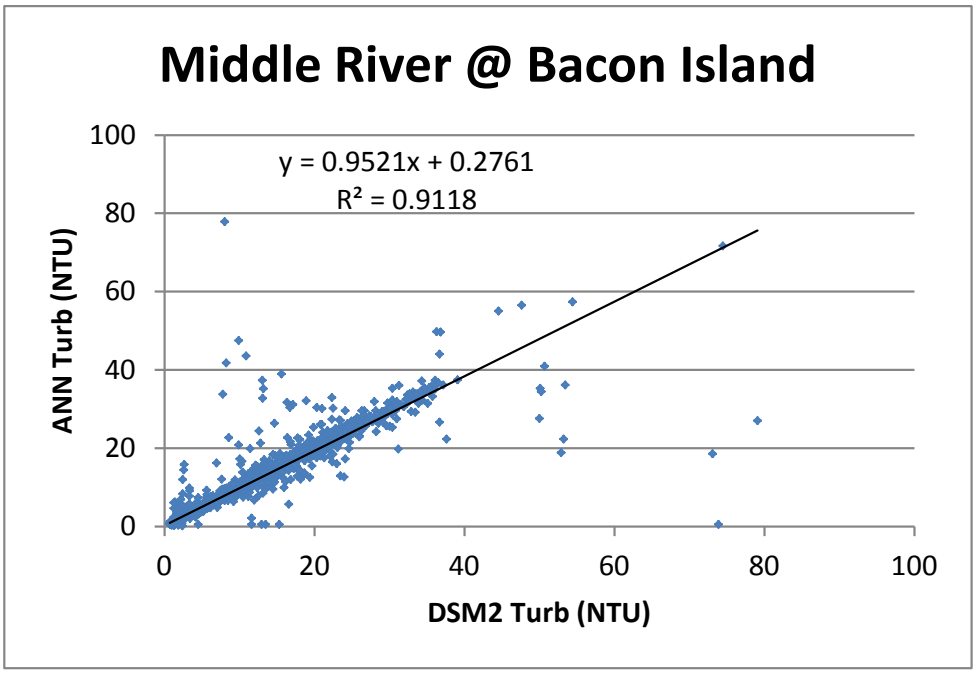

Old River @ Quimby
y = 1.0185x - 0.0715
R² = 0.997
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
20
40
60
80
100
120
140
160
50
150

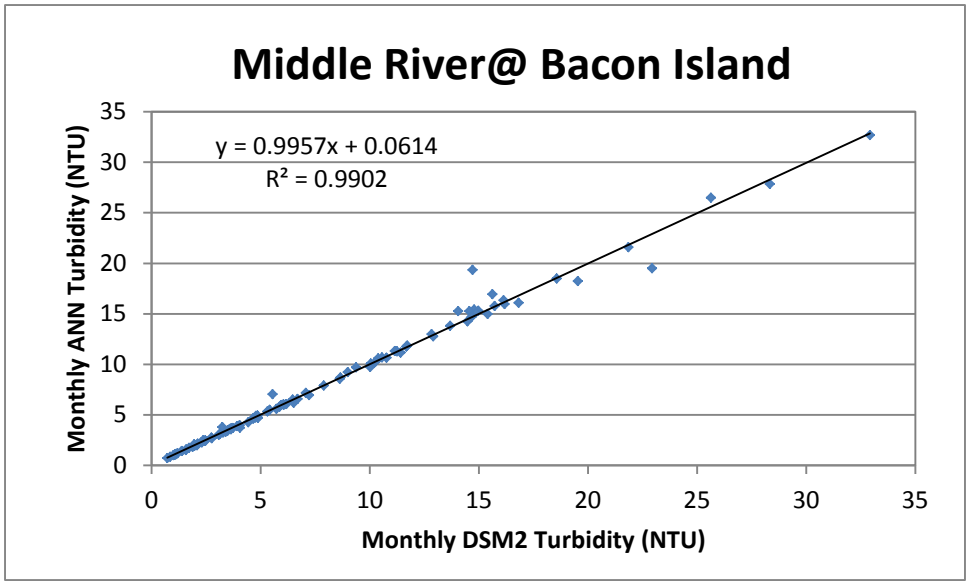

Old River @ Bacon
y = 0.978x + 0.2097
R² = 0.9774
ANN Turb (NTU)
DSM2 Turb (NTU)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200

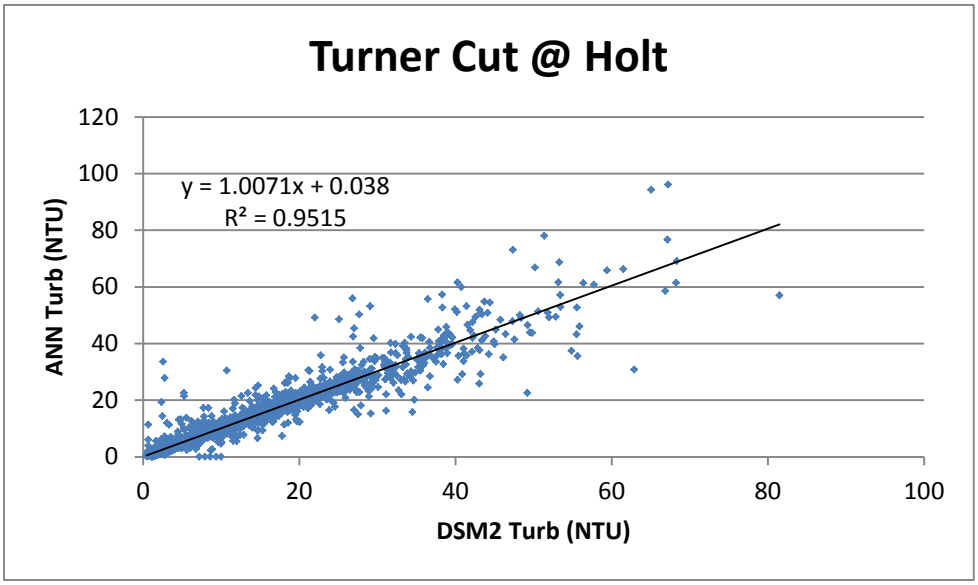

Old River @ Bacon
y = 1.0005x + 0.2096
R² = 0.9973
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
20
40
60
80
100
120
0
20
40
60
80
100
120

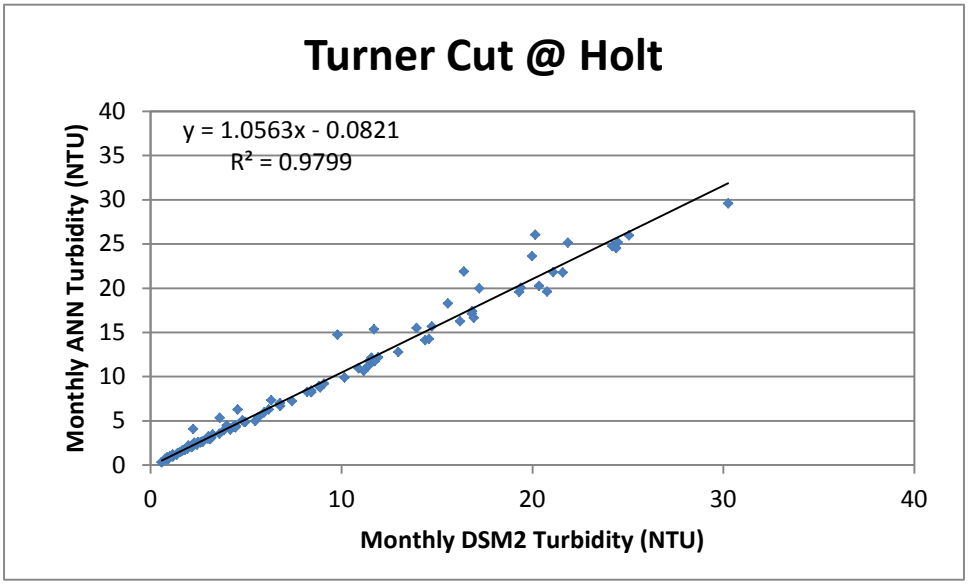

Middle River @ Holt
y = 1.0024x + 0.0155
R² = 0.986
ANN Turb (NTU)
DSM2 Turb (NTU)
0
10
20
30
40
50
60
70
80
90

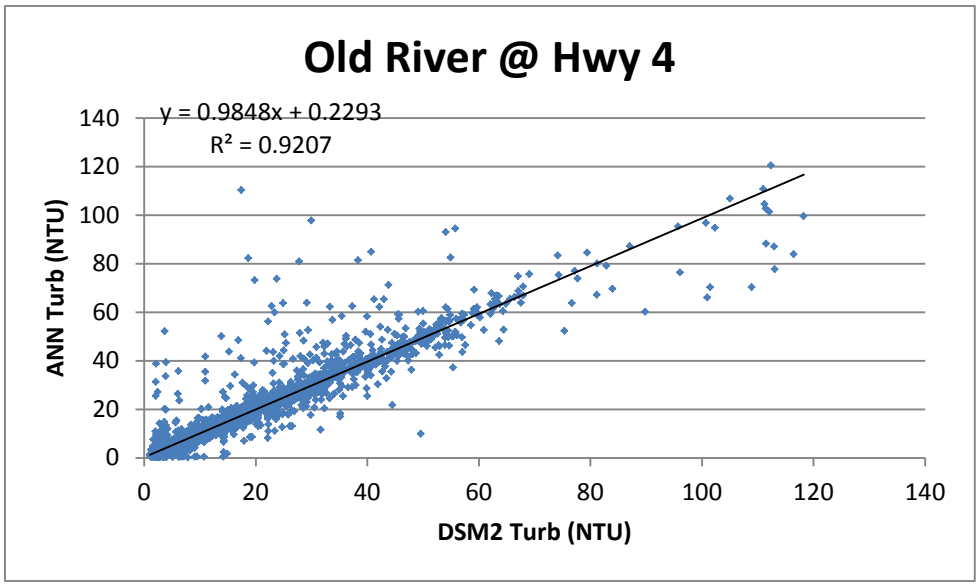

Middle River @ Holt
y = 1.0074x - 0.0005
R² = 0.9997
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
10
20
30
40
50

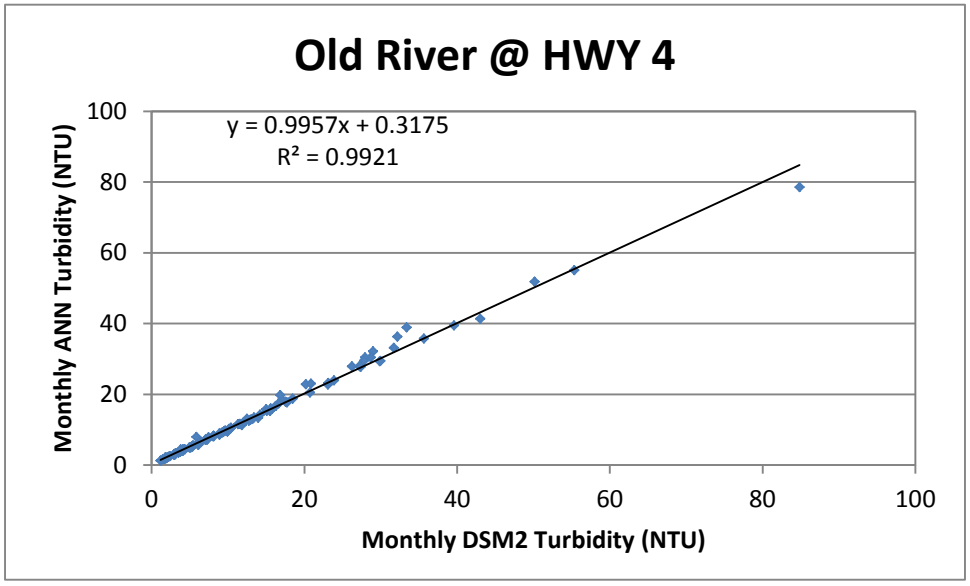

Middle River @ Bacon Island
y = 0.9521x + 0.2761
R² = 0.9118
ANN Turb (NTU)
DSM2 Turb (NTU)
0
20
40
60
80
100

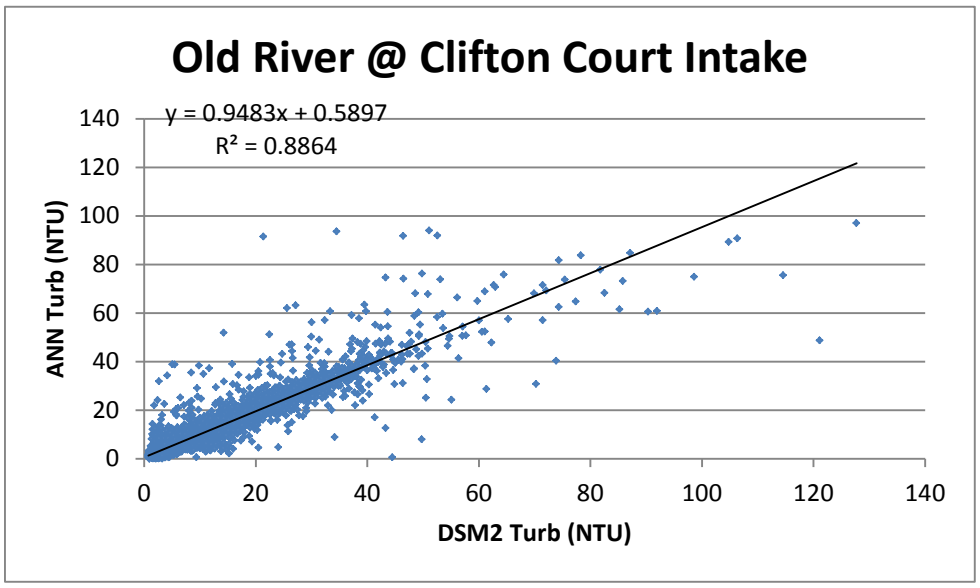

Middle River@ Bacon Island
y = 0.9957x + 0.0614
R² = 0.9902
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
5
10
15
20
25
30
35

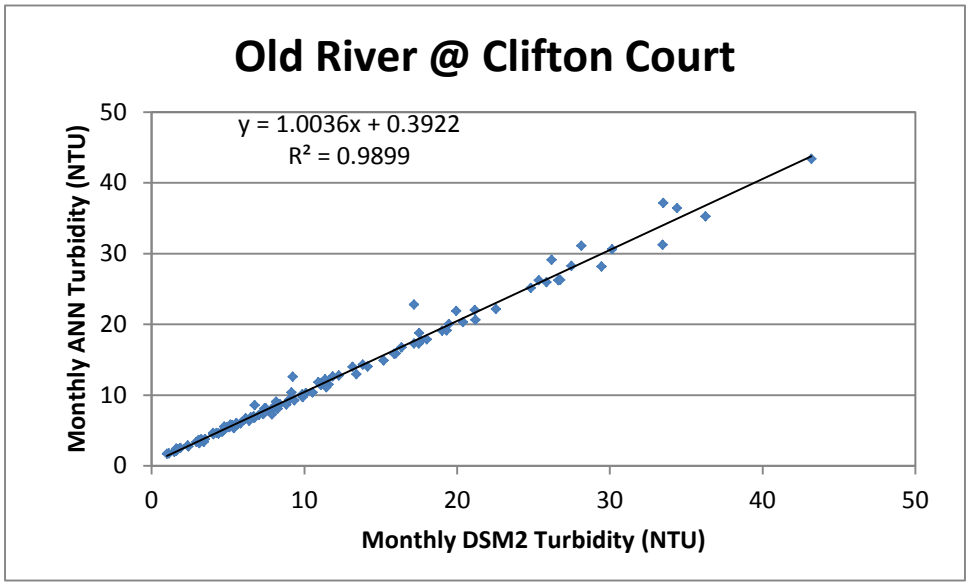

Turner Cut @ Holt
y = 1.0071x + 0.038
R² = 0.9515
ANN Turb (NTU)
DSM2 Turb (NTU)
0
20
40
60
80
100
120

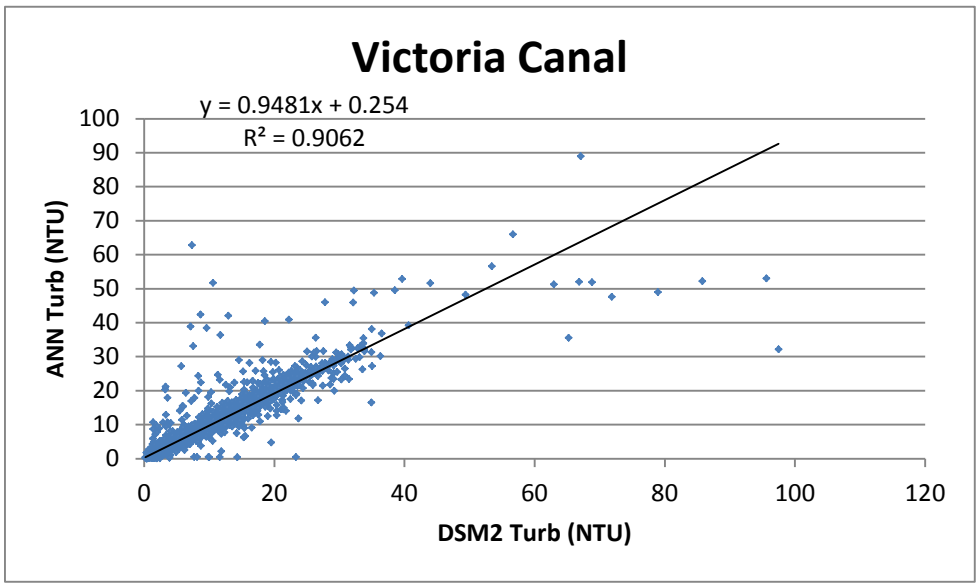

Turner Cut @ Holt
y = 1.0563x - 0.0821
R² = 0.9799
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
5
10
15
20
25
30
35
40

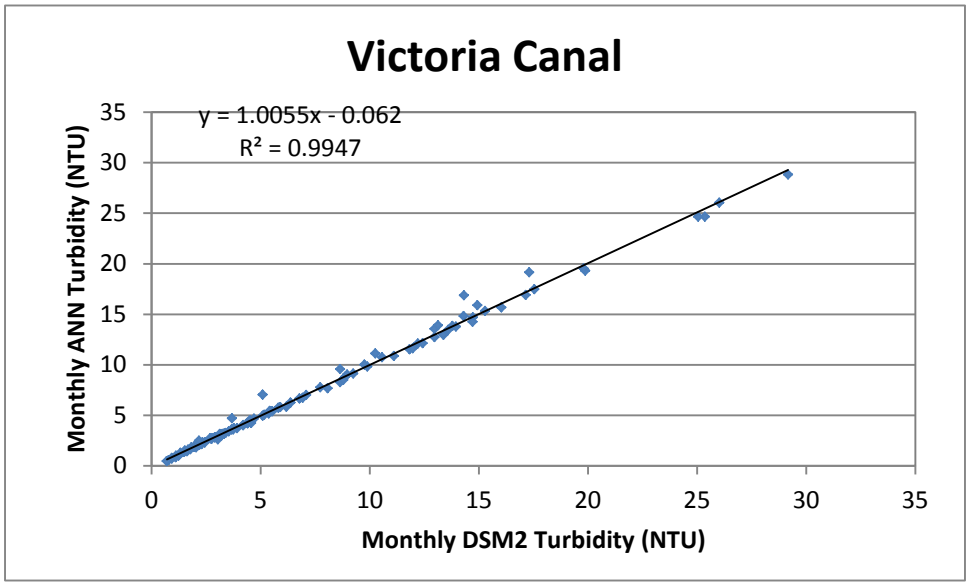

Old River @ Hwy 4
y = 0.9848x + 0.2293
R² = 0.9207
ANN Turb (NTU)
DSM2 Turb (NTU)
0
20
40
60
80
100
120
140

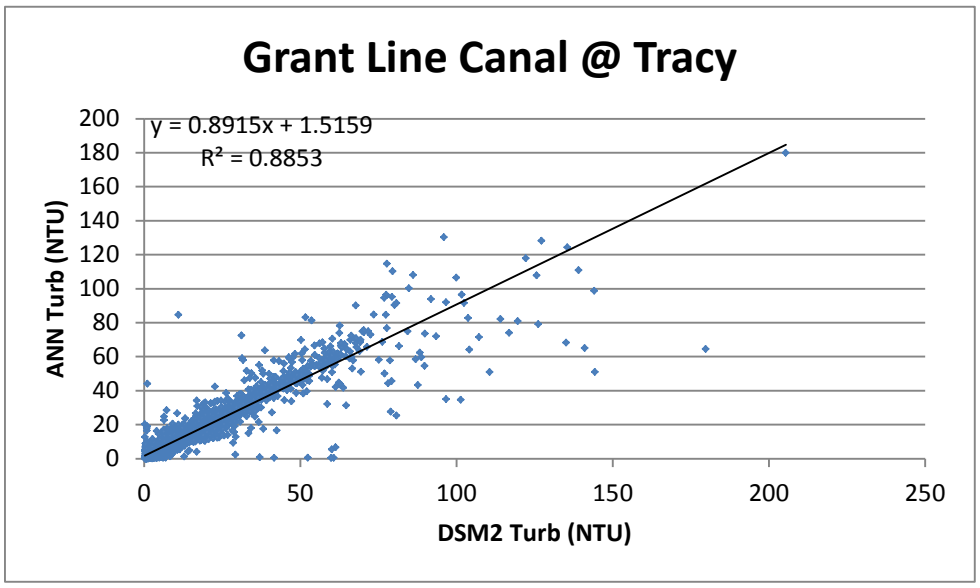

Old River @ HWY 4
y = 0.9957x + 0.3175
R² = 0.9921
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
20
40
60
80
100

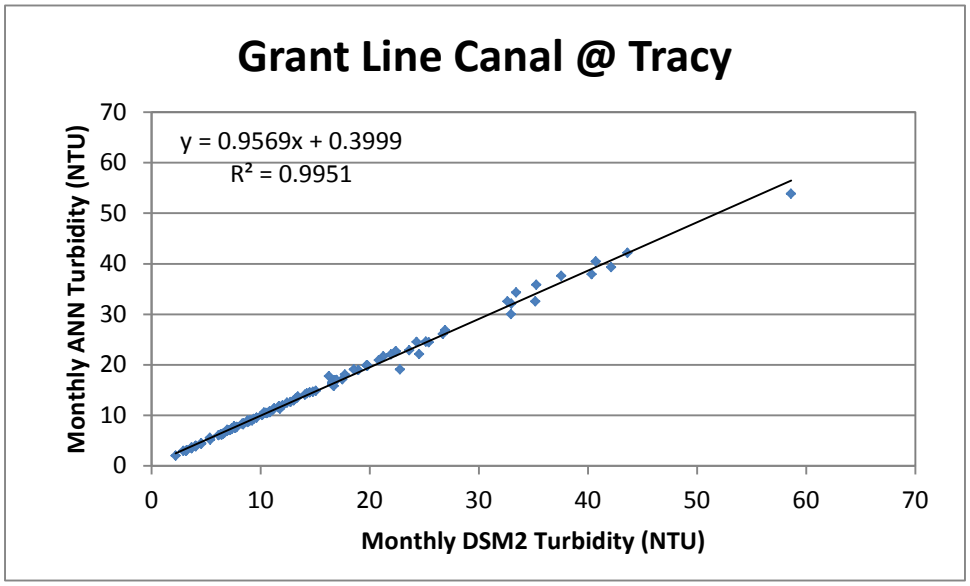

Old River @ Clifton Court Intake
y = 0.9483x + 0.5897
R² = 0.8864
ANN Turb (NTU)
DSM2 Turb (NTU)
0
20
40
60
80
100
120
140

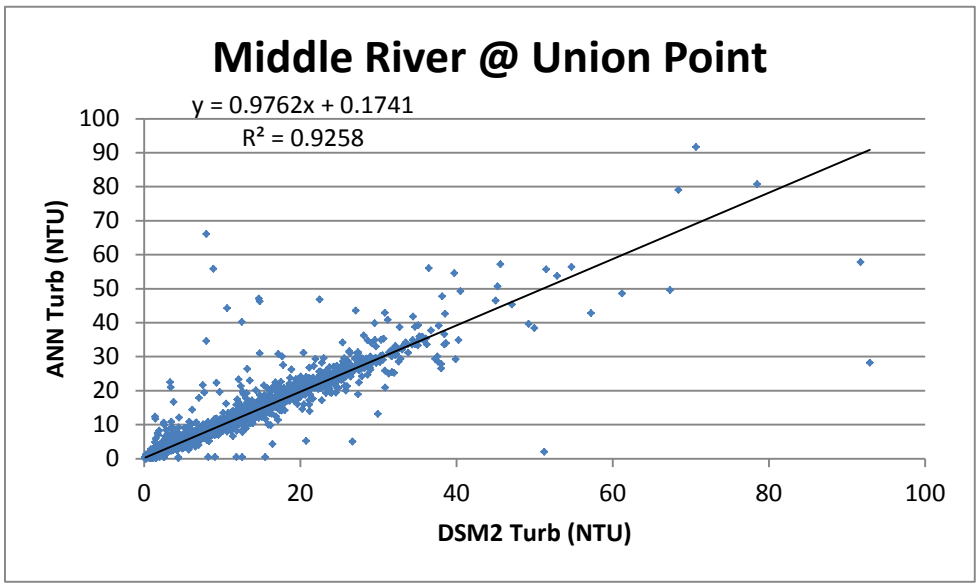

Old River @ Clifton Court
y = 1.0036x + 0.3922
R² = 0.9899
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
10
20
30
40
50

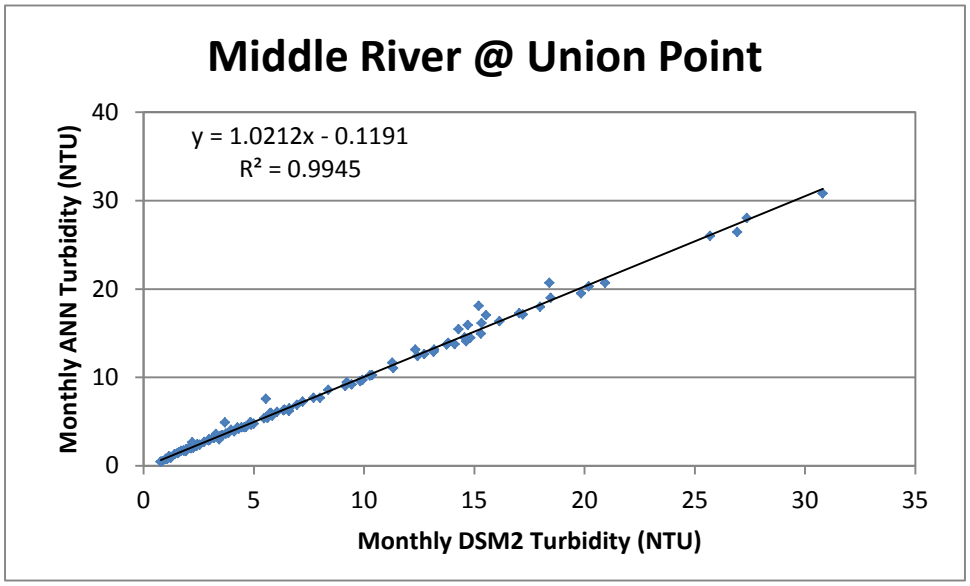

Victoria Canal
y = 0.9481x + 0.254
R² = 0.9062
ANN Turb (NTU)
DSM2 Turb (NTU)
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100
120

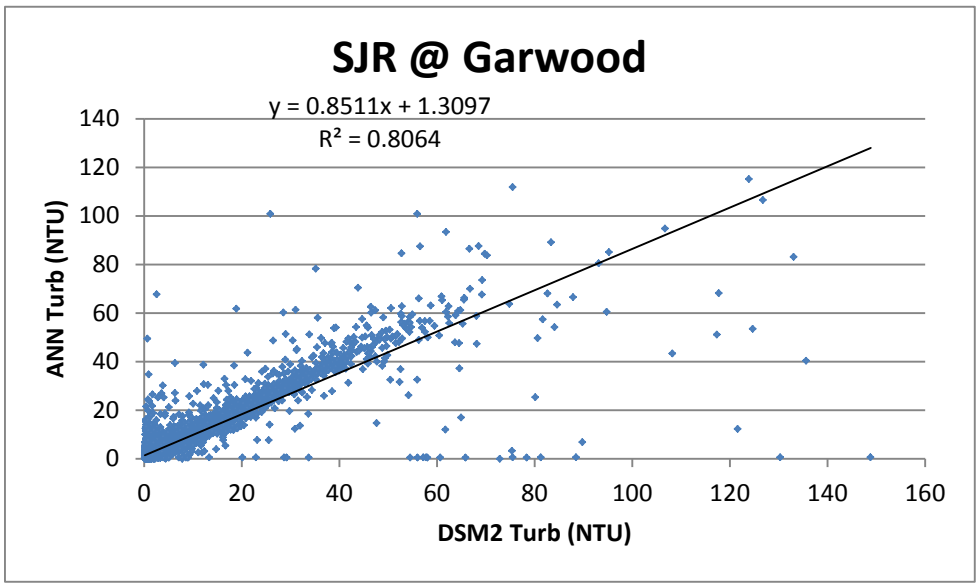

Victoria Canal
y = 1.0055x - 0.062
R² = 0.9947
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
5
10
15
20
25
30
35
0
5
10
15
20
25
30
35


Grant Line Canal @ Tracy
y = 0.8915x + 1.5159
R² = 0.8853
ANN Turb (NTU)
DSM2 Turb (NTU)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200
250


Grant Line Canal @ Tracy
y = 0.9569x + 0.3999
R² = 0.9951
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
10
20
30
40
50
60
70
0
10
20
30
40
50
60
70


Middle River @ Union Point
y = 0.9762x + 0.1741
R² = 0.9258
ANN Turb (NTU)
DSM2 Turb (NTU)
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100


Middle River @ Union Point
y = 1.0212x - 0.1191
R² = 0.9945
Monthly ANN Turbidity (NTU)
Monthly DSM2 Turbidity (NTU)
0
10
20
30
40
0
5
10
15
20
25
30
35



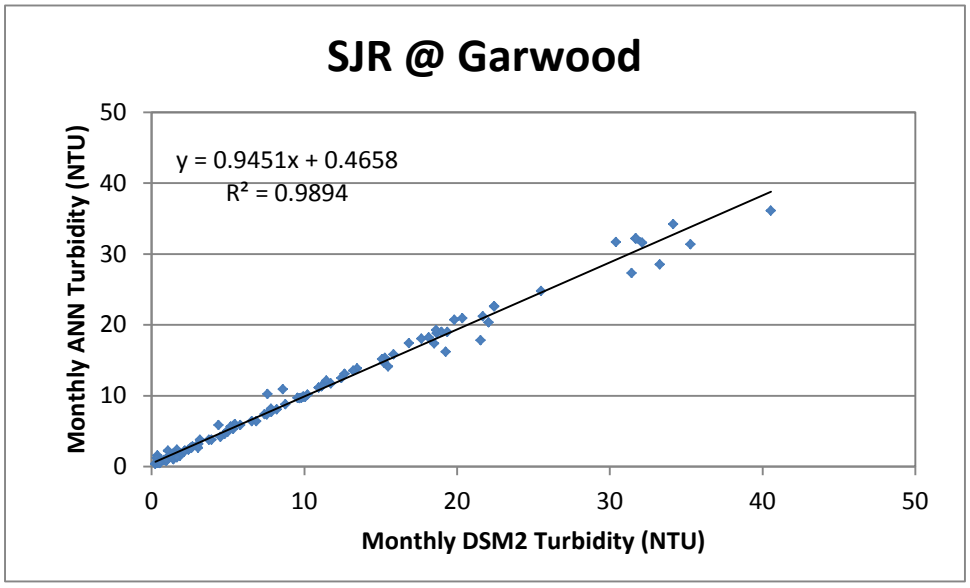


Figure G-G-1 Correlation between monthly averages of ANN and DSM2 simulated turbidity for the winter months (December – March) for the multi-year simulation.