



Appendix D

Additional Hydrodynamic
Model Calibration /
Validation Figures

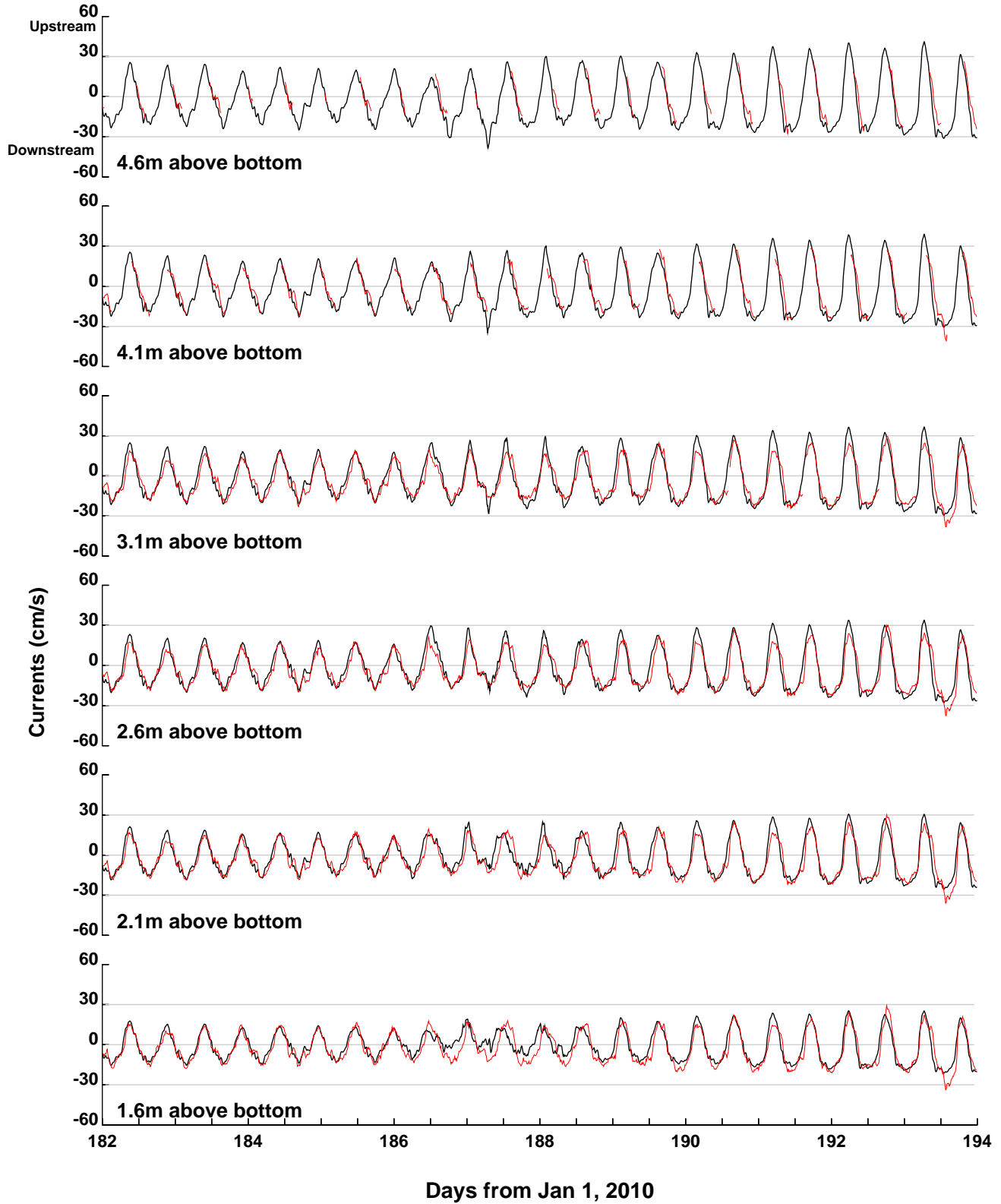


Appendix D-1

Current Velocity Calibration – 12-Day Period

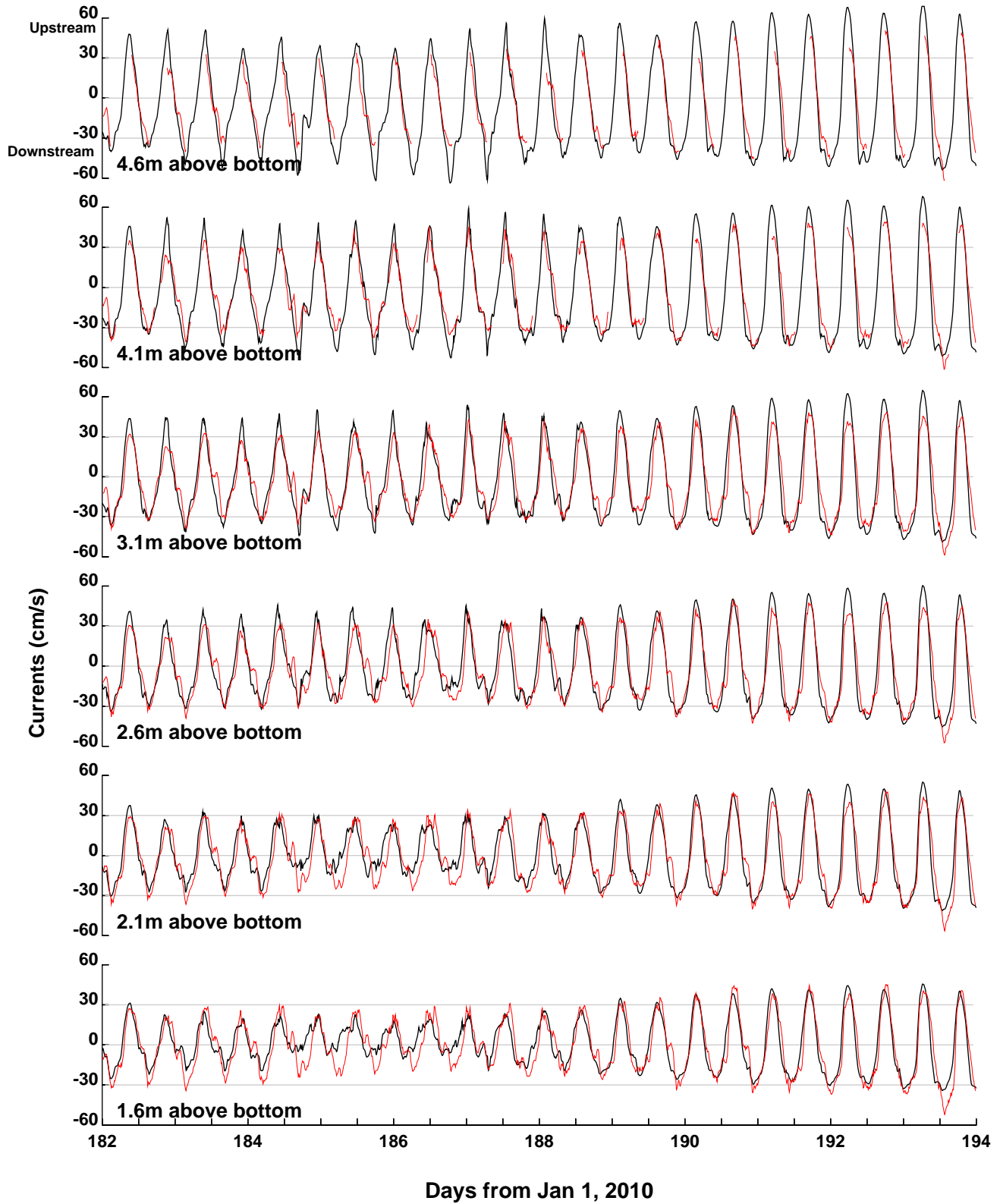
135 (LPR)

— ADCP
— MODEL



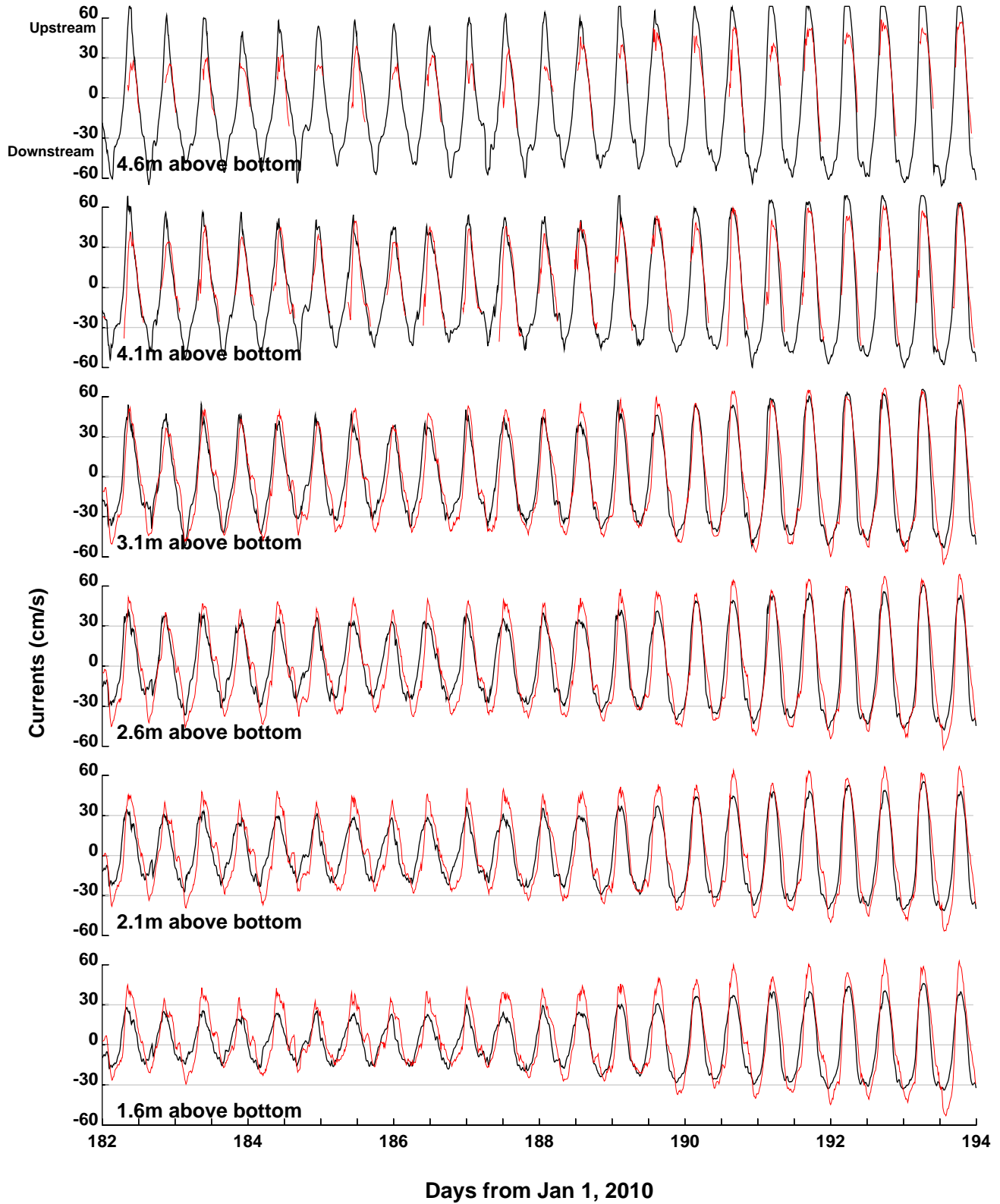
102 (LPR)

— ADCP
— MODEL



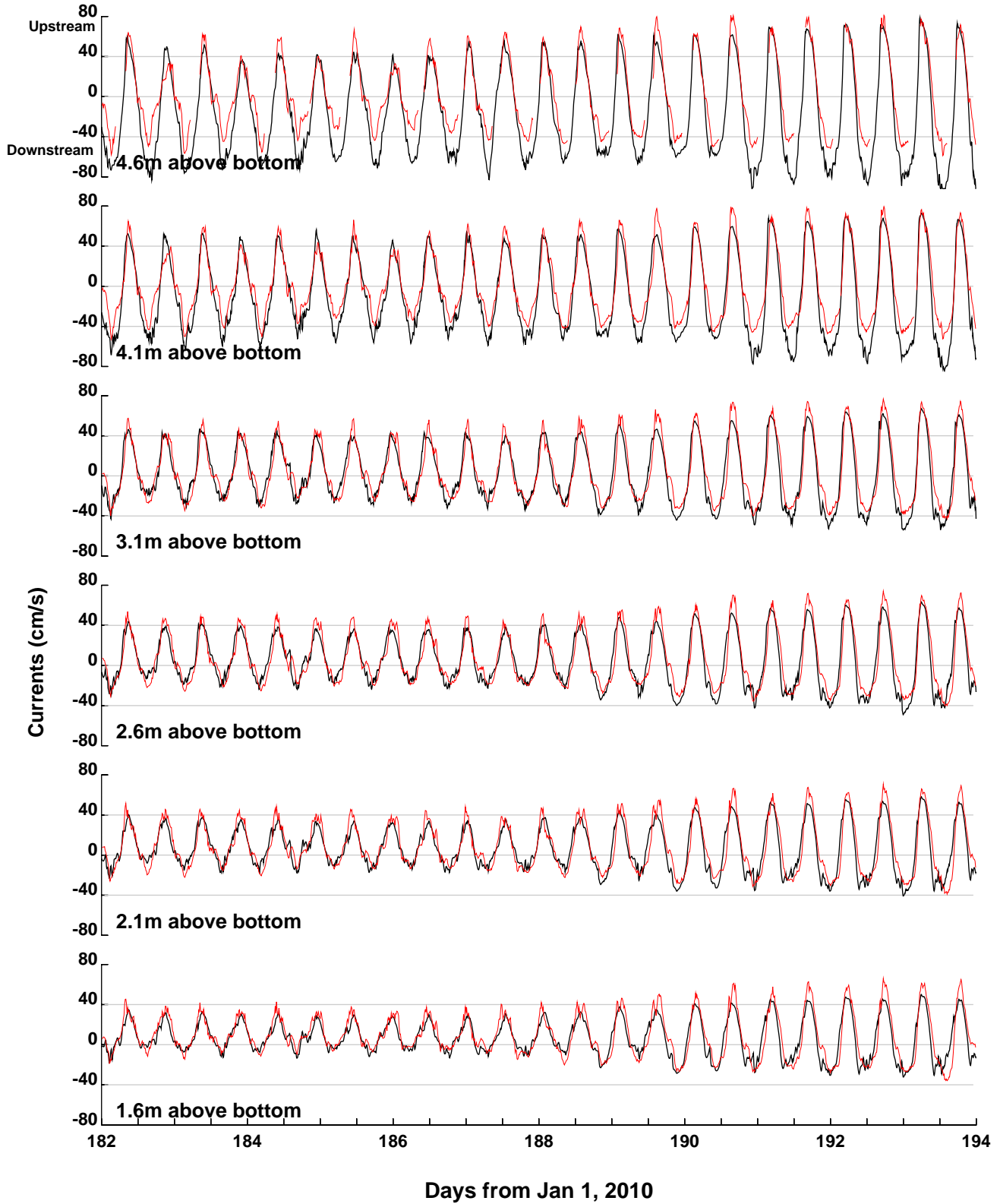
067 (LPR)

— ADCP
— MODEL



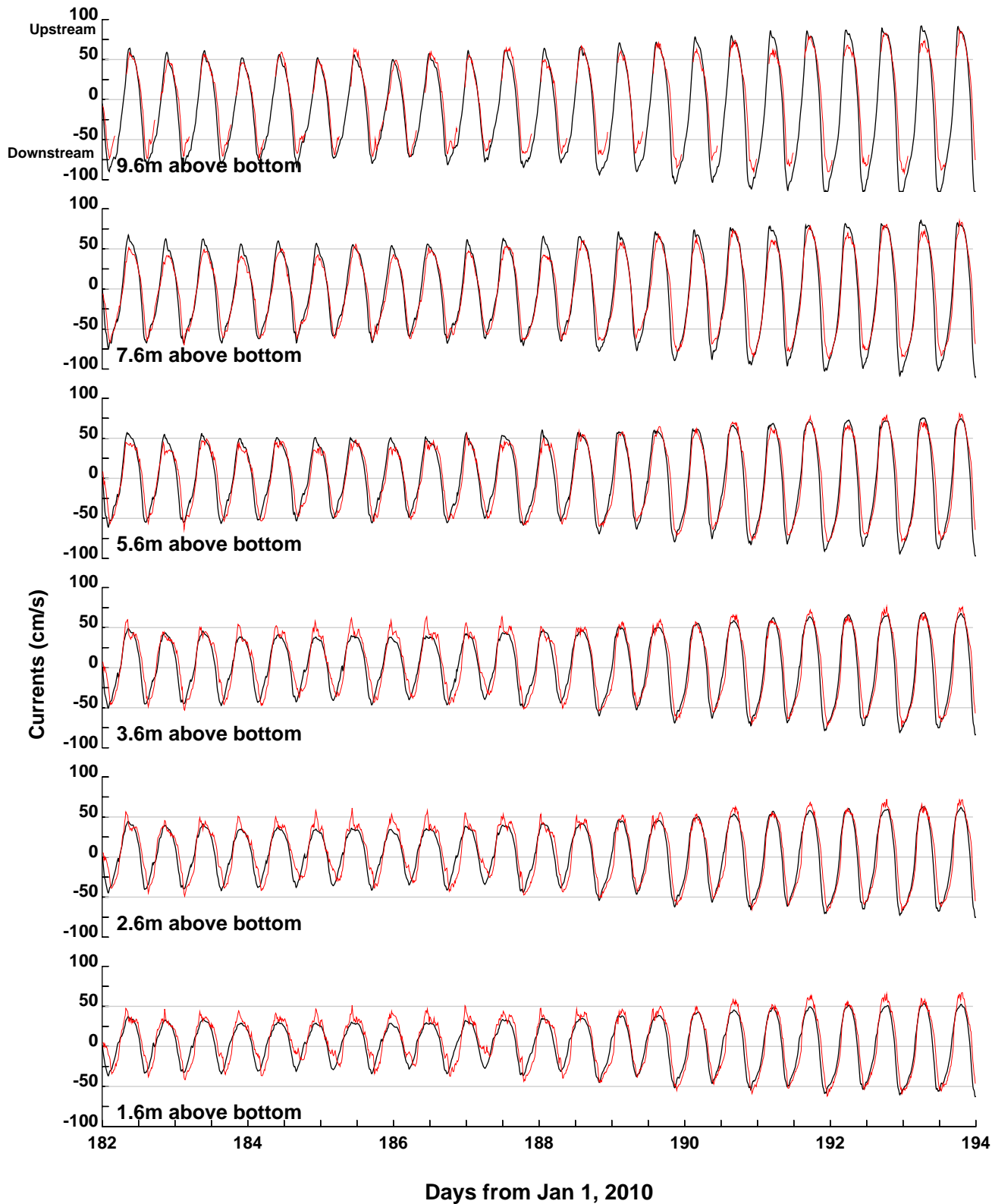
042 (LPR)

— ADCP
— MODEL



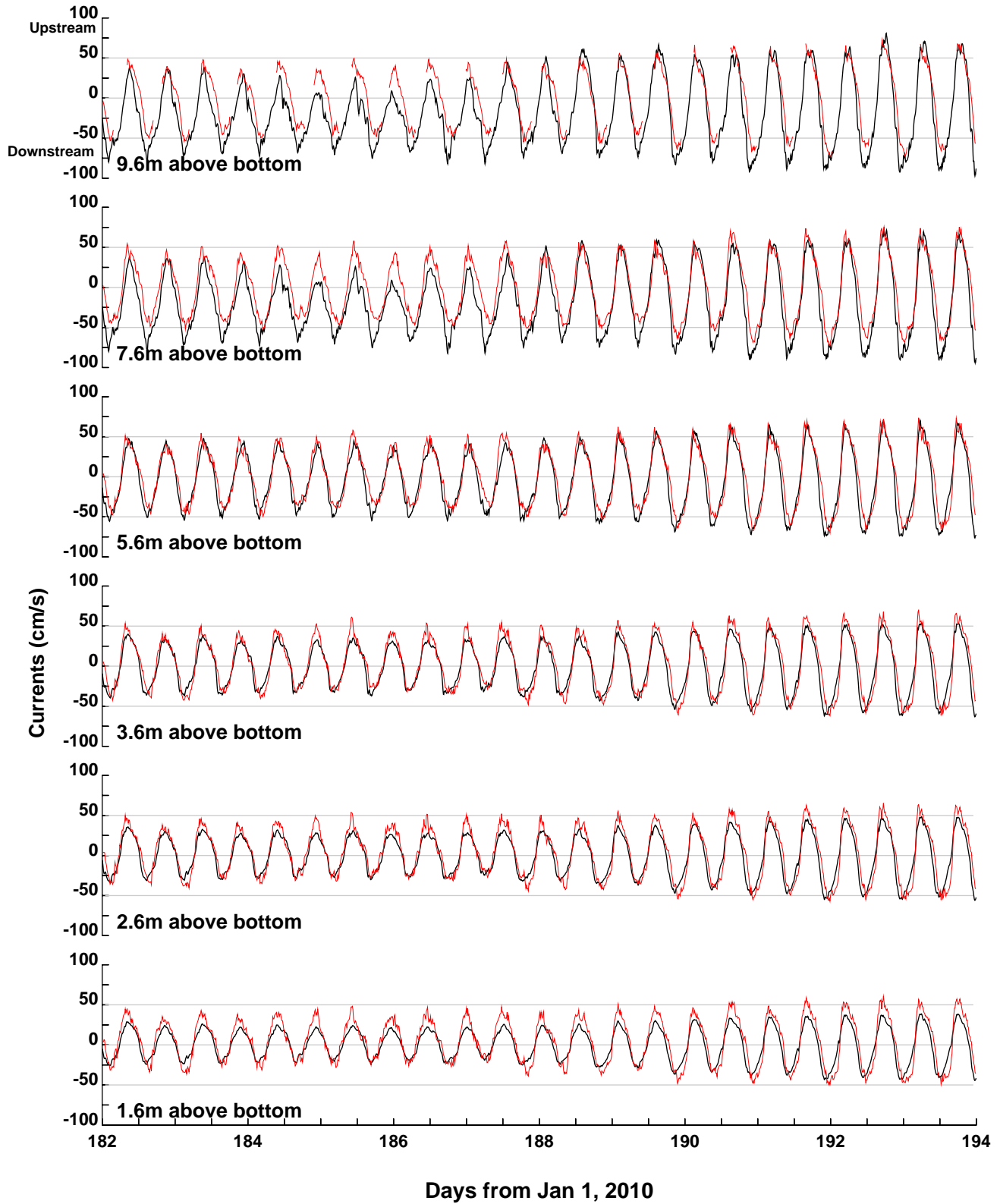
HKN (Hackensack River)

— ADCP
— MODEL



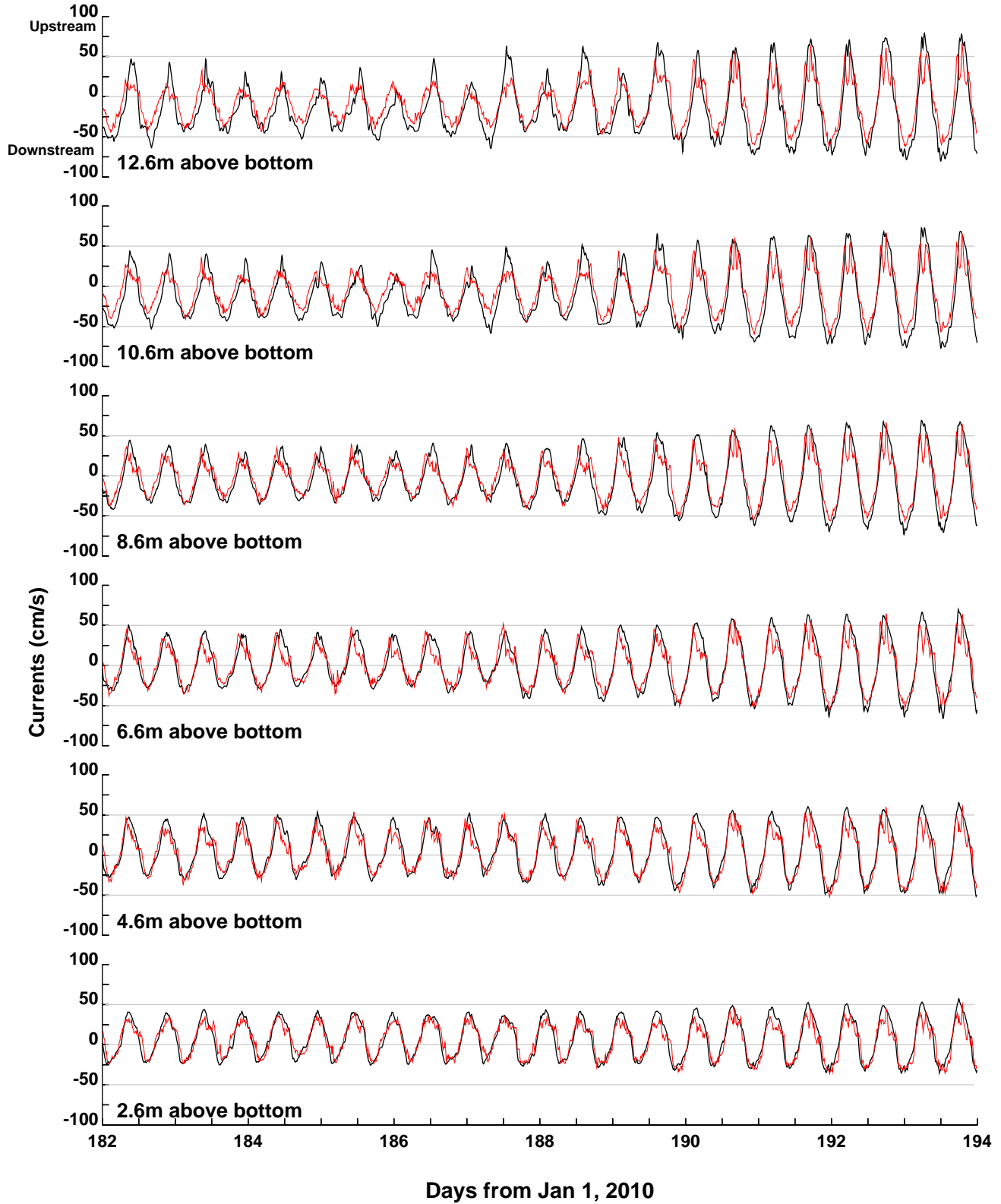
NBN (Newark Bay North)

— ADCP
— MODEL



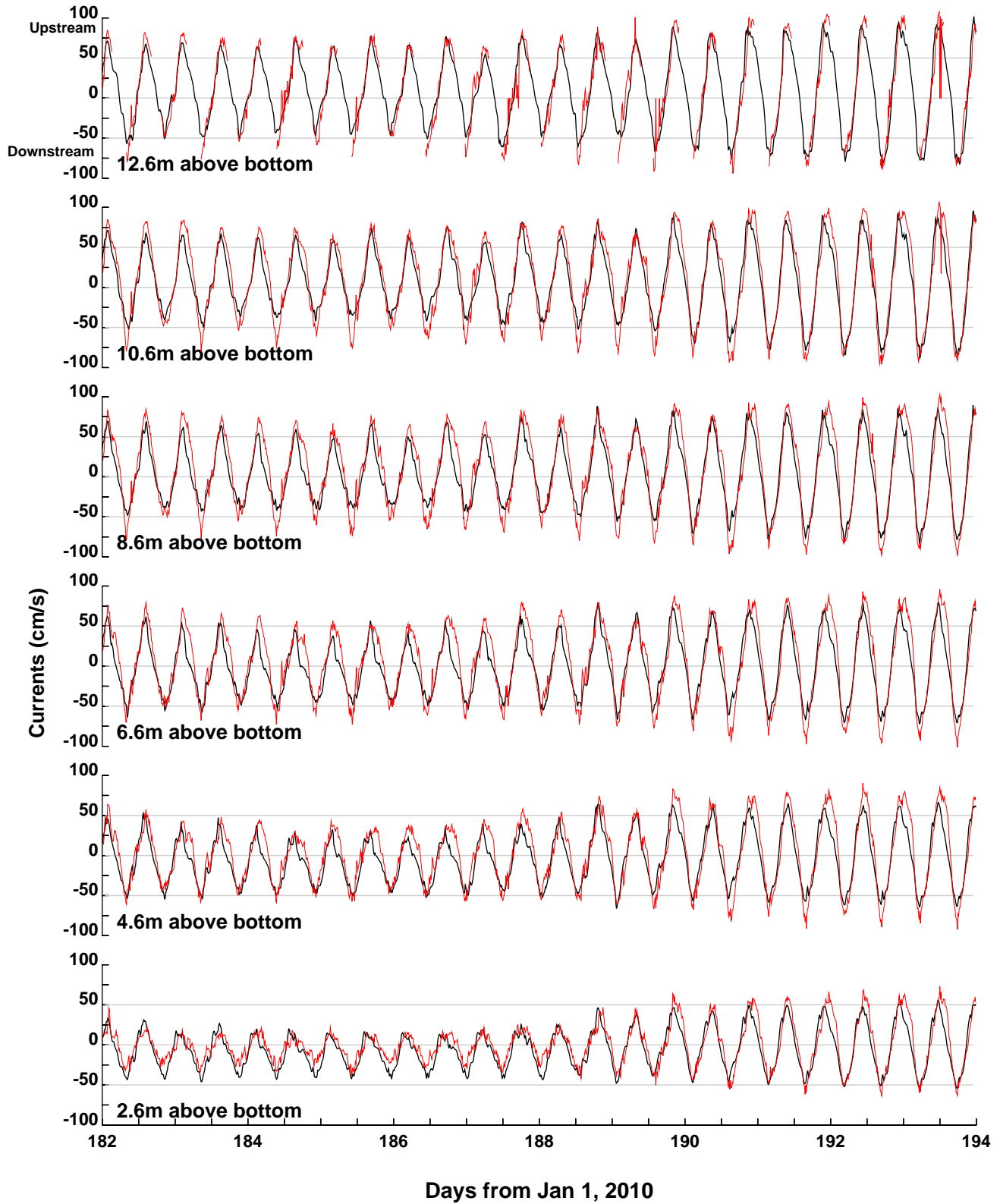
NBS (Newark Bay South)

— ADCP
— MODEL



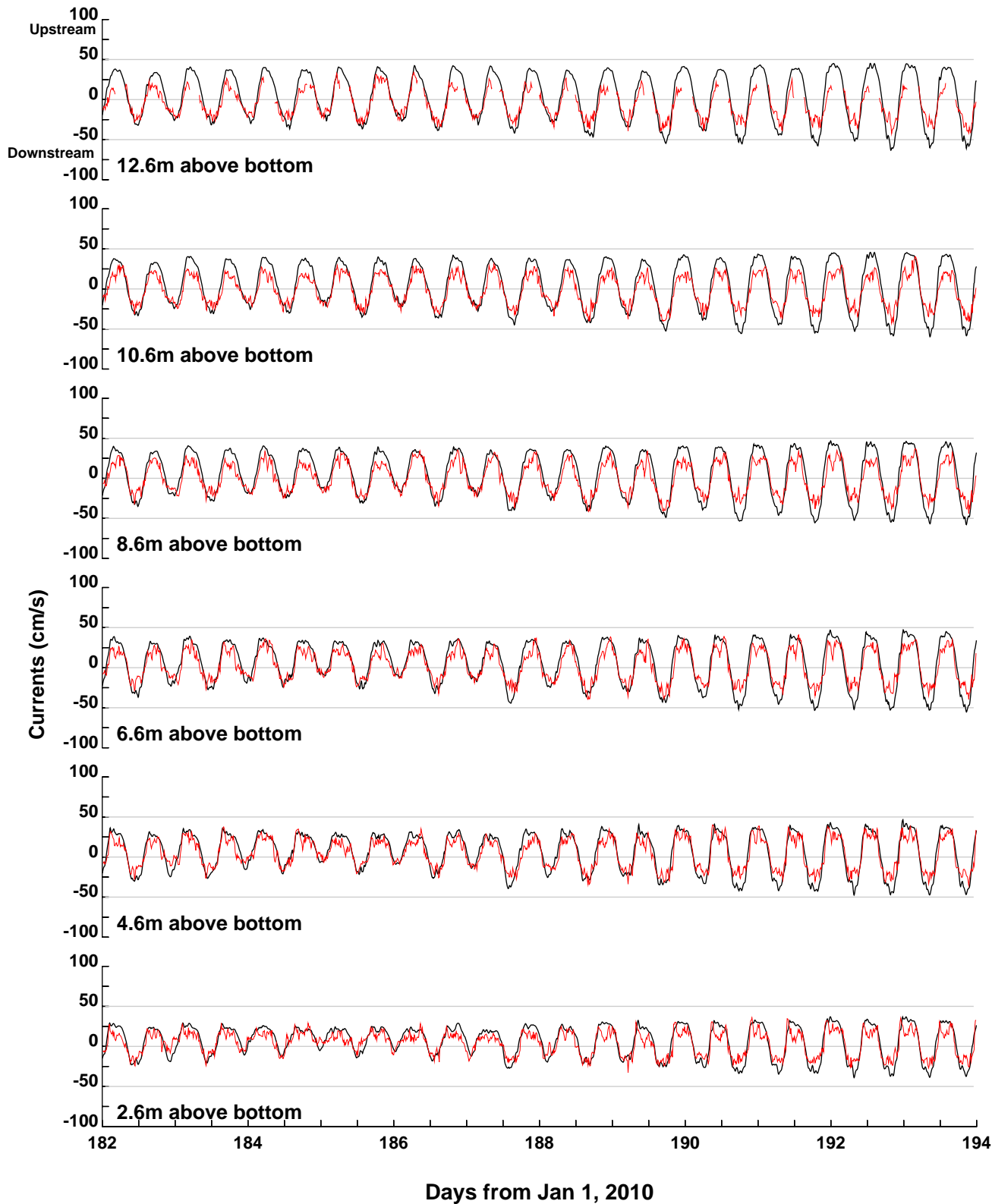
KVK (Kill van Kull)

— ADCP
— MODEL



ARK (Arthur Kill)

— ADCP
— MODEL

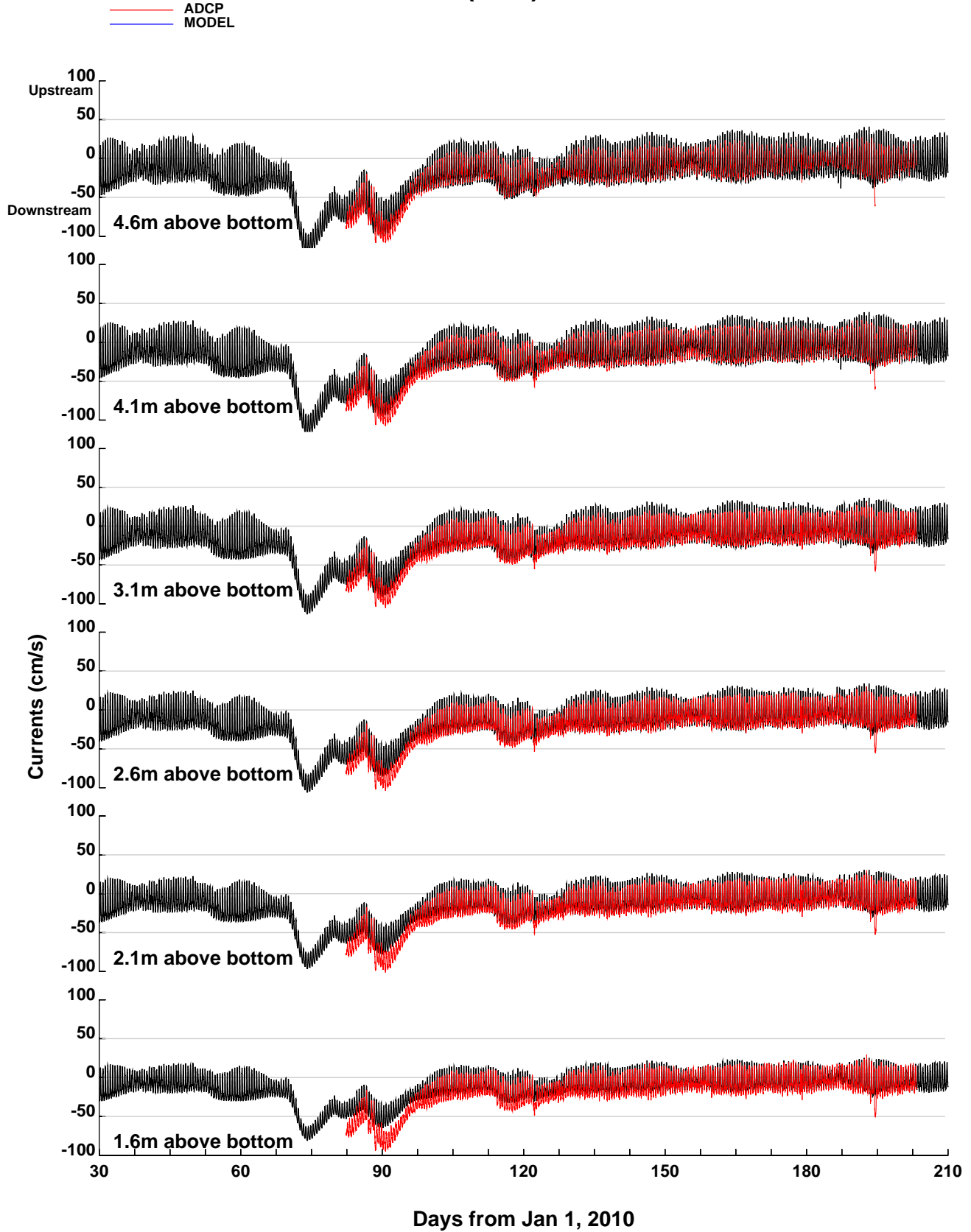




Appendix D-2

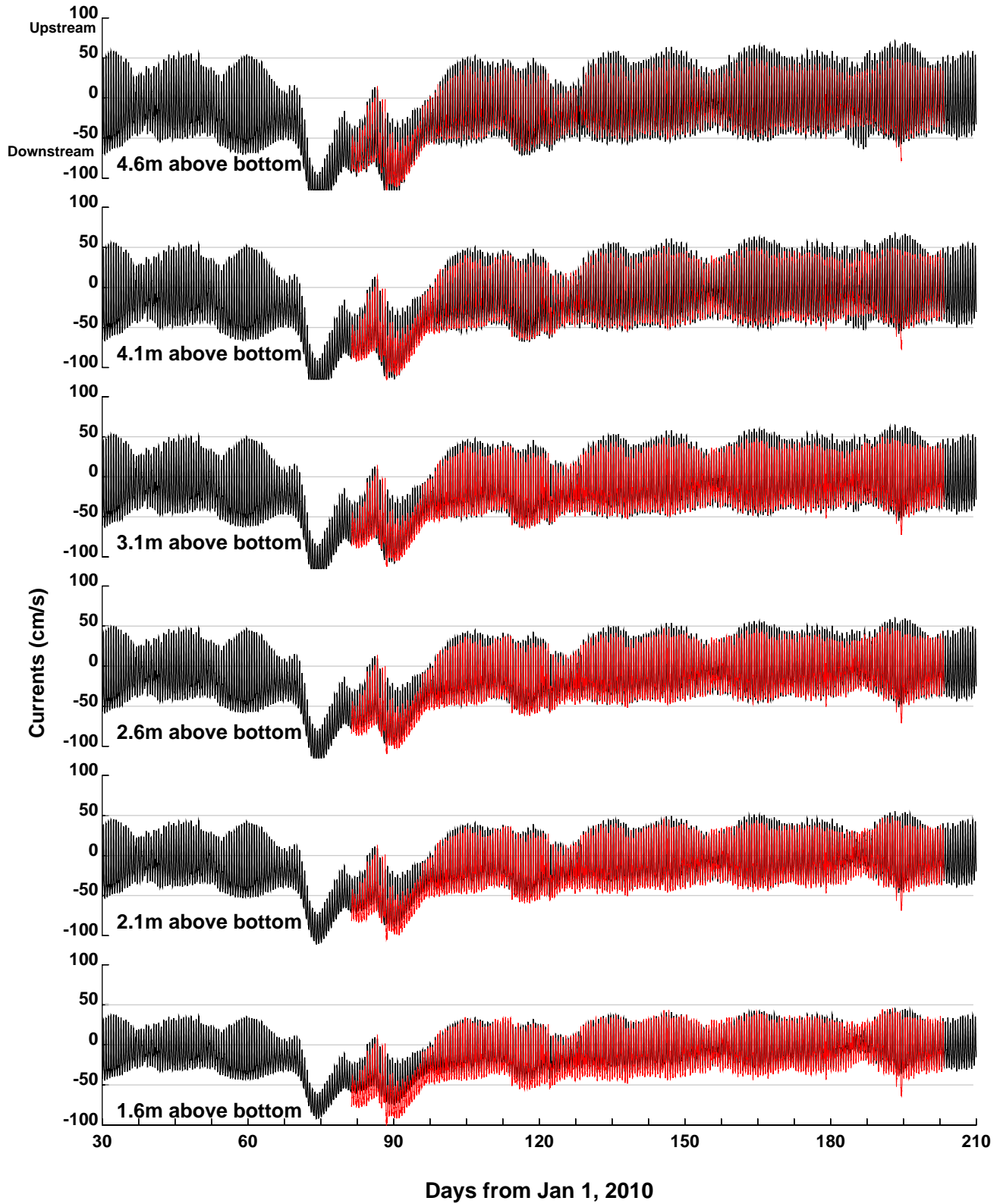
Current Velocity Calibration – 6-Month Period

135 (LPR)

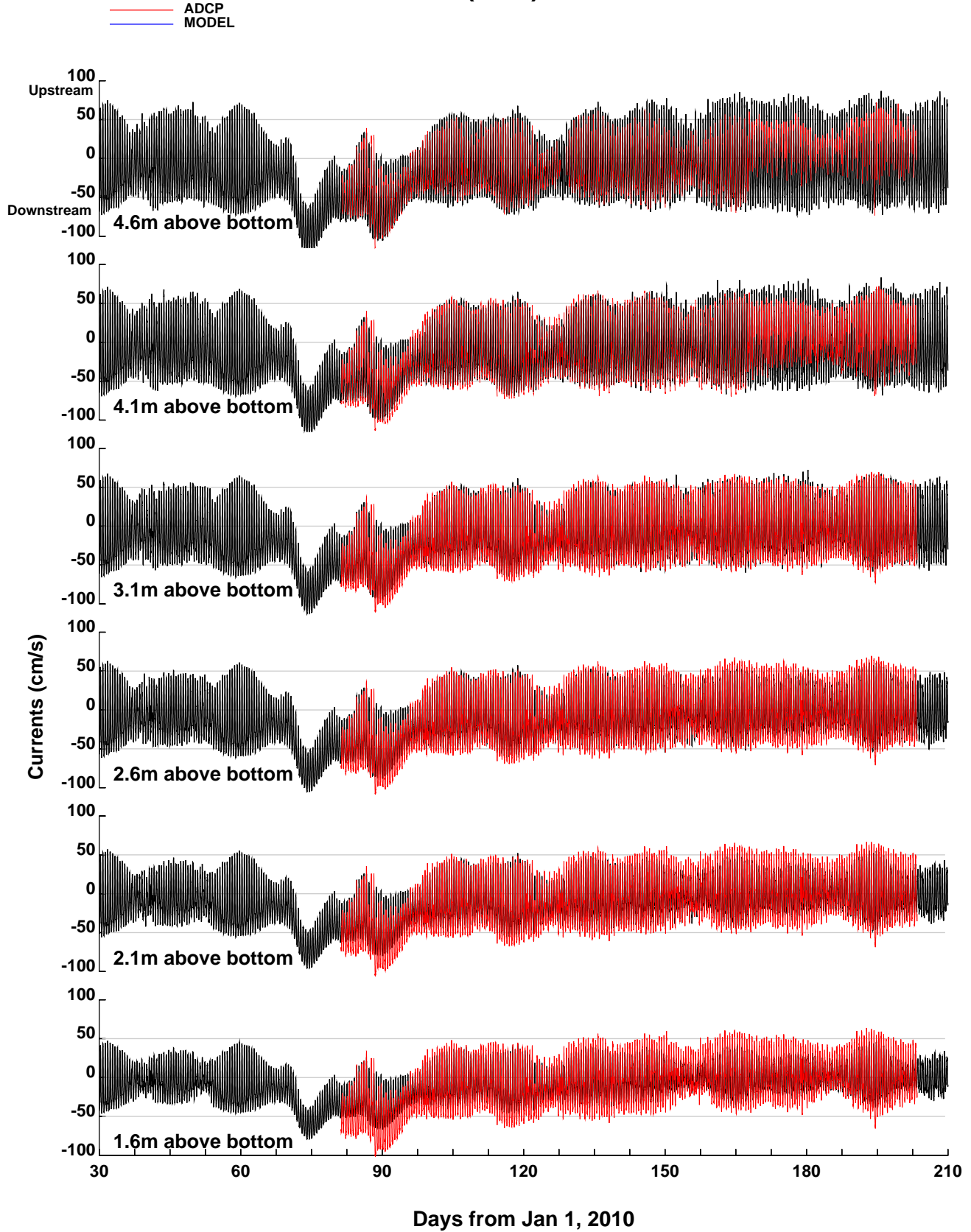


102 (LPR)

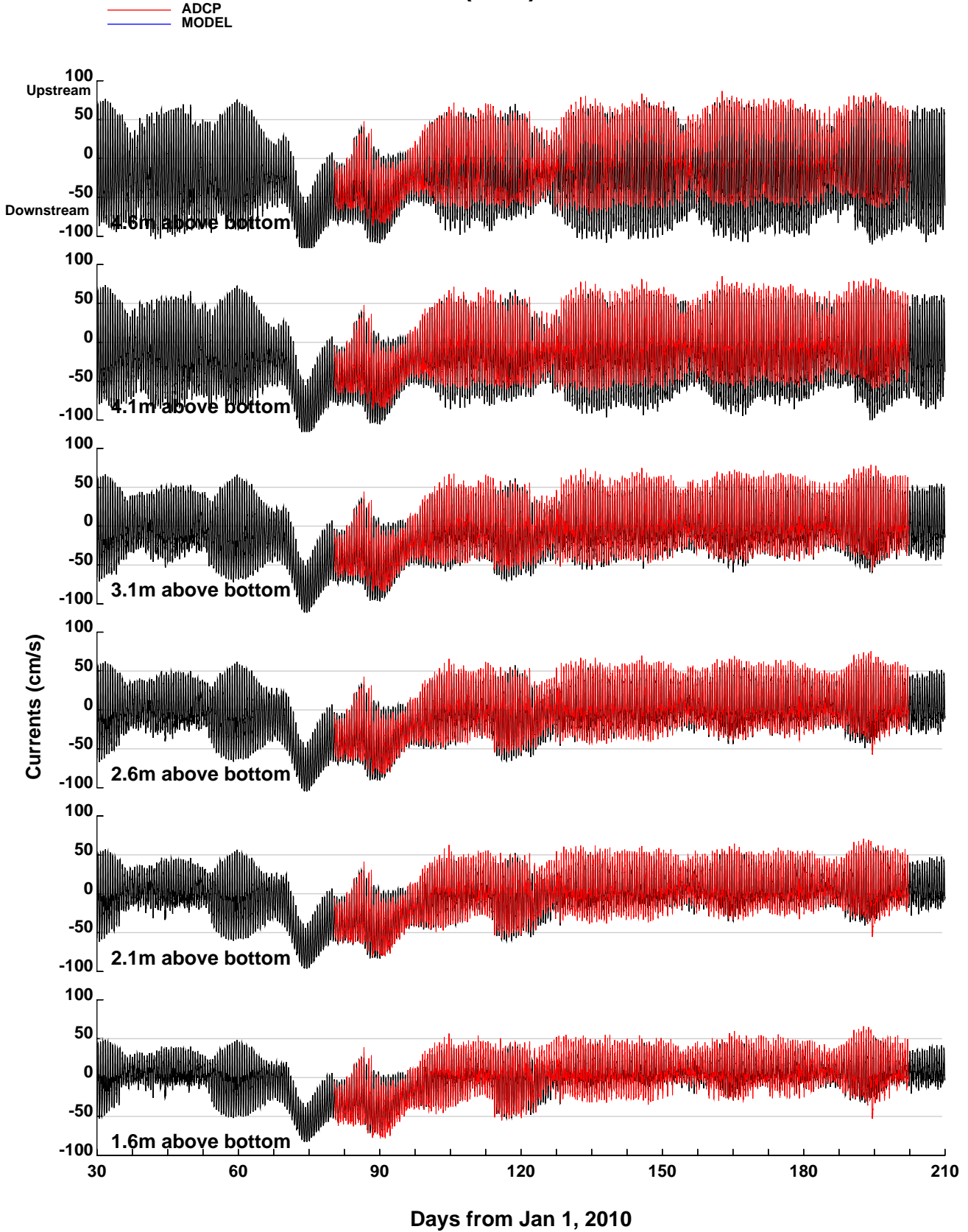
ADCP
MODEL



067 (LPR)

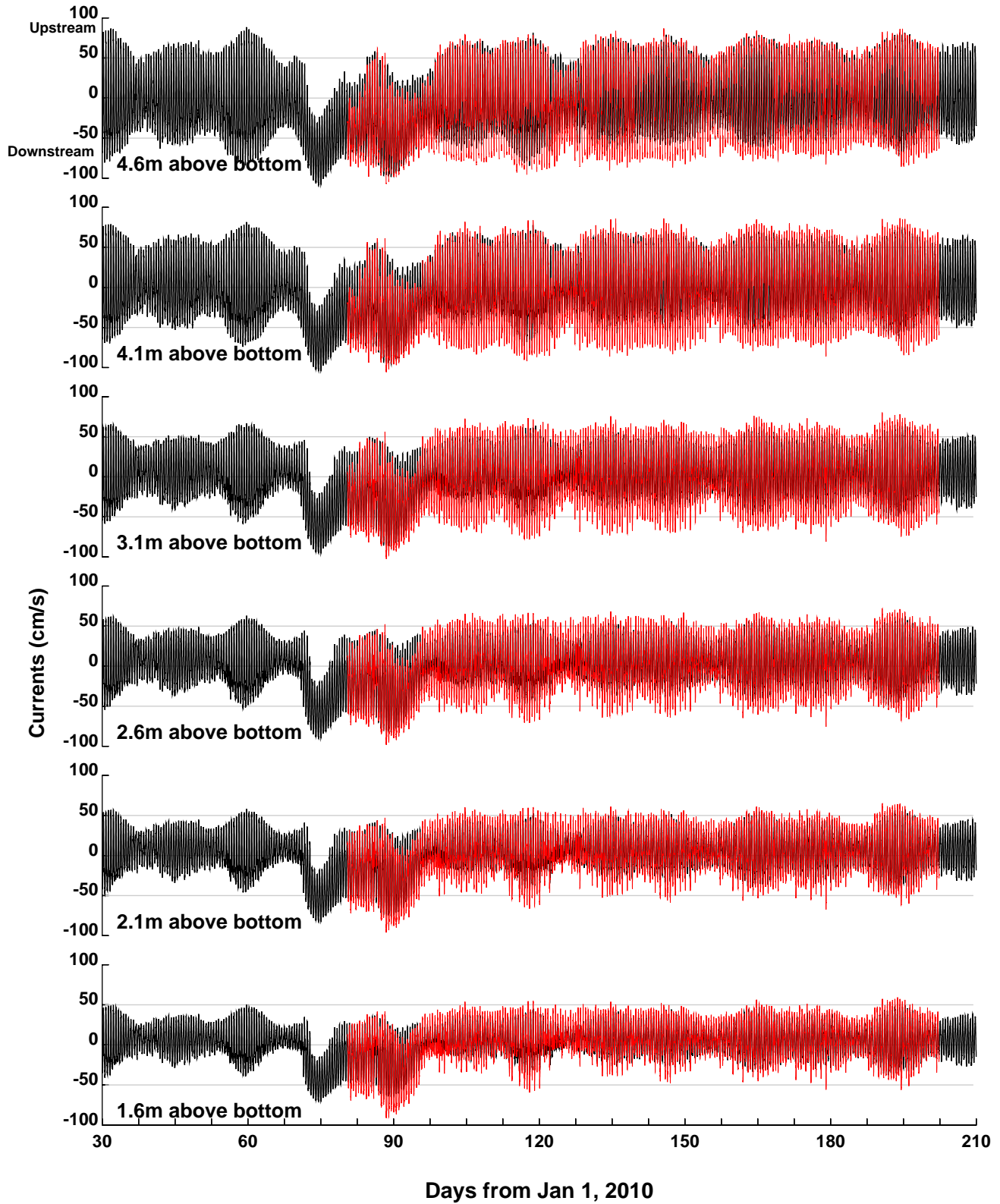


042 (LPR)



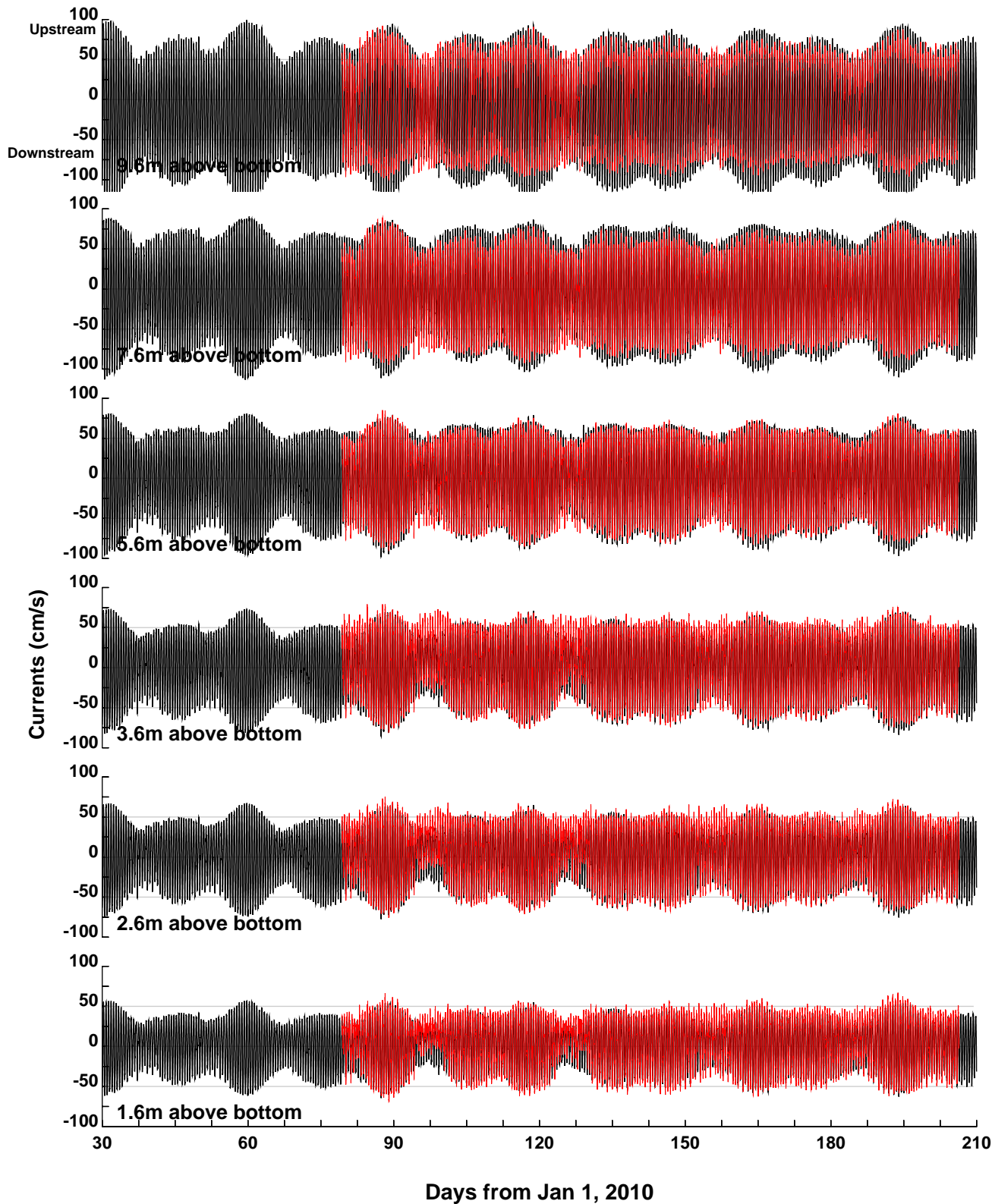
014 (LPR)

— ADCP
— MODEL



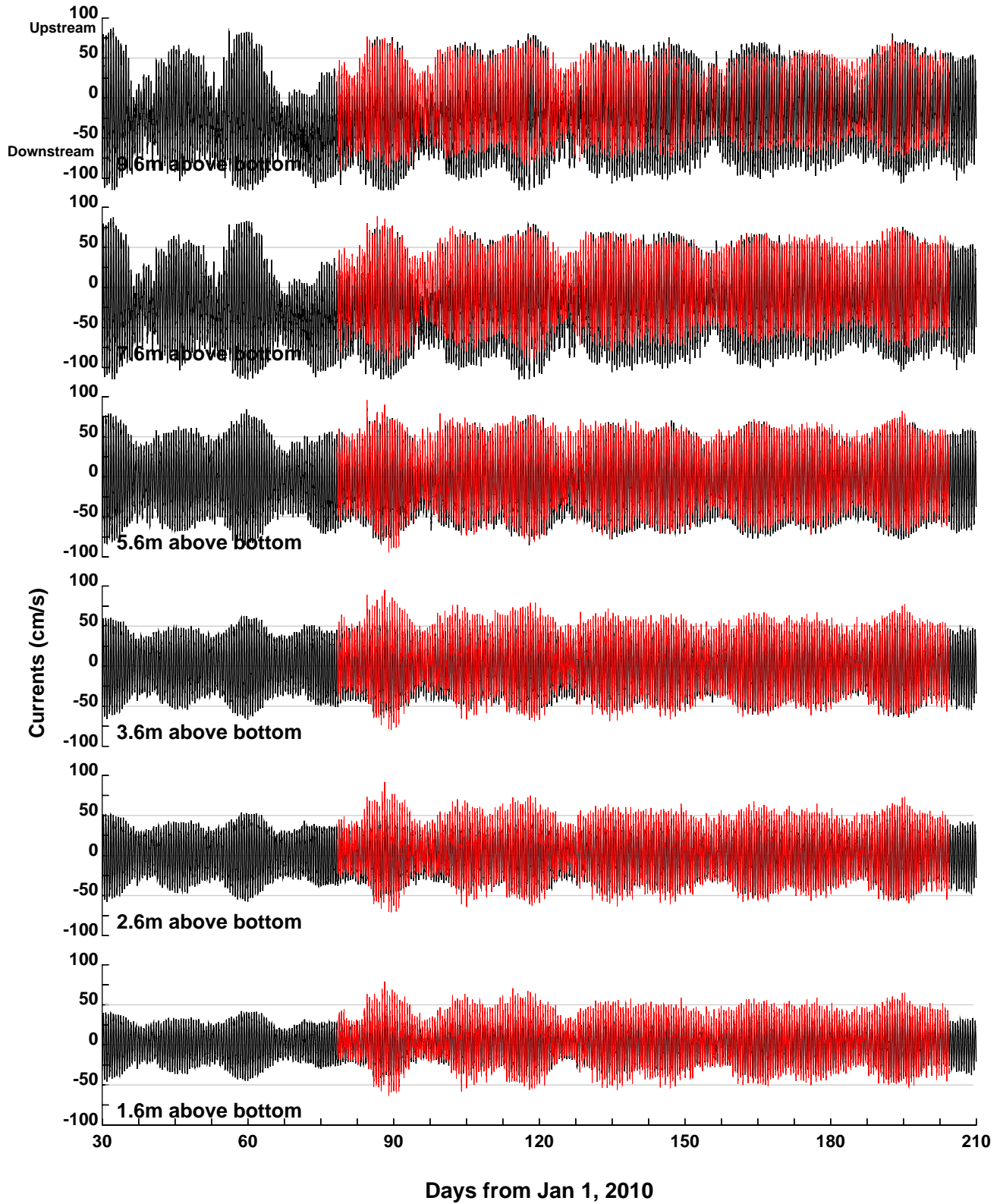
HKN (Hackensack River)

— ADCP
— MODEL

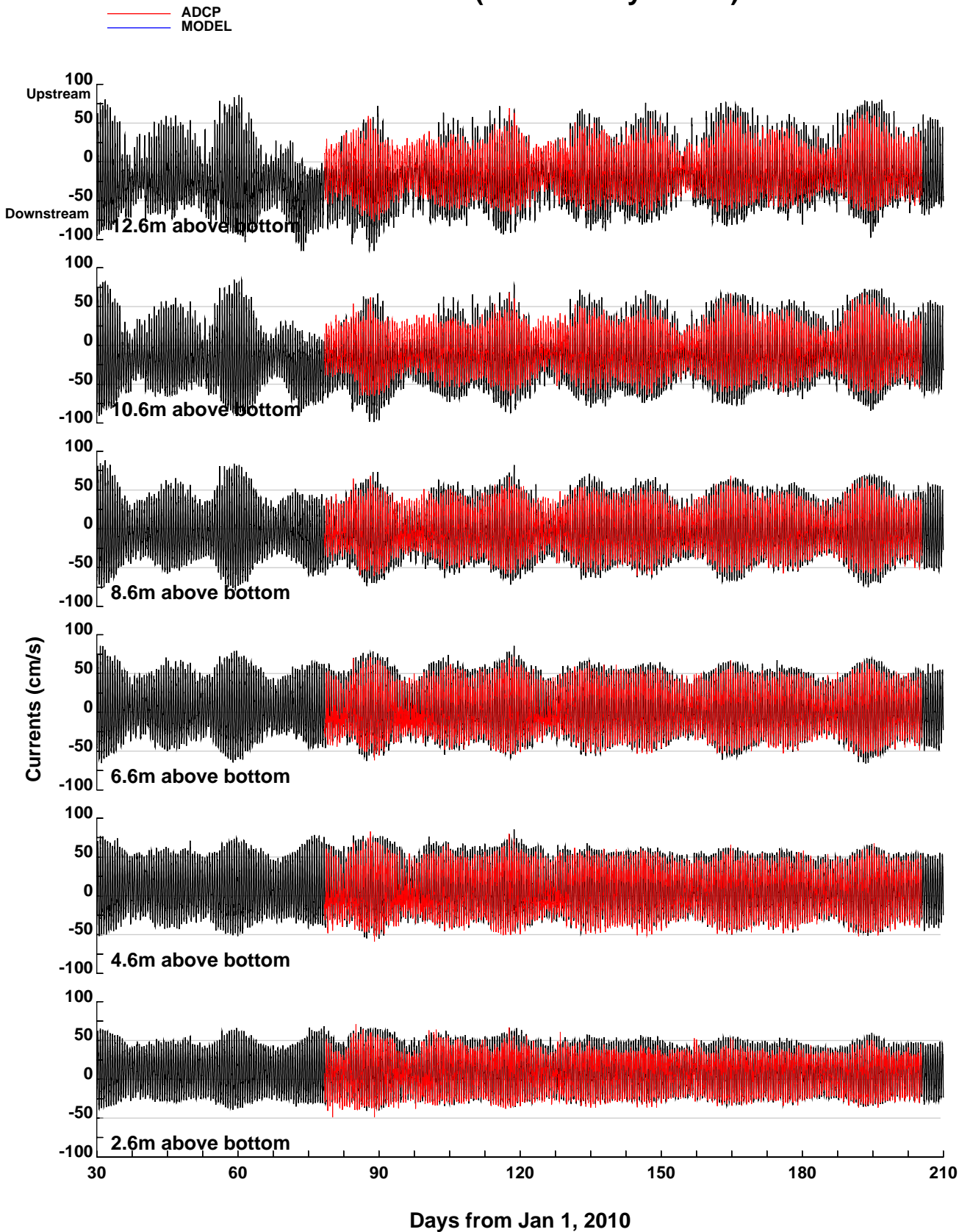


NBN (Newark Bay North)

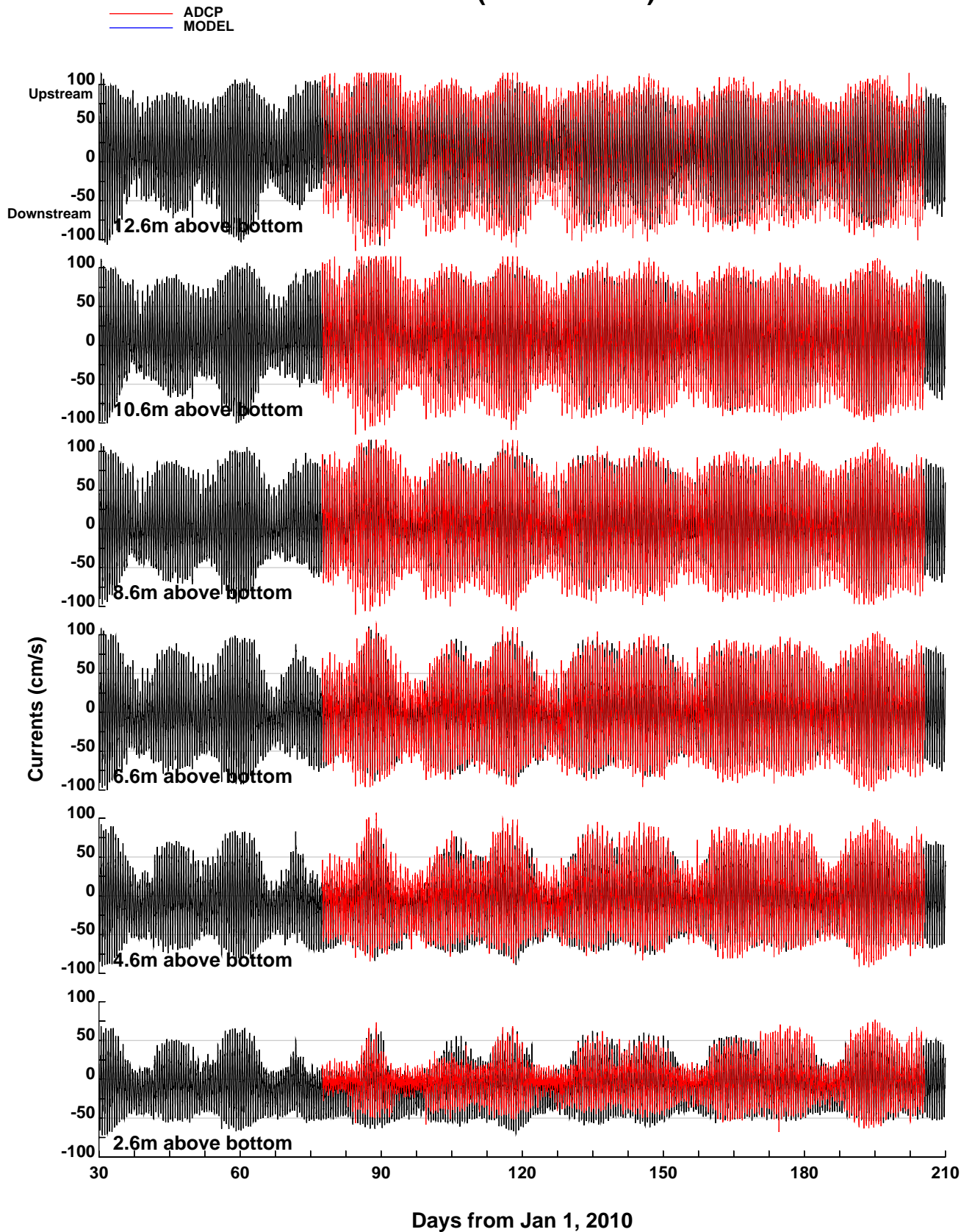
— ADCP
— MODEL



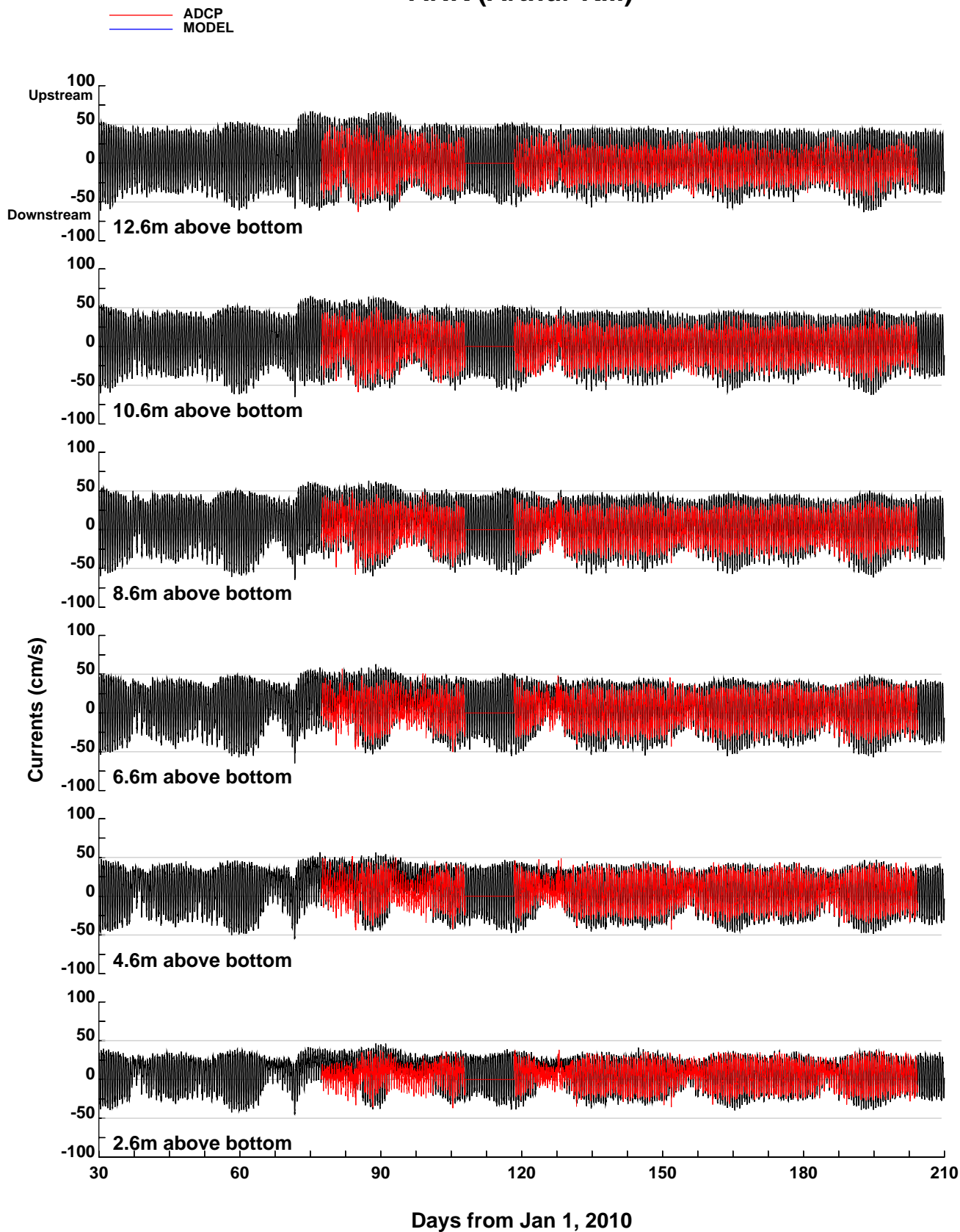
NBS (Newark Bay South)



KVK (Kill van Kull)



ARK (Arthur Kill)

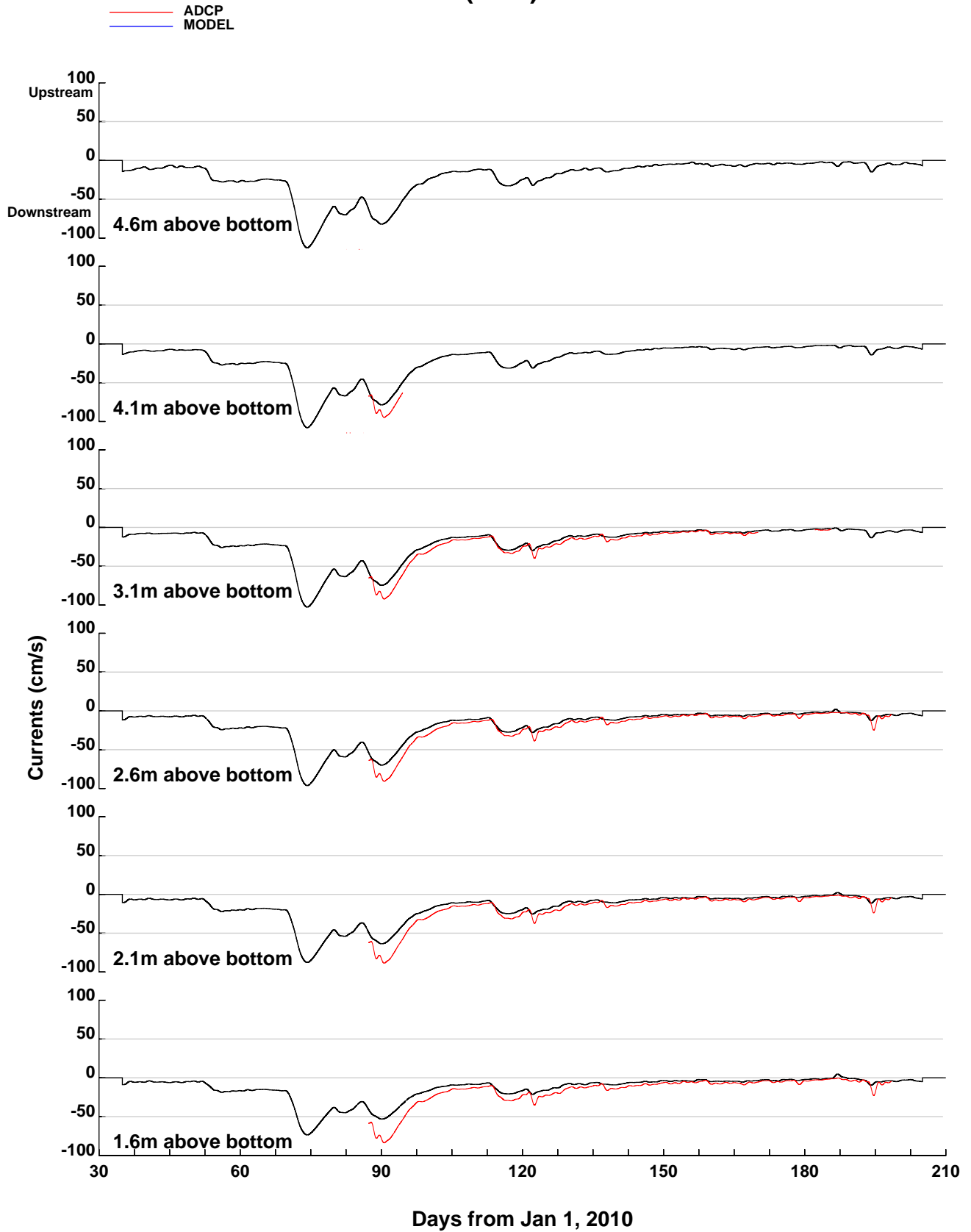




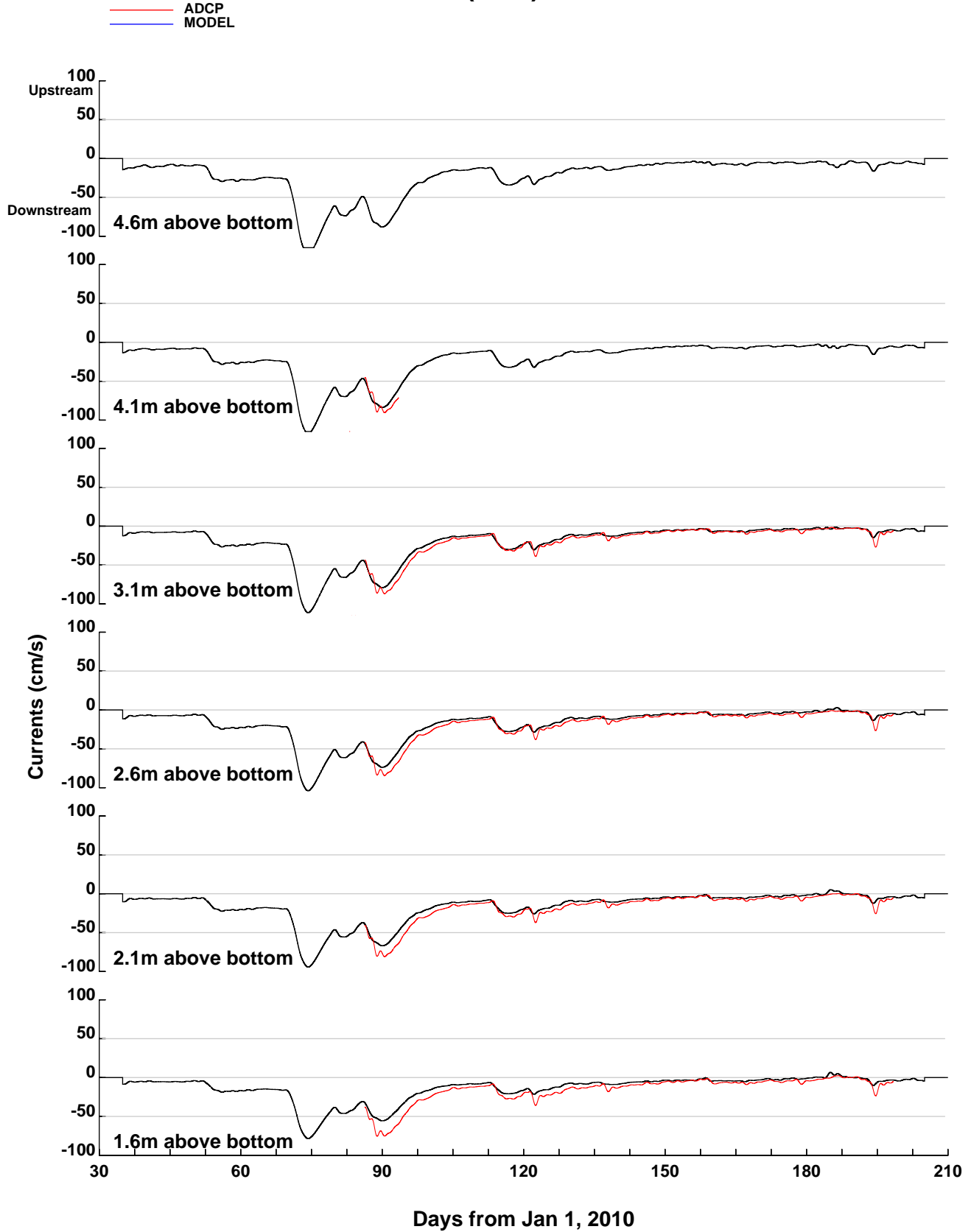
Appendix D-3

Current Velocity Calibration –
6-Month Period with
Low-Pass Filter

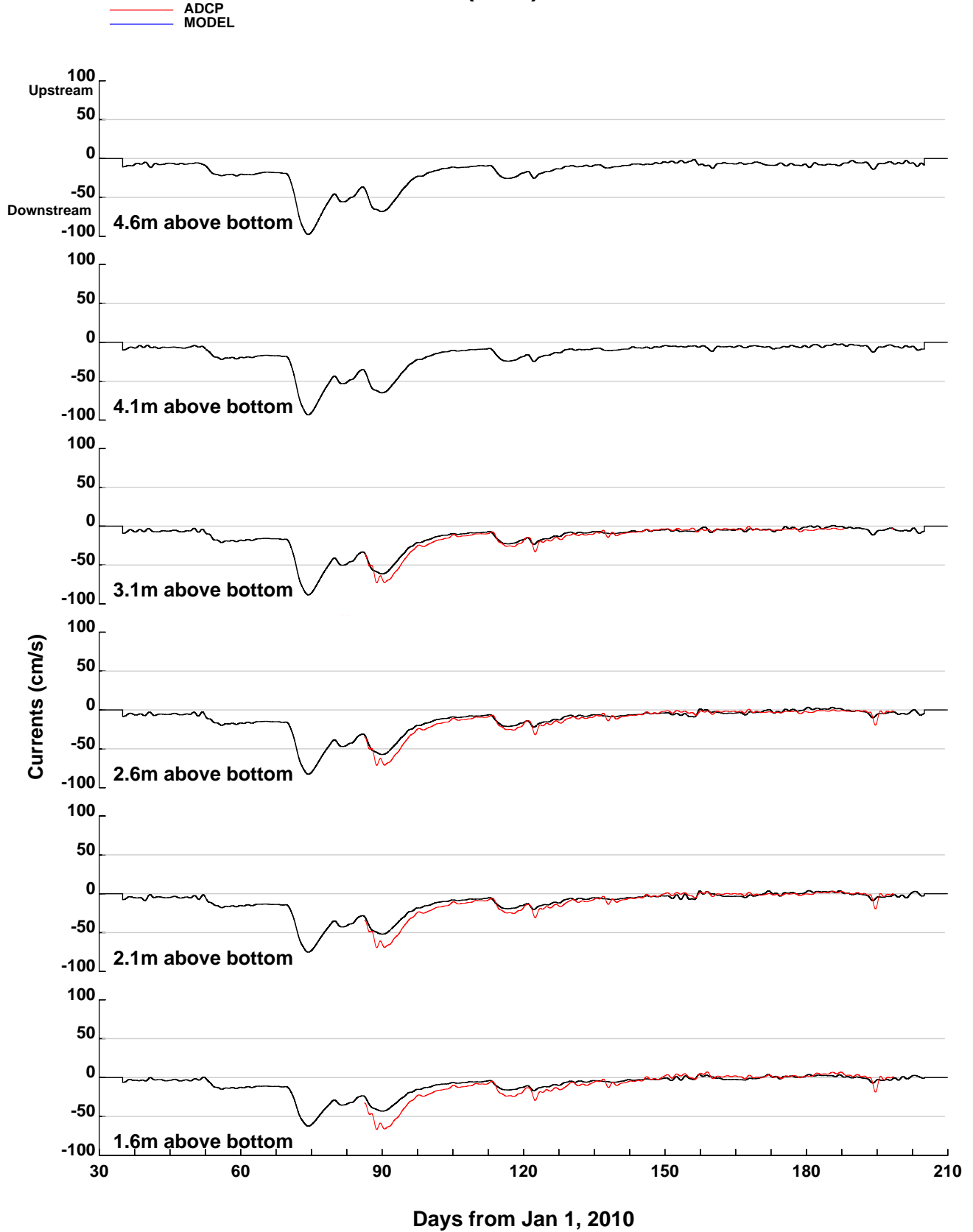
135 (LPR)



102 (LPR)

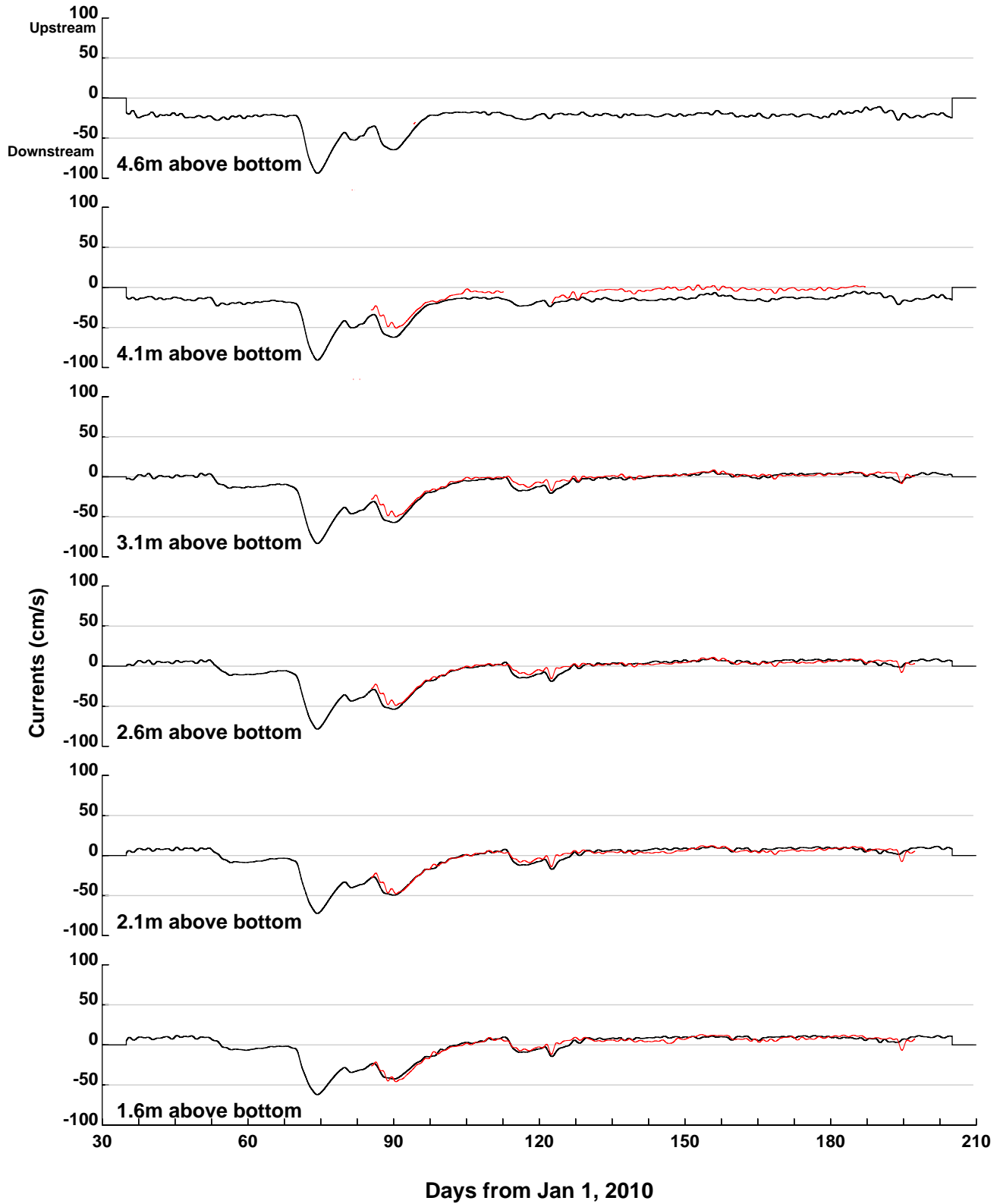


067 (LPR)

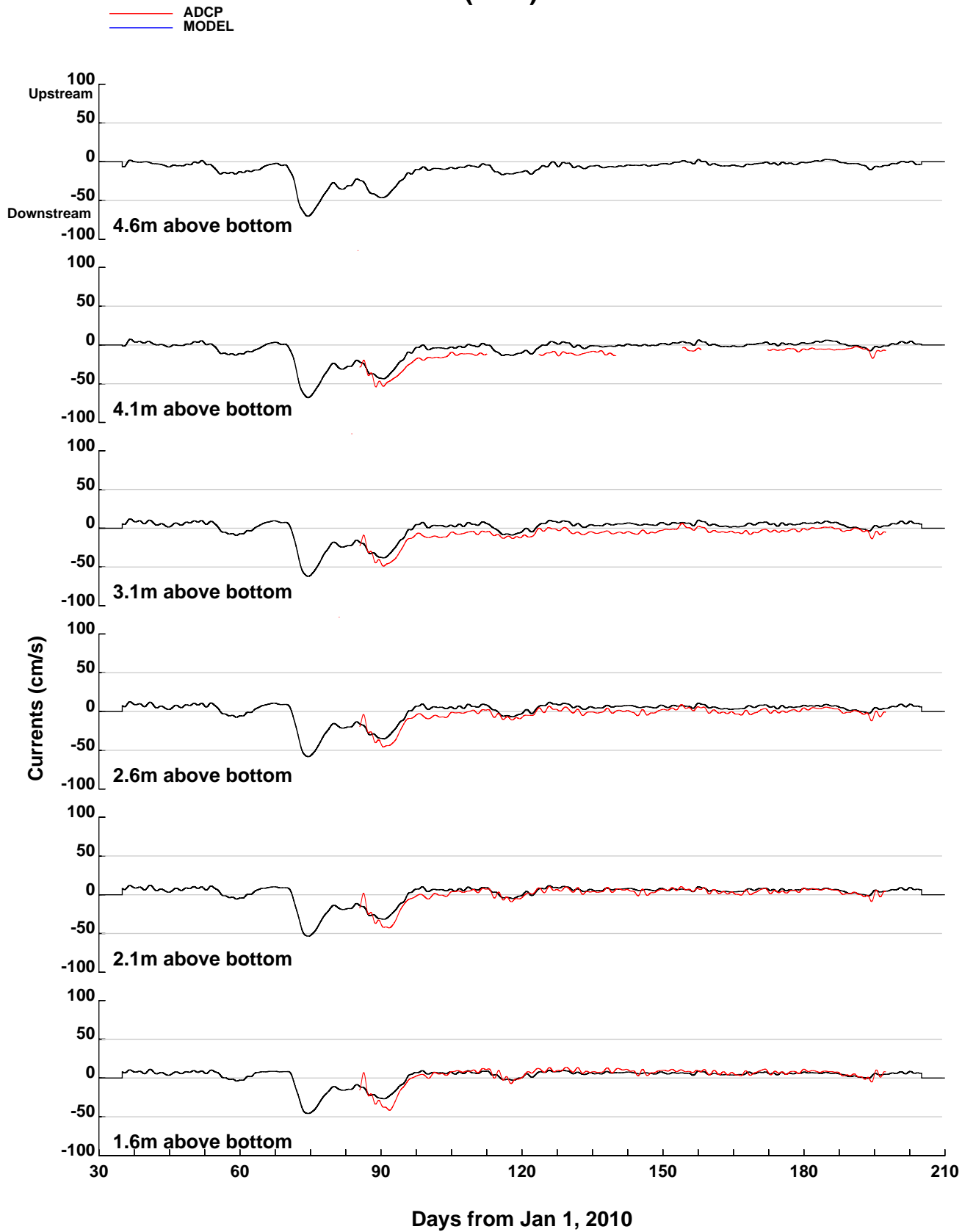


042 (LPR)

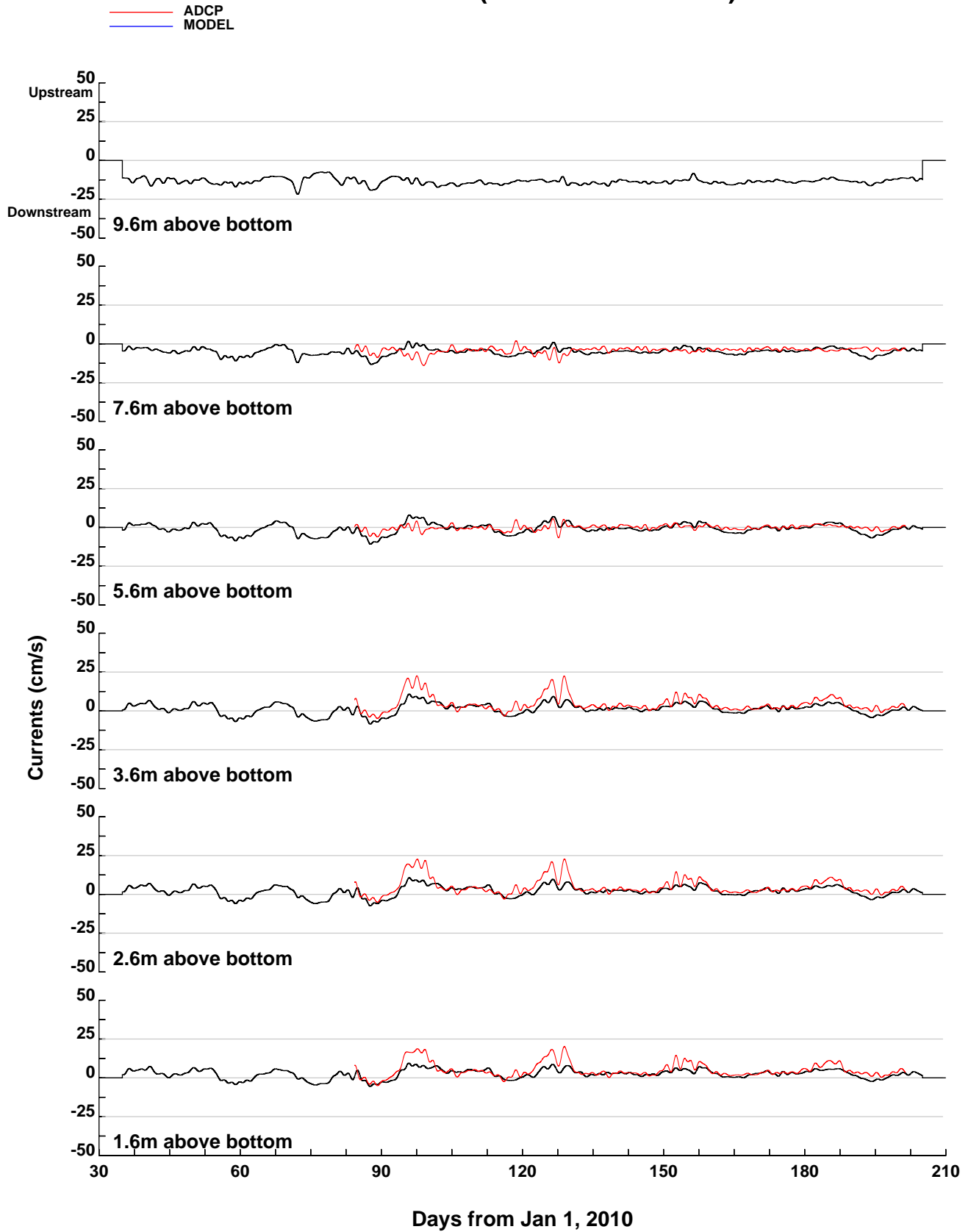
— ADCP
— MODEL



014 (LPR)

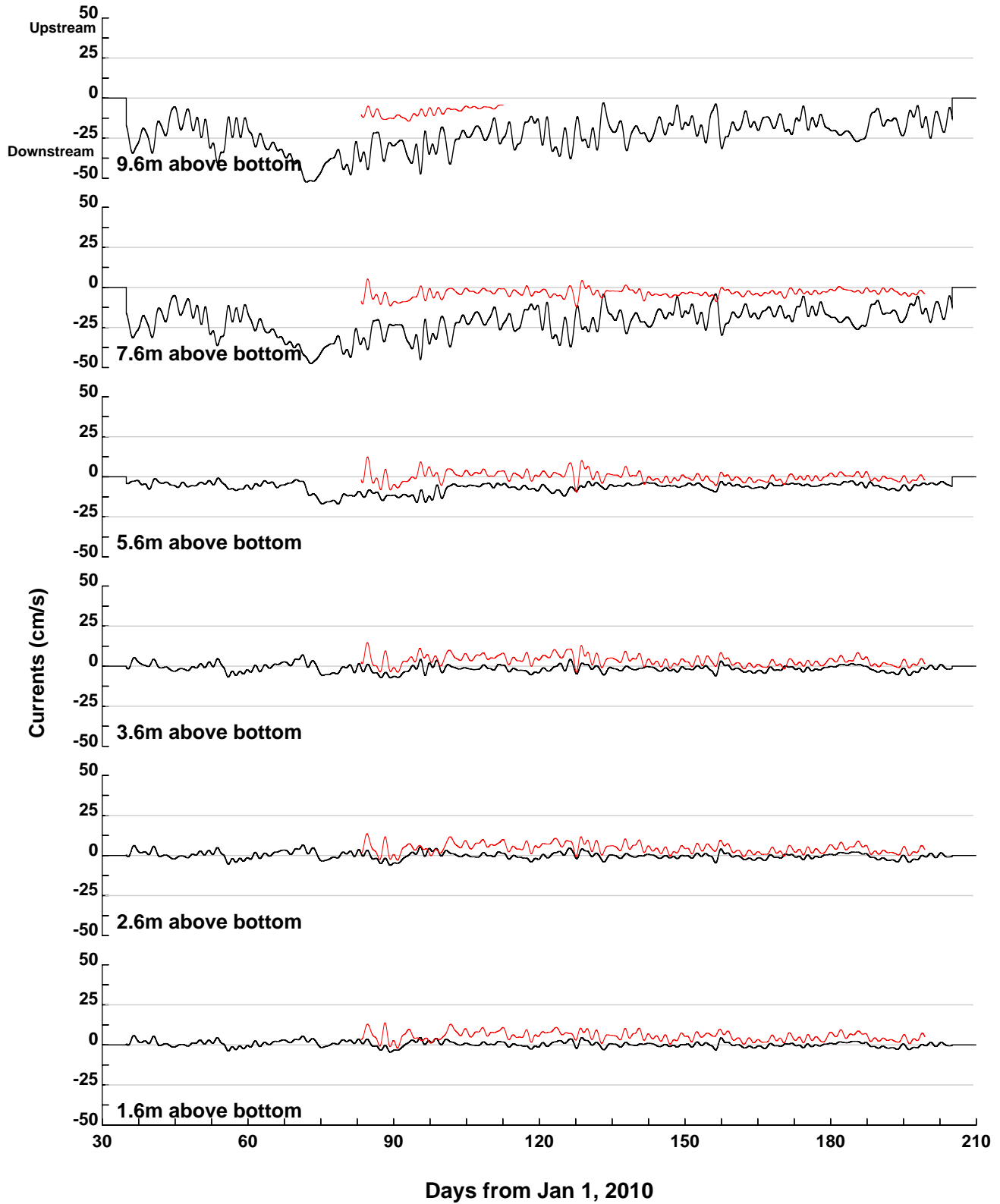


HKN (Hackensack River)

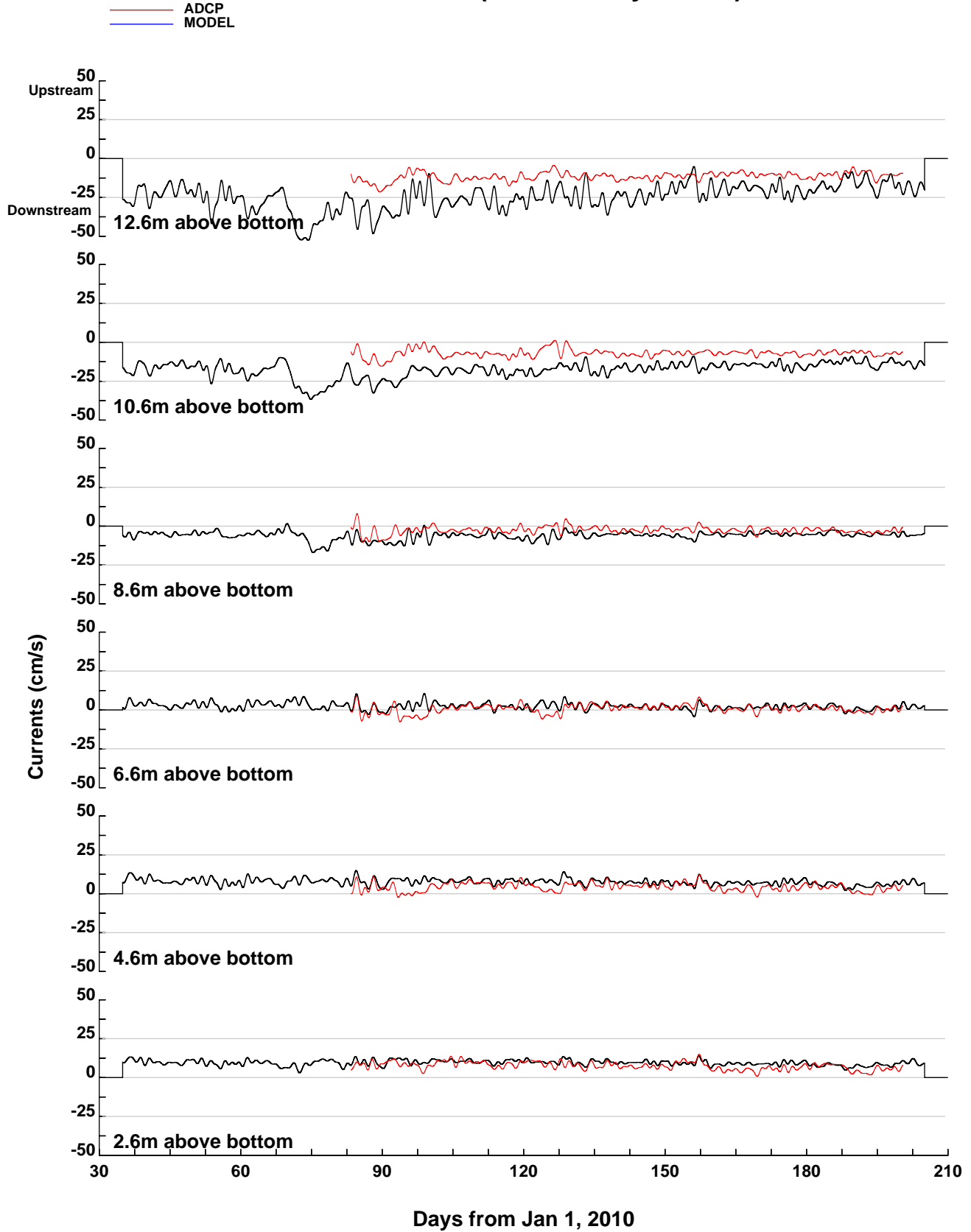


NBN (Newark Bay North)

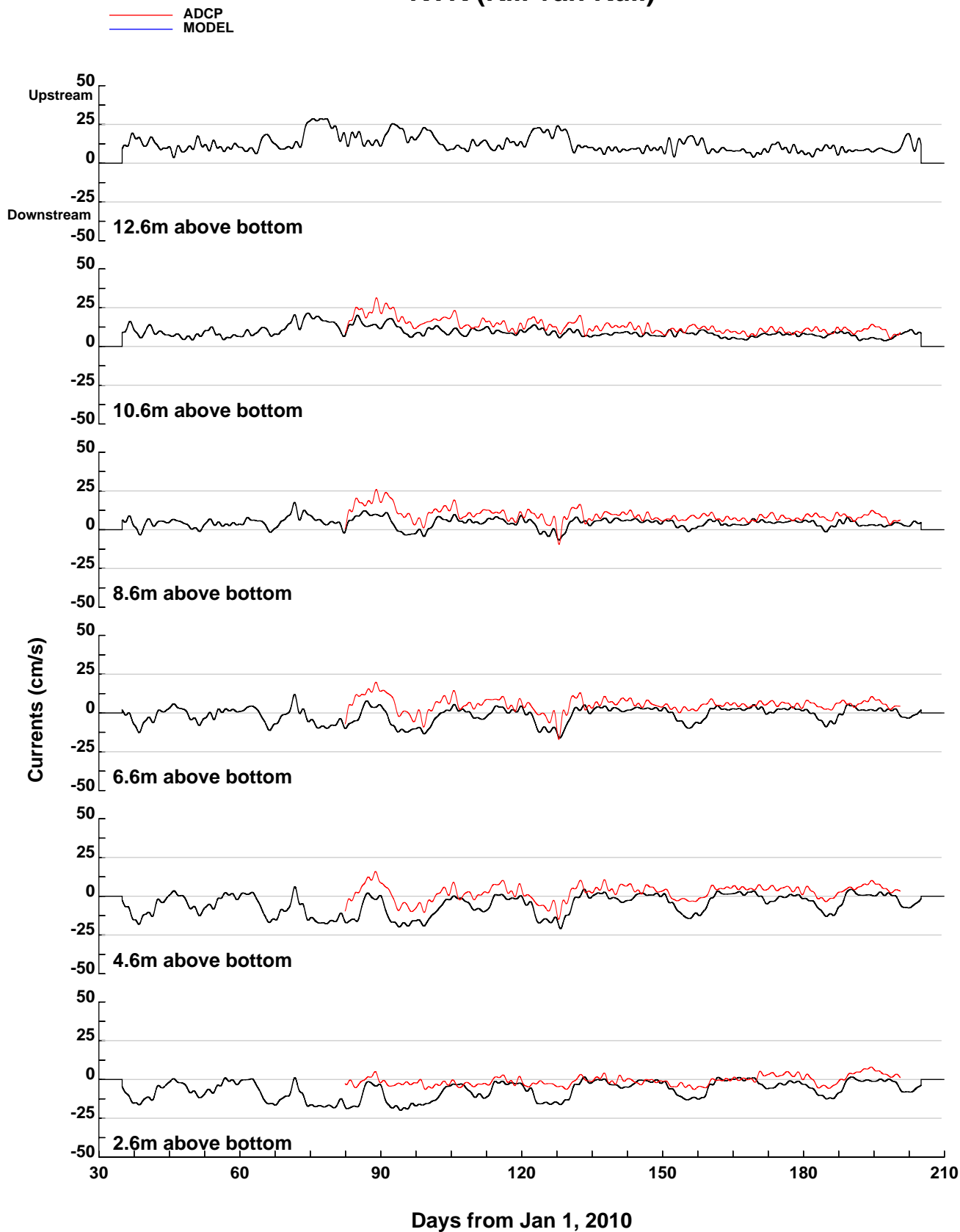
— ADCP
— MODEL



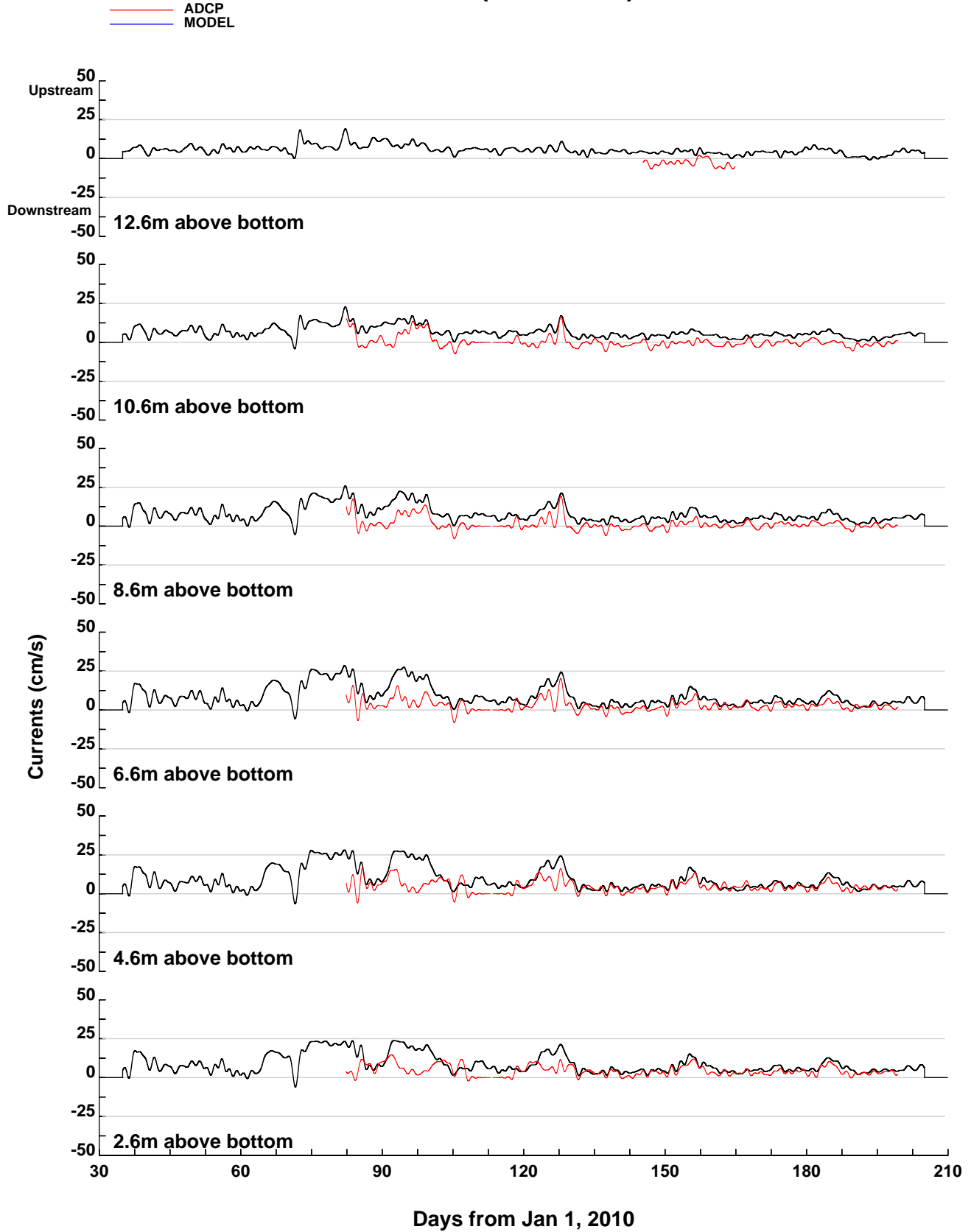
NBS (Newark Bay South)



KVK (Kill van Kull)



ARK (Arthur Kill)





Appendix E

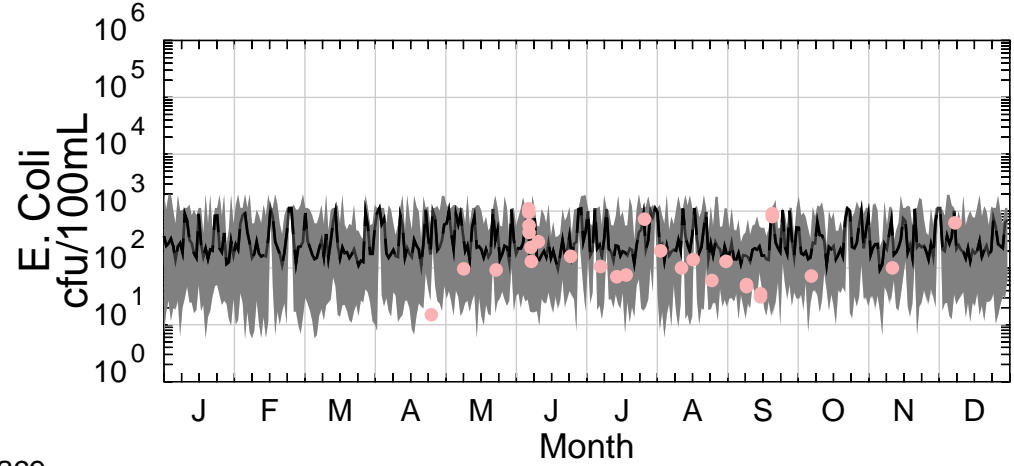
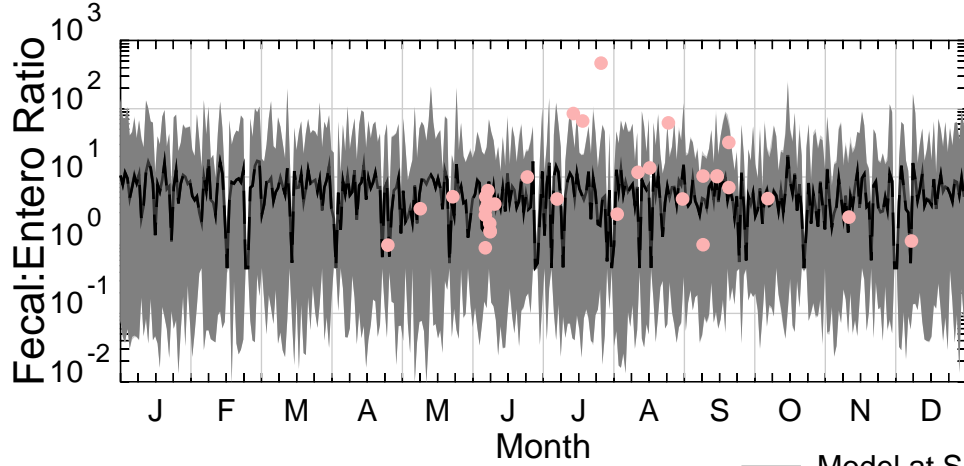
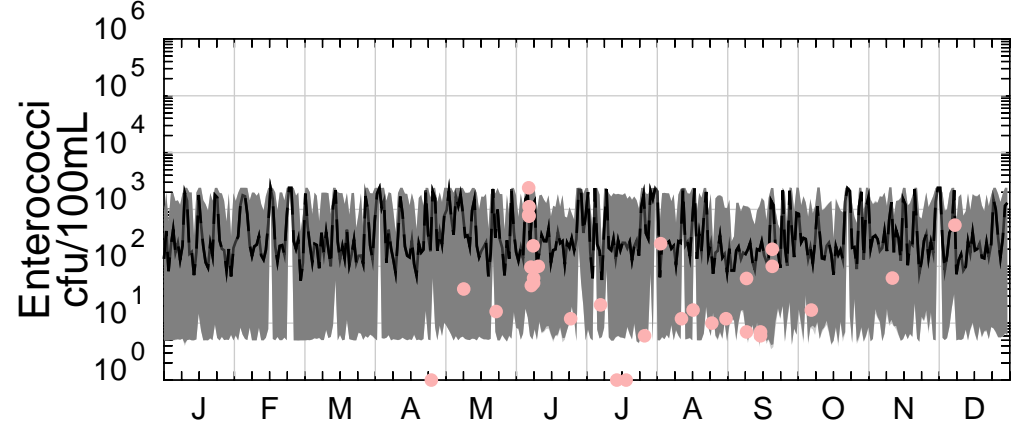
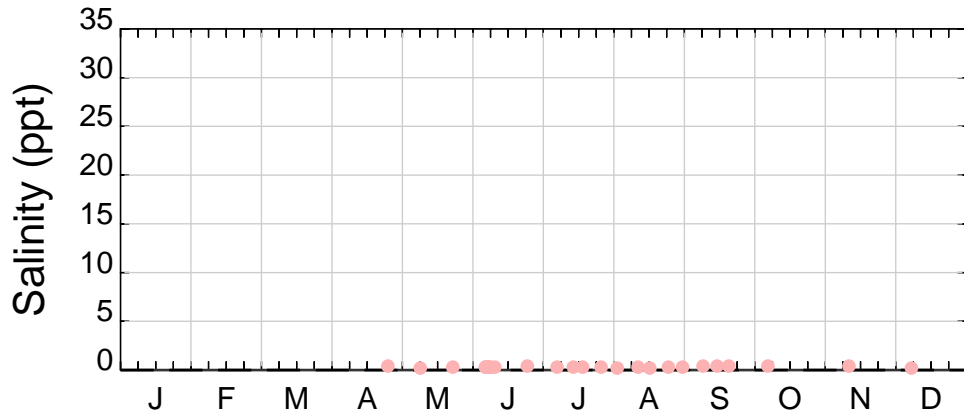
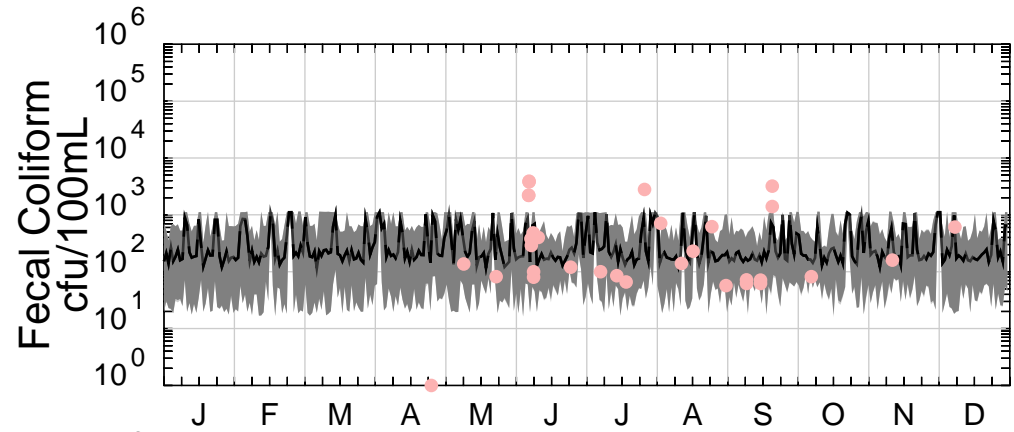
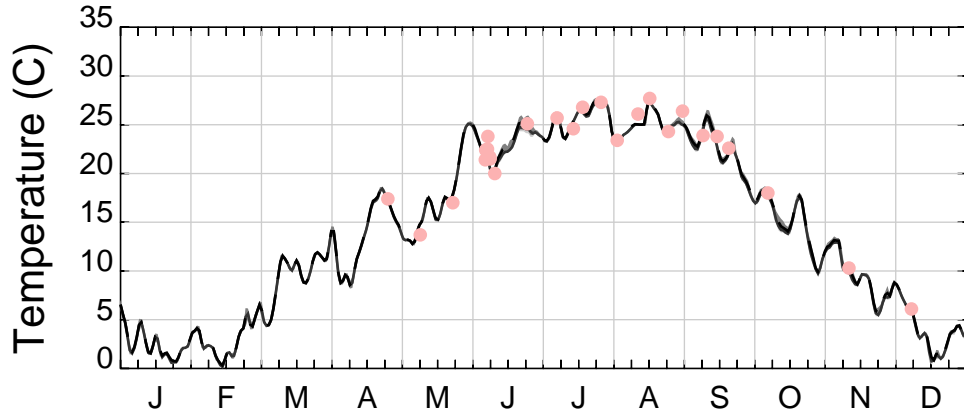
Additional Water Quality Model Calibration Figures



Appendix E-1

Additional Calibration Annual Time-Series Figures

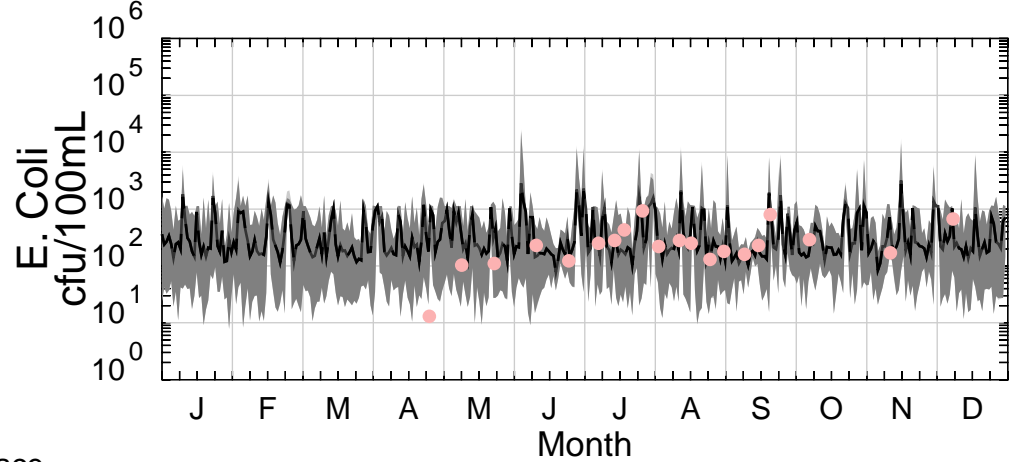
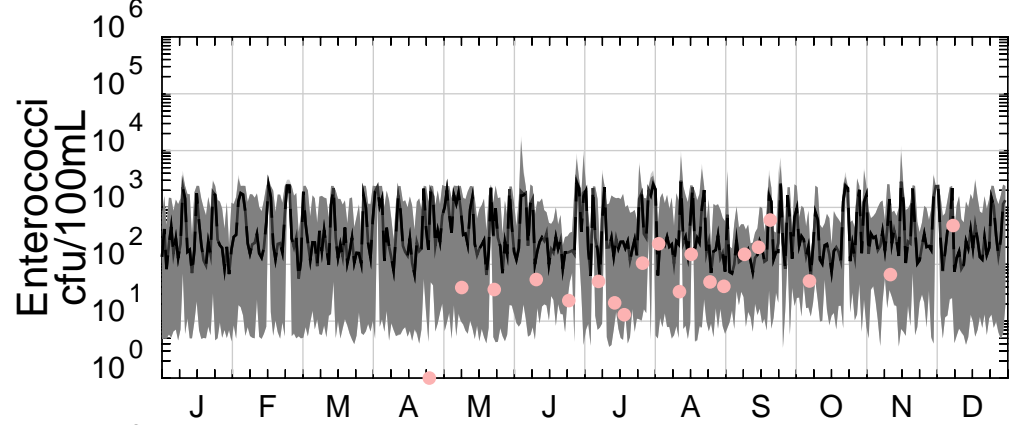
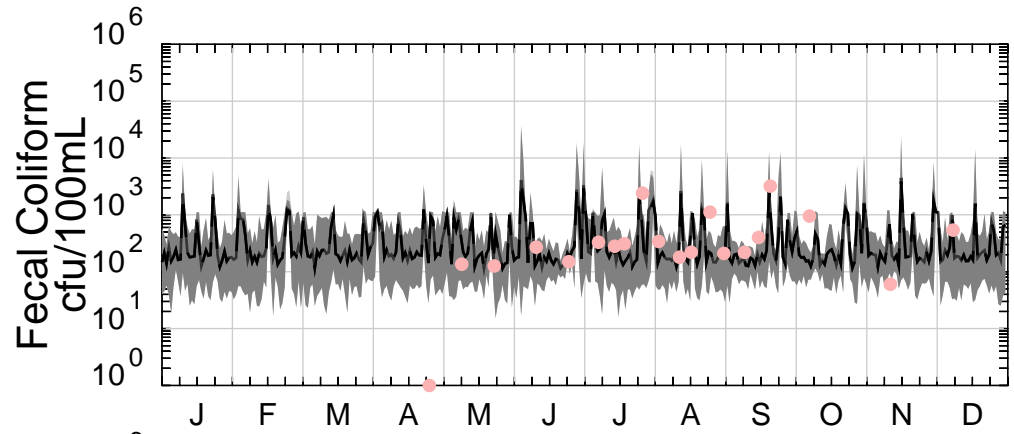
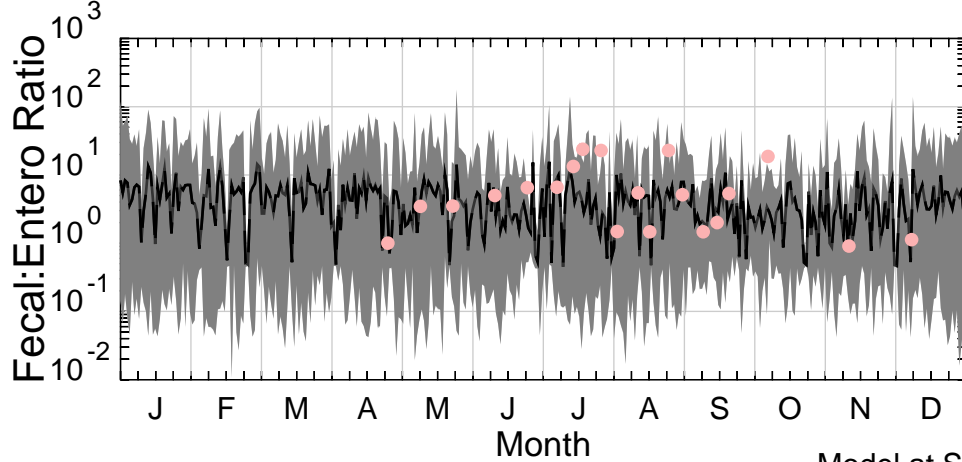
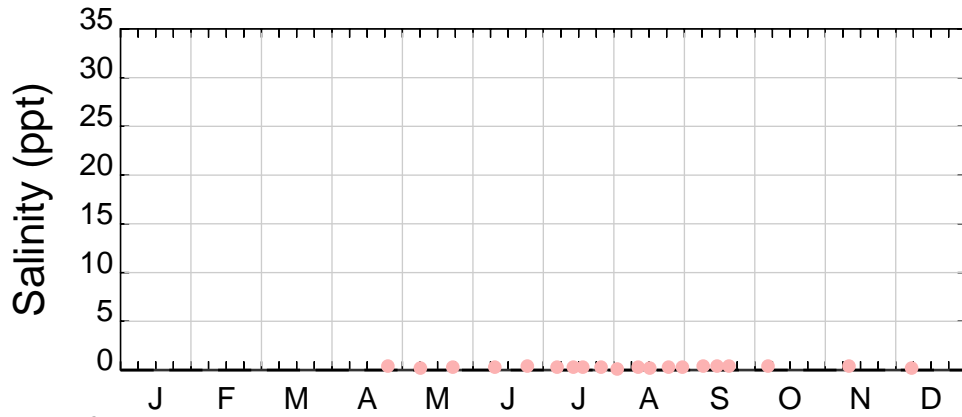
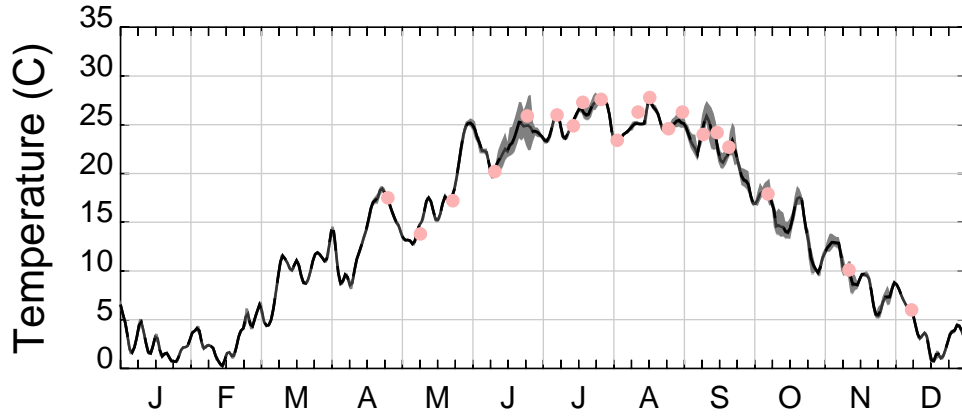
Station: B24



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

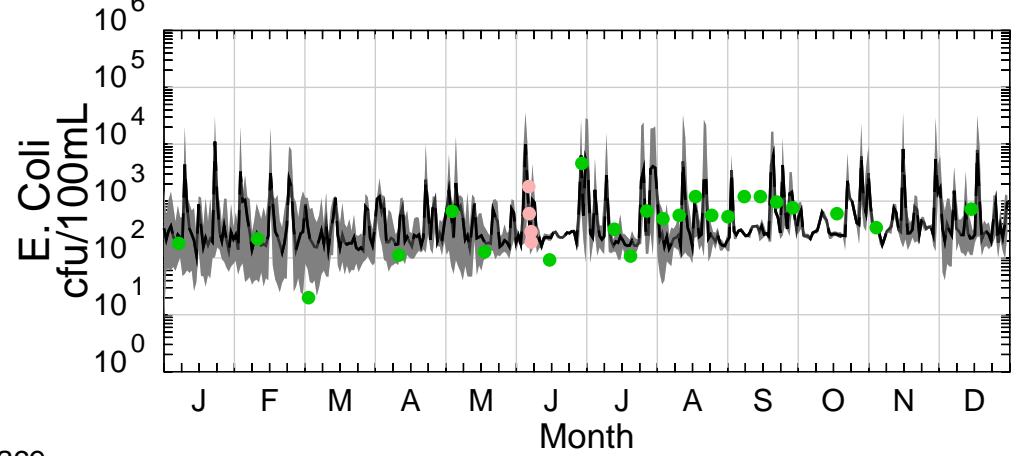
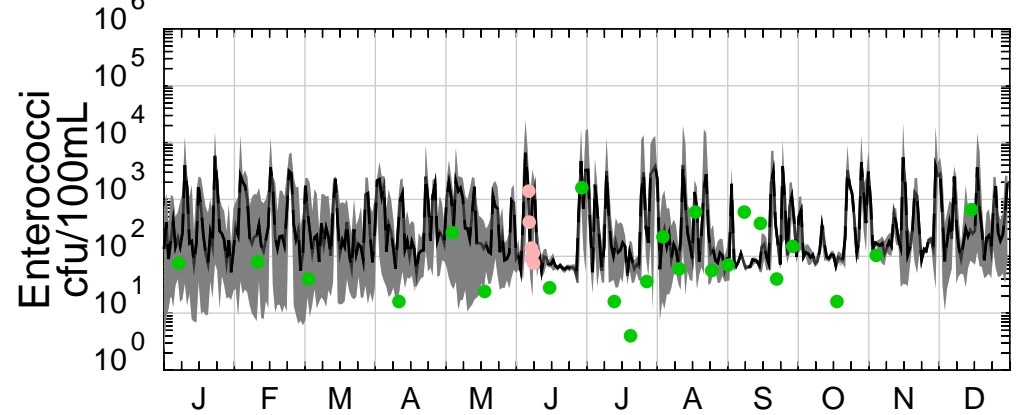
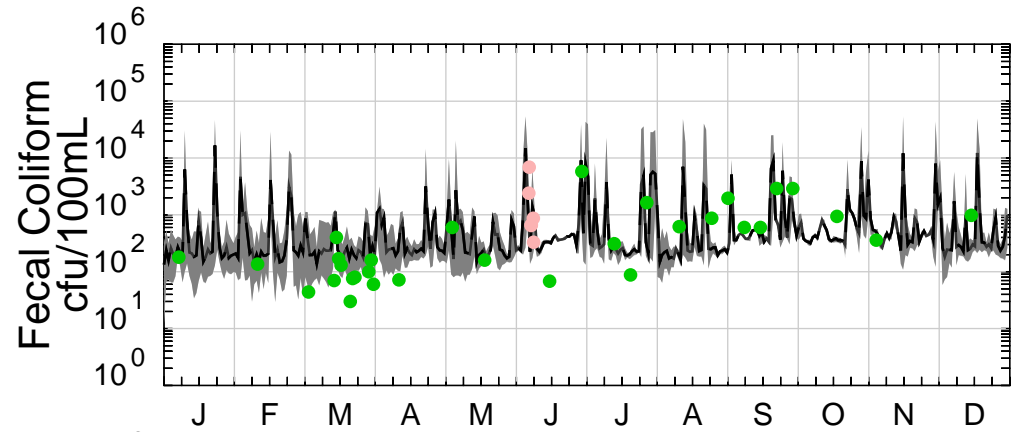
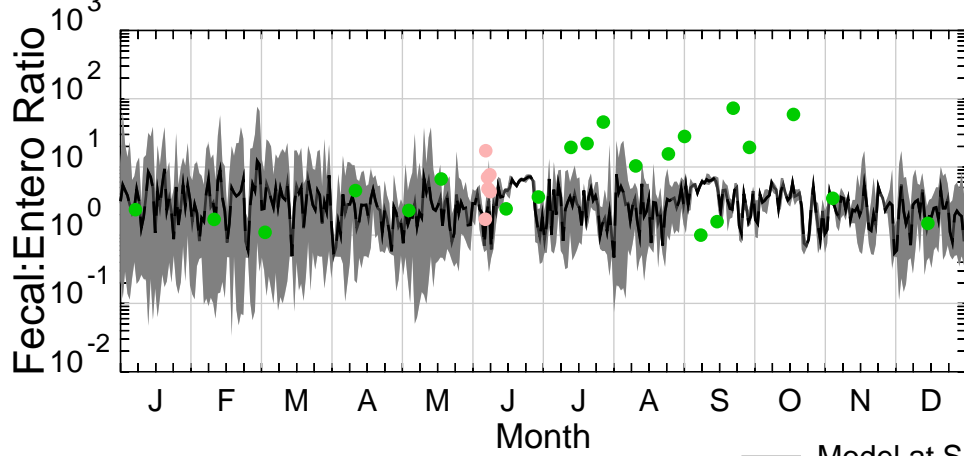
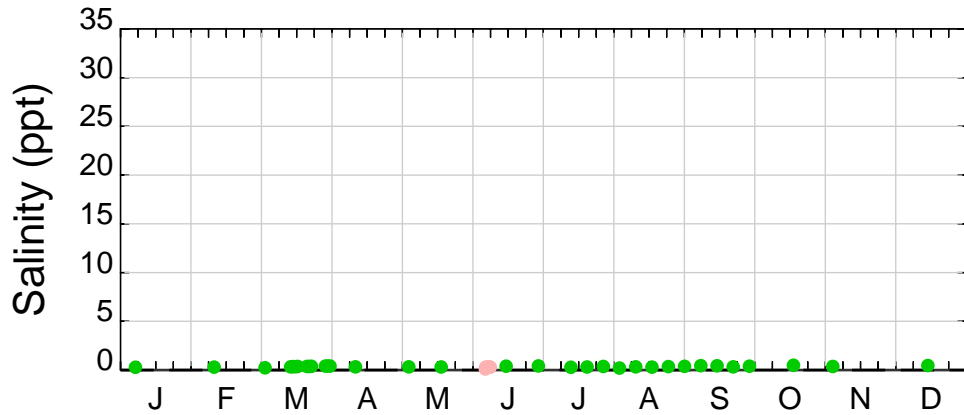
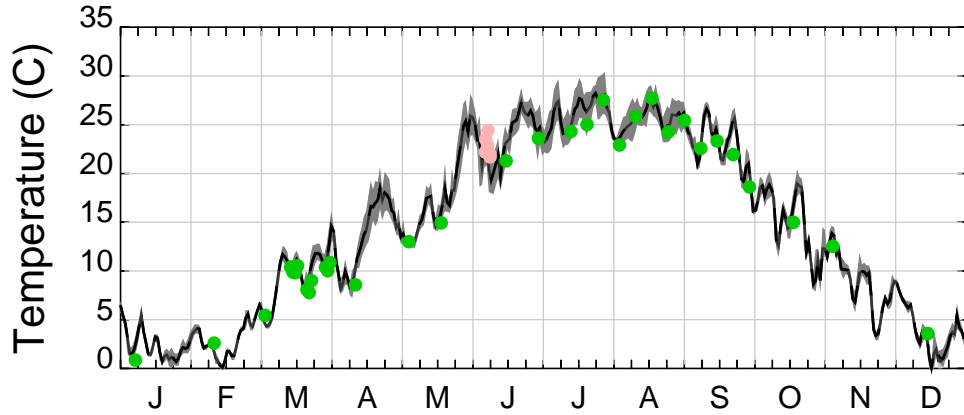
Station: 2



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

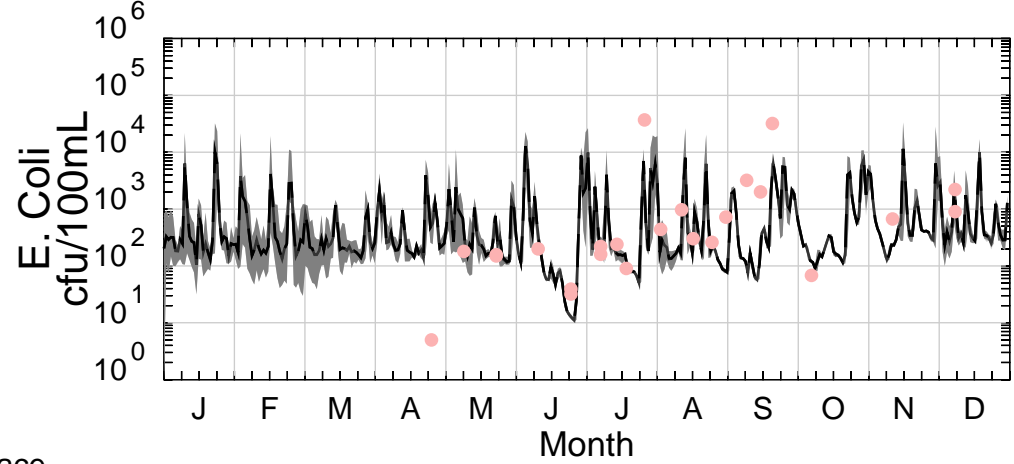
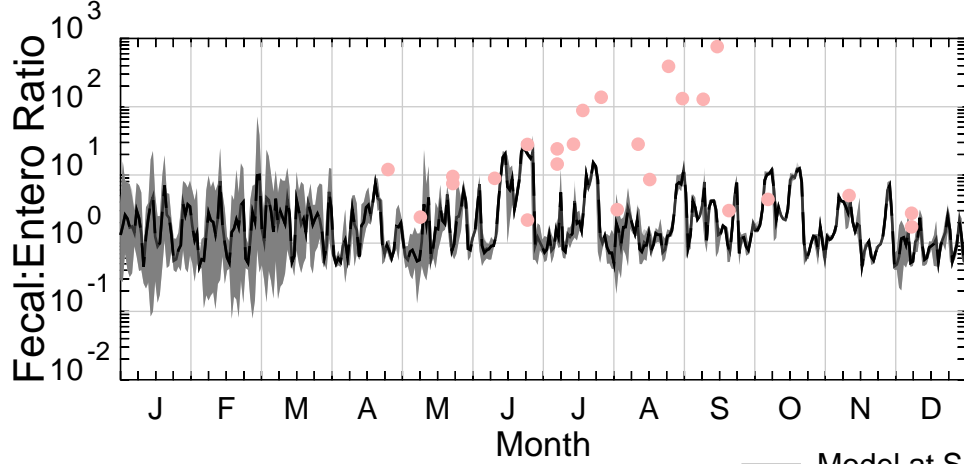
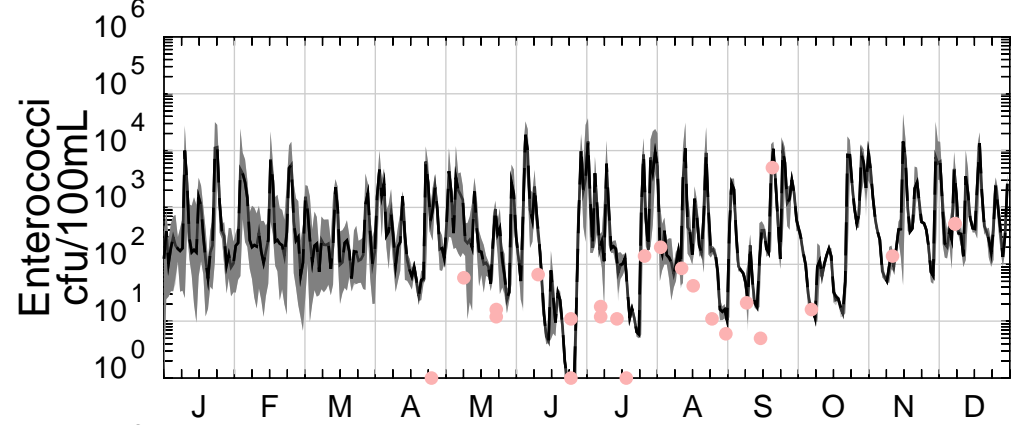
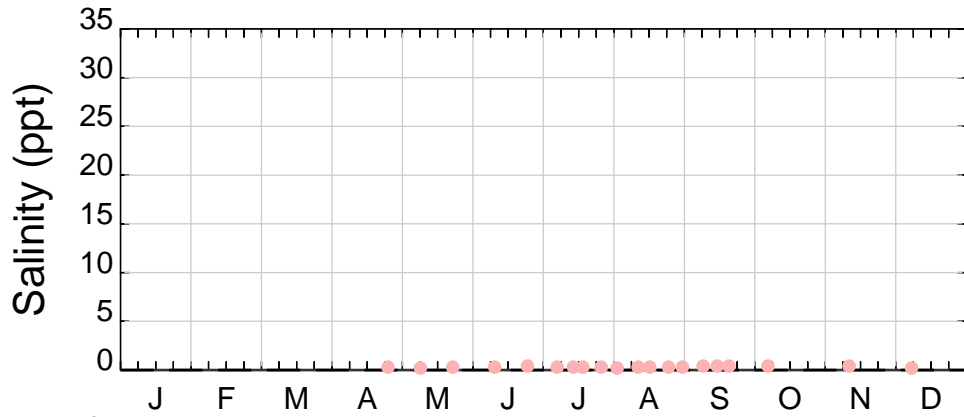
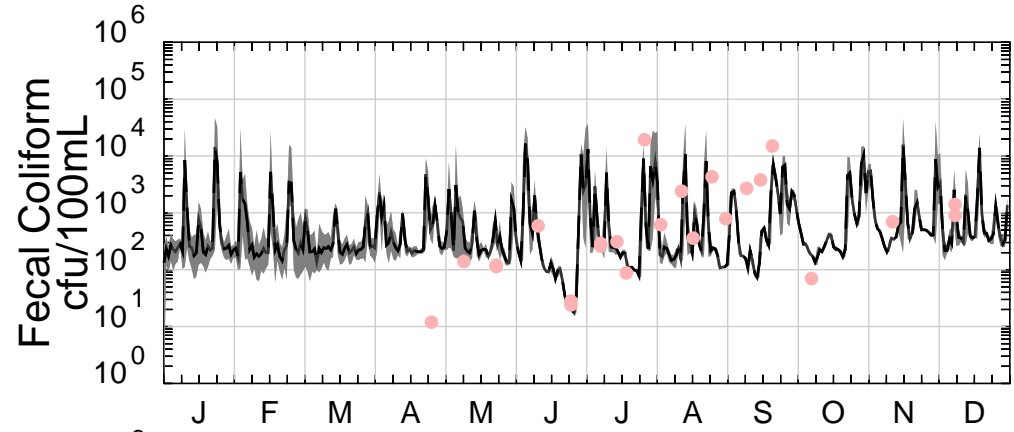
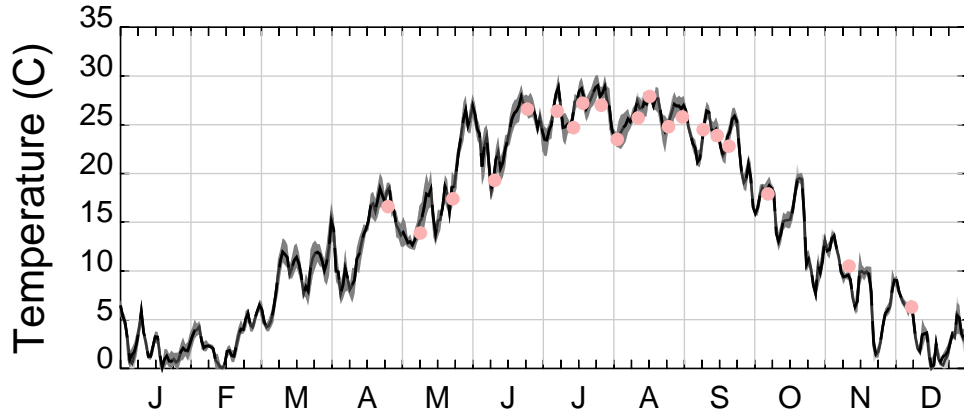
Station: 3



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

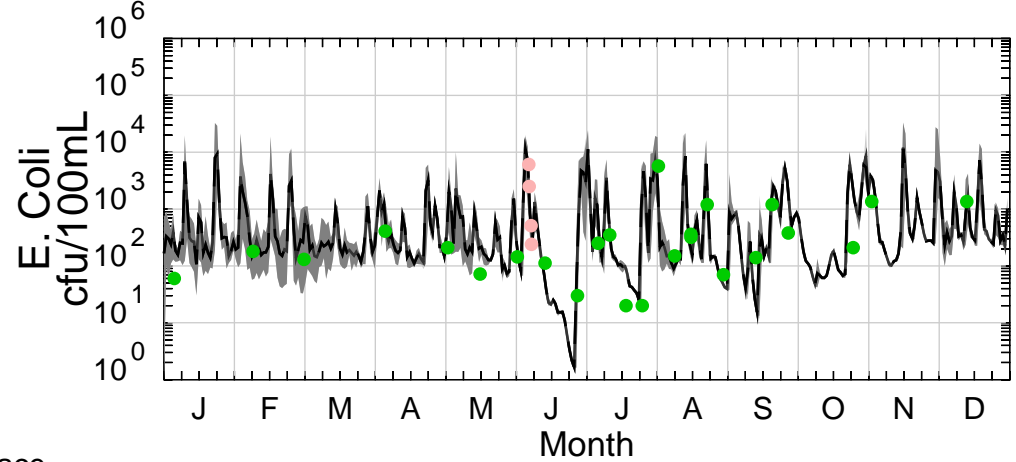
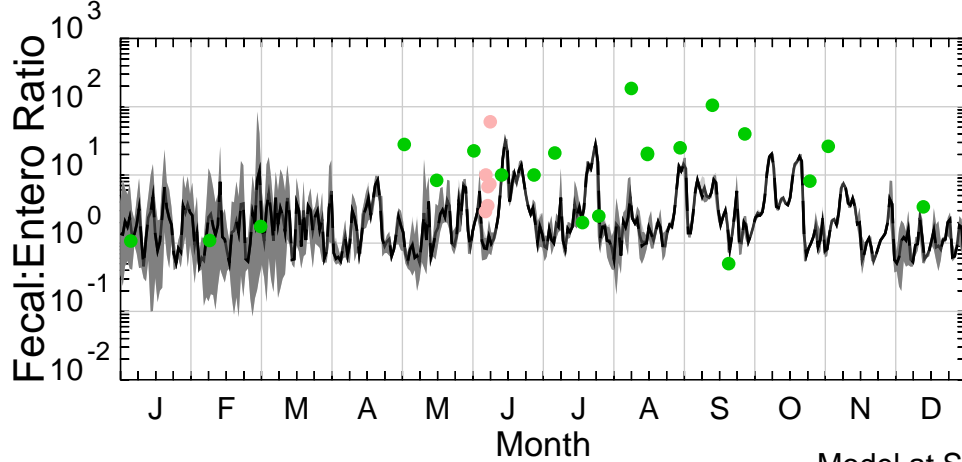
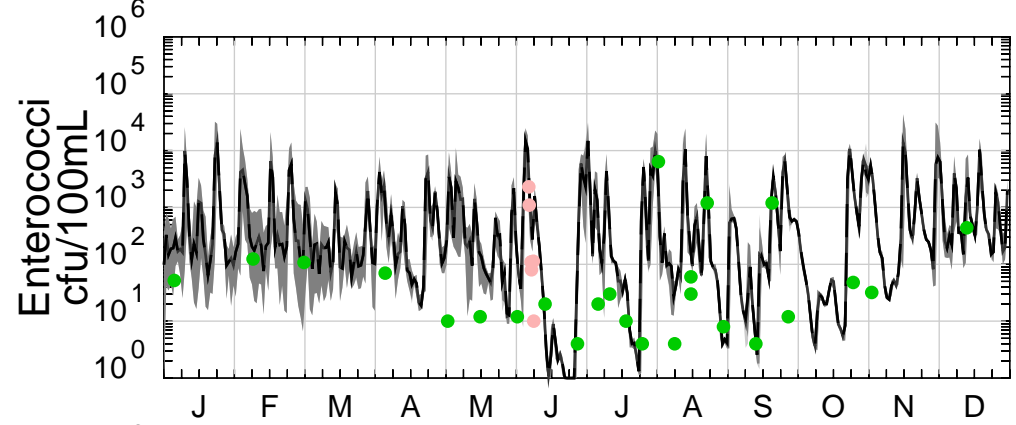
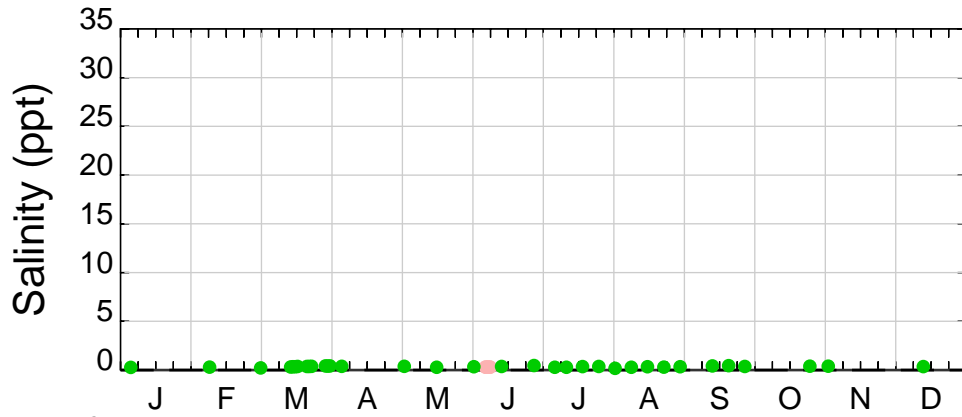
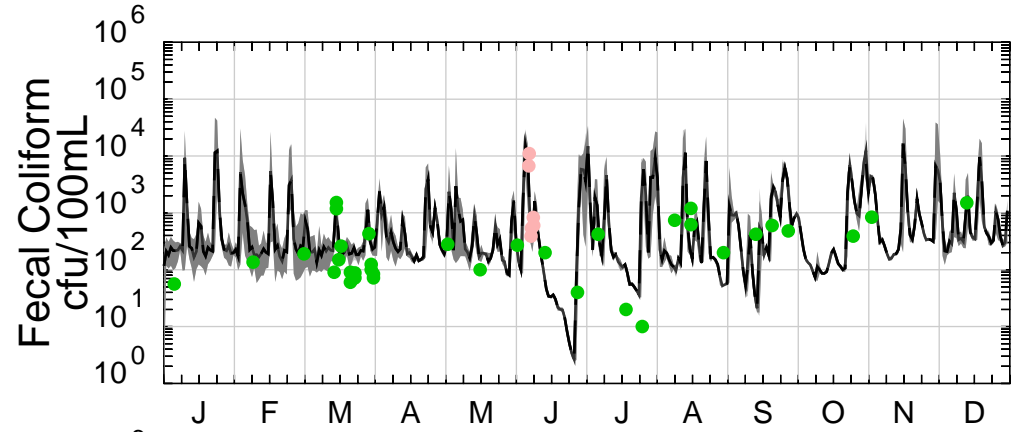
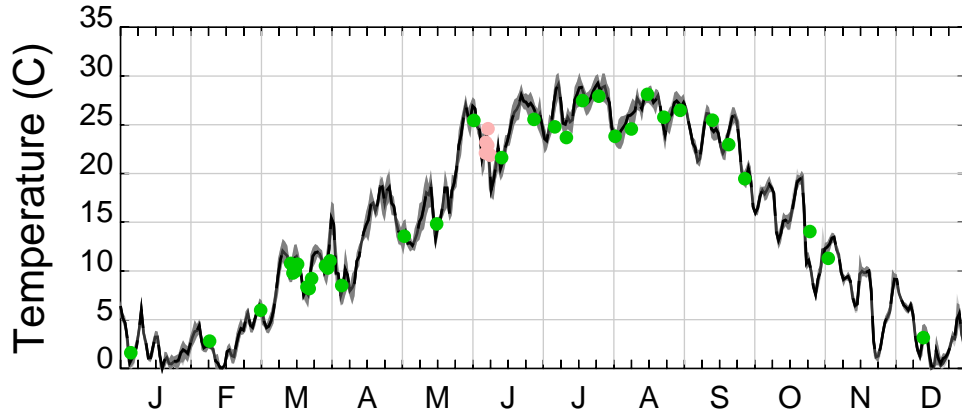
Station: B22



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

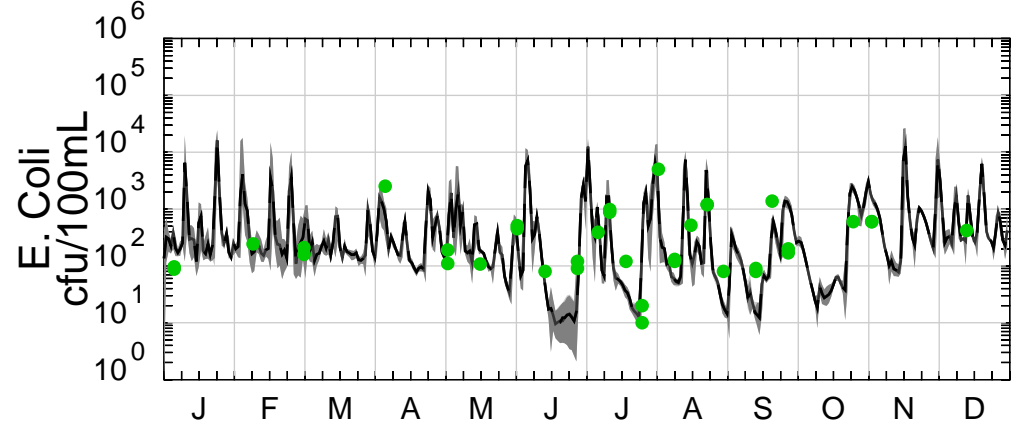
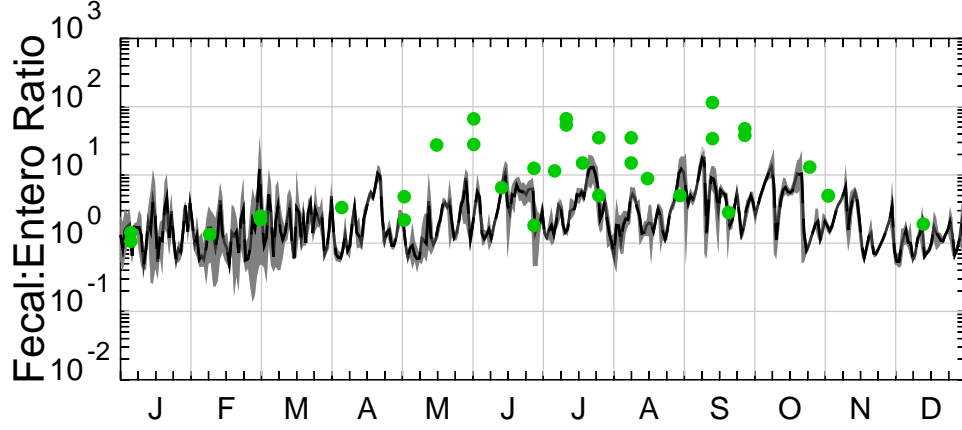
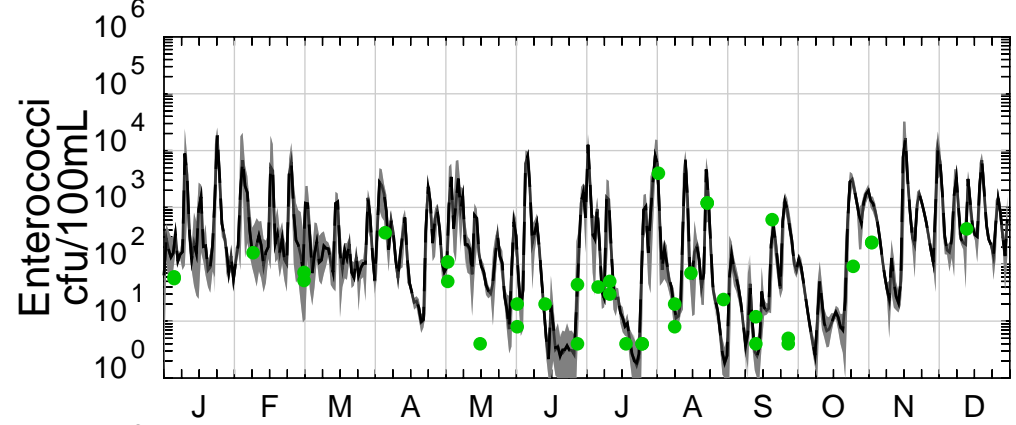
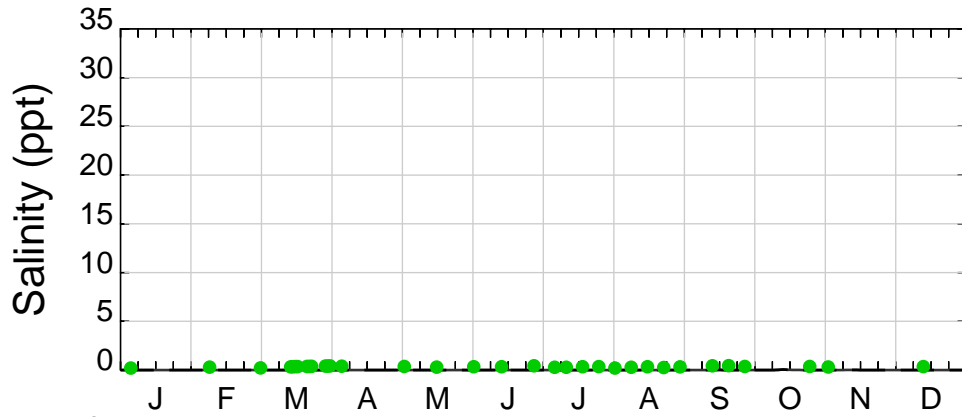
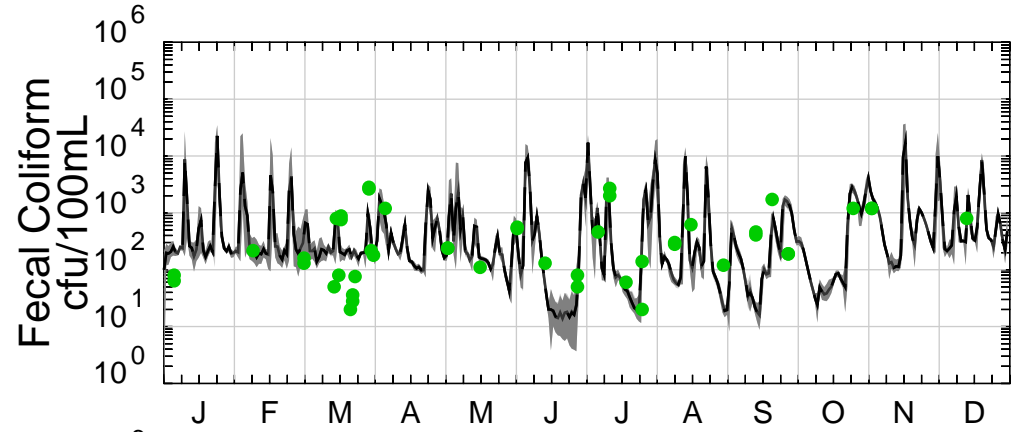
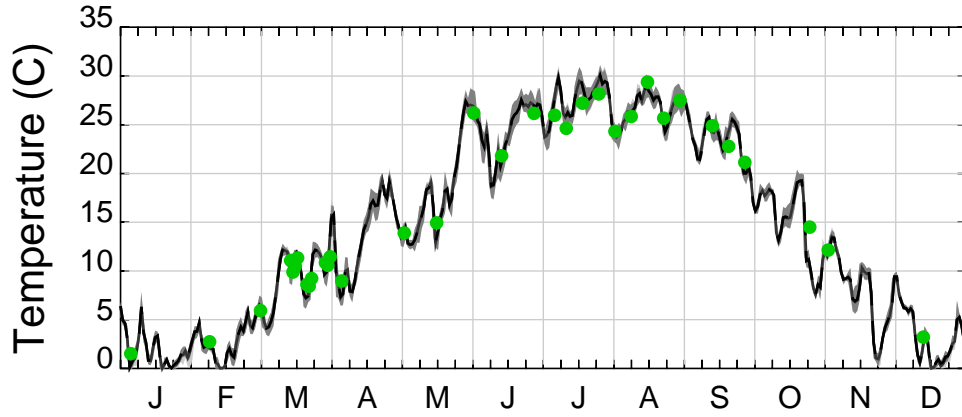
Station: 4



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Station: 5

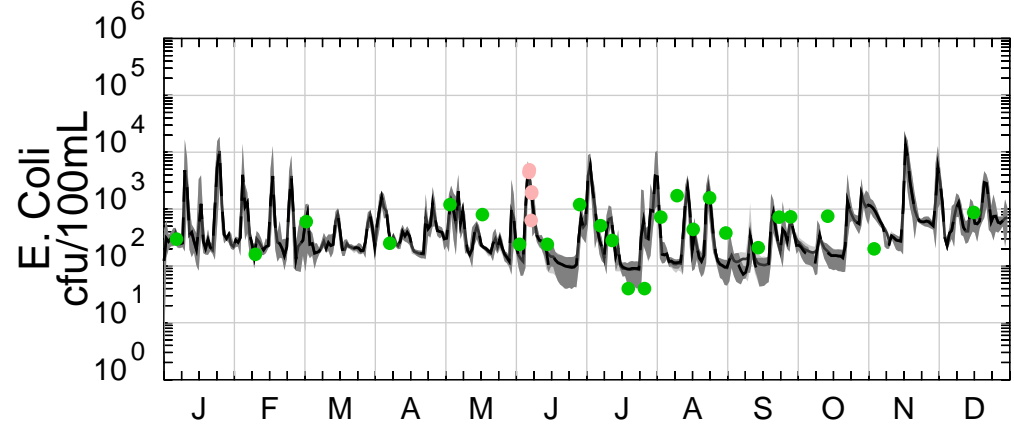
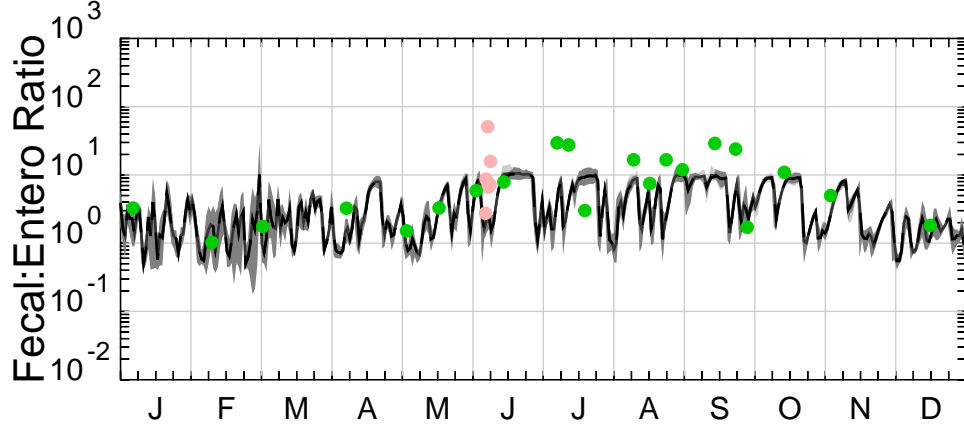
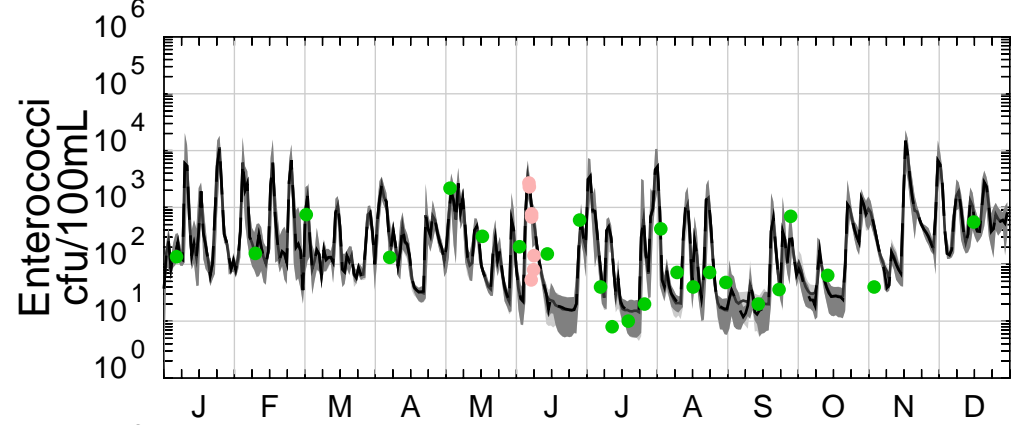
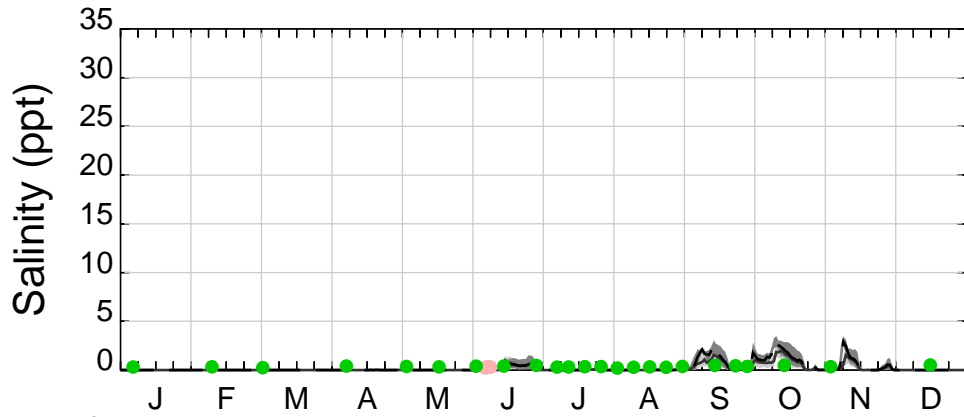
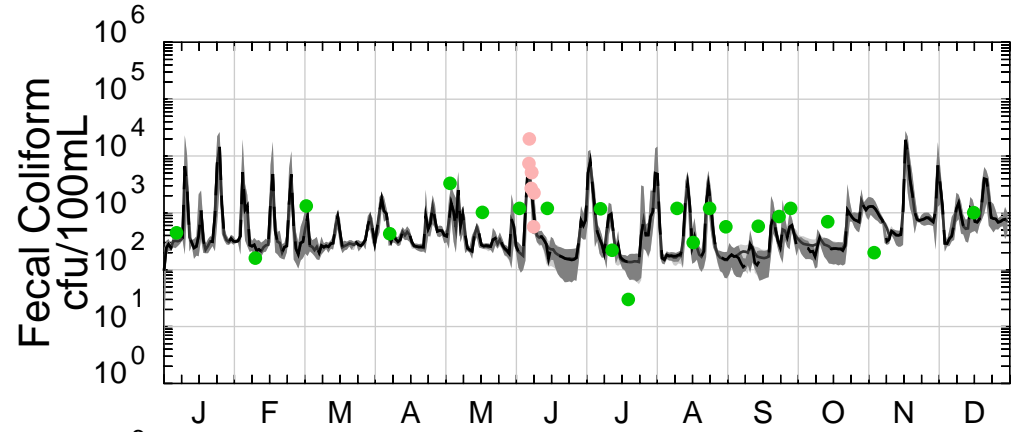
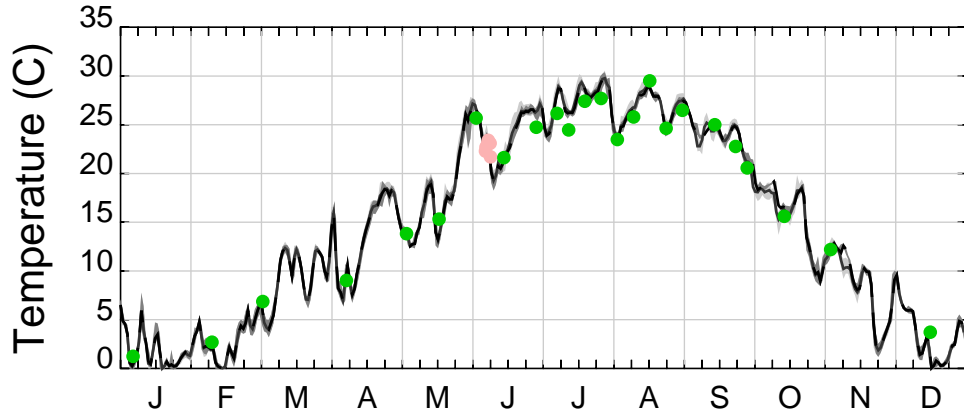


Model = 2016
 Data = 2016

— Model at Surface
 - - Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Station: 7

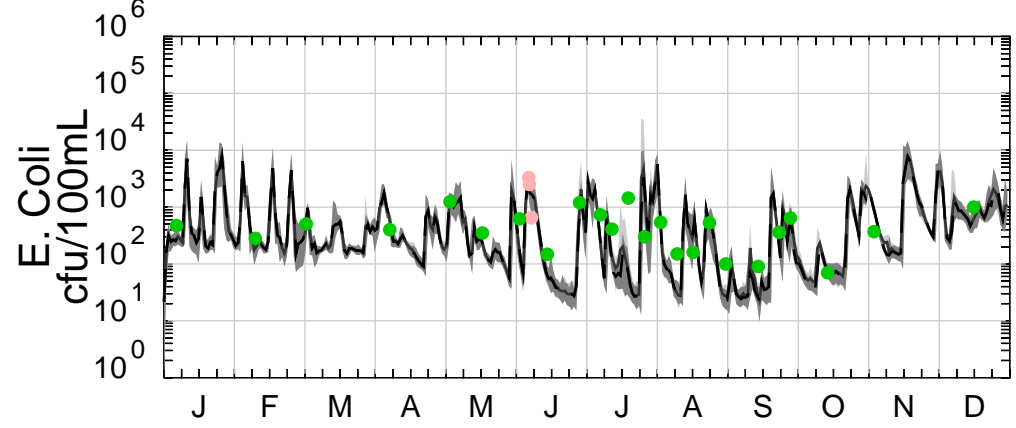
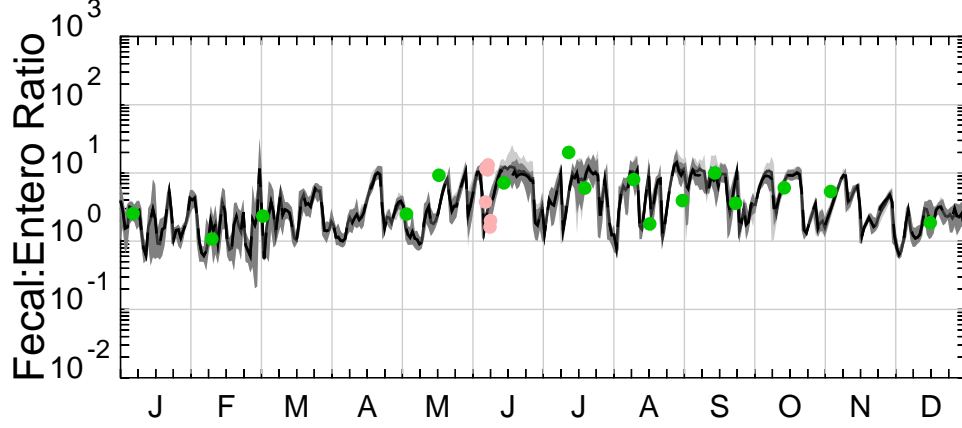
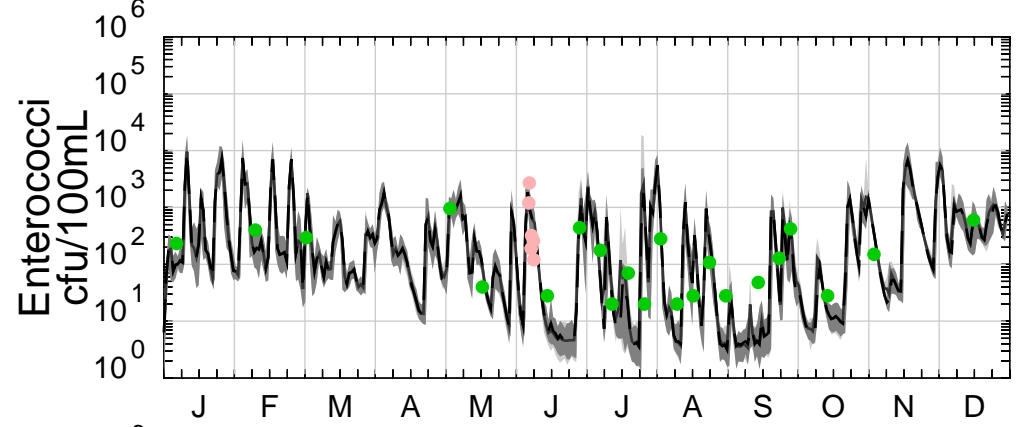
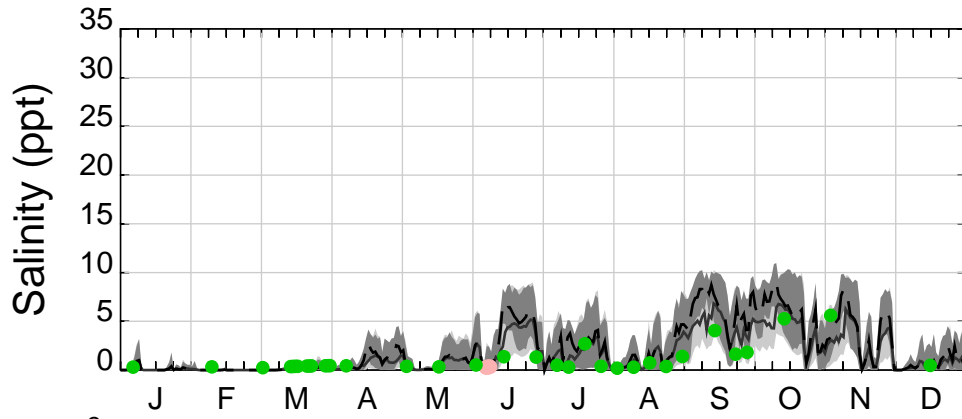
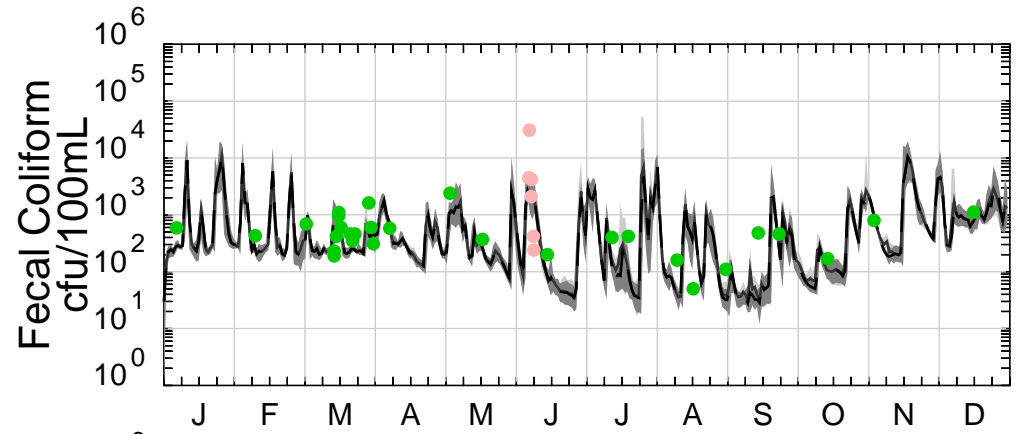
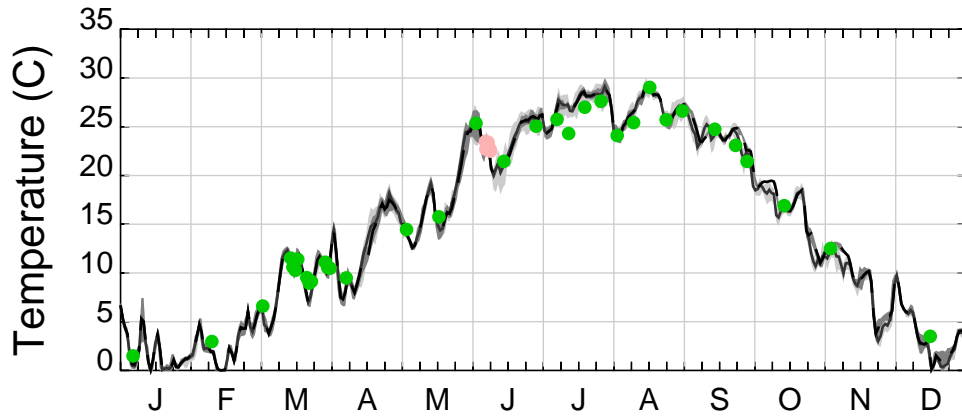


Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Station: 8

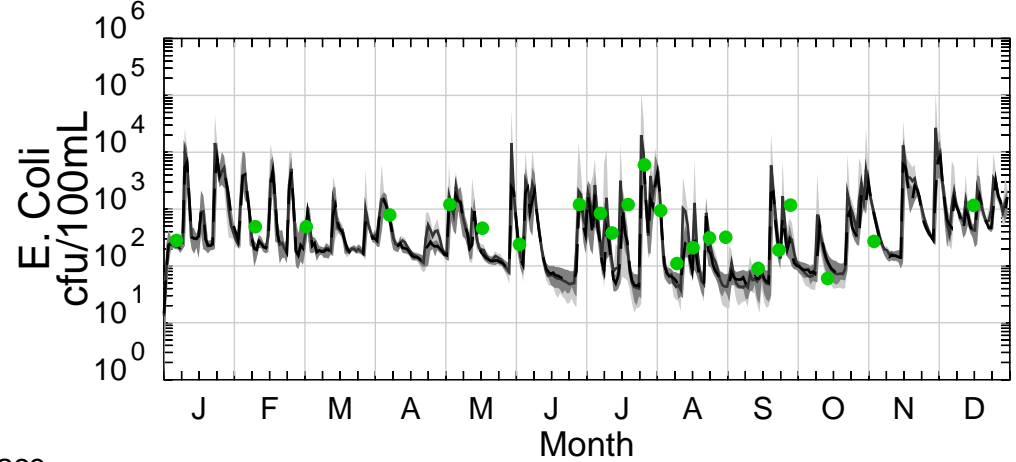
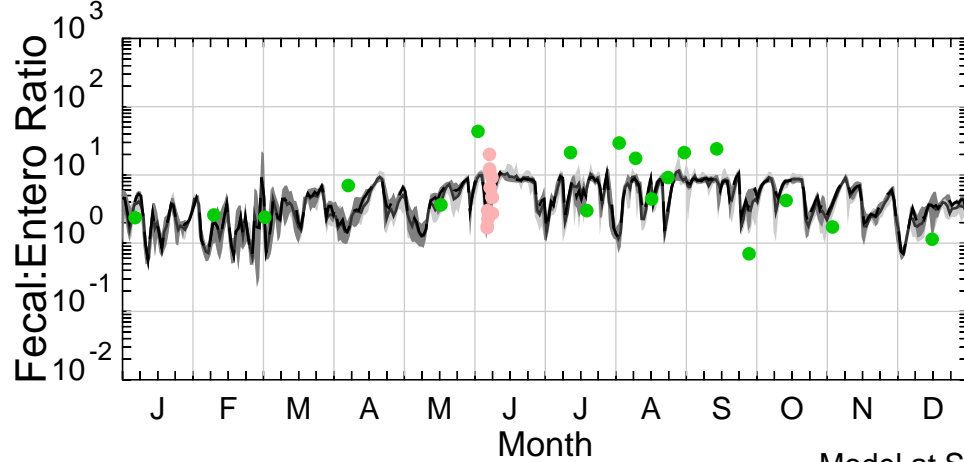
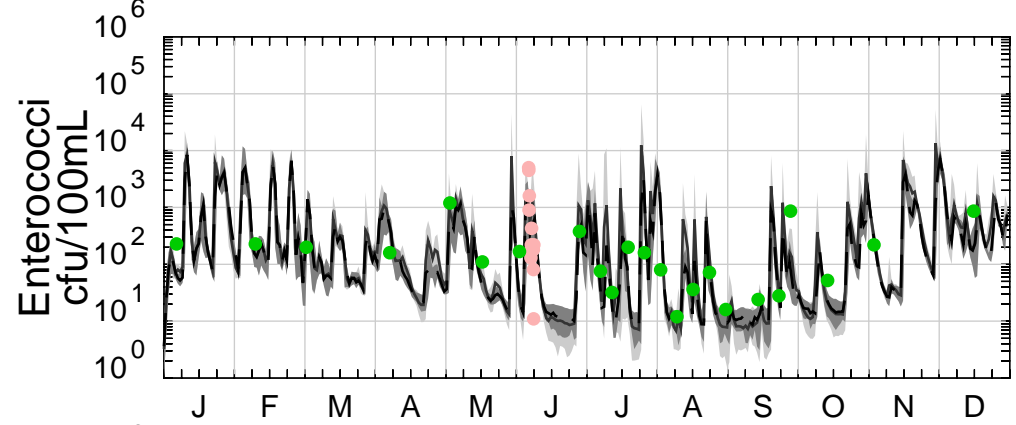
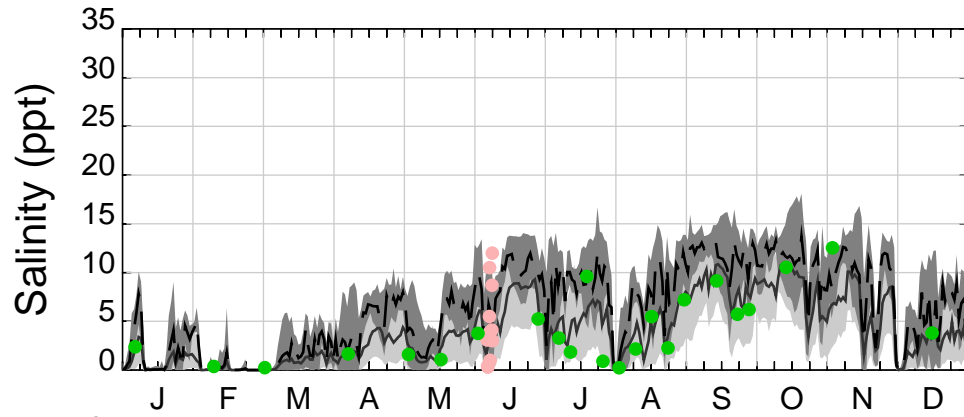
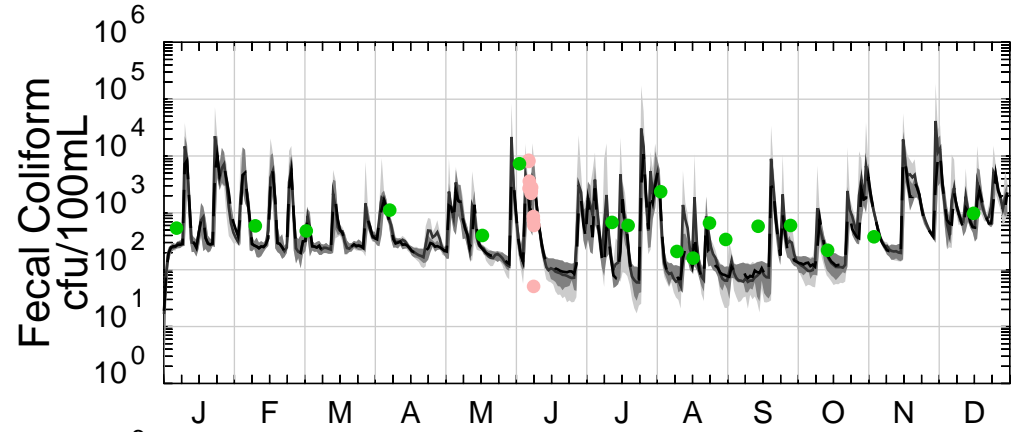
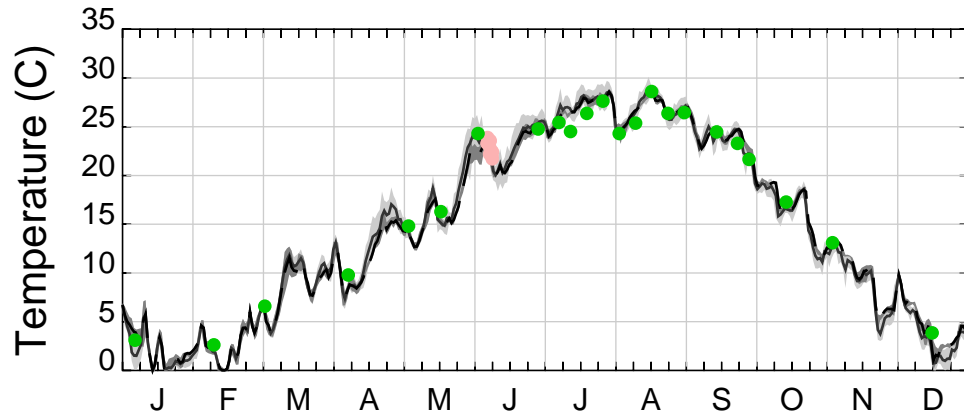


Model = 2016
 Data = 2016

— Model at Surface
 - - Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

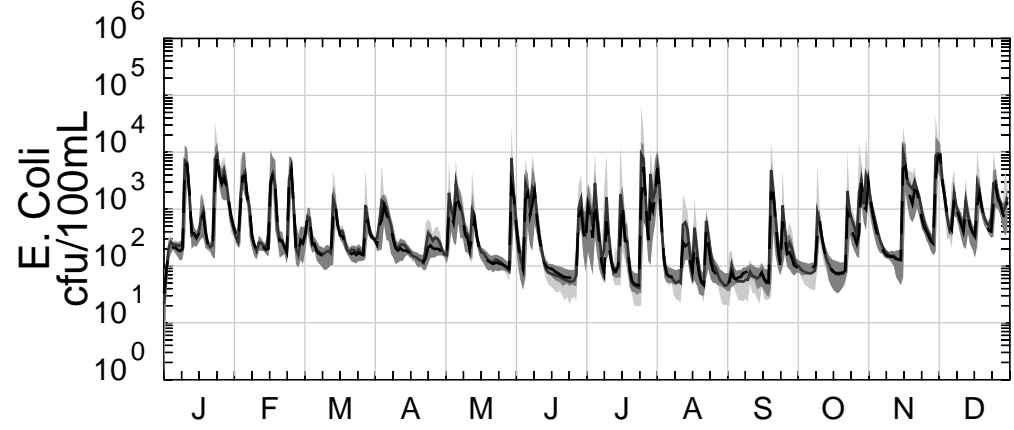
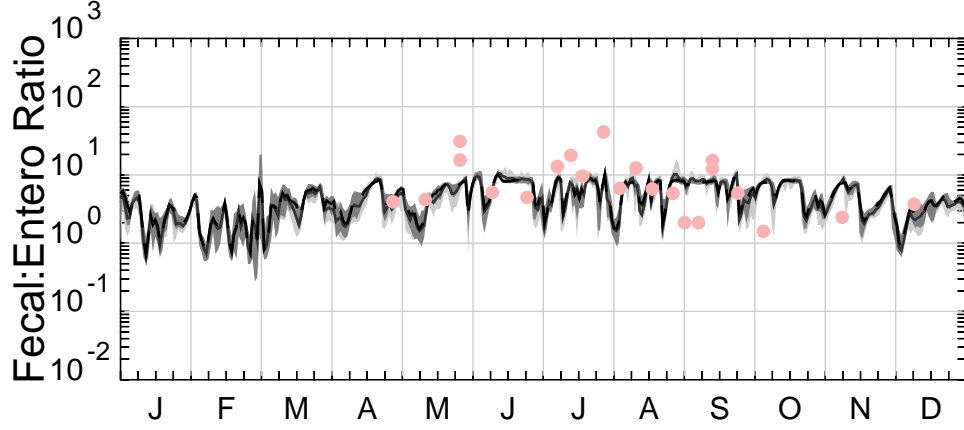
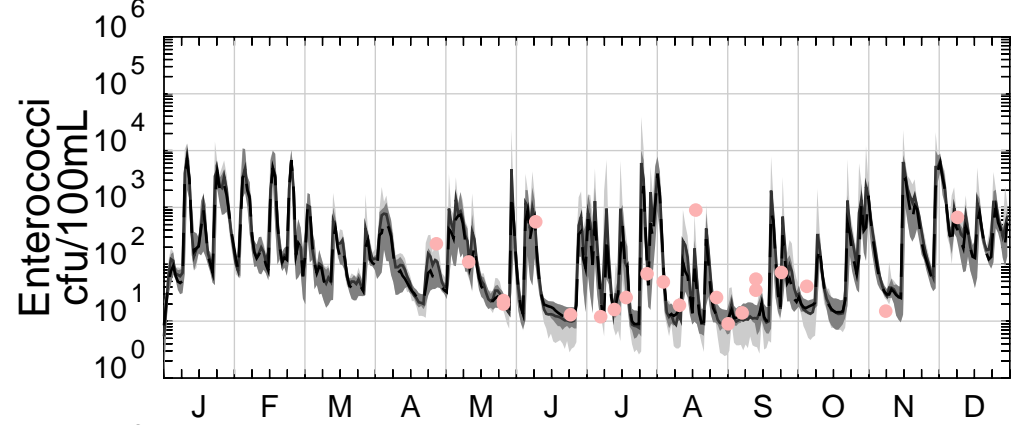
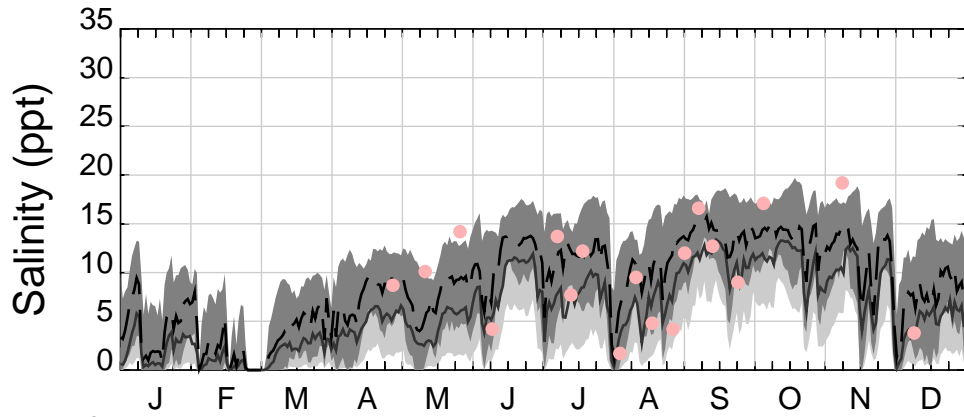
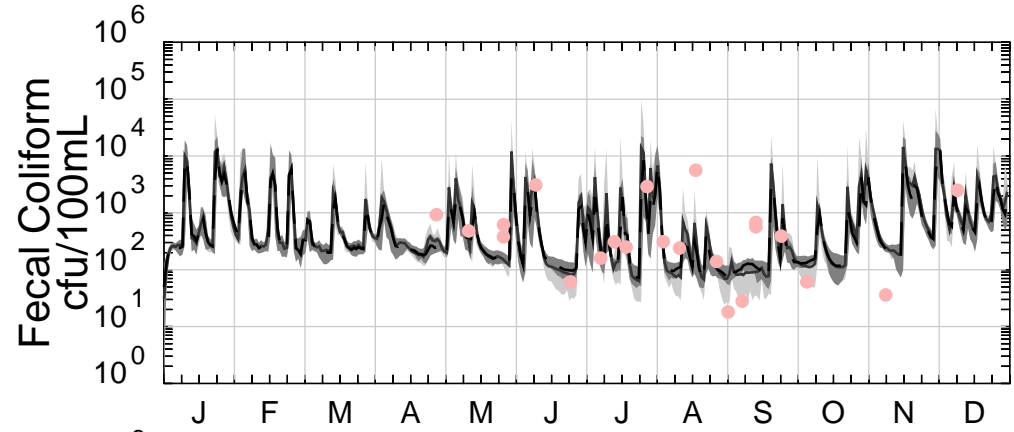
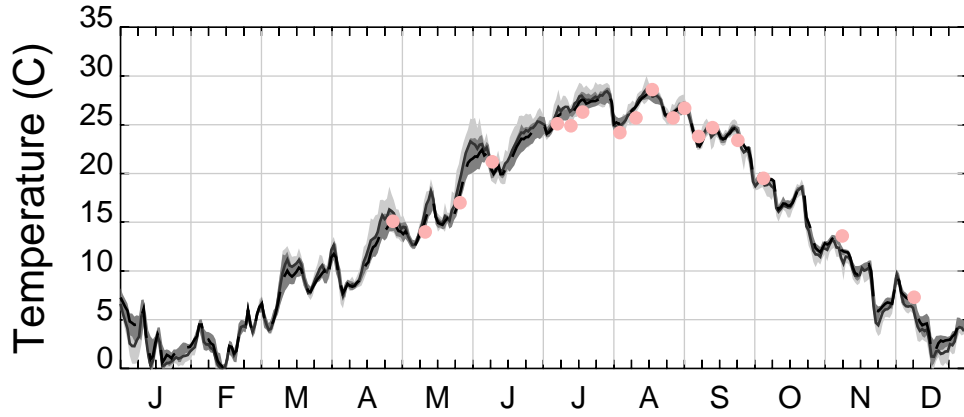
Station: 10



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- ● ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data

Station: 11

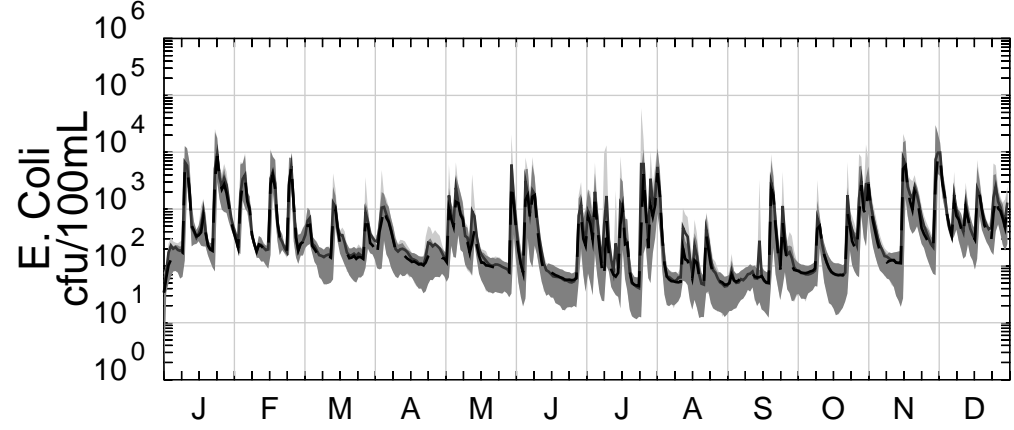
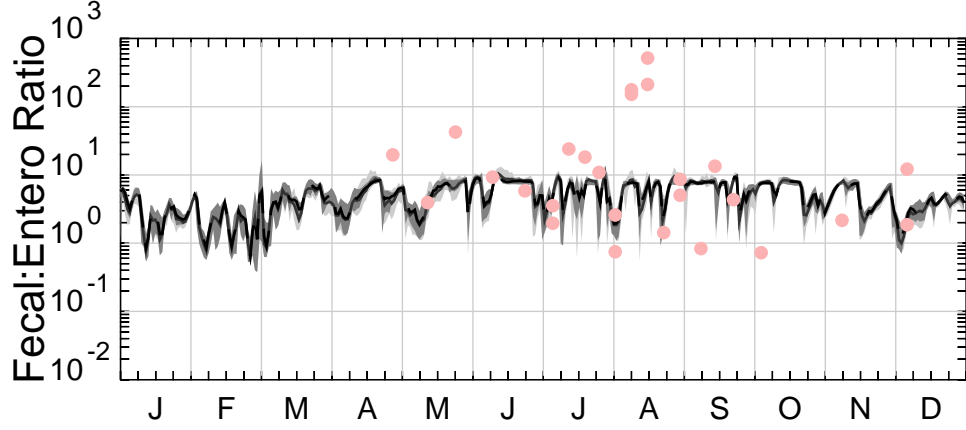
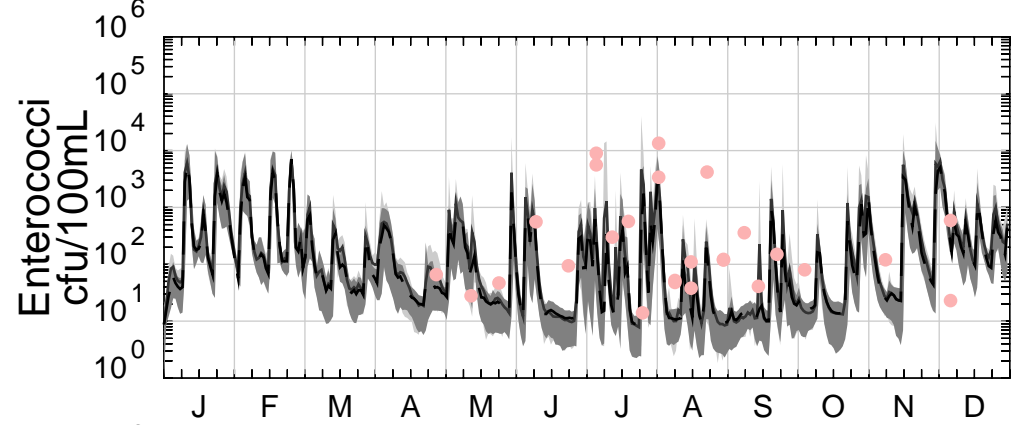
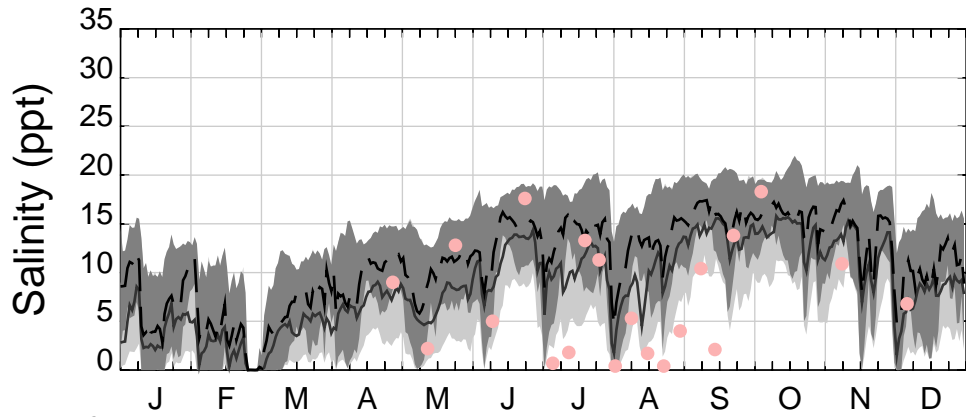
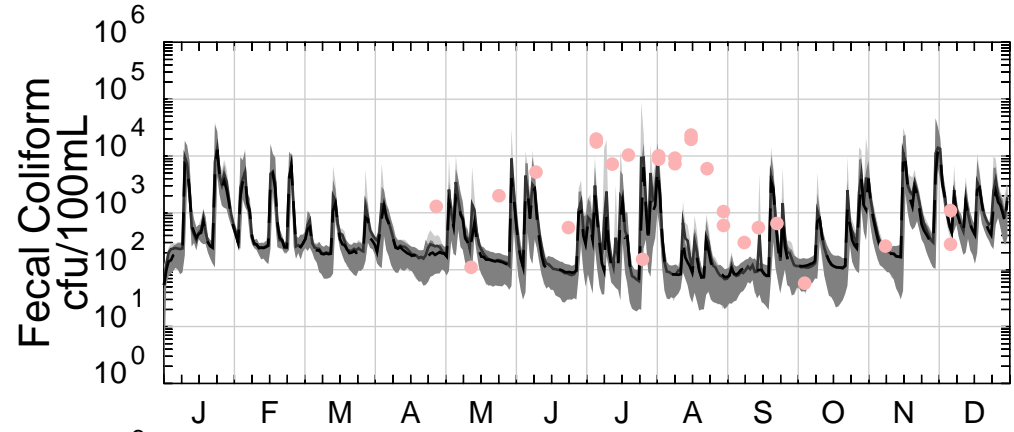
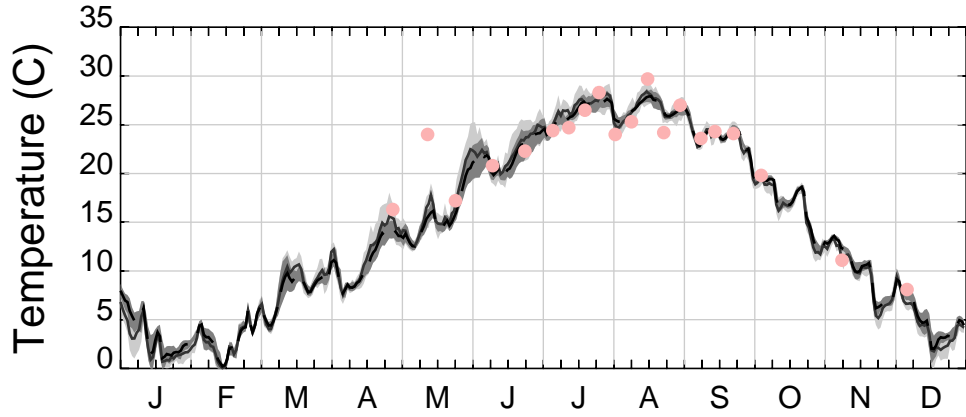


Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

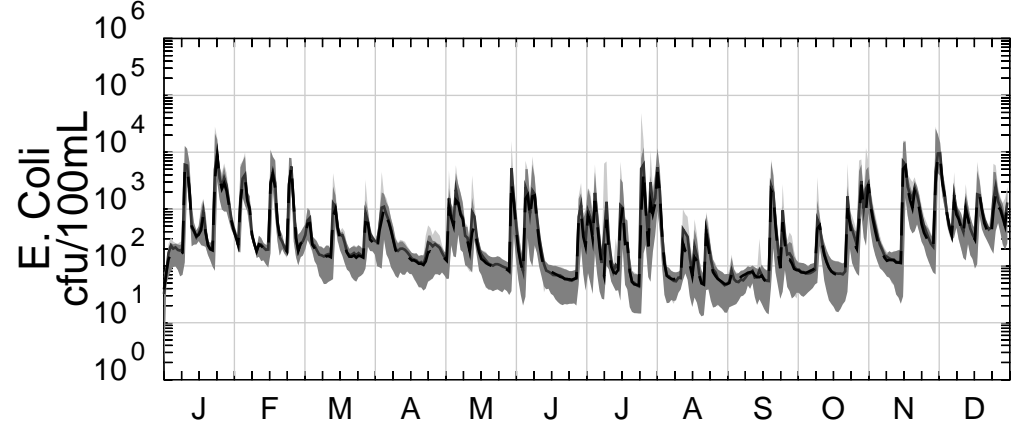
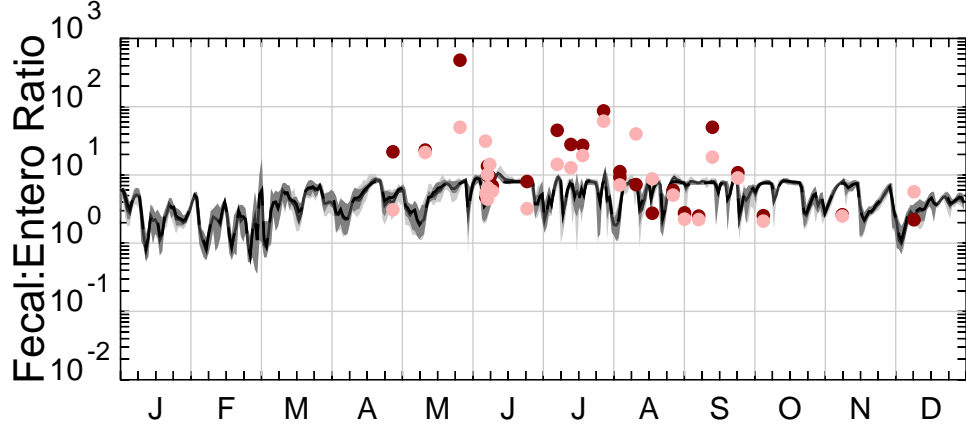
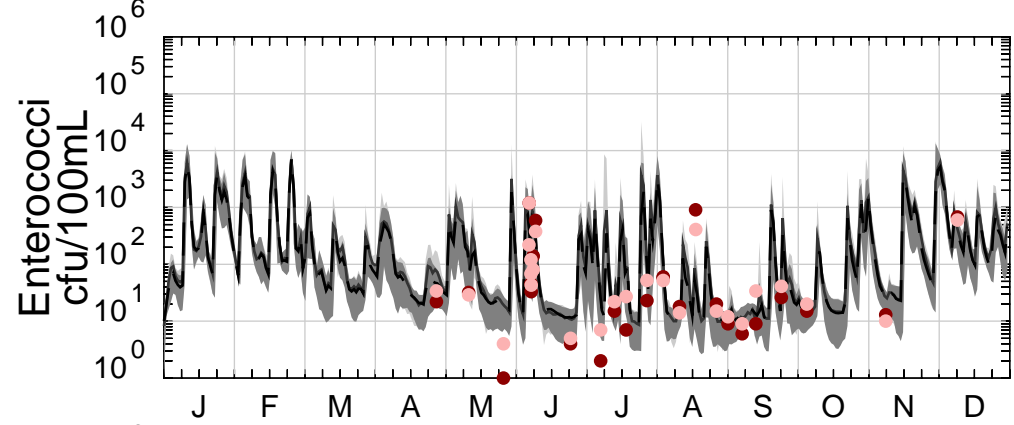
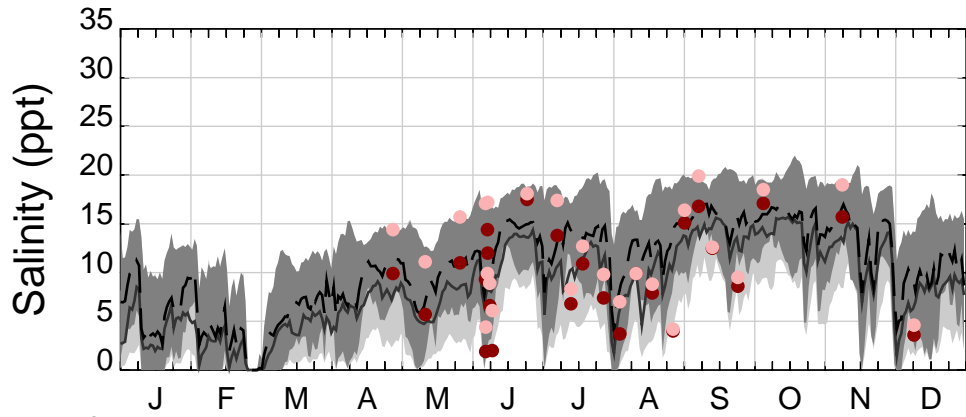
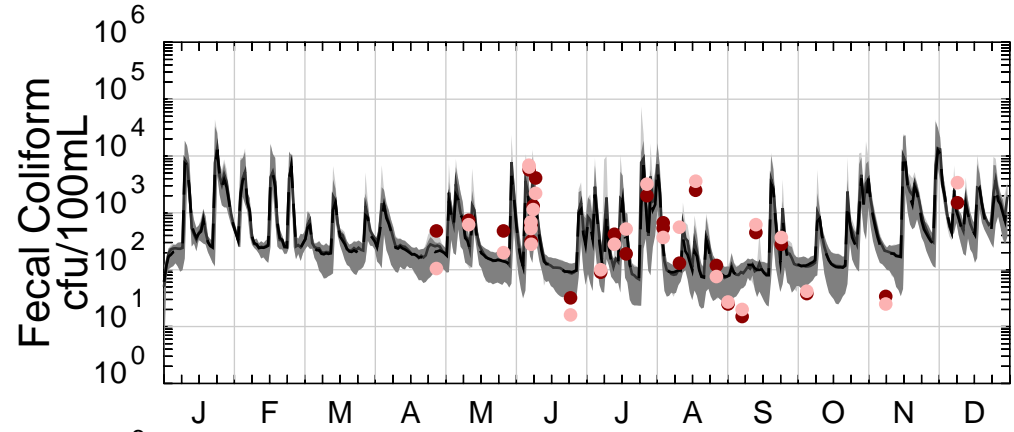
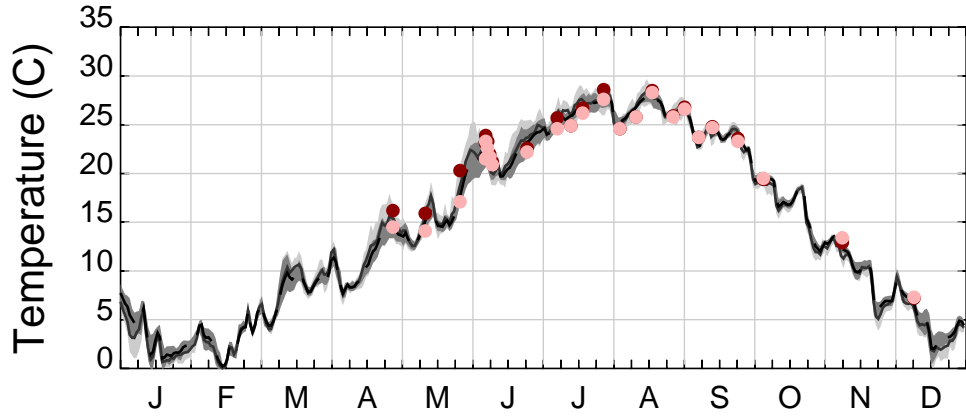
Station: B8



Model = 2016
 Data = 2016

— Model at Surface
— Model at Bottom
— Model Daily Average at Surface
— Model Daily Average at Bottom
● Surface/Mid-depth HDR Data
● Surface/Mid/Bottom NJHDG Data

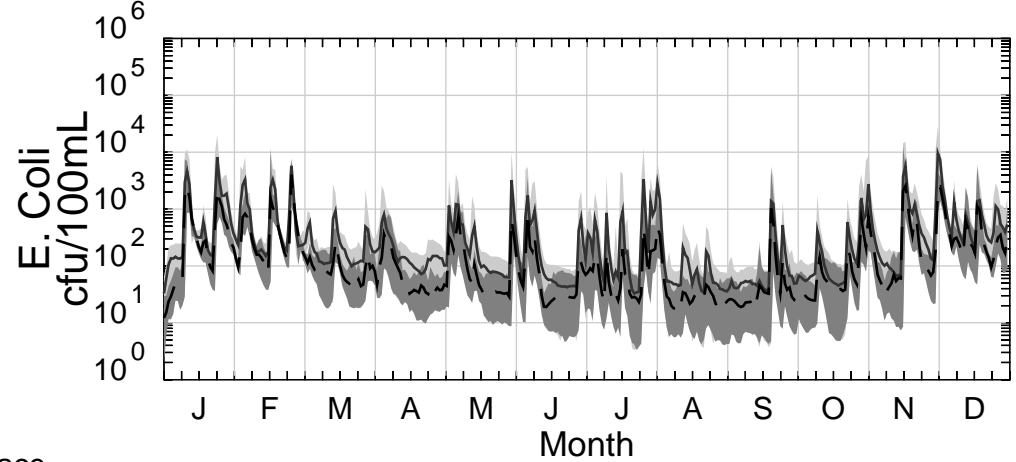
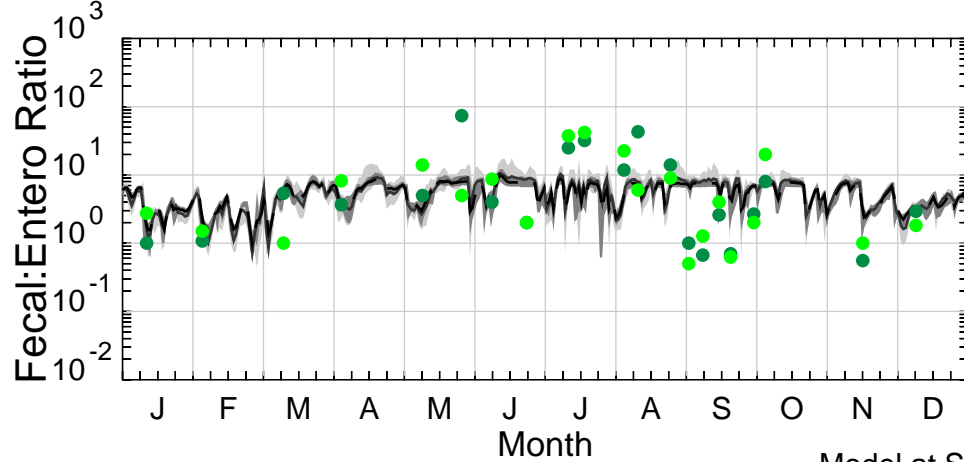
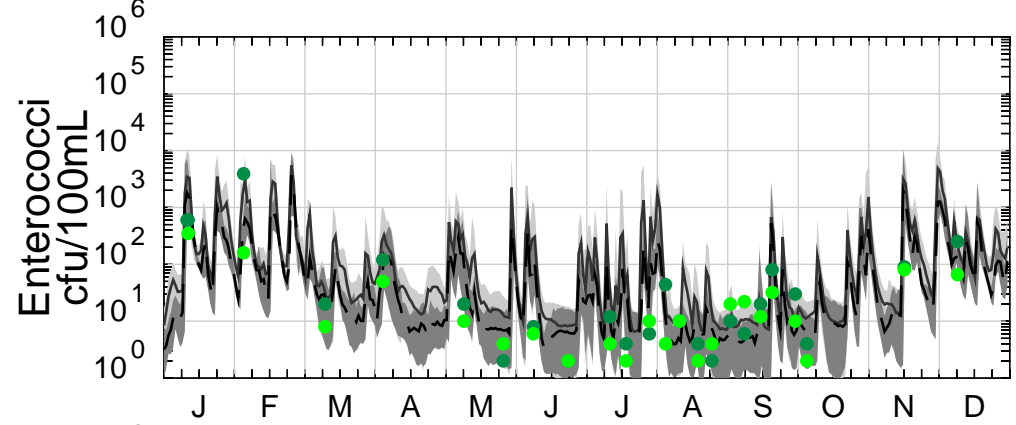
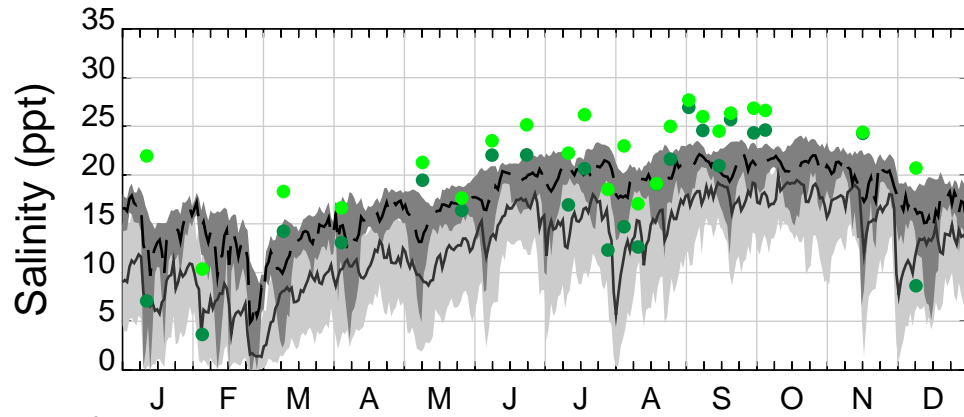
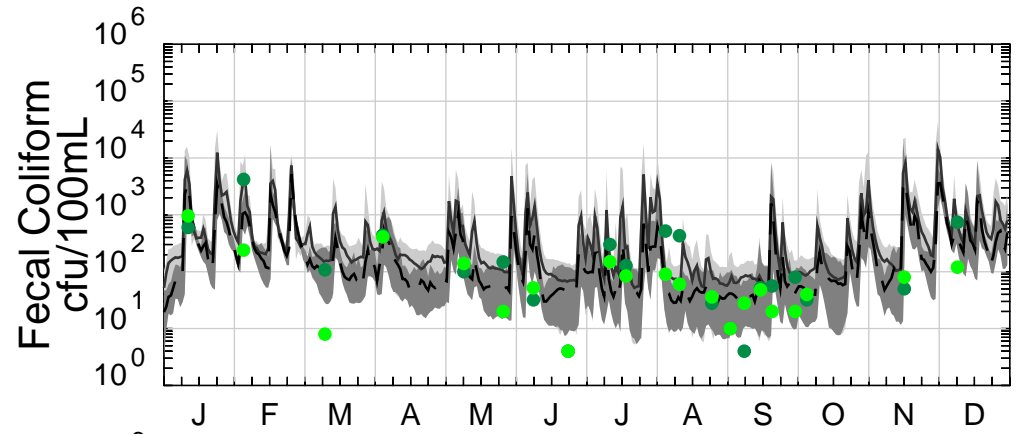
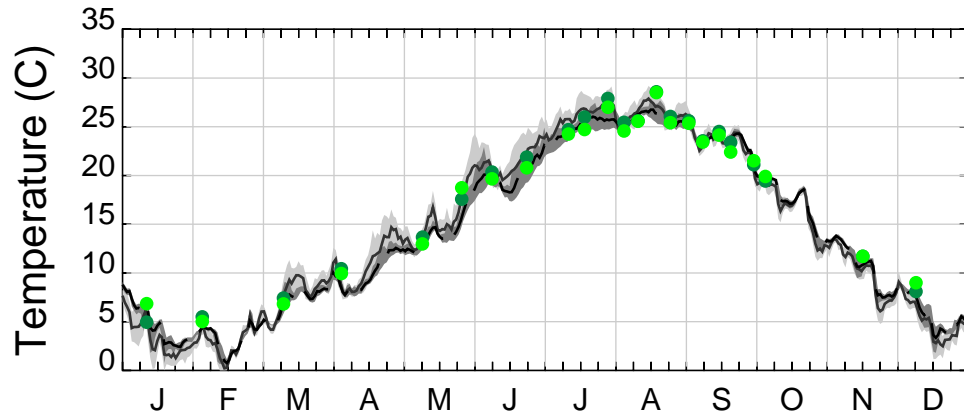
Station: B6



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

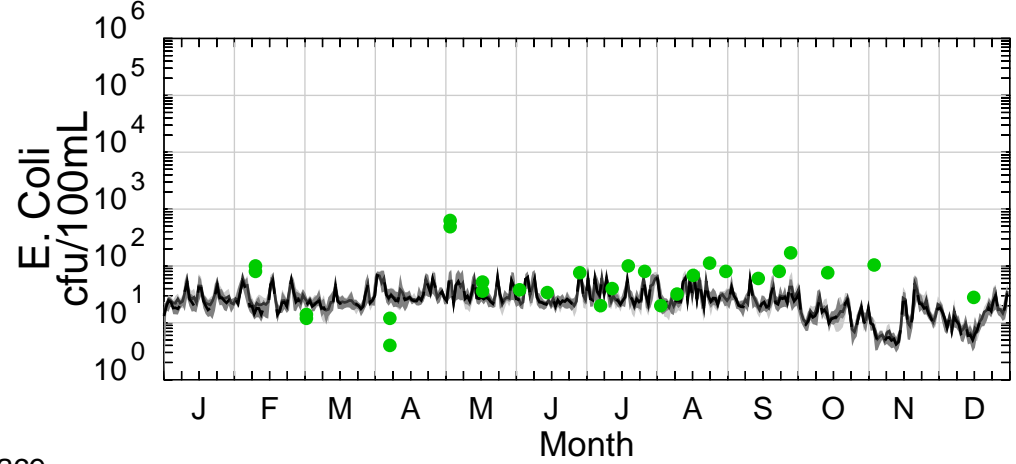
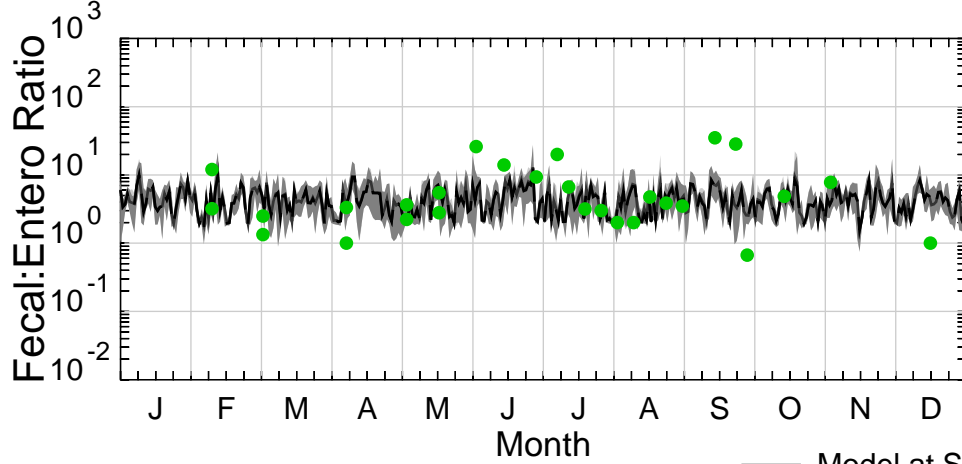
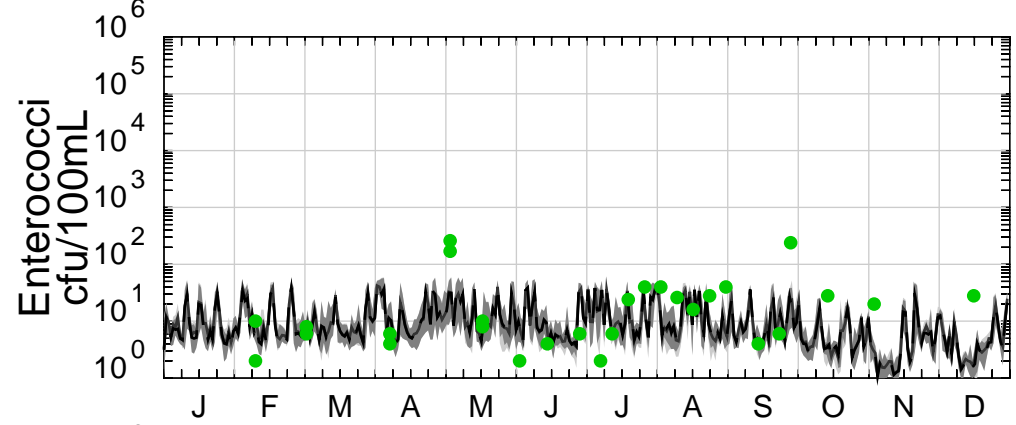
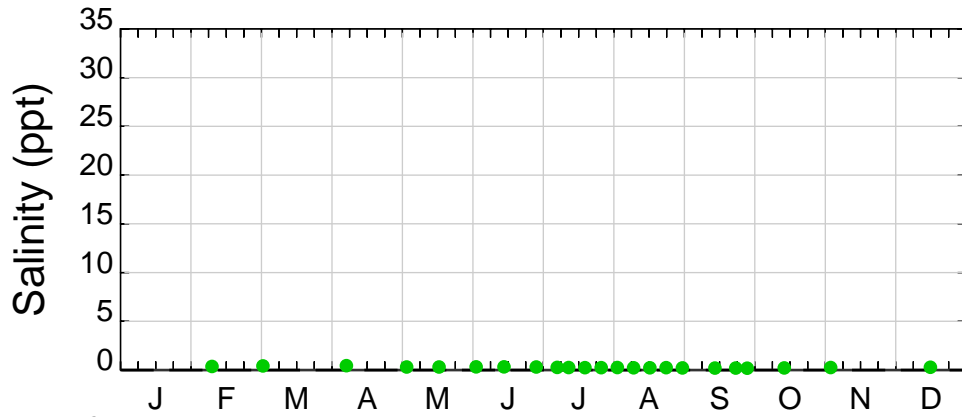
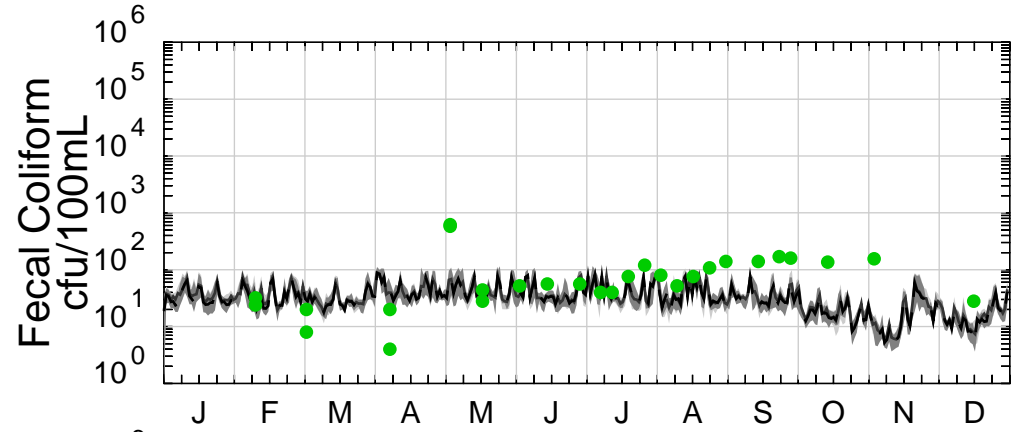
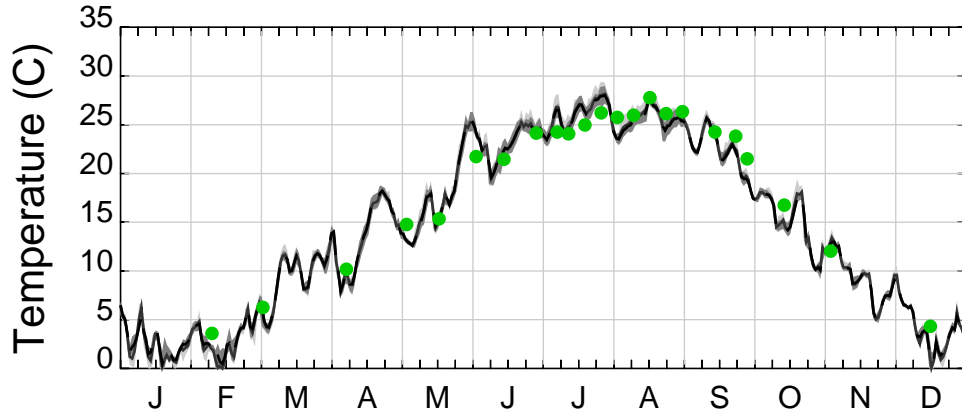
Station: 12



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

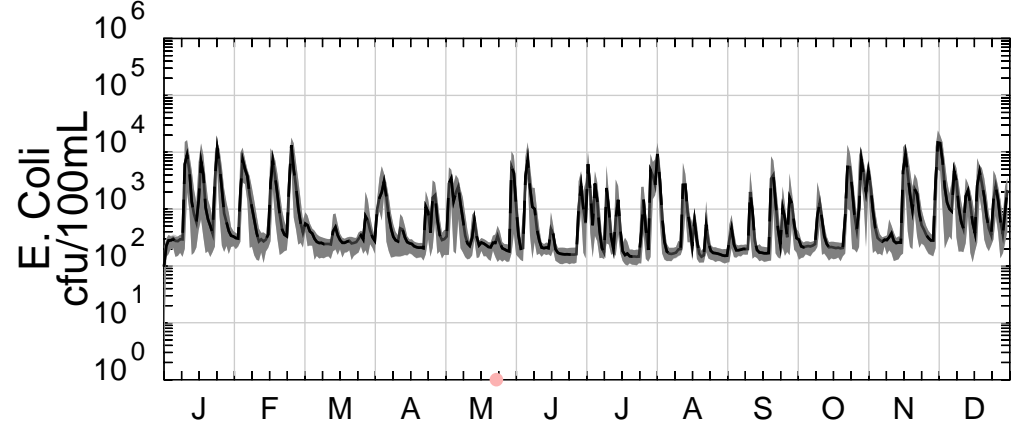
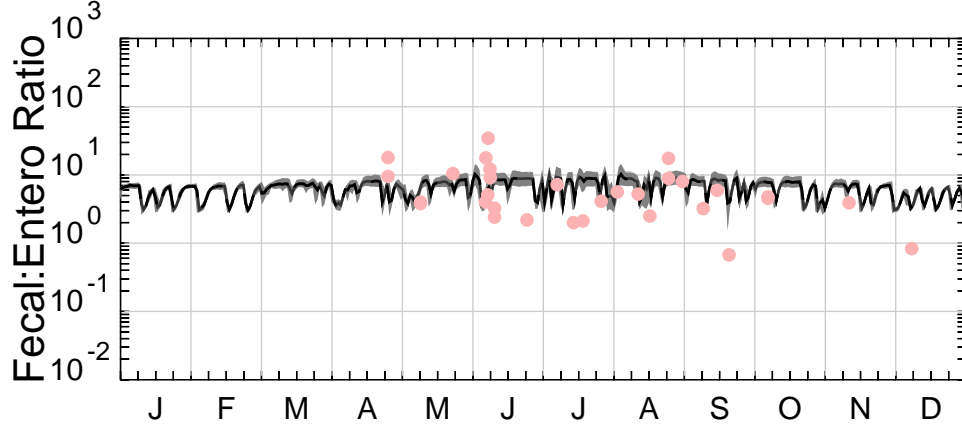
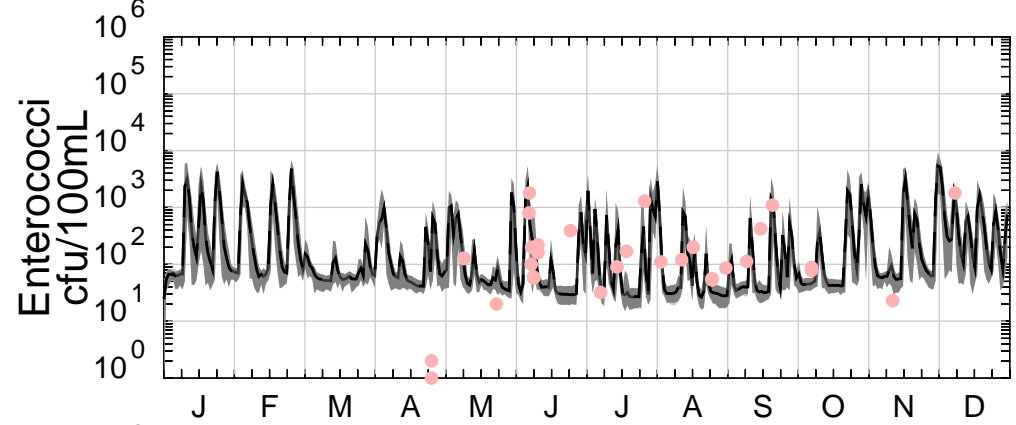
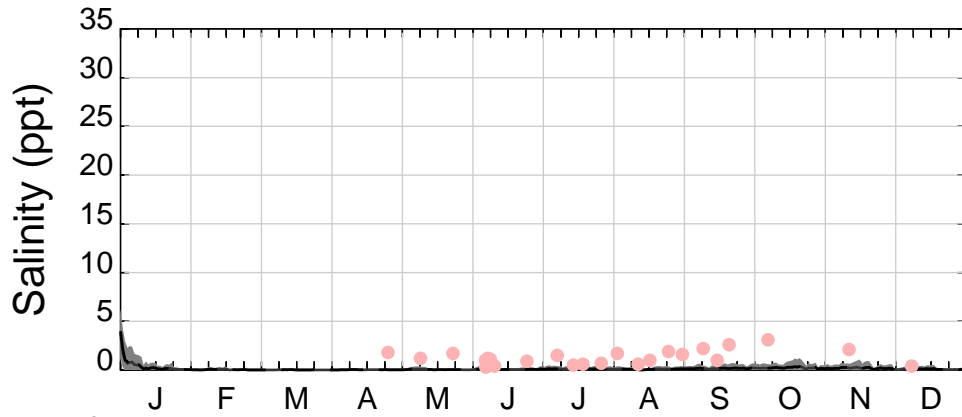
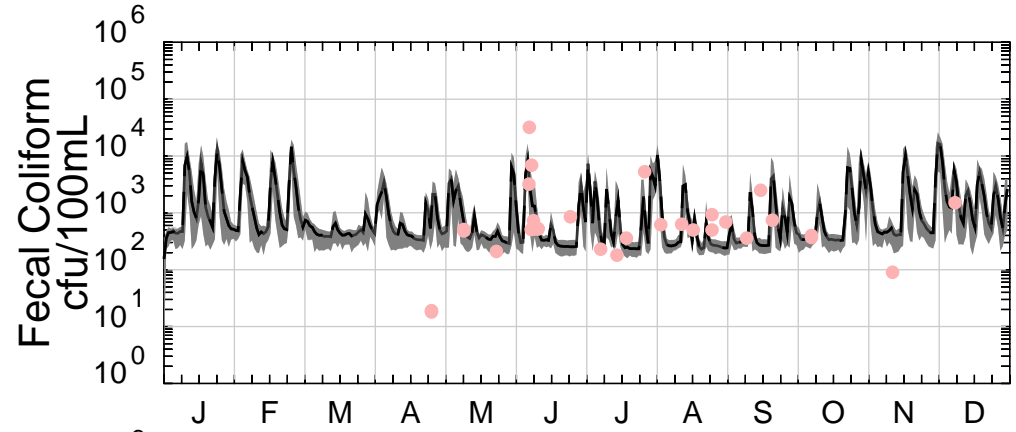
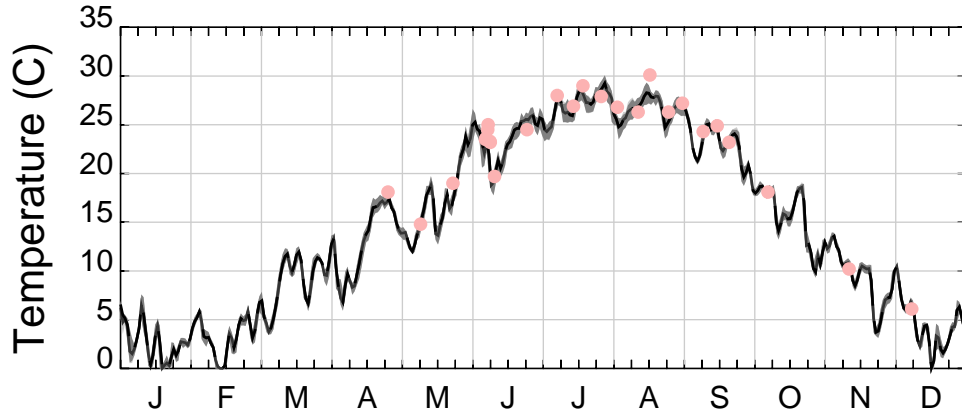
Station: 13



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

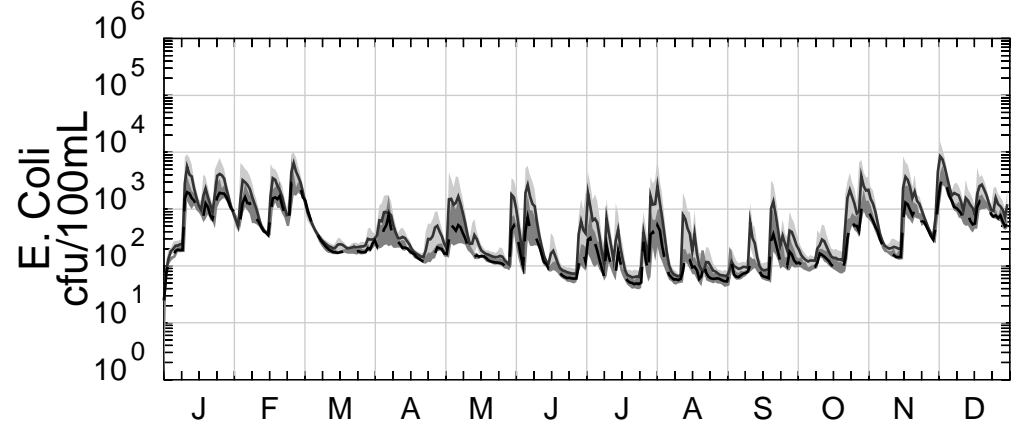
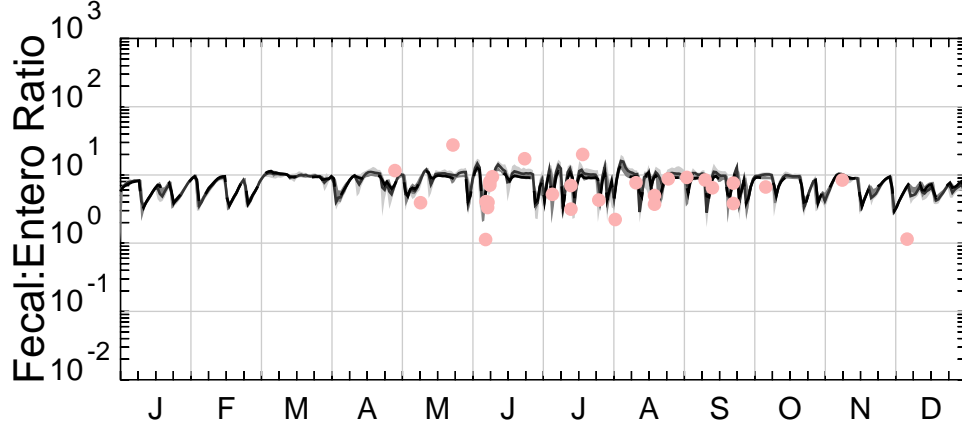
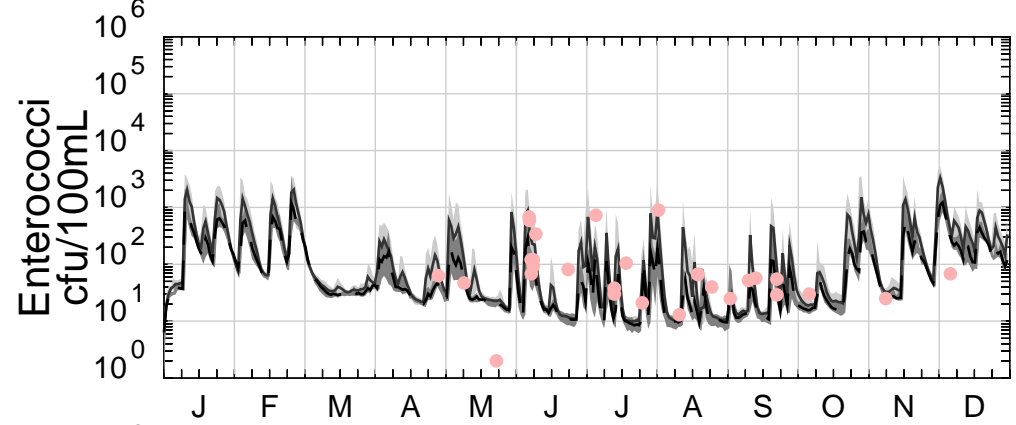
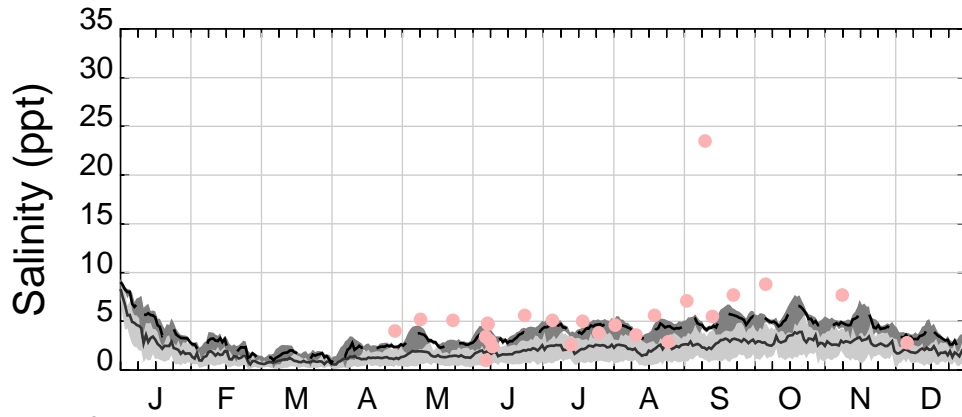
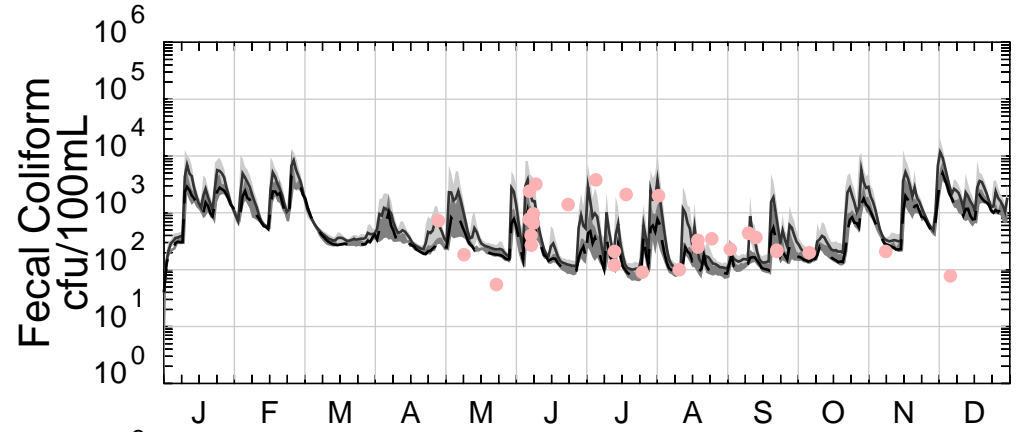
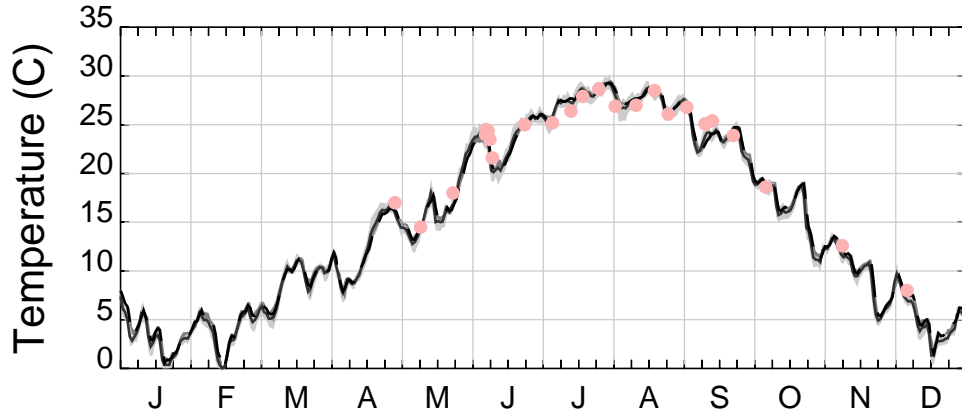
Station: B1



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

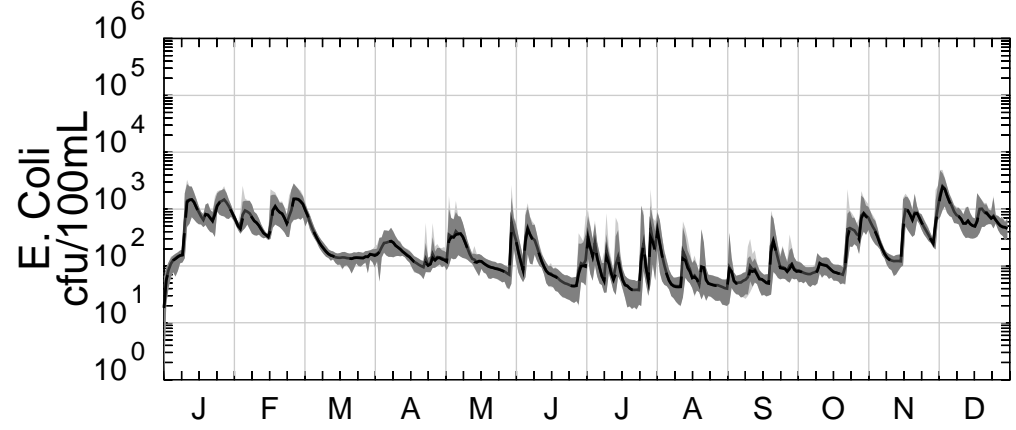
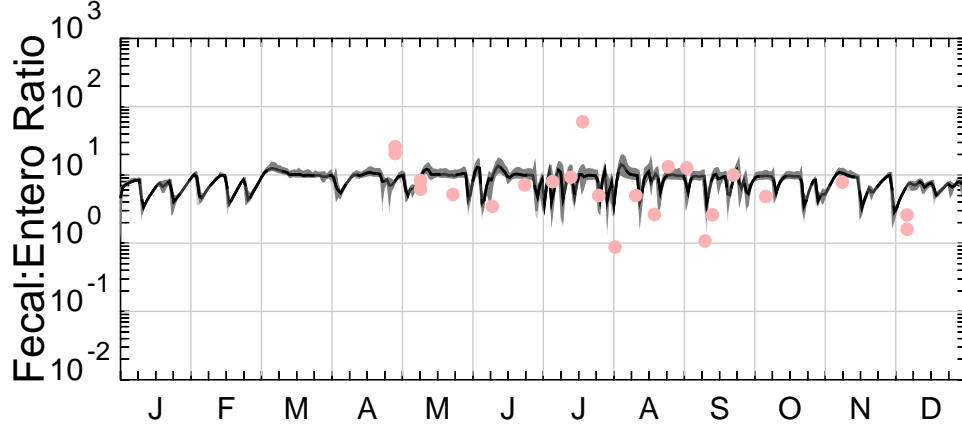
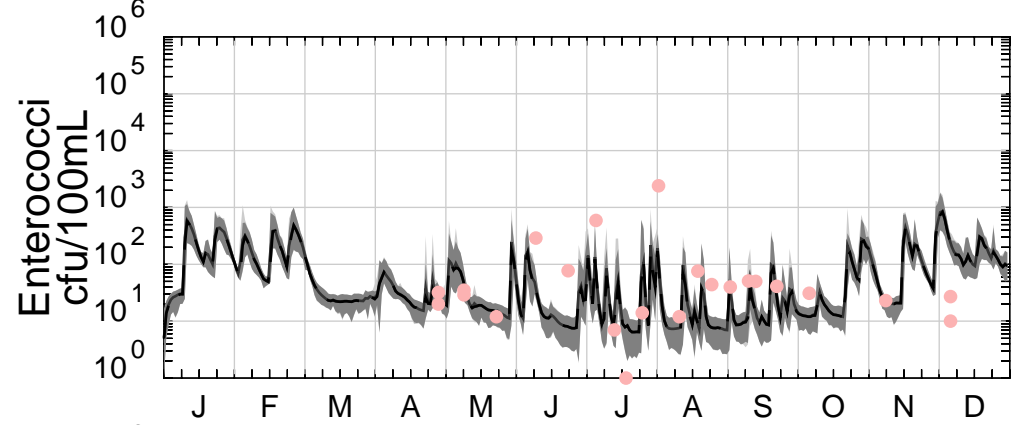
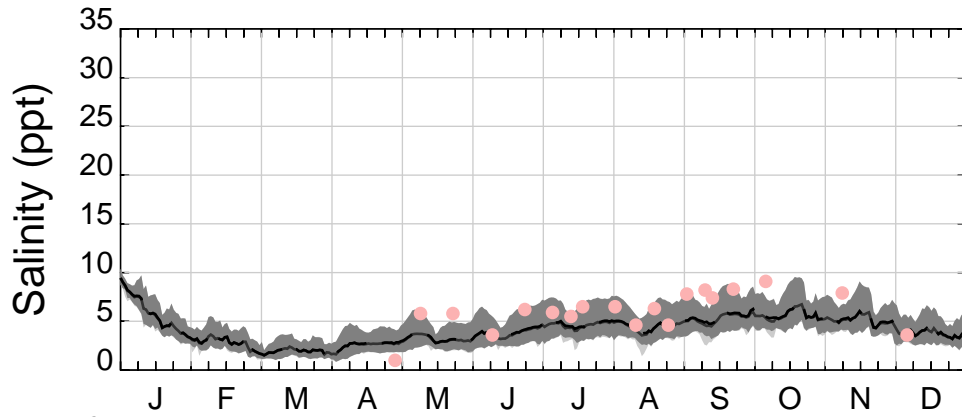
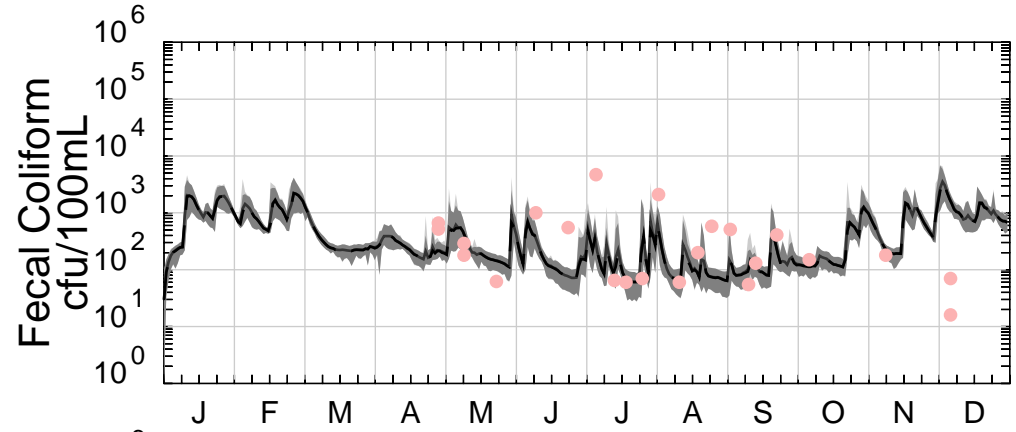
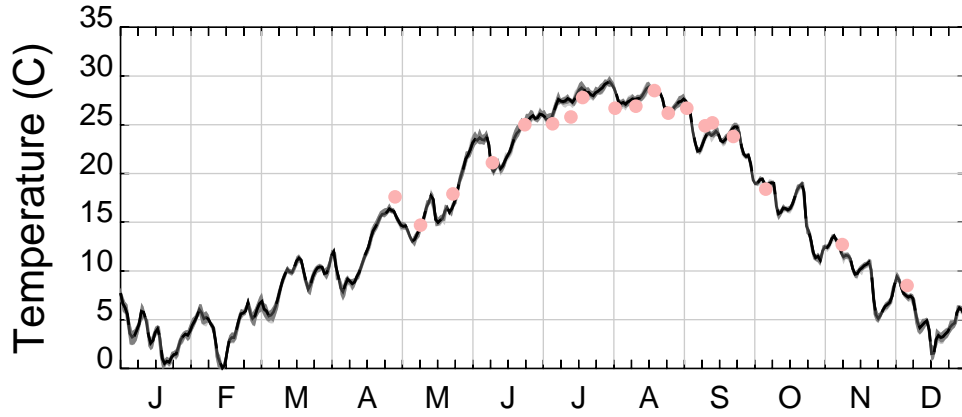
Station: B2



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

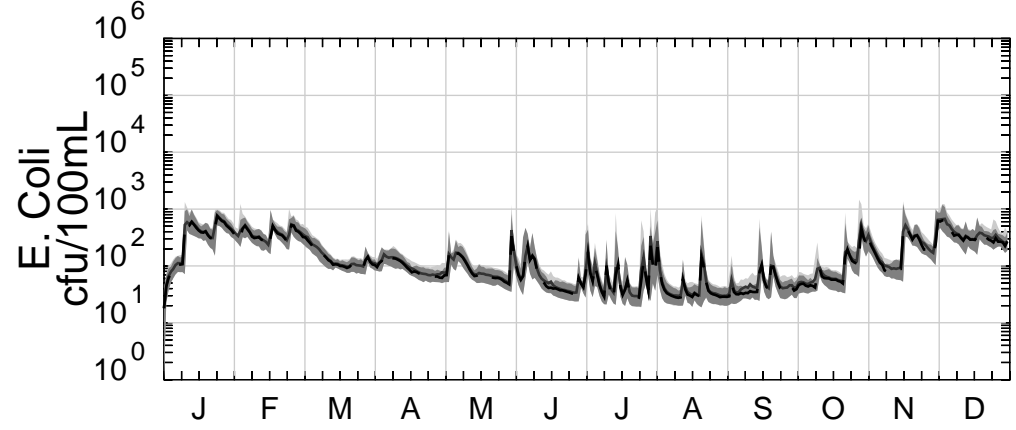
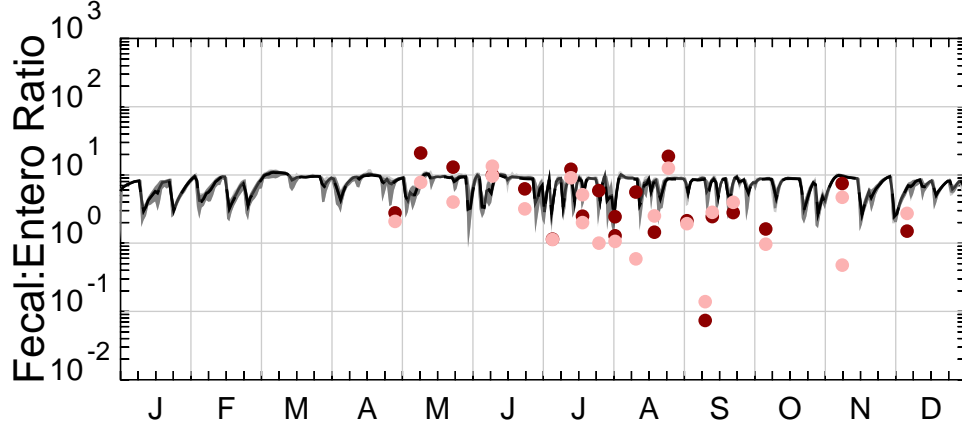
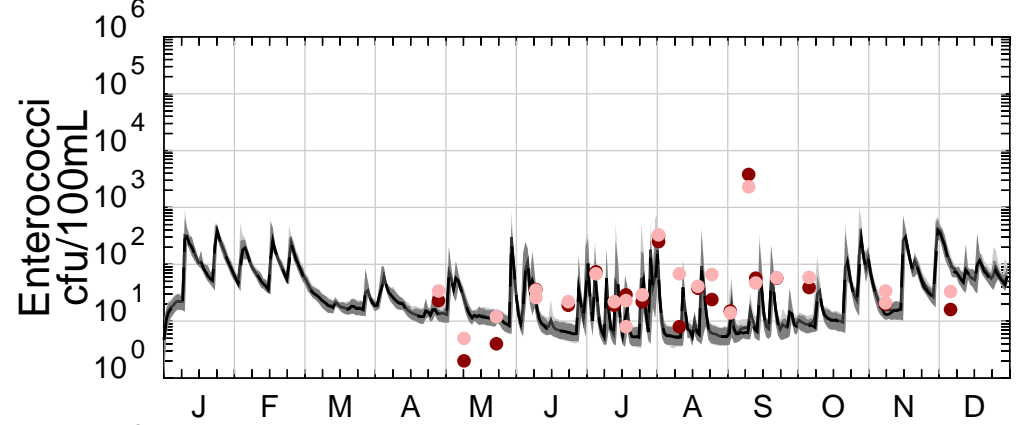
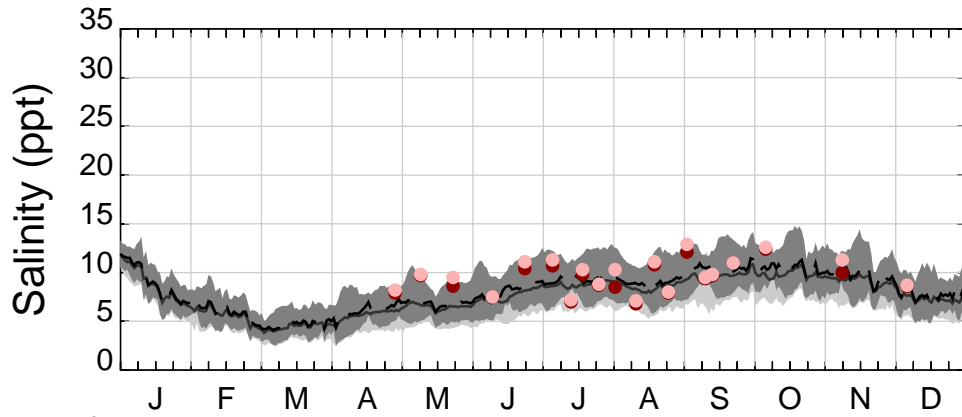
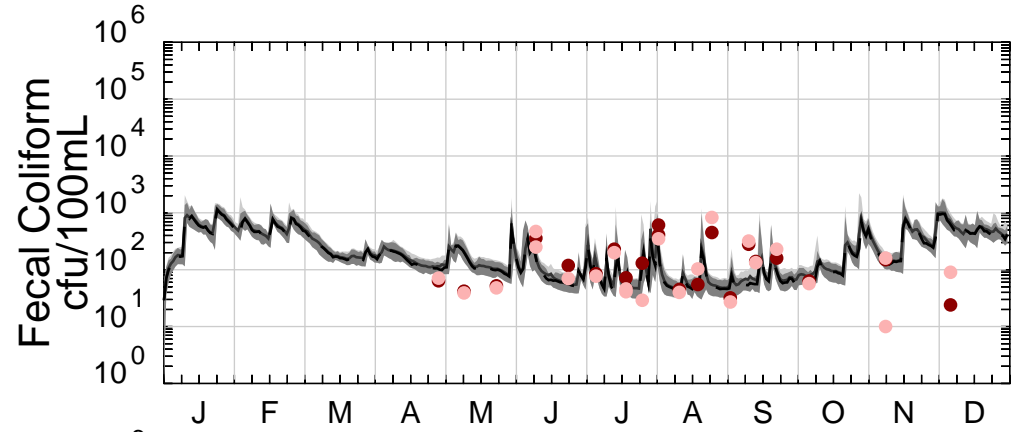
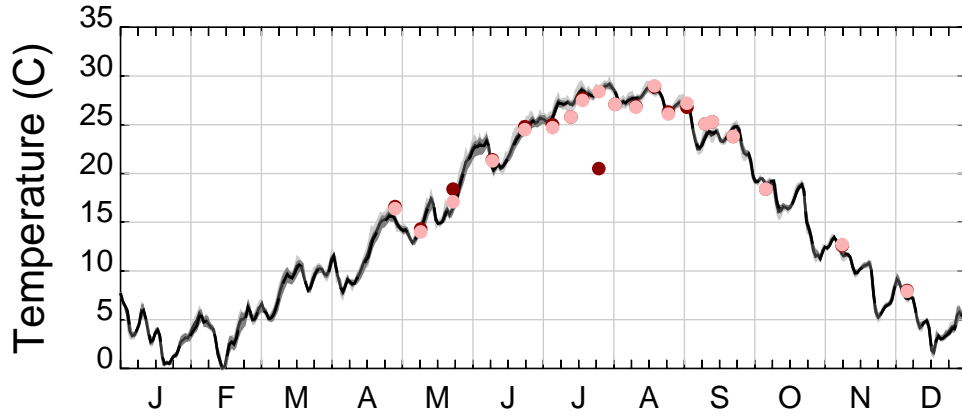
Station: B11



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

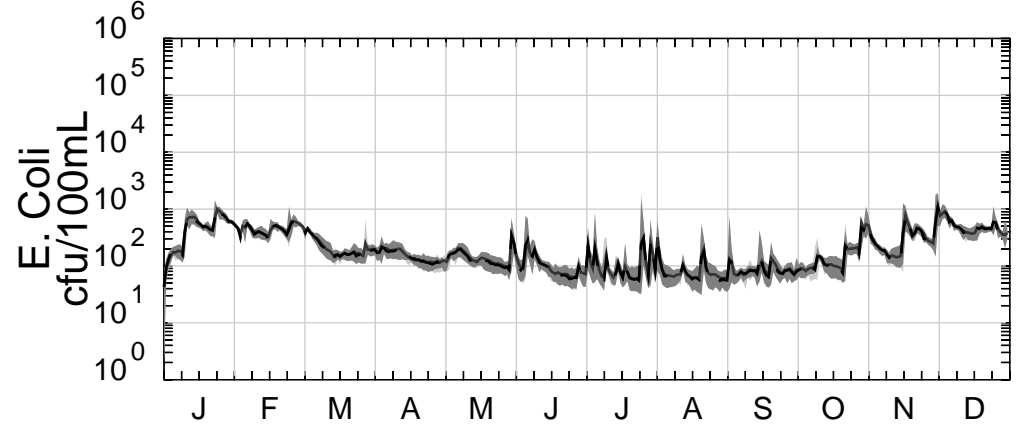
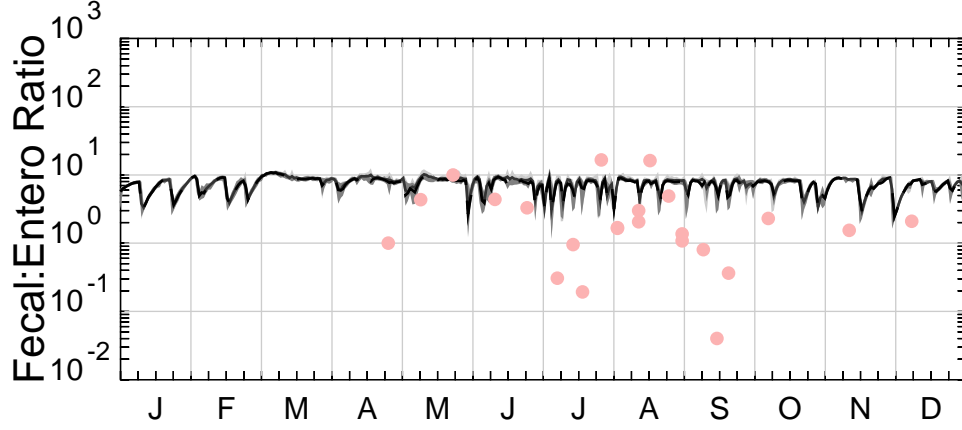
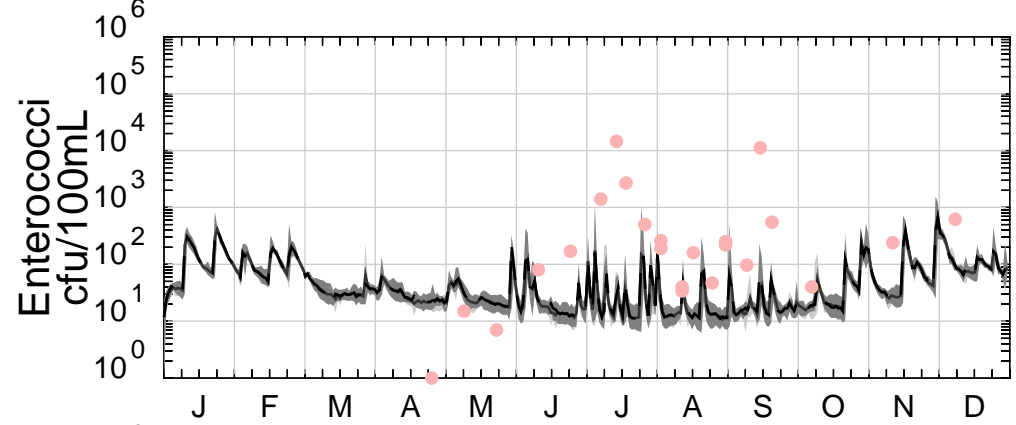
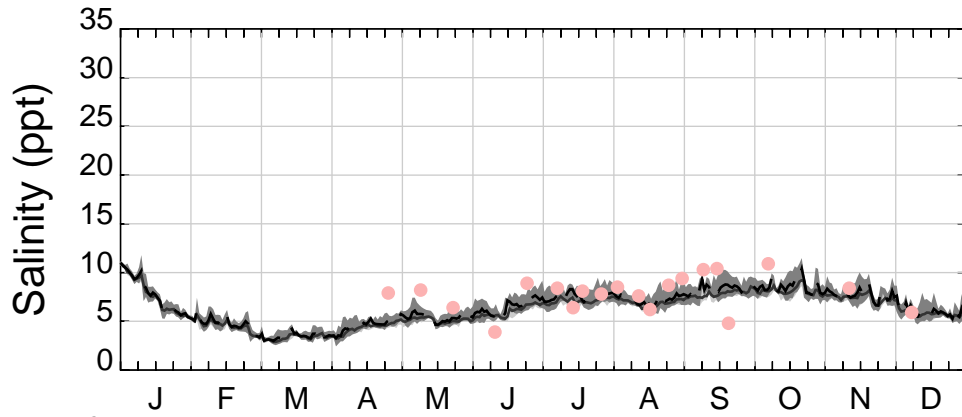
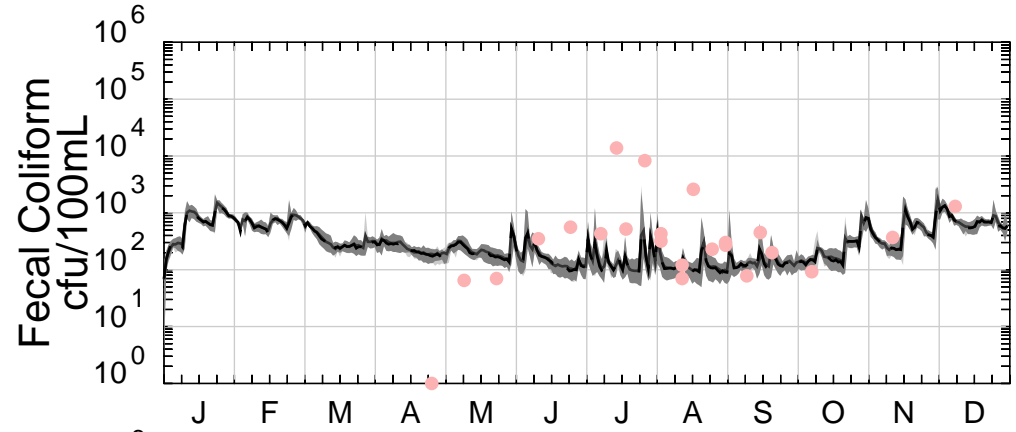
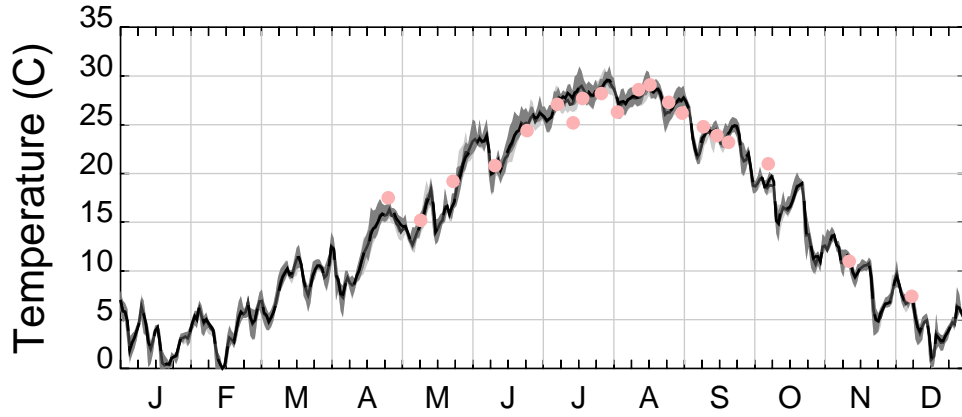
Station: B3



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

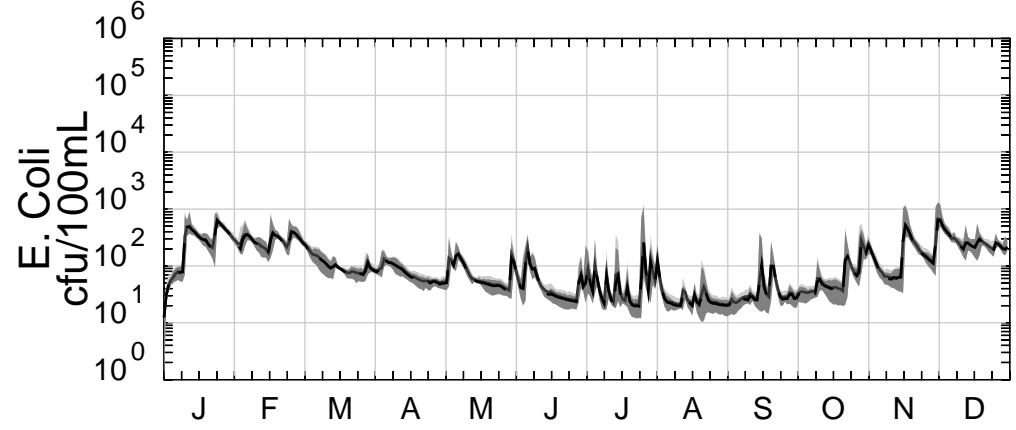
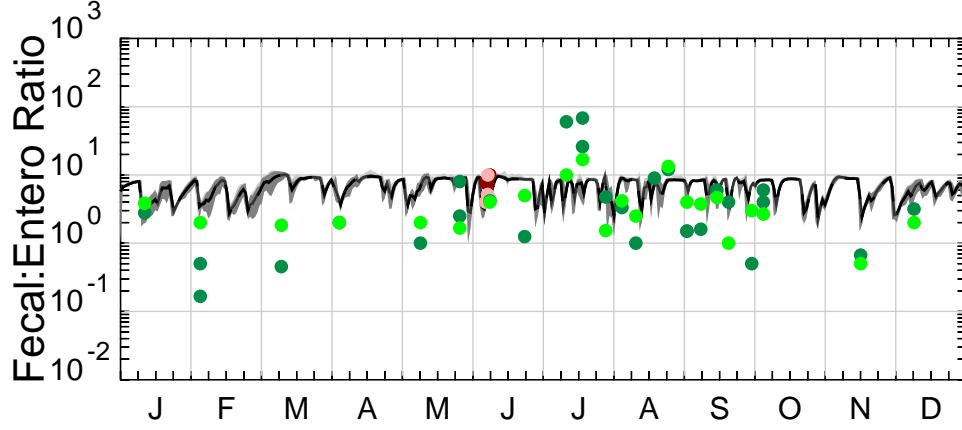
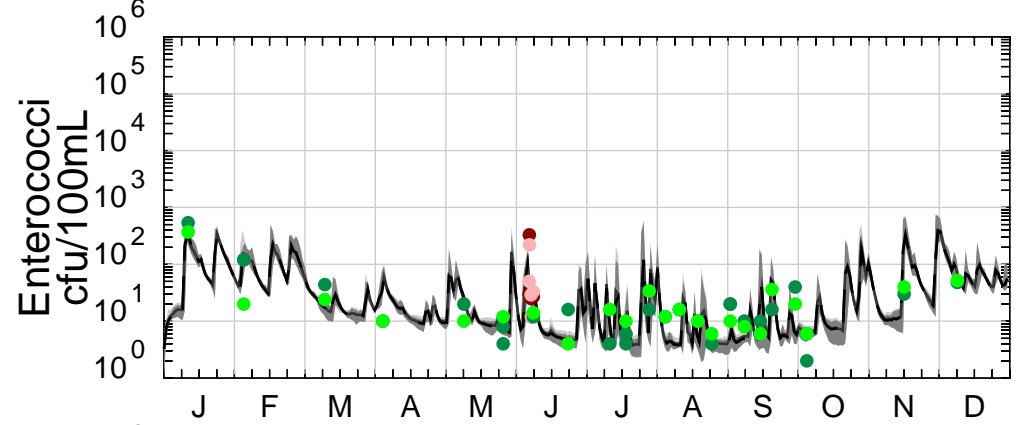
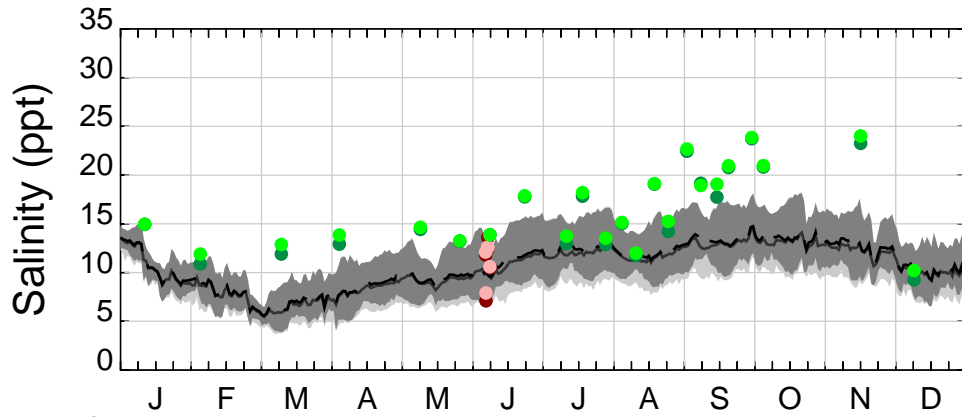
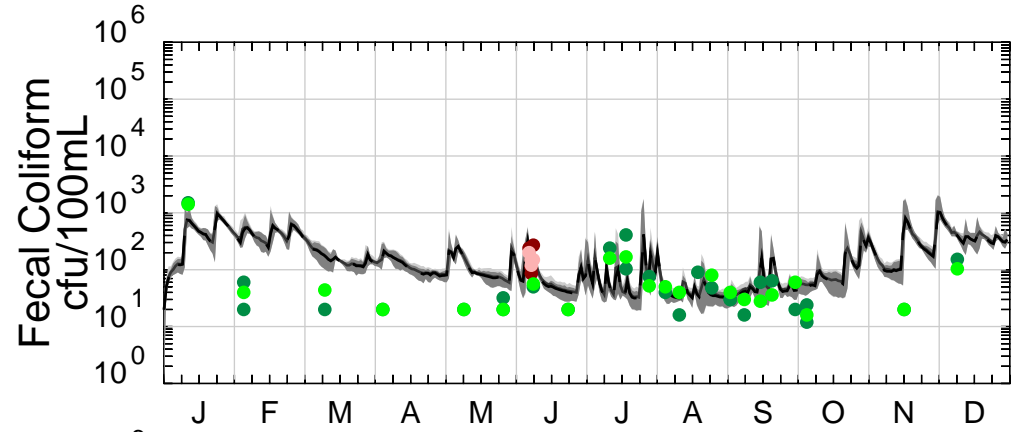
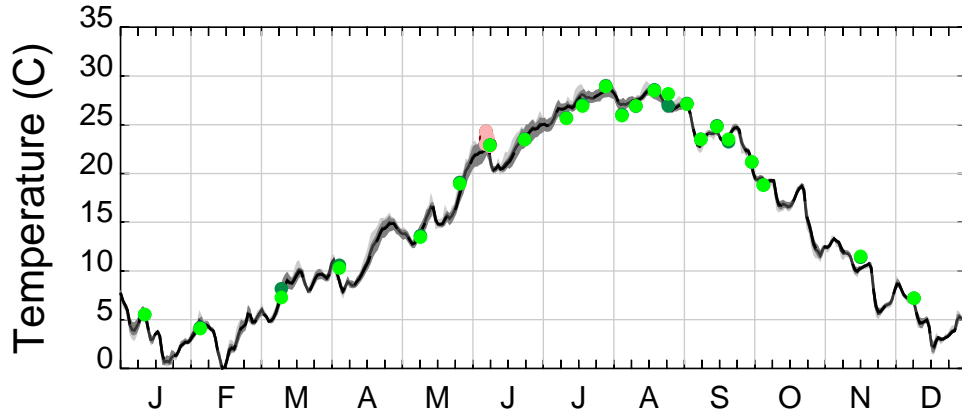
Station: B4



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

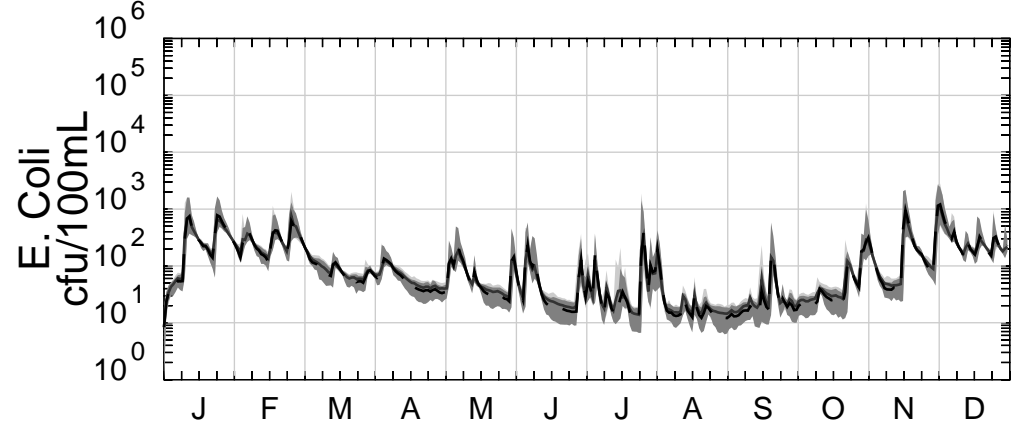
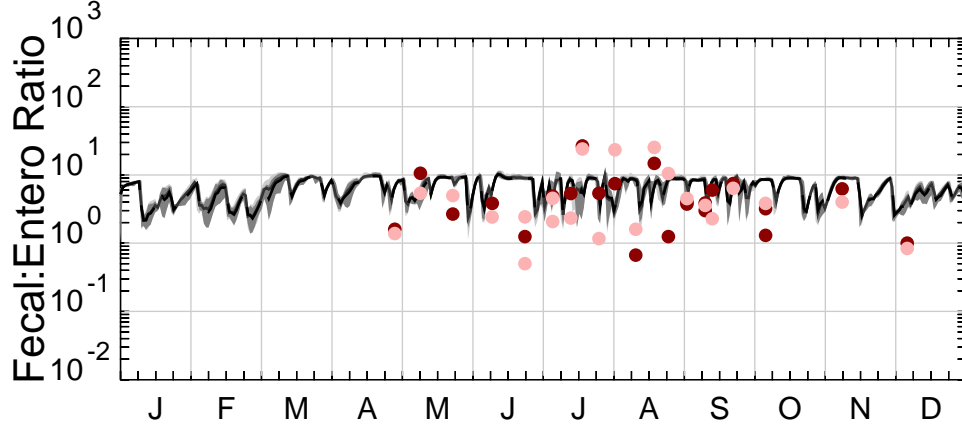
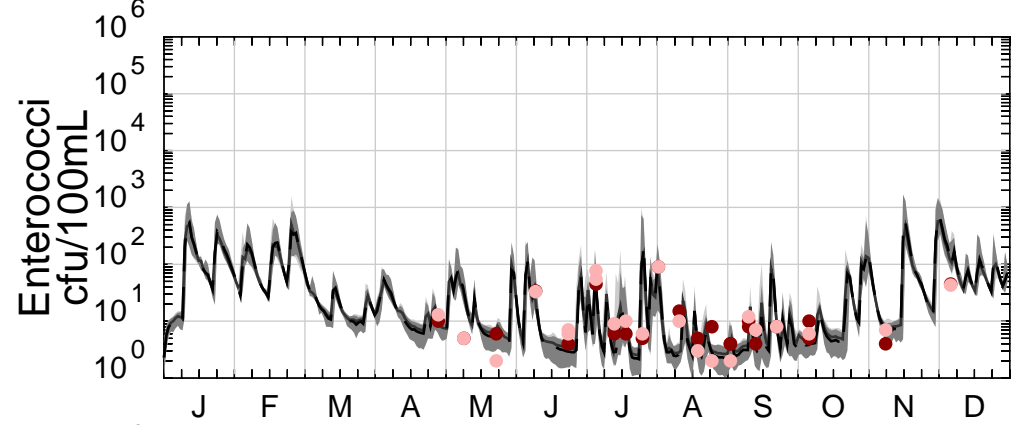
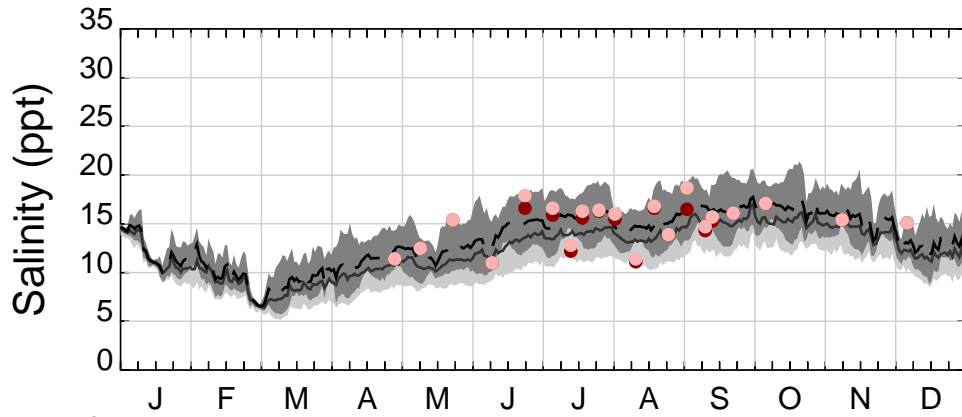
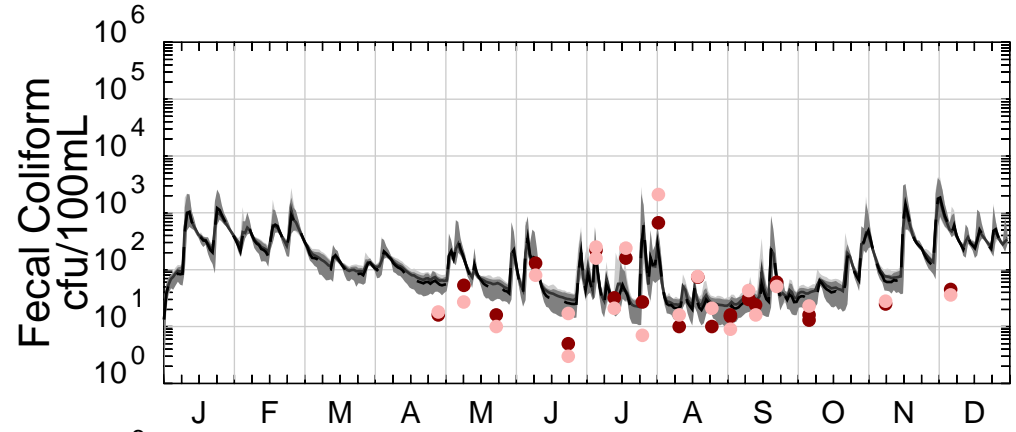
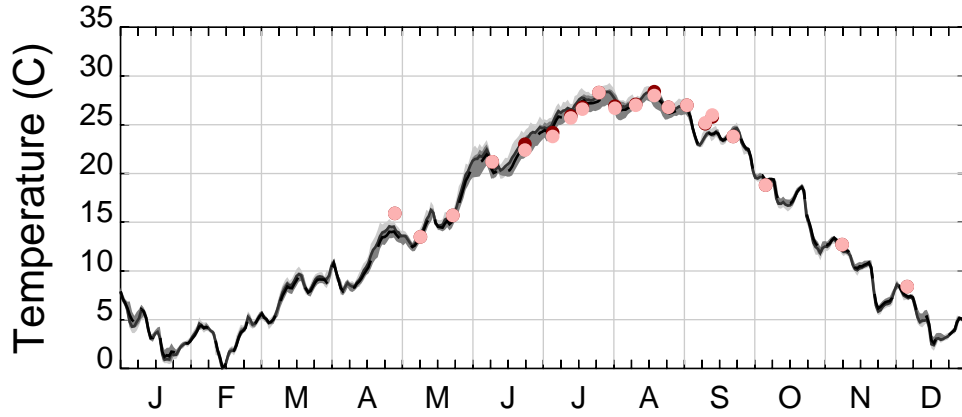
Station: 14



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- ● ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data

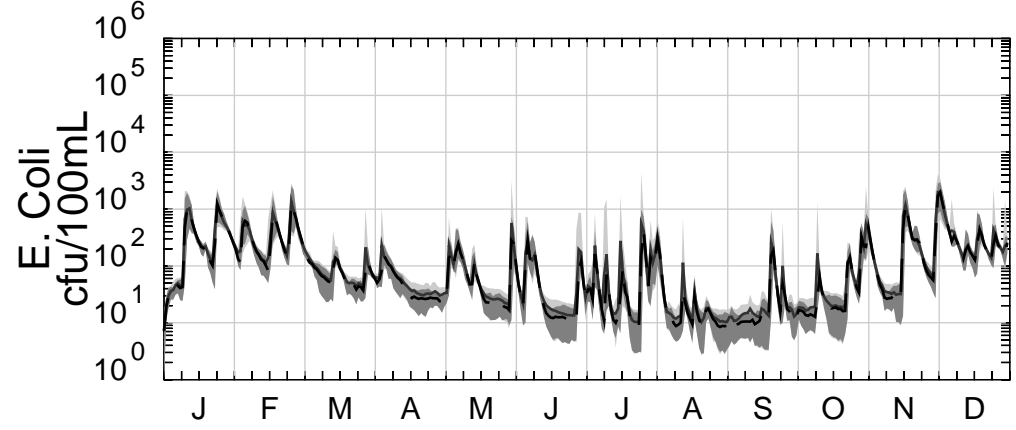
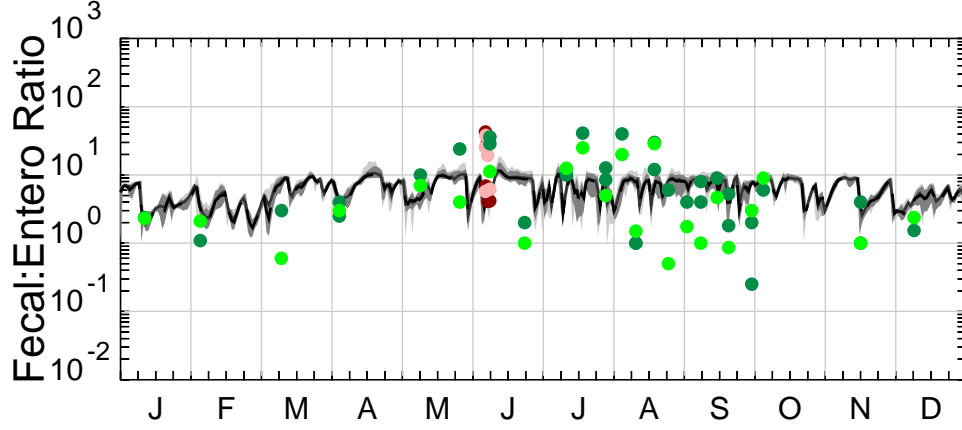
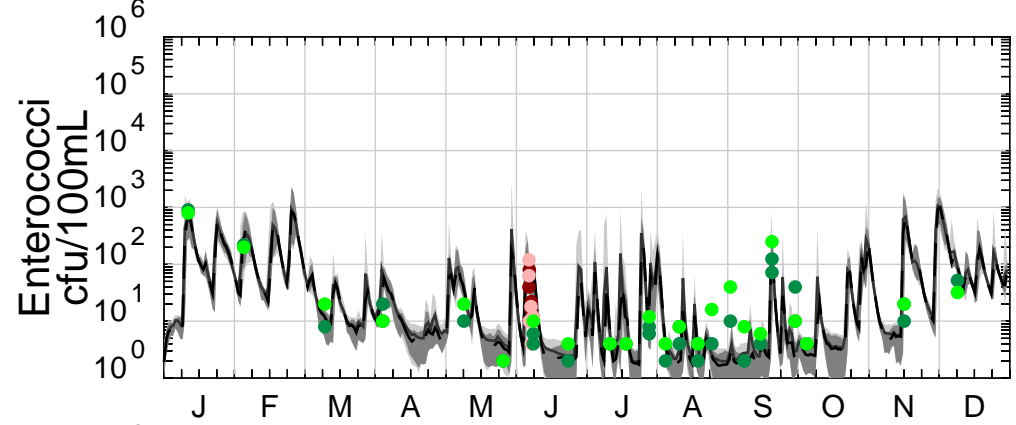
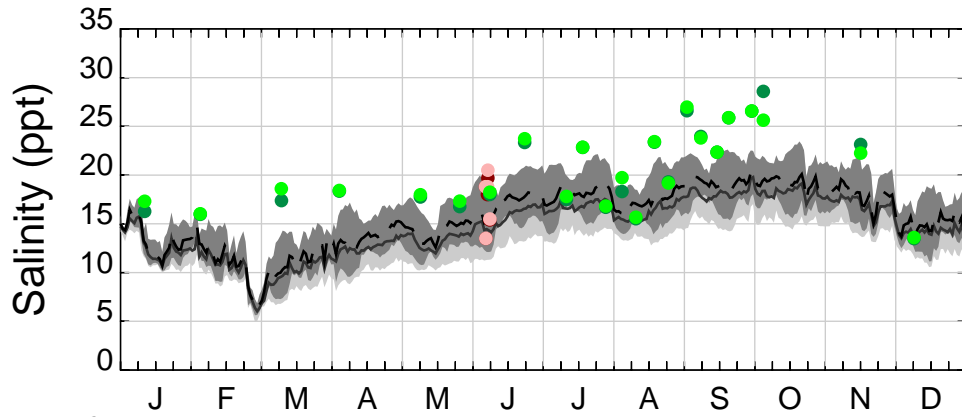
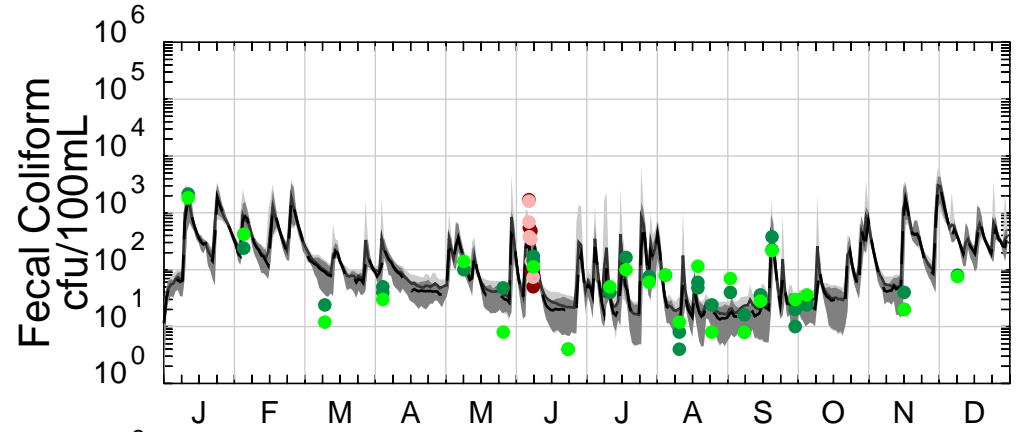
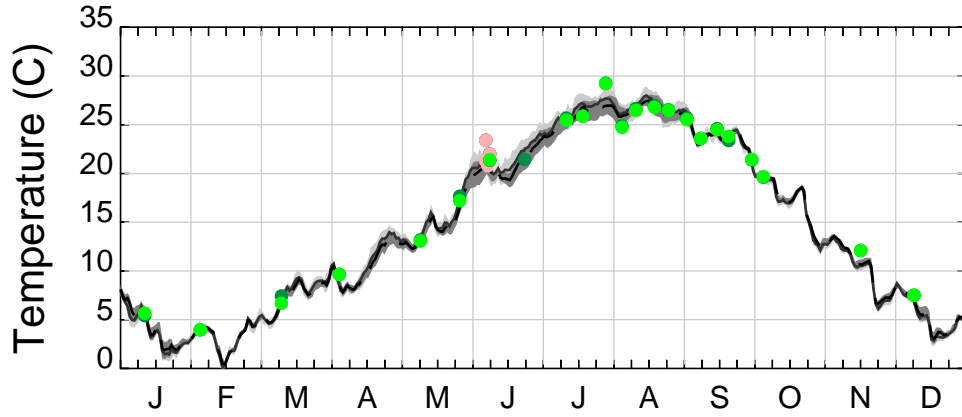
Station: B7



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

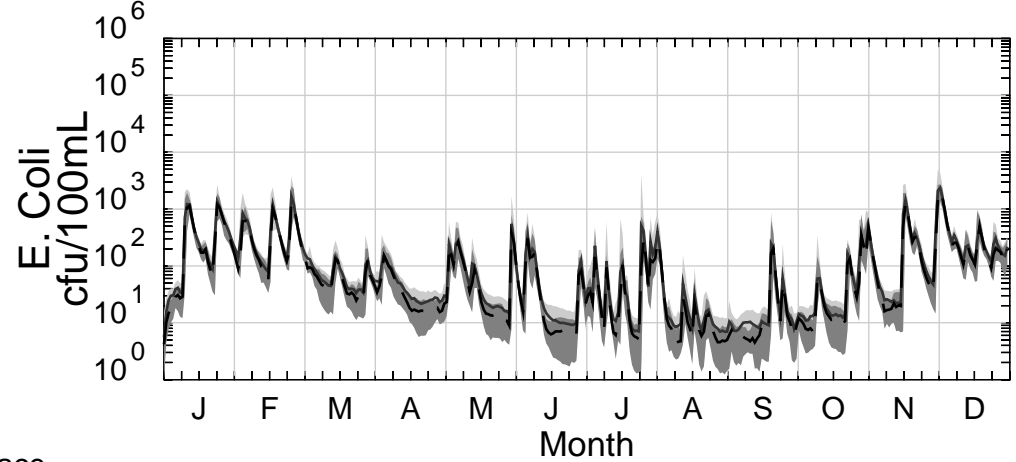
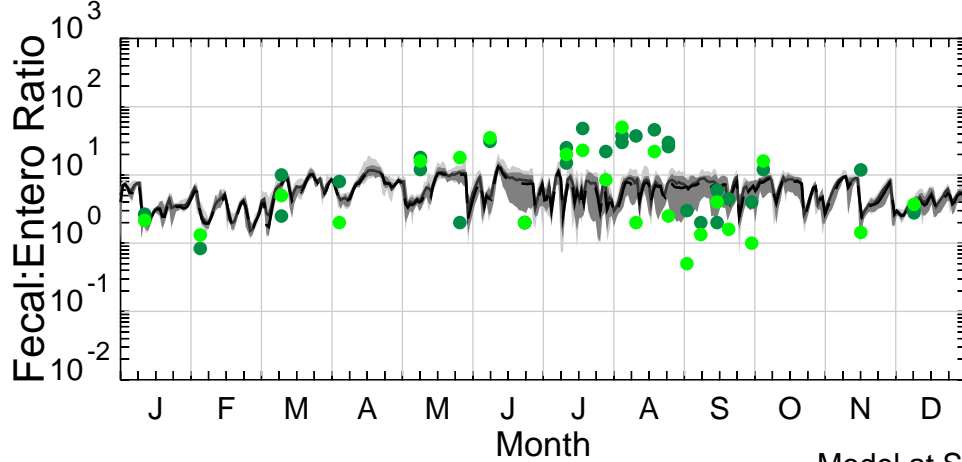
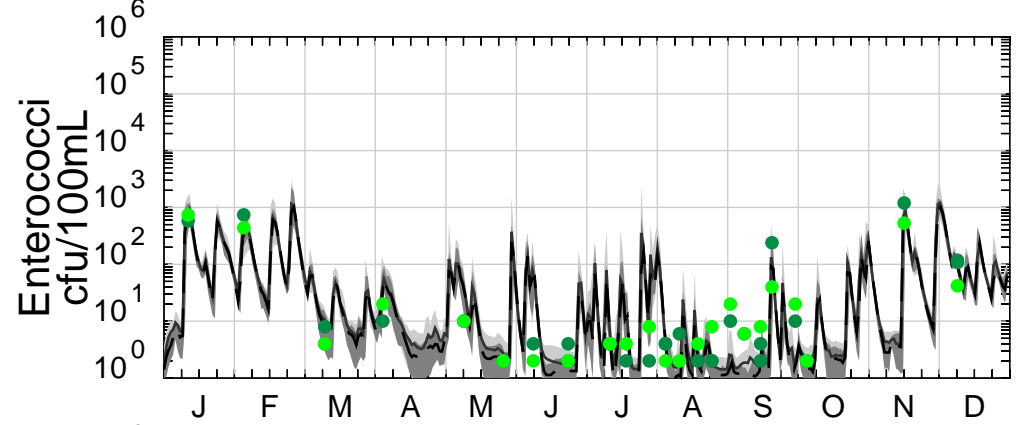
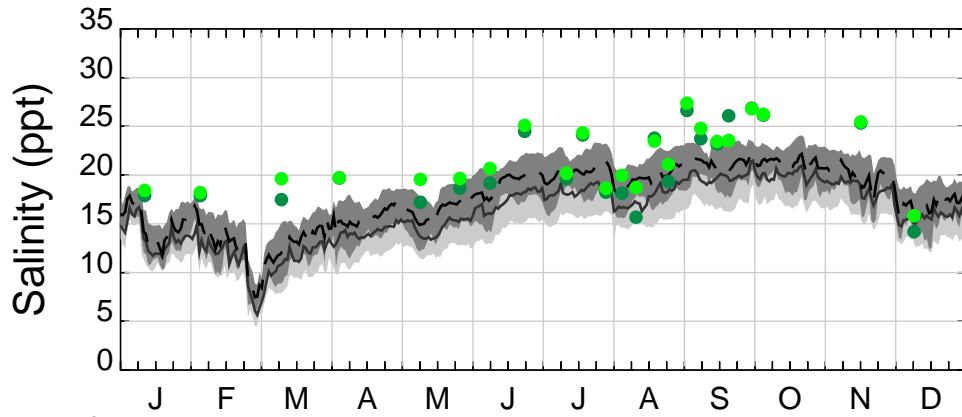
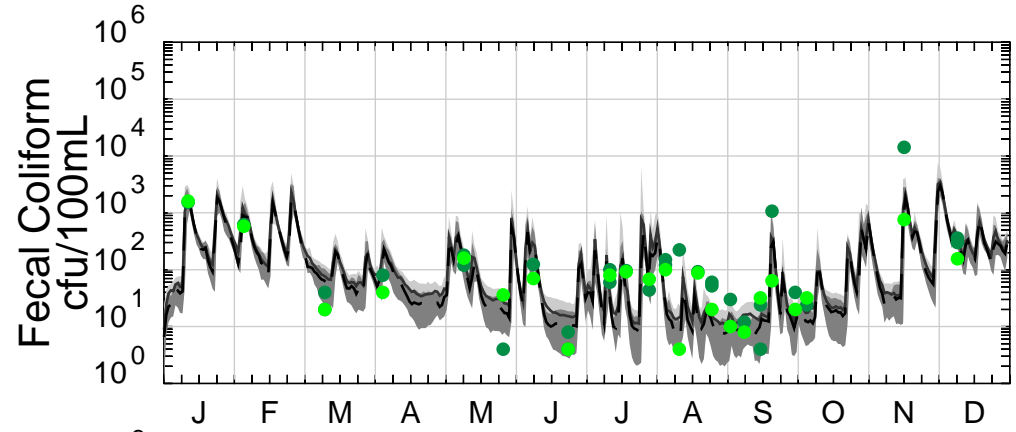
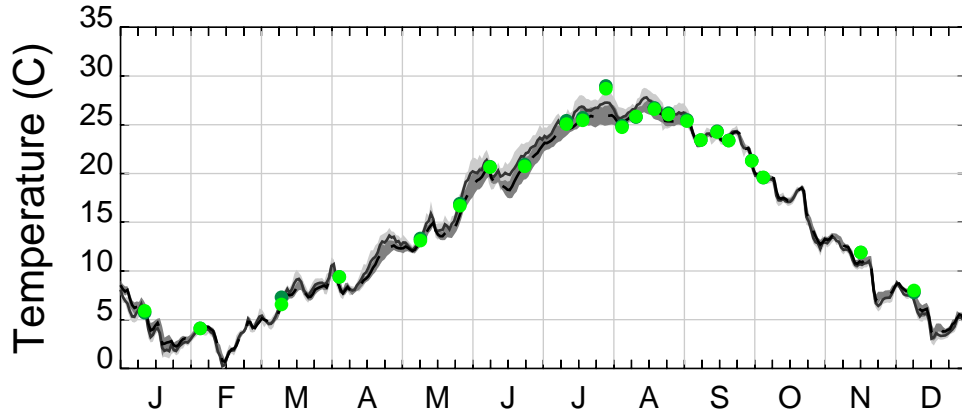
Station: 15



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

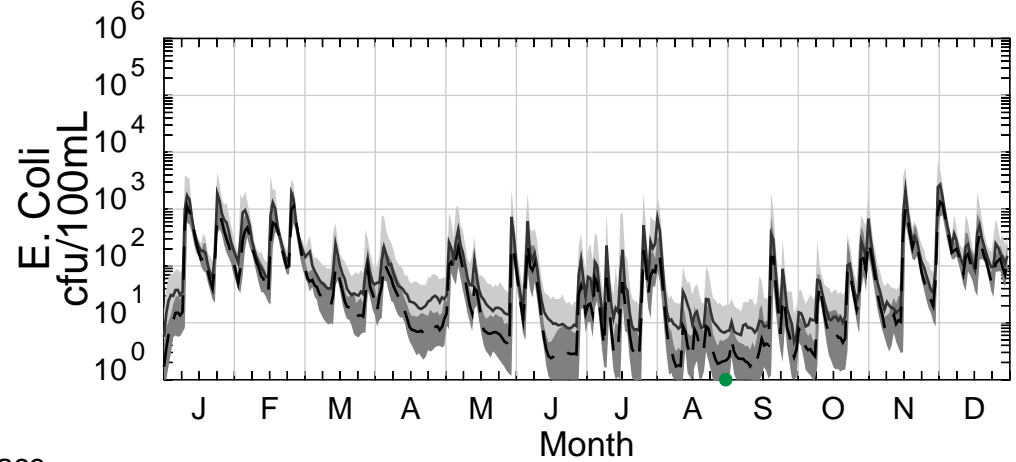
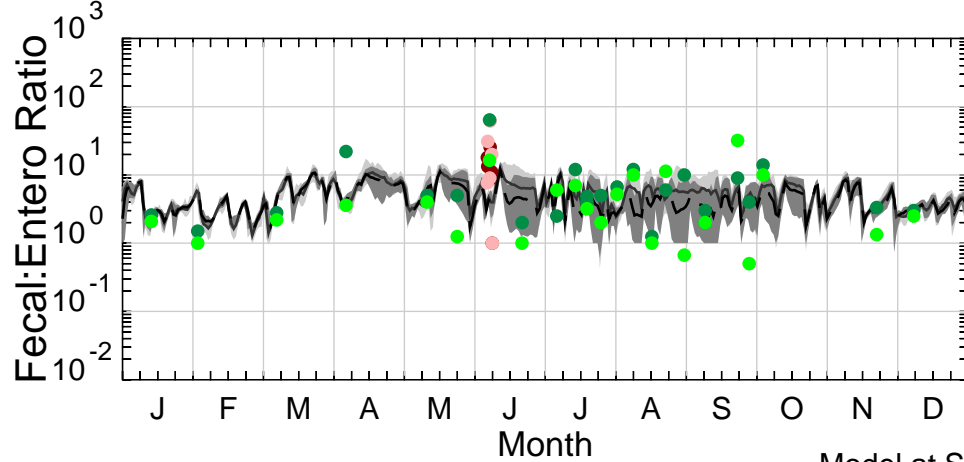
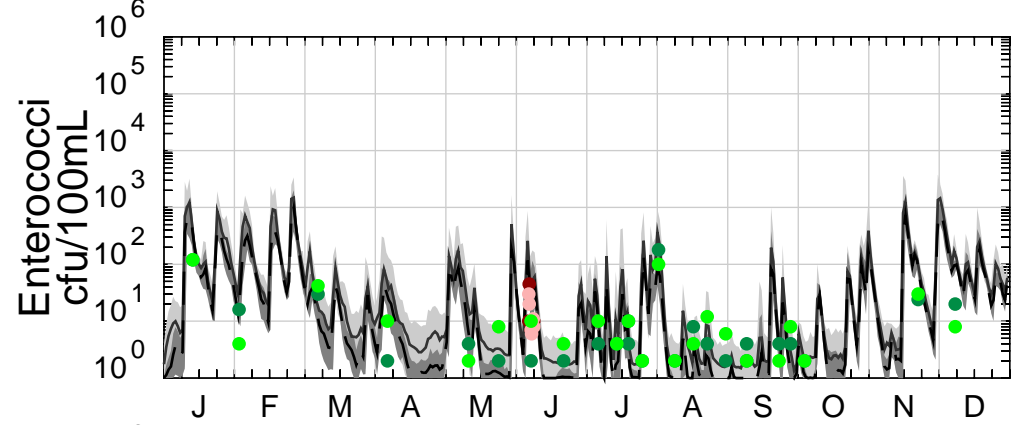
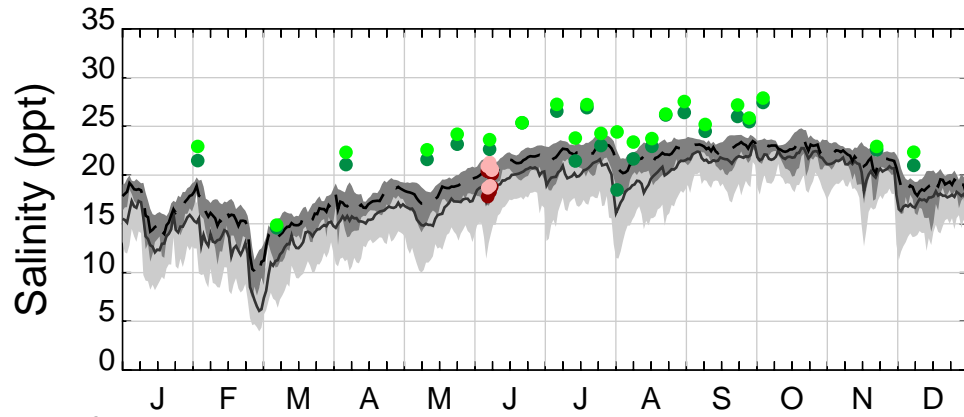
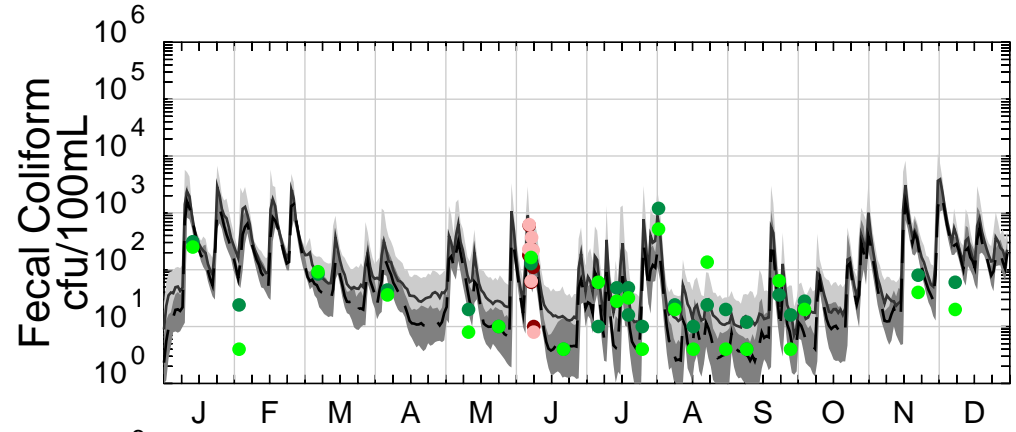
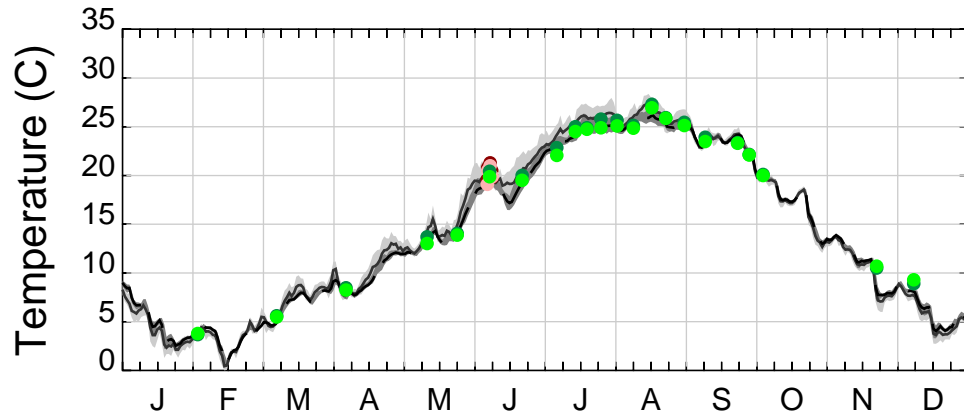
Station: 16



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

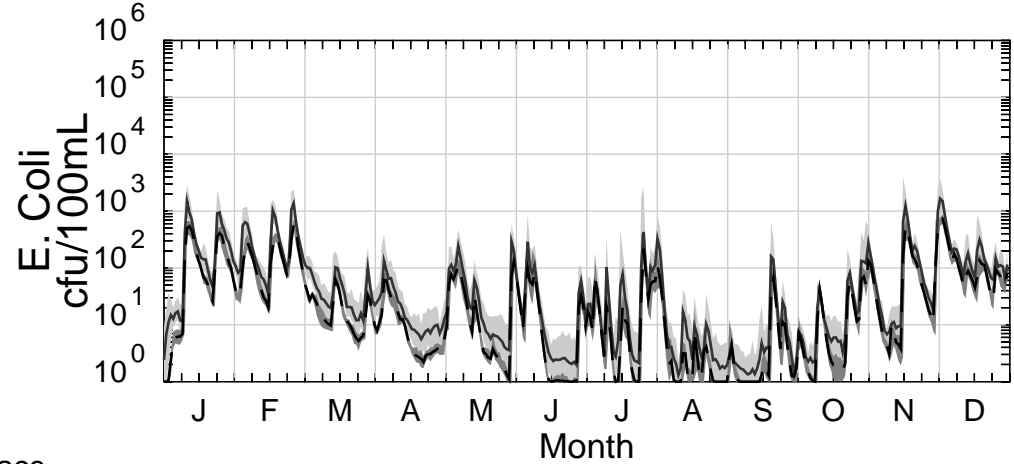
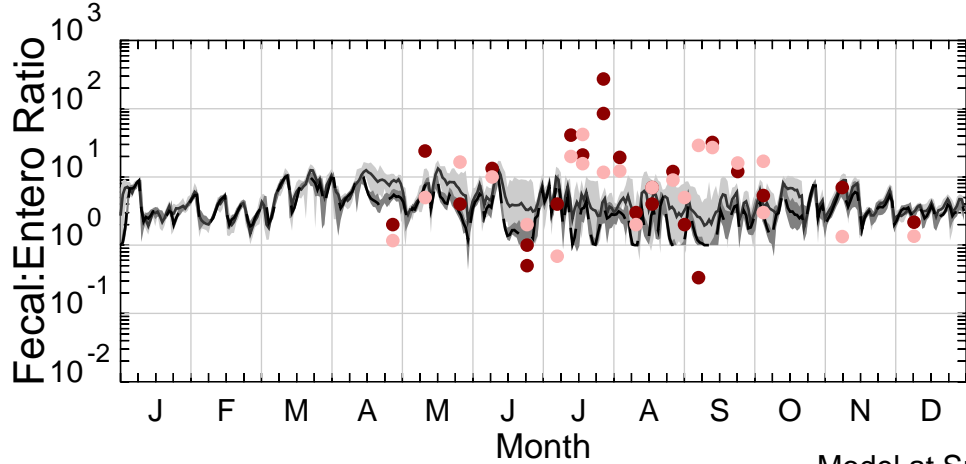
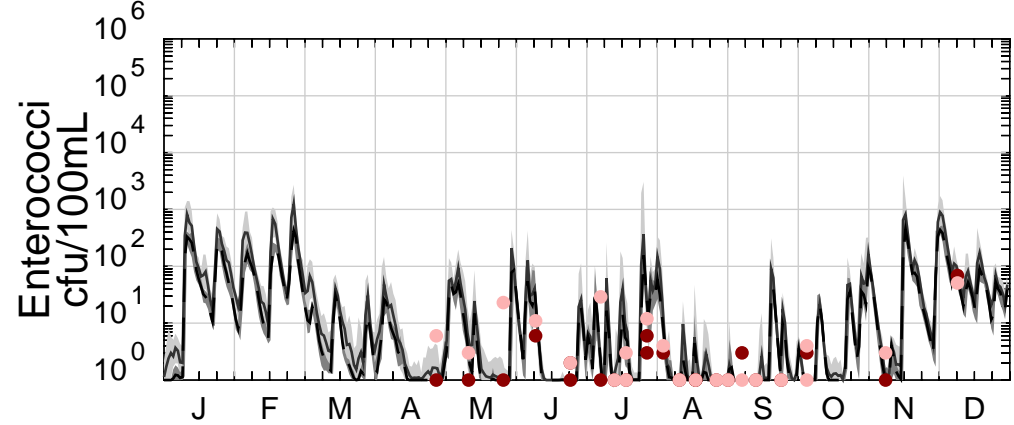
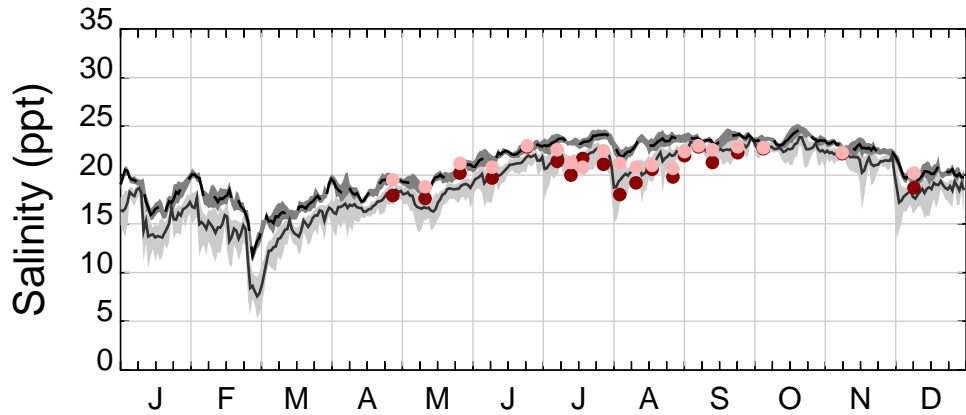
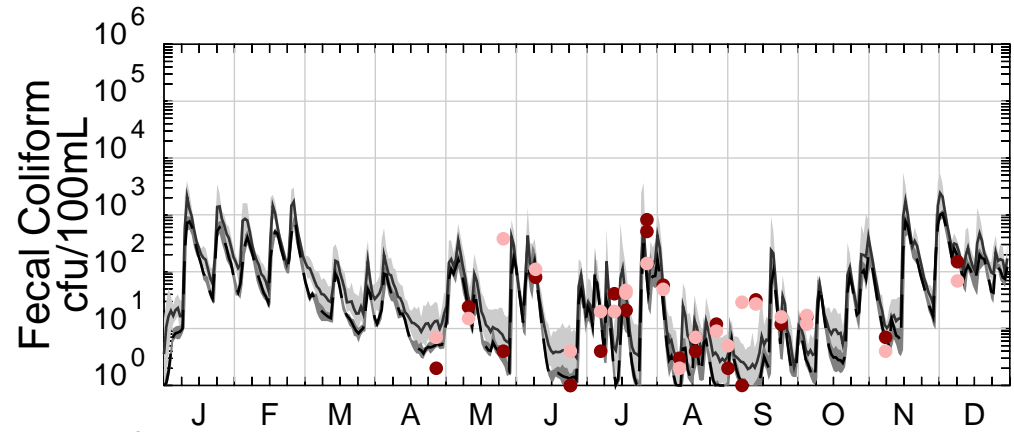
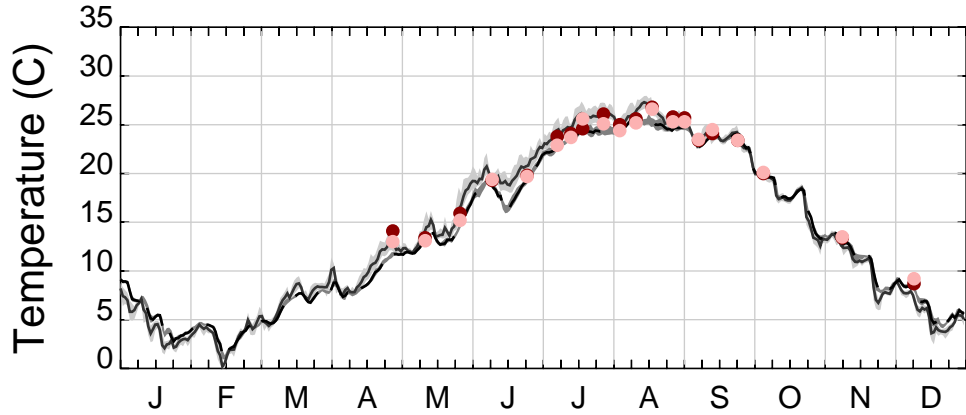
Station: 17



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

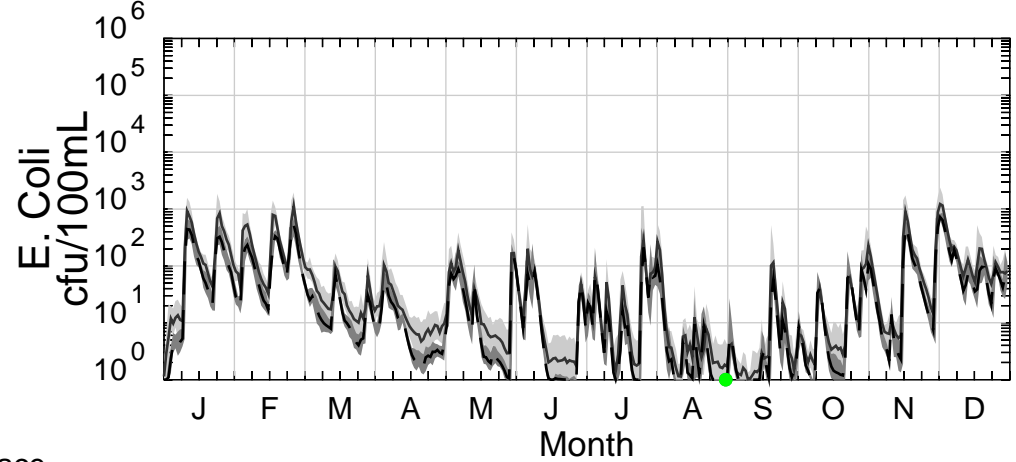
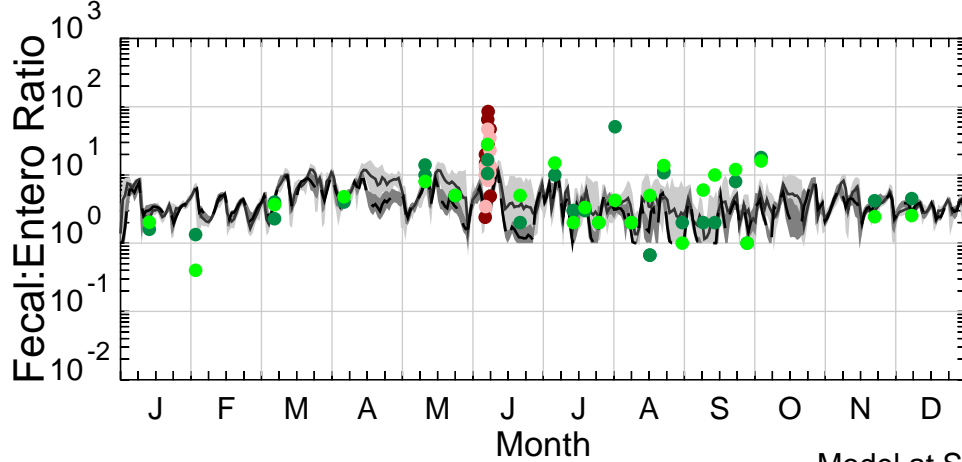
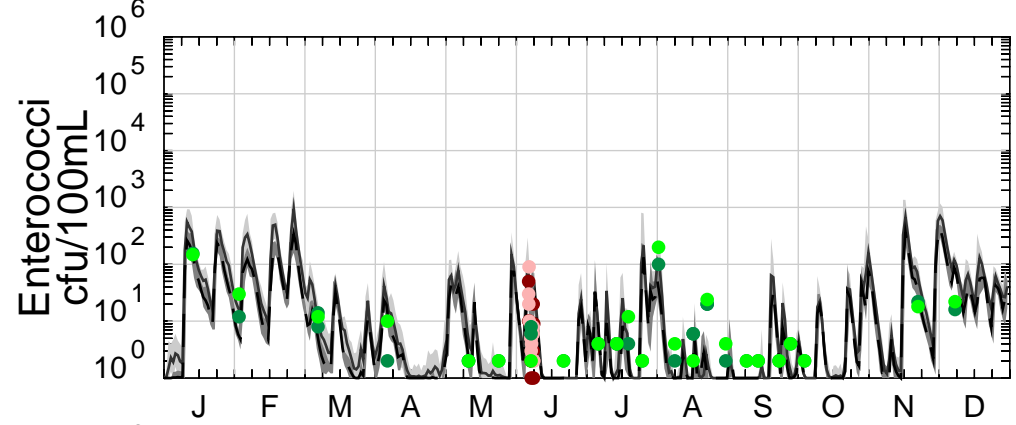
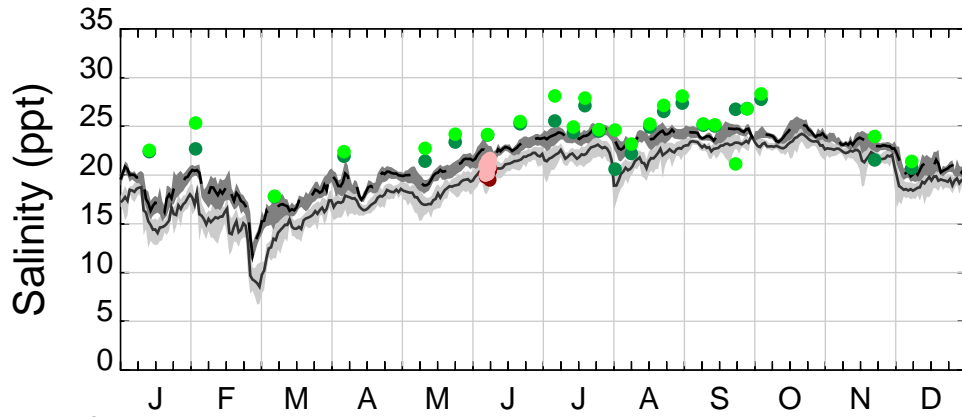
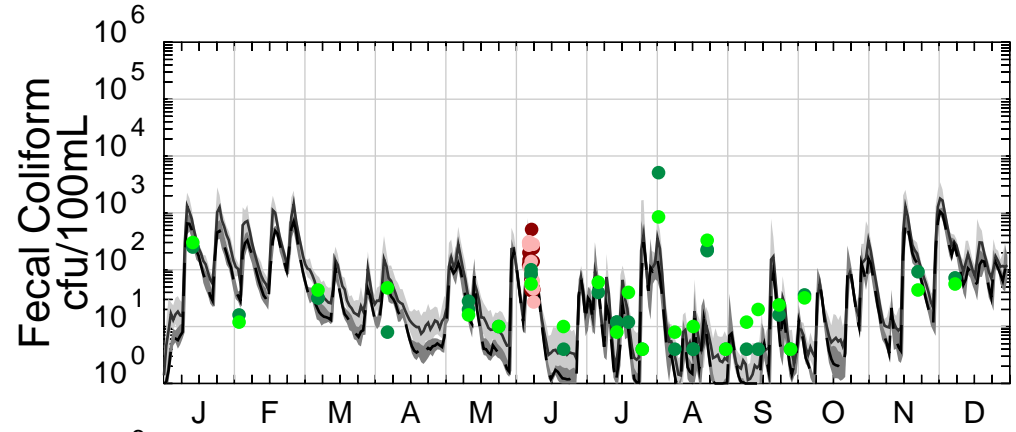
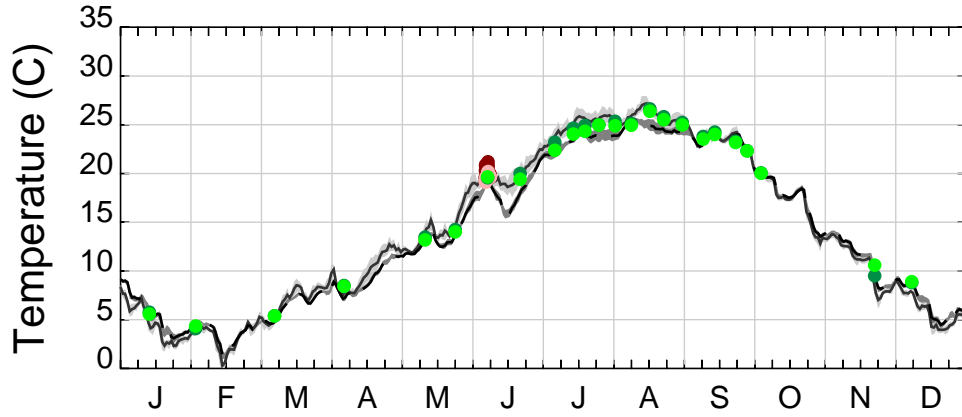
Station: B10



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

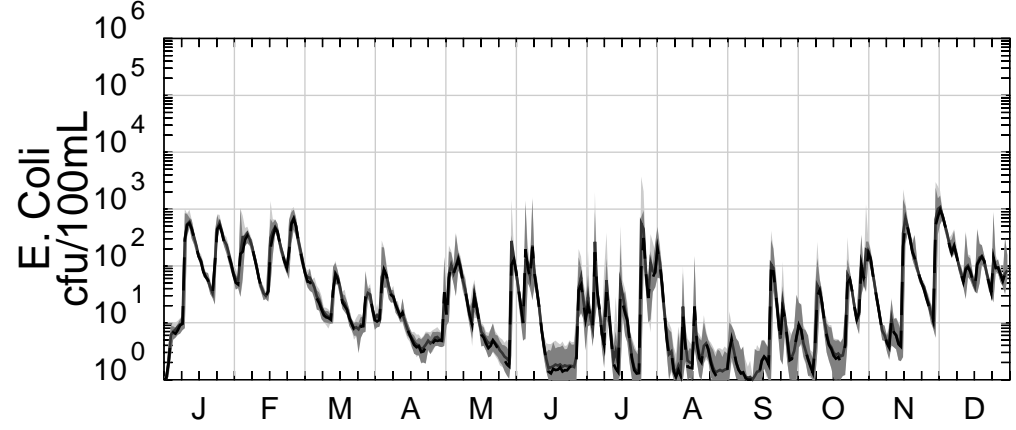
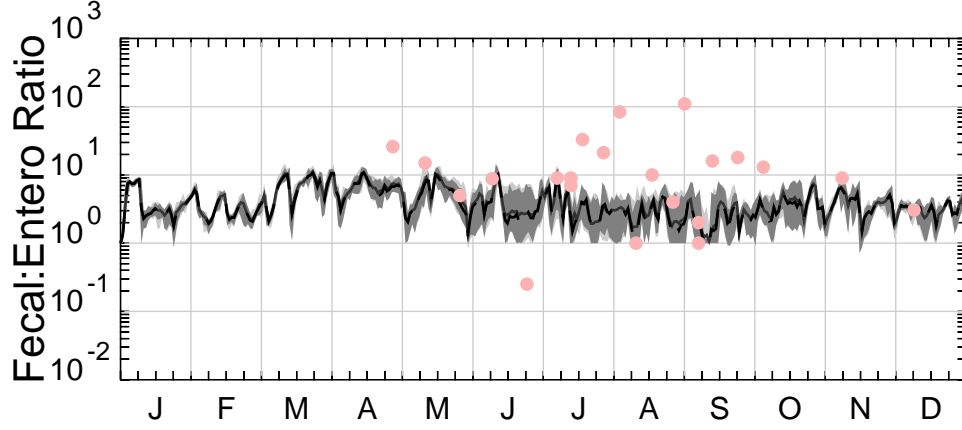
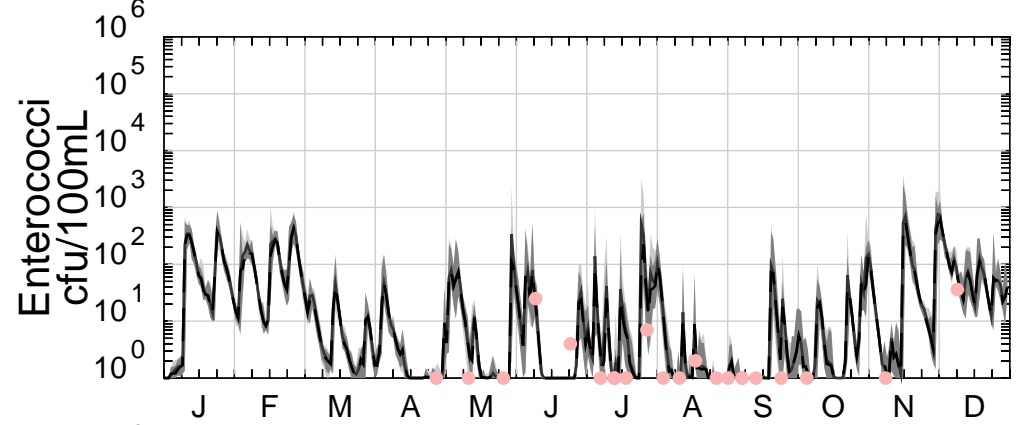
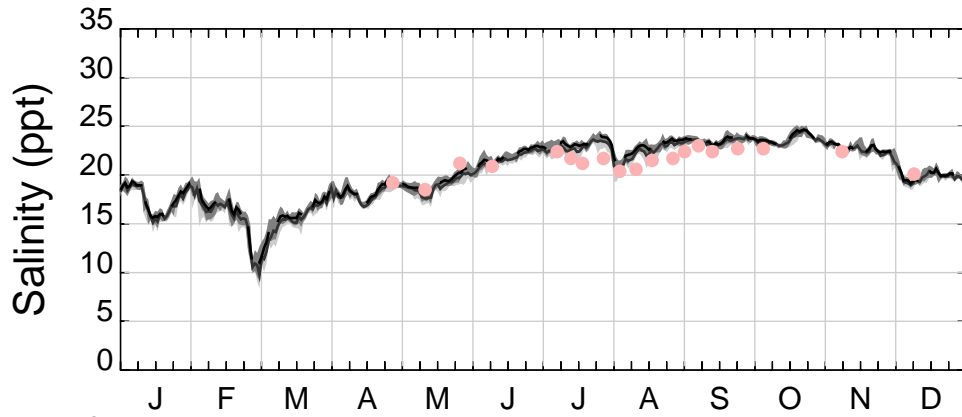
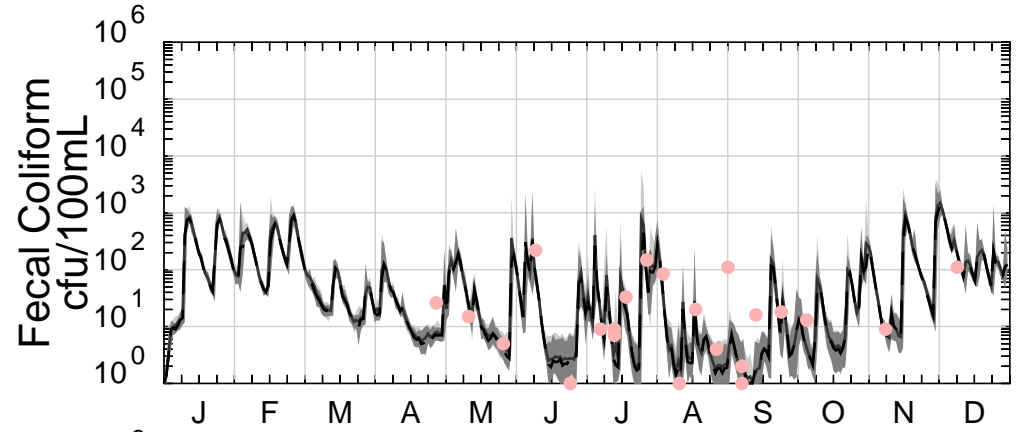
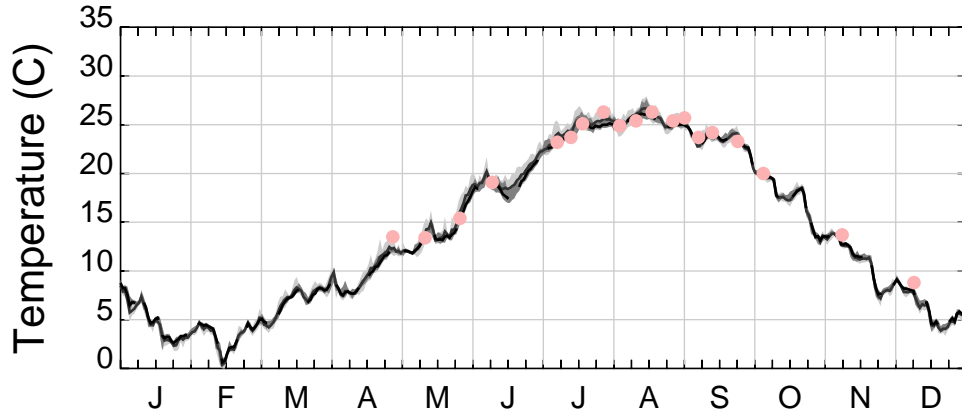
Station: 18



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Station: B17

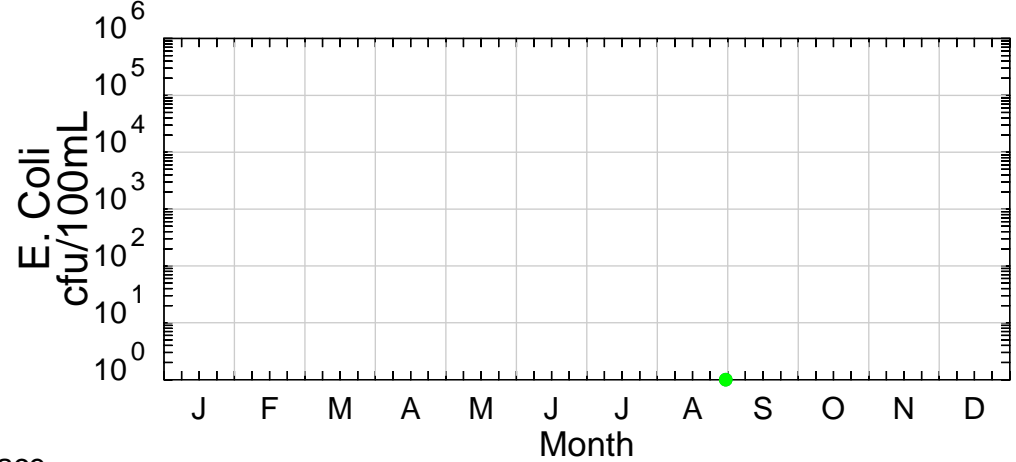
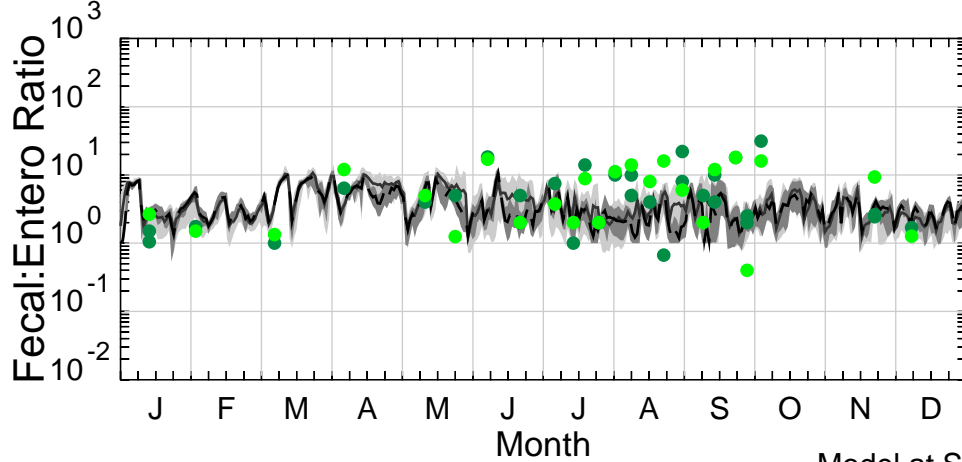
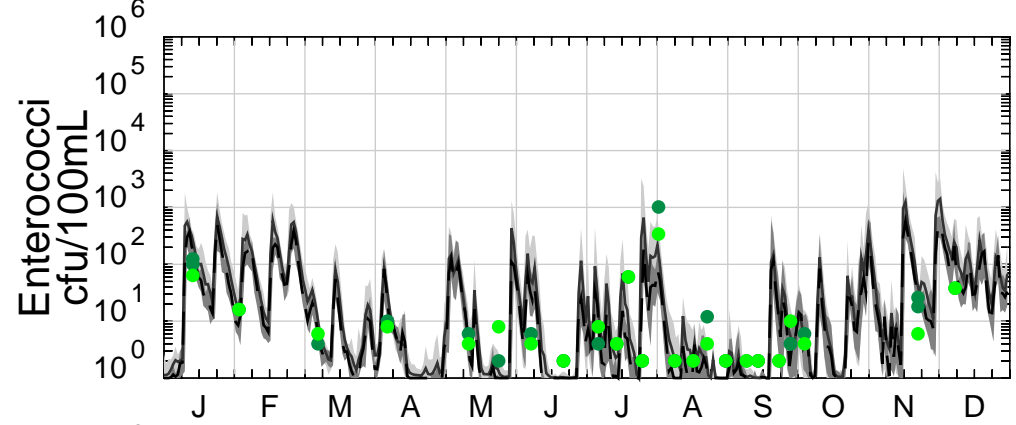
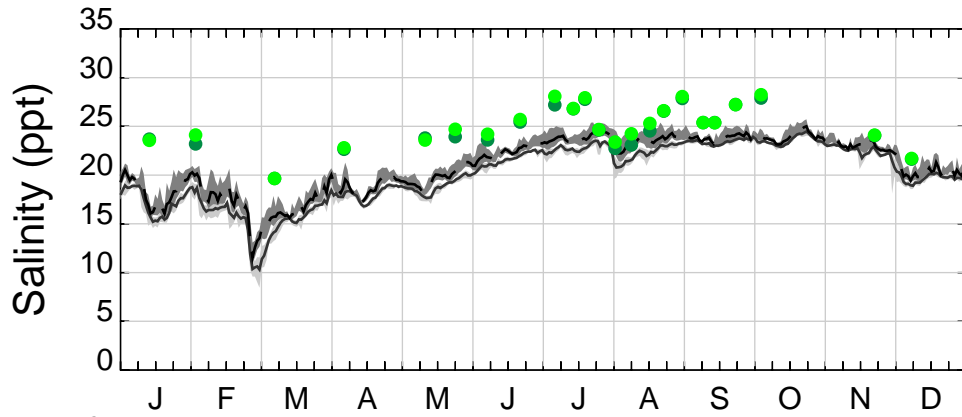
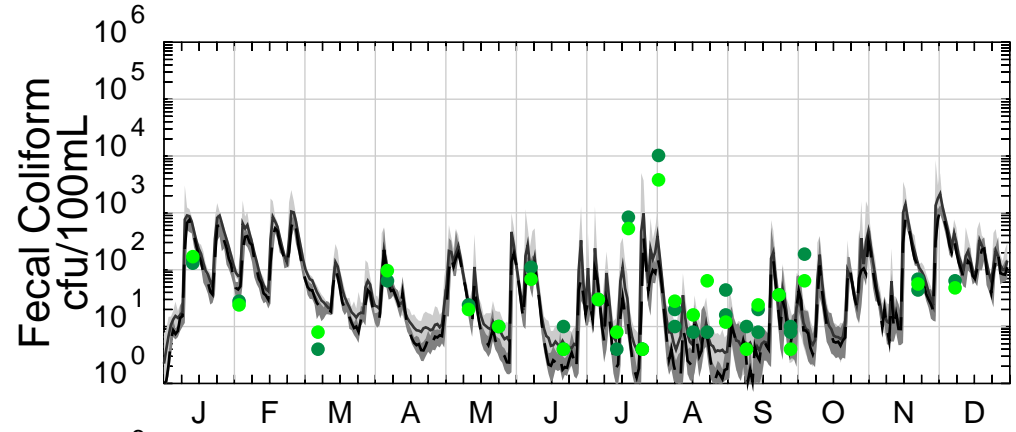
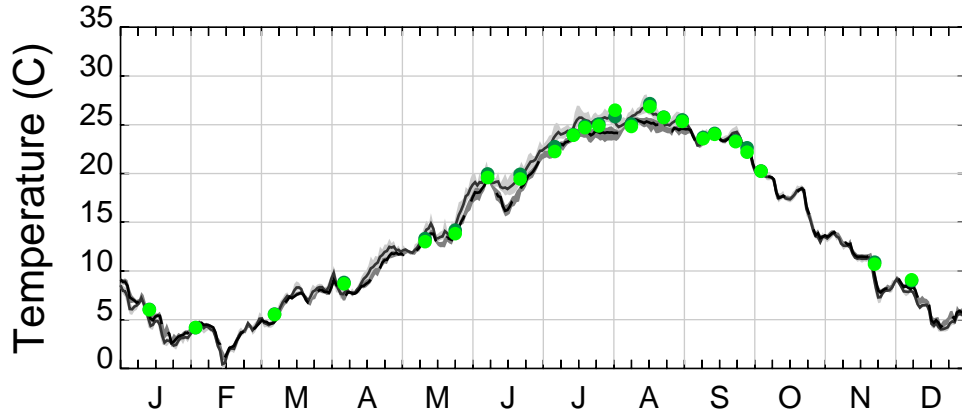


Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

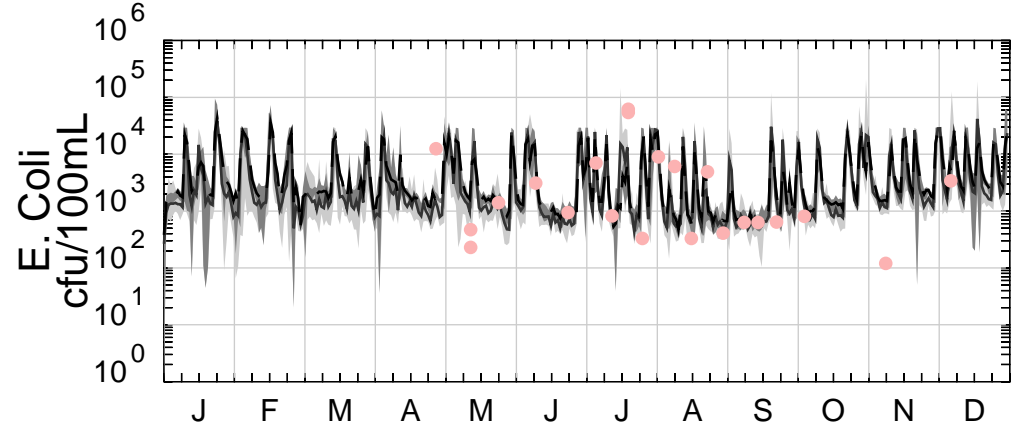
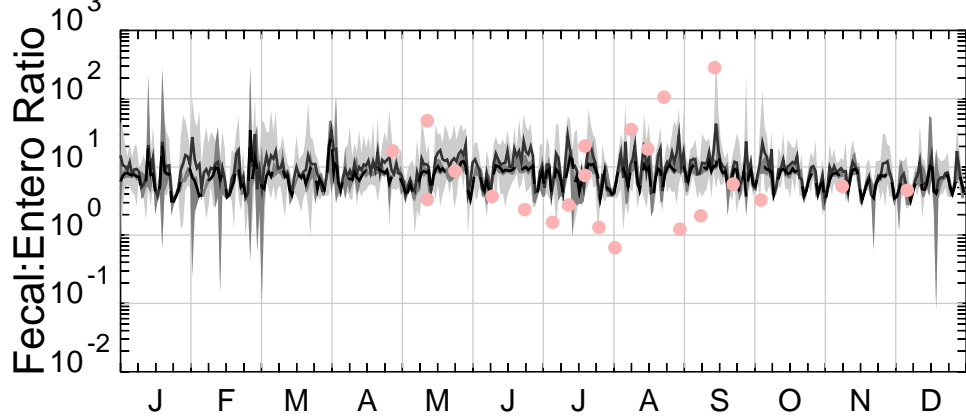
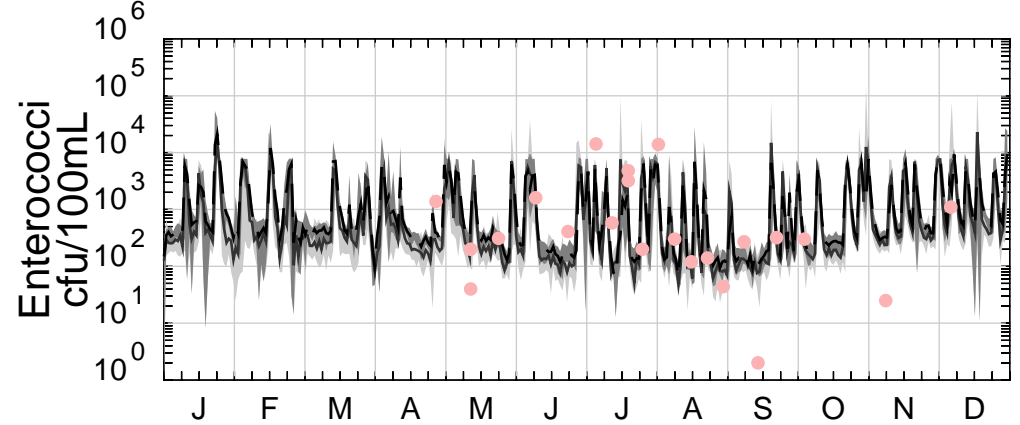
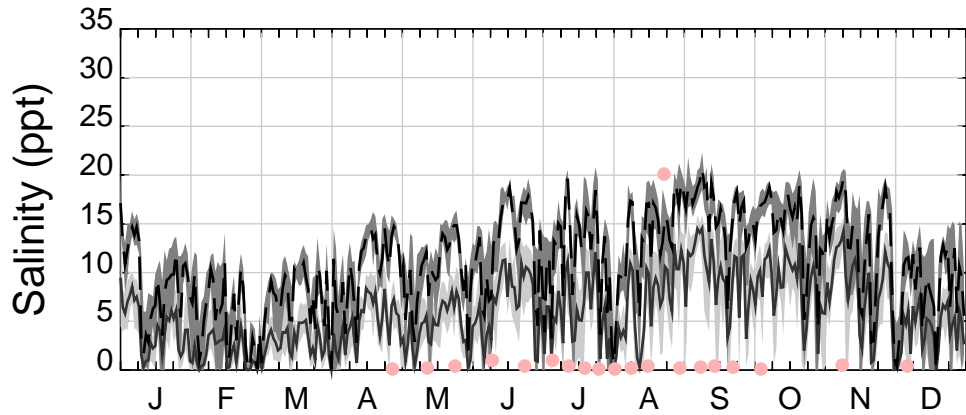
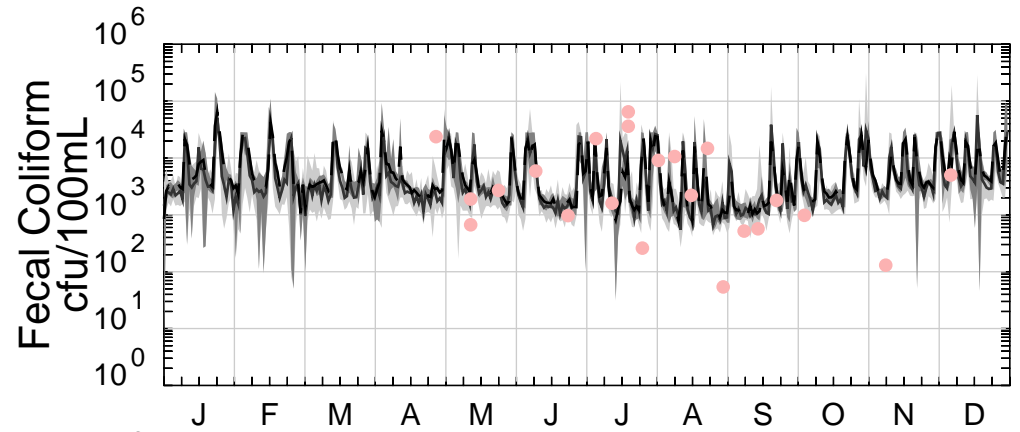
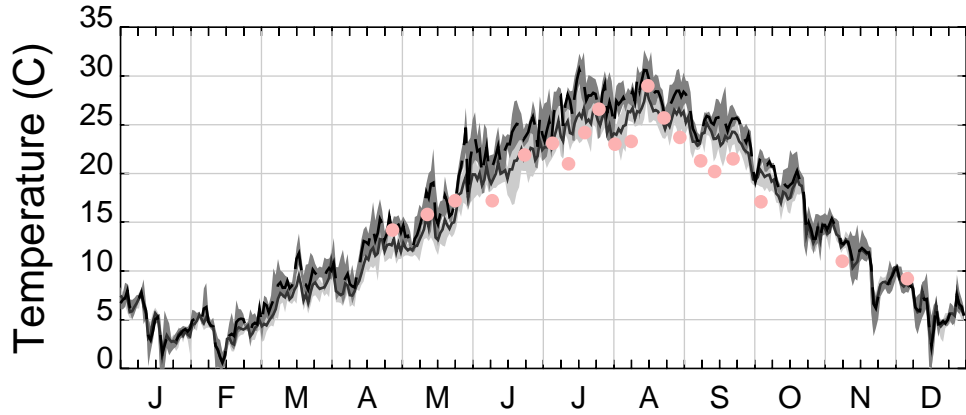
Station: 19



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- ● ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data

Station: B16

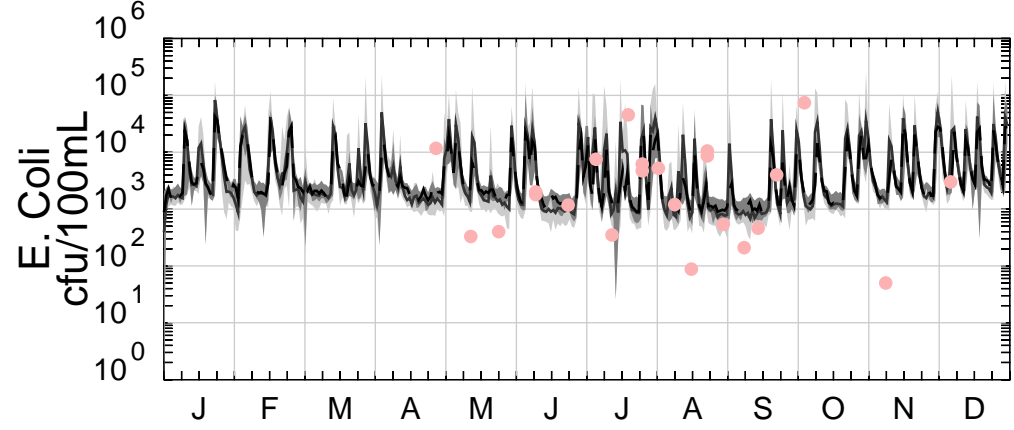
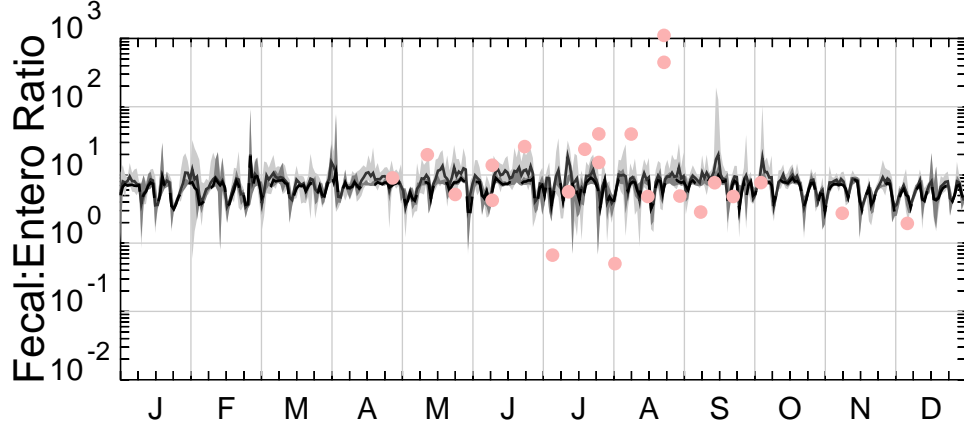
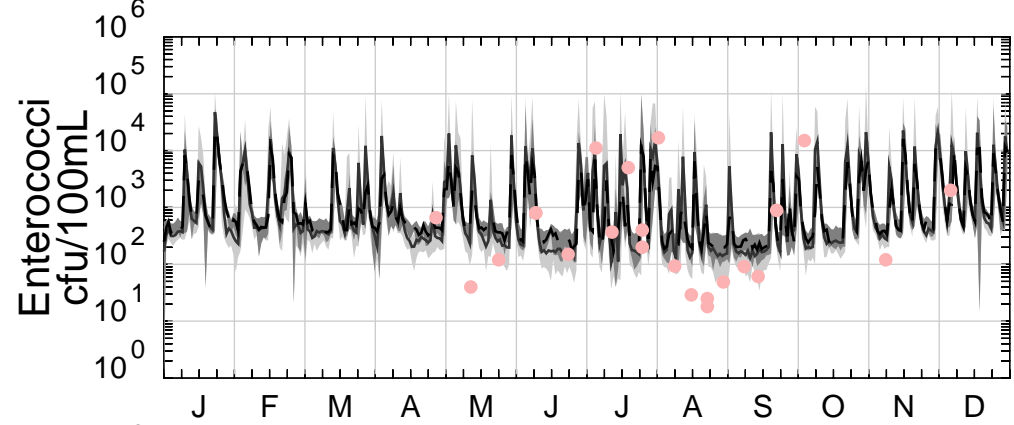
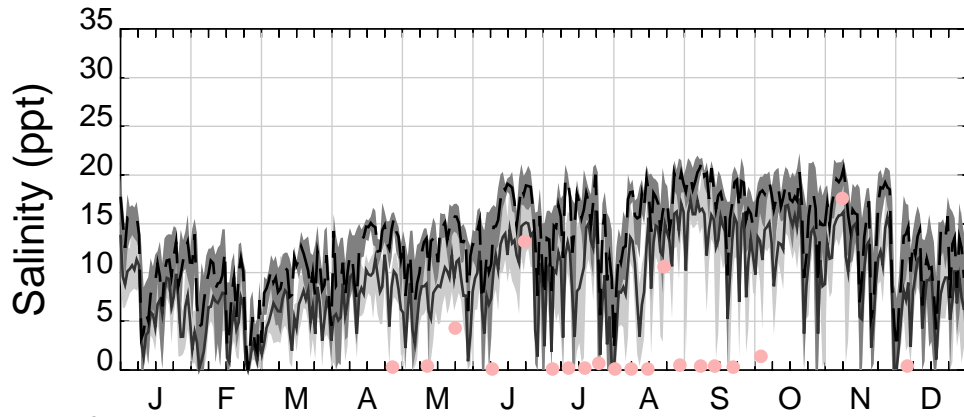
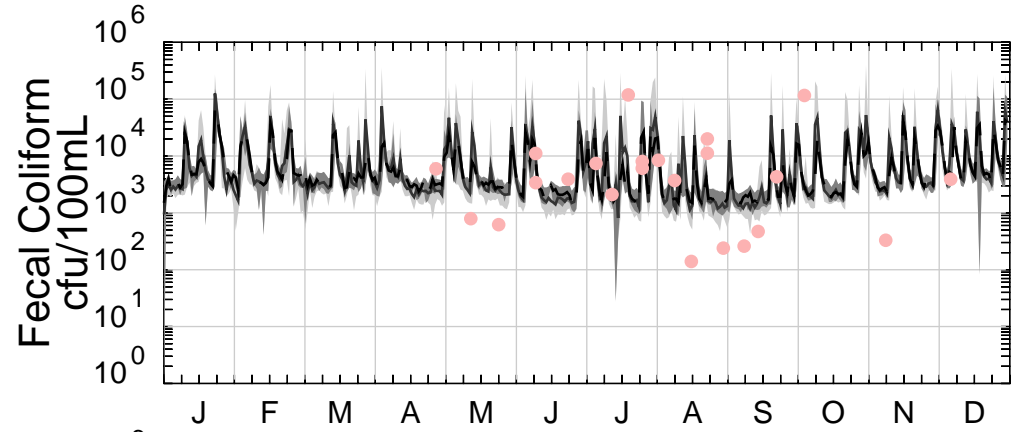
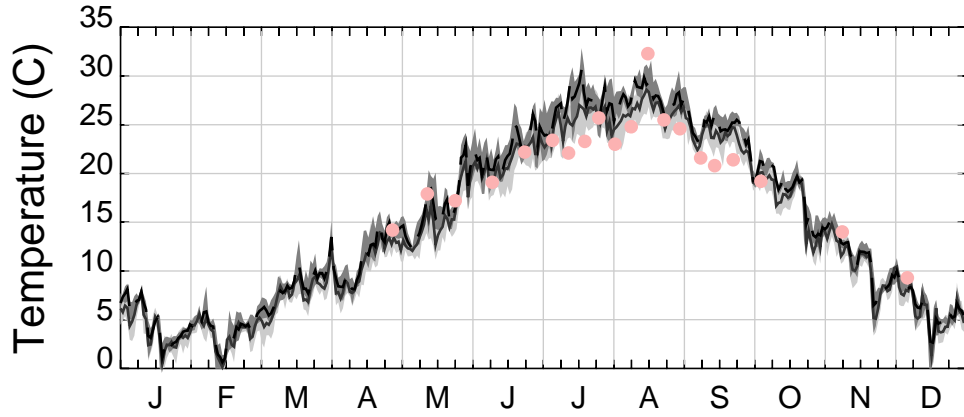


Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

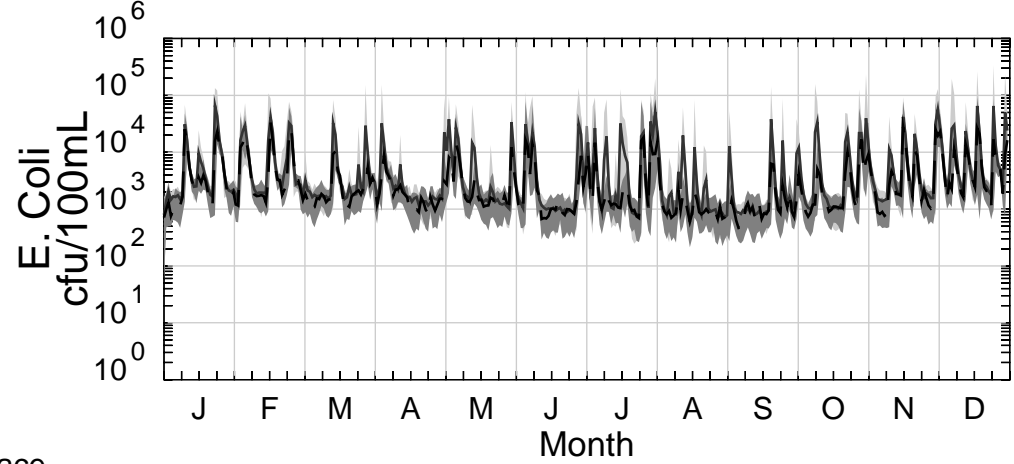
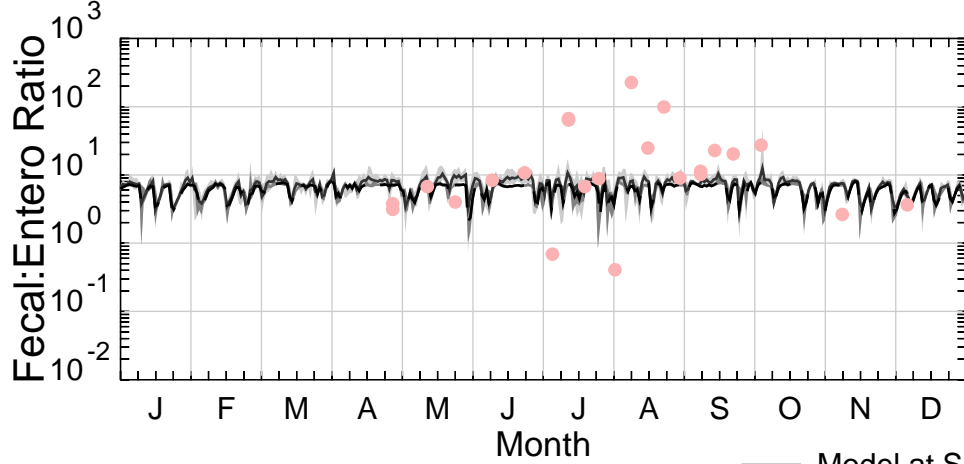
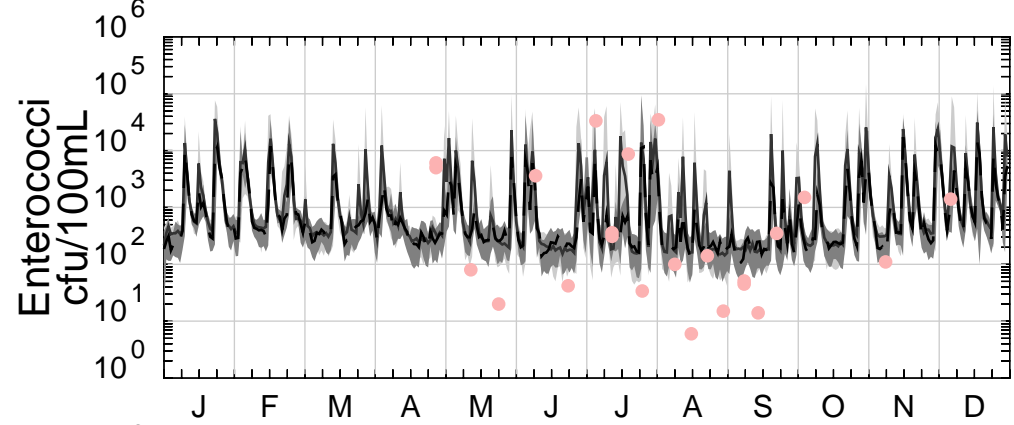
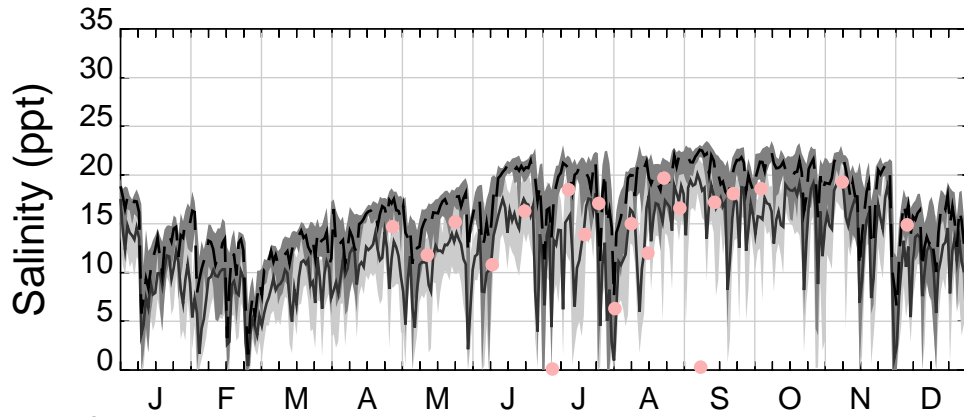
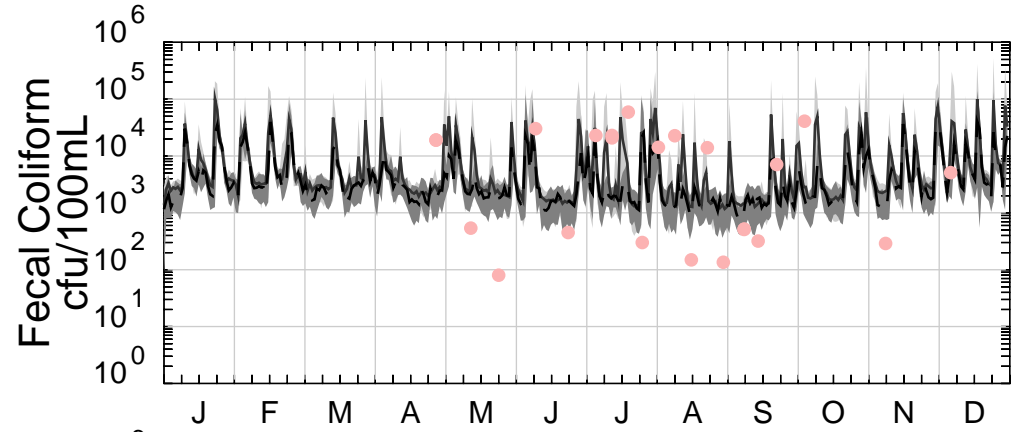
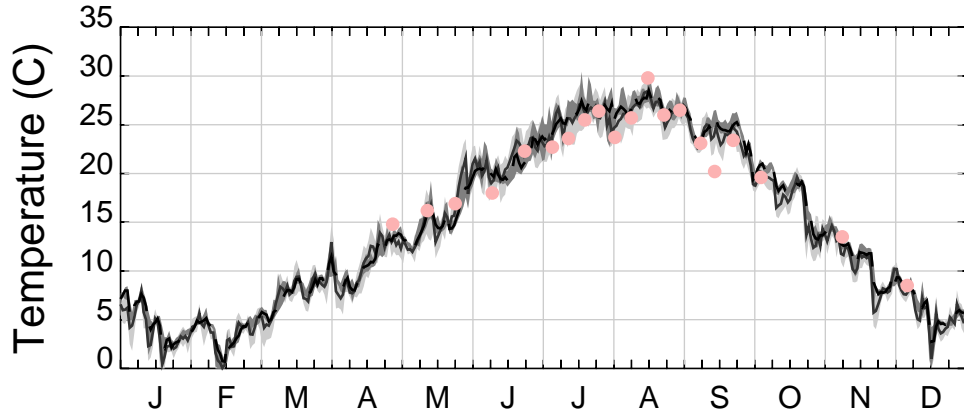
Station: B14



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

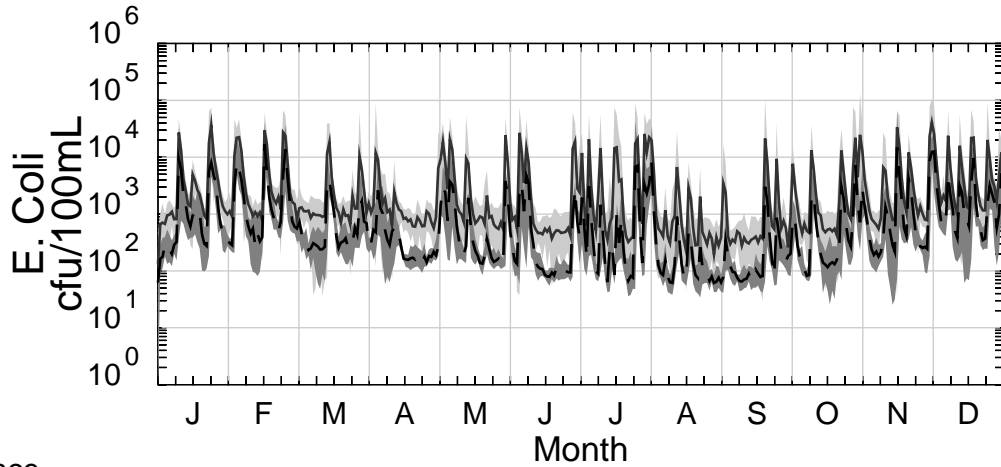
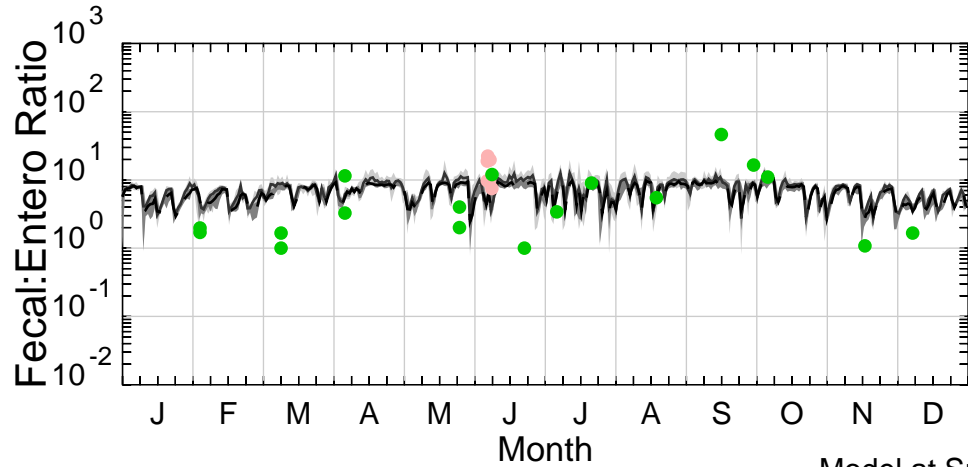
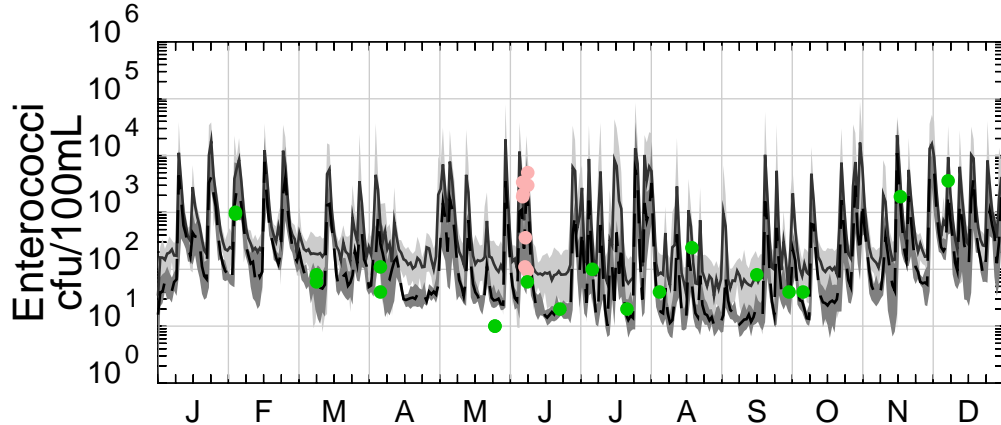
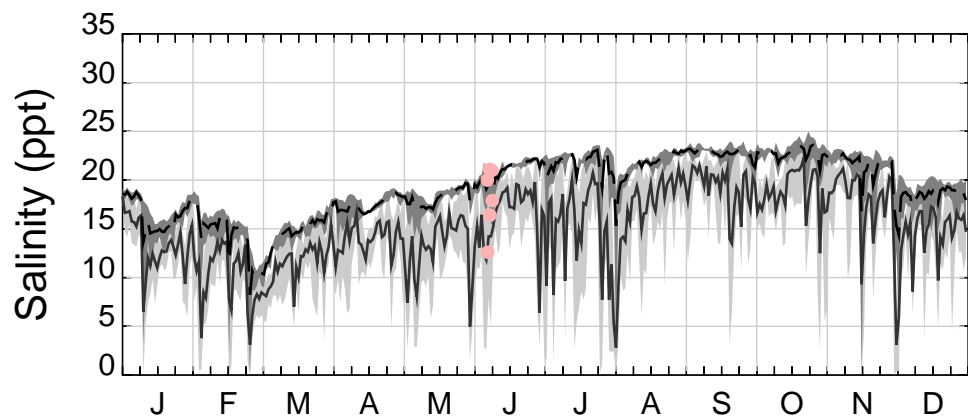
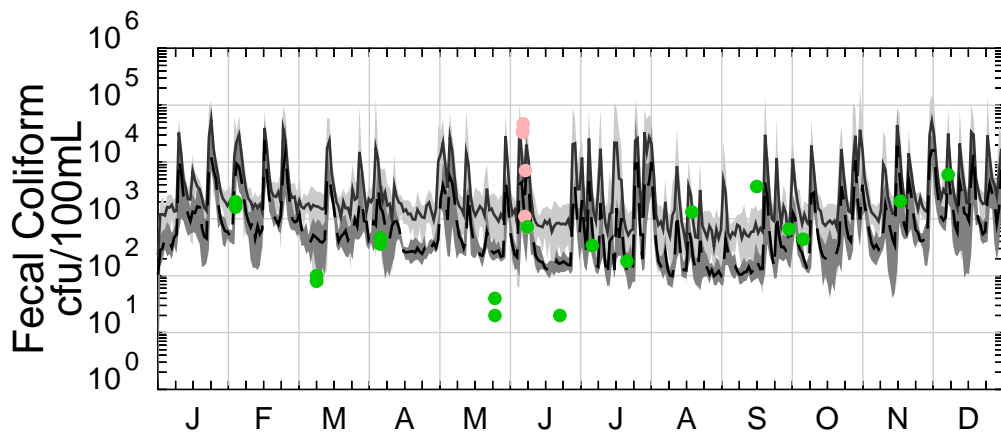
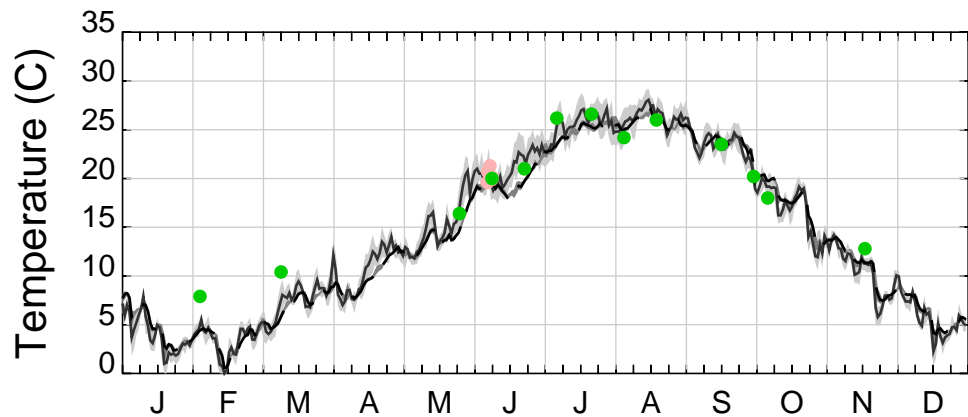
Station: B13



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

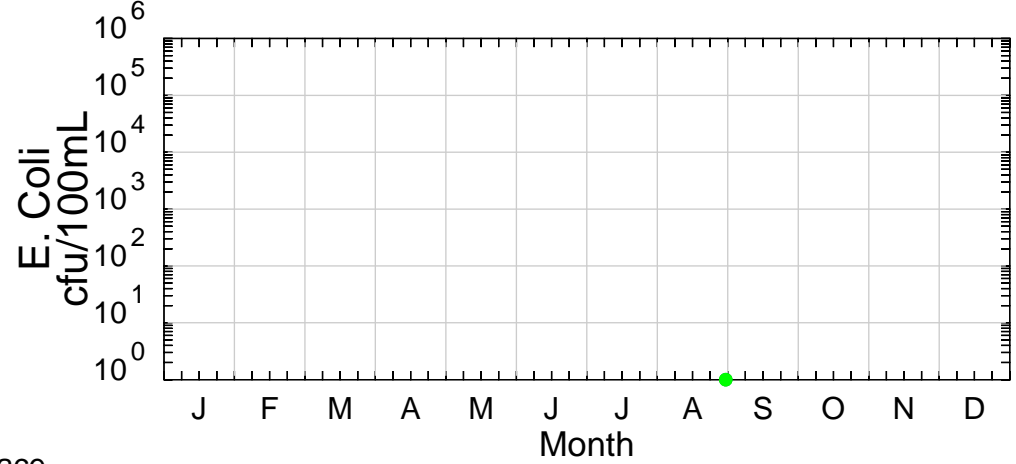
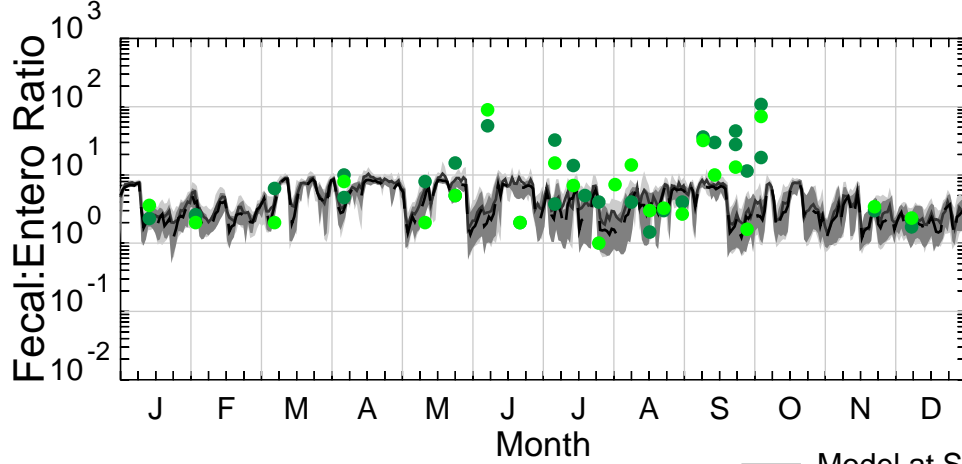
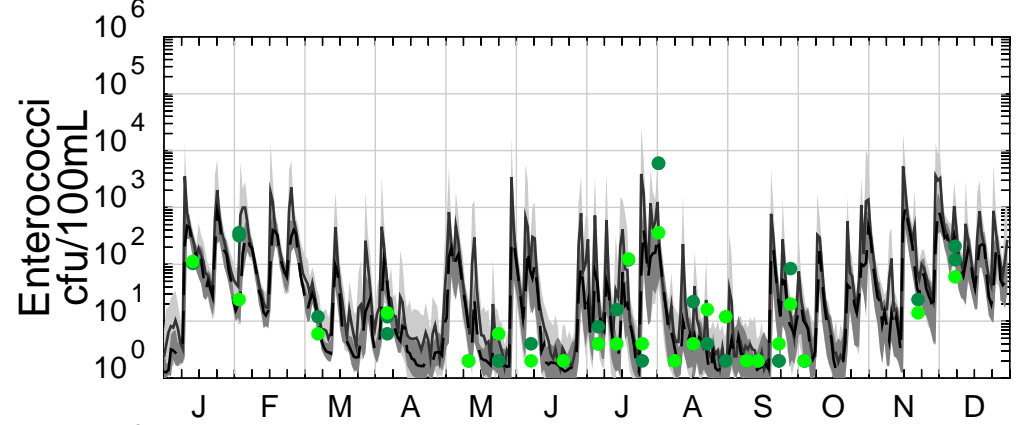
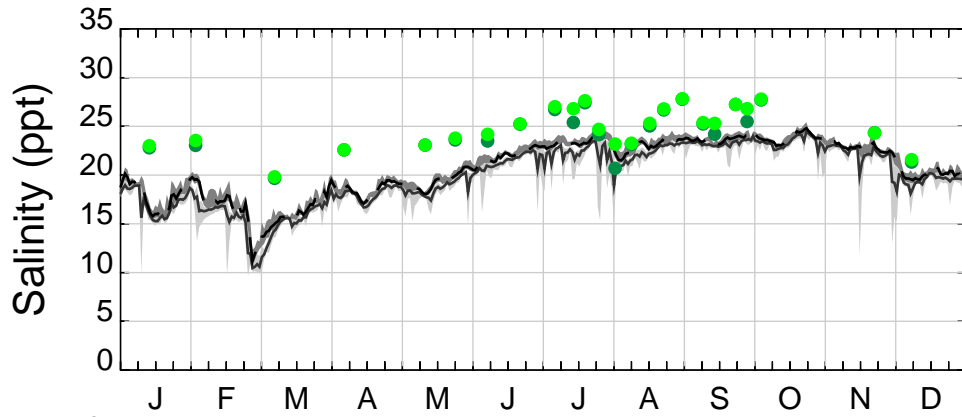
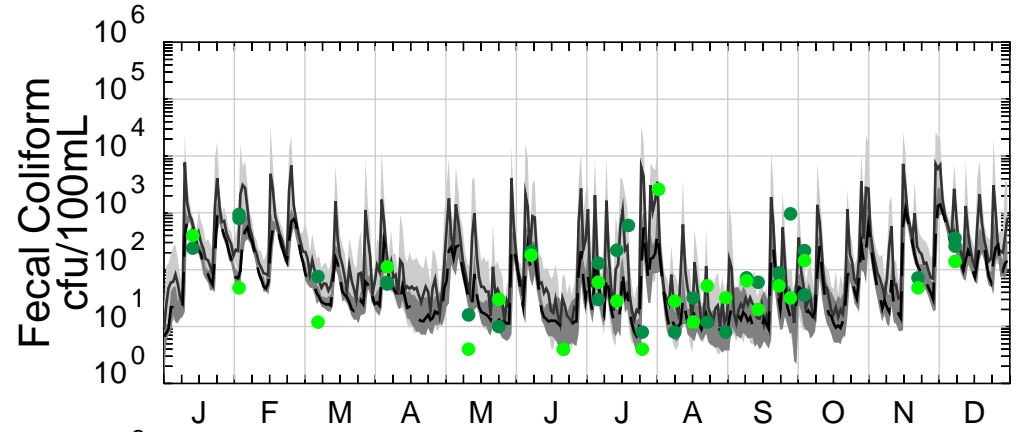
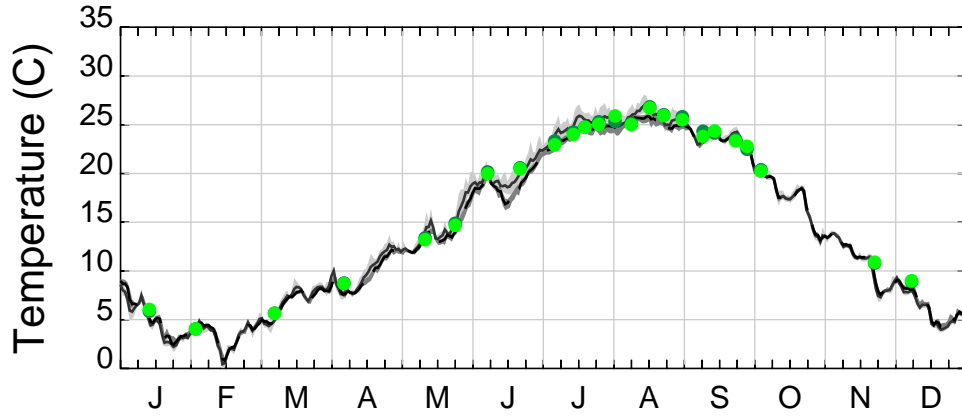
Station: 20



Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom
 ●●● Surface/Mid-depth HDR Data
 ●●● Surface/Mid/Bottom NJHDG Data

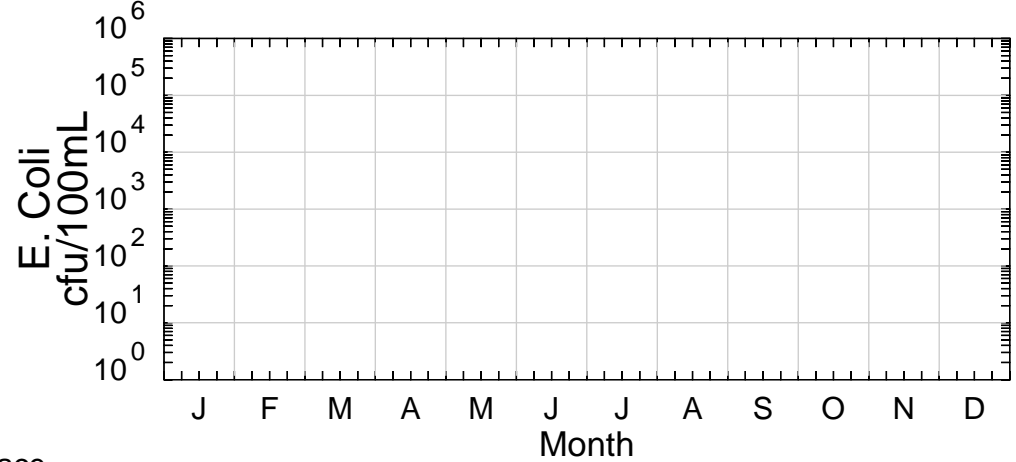
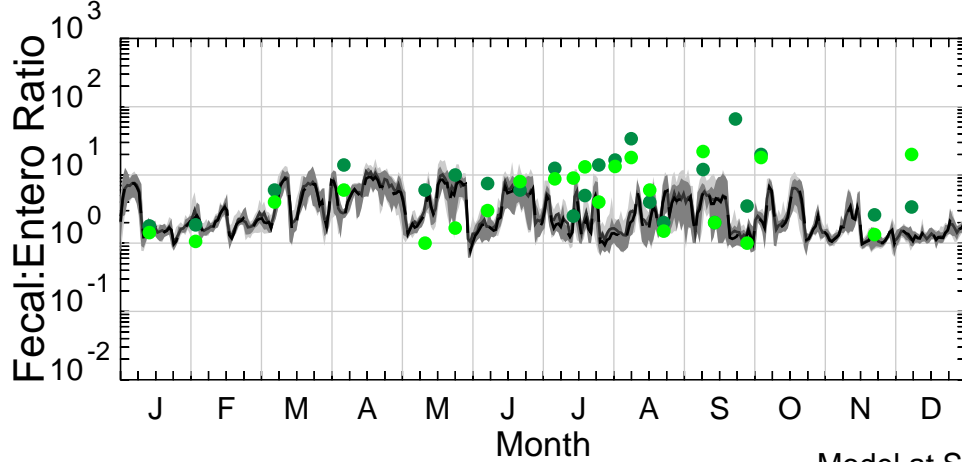
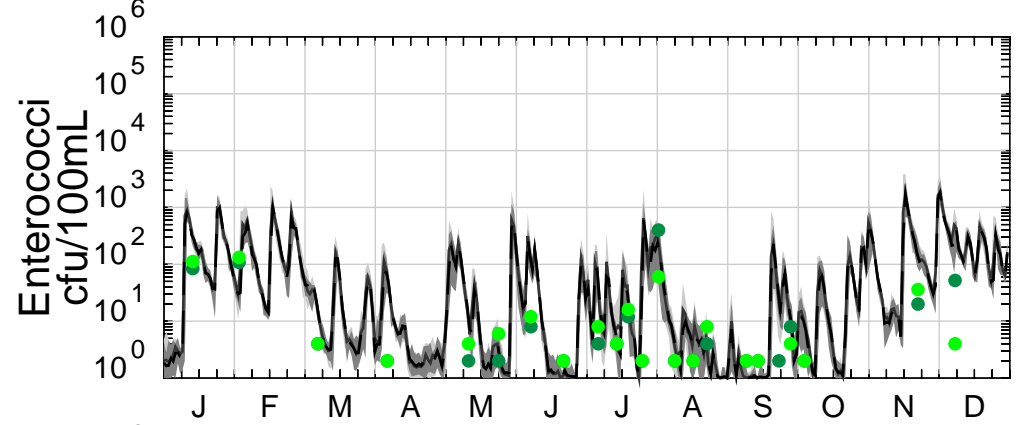
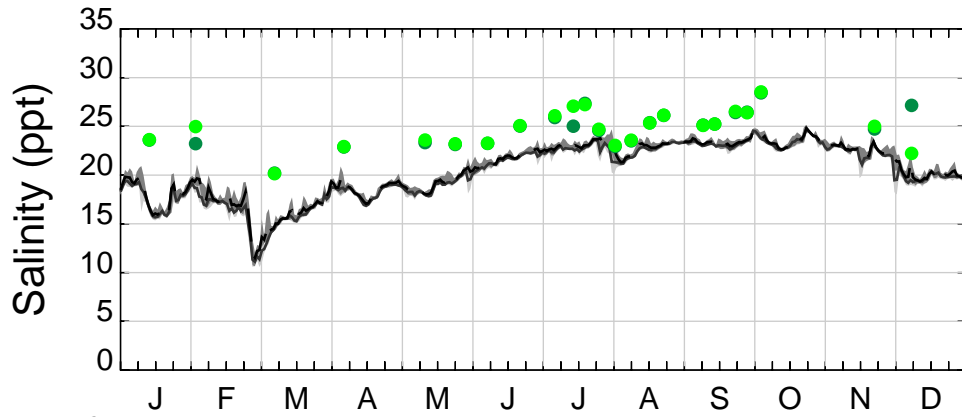
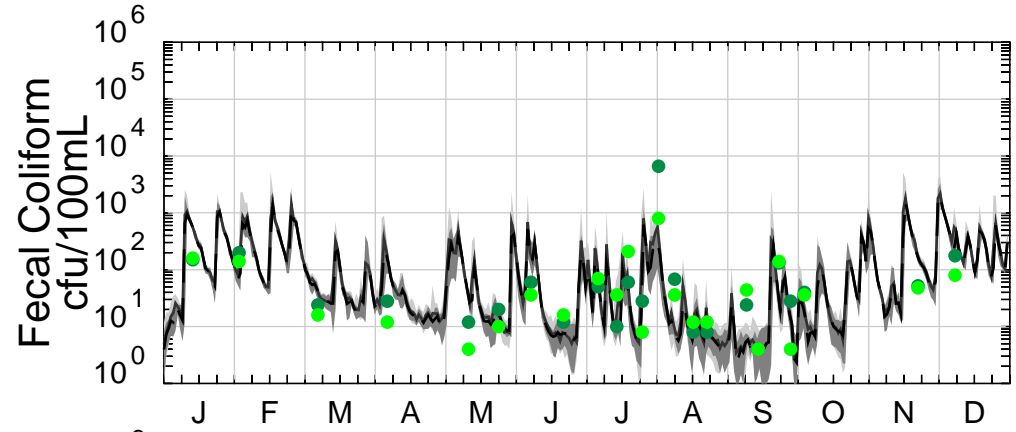
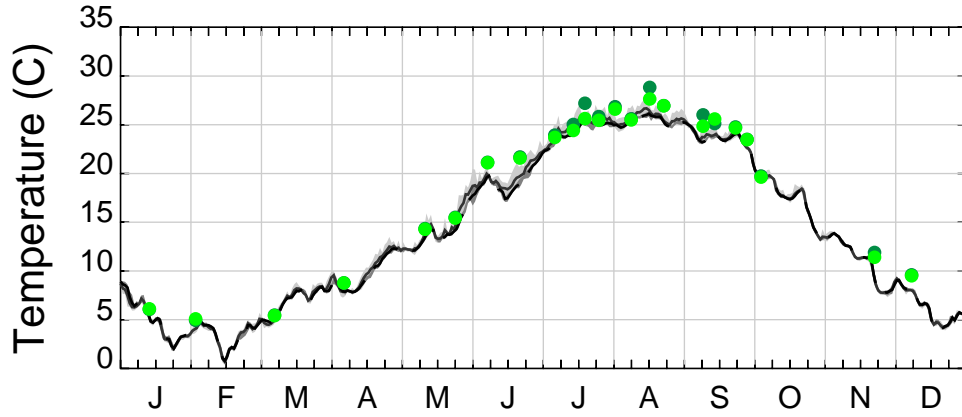
Station: 21



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Station: 23

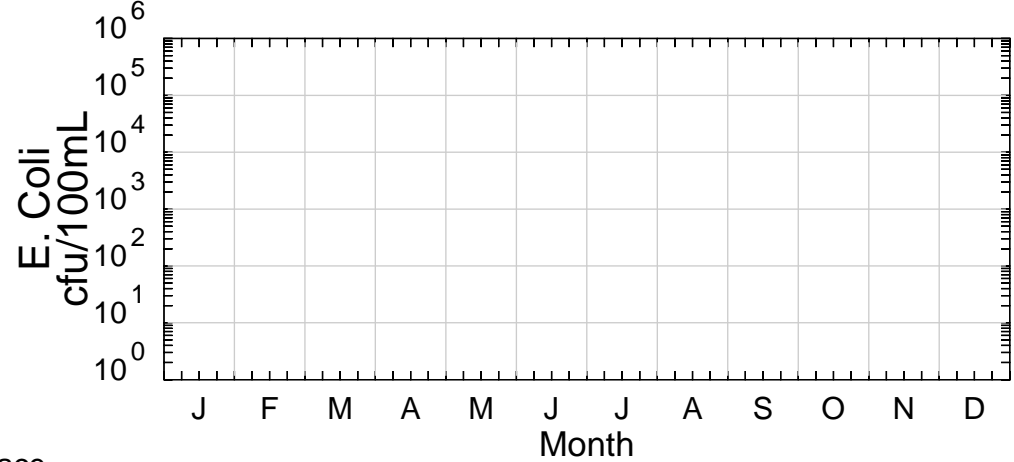
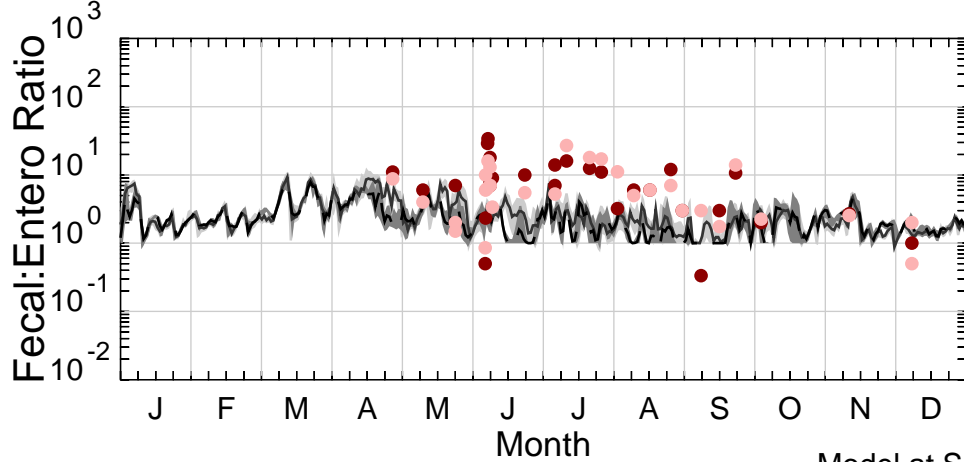
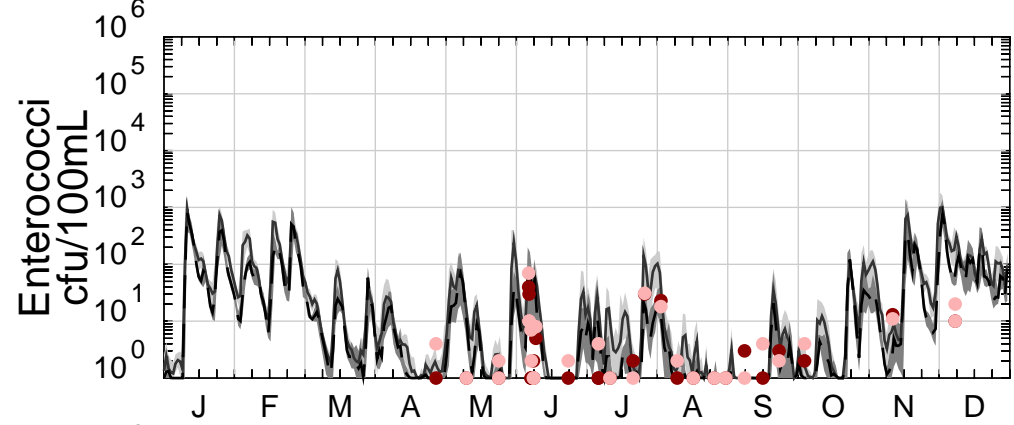
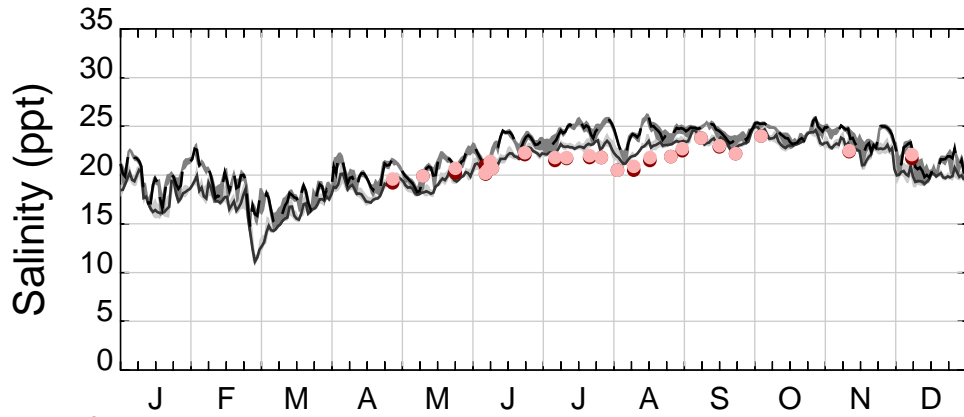
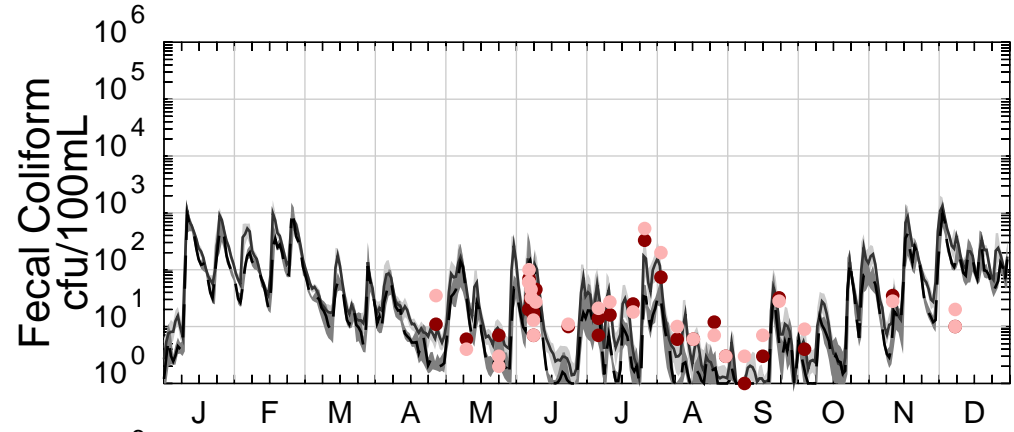
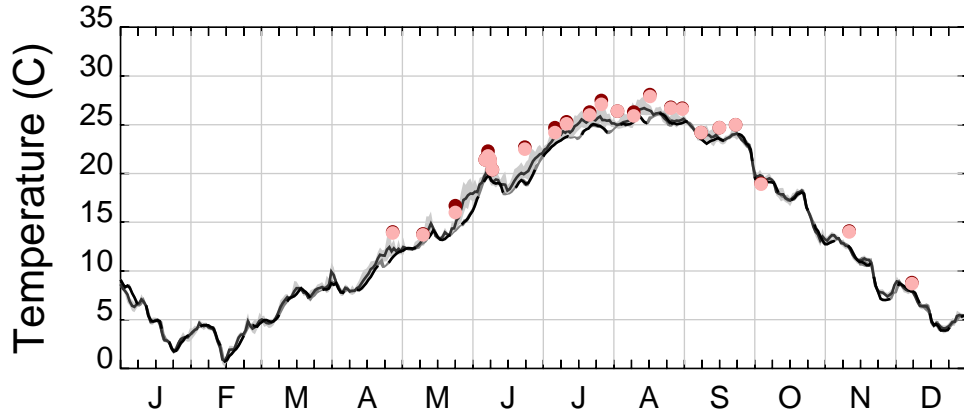


Model = 2016
 Data = 2016

— Model at Surface
 - - Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

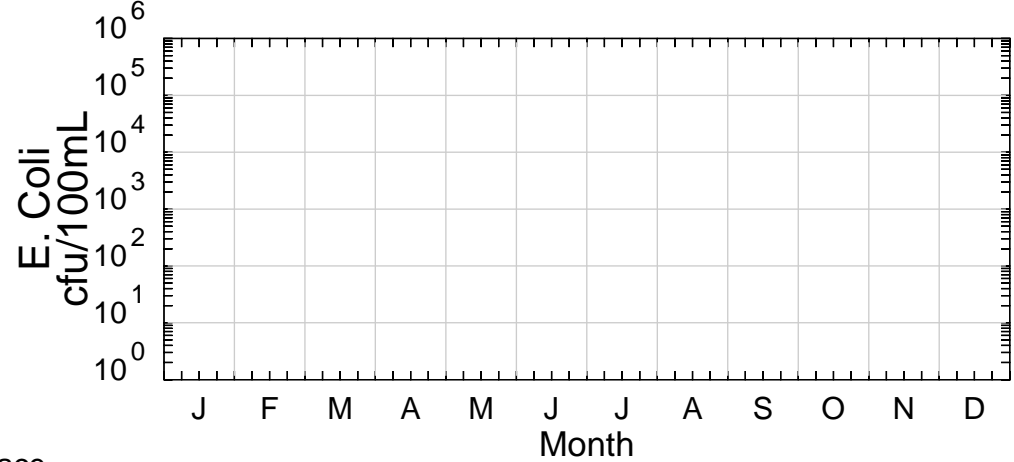
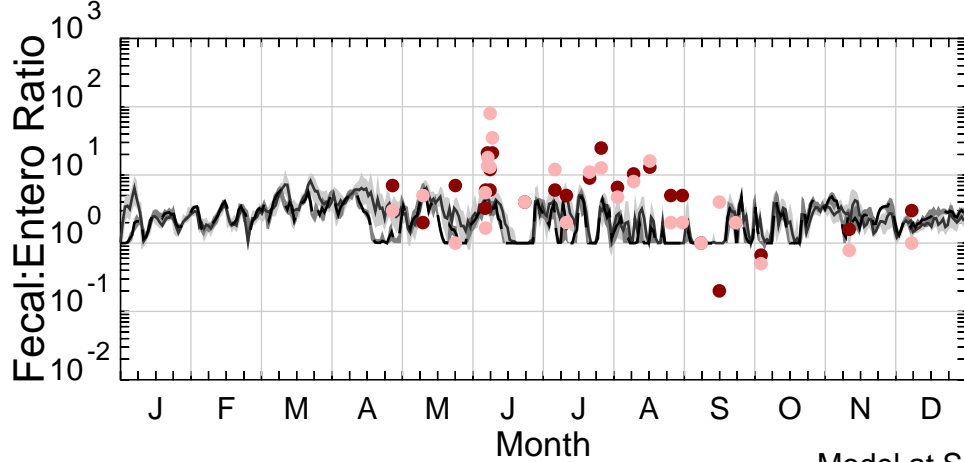
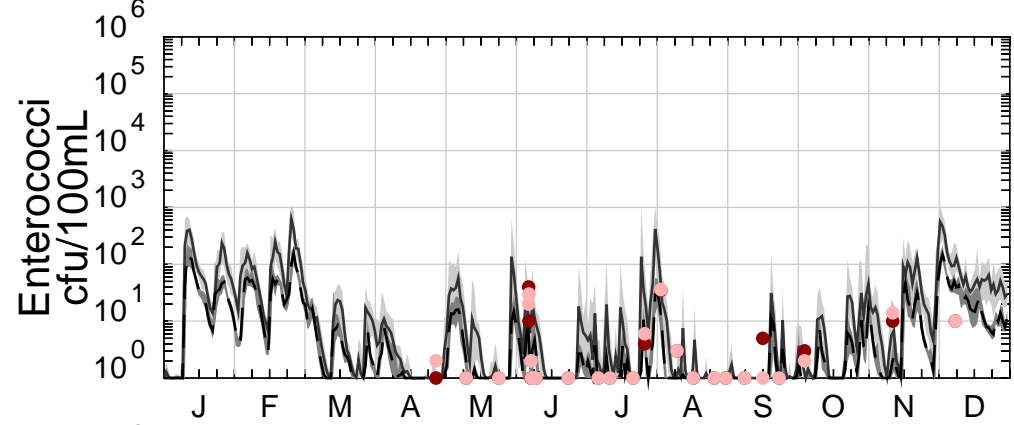
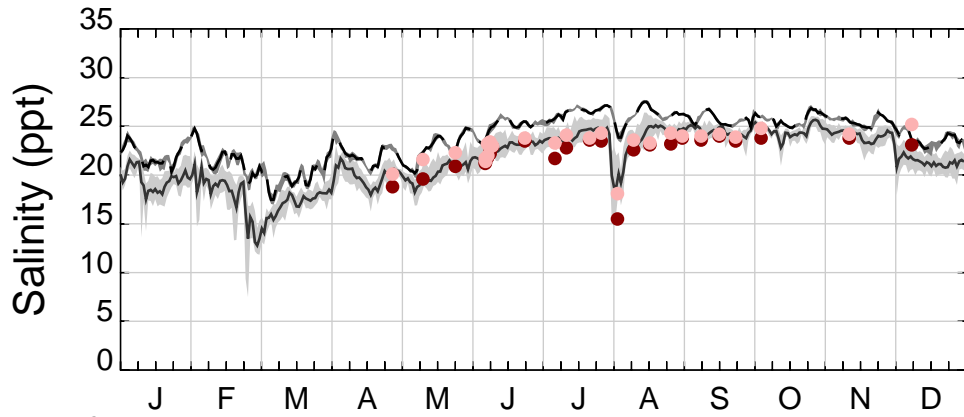
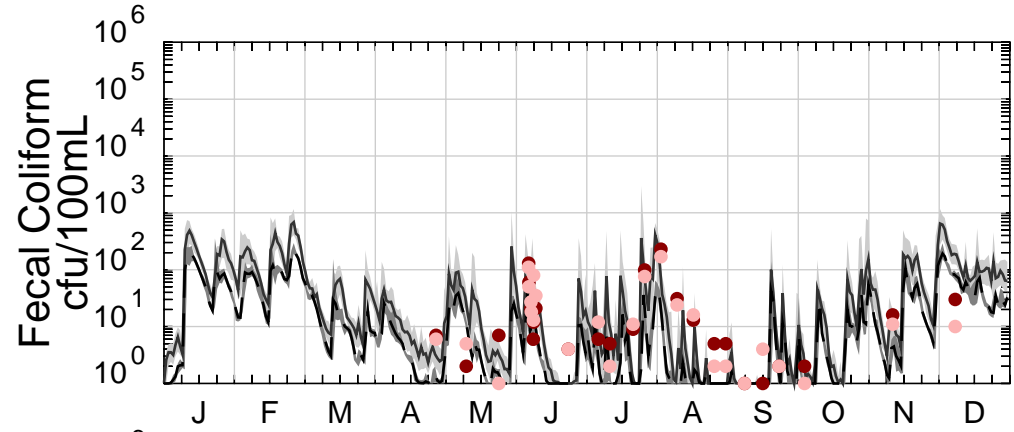
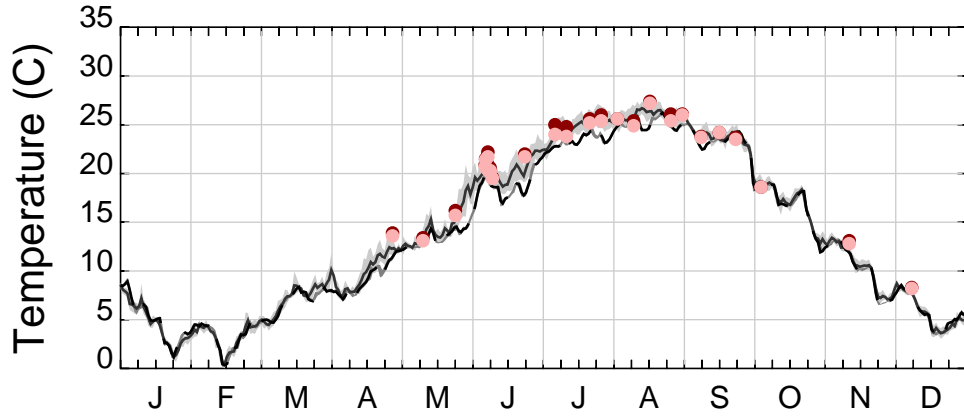
Station: 24



Model = 2016
Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

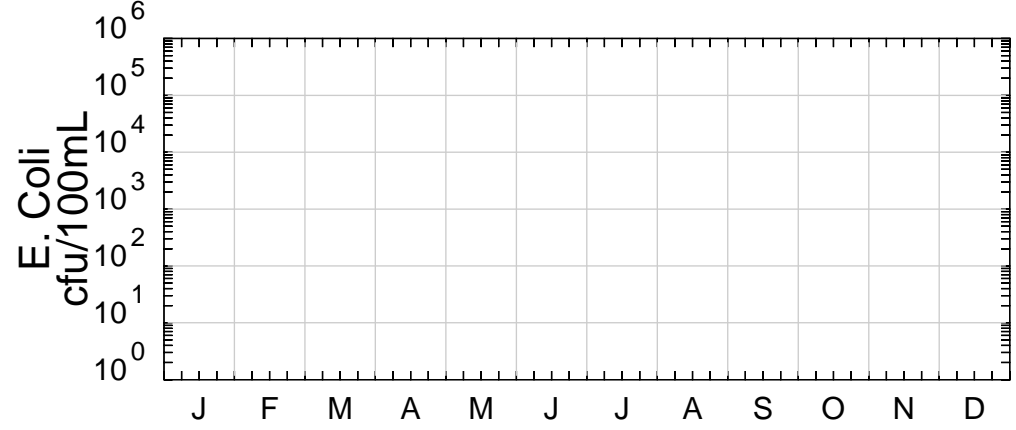
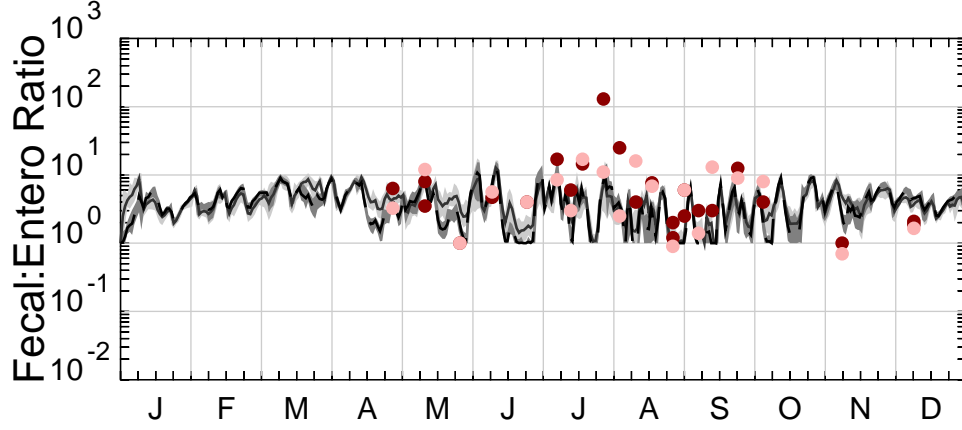
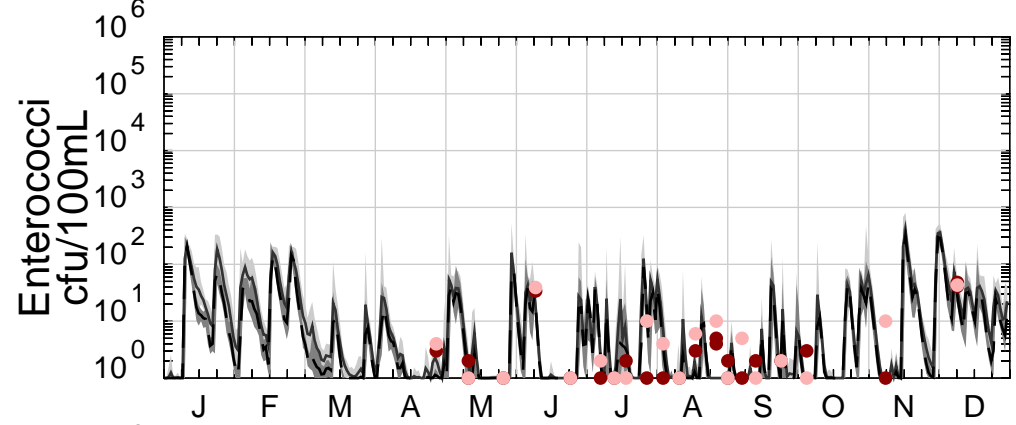
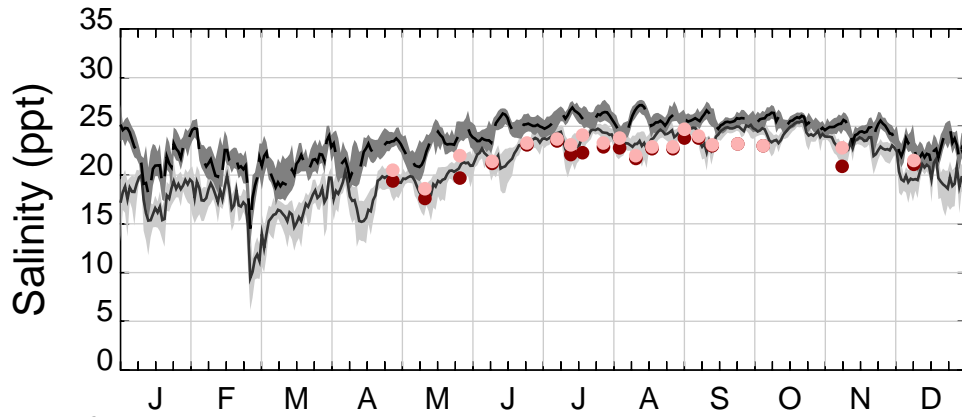
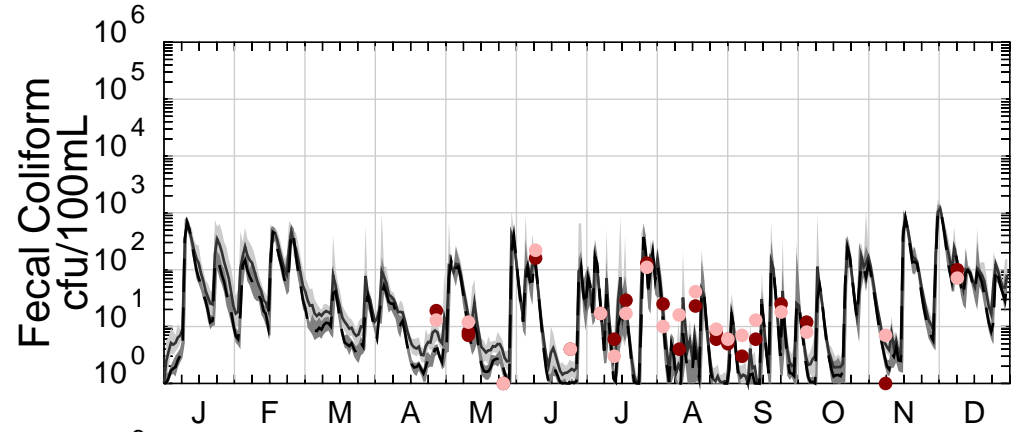
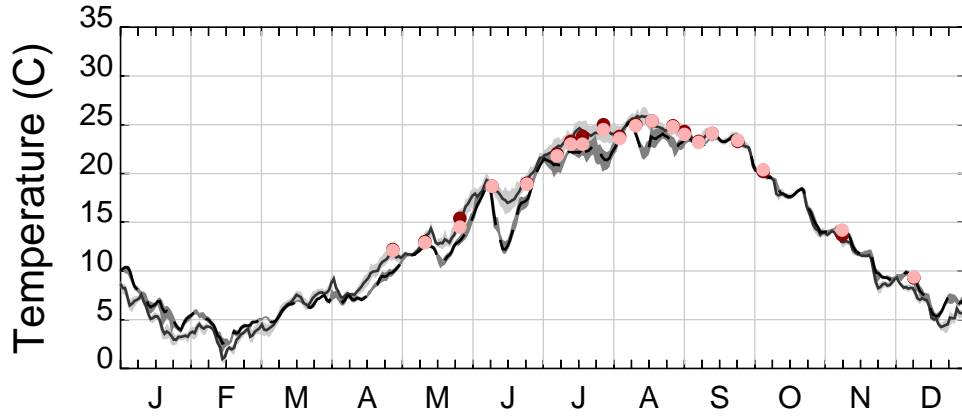
Station: B15



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

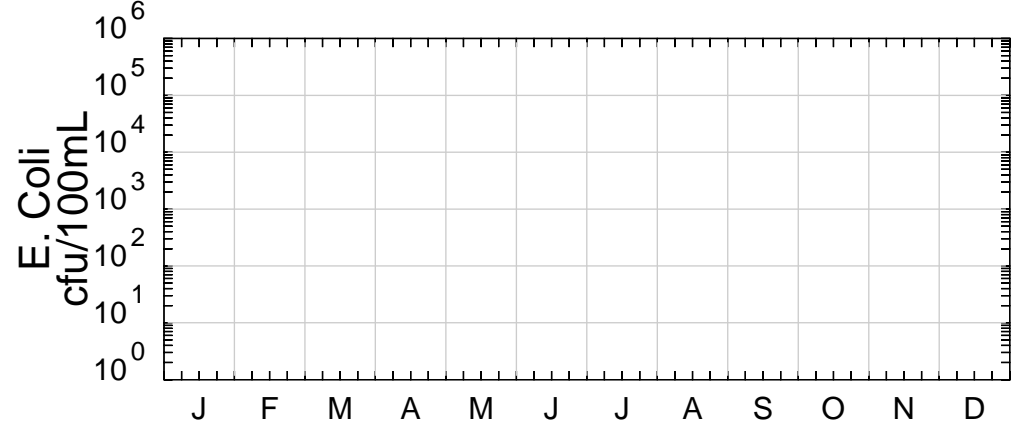
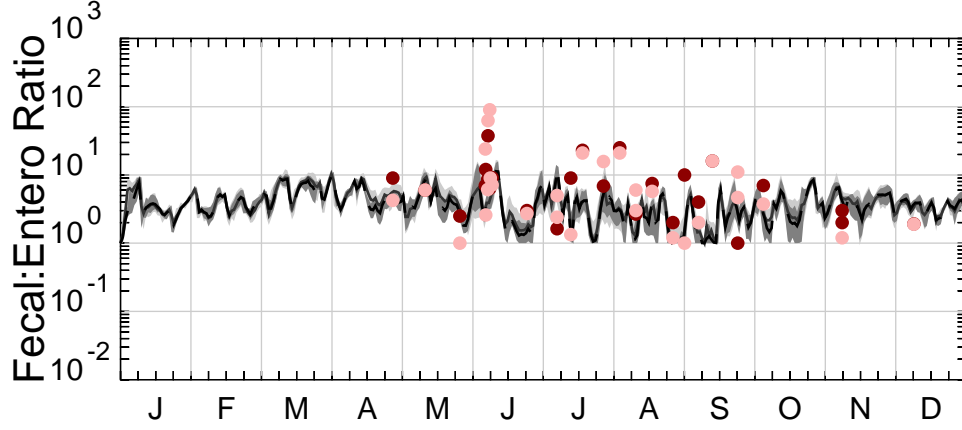
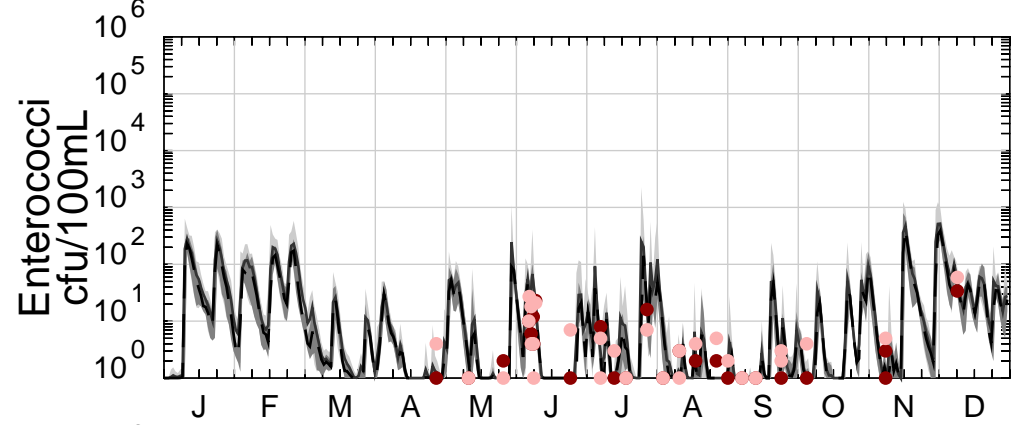
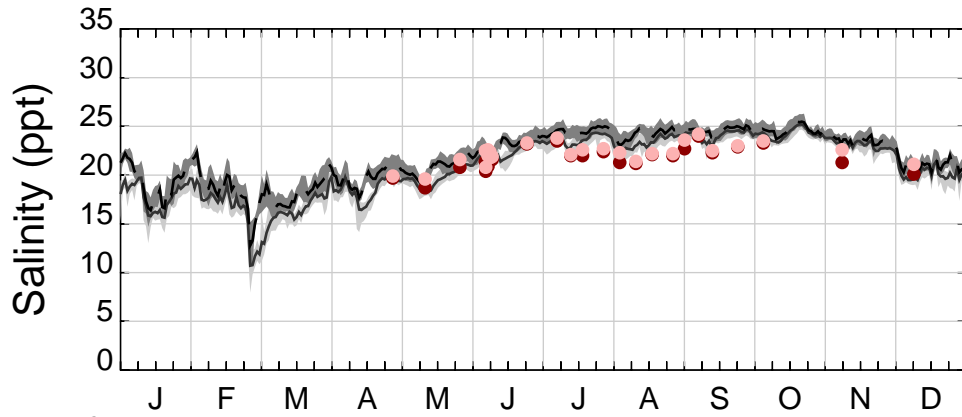
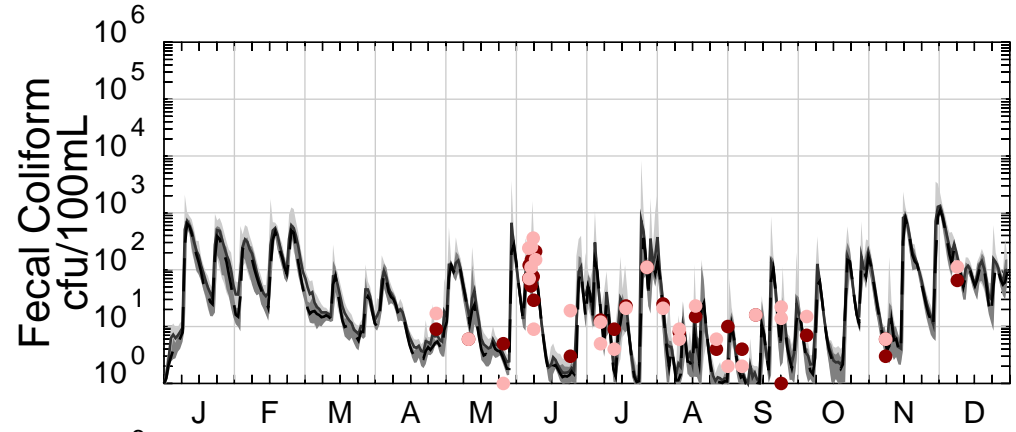
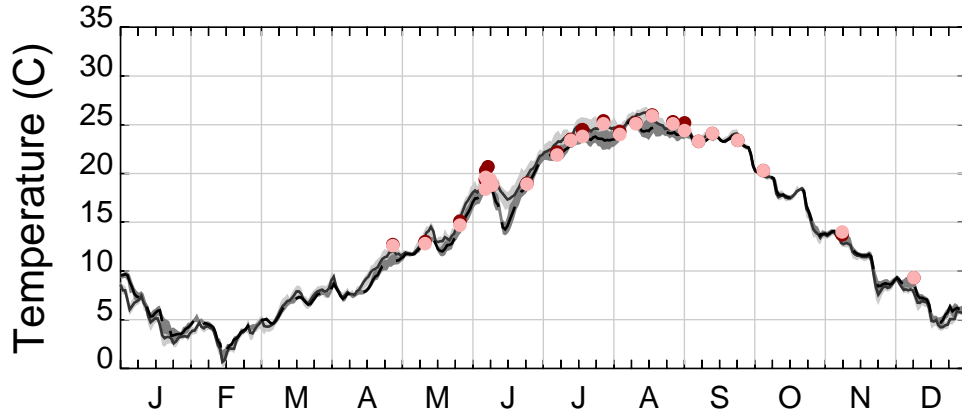
Station: B20



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

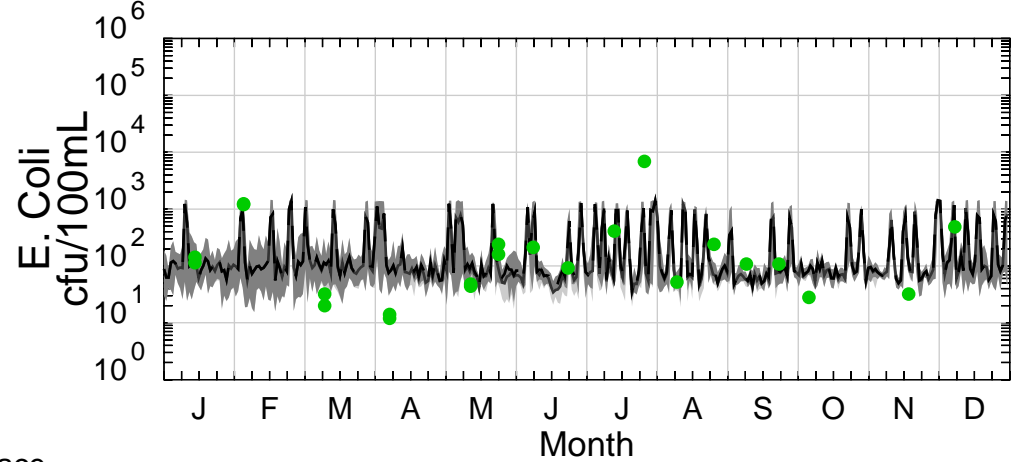
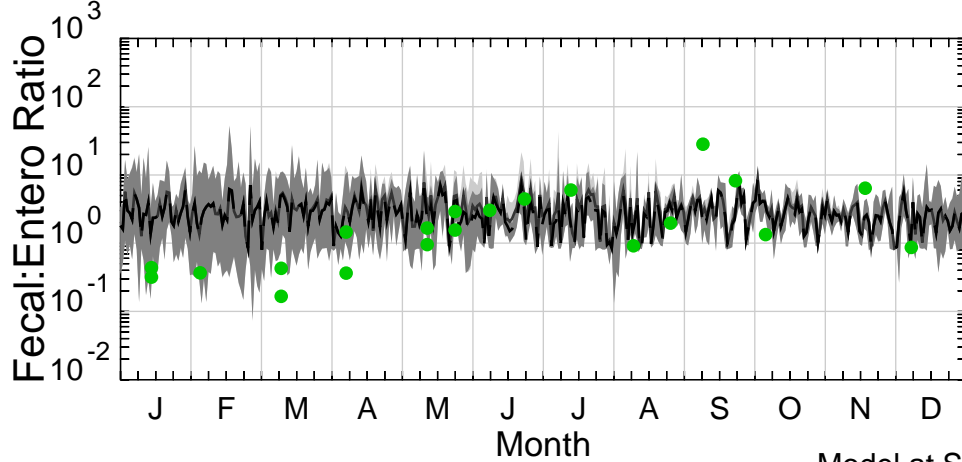
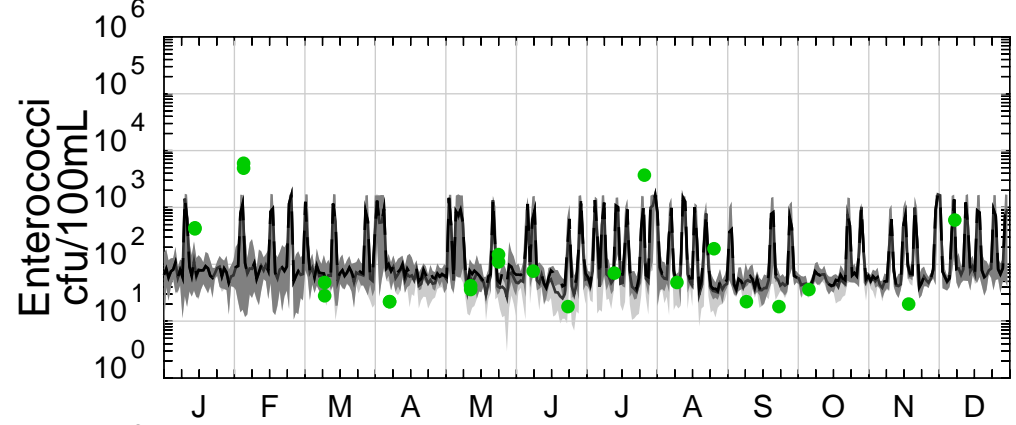
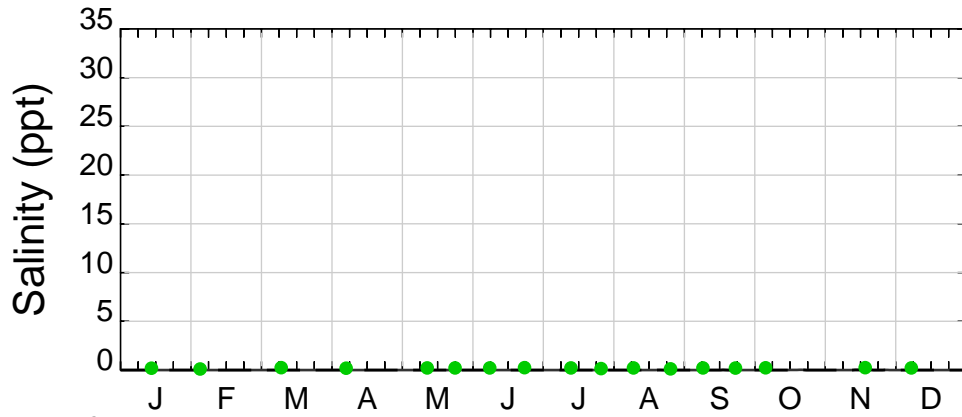
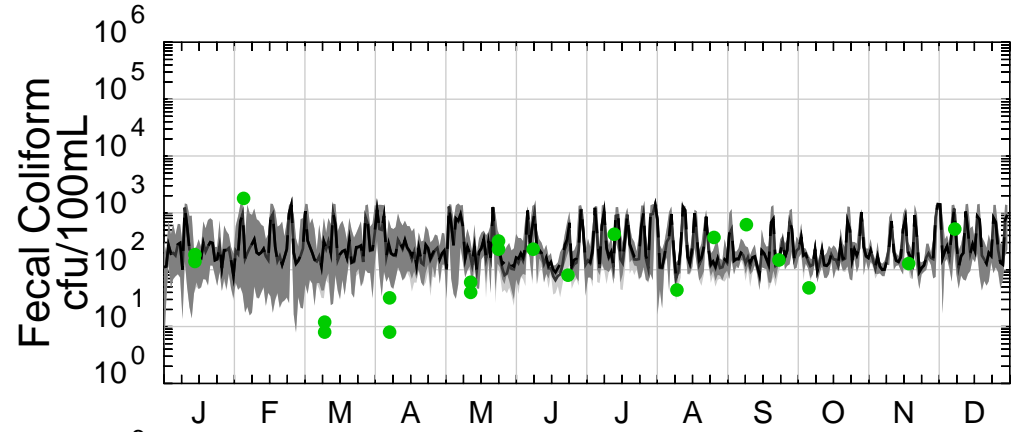
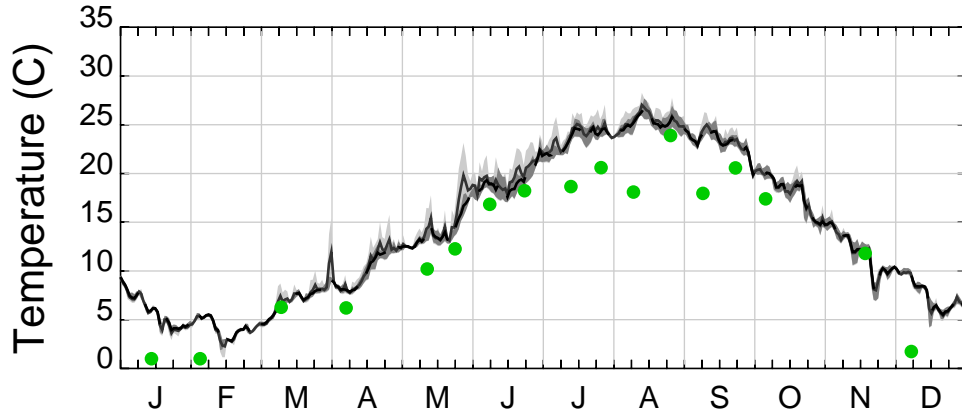
Station: B12



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

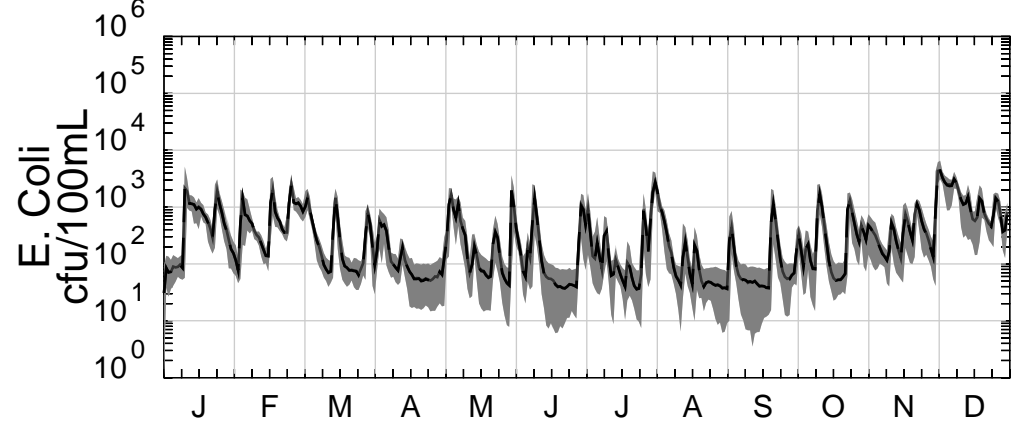
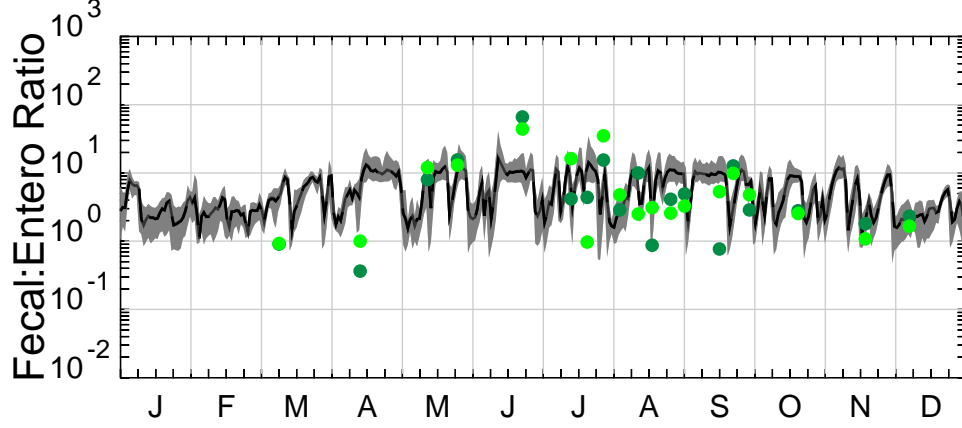
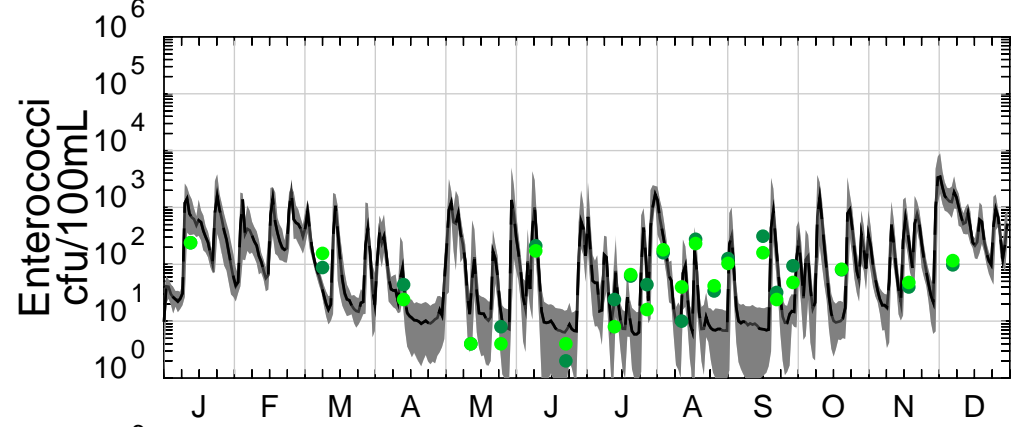
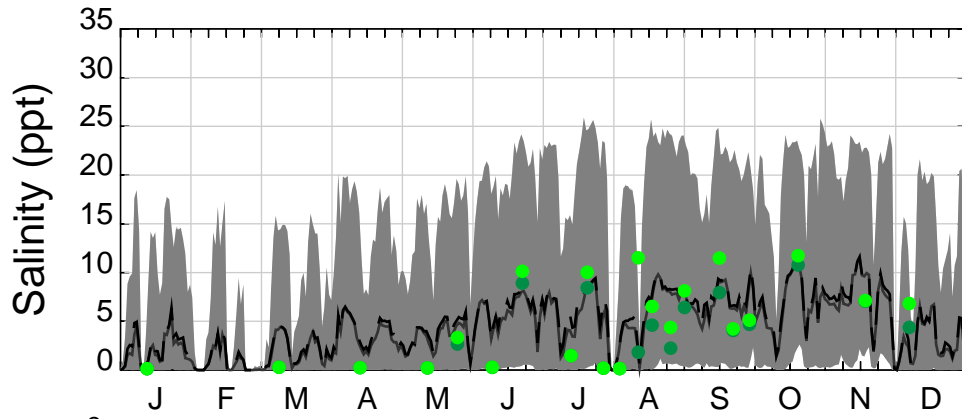
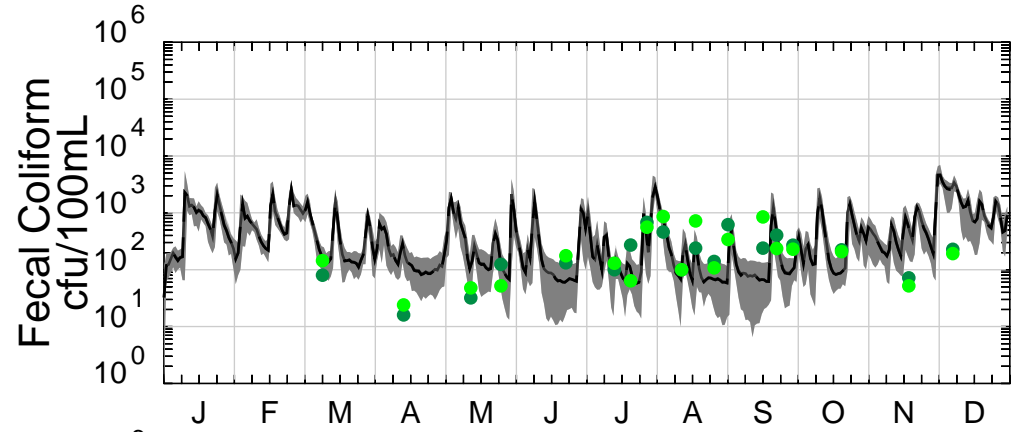
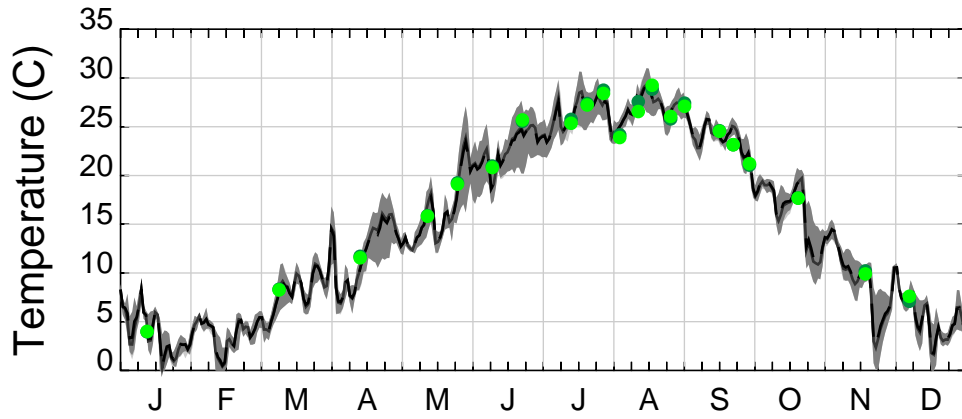
Station: 25



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Station: 26

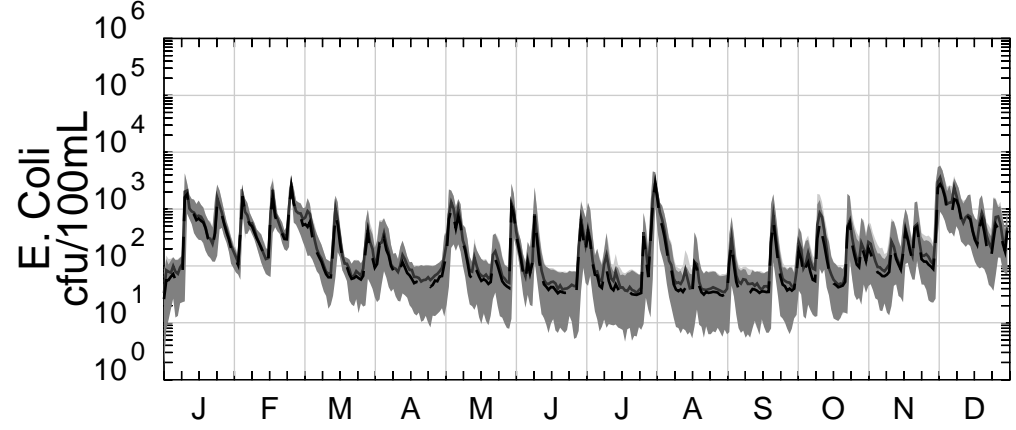
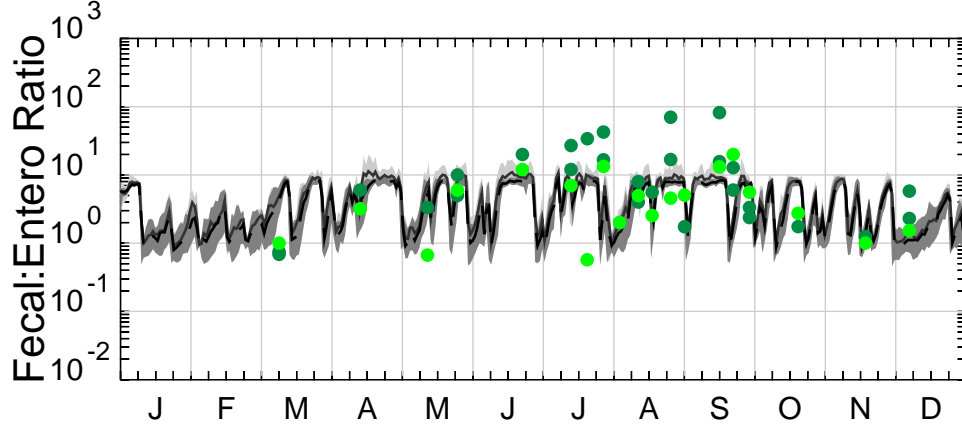
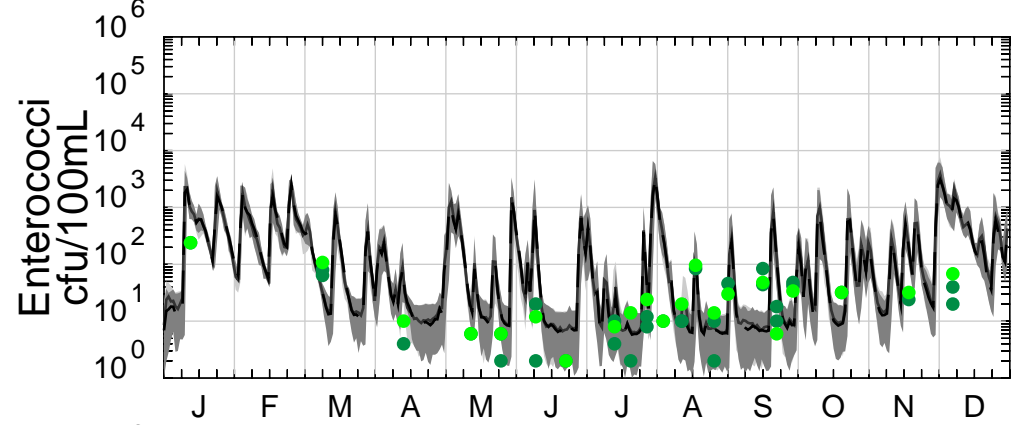
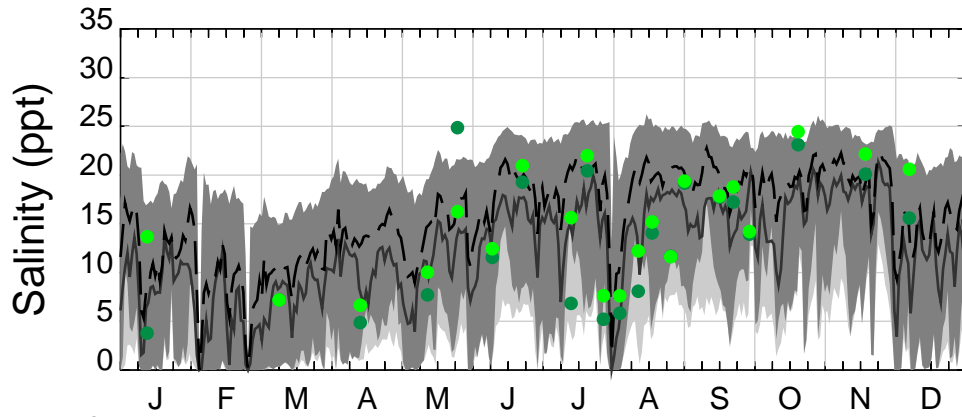
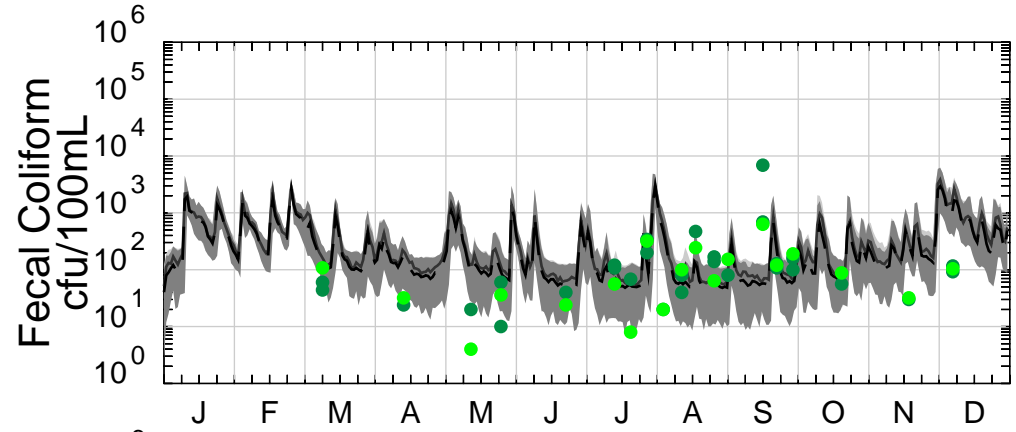
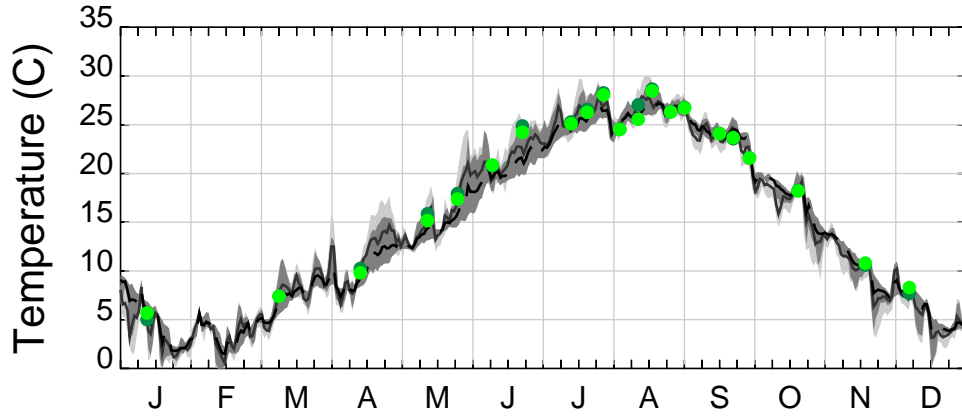


Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Station: 27

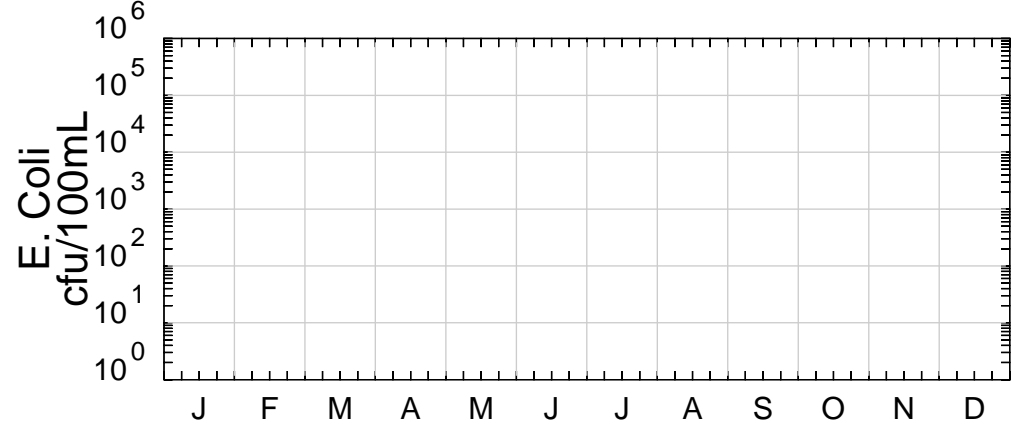
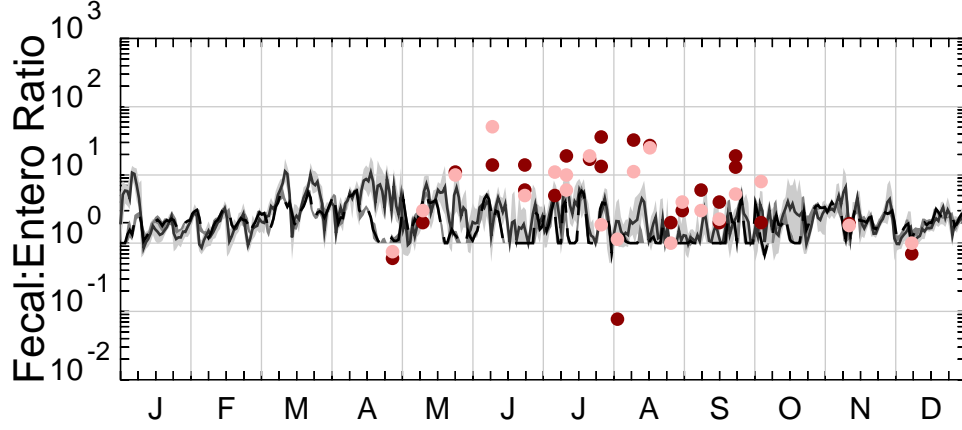
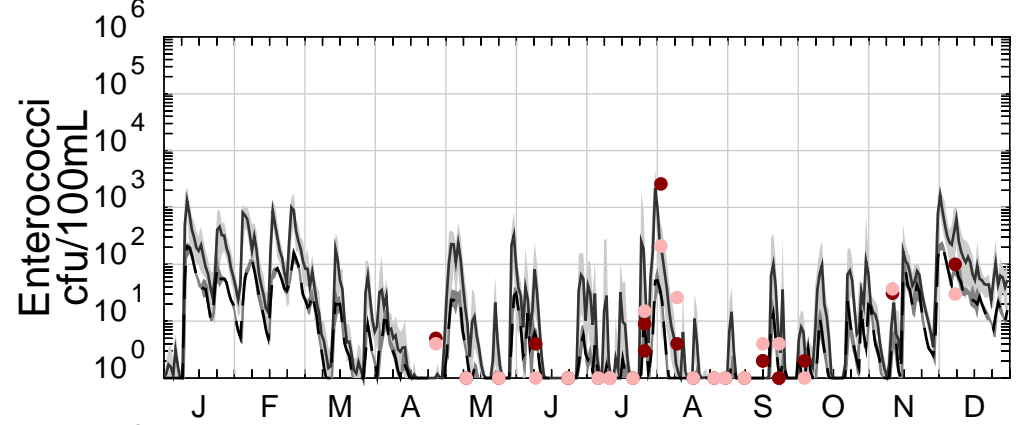
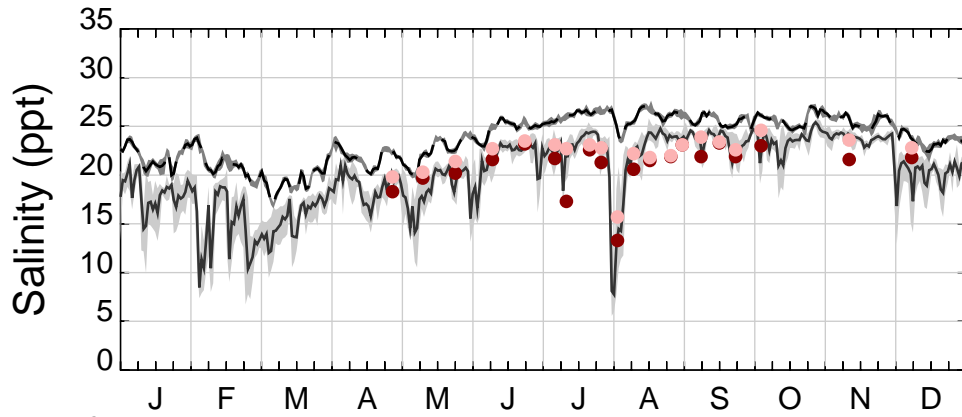
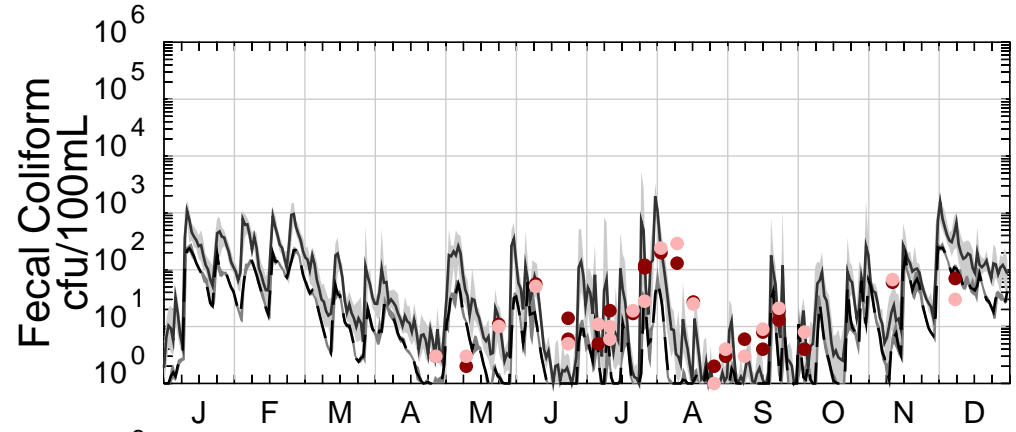
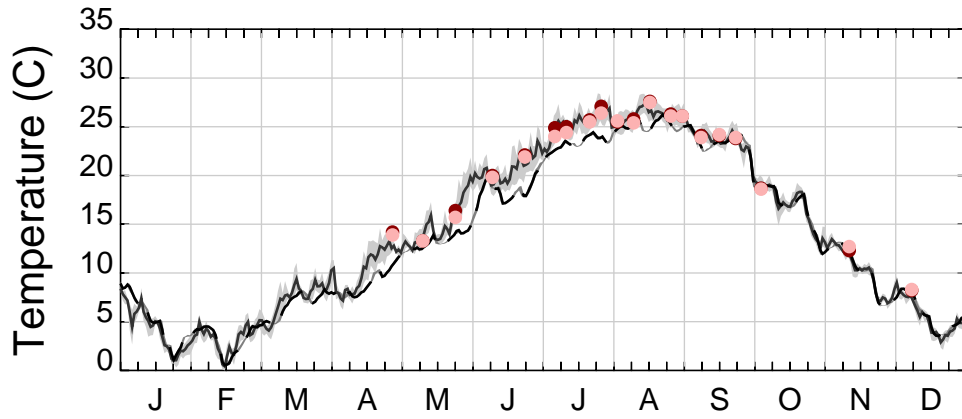


Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

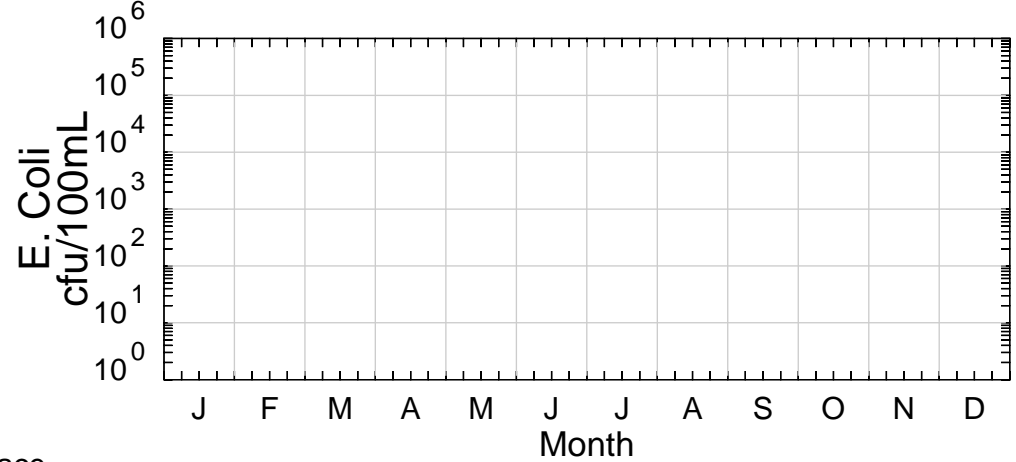
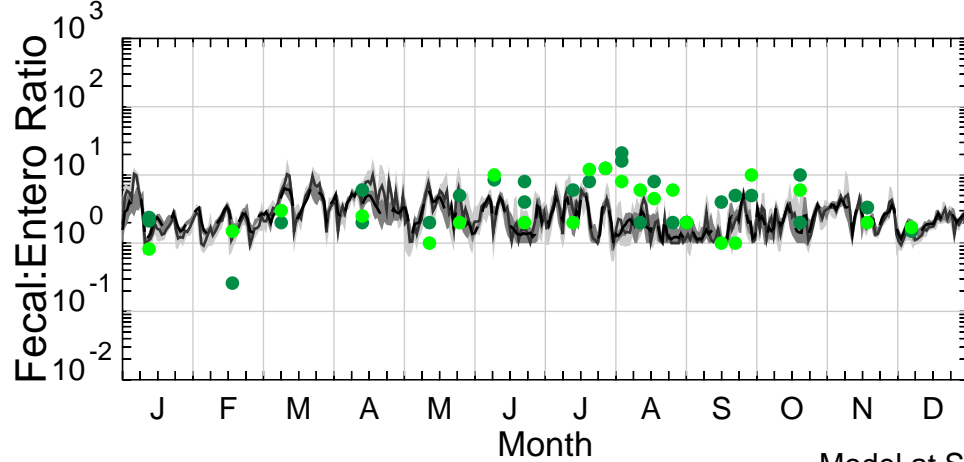
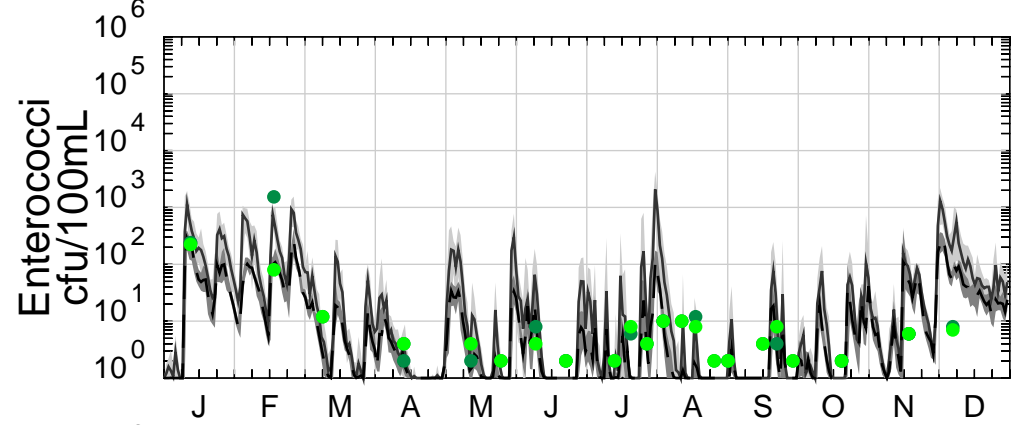
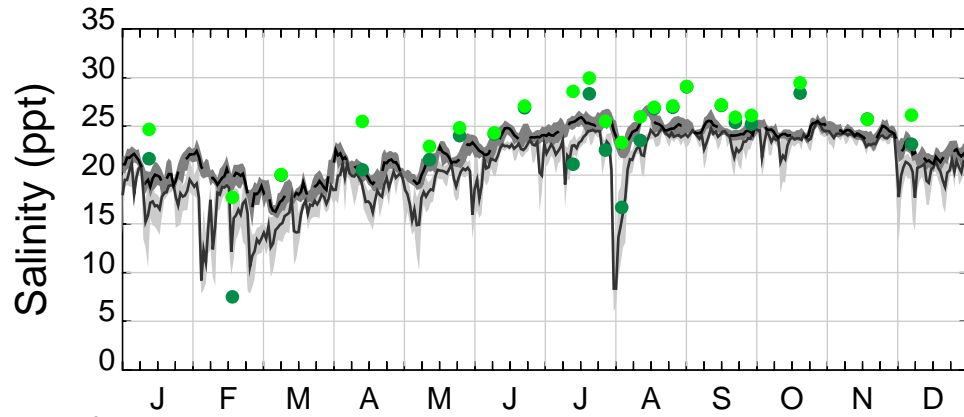
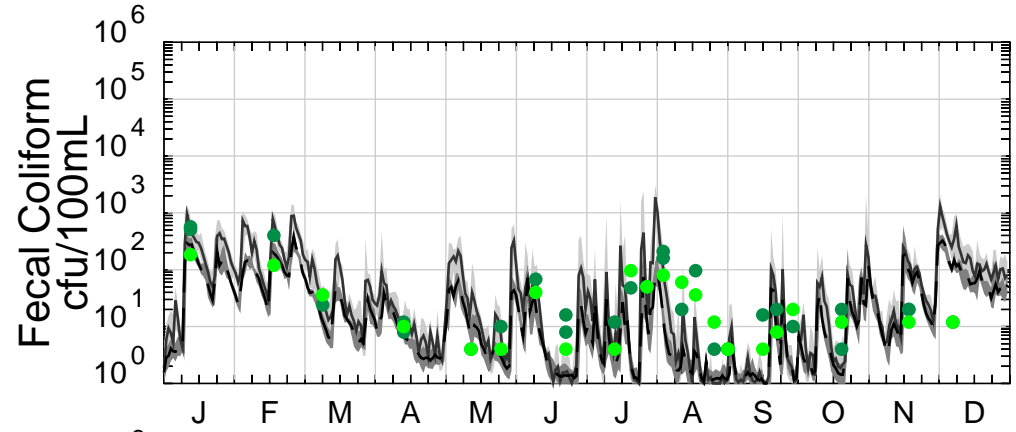
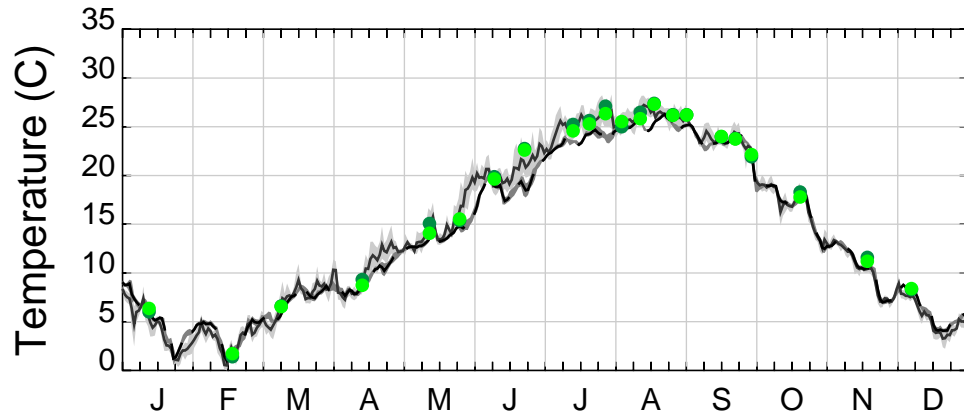
Station: B19



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

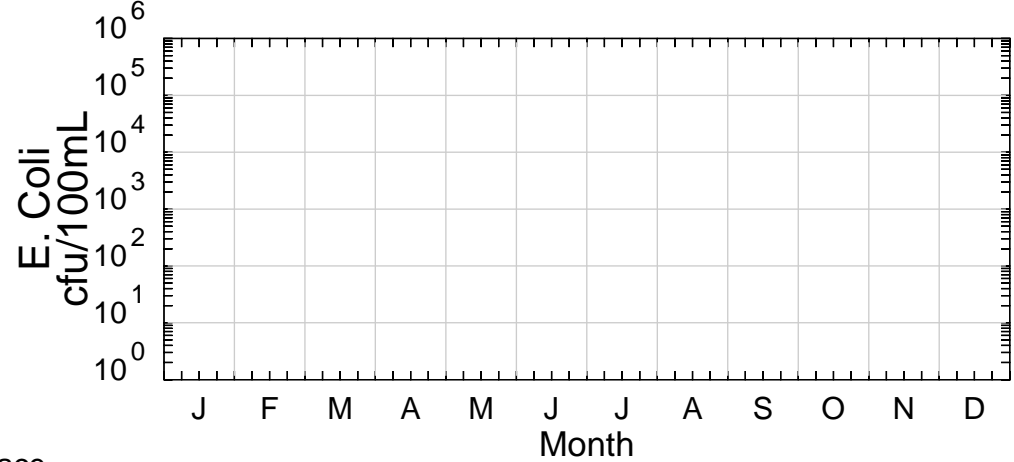
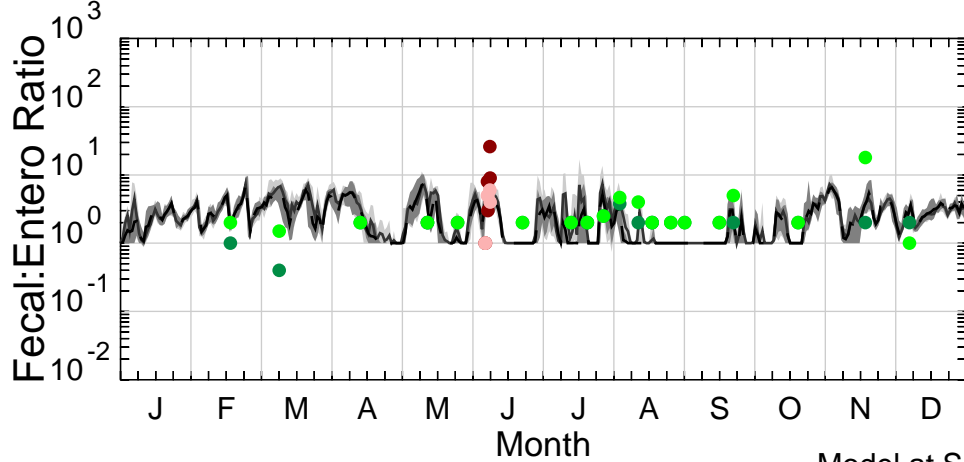
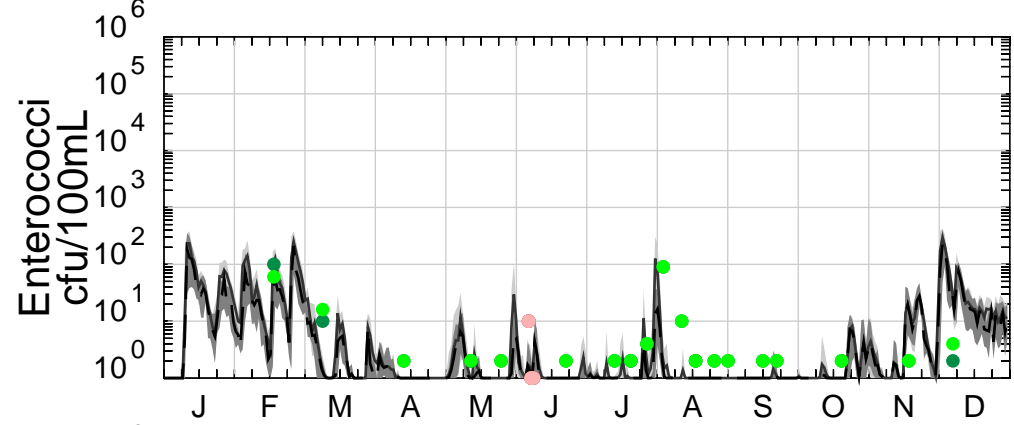
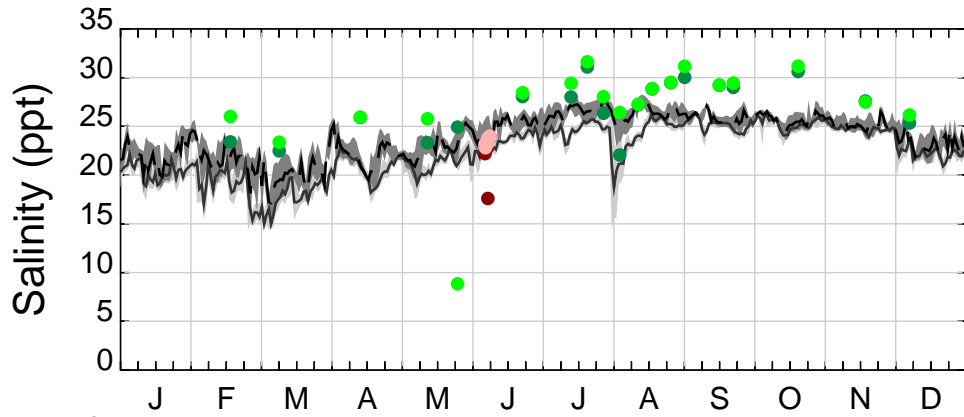
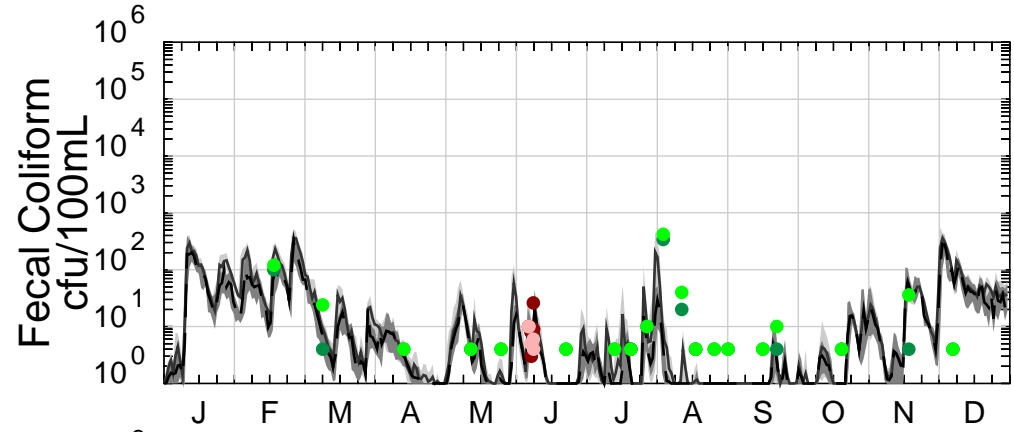
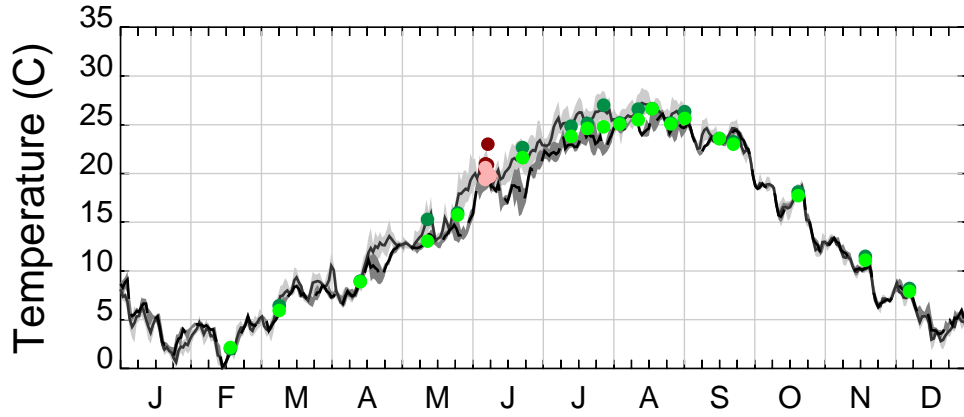
Station: 28



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

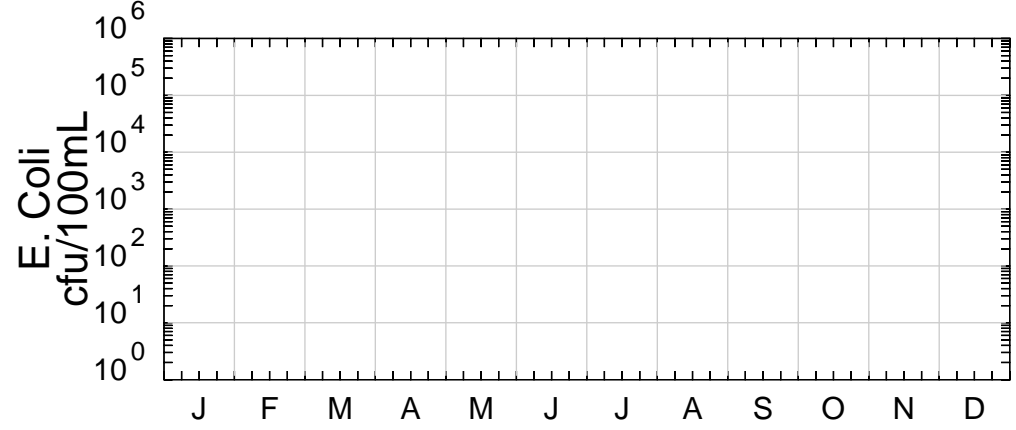
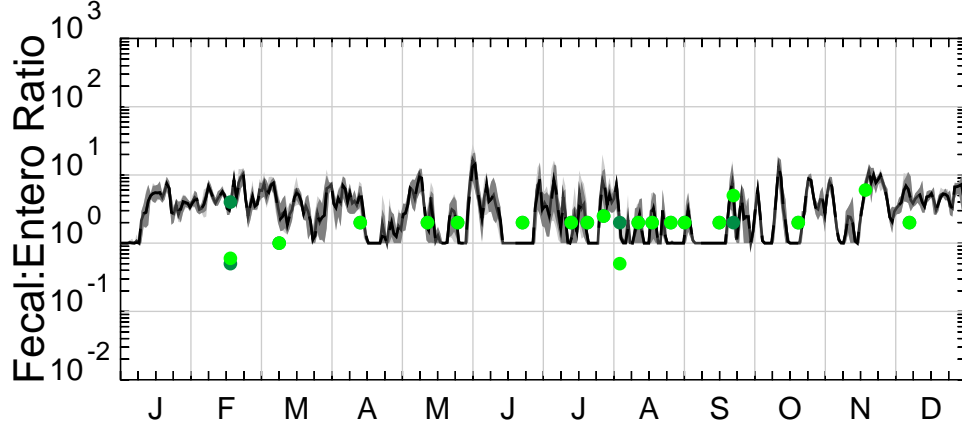
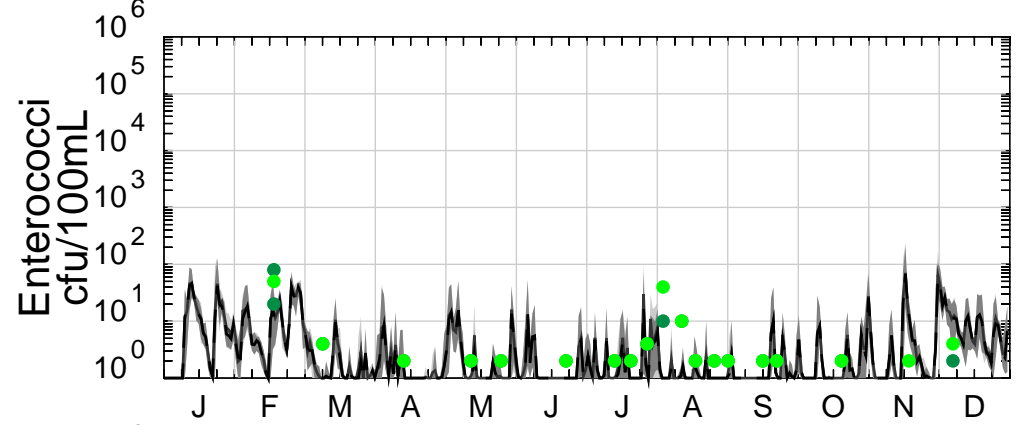
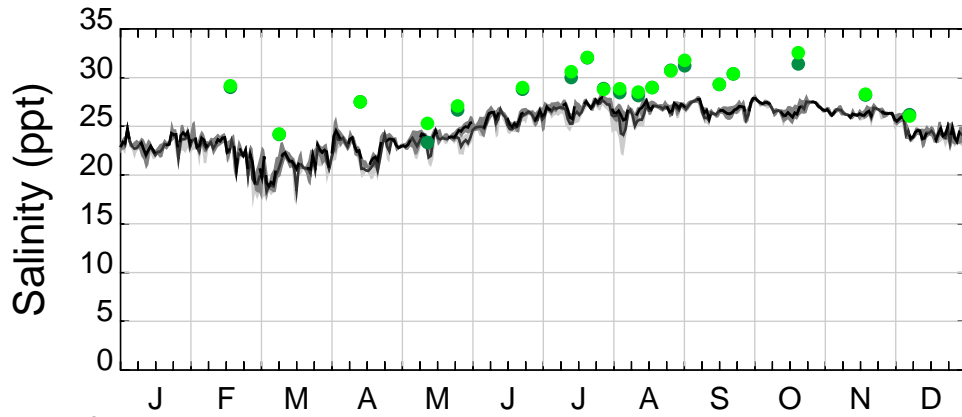
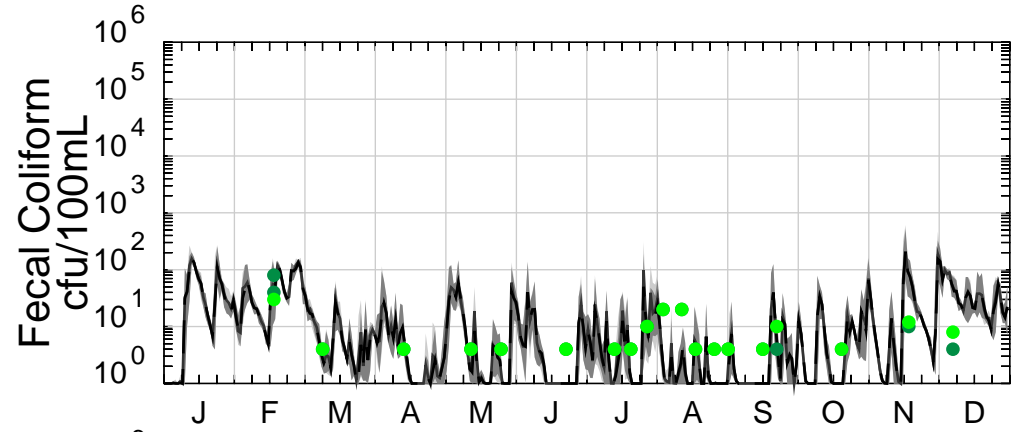
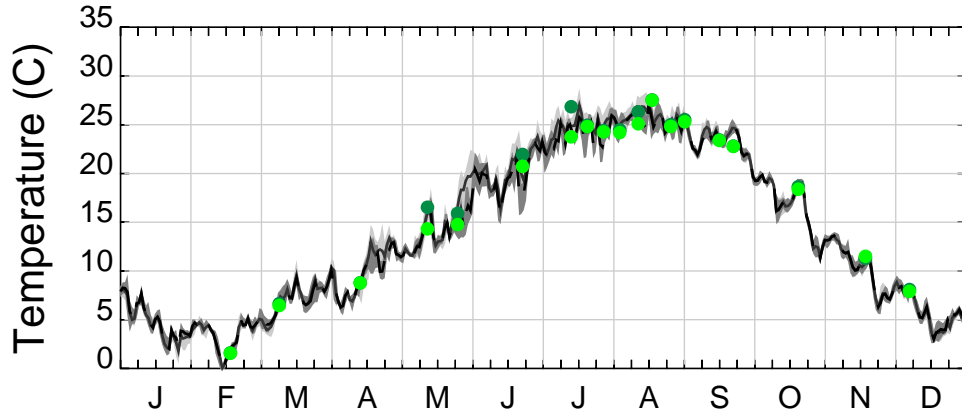
Station: 29



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- ● ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data

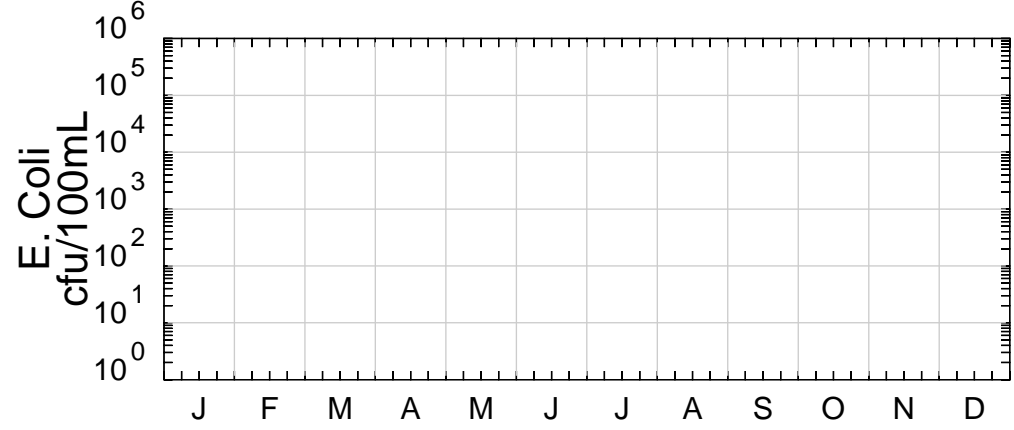
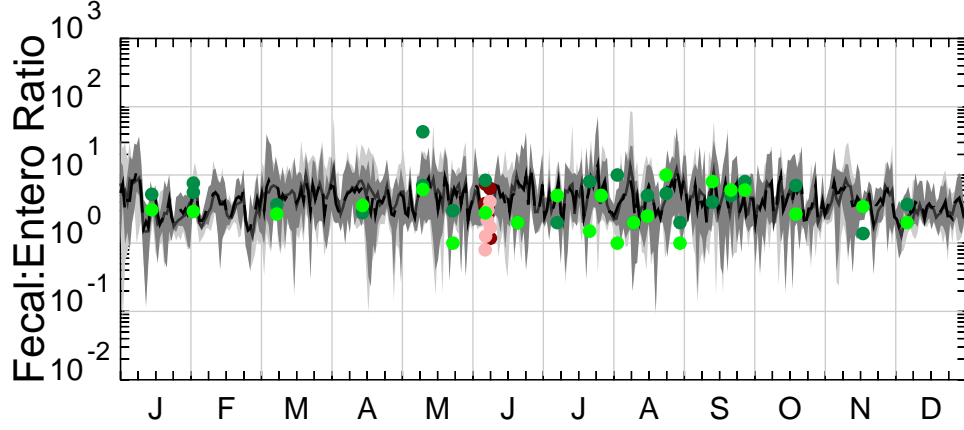
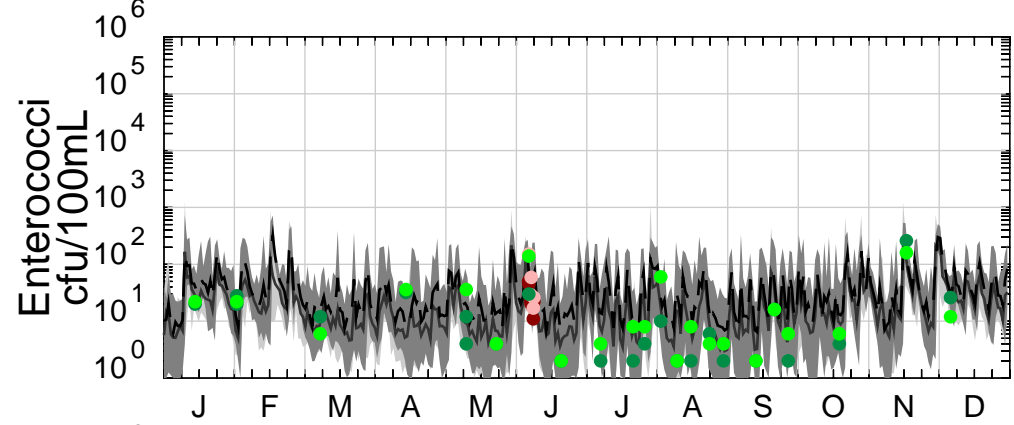
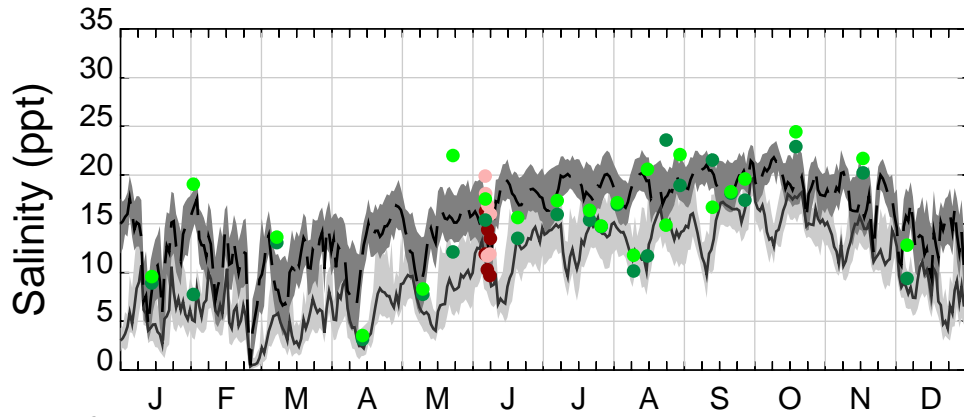
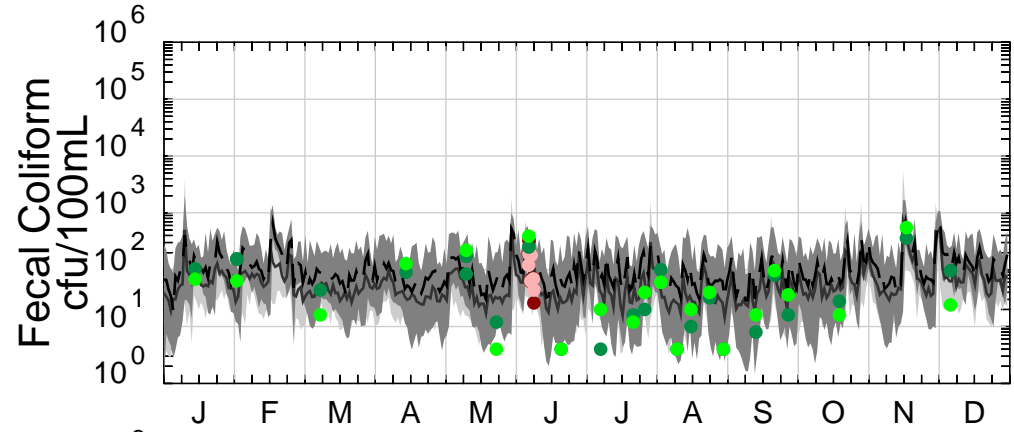
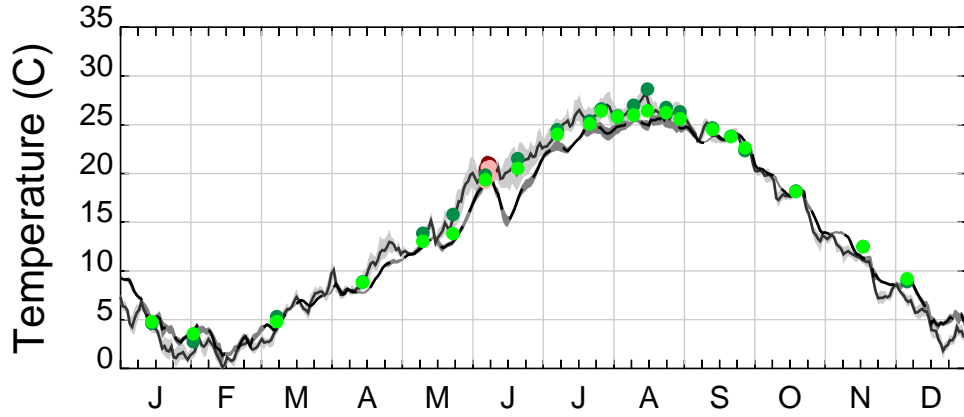
Station: 30



— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom
 ● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Model = 2016
 Data = 2016

Station: 31

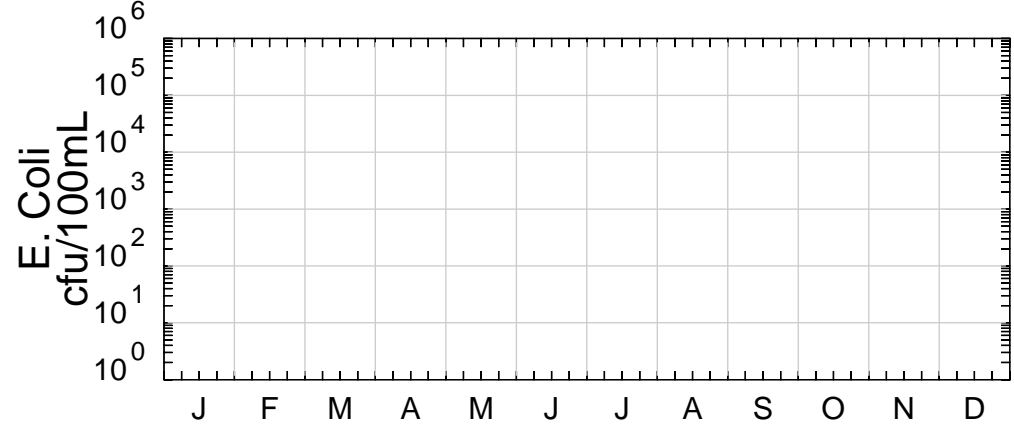
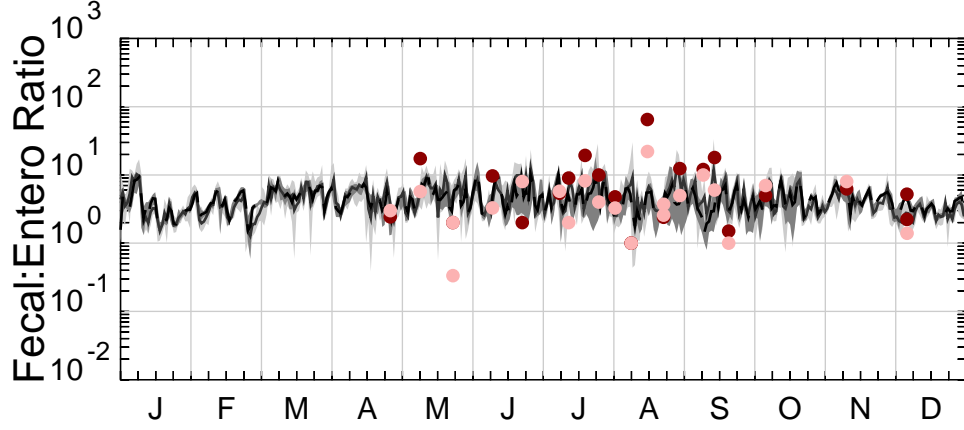
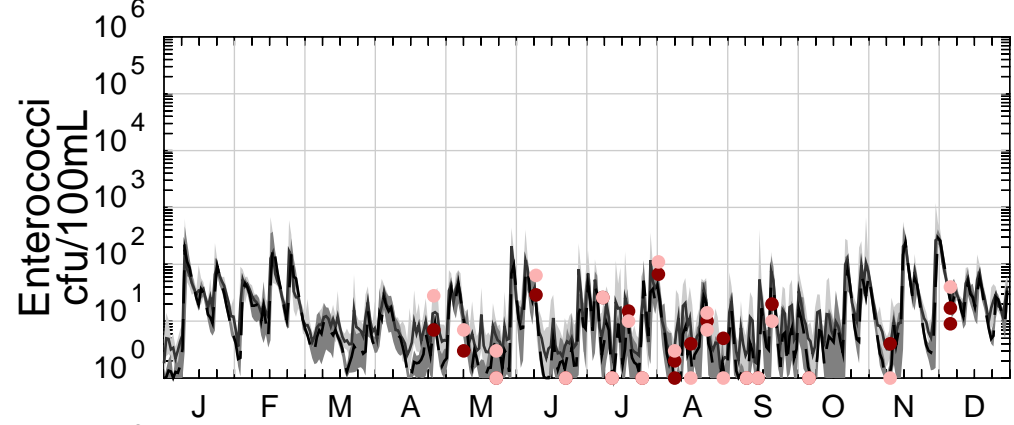
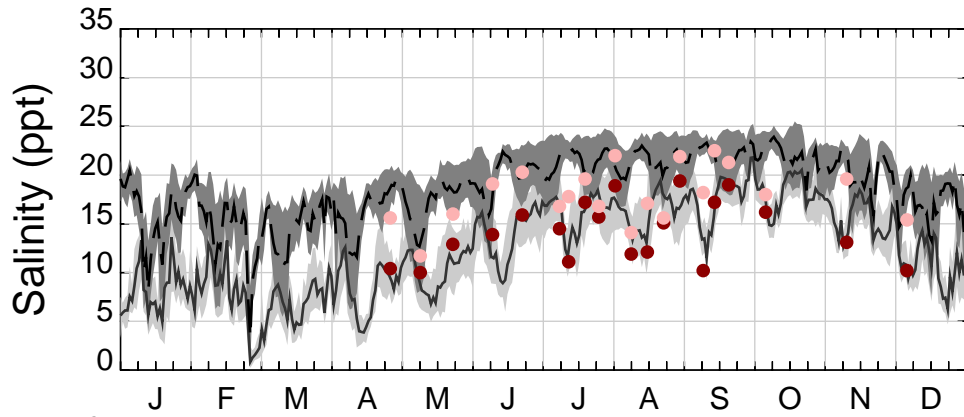
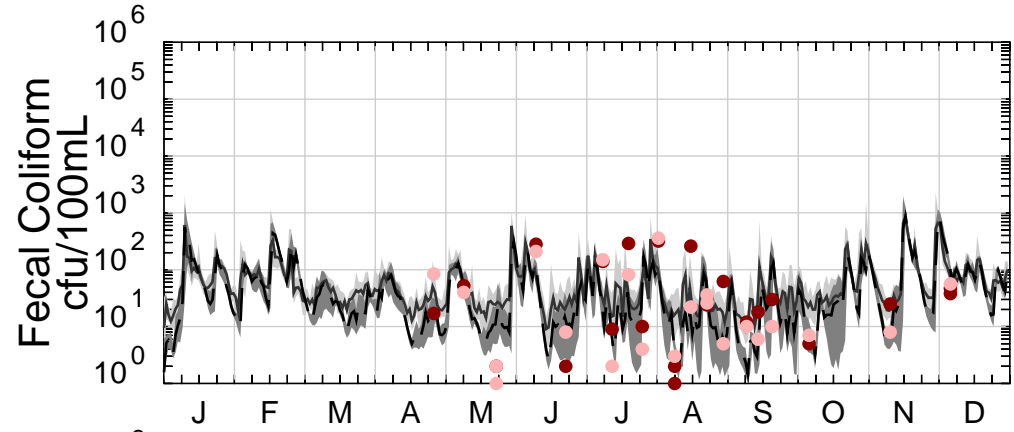
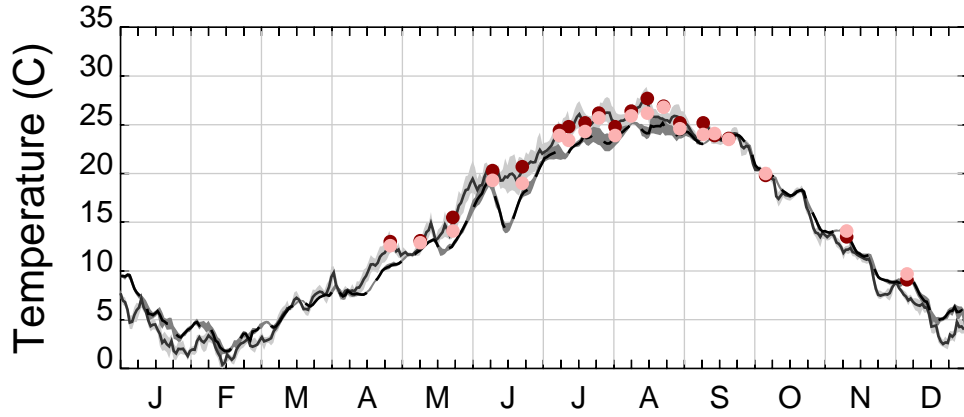


Model = 2016
 Data = 2016

— Model at Surface
 - - Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

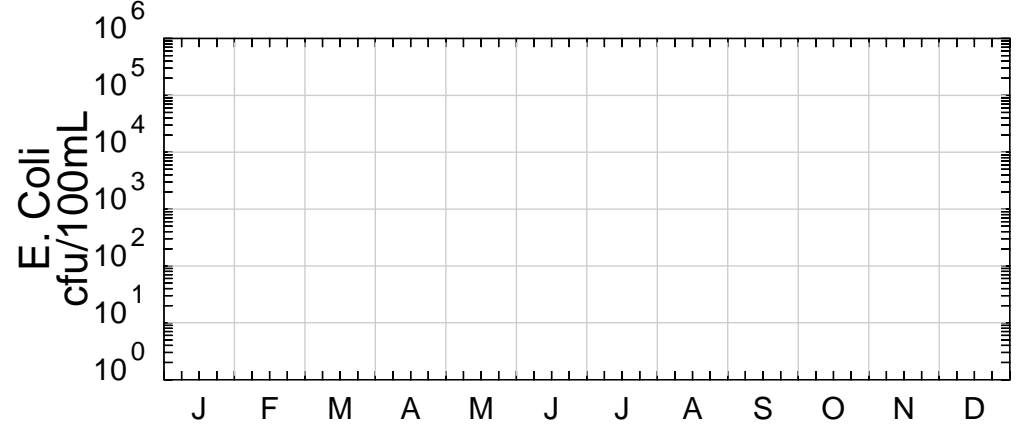
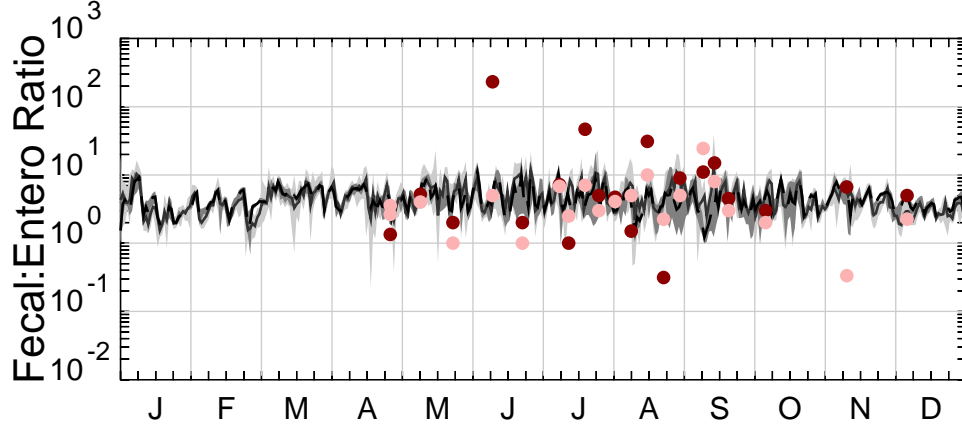
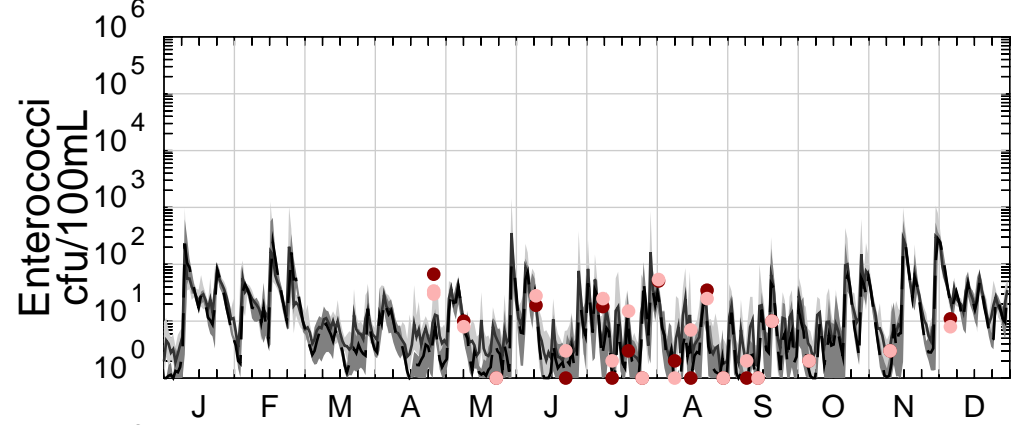
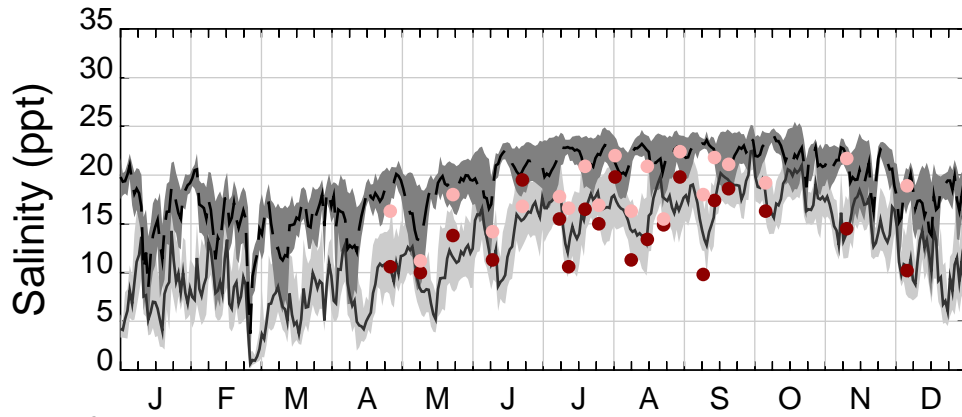
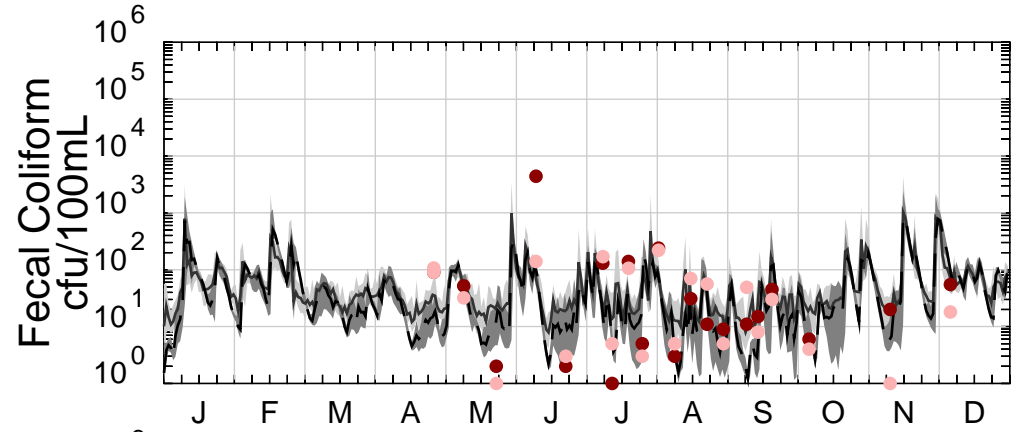
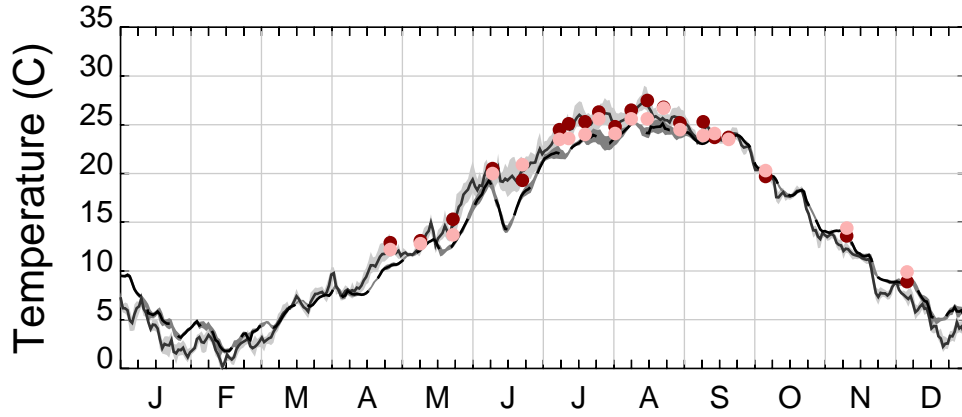
Station: B5A



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

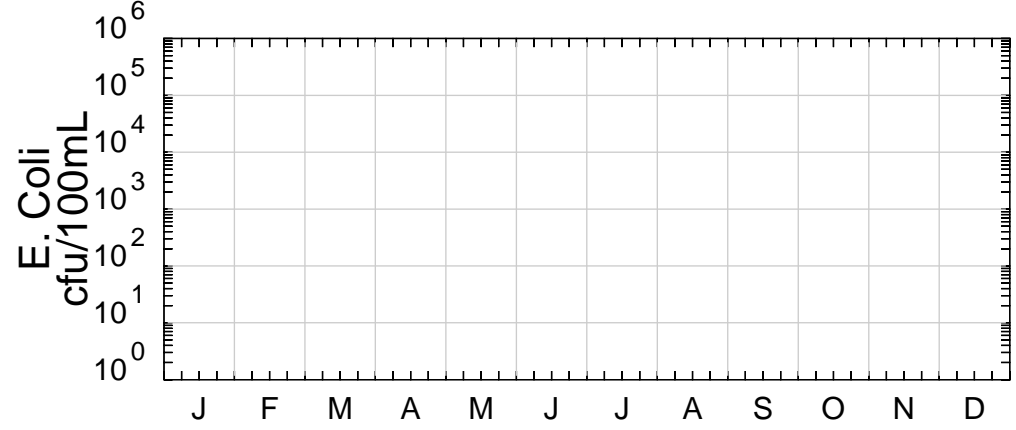
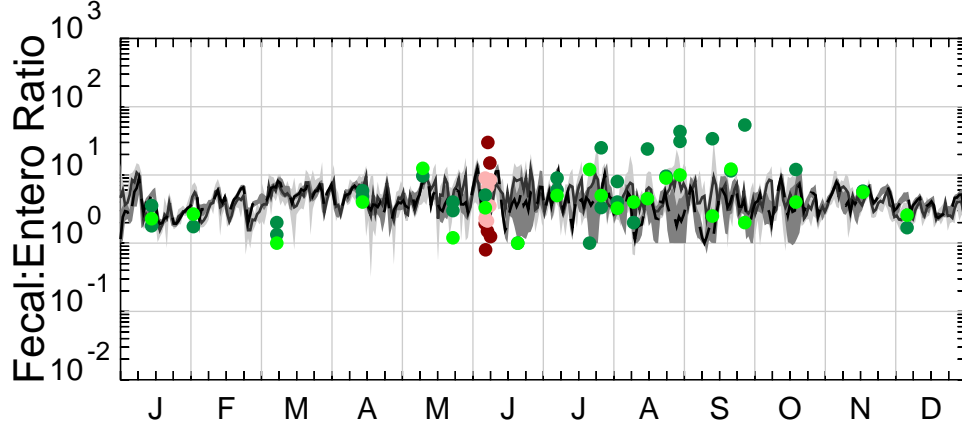
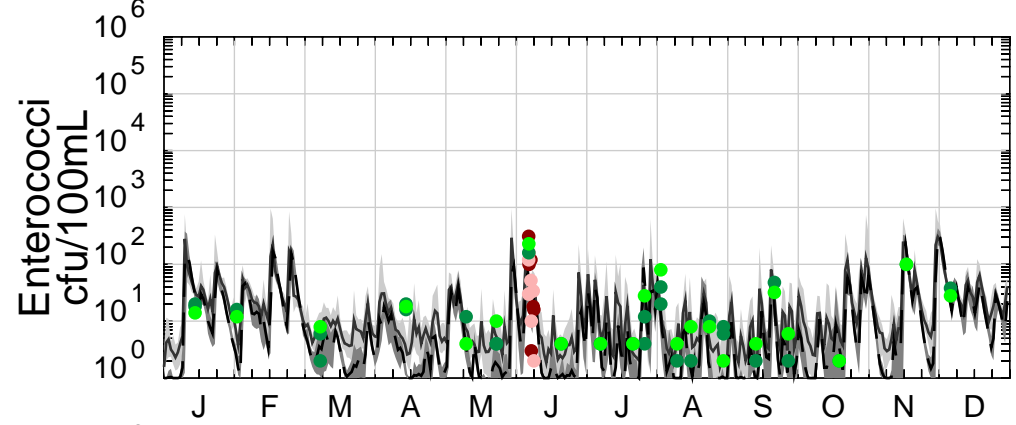
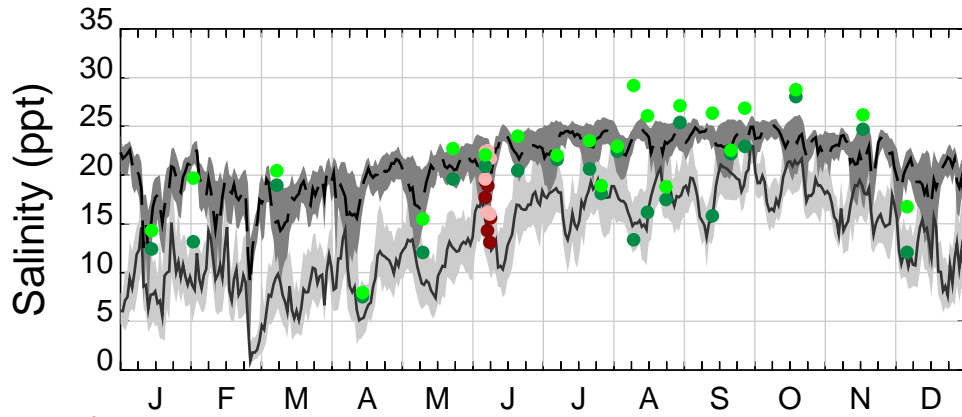
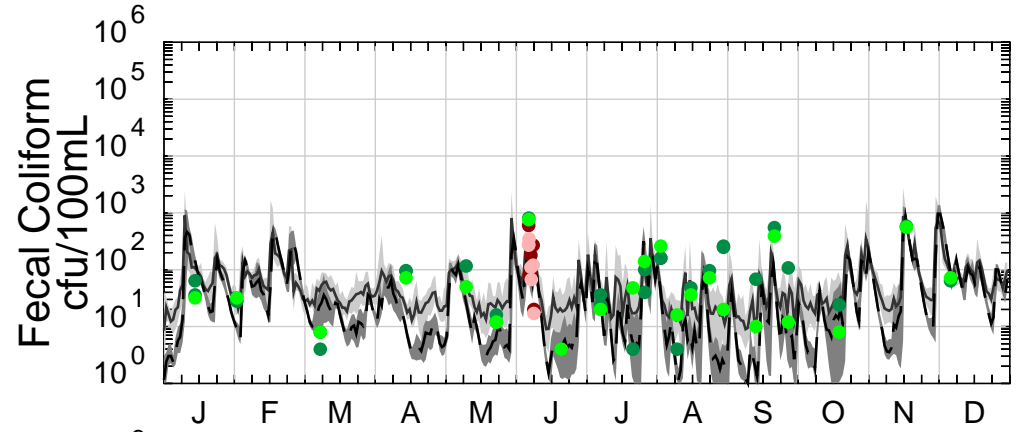
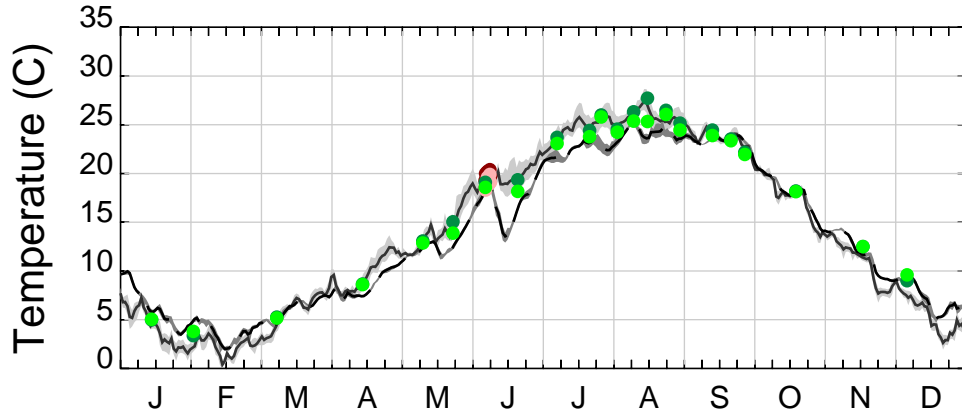
Station: B5B



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

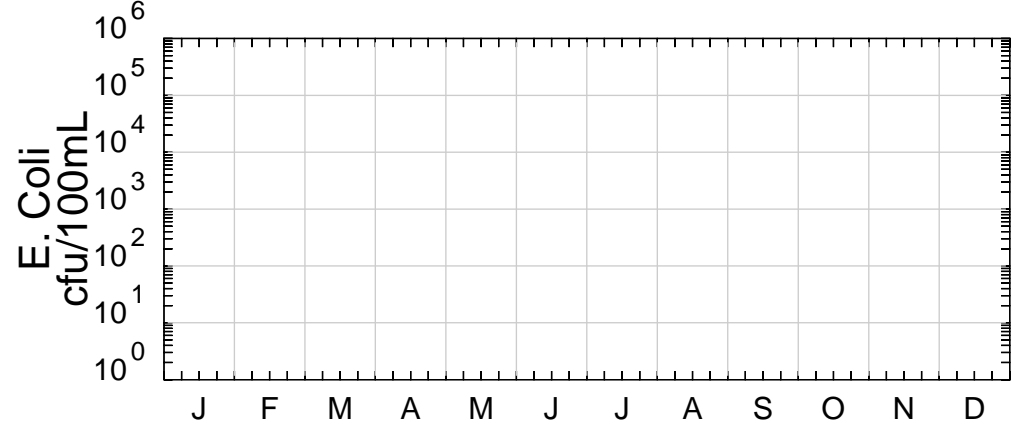
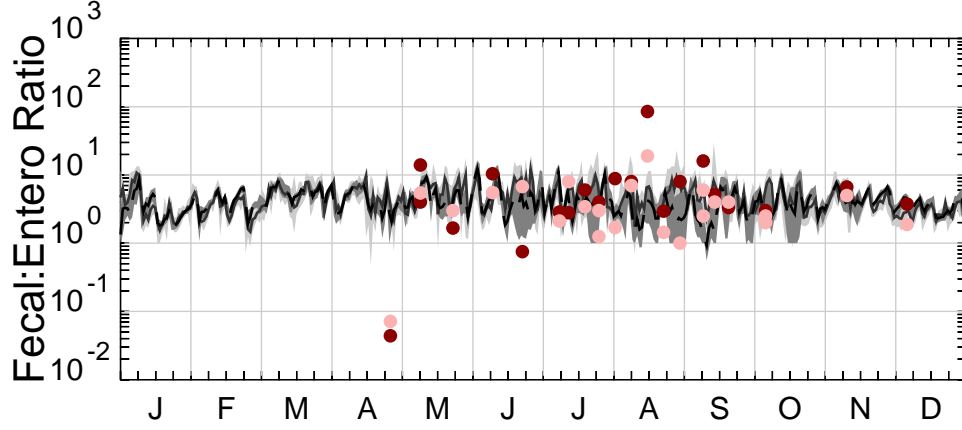
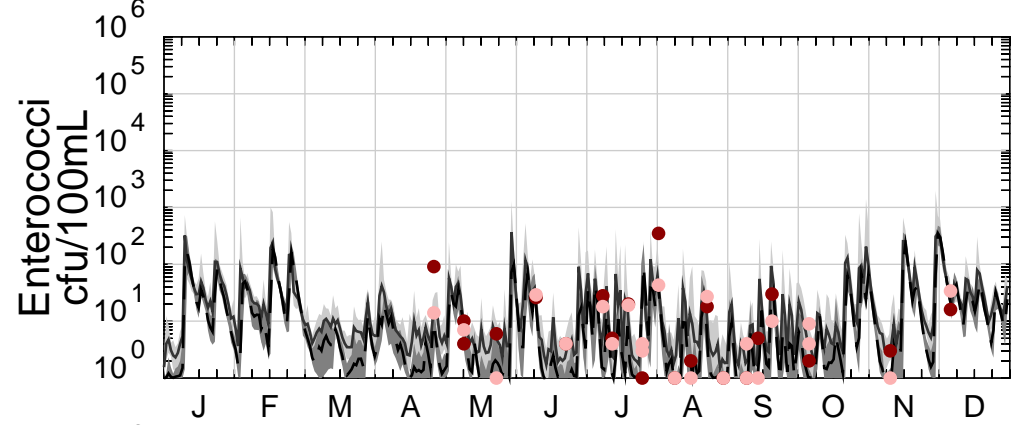
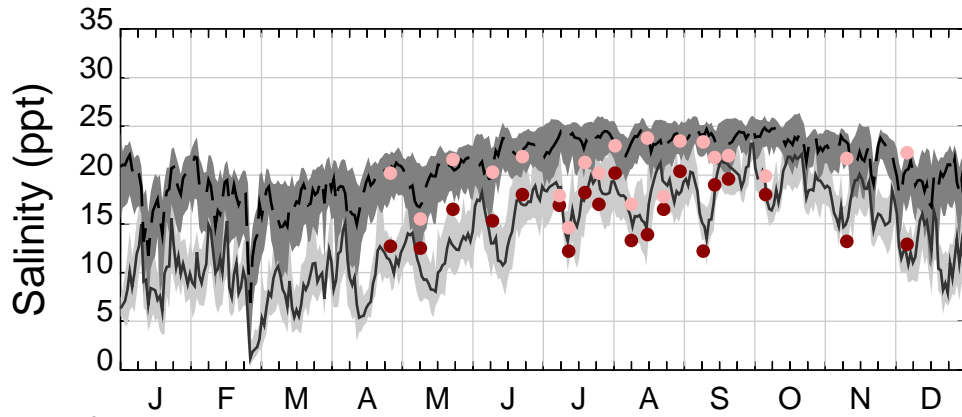
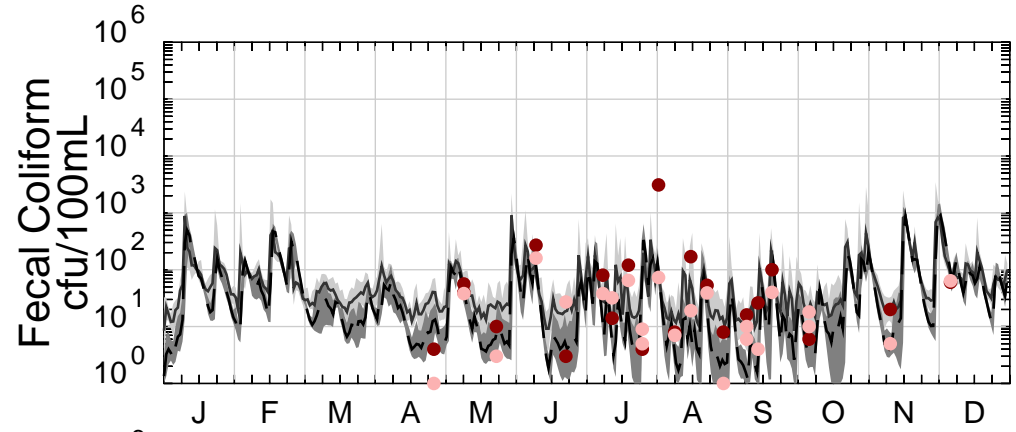
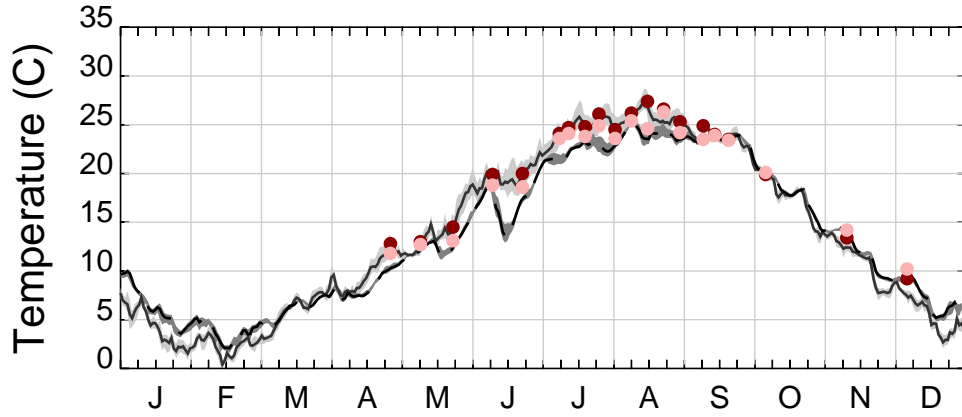
Station: 32



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- ● ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data

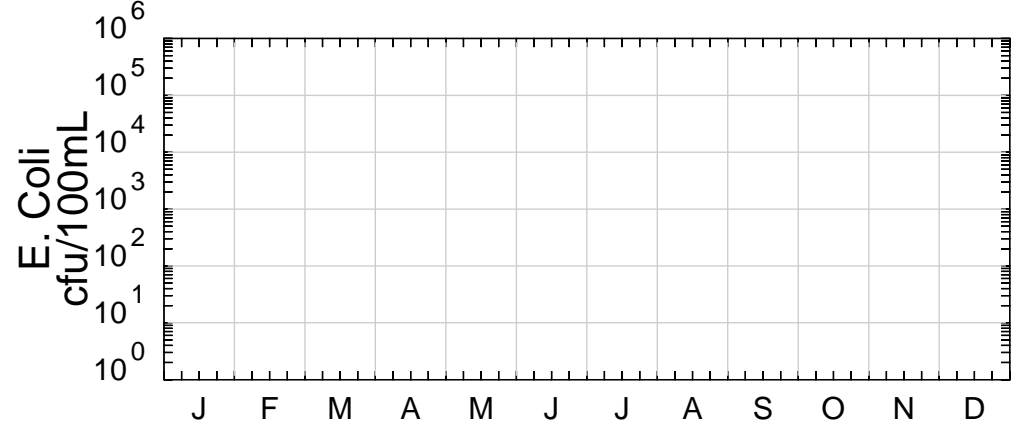
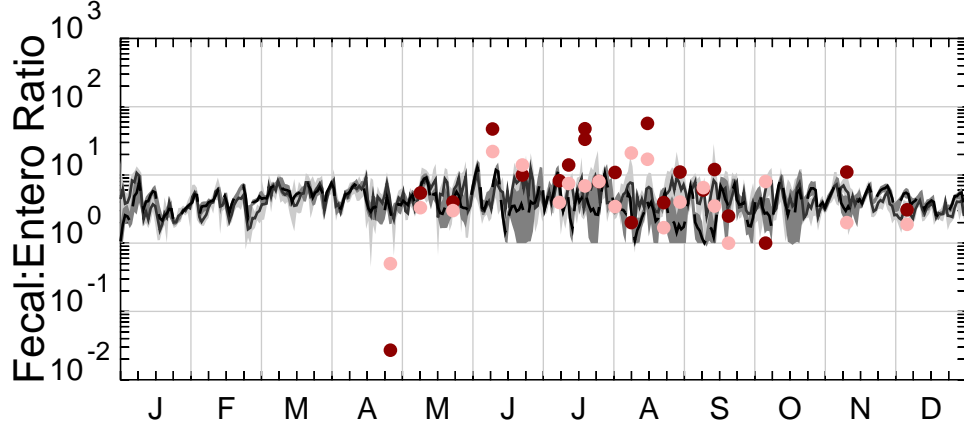
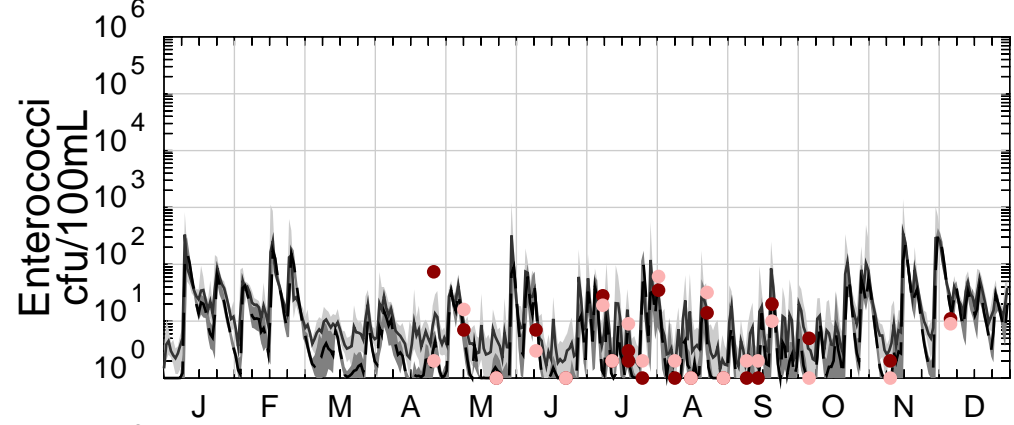
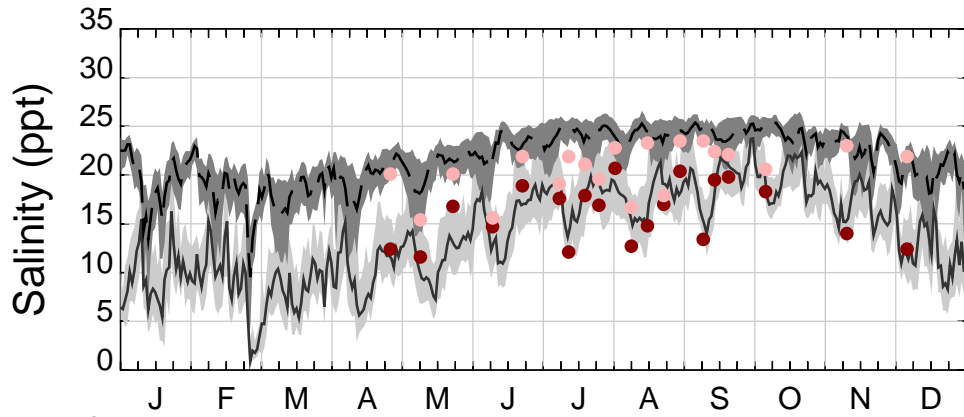
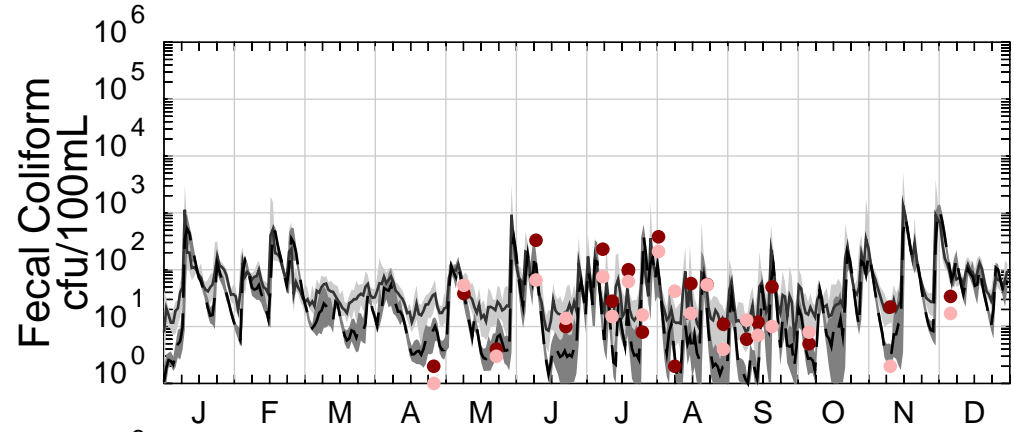
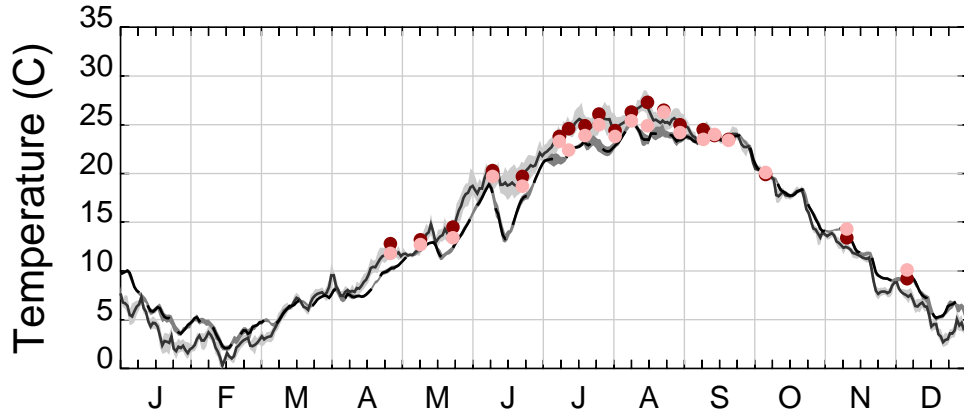
Station: B18A



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

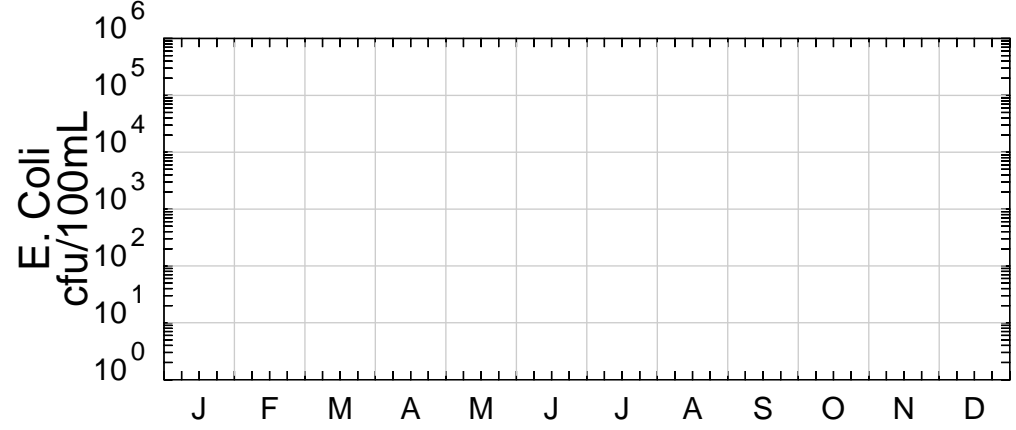
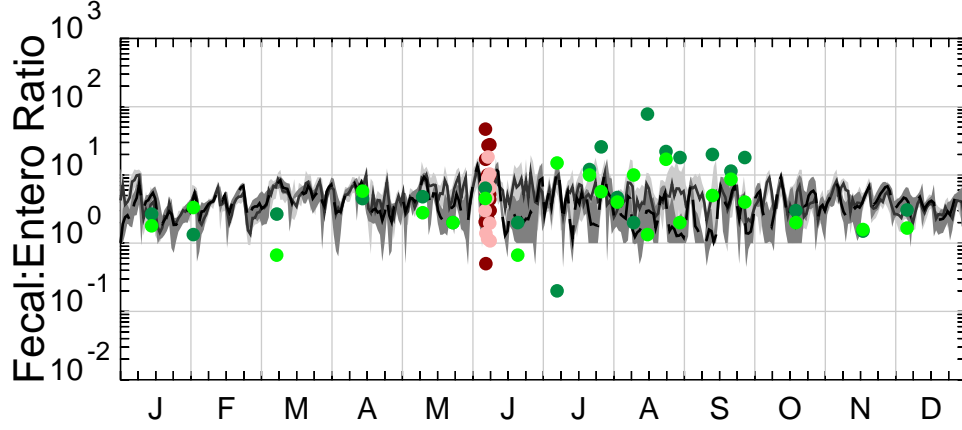
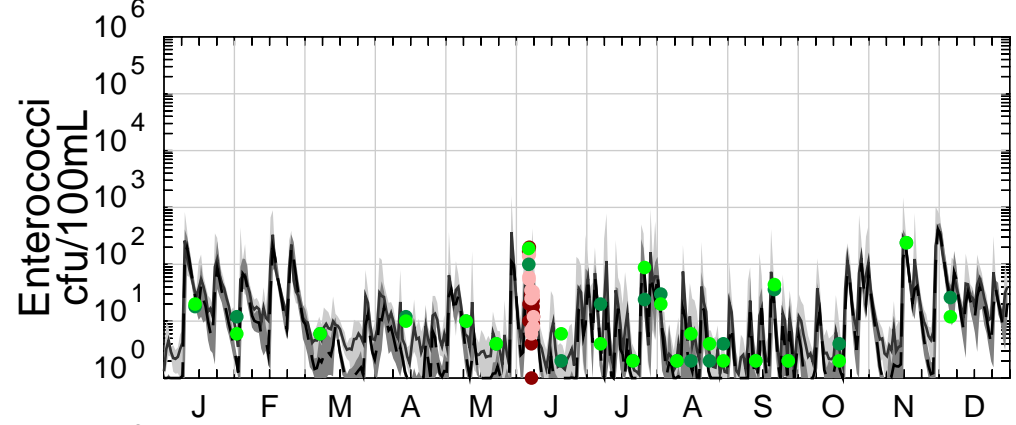
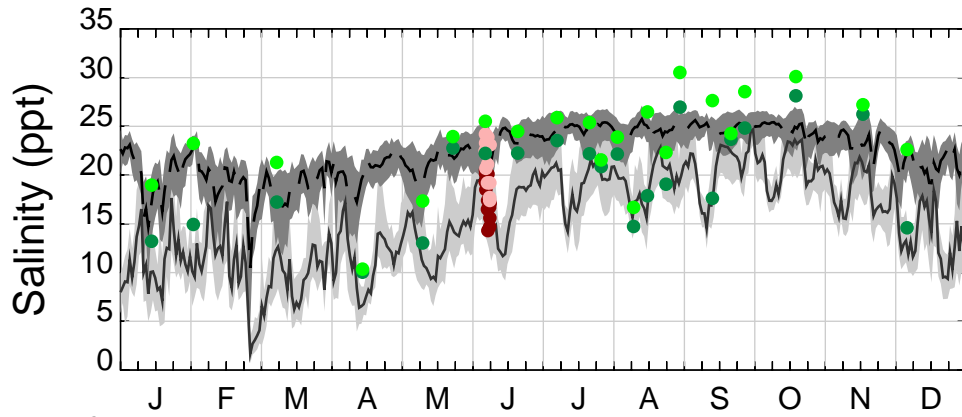
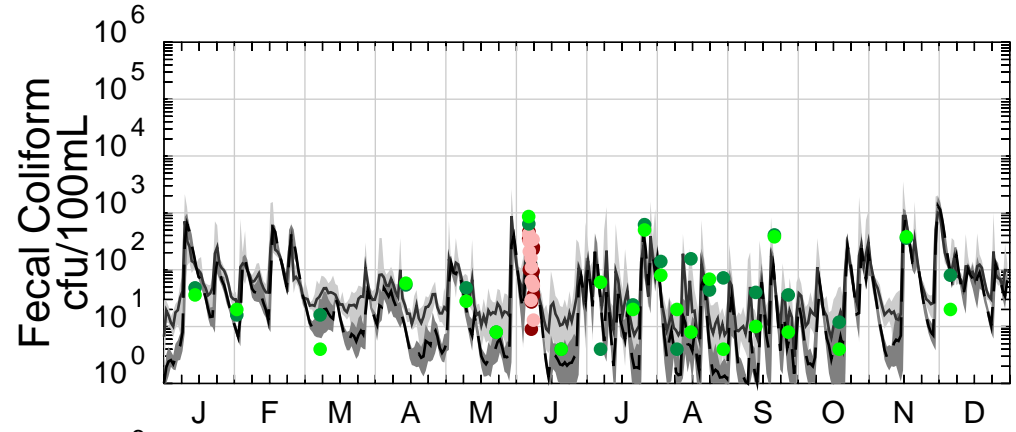
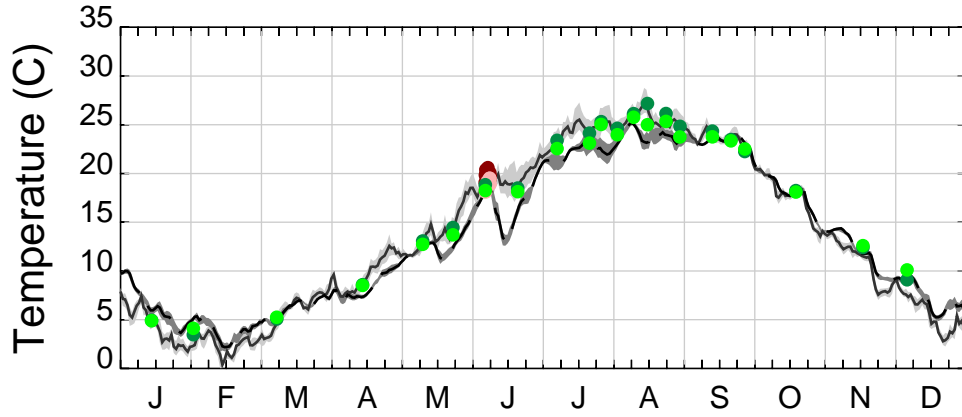
Station: B18B



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

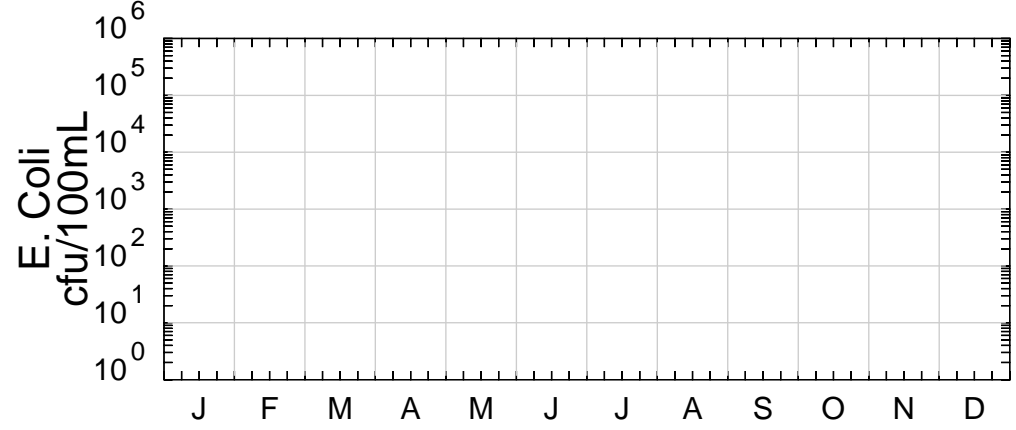
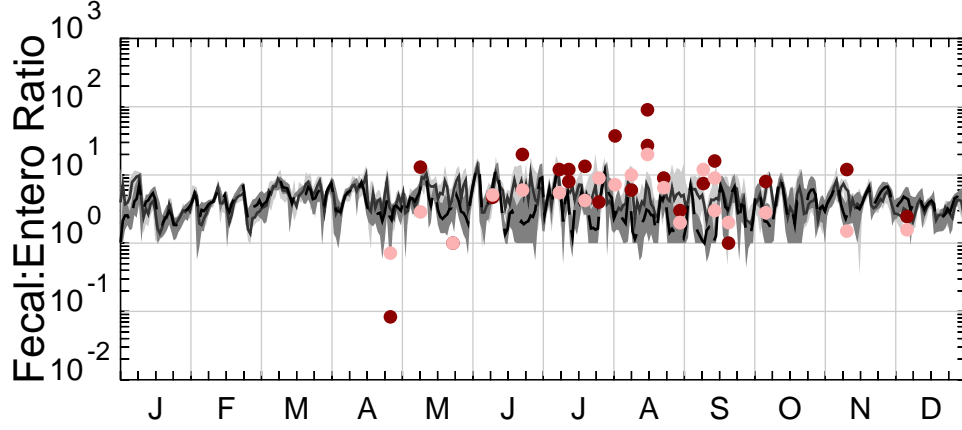
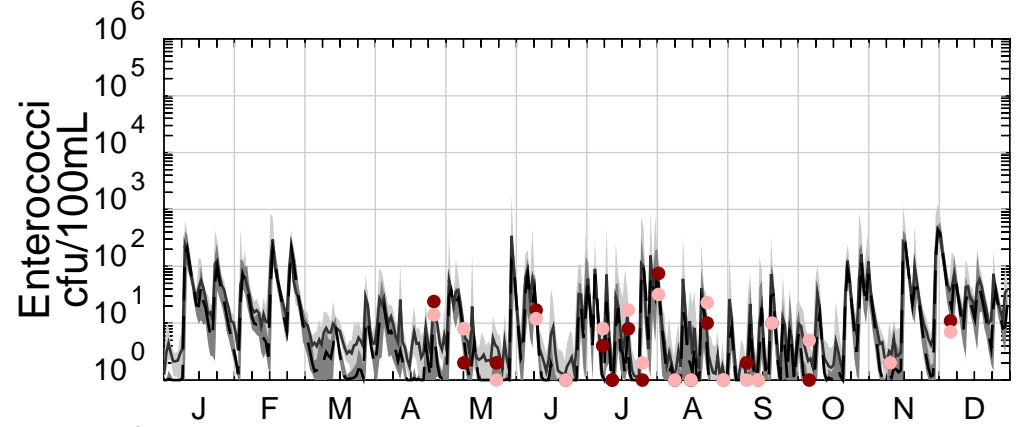
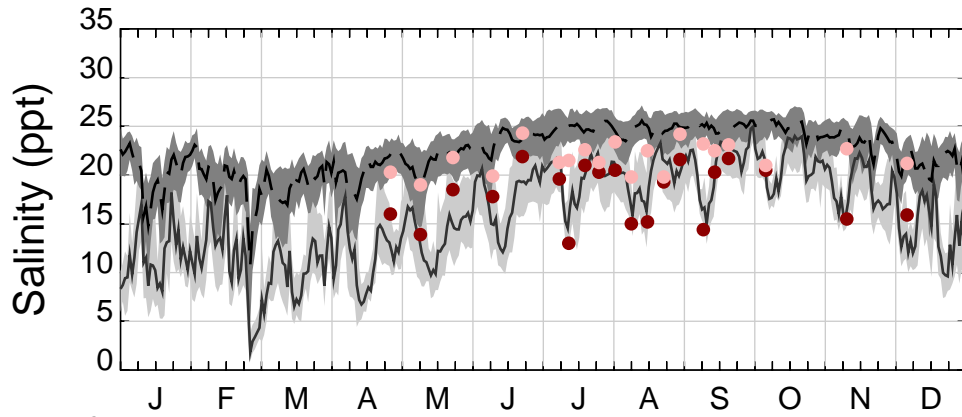
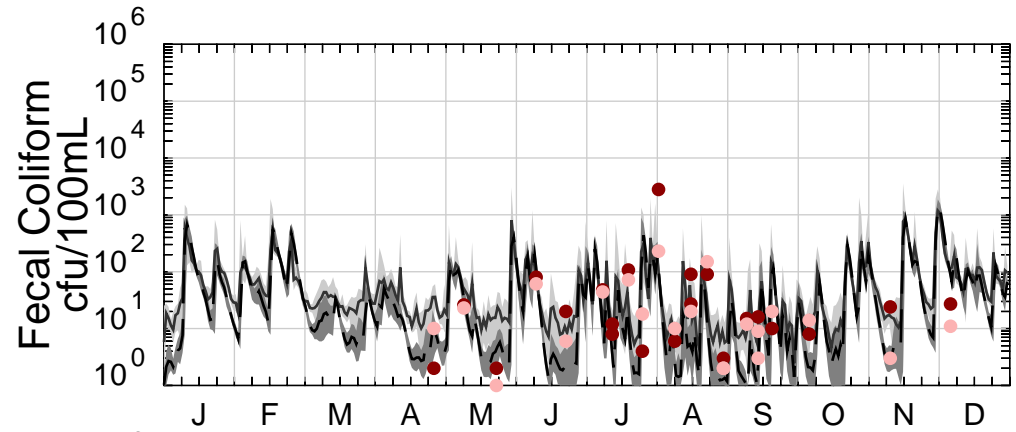
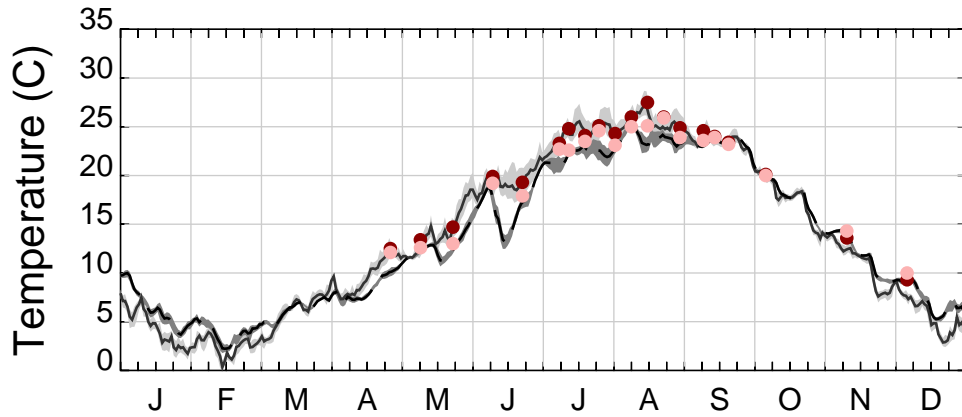
Station: 33



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- ● ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data

Station: B23A

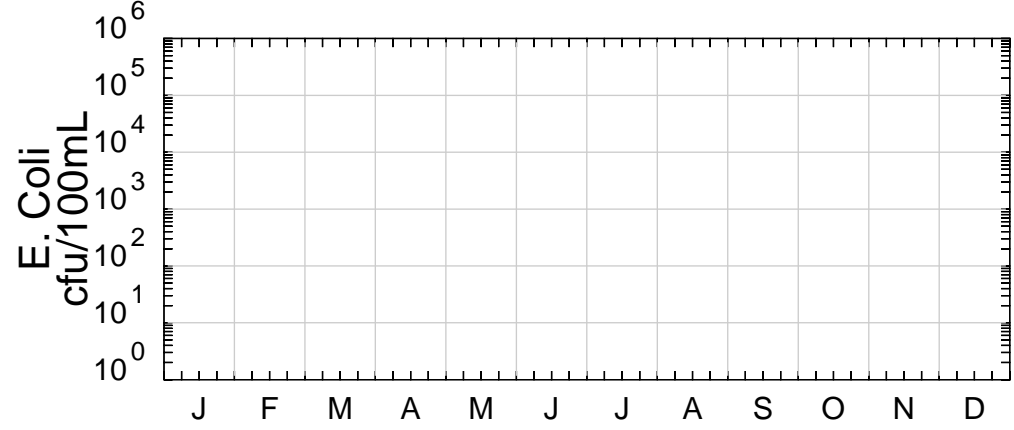
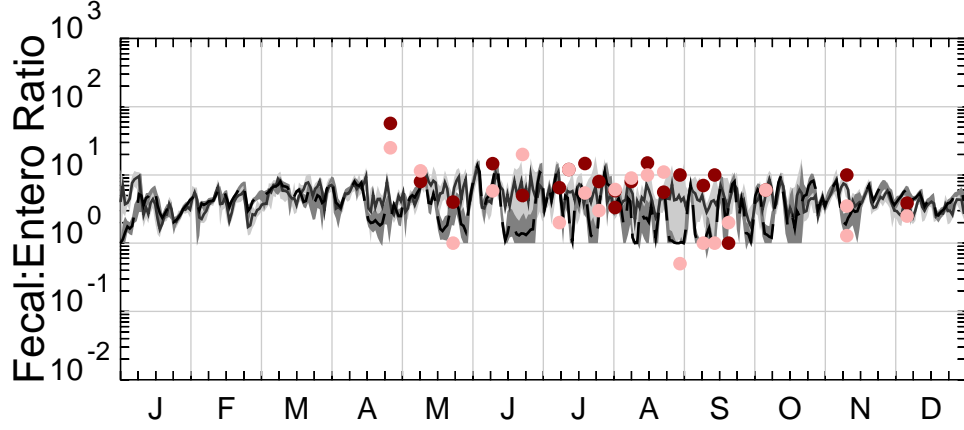
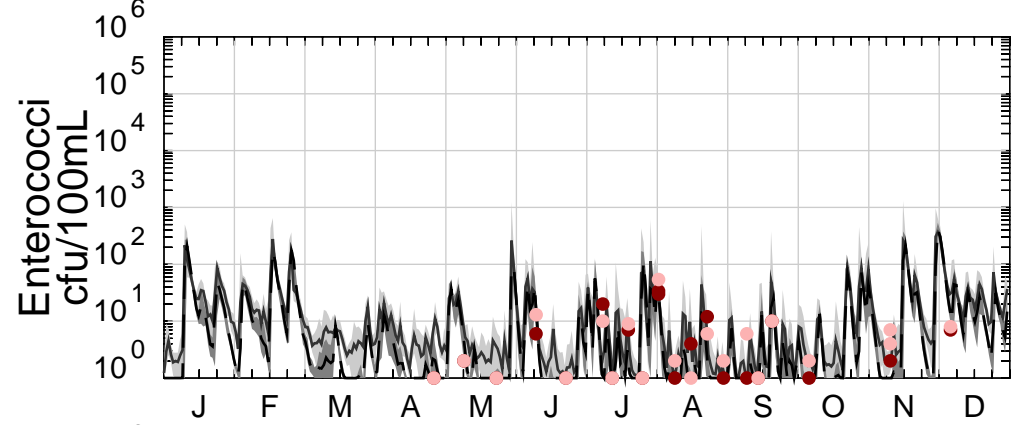
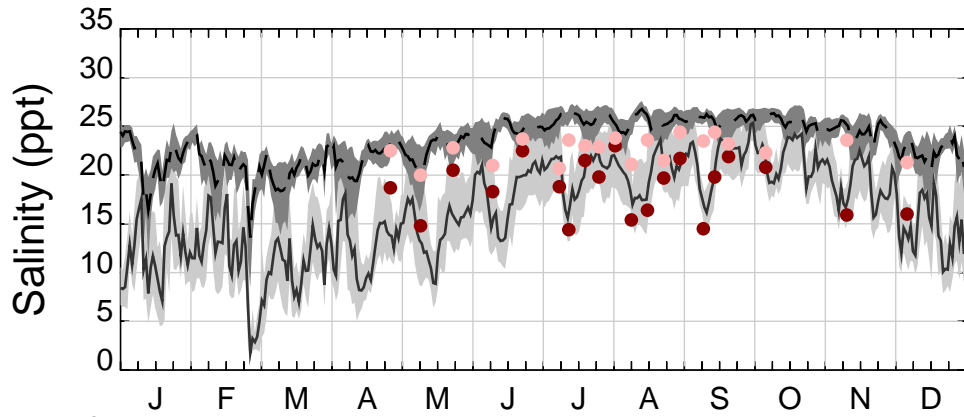
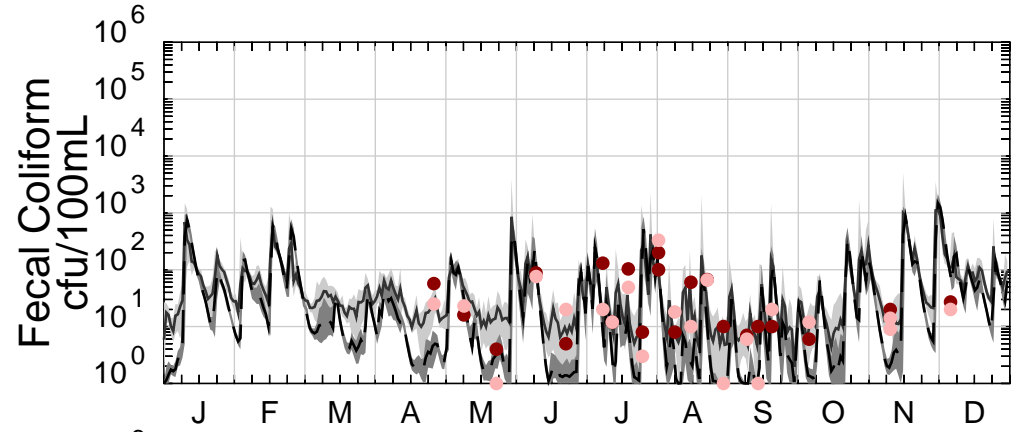
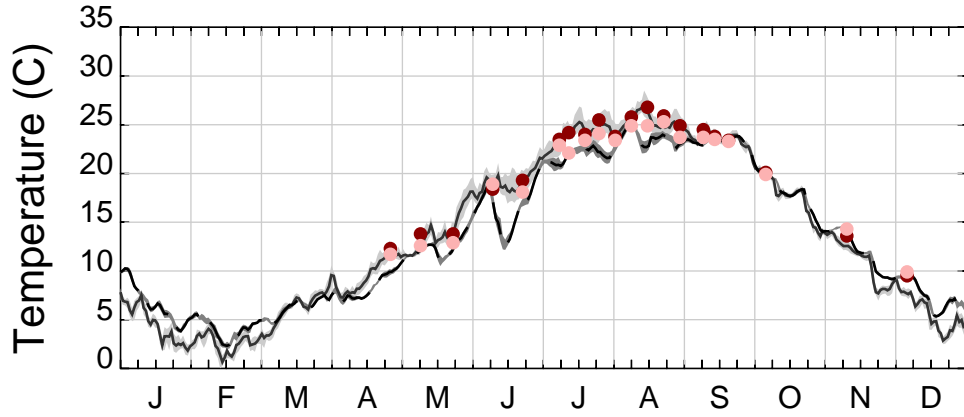


Model = 2016
 Data = 2016

— Model at Surface
 — Model at Bottom
 — Model Daily Average at Surface
 - - Model Daily Average at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

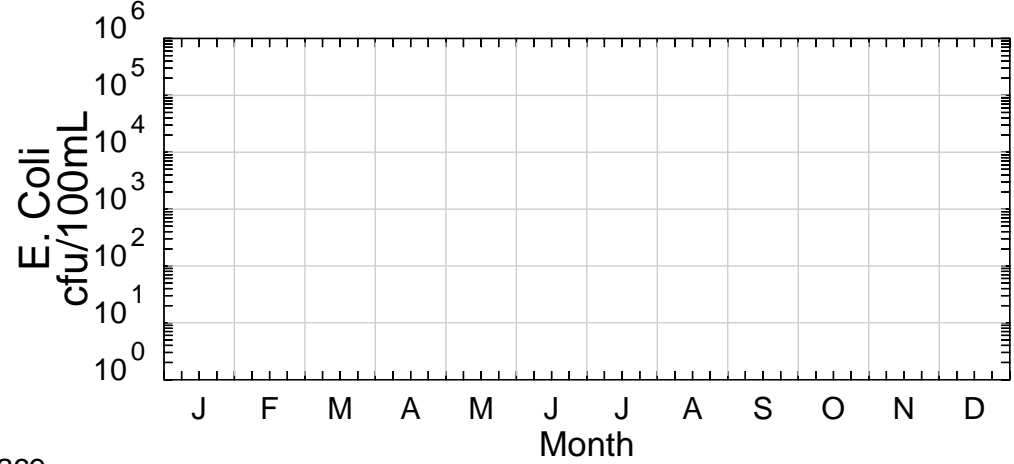
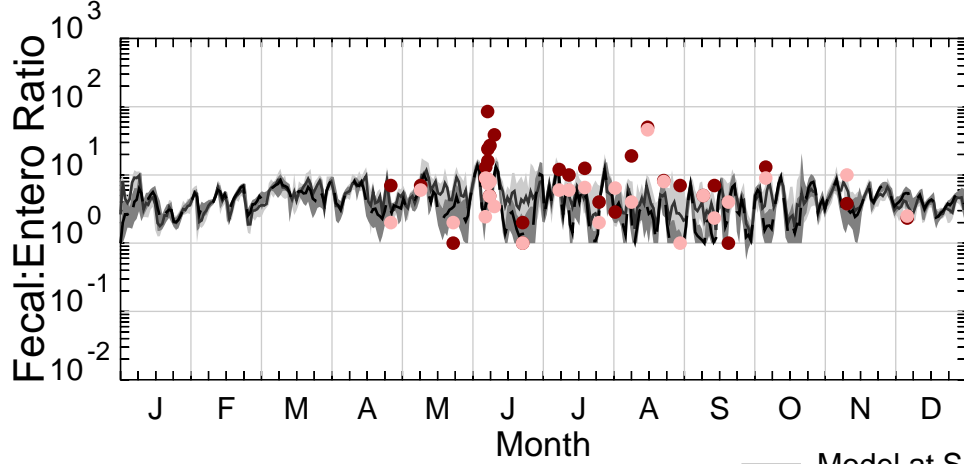
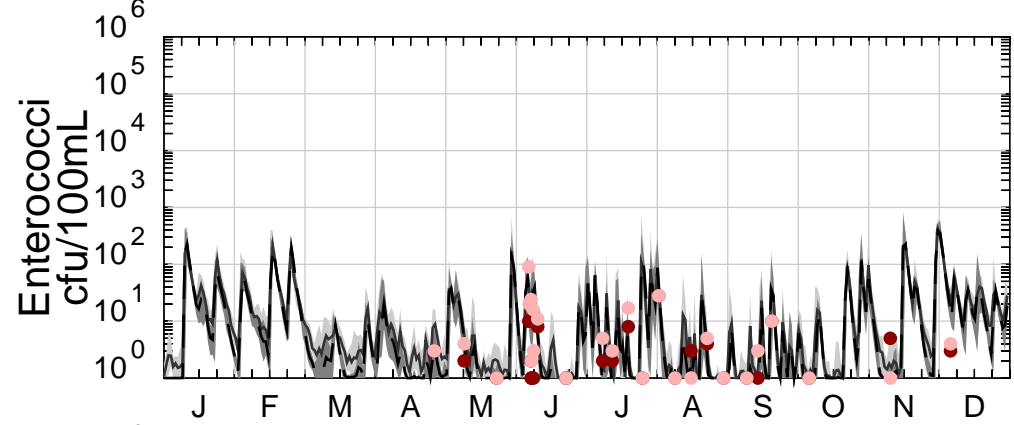
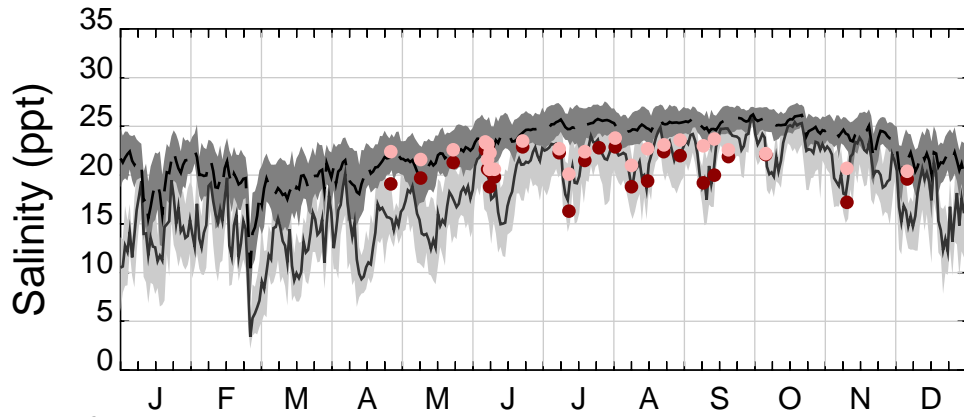
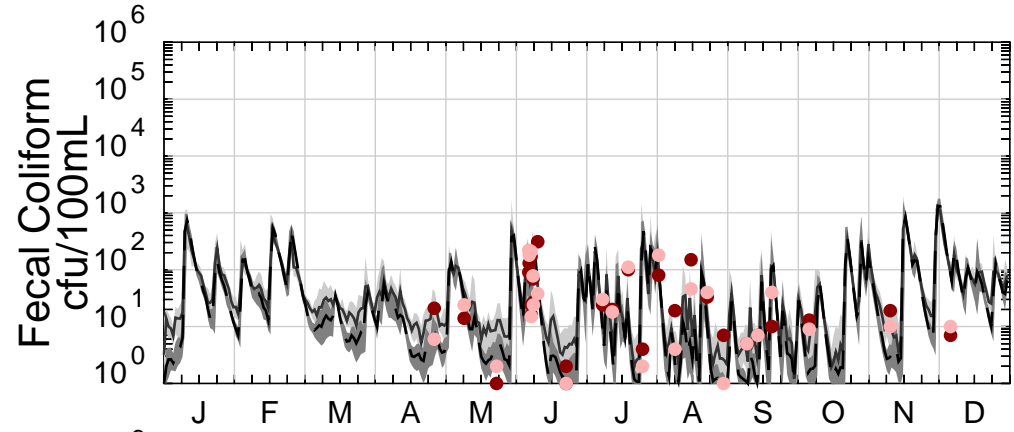
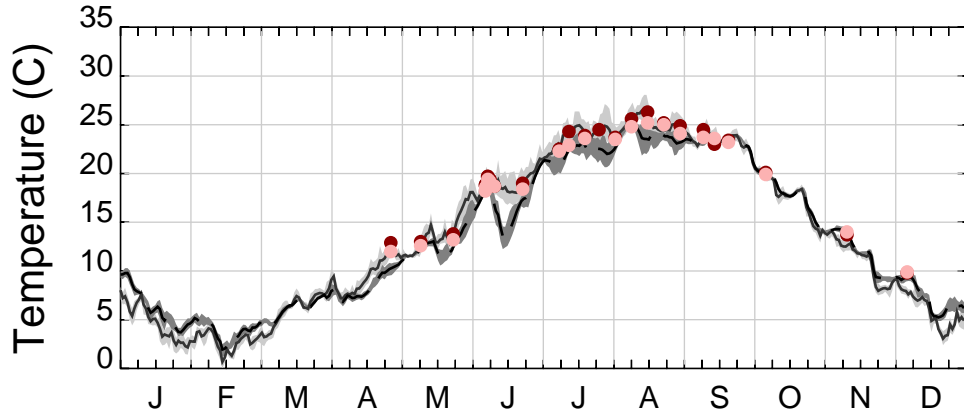
Station: B23B



Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

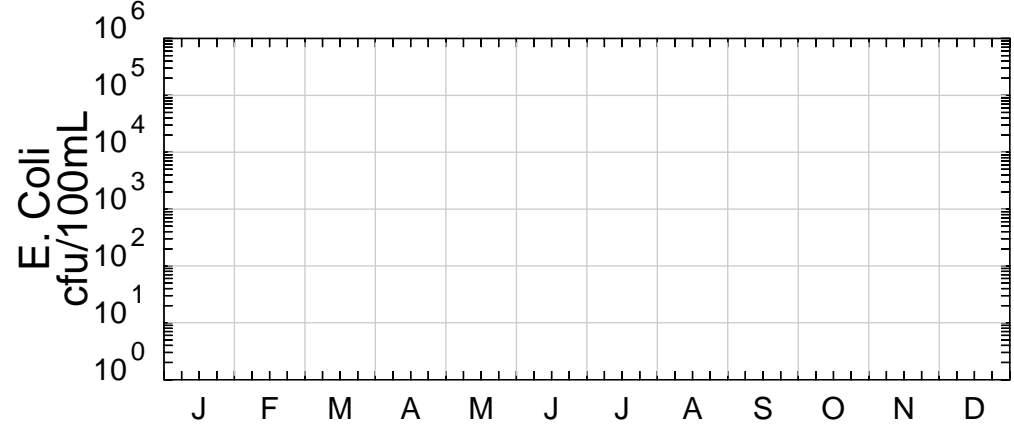
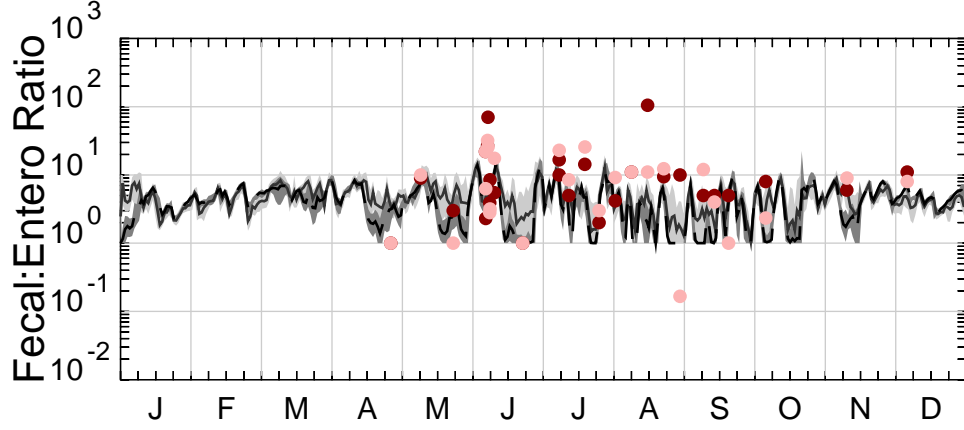
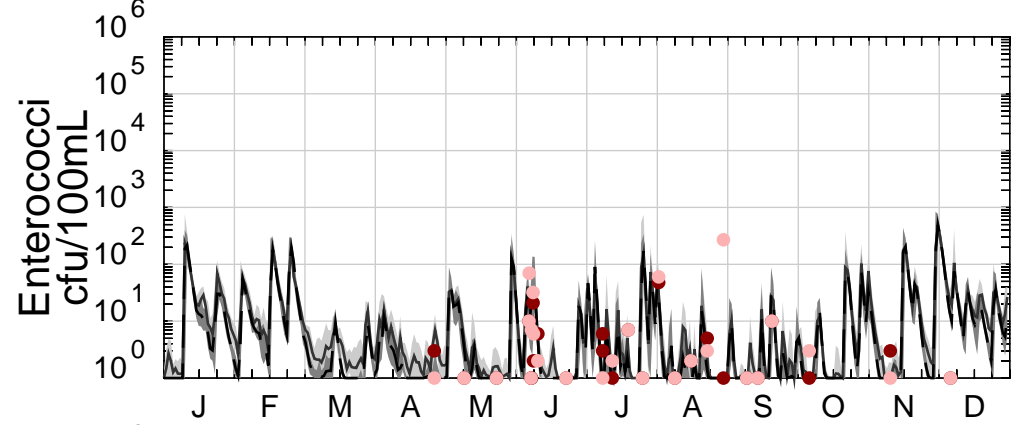
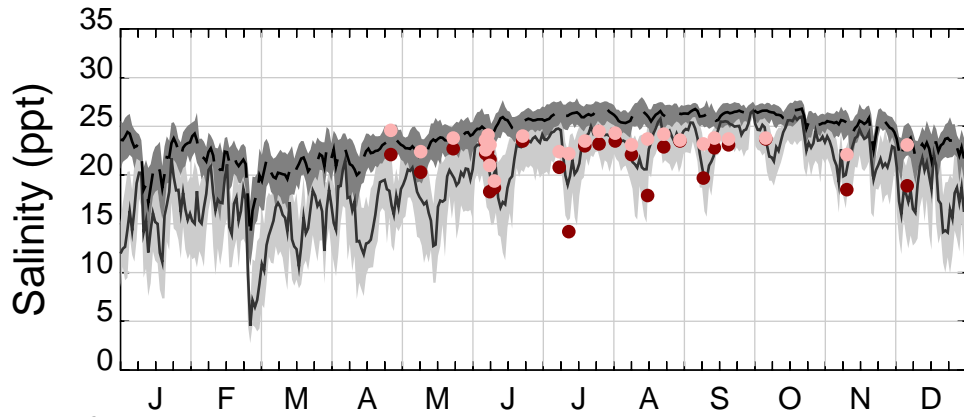
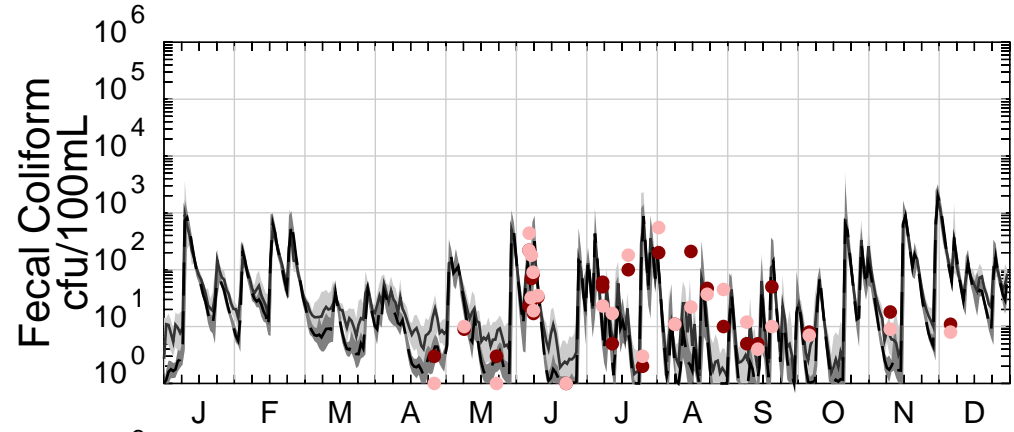
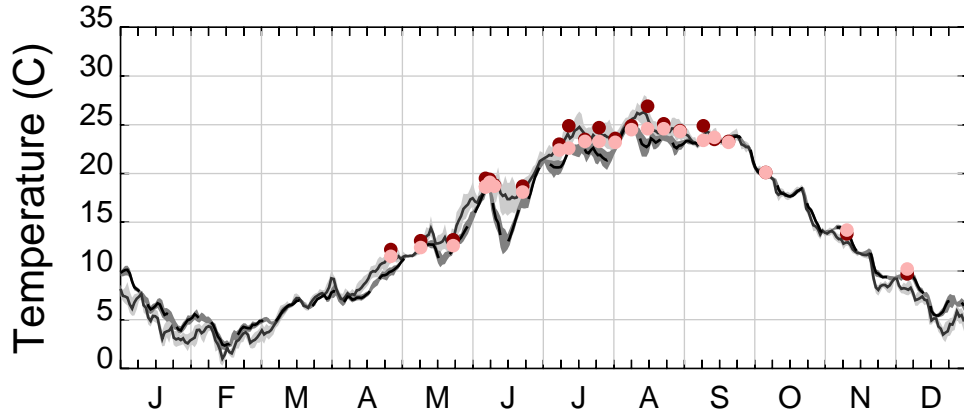
Station: B26



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

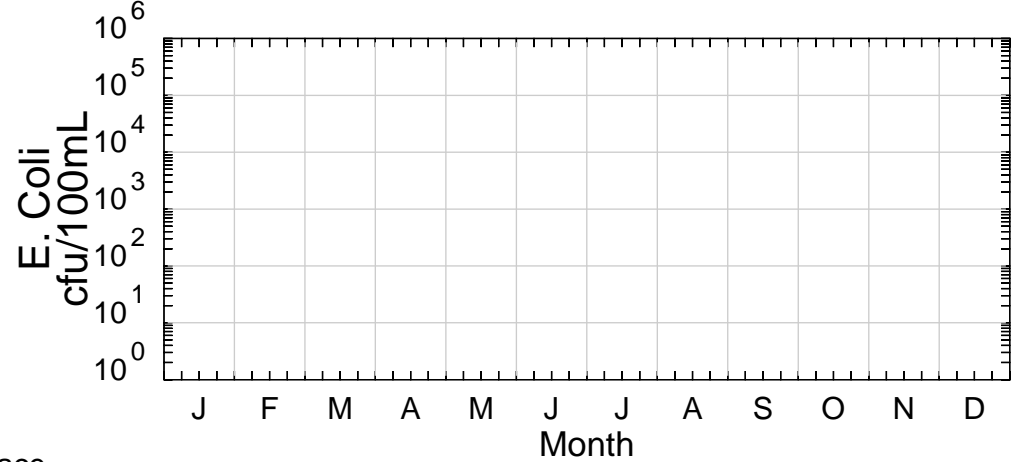
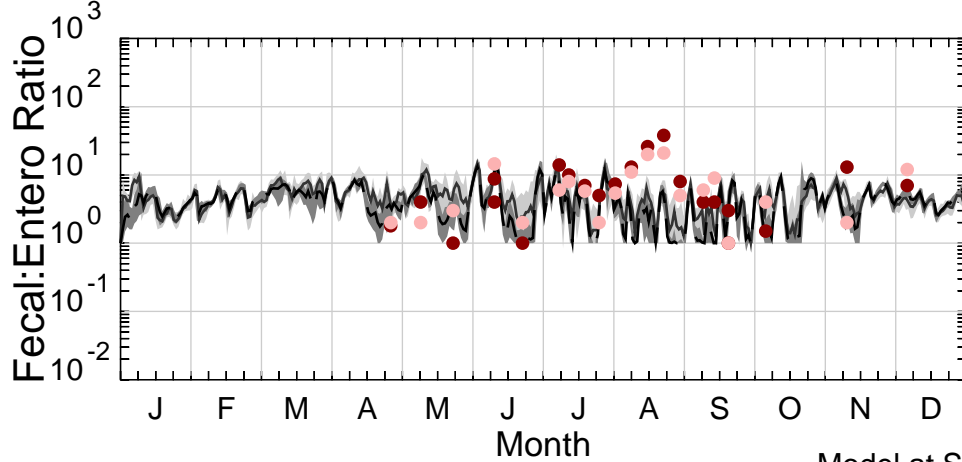
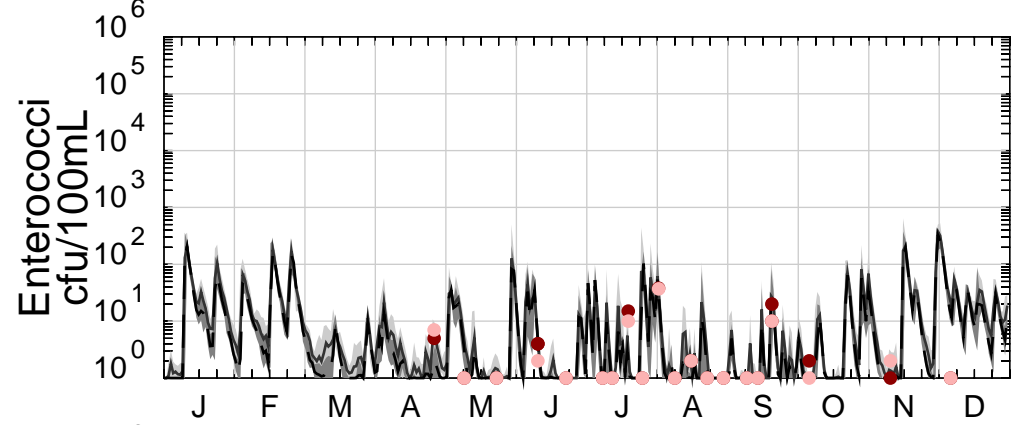
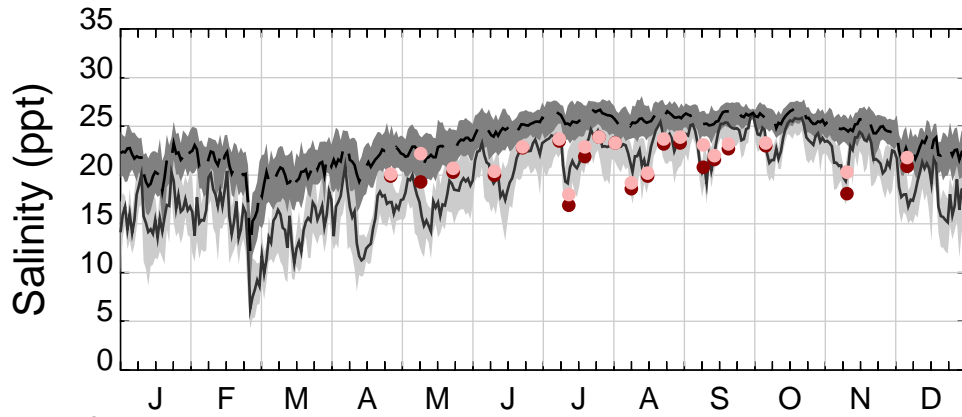
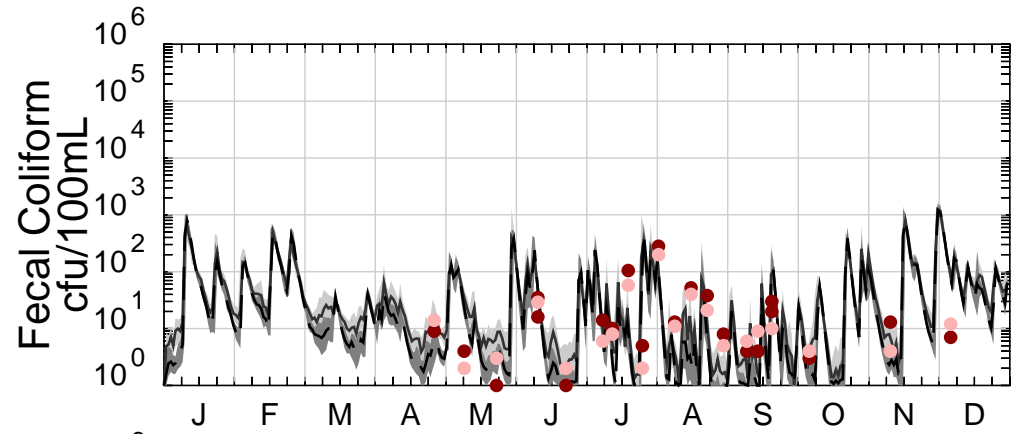
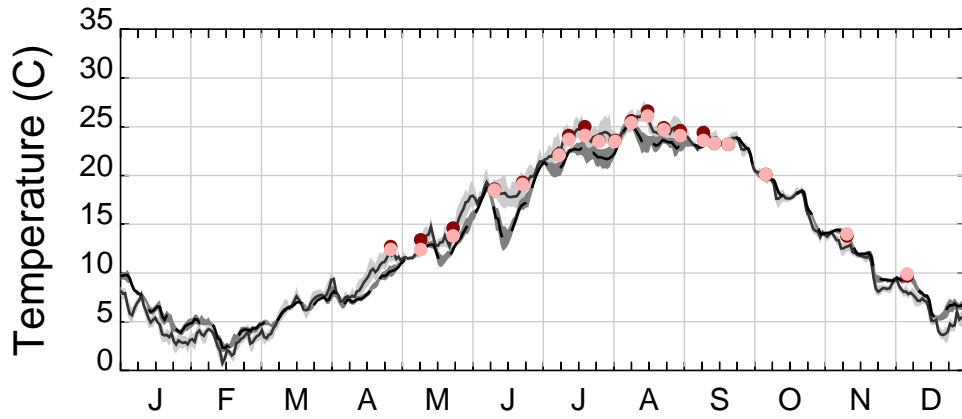
Station: B27



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

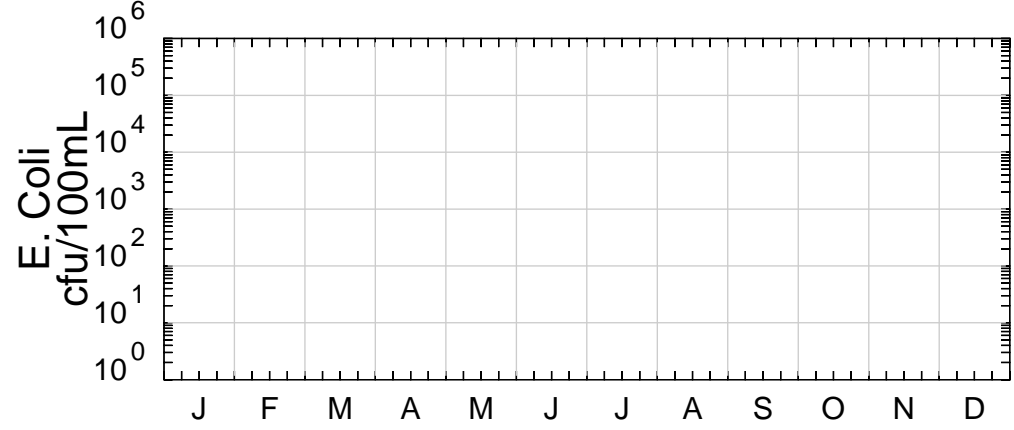
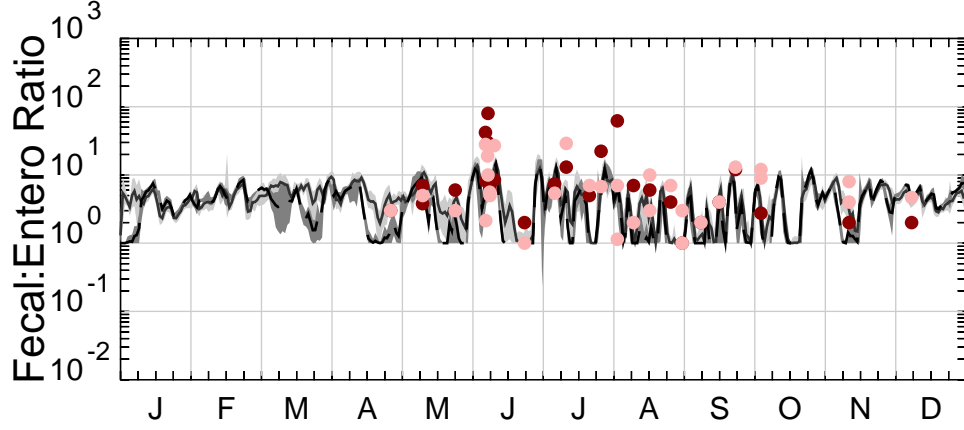
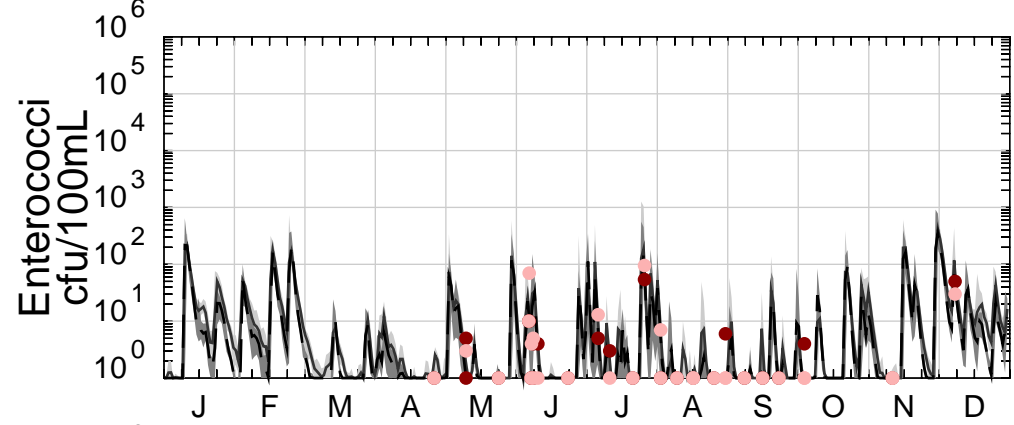
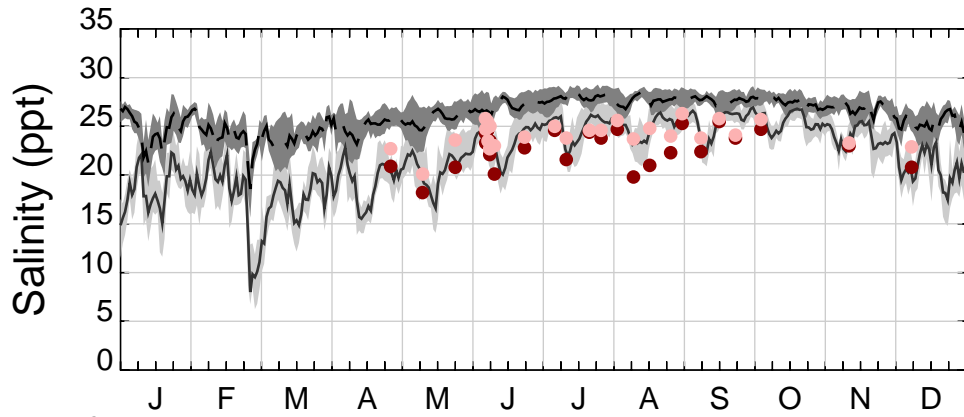
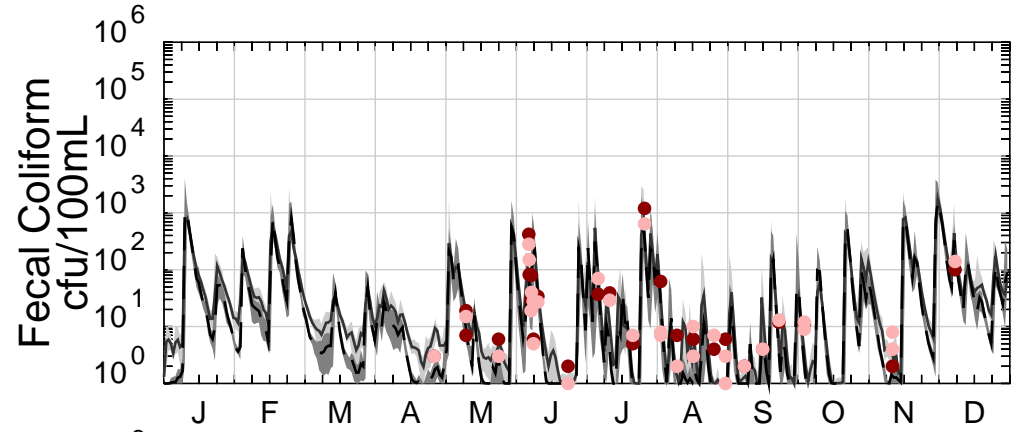
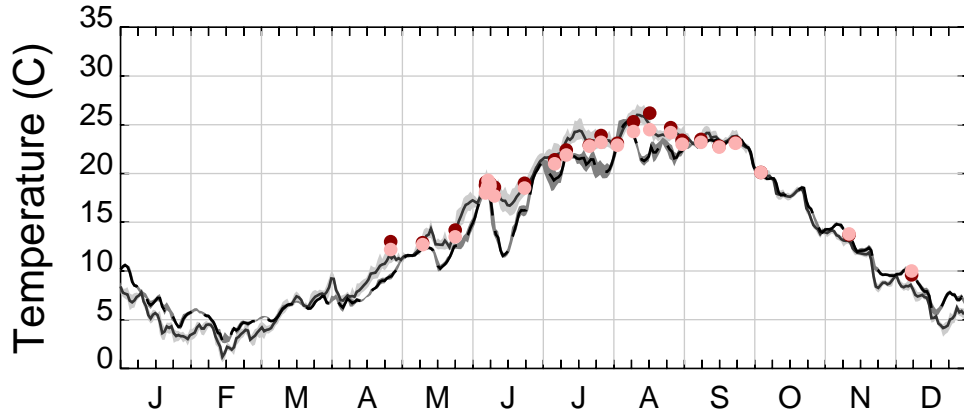
Station: B9



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

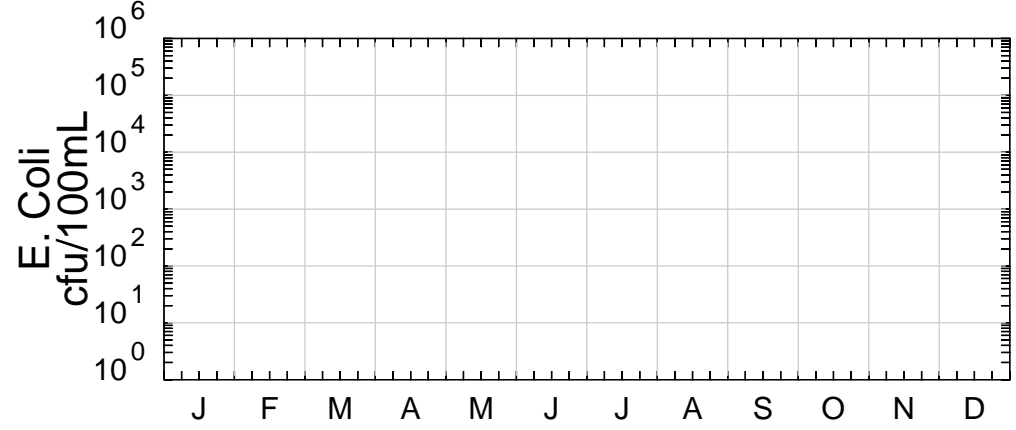
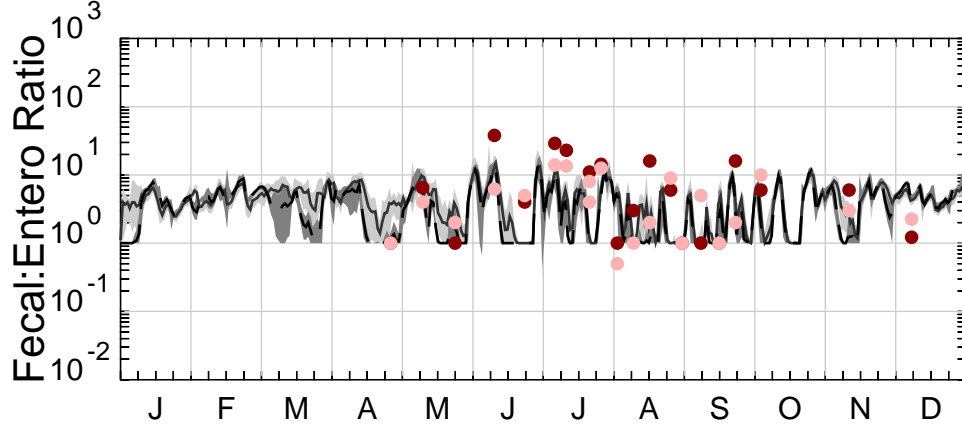
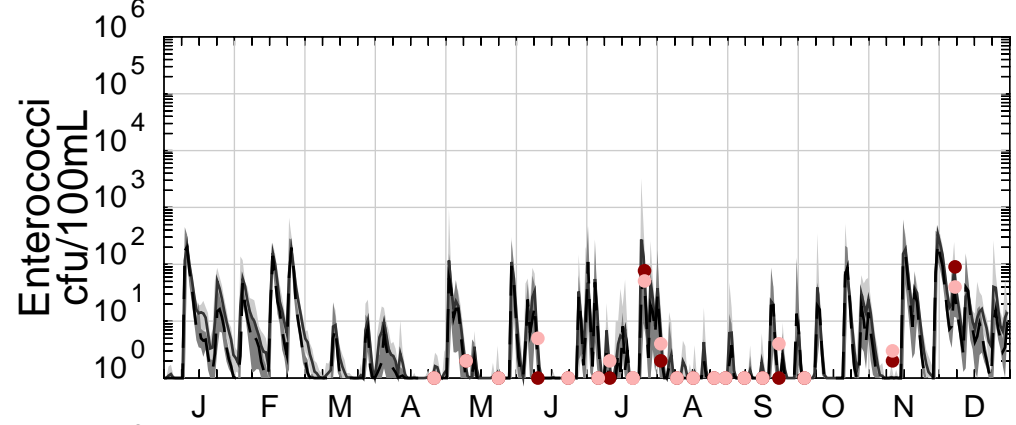
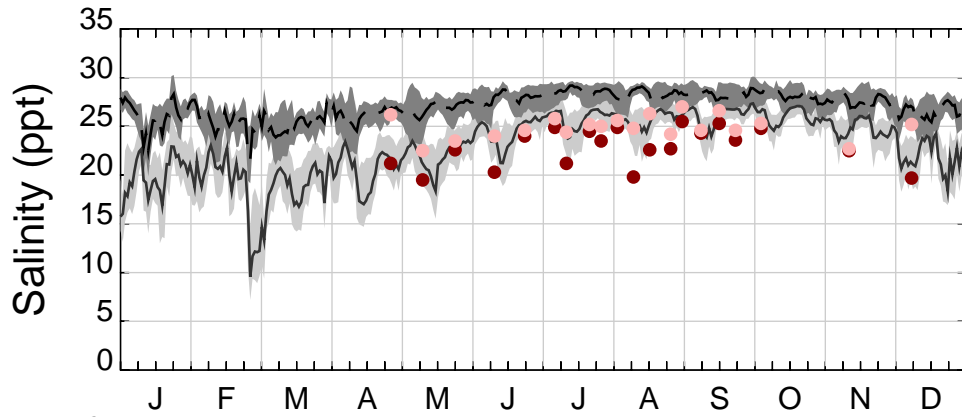
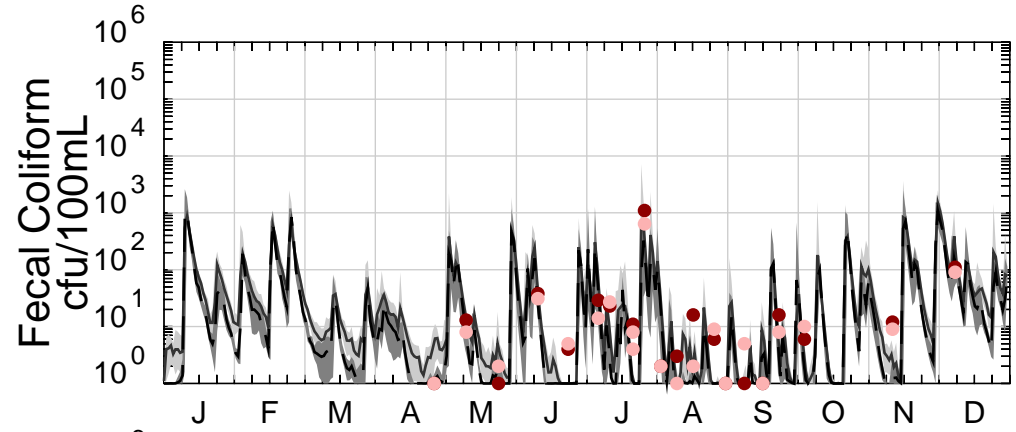
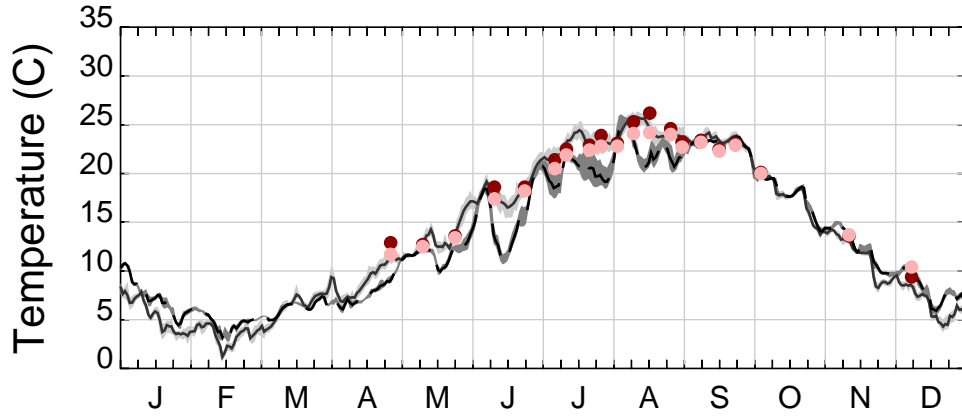
Station: B28



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

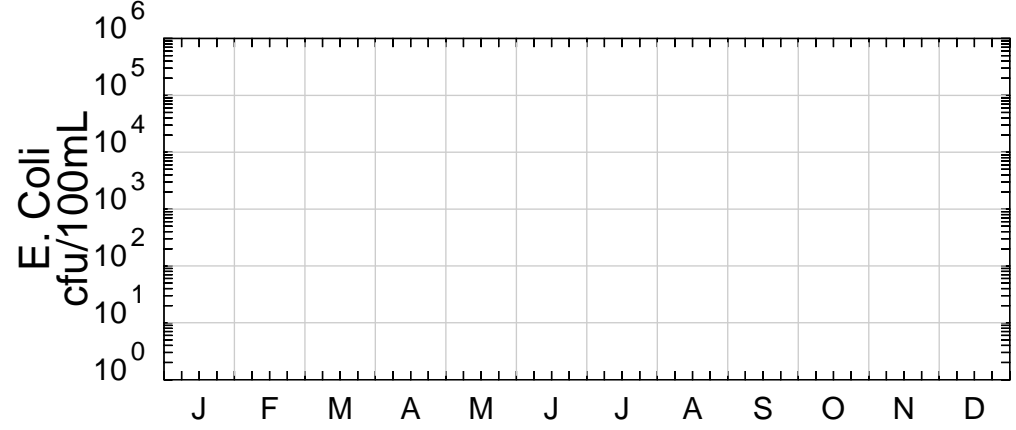
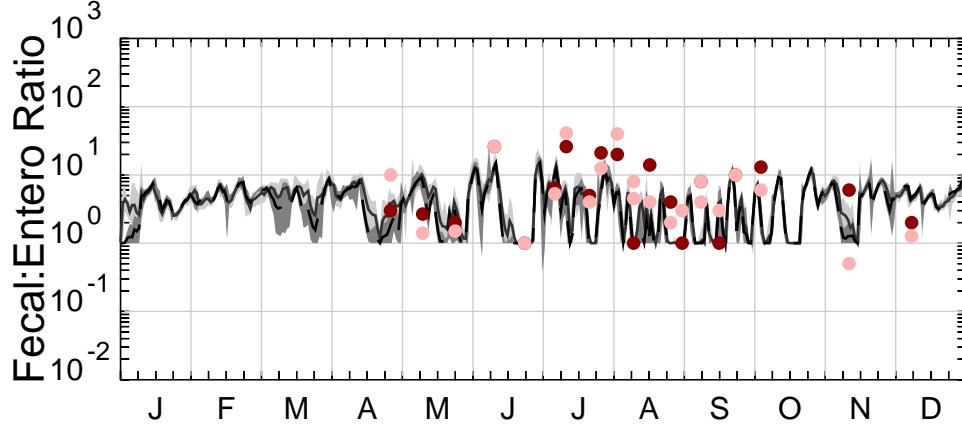
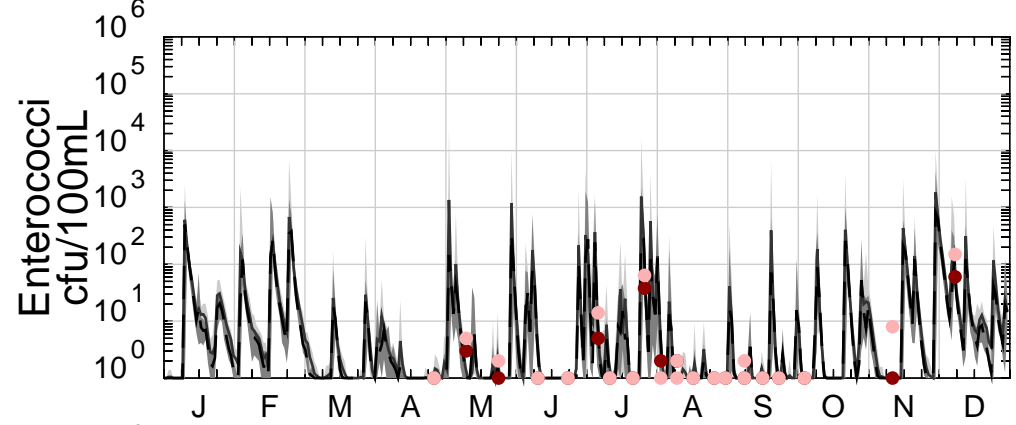
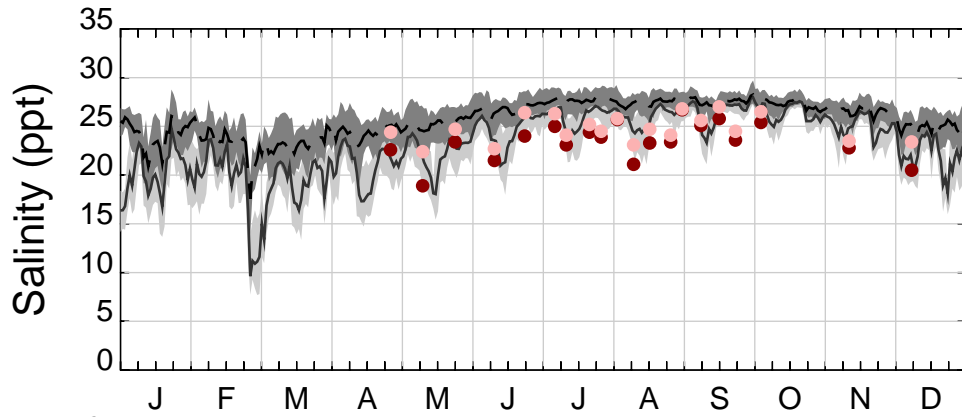
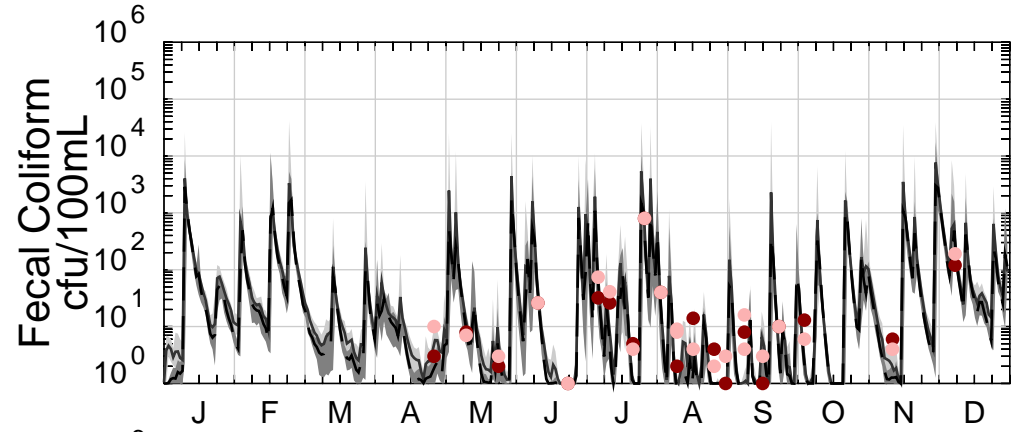
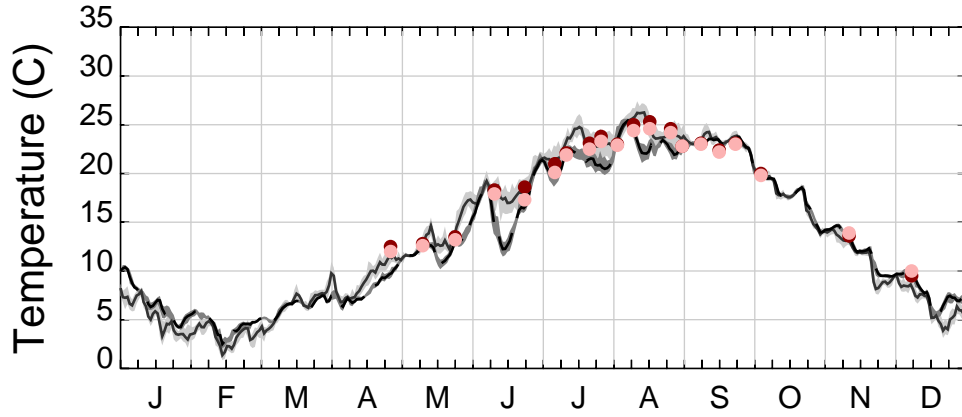
Station: B21A



Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Station: B21B



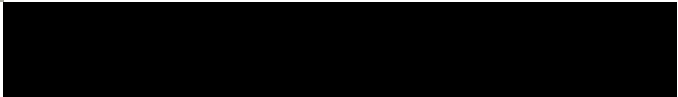

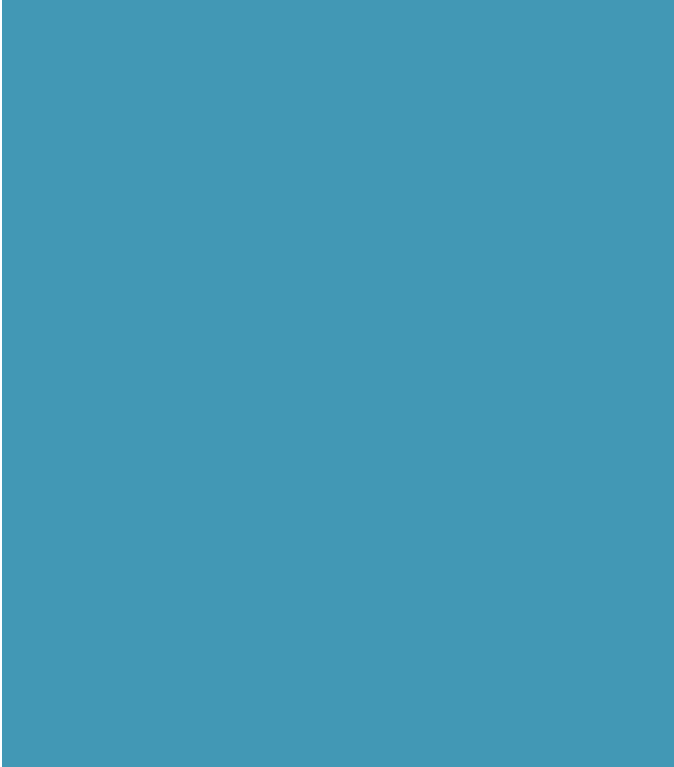
Model = 2016
 Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data



Appendix E-2

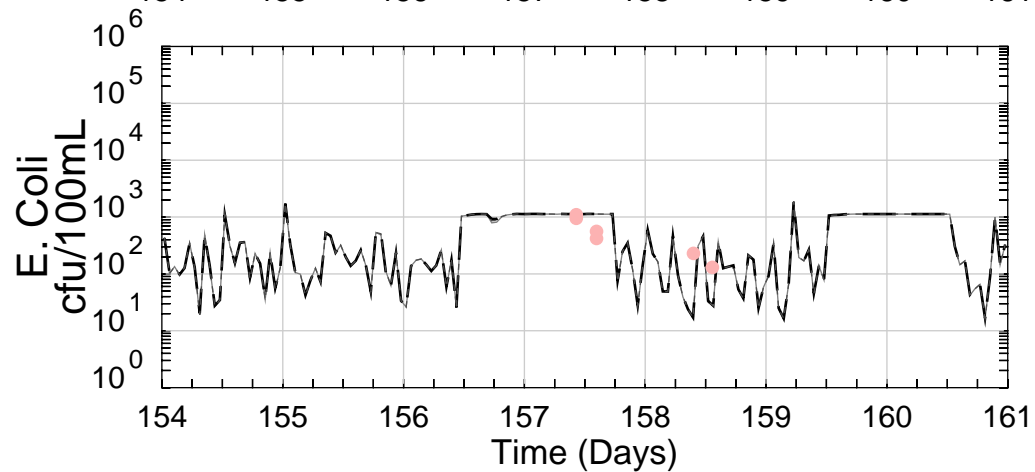
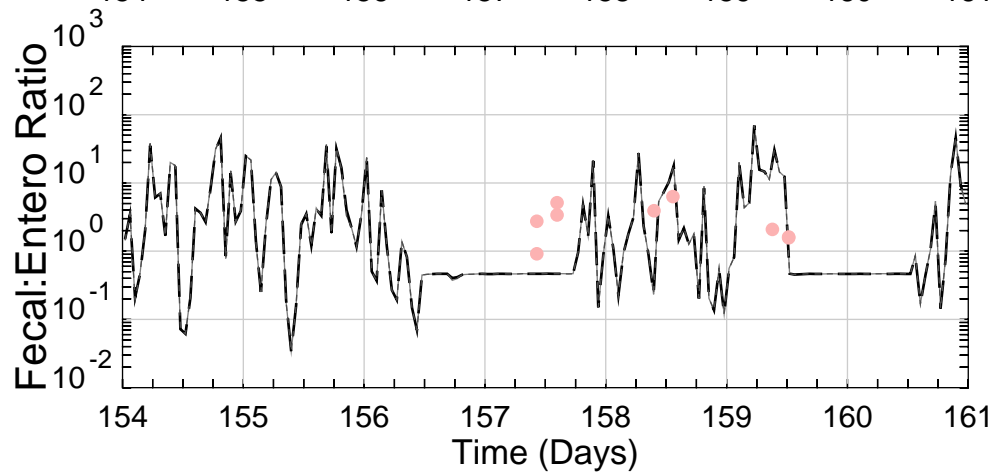
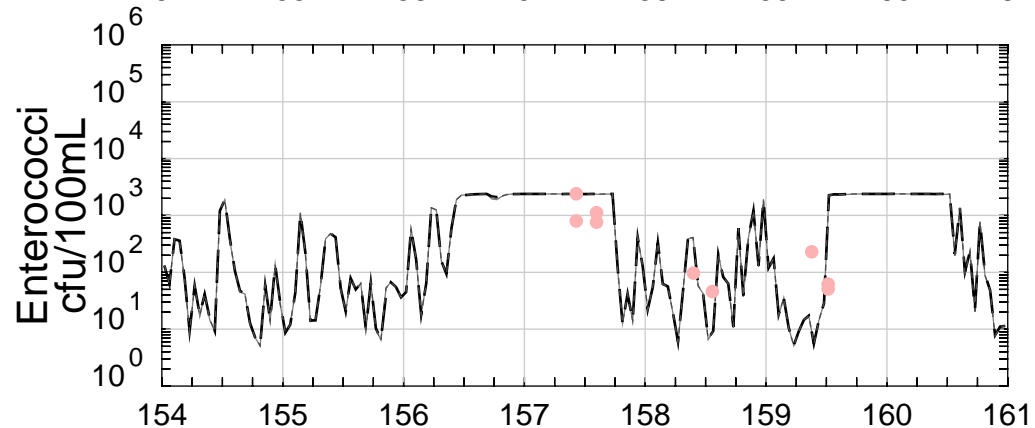
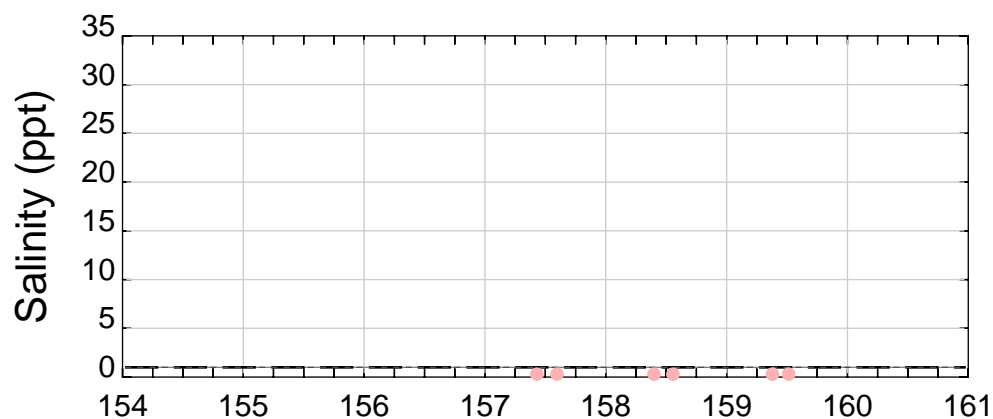
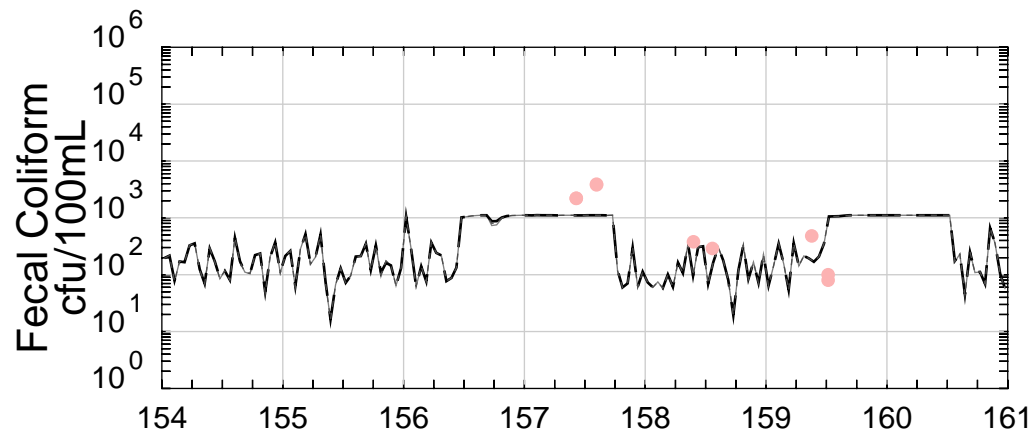
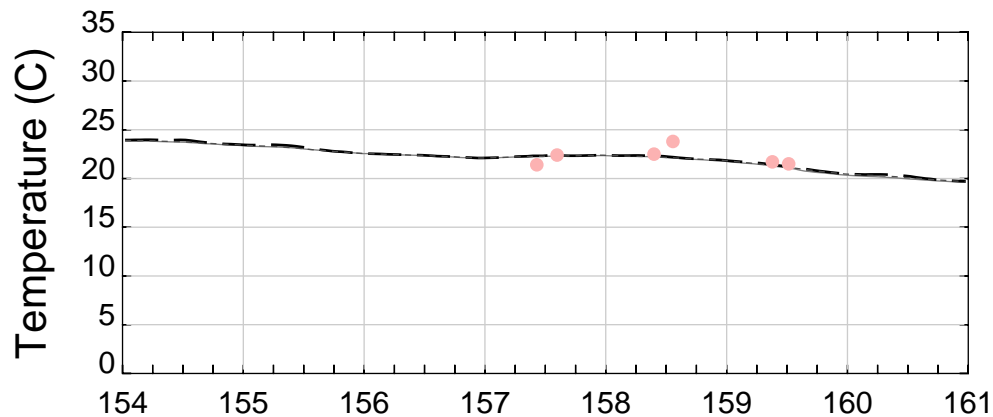
Additional Calibration Wet-Weather Time-Series Figures



Passaic River & Tributaries Passaic River

FW2

Station: B24 Event 1 (June 3-9)



Model = 2016
Data = 2016

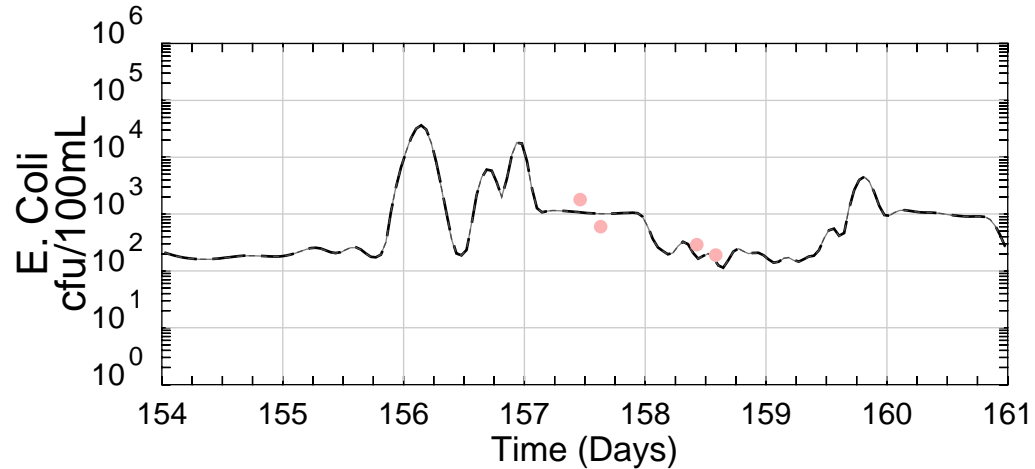
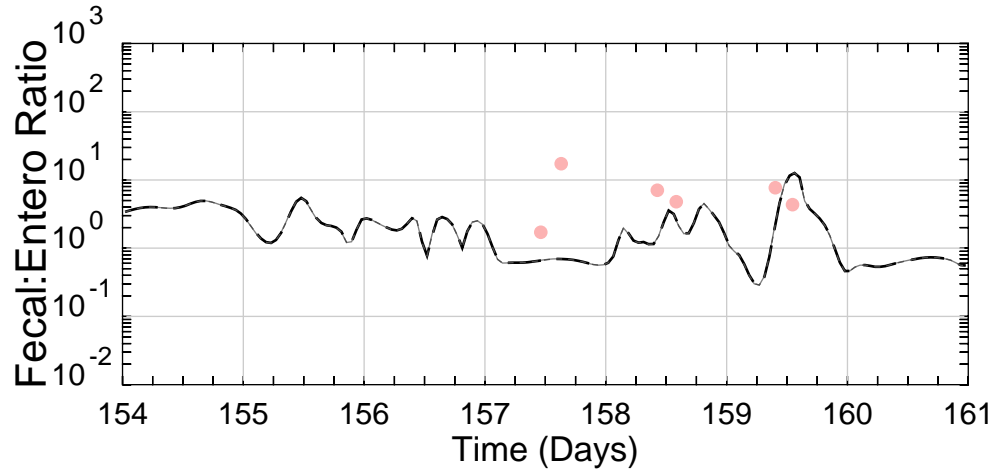
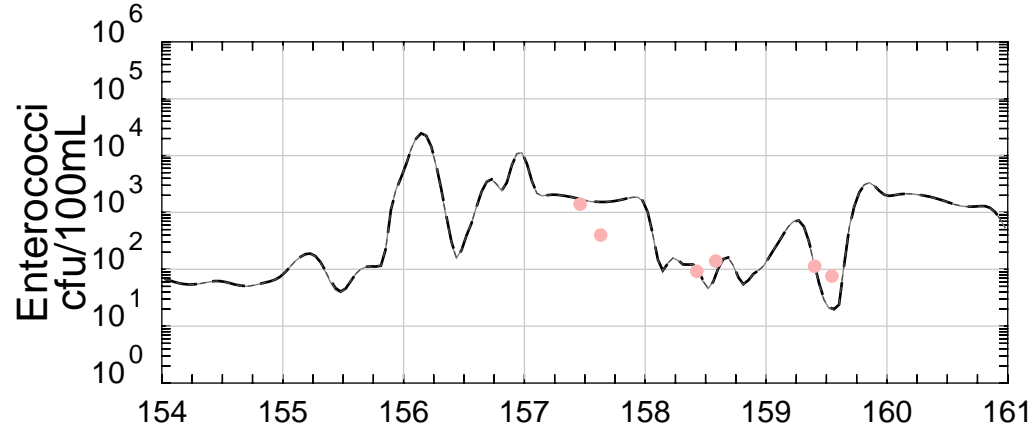
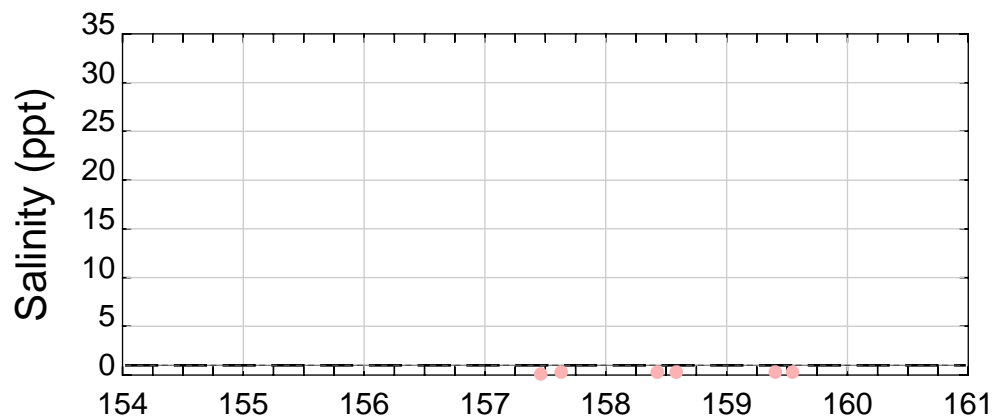
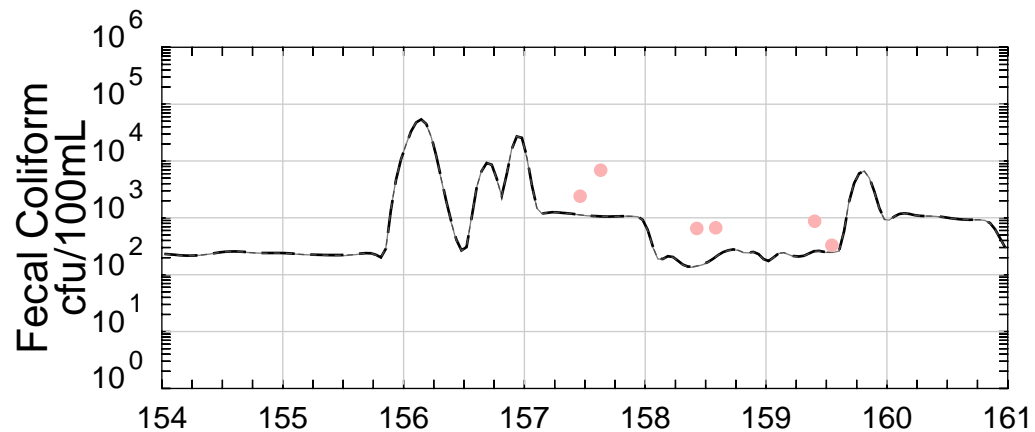
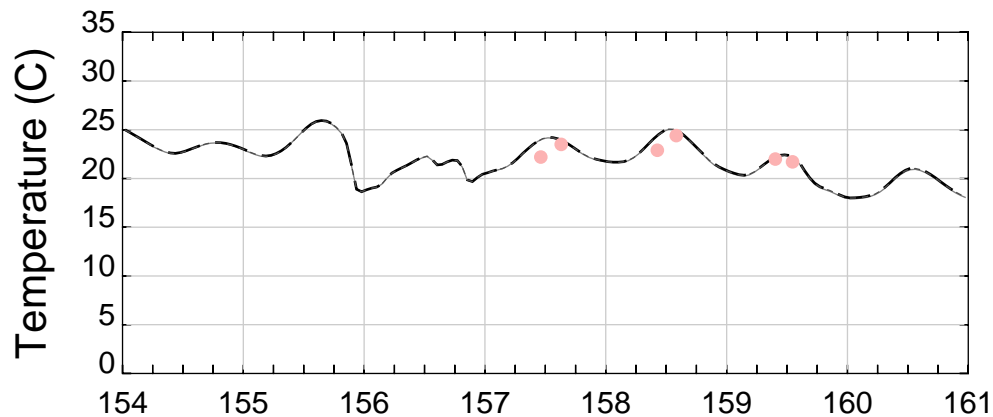
- Model at Surface
- - - Model at Mid-Depth
- . - Model at Bottom

- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Passaic River & Tributaries Passaic River

Station: 3 Event 1 (June 3-9)

FW2



Model = 2016
Data = 2016

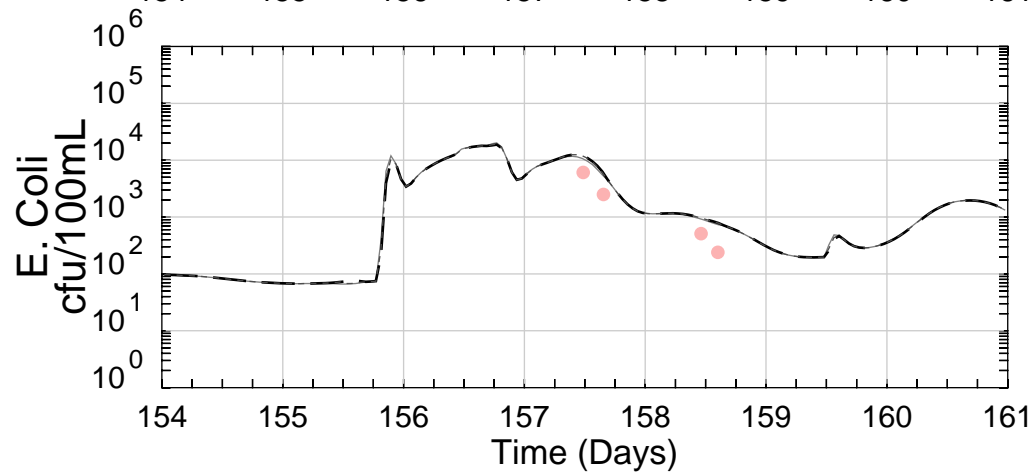
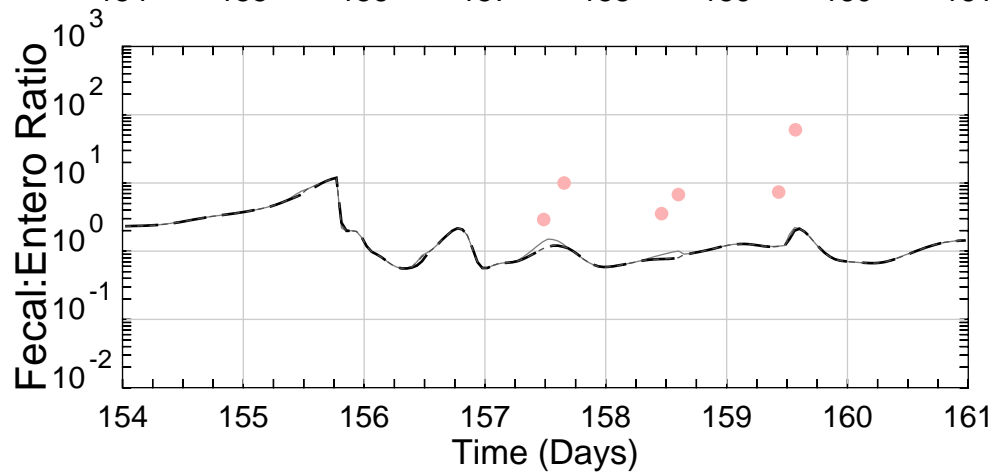
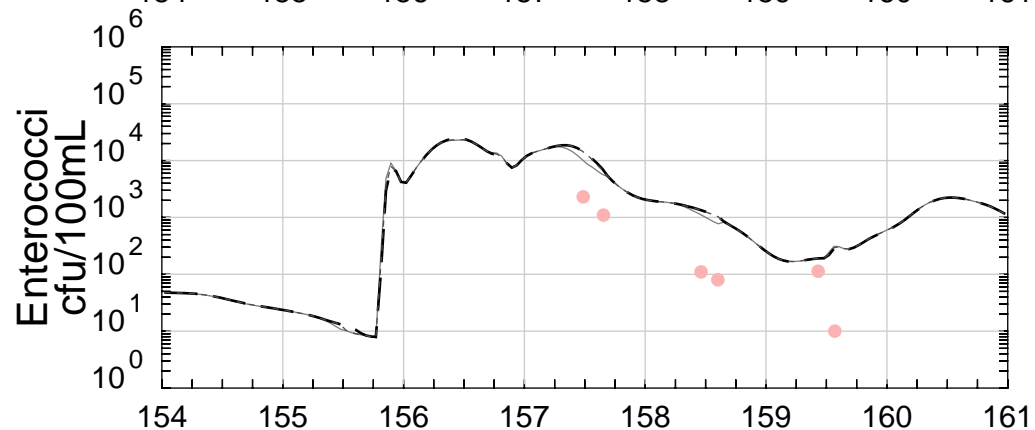
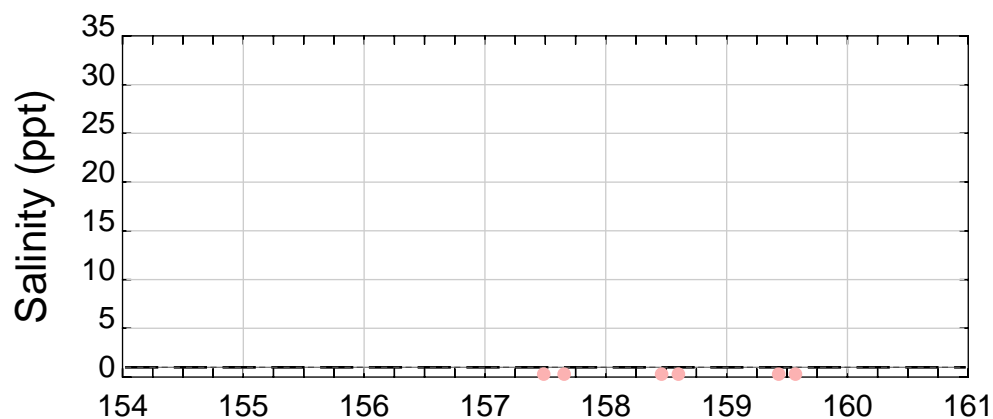
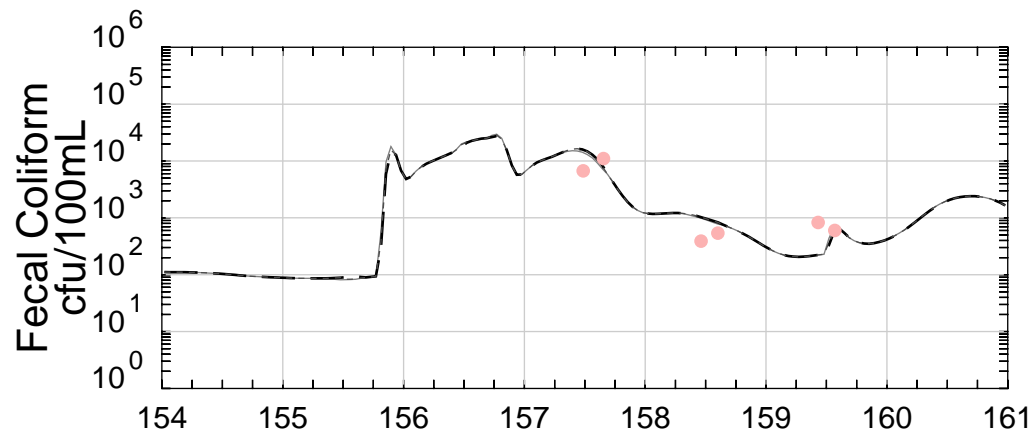
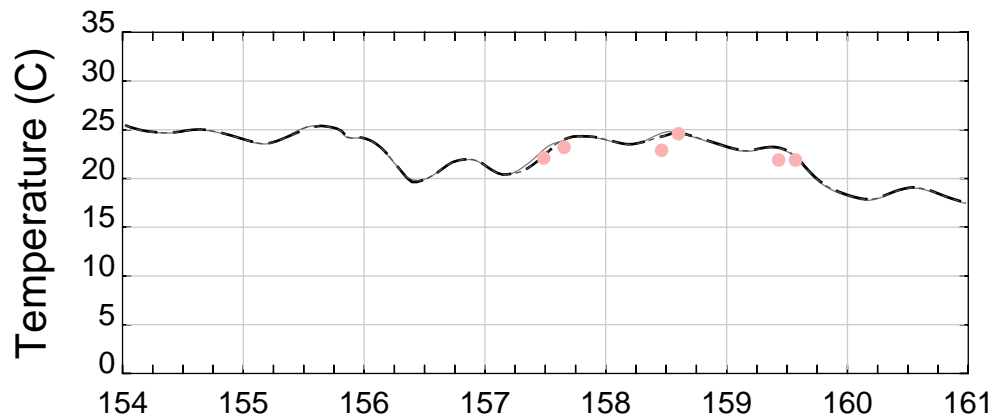
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Passaic River & Tributaries Passaic River

FW2

Station: 4 Event 1 (June 3-9)



Model = 2016
Data = 2016

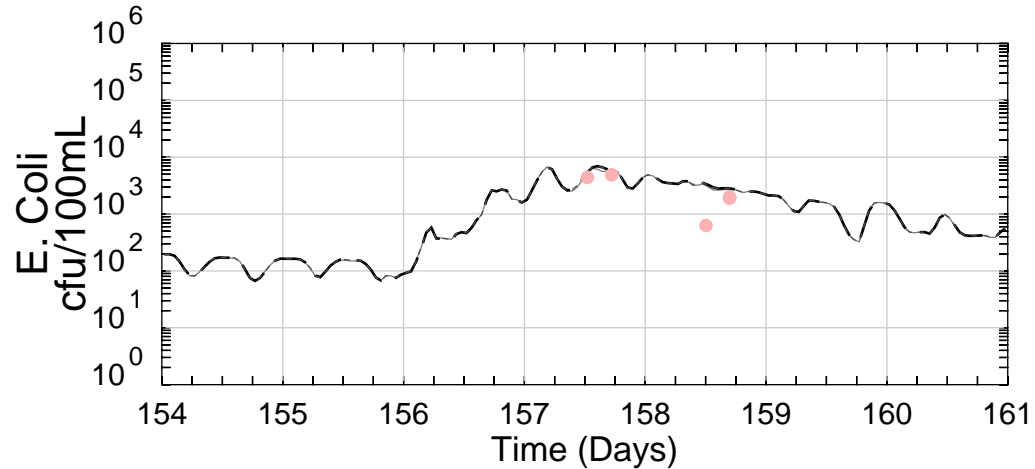
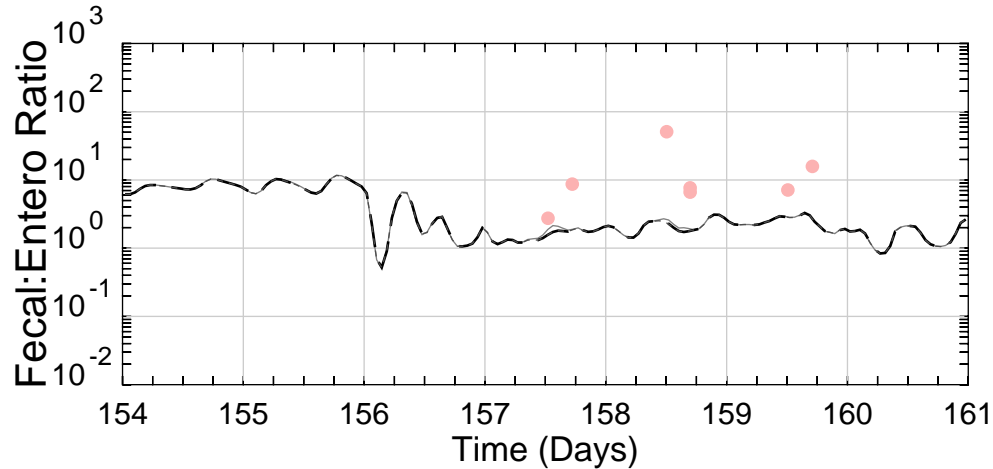
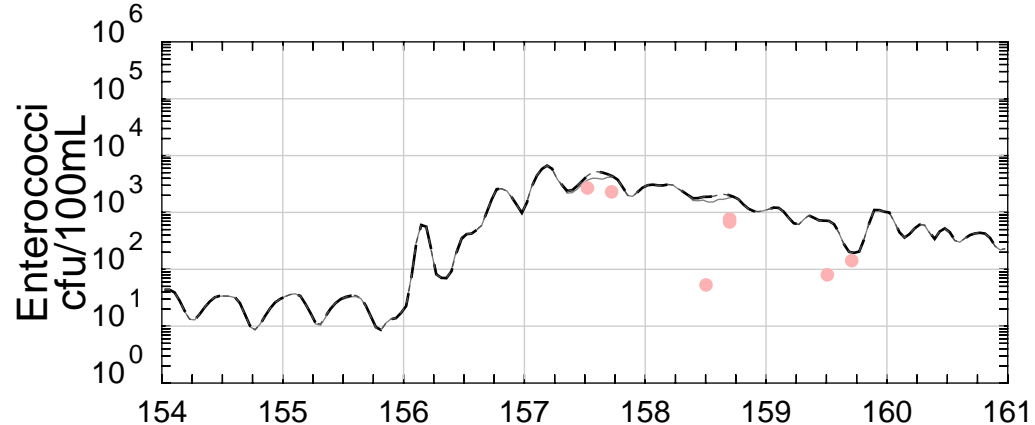
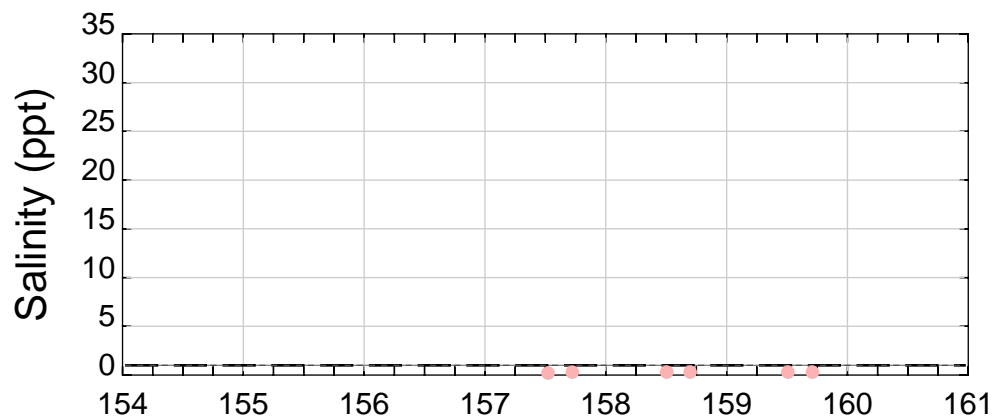
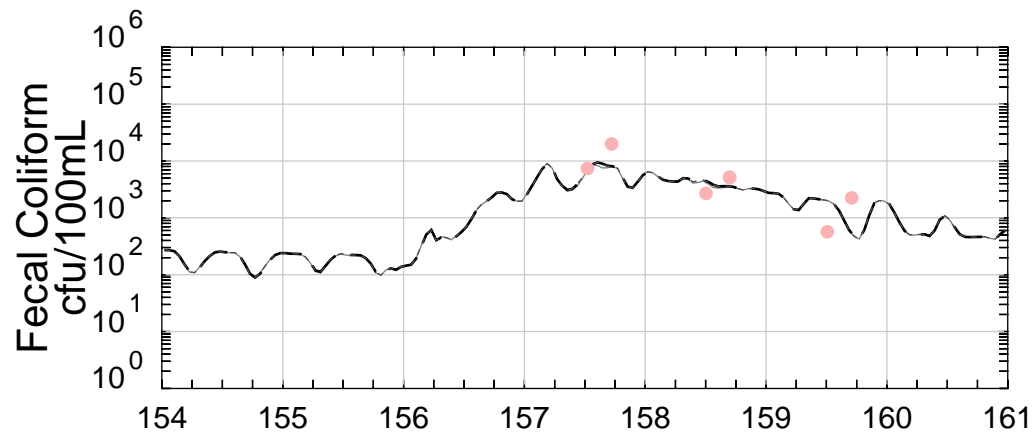
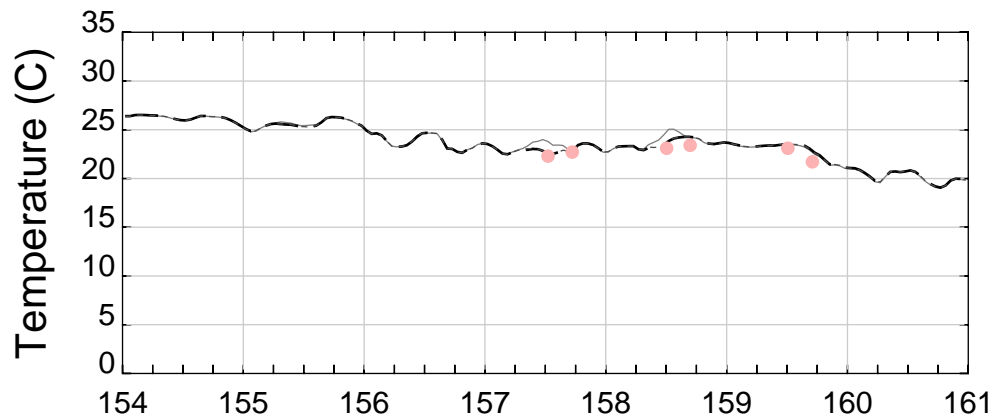
— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Passaic River & Tributaries Passaic River

Station: 7 Event 1 (June 3-9)

FW2/SE2



Model = 2016
Data = 2016

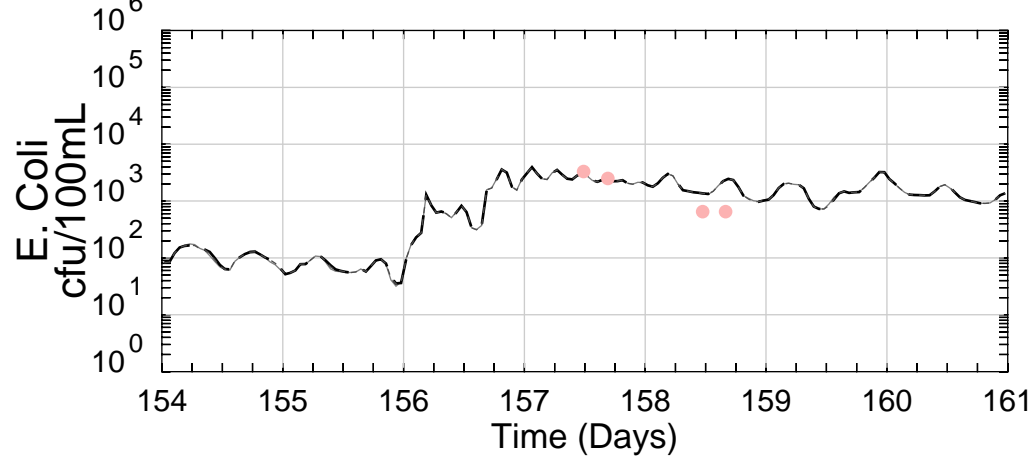
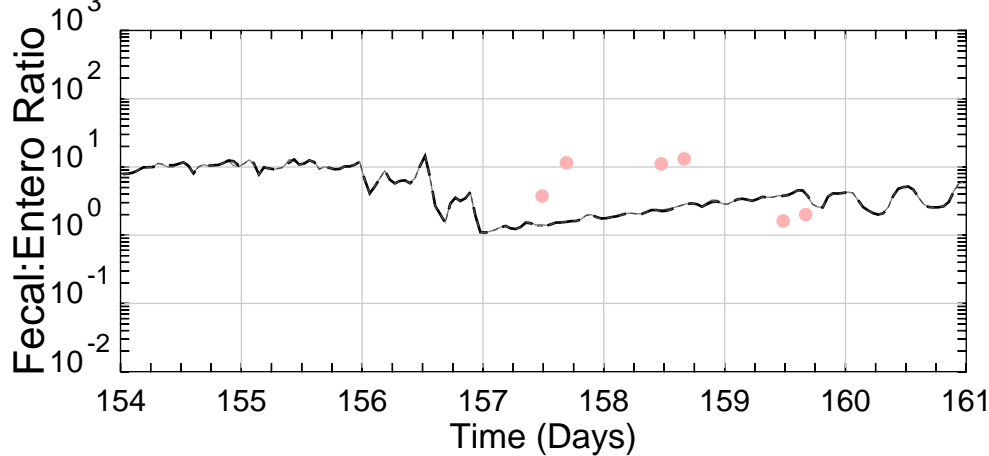
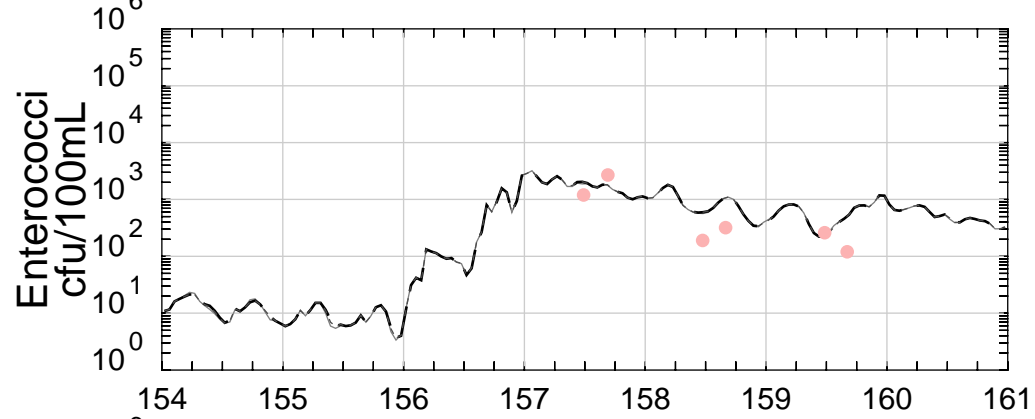
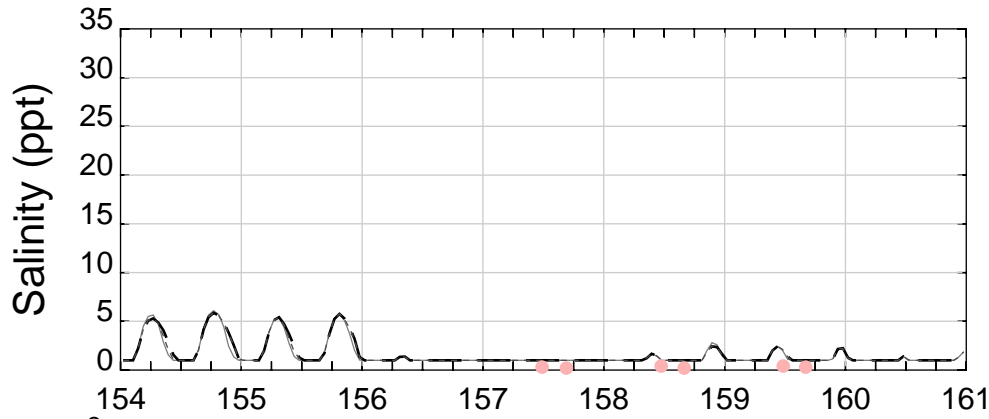
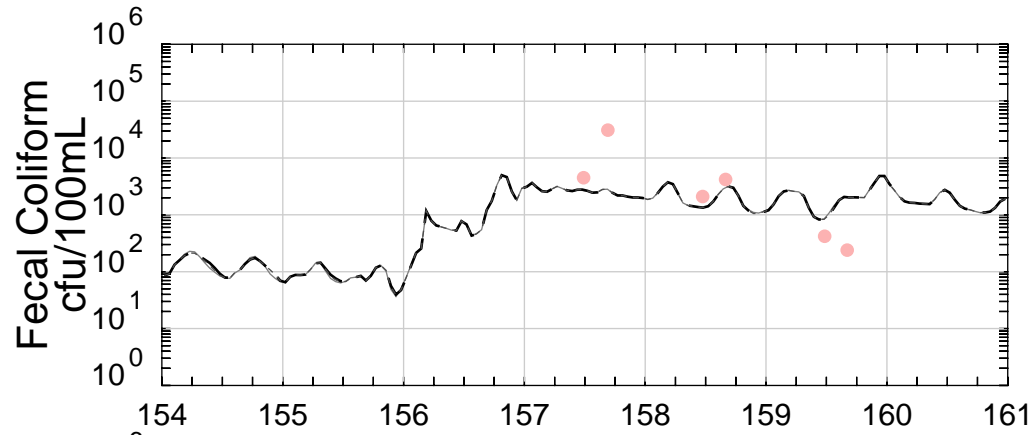
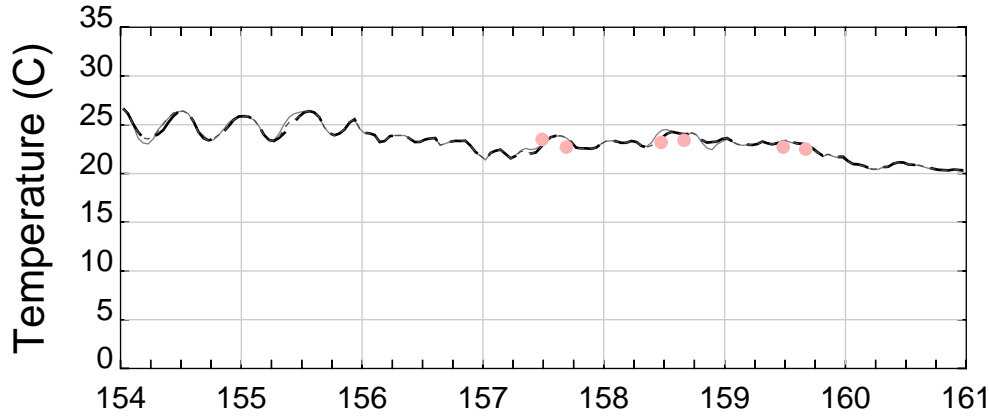
— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Passaic River & Tributaries Passaic River

Station: 8 Event 1 (June 3-9)

FW2/SE2



Model = 2016
Data = 2016

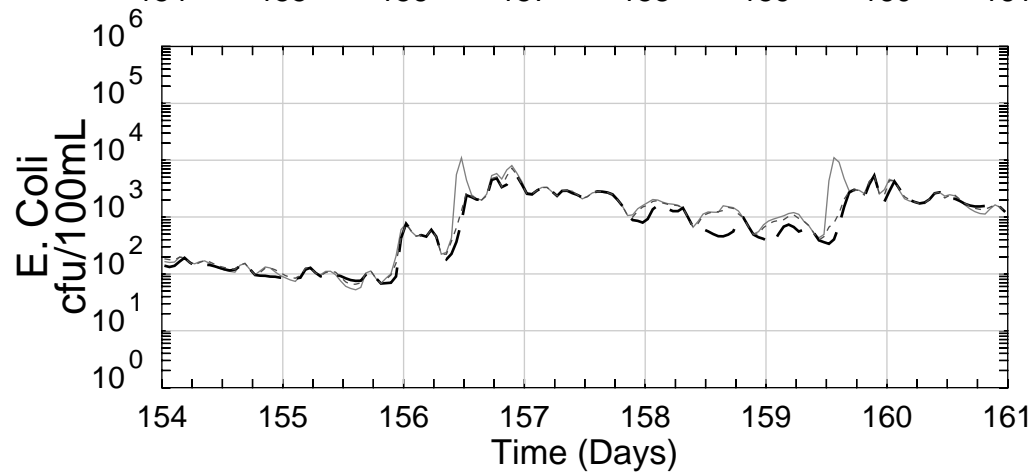
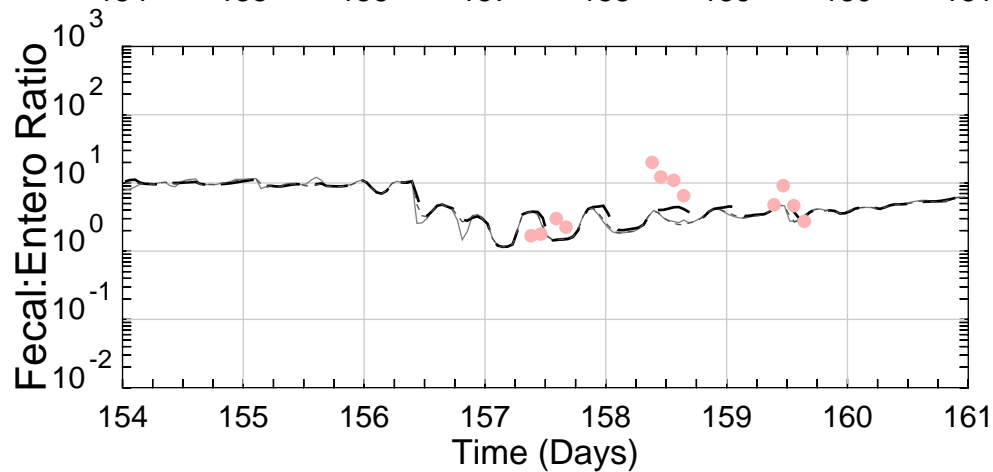
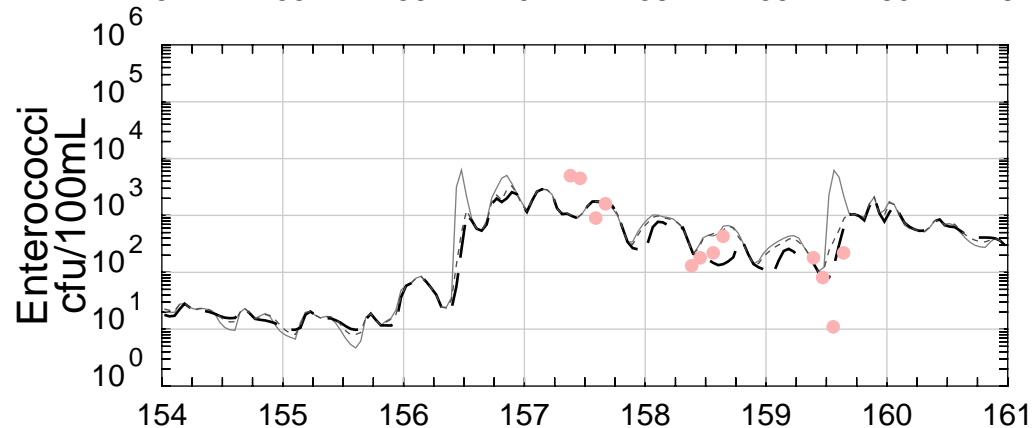
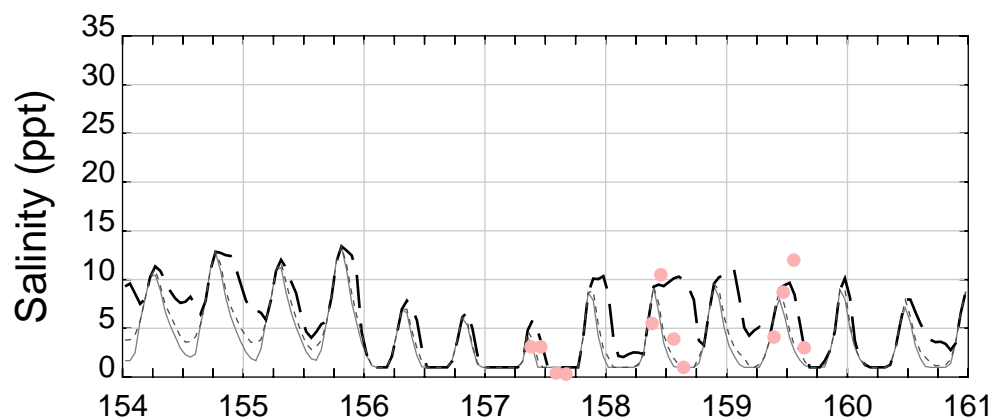
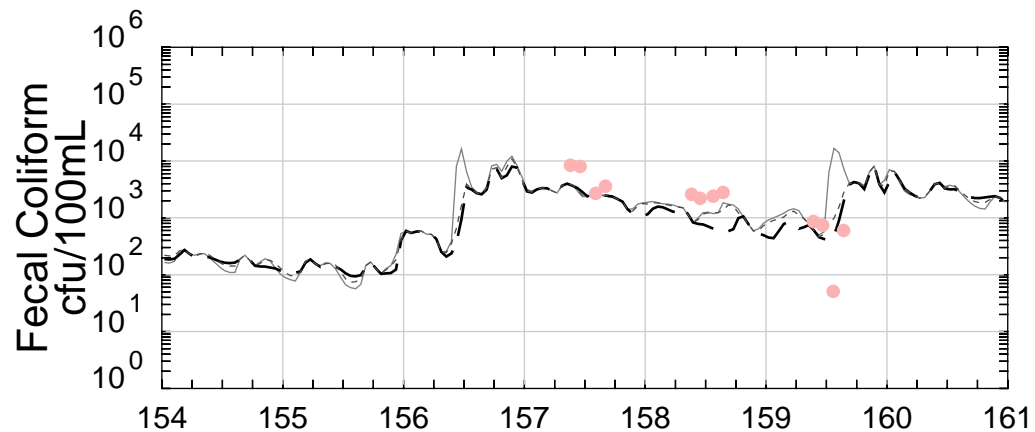
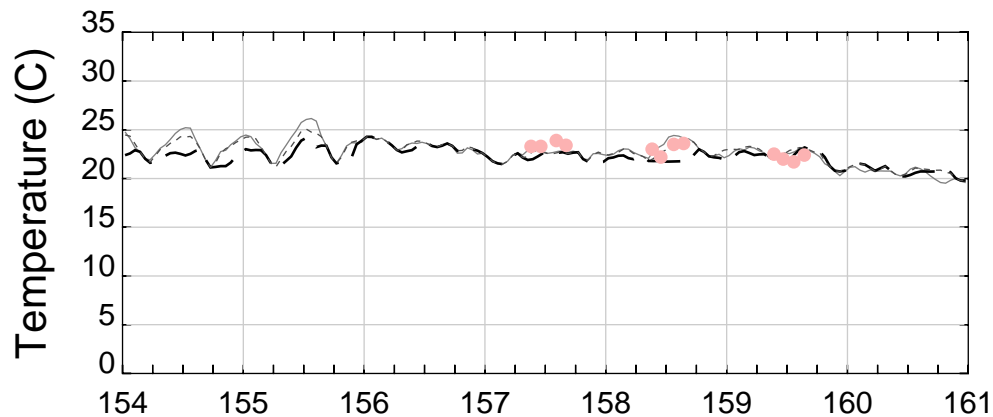
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Passaic River & Tributaries Passaic River

SE3

Station: 10 Event 1 (June 3-9)



Model = 2016
Data = 2016

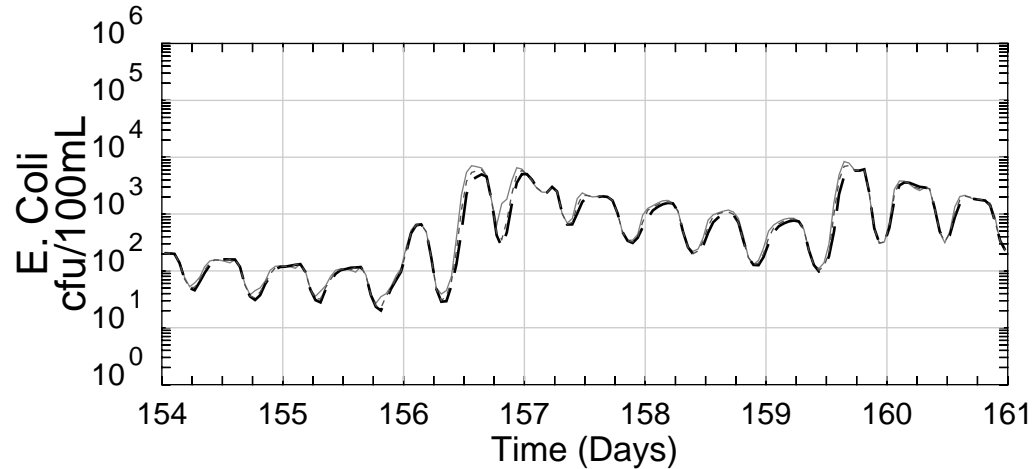
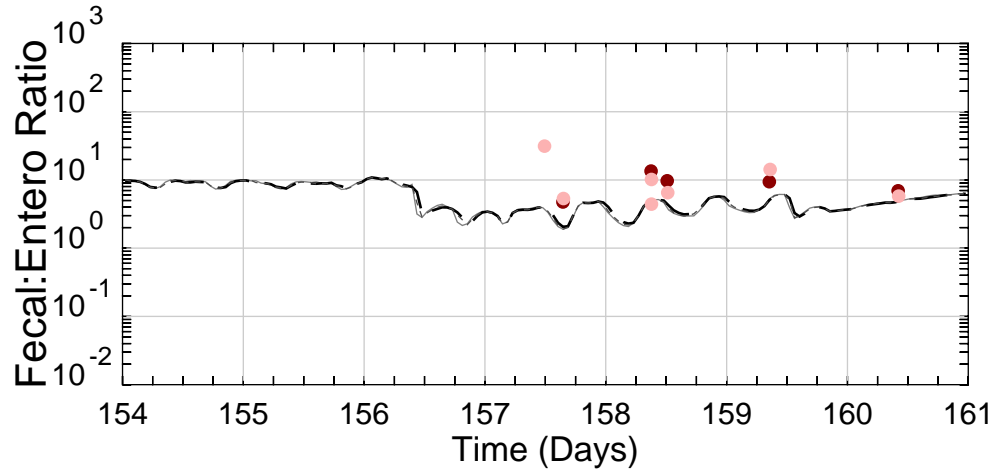
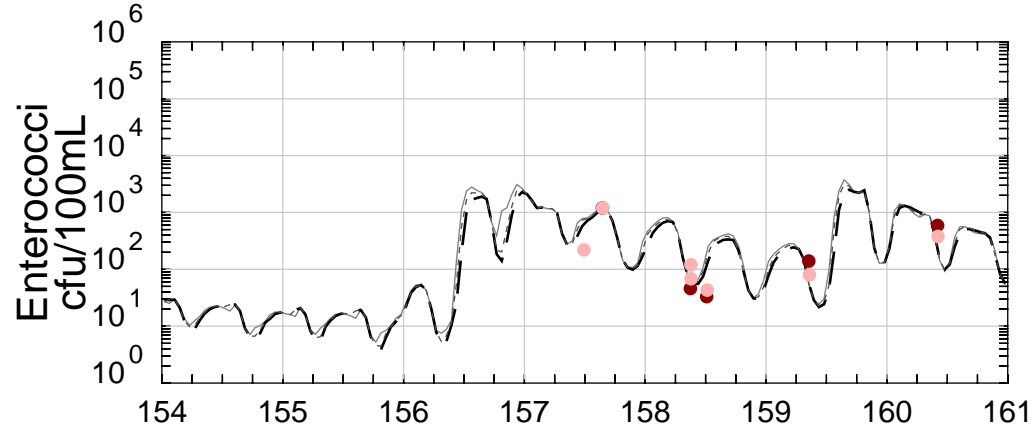
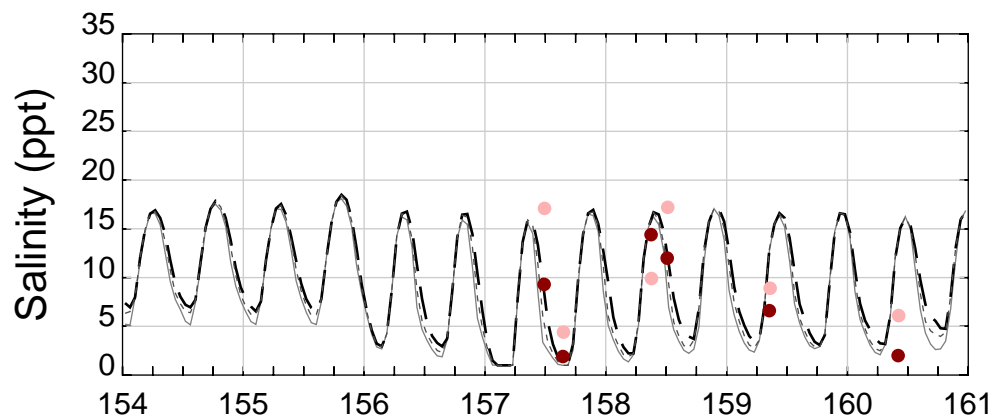
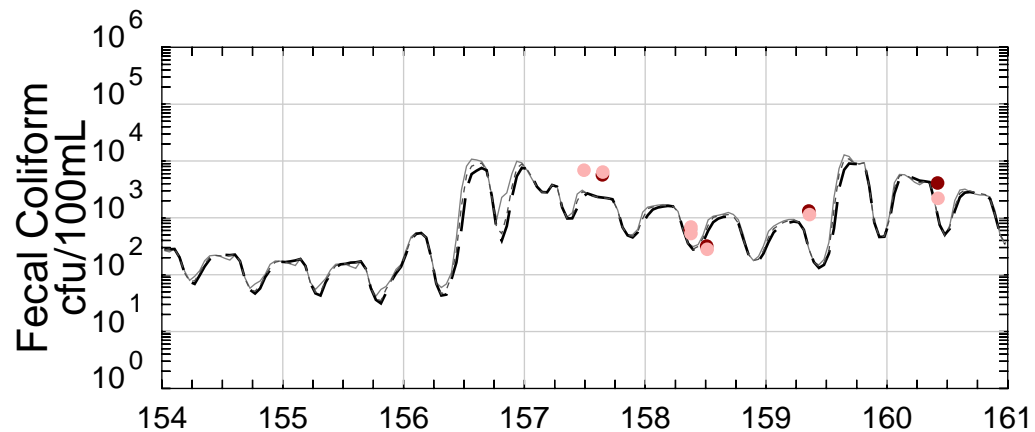
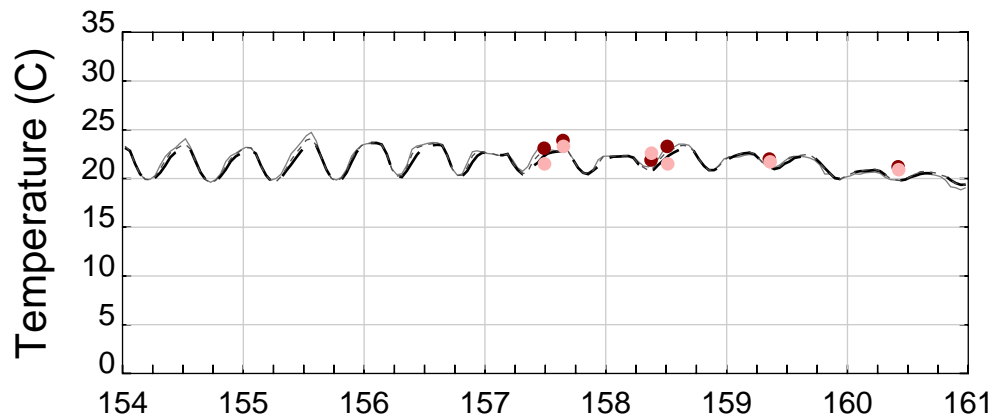
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Passaic River & Tributaries Passaic River

SE3

Station: B6 Event 1 (June 3-9)



Model = 2016
Data = 2016

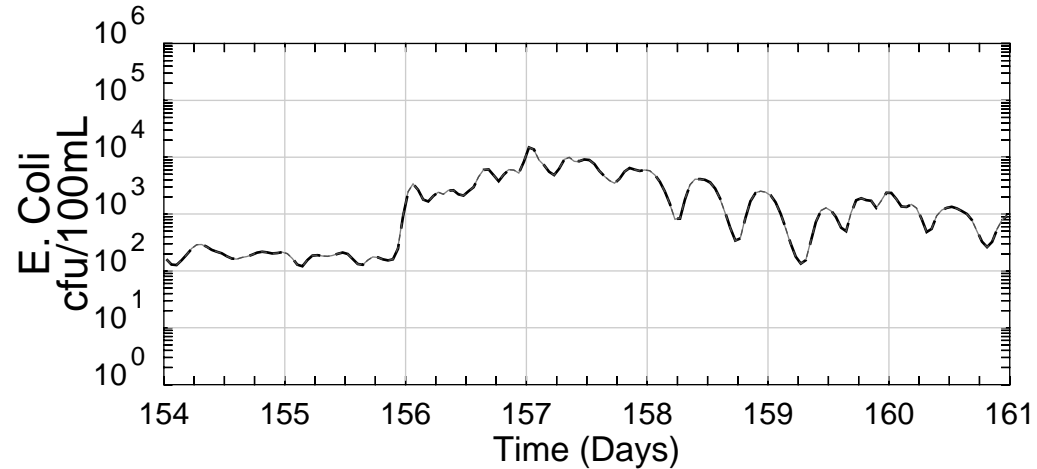
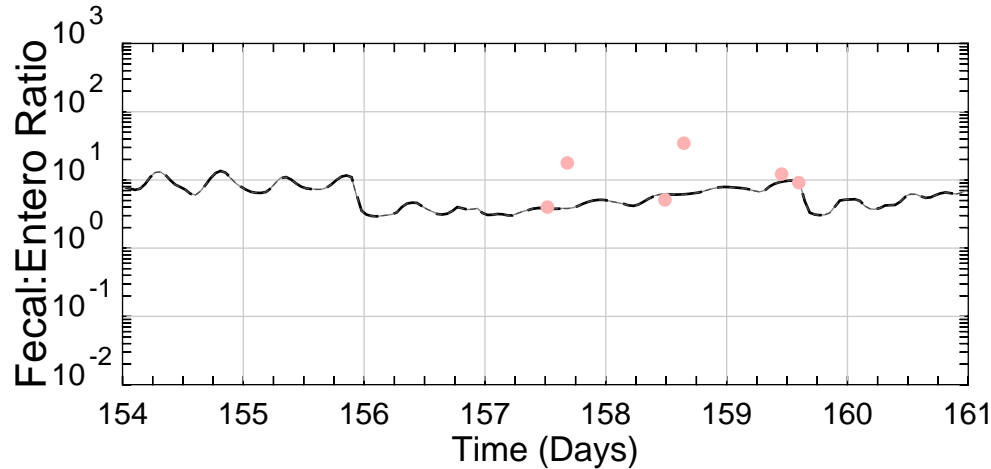
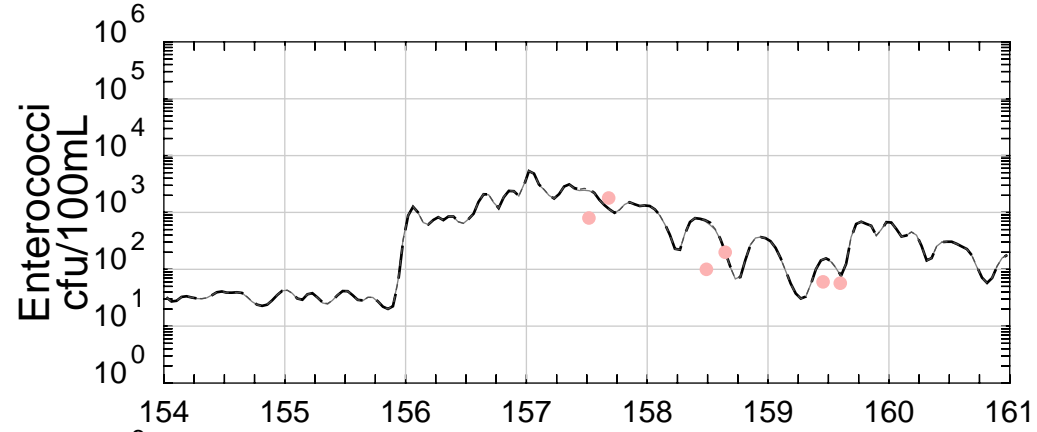
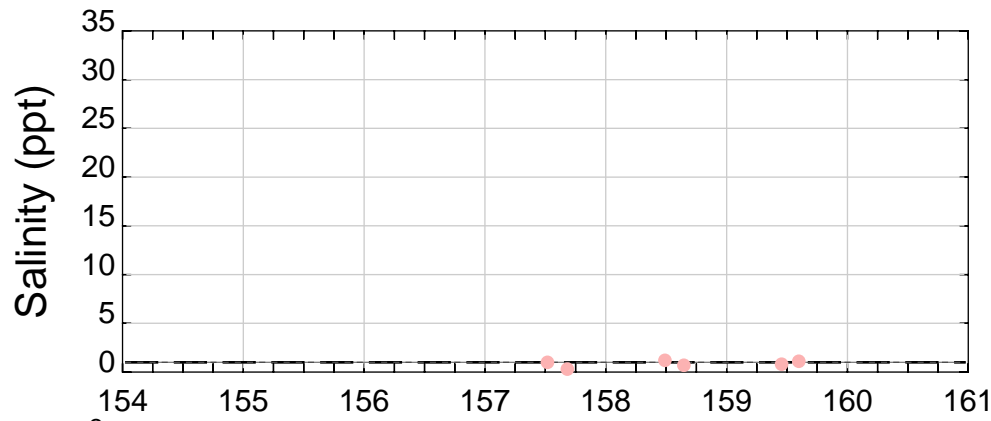
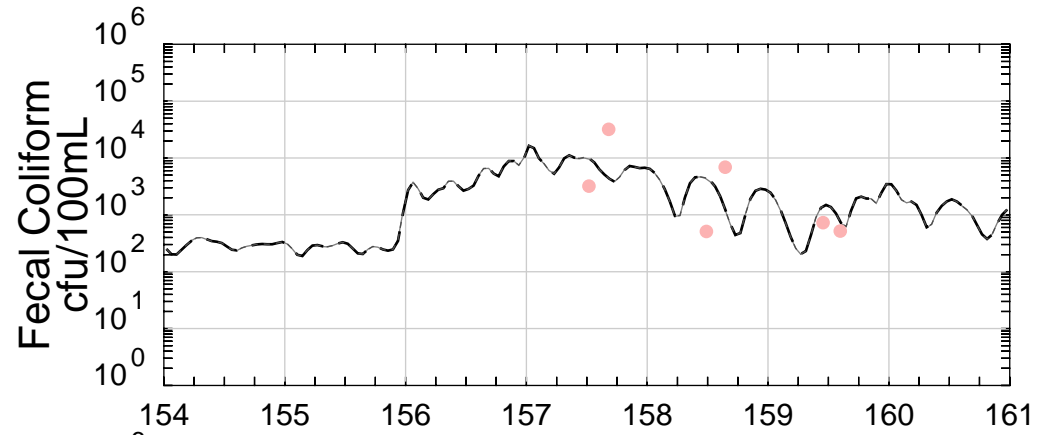
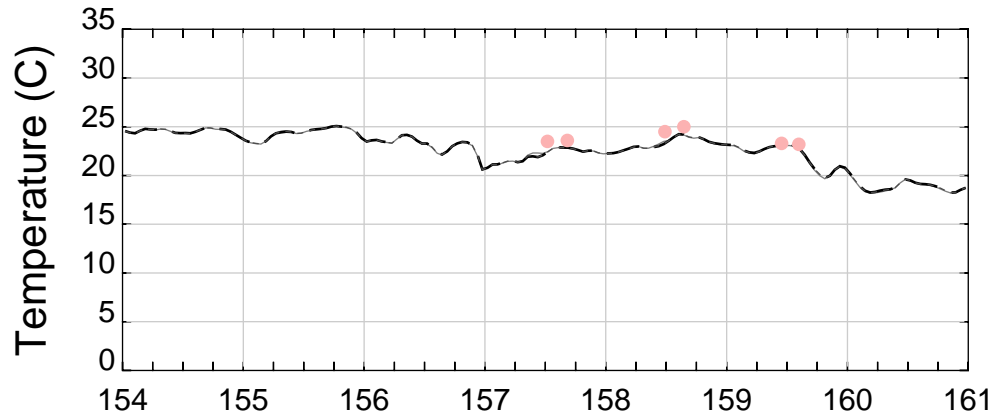
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- ● Surface/Mid-depth HDR Data
- ● Surface/Mid/Bottom NJHDG Data

Hackensack River & Tributaries Hackensack River

SE1

Station: B1 Event 1 (June 3-9)



Model = 2016
Data = 2016

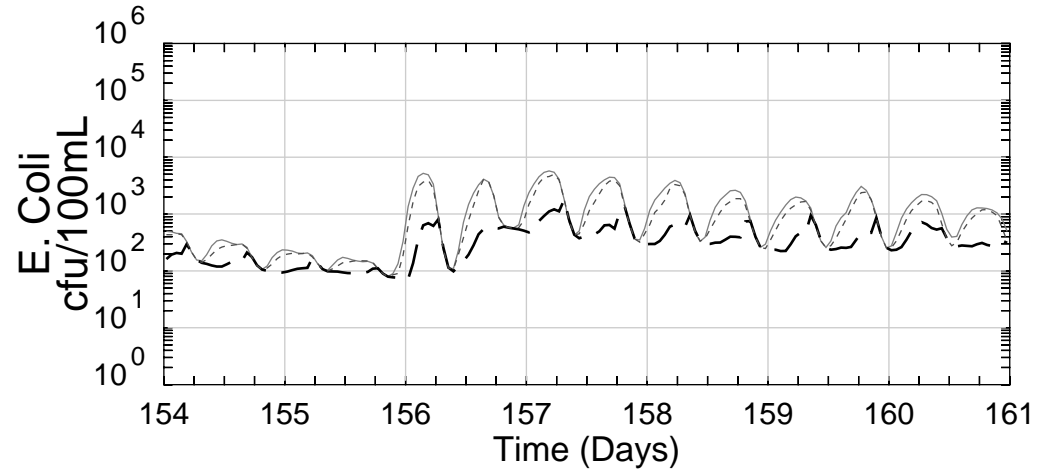
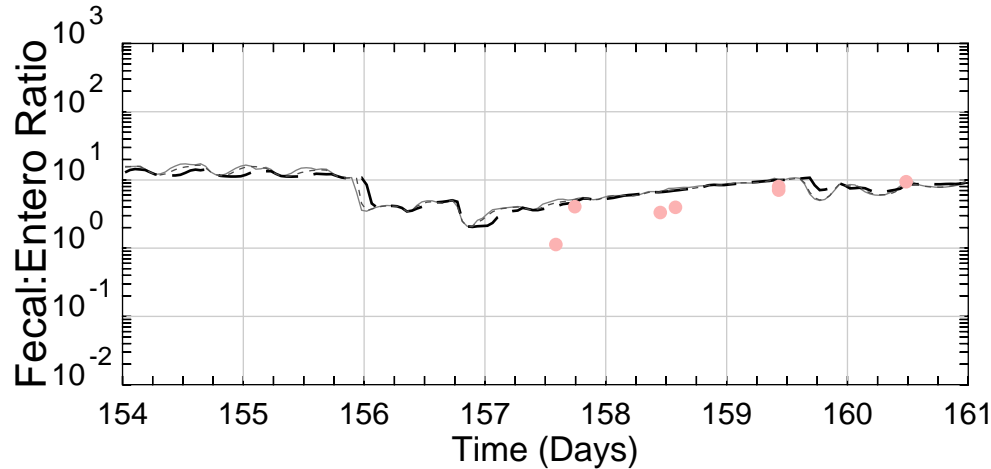
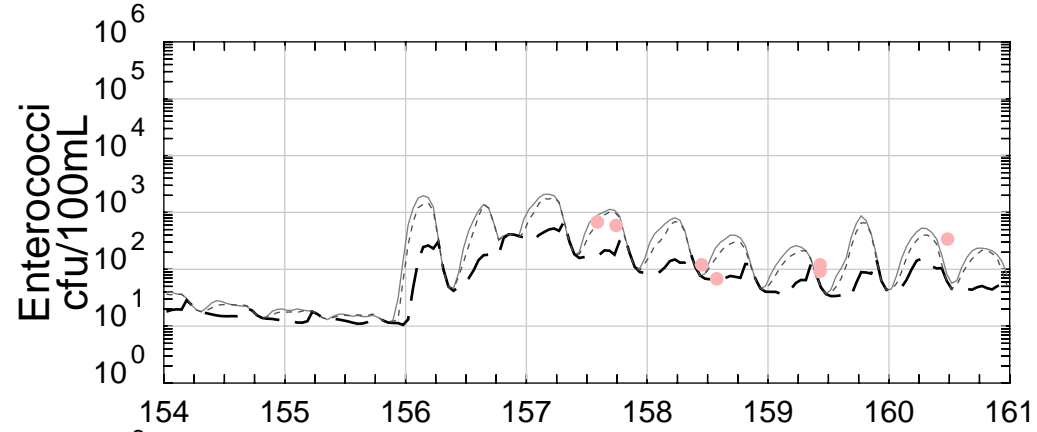
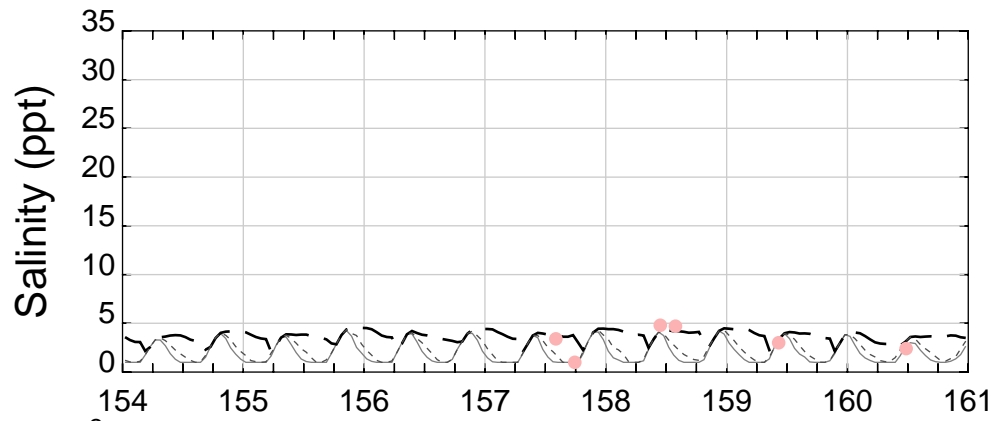
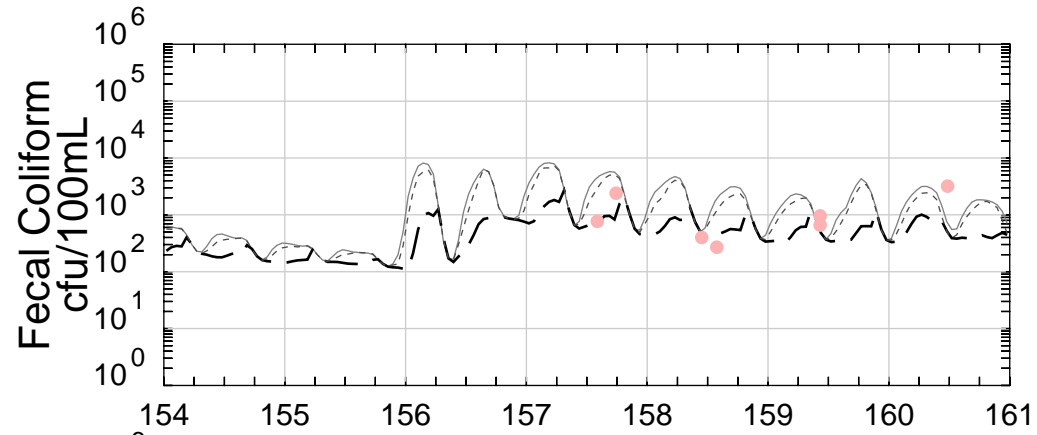
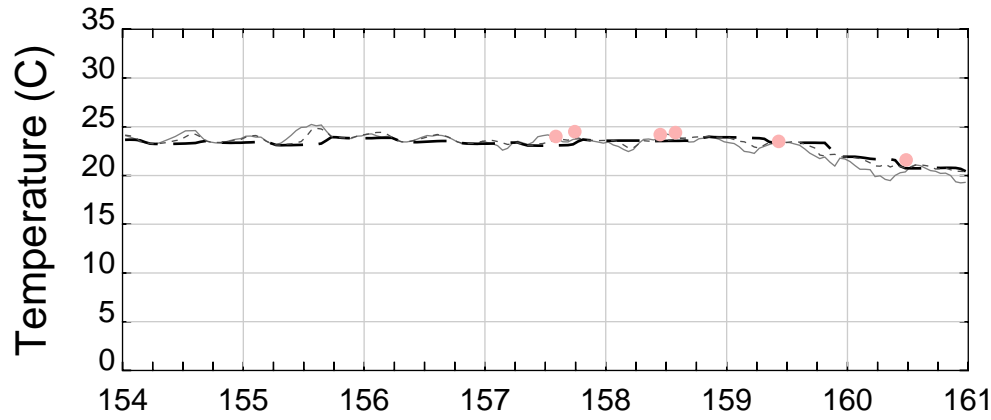
— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Hackensack River & Tributaries Hackensack River

SE1

Station: B2 Event 1 (June 3-9)



Model = 2016
Data = 2016

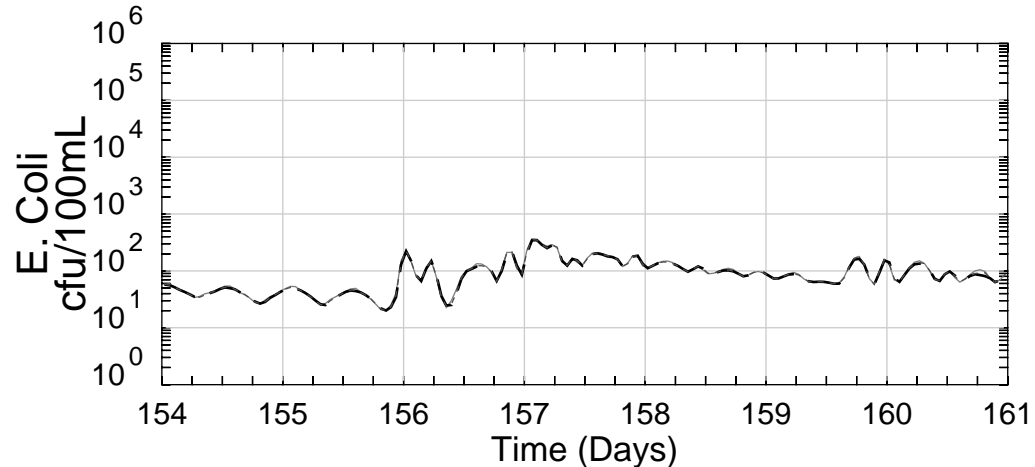
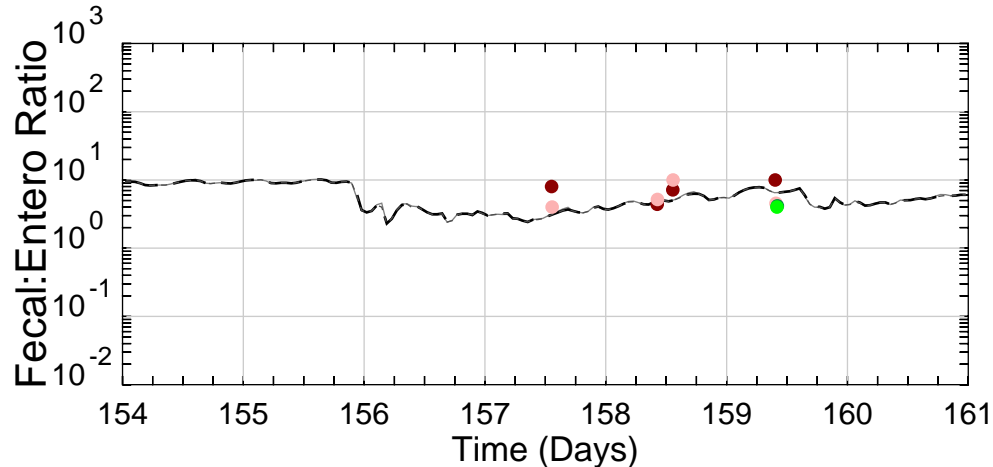
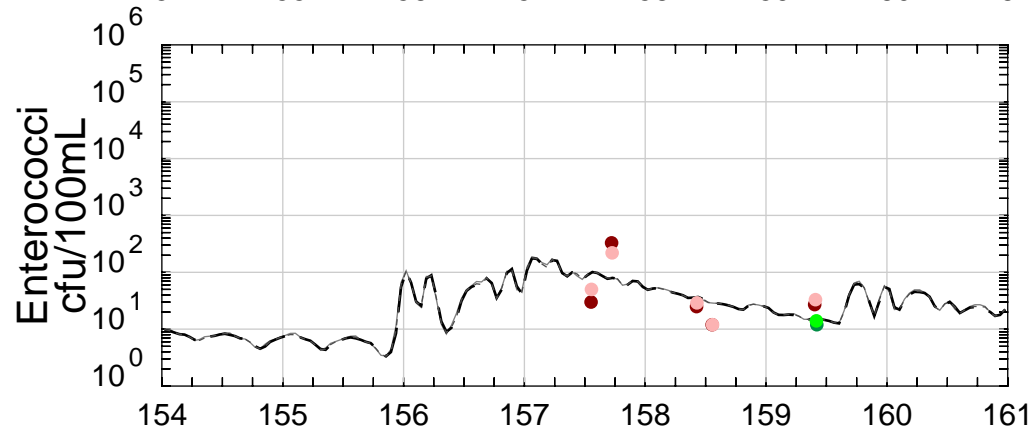
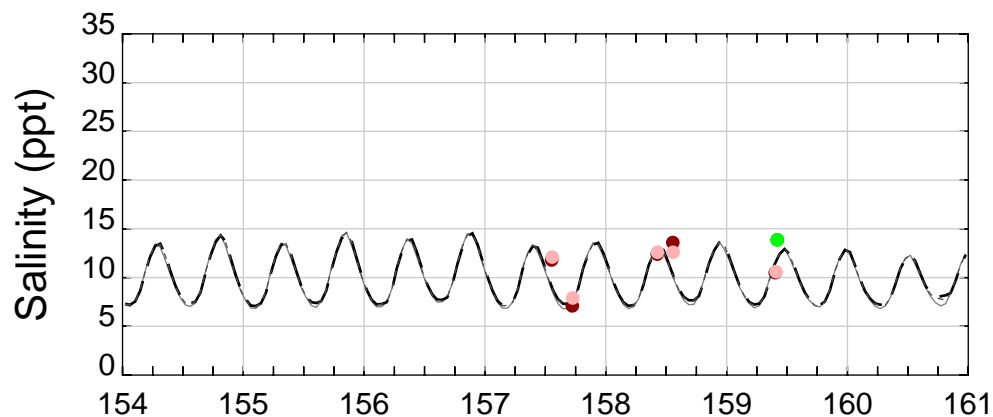
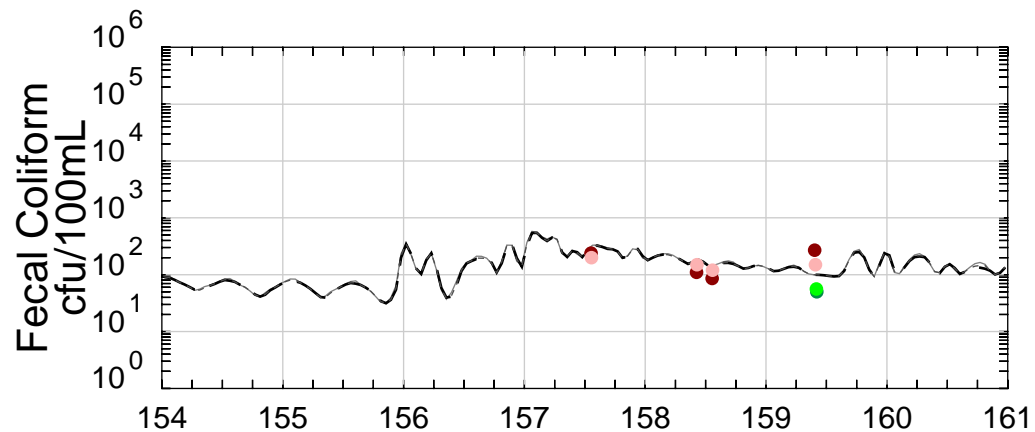
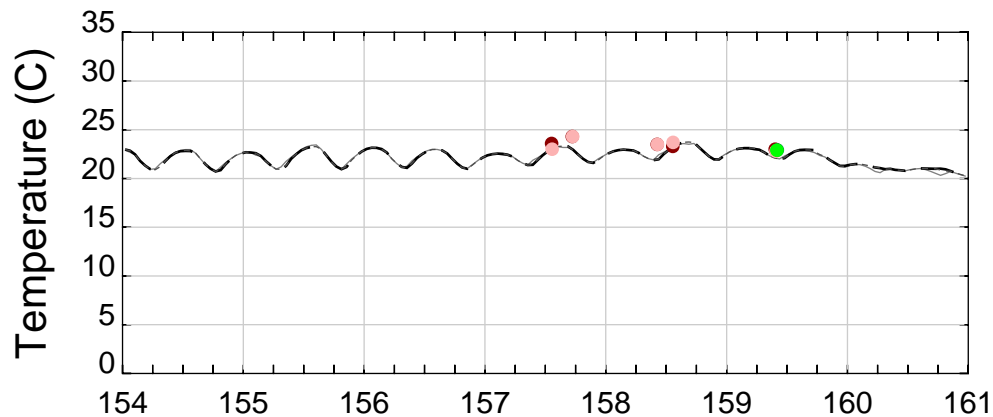
— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Hackensack River & Tributaries Hackensack River

SE2

Station: 14 Event 1 (June 3-9)



Model = 2016
Data = 2016

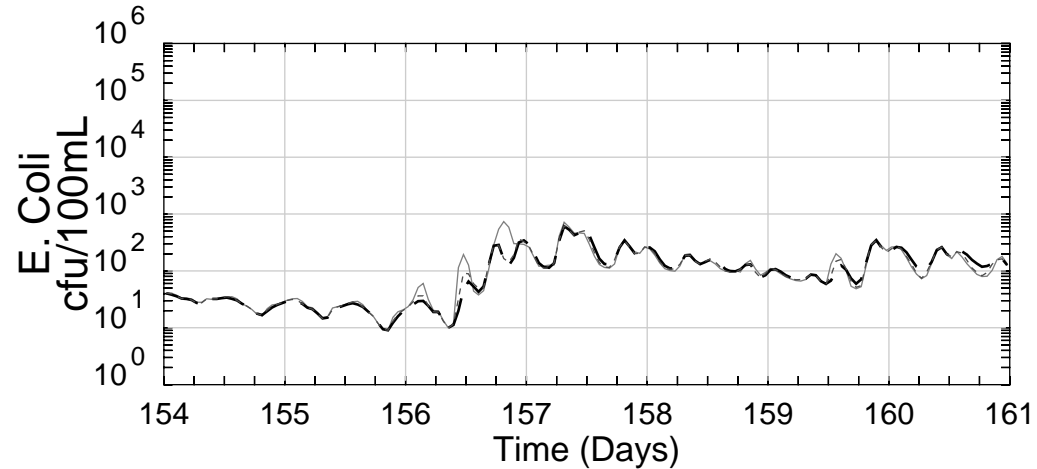
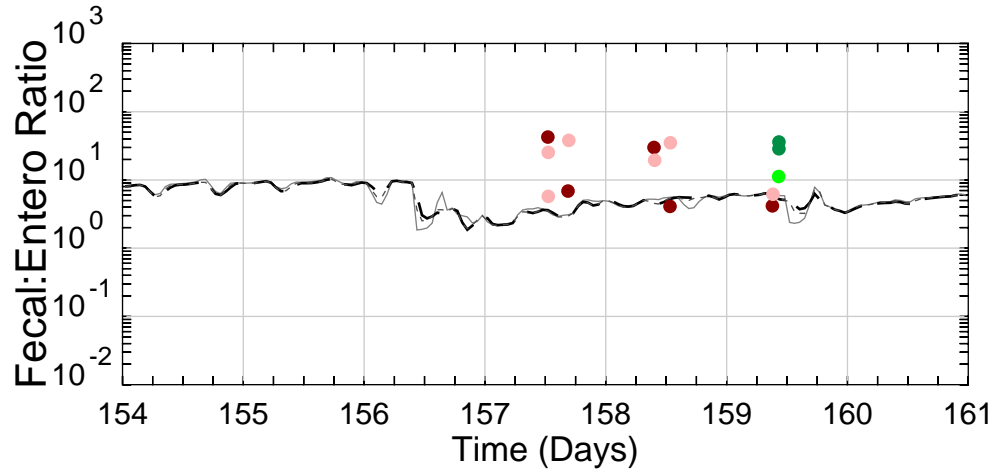
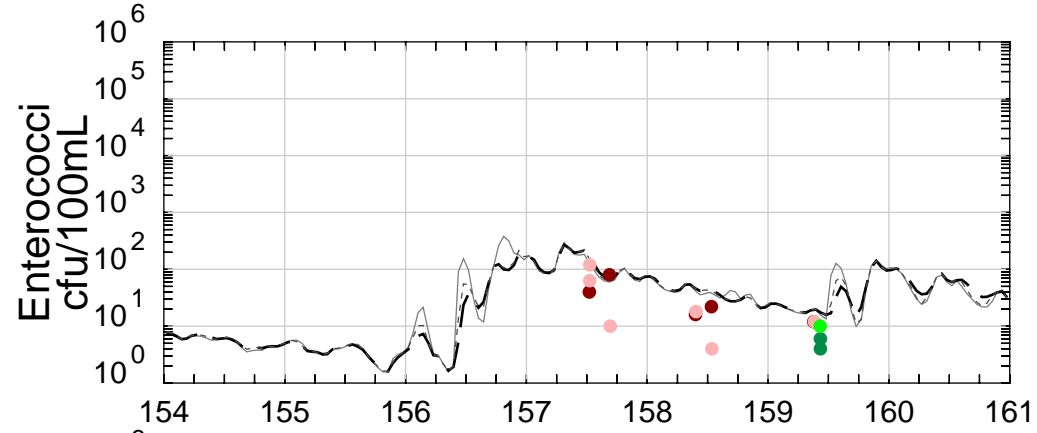
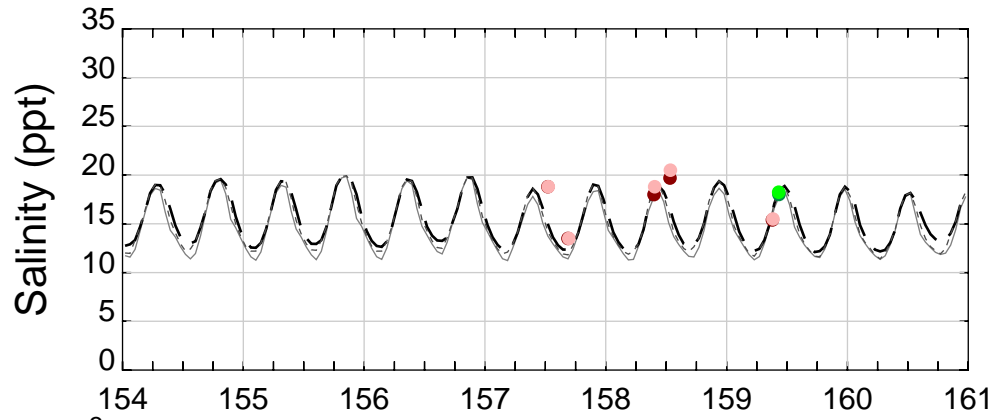
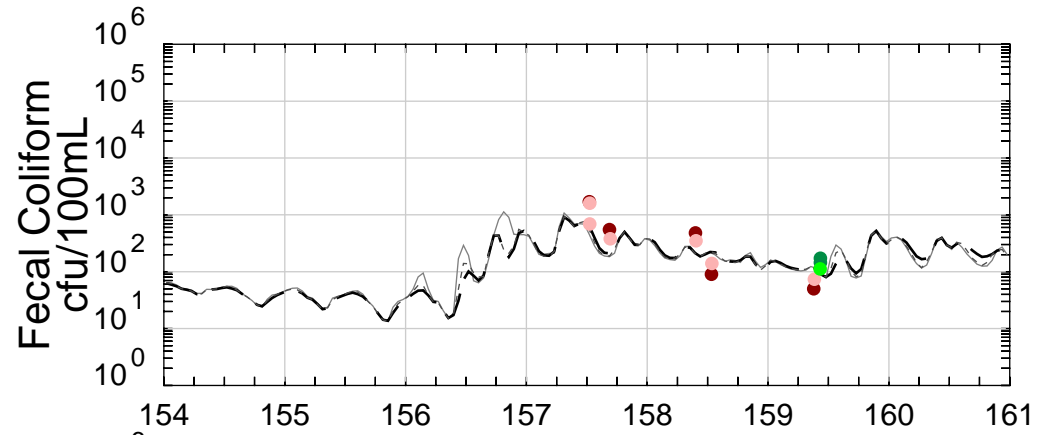
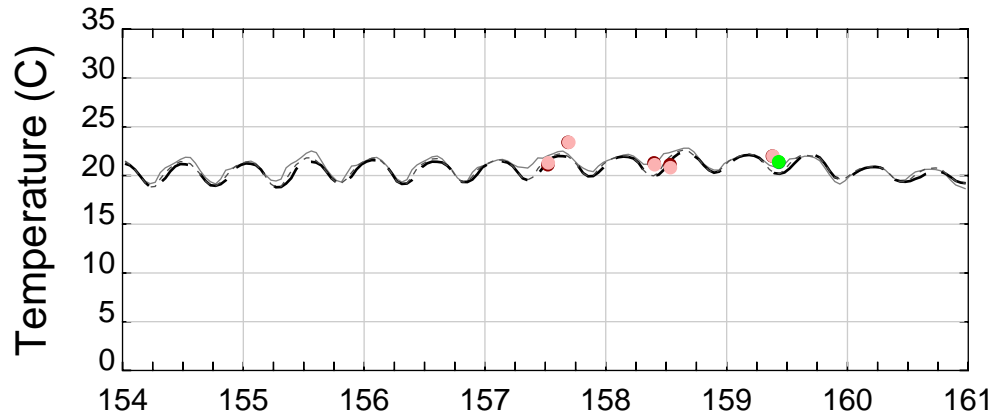
— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Hackensack River & Tributaries Hackensack River

SE2

Station: 15 Event 1 (June 3-9)



Model = 2016
Data = 2016

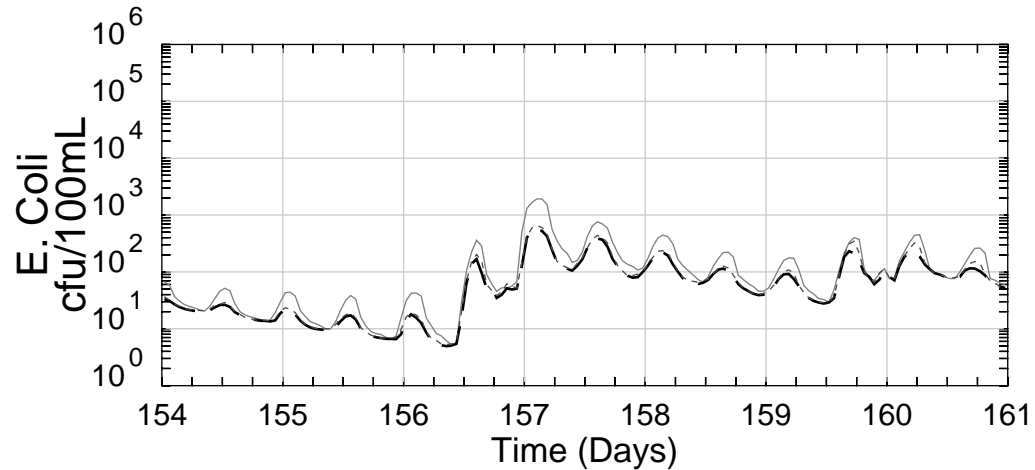
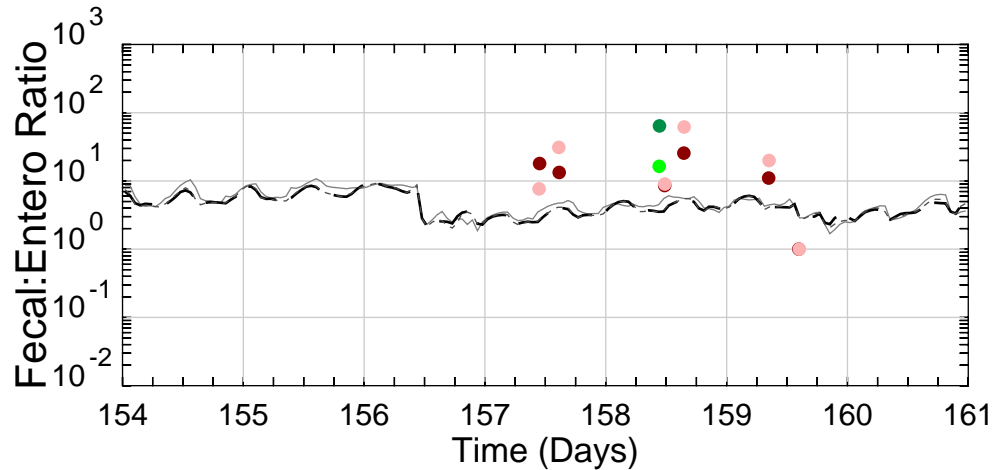
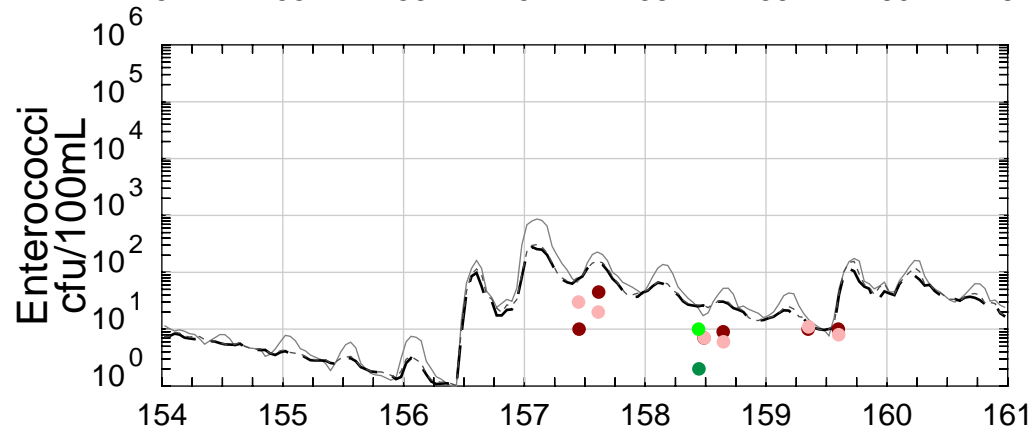
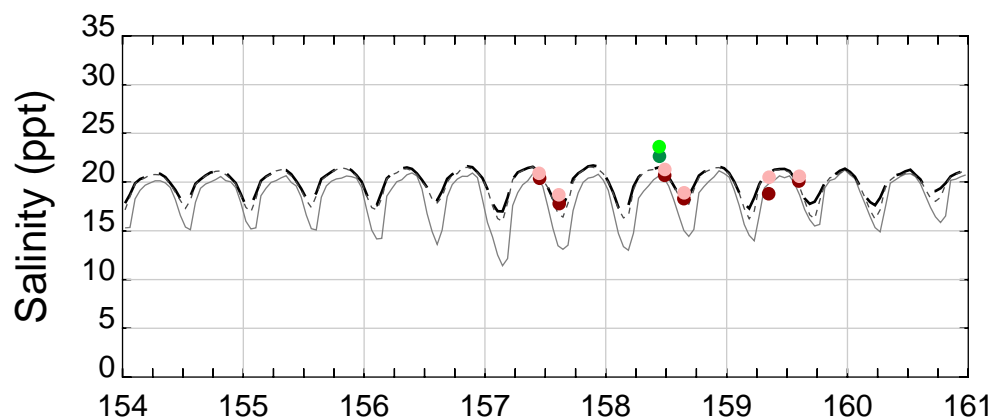
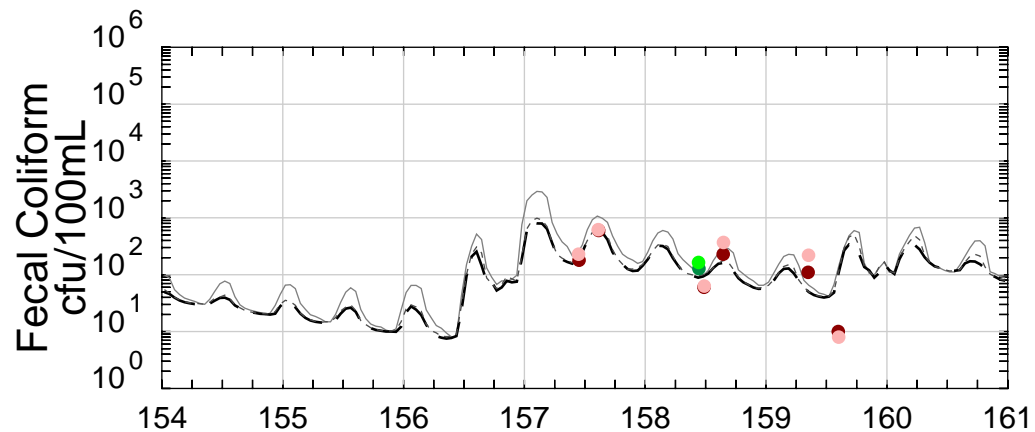
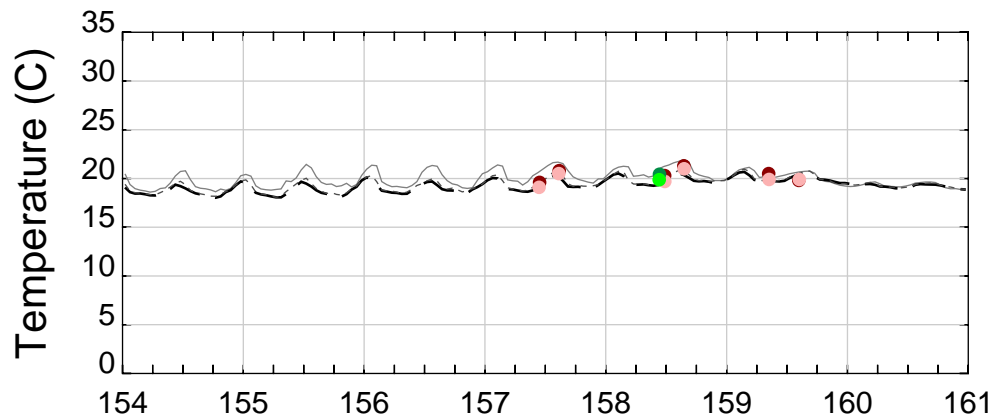
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom

- ● Surface/Mid-depth HDR Data
- ● Surface/Mid/Bottom NJHDG Data

Newark Bay & Tributaries Newark Bay

SE3

Station: 17 Event 1 (June 3-9)

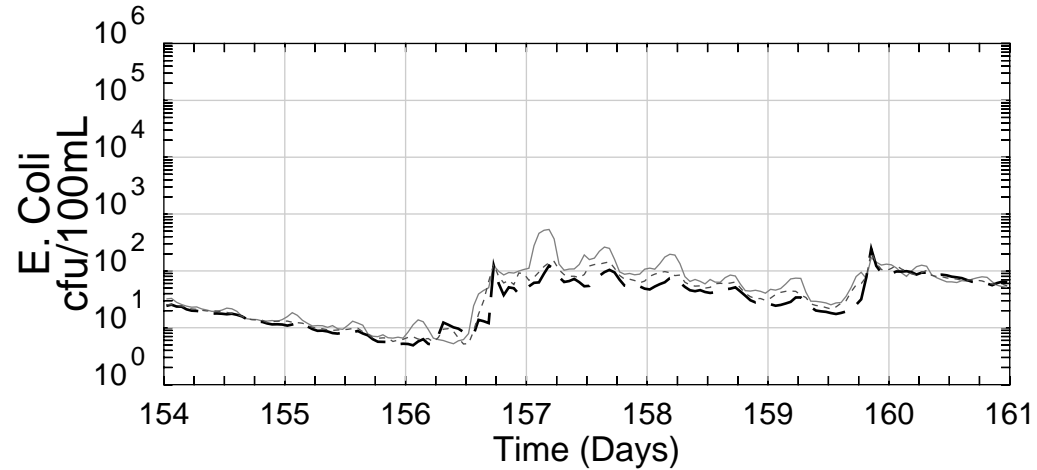
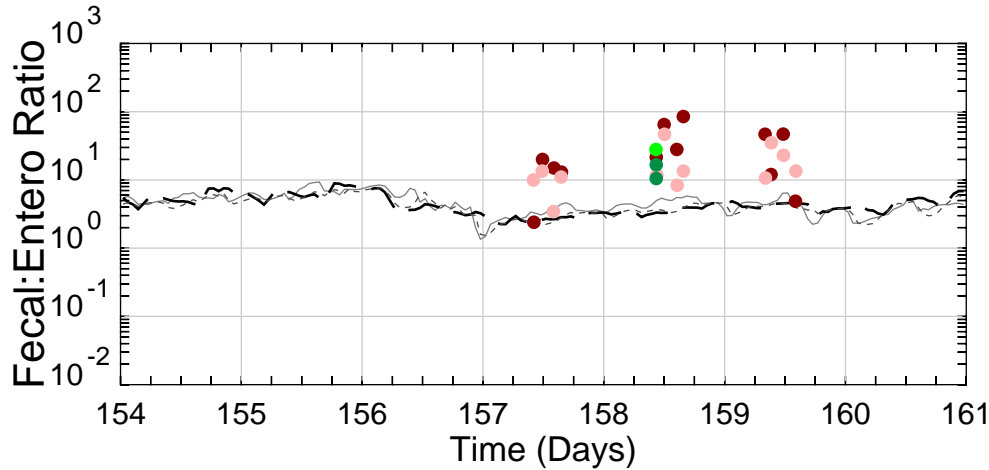
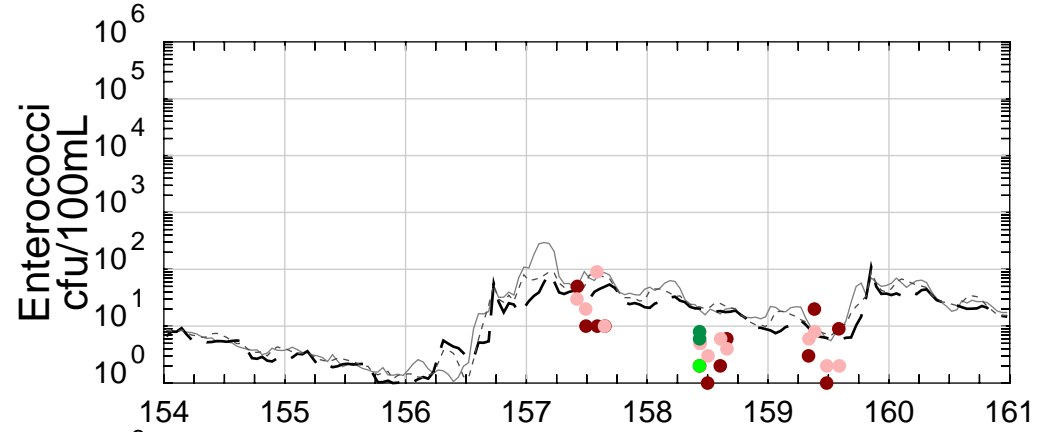
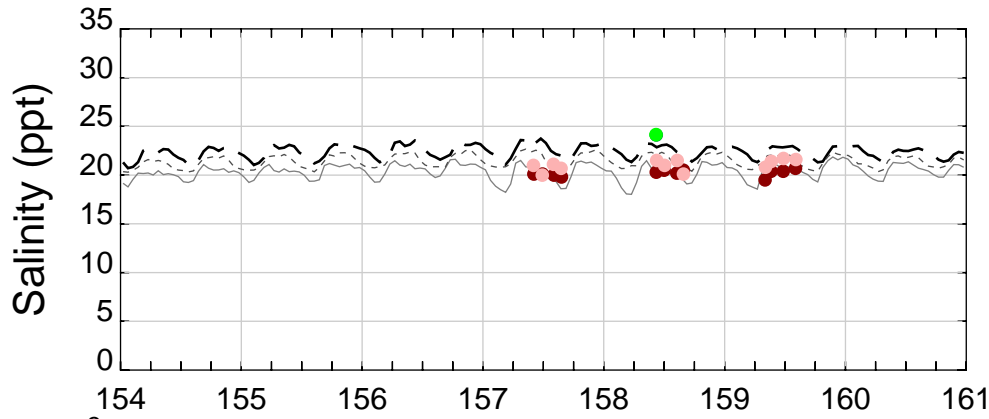
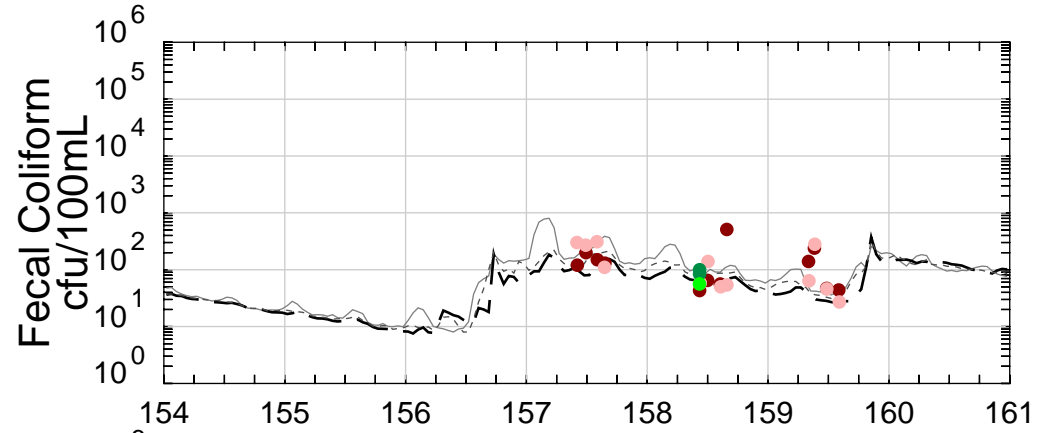
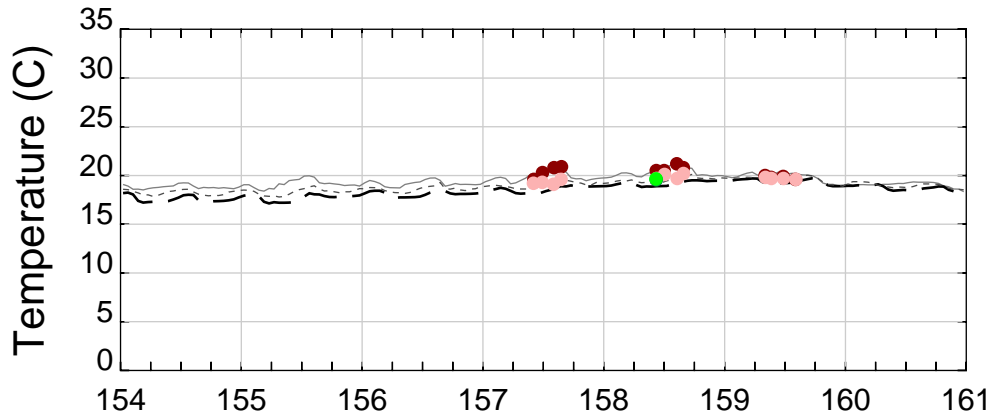


Model = 2016
Data = 2016

- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom

- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Station: 18 Event 1 (June 3-9)

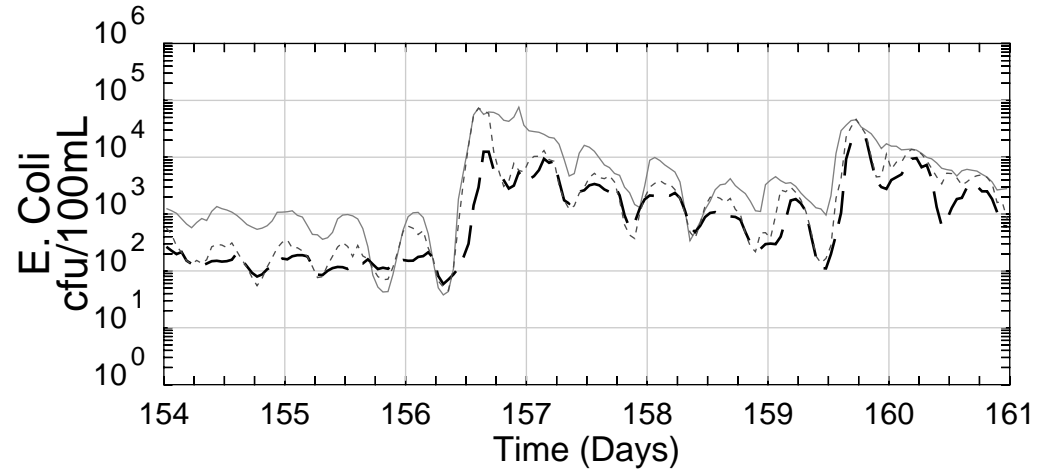
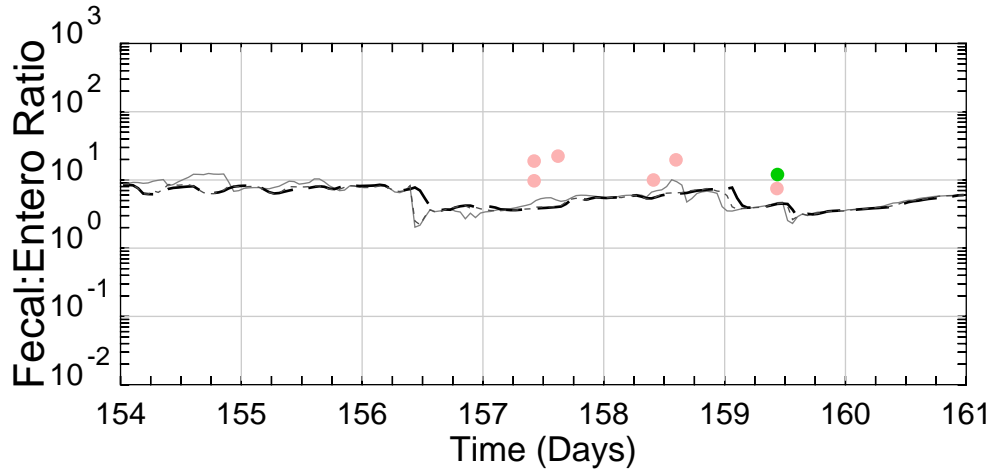
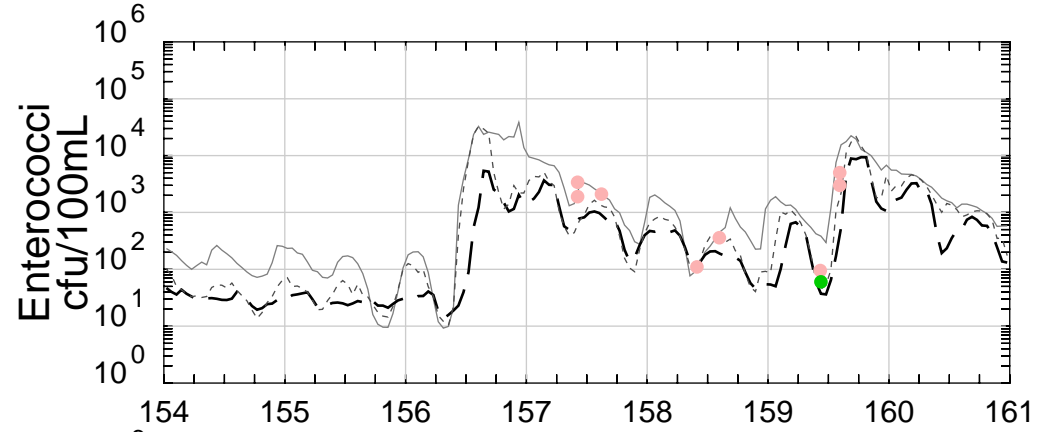
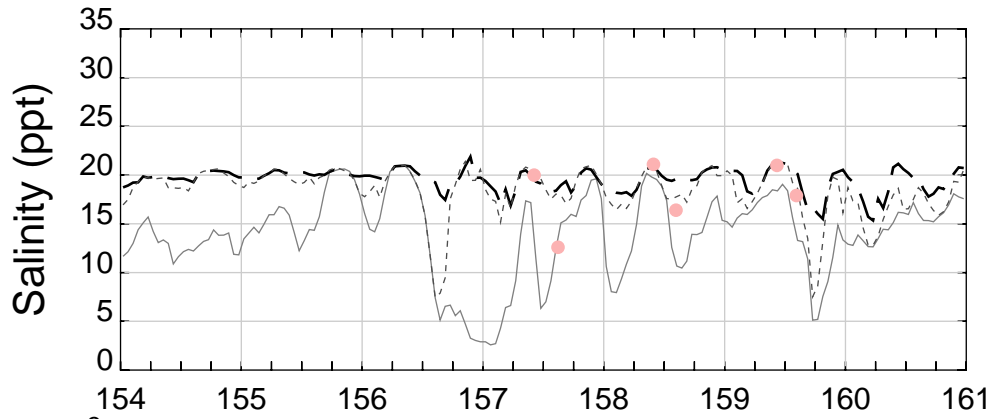
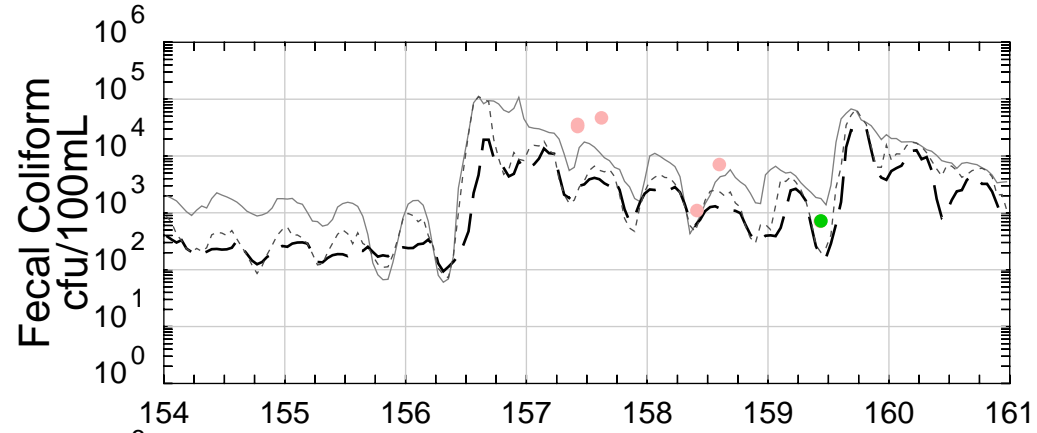
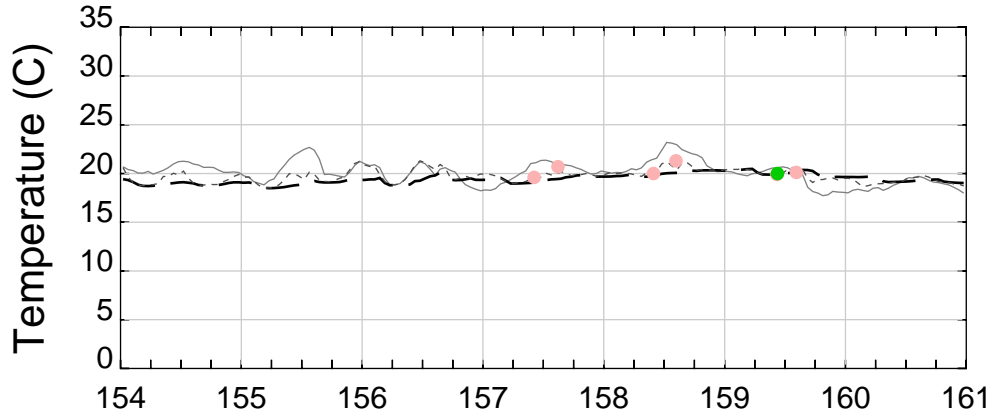


Model = 2016
 Data = 2016

— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● ● Surface/Mid-depth HDR Data
 ● ● Surface/Mid/Bottom NJHDG Data

Station: 20 Event 1 (June 3-9)



Model = 2016
 Data = 2016

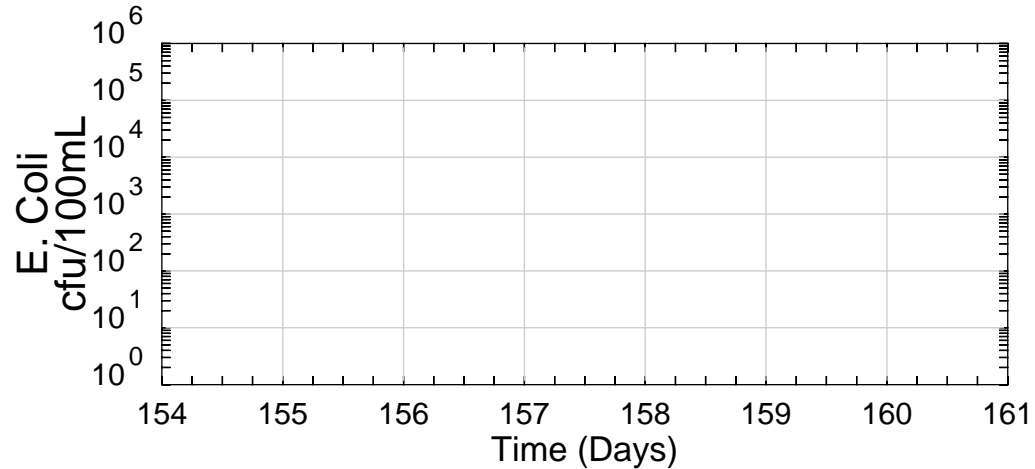
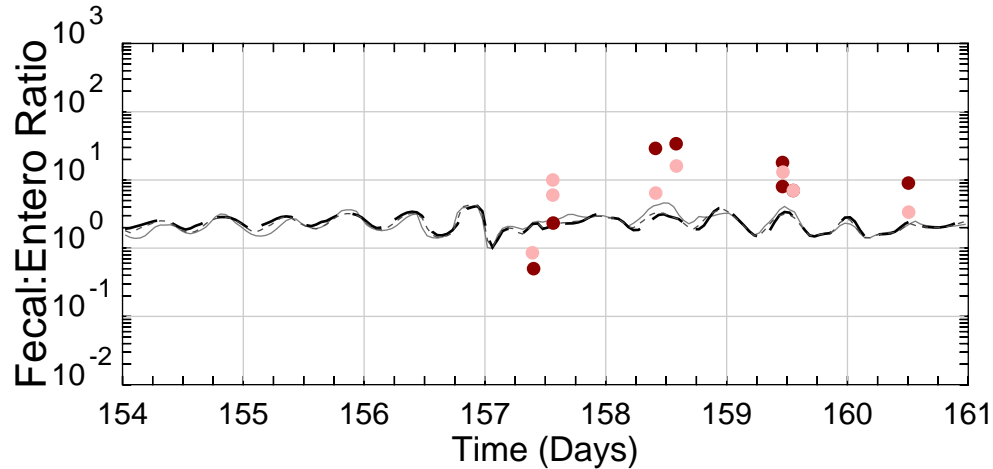
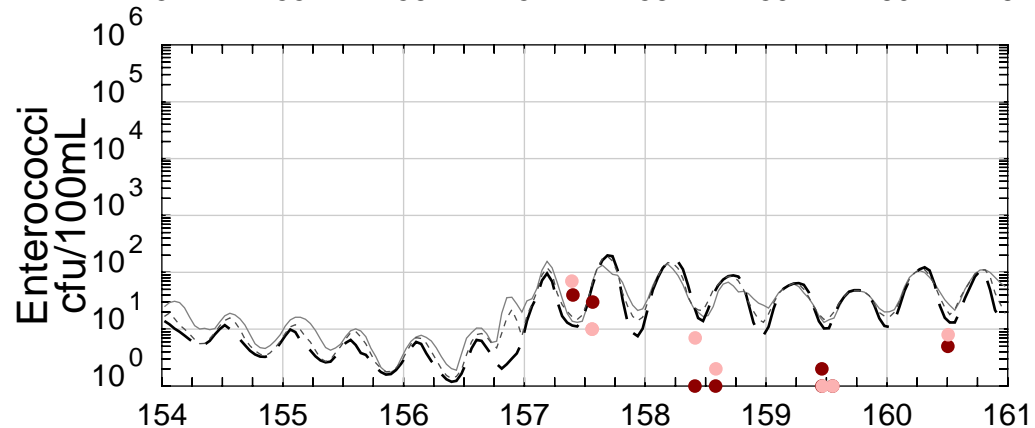
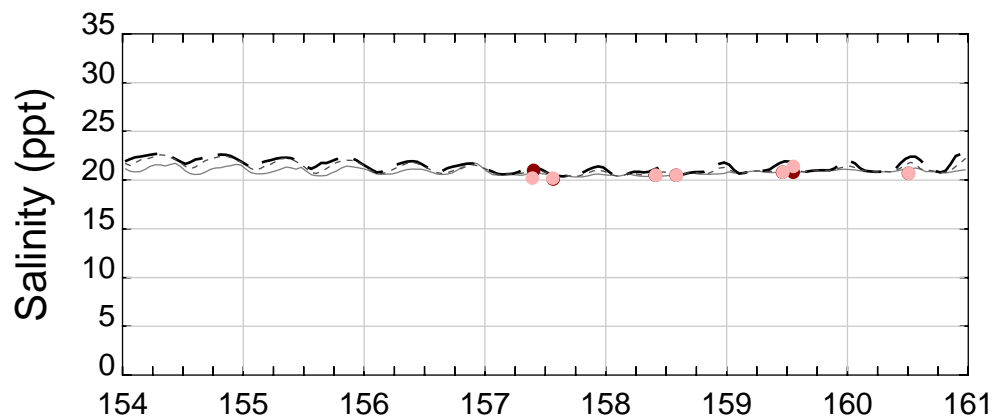
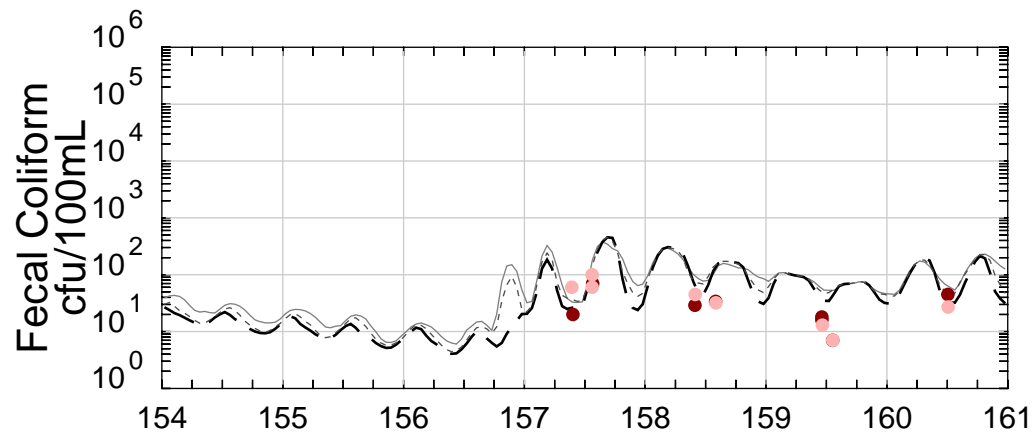
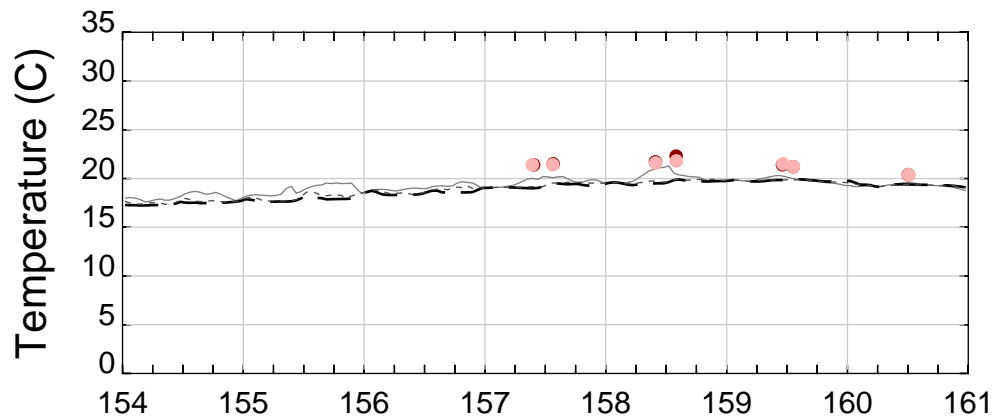
— Model at Surface
 - - - Model at Mid-Depth
 - · - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Arthur Kill, Raritan River/Bay & Tributaries Arthur Kill

SE3

Station: 24 Event 1 (June 3-9)



Model = 2016
Data = 2016

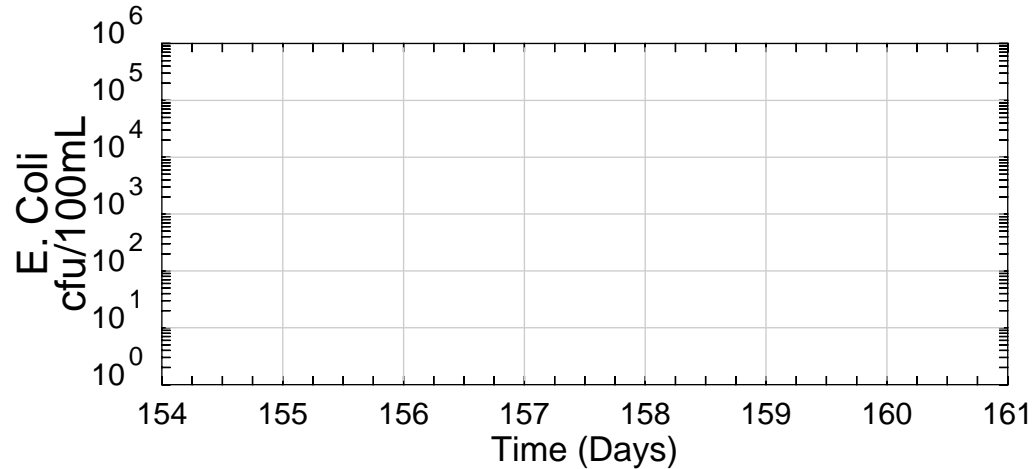
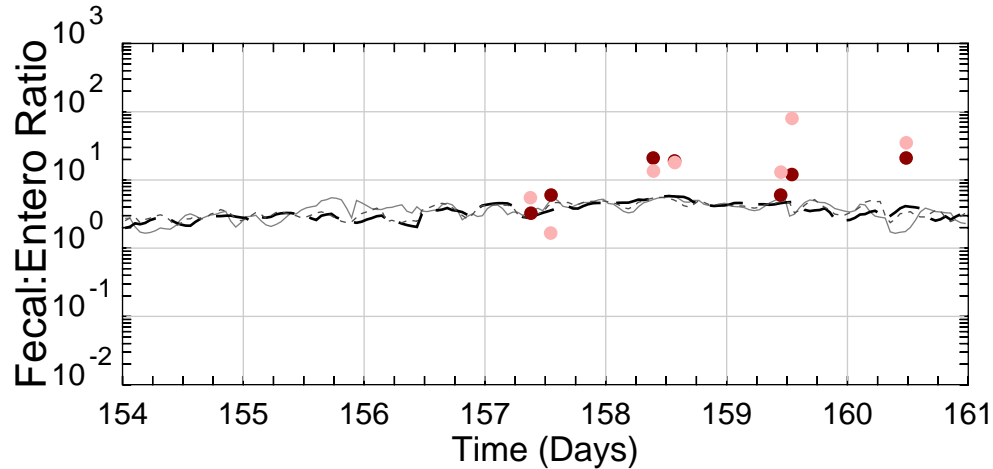
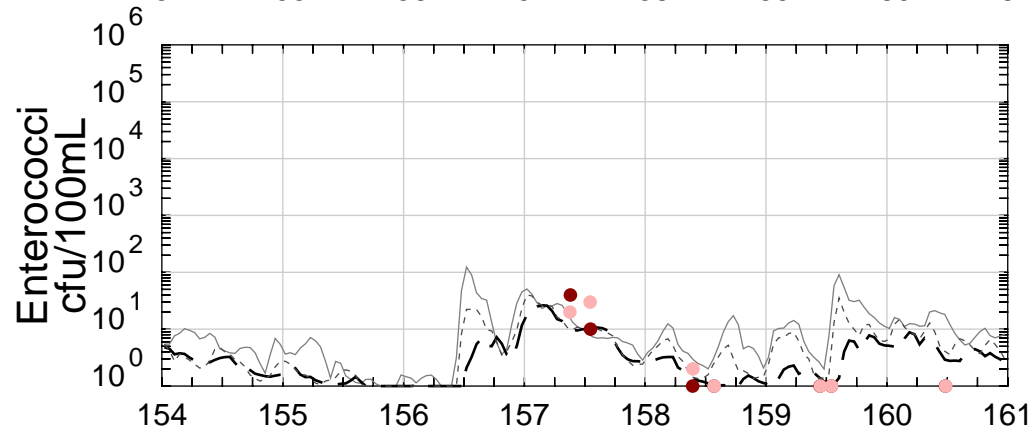
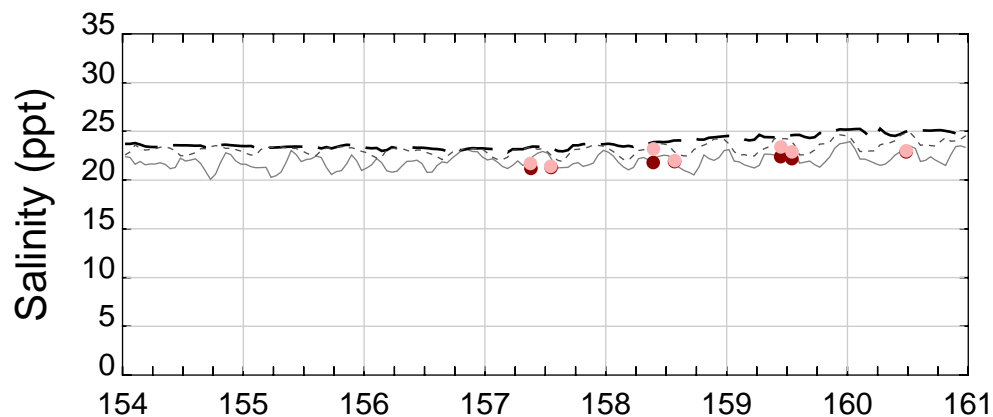
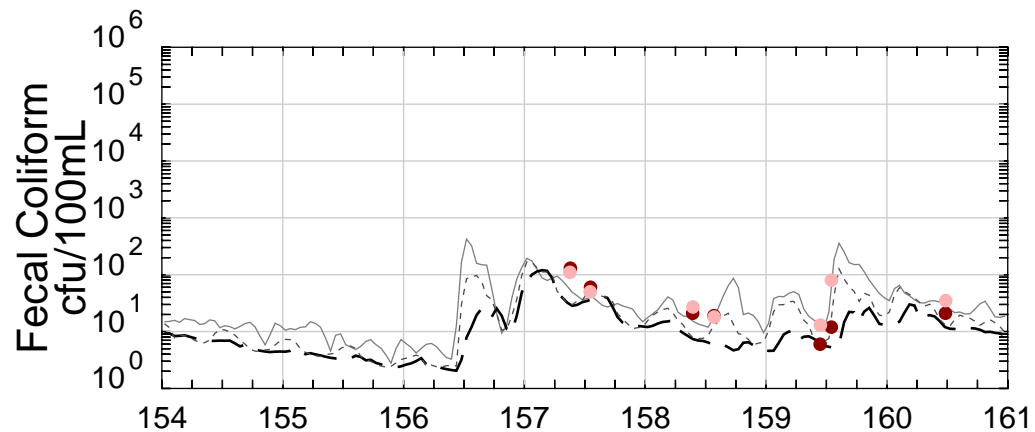
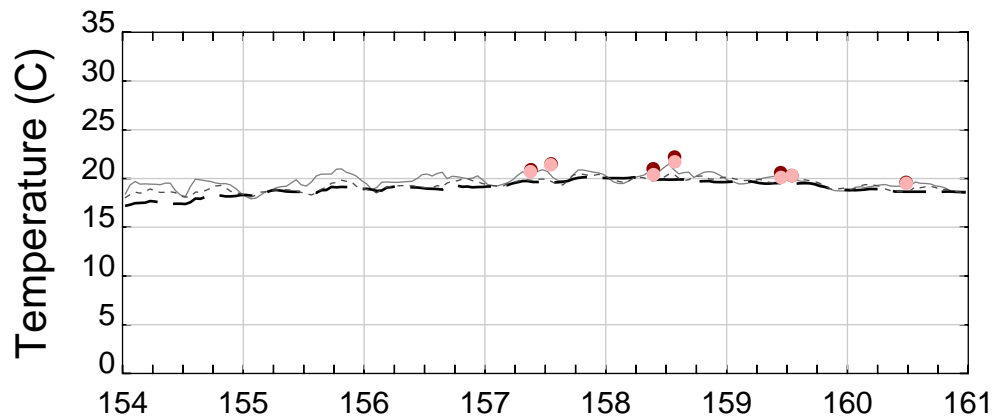
- Model at Surface
- - - Model at Mid-Depth
- . - Model at Bottom

- ● Surface/Mid-depth HDR Data
- ● Surface/Mid/Bottom NJHDG Data

Arthur Kill, Raritan River/Bay & Tributaries Arthur Kill

SE2

Station: B15 Event 1 (June 3-9)



Model = 2016
Data = 2016

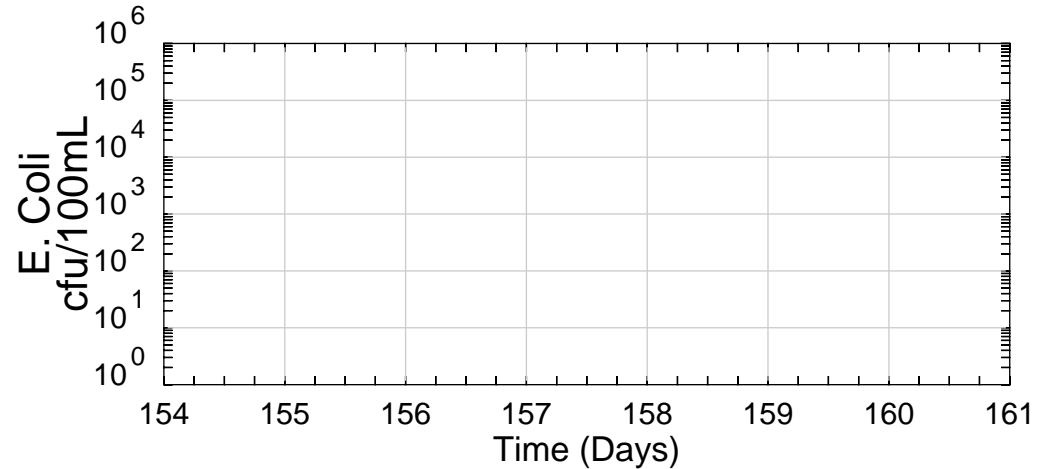
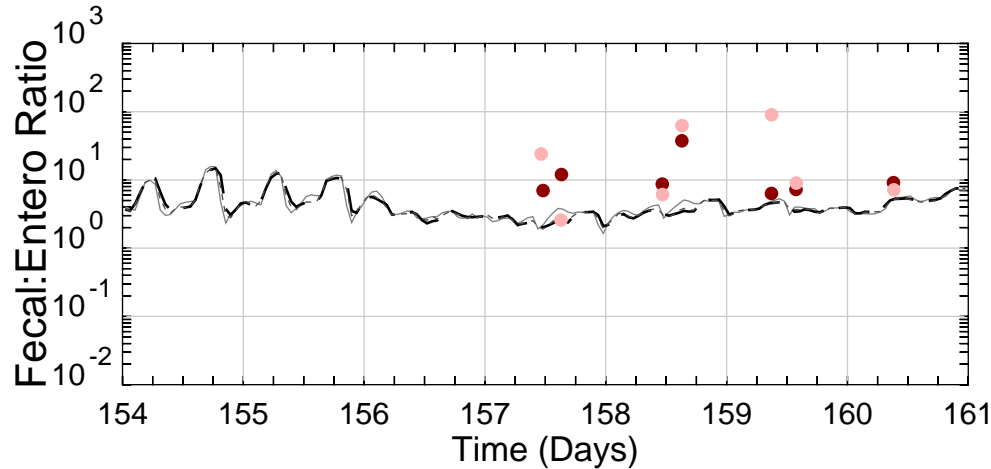
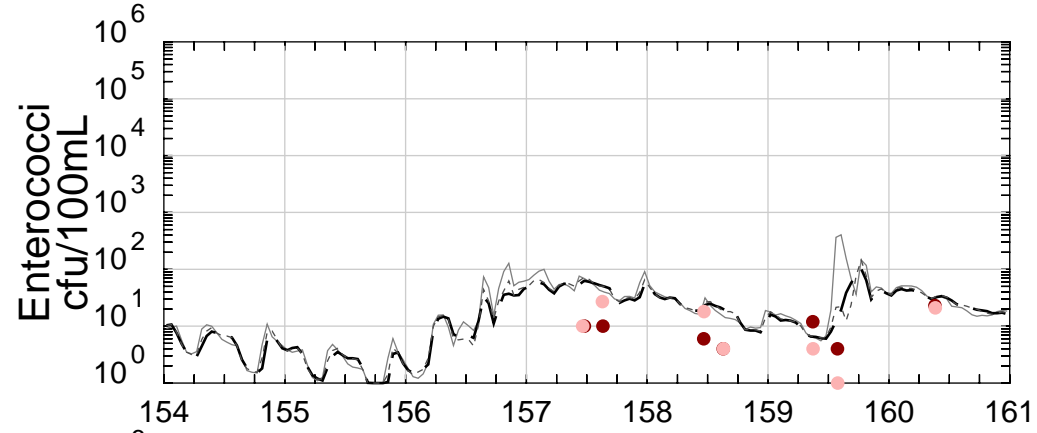
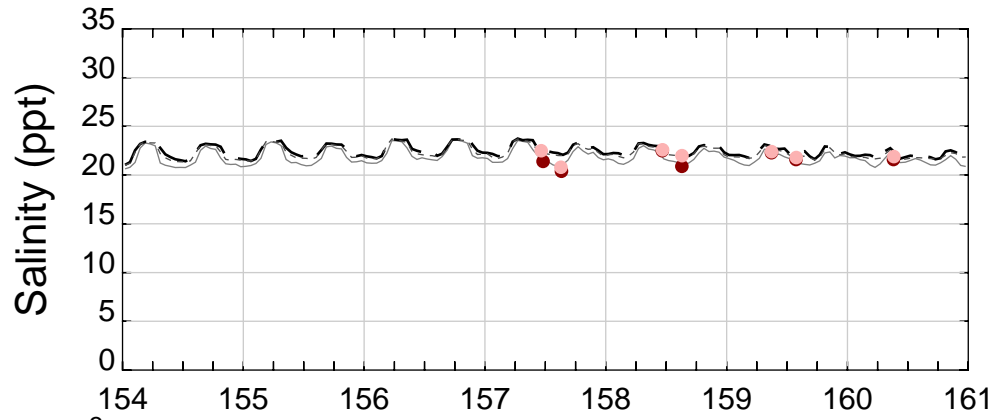
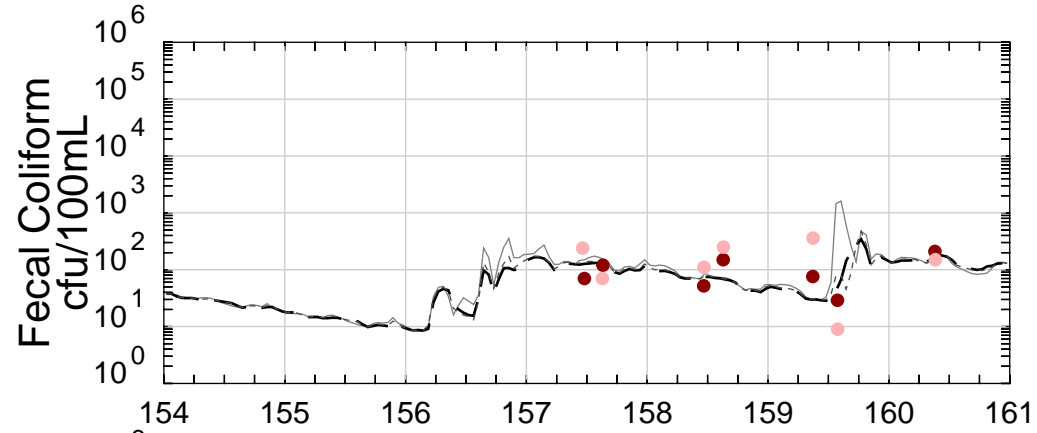
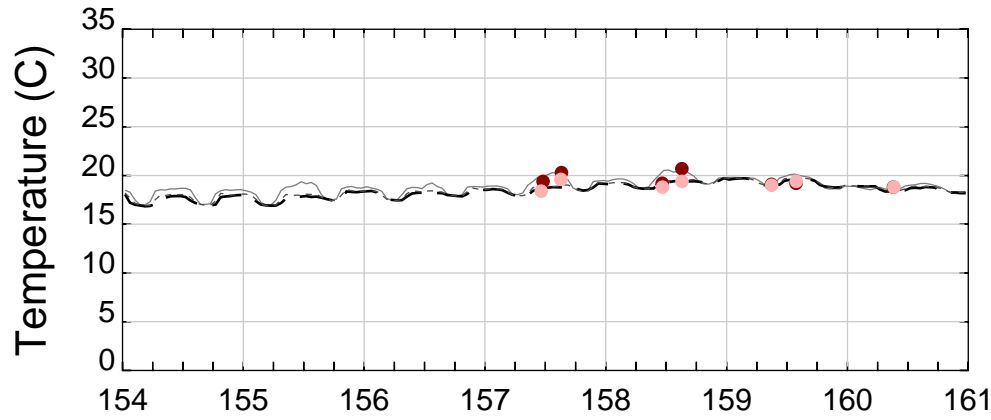
- Model at Surface
- - - Model at Mid-Depth
- . - Model at Bottom

- ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data

Hudson River, Upper Bay Kill Van Kull

SE3

Station: B12 Event 1 (June 3-9)



Model = 2016
Data = 2016

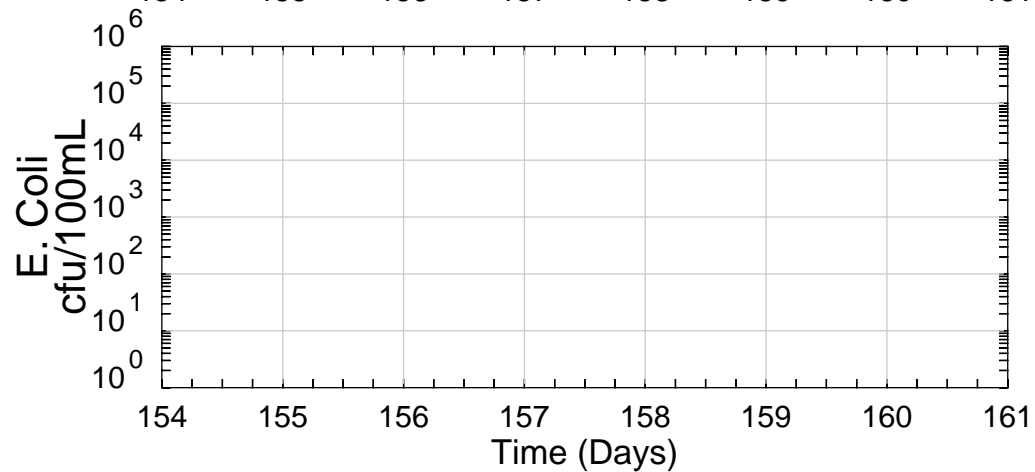
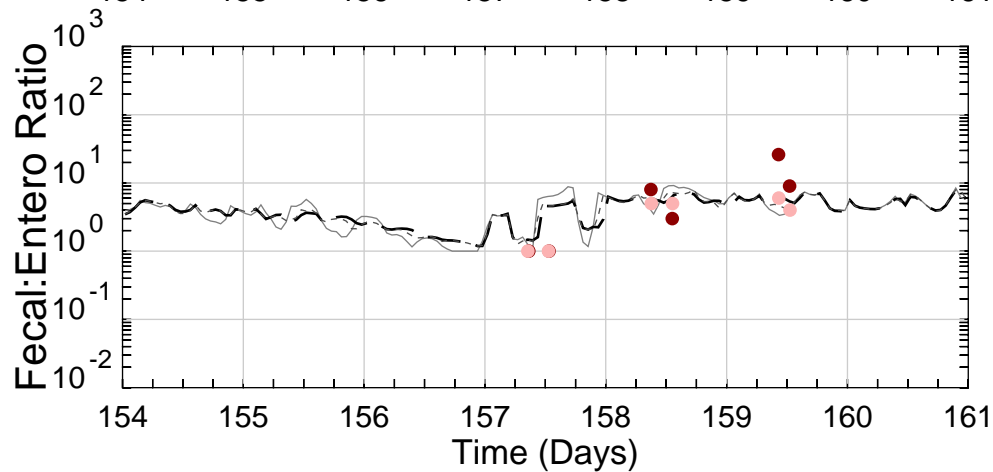
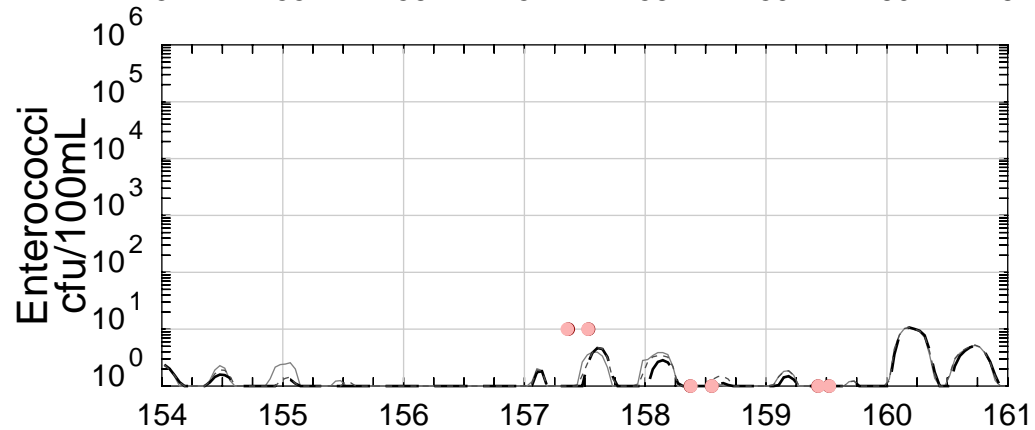
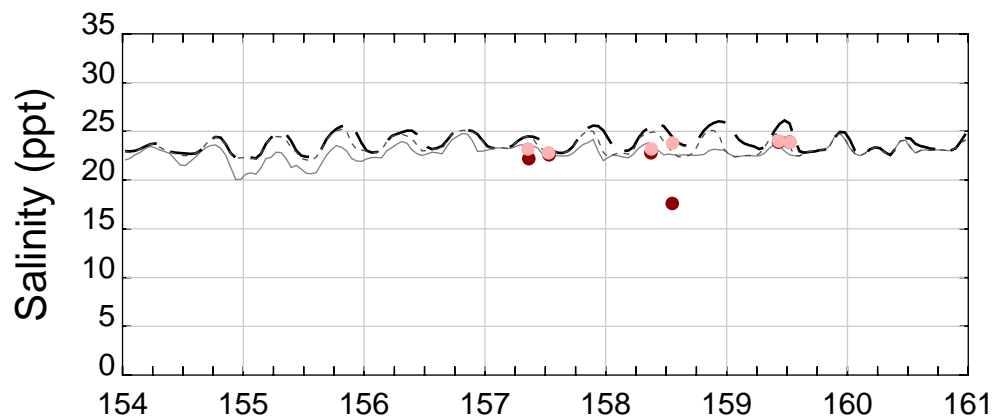
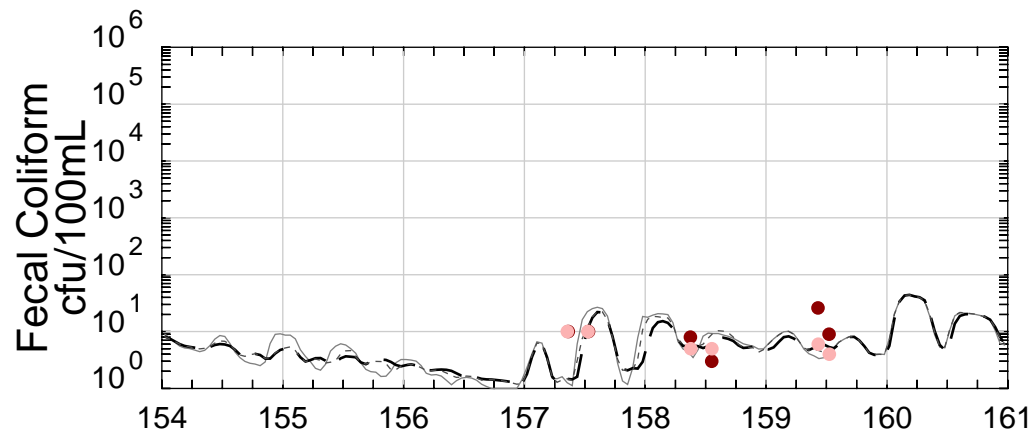
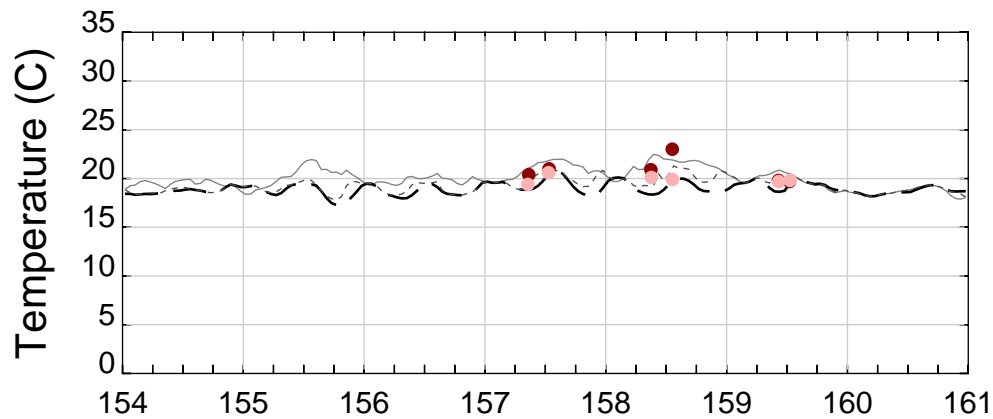
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Arthur Kill, Raritan River/Bay & Tributaries Raritan Bay

SE1

Station: 29 Event 1 (June 3-9)



Model = 2016
Data = 2016

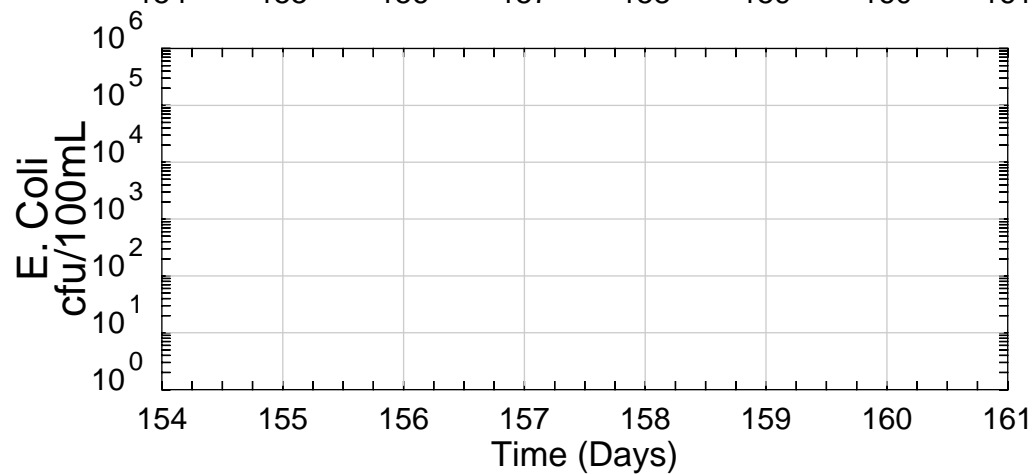
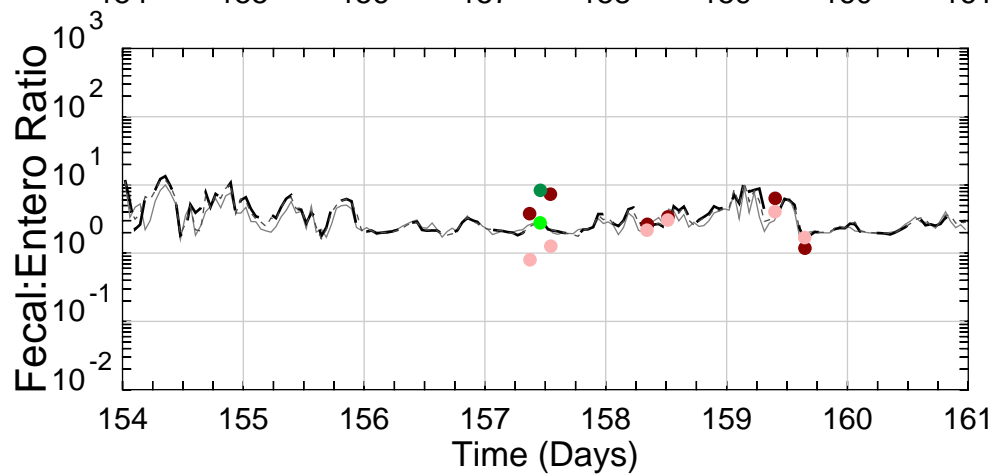
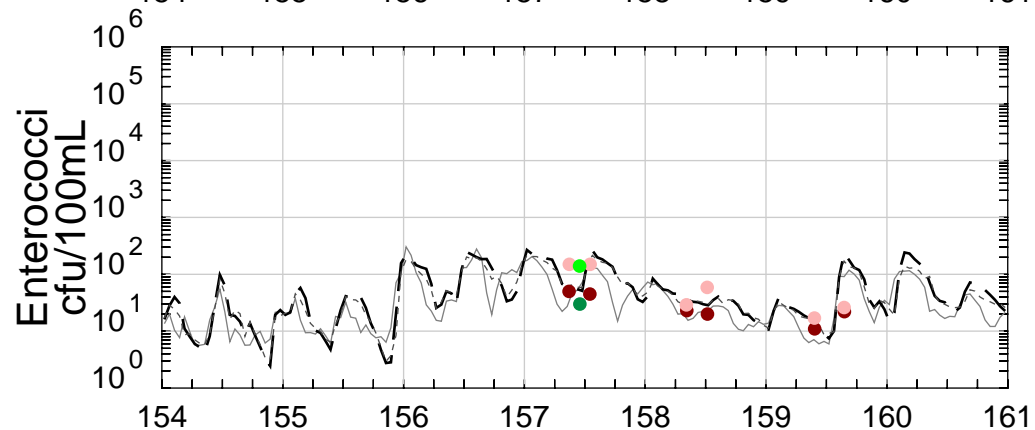
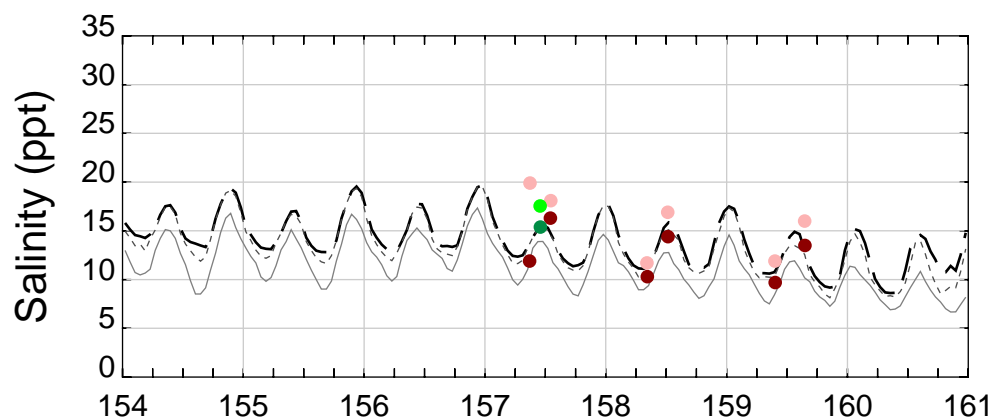
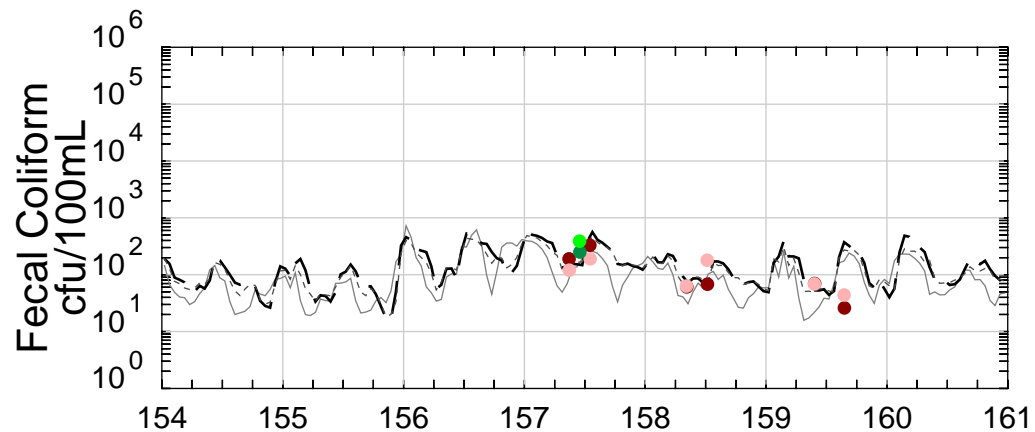
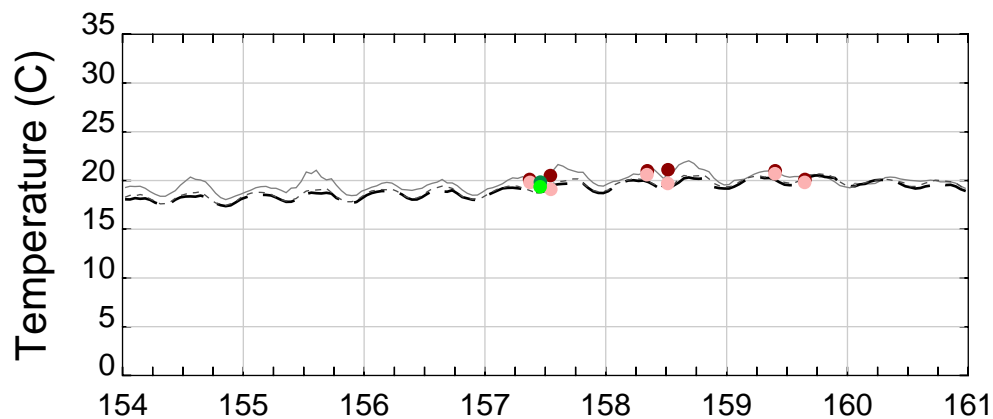
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Hudson River, Upper Bay Hudson River

SE2

Station: 31 Event 1 (June 3-9)



Model = 2016
Data = 2016

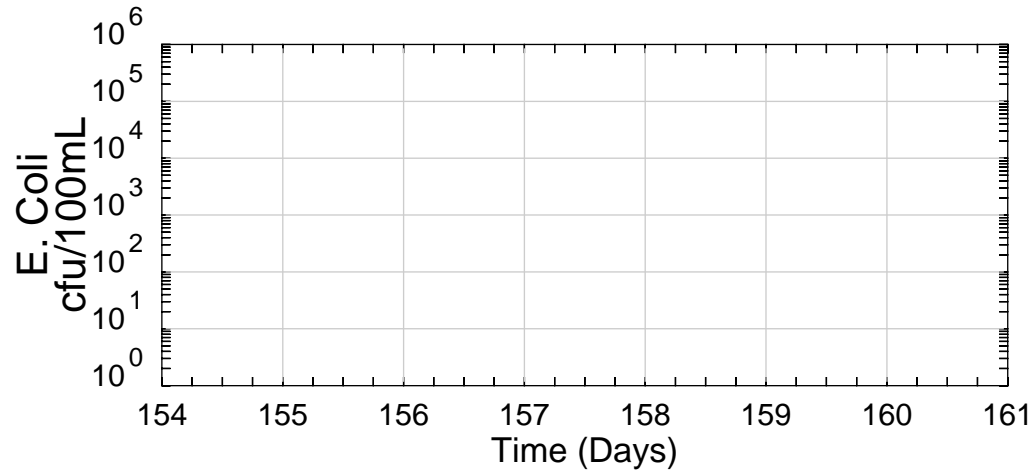
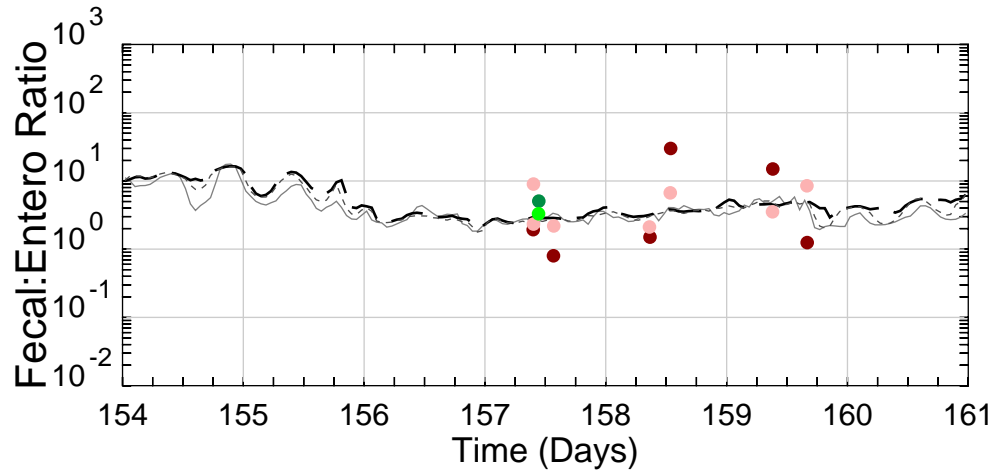
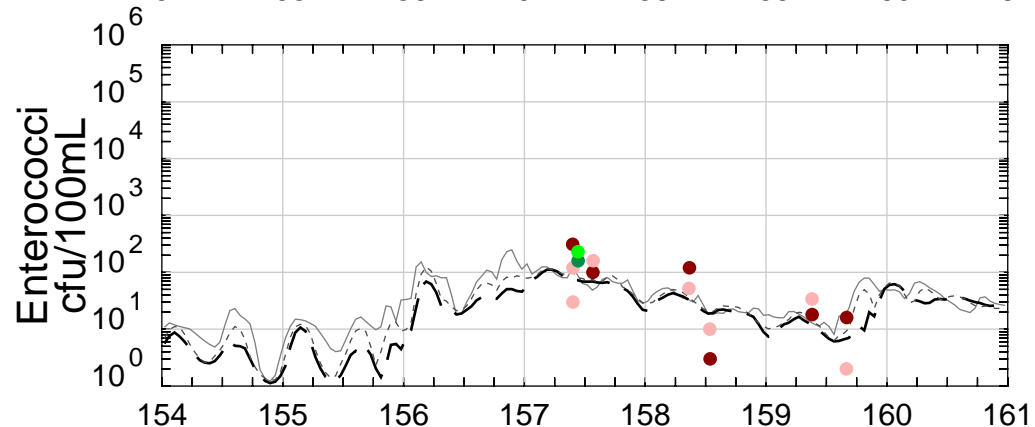
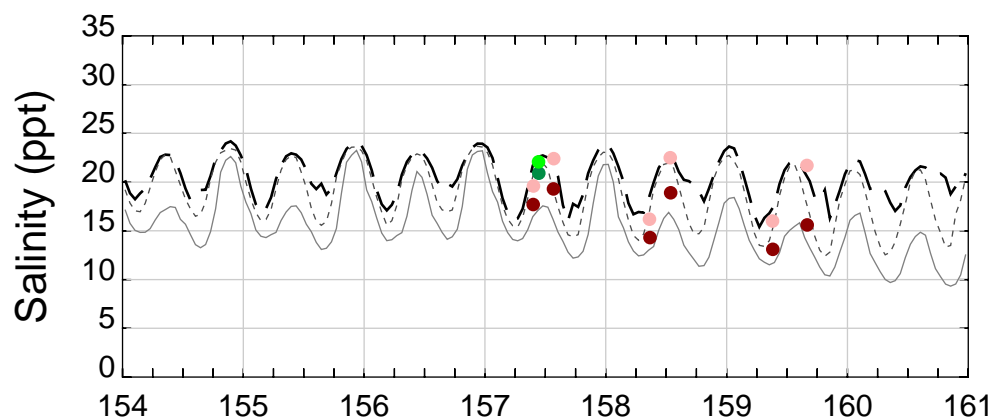
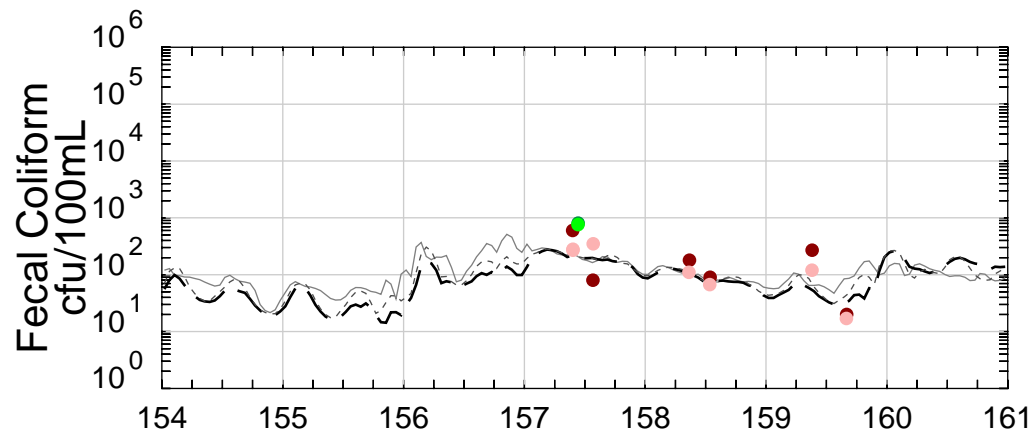
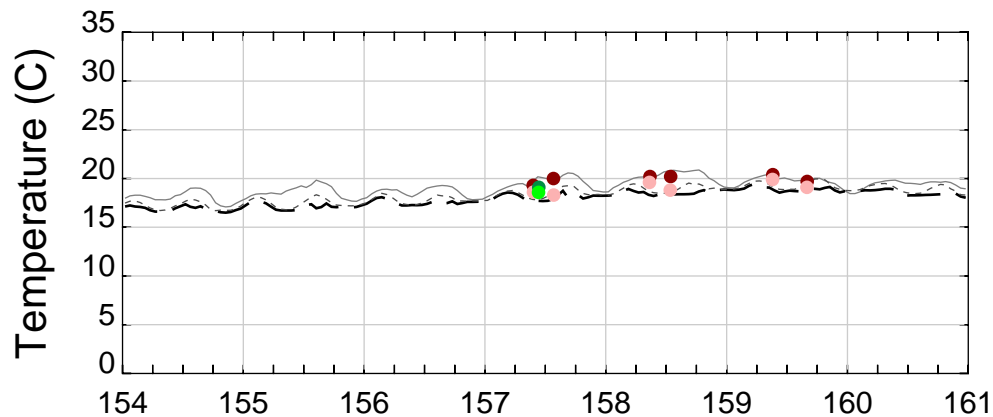
— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Hudson River, Upper Bay Hudson River

SE2

Station: 32 Event 1 (June 3-9)



Model = 2016
Data = 2016

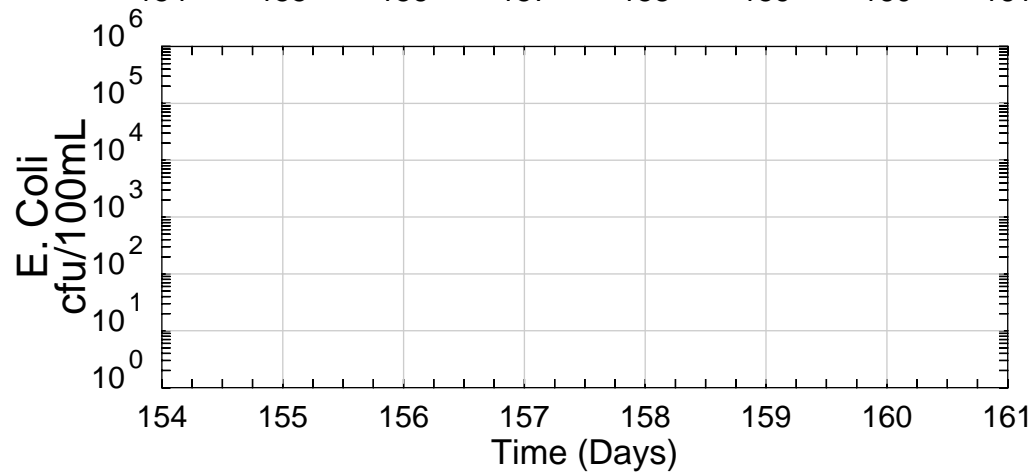
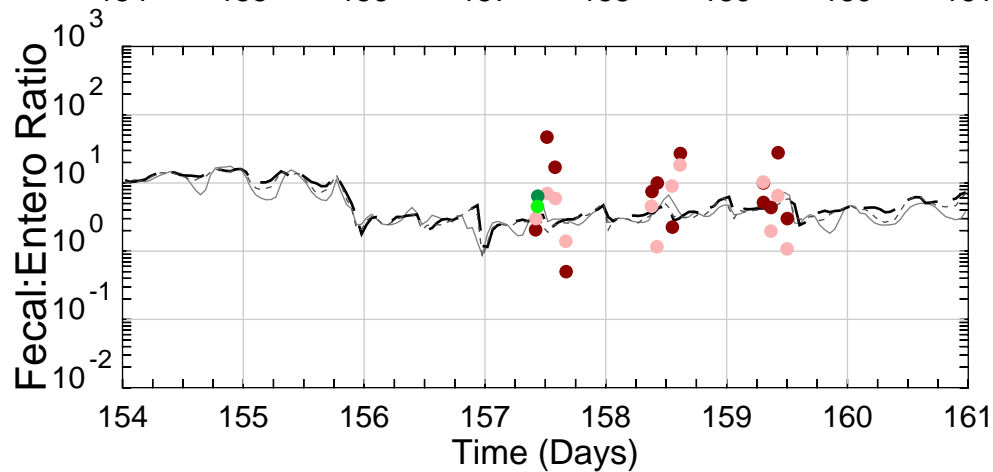
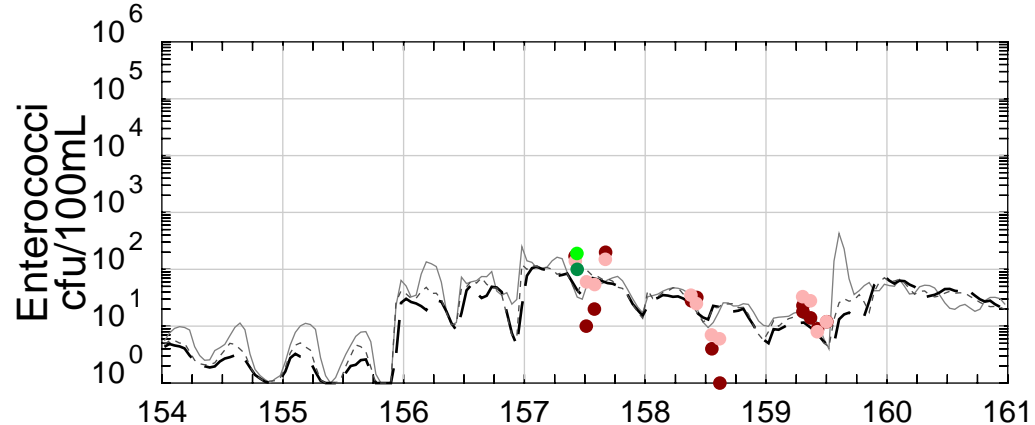
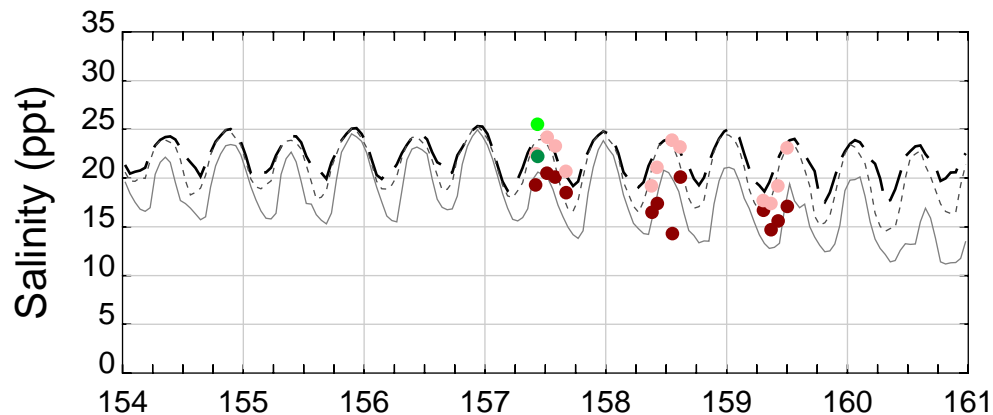
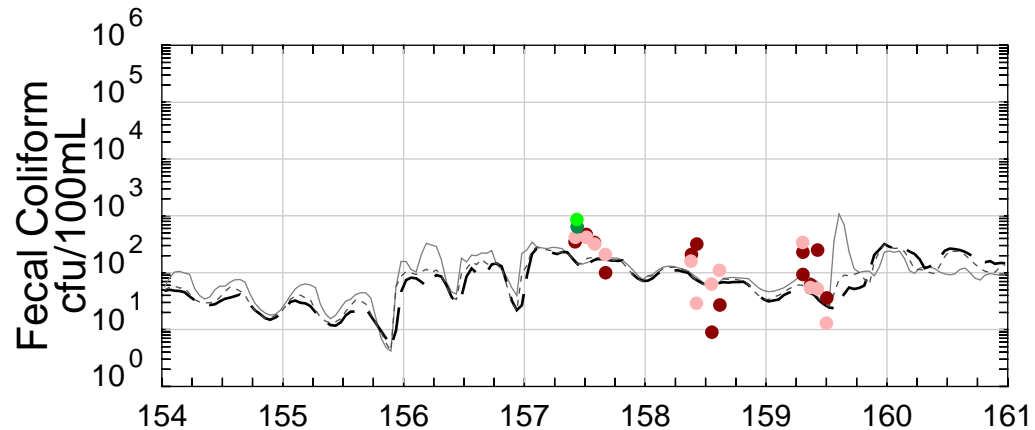
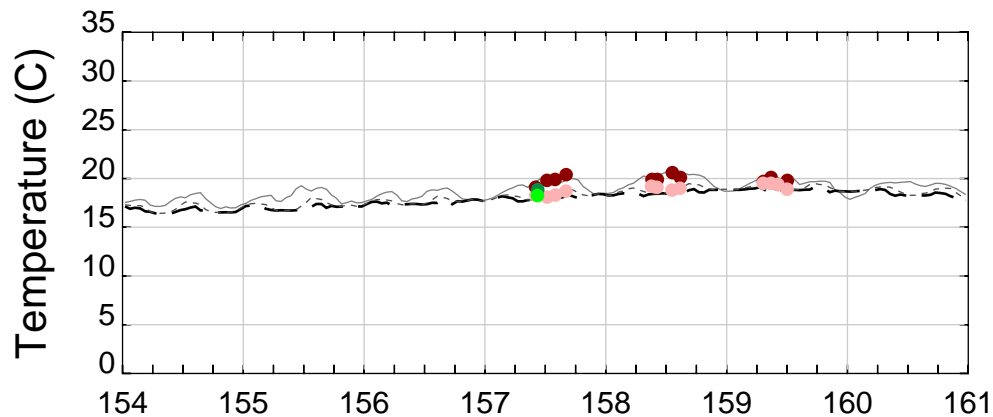
— Model at Surface
 - - - Model at Mid-Depth
 - · - Model at Bottom

● ● Surface/Mid-depth HDR Data
 ● ● Surface/Mid/Bottom NJHDG Data

Hudson River, Upper Bay Hudson River

SE2

Station: 33 Event 1 (June 3-9)



Model = 2016
Data = 2016

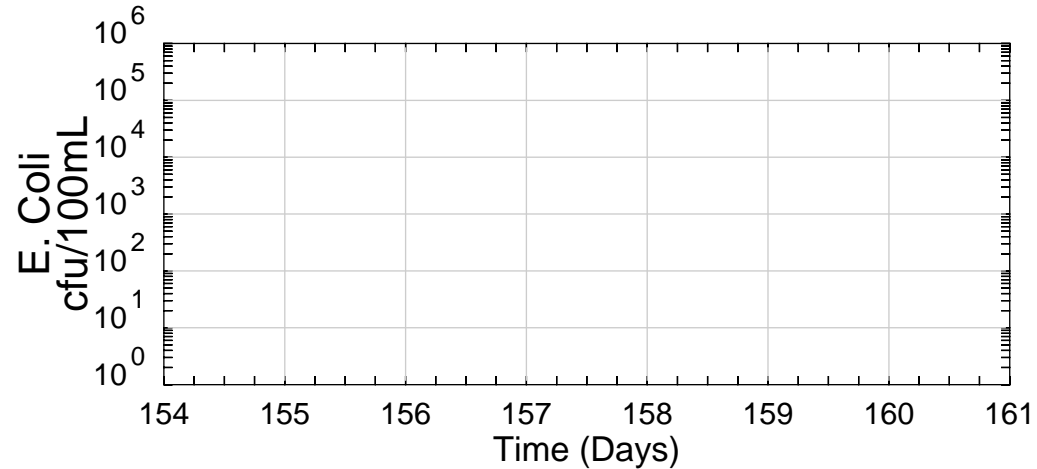
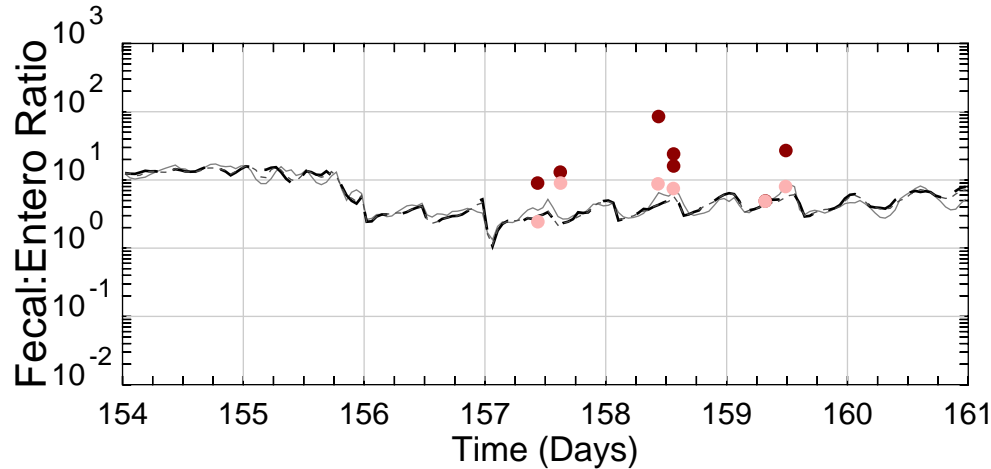
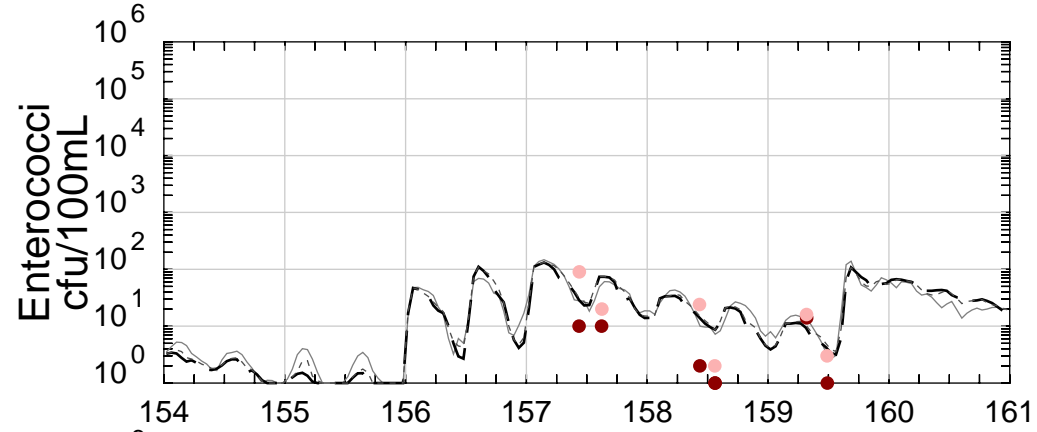
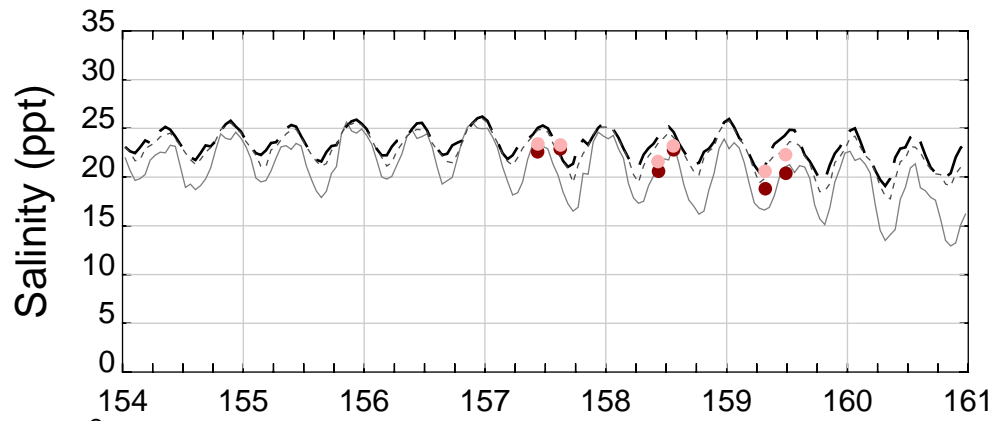
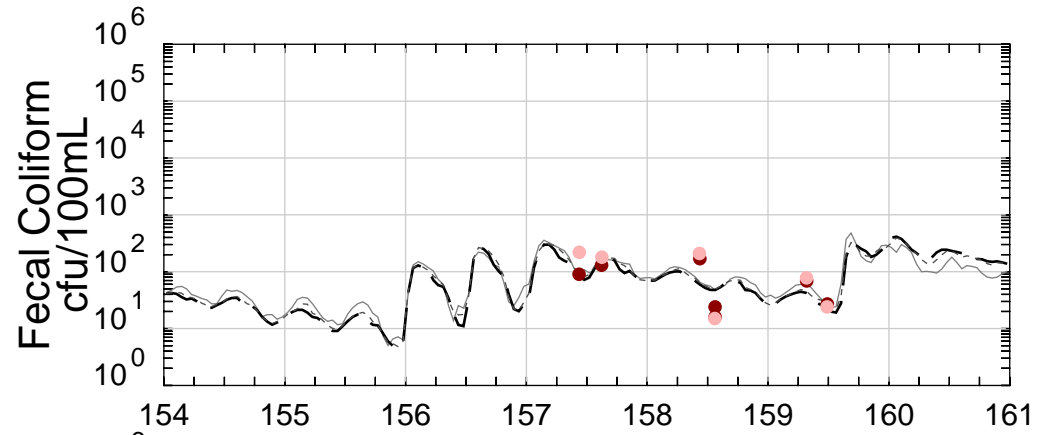
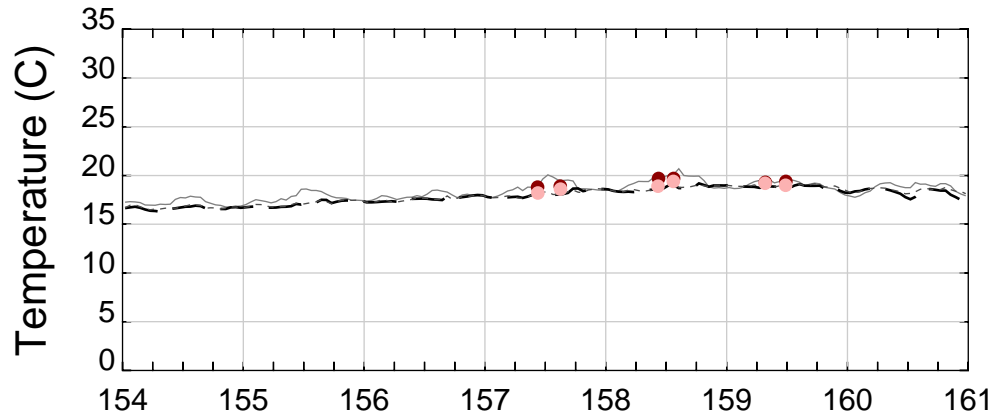
— Model at Surface
 - - - Model at Mid-Depth
 - . - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Hudson River, Upper Bay Upper Bay

SE2

Station: B26 Event 1 (June 3-9)



Model = 2016
Data = 2016

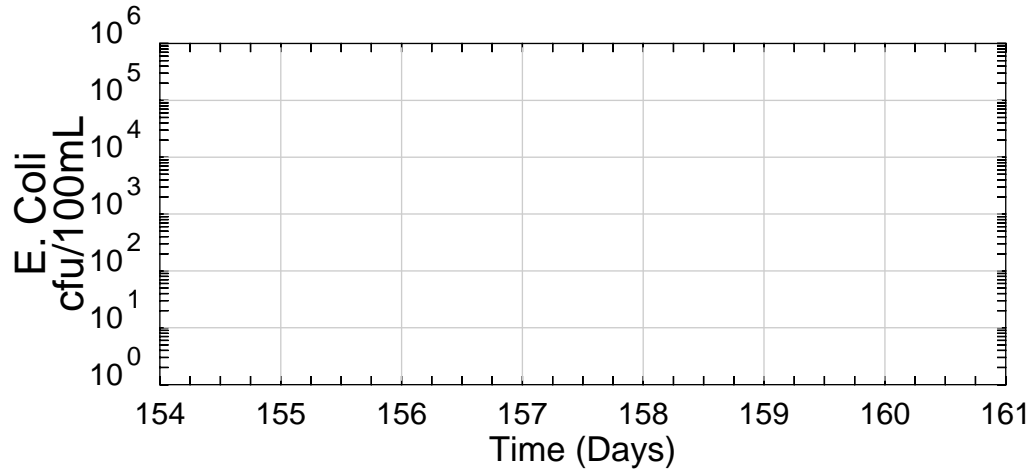
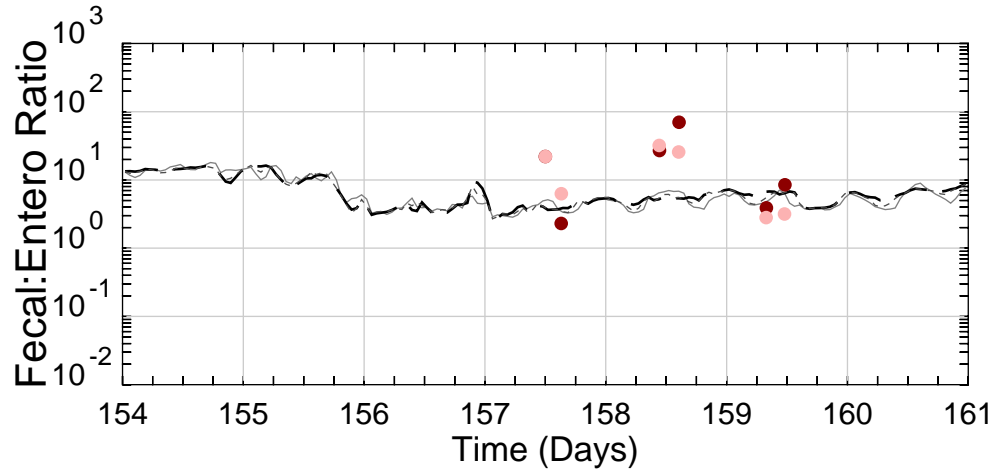
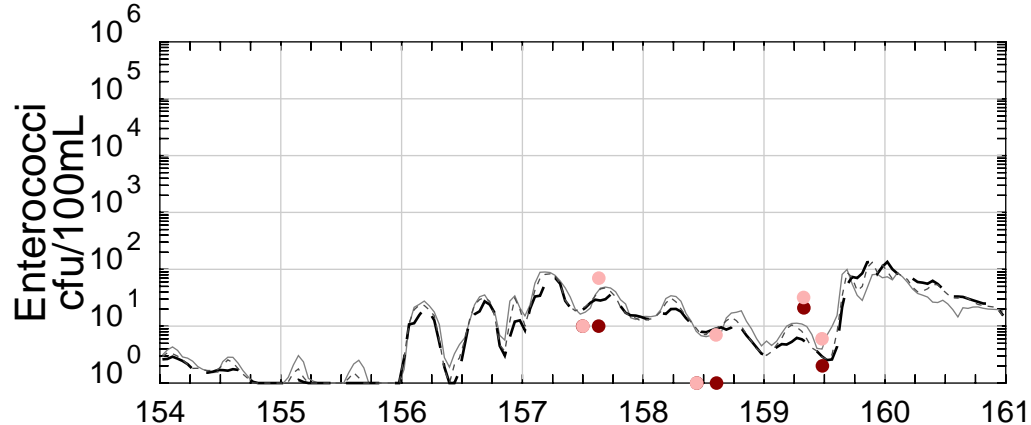
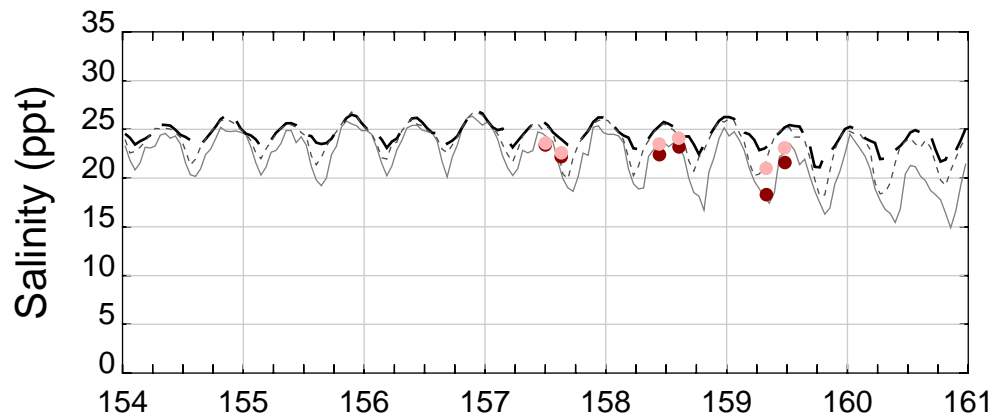
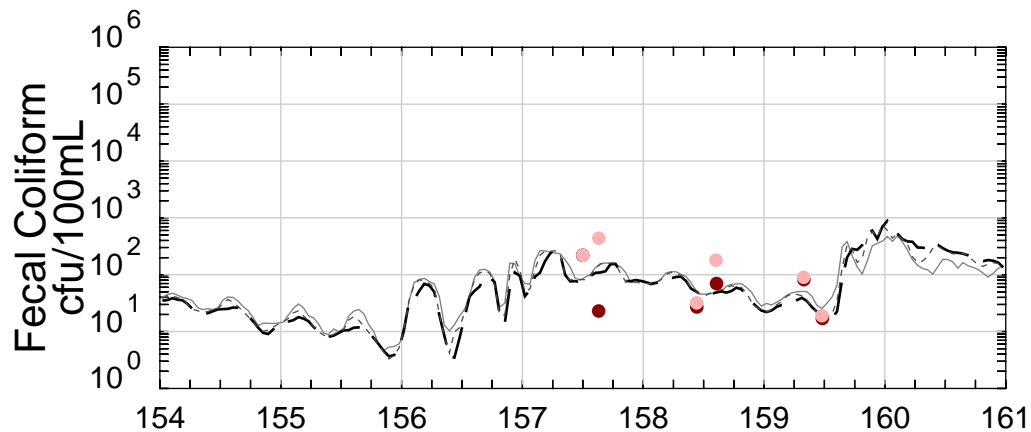
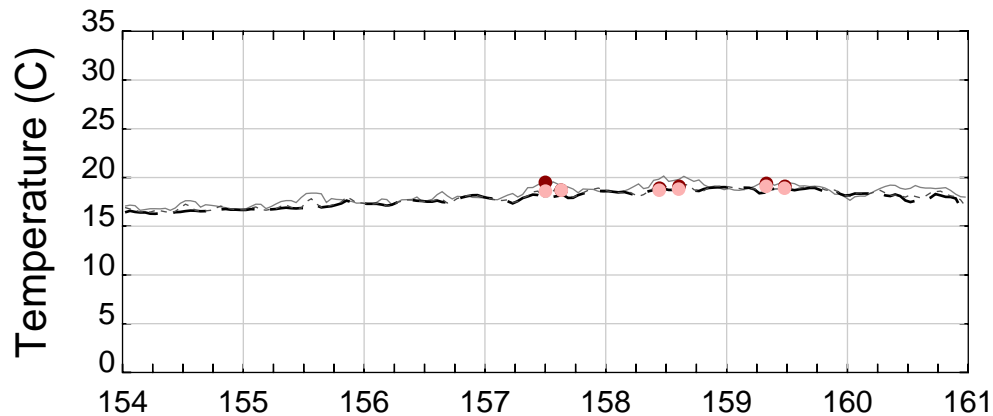
— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Hudson River, Upper Bay Upper Bay

SE2

Station: B27 Event 1 (June 3-9)



Model = 2016
Data = 2016

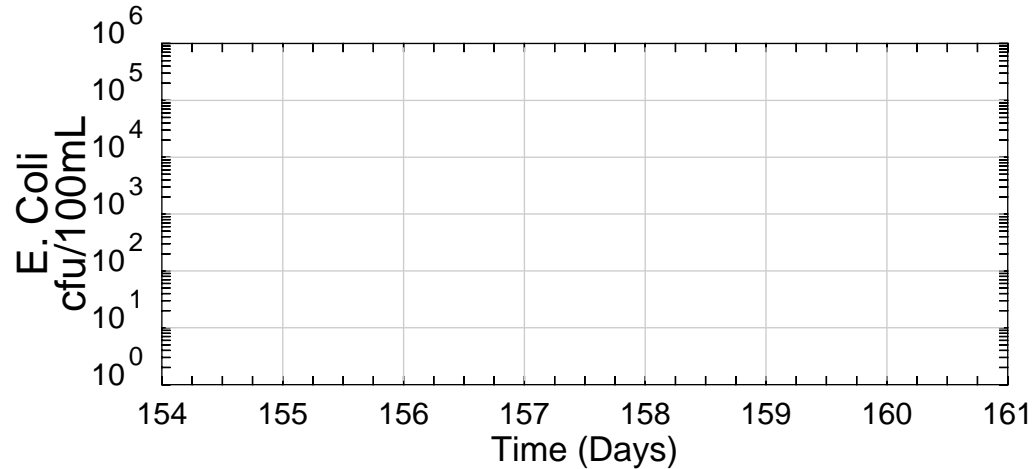
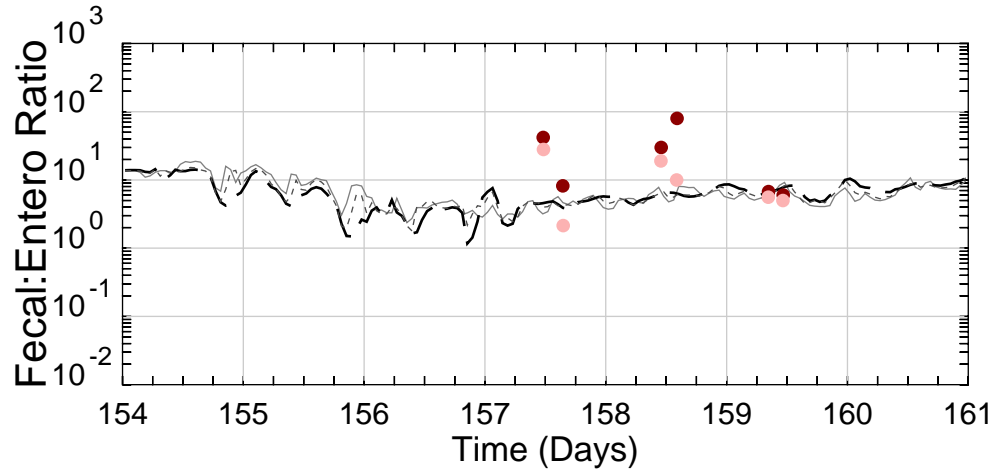
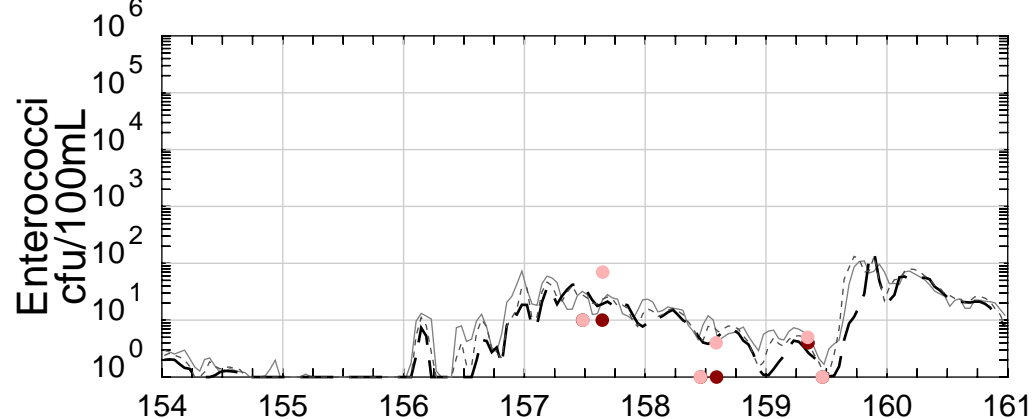
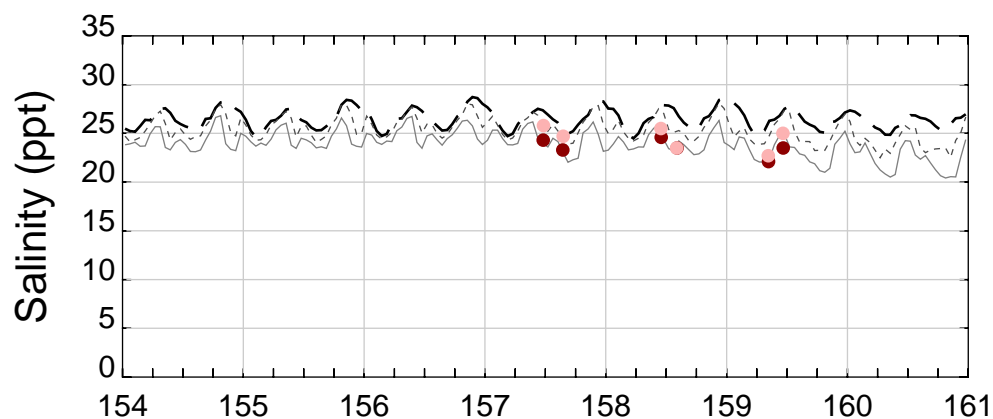
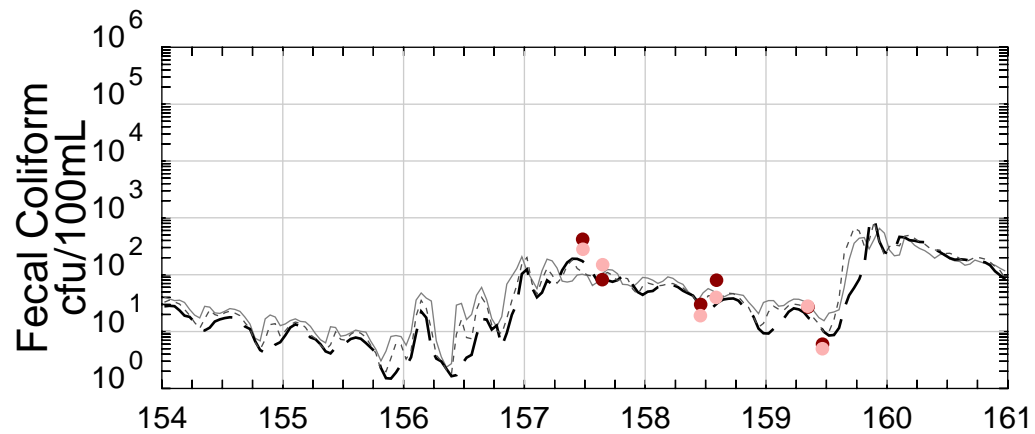
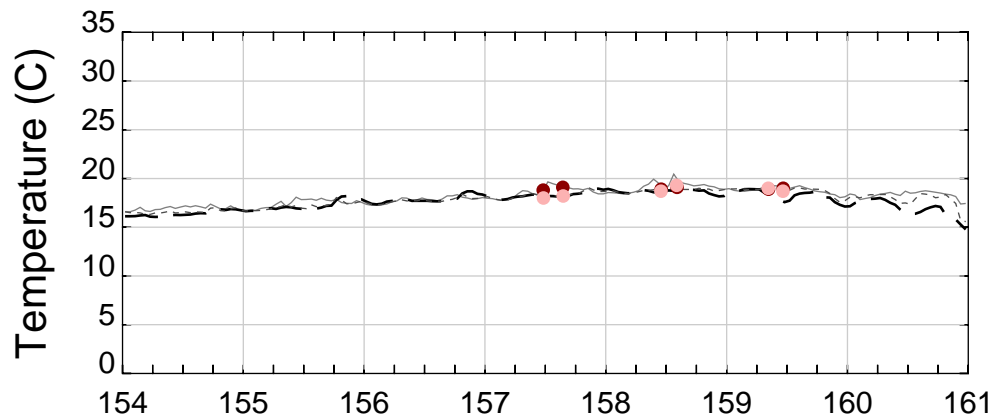
— Model at Surface
 - - - Model at Mid-Depth
 - · - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

Hudson River, Upper Bay Upper Bay

SE2

Station: B28 Event 1 (June 3-9)



Model = 2016
Data = 2016

— Model at Surface
 - - - Model at Mid-Depth
 - - - Model at Bottom

● Surface/Mid-depth HDR Data
 ● Surface/Mid/Bottom NJHDG Data

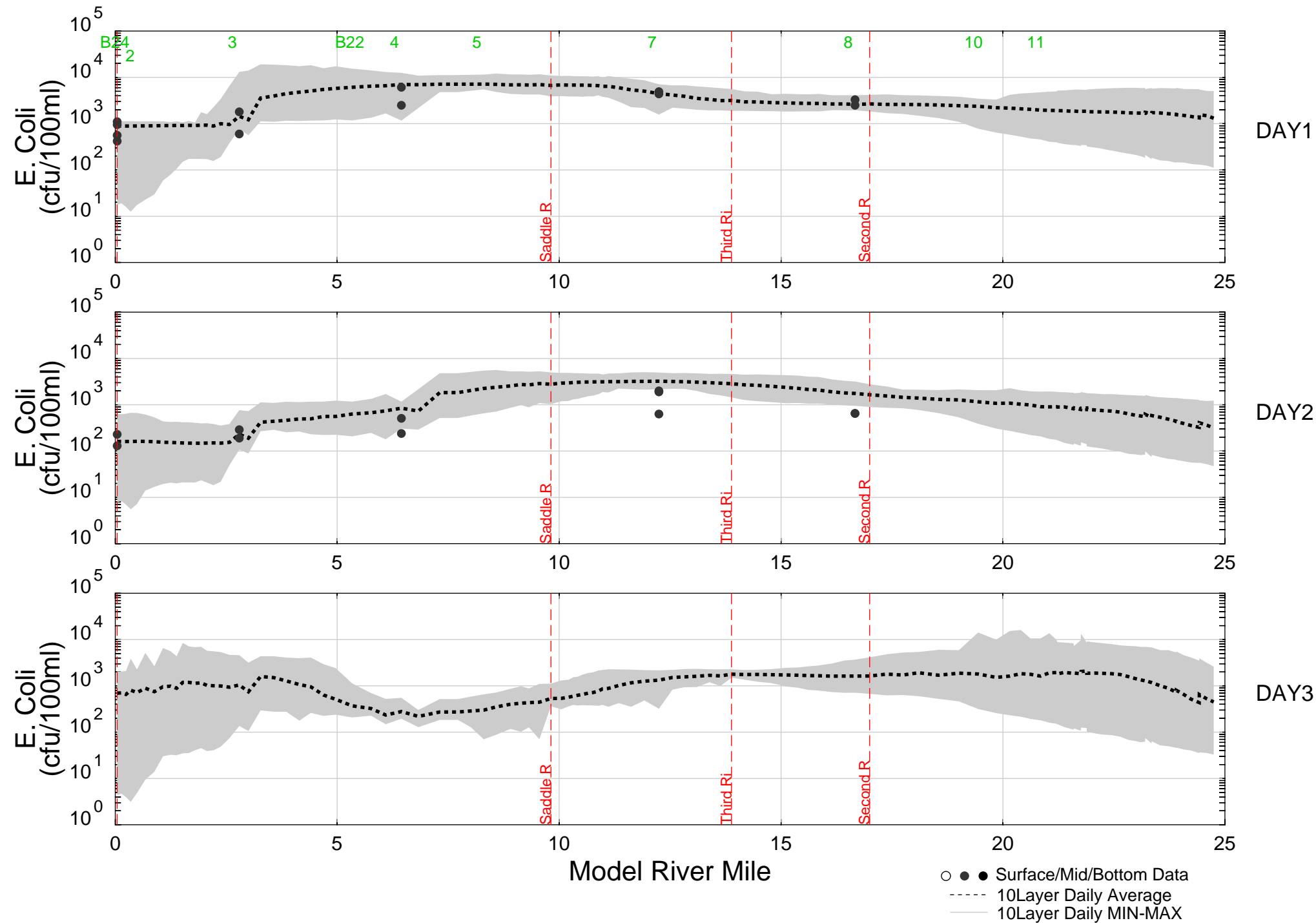


Appendix E-3

Additional Calibration E. Coli Transect Figures

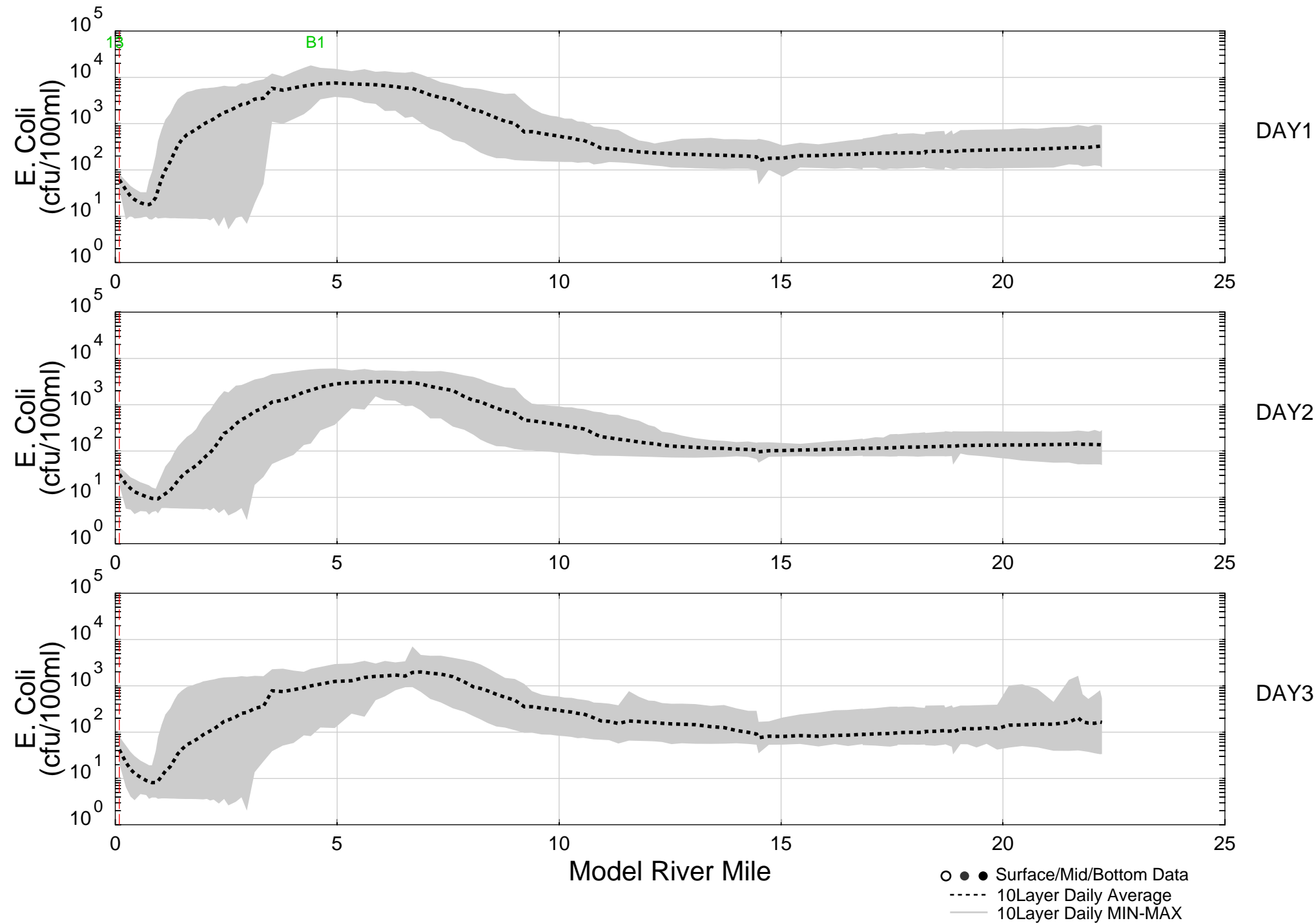
WW Event : June 6-8, 2016

Passaic River Transect



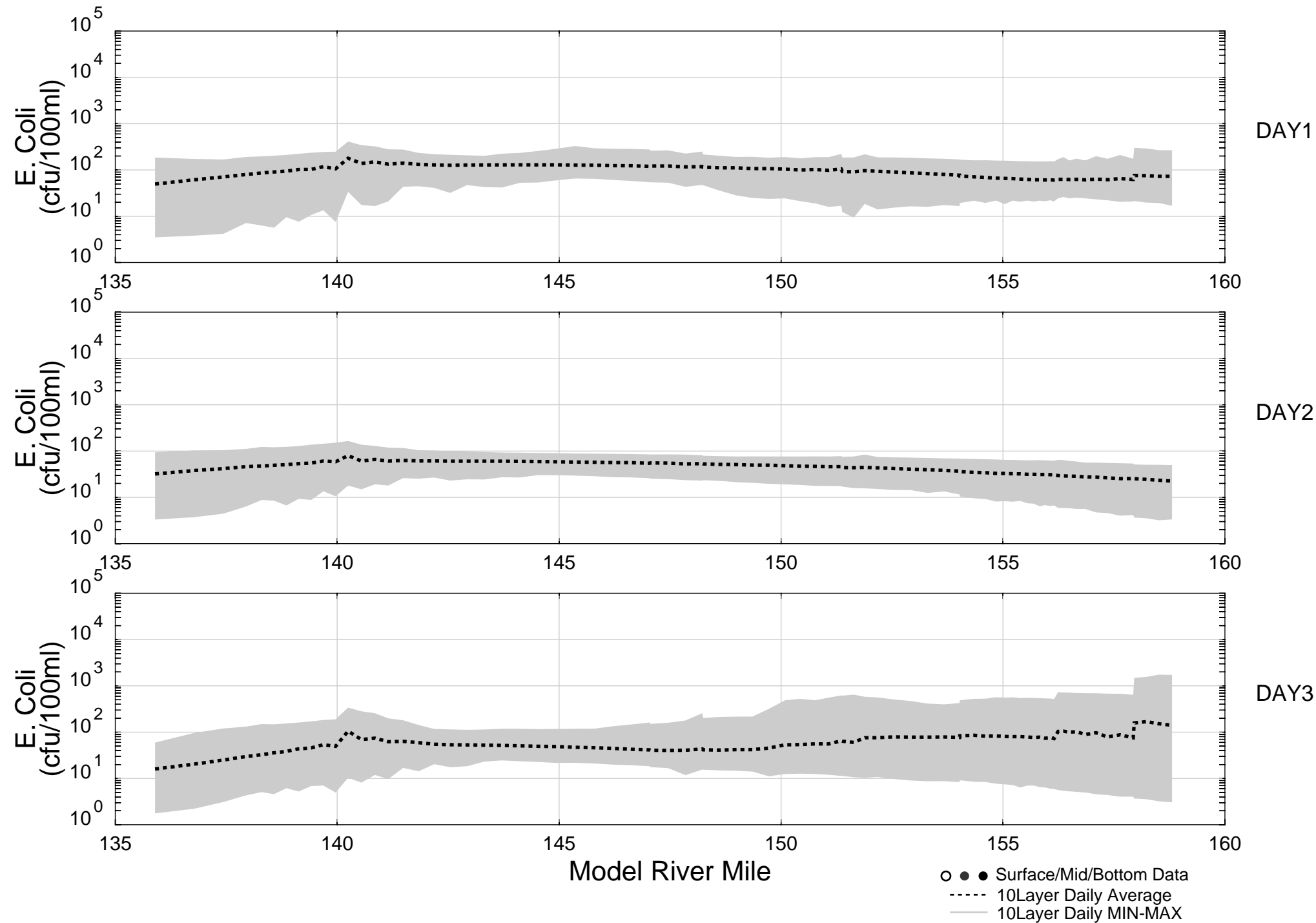
WW Event : June 6-8, 2016

Hackensack River Transect



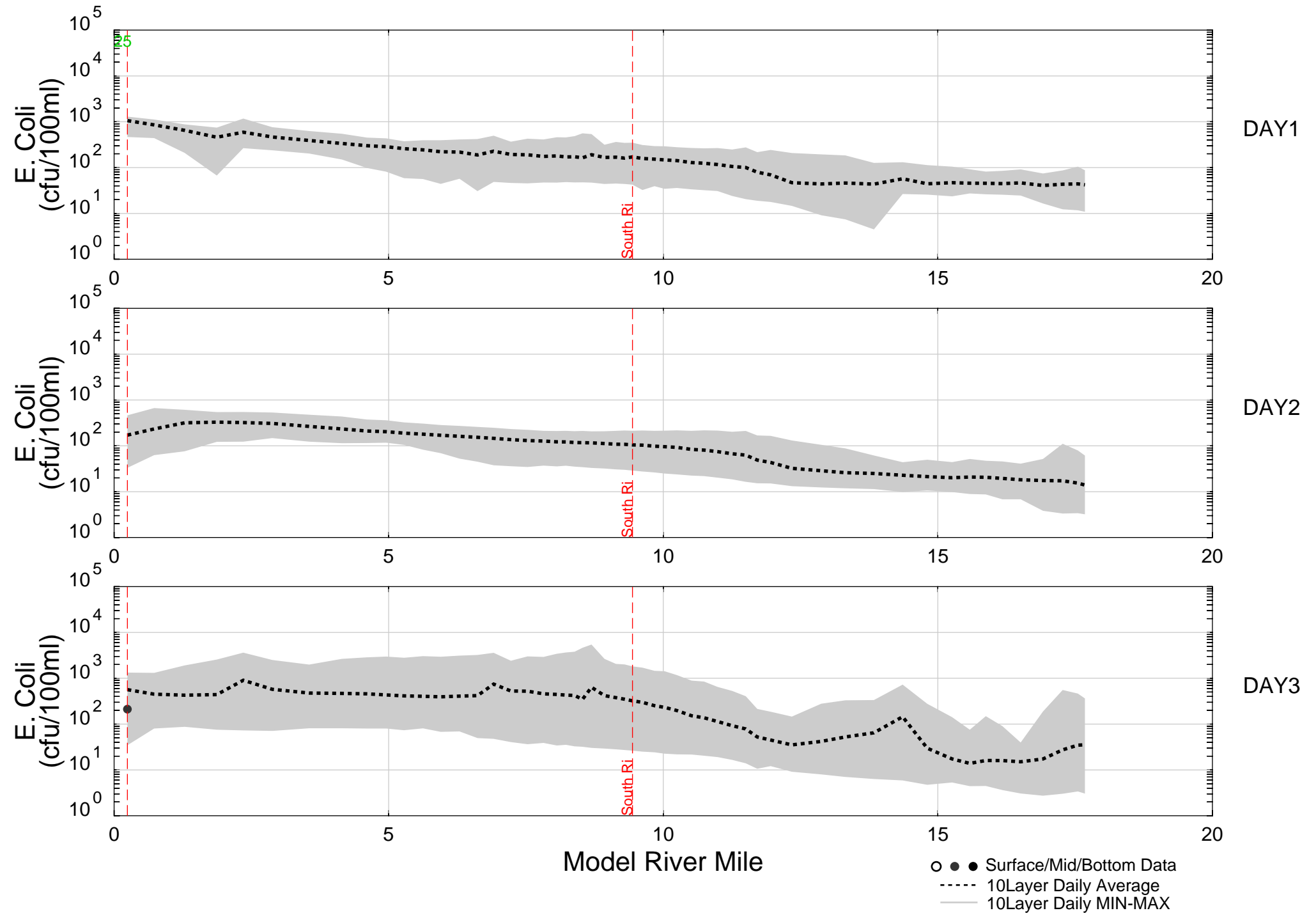
WW Event : June 6-8, 2016

Hudson River Transect



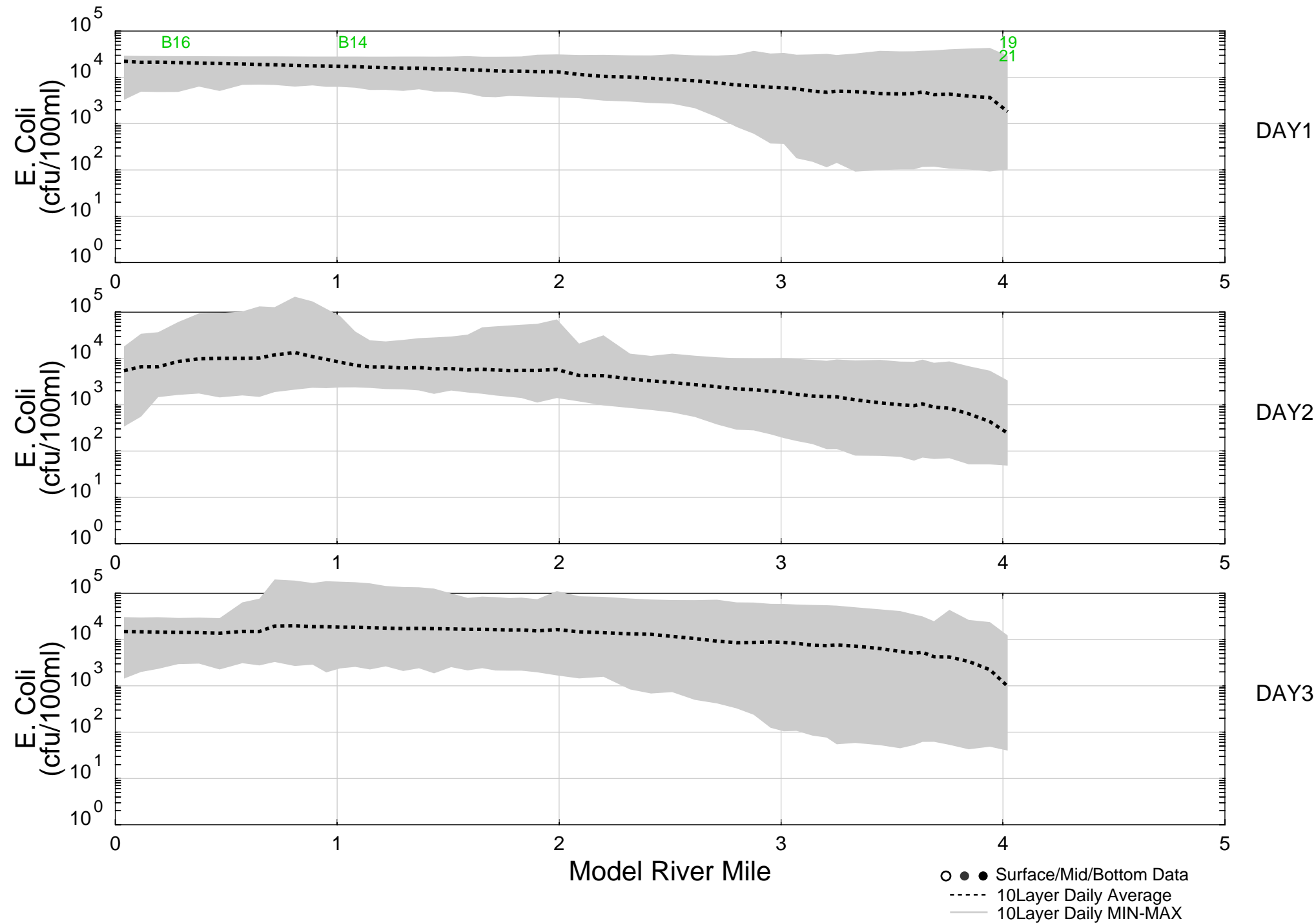
WW Event : June 6-8, 2016

Raritan River Transect



WW Event : June 6-8, 2016

Elizabeth River Transect



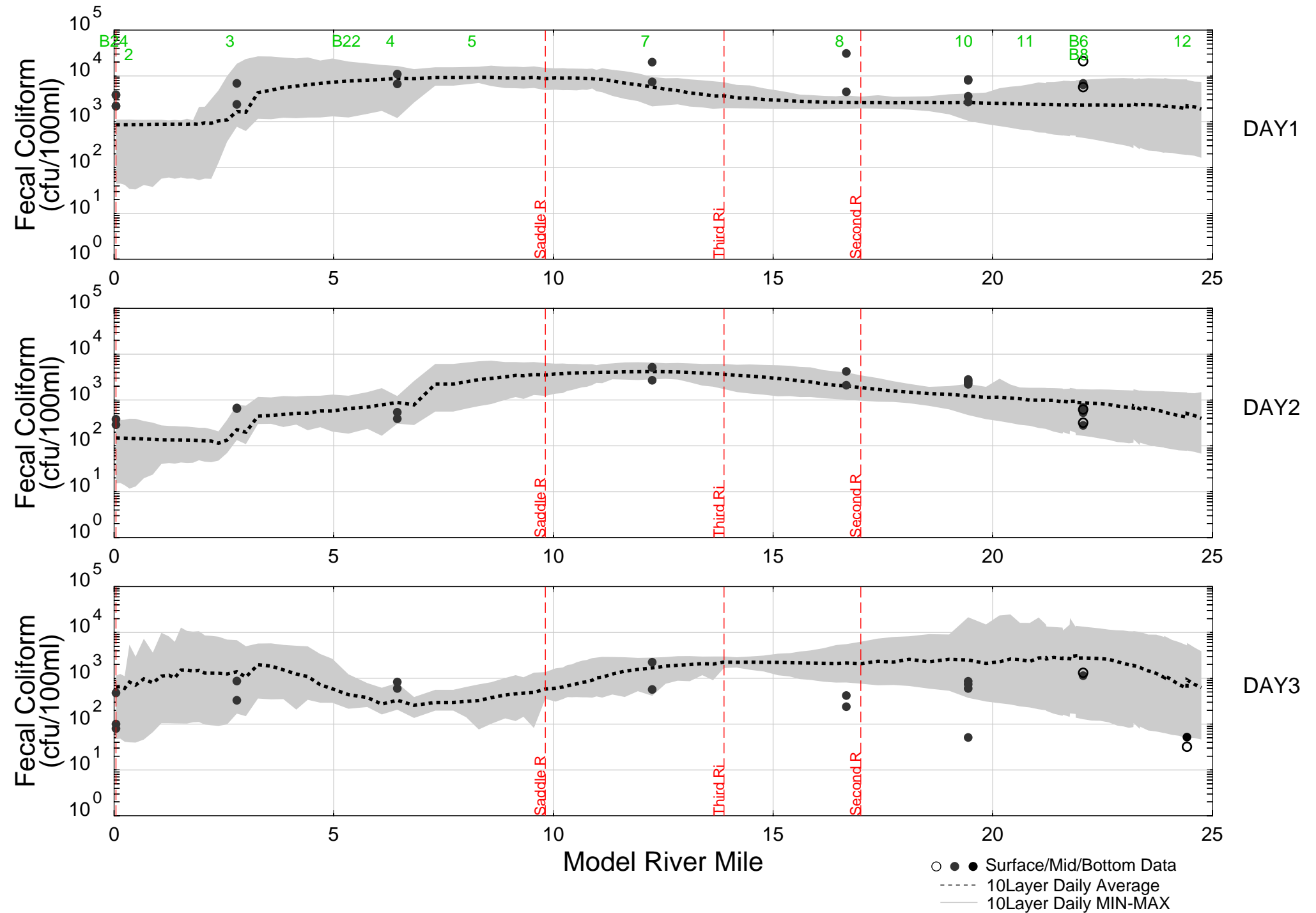


Appendix E-4

Additional Calibration Fecal Coliform Transect Figures

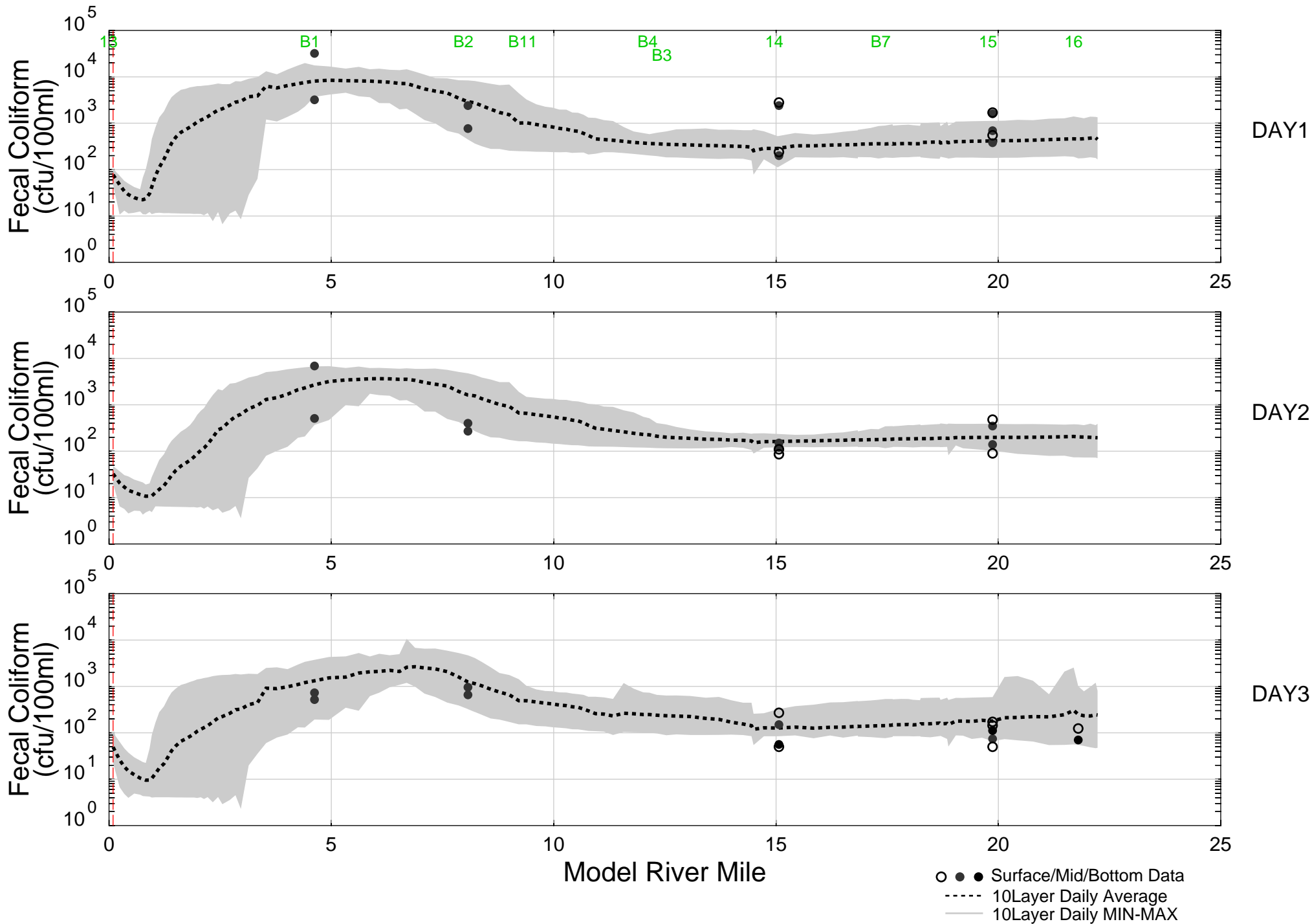
WW Event : June 6-8, 2016

Passaic River Transect



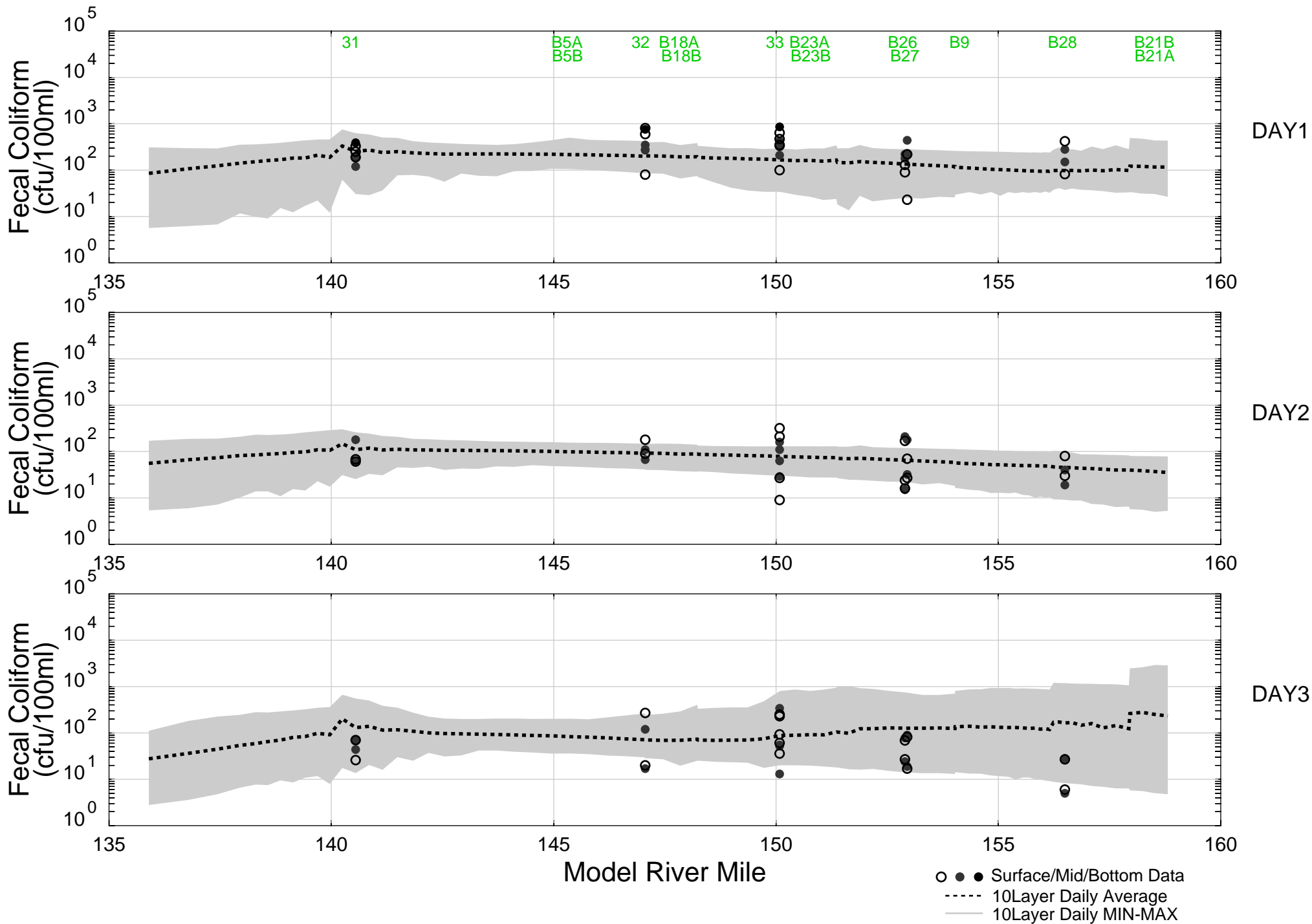
WW Event : June 6-8, 2016

Hackensack River Transect



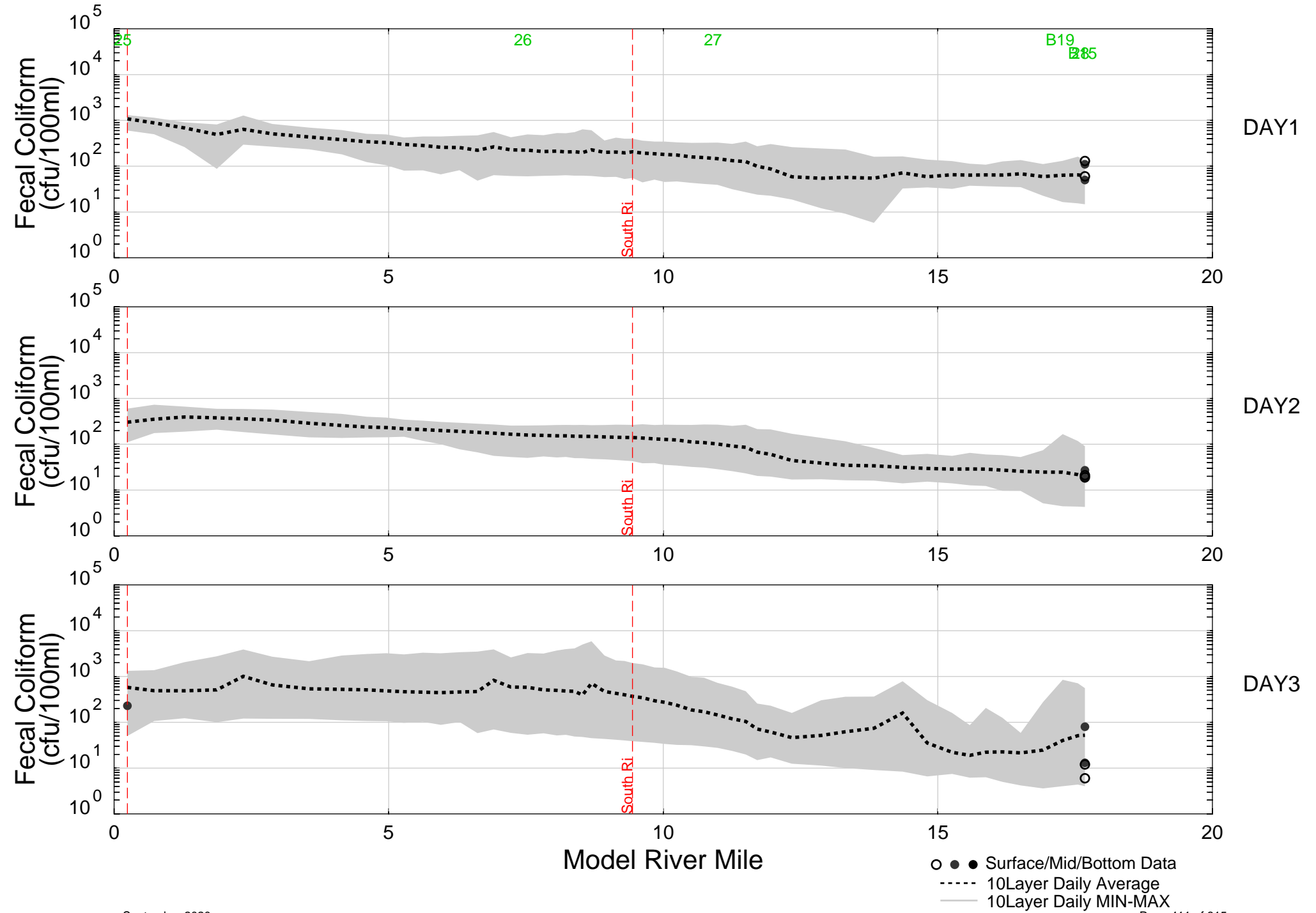
WW Event : June 6-8, 2016

Hudson River Transect



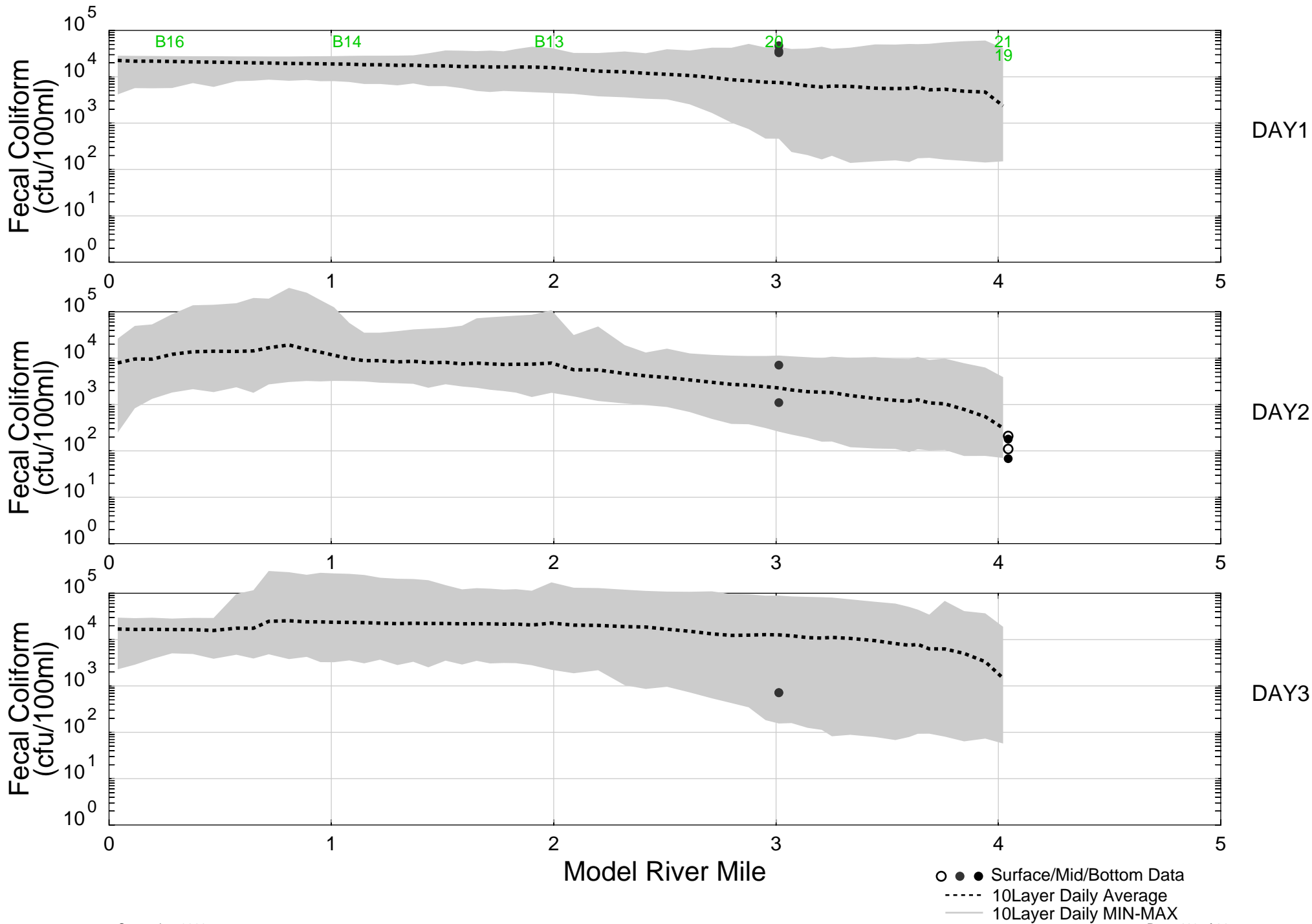
WW Event : June 6-8, 2016

Raritan River Transect



WW Event : June 6-8, 2016

Elizabeth River Transect



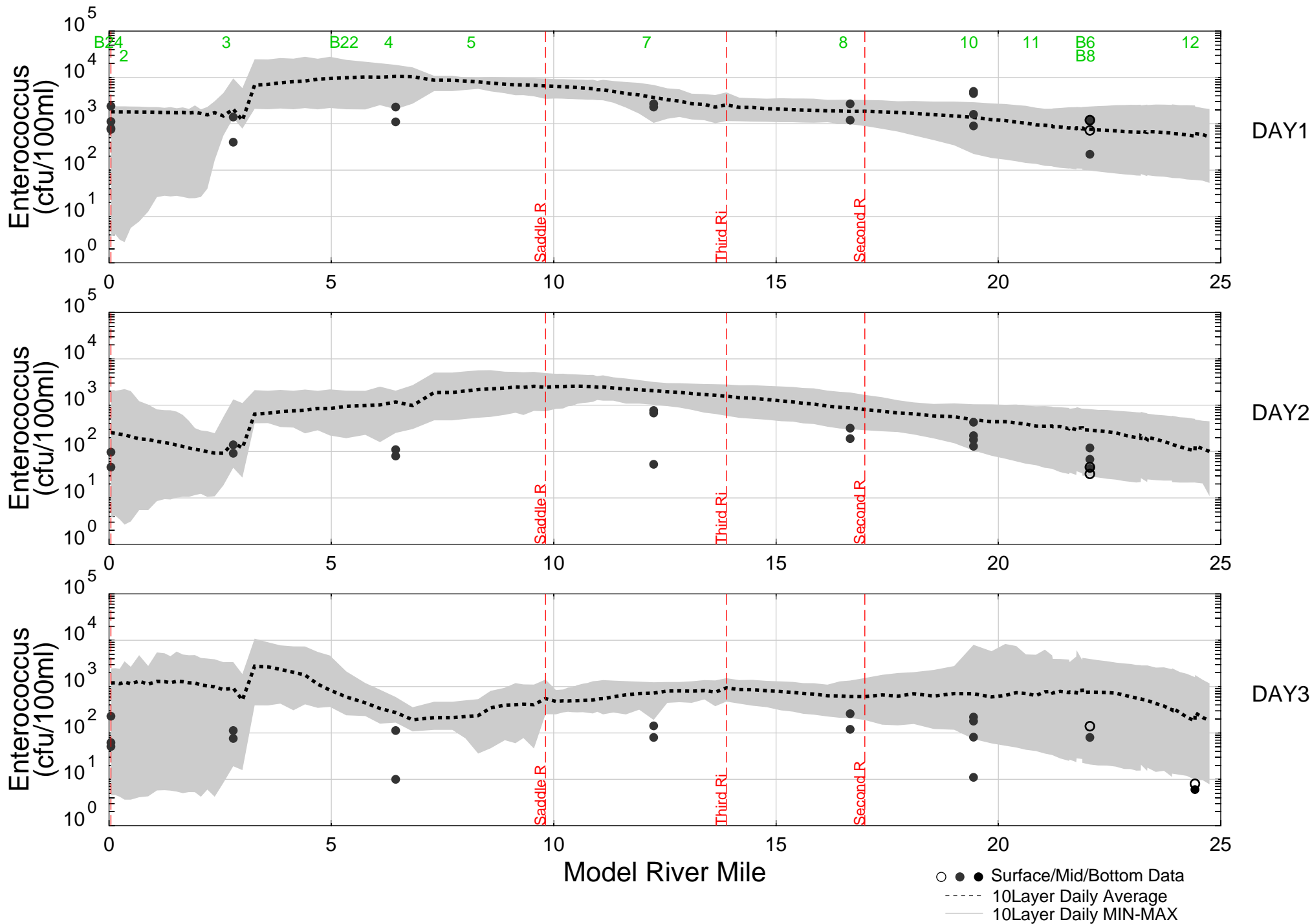


Appendix E-5

Additional Calibration Enterococci Transect Figures

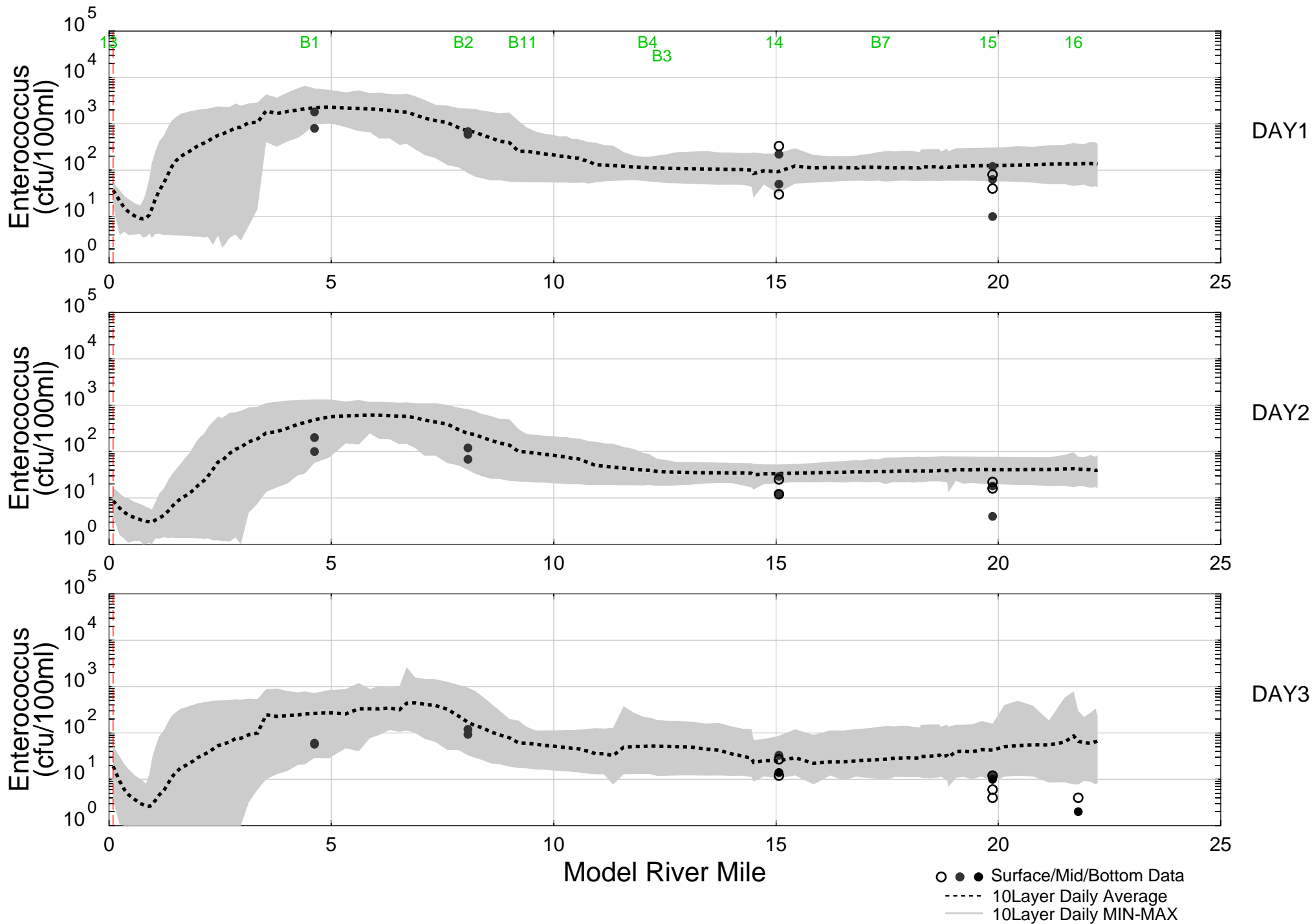
WW Event : June 6-8, 2016

Passaic River Transect



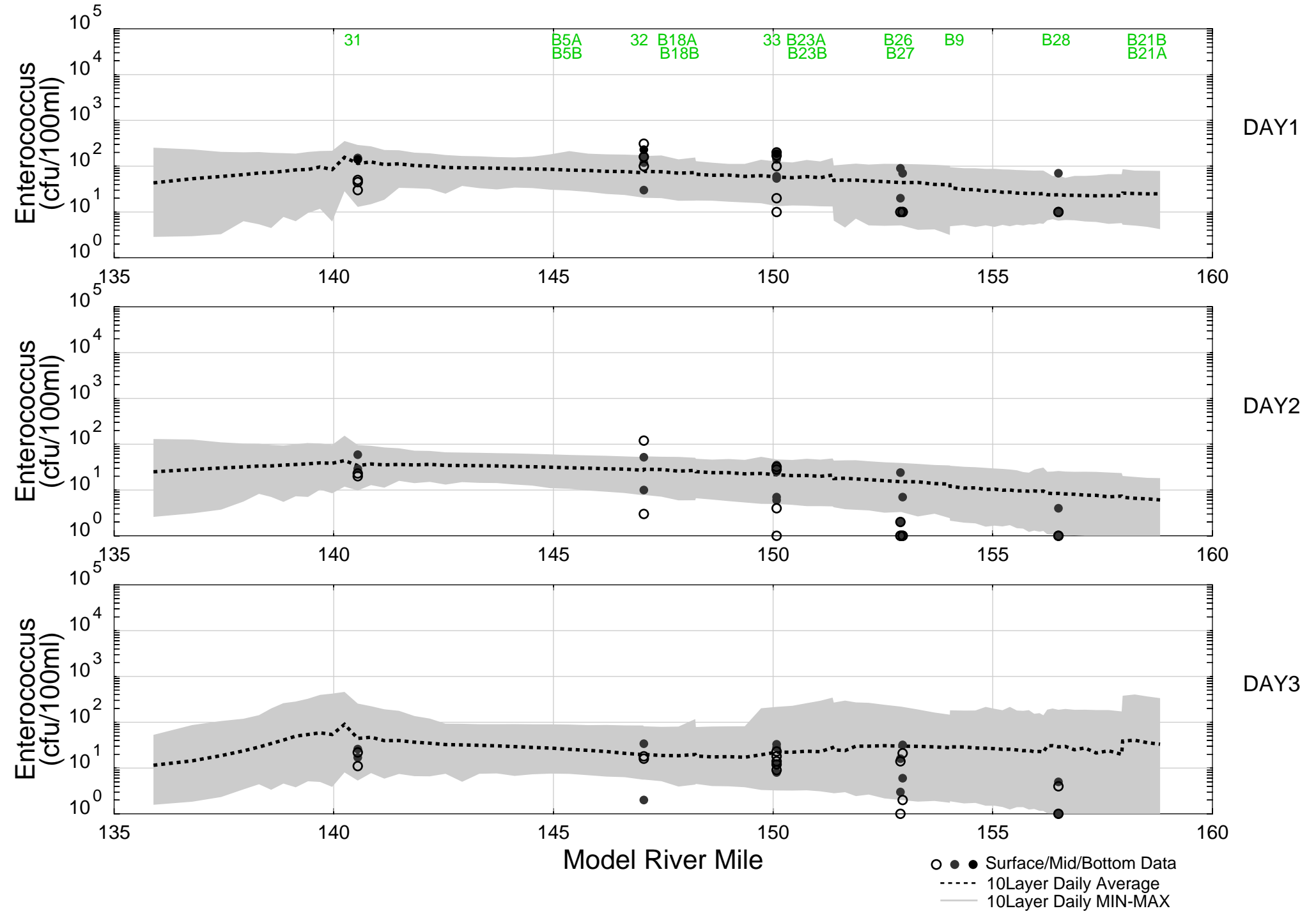
WW Event : June 6-8, 2016

Hackensack River Transect



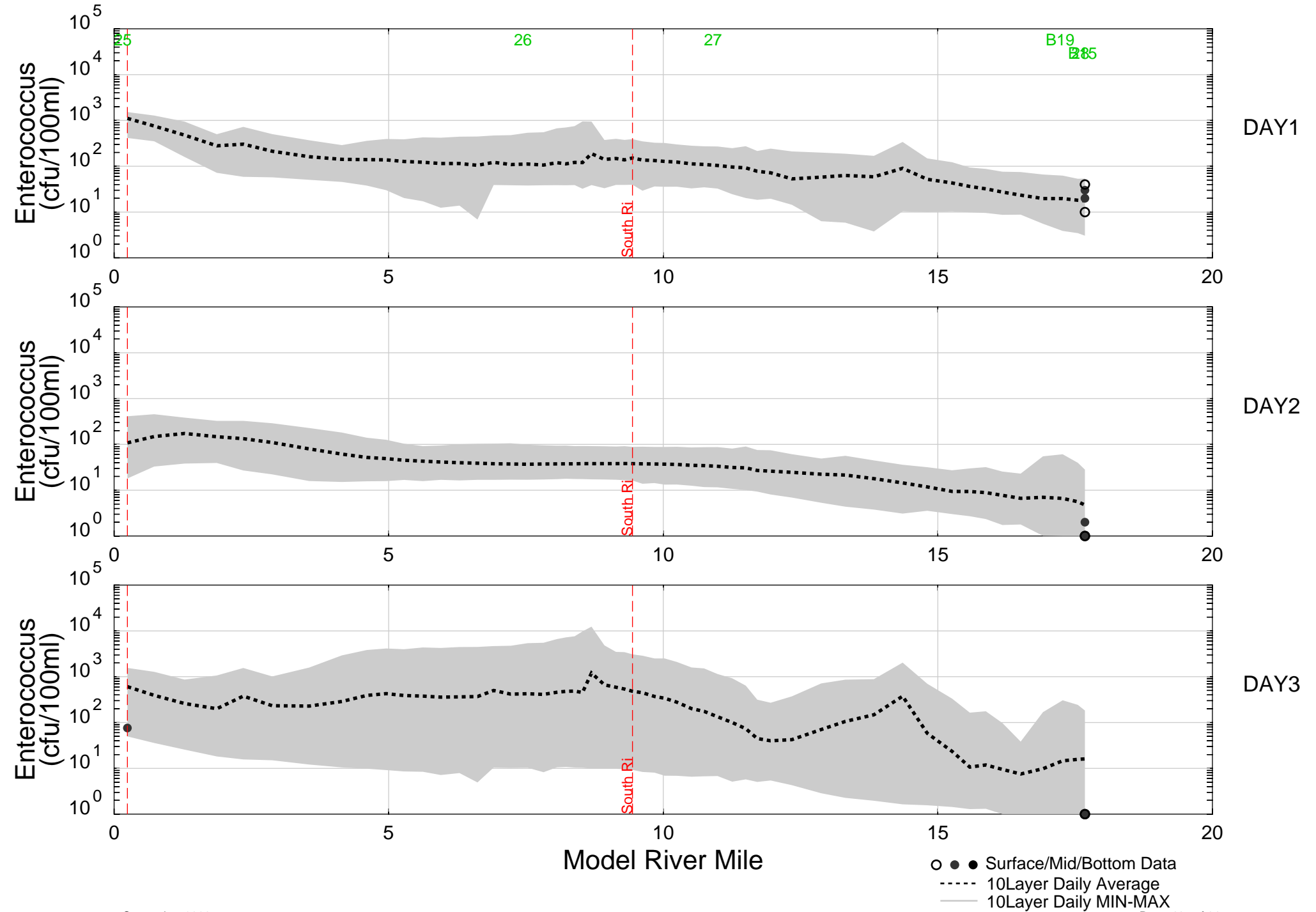
WW Event : June 6-8, 2016

Hudson River Transect



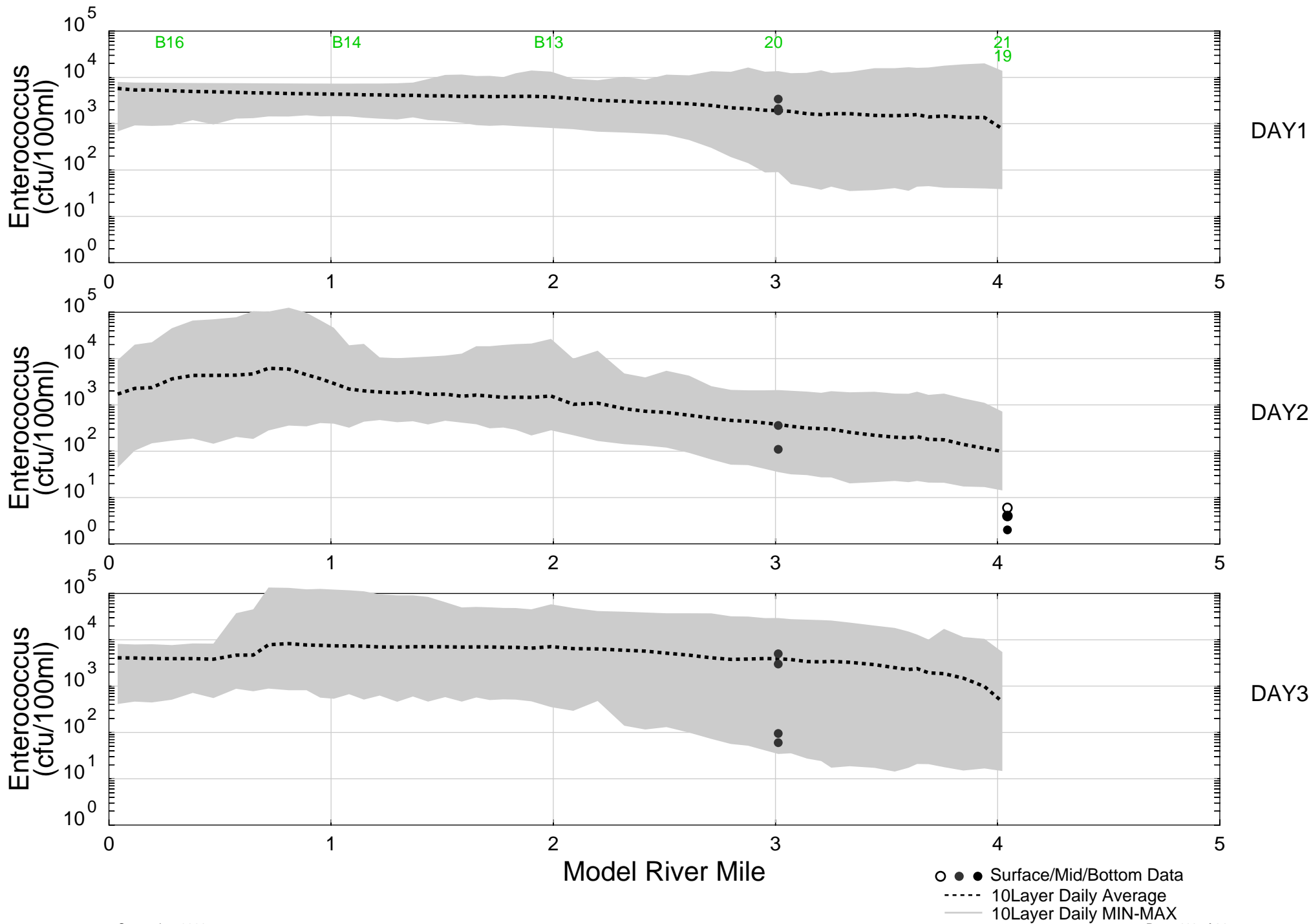
WW Event : June 6-8, 2016

Raritan River Transect



WW Event : June 6-8, 2016

Elizabeth River Transect





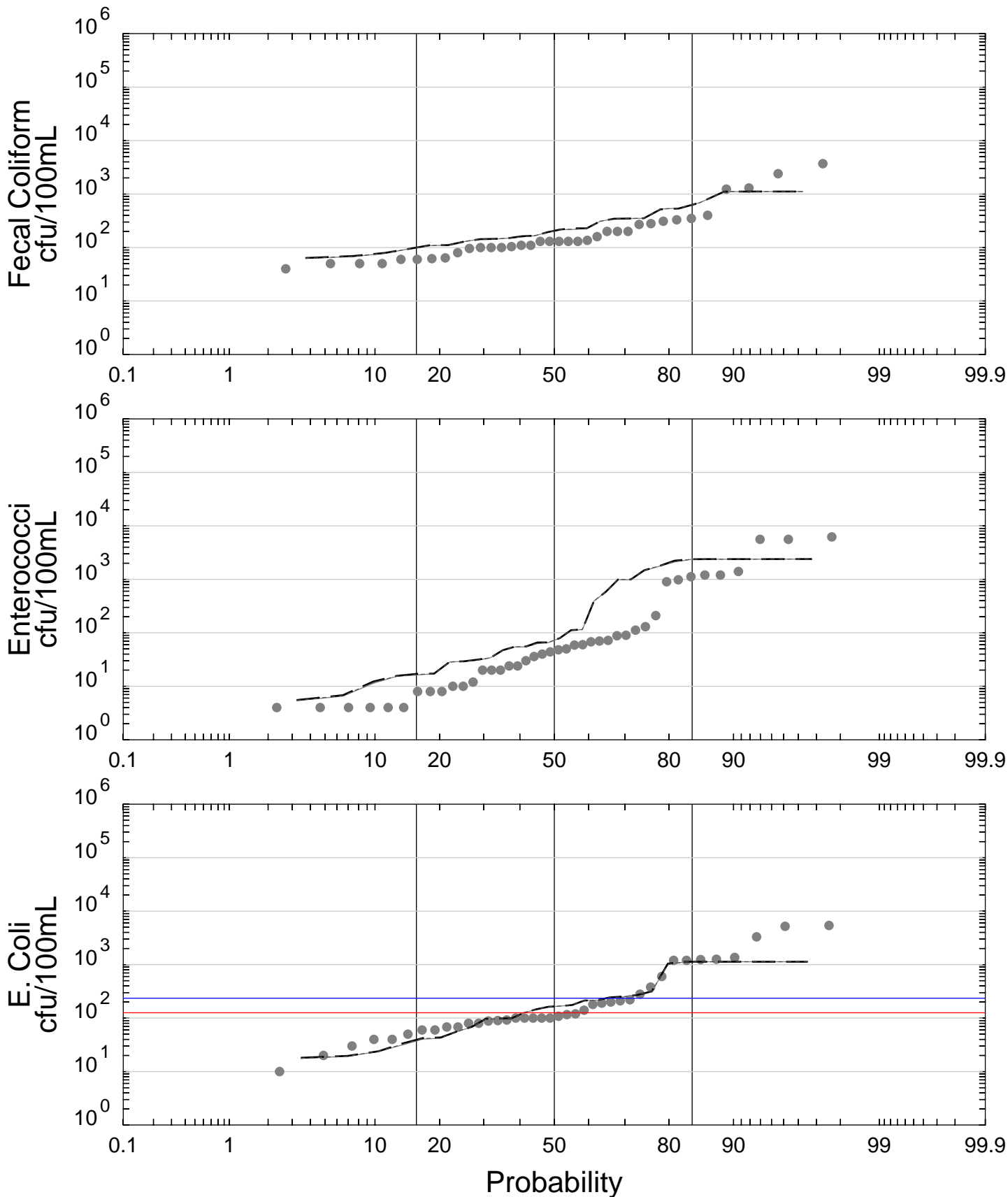
Appendix E-6

Additional Calibration Probability Figures

PASSAIC RIVER

FW2

Station: 1



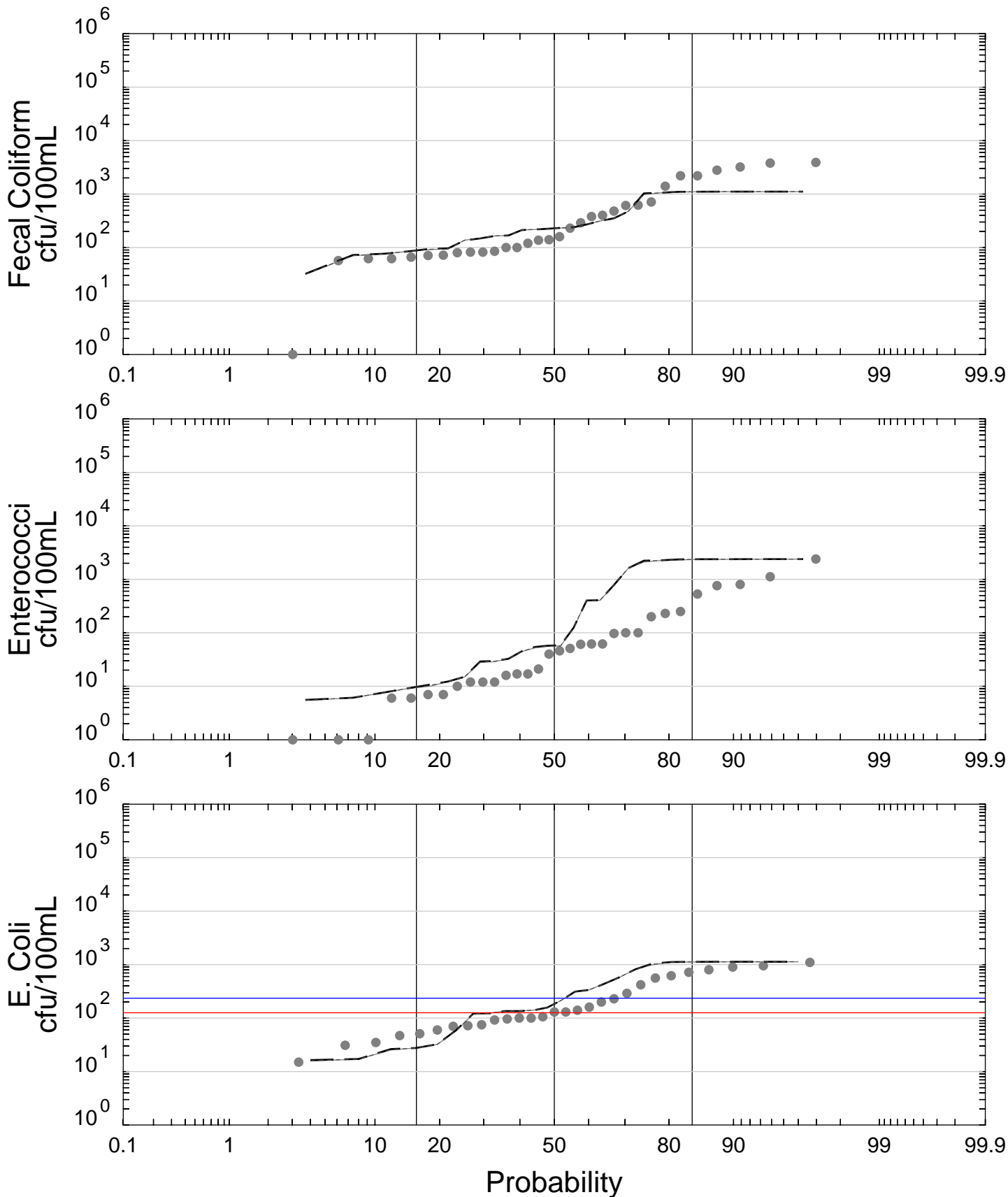
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

FW2

Station: B24



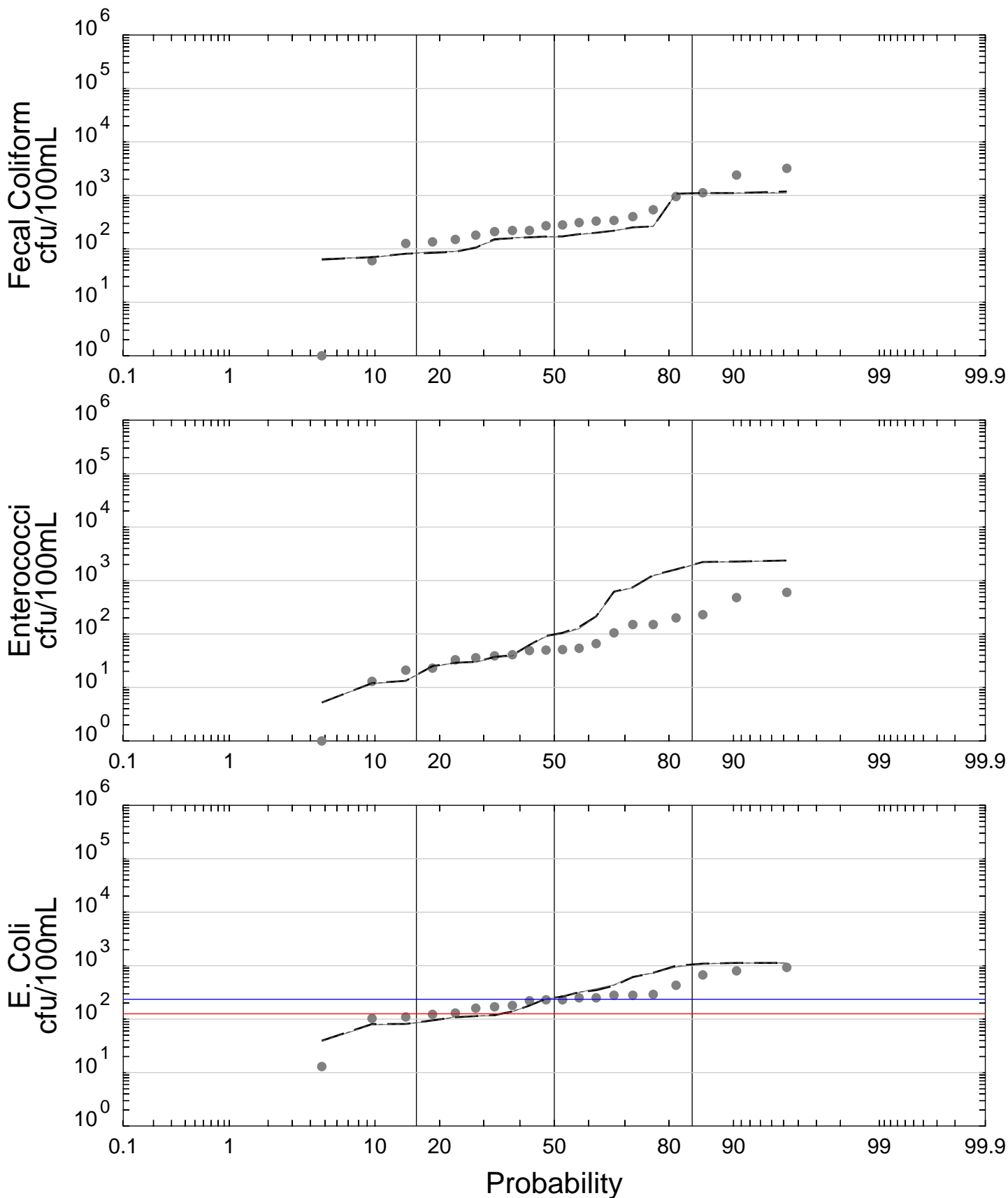
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

FW2

Station: 2



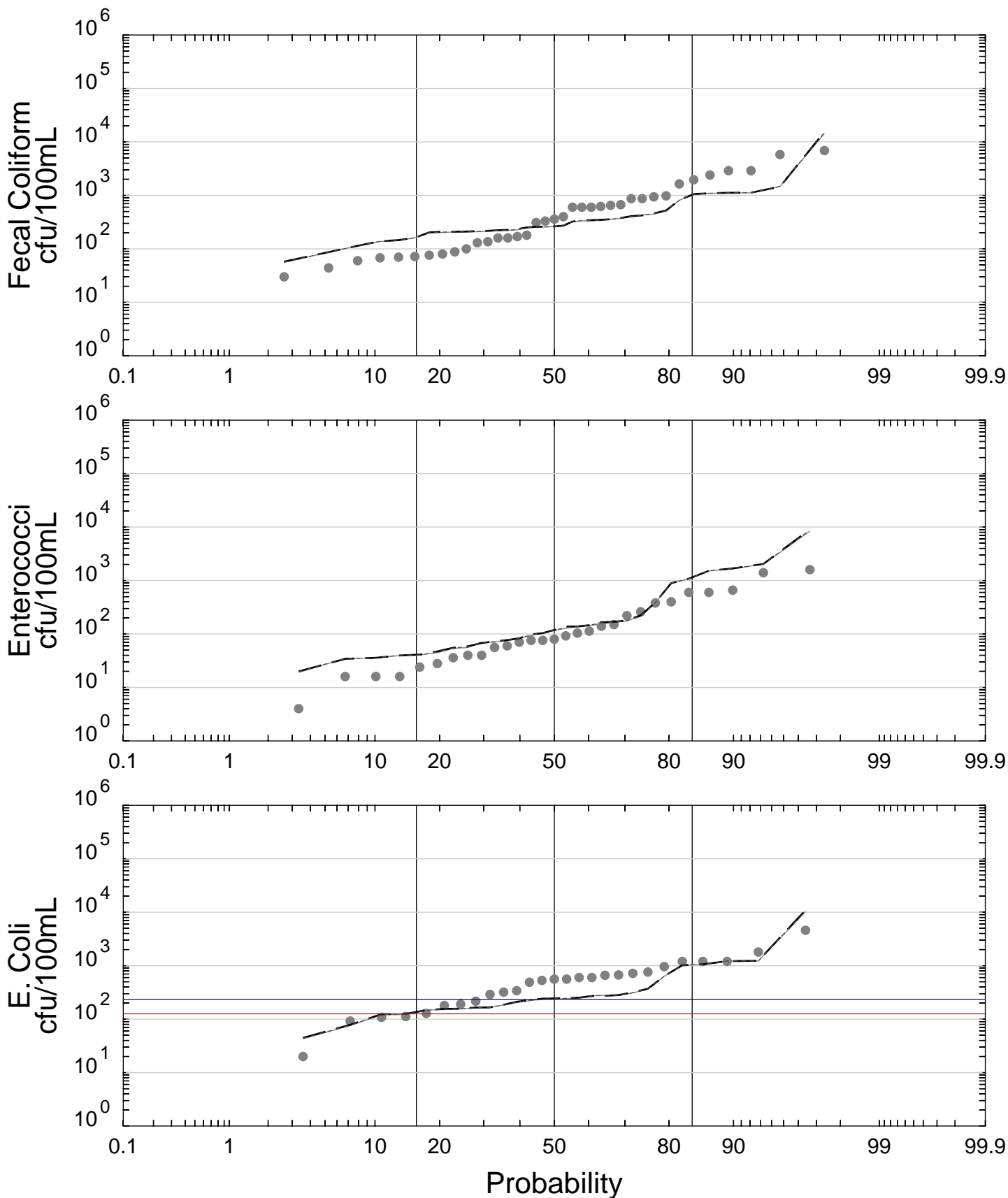
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

FW2

Station: 3

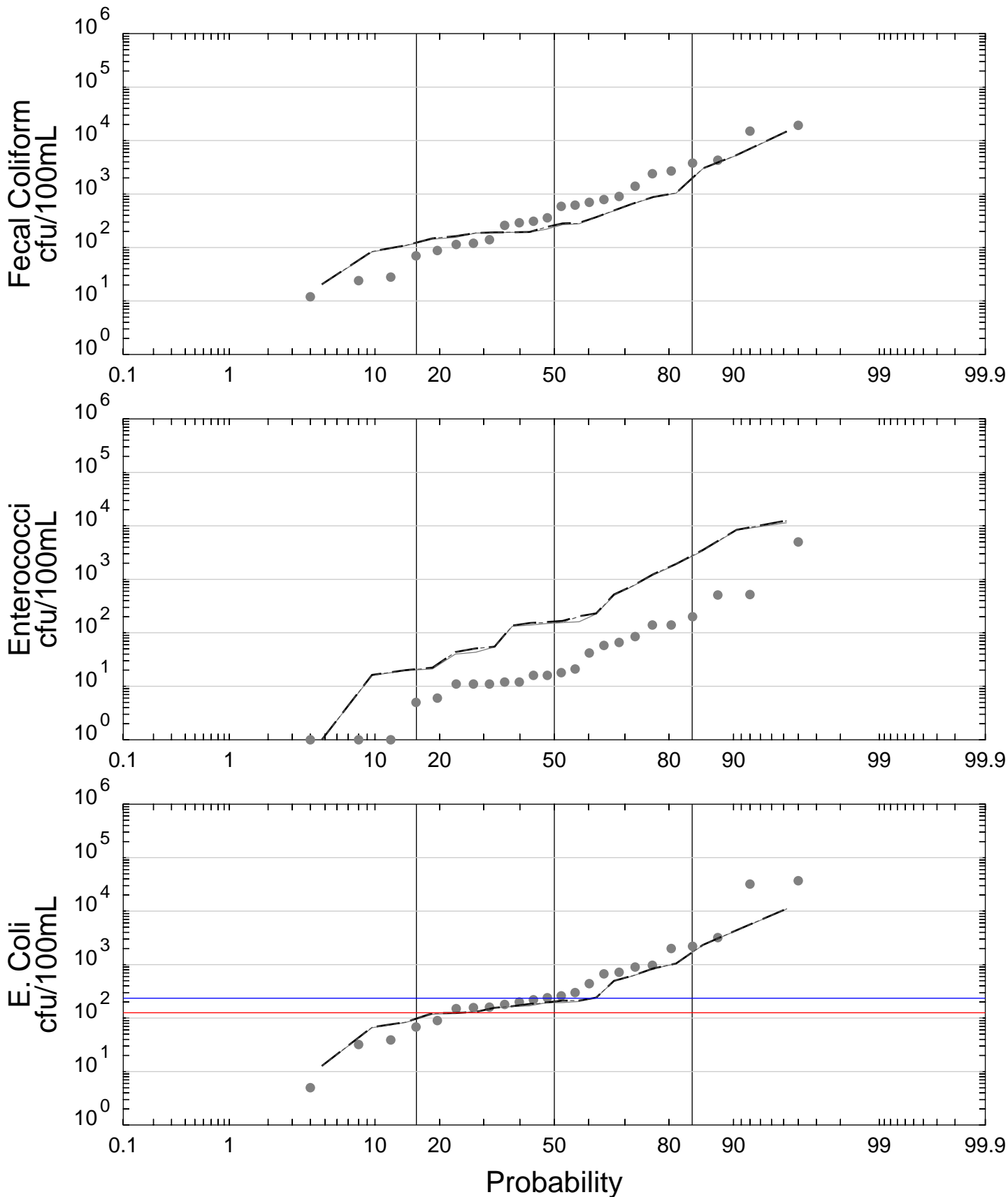


Model Results during data sampling hours only

PASSAIC RIVER

FW2

Station: B22



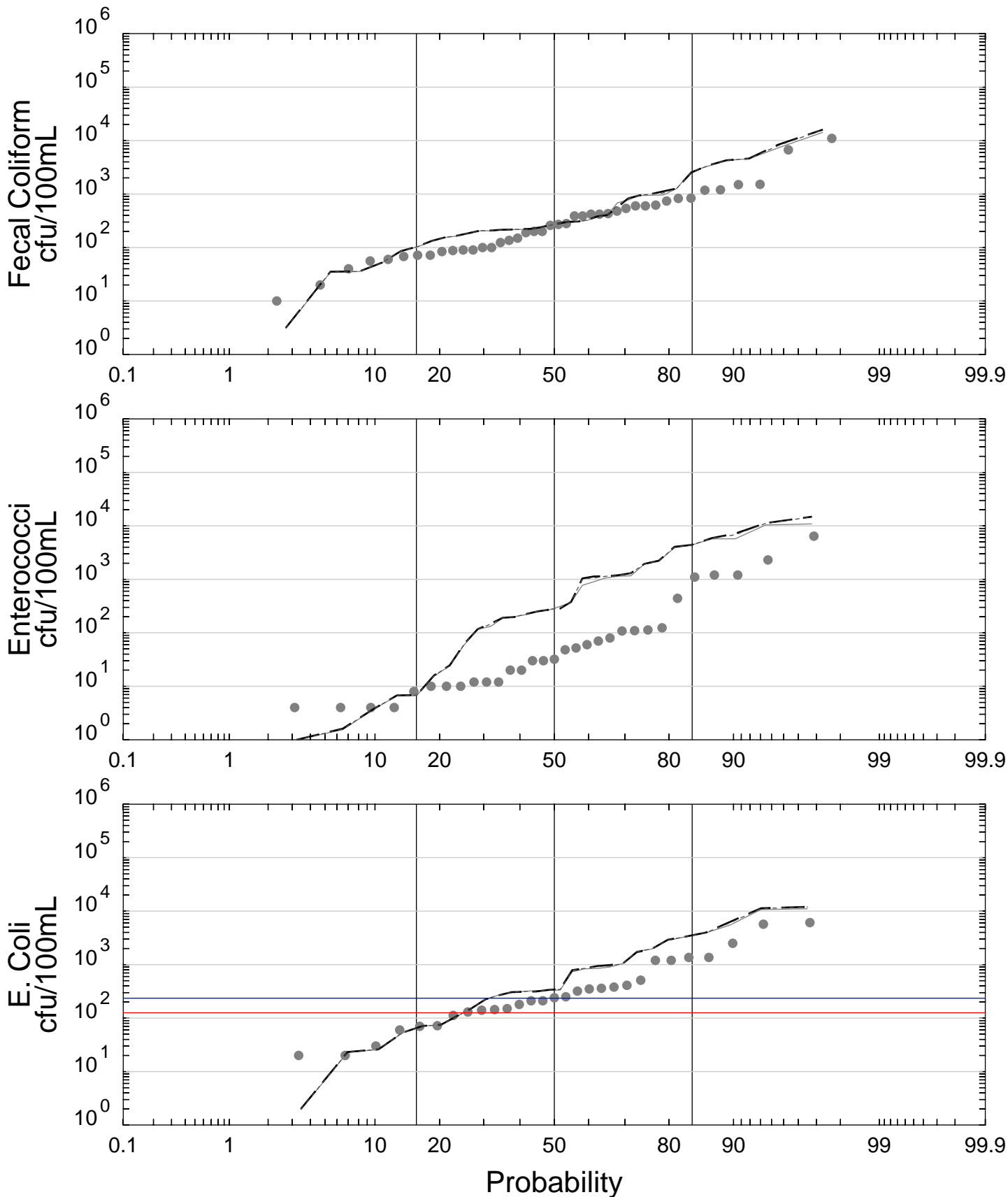
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

FW2

Station: 4



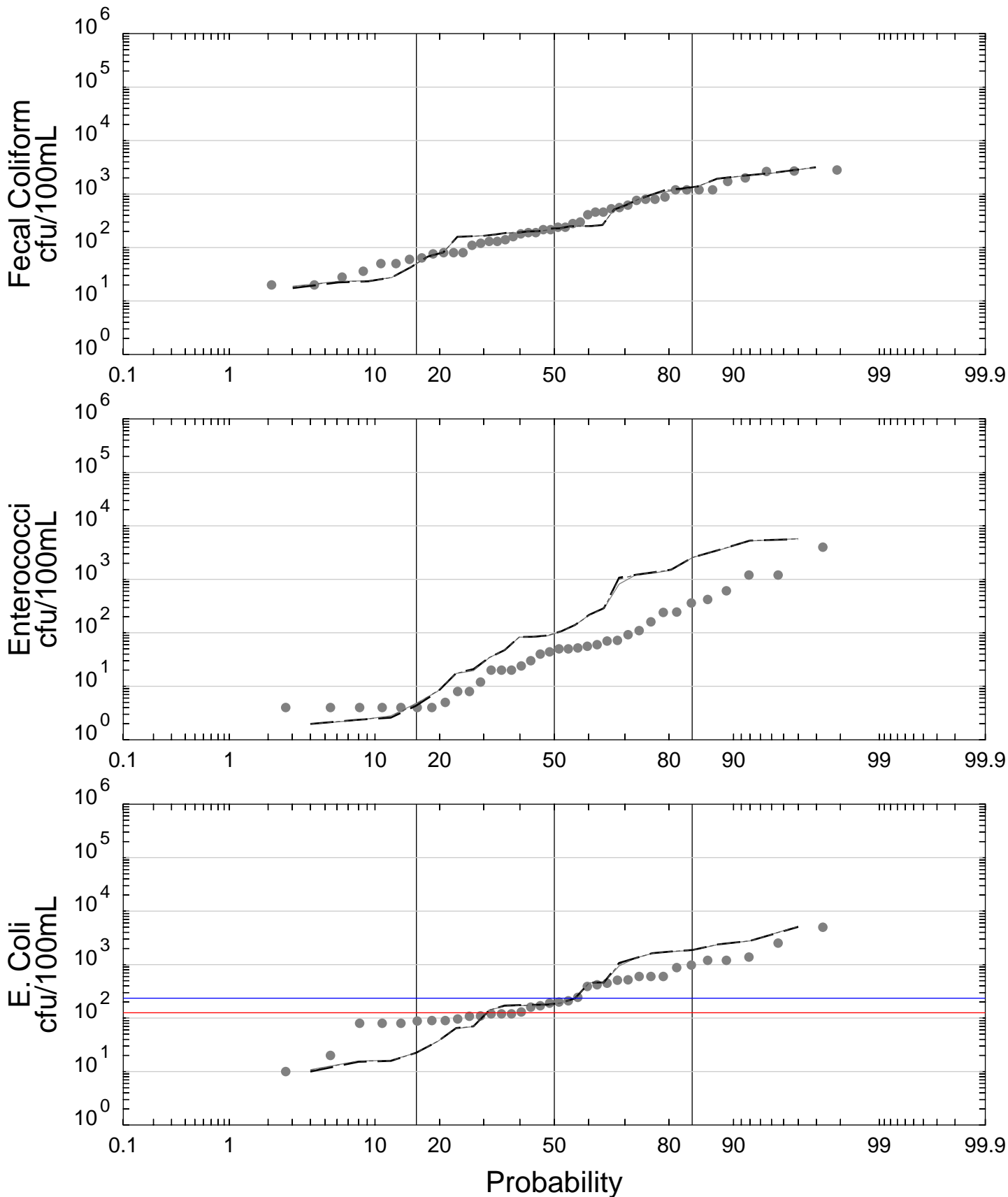
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

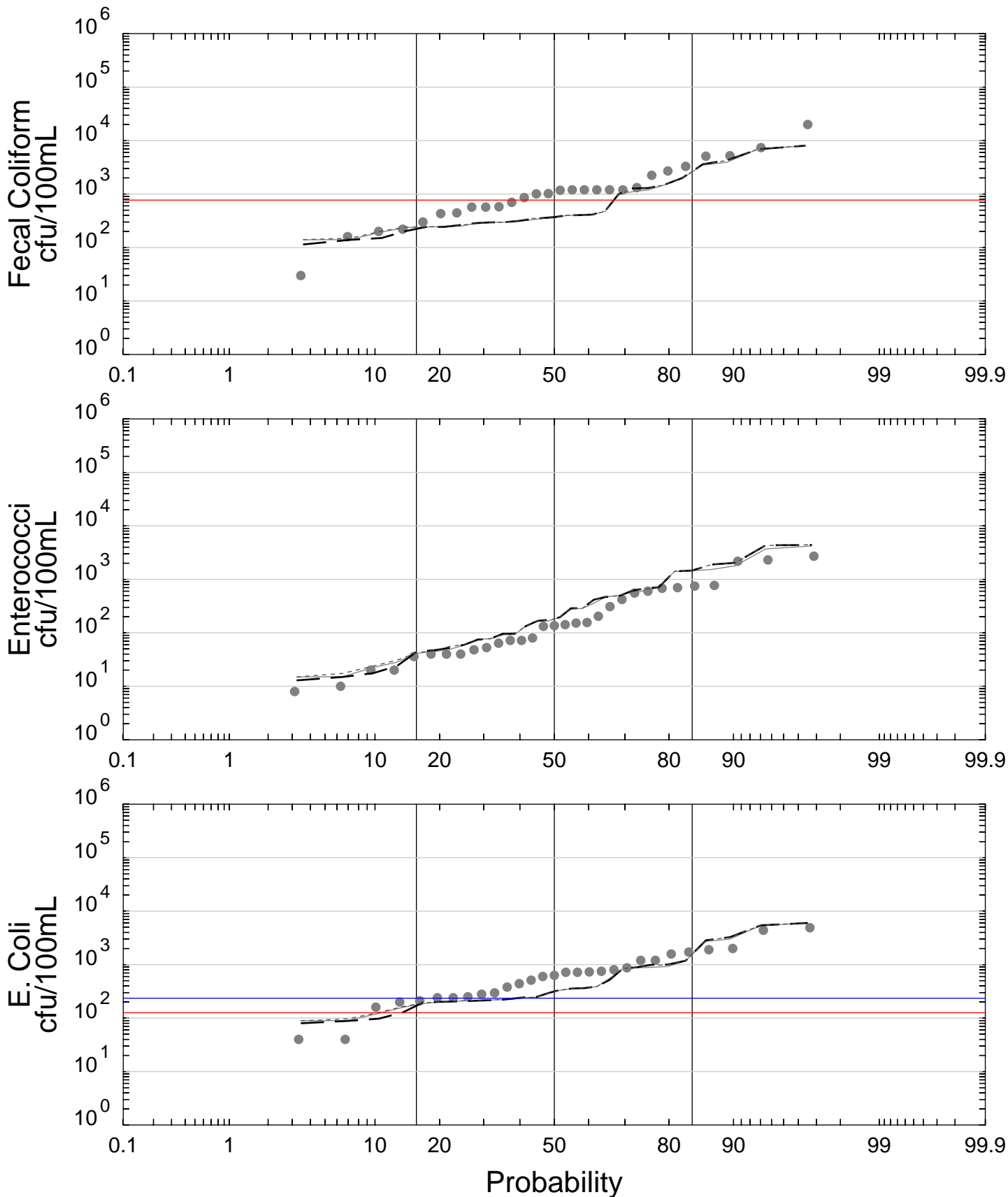
FW2

Station: 5



Model Results during data sampling hours only

Station: 7



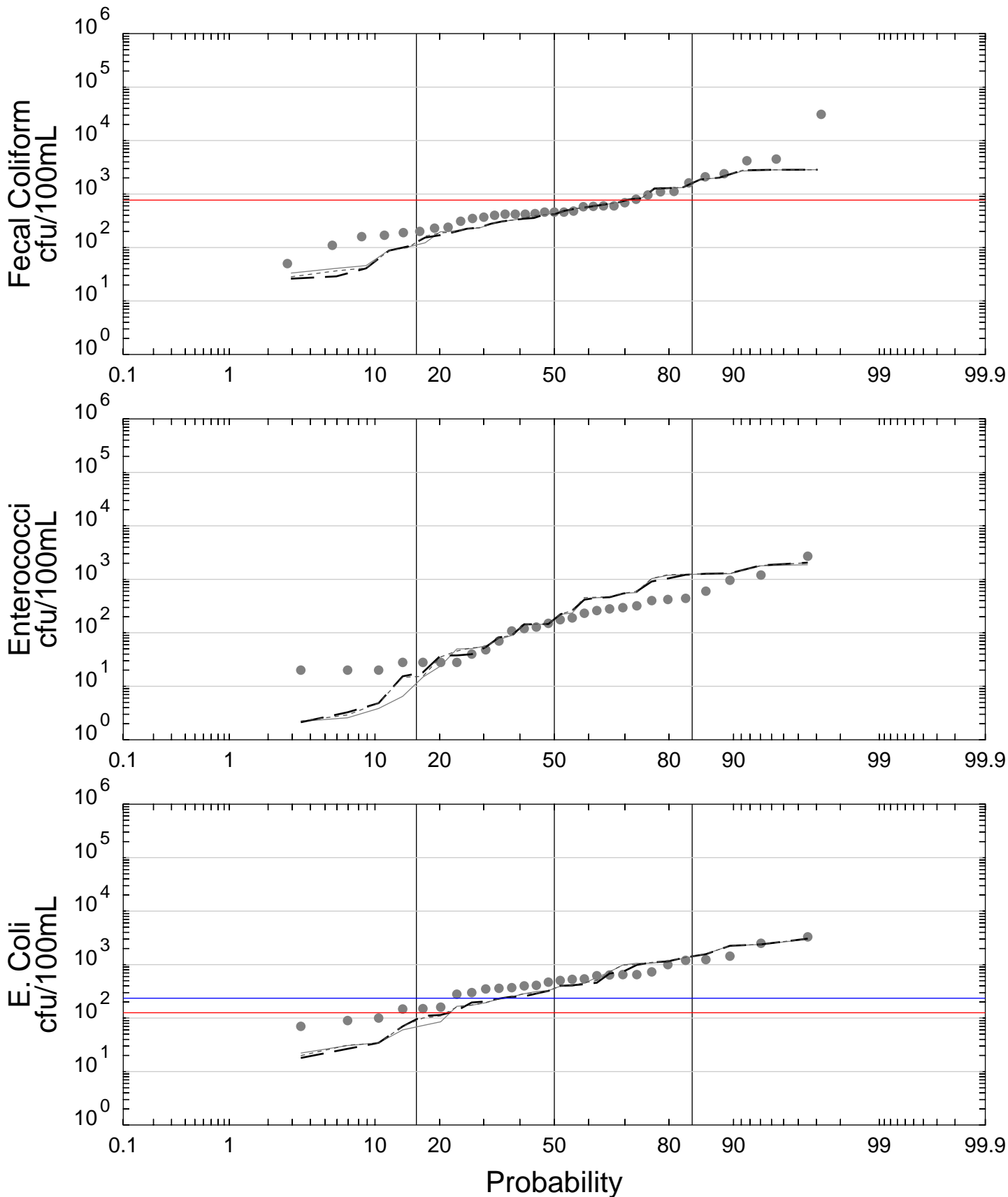
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

FW2/SE2

Station: 8

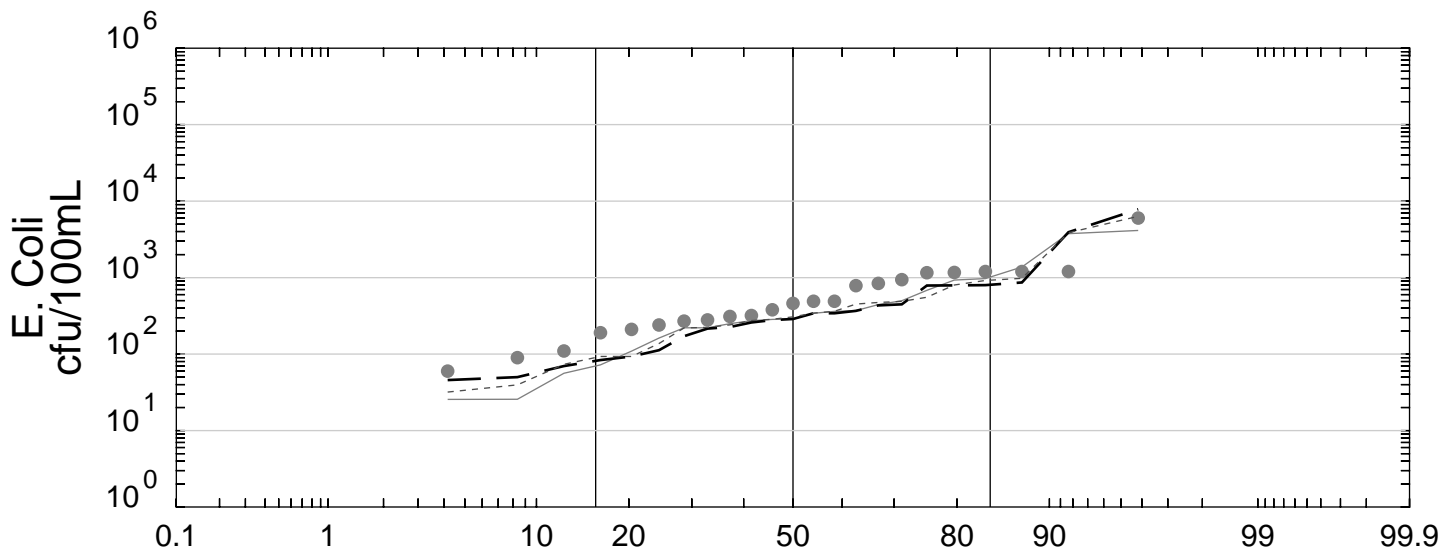
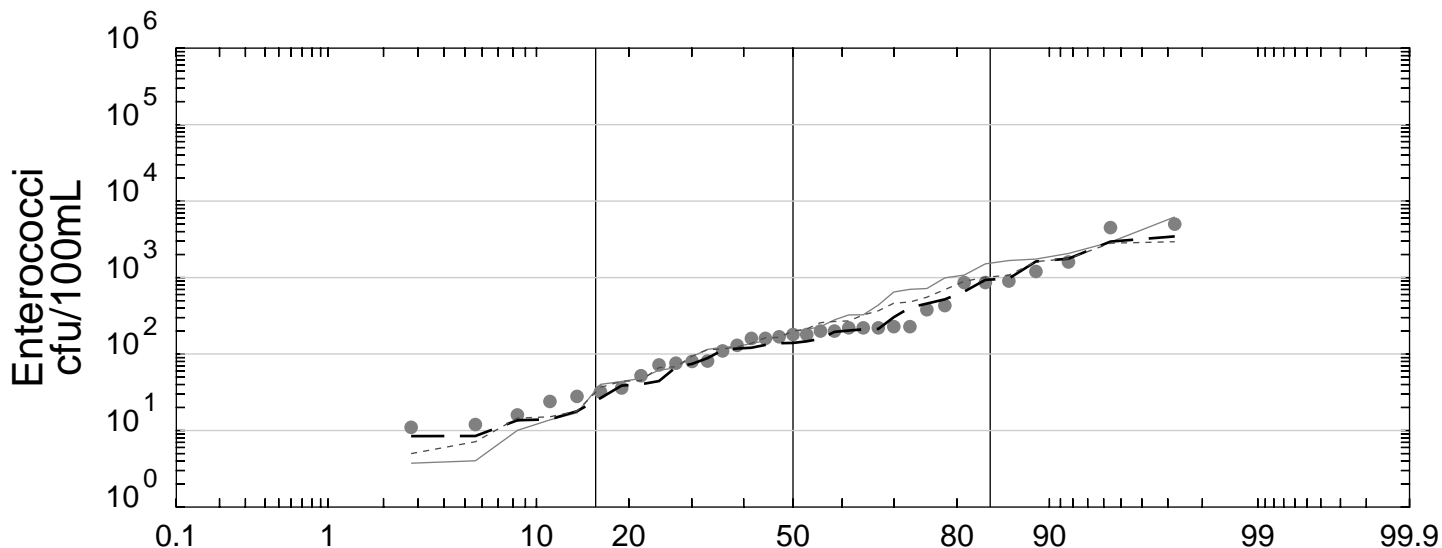
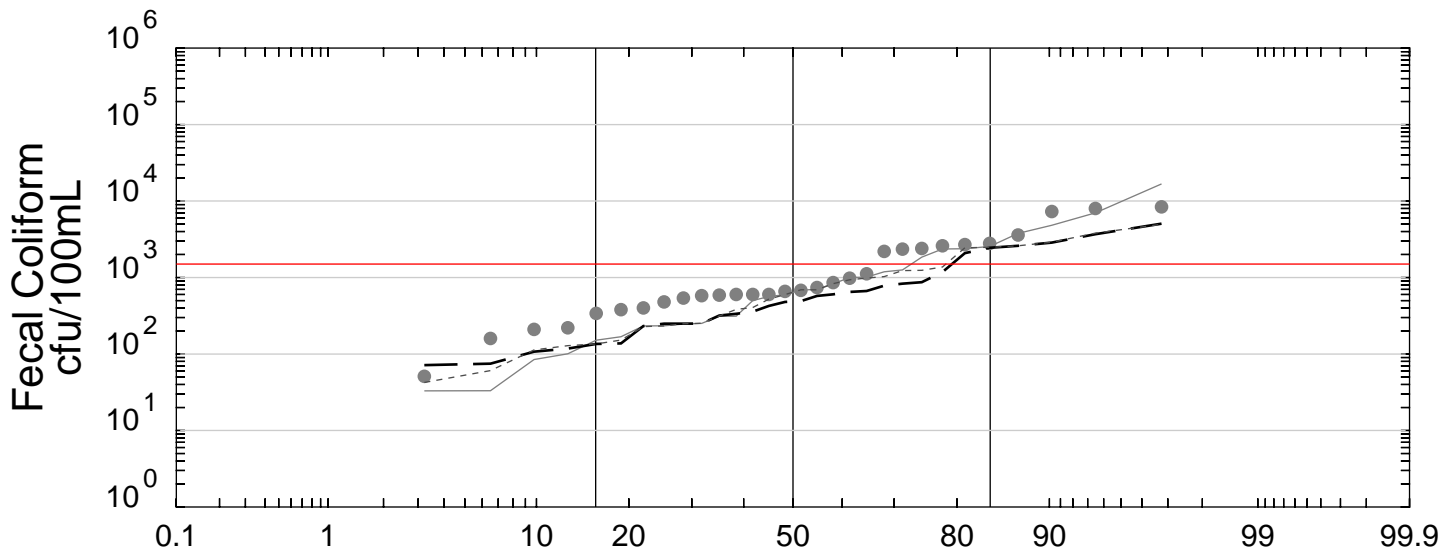


Model Results during data sampling hours only

PASSAIC RIVER

SE3

Station: 10



Probability

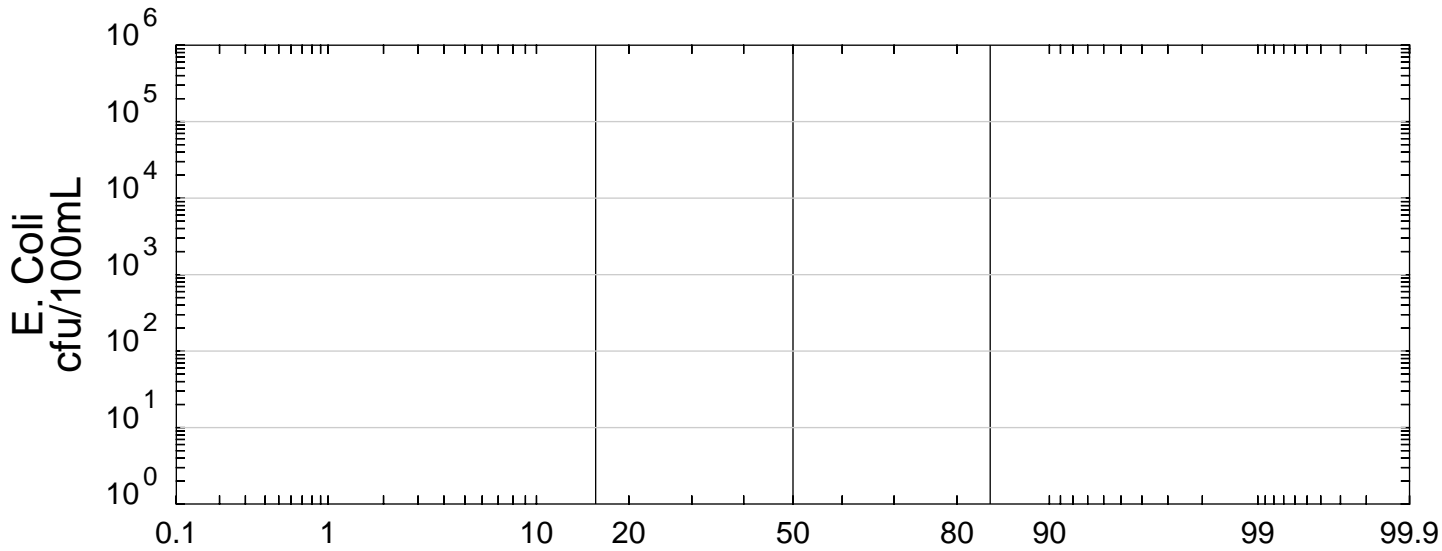
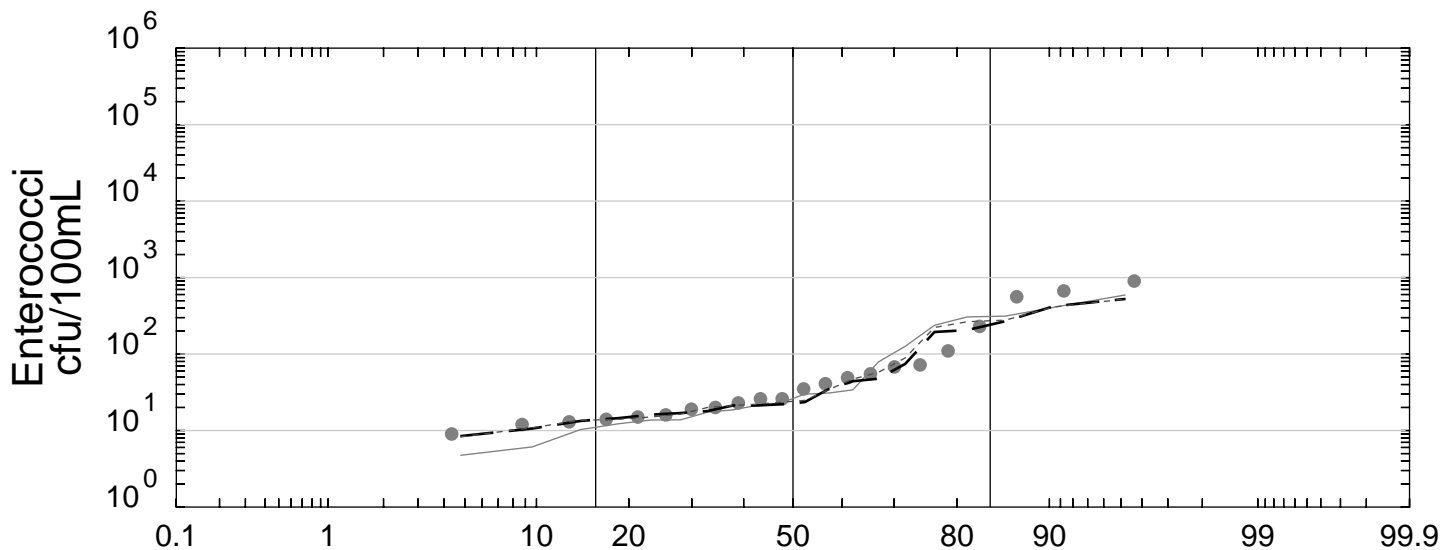
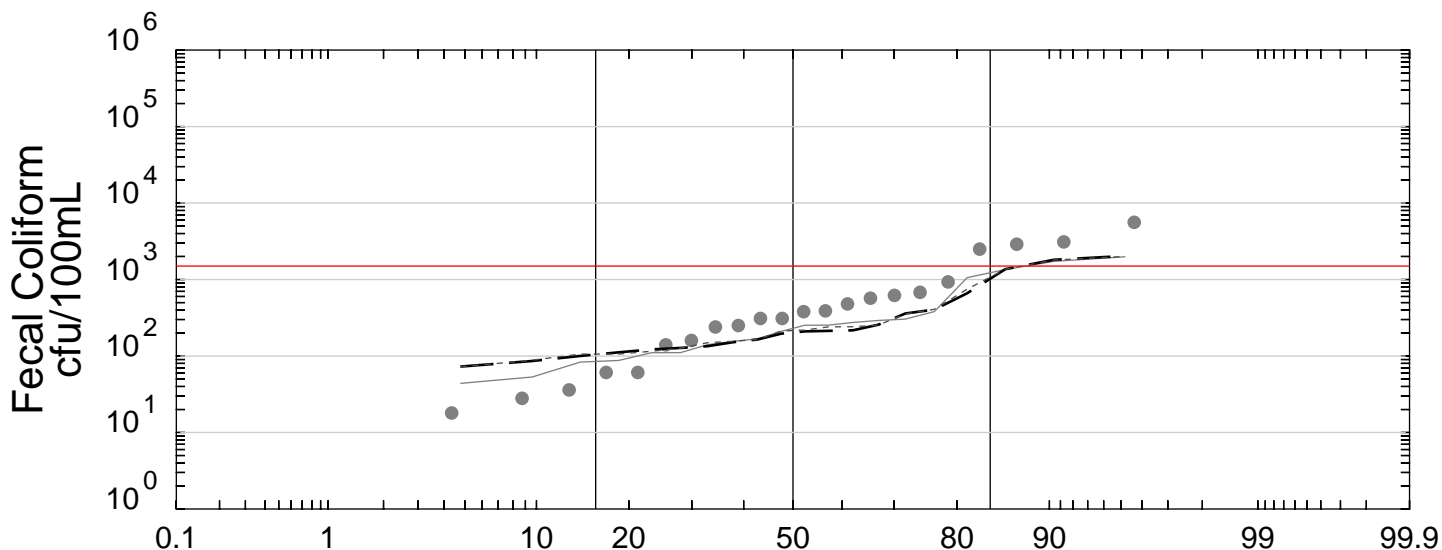
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

SE3

Station: 11



Probability

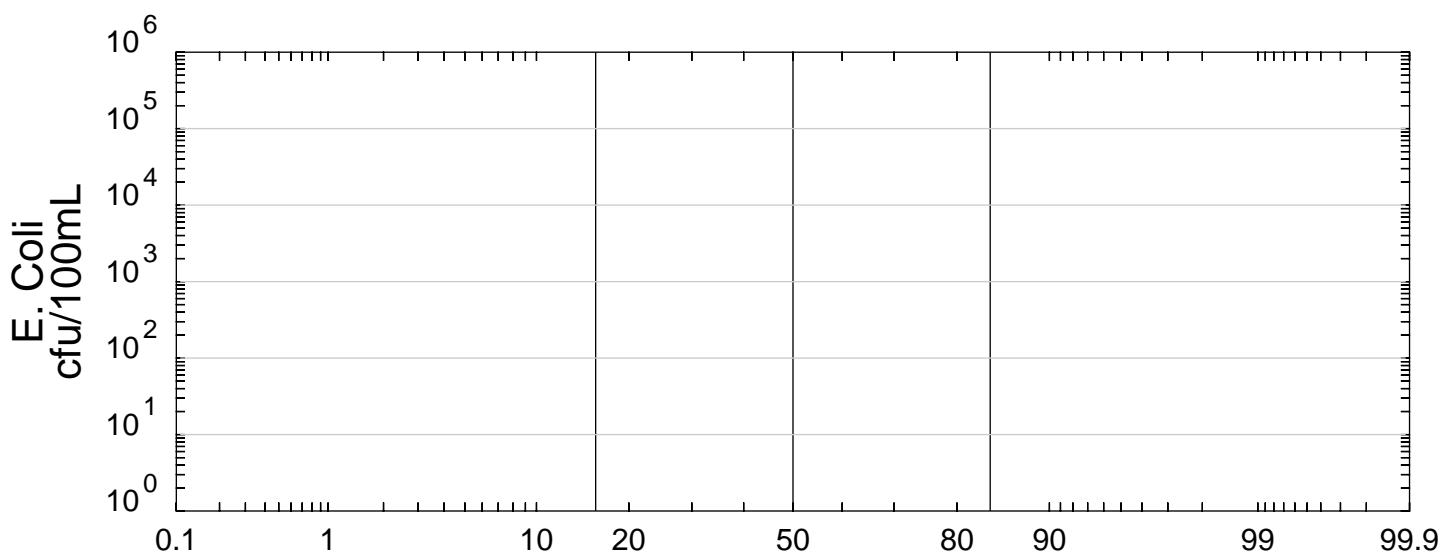
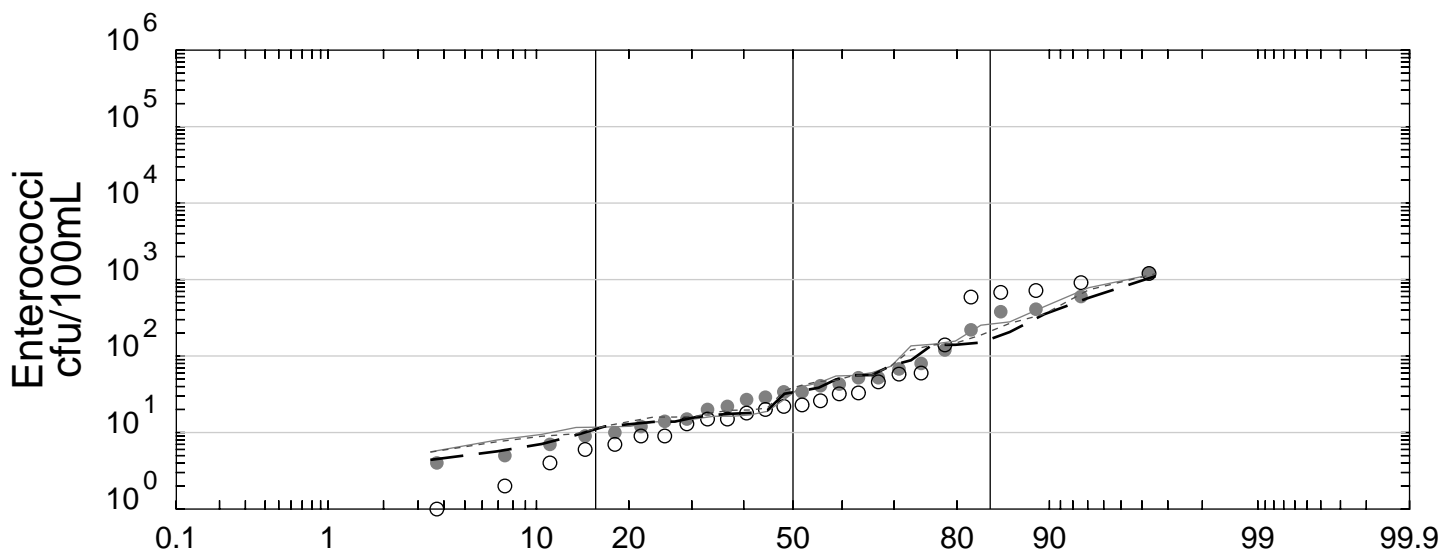
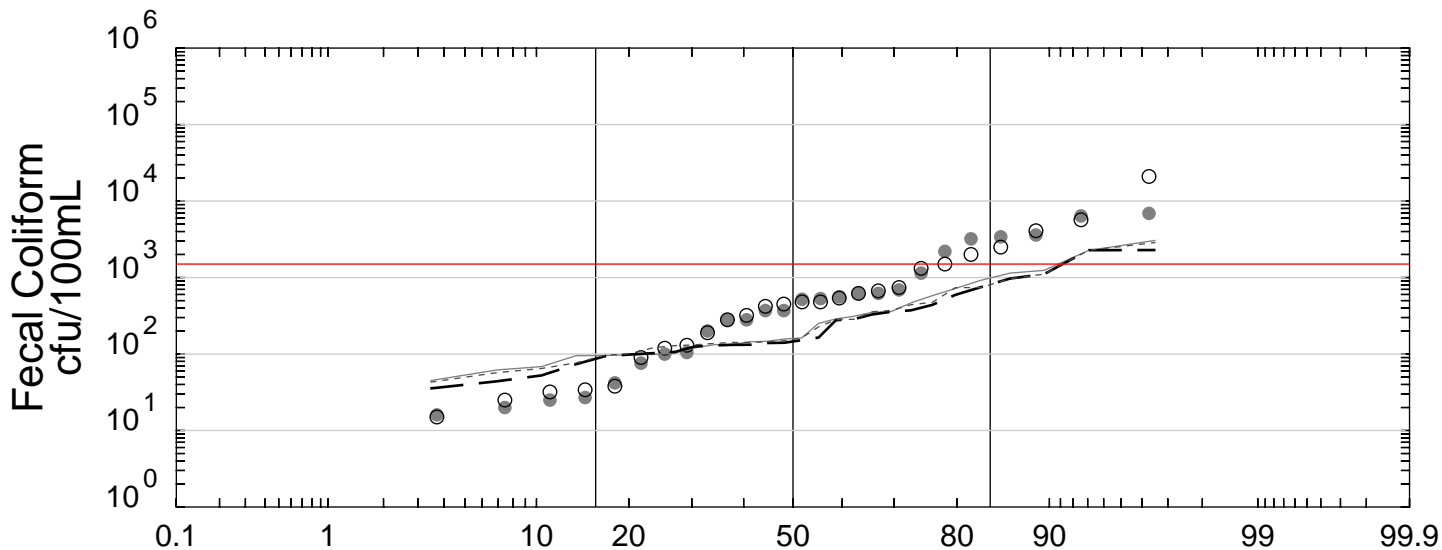
- Model at Surface
- Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

SE3

Station: B6



Probability

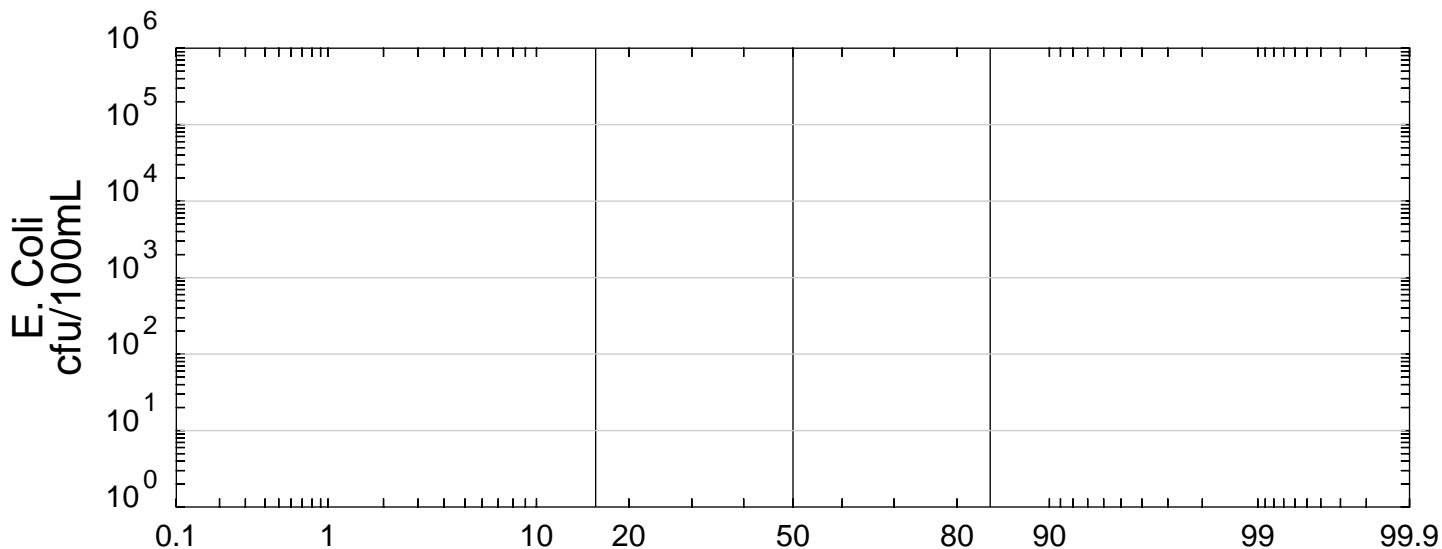
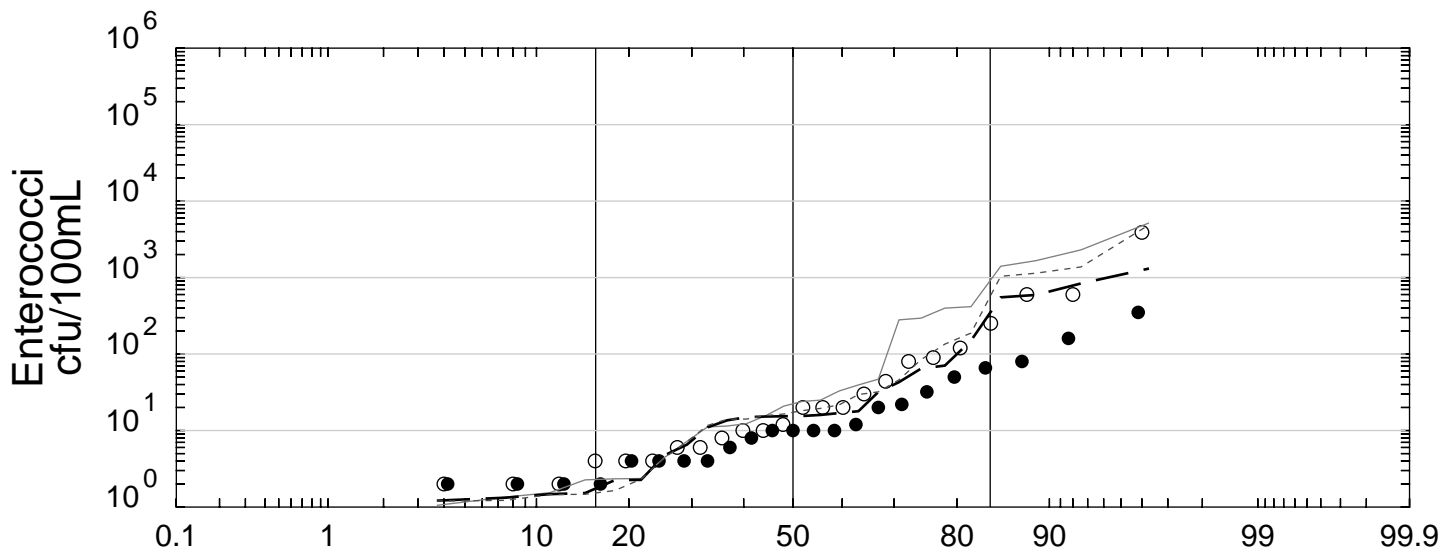
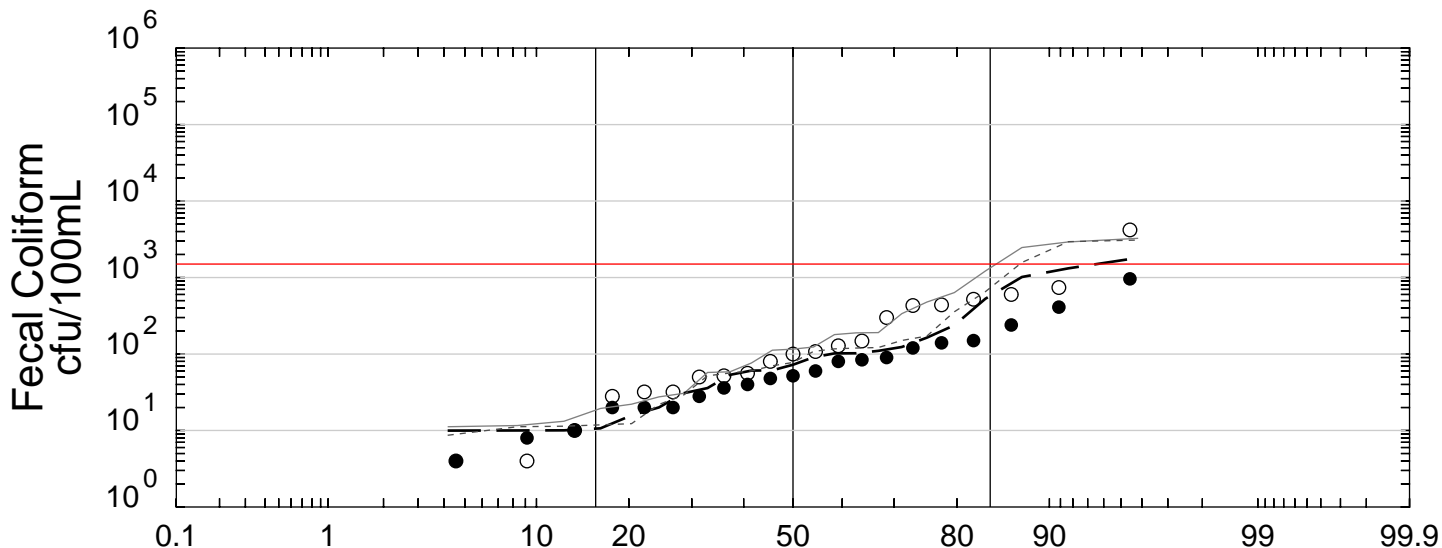
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

PASSAIC RIVER

SE3

Station: 12



Probability

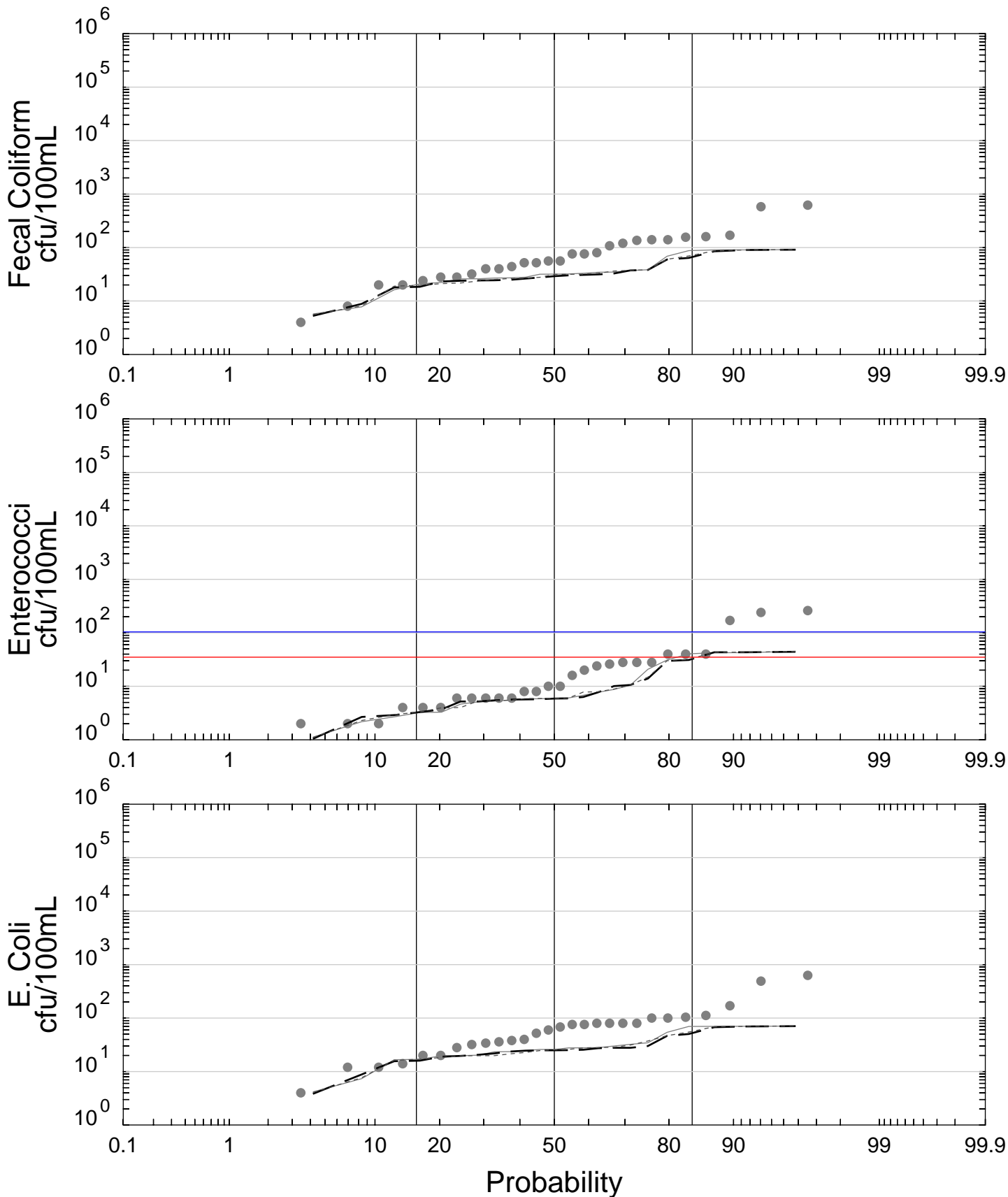
- Model at Surface
- Model at Mid-Depth
- Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HACKENSACK RIVER

SE1

Station: 13



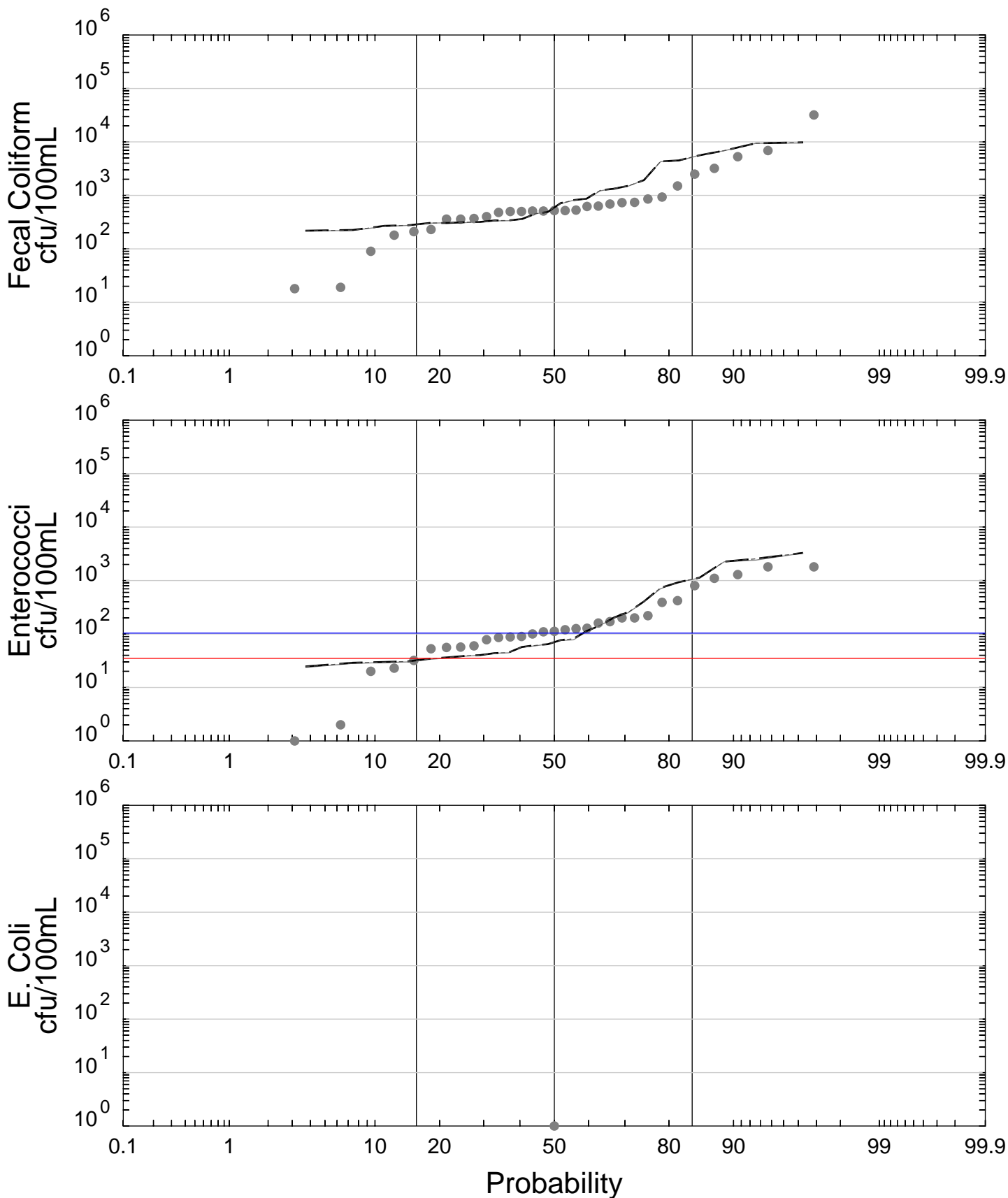
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HACKENSACK RIVER

SE1

Station: B1



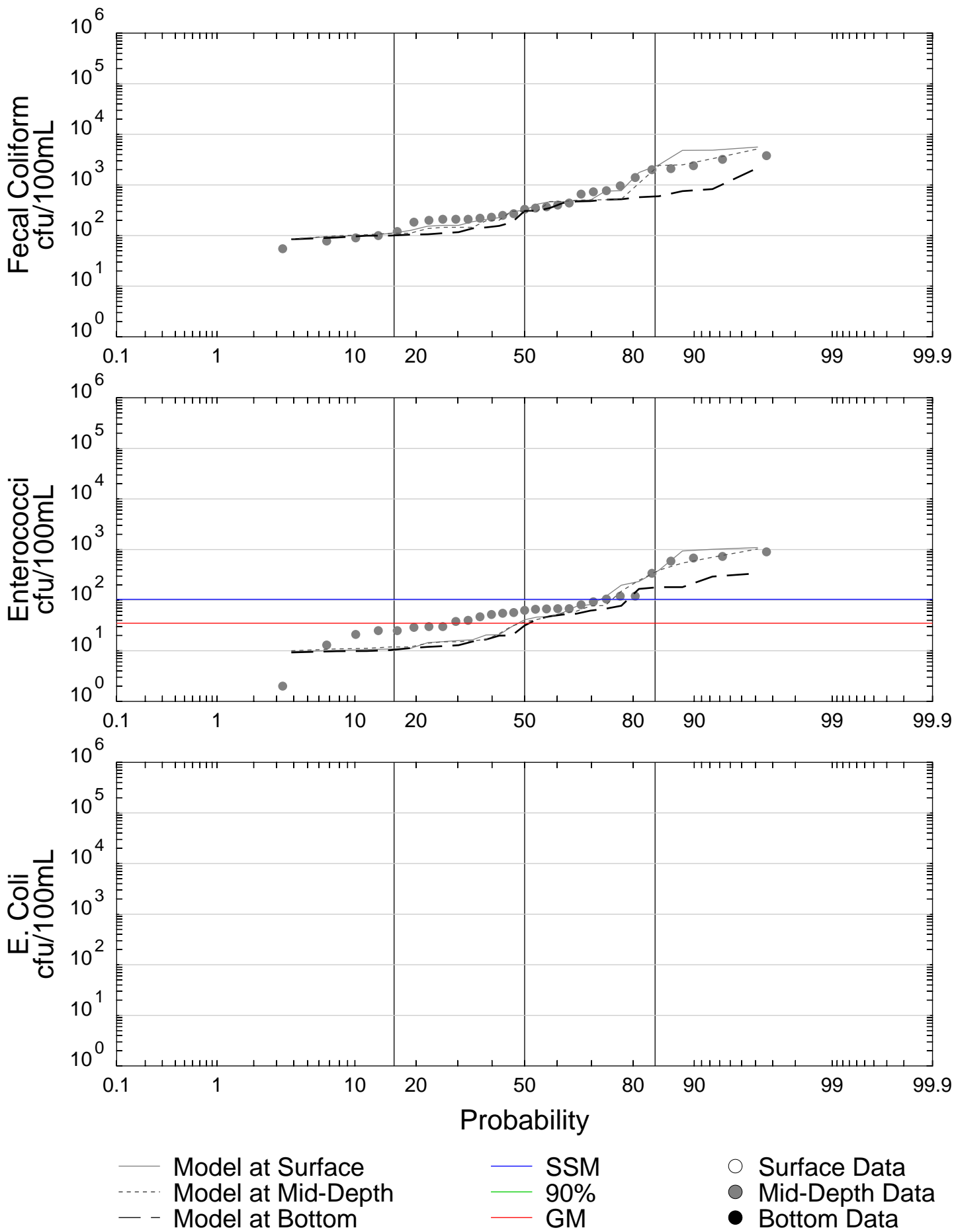
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HACKENSACK RIVER

SE1

Station: B2

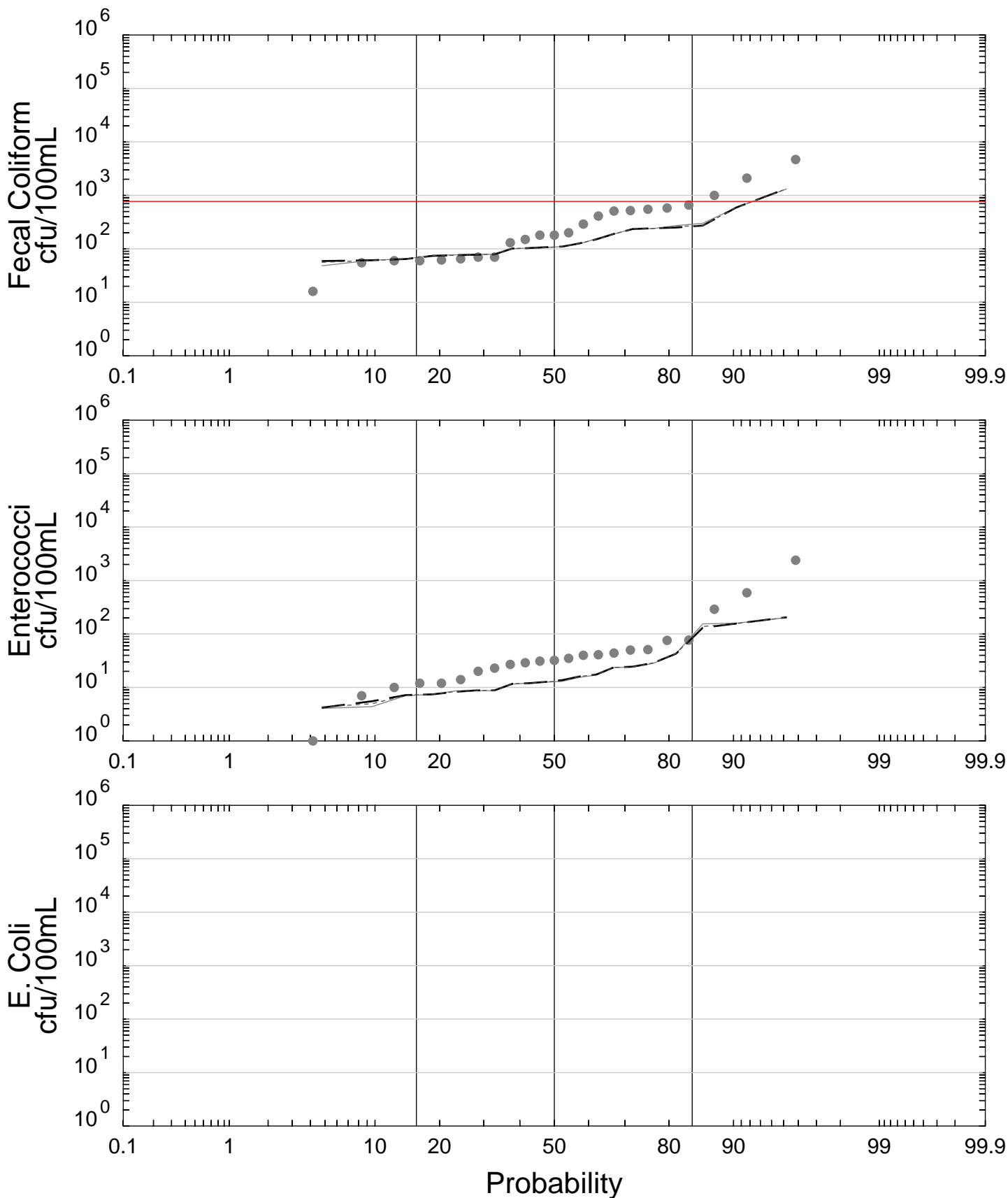


Model Results during data sampling hours only

HACKENSACK RIVER

SE2

Station: B11



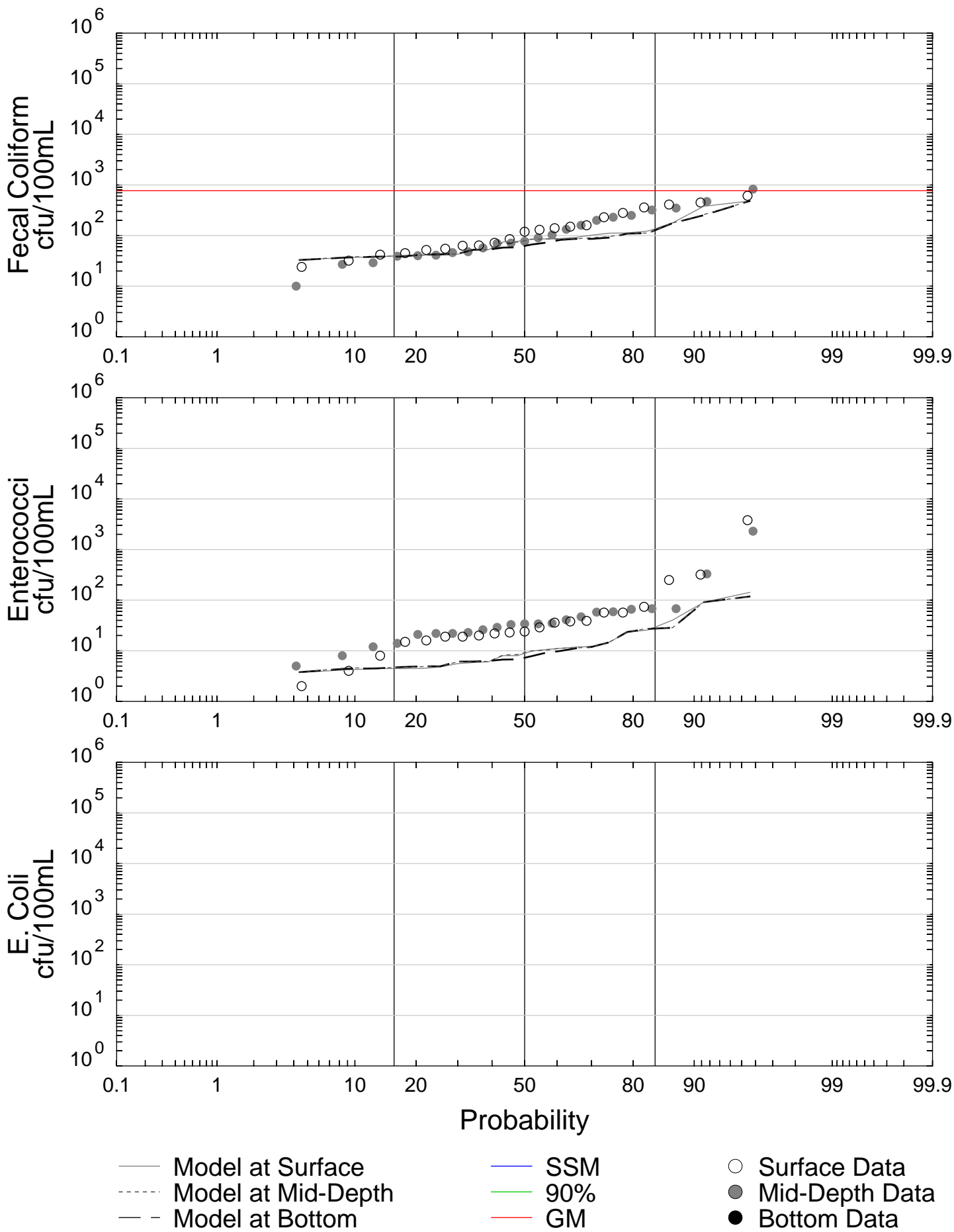
- Model at Surface
- - - Model at Mid-Depth
- ⋯ Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HACKENSACK RIVER

SE2

Station: B3

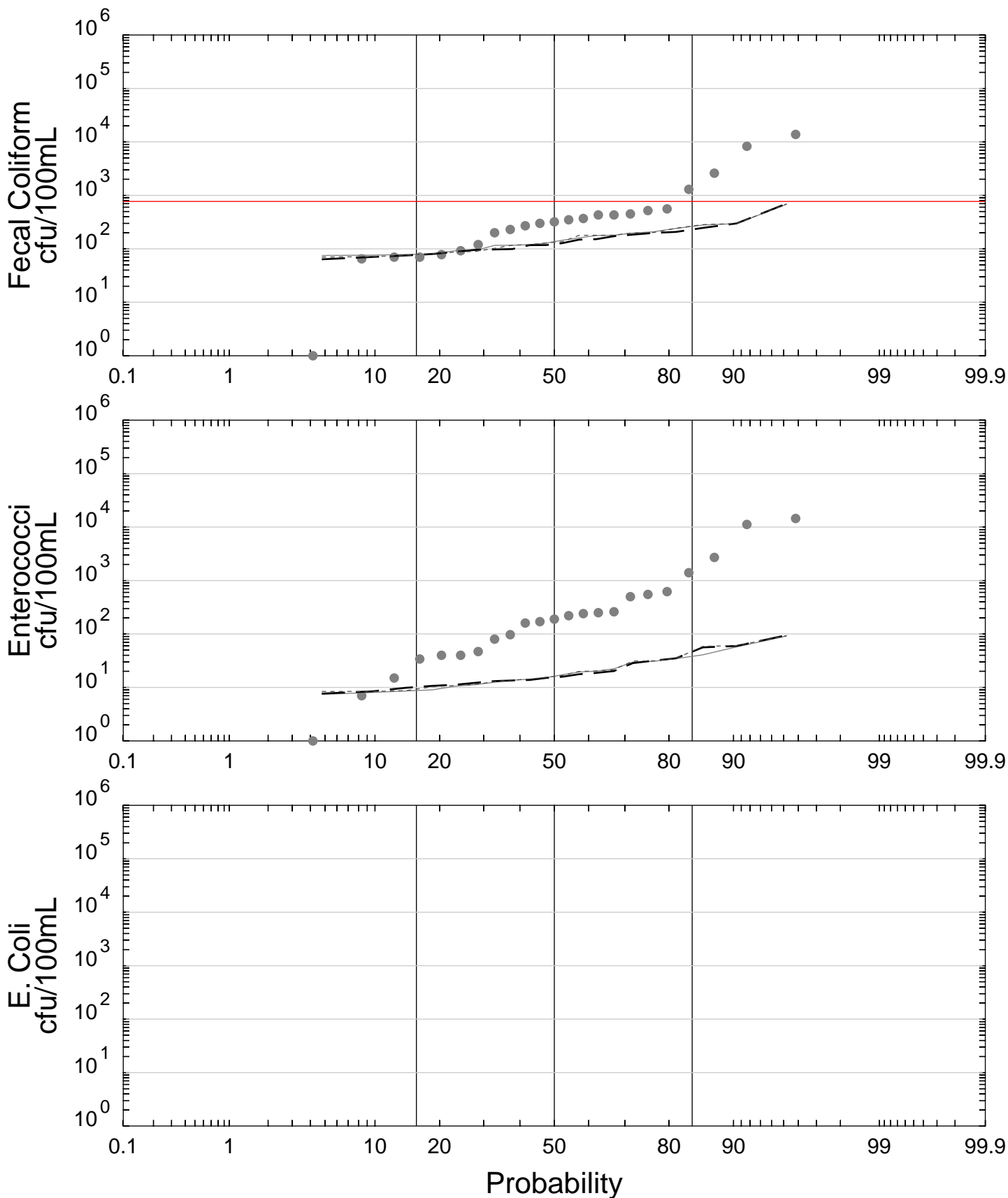


Model Results during data sampling hours only

HACKENSACK RIVER

SE2

Station: B4



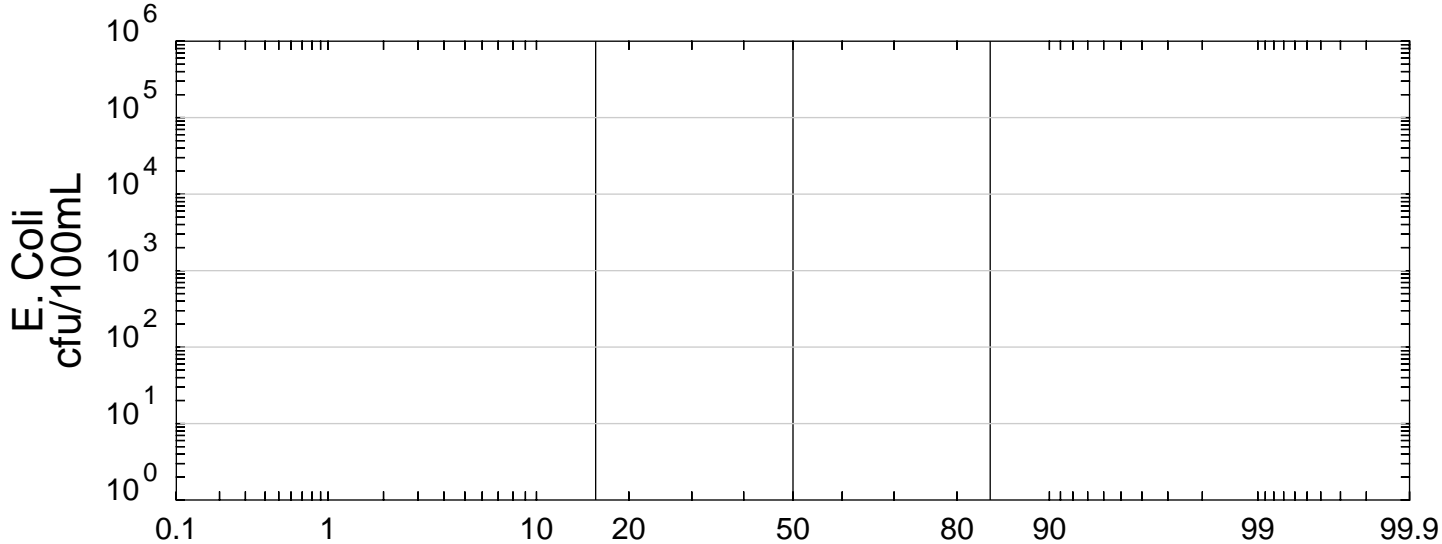
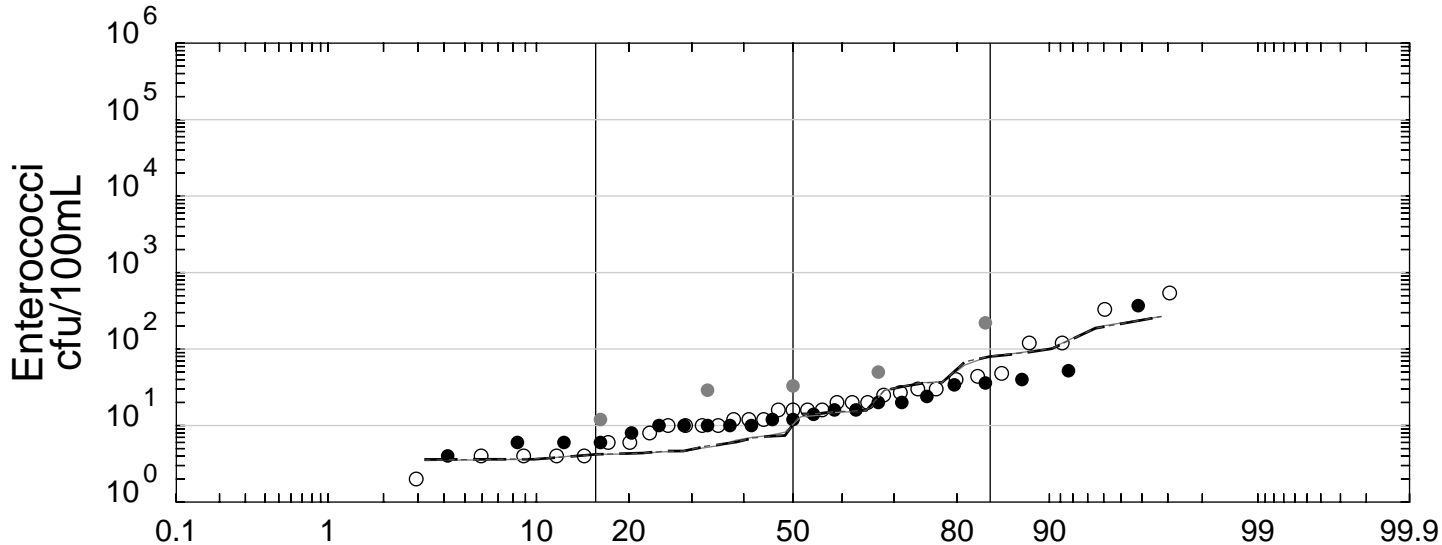
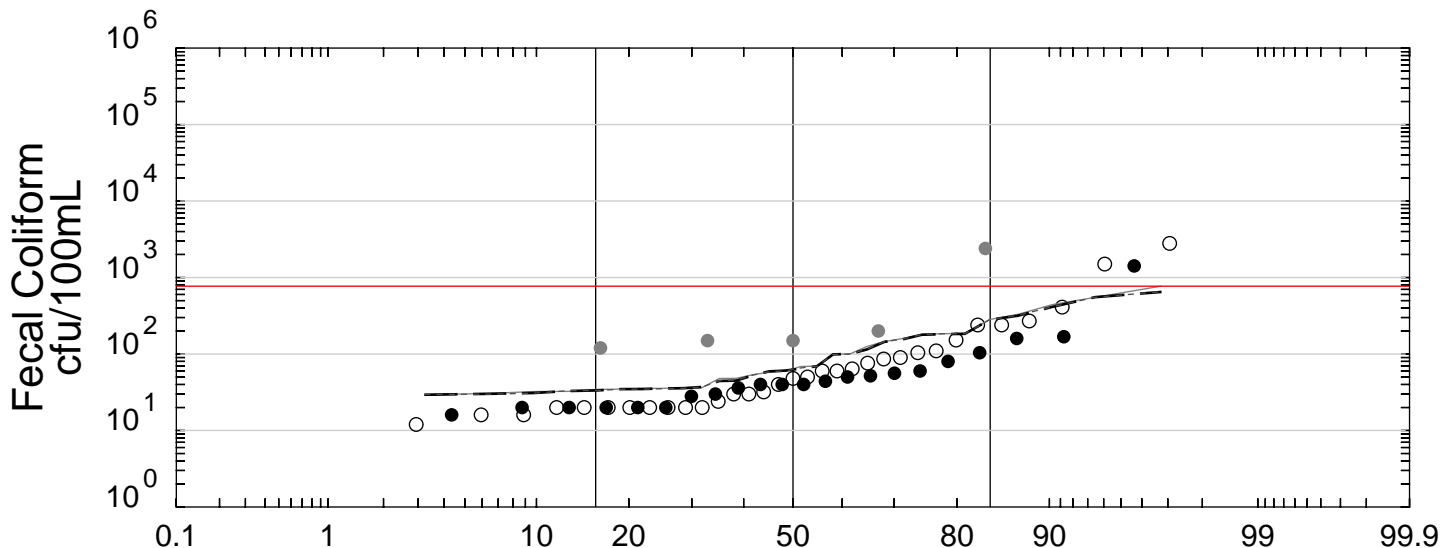
- Model at Surface
- - - Model at Mid-Depth
- ⋯ Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HACKENSACK RIVER

SE2

Station: 14



Probability

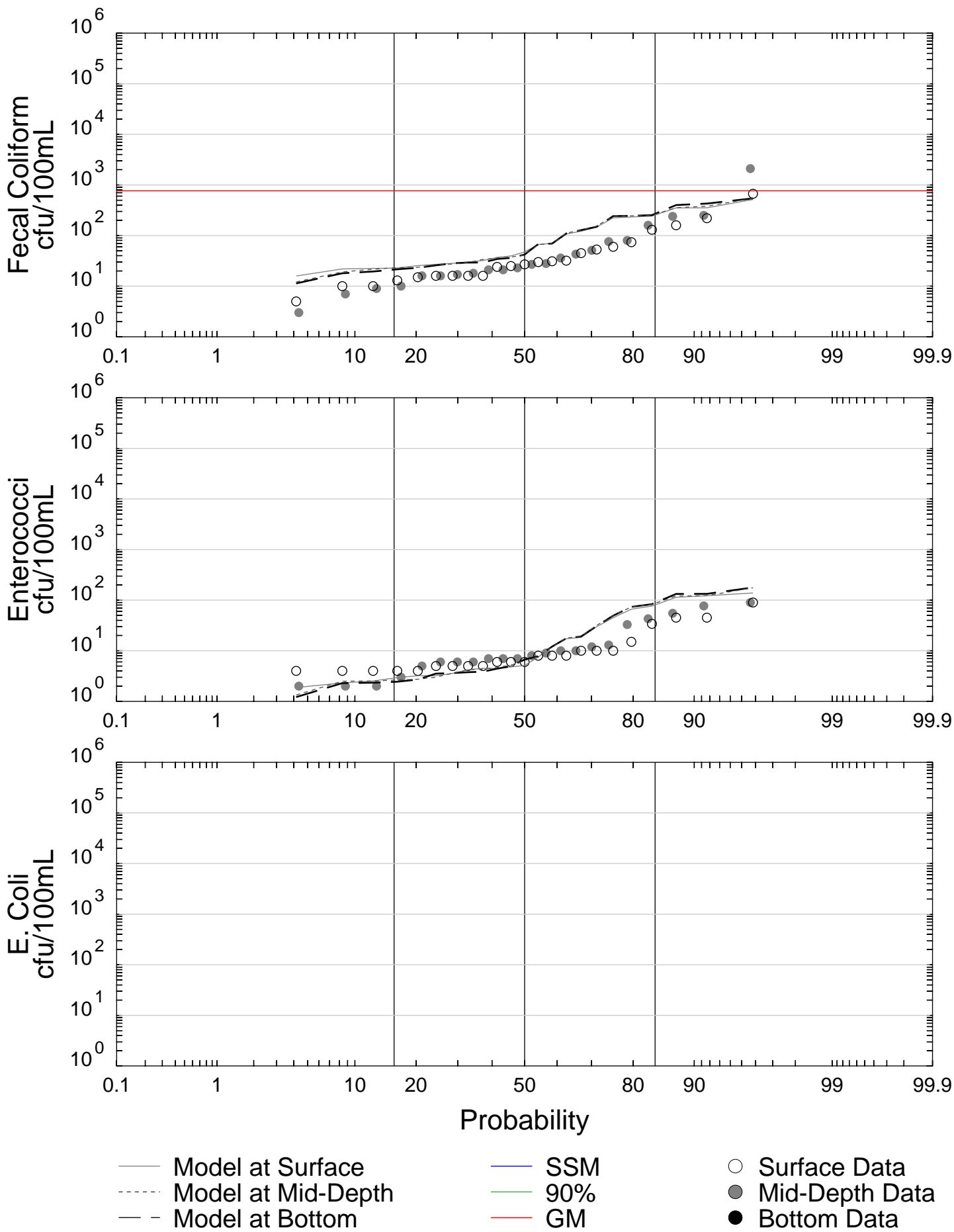
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HACKENSACK RIVER

SE2

Station: B7

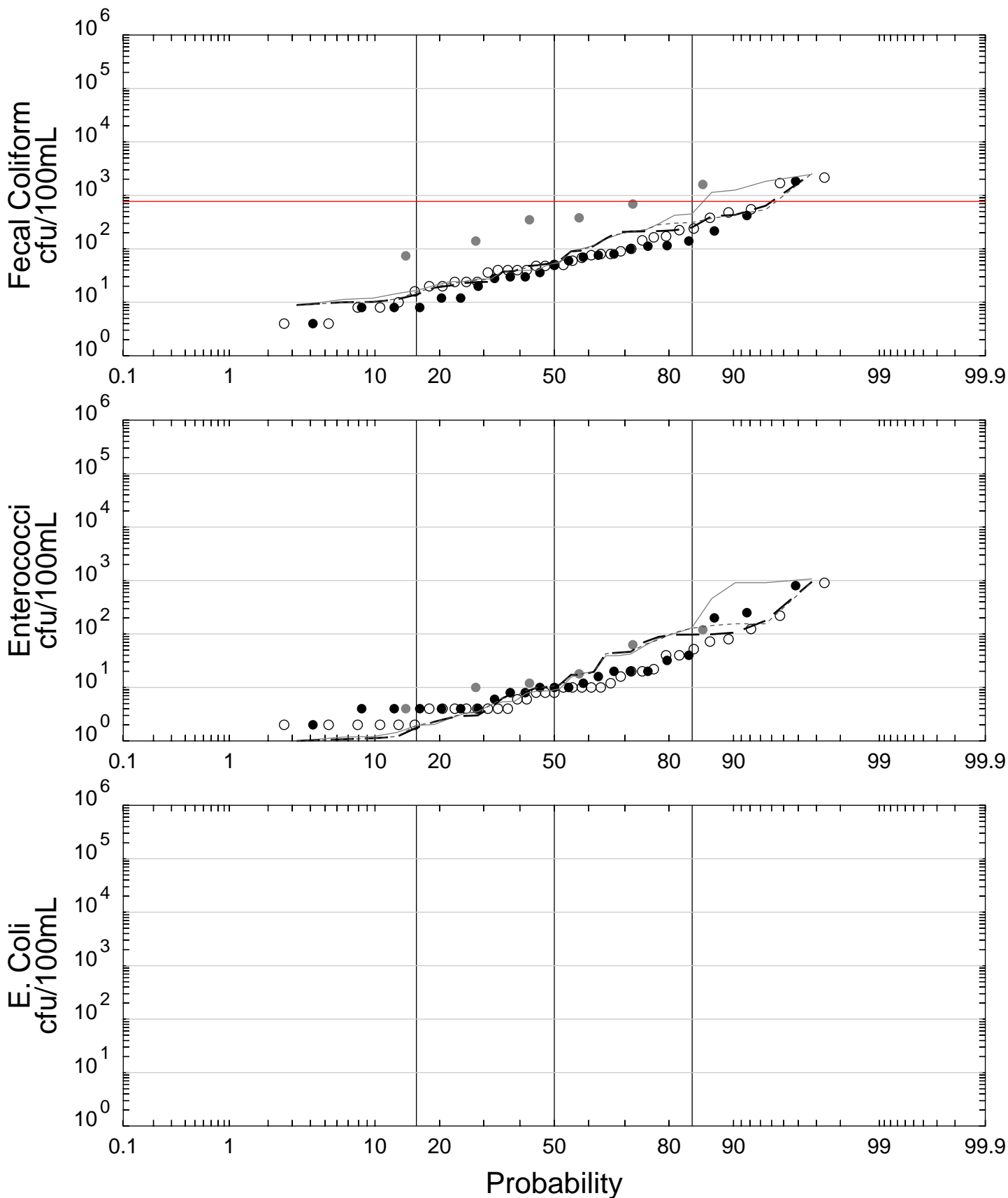


Model Results during data sampling hours only

HACKENSACK RIVER

SE2

Station: 15

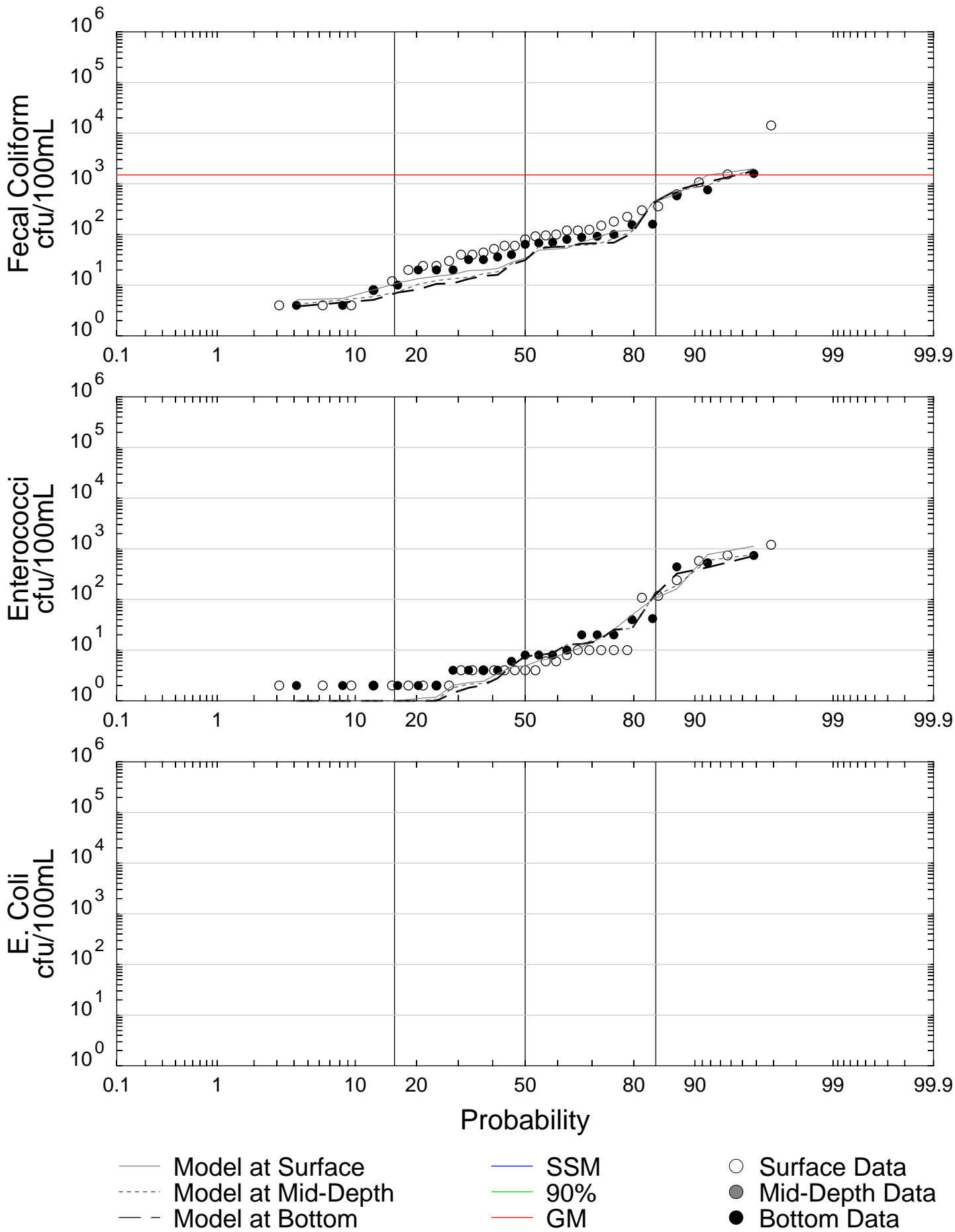


Model Results during data sampling hours only

HACKENSACK RIVER

SE3

Station: 16

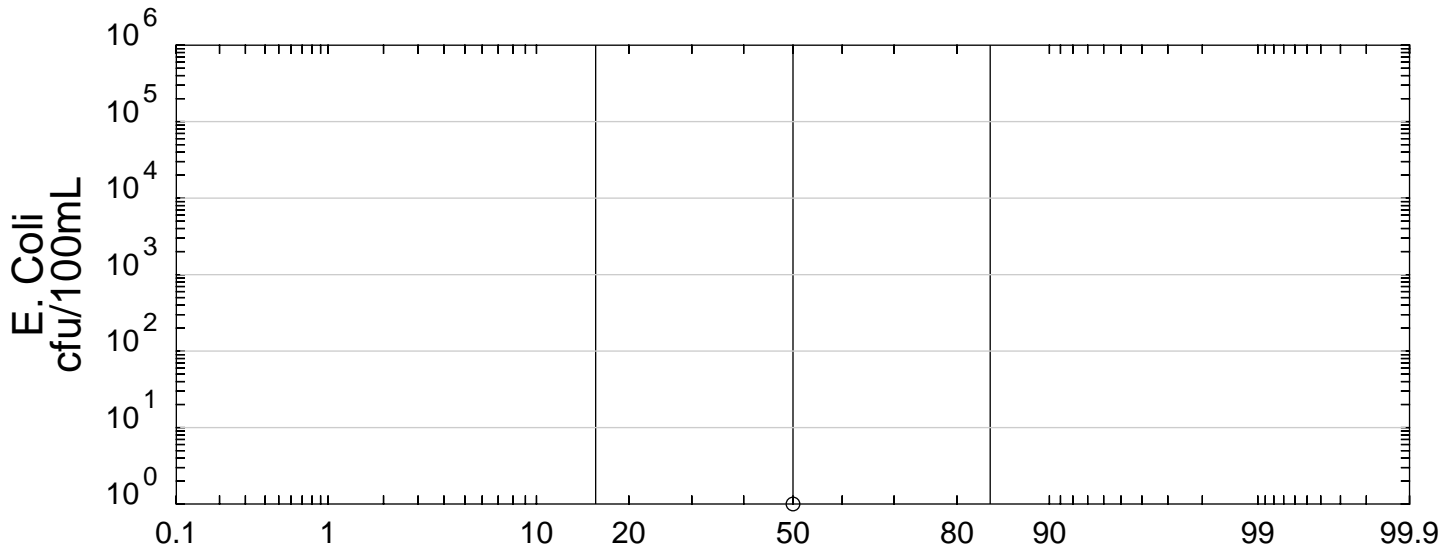
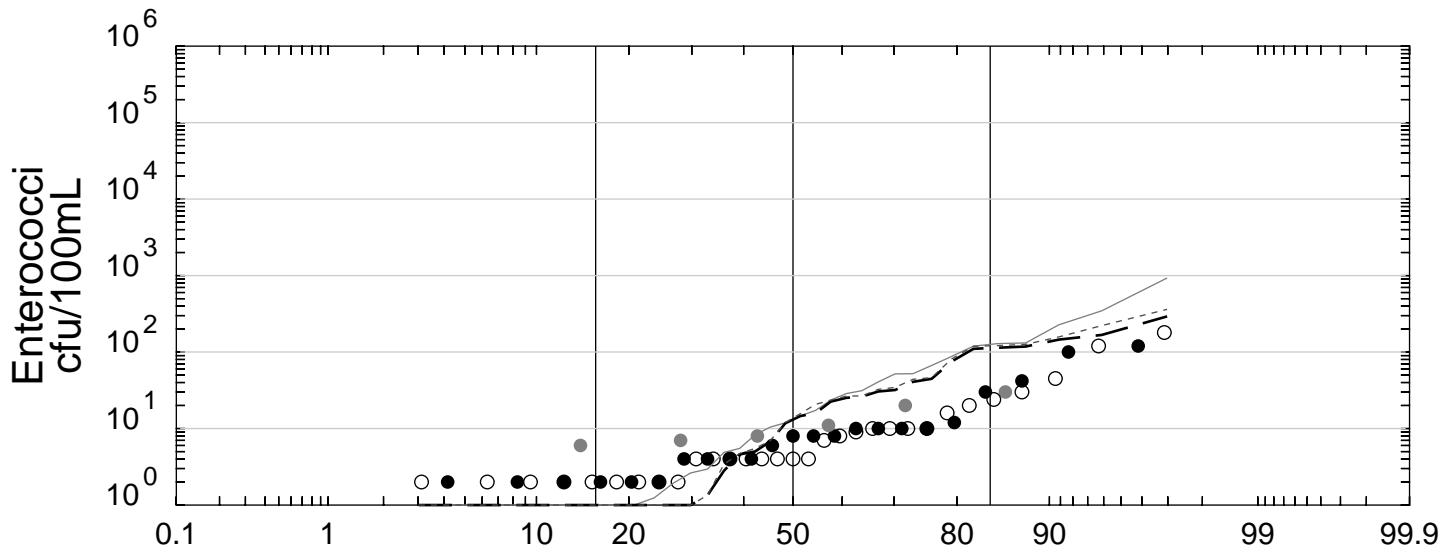
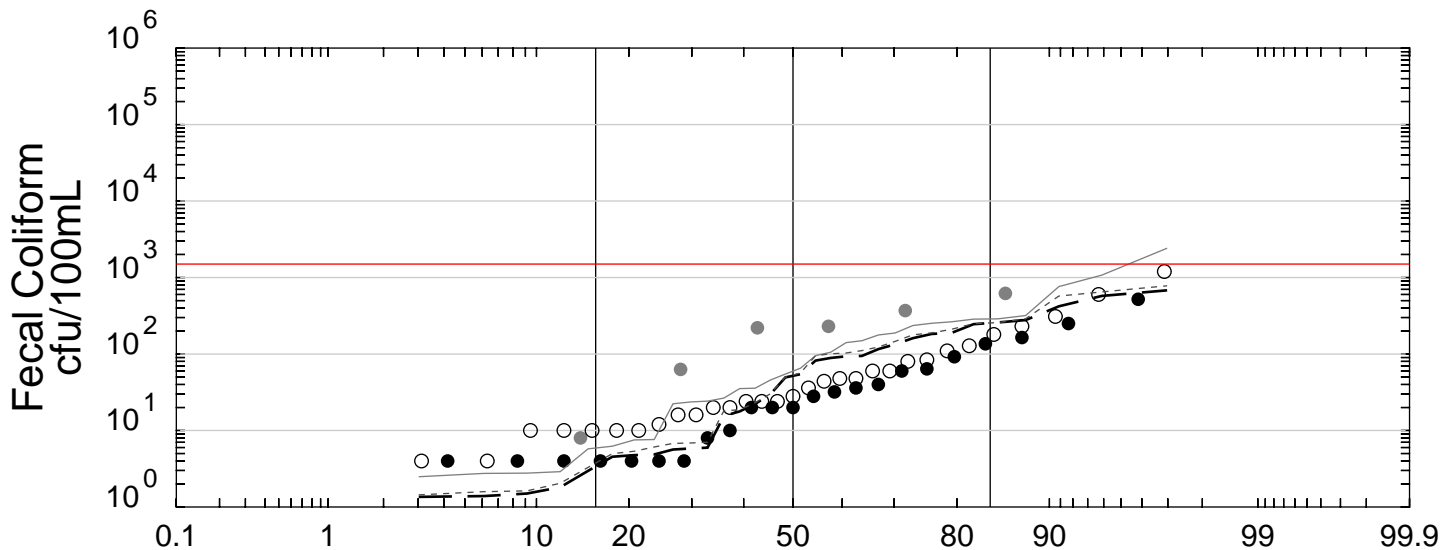


Model Results during data sampling hours only

LOWER PASSAIC RIVER

SE3

Station: 17



Probability

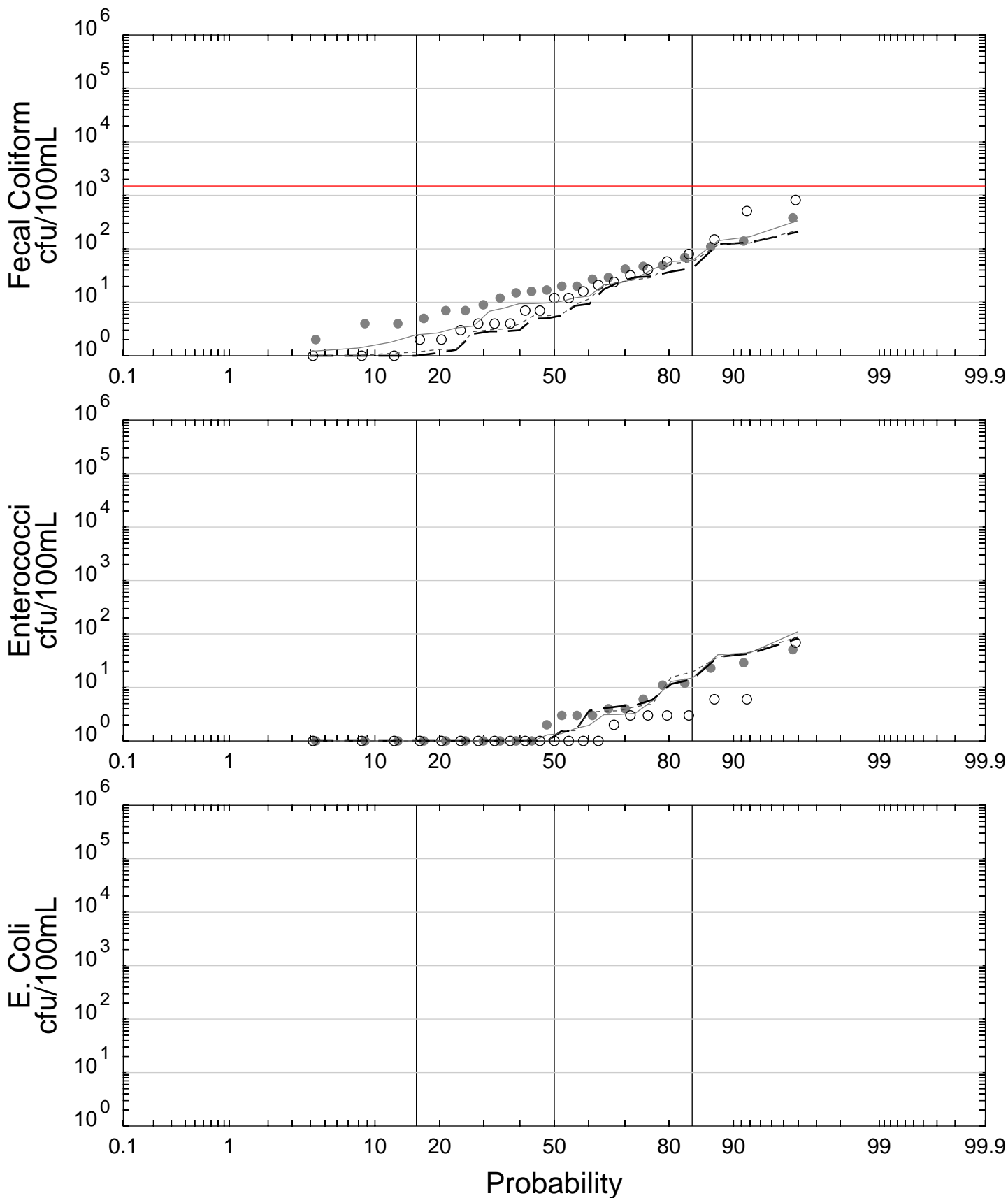
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

LOWER PASSAIC RIVER

SE3

Station: B10

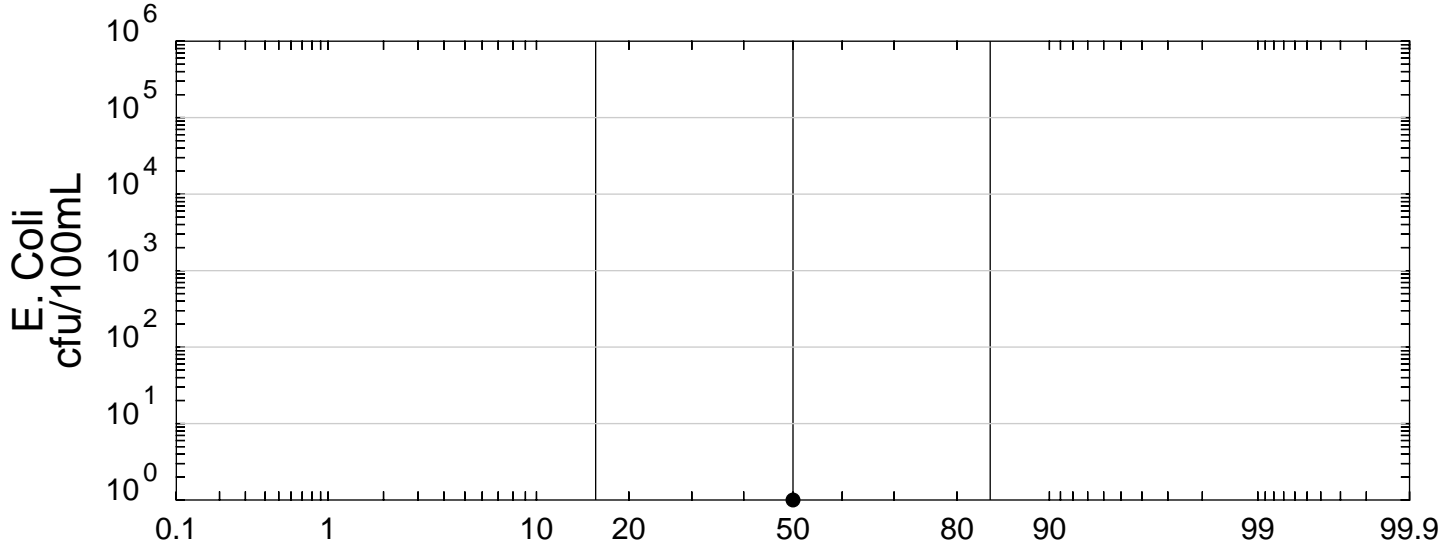
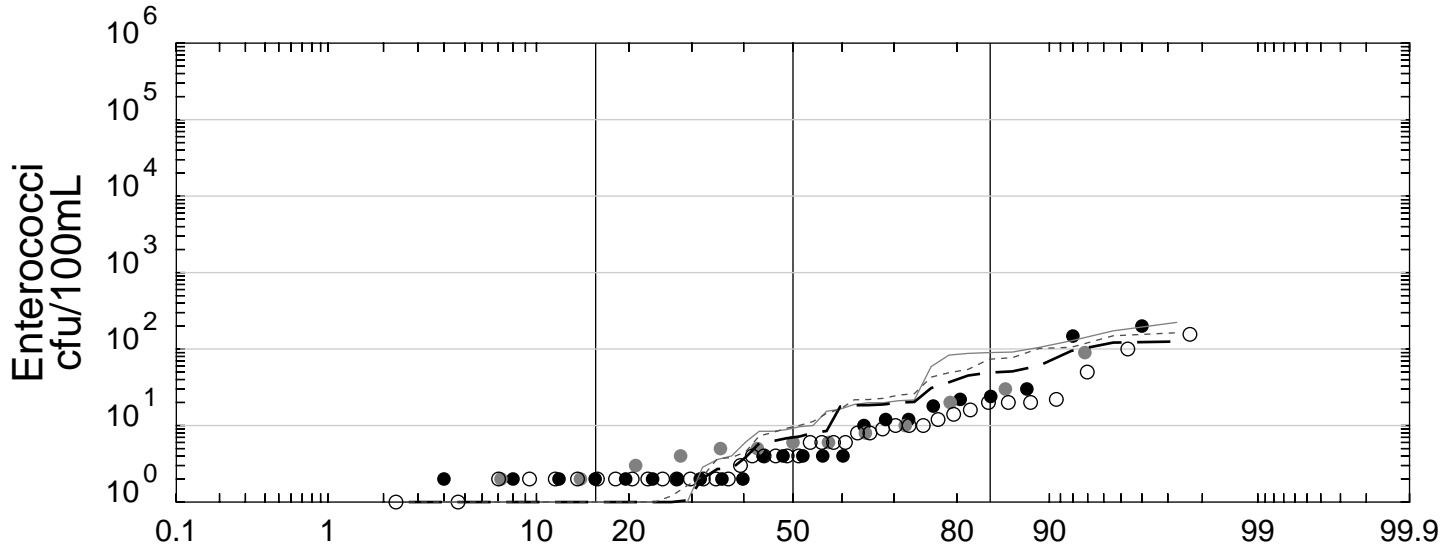
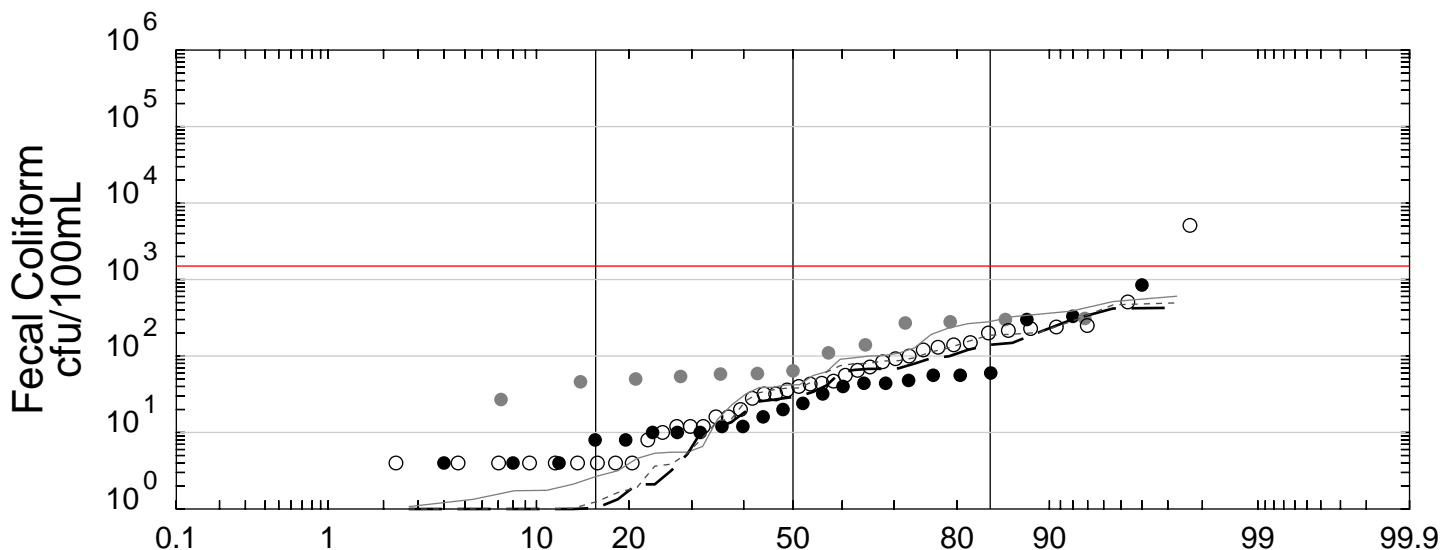


Model Results during data sampling hours only

LOWER PASSAIC RIVER

SE3

Station: 18



Probability

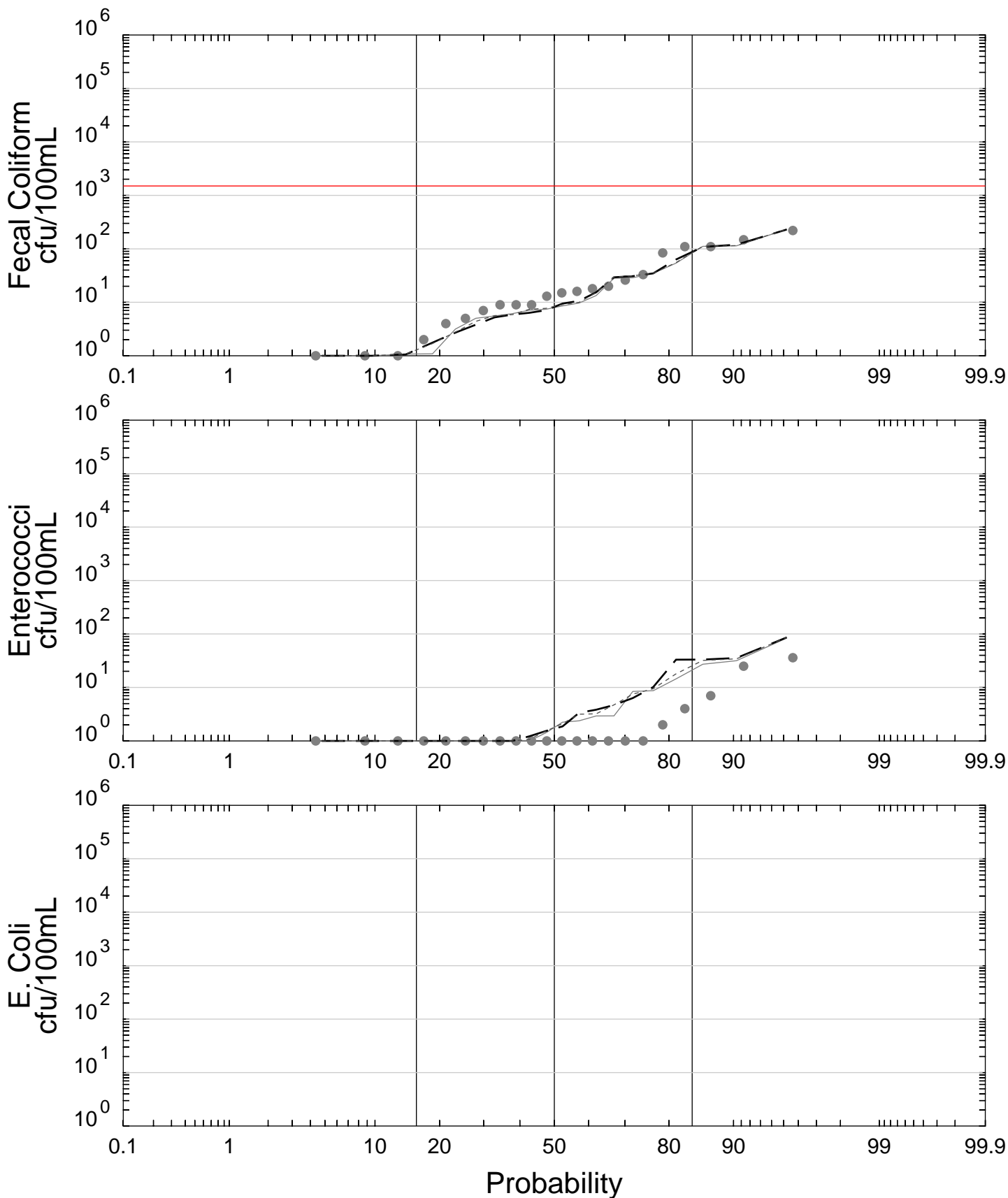
- Model at Surface
- - - Model at Mid-Depth
- · · Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

LOWER PASSAIC RIVER

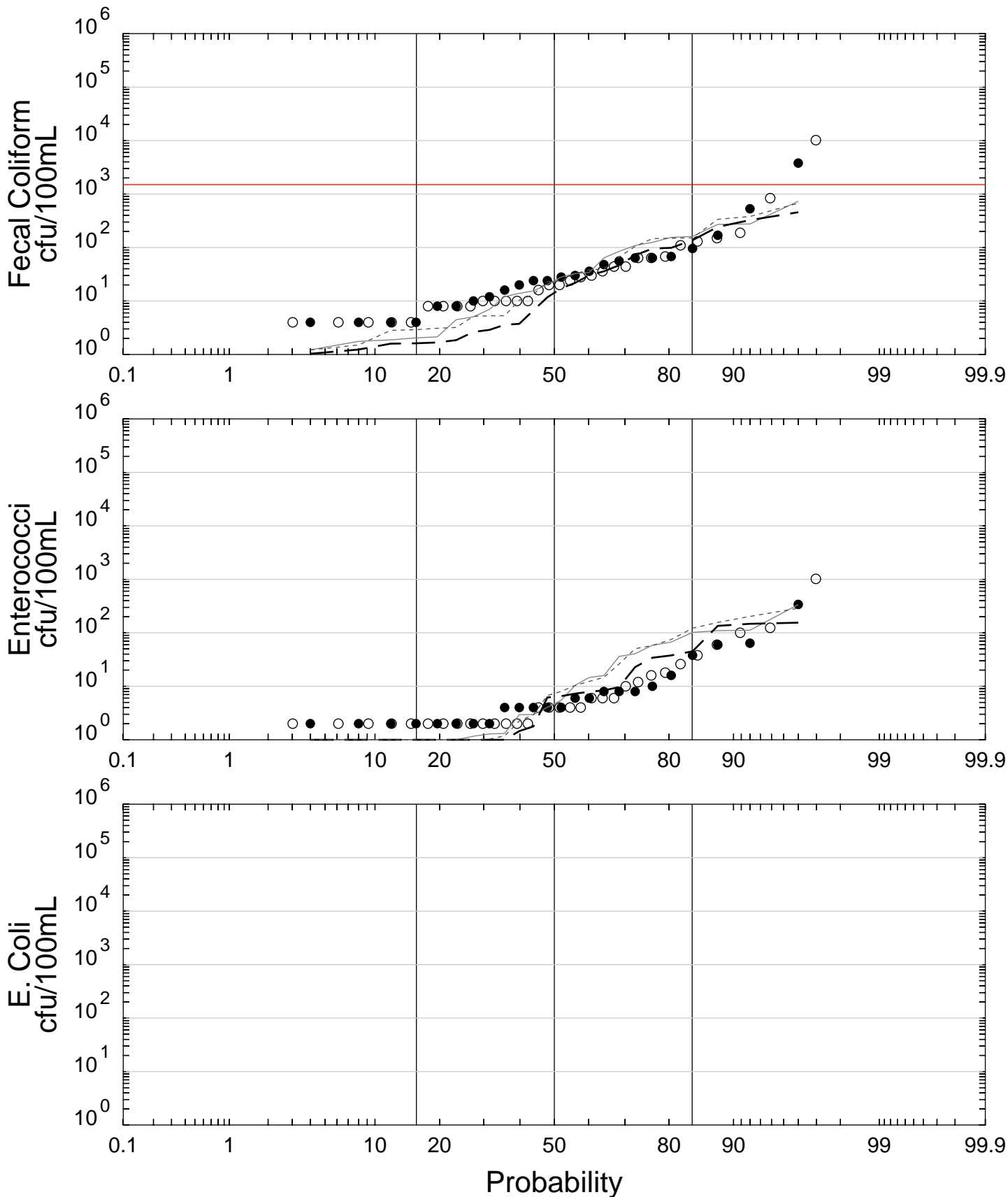
SE3

Station: B17



Model Results during data sampling hours only

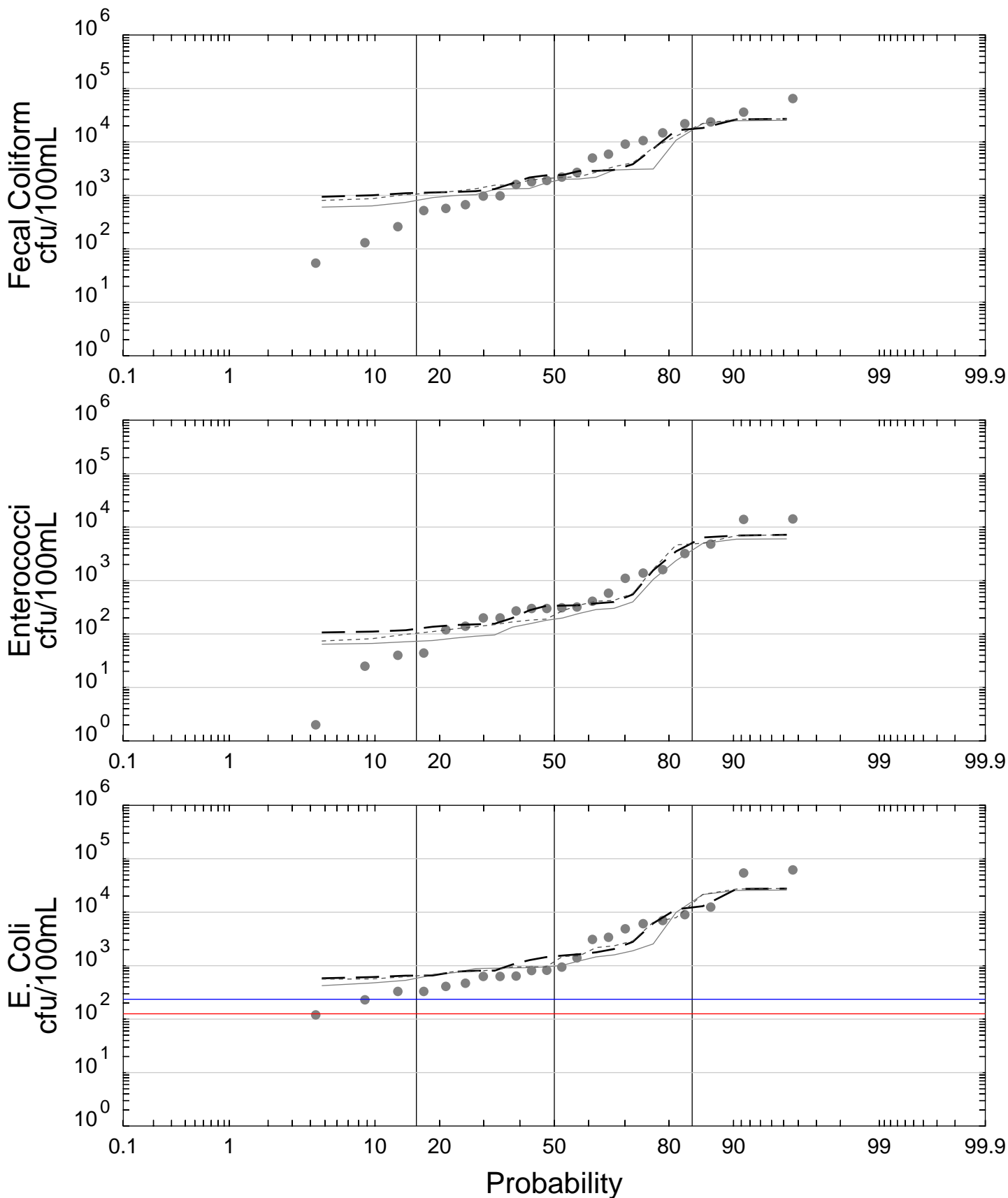
Station: 19



- Model at Surface
- - - Model at Mid-Depth
- . - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

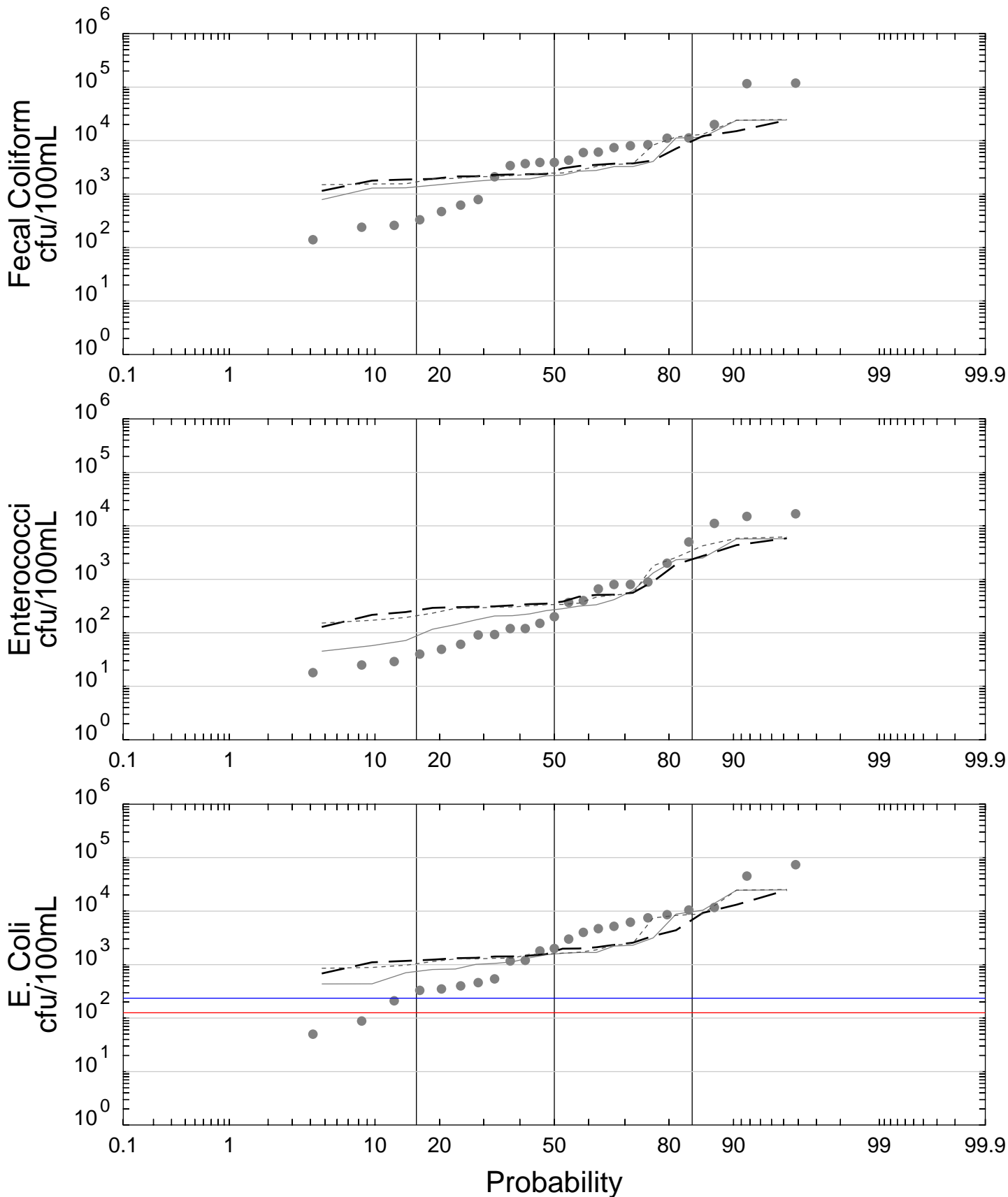
Station: B16



- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

Station: B14



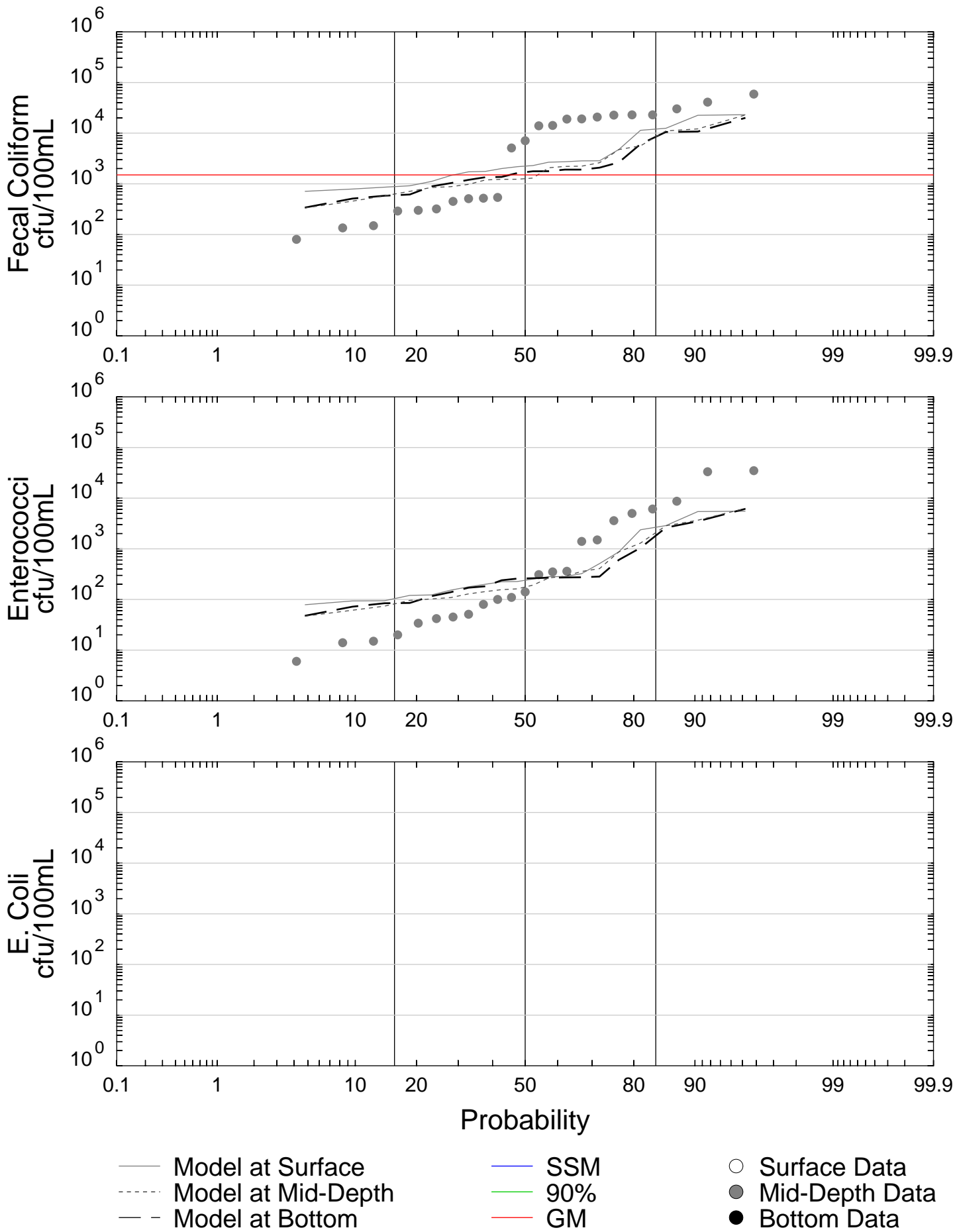
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

ELIZABETH RIVER

SE3

Station: B13

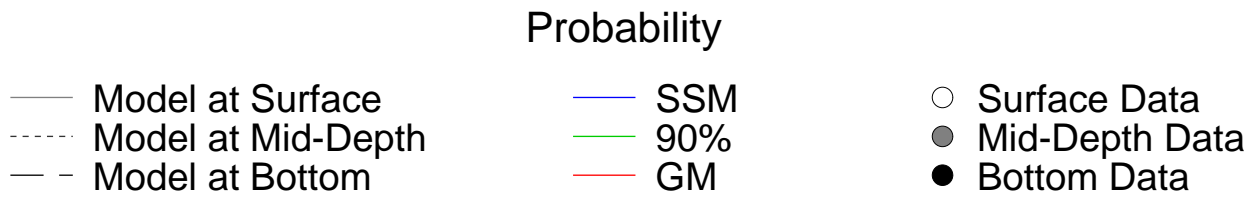
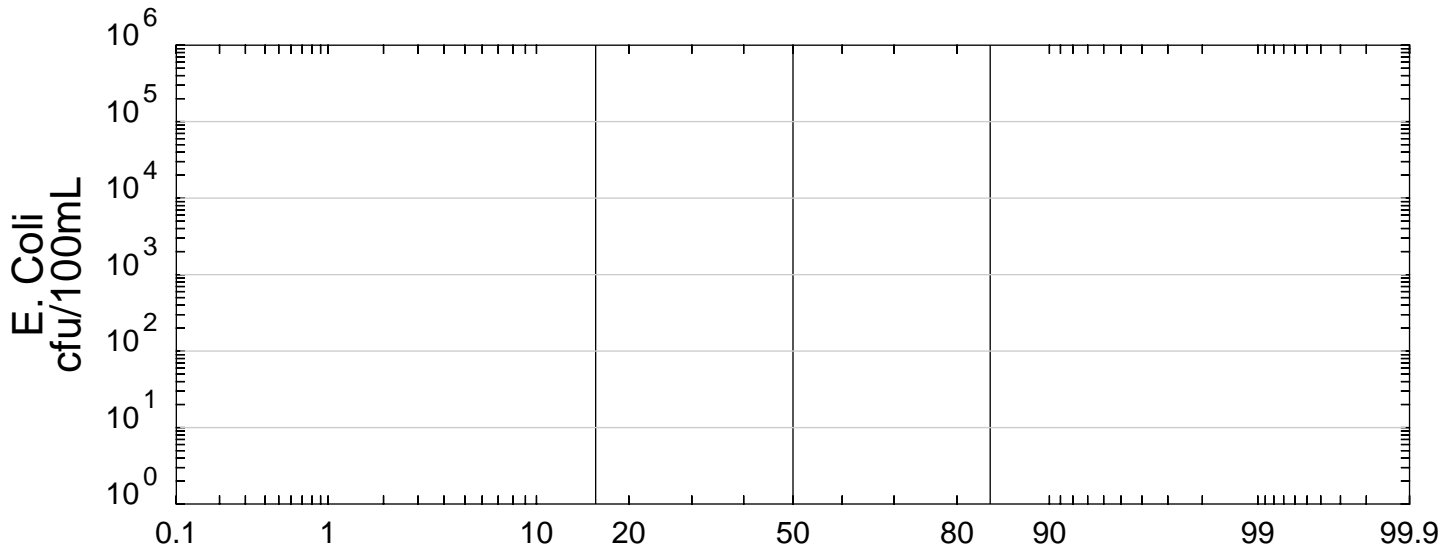
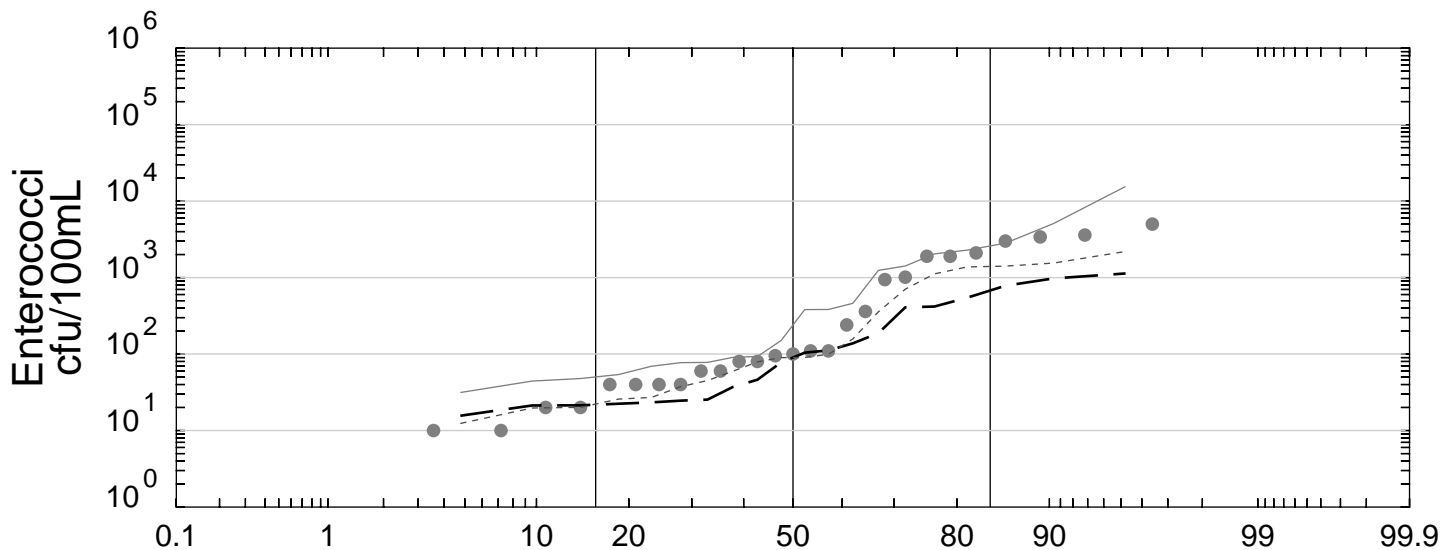
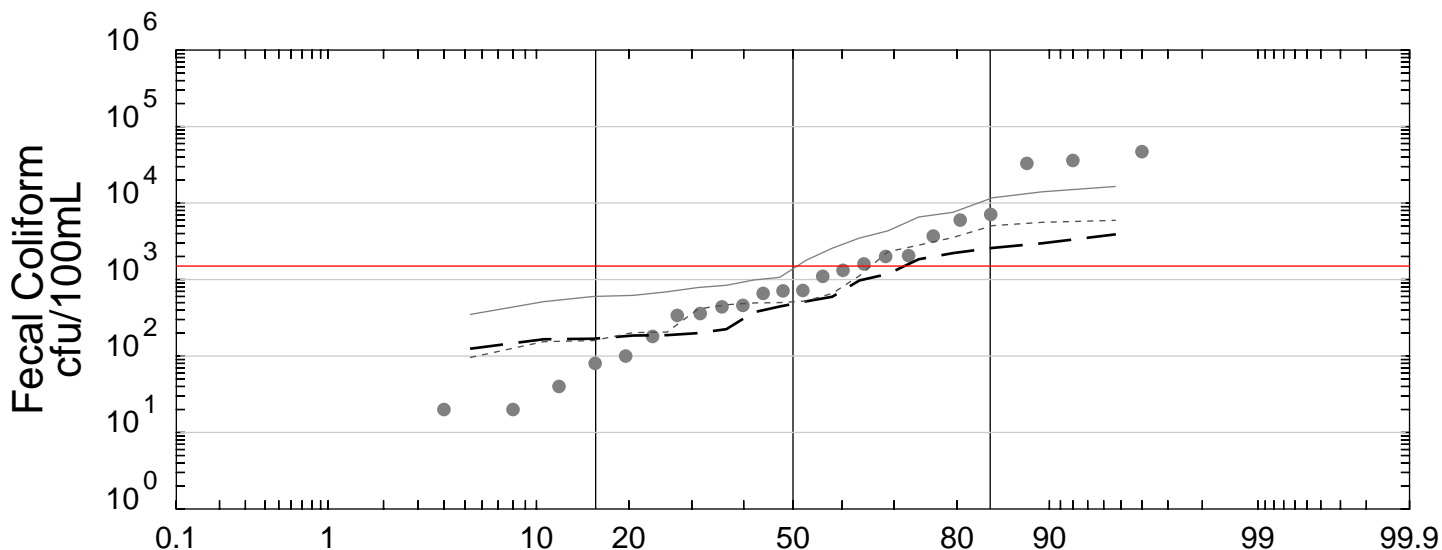


Model Results during data sampling hours only

ELIZABETH RIVER

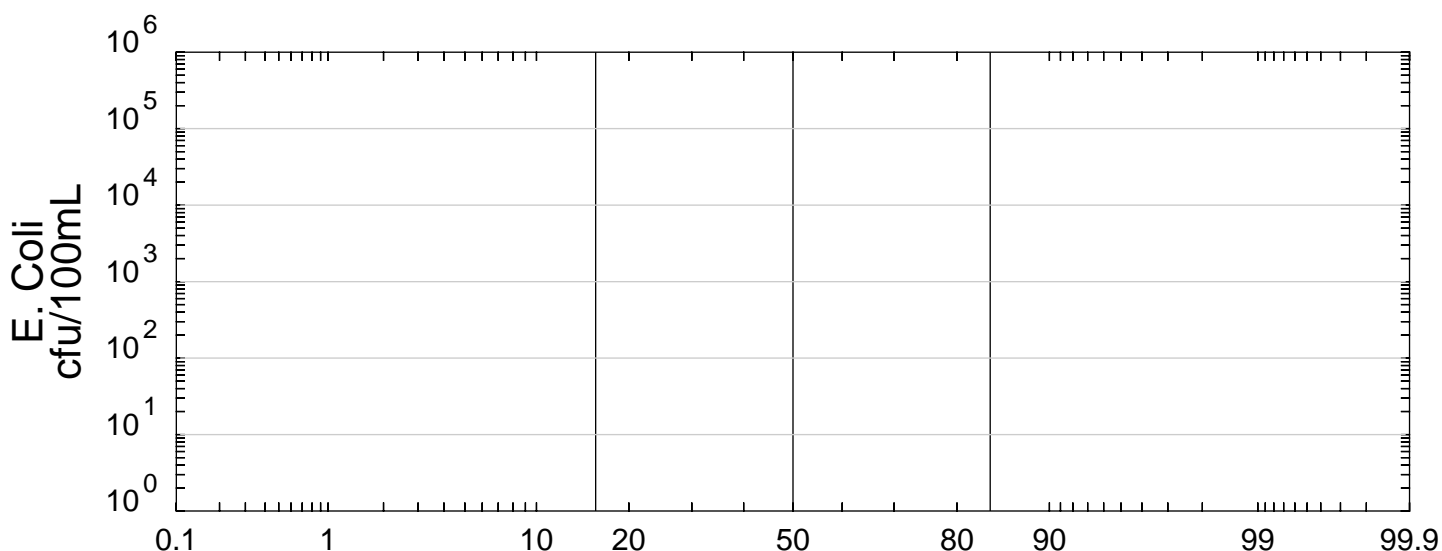
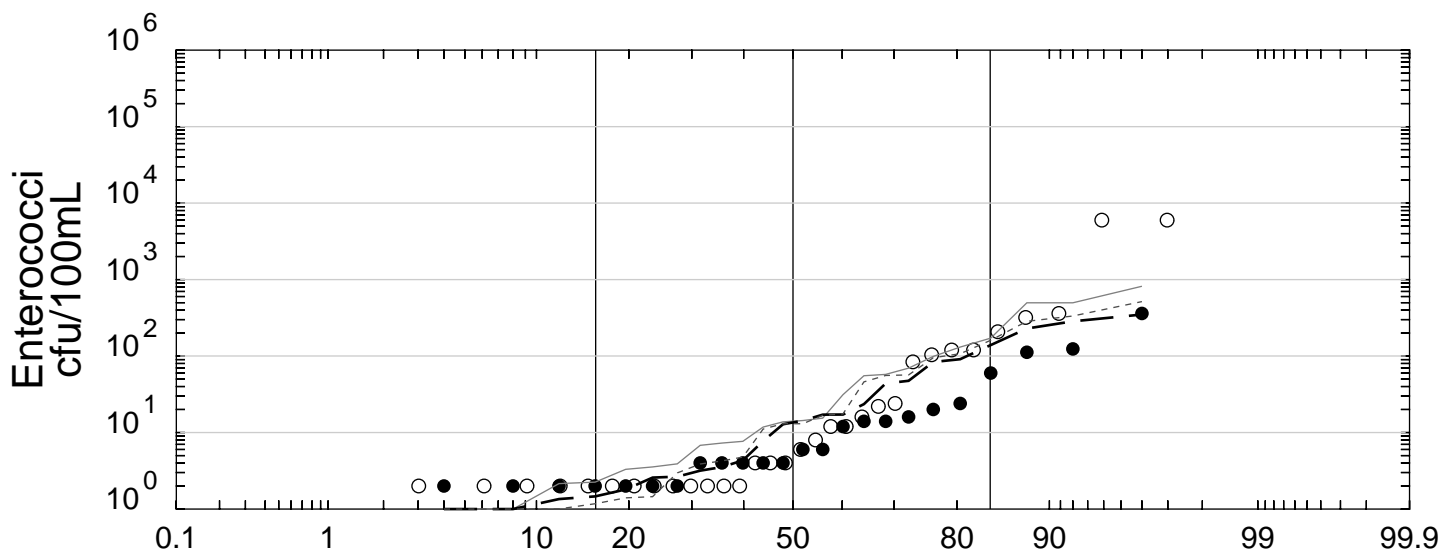
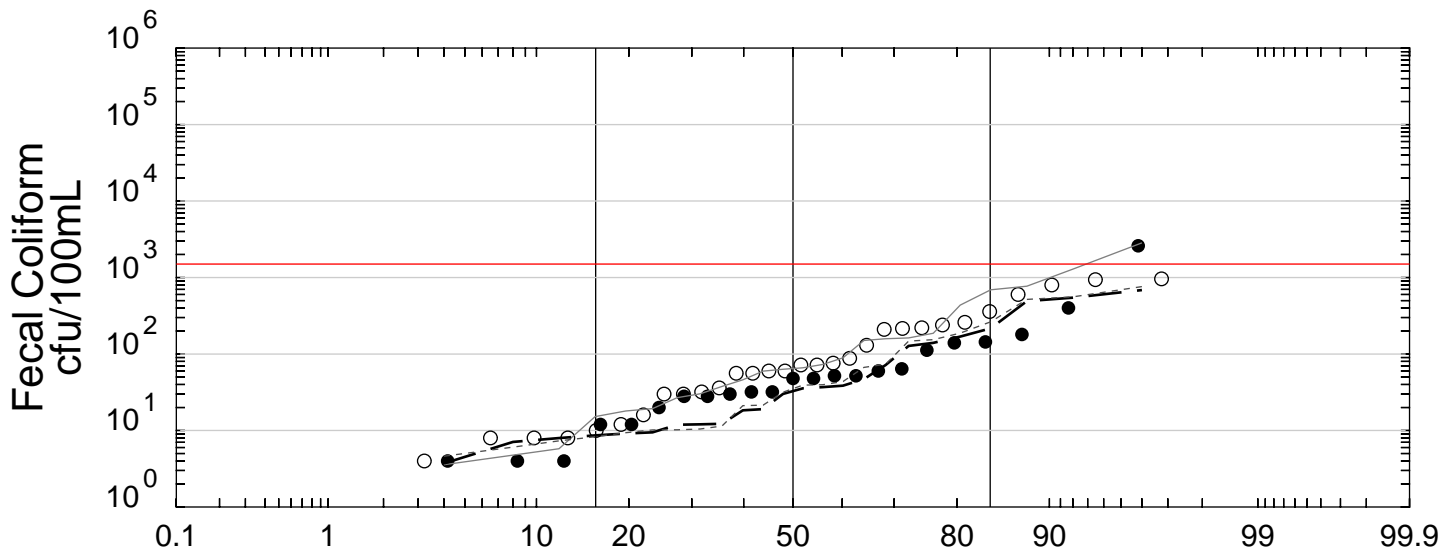
SE3

Station: 20



Model Results during data sampling hours only

Station: 21

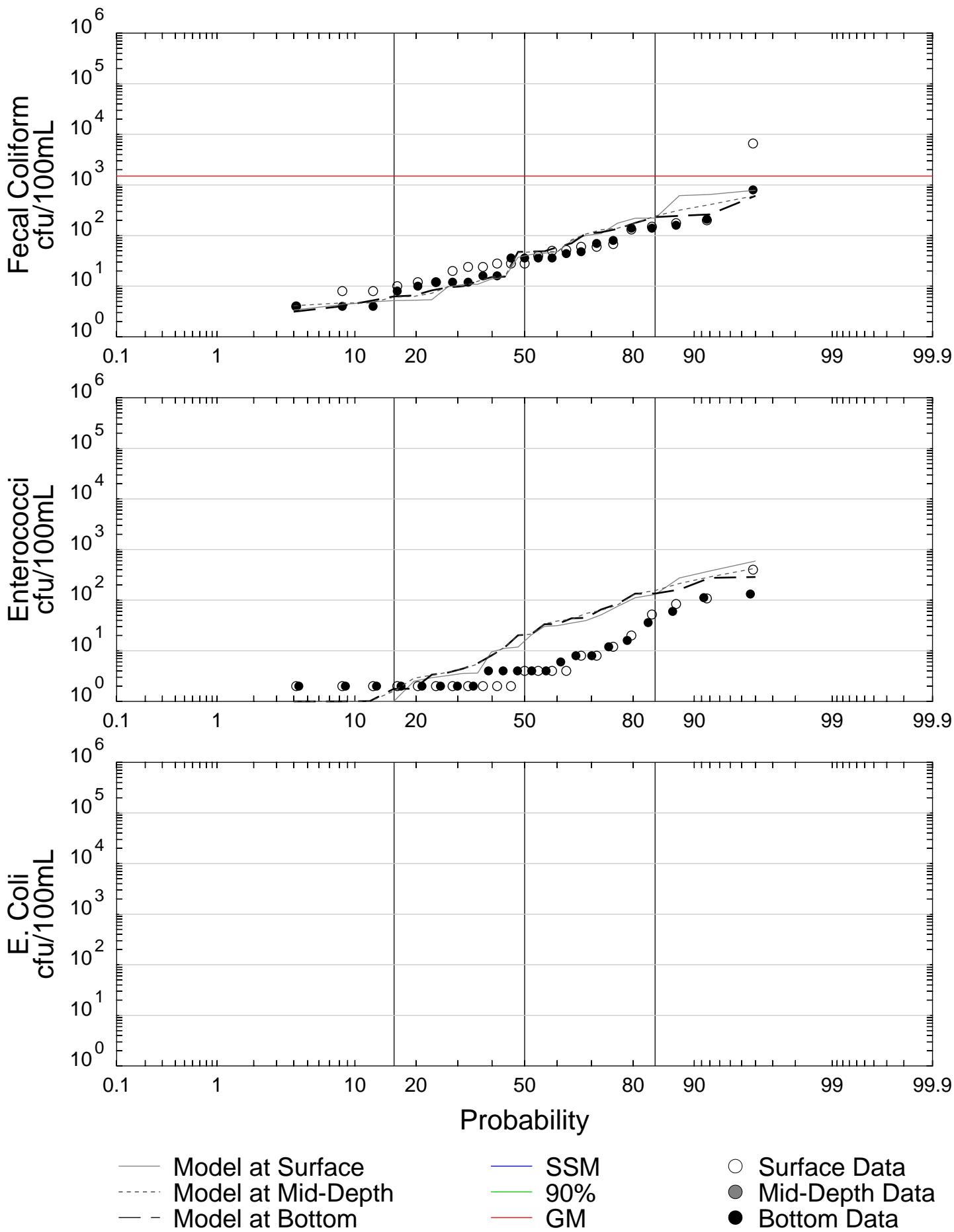


Probability

- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

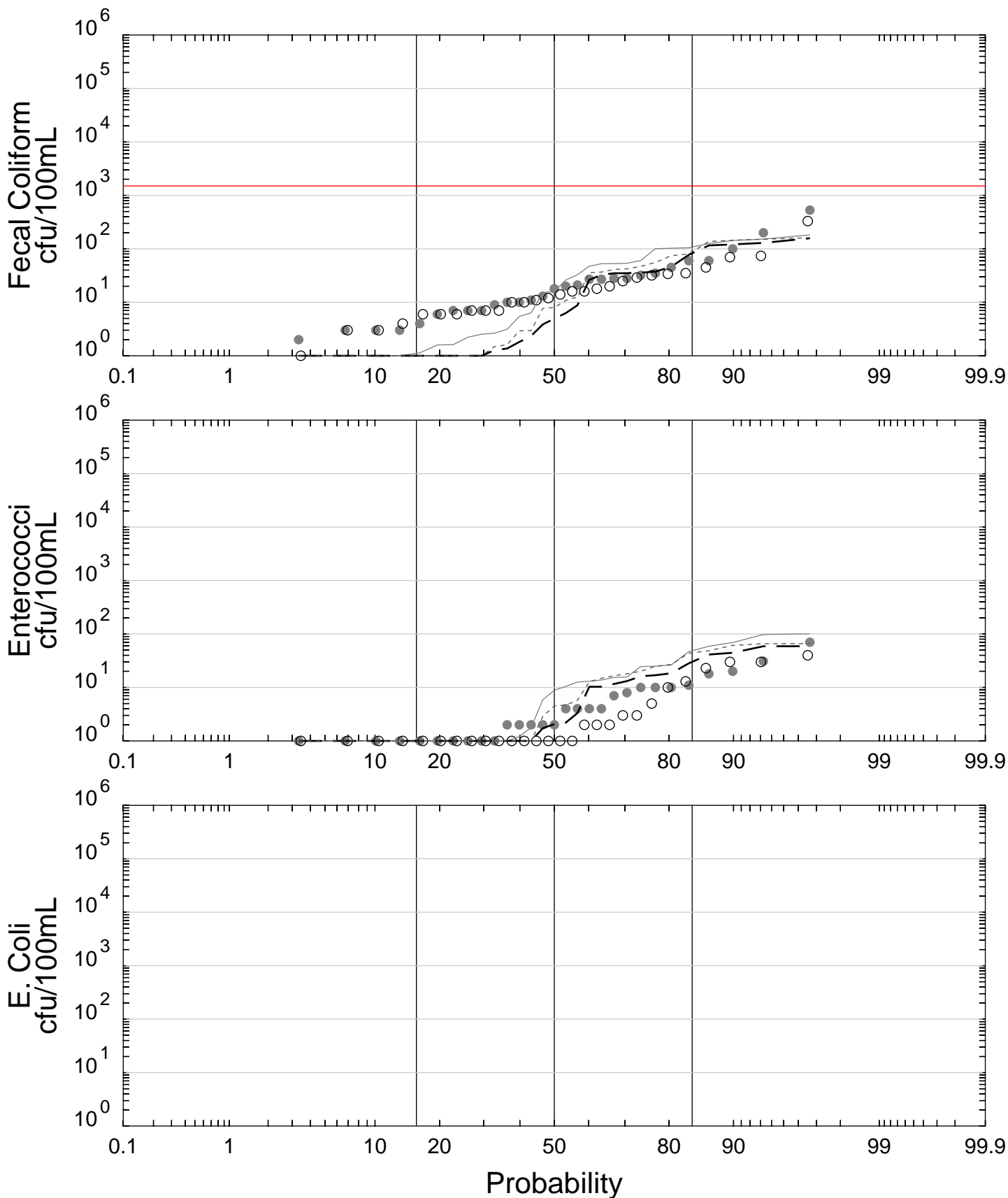
Model Results during data sampling hours only

Station: 23



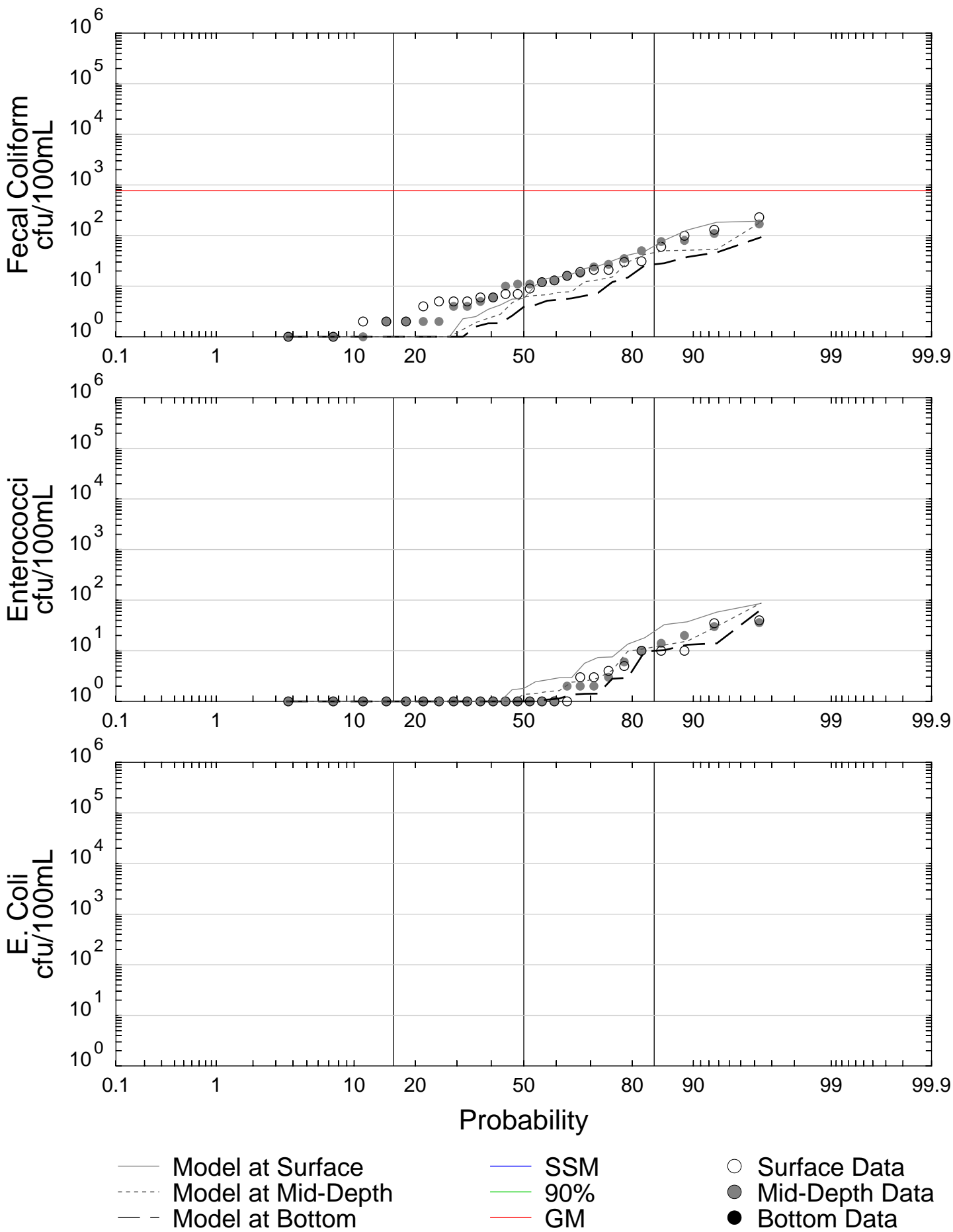
Model Results during data sampling hours only

Station: 24



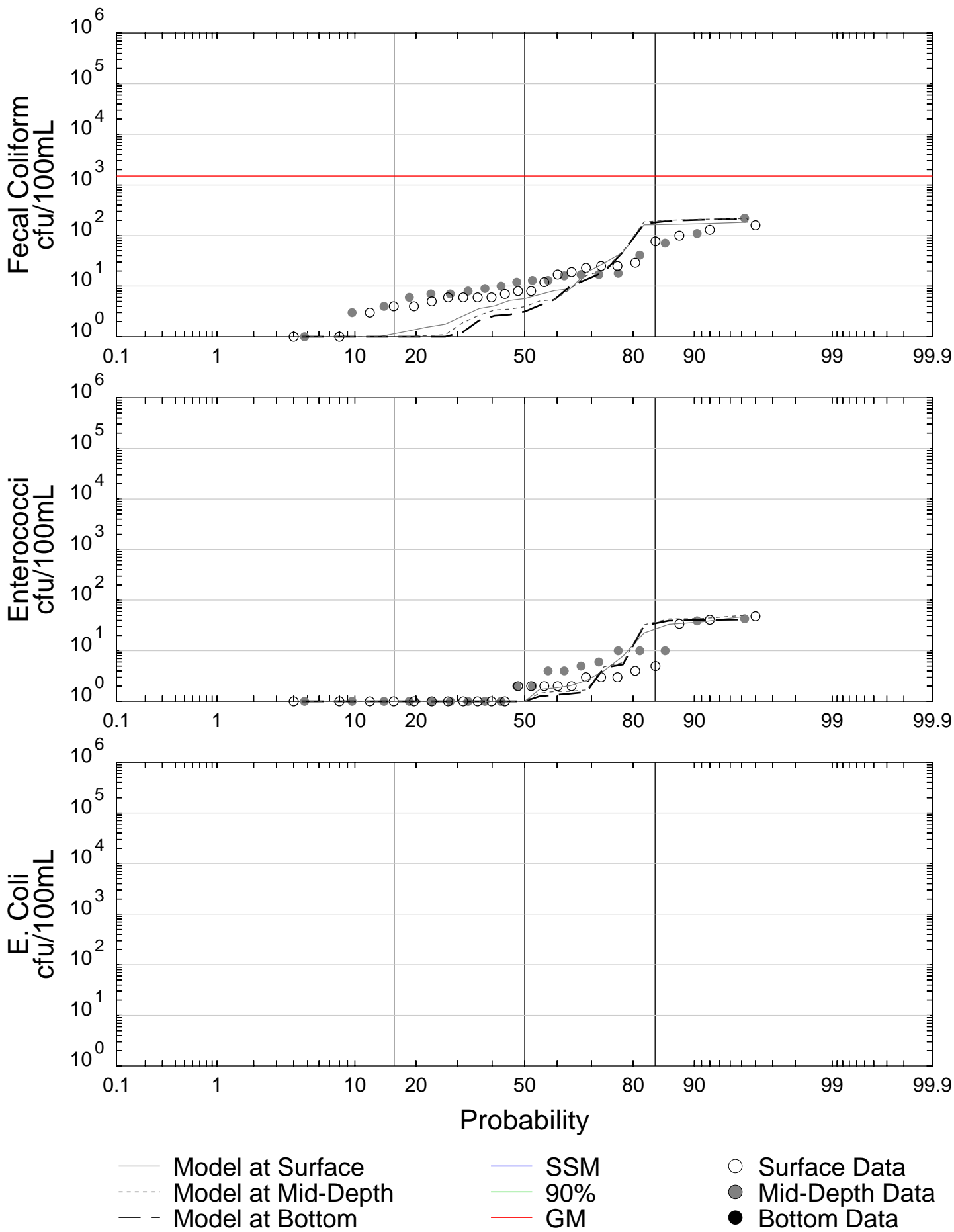
Model Results during data sampling hours only

Station: B15



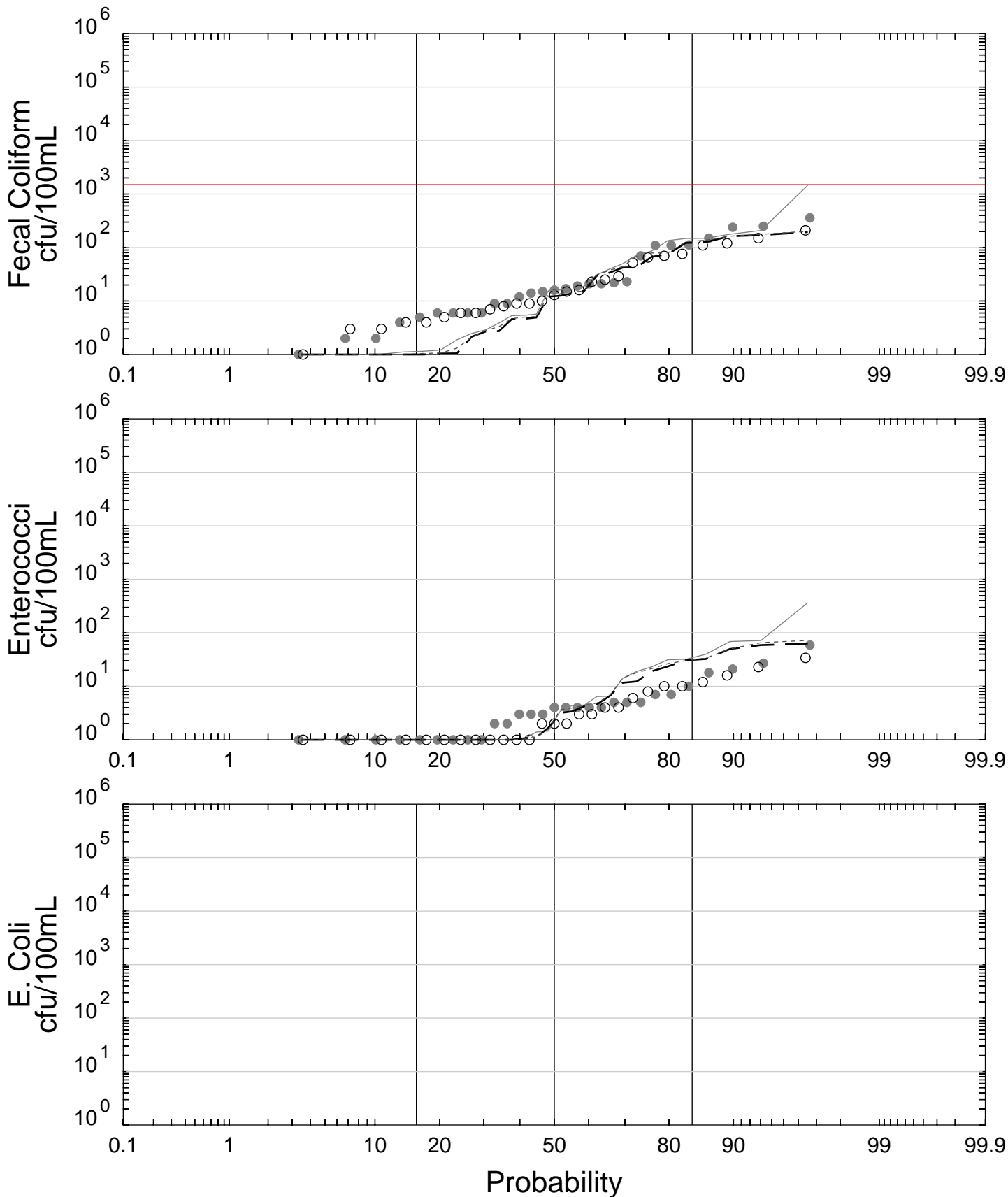
Model Results during data sampling hours only

Station: B20



Model Results during data sampling hours only

Station: B12



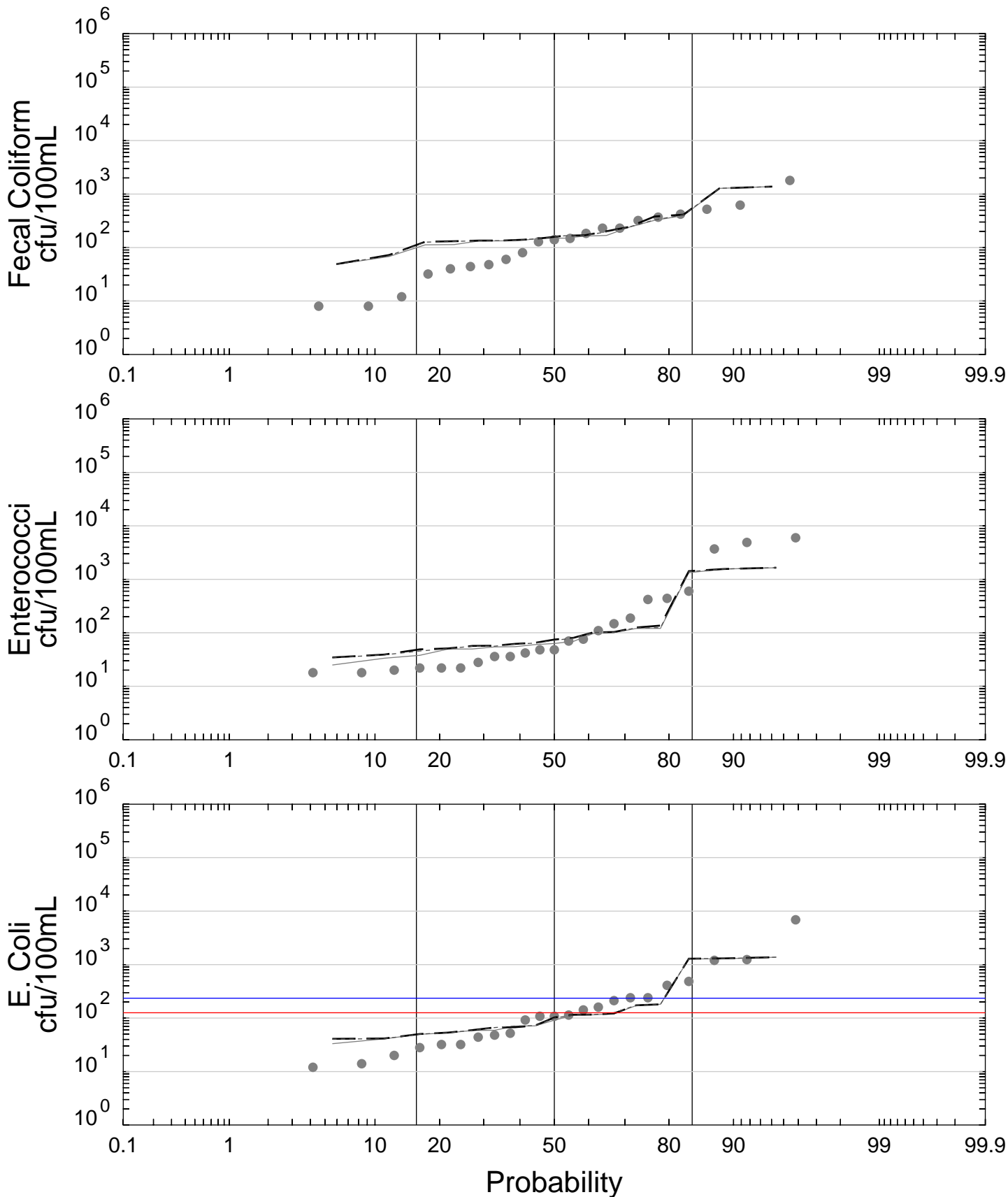
- Model at Surface
- Model at Mid-Depth
- .- Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

RARITAN RIVER

FW2

Station: 25



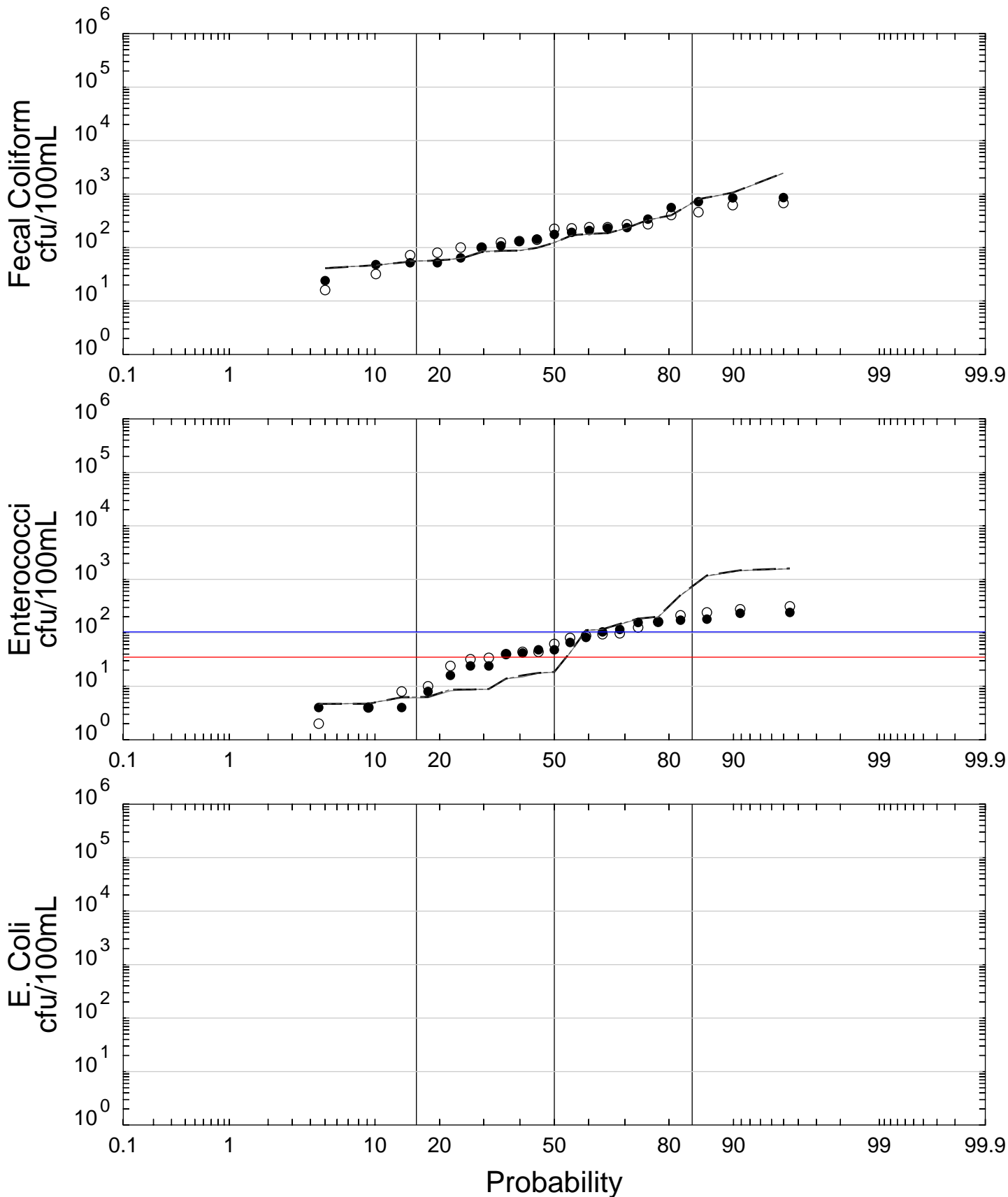
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

RARITAN RIVER

SE1

Station: 26



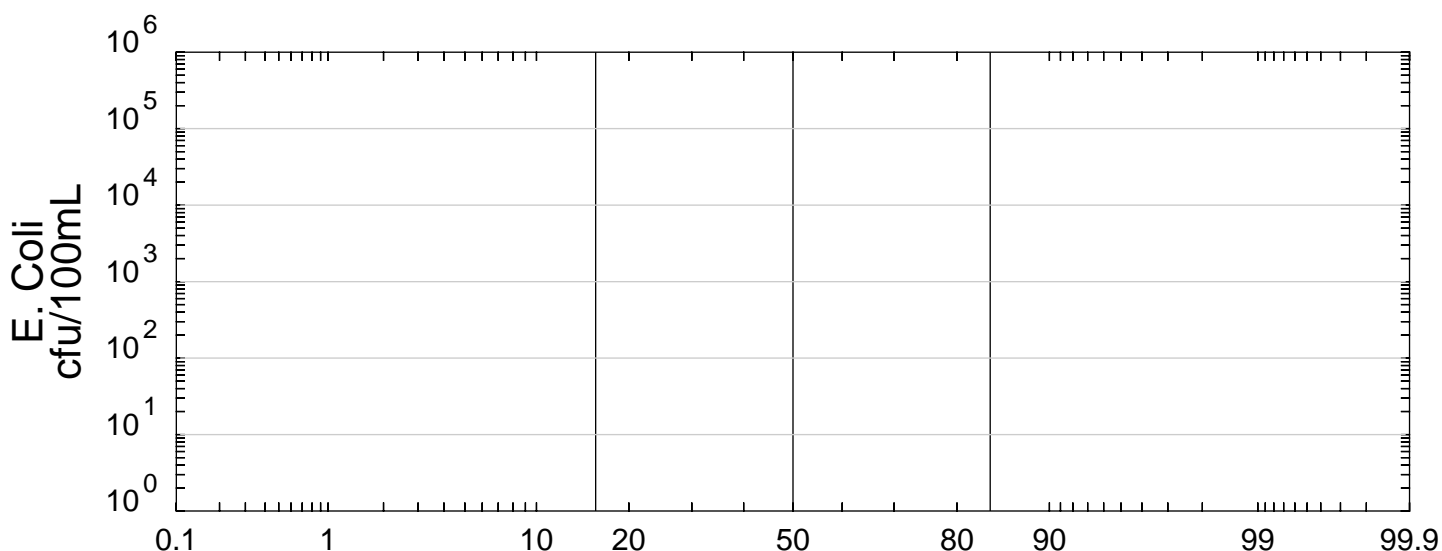
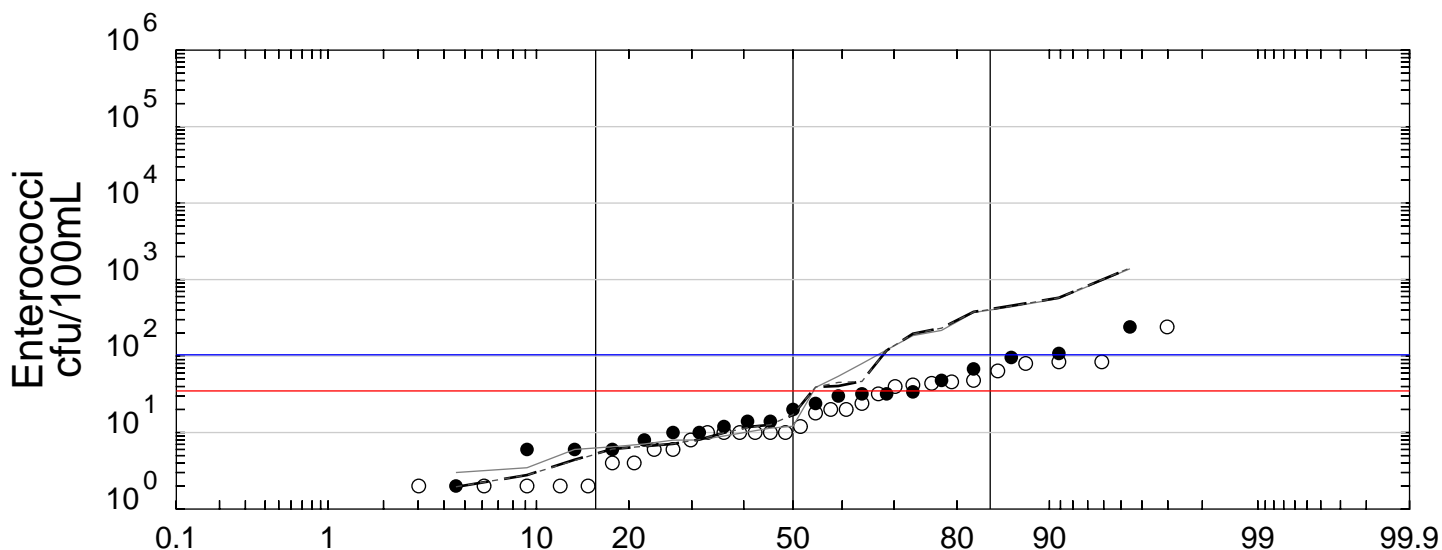
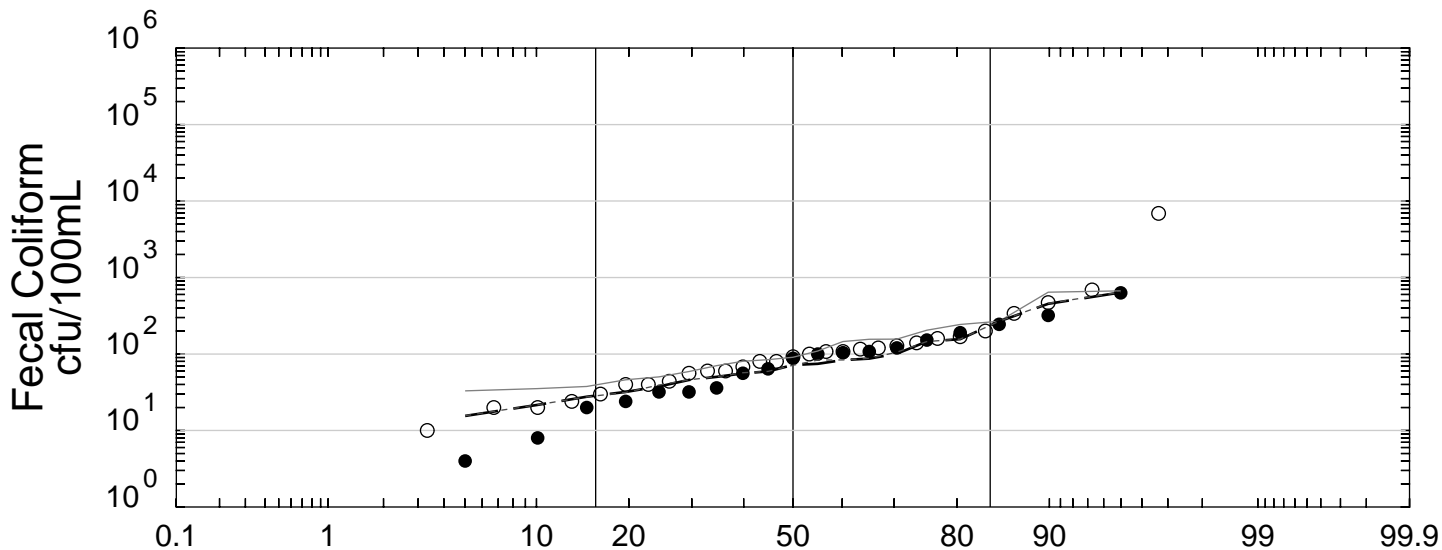
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

RARITAN RIVER

SE1

Station: 27



Probability

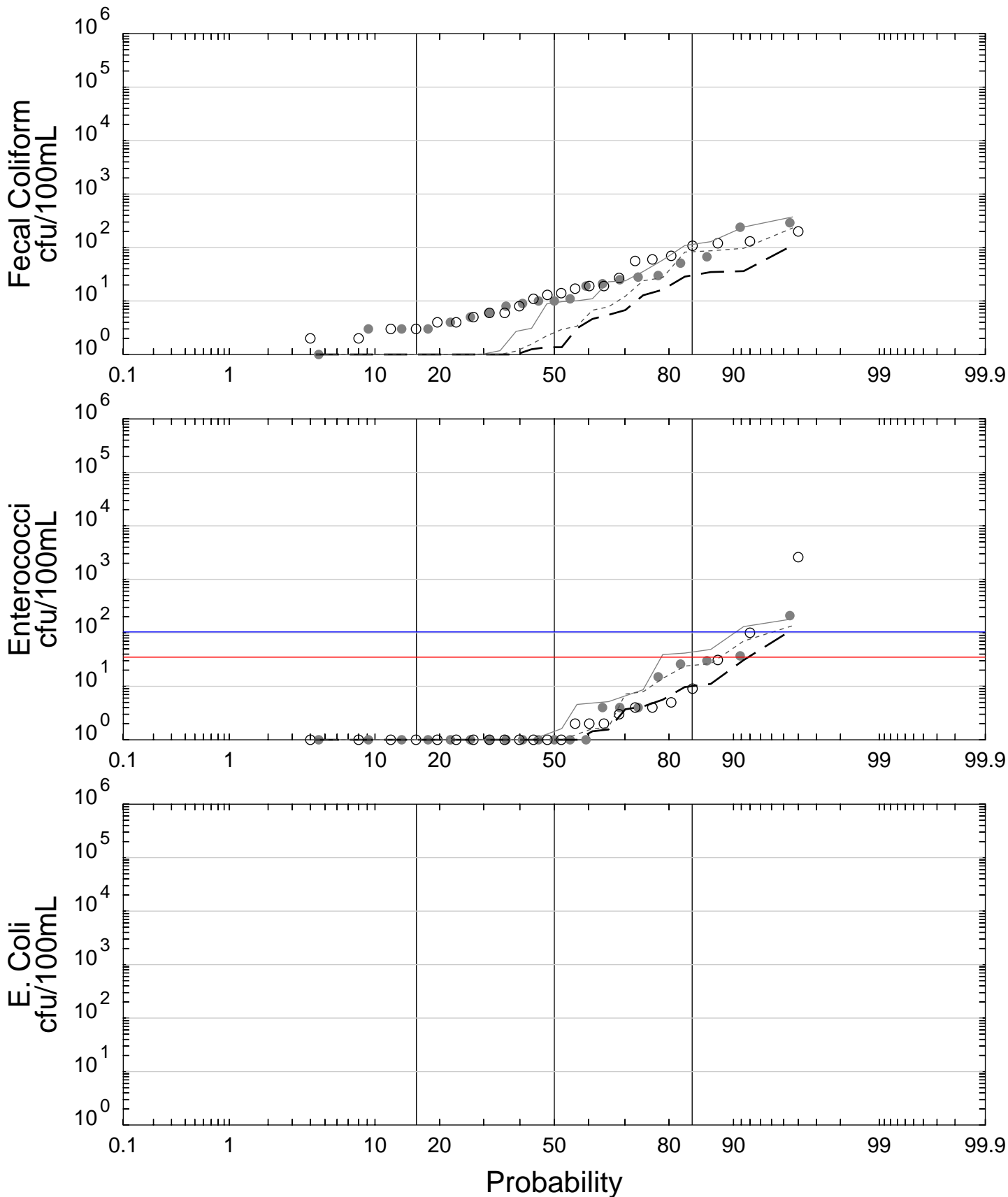
- Model at Surface
- Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

RARITAN BAY

SE1

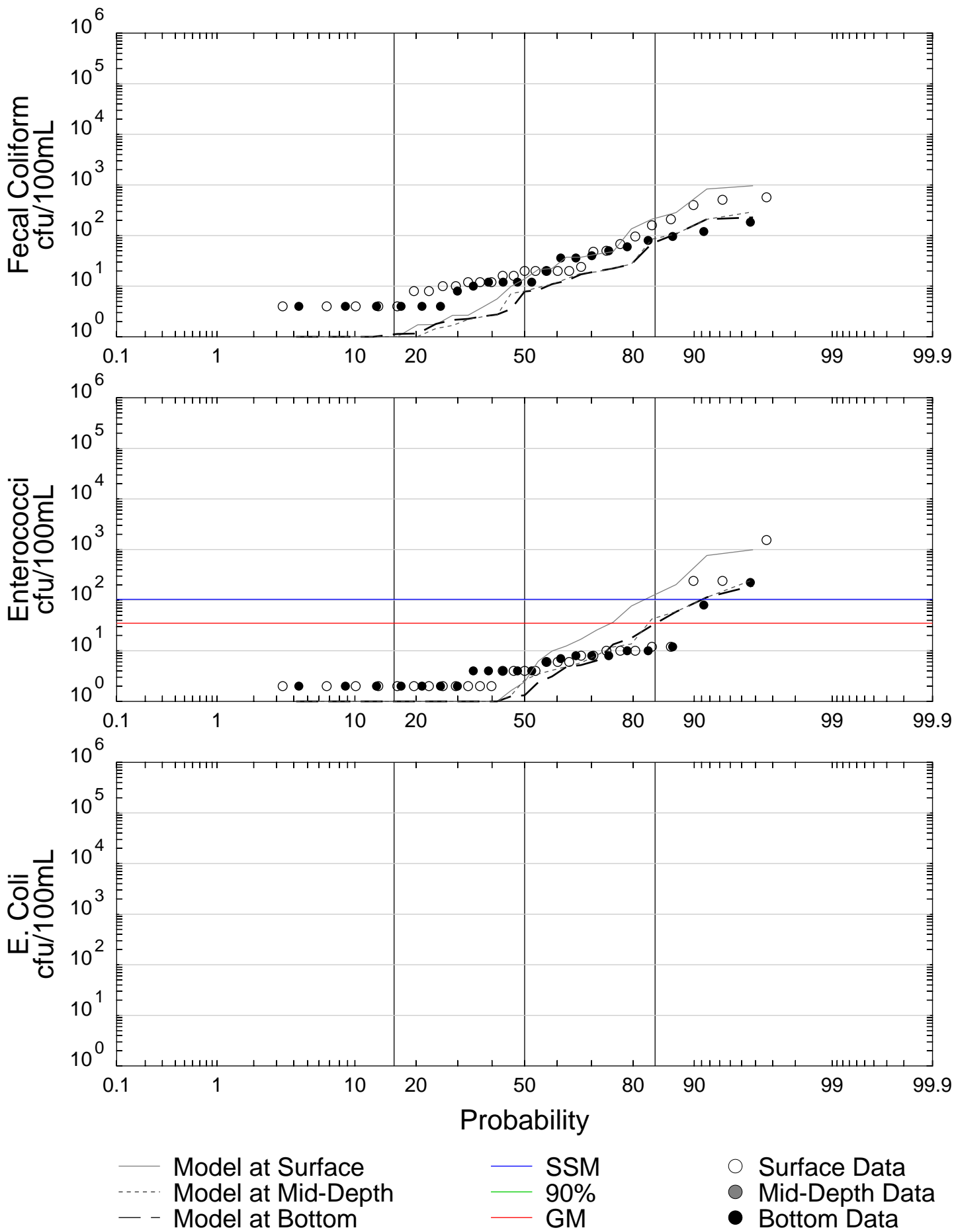
Station: B19



- Model at Surface
- - - Model at Mid-Depth
- · · Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

Station: 28

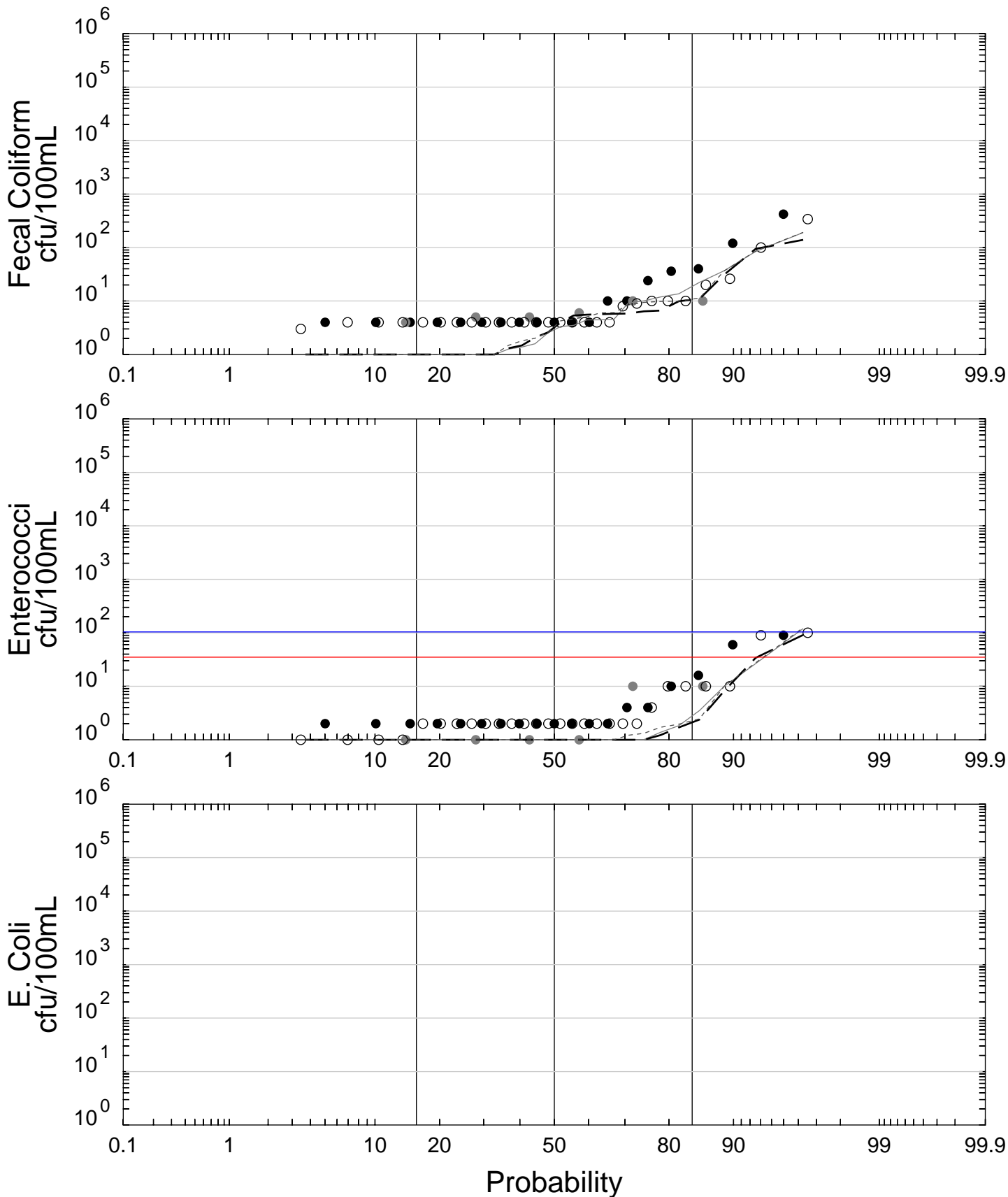


Model Results during data sampling hours only

RARITAN BAY

SE1

Station: 29



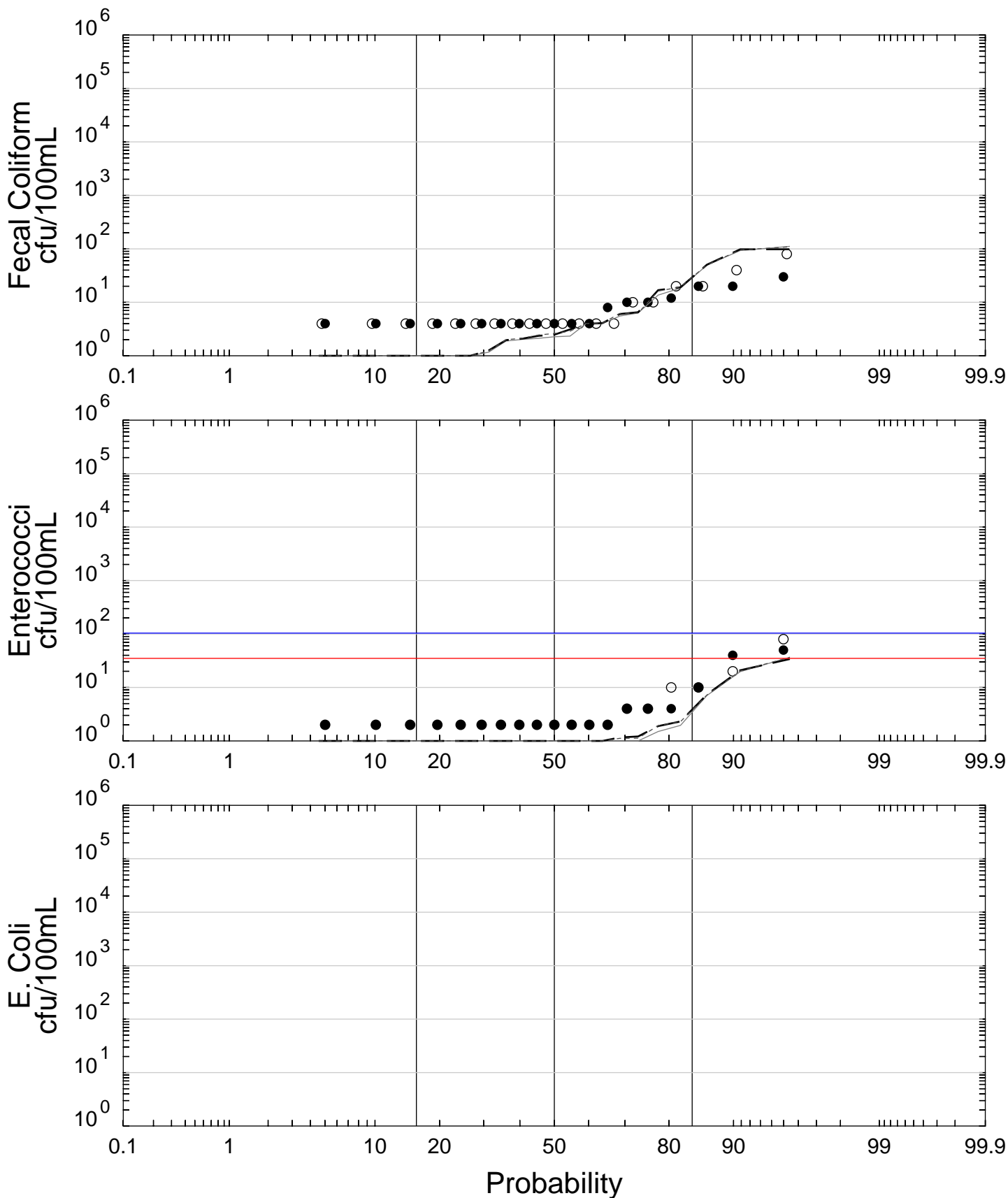
- Model at Surface
- - - Model at Mid-Depth
- . - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

RARITAN BAY

SE1

Station: 30



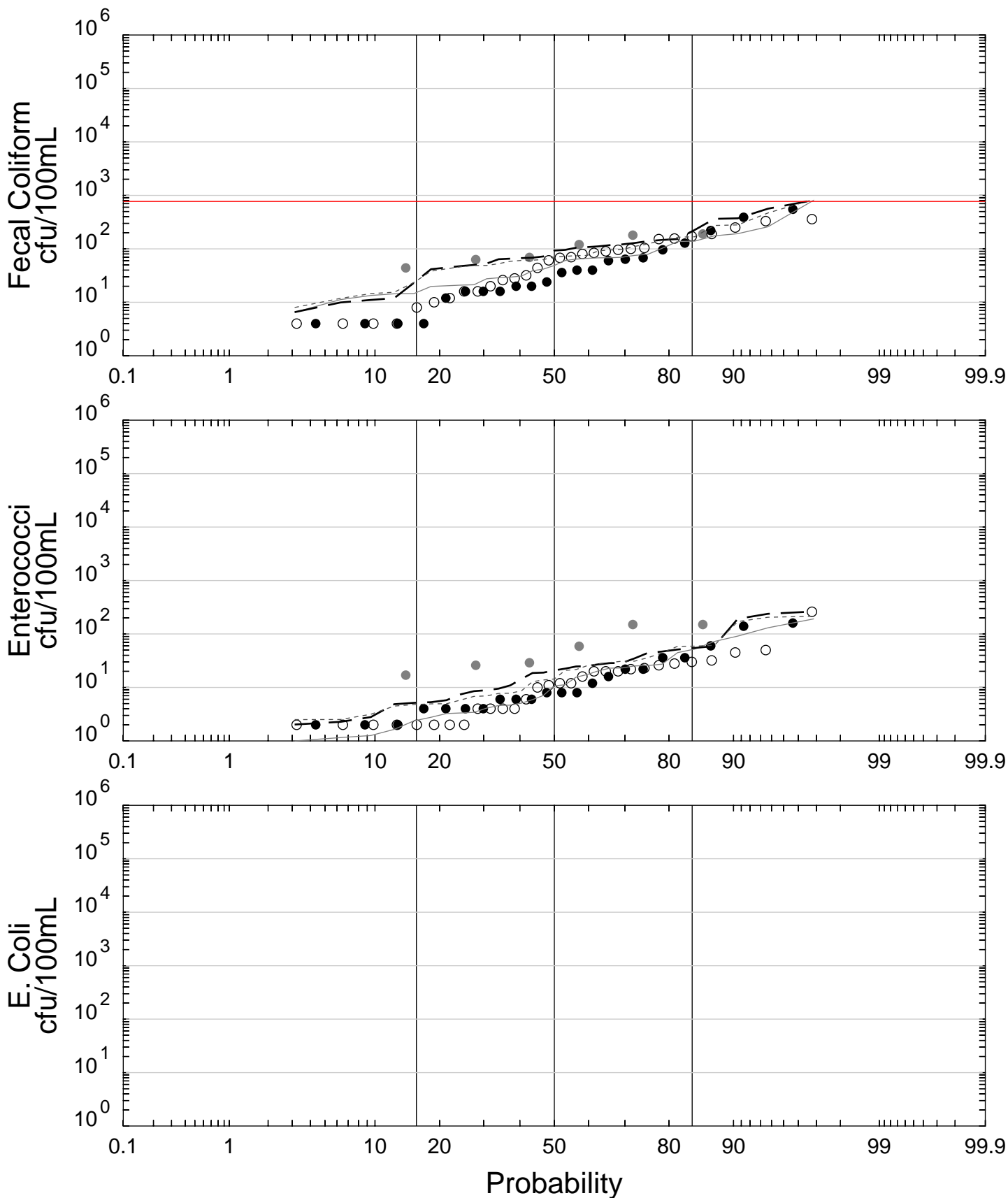
- Model at Surface
- Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: 31



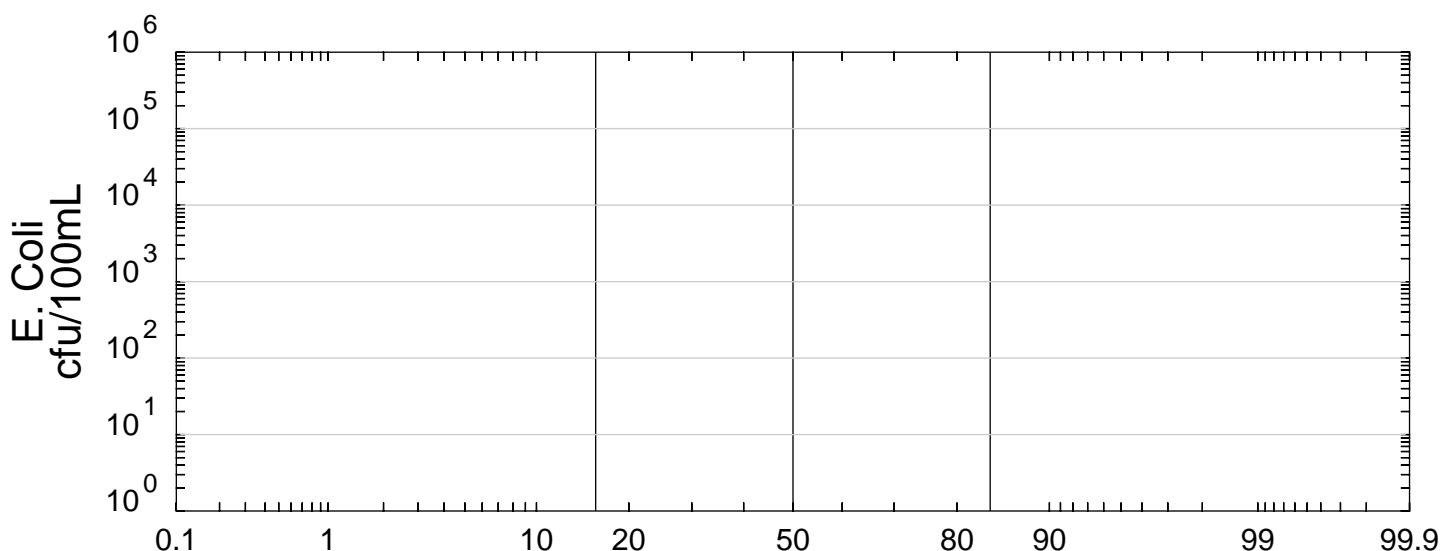
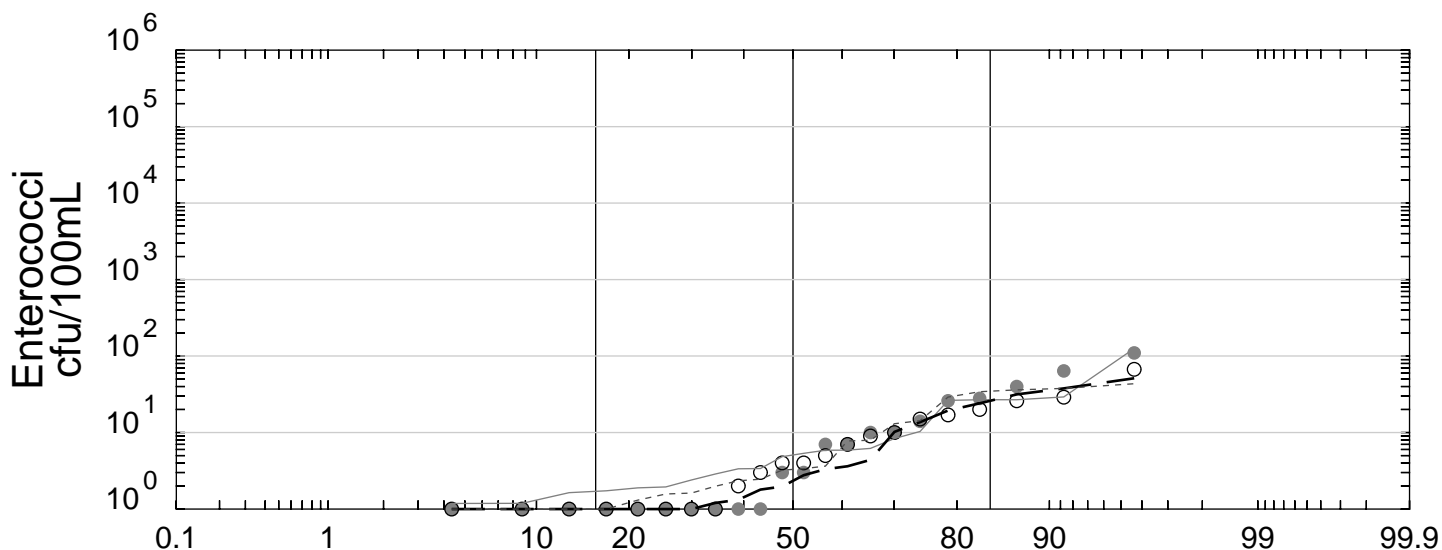
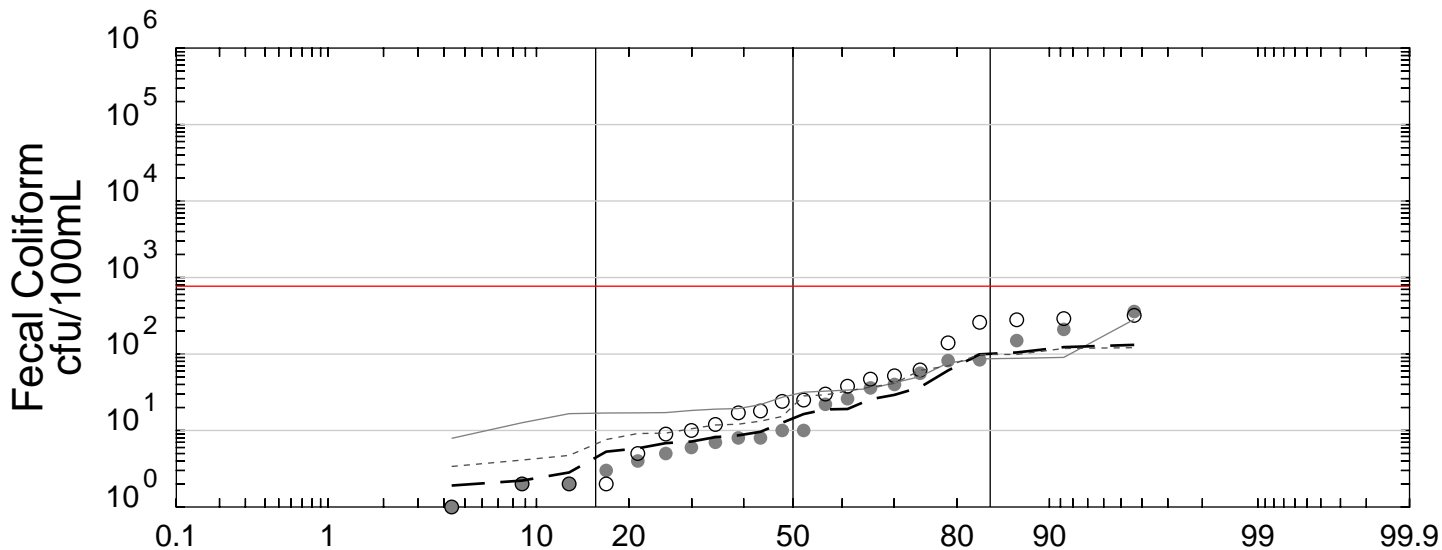
- Model at Surface
- - - Model at Mid-Depth
- . - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B5A



Probability

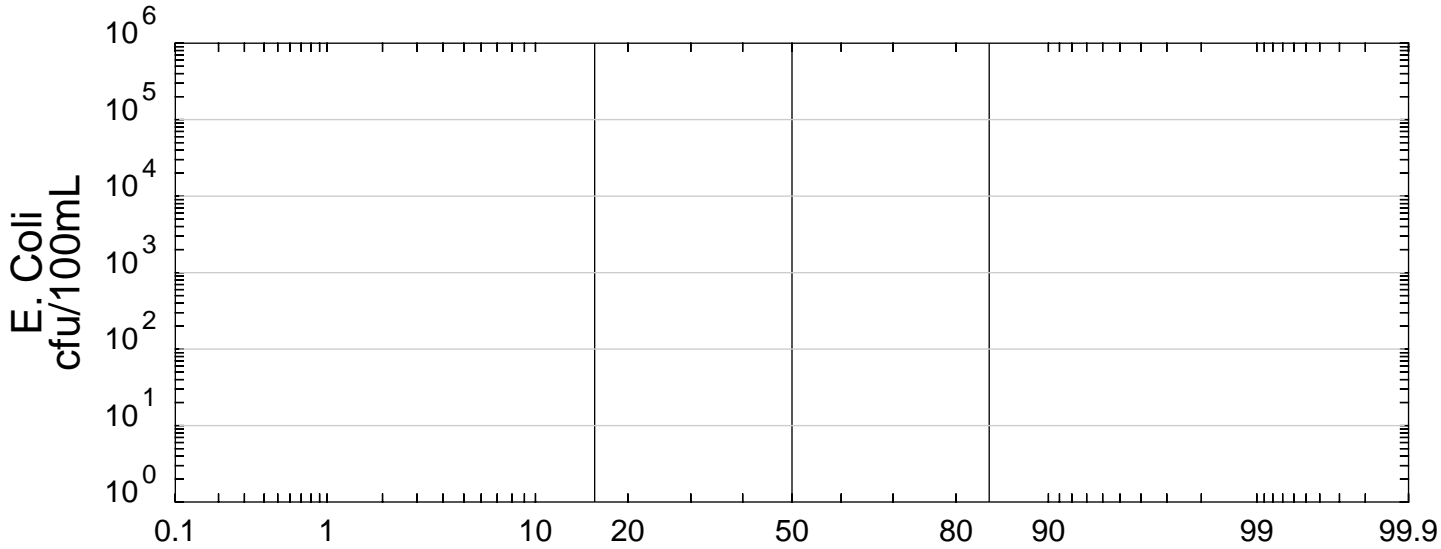
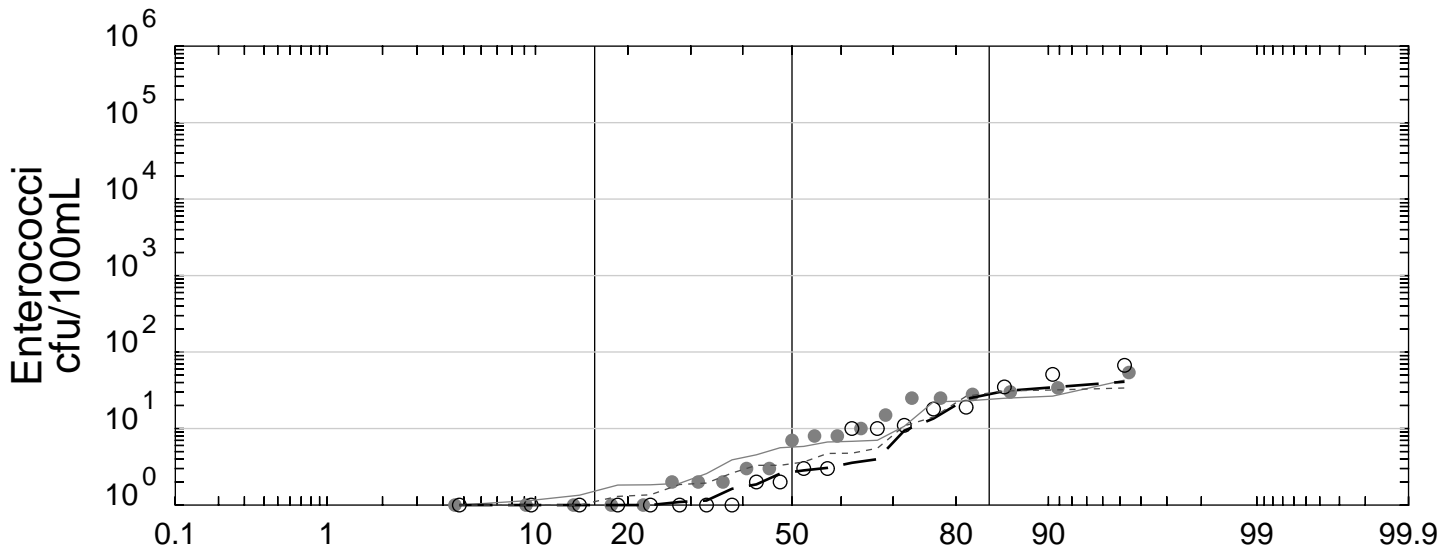
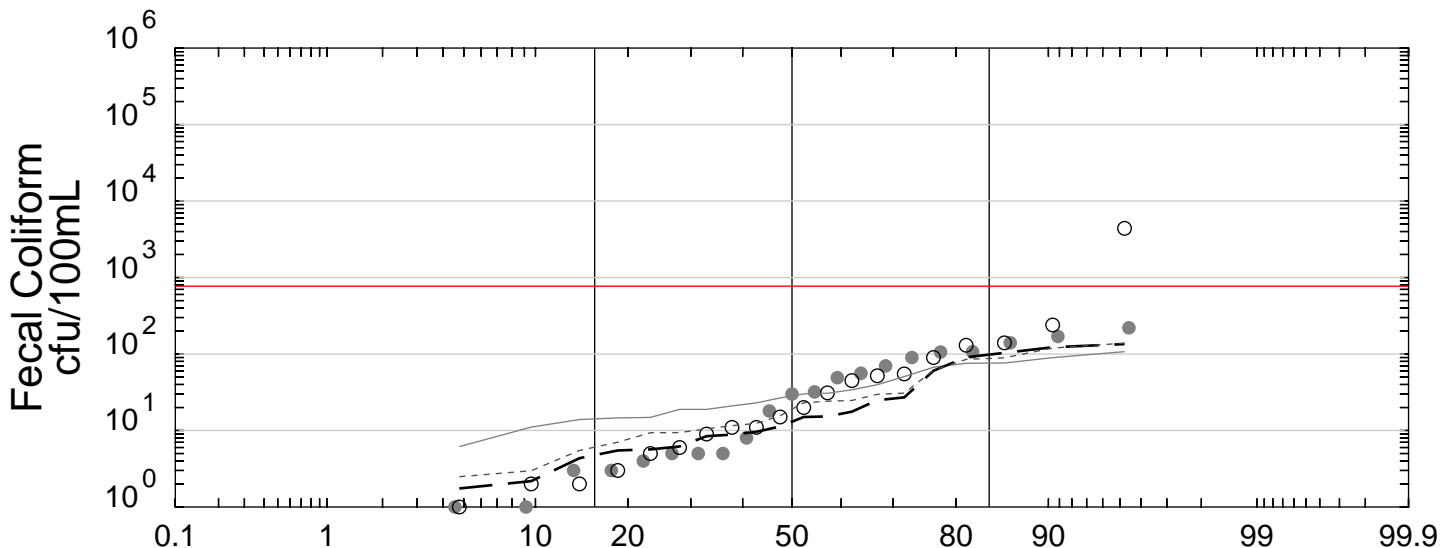
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B5B



Probability

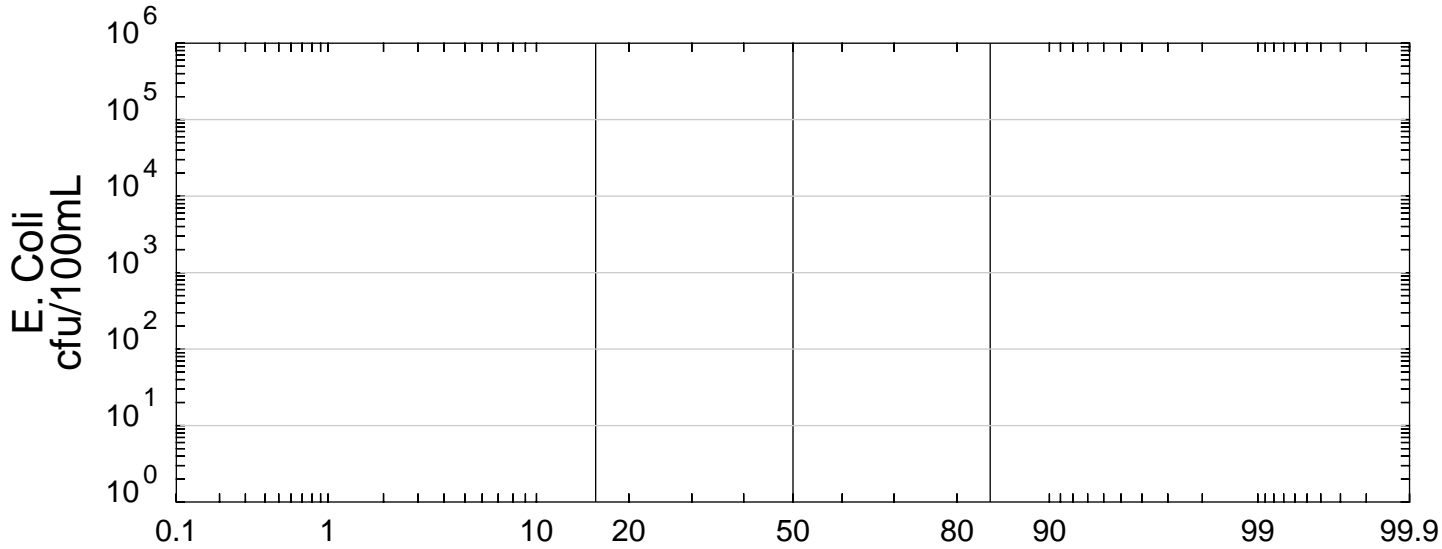
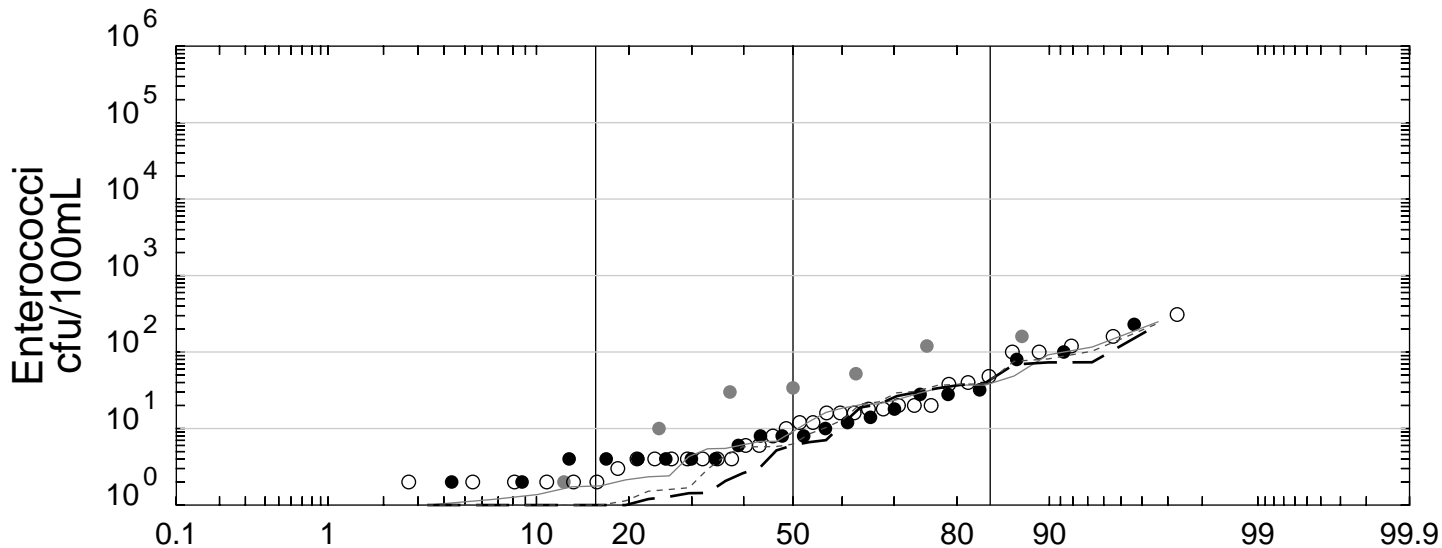
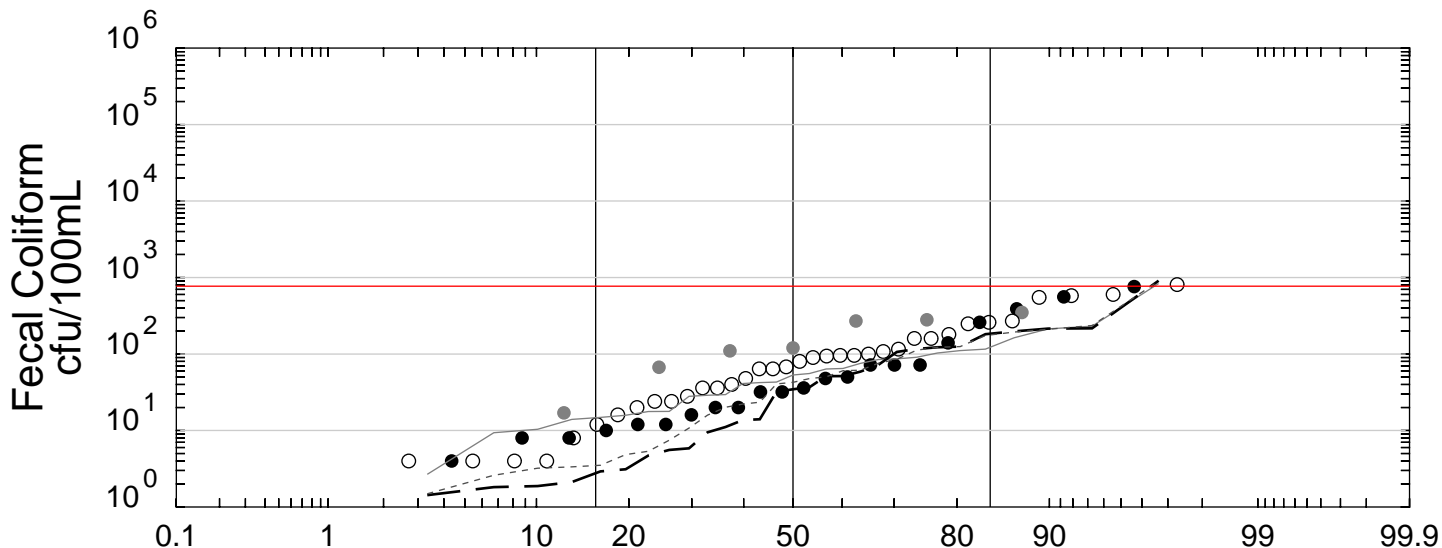
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: 32



Probability

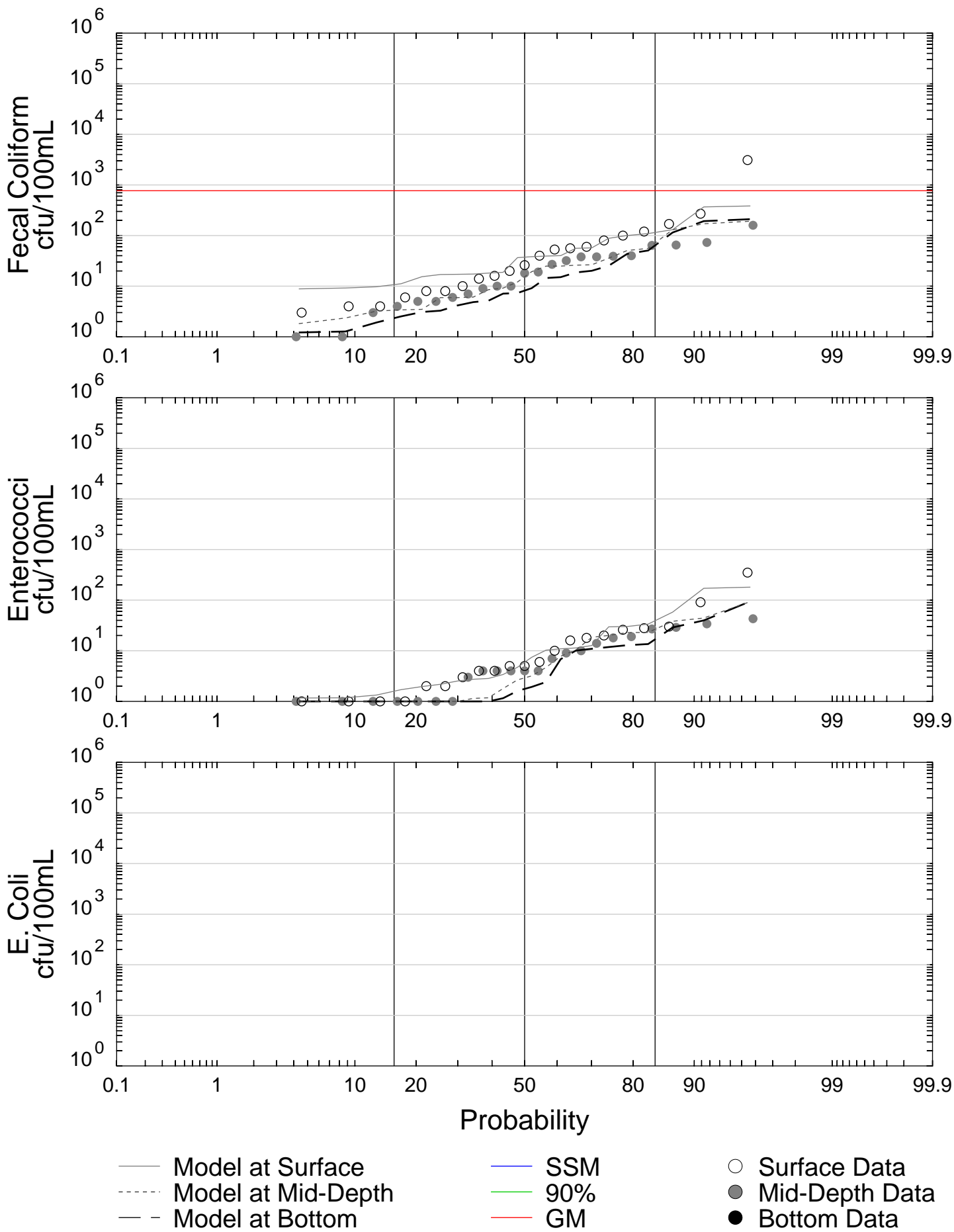
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B18A

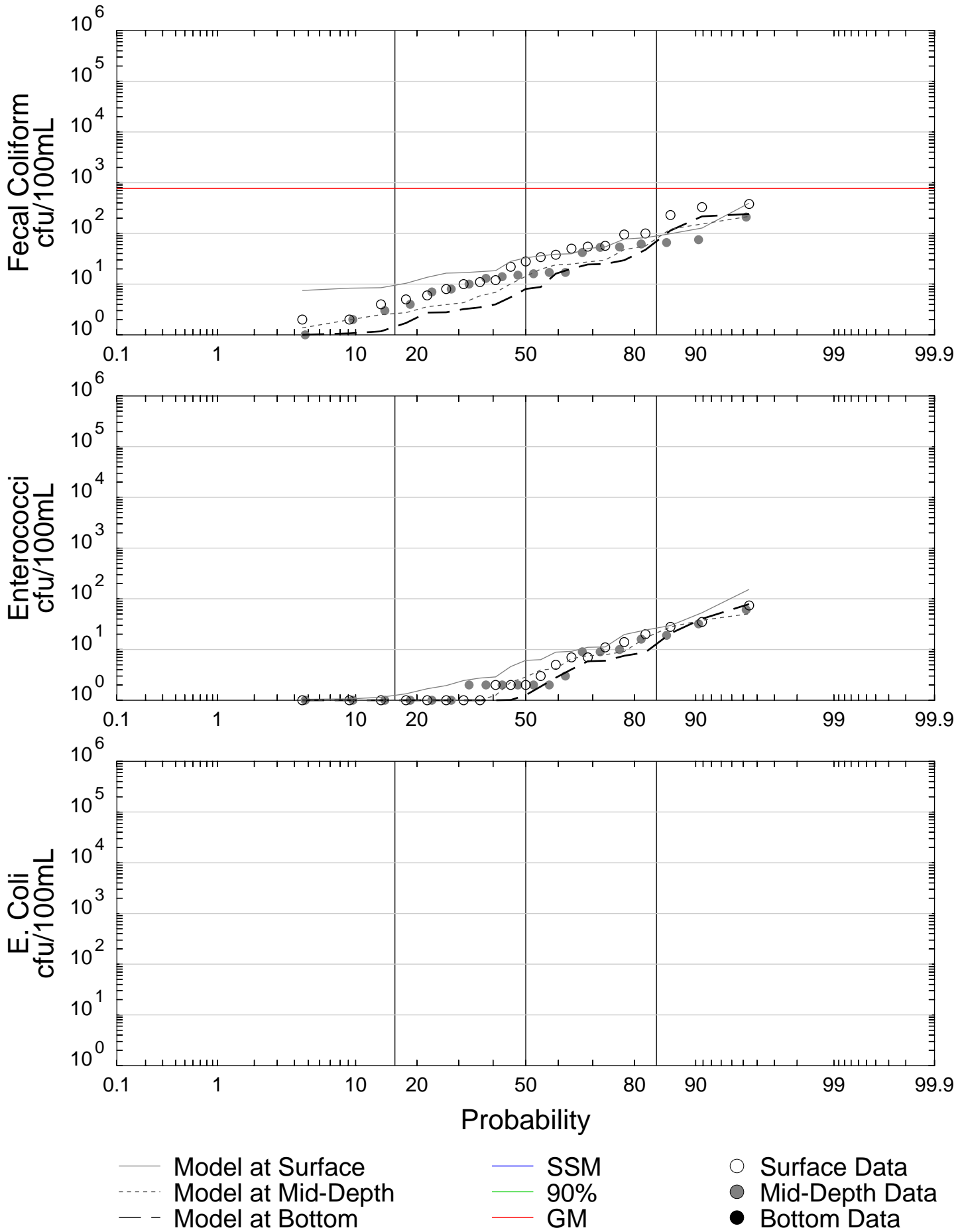


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B18B

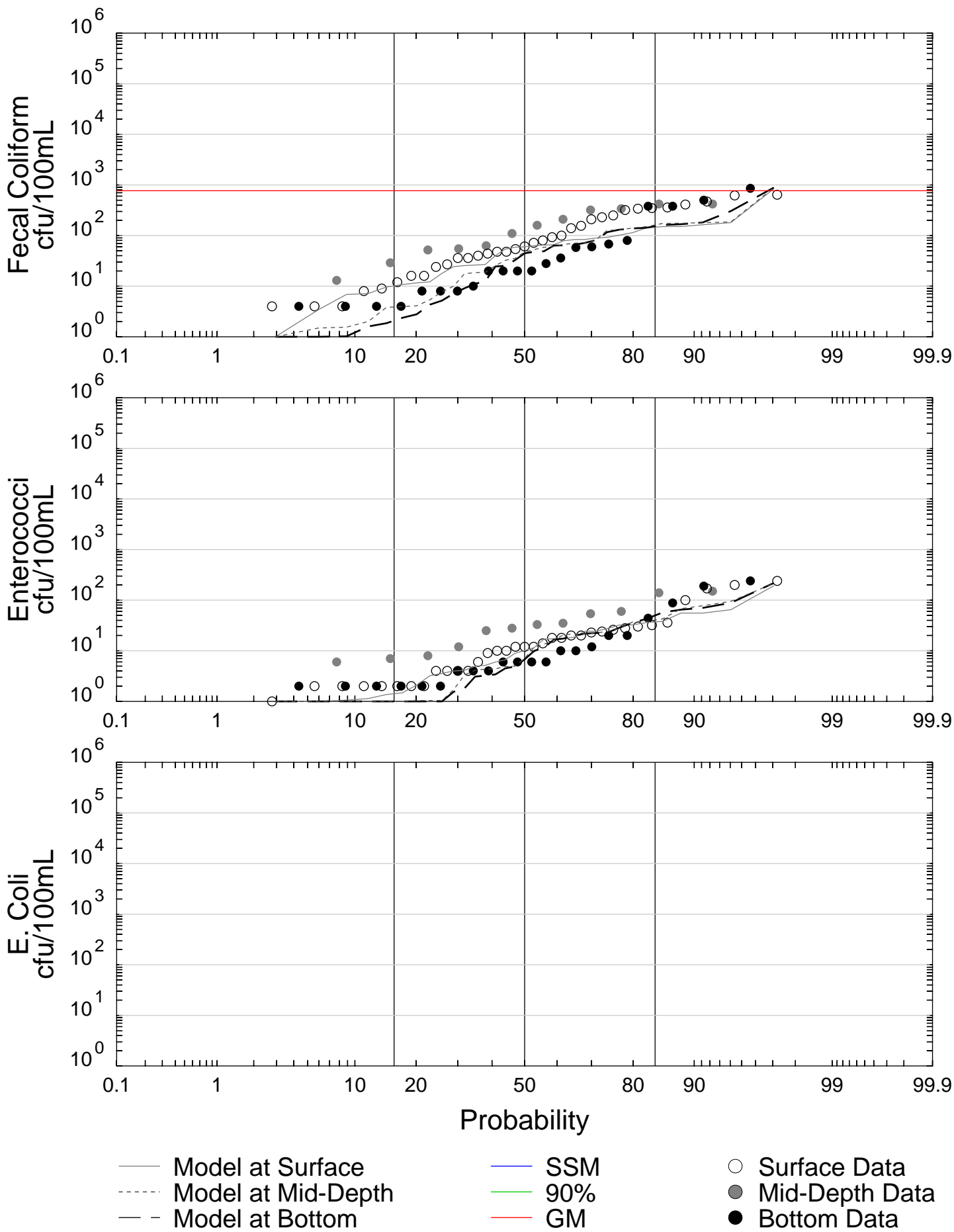


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: 33

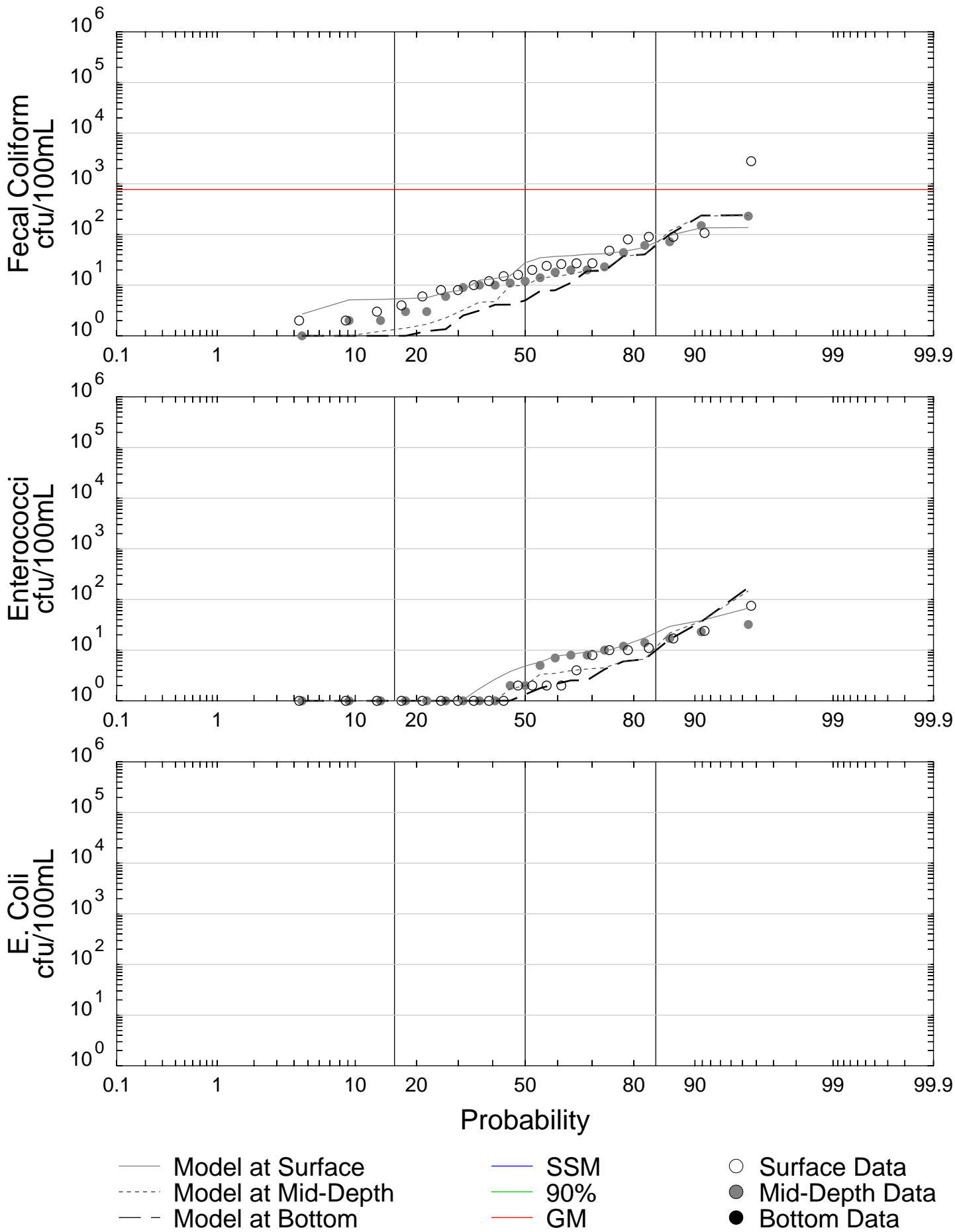


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B23A

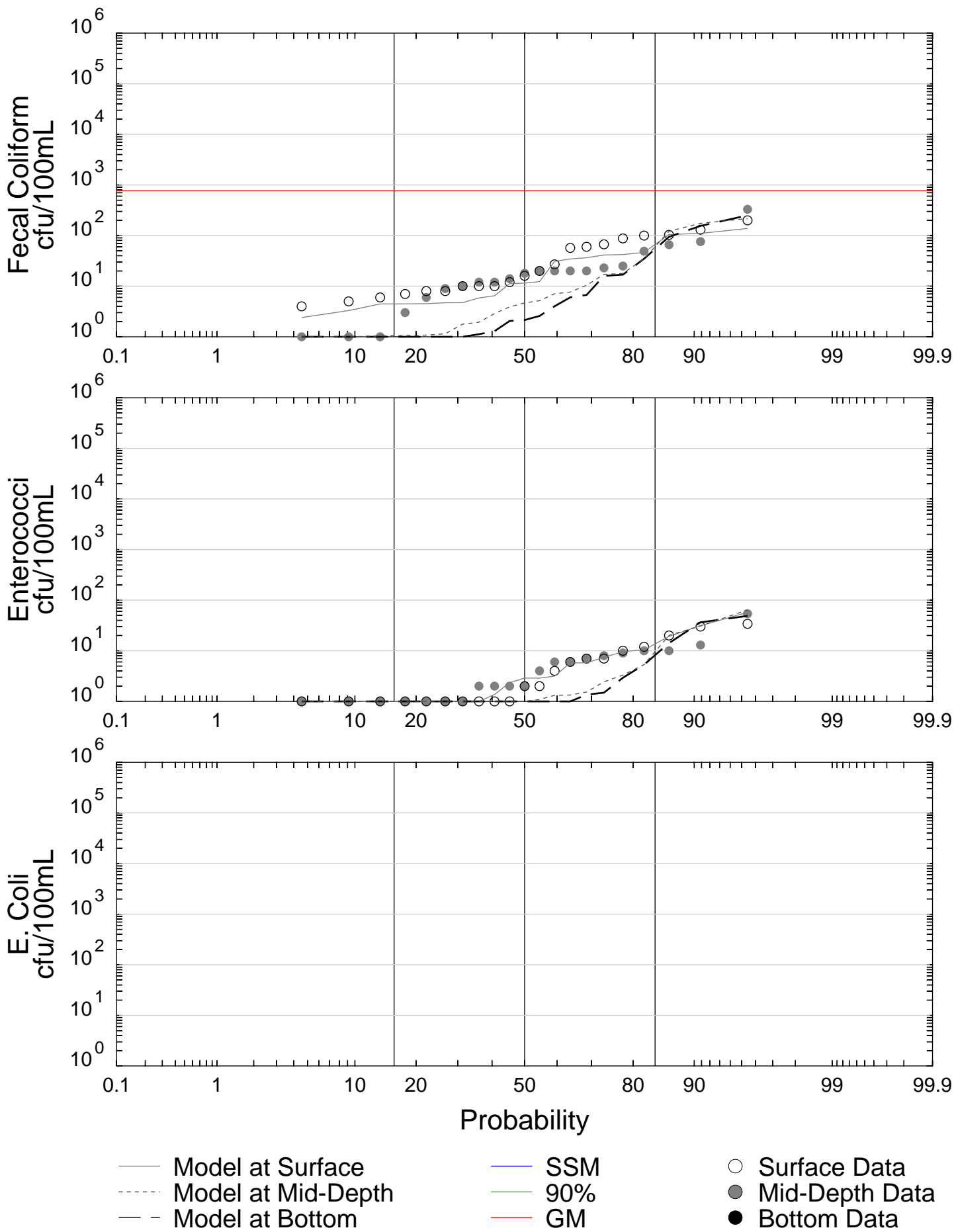


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B23B

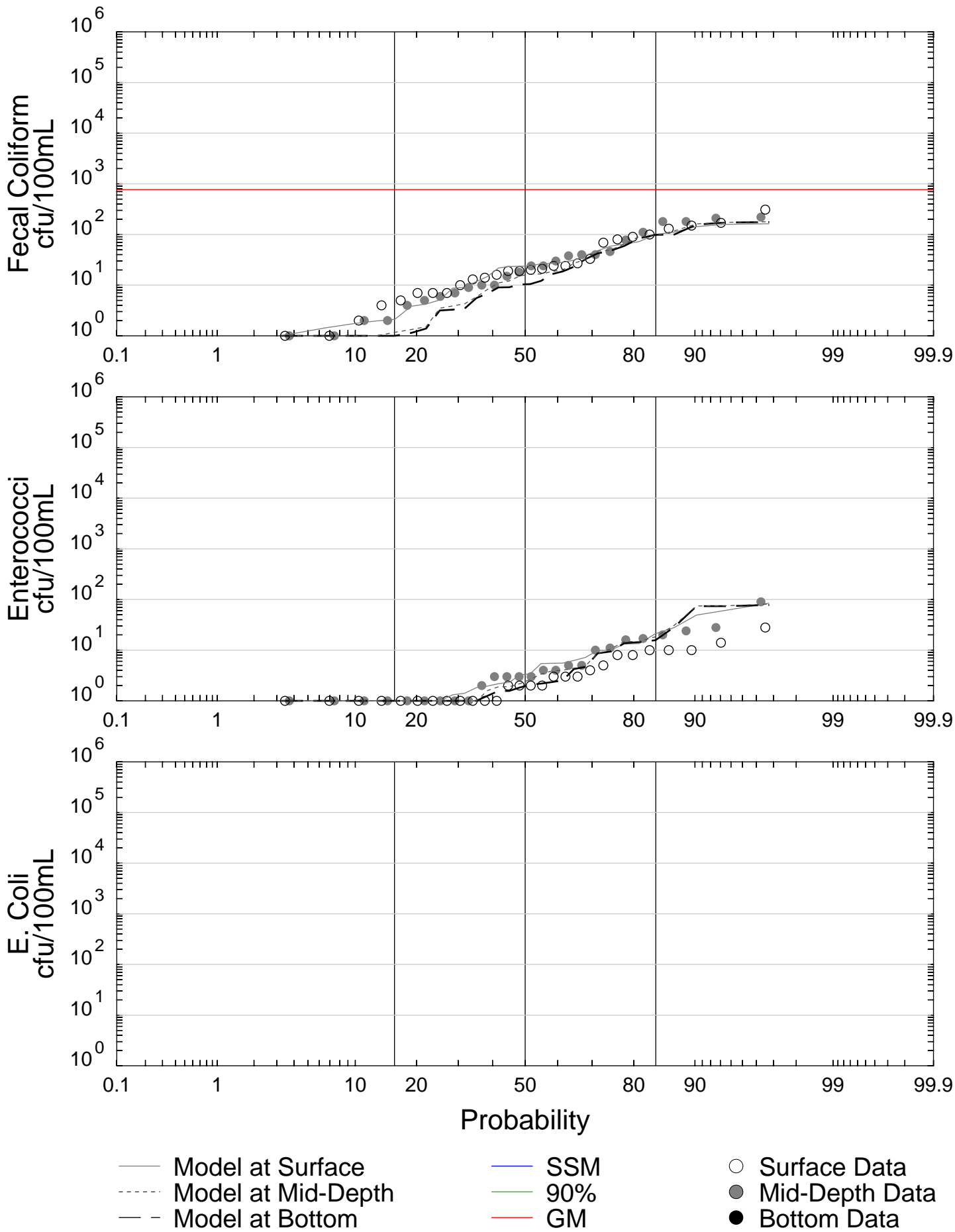


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B26

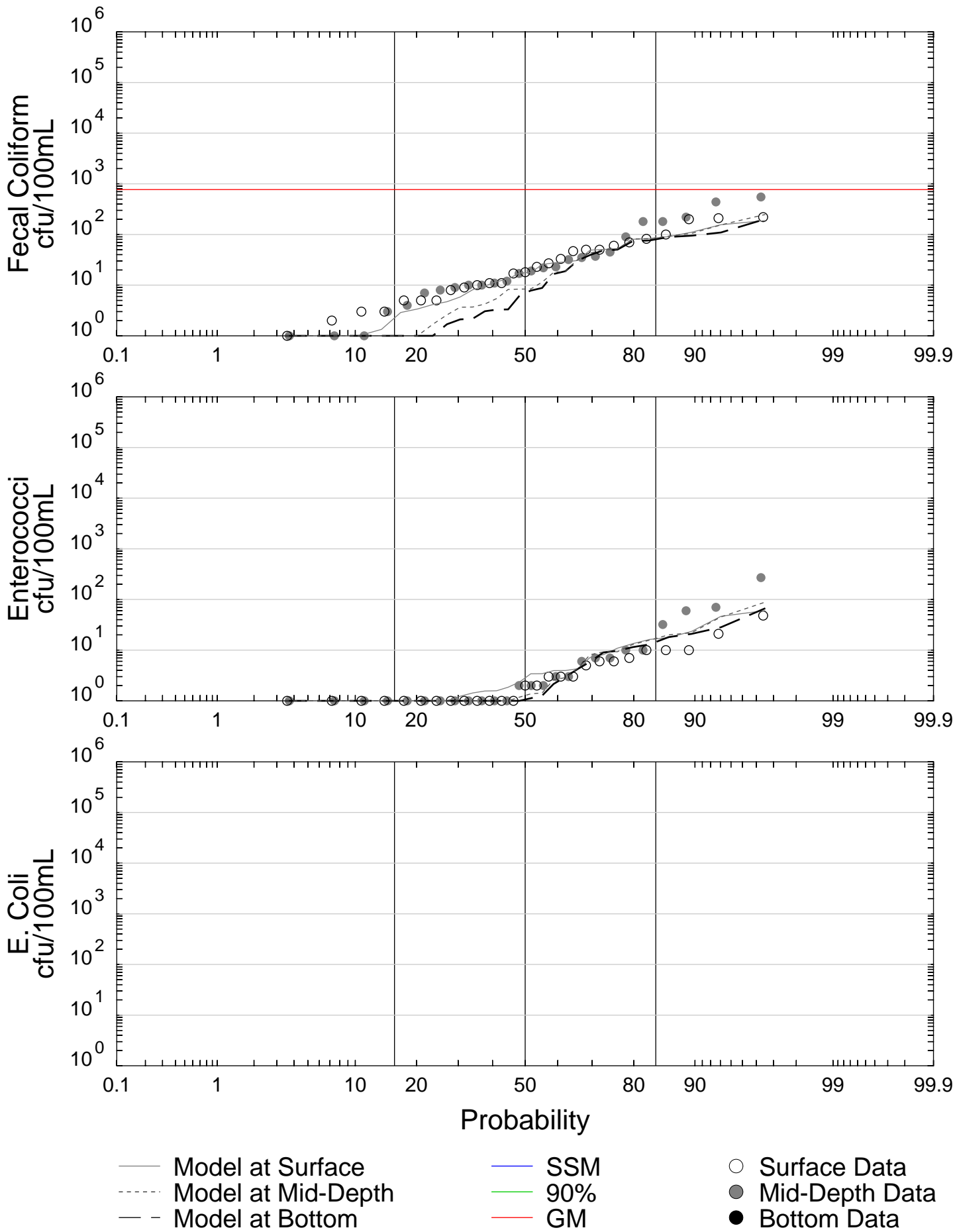


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B27

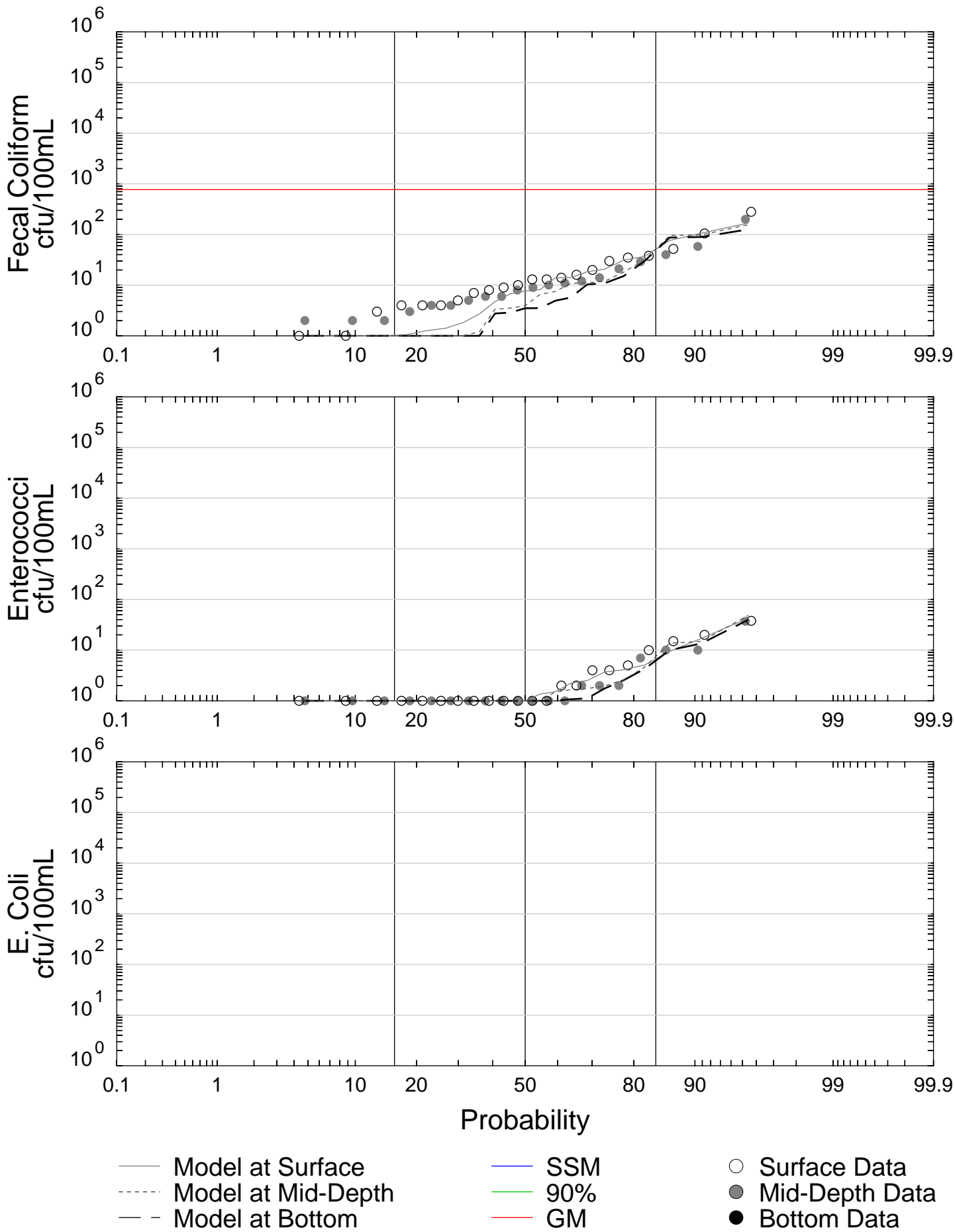


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B9

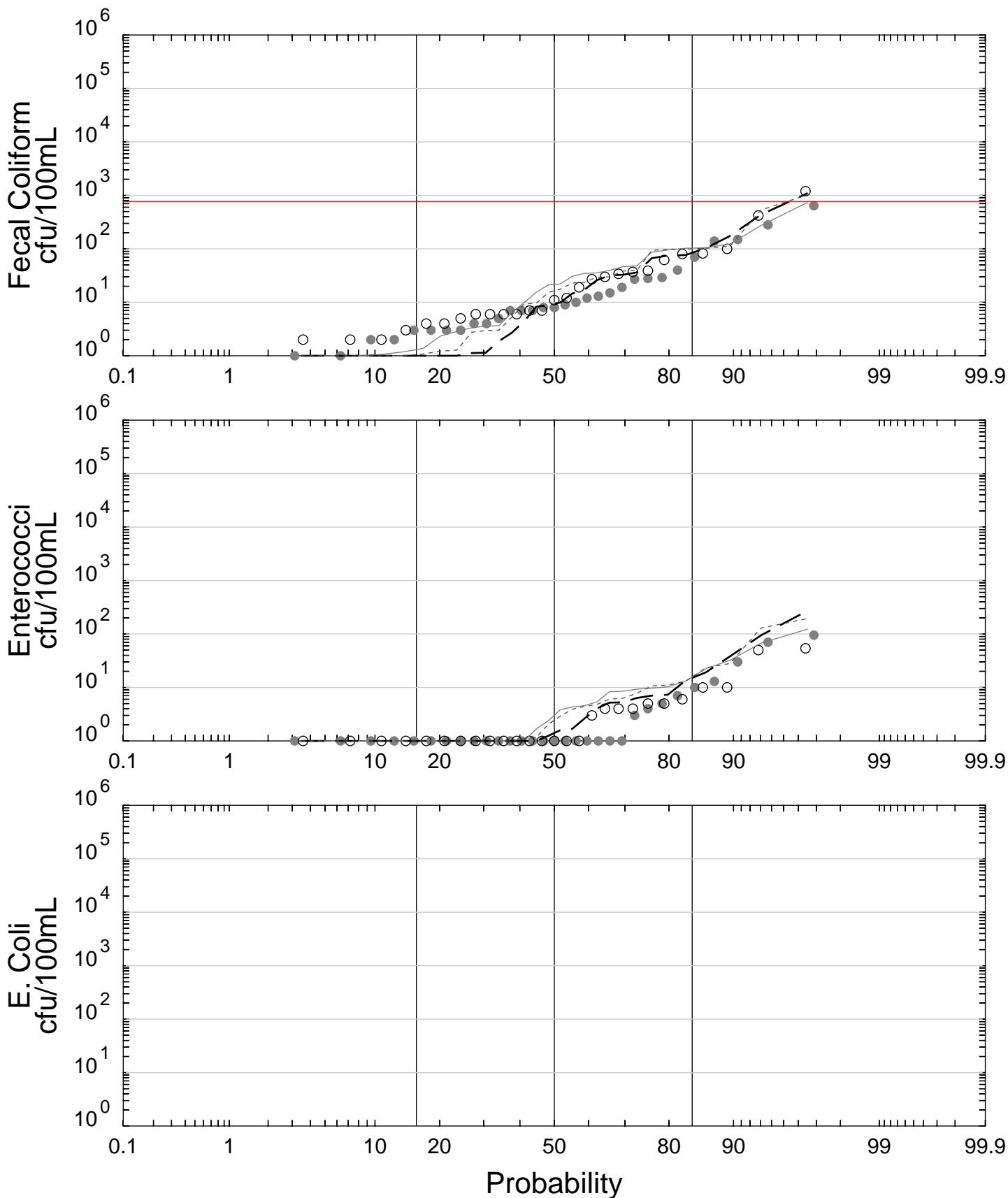


Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B28



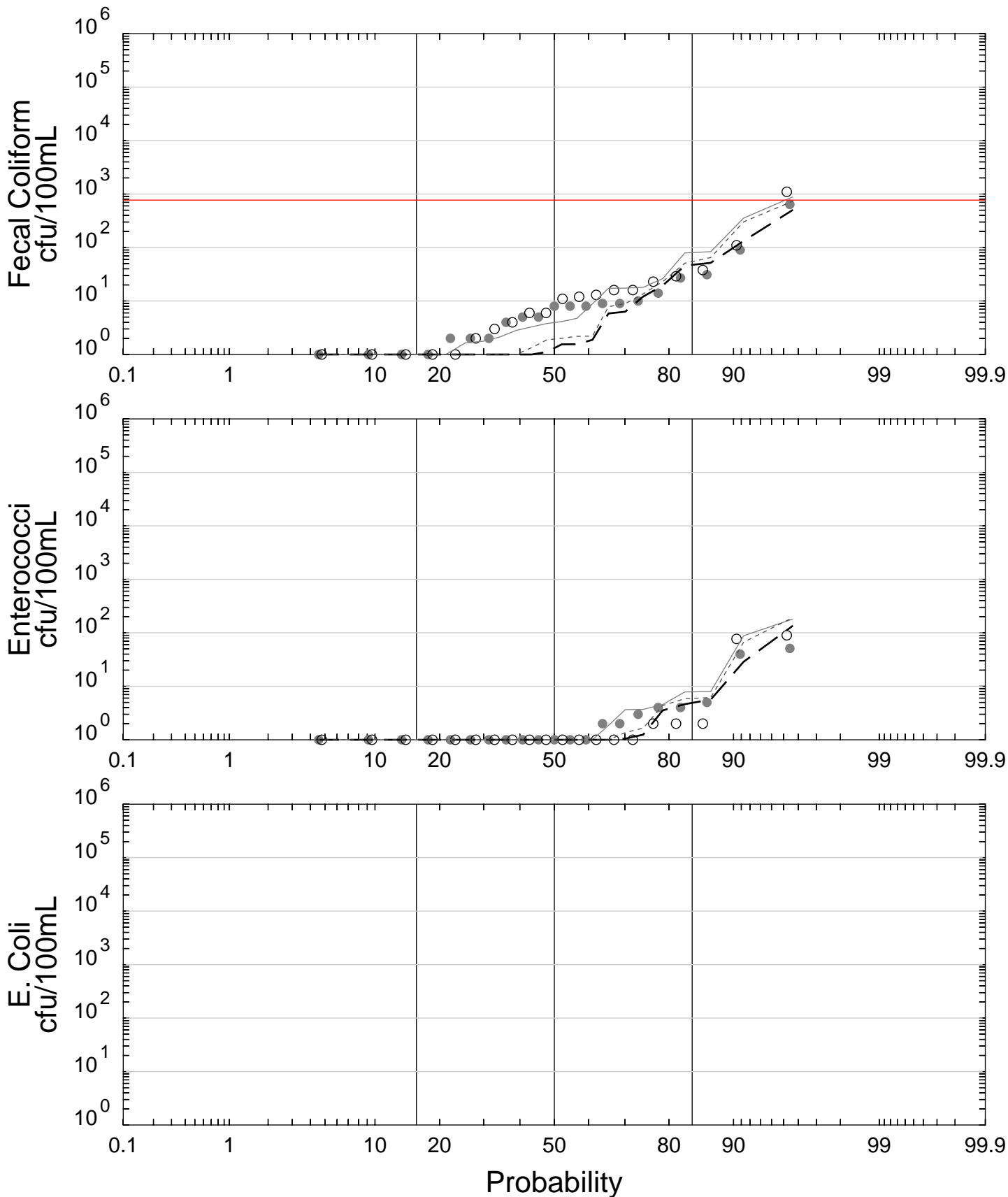
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B21A



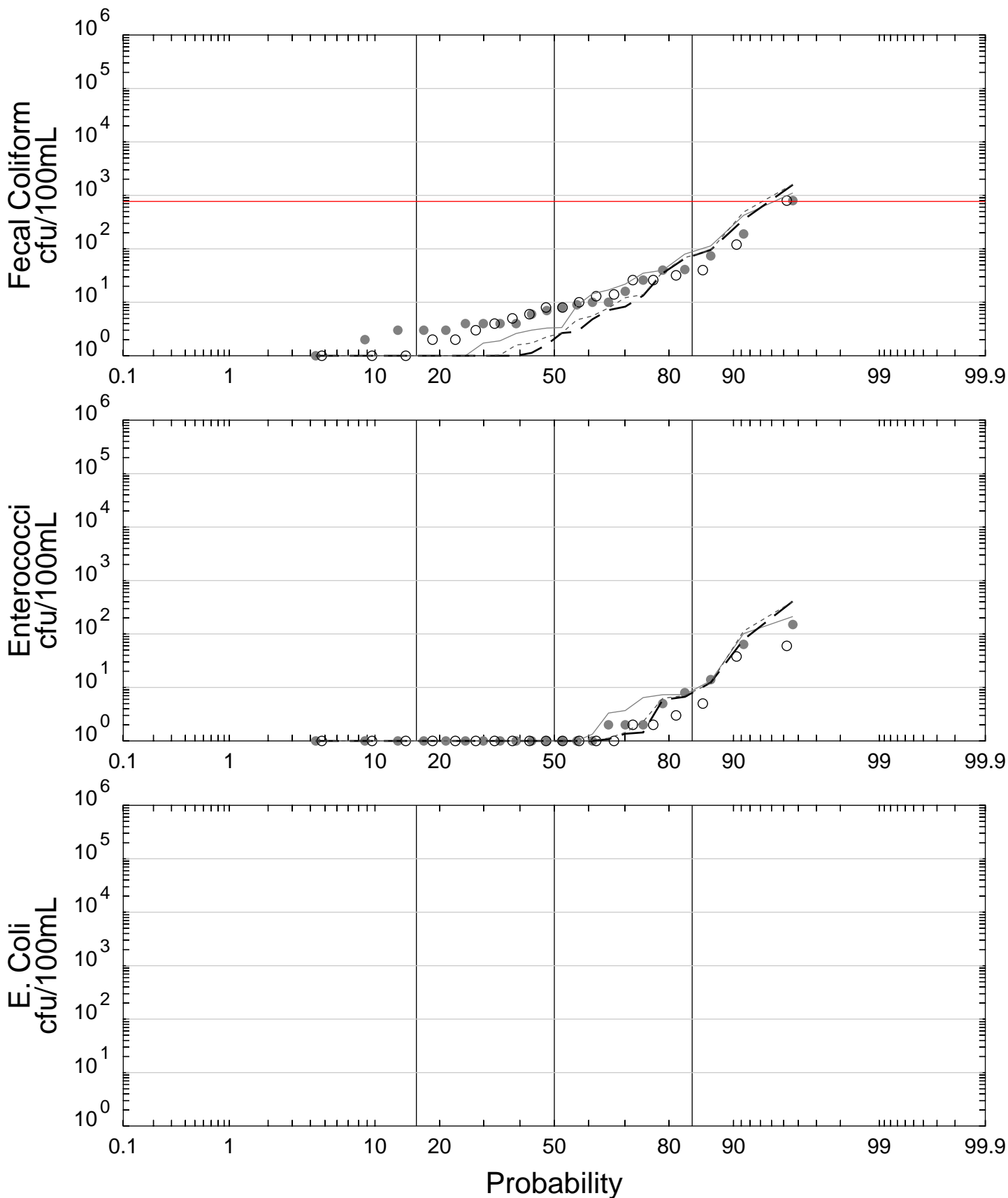
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

HUDSON RIVER

SE2

Station: B21B



- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

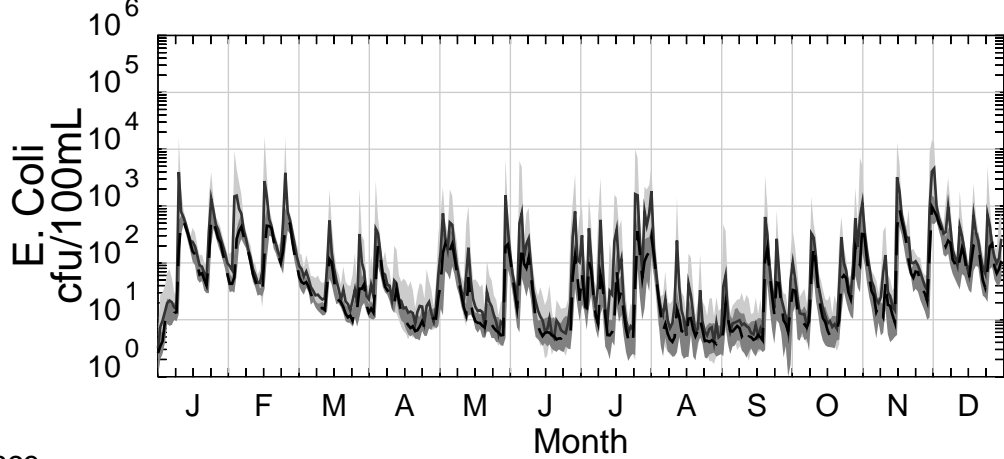
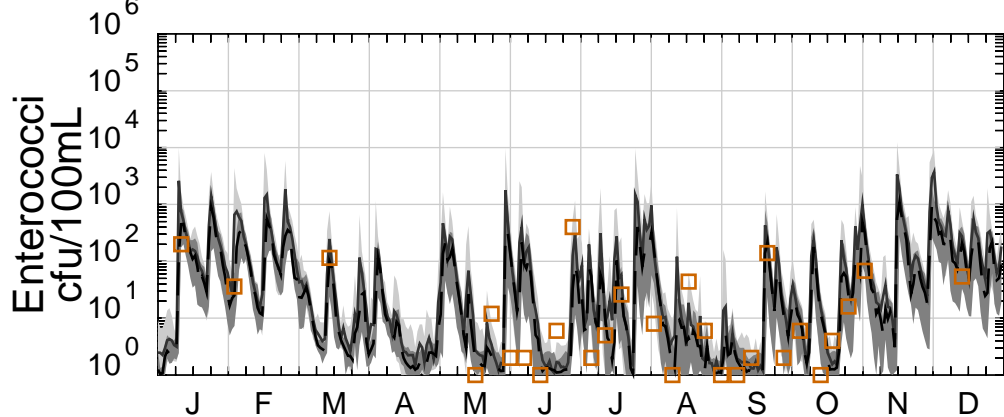
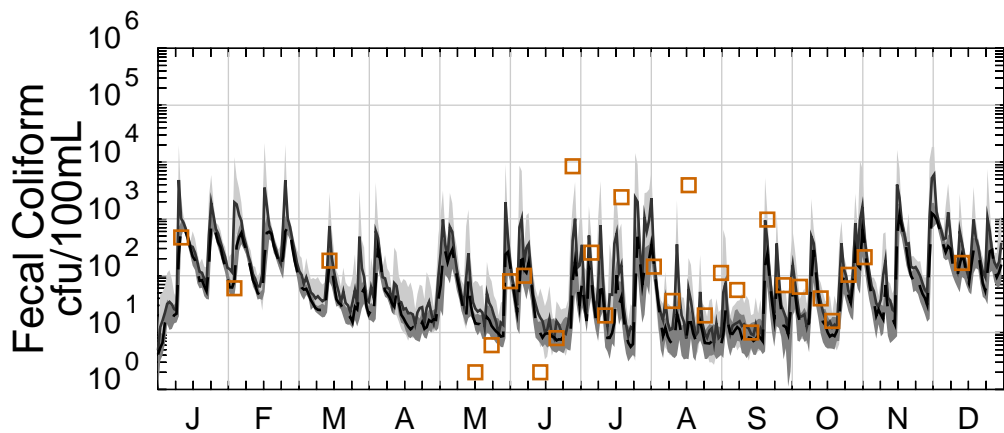
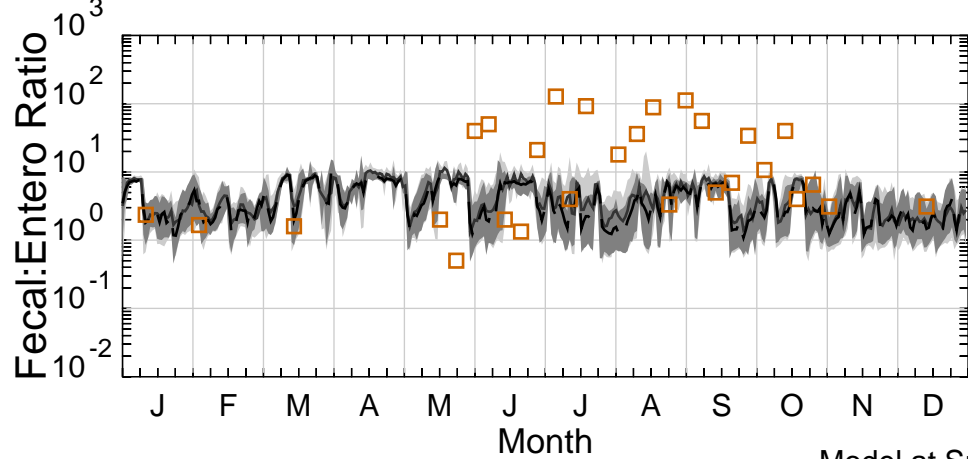
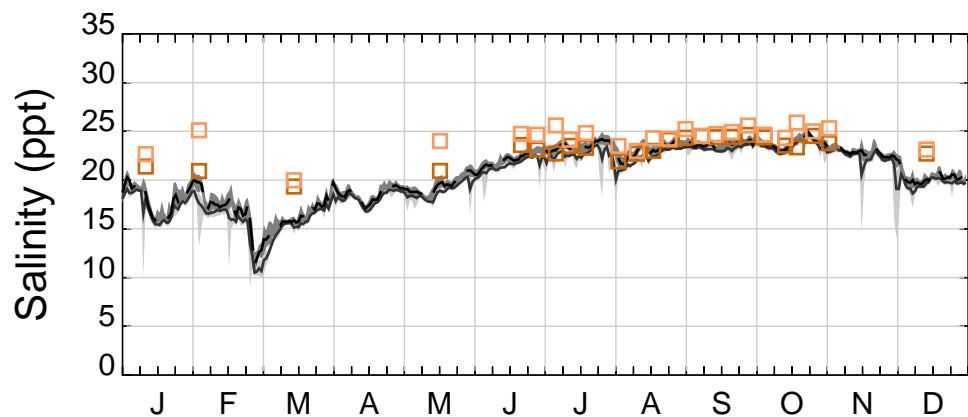
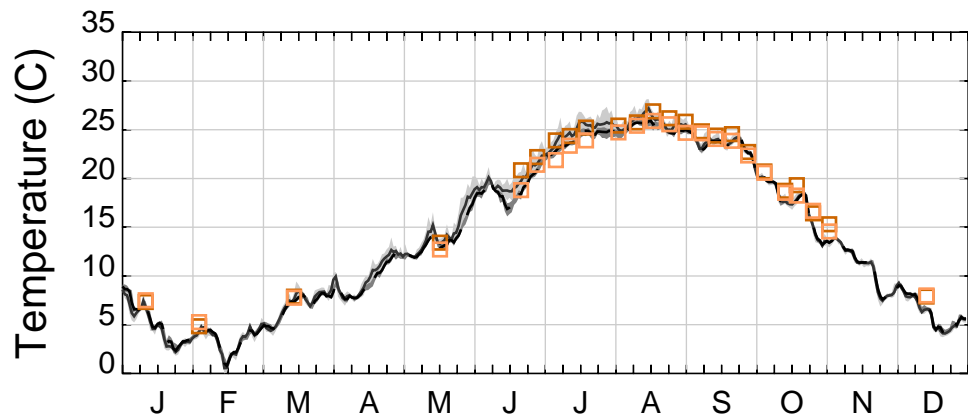


Appendix E-7

Calibration Annual Time-Series Figures with NYCDEP Harbor Survey Data

Staten Island AK Railroad Bridge

Station: K3

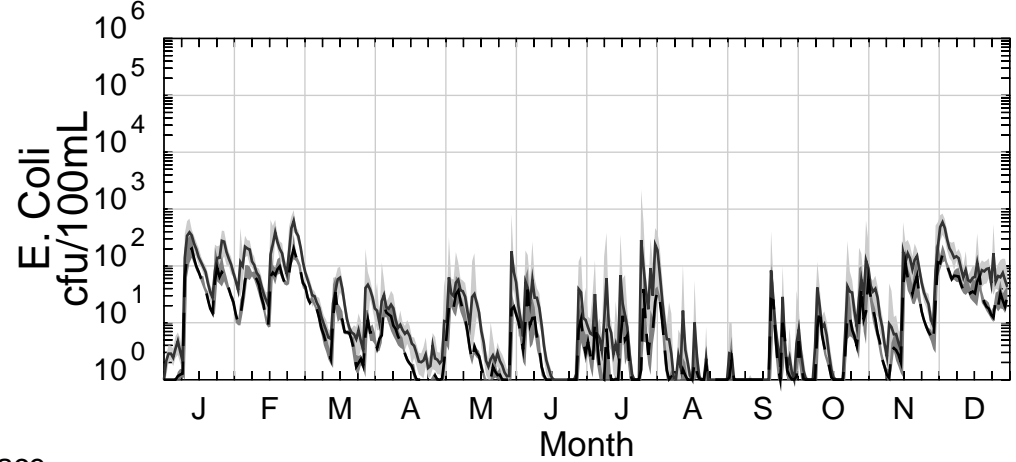
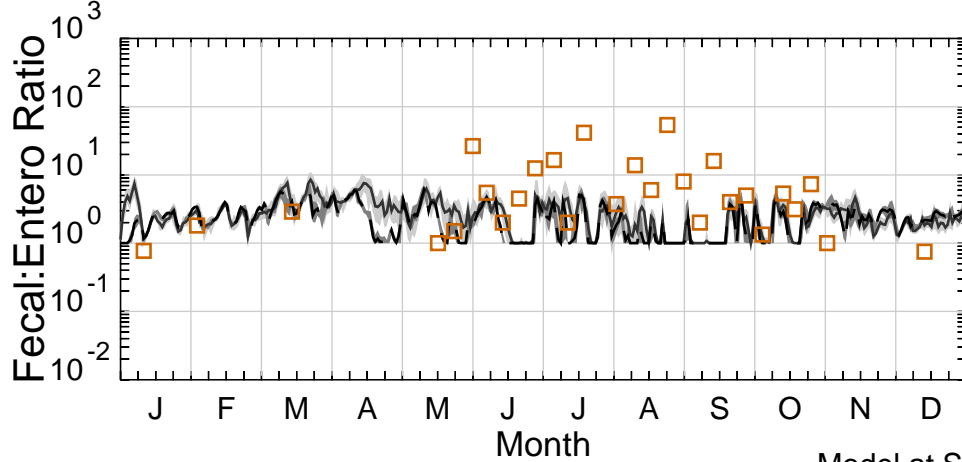
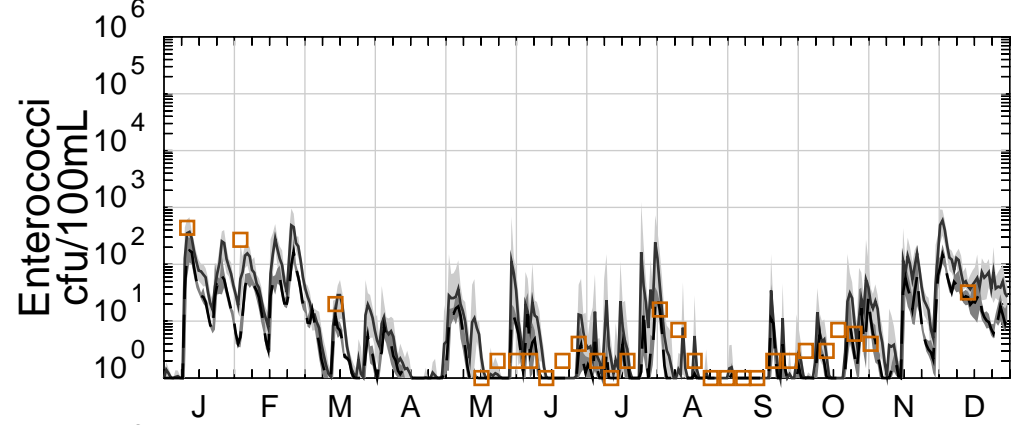
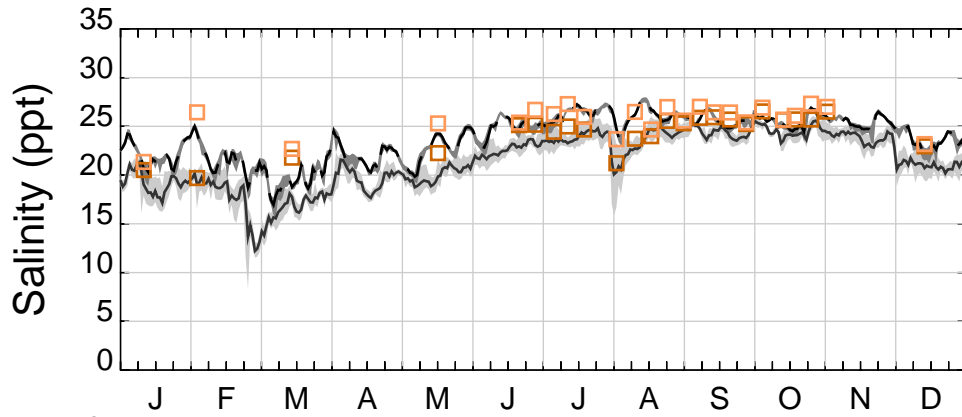
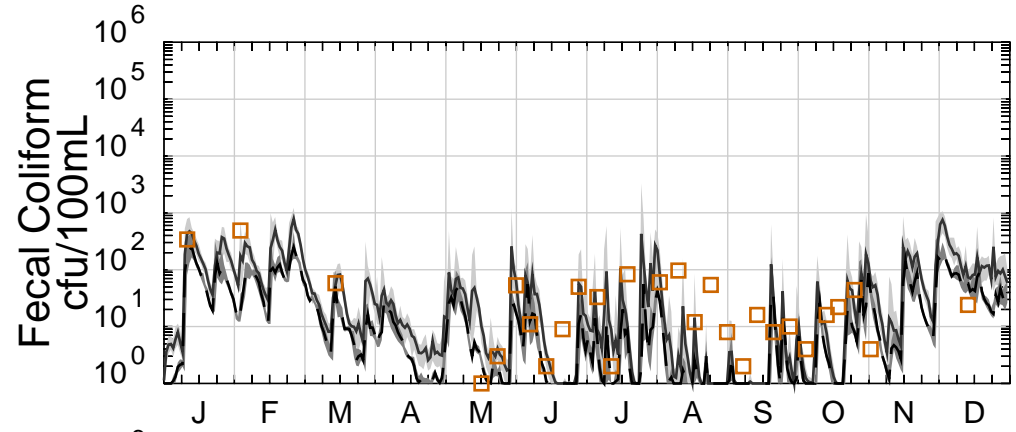
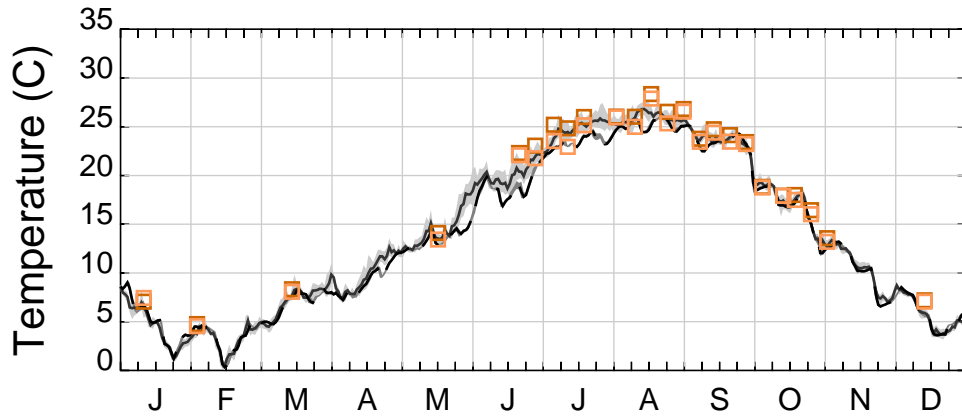


Model = 2016
Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Station: K5

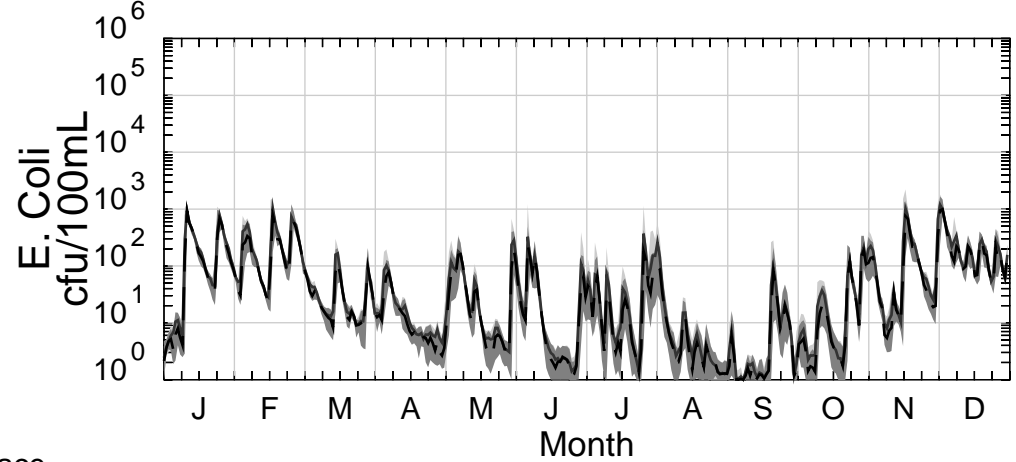
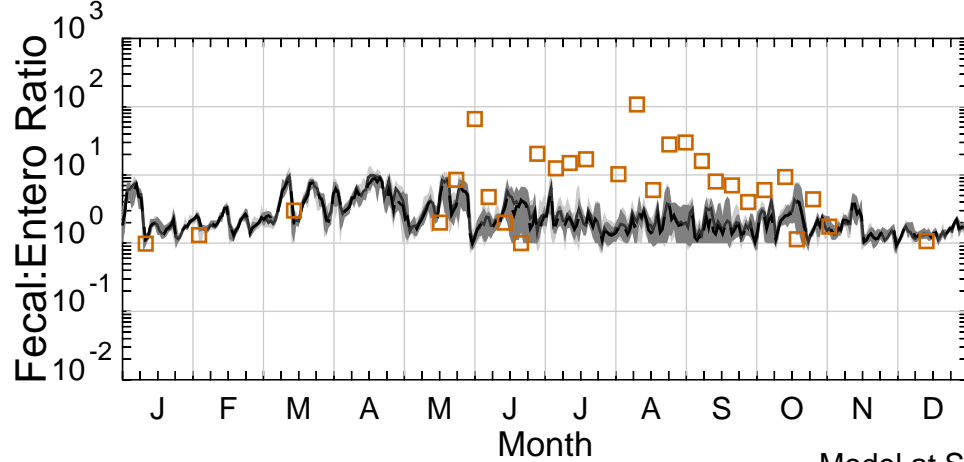
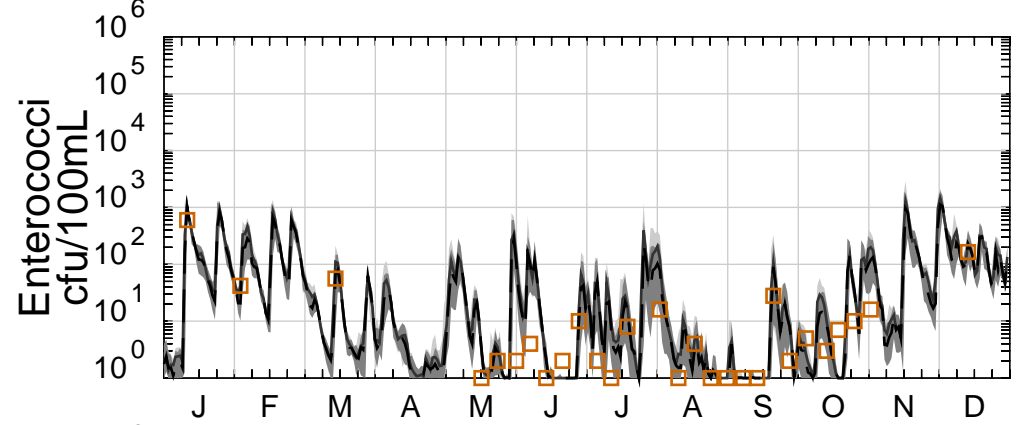
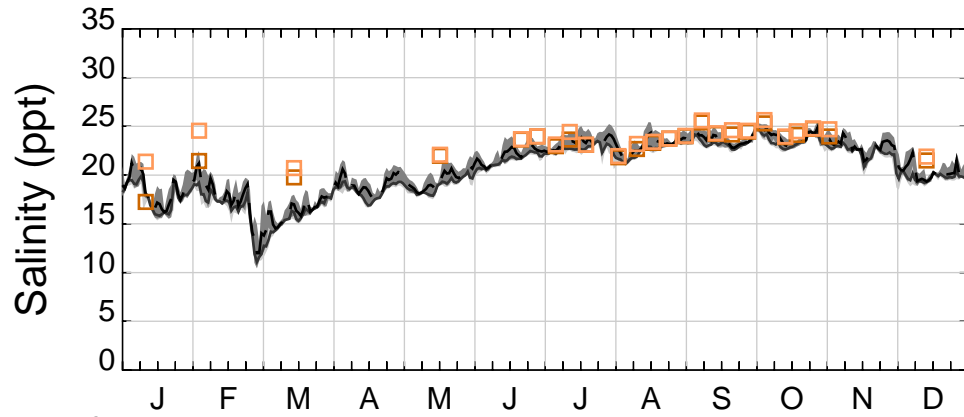
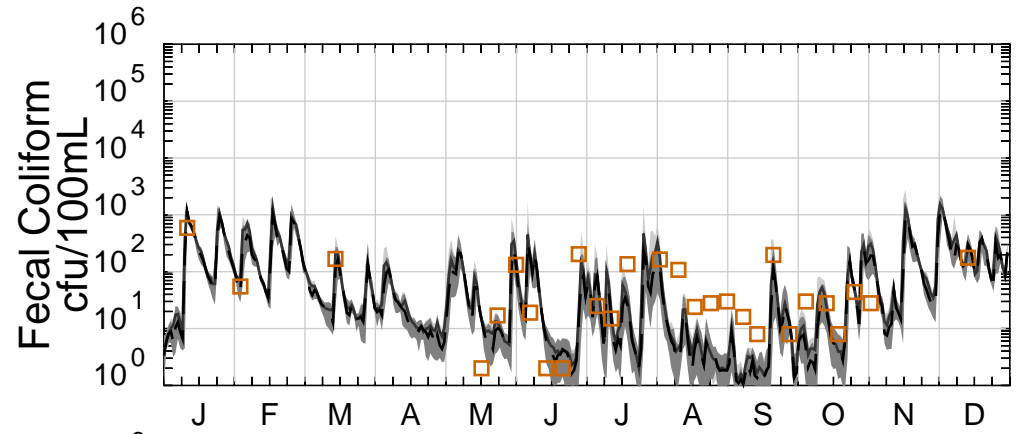
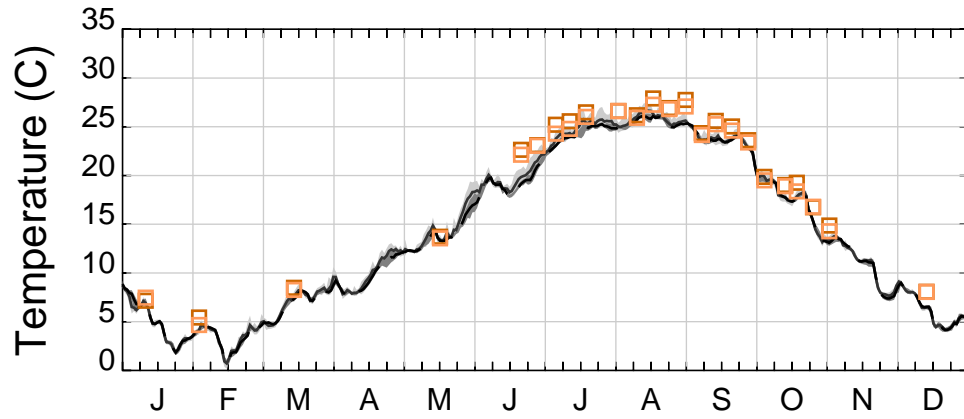


Model = 2016
 Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Staten Island Fresh Kills

Station: K4

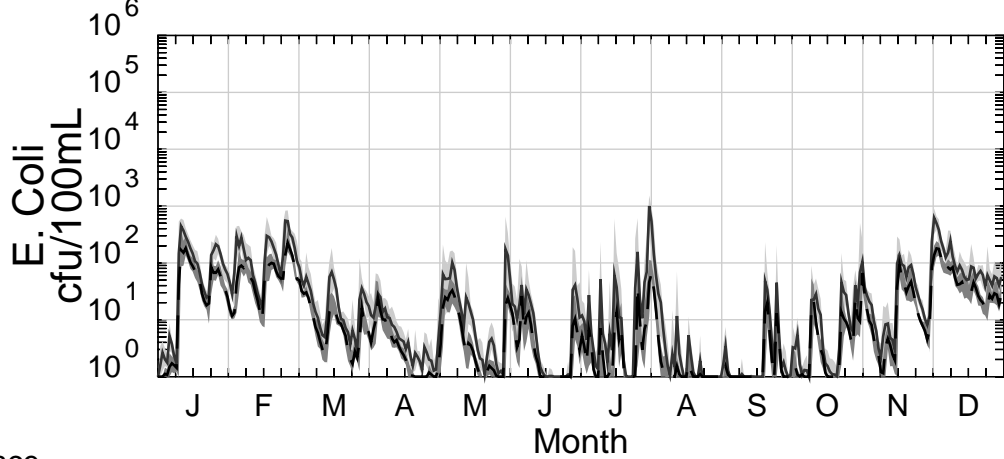
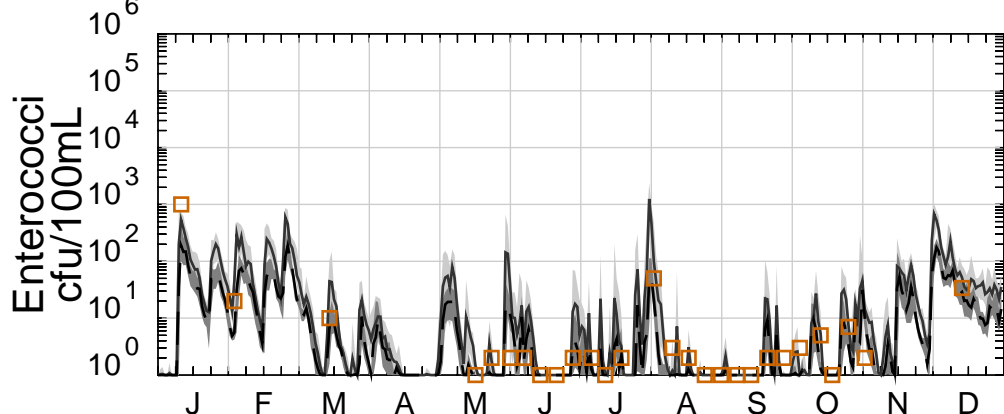
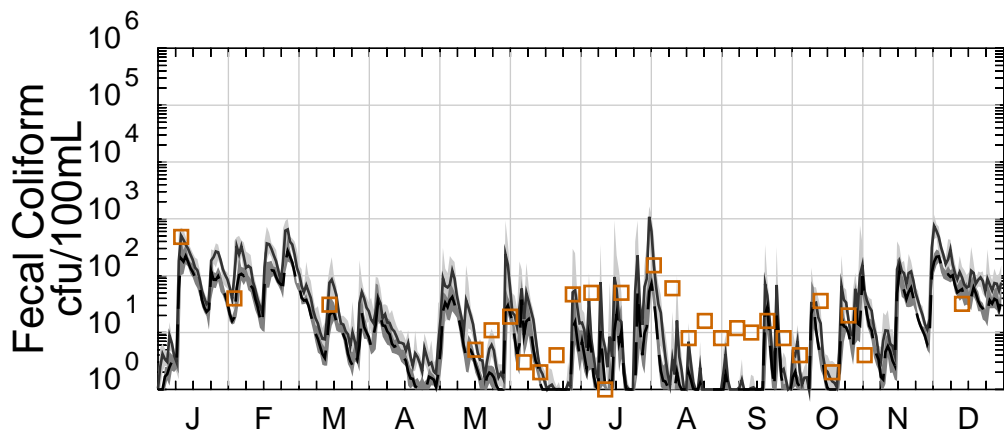
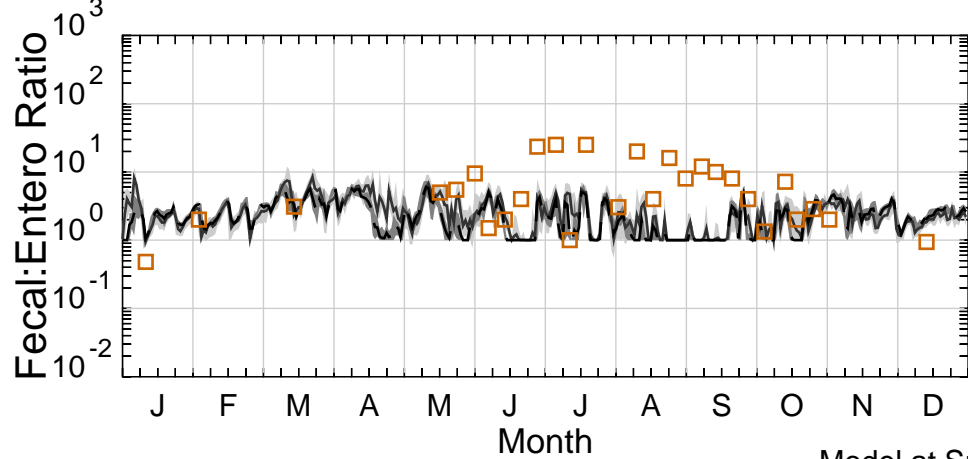
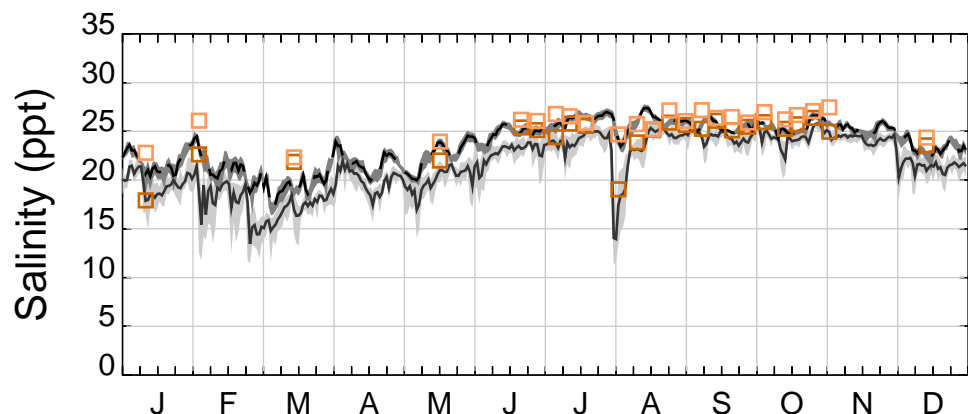
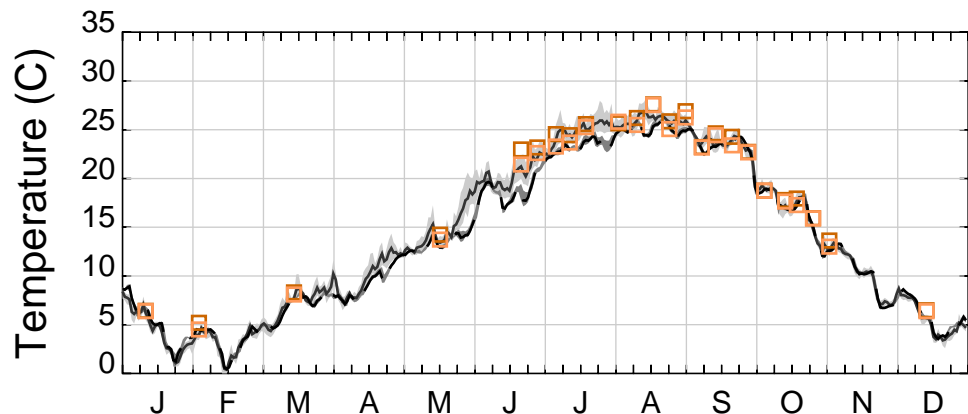


Model = 2016
Data = 2016

- Model at Surface
- - Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Staten Island Raritan River

Station: K5A



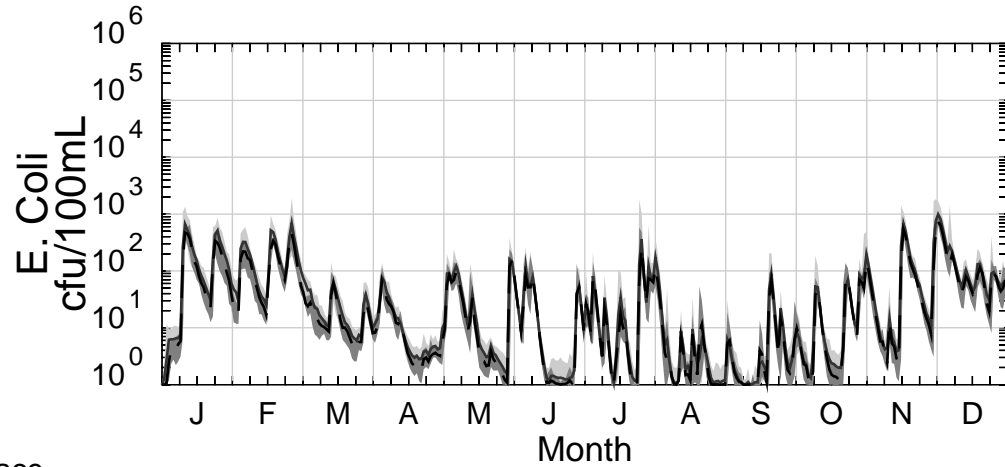
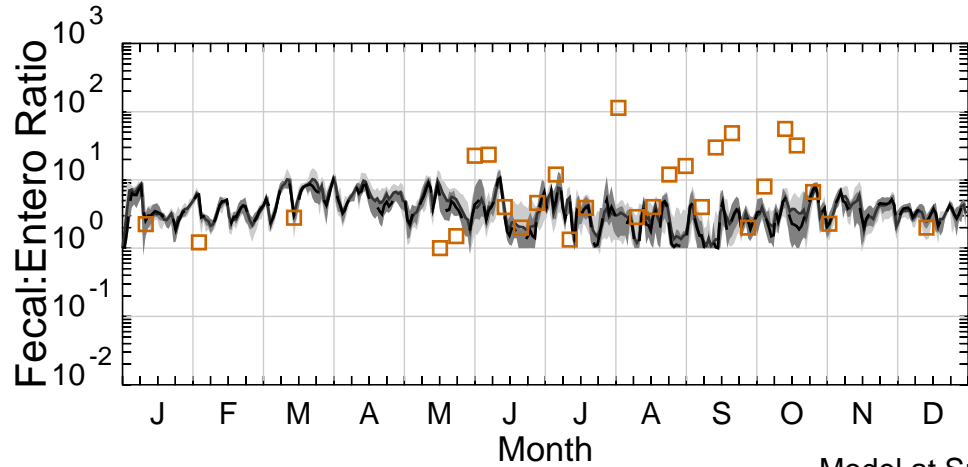
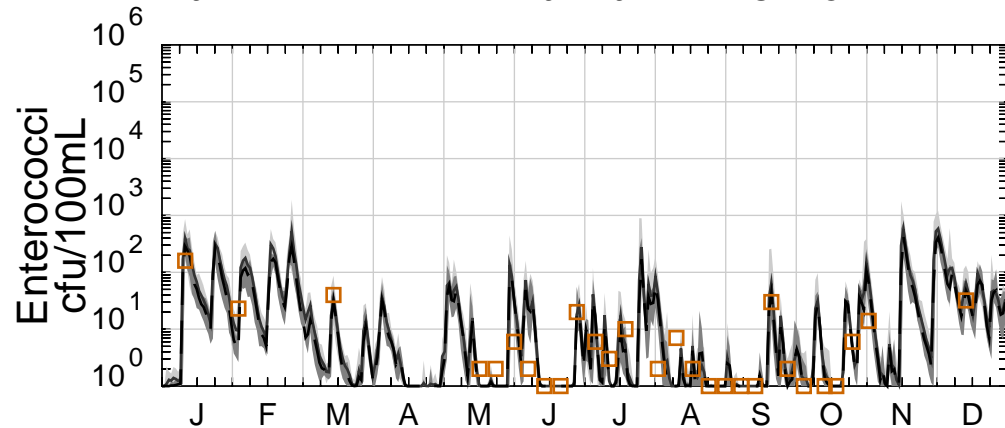
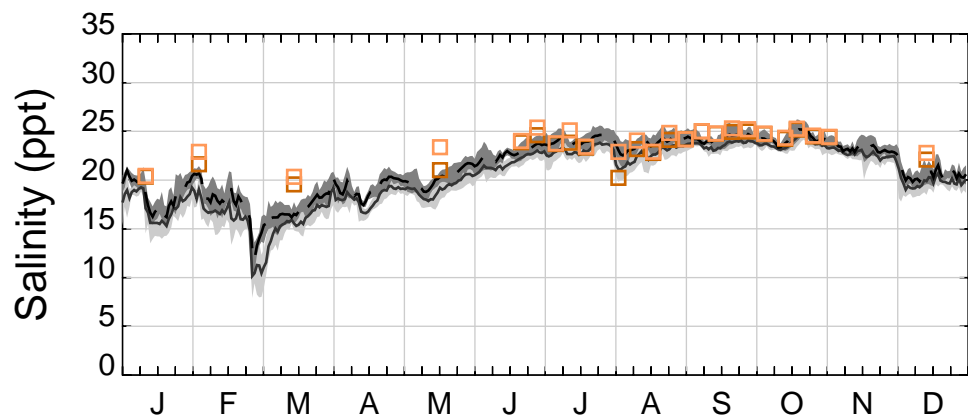
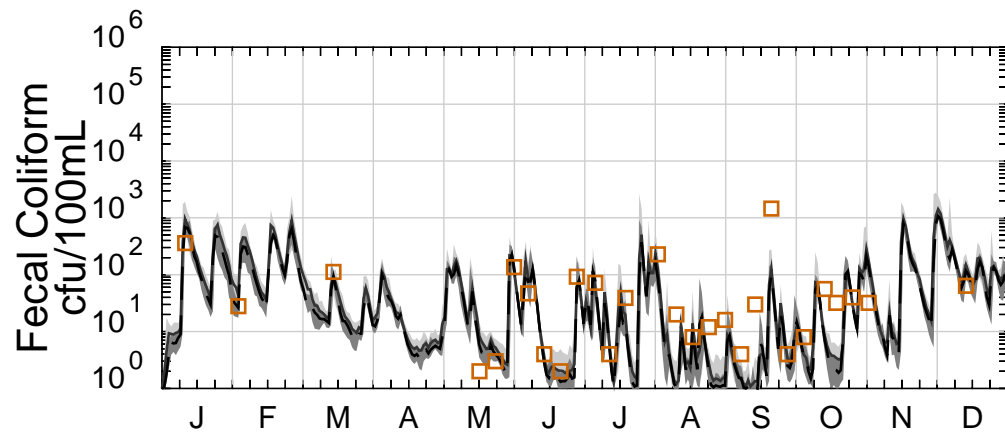
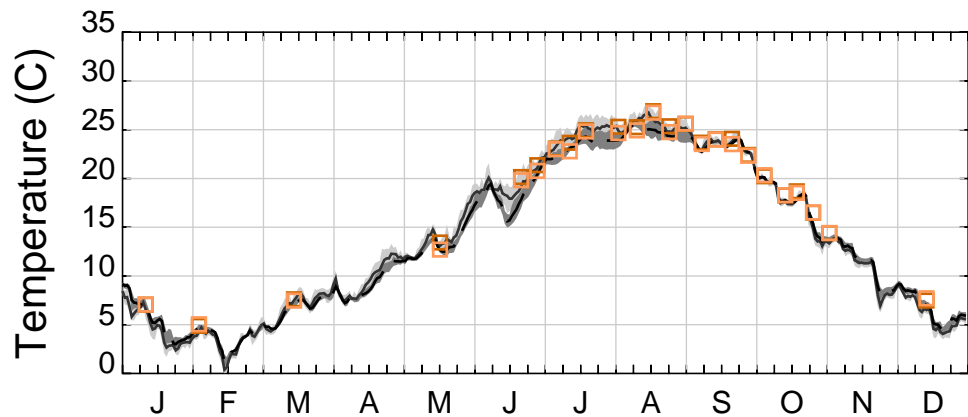
Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Staten Island Shooters Island

Station: K2



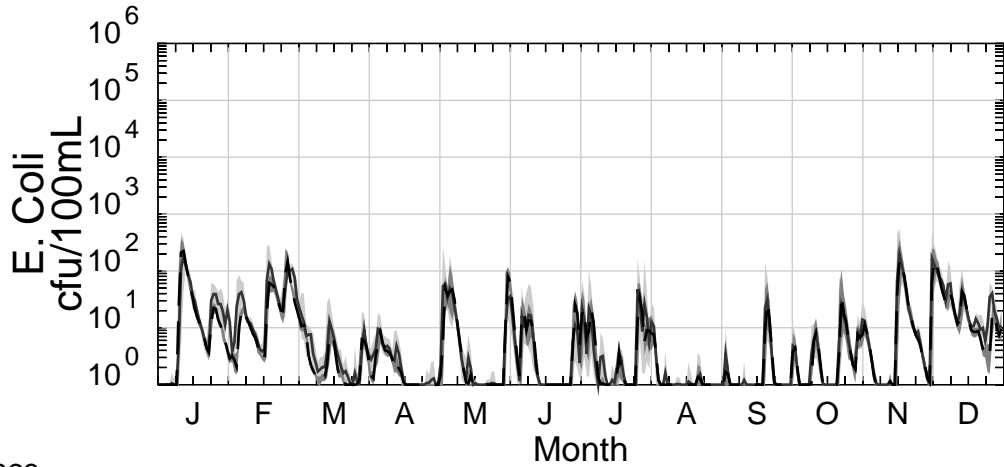
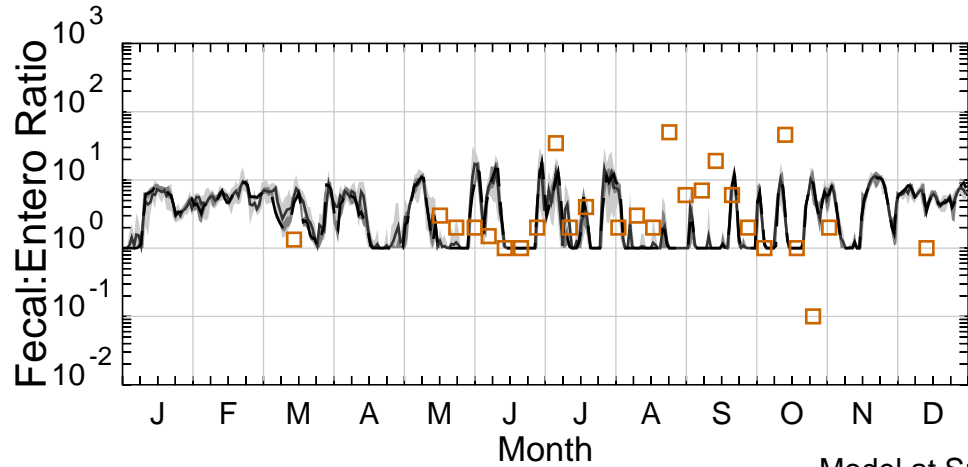
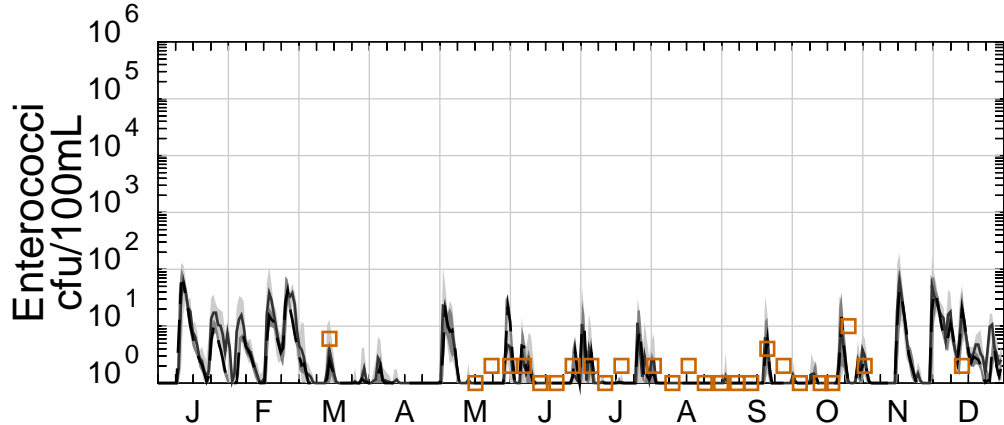
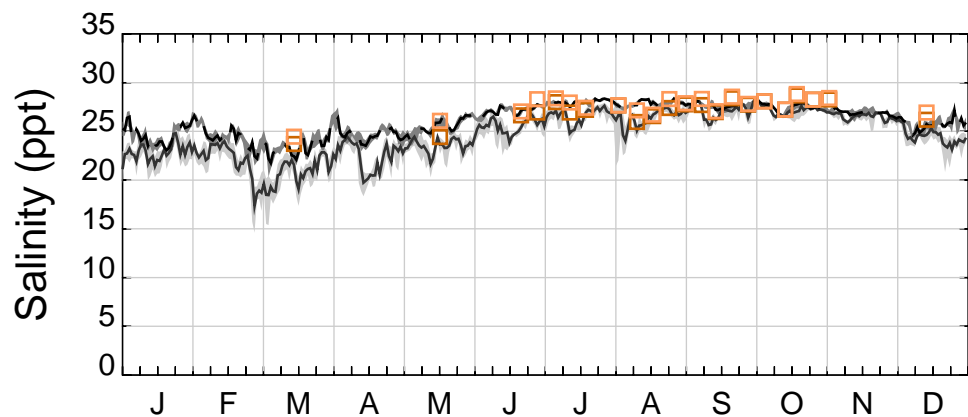
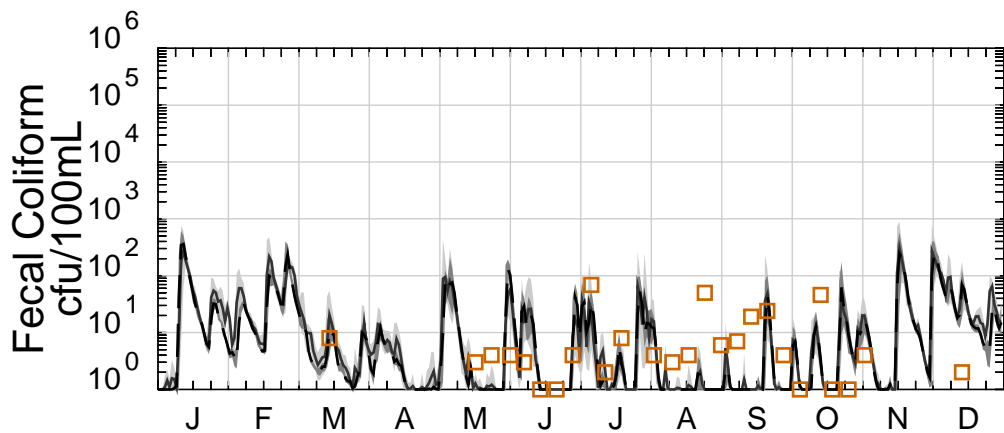
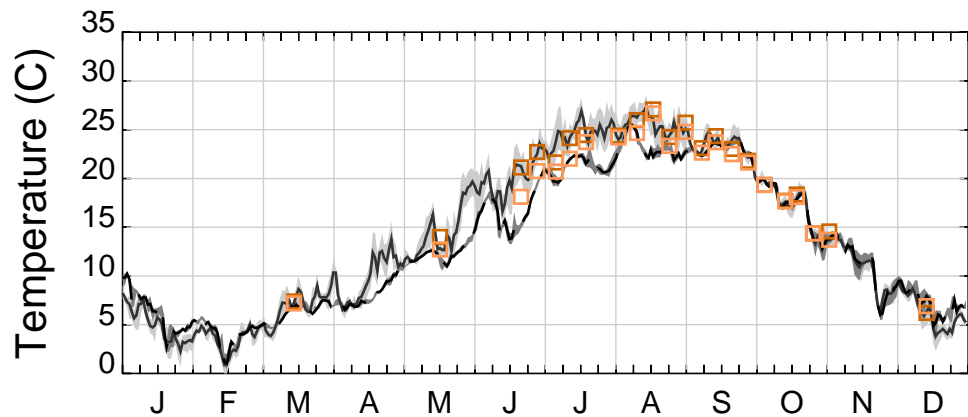
Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Staten Island Old Orchard Light

Station: K6

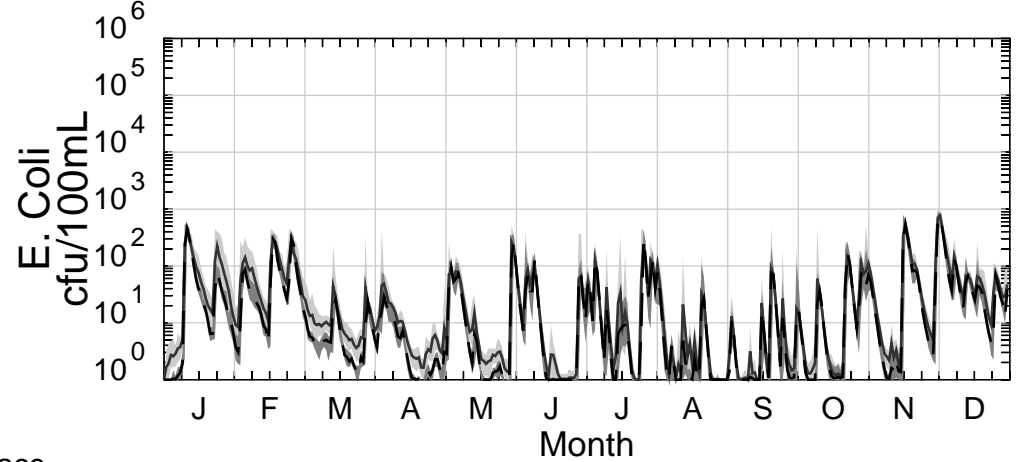
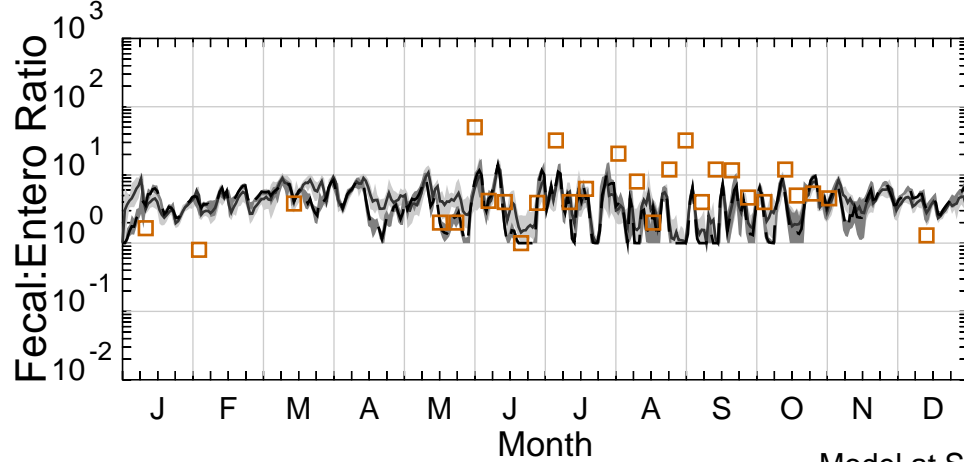
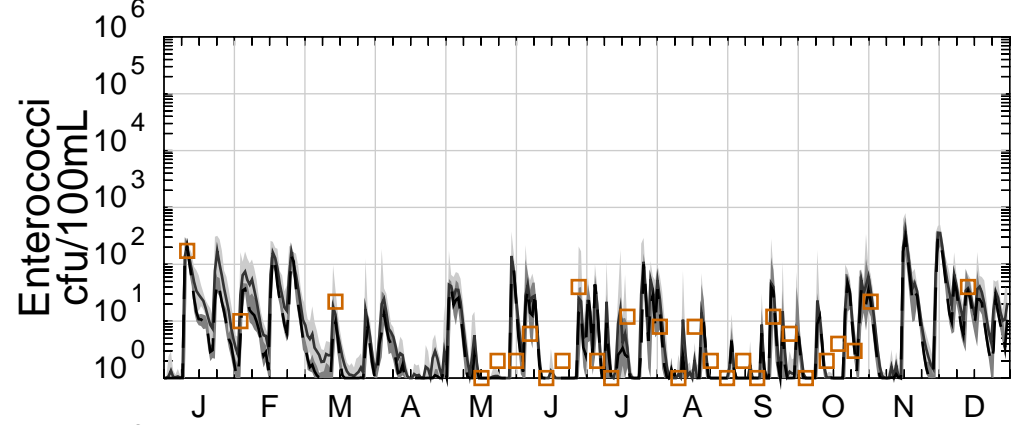
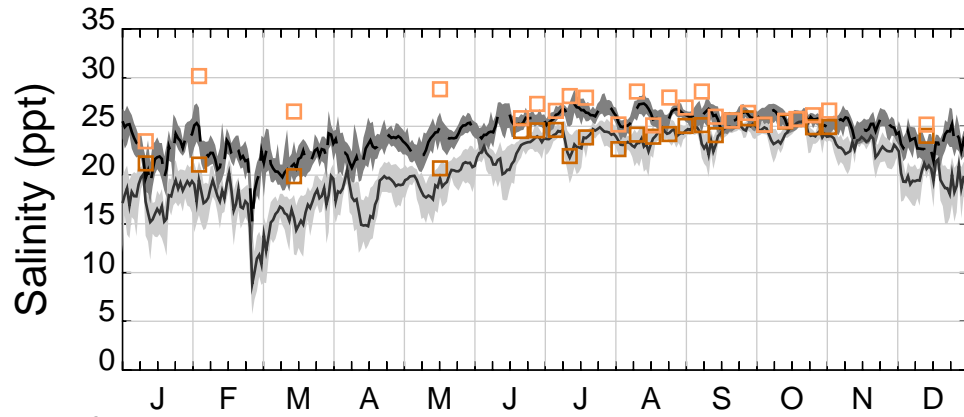
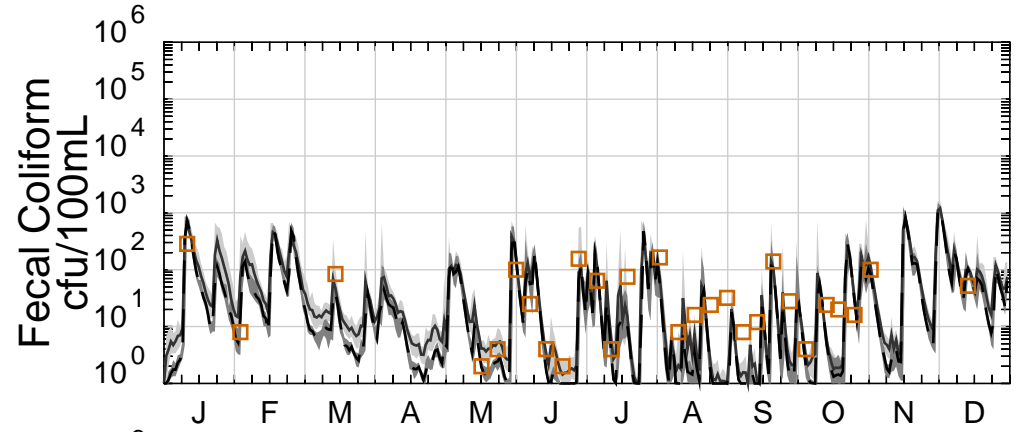
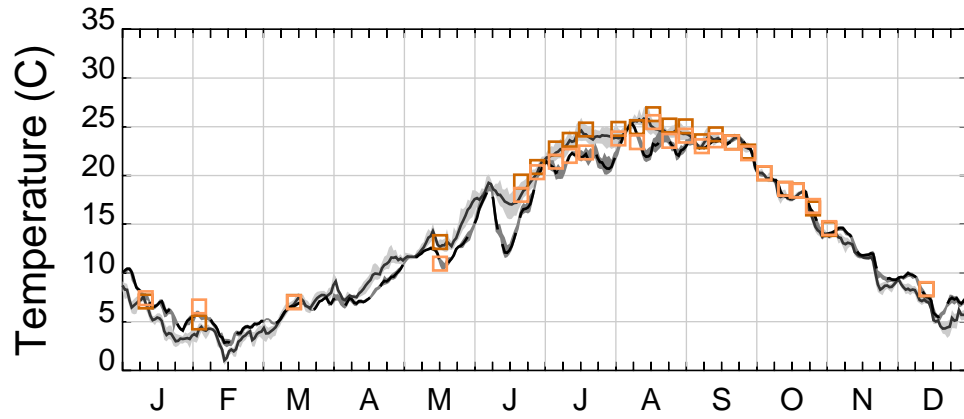


Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Staten Island St. George

Station: K1



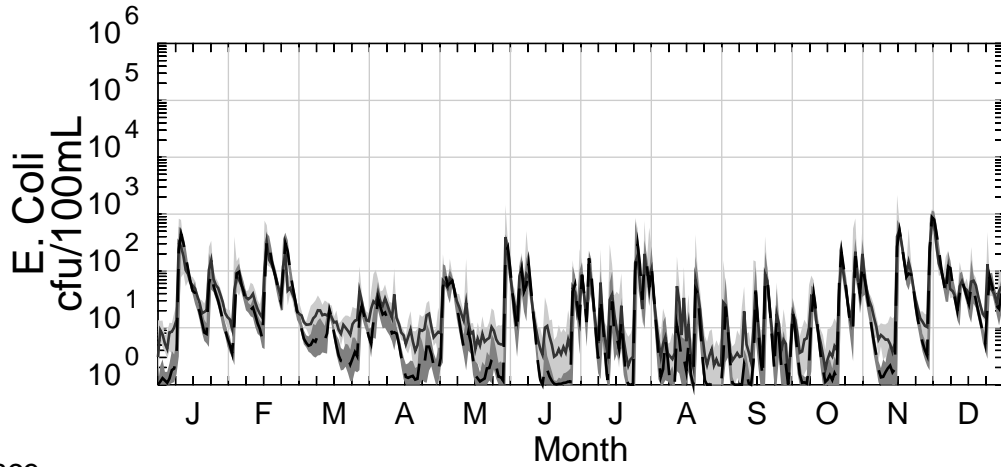
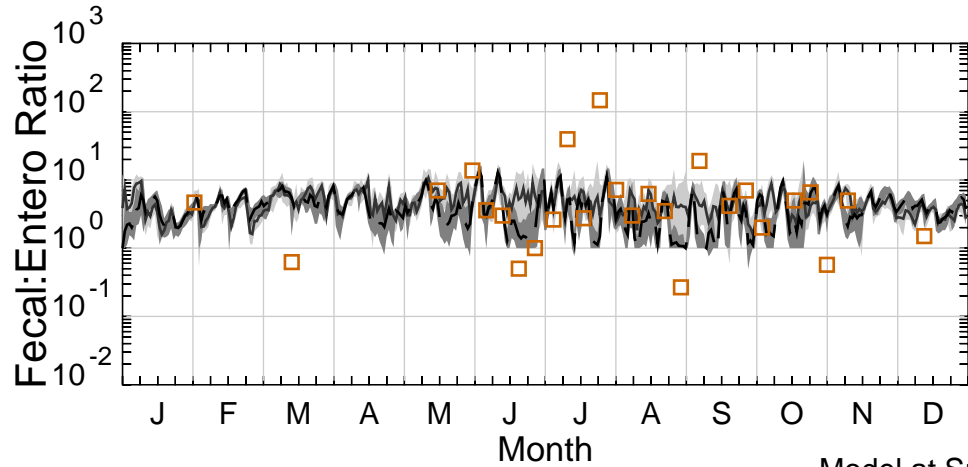
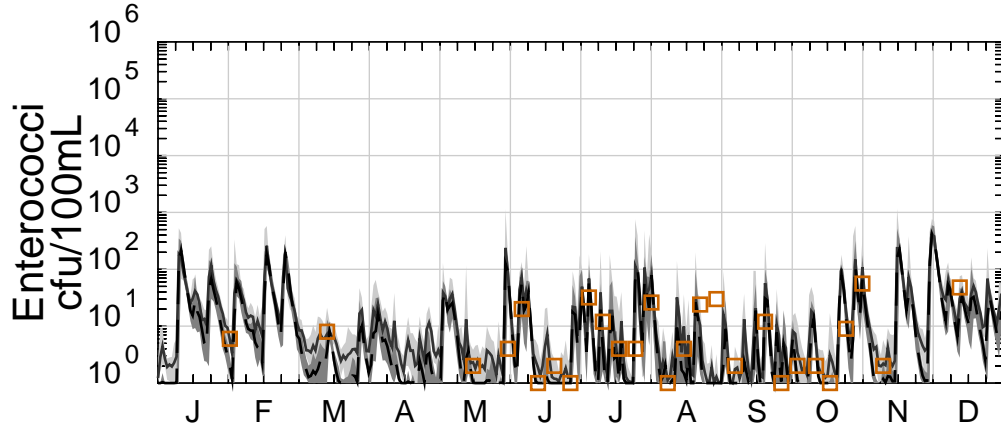
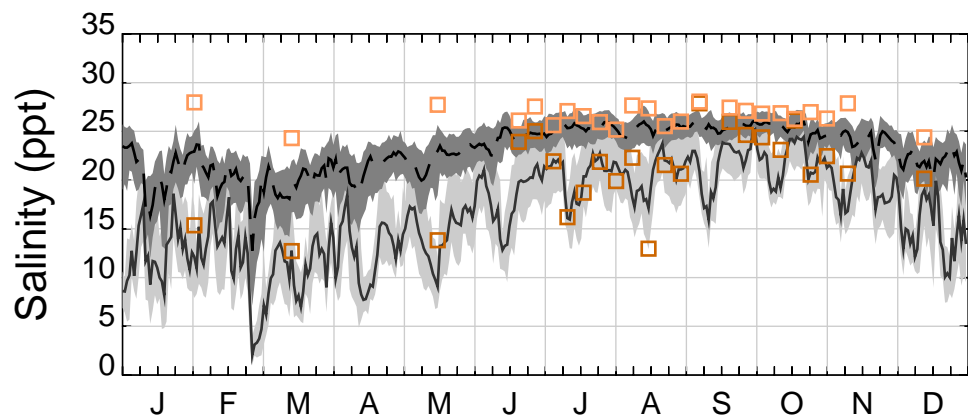
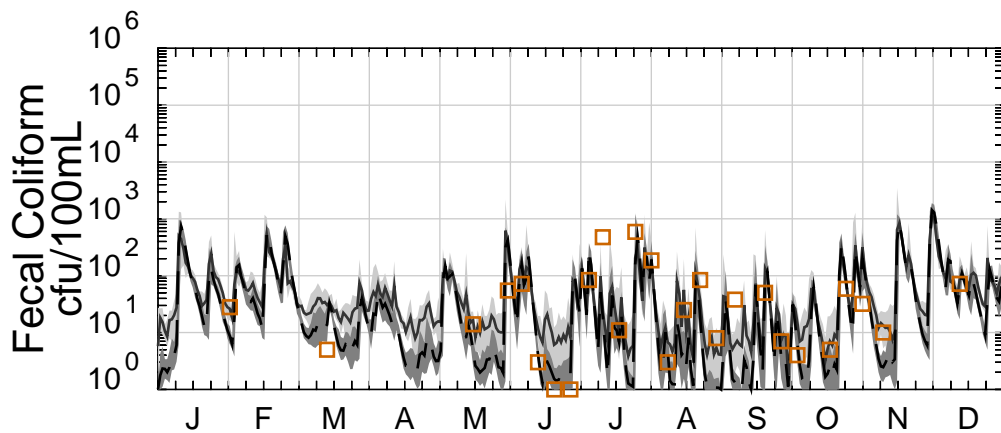
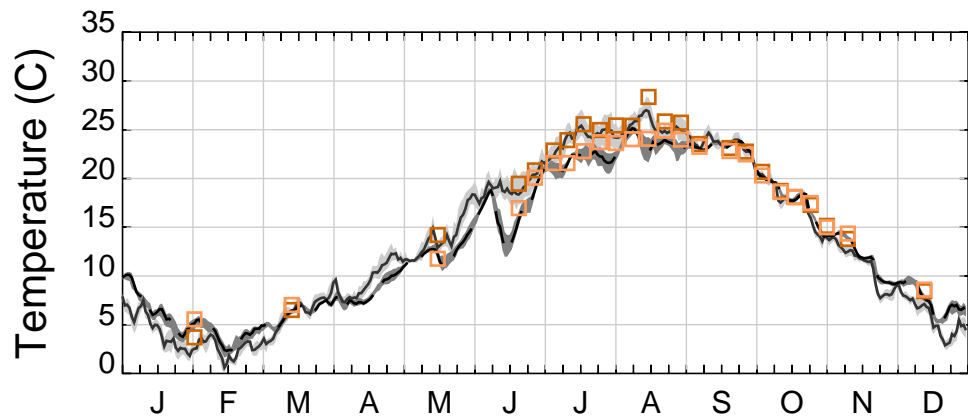
Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Hudson Pier A - The Battery

Station: N5

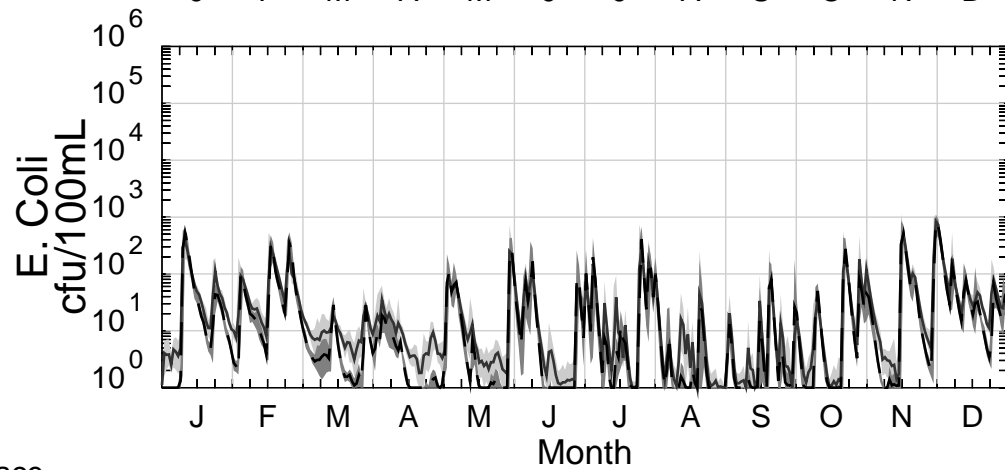
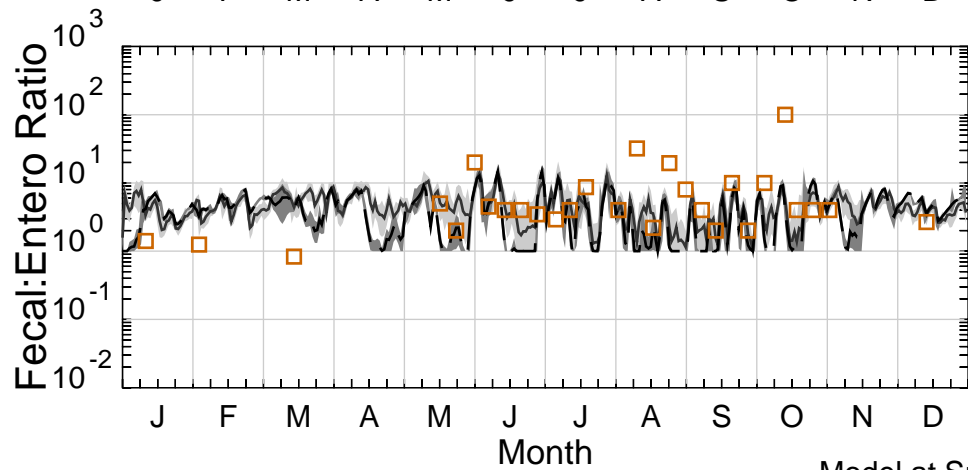
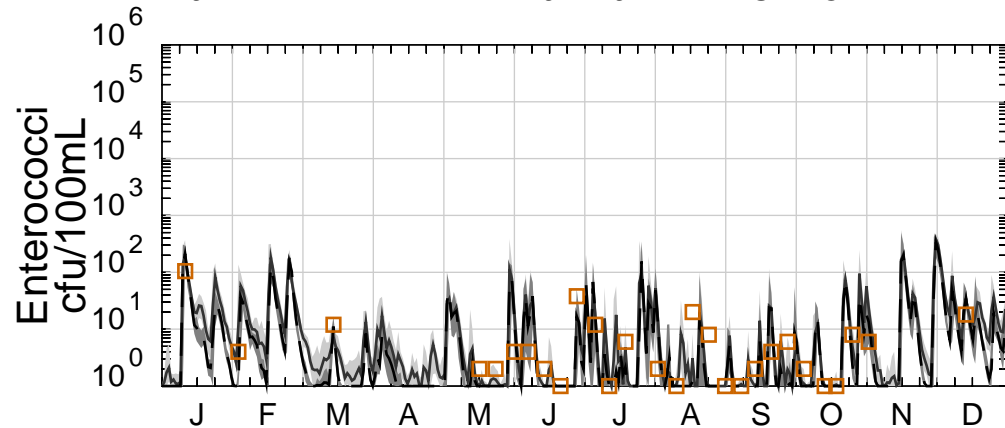
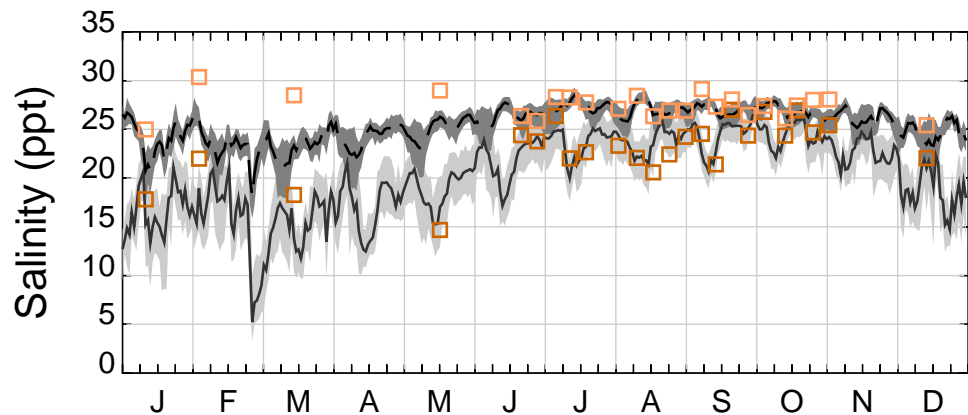
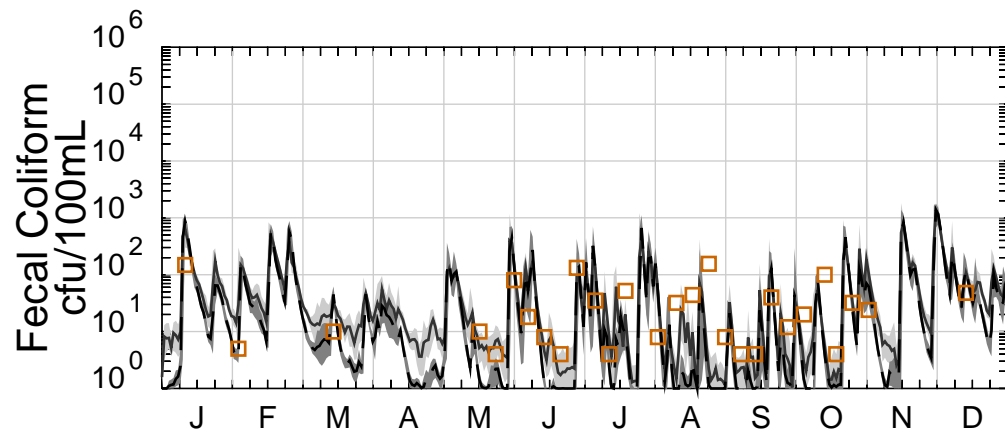
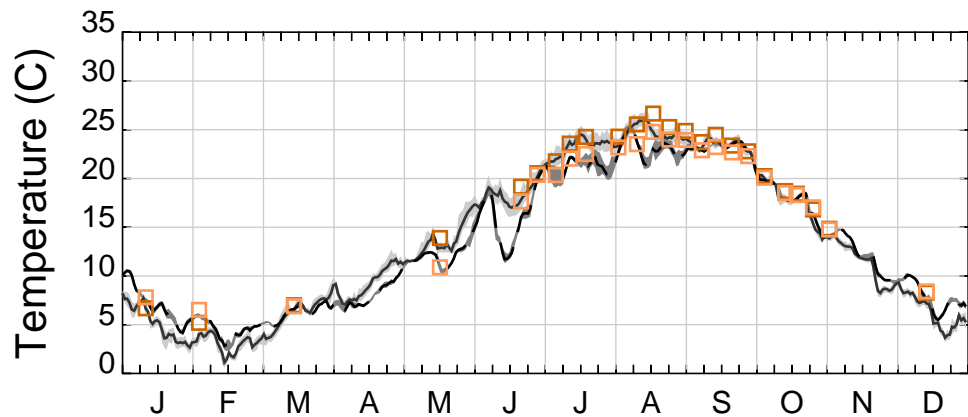


Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Hudson Bell Buoy 31

Station: N6



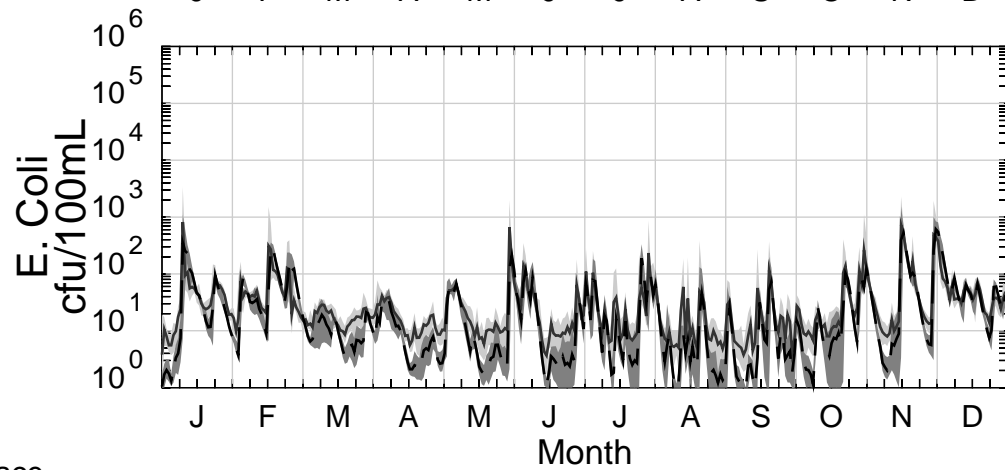
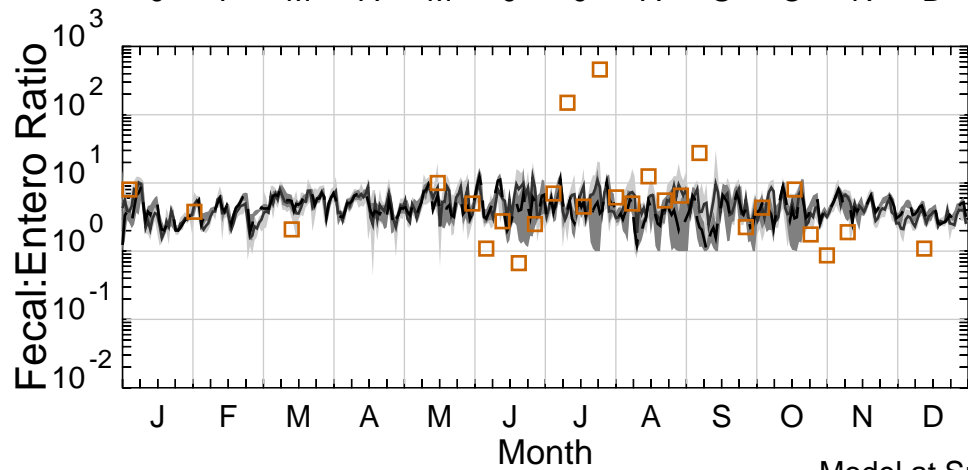
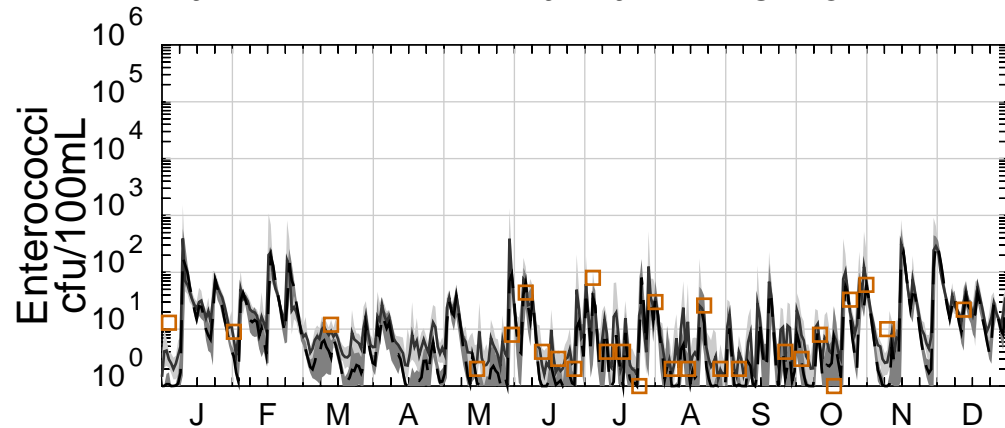
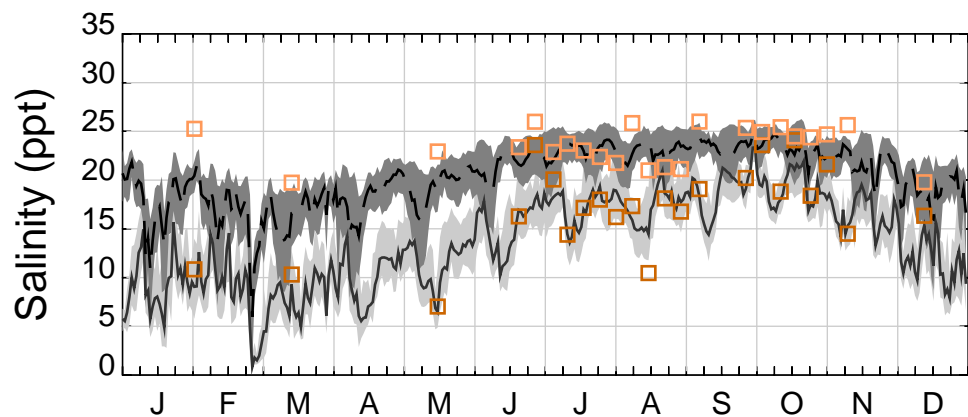
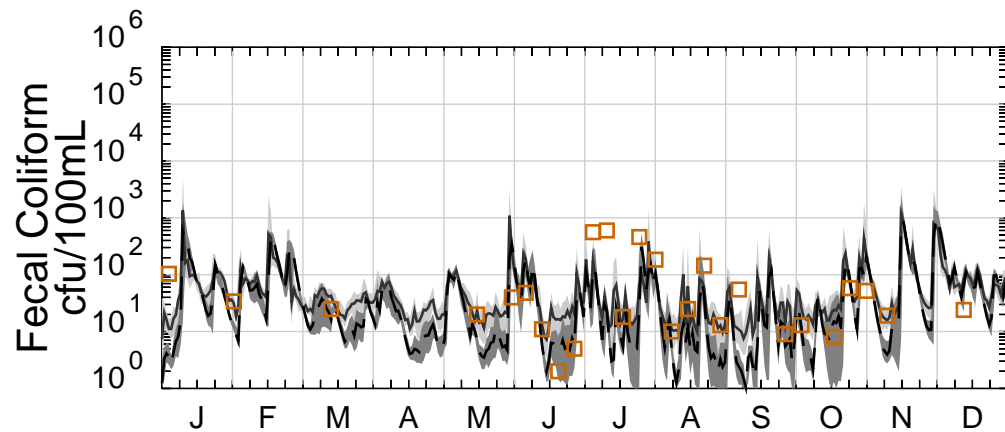
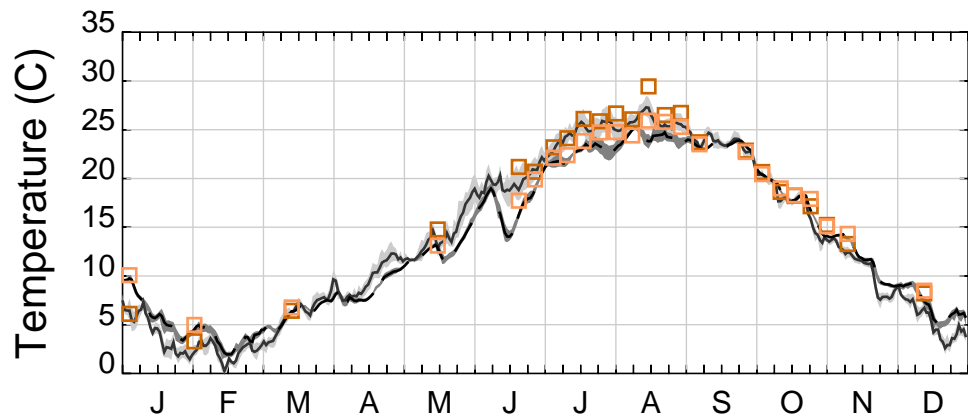
Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Hudson W. 42 St.

Station: N4



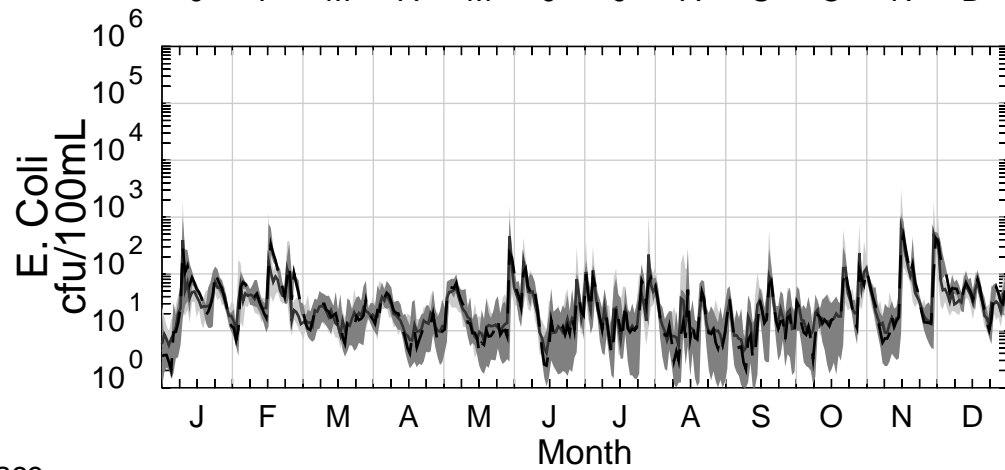
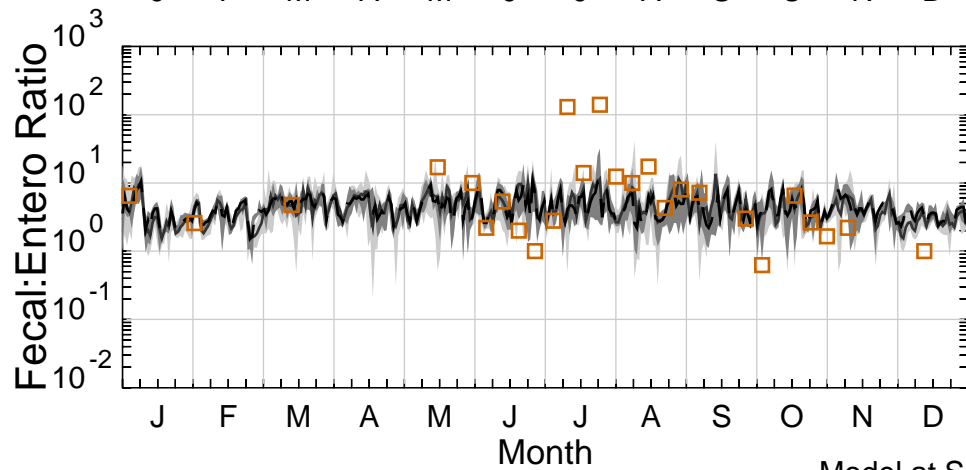
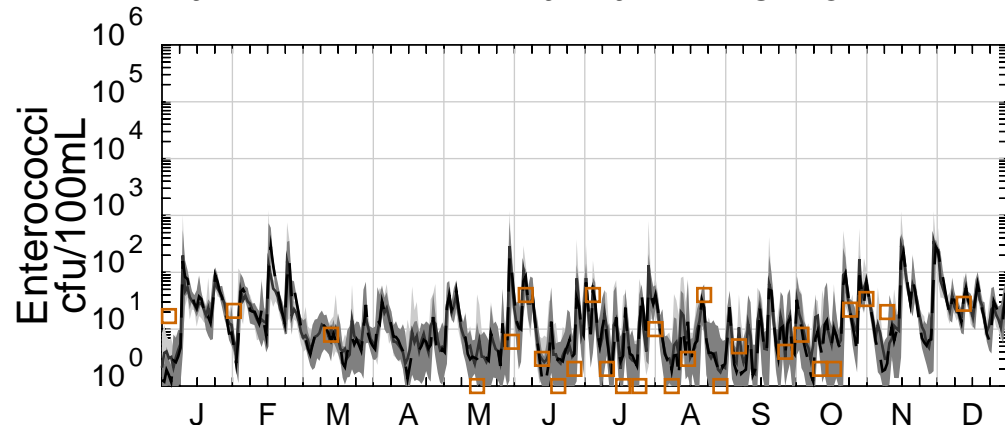
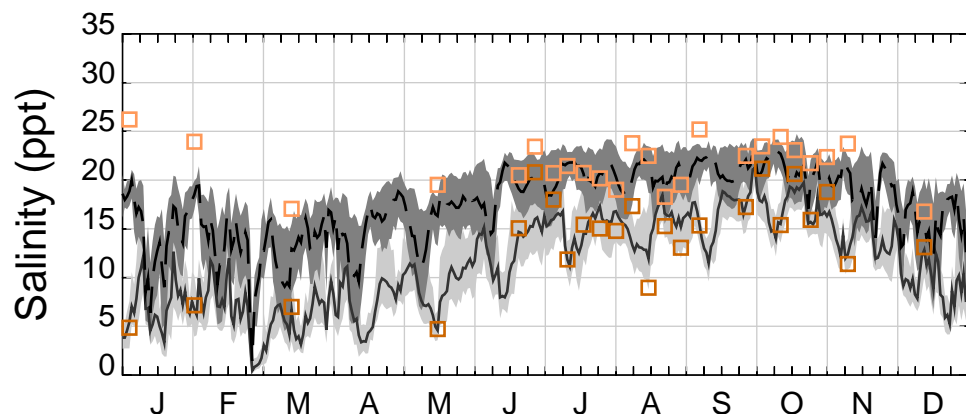
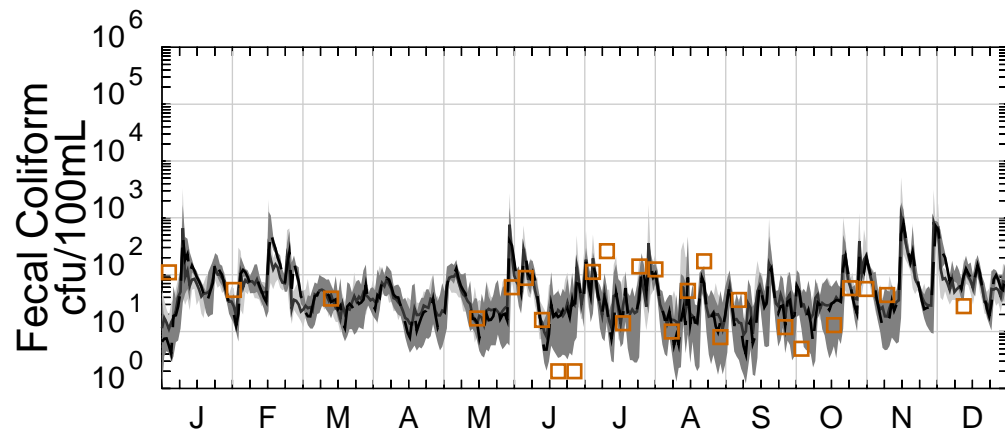
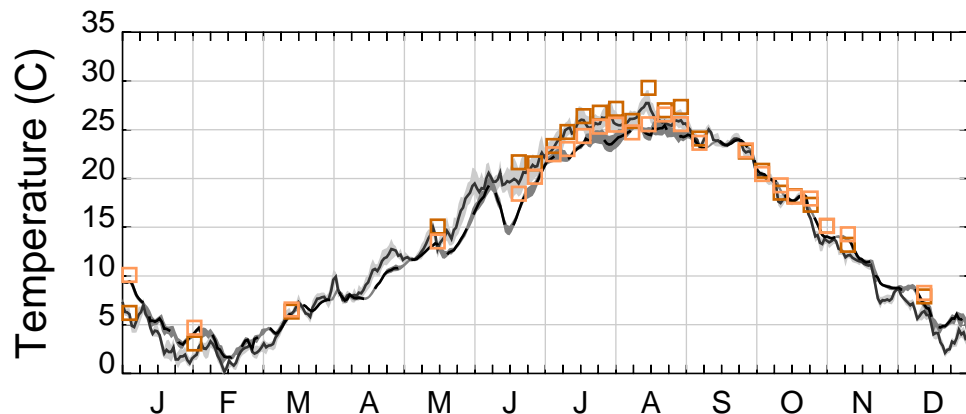
Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Hudson W. 125 St.

Station: N3B



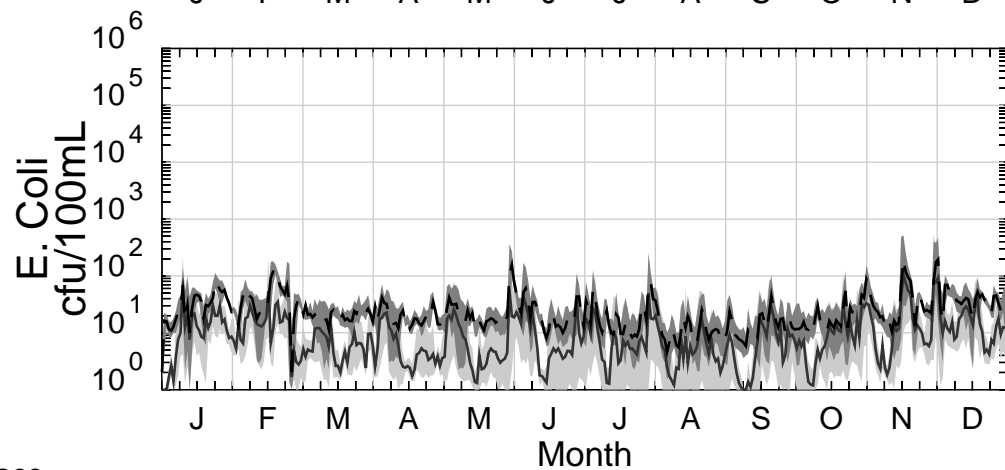
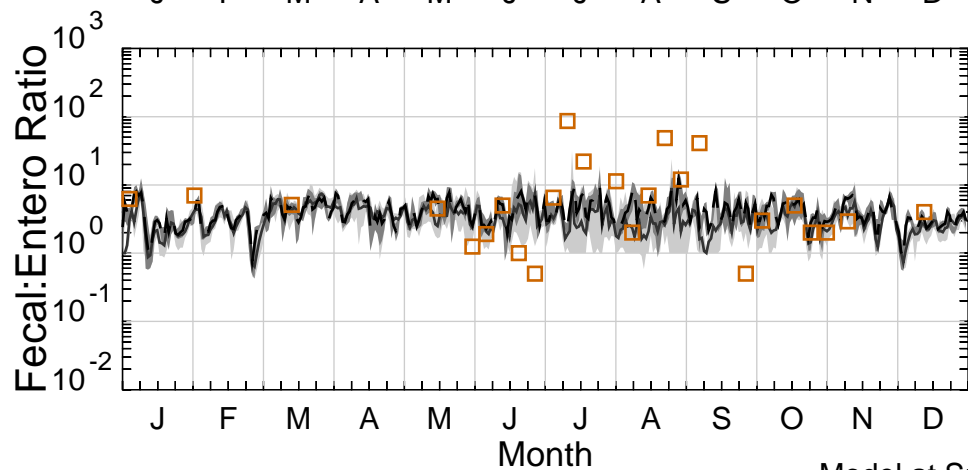
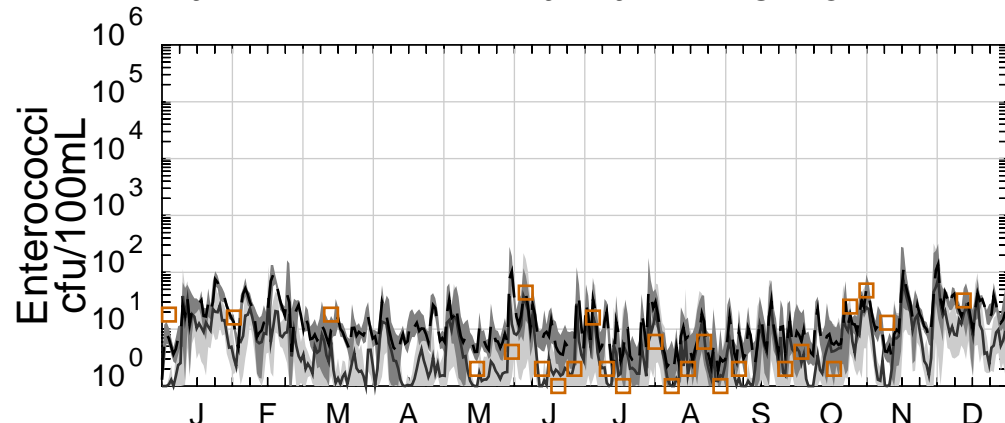
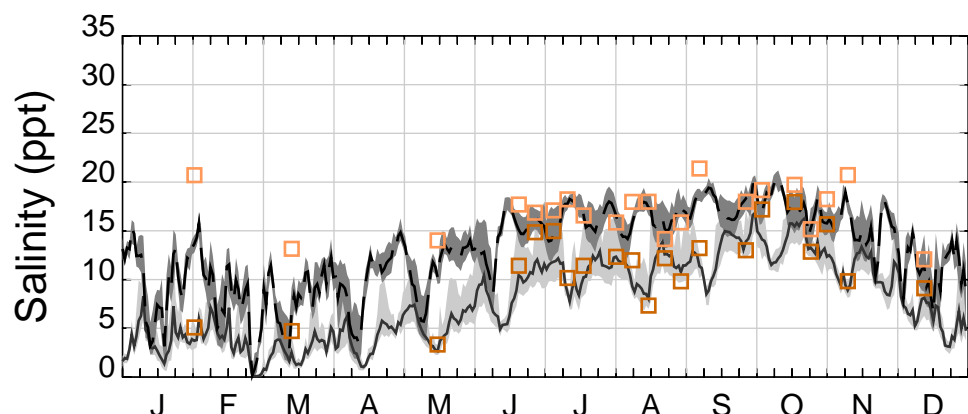
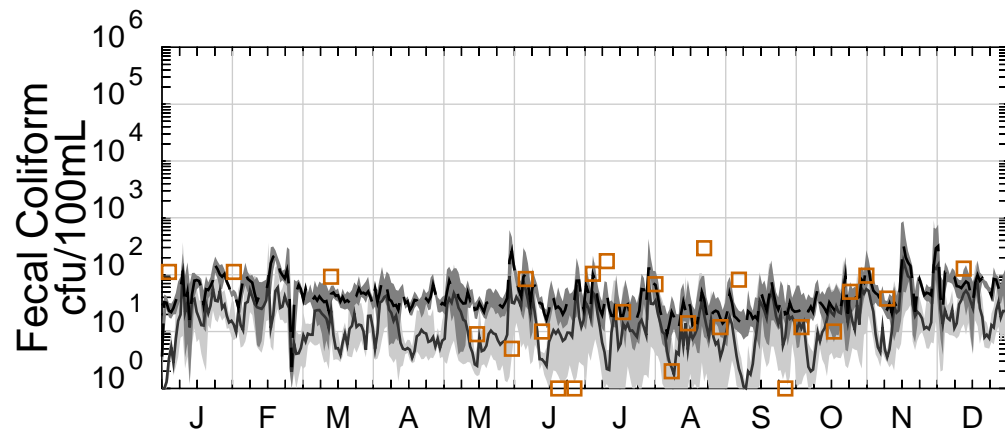
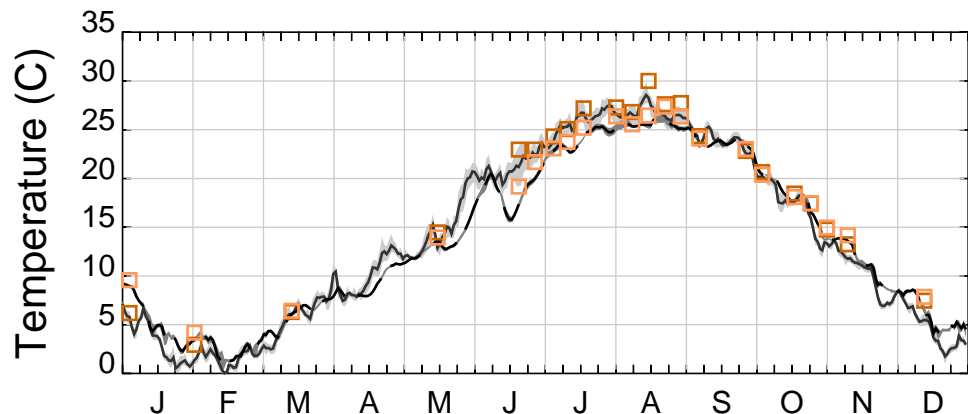
Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Hudson Mt. St. Vincent

Station: N1

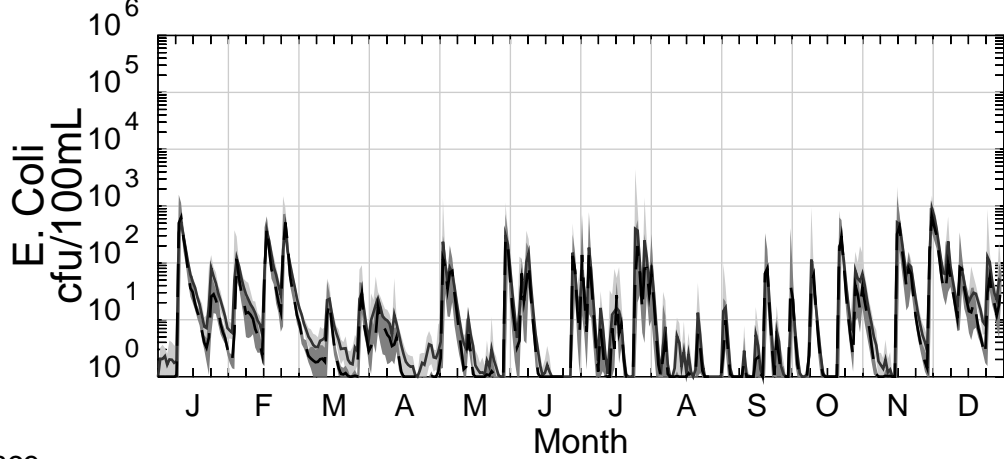
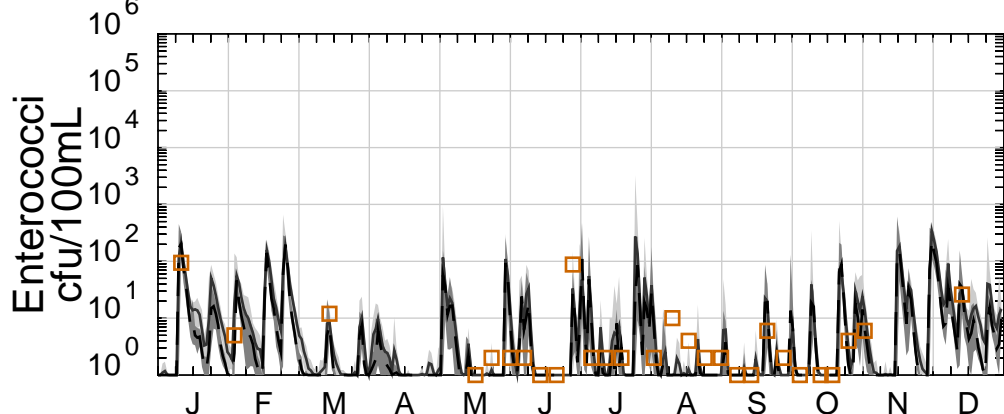
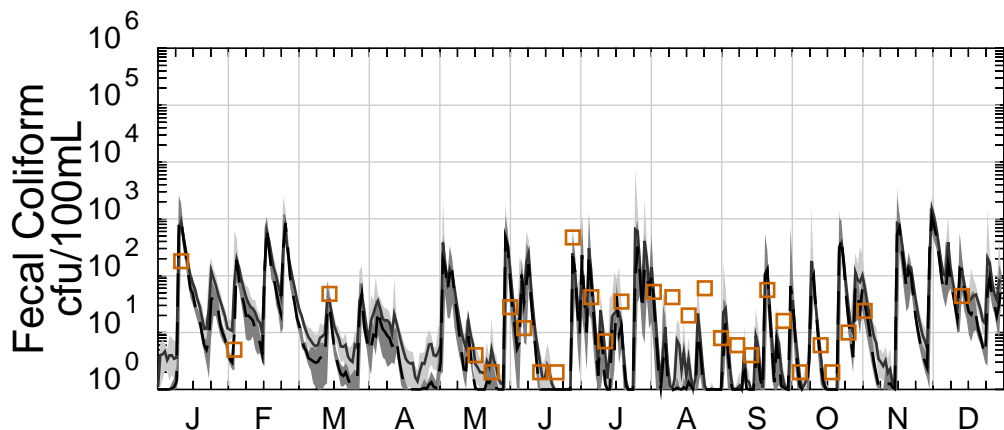
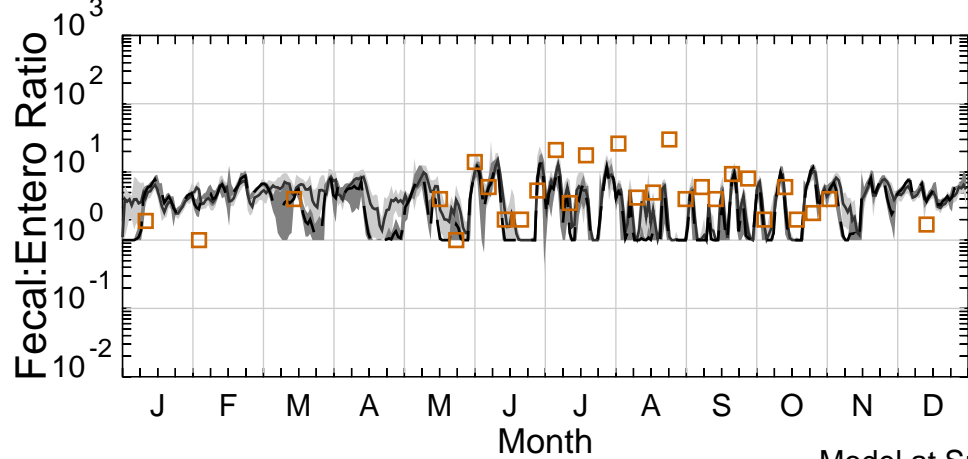
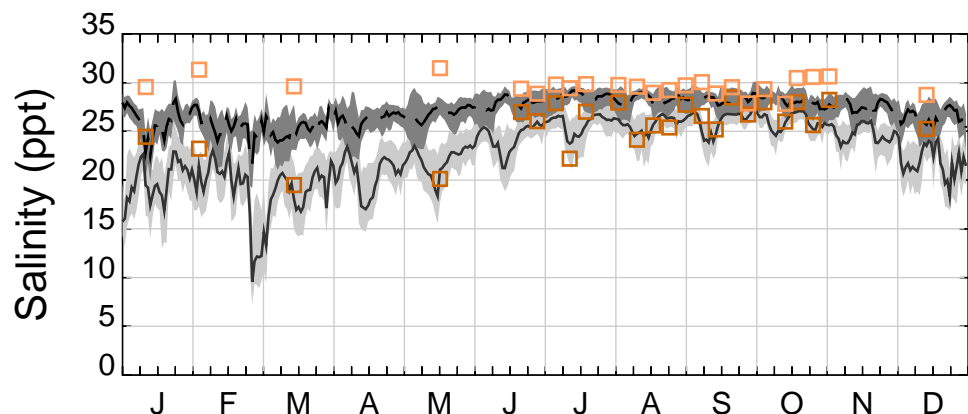
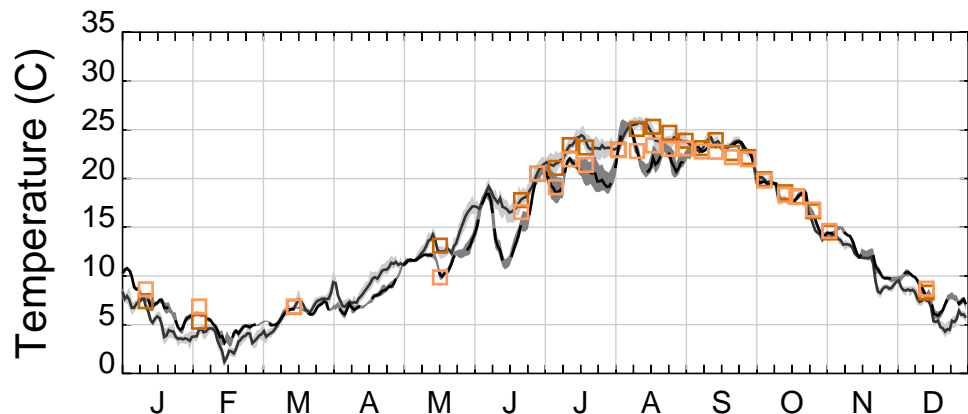


Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Jamaica Bay Coney Is. Outfall

Station: N8



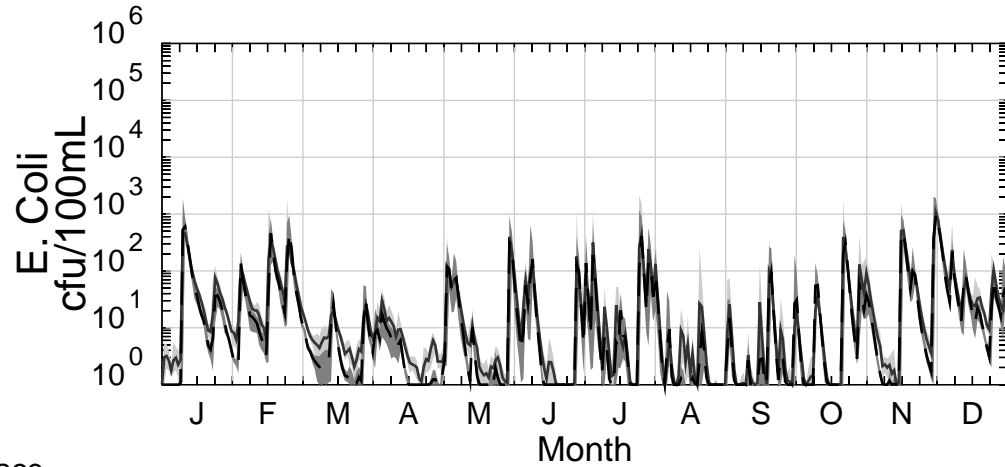
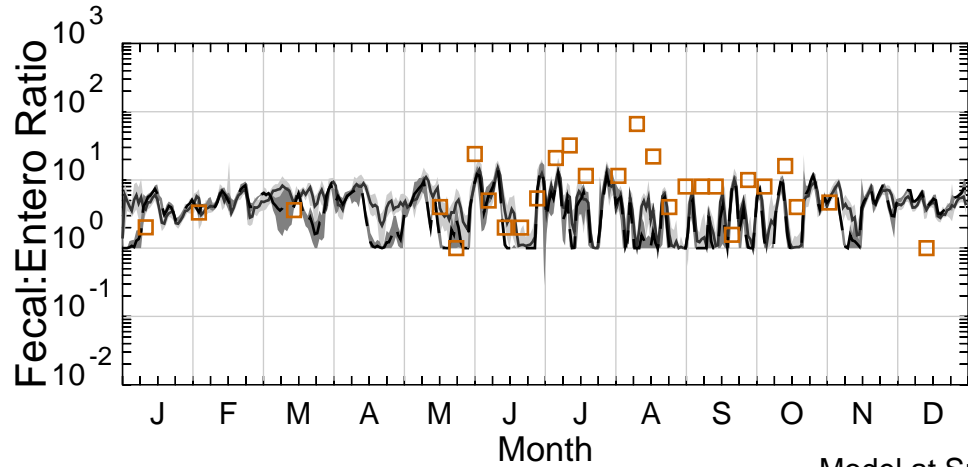
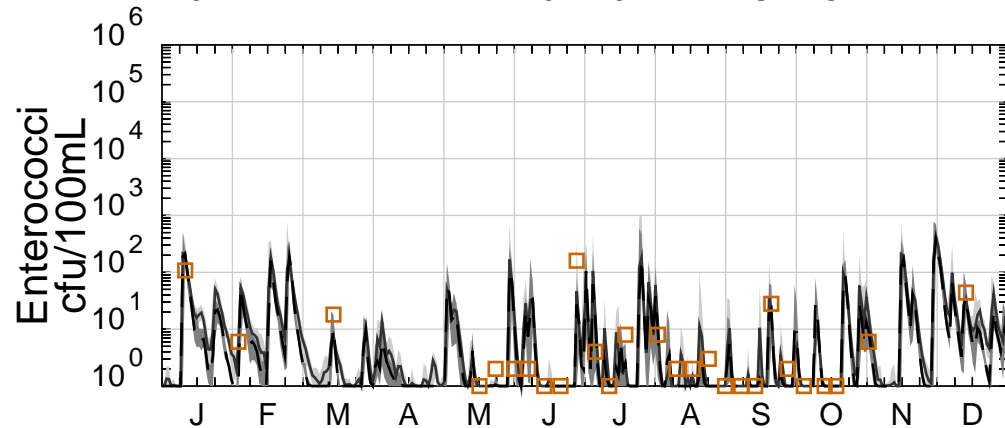
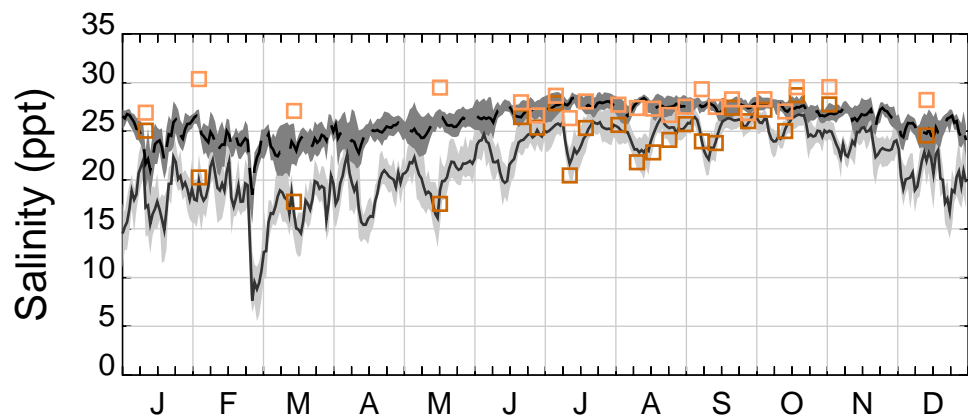
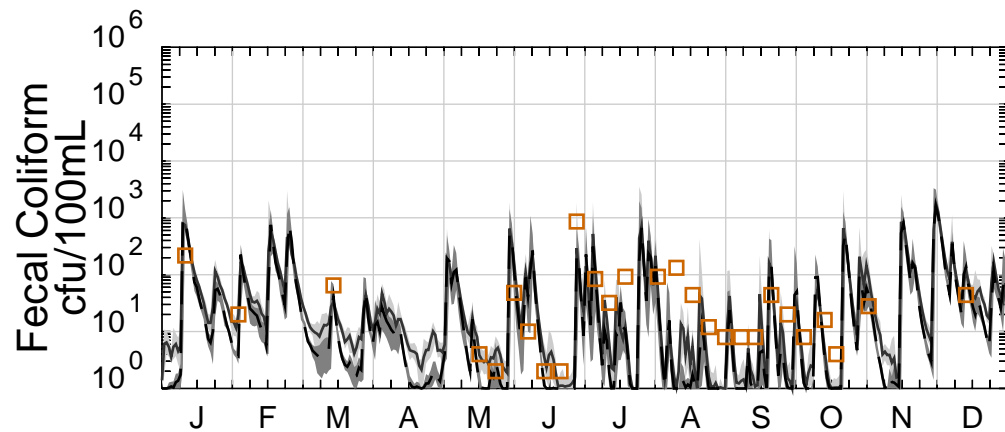
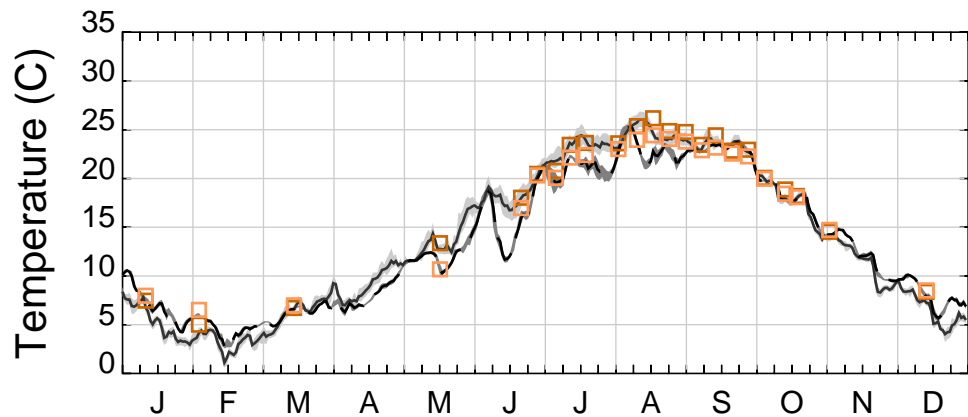
Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

Hudson Robbins Reef

Station: N7



Model = 2016
Data = 2016

- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom

- Surface/Bottom HS Data
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

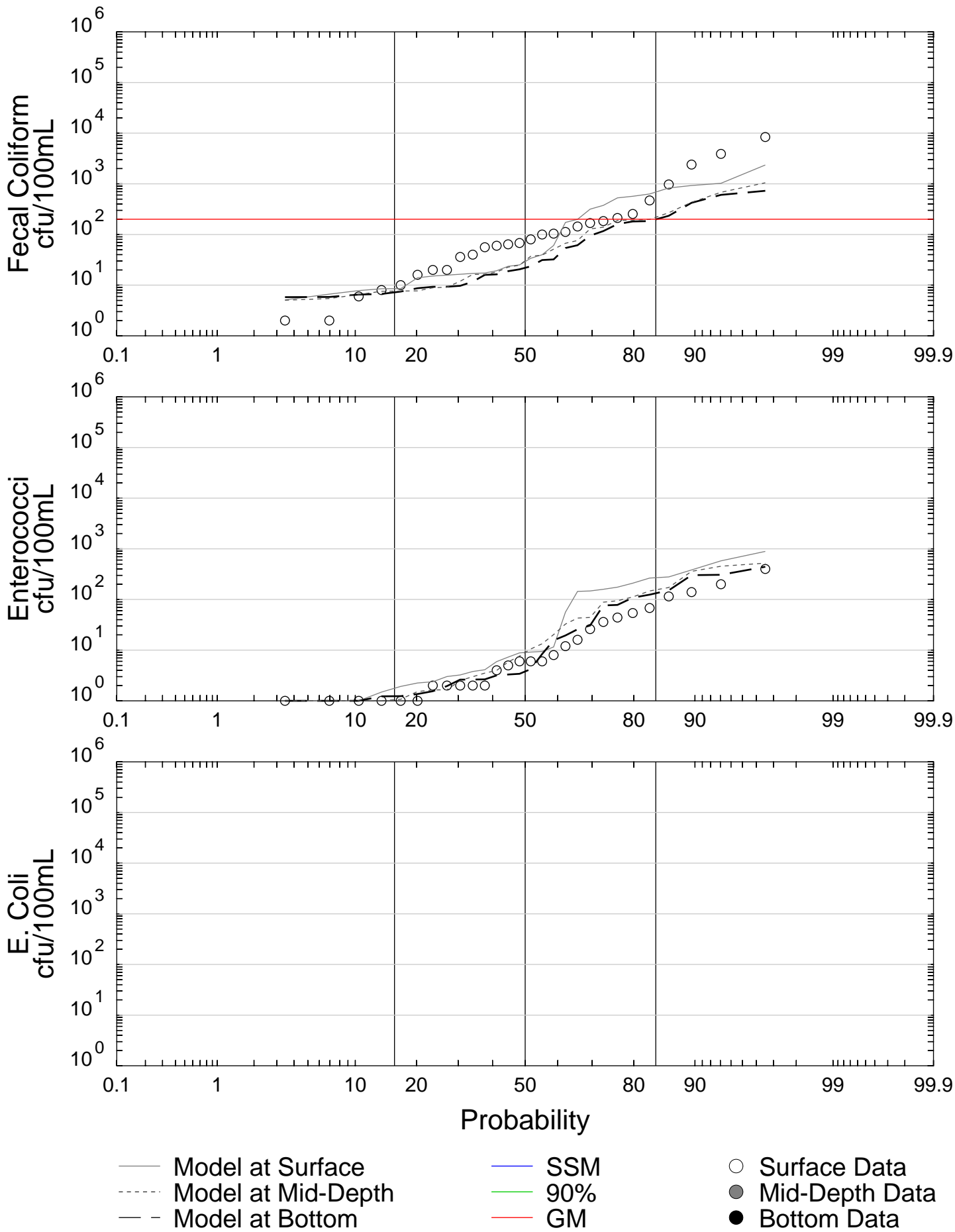


Appendix E-8

Calibration Probability
Figures with NYCDEP Harbor
Survey Data

Staten Island AK Railroad Bridge

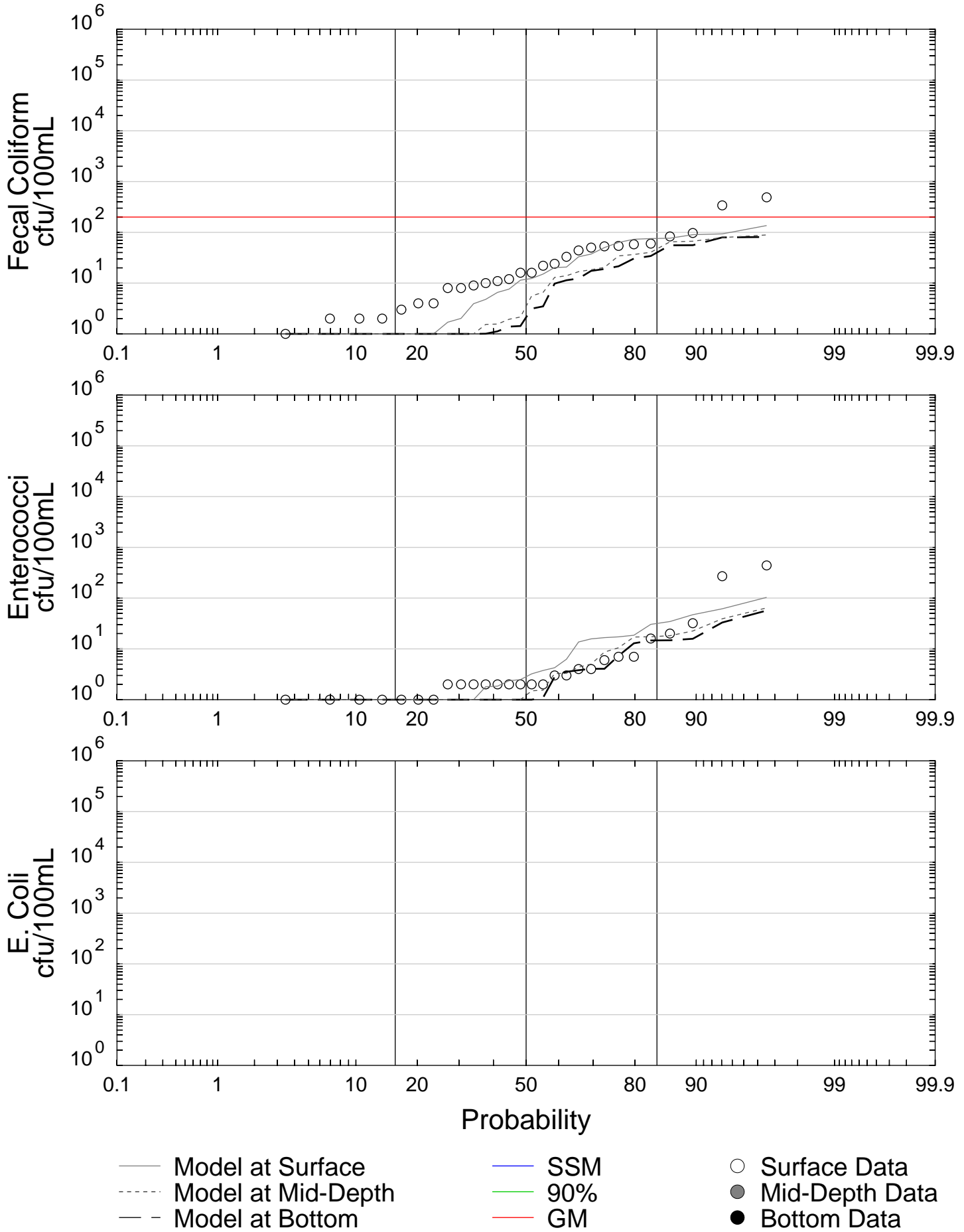
Station: K3



Model Results during data sampling hours only

Staten Island Tottenville

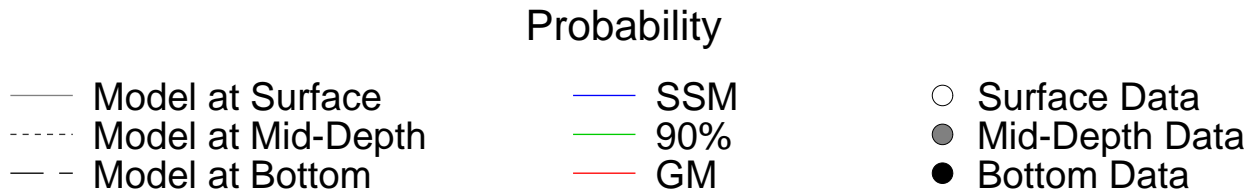
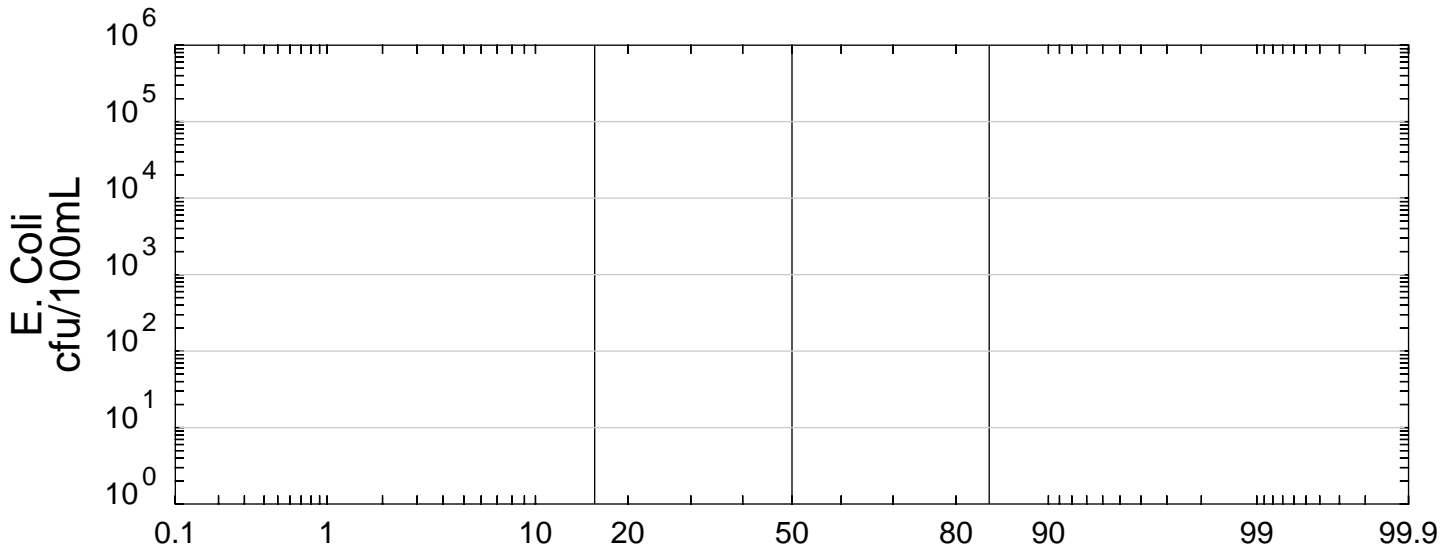
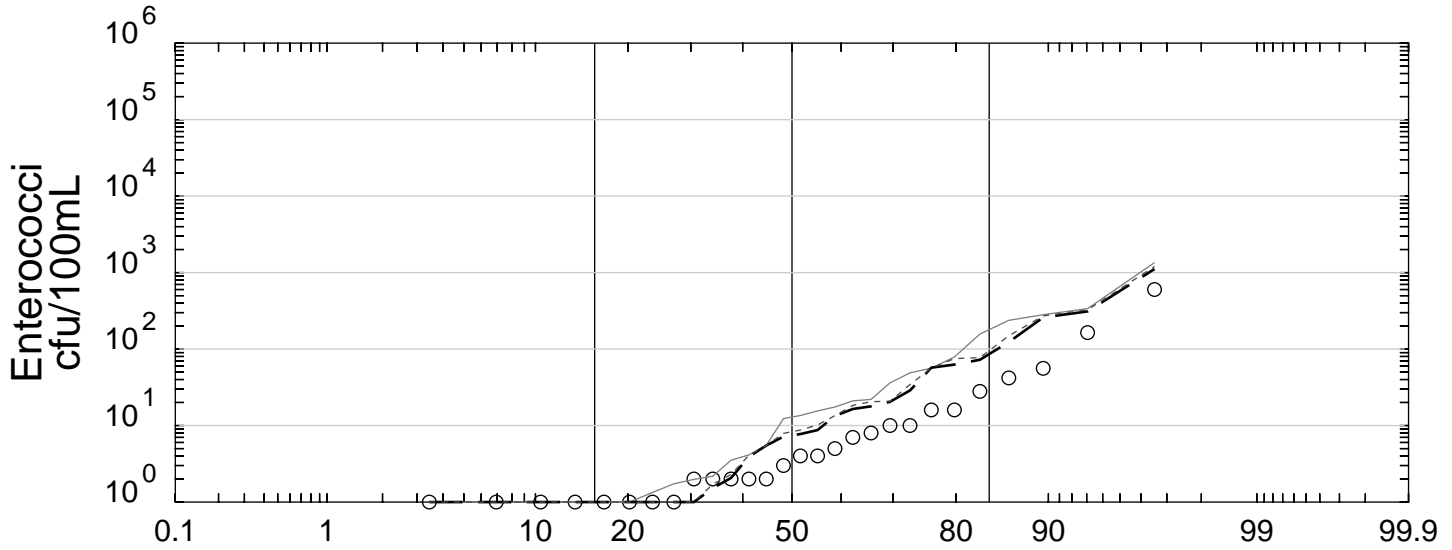
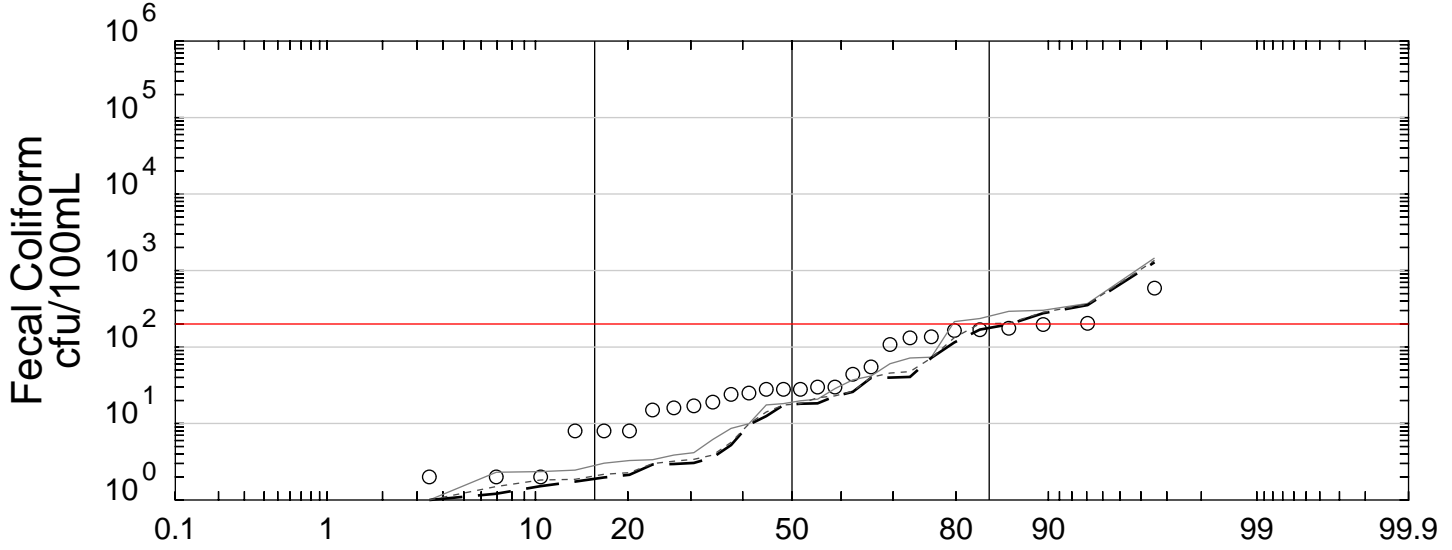
Station: K5



Model Results during data sampling hours only

Staten Island Fresh Kills

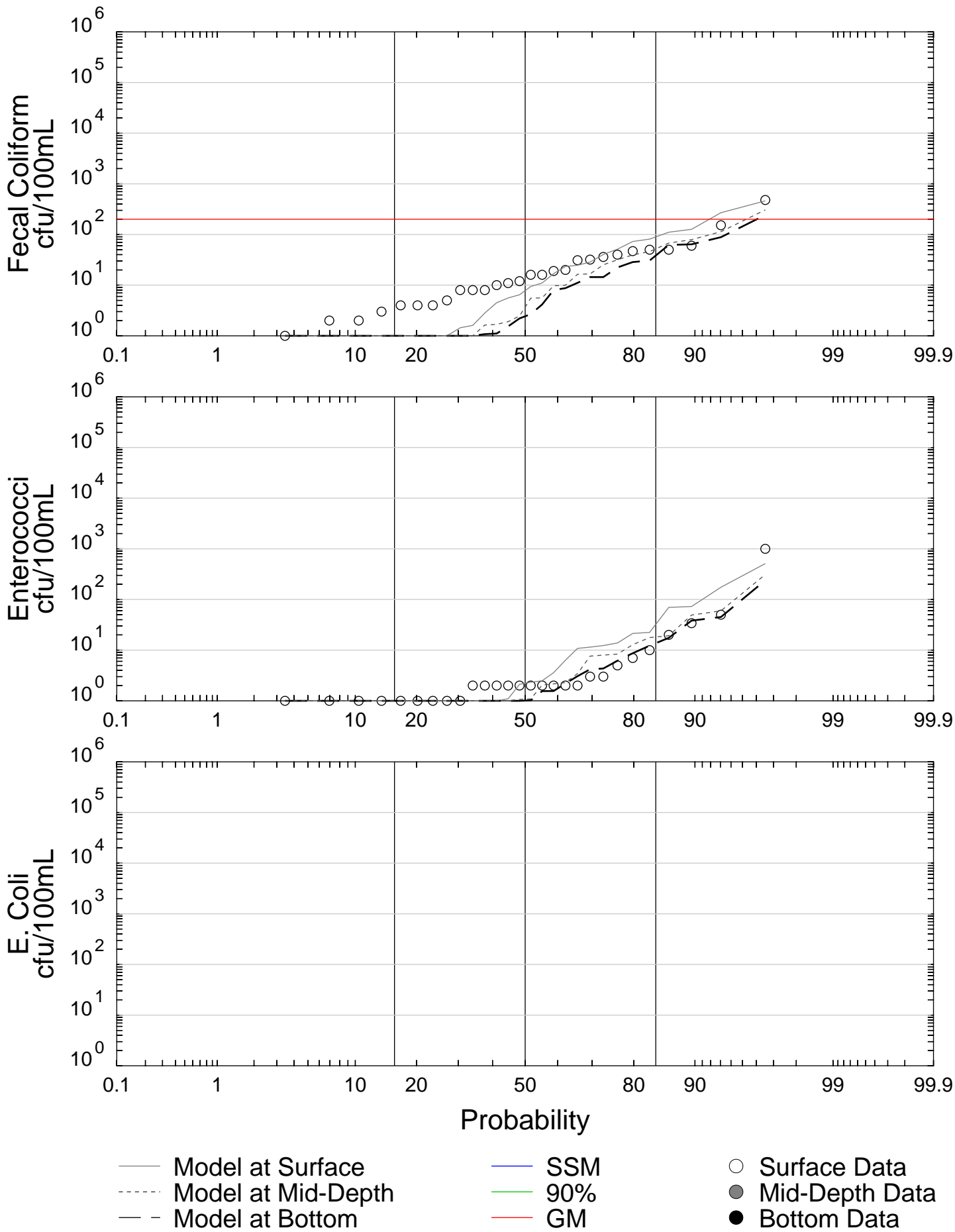
Station: K4



Model Results during data sampling hours only

Staten Island Raritan River

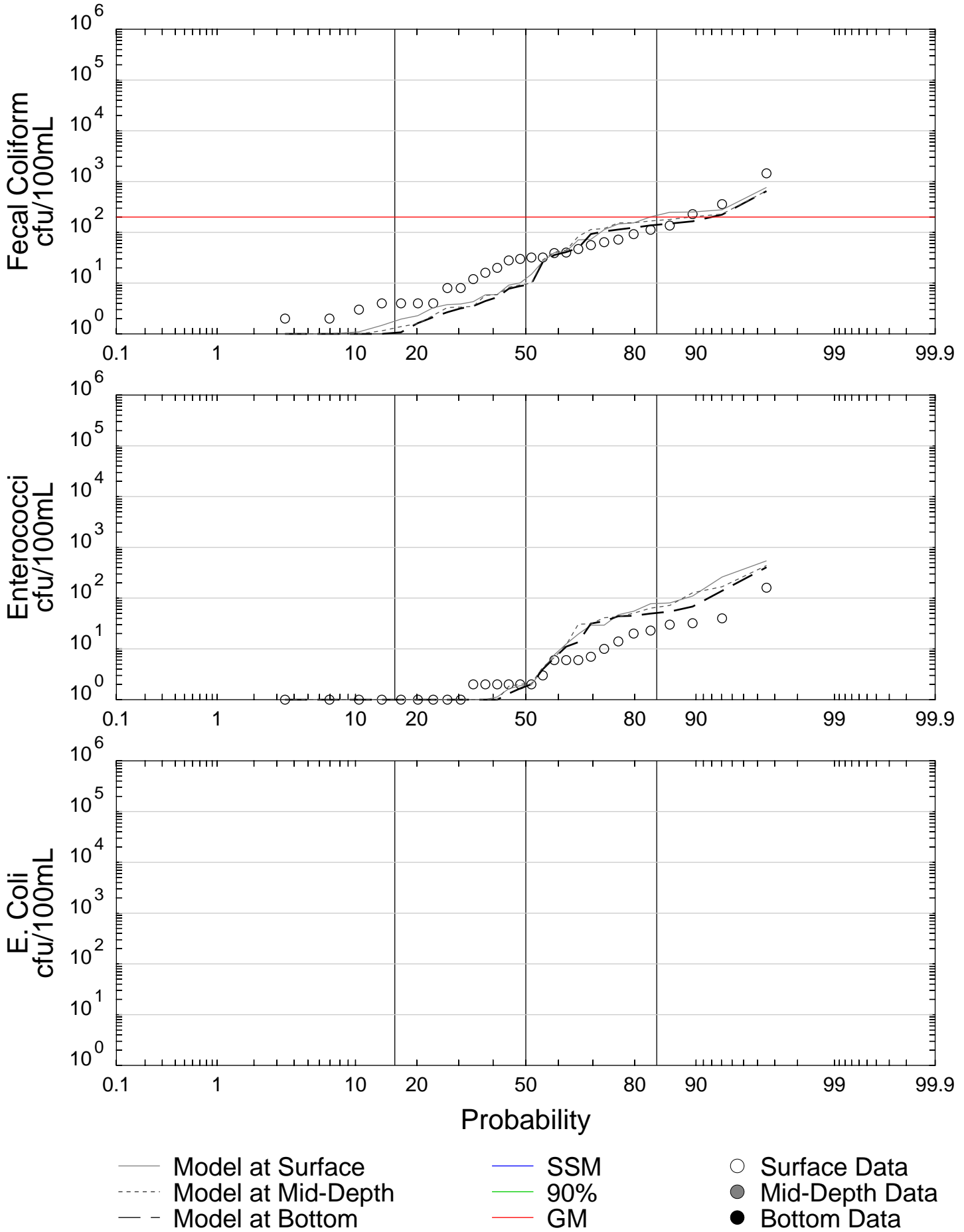
Station: K5A



Model Results during data sampling hours only

Staten Island Shooters Island

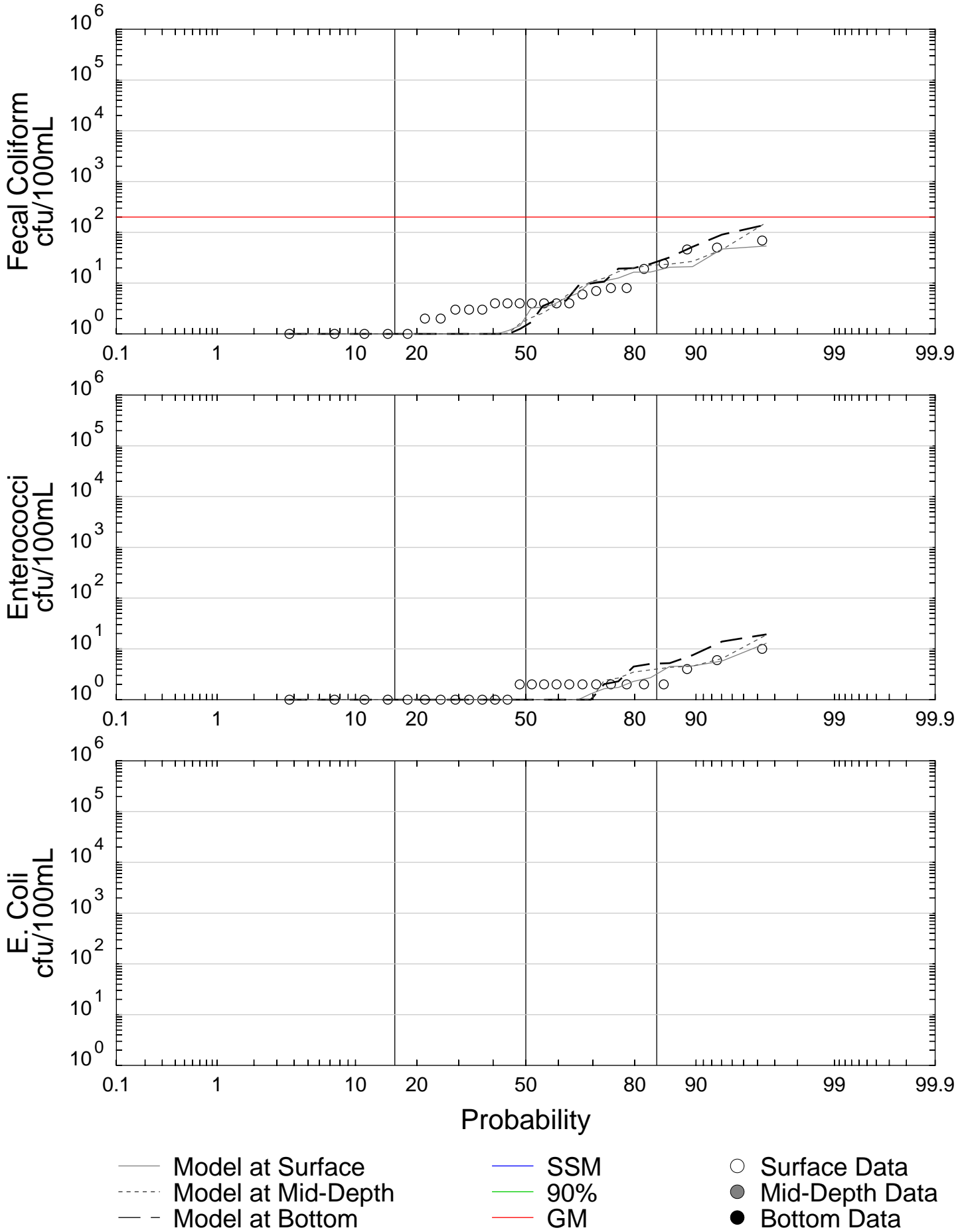
Station: K2



Model Results during data sampling hours only

Staten Island Old Orchard Light

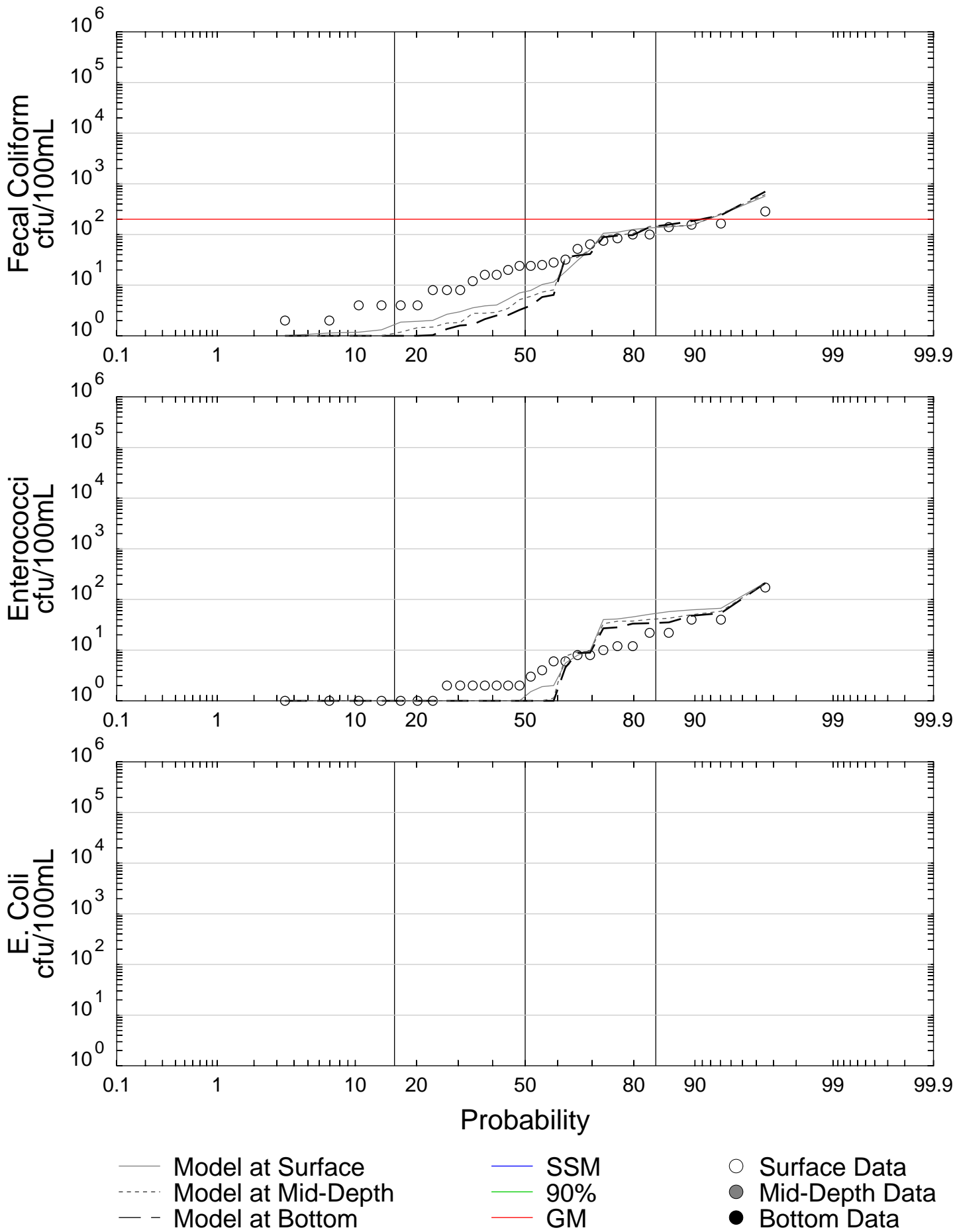
Station: K6



Model Results during data sampling hours only

Staten Island St. George

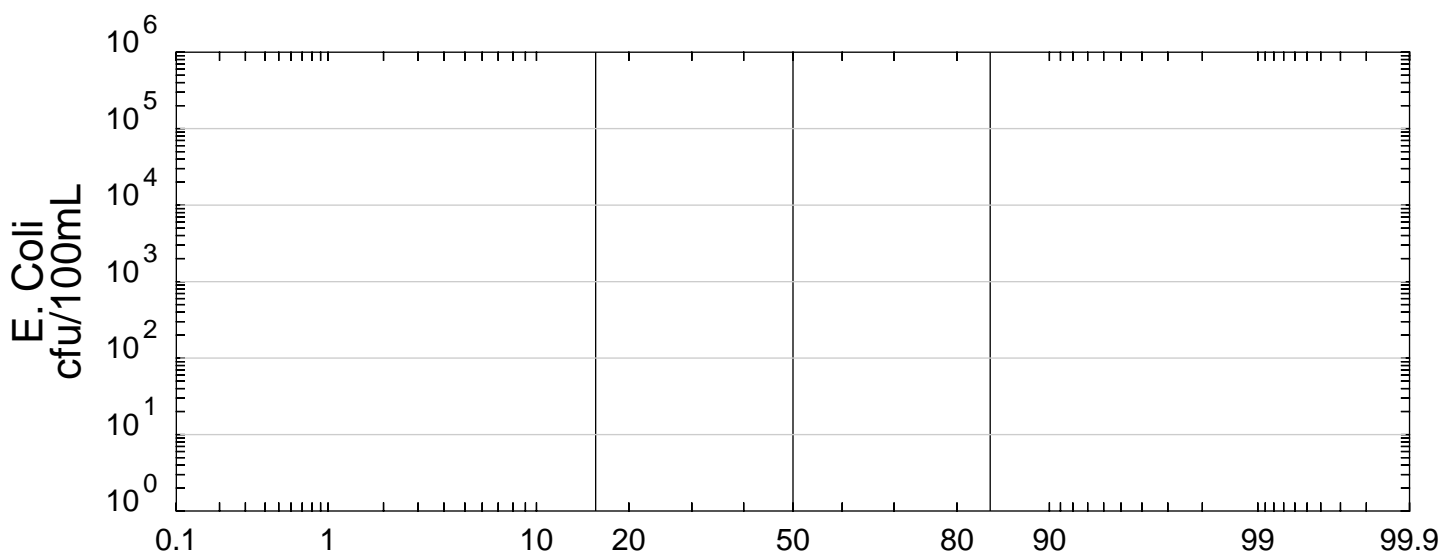
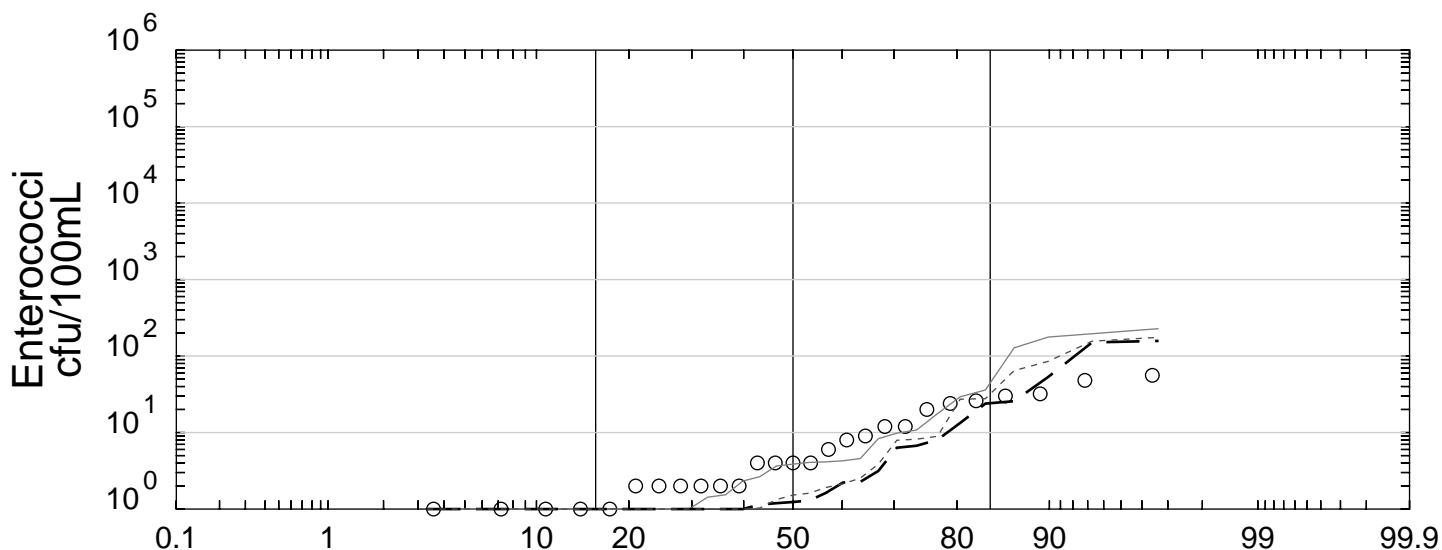
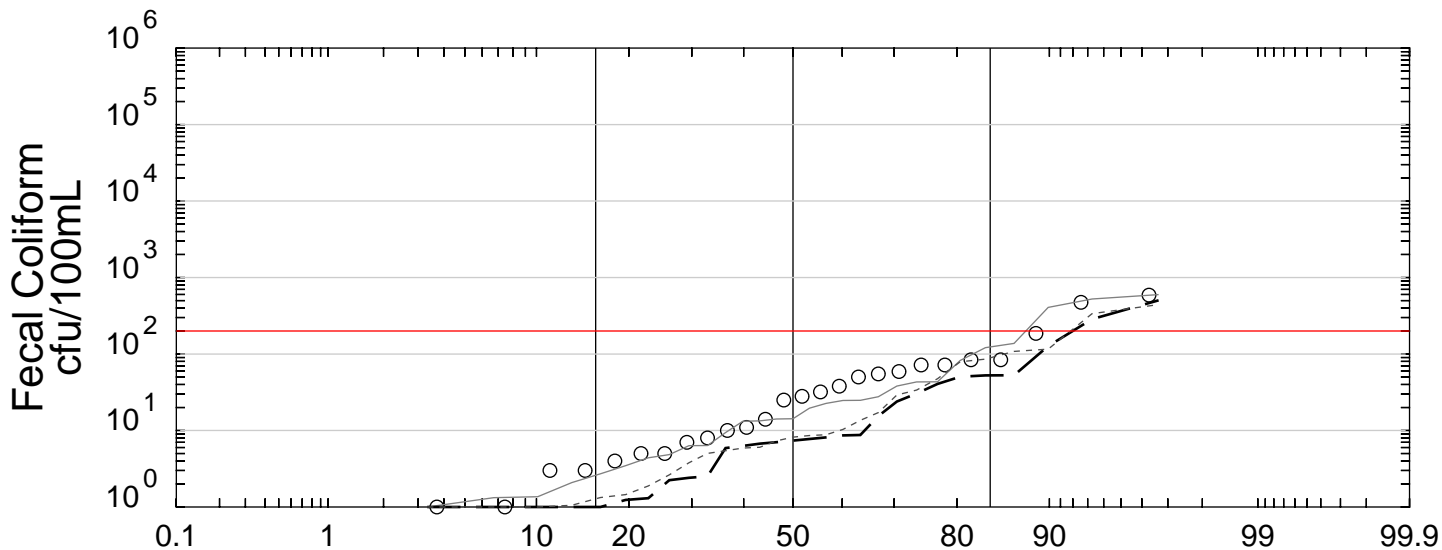
Station: K1



Model Results during data sampling hours only

Hudson Pier A - The Battery

Station: N5



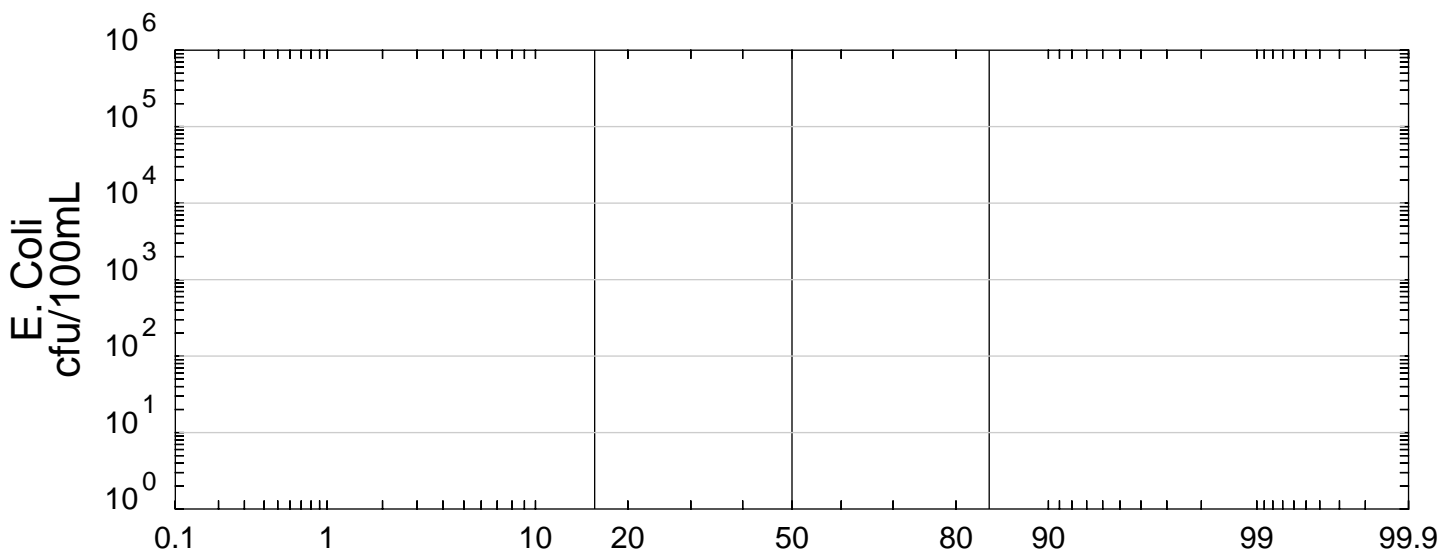
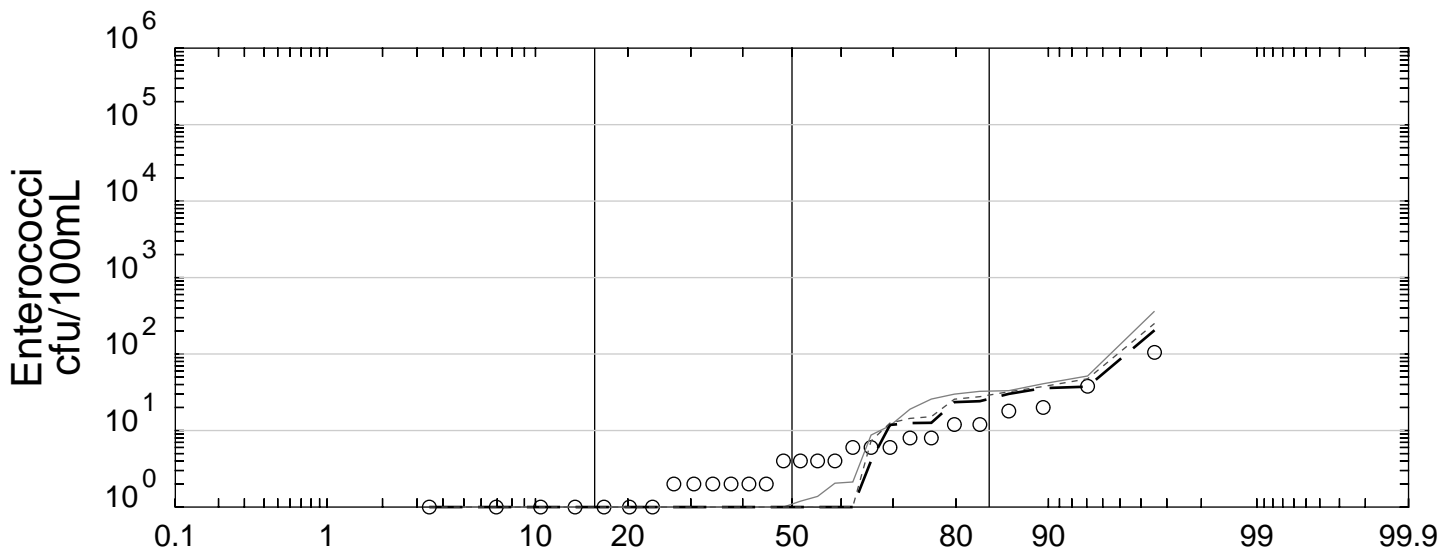
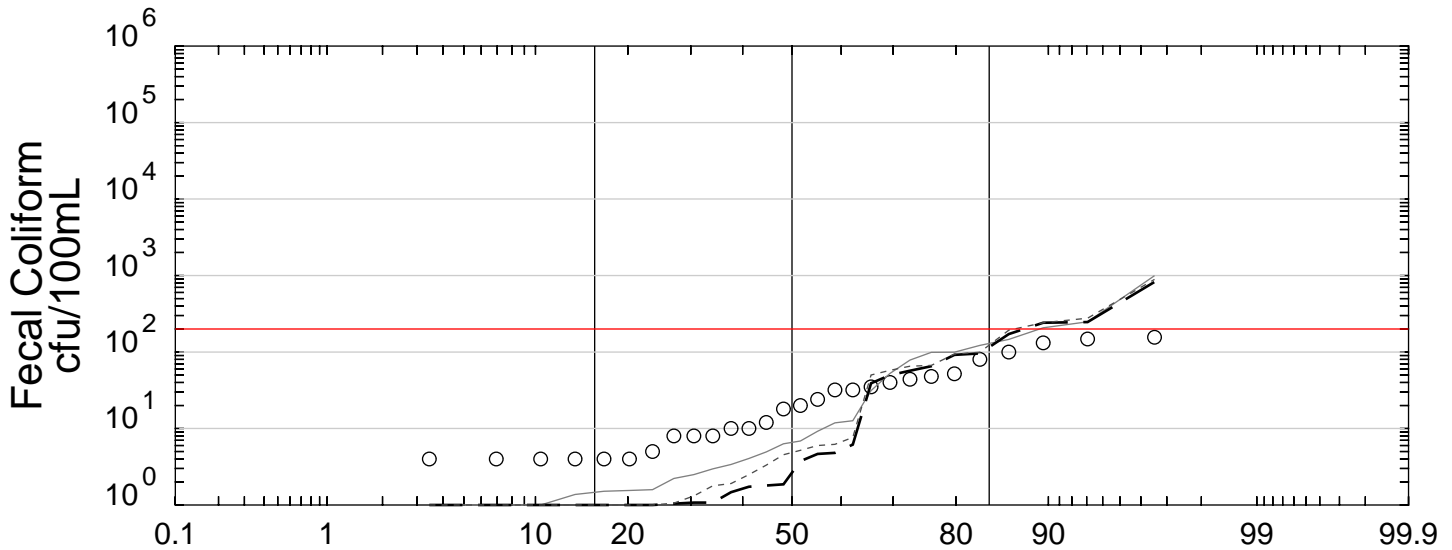
Probability

- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

Hudson Bell Buoy 31

Station: N6



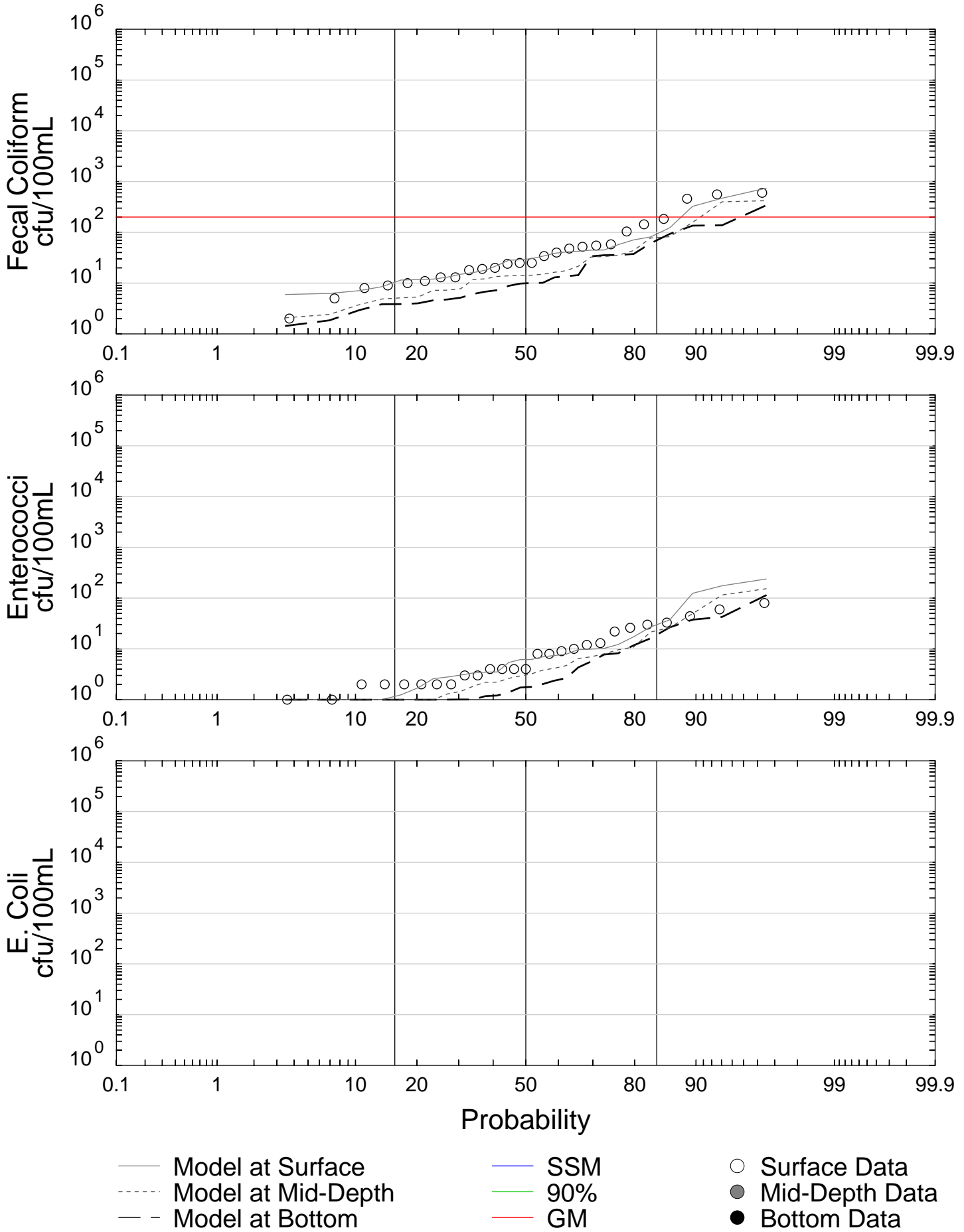
Probability

- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

Hudson W. 42 St.

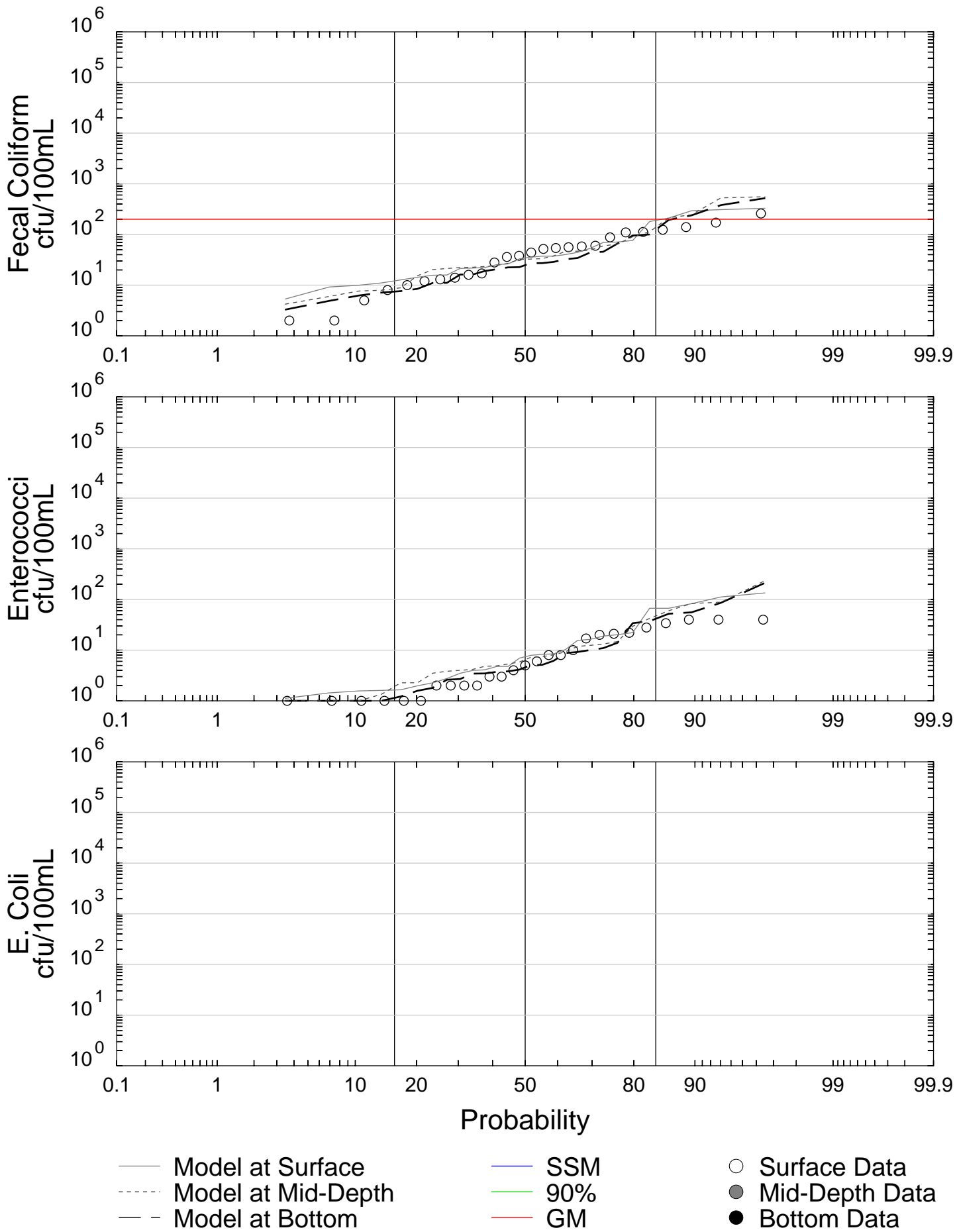
Station: N4



Model Results during data sampling hours only

Hudson
W. 125 St.

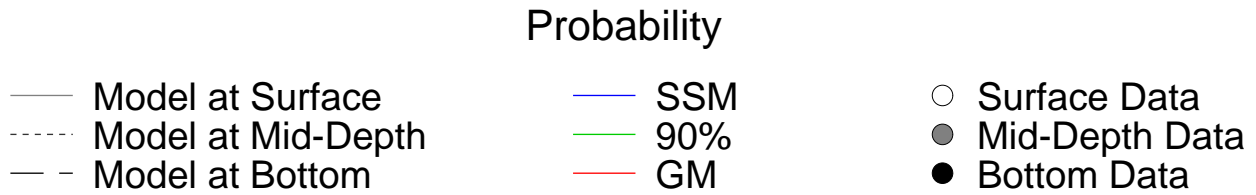
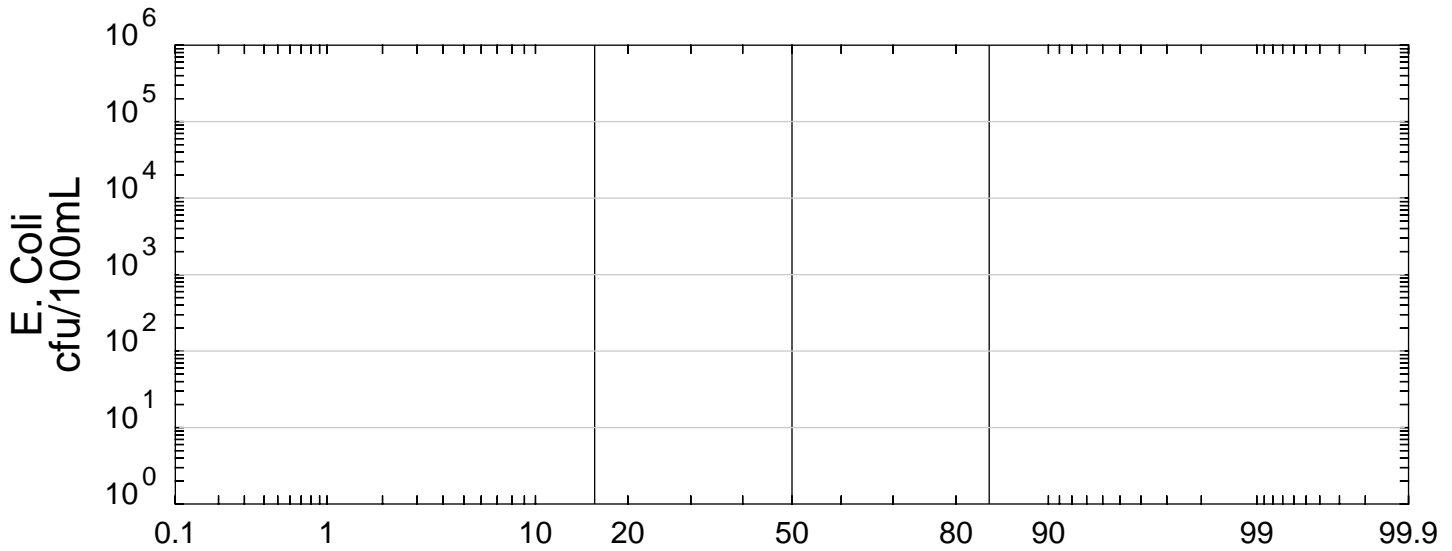
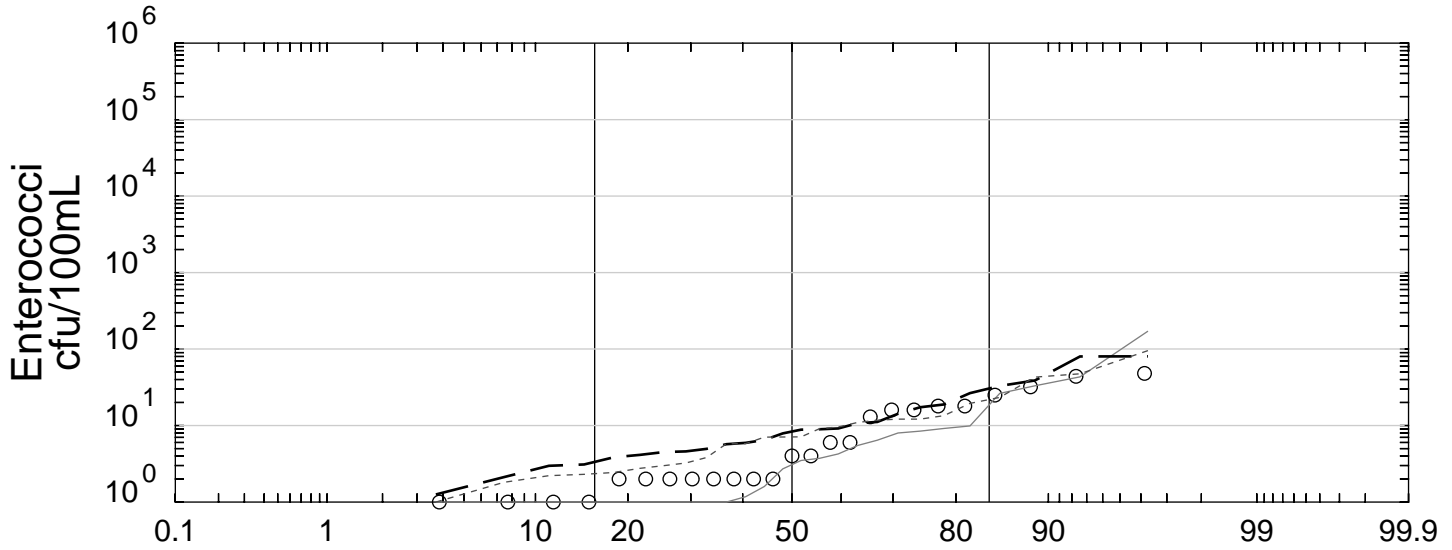
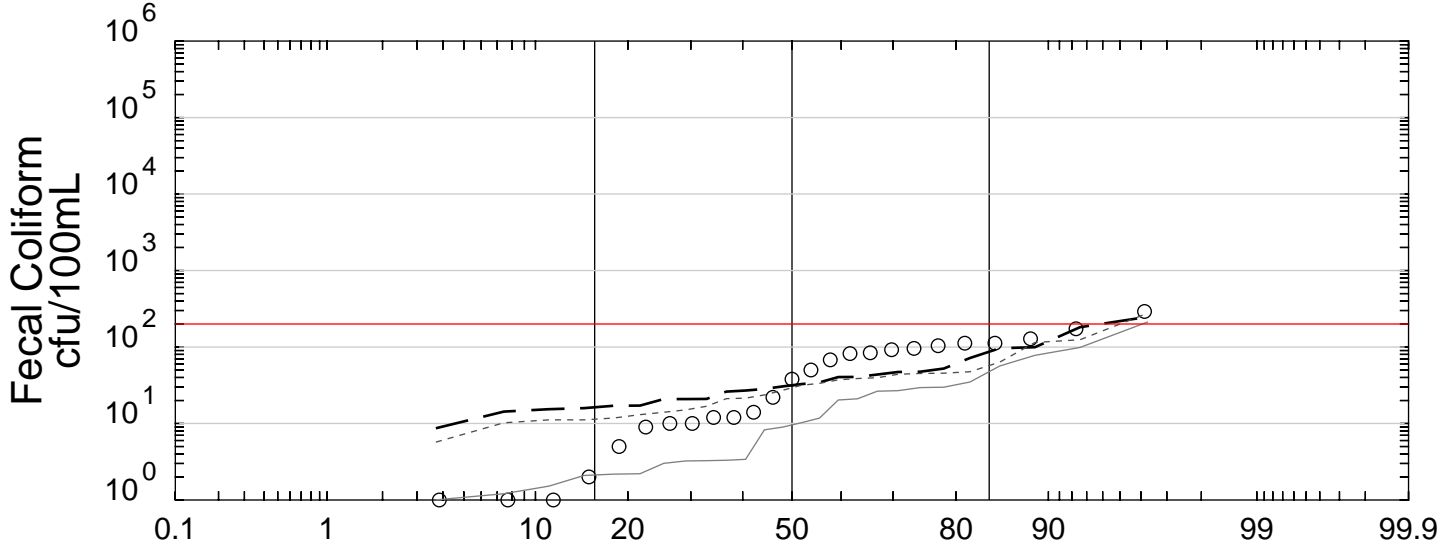
Station: N3B



Model Results during data sampling hours only

Hudson Mt. St. Vincent

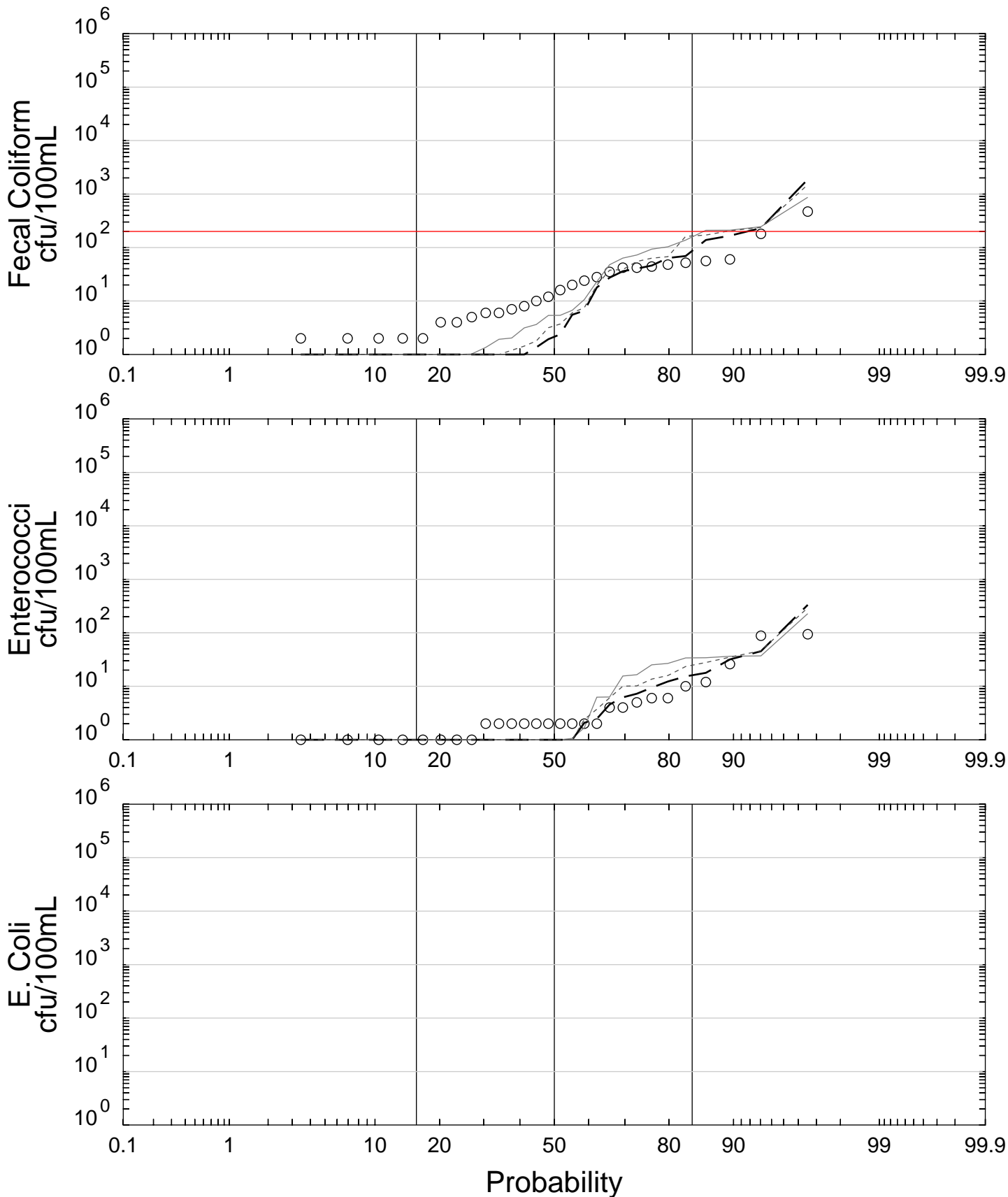
Station: N1



Model Results during data sampling hours only

Jamaica Bay Coney Is. Outfall

Station: N8

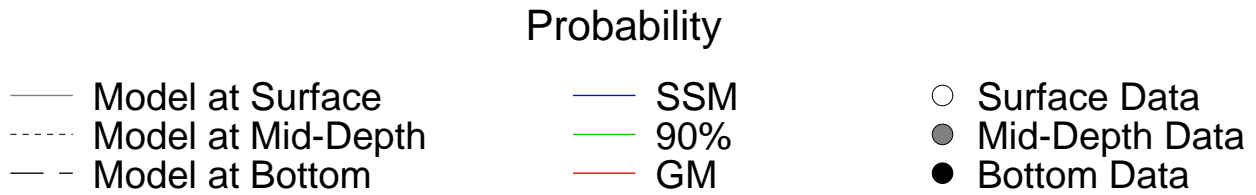
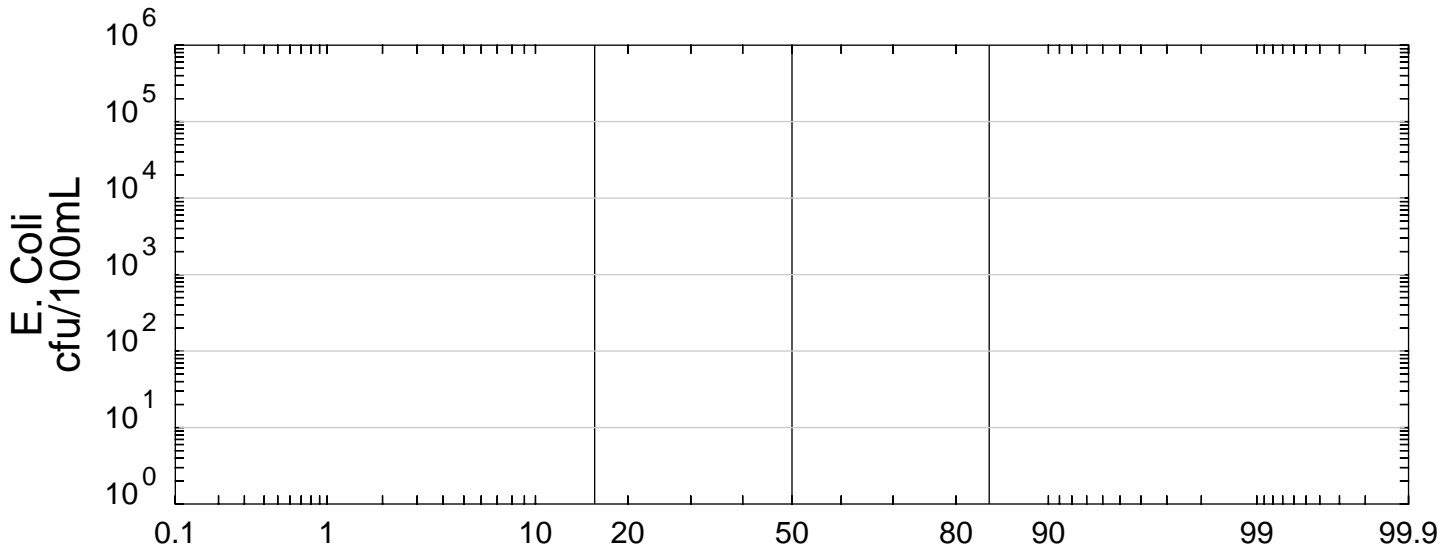
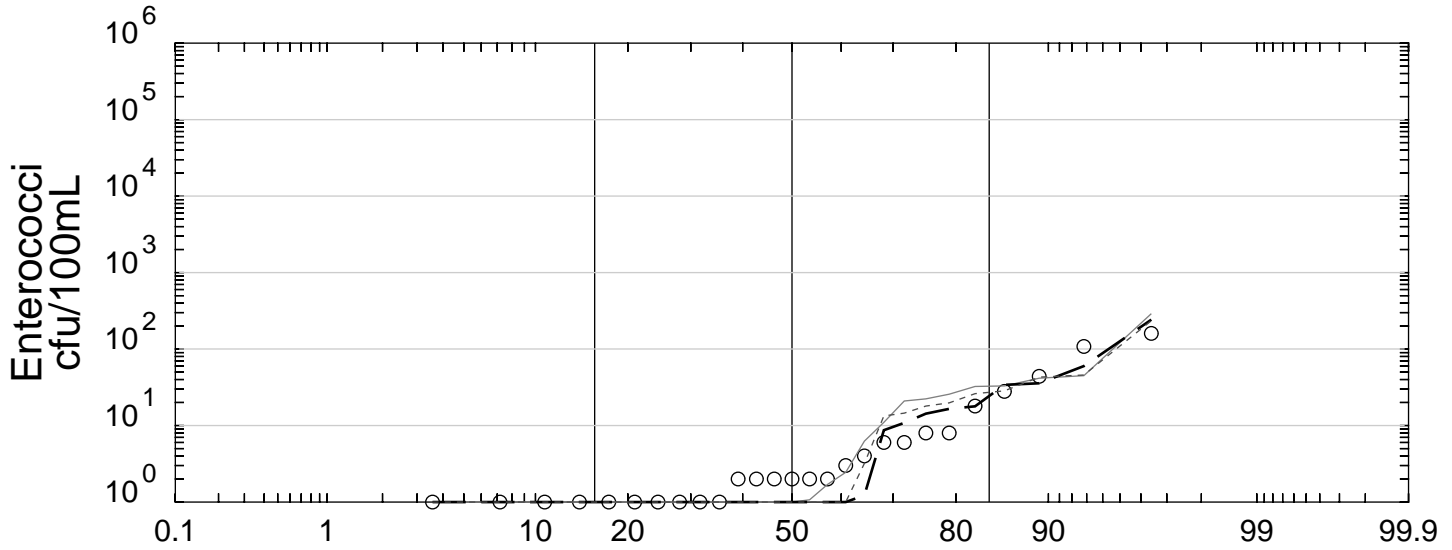
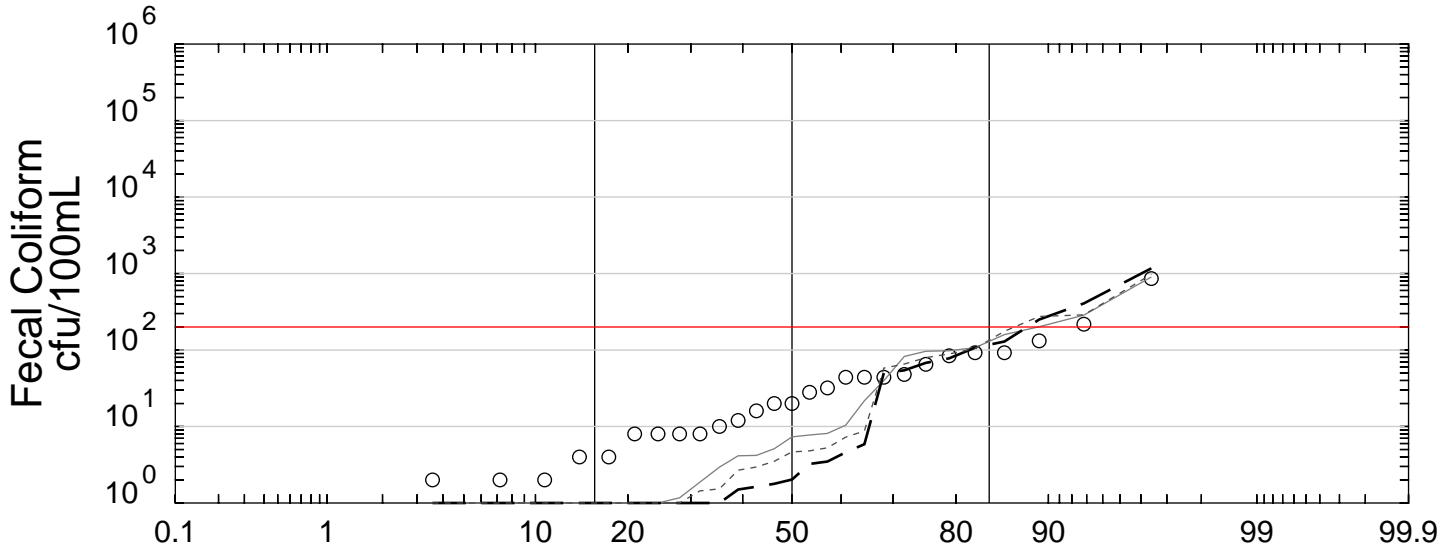


- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom
- SSM
- 90%
- GM
- Surface Data
- Mid-Depth Data
- Bottom Data

Model Results during data sampling hours only

Hudson Robbins Reef

Station: N7



Model Results during data sampling hours only