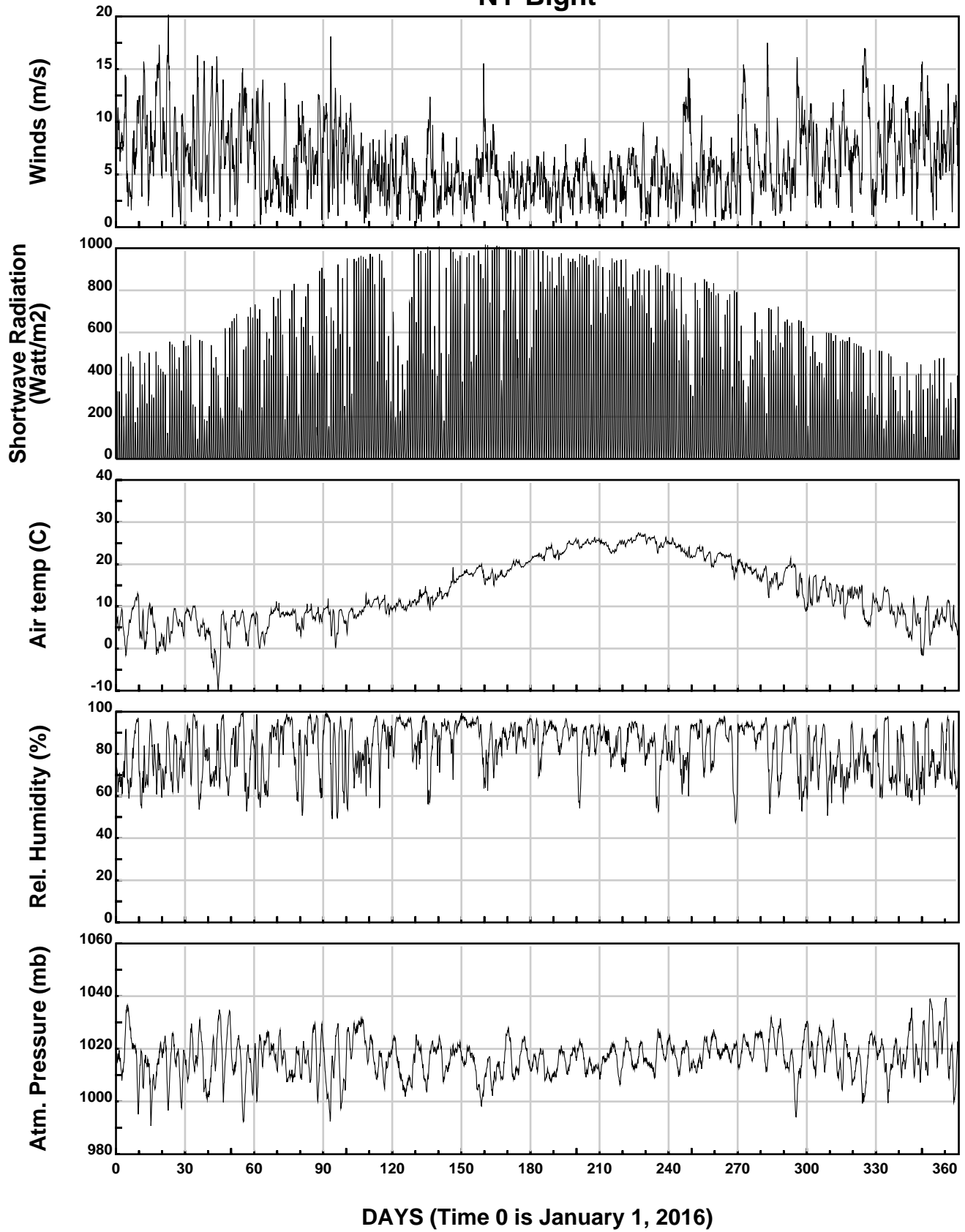




# Appendix A

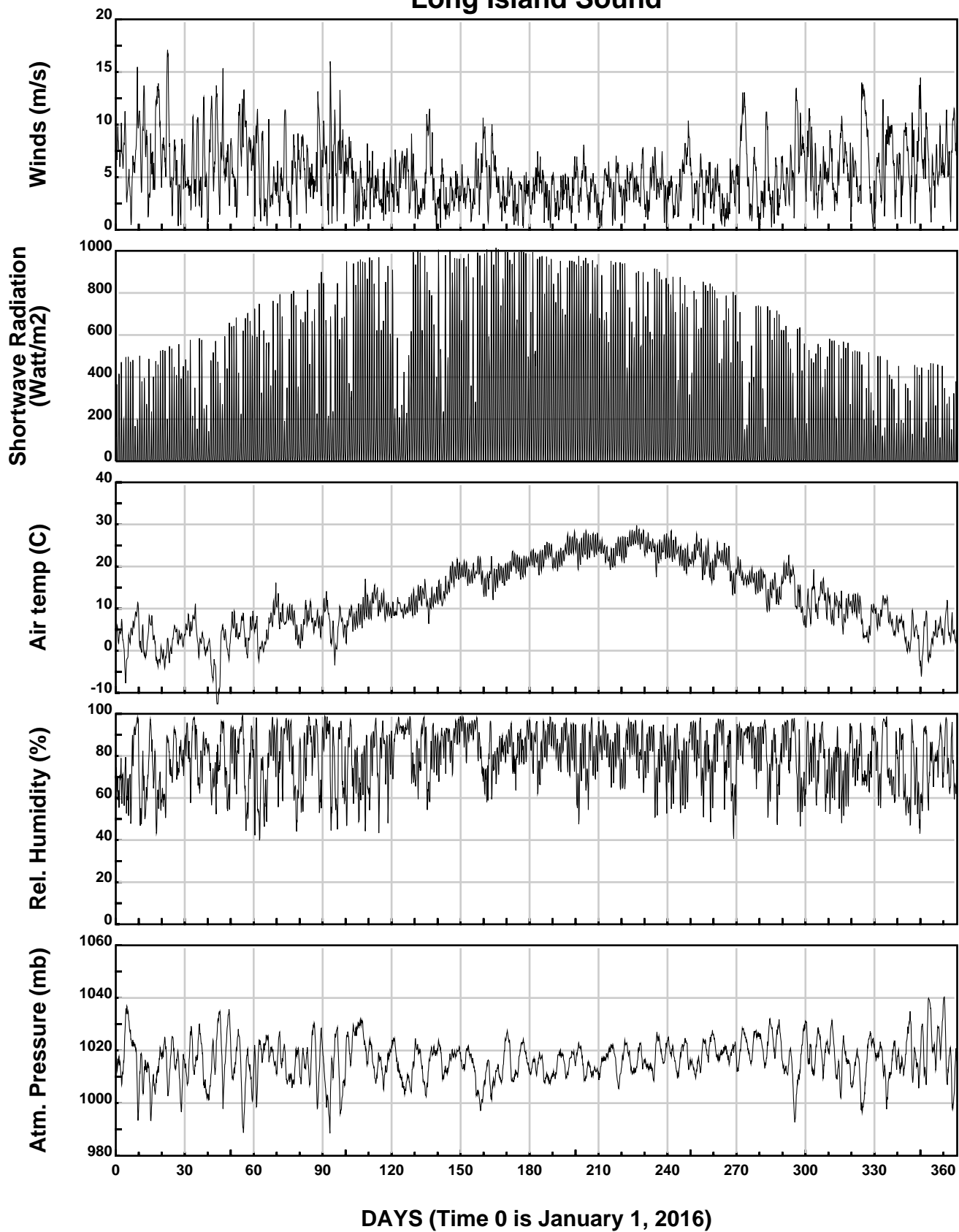
## Additional Hydrodynamic Model Input Figures

### NY Bight



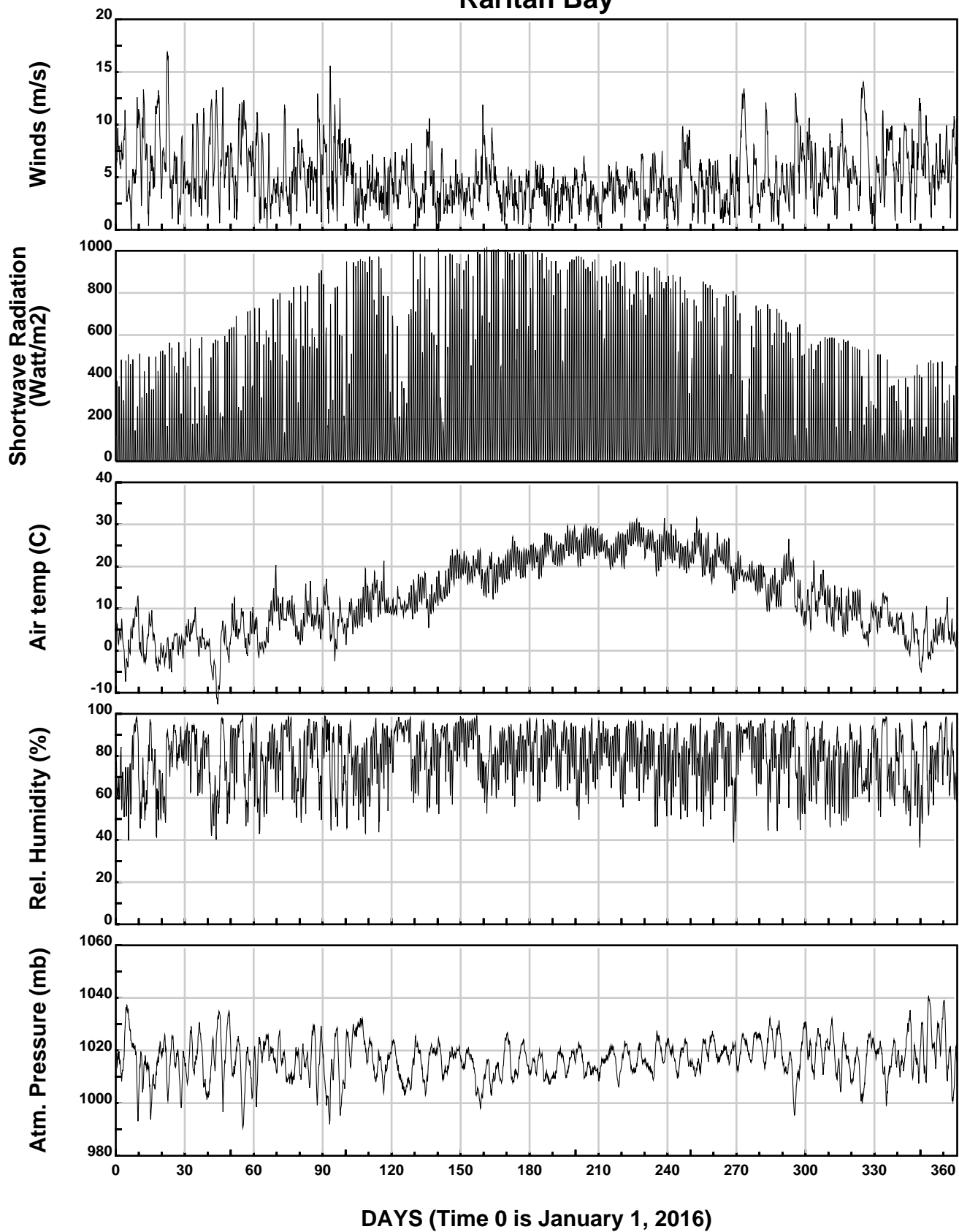
2016

### Long Island Sound



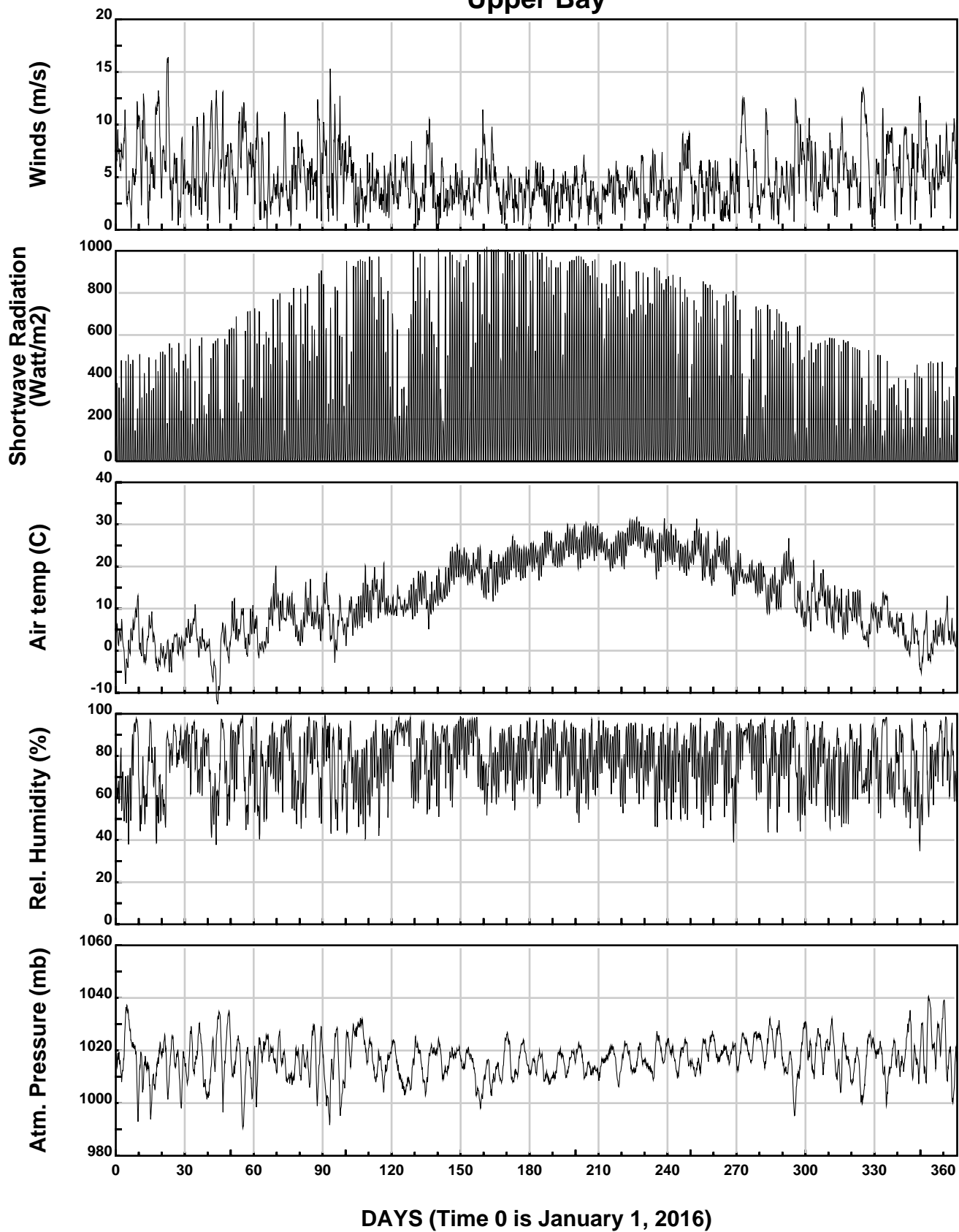
2016

### Raritan Bay



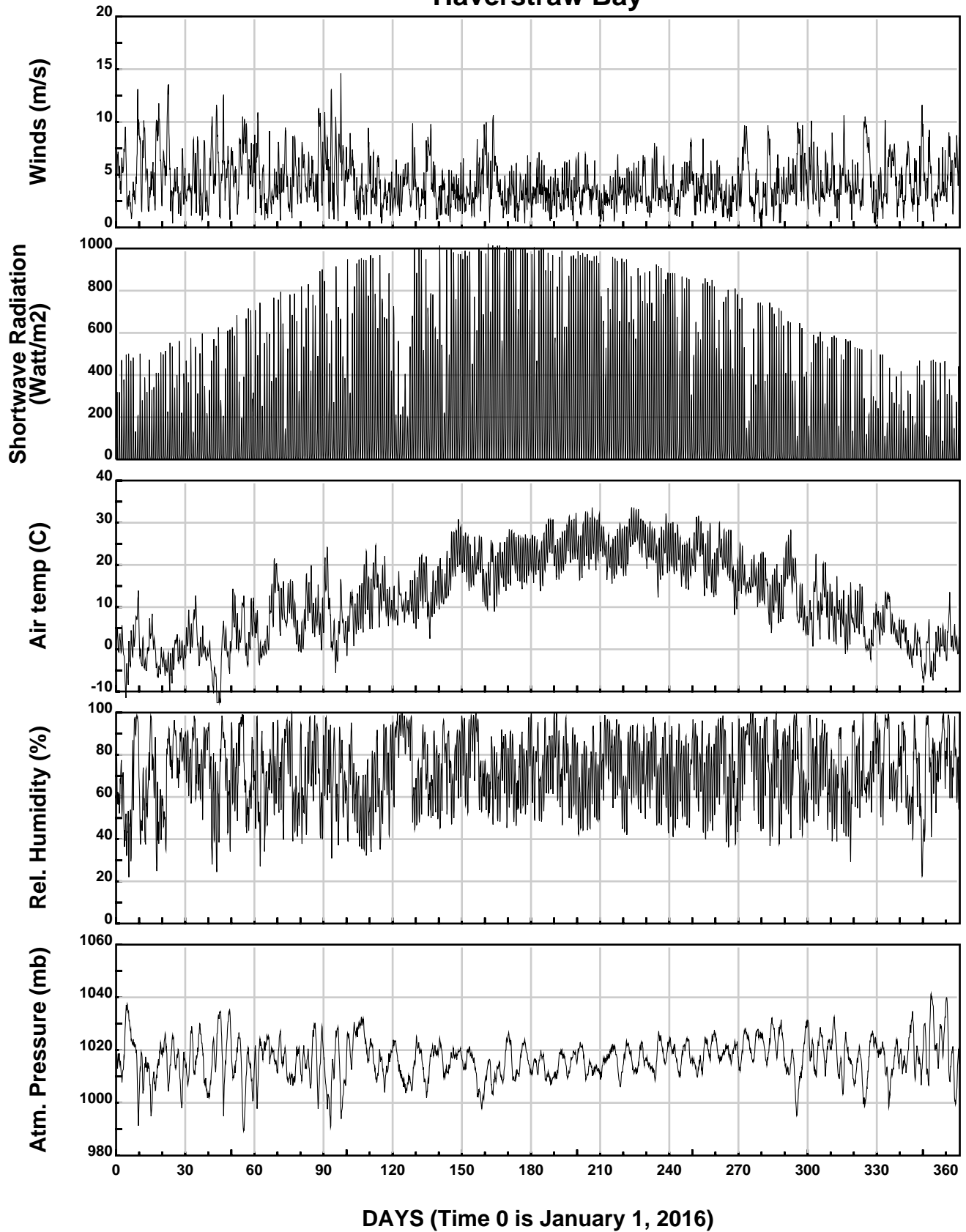
2016

### Upper Bay



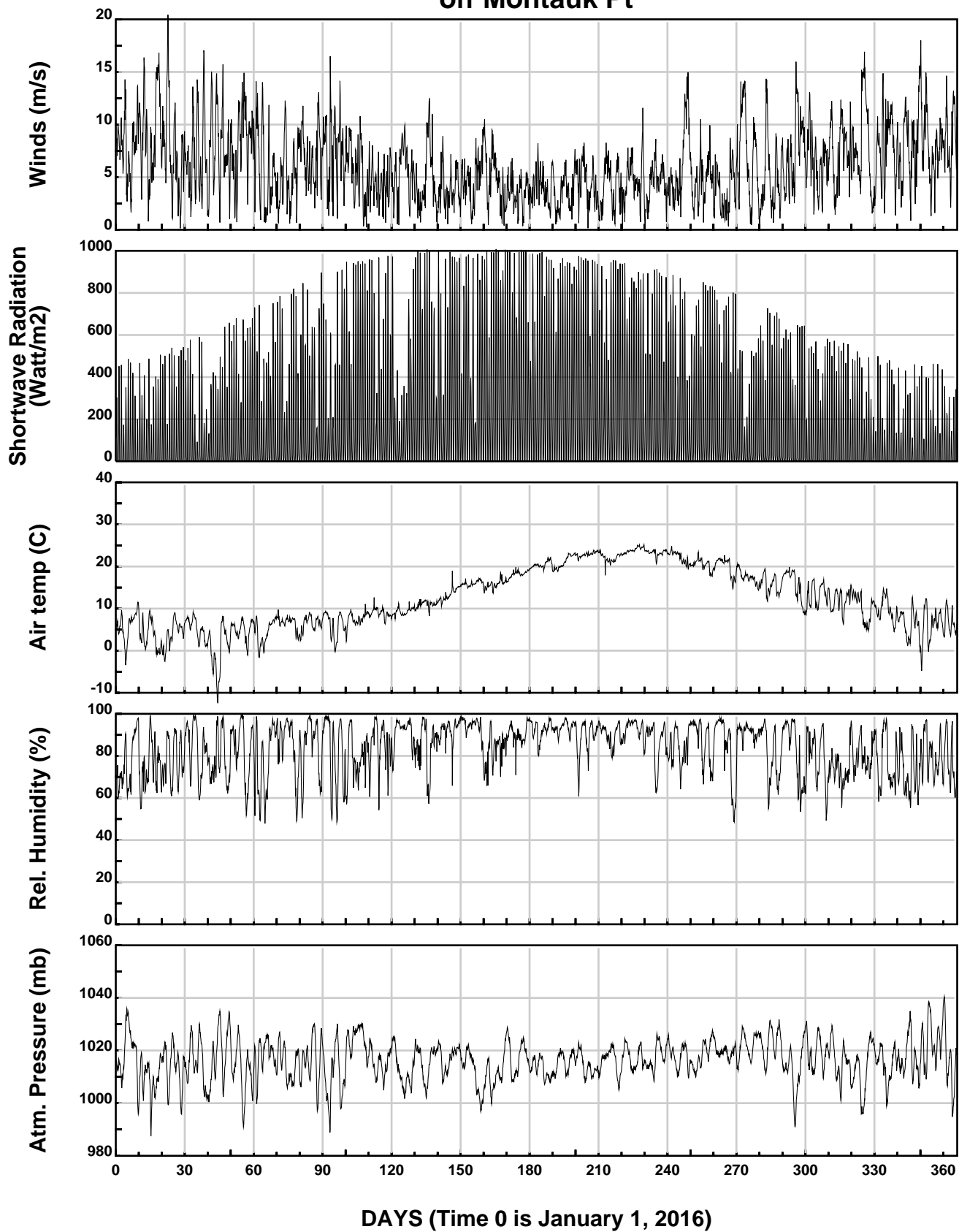
2016

### Haverstraw Bay



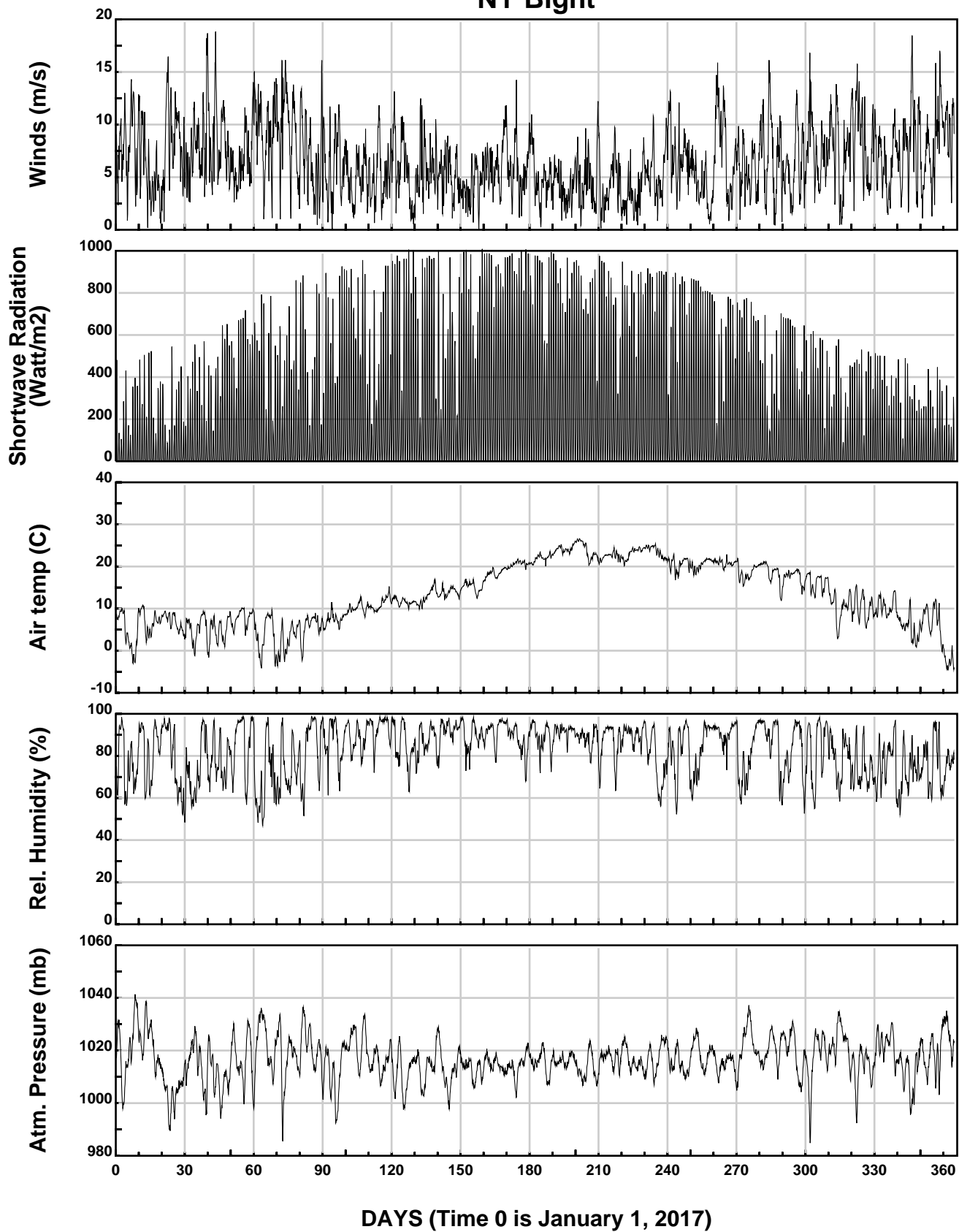
2016

### off Montauk Pt



**2016**

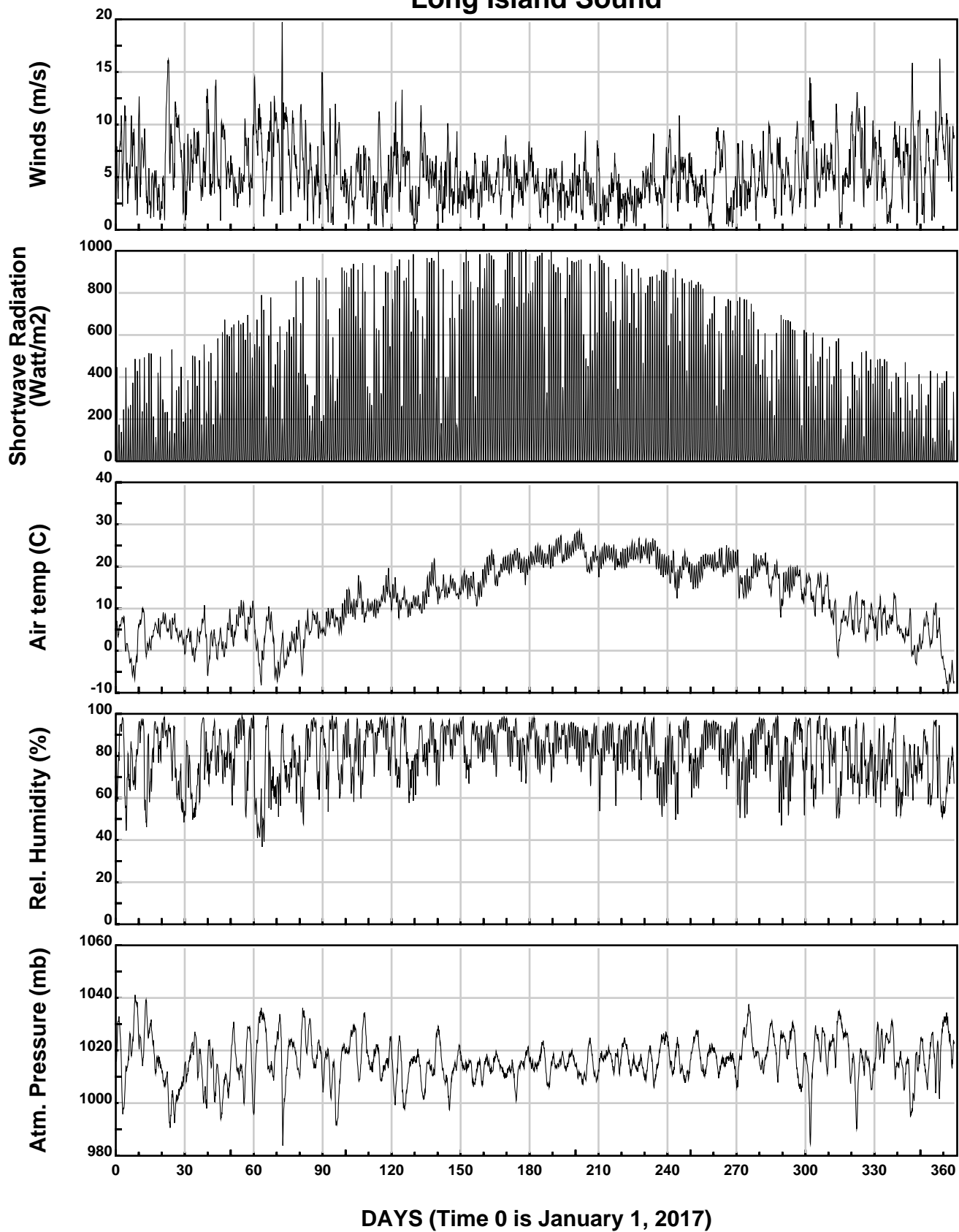
### NY Bight



**2017**

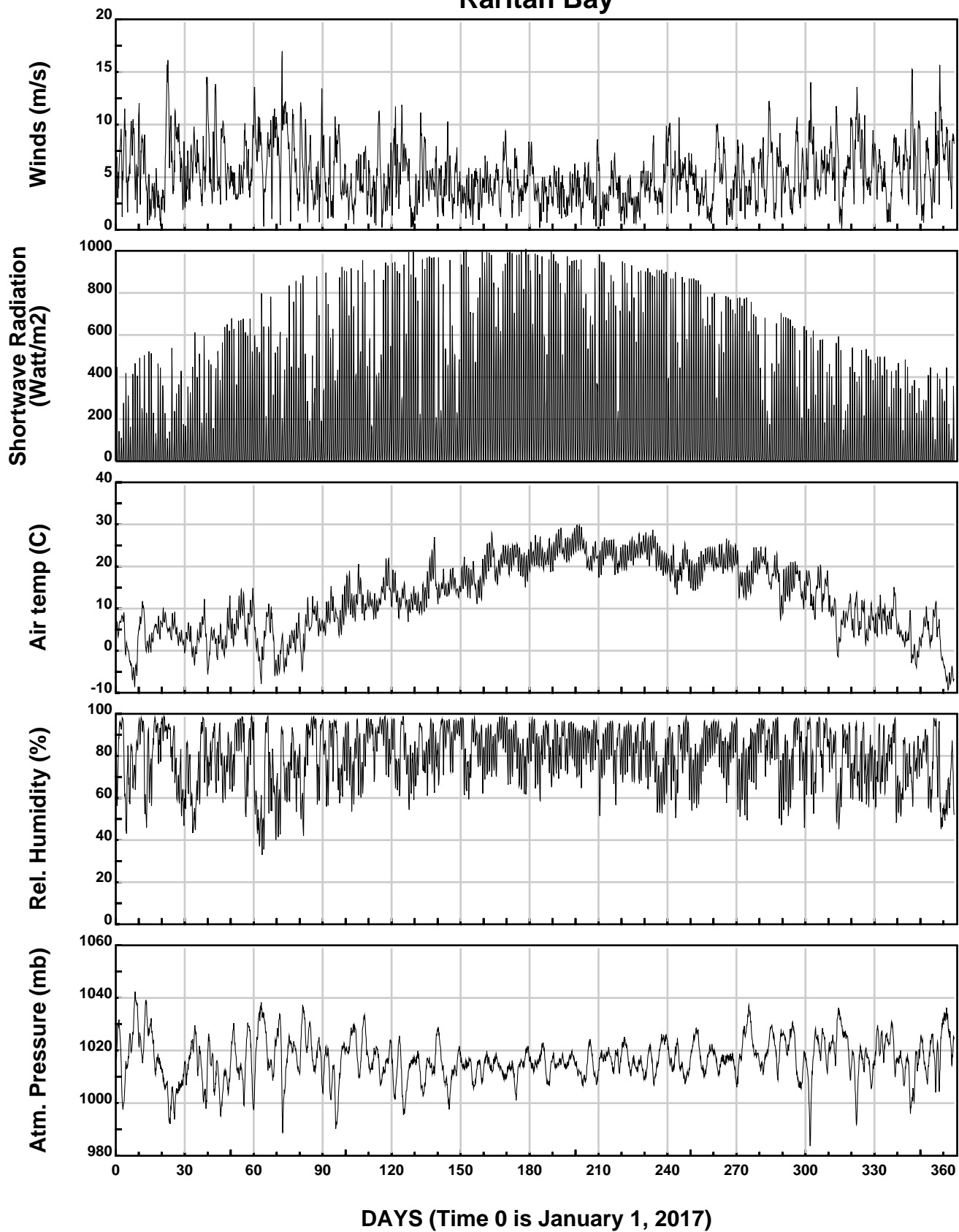


### Long Island Sound



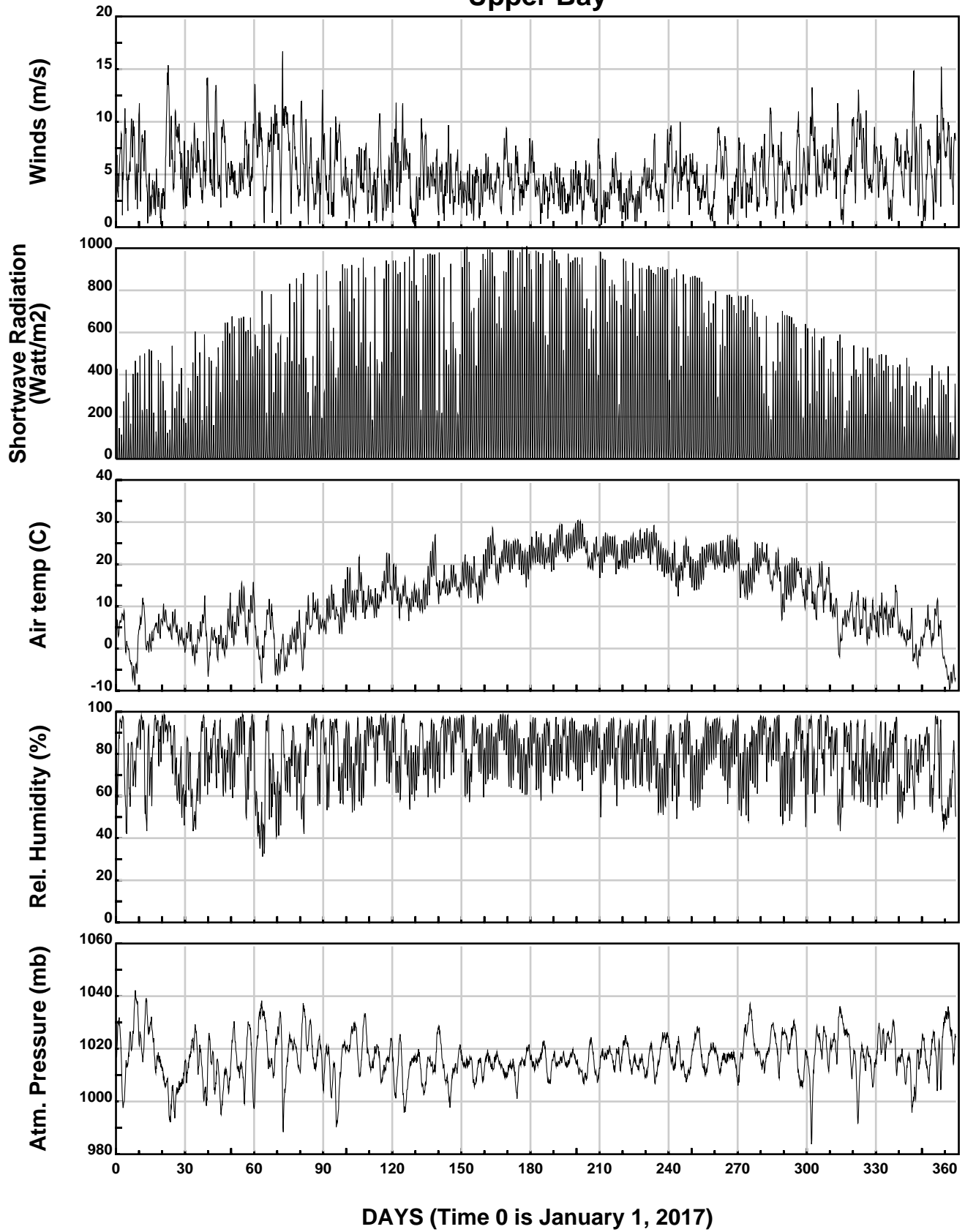
**2017**

### Raritan Bay



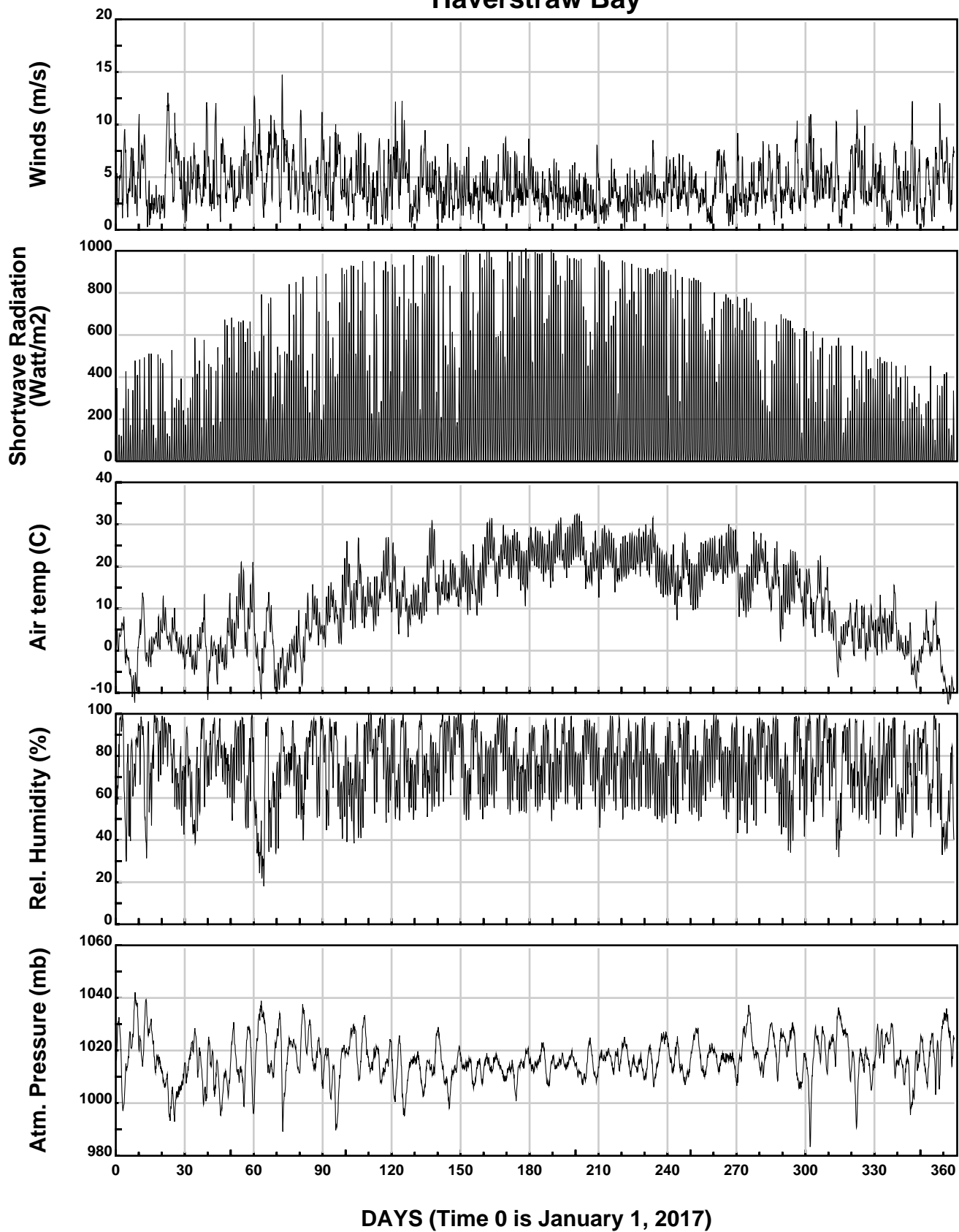
2017

### Upper Bay



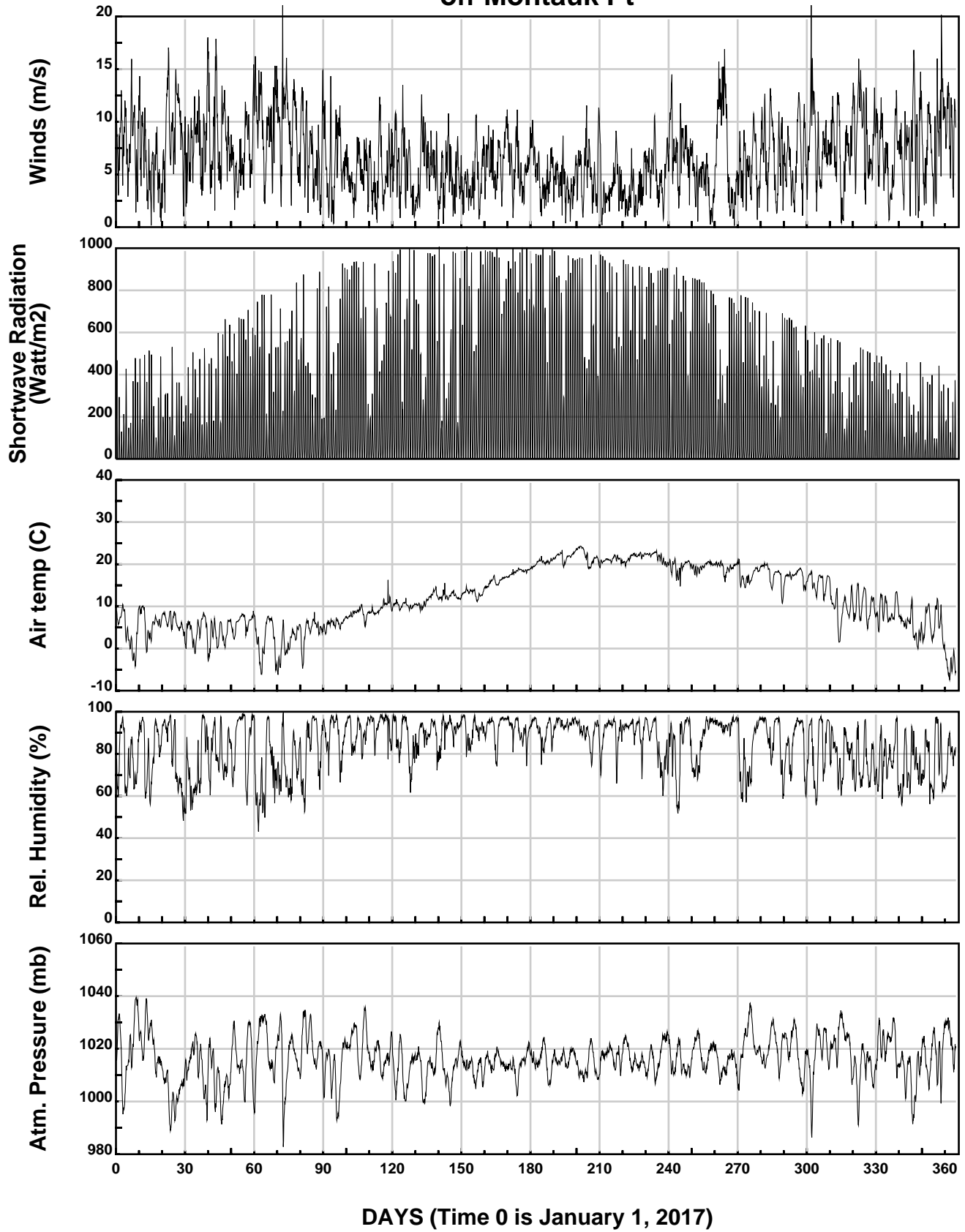
2017

### Haverstraw Bay



2017

### off Montauk Pt



**2017**



# Appendix B

## Additional Water Quality Model Loading Figures



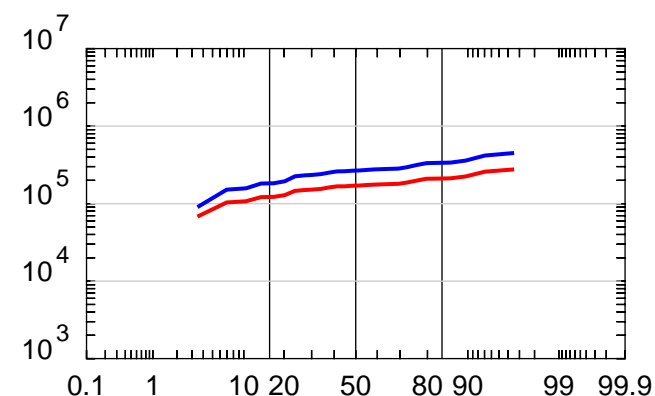
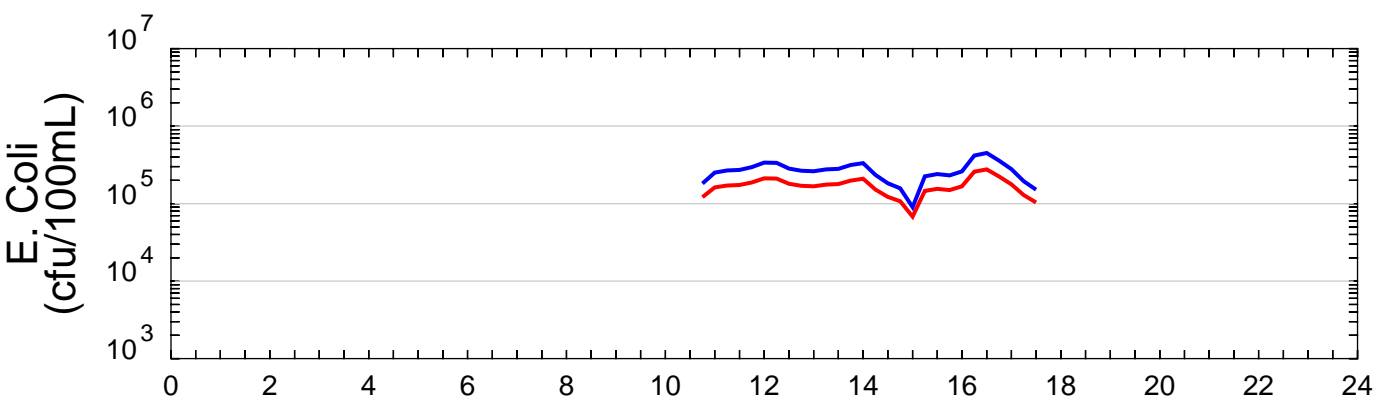
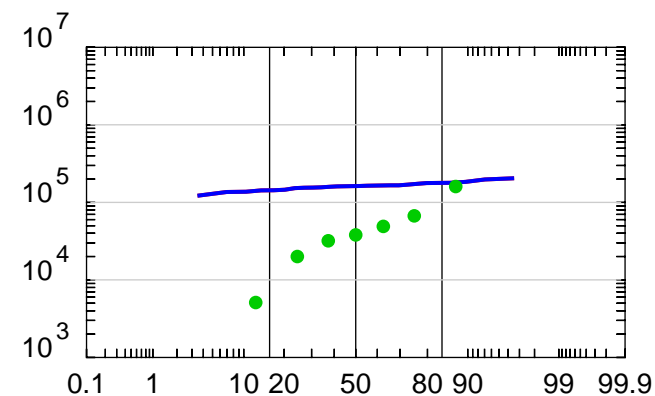
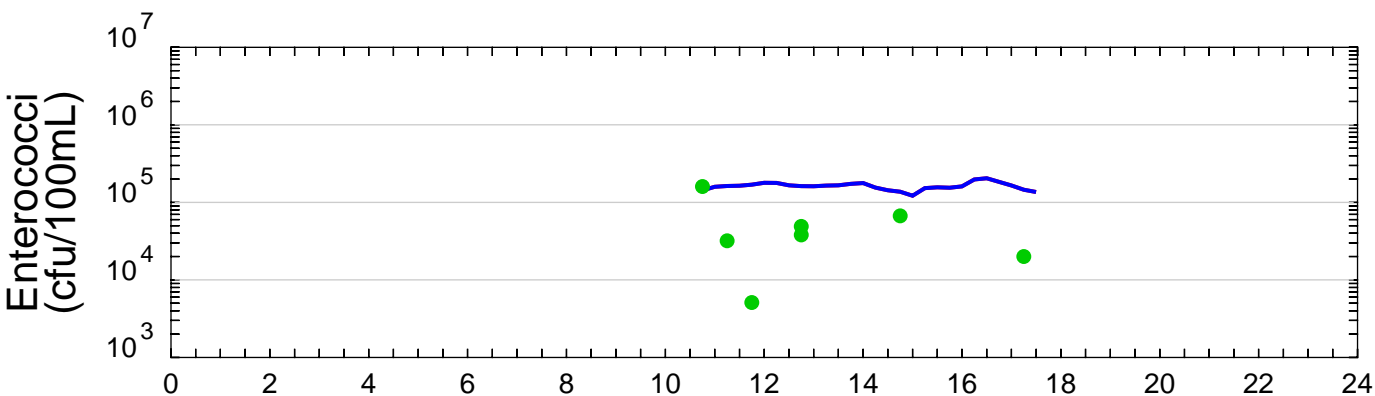
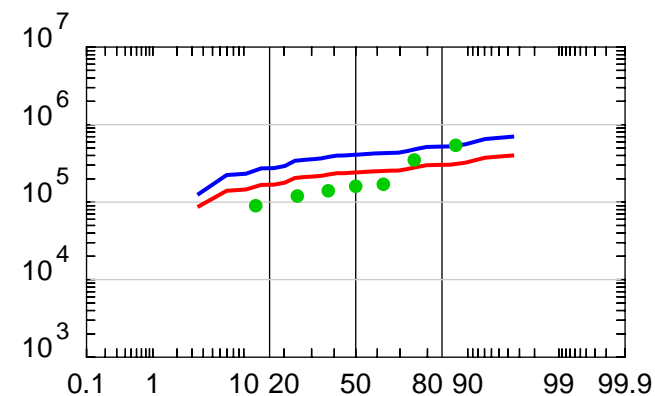
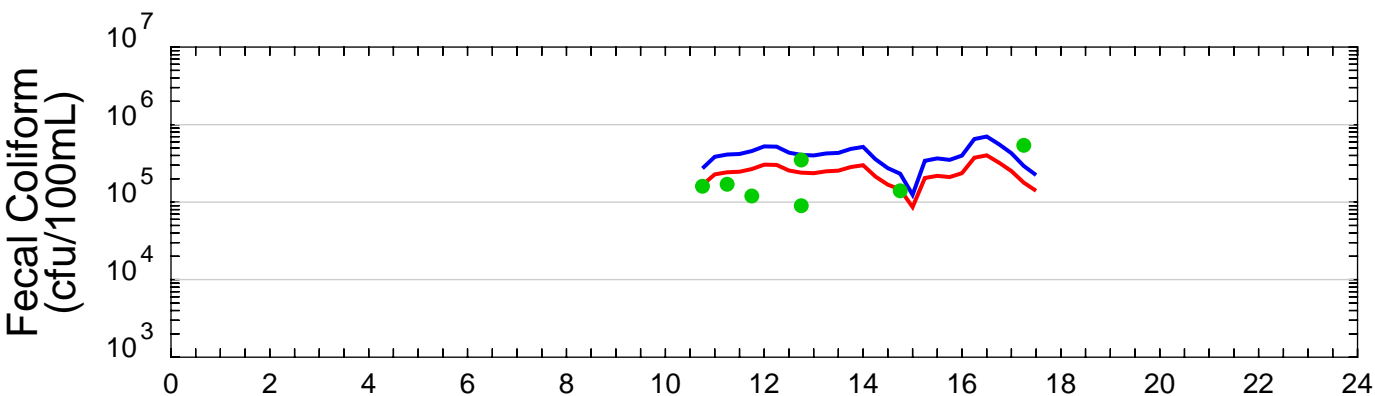
# Appendix B-1

## Assessment of CSO Mass Balance Approach

WW Event Day:  
11 / 29 / 2016

### CSO Pathogen Concentrations 2016-2017

## HR006



Hour of Day

Probability

Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

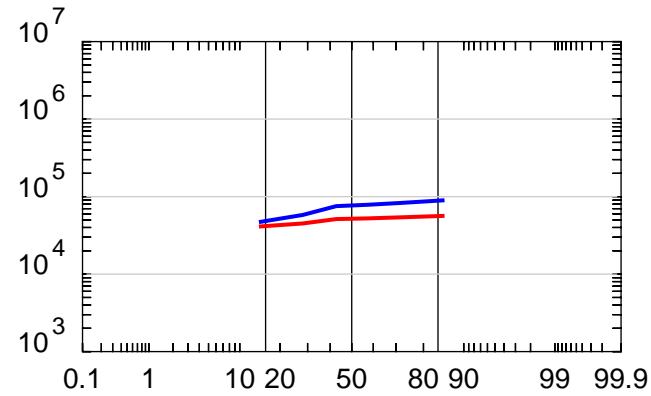
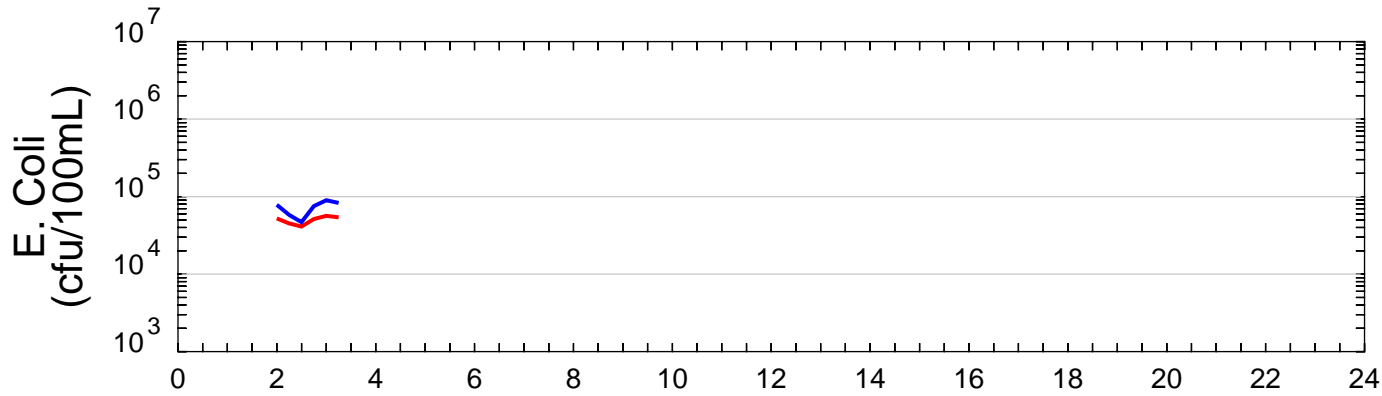
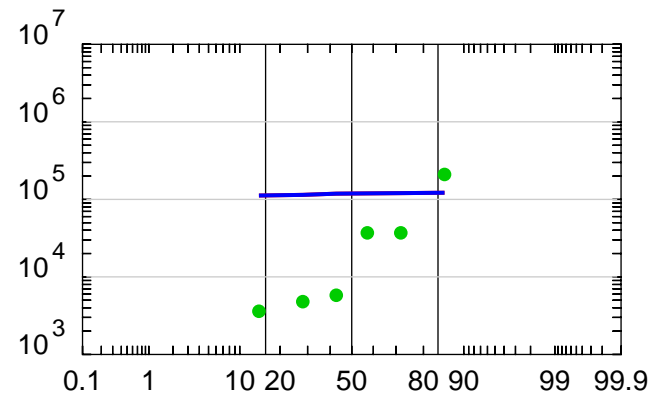
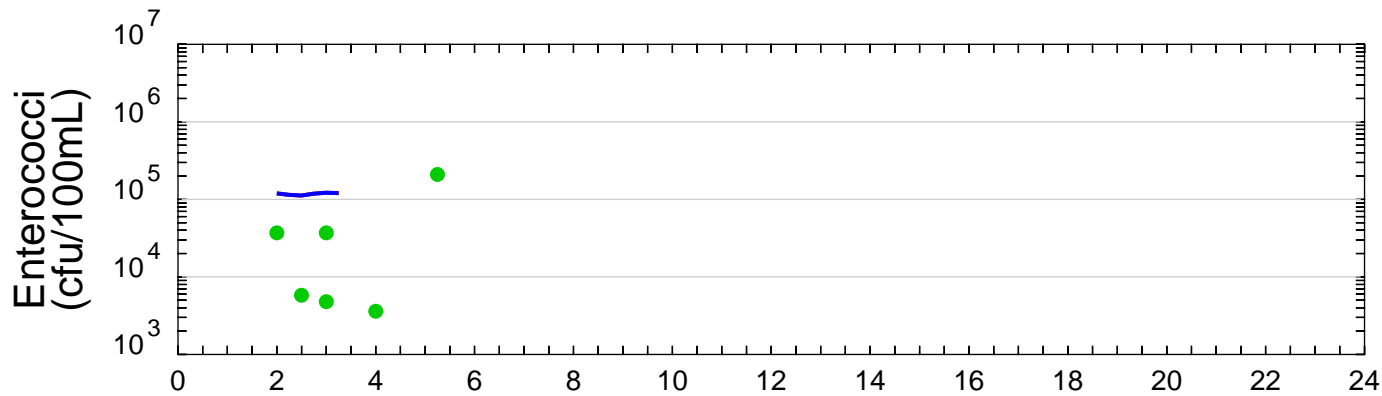
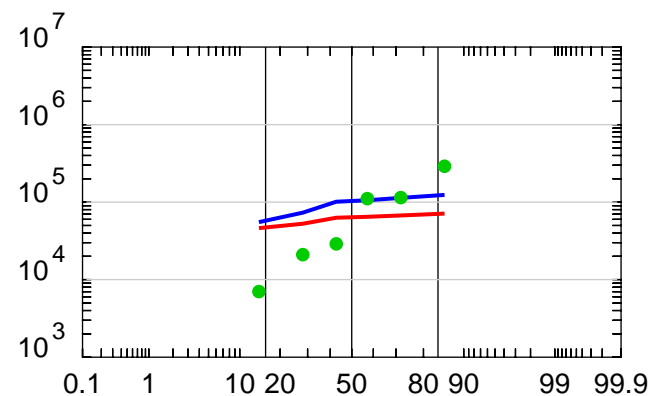
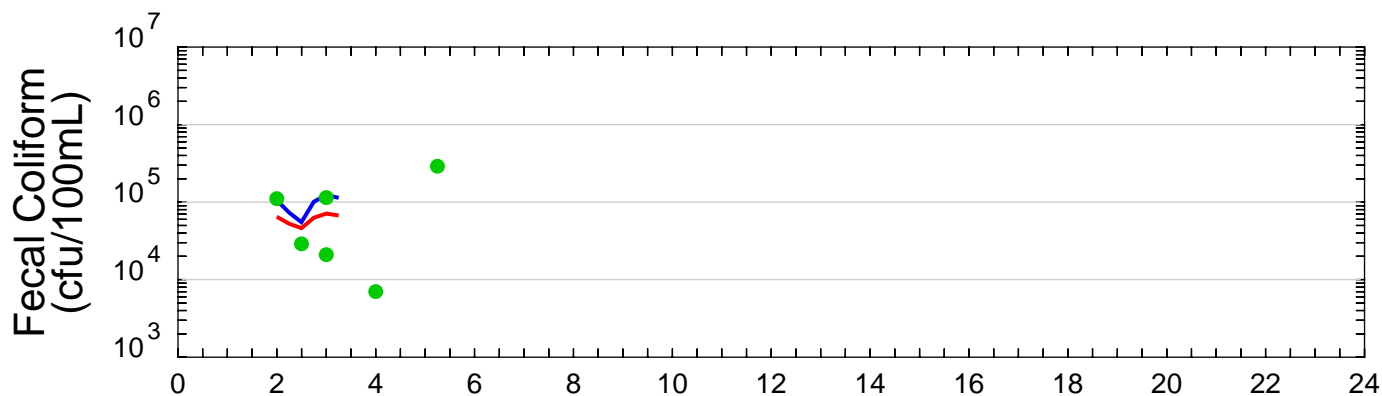


WW Event Day:

4 / 4 / 2017

# CSO Pathogen Concentrations 2016-2017

## HR006



Hour of Day

Probability

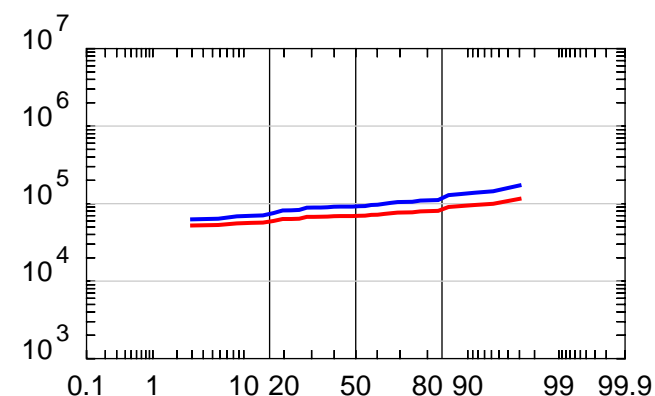
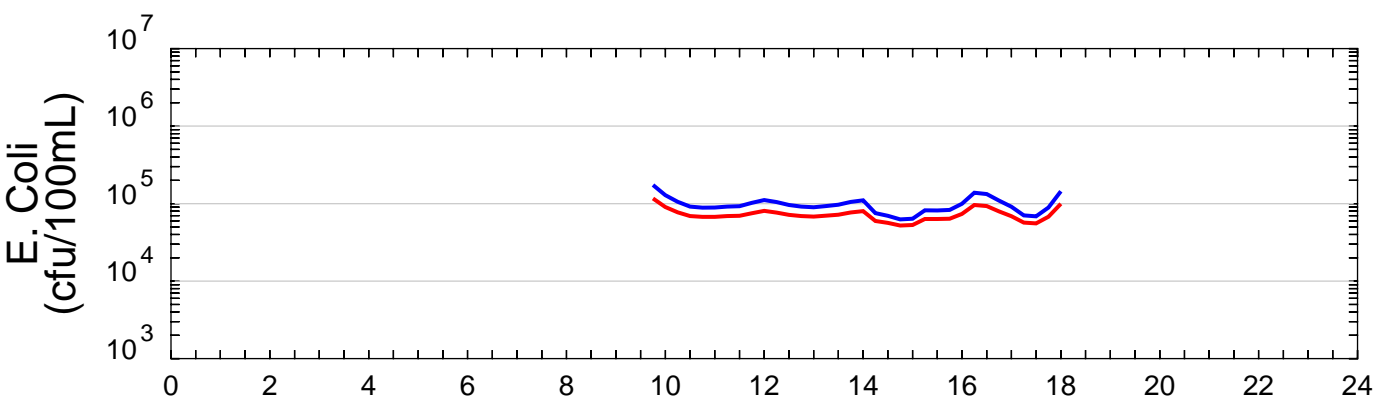
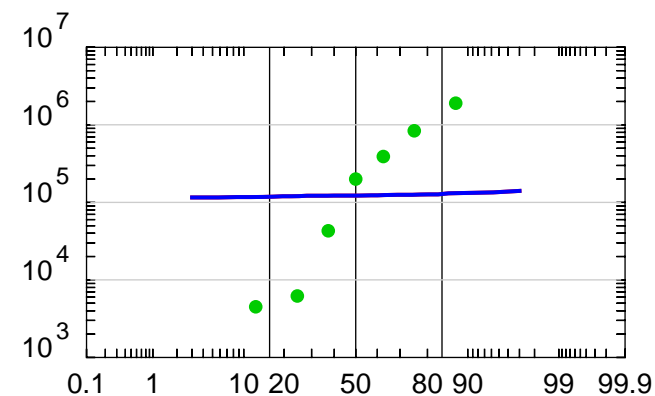
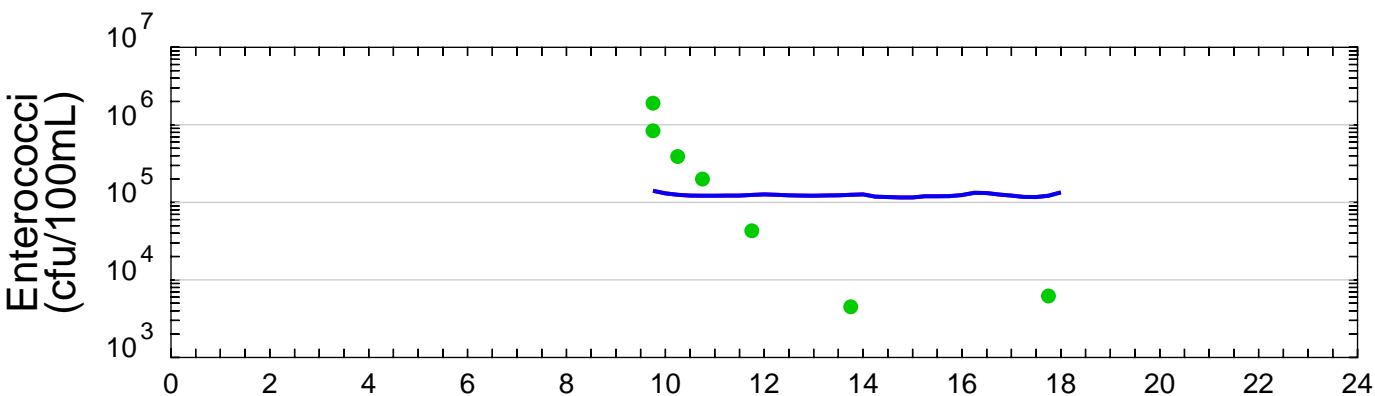
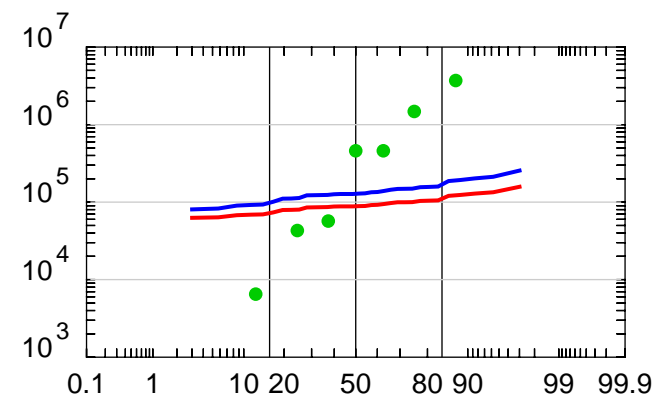
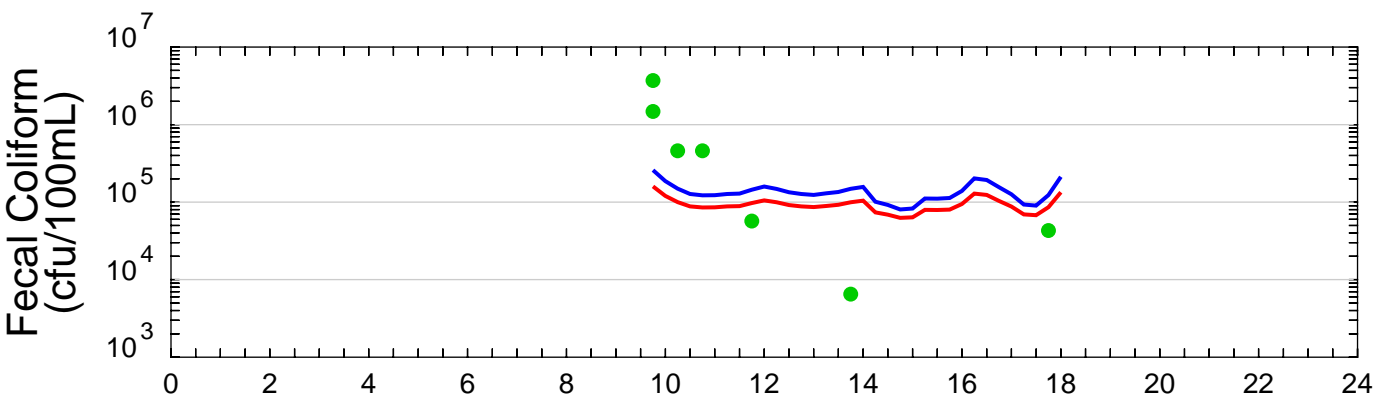
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

WW Event Day:  
11 / 29 / 2016

### CSO Pathogen Concentrations 2016-2017

## HR007



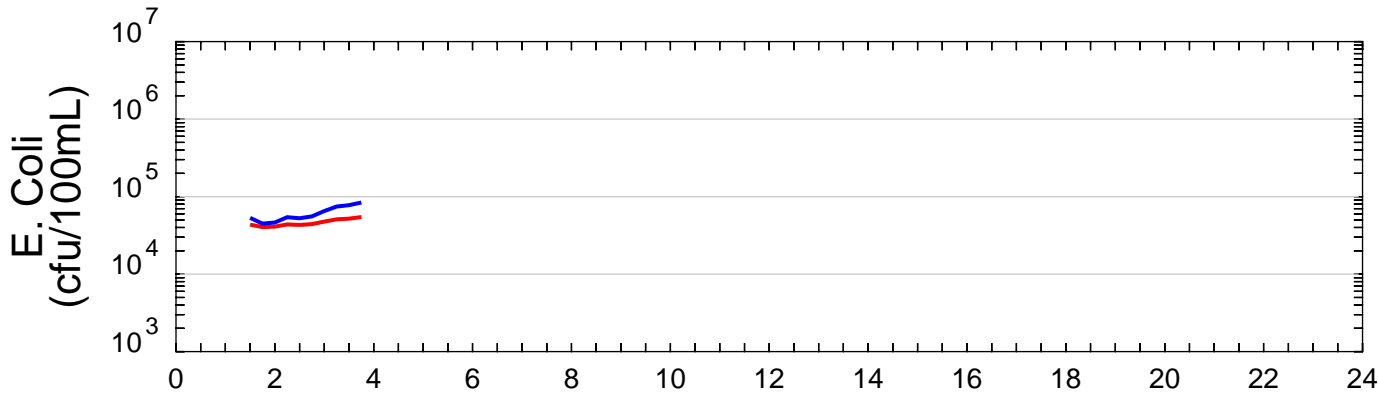
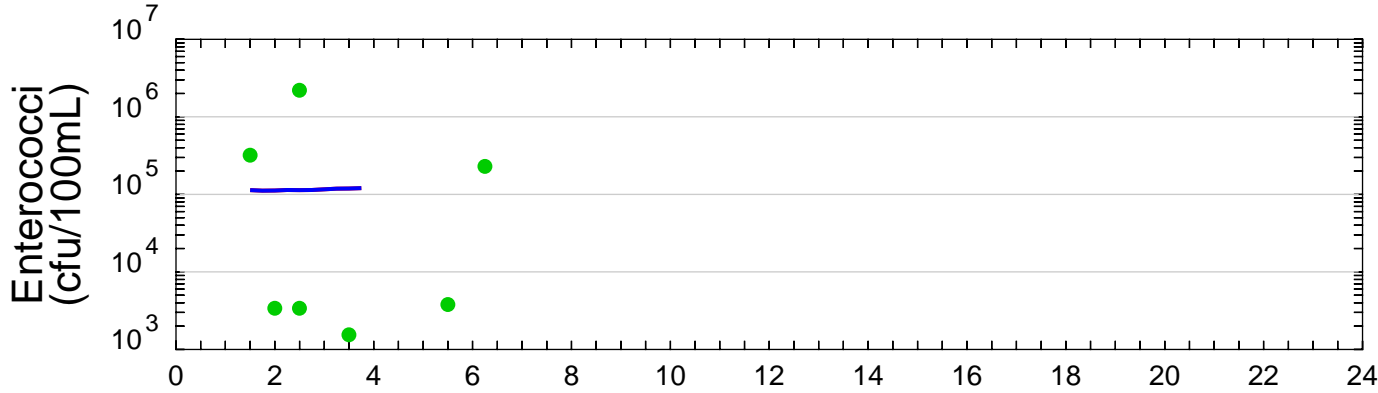
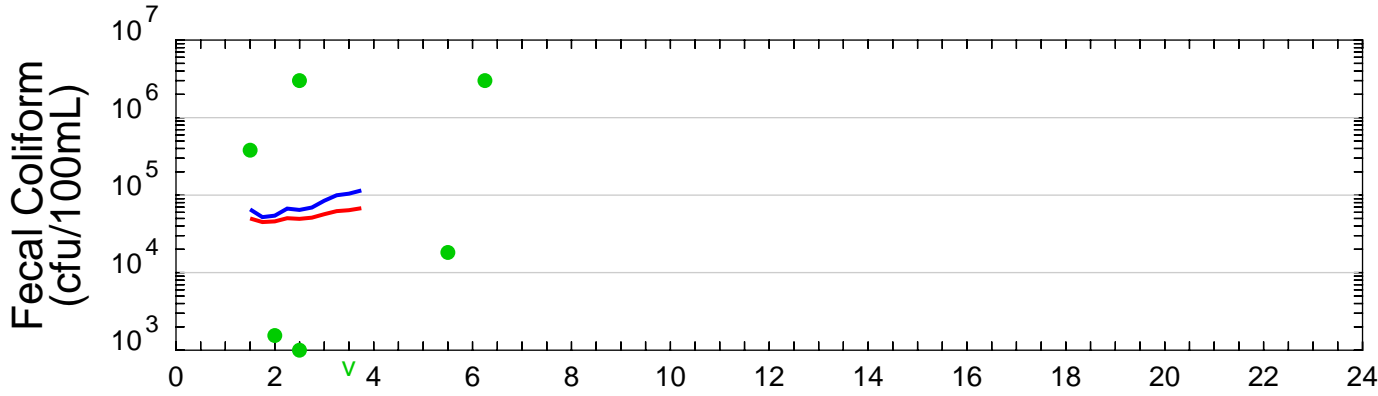
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

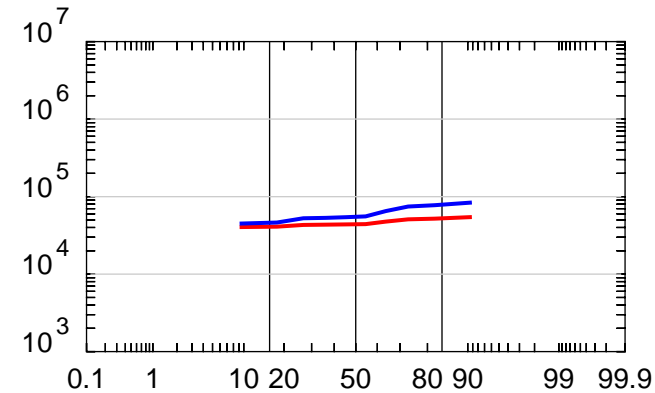
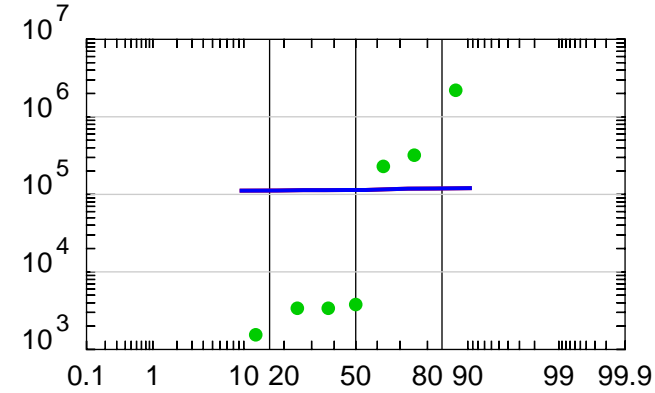
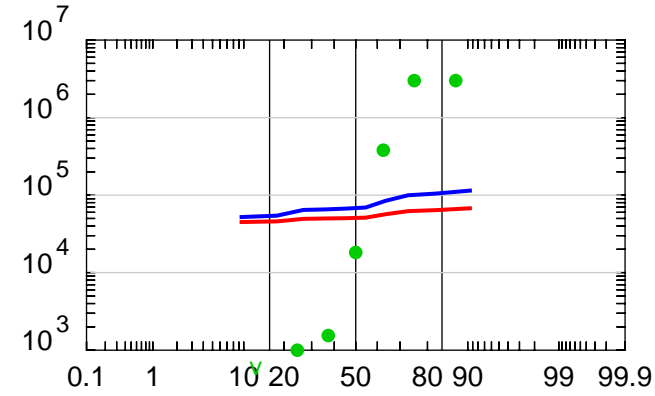
WW Event Day:  
4 / 4 / 2017

### CSO Pathogen Concentrations 2016-2017

## HR007



Hour of Day



Probability

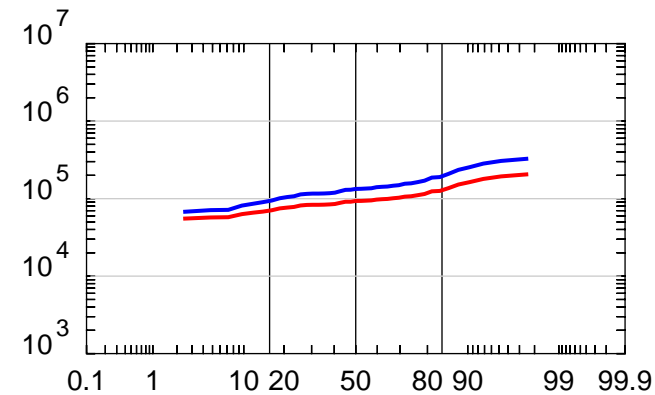
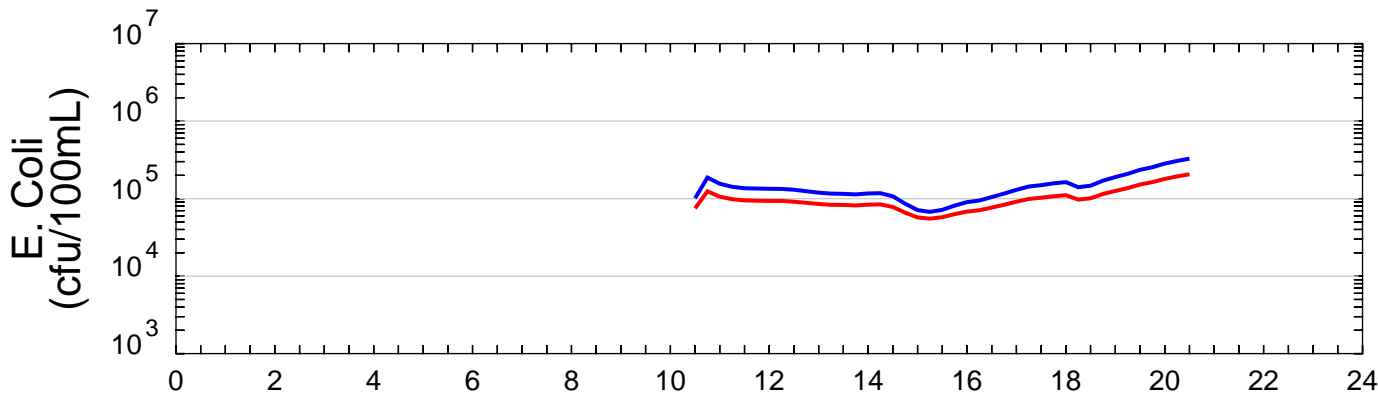
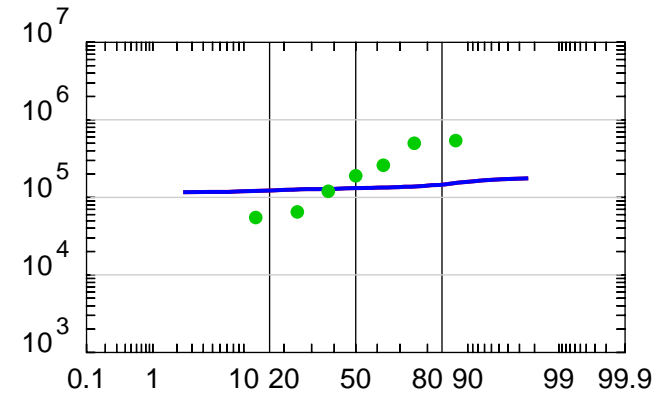
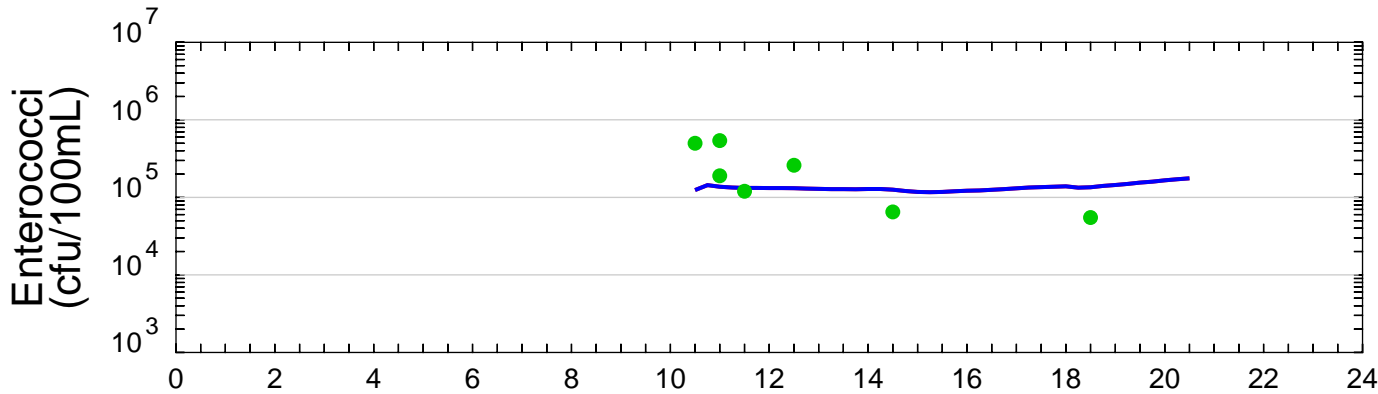
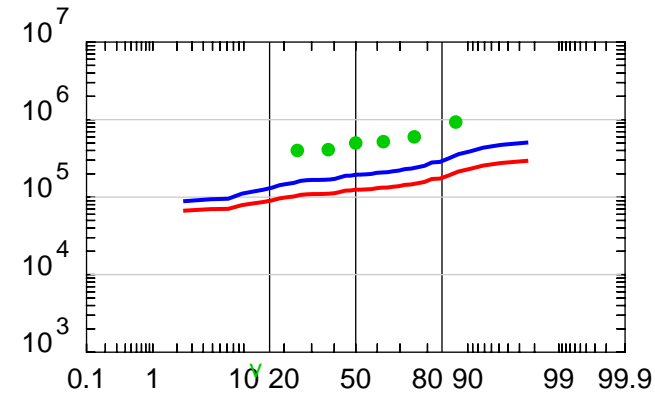
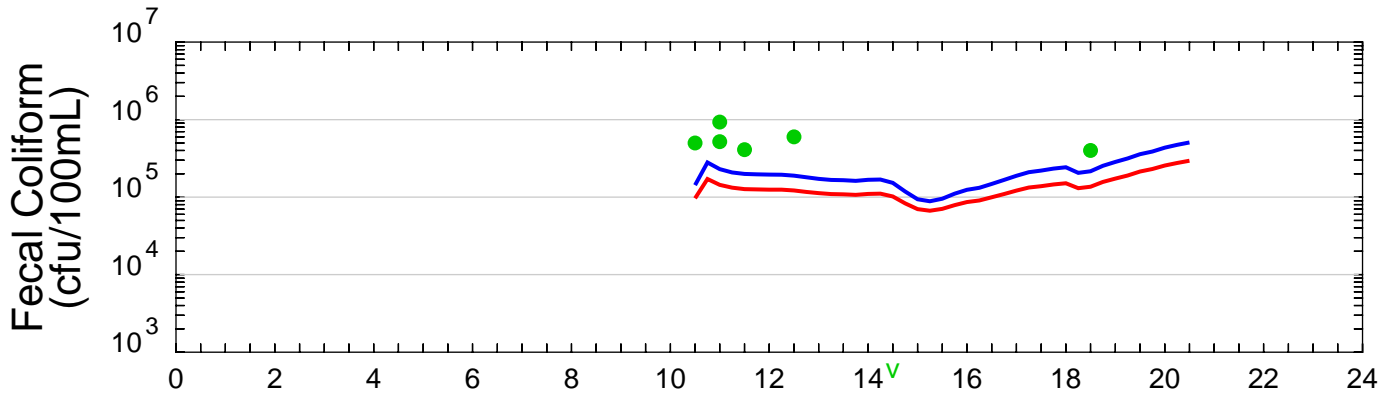
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

WW Event Day:  
11 / 29 / 2016

### CSO Pathogen Concentrations 2016-2017

## KE007



Hour of Day

Probability

Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

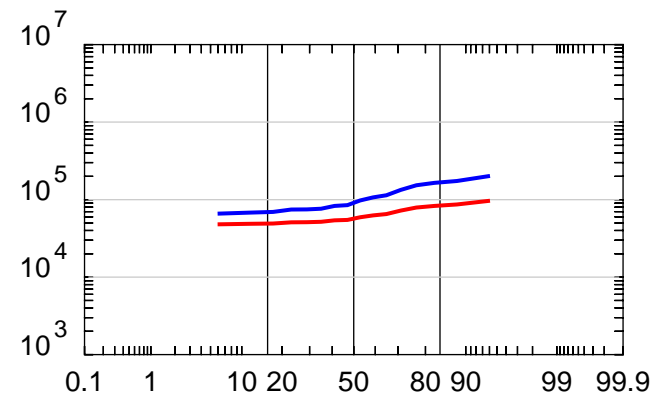
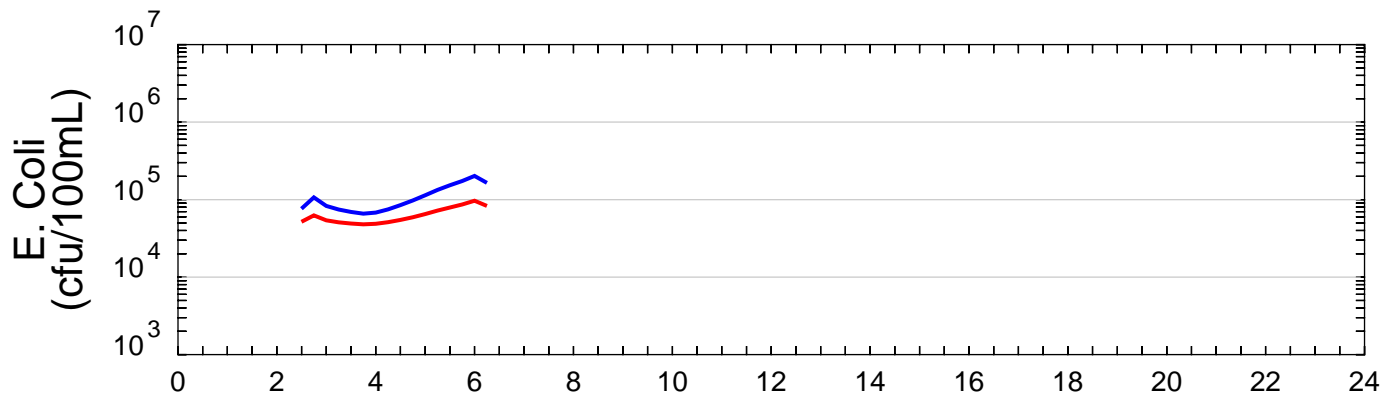
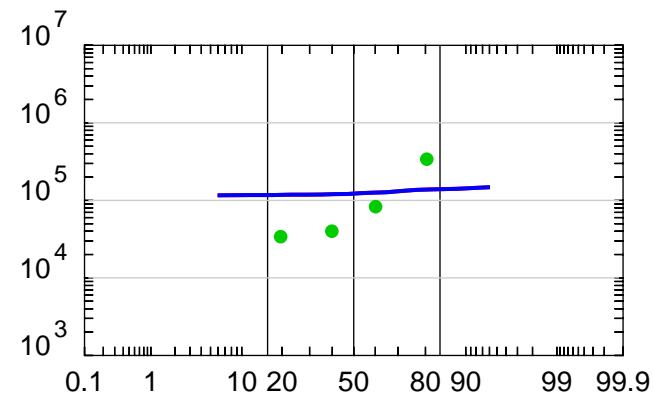
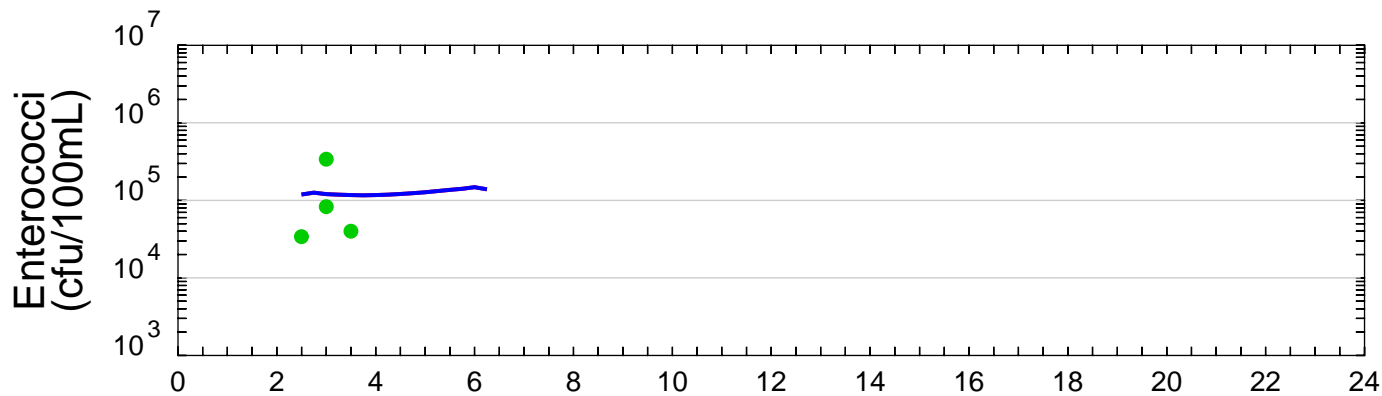
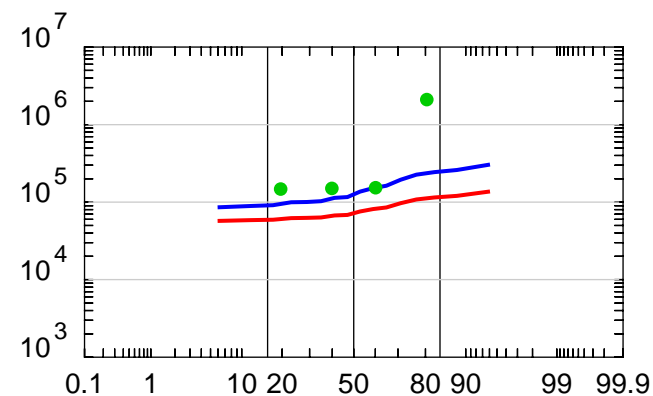
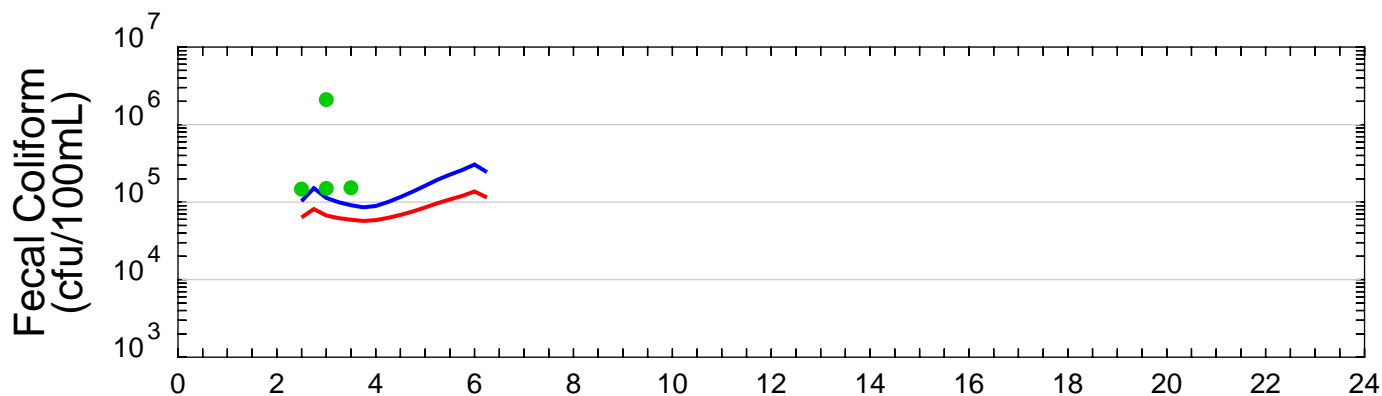
Assumed IW flow starts when data sampling begins

WW Event Day:

4 / 4 / 2017

# CSO Pathogen Concentrations 2016-2017

## KE007



Hour of Day

Probability

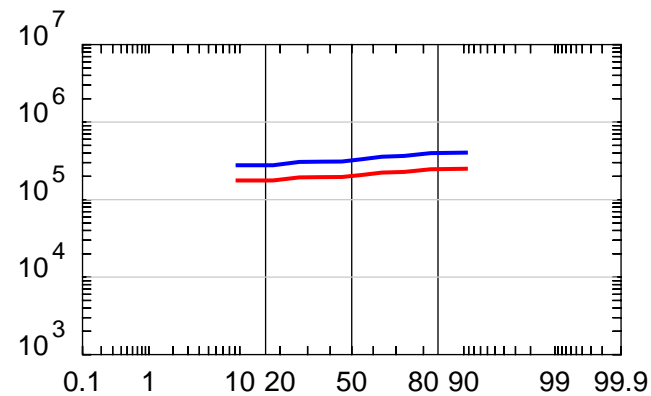
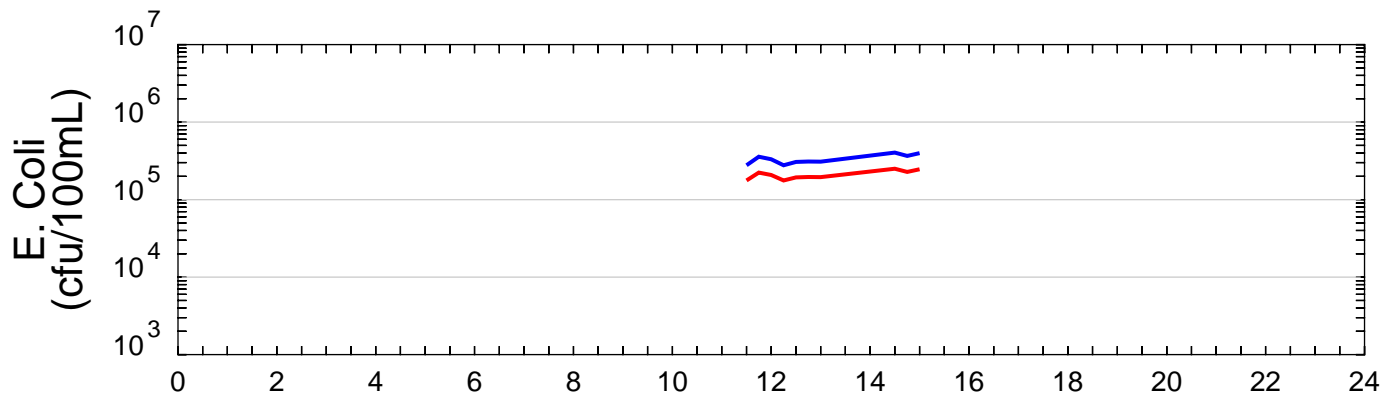
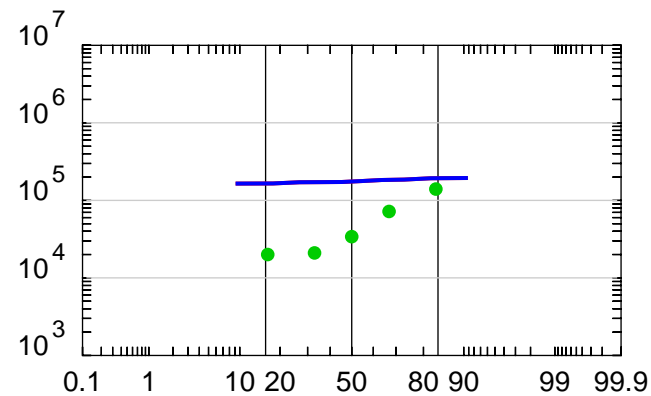
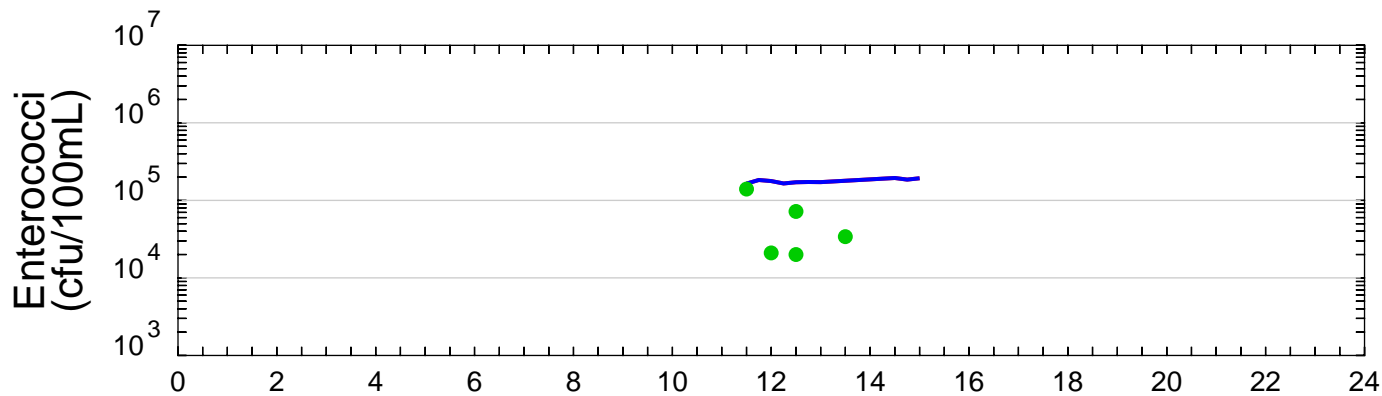
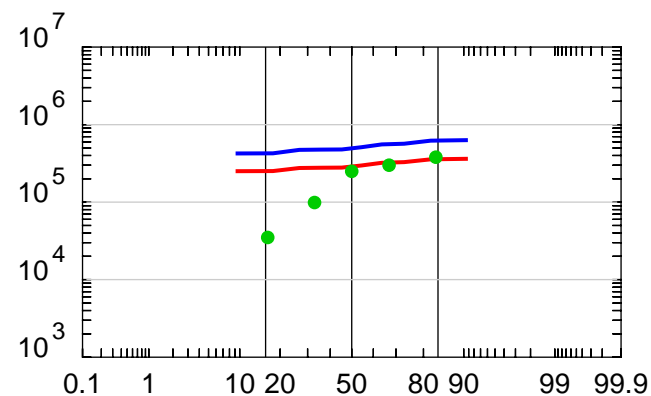
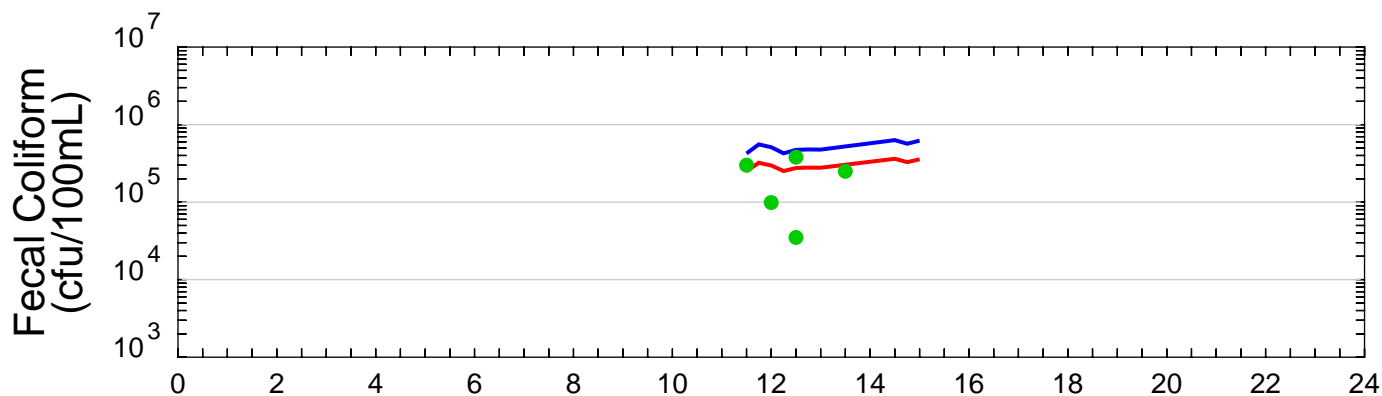
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

WW Event Day:  
11 / 29 / 2016

### CSO Pathogen Concentrations 2016-2017

## NE004



Hour of Day

Probability

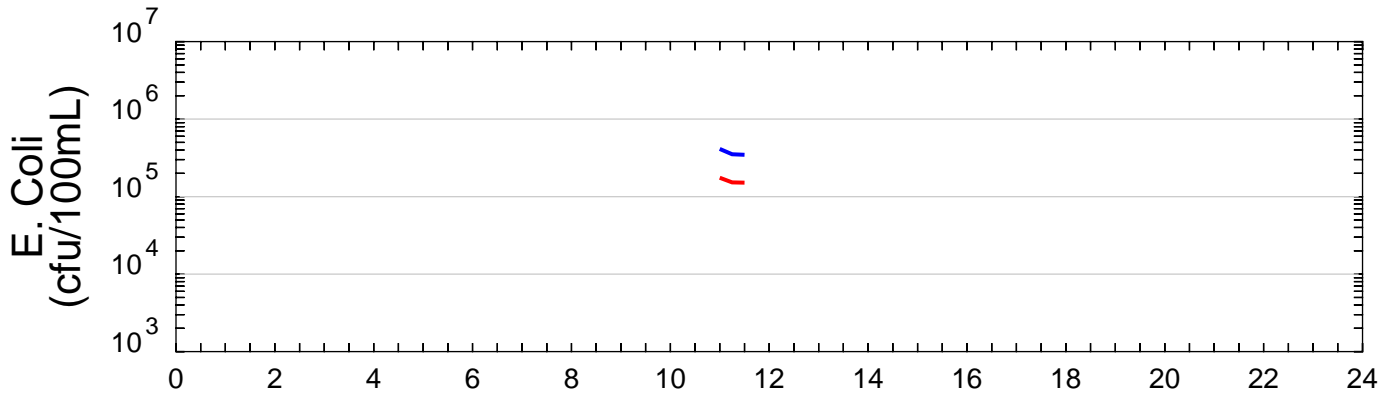
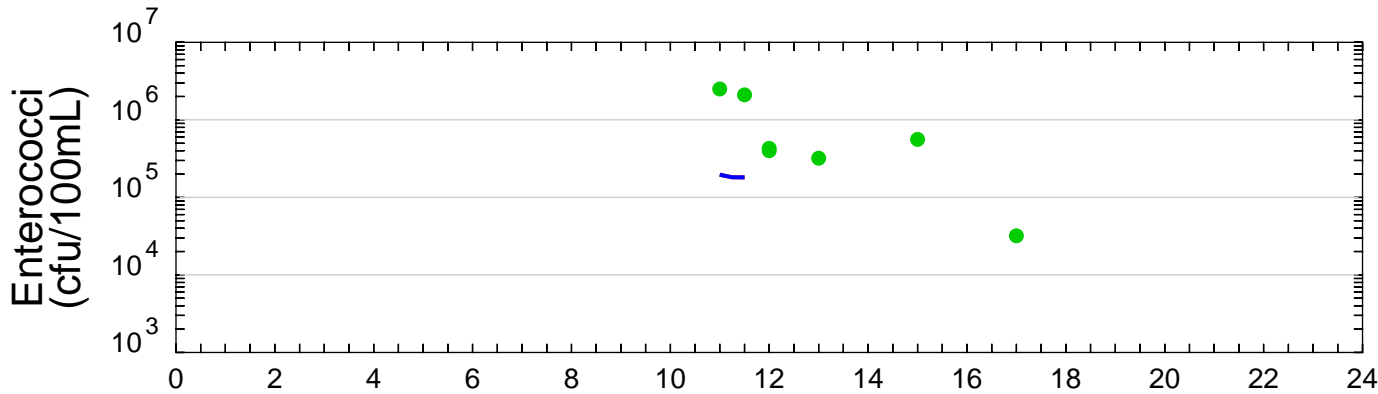
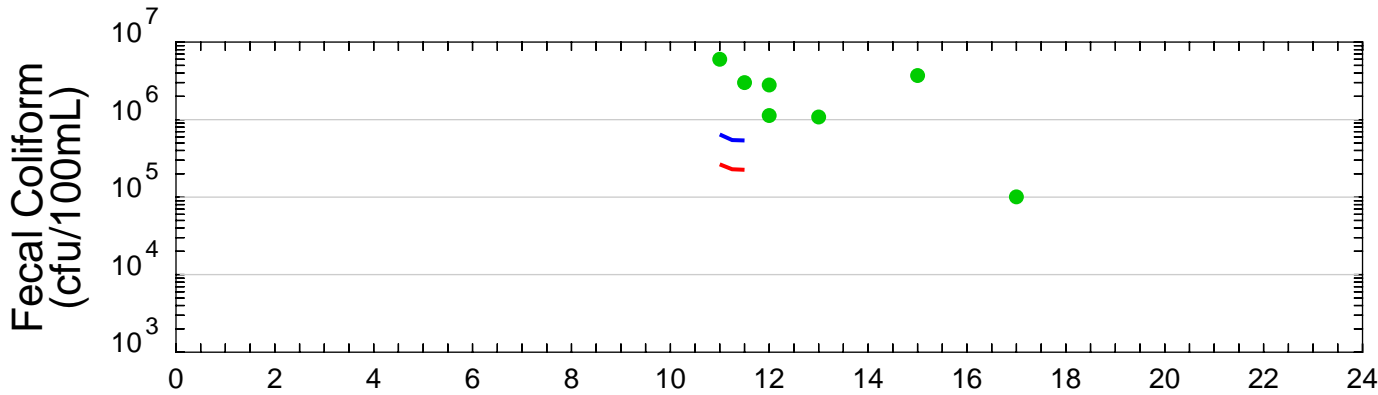
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

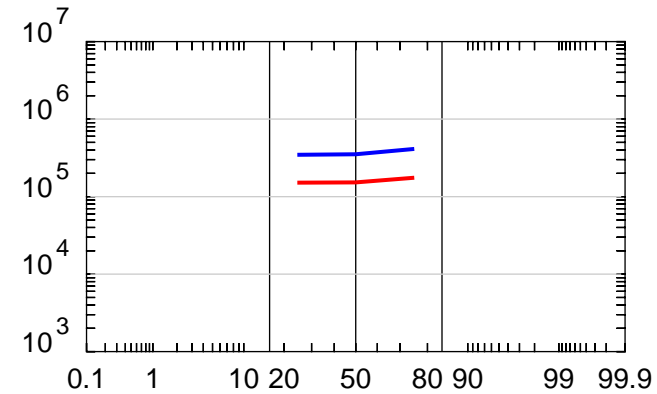
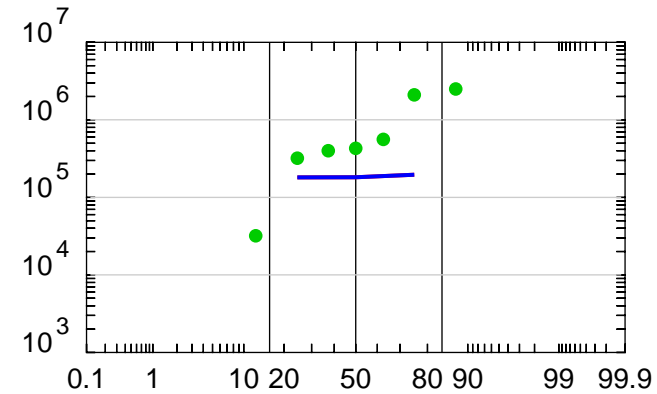
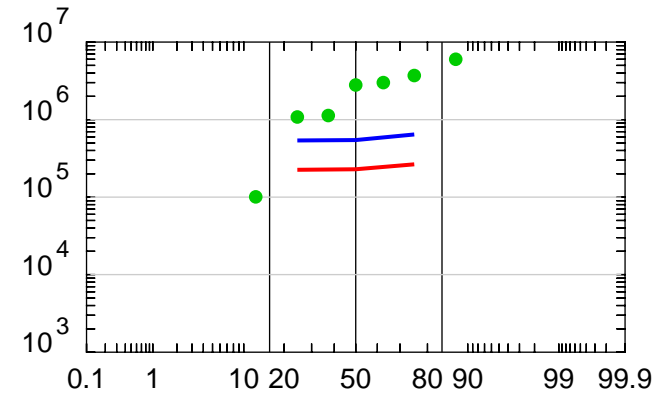
WW Event Day:  
4 / 6 / 2017

### CSO Pathogen Concentrations 2016-2017

## NE004



Hour of Day



Probability

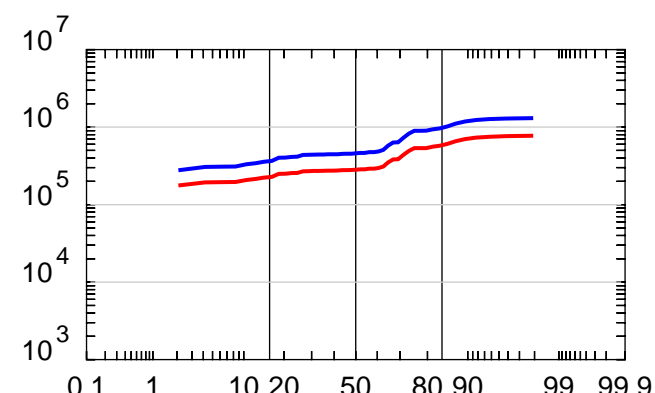
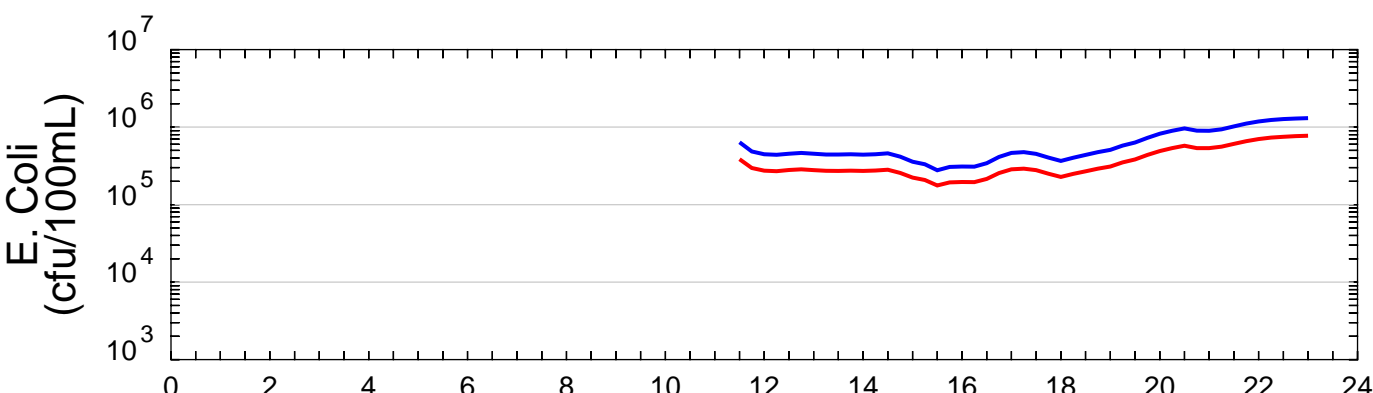
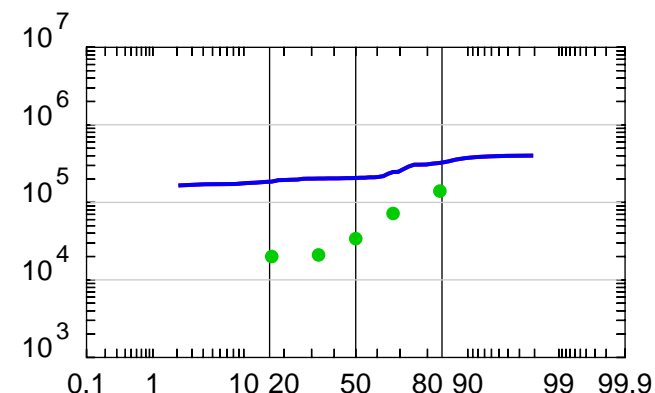
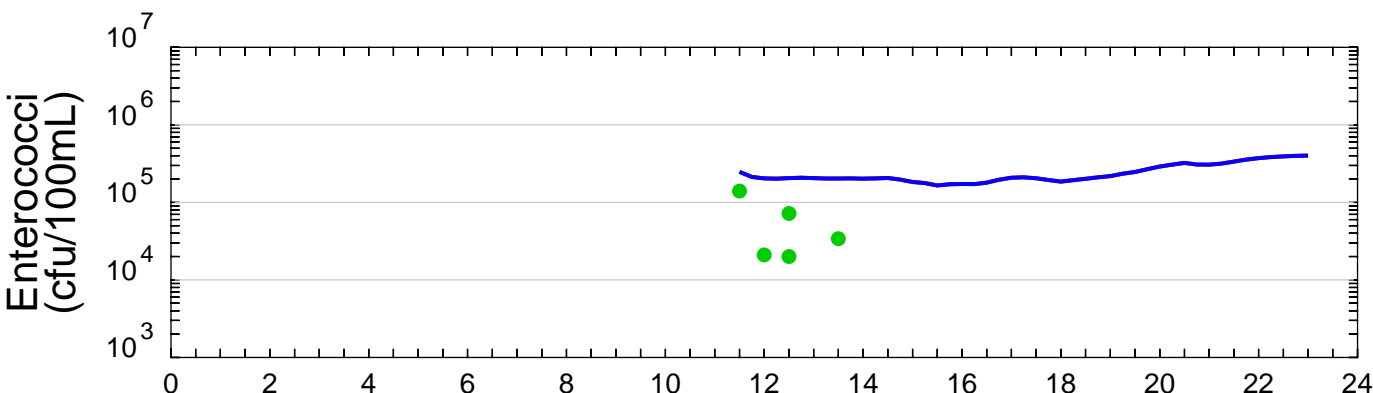
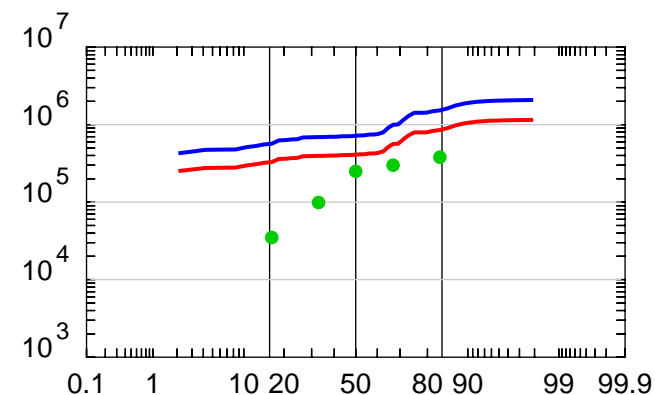
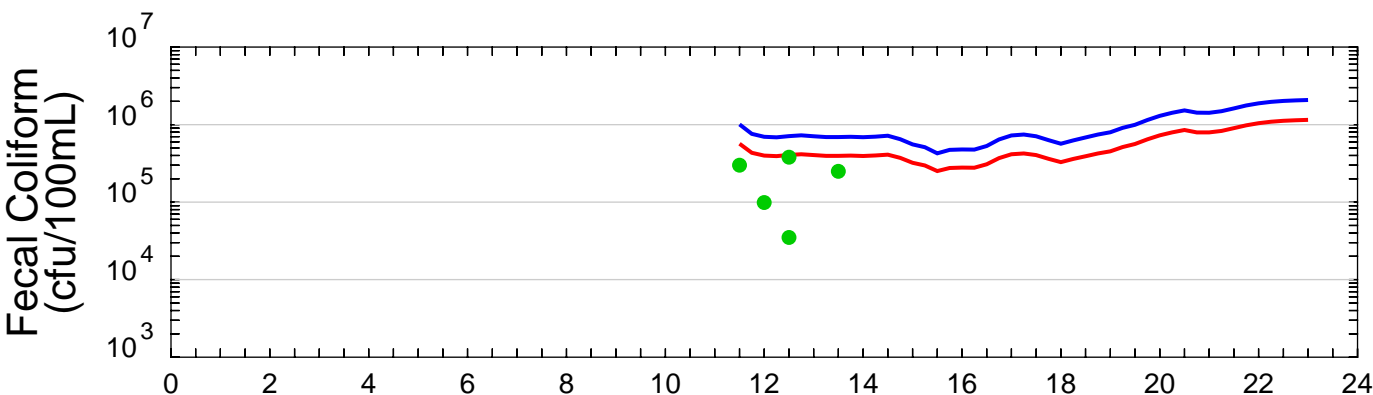
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

WW Event Day:  
11 / 29 / 2016

### CSO Pathogen Concentrations 2016-2017

## NE005



Hour of Day

Probability

Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

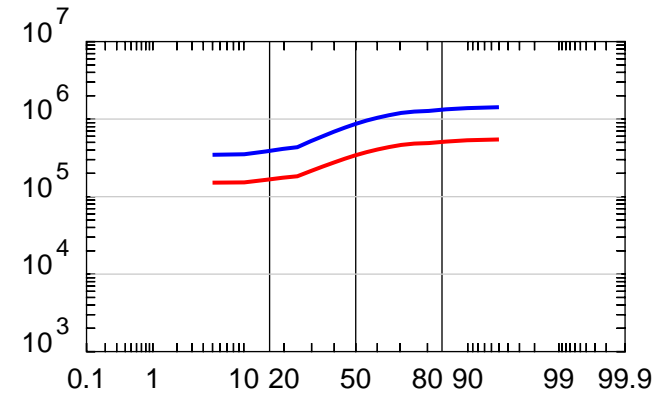
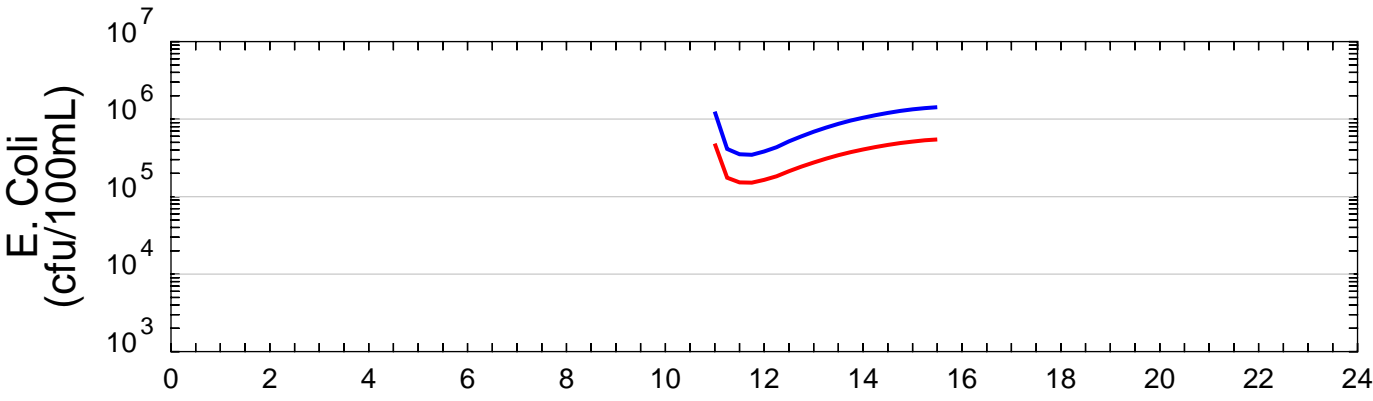
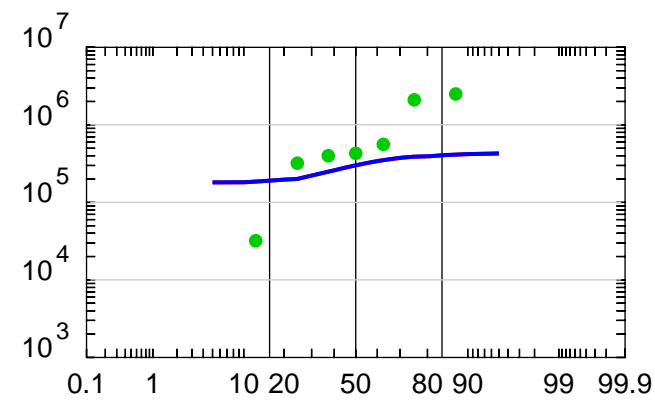
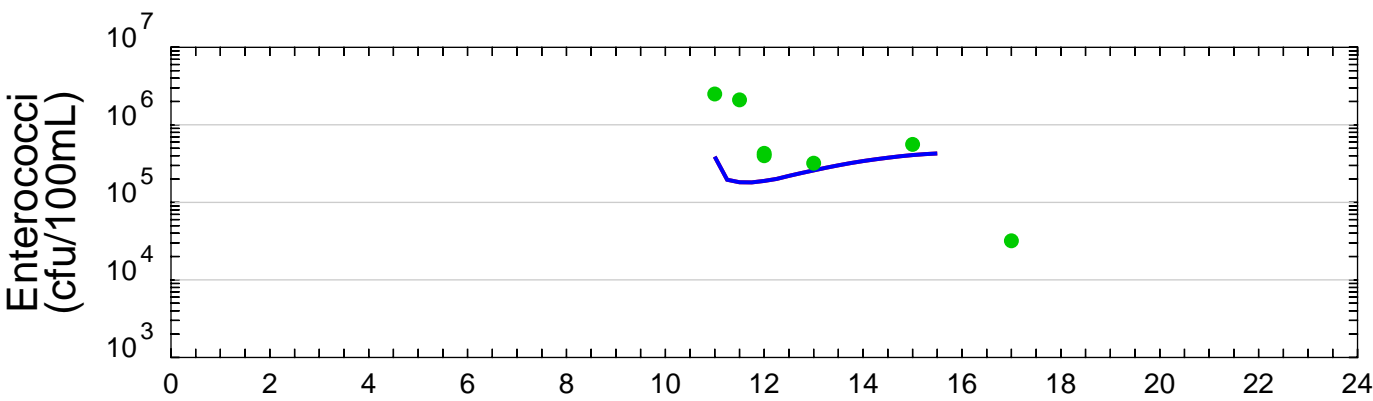
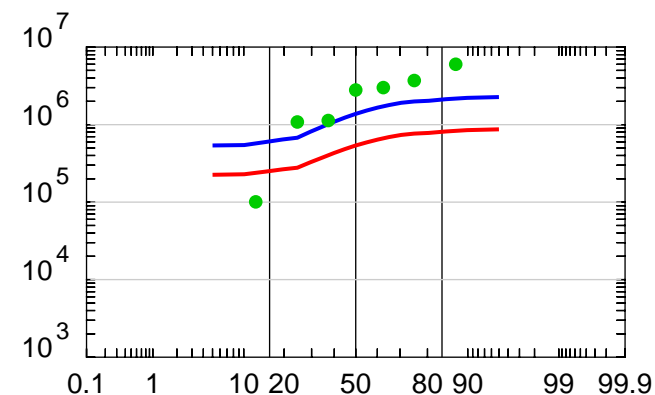
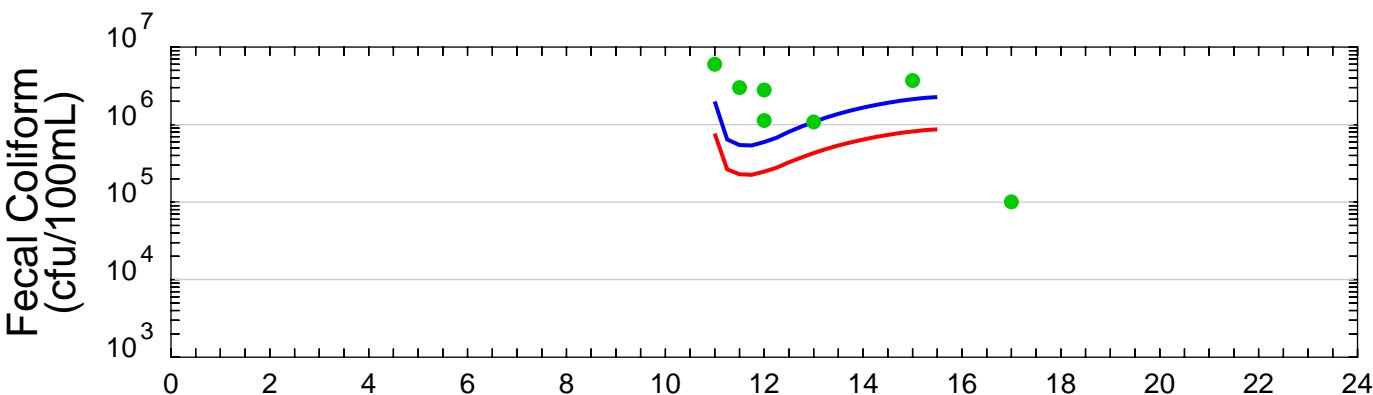


WW Event Day:

4 / 6 / 2017

### CSO Pathogen Concentrations 2016-2017

## NE005



Hour of Day

Probability

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Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

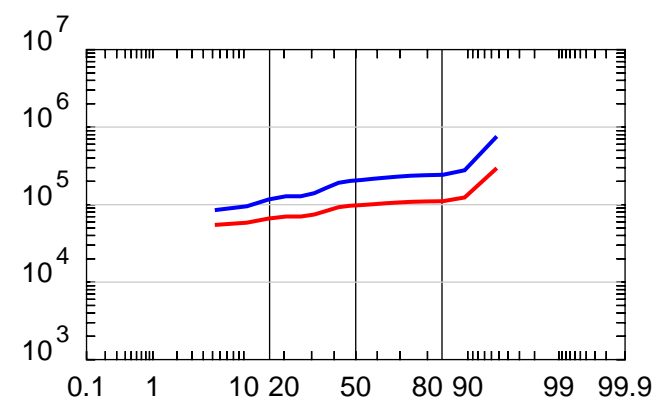
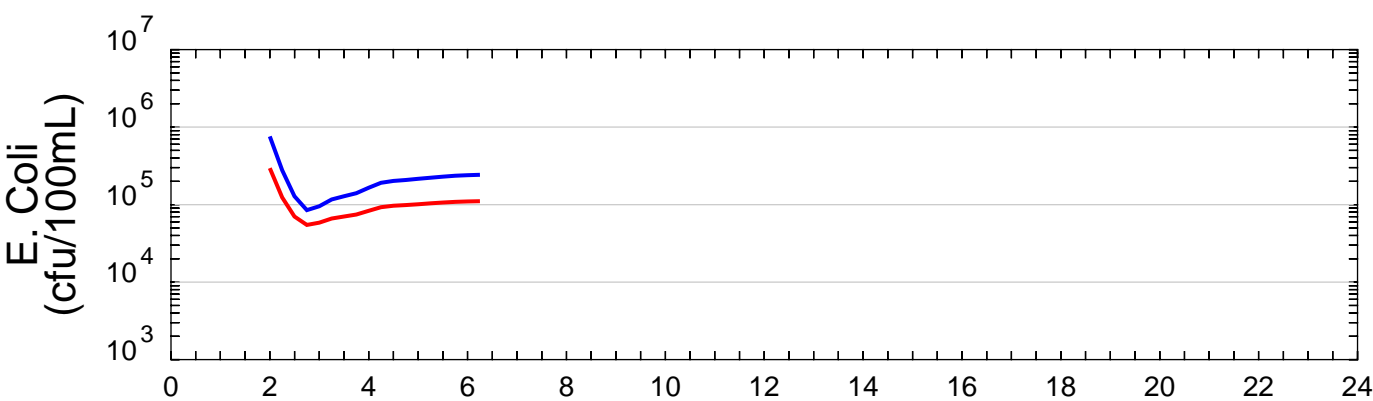
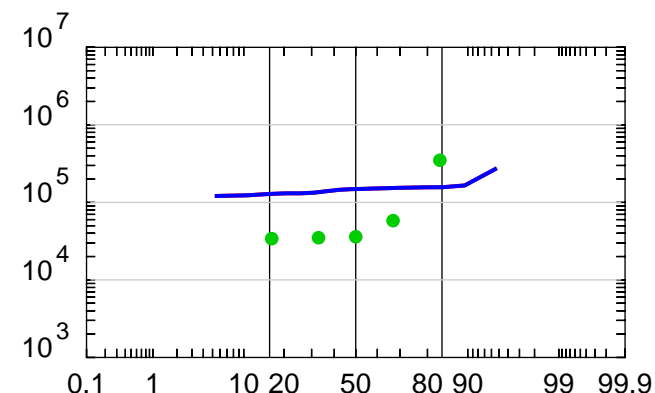
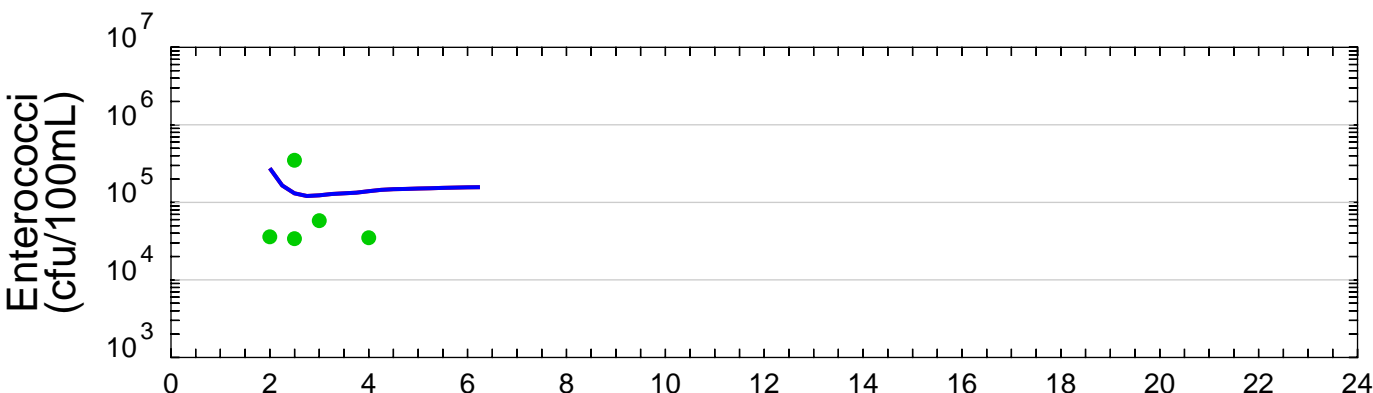
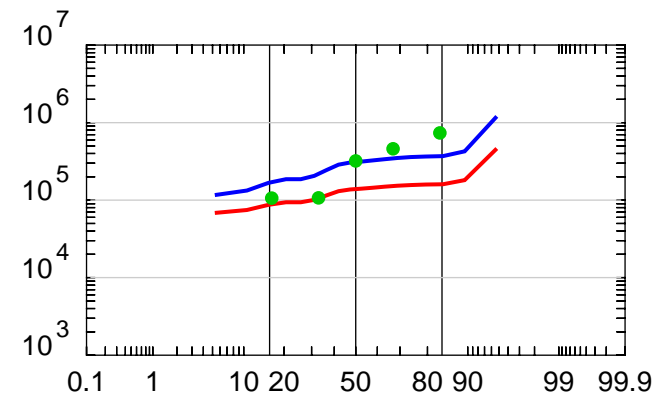
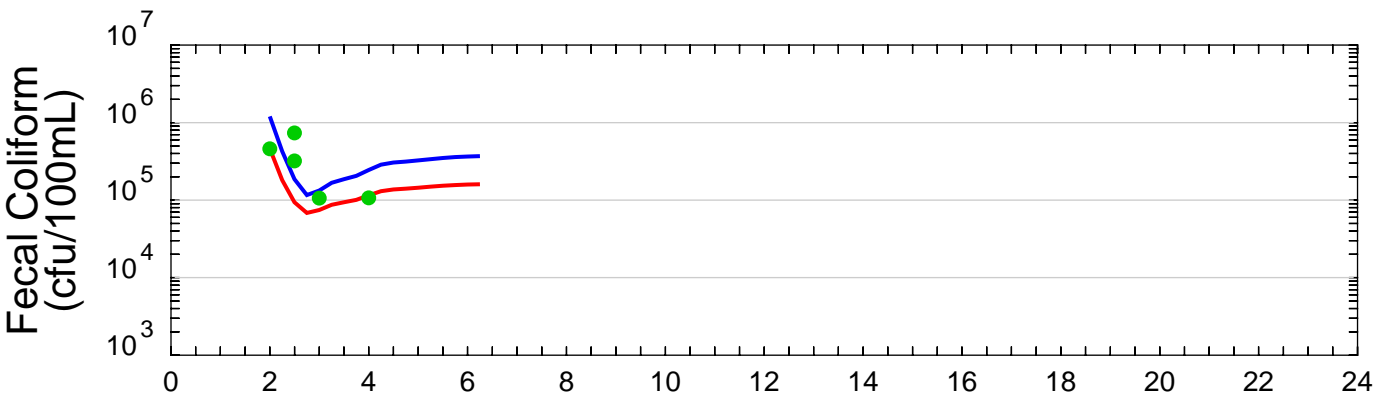
Assumed IW flow starts when data sampling begins

WW Event Day:

4 / 4 / 2017

# CSO Pathogen Concentrations 2016-2017

## NE009



Hour of Day

Probability

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Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

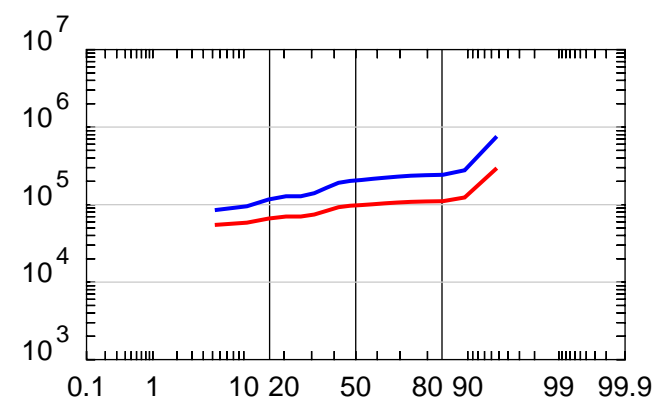
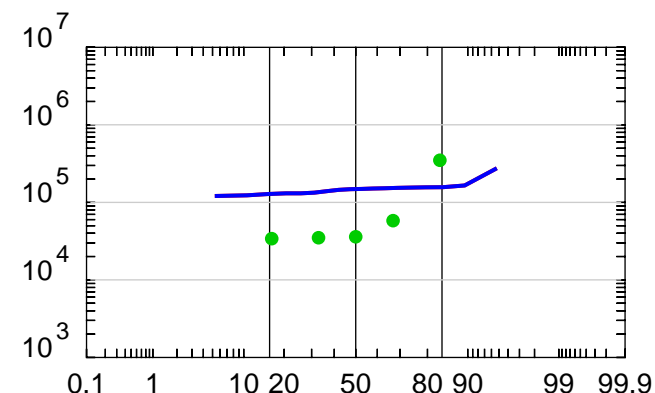
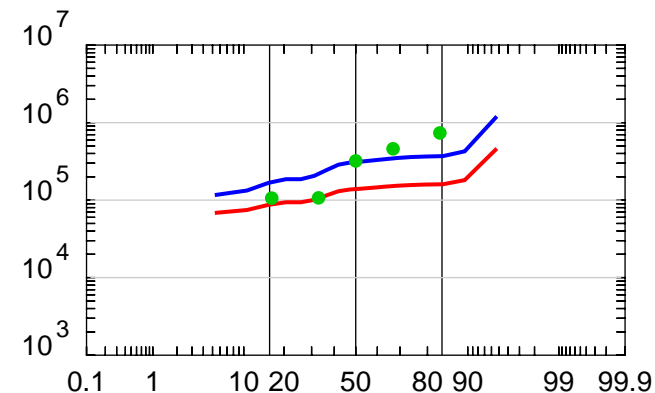
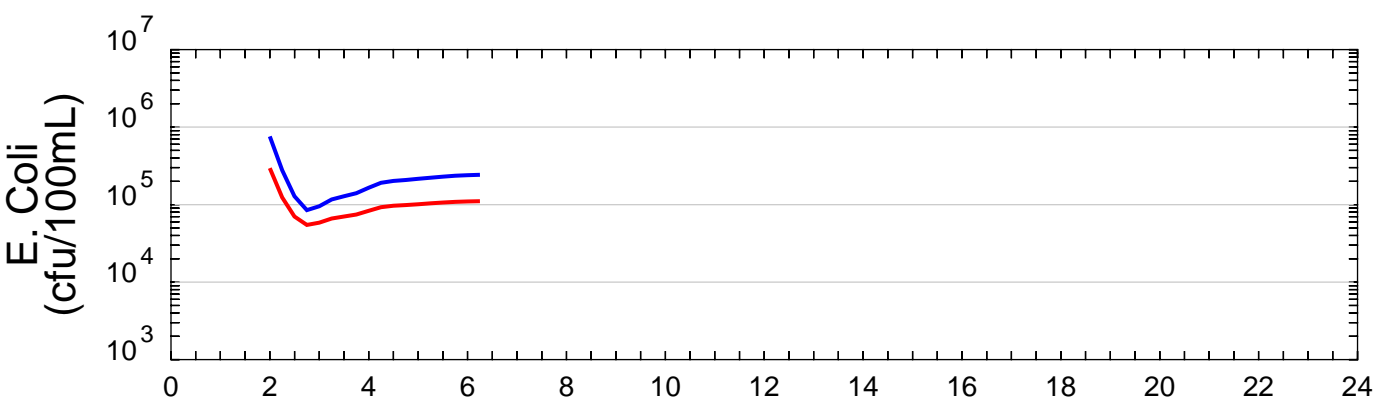
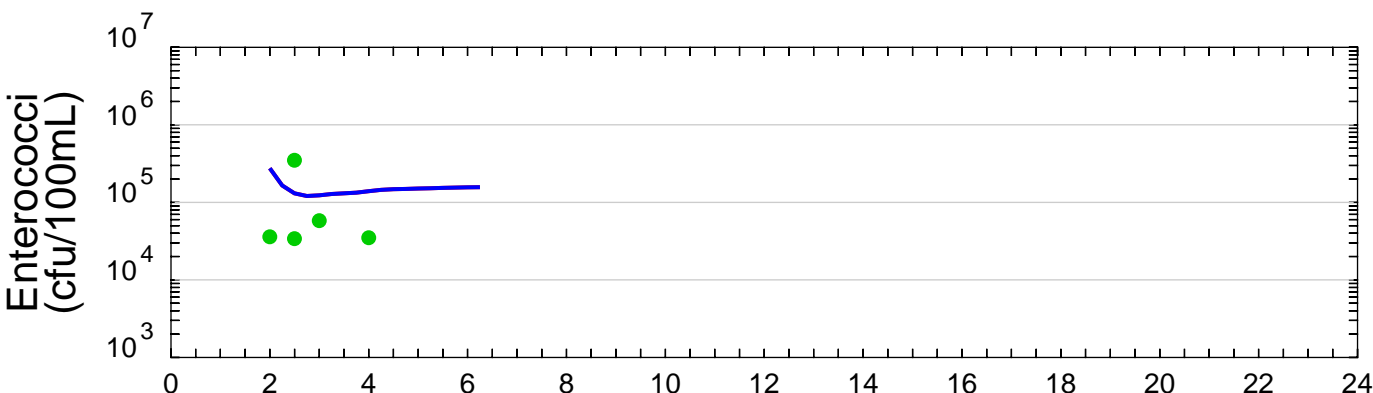
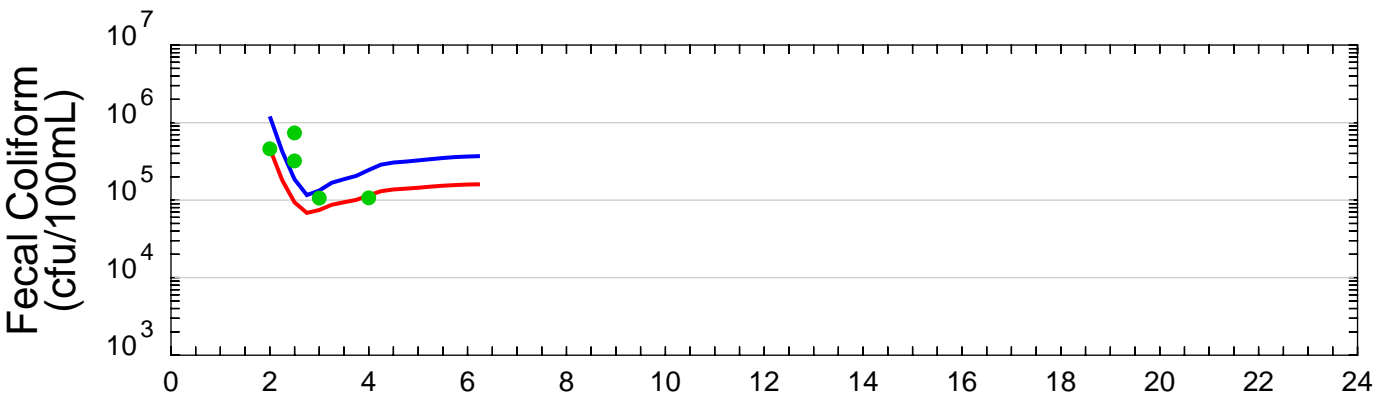
Assumed IW flow starts when data sampling begins

WW Event Day:

4 / 4 / 2017

# CSO Pathogen Concentrations 2016-2017

## NE010



Hour of Day

Probability

Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

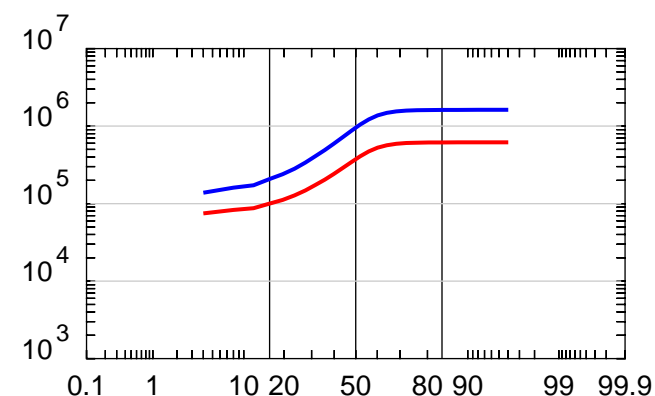
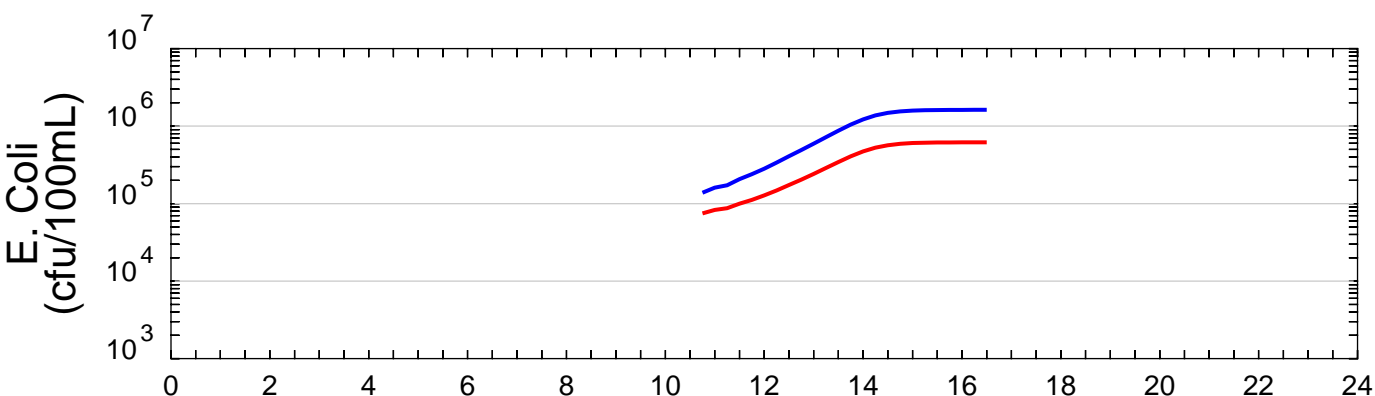
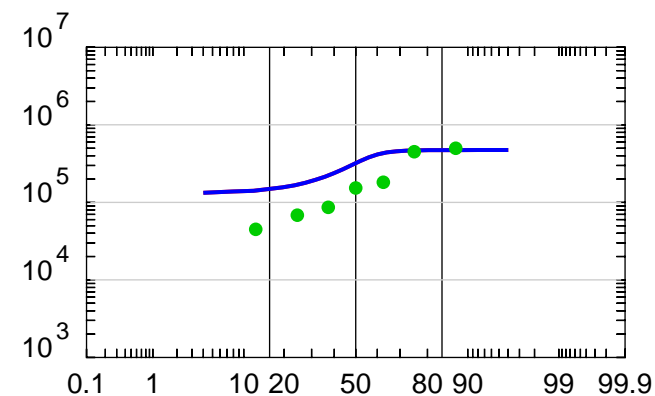
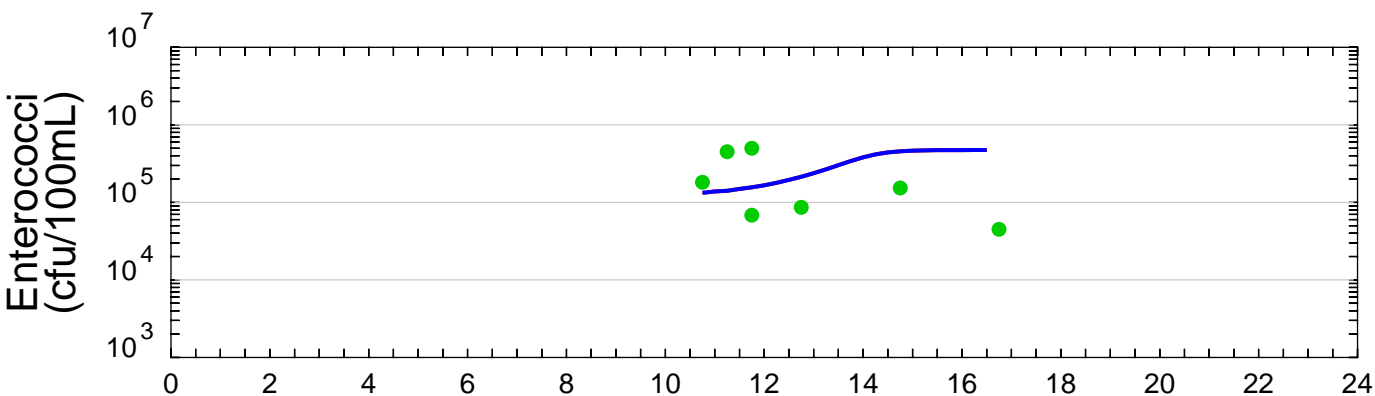
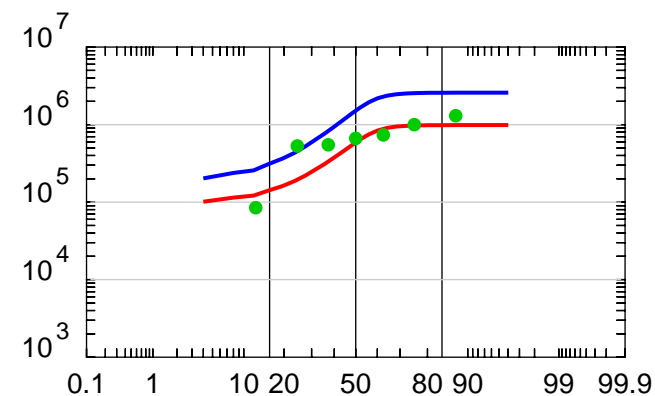
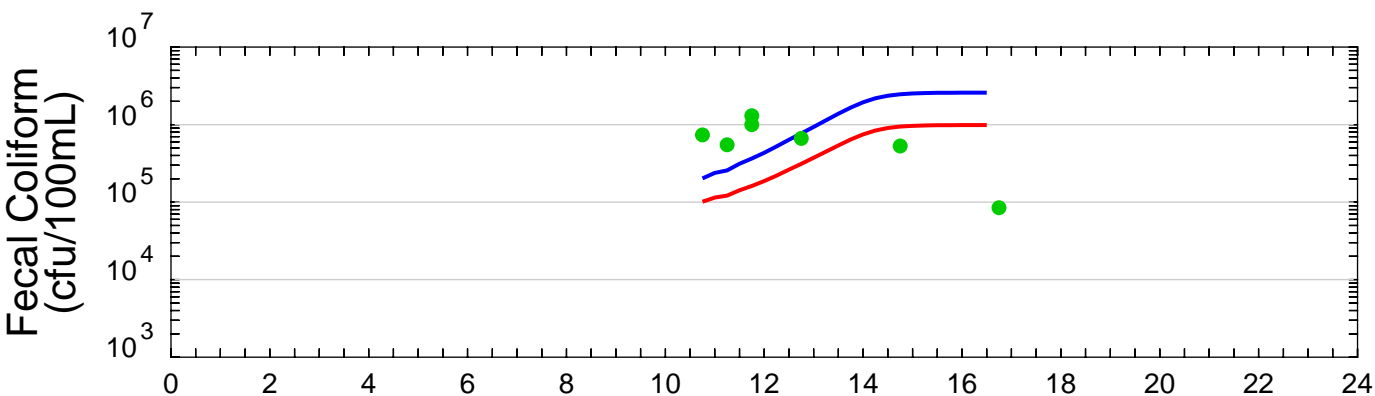
Assumed IW flow starts when data sampling begins

WW Event Day:

4 / 6 / 2017

# CSO Pathogen Concentrations 2016-2017

## NE014



Hour of Day

Probability

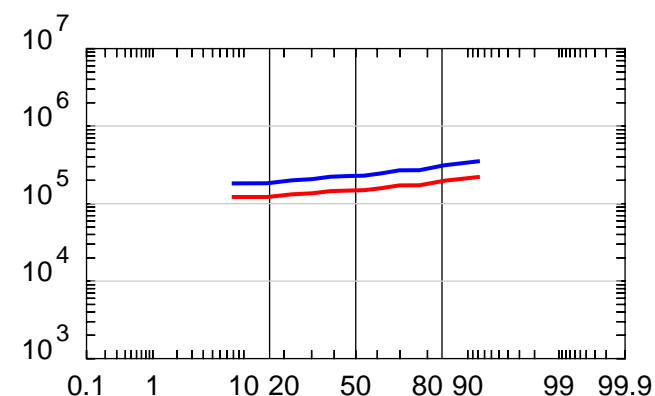
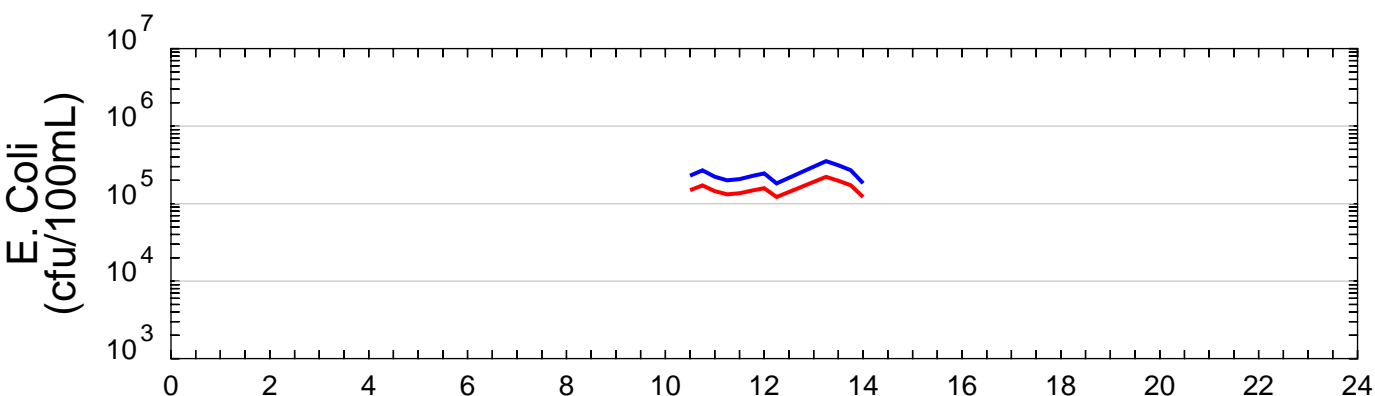
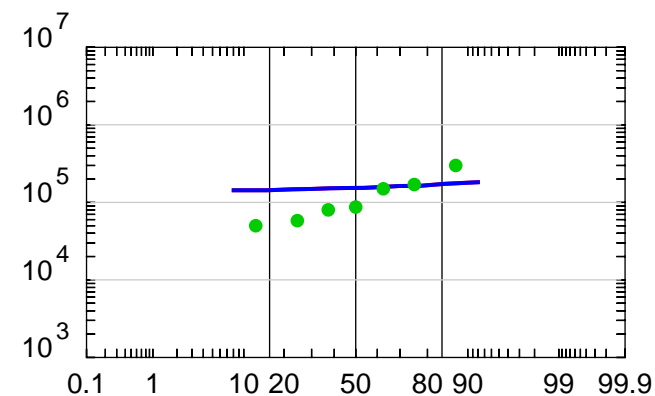
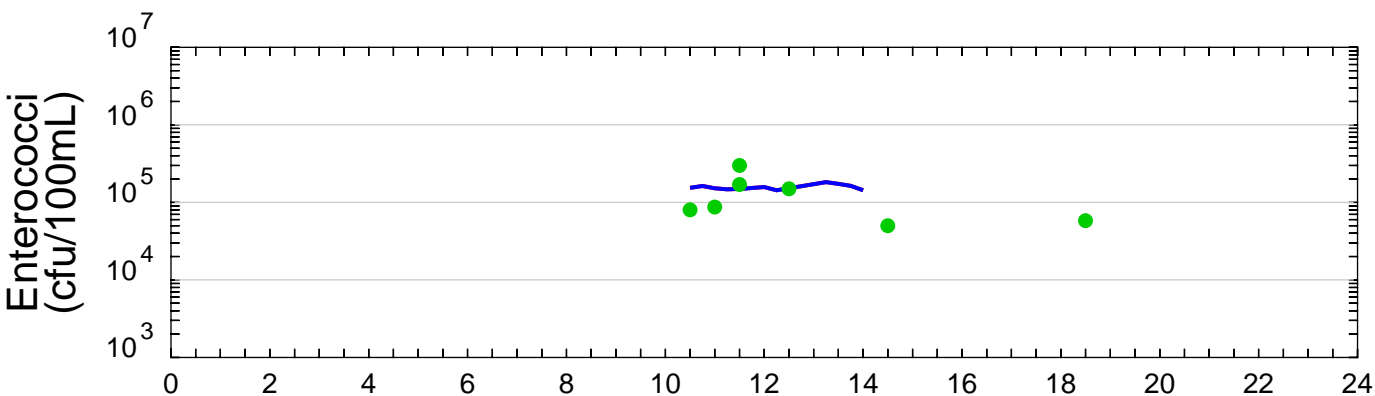
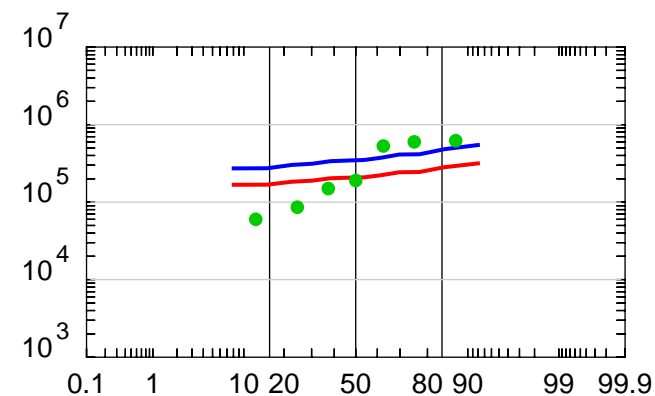
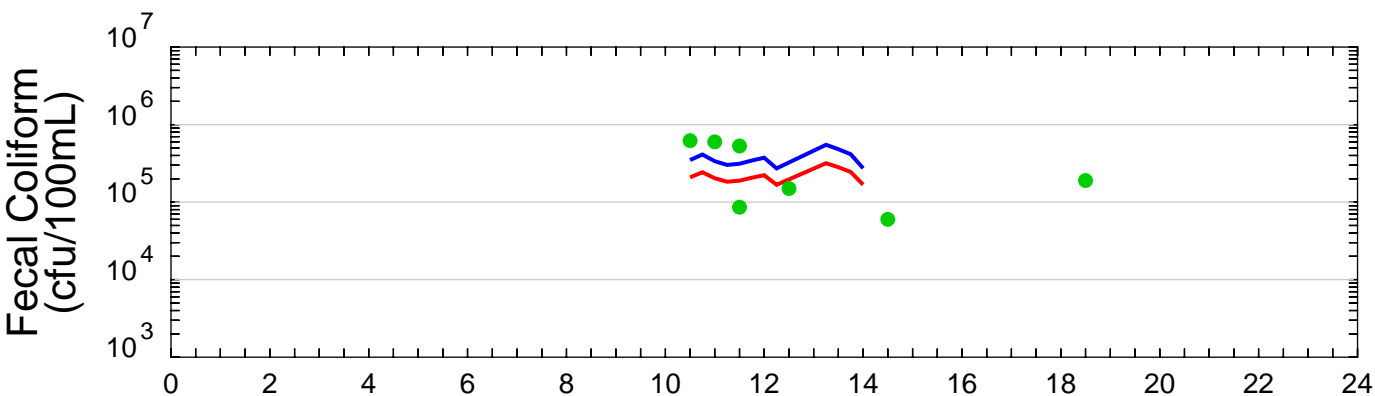
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

WW Event Day:  
11 / 29 / 2016

### CSO Pathogen Concentrations 2016-2017

## NE025



Hour of Day

Probability

Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

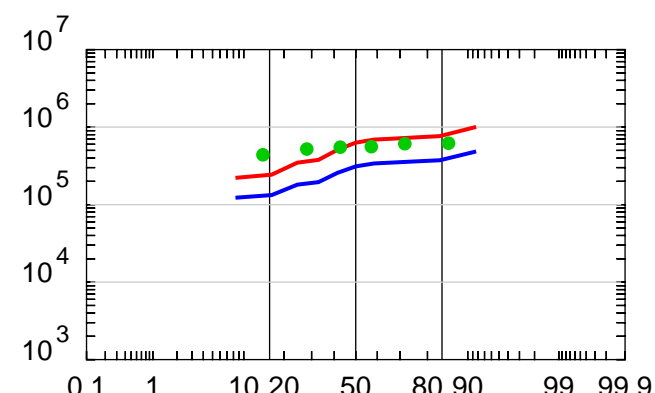
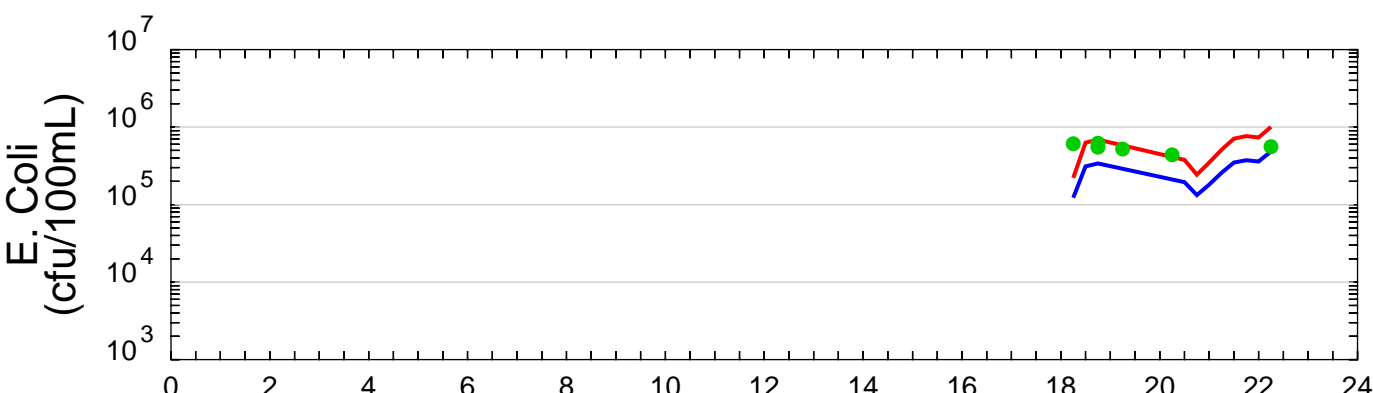
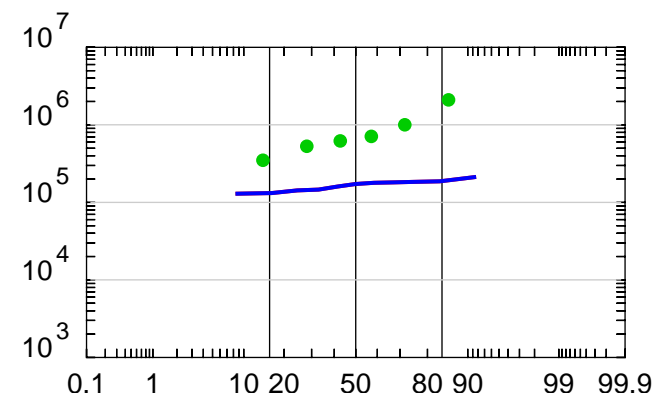
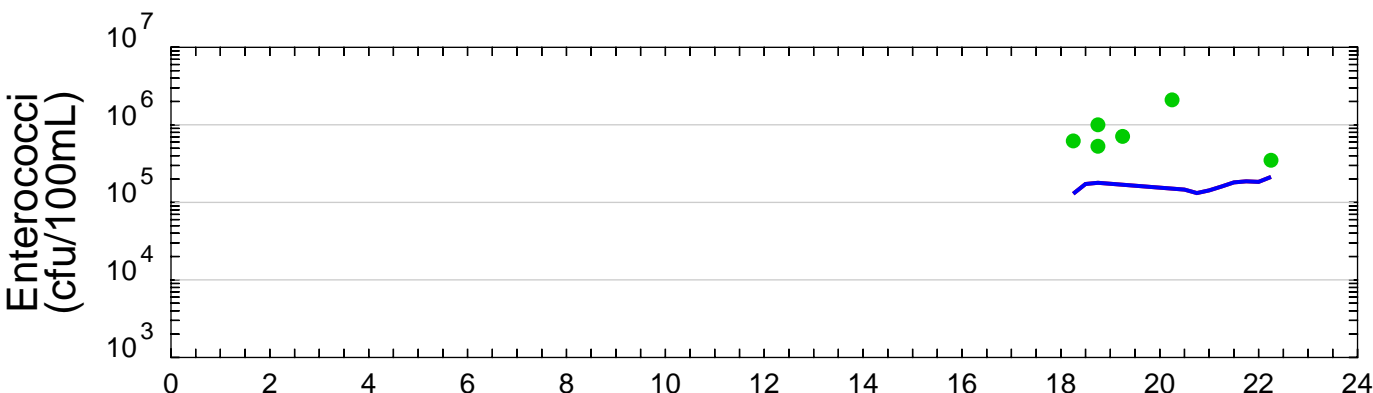
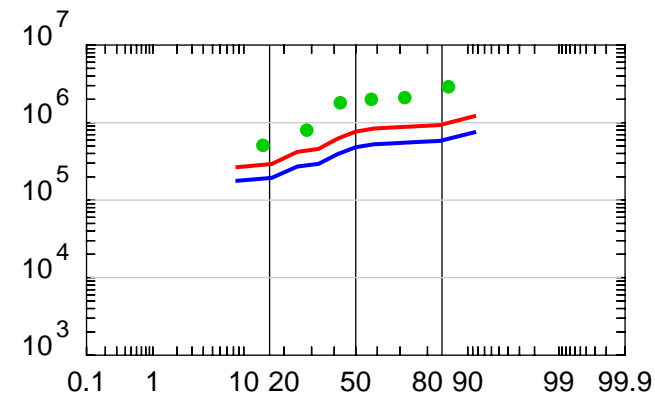
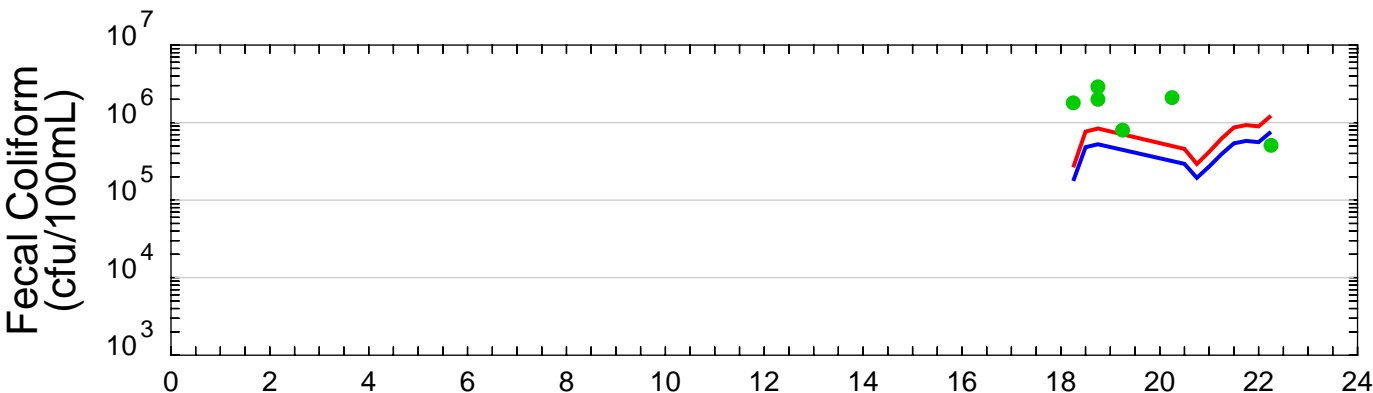
Assumed IW flow starts when data sampling begins

WW Event Day:

8 / 21/ 2016

# CSO Pathogen Concentrations 2016-2017

## PT006



Hour of Day

Probability

Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

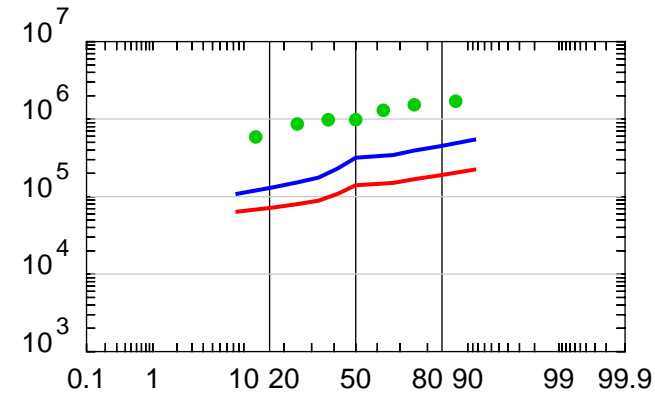
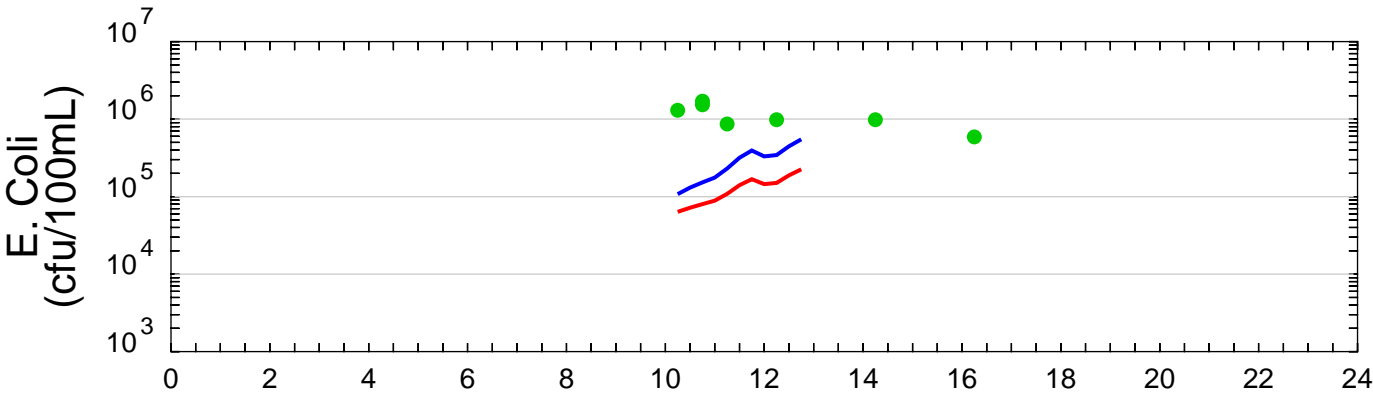
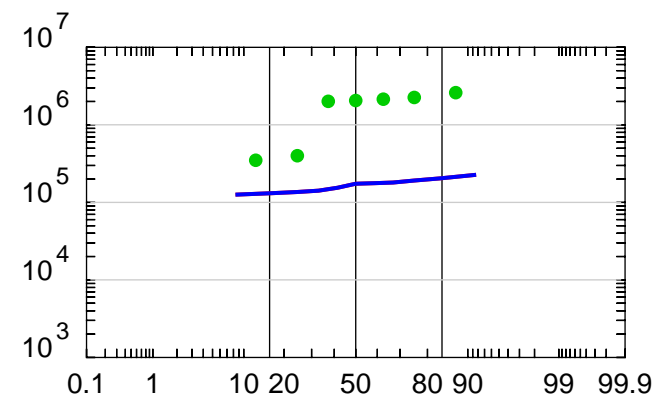
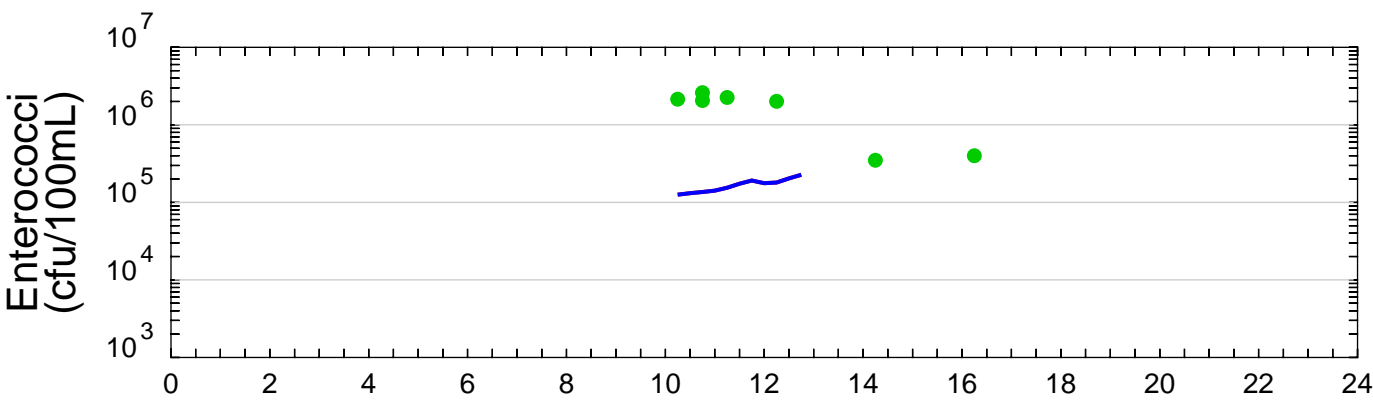
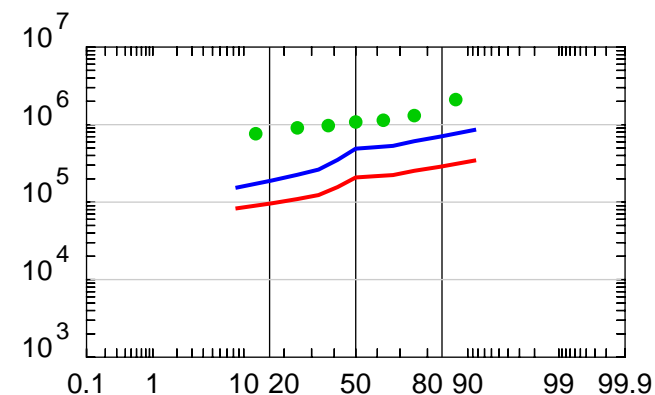
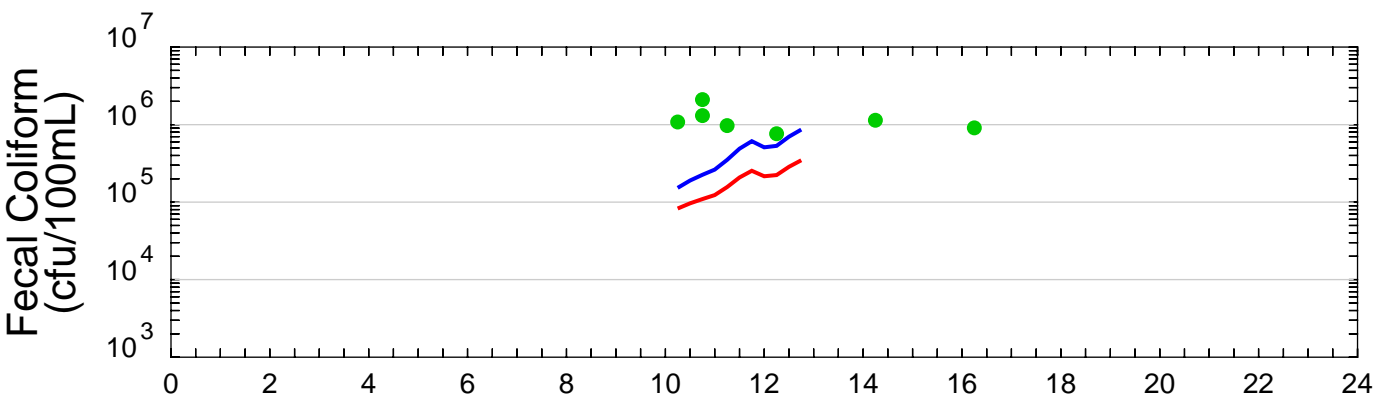
Assumed IW flow starts when data sampling begins

WW Event Day:

4 / 6 / 2017

# CSO Pathogen Concentrations 2016-2017

## PT006



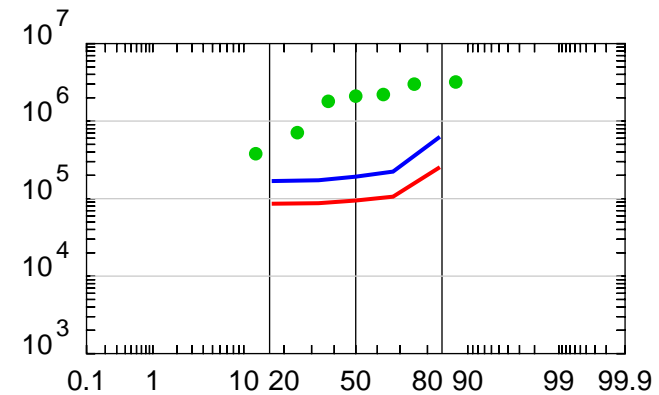
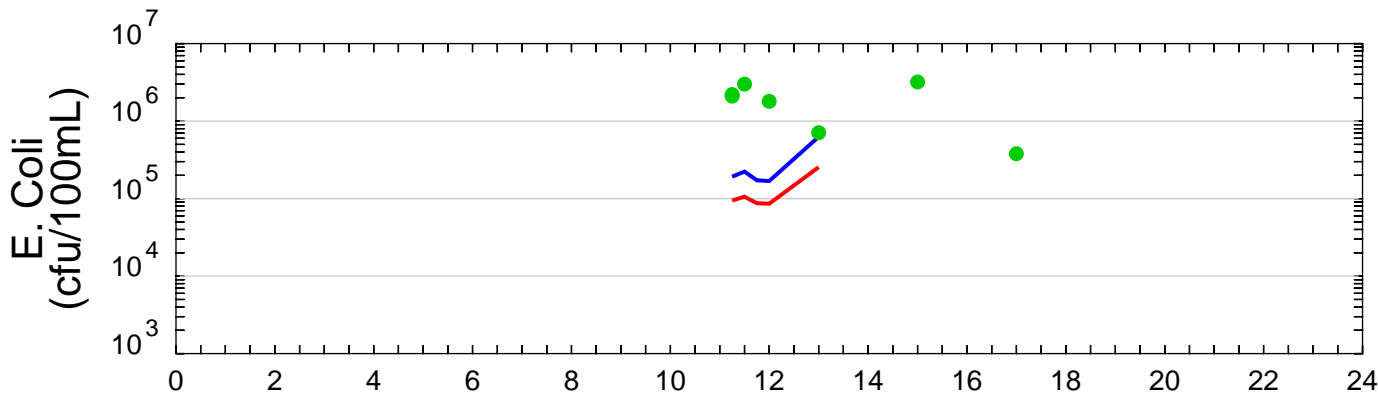
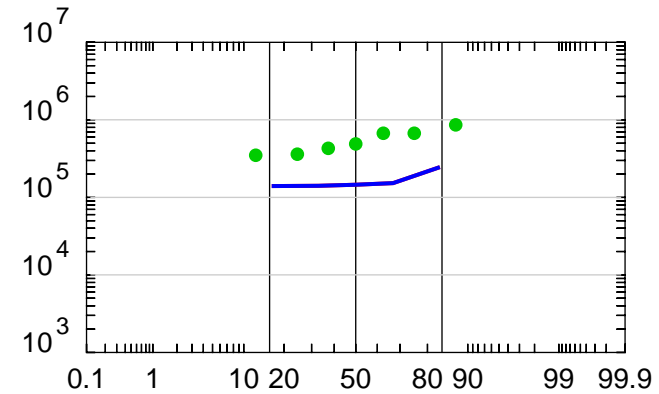
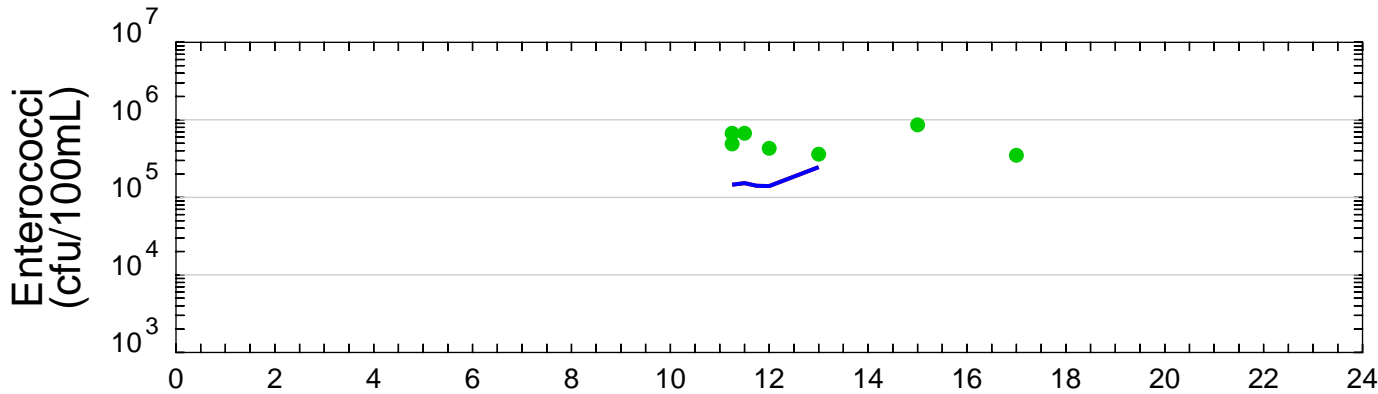
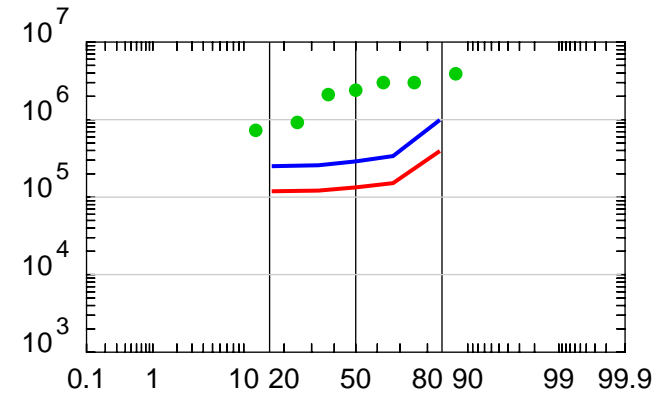
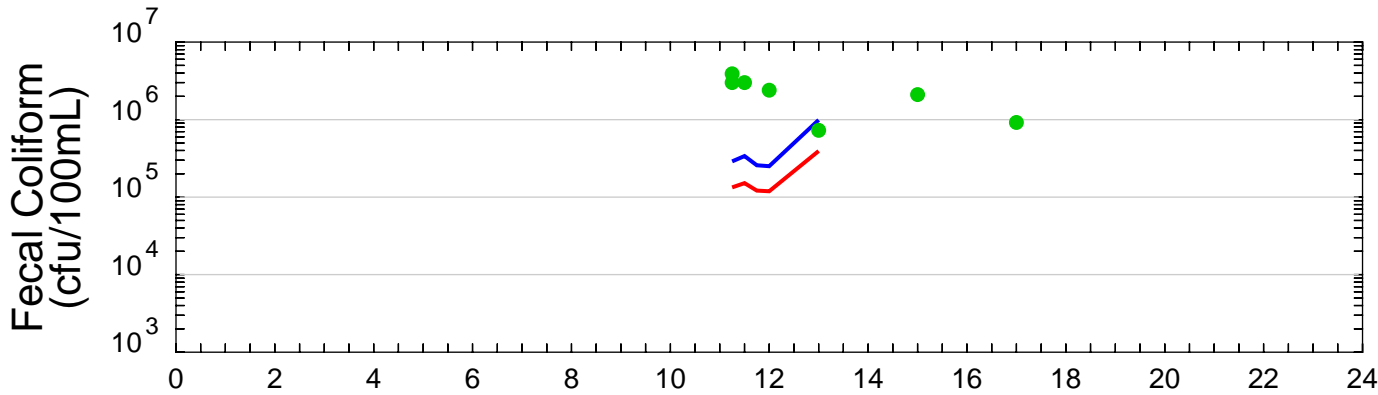
Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

Assumed IW flow starts when data sampling begins

WW Event Day:  
4 / 6 / 2017

### CSO Pathogen Concentrations 2016-2017

## PT027



Hour of Day

Probability

Calculated from IW Model - Round 1 Sanitary Ireg on Influent Temperature  
Calculated from IW Model - Round 2 Sanitary Annual MLE  
CSO Data

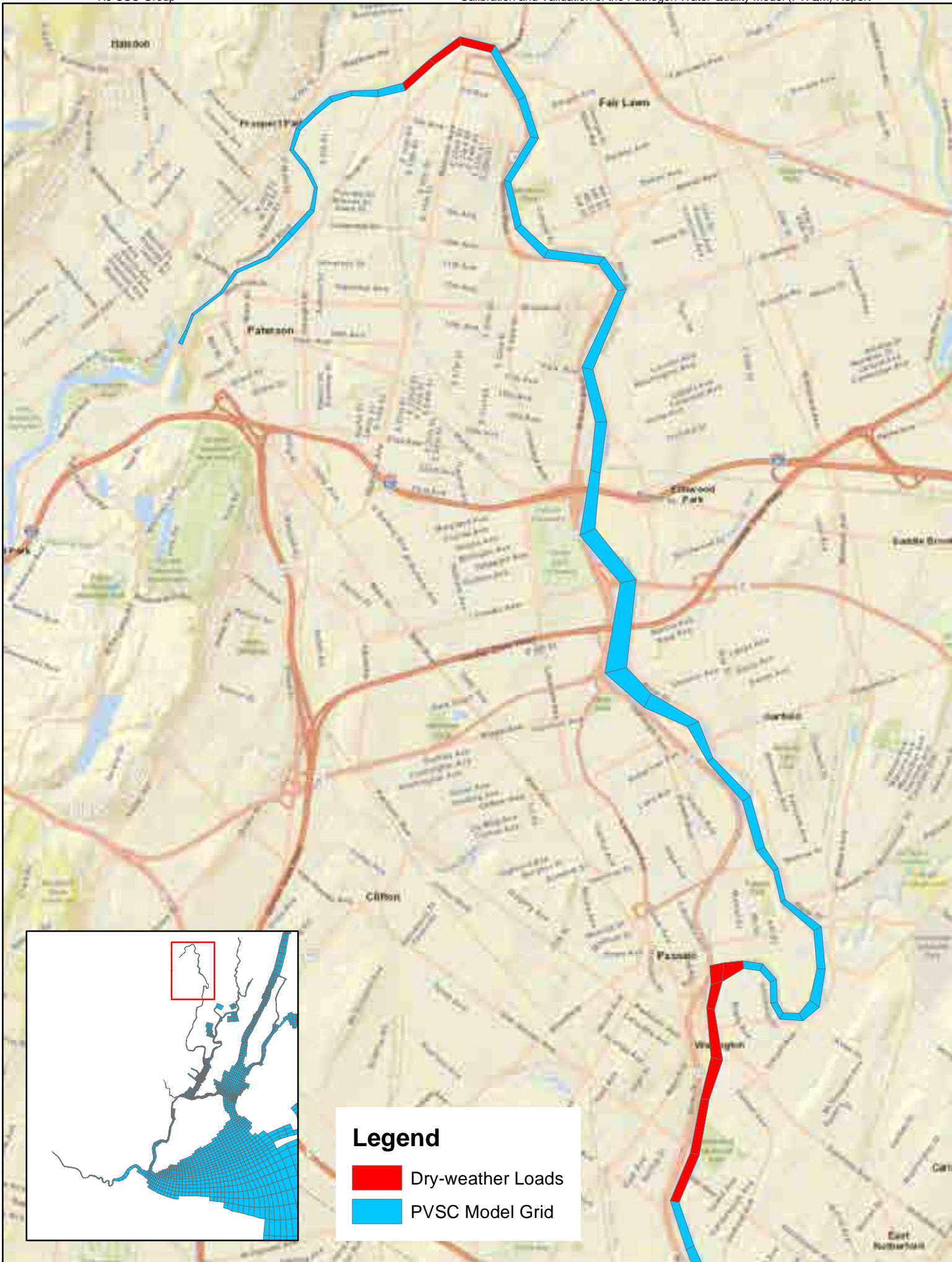
Assumed IW flow starts when data sampling begins





## Appendix B-2

### Locations of Assigned Dry-Weather Flows

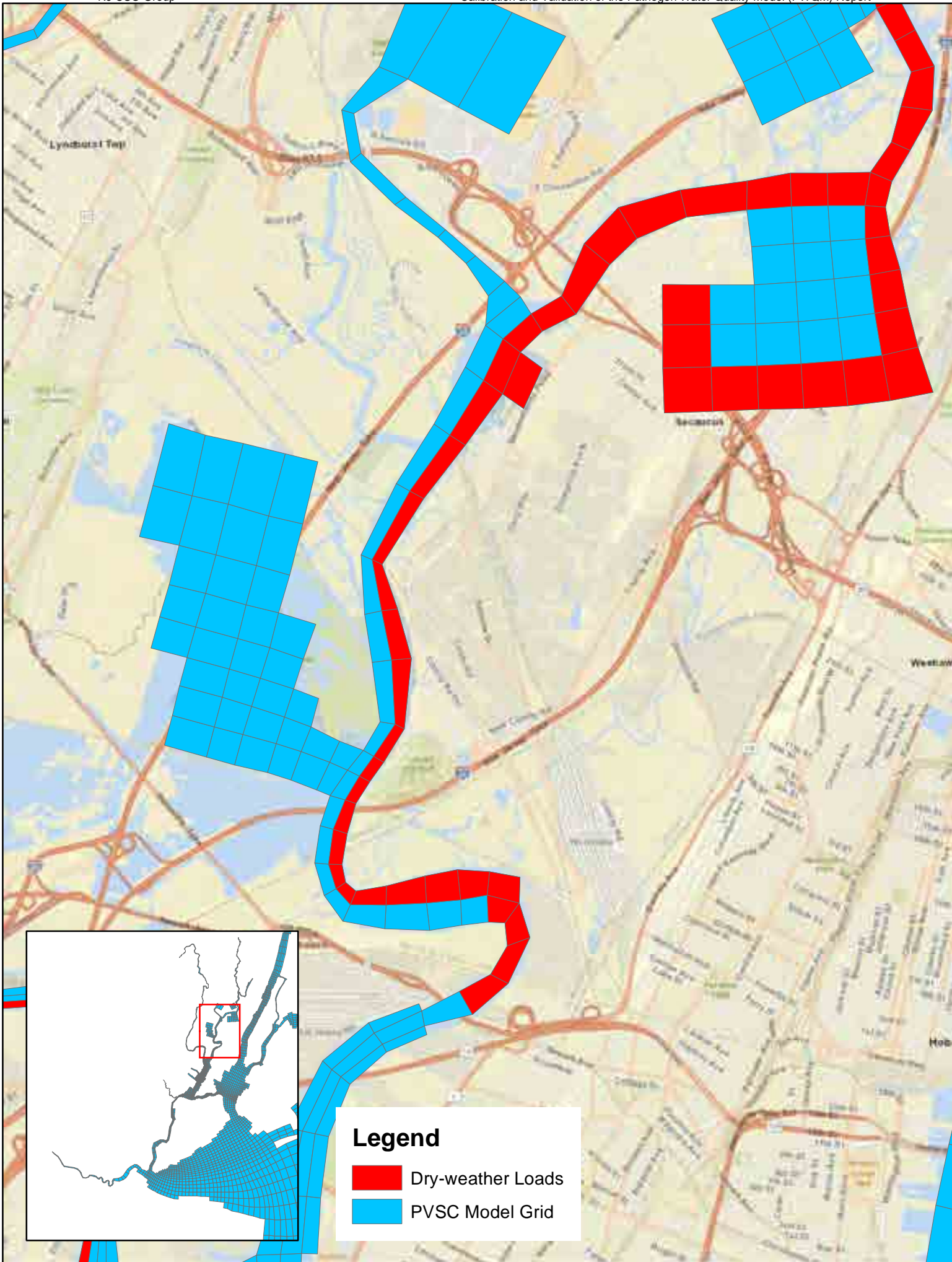






**Legend**

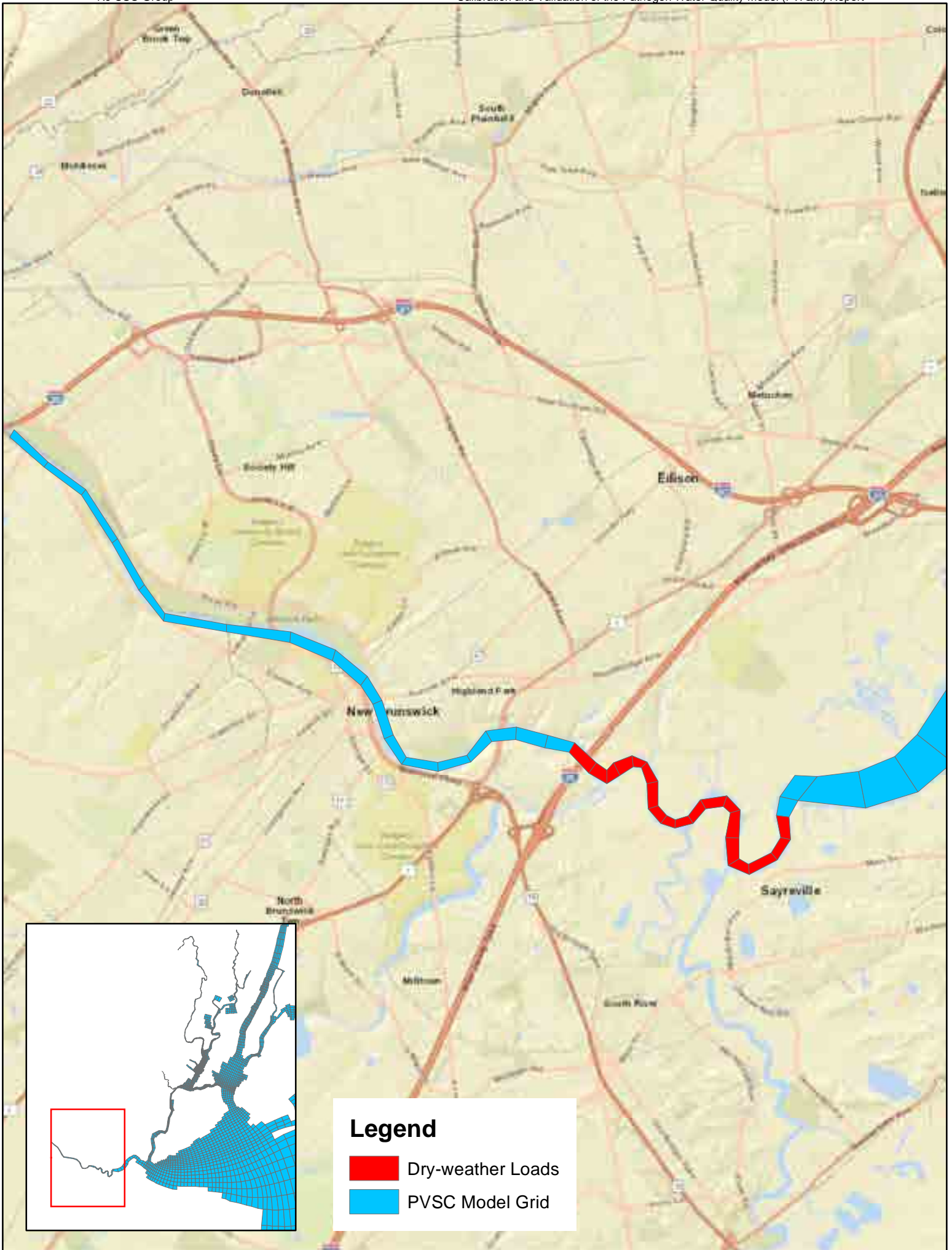
- Dry-weather Loads
- PVSC Model Grid



**Legend**

- Dry-weather Loads
- PVSC Model Grid



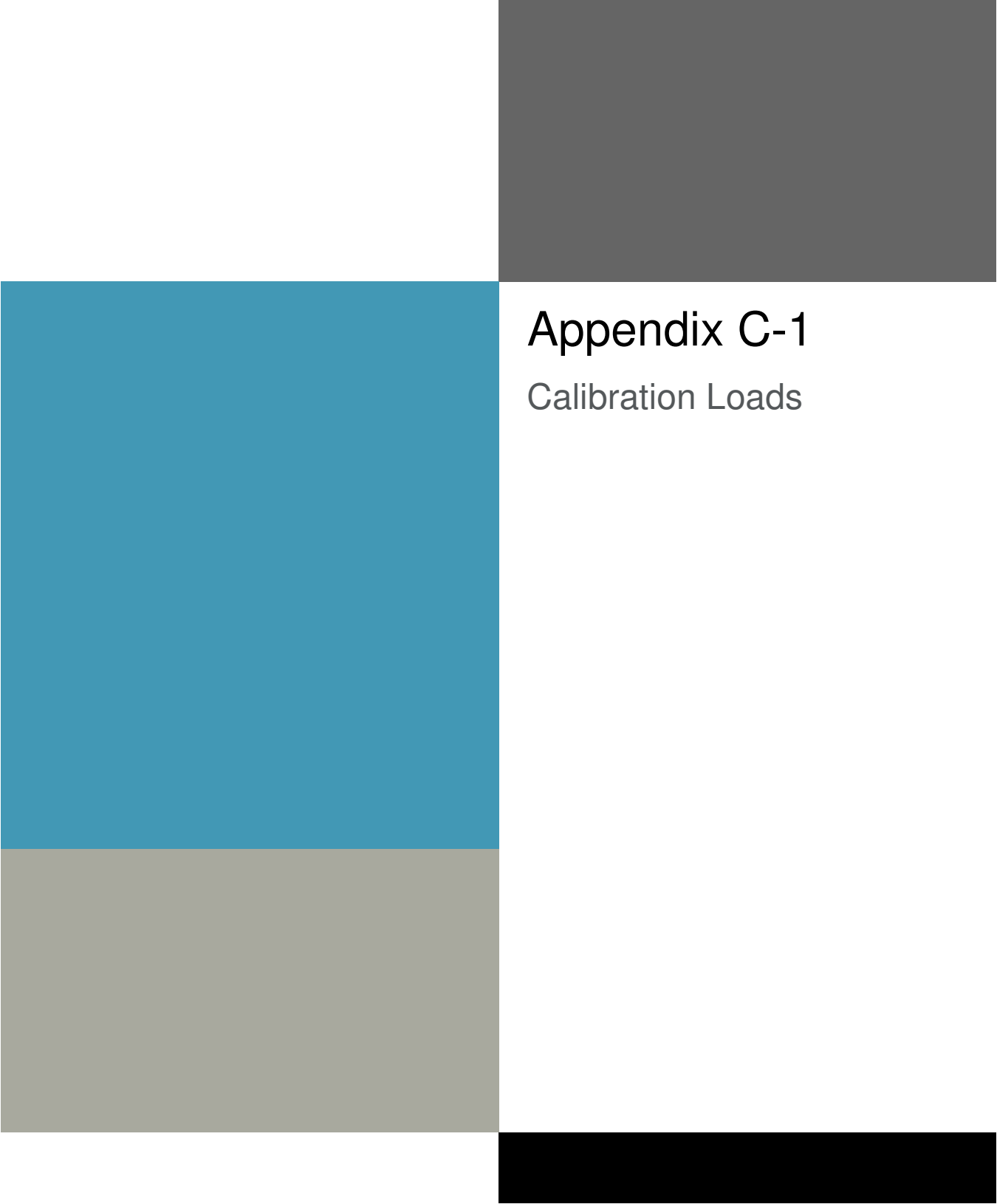




# Appendix C

## Water Quality Model Loads





# Appendix C-1

## Calibration Loads

Volume

Fecal Coliform

Enterococcus

E. Coli

Combined Sewer Outfalls		
Waterbody	Outfall	Total Discharge (MG/Yr)
Arthur Kill	EL030	3
Arthur Kill	EL031	13
Arthur Kill	EL032	7
Arthur Kill	EL037	61
Arthur Kill	PA002	51
Arthur Kill	PA003	27
Arthur Kill	PA004	8
Arthur Kill	PA005	8
Arthur Kill	PA006	16
Arthur Kill	PA007	4
Arthur Kill	PA008	2
Arthur Kill	PA009	2
Arthur Kill	PA010	2
Elizabeth River	EL003	56
Elizabeth River	EL005	89
Elizabeth River	EL008	9
Elizabeth River	EL010	16
Elizabeth River	EL011	16
Elizabeth River	EL012	5
Elizabeth River	EL014	1
Elizabeth River	EL016	16
Elizabeth River	EL021	2
Elizabeth River	EL022	66
Elizabeth River	EL026	52
Elizabeth River	EL027	33
Elizabeth River	EL028	32
Elizabeth River	EL029	34
Elizabeth River	EL035	34
Elizabeth River	EL036a	17
Elizabeth River	EL036b	20
Elizabeth River	EL038	8
Elizabeth River	EL040	12
Elizabeth River	EL041	175
Elizabeth River	EL042	36
Elizabeth River	EL043	1
Hackensack River	HK001	81
Hackensack River	HK002	115
Hackensack River	JC001	68
Hackensack River	JC002	29
Hackensack River	JC003	45
Hackensack River	JC004	20
Hackensack River	JC005	8
Hackensack River	JC006	67
Hackensack River	JC007	33
Hackensack River	JC008	97
Hackensack River	JC009	38
Hackensack River	JC010	25
Hackensack River	NB003	150

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	12
Arthur Kill	EL031	147
Arthur Kill	EL032	29
Arthur Kill	EL037	1,046
Arthur Kill	PA002	1,128
Arthur Kill	PA003	971
Arthur Kill	PA004	94
Arthur Kill	PA005	224
Arthur Kill	PA006	372
Arthur Kill	PA007	39
Arthur Kill	PA008	16
Arthur Kill	PA009	6
Arthur Kill	PA010	5
Elizabeth River	EL003	186
Elizabeth River	EL005	1,386
Elizabeth River	EL008	193
Elizabeth River	EL010	80
Elizabeth River	EL011	79
Elizabeth River	EL012	58
Elizabeth River	EL014	2
Elizabeth River	EL016	152
Elizabeth River	EL021	35
Elizabeth River	EL022	1,350
Elizabeth River	EL026	1,238
Elizabeth River	EL027	169
Elizabeth River	EL028	162
Elizabeth River	EL029	375
Elizabeth River	EL035	476
Elizabeth River	EL036a	137
Elizabeth River	EL036b	182
Elizabeth River	EL038	79
Elizabeth River	EL040	123
Elizabeth River	EL041	1,985
Elizabeth River	EL042	324
Elizabeth River	EL043	4
Hackensack River	HK001	1,525
Hackensack River	HK002	2,289
Hackensack River	JC001	1,050
Hackensack River	JC002	282
Hackensack River	JC003	384
Hackensack River	JC004	128
Hackensack River	JC005	56
Hackensack River	JC006	2,323
Hackensack River	JC007	263
Hackensack River	JC008	998
Hackensack River	JC009	286
Hackensack River	JC010	190
Hackensack River	NB003	1,812

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	12
Arthur Kill	EL031	73
Arthur Kill	EL032	32
Arthur Kill	EL037	389
Arthur Kill	PA002	363
Arthur Kill	PA003	247
Arthur Kill	PA004	44
Arthur Kill	PA005	65
Arthur Kill	PA006	115
Arthur Kill	PA007	23
Arthur Kill	PA008	11
Arthur Kill	PA009	8
Arthur Kill	PA010	7
Elizabeth River	EL003	246
Elizabeth River	EL005	547
Elizabeth River	EL008	61
Elizabeth River	EL010	74
Elizabeth River	EL011	73
Elizabeth River	EL012	27
Elizabeth River	EL014	4
Elizabeth River	EL016	85
Elizabeth River	EL021	13
Elizabeth River	EL022	452
Elizabeth River	EL026	380
Elizabeth River	EL027	154
Elizabeth River	EL028	150
Elizabeth River	EL029	188
Elizabeth River	EL035	201
Elizabeth River	EL036a	87
Elizabeth River	EL036b	104
Elizabeth River	EL038	43
Elizabeth River	EL040	64
Elizabeth River	EL041	972
Elizabeth River	EL042	189
Elizabeth River	EL043	6
Hackensack River	HK001	537
Hackensack River	HK002	780
Hackensack River	JC001	419
Hackensack River	JC002	154
Hackensack River	JC003	230
Hackensack River	JC004	99
Hackensack River	JC005	40
Hackensack River	JC006	594
Hackensack River	JC007	166
Hackensack River	JC008	524
Hackensack River	JC009	191
Hackensack River	JC010	126
Hackensack River	NB003	849

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	8
Arthur Kill	EL031	98
Arthur Kill	EL032	21
Arthur Kill	EL037	679
Arthur Kill	PA002	726
Arthur Kill	PA003	617
Arthur Kill	PA004	62
Arthur Kill	PA005	143
Arthur Kill	PA006	239
Arthur Kill	PA007	26
Arthur Kill	PA008	11
Arthur Kill	PA009	5
Arthur Kill	PA010	4
Elizabeth River	EL003	142
Elizabeth River	EL005	904
Elizabeth River	EL008	124
Elizabeth River	EL010	57
Elizabeth River	EL011	57
Elizabeth River	EL012	38
Elizabeth River	EL014	2
Elizabeth River	EL016	102
Elizabeth River	EL021	23
Elizabeth River	EL022	871
Elizabeth River	EL026	794
Elizabeth River	EL027	121
Elizabeth River	EL028	116
Elizabeth River	EL029	249
Elizabeth River	EL035	312
Elizabeth River	EL036a	94
Elizabeth River	EL036b	122
Elizabeth River	EL038	53
Elizabeth River	EL040	82
Elizabeth River	EL041	1,317
Elizabeth River	EL042	219
Elizabeth River	EL043	3
Hackensack River	HK001	987
Hackensack River	HK002	1,478
Hackensack River	JC001	685
Hackensack River	JC002	189
Hackensack River	JC003	260
Hackensack River	JC004	89
Hackensack River	JC005	39
Hackensack River	JC006	1,476
Hackensack River	JC007	179
Hackensack River	JC008	666
Hackensack River	JC009	196
Hackensack River	JC010	130
Hackensack River	NB003	1,198

Hackensack River	NB005	27
Hackensack River	NB006	0
Hackensack River	NB007	6
Hackensack River	NB008	13
Hackensack River	NB009	23
Hackensack River	NB010	1
Hackensack River	NB011	4
Hackensack River	NB014	0
Hackensack River	RP001	9
Hackensack River	RP002	1
Hackensack River	RP003	11
Hackensack River	RP004	14
Hackensack River	RP005	6
Hackensack River	RP006	1
Hudson River	FL001	57
Hudson River	FL002	1
Hudson River	GU001	10
Hudson River	JC020	49
Hudson River	JC025	35
Hudson River	JC026	9
Hudson River	JC028	64
Hudson River	JC029	171
Hudson River	NB004	11
Hudson River	NH002A1	186
Hudson River	NH002A2	157
Hudson River	NH003A	91
Hudson River	NH005A	41
Hudson River	NH006A	30
Hudson River	NH008A	19
Hudson River	NH012A	7
Hudson River	NH013A	134
Hudson River	NH015A	25
Kill Van Kull	BA001	363
Kill Van Kull	BA002	14
Kill Van Kull	BA003	8
Kill Van Kull	BA004	0
Kill Van Kull	BA008	4
Kill Van Kull	BA009	2
Kill Van Kull	BA010	7
Kill Van Kull	BA011	4
Kill Van Kull	BA022	0
Kill Van Kull	BA024	0
Kill Van Kull	BA037	2
Newark Bay	BA012	9
Newark Bay	BA013	0
Newark Bay	BA014	11
Newark Bay	BA015	37
Newark Bay	BA016	3
Newark Bay	BA017	41
Newark Bay	BA018	11
Newark Bay	BA019	24
Newark Bay	BA020	7

Hackensack River	NB005	289
Hackensack River	NB006	0
Hackensack River	NB007	105
Hackensack River	NB008	101
Hackensack River	NB009	270
Hackensack River	NB010	4
Hackensack River	NB011	50
Hackensack River	NB014	1
Hackensack River	RP001	156
Hackensack River	RP002	18
Hackensack River	RP003	49
Hackensack River	RP004	129
Hackensack River	RP005	89
Hackensack River	RP006	4
Hudson River	FL001	1,375
Hudson River	FL002	45
Hudson River	GU001	123
Hudson River	JC020	738
Hudson River	JC025	804
Hudson River	JC026	139
Hudson River	JC028	825
Hudson River	JC029	1,258
Hudson River	NB004	138
Hudson River	NH002A1	1,939
Hudson River	NH002A2	4,030
Hudson River	NH003A	949
Hudson River	NH005A	880
Hudson River	NH006A	161
Hudson River	NH008A	76
Hudson River	NH012A	12
Hudson River	NH013A	2,011
Hudson River	NH015A	216
Kill Van Kull	BA001	5,555
Kill Van Kull	BA002	51
Kill Van Kull	BA003	45
Kill Van Kull	BA004	1
Kill Van Kull	BA008	25
Kill Van Kull	BA009	9
Kill Van Kull	BA010	44
Kill Van Kull	BA011	11
Kill Van Kull	BA022	0
Kill Van Kull	BA024	1
Kill Van Kull	BA037	6
Newark Bay	BA012	39
Newark Bay	BA013	1
Newark Bay	BA014	59
Newark Bay	BA015	408
Newark Bay	BA016	18
Newark Bay	BA017	1,050
Newark Bay	BA018	142
Newark Bay	BA019	175
Newark Bay	BA020	38

Hackensack River	NB005	146
Hackensack River	NB006	0
Hackensack River	NB007	37
Hackensack River	NB008	64
Hackensack River	NB009	128
Hackensack River	NB010	5
Hackensack River	NB011	22
Hackensack River	NB014	1
Hackensack River	RP001	56
Hackensack River	RP002	8
Hackensack River	RP003	51
Hackensack River	RP004	73
Hackensack River	RP005	35
Hackensack River	RP006	3
Hudson River	FL001	421
Hudson River	FL002	11
Hudson River	GU001	56
Hudson River	JC020	297
Hudson River	JC025	253
Hudson River	JC026	57
Hudson River	JC028	369
Hudson River	JC029	854
Hudson River	NB004	62
Hudson River	NH002A1	1,008
Hudson River	NH002A2	1,194
Hudson River	NH003A	495
Hudson River	NH005A	288
Hudson River	NH006A	140
Hudson River	NH008A	87
Hudson River	NH012A	31
Hudson River	NH013A	816
Hudson River	NH015A	129
Kill Van Kull	BA001	2,223
Kill Van Kull	BA002	64
Kill Van Kull	BA003	37
Kill Van Kull	BA004	2
Kill Van Kull	BA008	19
Kill Van Kull	BA009	11
Kill Van Kull	BA010	32
Kill Van Kull	BA011	17
Kill Van Kull	BA022	0
Kill Van Kull	BA024	2
Kill Van Kull	BA037	7
Newark Bay	BA012	43
Newark Bay	BA013	2
Newark Bay	BA014	52
Newark Bay	BA015	206
Newark Bay	BA016	13
Newark Bay	BA017	310
Newark Bay	BA018	65
Newark Bay	BA019	120
Newark Bay	BA020	35

Hackensack River	NB005	192
Hackensack River	NB006	0
Hackensack River	NB007	68
Hackensack River	NB008	69
Hackensack River	NB009	178
Hackensack River	NB010	3
Hackensack River	NB011	33
Hackensack River	NB014	0
Hackensack River	RP001	101
Hackensack River	RP002	12
Hackensack River	RP003	36
Hackensack River	RP004	87
Hackensack River	RP005	58
Hackensack River	RP006	3
Hudson River	FL001	882
Hudson River	FL002	28
Hudson River	GU001	81
Hudson River	JC020	482
Hudson River	JC025	517
Hudson River	JC026	91
Hudson River	JC028	543
Hudson River	JC029	863
Hudson River	NB004	91
Hudson River	NH002A1	1,293
Hudson River	NH002A2	2,580
Hudson River	NH003A	633
Hudson River	NH005A	567
Hudson River	NH006A	114
Hudson River	NH008A	57
Hudson River	NH012A	11
Hudson River	NH013A	1,314
Hudson River	NH015A	146
Kill Van Kull	BA001	3,627
Kill Van Kull	BA002	39
Kill Van Kull	BA003	32
Kill Van Kull	BA004	1
Kill Van Kull	BA008	18
Kill Van Kull	BA009	7
Kill Van Kull	BA010	31
Kill Van Kull	BA011	8
Kill Van Kull	BA022	0
Kill Van Kull	BA024	1
Kill Van Kull	BA037	4
Newark Bay	BA012	29
Newark Bay	BA013	1
Newark Bay	BA014	42
Newark Bay	BA015	272
Newark Bay	BA016	12
Newark Bay	BA017	672
Newark Bay	BA018	94
Newark Bay	BA019	121
Newark Bay	BA020	27

Newark Bay	BA026	1
Newark Bay	BA028	0
Newark Bay	BA029	6
Newark Bay	BA030	1
Newark Bay	BA034	0
Newark Bay	EL001	74
Newark Bay	EL002	31
Newark Bay	EL034	70
Newark Bay	EL039	9
Newark Bay	JC011	57
Newark Bay	JC013	76
Newark Bay	NE023	13
Newark Bay	NE023_Stor	190
Newark Bay	NE025	58
Newark Bay	NE027	12
Newark Bay	NE030	10
Newark Bay	NE030_Stor	37
Passaic River	EN001	13
Passaic River	HR001	1
Passaic River	HR002	2
Passaic River	HR003	11
Passaic River	HR005	14
Passaic River	HR006	6
Passaic River	HR006_Stor	5
Passaic River	HR007	11
Passaic River	KE001	3
Passaic River	KE004	10
Passaic River	KE006	92
Passaic River	KE007	61
Passaic River	KE010	20
Passaic River	NE002	73
Passaic River	NE003	0
Passaic River	NE003_Stor	48
Passaic River	NE004	2
Passaic River	NE005	17
Passaic River	NE008	74
Passaic River	NE009	121
Passaic River	NE010	121
Passaic River	NE014	143
Passaic River	NE015	57
Passaic River	NE016	41
Passaic River	NE017	82
Passaic River	NE018	59
Passaic River	NE022	32
Passaic River	PT001	16
Passaic River	PT003	1
Passaic River	PT005	3
Passaic River	PT006	49
Passaic River	PT007	31
Passaic River	PT010	5
Passaic River	PT013	8
Passaic River	PT014	0

Newark Bay	BA026	2
Newark Bay	BA028	0
Newark Bay	BA029	32
Newark Bay	BA030	3
Newark Bay	BA034	1
Newark Bay	EL001	837
Newark Bay	EL002	301
Newark Bay	EL034	937
Newark Bay	EL039	30
Newark Bay	JC011	158
Newark Bay	JC013	1,908
Newark Bay	NE023	65
Newark Bay	NE023_Stor	294
Newark Bay	NE025	448
Newark Bay	NE027	63
Newark Bay	NE030	74
Newark Bay	NE030_Stor	57
Passaic River	EN001	123
Passaic River	HR001	10
Passaic River	HR002	8
Passaic River	HR003	30
Passaic River	HR005	66
Passaic River	HR006	69
Passaic River	HR006_Stor	8
Passaic River	HR007	37
Passaic River	KE001	10
Passaic River	KE004	25
Passaic River	KE006	977
Passaic River	KE007	454
Passaic River	KE010	107
Passaic River	NE002	748
Passaic River	NE003	0
Passaic River	NE003_Stor	74
Passaic River	NE004	20
Passaic River	NE005	675
Passaic River	NE008	2,065
Passaic River	NE009	2,819
Passaic River	NE010	2,819
Passaic River	NE014	4,372
Passaic River	NE015	1,122
Passaic River	NE016	539
Passaic River	NE017	951
Passaic River	NE018	1,202
Passaic River	NE022	176
Passaic River	PT001	549
Passaic River	PT003	4
Passaic River	PT005	47
Passaic River	PT006	742
Passaic River	PT007	607
Passaic River	PT010	37
Passaic River	PT013	73
Passaic River	PT014	0

Newark Bay	BA026	5
Newark Bay	BA028	0
Newark Bay	BA029	29
Newark Bay	BA030	6
Newark Bay	BA034	1
Newark Bay	EL001	411
Newark Bay	EL002	167
Newark Bay	EL034	411
Newark Bay	EL039	38
Newark Bay	JC011	249
Newark Bay	JC013	571
Newark Bay	NE023	62
Newark Bay	NE023_Stor	790
Newark Bay	NE025	291
Newark Bay	NE027	58
Newark Bay	NE030	48
Newark Bay	NE030_Stor	153
Passaic River	EN001	68
Passaic River	HR001	6
Passaic River	HR002	10
Passaic River	HR003	46
Passaic River	HR005	64
Passaic River	HR006	33
Passaic River	HR006_Stor	22
Passaic River	HR007	48
Passaic River	KE001	13
Passaic River	KE004	42
Passaic River	KE006	502
Passaic River	KE007	306
Passaic River	KE010	94
Passaic River	NE002	395
Passaic River	NE003	0
Passaic River	NE003_Stor	200
Passaic River	NE004	9
Passaic River	NE005	163
Passaic River	NE008	585
Passaic River	NE009	881
Passaic River	NE010	881
Passaic River	NE014	1,189
Passaic River	NE015	385
Passaic River	NE016	238
Passaic River	NE017	459
Passaic River	NE018	406
Passaic River	NE022	151
Passaic River	PT001	140
Passaic River	PT003	5
Passaic River	PT005	18
Passaic River	PT006	300
Passaic River	PT007	208
Passaic River	PT010	24
Passaic River	PT013	41
Passaic River	PT014	1

Newark Bay	BA026	2
Newark Bay	BA028	0
Newark Bay	BA029	23
Newark Bay	BA030	2
Newark Bay	BA034	1
Newark Bay	EL001	556
Newark Bay	EL002	202
Newark Bay	EL034	616
Newark Bay	EL039	23
Newark Bay	JC011	126
Newark Bay	JC013	1,222
Newark Bay	NE023	47
Newark Bay	NE023_Stor	273
Newark Bay	NE025	306
Newark Bay	NE027	45
Newark Bay	NE030	51
Newark Bay	NE030_Stor	53
Passaic River	EN001	82
Passaic River	HR001	6
Passaic River	HR002	6
Passaic River	HR003	23
Passaic River	HR005	48
Passaic River	HR006	46
Passaic River	HR006_Stor	7
Passaic River	HR007	28
Passaic River	KE001	7
Passaic River	KE004	20
Passaic River	KE006	651
Passaic River	KE007	311
Passaic River	KE010	76
Passaic River	NE002	500
Passaic River	NE003	0
Passaic River	NE003_Stor	69
Passaic River	NE004	13
Passaic River	NE005	428
Passaic River	NE008	1,319
Passaic River	NE009	1,811
Passaic River	NE010	1,811
Passaic River	NE014	2,787
Passaic River	NE015	725
Passaic River	NE016	355
Passaic River	NE017	630
Passaic River	NE018	776
Passaic River	NE022	124
Passaic River	PT001	349
Passaic River	PT003	3
Passaic River	PT005	31
Passaic River	PT006	485
Passaic River	PT007	392
Passaic River	PT010	25
Passaic River	PT013	49
Passaic River	PT014	0

Passaic River	PT015	0
Passaic River	PT016	9
Passaic River	PT017	5
Passaic River	PT021	5
Passaic River	PT022	14
Passaic River	PT023	3
Passaic River	PT024	7
Passaic River	PT025	69
Passaic River	PT026	0
Passaic River	PT027	39
Passaic River	PT028	7
Passaic River	PT029	70
Passaic River	PT030	4
Passaic River	PT031	9
Passaic River	PT032	16
Raritan River	PA011	9
Raritan River	PA013	27
Raritan River	PA014	10
Raritan River	PA015	11
Raritan River	PA016	86
Raritan River	PA017	8
Raritan River	PA019	51
Upper NY Bay	BA006	9
Upper NY Bay	BA006_stor	21
Upper NY Bay	BA007	40
Upper NY Bay	BA021	43
Upper NY Bay	JC014	17
Upper NY Bay	JC015	7
Upper NY Bay	JC016	57
Upper NY Bay	JC018	120
<b>Total CSO</b>		<b>6,118</b>

Passaic River	PT015	1
Passaic River	PT016	37
Passaic River	PT017	52
Passaic River	PT021	104
Passaic River	PT022	566
Passaic River	PT023	47
Passaic River	PT024	69
Passaic River	PT025	465
Passaic River	PT026	1
Passaic River	PT027	550
Passaic River	PT028	56
Passaic River	PT029	1,098
Passaic River	PT030	8
Passaic River	PT031	78
Passaic River	PT032	116
Raritan River	PA011	140
Raritan River	PA013	603
Raritan River	PA014	172
Raritan River	PA015	274
Raritan River	PA016	884
Raritan River	PA017	27
Raritan River	PA019	278
Upper NY Bay	BA006	52
Upper NY Bay	BA006_stor	32
Upper NY Bay	BA007	197
Upper NY Bay	BA021	443
Upper NY Bay	JC014	80
Upper NY Bay	JC015	22
Upper NY Bay	JC016	960
Upper NY Bay	JC018	420
<b>Total CSO</b>		<b>83,722</b>

Passaic River	PT015	2
Passaic River	PT016	42
Passaic River	PT017	29
Passaic River	PT021	33
Passaic River	PT022	135
Passaic River	PT023	18
Passaic River	PT024	39
Passaic River	PT025	338
Passaic River	PT026	2
Passaic River	PT027	232
Passaic River	PT028	37
Passaic River	PT029	434
Passaic River	PT030	18
Passaic River	PT031	47
Passaic River	PT032	80
Raritan River	PA011	56
Raritan River	PA013	192
Raritan River	PA014	63
Raritan River	PA015	84
Raritan River	PA016	466
Raritan River	PA017	35
Raritan River	PA019	241
Upper NY Bay	BA006	45
Upper NY Bay	BA006_stor	86
Upper NY Bay	BA007	188
Upper NY Bay	BA021	232
Upper NY Bay	JC014	77
Upper NY Bay	JC015	31
Upper NY Bay	JC016	360
Upper NY Bay	JC018	531
<b>Total CSO</b>		<b>36,070</b>

Passaic River	PT015	1
Passaic River	PT016	28
Passaic River	PT017	35
Passaic River	PT021	67
Passaic River	PT022	359
Passaic River	PT023	31
Passaic River	PT024	47
Passaic River	PT025	322
Passaic River	PT026	1
Passaic River	PT027	361
Passaic River	PT028	39
Passaic River	PT029	716
Passaic River	PT030	7
Passaic River	PT031	53
Passaic River	PT032	80
Raritan River	PA011	92
Raritan River	PA013	387
Raritan River	PA014	112
Raritan River	PA015	176
Raritan River	PA016	591
Raritan River	PA017	21
Raritan River	PA019	197
Upper NY Bay	BA006	37
Upper NY Bay	BA006_stor	30
Upper NY Bay	BA007	141
Upper NY Bay	BA021	296
Upper NY Bay	JC014	58
Upper NY Bay	JC015	17
Upper NY Bay	JC016	624
Upper NY Bay	JC018	318
<b>Total CSO</b>		<b>54,961</b>

Stormwater Outfalls		
Waterbody	Outfall	Total Discharge, (MG/Yr)
Arthur Kill	49a.1	22,699
Arthur Kill	50.1	5,780
Arthur Kill	64.1	4,711
Elizabeth River	56a.d	0
Hackensack River	126.d	750
Hackensack River	136.d	1,584
Hackensack River	145.d	600
Hackensack River	146.d	475
Hackensack River	151.d	724
Hackensack River	152.d	2,824
Hackensack River	160.d	377
Hackensack River	BerrysCka.	3,515
Hudson River	Hudson1.1	1,652
Hudson River	Hudson2.1	2,593
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	2,021
Overpeck Creek	165.1	1,302

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	1,347
Arthur Kill	50.1	14
Arthur Kill	64.1	5,830
Elizabeth River	56a.d	0
Hackensack River	126.d	2
Hackensack River	136.d	135
Hackensack River	145.d	7
Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	3,570
Hackensack River	160.d	0
Hackensack River	BerrysCka.	662
Hudson River	Hudson1.1	1,644
Hudson River	Hudson2.1	1,842
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	1,376
Overpeck Creek	165.1	0

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	1,764
Arthur Kill	50.1	7
Arthur Kill	64.1	15,639
Elizabeth River	56a.d	0
Hackensack River	126.d	0
Hackensack River	136.d	5
Hackensack River	145.d	4
Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	1,306
Hackensack River	160.d	0
Hackensack River	BerrysCka.	680
Hudson River	Hudson1.1	4,411
Hudson River	Hudson2.1	4,941
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	3,691
Overpeck Creek	165.1	0

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	673
Arthur Kill	50.1	7
Arthur Kill	64.1	5,402
Elizabeth River	56a.d	0
Hackensack River	126.d	1
Hackensack River	136.d	67
Hackensack River	145.d	3
Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	3,309
Hackensack River	160.d	0
Hackensack River	BerrysCka.	331
Hudson River	Hudson1.1	1,524
Hudson River	Hudson2.1	1,707
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	1,275
Overpeck Creek	165.1	0

Passaic River	104.1	2,277
Passaic River	111.d	297
Passaic River	115.d	903
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	3,724
Passaic River	Frank's Cr	297
Raritan River	12a.d	3,037
Raritan River	14.1	7,984
Raritan River	18.d	2,288
Raritan River	31.d	6,091
Raritan River	7.1	0
Raritan River	9.d	2,759
Raritan River	10.d	1,975
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>83,239</b>

Passaic River	104.1	2,988
Passaic River	111.d	74
Passaic River	115.d	71
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	148
Passaic River	Frank's Cr	17
Raritan River	12a.d	3,594
Raritan River	14.1	201
Raritan River	18.d	2,776
Raritan River	31.d	6,914
Raritan River	7.1	0
Raritan River	9.d	3,022
Raritan River	10.d	50
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>36,284</b>

Passaic River	104.1	8,011
Passaic River	111.d	198
Passaic River	115.d	191
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	112
Passaic River	Frank's Cr	28
Raritan River	12a.d	1,315
Raritan River	14.1	214
Raritan River	18.d	7,446
Raritan River	31.d	18,551
Raritan River	7.1	0
Raritan River	9.d	1,105
Raritan River	10.d	57
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>69,676</b>

Passaic River	104.1	2,768
Passaic River	111.d	69
Passaic River	115.d	66
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	91
Passaic River	Frank's Cr	9
Raritan River	12a.d	3,332
Raritan River	14.1	182
Raritan River	18.d	2,572
Raritan River	31.d	6,409
Raritan River	7.1	0
Raritan River	9.d	2,800
Raritan River	10.d	48
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>32,644</b>

River Discharges		
Waterbody	Outfall	Total Discharge (MG/Yr)
Hudson River	Hudson R	13,171,352
Hackensack River	Hackensa	3,058
Passaic River	Passaic	144,737
Passaic River	Saddle R	15,654
Raritan River	Raritan	153,336
Hudson River	Norman K	26,515
Hudson River	Mooorden	4,017
Hudson River	Esopus C	274,052
Hudson River	Walkkill	582,631
Hudson River	Wappinge	146,124
Hudson River	Croton R	112,553
Hudson River	Sawmill	94,066
Hudson River	Catskill	137,420
Passaic River	1392500.1	7,009
Elizabeth River	1393450.1	8,244
Passaic River	110.1	6,053
Passaic River	120a.d	5,600
Raritan River	23.1	29,820
<b>Total River</b>		<b>14,922,241</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	39,588
Hackensack River	Hackensa	12
Passaic River	Passaic	2,203
Passaic River	Saddle R	785
Raritan River	Raritan	3,189
Hudson River	Norman K	1
Hudson River	Mooorden	0
Hudson River	Esopus C	10
Hudson River	Walkkill	22
Hudson River	Wappinge	6
Hudson River	Croton R	4
Hudson River	Sawmill	4
Hudson River	Catskill	5
Passaic River	1392500.1	1,399
Elizabeth River	1393450.1	4,301
Passaic River	110.1	2,417
Passaic River	120a.d	967
Raritan River	23.1	421
<b>Total River</b>		<b>55,334</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	14,618
Hackensack River	Hackensa	4
Passaic River	Passaic	3,903
Passaic River	Saddle R	1,387
Raritan River	Raritan	3,203
Hudson River	Norman K	1
Hudson River	Mooorden	0
Hudson River	Esopus C	10
Hudson River	Walkkill	22
Hudson River	Wappinge	6
Hudson River	Croton R	4
Hudson River	Sawmill	4
Hudson River	Catskill	5
Passaic River	1392500.1	1,022
Elizabeth River	1393450.1	1,108
Passaic River	110.1	2,868
Passaic River	120a.d	816
Raritan River	23.1	425
<b>Total River</b>		<b>29,407</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	19,793
Hackensack River	Hackensa	9
Passaic River	Passaic	2,327
Passaic River	Saddle R	769
Raritan River	Raritan	2,765
Hudson River	Norman K	1
Hudson River	Mooorden	0
Hudson River	Esopus C	10
Hudson River	Walkkill	22
Hudson River	Wappinge	6
Hudson River	Croton R	4
Hudson River	Sawmill	4
Hudson River	Catskill	5
Passaic River	1392500.1	2,049
Elizabeth River	1393450.1	4,177
Passaic River	110.1	1,695
Passaic River	120a.d	1,532
Raritan River	23.1	368
<b>Total River</b>		<b>35,537</b>

Dry-weather Loads		
Waterbody	Outfall	Total Discharge (MG/Yr) Equivalent
Elizabeth River	Elizabeth	16
Hackensack River	Hackensack	67
Passaic River	Passaic	30
Raritan River	Raritan	16
<b>Total Dry Load</b>		<b>129</b>

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Elizabeth River	Elizabeth	2,500
Hackensack River	Hackensack	10,100
Passaic River	Passaic	4,620
Raritan River	Raritan	2,370
<b>Total Dry Load</b>		<b>19,590</b>

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Elizabeth River	Elizabeth	421
Hackensack River	Hackensack	1,700
Passaic River	Passaic	779
Raritan River	Raritan	400
<b>Total Dry Load</b>		<b>3,300</b>

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Elizabeth River	Elizabeth	1,560
Hackensack River	Hackensack	6,320
Passaic River	Passaic	2,880
Raritan River	Raritan	1,480
<b>Total Dry Load</b>		<b>12,240</b>

WWTP Discharges		
Waterbody	Outfall	Total Discharge (MG/Yr)
Upper NY Bay	WPCF	76,438

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	WPCF	145

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	WPCF	29

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	WPCF	29

Hackensack River	BCUA001	23,611
Arthur Kill	JMEUC	18,196
Raritan River	MCUA	33,508
Hudson River	NHSA001	3,044
Hudson River	Woodcliff	1,051
Hudson River	NHSA002	4,745
Hudson River	BCUA002	1,098
Arthur Kill	NJ0024643	9,190
Arthur Kill	NJ0024953	4,471
Hackensack River	NJ0025038	1,121
Hackensack River	NJ0034339	2,206
<b>Total WWTP</b>		<b>178,680</b>

Hackensack River	BCUA001	45
Arthur Kill	JMEUC	34
Raritan River	MCUA	63
Hudson River	NHSA001	6
Hudson River	Woodcliff	2
Hudson River	NHSA002	9
Hudson River	BCUA002	2
Arthur Kill	NJ0024643	17
Arthur Kill	NJ0024953	8
Hackensack River	NJ0025038	2
Hackensack River	NJ0034339	4
<b>Total WWTP</b>		<b>338</b>

Hackensack River	BCUA001	9
Arthur Kill	JMEUC	7
Raritan River	MCUA	13
Hudson River	NHSA001	1
Hudson River	Woodcliff	0
Hudson River	NHSA002	2
Hudson River	BCUA002	0
Arthur Kill	NJ0024643	3
Arthur Kill	NJ0024953	2
Hackensack River	NJ0025038	0
Hackensack River	NJ0034339	1
<b>Total WWTP</b>		<b>68</b>

Hackensack River	BCUA001	9
Arthur Kill	JMEUC	7
Raritan River	MCUA	13
Hudson River	NHSA001	1
Hudson River	Woodcliff	0
Hudson River	NHSA002	2
Hudson River	BCUA002	0
Arthur Kill	NJ0024643	3
Arthur Kill	NJ0024953	2
Hackensack River	NJ0025038	0
Hackensack River	NJ0034339	1
<b>Total WWTP</b>		<b>68</b>

Totals by Waterbody		
Waterbody	Outfall	Total Discharge (MG/Yr)
Arthur Kill		65,252
Elizabeth River		8,988
Hackensack River		41,800
Hudson River		14,564,011
Kill Van Kull		404
Newark Bay		2,811
Passaic River		188,071
Raritan River		241,017
Upper NY Bay		76,752

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		11,338
Elizabeth River		15,576
Hackensack River		27,388
Hudson River		58,864
Kill Van Kull		5,750
Newark Bay		8,519
Passaic River		40,504
Raritan River		24,978
Upper NY Bay		2,350

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		18,810
Elizabeth River		5,651
Hackensack River		9,048
Hudson River		30,594
Kill Van Kull		2,415
Newark Bay		7,826
Passaic River		28,730
Raritan River		33,867
Upper NY Bay		1,579

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		8,733
Elizabeth River		11,539
Hackensack River		18,462
Hudson River		33,373
Kill Van Kull		3,768
Newark Bay		6,092
Passaic River		30,391
Raritan River		21,543
Upper NY Bay		1,549

Totals by Source		
Source	Outfall	Total Discharge (MG/Yr)
CSO		6,118
Storm		83,239
River		14,922,241
Dry		129
WWTP		178,680

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		83,722
Storm		36,284
River		55,334
Dry		19,590
WWTP		338

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		36,070
Storm		69,676
River		29,407
Dry		3,300
WWTP		68

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		54,961
Storm		32,644
River		35,537
Dry		12,240
WWTP		68

Totals by Source by Waterbody		
Waterbody	Source	Total Discharge (MG/Yr)
Arthur Kill	CSO	204
	Storm	33,190
	River	0
	Dry	0
	WWTP	31,858
Elizabeth River	CSO	728
	Storm	0
	River	8,244
	Dry	16
	WWTP	0
Hackensack River	CSO	889
	Storm	10,849
	River	3,058
	Dry	67
	WWTP	26,938

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	4,088
	Storm	7,190
	River	0
	Dry	0
	WWTP	60
Elizabeth River	CSO	8,774
	Storm	0
	River	4,301
	Dry	2,500
	WWTP	0
Hackensack River	CSO	12,849
	Storm	4,376
	River	12
	Dry	10,100
	WWTP	51

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	1,389
	Storm	17,410
	River	0
	Dry	0
	WWTP	12
Elizabeth River	CSO	4,122
	Storm	0
	River	1,108
	Dry	421
	WWTP	0
Hackensack River	CSO	5,338
	Storm	1,996
	River	4
	Dry	1,700
	WWTP	10

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	2,639
	Storm	6,082
	River	0
	Dry	0
	WWTP	12
Elizabeth River	CSO	5,801
	Storm	0
	River	4,177
	Dry	1,560
	WWTP	0
Hackensack River	CSO	8,411
	Storm	3,712
	River	9
	Dry	6,320
	WWTP	10

Hudson River	CSO	1,097
	Storm	4,245
	River	14,548,731
	Dry	0
	WWTP	9,938
Kill Van Kull	CSO	404
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	790
	Storm	2,021
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	1,490
	Storm	7,498
	River	179,053
	Dry	30
	WWTP	0
Raritan River	CSO	203
	Storm	24,135
	River	183,156
	Dry	16
	WWTP	33,508
Upper NY Bay	CSO	313
	Storm	0
	River	0
	Dry	0
	WWTP	76,438

Hudson River	CSO	15,719
	Storm	3,486
	River	39,640
	Dry	0
	WWTP	19
Kill Van Kull	CSO	5,750
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	7,143
	Storm	1,376
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	24,815
	Storm	3,298
	River	7,771
	Dry	4,620
	WWTP	0
Raritan River	CSO	2,379
	Storm	16,557
	River	3,610
	Dry	2,370
	WWTP	63
Upper NY Bay	CSO	2,205
	Storm	0
	River	0
	Dry	0
	WWTP	145

Hudson River	CSO	6,568
	Storm	9,352
	River	14,670
	Dry	0
	WWTP	4
Kill Van Kull	CSO	2,415
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	4,136
	Storm	3,691
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	9,415
	Storm	8,539
	River	9,996
	Dry	779
	WWTP	0
Raritan River	CSO	1,138
	Storm	28,688
	River	3,628
	Dry	400
	WWTP	13
Upper NY Bay	CSO	1,550
	Storm	0
	River	0
	Dry	0
	WWTP	29

Hudson River	CSO	10,293
	Storm	3,231
	River	19,845
	Dry	0
	WWTP	4
Kill Van Kull	CSO	3,768
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	4,816
	Storm	1,275
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	16,138
	Storm	3,001
	River	8,372
	Dry	2,880
	WWTP	0
Raritan River	CSO	1,575
	Storm	15,342
	River	3,133
	Dry	1,480
	WWTP	13
Upper NY Bay	CSO	1,520
	Storm	0
	River	0
	Dry	0
	WWTP	29





# Appendix C-2

## Validation Loads

Volume

Fecal Coliform

Enterococcus

E. Coli

Combined Sewer Outfalls		
Waterbody	Outfall	Total Discharge (MG/Yr)
Arthur Kill	EL030	5
Arthur Kill	EL031	19
Arthur Kill	EL032	11
Arthur Kill	EL037	77
Arthur Kill	PA002	72
Arthur Kill	PA003	34
Arthur Kill	PA004	11
Arthur Kill	PA005	11
Arthur Kill	PA006	21
Arthur Kill	PA007	6
Arthur Kill	PA008	3
Arthur Kill	PA009	3
Arthur Kill	PA010	3
Elizabeth River	EL003	86
Elizabeth River	EL005	111
Elizabeth River	EL008	11
Elizabeth River	EL010	22
Elizabeth River	EL011	21
Elizabeth River	EL012	6
Elizabeth River	EL014	2
Elizabeth River	EL016	21
Elizabeth River	EL021	4
Elizabeth River	EL022	85
Elizabeth River	EL026	67
Elizabeth River	EL027	41
Elizabeth River	EL028	48
Elizabeth River	EL029	44
Elizabeth River	EL035	44
Elizabeth River	EL036a	27
Elizabeth River	EL036b	30
Elizabeth River	EL038	13
Elizabeth River	EL040	15
Elizabeth River	EL041	222
Elizabeth River	EL042	51
Elizabeth River	EL043	1
Hackensack River	HK001	85
Hackensack River	HK002	116
Hackensack River	JC001	90
Hackensack River	JC002	37
Hackensack River	JC003	57
Hackensack River	JC004	27
Hackensack River	JC005	9
Hackensack River	JC006	81
Hackensack River	JC007	38
Hackensack River	JC008	118
Hackensack River	JC009	48
Hackensack River	JC010	35
Hackensack River	NB003	154

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	18
Arthur Kill	EL031	214
Arthur Kill	EL032	43
Arthur Kill	EL037	1,280
Arthur Kill	PA002	1,442
Arthur Kill	PA003	1,140
Arthur Kill	PA004	116
Arthur Kill	PA005	238
Arthur Kill	PA006	401
Arthur Kill	PA007	46
Arthur Kill	PA008	30
Arthur Kill	PA009	10
Arthur Kill	PA010	11
Elizabeth River	EL003	279
Elizabeth River	EL005	1,635
Elizabeth River	EL008	233
Elizabeth River	EL010	124
Elizabeth River	EL011	109
Elizabeth River	EL012	69
Elizabeth River	EL014	5
Elizabeth River	EL016	208
Elizabeth River	EL021	57
Elizabeth River	EL022	1,747
Elizabeth River	EL026	1,599
Elizabeth River	EL027	203
Elizabeth River	EL028	237
Elizabeth River	EL029	481
Elizabeth River	EL035	607
Elizabeth River	EL036a	196
Elizabeth River	EL036b	253
Elizabeth River	EL038	127
Elizabeth River	EL040	148
Elizabeth River	EL041	2,443
Elizabeth River	EL042	444
Elizabeth River	EL043	3
Hackensack River	HK001	1,548
Hackensack River	HK002	2,272
Hackensack River	JC001	1,486
Hackensack River	JC002	390
Hackensack River	JC003	443
Hackensack River	JC004	182
Hackensack River	JC005	58
Hackensack River	JC006	2,638
Hackensack River	JC007	317
Hackensack River	JC008	1,081
Hackensack River	JC009	372
Hackensack River	JC010	240
Hackensack River	NB003	1,649

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	21
Arthur Kill	EL031	107
Arthur Kill	EL032	49
Arthur Kill	EL037	484
Arthur Kill	PA002	488
Arthur Kill	PA003	296
Arthur Kill	PA004	59
Arthur Kill	PA005	76
Arthur Kill	PA006	138
Arthur Kill	PA007	31
Arthur Kill	PA008	18
Arthur Kill	PA009	12
Arthur Kill	PA010	13
Elizabeth River	EL003	380
Elizabeth River	EL005	673
Elizabeth River	EL008	78
Elizabeth River	EL010	104
Elizabeth River	EL011	98
Elizabeth River	EL012	32
Elizabeth River	EL014	7
Elizabeth River	EL016	113
Elizabeth River	EL021	23
Elizabeth River	EL022	584
Elizabeth River	EL026	491
Elizabeth River	EL027	191
Elizabeth River	EL028	225
Elizabeth River	EL029	242
Elizabeth River	EL035	260
Elizabeth River	EL036a	136
Elizabeth River	EL036b	153
Elizabeth River	EL038	68
Elizabeth River	EL040	82
Elizabeth River	EL041	1,224
Elizabeth River	EL042	265
Elizabeth River	EL043	4
Hackensack River	HK001	556
Hackensack River	HK002	780
Hackensack River	JC001	569
Hackensack River	JC002	201
Hackensack River	JC003	287
Hackensack River	JC004	133
Hackensack River	JC005	43
Hackensack River	JC006	697
Hackensack River	JC007	196
Hackensack River	JC008	619
Hackensack River	JC009	243
Hackensack River	JC010	171
Hackensack River	NB003	841

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	14
Arthur Kill	EL031	142
Arthur Kill	EL032	32
Arthur Kill	EL037	832
Arthur Kill	PA002	931
Arthur Kill	PA003	725
Arthur Kill	PA004	77
Arthur Kill	PA005	153
Arthur Kill	PA006	259
Arthur Kill	PA007	31
Arthur Kill	PA008	20
Arthur Kill	PA009	8
Arthur Kill	PA010	8
Elizabeth River	EL003	215
Elizabeth River	EL005	1,070
Elizabeth River	EL008	150
Elizabeth River	EL010	88
Elizabeth River	EL011	78
Elizabeth River	EL012	46
Elizabeth River	EL014	4
Elizabeth River	EL016	140
Elizabeth River	EL021	37
Elizabeth River	EL022	1,127
Elizabeth River	EL026	1,026
Elizabeth River	EL027	146
Elizabeth River	EL028	170
Elizabeth River	EL029	320
Elizabeth River	EL035	399
Elizabeth River	EL036a	135
Elizabeth River	EL036b	171
Elizabeth River	EL038	85
Elizabeth River	EL040	99
Elizabeth River	EL041	1,624
Elizabeth River	EL042	300
Elizabeth River	EL043	2
Hackensack River	HK001	1,003
Hackensack River	HK002	1,467
Hackensack River	JC001	967
Hackensack River	JC002	260
Hackensack River	JC003	302
Hackensack River	JC004	126
Hackensack River	JC005	40
Hackensack River	JC006	1,679
Hackensack River	JC007	215
Hackensack River	JC008	728
Hackensack River	JC009	254
Hackensack River	JC010	165
Hackensack River	NB003	1,098

Hackensack River	NB005	28
Hackensack River	NB006	0
Hackensack River	NB007	6
Hackensack River	NB008	14
Hackensack River	NB009	23
Hackensack River	NB010	1
Hackensack River	NB011	6
Hackensack River	NB014	1
Hackensack River	RP001	10
Hackensack River	RP002	2
Hackensack River	RP003	14
Hackensack River	RP004	19
Hackensack River	RP005	7
Hackensack River	RP006	1
Hudson River	FL001	68
Hudson River	FL002	5
Hudson River	GU001	13
Hudson River	JC020	59
Hudson River	JC025	43
Hudson River	JC026	11
Hudson River	JC028	77
Hudson River	JC029	216
Hudson River	NB004	12
Hudson River	NH002A1	190
Hudson River	NH002A2	200
Hudson River	NH003A	95
Hudson River	NH005A	41
Hudson River	NH006A	41
Hudson River	NH008A	21
Hudson River	NH012A	8
Hudson River	NH013A	141
Hudson River	NH015A	27
Kill Van Kull	BA001	431
Kill Van Kull	BA002	26
Kill Van Kull	BA003	10
Kill Van Kull	BA004	1
Kill Van Kull	BA008	7
Kill Van Kull	BA009	4
Kill Van Kull	BA010	8
Kill Van Kull	BA011	6
Kill Van Kull	BA022	0
Kill Van Kull	BA024	1
Kill Van Kull	BA037	3
Newark Bay	BA012	13
Newark Bay	BA013	1
Newark Bay	BA014	15
Newark Bay	BA015	47
Newark Bay	BA016	4
Newark Bay	BA017	51
Newark Bay	BA018	14
Newark Bay	BA019	33
Newark Bay	BA020	11

Hackensack River	NB005	270
Hackensack River	NB006	0
Hackensack River	NB007	116
Hackensack River	NB008	99
Hackensack River	NB009	281
Hackensack River	NB010	6
Hackensack River	NB011	73
Hackensack River	NB014	2
Hackensack River	RP001	171
Hackensack River	RP002	19
Hackensack River	RP003	68
Hackensack River	RP004	197
Hackensack River	RP005	110
Hackensack River	RP006	6
Hudson River	FL001	1,601
Hudson River	FL002	155
Hudson River	GU001	148
Hudson River	JC020	801
Hudson River	JC025	851
Hudson River	JC026	156
Hudson River	JC028	863
Hudson River	JC029	1,593
Hudson River	NB004	157
Hudson River	NH002A1	2,096
Hudson River	NH002A2	4,424
Hudson River	NH003A	979
Hudson River	NH005A	885
Hudson River	NH006A	223
Hudson River	NH008A	77
Hudson River	NH012A	13
Hudson River	NH013A	1,919
Hudson River	NH015A	222
Kill Van Kull	BA001	6,839
Kill Van Kull	BA002	86
Kill Van Kull	BA003	57
Kill Van Kull	BA004	3
Kill Van Kull	BA008	31
Kill Van Kull	BA009	18
Kill Van Kull	BA010	43
Kill Van Kull	BA011	15
Kill Van Kull	BA022	0
Kill Van Kull	BA024	2
Kill Van Kull	BA037	11
Newark Bay	BA012	50
Newark Bay	BA013	1
Newark Bay	BA014	77
Newark Bay	BA015	499
Newark Bay	BA016	19
Newark Bay	BA017	1,308
Newark Bay	BA018	188
Newark Bay	BA019	239
Newark Bay	BA020	57

Hackensack River	NB005	147
Hackensack River	NB006	0
Hackensack River	NB007	41
Hackensack River	NB008	69
Hackensack River	NB009	132
Hackensack River	NB010	5
Hackensack River	NB011	35
Hackensack River	NB014	3
Hackensack River	RP001	65
Hackensack River	RP002	10
Hackensack River	RP003	66
Hackensack River	RP004	102
Hackensack River	RP005	44
Hackensack River	RP006	4
Hudson River	FL001	497
Hudson River	FL002	40
Hudson River	GU001	72
Hudson River	JC020	346
Hudson River	JC025	291
Hudson River	JC026	65
Hudson River	JC028	425
Hudson River	JC029	1,079
Hudson River	NB004	71
Hudson River	NH002A1	1,050
Hudson River	NH002A2	1,421
Hudson River	NH003A	516
Hudson River	NH005A	290
Hudson River	NH006A	194
Hudson River	NH008A	93
Hudson River	NH012A	33
Hudson River	NH013A	828
Hudson River	NH015A	139
Kill Van Kull	BA001	2,674
Kill Van Kull	BA002	116
Kill Van Kull	BA003	49
Kill Van Kull	BA004	4
Kill Van Kull	BA008	31
Kill Van Kull	BA009	18
Kill Van Kull	BA010	39
Kill Van Kull	BA011	25
Kill Van Kull	BA022	0
Kill Van Kull	BA024	3
Kill Van Kull	BA037	13
Newark Bay	BA012	57
Newark Bay	BA013	3
Newark Bay	BA014	68
Newark Bay	BA015	255
Newark Bay	BA016	17
Newark Bay	BA017	387
Newark Bay	BA018	83
Newark Bay	BA019	165
Newark Bay	BA020	50

Hackensack River	NB005	181
Hackensack River	NB006	0
Hackensack River	NB007	75
Hackensack River	NB008	68
Hackensack River	NB009	186
Hackensack River	NB010	4
Hackensack River	NB011	48
Hackensack River	NB014	1
Hackensack River	RP001	111
Hackensack River	RP002	13
Hackensack River	RP003	49
Hackensack River	RP004	131
Hackensack River	RP005	72
Hackensack River	RP006	4
Hudson River	FL001	1,028
Hudson River	FL002	98
Hudson River	GU001	98
Hudson River	JC020	526
Hudson River	JC025	550
Hudson River	JC026	102
Hudson River	JC028	573
Hudson River	JC029	1,093
Hudson River	NB004	103
Hudson River	NH002A1	1,394
Hudson River	NH002A2	2,846
Hudson River	NH003A	654
Hudson River	NH005A	570
Hudson River	NH006A	158
Hudson River	NH008A	58
Hudson River	NH012A	12
Hudson River	NH013A	1,260
Hudson River	NH015A	151
Kill Van Kull	BA001	4,457
Kill Van Kull	BA002	66
Kill Van Kull	BA003	40
Kill Van Kull	BA004	2
Kill Van Kull	BA008	23
Kill Van Kull	BA009	13
Kill Van Kull	BA010	31
Kill Van Kull	BA011	12
Kill Van Kull	BA022	0
Kill Van Kull	BA024	2
Kill Van Kull	BA037	8
Newark Bay	BA012	37
Newark Bay	BA013	1
Newark Bay	BA014	55
Newark Bay	BA015	332
Newark Bay	BA016	14
Newark Bay	BA017	838
Newark Bay	BA018	124
Newark Bay	BA019	164
Newark Bay	BA020	41

Newark Bay	BA026	2
Newark Bay	BA028	0
Newark Bay	BA029	10
Newark Bay	BA030	2
Newark Bay	BA034	1
Newark Bay	EL001	103
Newark Bay	EL002	43
Newark Bay	EL034	94
Newark Bay	EL039	14
Newark Bay	JC011	75
Newark Bay	JC013	91
Newark Bay	NE023	20
Newark Bay	NE023_Stor	237
Newark Bay	NE025	102
Newark Bay	NE027	21
Newark Bay	NE030	18
Newark Bay	NE030_Stor	46
Passaic River	EN001	18
Passaic River	HR001	2
Passaic River	HR002	3
Passaic River	HR003	16
Passaic River	HR005	19
Passaic River	HR006	9
Passaic River	HR006_Stor	7
Passaic River	HR007	14
Passaic River	KE001	3
Passaic River	KE004	13
Passaic River	KE006	120
Passaic River	KE007	63
Passaic River	KE010	27
Passaic River	NE002	94
Passaic River	NE003	0
Passaic River	NE003_Stor	60
Passaic River	NE004	3
Passaic River	NE005	21
Passaic River	NE008	94
Passaic River	NE009	173
Passaic River	NE010	173
Passaic River	NE014	183
Passaic River	NE015	81
Passaic River	NE016	54
Passaic River	NE017	105
Passaic River	NE018	75
Passaic River	NE022	42
Passaic River	PT001	22
Passaic River	PT003	2
Passaic River	PT005	5
Passaic River	PT006	62
Passaic River	PT007	37
Passaic River	PT010	8
Passaic River	PT013	10
Passaic River	PT014	0

Newark Bay	BA026	4
Newark Bay	BA028	0
Newark Bay	BA029	49
Newark Bay	BA030	5
Newark Bay	BA034	1
Newark Bay	EL001	1,037
Newark Bay	EL002	391
Newark Bay	EL034	1,215
Newark Bay	EL039	47
Newark Bay	JC011	196
Newark Bay	JC013	2,074
Newark Bay	NE023	76
Newark Bay	NE023_Stor	368
Newark Bay	NE025	698
Newark Bay	NE027	115
Newark Bay	NE030	134
Newark Bay	NE030_Stor	71
Passaic River	EN001	193
Passaic River	HR001	15
Passaic River	HR002	15
Passaic River	HR003	54
Passaic River	HR005	87
Passaic River	HR006	75
Passaic River	HR006_Stor	10
Passaic River	HR007	52
Passaic River	KE001	10
Passaic River	KE004	34
Passaic River	KE006	1,219
Passaic River	KE007	473
Passaic River	KE010	142
Passaic River	NE002	907
Passaic River	NE003	0
Passaic River	NE003_Stor	93
Passaic River	NE004	28
Passaic River	NE005	814
Passaic River	NE008	2,462
Passaic River	NE009	3,704
Passaic River	NE010	3,704
Passaic River	NE014	5,275
Passaic River	NE015	1,374
Passaic River	NE016	633
Passaic River	NE017	1,090
Passaic River	NE018	1,451
Passaic River	NE022	219
Passaic River	PT001	712
Passaic River	PT003	15
Passaic River	PT005	114
Passaic River	PT006	1,009
Passaic River	PT007	743
Passaic River	PT010	90
Passaic River	PT013	134
Passaic River	PT014	0

Newark Bay	BA026	8
Newark Bay	BA028	0
Newark Bay	BA029	48
Newark Bay	BA030	10
Newark Bay	BA034	2
Newark Bay	EL001	553
Newark Bay	EL002	227
Newark Bay	EL034	545
Newark Bay	EL039	60
Newark Bay	JC011	325
Newark Bay	JC013	655
Newark Bay	NE023	90
Newark Bay	NE023_Stor	988
Newark Bay	NE025	503
Newark Bay	NE027	97
Newark Bay	NE030	88
Newark Bay	NE030_Stor	191
Passaic River	EN001	100
Passaic River	HR001	8
Passaic River	HR002	16
Passaic River	HR003	71
Passaic River	HR005	86
Passaic River	HR006	47
Passaic River	HR006_Stor	27
Passaic River	HR007	64
Passaic River	KE001	12
Passaic River	KE004	55
Passaic River	KE006	649
Passaic River	KE007	316
Passaic River	KE010	126
Passaic River	NE002	500
Passaic River	NE003	0
Passaic River	NE003_Stor	249
Passaic River	NE004	16
Passaic River	NE005	200
Passaic River	NE008	721
Passaic River	NE009	1,211
Passaic River	NE010	1,211
Passaic River	NE014	1,473
Passaic River	NE015	516
Passaic River	NE016	302
Passaic River	NE017	568
Passaic River	NE018	503
Passaic River	NE022	198
Passaic River	PT001	188
Passaic River	PT003	9
Passaic River	PT005	35
Passaic River	PT006	390
Passaic River	PT007	251
Passaic River	PT010	43
Passaic River	PT013	60
Passaic River	PT014	1

Newark Bay	BA026	4
Newark Bay	BA028	0
Newark Bay	BA029	35
Newark Bay	BA030	4
Newark Bay	BA034	1
Newark Bay	EL001	693
Newark Bay	EL002	264
Newark Bay	EL034	800
Newark Bay	EL039	35
Newark Bay	JC011	158
Newark Bay	JC013	1,333
Newark Bay	NE023	57
Newark Bay	NE023_Stor	341
Newark Bay	NE025	482
Newark Bay	NE027	81
Newark Bay	NE030	92
Newark Bay	NE030_Stor	66
Passaic River	EN001	129
Passaic River	HR001	10
Passaic River	HR002	11
Passaic River	HR003	41
Passaic River	HR005	63
Passaic River	HR006	51
Passaic River	HR006_Stor	9
Passaic River	HR007	39
Passaic River	KE001	7
Passaic River	KE004	27
Passaic River	KE006	815
Passaic River	KE007	324
Passaic River	KE010	101
Passaic River	NE002	609
Passaic River	NE003	0
Passaic River	NE003_Stor	86
Passaic River	NE004	19
Passaic River	NE005	517
Passaic River	NE008	1,575
Passaic River	NE009	2,386
Passaic River	NE010	2,386
Passaic River	NE014	3,366
Passaic River	NE015	893
Passaic River	NE016	419
Passaic River	NE017	727
Passaic River	NE018	938
Passaic River	NE022	156
Passaic River	PT001	453
Passaic River	PT003	10
Passaic River	PT005	73
Passaic River	PT006	657
Passaic River	PT007	479
Passaic River	PT010	60
Passaic River	PT013	88
Passaic River	PT014	0

Passaic River	PT015	1
Passaic River	PT016	11
Passaic River	PT017	7
Passaic River	PT021	5
Passaic River	PT022	16
Passaic River	PT023	3
Passaic River	PT024	7
Passaic River	PT025	73
Passaic River	PT026	1
Passaic River	PT027	36
Passaic River	PT028	9
Passaic River	PT029	76
Passaic River	PT030	6
Passaic River	PT031	9
Passaic River	PT032	24
Raritan River	PA011	12
Raritan River	PA013	33
Raritan River	PA014	12
Raritan River	PA015	14
Raritan River	PA016	108
Raritan River	PA017	13
Raritan River	PA019	66
Upper NY Bay	BA006	14
Upper NY Bay	BA006_stor	26
Upper NY Bay	BA007	61
Upper NY Bay	BA021	59
Upper NY Bay	JC014	27
Upper NY Bay	JC015	12
Upper NY Bay	JC016	71
Upper NY Bay	JC018	164
<b>Total CSO</b>		<b>7,697</b>

Passaic River	PT015	2
Passaic River	PT016	57
Passaic River	PT017	85
Passaic River	PT021	114
Passaic River	PT022	617
Passaic River	PT023	66
Passaic River	PT024	83
Passaic River	PT025	542
Passaic River	PT026	1
Passaic River	PT027	547
Passaic River	PT028	115
Passaic River	PT029	1,112
Passaic River	PT030	14
Passaic River	PT031	74
Passaic River	PT032	192
Raritan River	PA011	162
Raritan River	PA013	661
Raritan River	PA014	178
Raritan River	PA015	286
Raritan River	PA016	1,034
Raritan River	PA017	47
Raritan River	PA019	335
Upper NY Bay	BA006	67
Upper NY Bay	BA006_stor	40
Upper NY Bay	BA007	307
Upper NY Bay	BA021	556
Upper NY Bay	JC014	124
Upper NY Bay	JC015	37
Upper NY Bay	JC016	1,031
Upper NY Bay	JC018	649
<b>Total CSO</b>		<b>99,563</b>

Passaic River	PT015	2
Passaic River	PT016	50
Passaic River	PT017	40
Passaic River	PT021	36
Passaic River	PT022	152
Passaic River	PT023	21
Passaic River	PT024	40
Passaic River	PT025	364
Passaic River	PT026	2
Passaic River	PT027	220
Passaic River	PT028	52
Passaic River	PT029	458
Passaic River	PT030	26
Passaic River	PT031	45
Passaic River	PT032	122
Raritan River	PA011	71
Raritan River	PA013	226
Raritan River	PA014	73
Raritan River	PA015	97
Raritan River	PA016	572
Raritan River	PA017	60
Raritan River	PA019	310
Upper NY Bay	BA006	64
Upper NY Bay	BA006_stor	107
Upper NY Bay	BA007	283
Upper NY Bay	BA021	313
Upper NY Bay	JC014	123
Upper NY Bay	JC015	51
Upper NY Bay	JC016	426
Upper NY Bay	JC018	741
<b>Total CSO</b>		<b>44,556</b>

Passaic River	PT015	2
Passaic River	PT016	40
Passaic River	PT017	56
Passaic River	PT021	73
Passaic River	PT022	391
Passaic River	PT023	42
Passaic River	PT024	55
Passaic River	PT025	372
Passaic River	PT026	1
Passaic River	PT027	357
Passaic River	PT028	76
Passaic River	PT029	727
Passaic River	PT030	11
Passaic River	PT031	50
Passaic River	PT032	131
Raritan River	PA011	107
Raritan River	PA013	427
Raritan River	PA014	116
Raritan River	PA015	184
Raritan River	PA016	694
Raritan River	PA017	36
Raritan River	PA019	240
Upper NY Bay	BA006	48
Upper NY Bay	BA006_stor	37
Upper NY Bay	BA007	220
Upper NY Bay	BA021	374
Upper NY Bay	JC014	90
Upper NY Bay	JC015	29
Upper NY Bay	JC016	674
Upper NY Bay	JC018	481
<b>Total CSO</b>		<b>65,559</b>

Stormwater Outfalls		
Waterbody	Outfall	Total Discharge, (MG/Yr)
Arthur Kill	49a.1	28,081
Arthur Kill	50.1	7,116
Arthur Kill	64.1	5,837
Elizabeth River	56a.d	0
Hackensack River	126.d	748
Hackensack River	136.d	1,794
Hackensack River	145.d	598
Hackensack River	146.d	473
Hackensack River	151.d	721
Hackensack River	152.d	3,057
Hackensack River	160.d	377
Hackensack River	BerrysCka.	3,732
Hudson River	Hudson1.1	1,747
Hudson River	Hudson2.1	2,693
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	2,286
Overpeck Creek	165.1	1,297

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	1,783
Arthur Kill	50.1	18
Arthur Kill	64.1	7,592
Elizabeth River	56a.d	0
Hackensack River	126.d	2
Hackensack River	136.d	163
Hackensack River	145.d	13
Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	3,936
Hackensack River	160.d	0
Hackensack River	BerrysCka.	751
Hudson River	Hudson1.1	1,794
Hudson River	Hudson2.1	2,005
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	1,794
Overpeck Creek	165.1	0

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	2,402
Arthur Kill	50.1	10
Arthur Kill	64.1	20,368
Elizabeth River	56a.d	0
Hackensack River	126.d	0
Hackensack River	136.d	6
Hackensack River	145.d	3
Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	1,440
Hackensack River	160.d	0
Hackensack River	BerrysCka.	742
Hudson River	Hudson1.1	4,813
Hudson River	Hudson2.1	5,379
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	4,811
Overpeck Creek	165.1	0

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	891
Arthur Kill	50.1	9
Arthur Kill	64.1	7,036
Elizabeth River	56a.d	0
Hackensack River	126.d	1
Hackensack River	136.d	81
Hackensack River	145.d	6
Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	3,647
Hackensack River	160.d	0
Hackensack River	BerrysCka.	375
Hudson River	Hudson1.1	1,663
Hudson River	Hudson2.1	1,858
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	1,662
Overpeck Creek	165.1	0

Passaic River	104.1	2,361
Passaic River	111.d	297
Passaic River	115.d	901
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	3,882
Passaic River	Frank's Cr	297
Raritan River	12a.d	4,257
Raritan River	14.1	10,899
Raritan River	18.d	3,240
Raritan River	31.d	8,423
Raritan River	7.1	0
Raritan River	9.d	3,088
Raritan River	10.d	2,789
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>100,994</b>

Passaic River	104.1	3,113
Passaic River	111.d	75
Passaic River	115.d	73
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	160
Passaic River	Frank's Cr	18
Raritan River	12a.d	5,488
Raritan River	14.1	259
Raritan River	18.d	4,254
Raritan River	31.d	10,540
Raritan River	7.1	0
Raritan River	9.d	3,536
Raritan River	10.d	75
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>47,442</b>

Passaic River	104.1	8,348
Passaic River	111.d	200
Passaic River	115.d	194
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	125
Passaic River	Frank's Cr	30
Raritan River	12a.d	2,008
Raritan River	14.1	296
Raritan River	18.d	11,411
Raritan River	31.d	28,276
Raritan River	7.1	0
Raritan River	9.d	1,294
Raritan River	10.d	88
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>92,243</b>

Passaic River	104.1	2,884
Passaic River	111.d	69
Passaic River	115.d	67
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	99
Passaic River	Frank's Cr	9
Raritan River	12a.d	5,086
Raritan River	14.1	258
Raritan River	18.d	3,942
Raritan River	31.d	9,768
Raritan River	7.1	0
Raritan River	9.d	3,277
Raritan River	10.d	75
Upper NY Bay	Hudson3.1	0
<b>Total Stormwater</b>		<b>42,766</b>

River Discharges		
Waterbody	Outfall	Total Discharge (MG/Yr)
Hudson River	Hudson R	13,219,695
Hackensack River	Hackensa	9,088
Passaic River	Passaic	165,430
Passaic River	Saddle R	19,020
Raritan River	Raritan	180,612
Hudson River	Norman K	40,616
Hudson River	Mooorden	8,670
Hudson River	Esopus C	414,037
Hudson River	Walkkill	883,444
Hudson River	Wappinge	199,851
Hudson River	Croton R	158,884
Hudson River	Sawmill	130,303
Hudson River	Catskill	210,561
Passaic River	1392500.1	7,223
Elizabeth River	1393450.1	8,311
Passaic River	110.1	6,251
Passaic River	120a.d	6,018
Raritan River	23.1	43,005
<b>Total River</b>		<b>15,711,019</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	40,923
Hackensack River	Hackensa	47
Passaic River	Passaic	2,597
Passaic River	Saddle R	824
Raritan River	Raritan	3,249
Hudson River	Norman K	2
Hudson River	Mooorden	0
Hudson River	Esopus C	16
Hudson River	Walkkill	33
Hudson River	Wappinge	8
Hudson River	Croton R	6
Hudson River	Sawmill	5
Hudson River	Catskill	8
Passaic River	1392500.1	1,411
Elizabeth River	1393450.1	4,636
Passaic River	110.1	2,680
Passaic River	120a.d	1,052
Raritan River	23.1	718
<b>Total River</b>		<b>58,215</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	14,658
Hackensack River	Hackensa	27
Passaic River	Passaic	5,136
Passaic River	Saddle R	1,566
Raritan River	Raritan	3,563
Hudson River	Norman K	2
Hudson River	Mooorden	0
Hudson River	Esopus C	16
Hudson River	Walkkill	33
Hudson River	Wappinge	8
Hudson River	Croton R	6
Hudson River	Sawmill	5
Hudson River	Catskill	8
Passaic River	1392500.1	1,125
Elizabeth River	1393450.1	1,235
Passaic River	110.1	3,160
Passaic River	120a.d	914
Raritan River	23.1	809
<b>Total River</b>		<b>32,269</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	20,461
Hackensack River	Hackensa	39
Passaic River	Passaic	2,776
Passaic River	Saddle R	865
Raritan River	Raritan	3,257
Hudson River	Norman K	2
Hudson River	Mooorden	0
Hudson River	Esopus C	16
Hudson River	Walkkill	33
Hudson River	Wappinge	8
Hudson River	Croton R	6
Hudson River	Sawmill	5
Hudson River	Catskill	8
Passaic River	1392500.1	2,188
Elizabeth River	1393450.1	4,648
Passaic River	110.1	1,886
Passaic River	120a.d	1,692
Raritan River	23.1	714
<b>Total River</b>		<b>38,604</b>

Dry-weather Loads		
Waterbody	Outfall	Total Discharge (MG/Yr) Equivalent
Elizabeth River	Elizabeth	16
Hackensack River	Hackensack	67
Passaic River	Passaic	30
Raritan River	Raritan	16
<b>Total Dry Load</b>		<b>129</b>

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Elizabeth River	Elizabeth	2,500
Hackensack River	Hackensack	10,100
Passaic River	Passaic	4,620
Raritan River	Raritan	2,370
<b>Total Dry Load</b>		<b>19,590</b>

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Elizabeth River	Elizabeth	421
Hackensack River	Hackensack	1,700
Passaic River	Passaic	779
Raritan River	Raritan	400
<b>Total Dry Load</b>		<b>3,300</b>

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Elizabeth River	Elizabeth	1,560
Hackensack River	Hackensack	6,320
Passaic River	Passaic	2,880
Raritan River	Raritan	1,480
<b>Total Dry Load</b>		<b>12,240</b>

WWTP Discharges		
Waterbody	Outfall	Total Discharge (MG/Yr)
Upper NY Bay	WPCF	76,837

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	WPCF	145

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	WPCF	29

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	WPCF	29

Hackensack River	BCUA001	25,856
Arthur Kill	JMEUC	19,573
Raritan River	MCUA	36,268
Hudson River	NHSA001	3,199
Hudson River	Woodcliff	1,049
Hudson River	NHSA002	4,581
Hudson River	BCUA002	1,243
Arthur Kill	NJ0024643	9,165
Arthur Kill	NJ0024953	4,460
Hackensack River	NJ0025038	1,118
Hackensack River	NJ0034339	2,199
<b>Total WWTP</b>		<b>185,548</b>

Hackensack River	BCUA001	49
Arthur Kill	JMEUC	37
Raritan River	MCUA	69
Hudson River	NHSA001	6
Hudson River	Woodcliff	2
Hudson River	NHSA002	9
Hudson River	BCUA002	2
Arthur Kill	NJ0024643	17
Arthur Kill	NJ0024953	8
Hackensack River	NJ0025038	2
Hackensack River	NJ0034339	4
<b>Total WWTP</b>		<b>351</b>

Hackensack River	BCUA001	10
Arthur Kill	JMEUC	7
Raritan River	MCUA	14
Hudson River	NHSA001	1
Hudson River	Woodcliff	0
Hudson River	NHSA002	2
Hudson River	BCUA002	0
Arthur Kill	NJ0024643	3
Arthur Kill	NJ0024953	2
Hackensack River	NJ0025038	0
Hackensack River	NJ0034339	1
<b>Total WWTP</b>		<b>70</b>

Hackensack River	BCUA001	10
Arthur Kill	JMEUC	7
Raritan River	MCUA	14
Hudson River	NHSA001	1
Hudson River	Woodcliff	0
Hudson River	NHSA002	2
Hudson River	BCUA002	0
Arthur Kill	NJ0024643	3
Arthur Kill	NJ0024953	2
Hackensack River	NJ0025038	0
Hackensack River	NJ0034339	1
<b>Total WWTP</b>		<b>70</b>

Totals by Waterbody		
Waterbody	Outfall	Total Discharge (MG/Yr)
Arthur Kill		74,507
Elizabeth River		9,300
Hackensack River		50,855
Hudson River		15,281,842
Kill Van Kull		497
Newark Bay		3,352
Passaic River		213,612
Raritan River		292,856
Upper NY Bay		77,270

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		14,445
Elizabeth River		18,345
Hackensack River		29,160
Hudson River		61,981
Kill Van Kull		7,105
Newark Bay		10,715
Passaic River		47,194
Raritan River		33,261
Upper NY Bay		2,956

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		24,584
Elizabeth River		7,088
Hackensack River		9,988
Hudson River		32,382
Kill Van Kull		2,973
Newark Bay		10,287
Passaic River		33,432
Raritan River		49,567
Upper NY Bay		2,138

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		11,182
Elizabeth River		13,639
Hackensack River		19,732
Hudson River		35,337
Kill Van Kull		4,653
Newark Bay		7,715
Passaic River		35,324
Raritan River		29,675
Upper NY Bay		1,982

Totals by Source		
Source	Outfall	Total Discharge (MG/Yr)
CSO		7,697
Storm		100,994
River		15,711,019
Dry		129
WWTP		185,548

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		99,563
Storm		47,442
River		58,215
Dry		19,590
WWTP		351

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		44,556
Storm		92,243
River		32,269
Dry		3,300
WWTP		70

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		65,559
Storm		42,766
River		38,604
Dry		12,240
WWTP		70

Totals by Source by Waterbody		
Waterbody	Source	Total Discharge (MG/Yr)
Arthur Kill	CSO	274
	Storm	41,035
	River	0
	Dry	0
	WWTP	33,198
Elizabeth River	CSO	972
	Storm	0
	River	8,311
	Dry	16
	WWTP	0
Hackensack River	CSO	1,027
	Storm	11,501
	River	9,088
	Dry	67
	WWTP	29,173

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	4,990
	Storm	9,392
	River	0
	Dry	0
	WWTP	63
Elizabeth River	CSO	11,209
	Storm	0
	River	4,636
	Dry	2,500
	WWTP	0
Hackensack River	CSO	14,092
	Storm	4,866
	River	47
	Dry	10,100
	WWTP	55

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	1,792
	Storm	22,779
	River	0
	Dry	0
	WWTP	13
Elizabeth River	CSO	5,432
	Storm	0
	River	1,235
	Dry	421
	WWTP	0
Hackensack River	CSO	6,059
	Storm	2,191
	River	27
	Dry	1,700
	WWTP	11

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	3,233
	Storm	7,937
	River	0
	Dry	0
	WWTP	13
Elizabeth River	CSO	7,431
	Storm	0
	River	4,648
	Dry	1,560
	WWTP	0
Hackensack River	CSO	9,250
	Storm	4,112
	River	39
	Dry	6,320
	WWTP	11

Hudson River	CSO	1,269
	Storm	4,440
	River	15,266,062
	Dry	0
	WWTP	10,072
Kill Van Kull	CSO	497
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	1,066
	Storm	2,286
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	1,901
	Storm	7,739
	River	203,942
	Dry	30
	WWTP	0
Raritan River	CSO	259
	Storm	32,697
	River	223,616
	Dry	16
	WWTP	36,268
Upper NY Bay	CSO	433
	Storm	0
	River	0
	Dry	0
	WWTP	76,837

Hudson River	CSO	17,162
	Storm	3,799
	River	41,000
	Dry	0
	WWTP	19
Kill Van Kull	CSO	7,105
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	8,921
	Storm	1,794
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	30,571
	Storm	3,439
	River	8,564
	Dry	4,620
	WWTP	0
Raritan River	CSO	2,703
	Storm	24,152
	River	3,967
	Dry	2,370
	WWTP	69
Upper NY Bay	CSO	2,810
	Storm	0
	River	0
	Dry	0
	WWTP	145

Hudson River	CSO	7,450
	Storm	10,192
	River	14,735
	Dry	0
	WWTP	4
Kill Van Kull	CSO	2,973
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	5,476
	Storm	4,811
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	11,856
	Storm	8,897
	River	11,900
	Dry	779
	WWTP	0
Raritan River	CSO	1,408
	Storm	43,373
	River	4,372
	Dry	400
	WWTP	14
Upper NY Bay	CSO	2,109
	Storm	0
	River	0
	Dry	0
	WWTP	29

Hudson River	CSO	11,274
	Storm	3,521
	River	20,538
	Dry	0
	WWTP	4
Kill Van Kull	CSO	4,653
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	6,053
	Storm	1,662
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	19,909
	Storm	3,128
	River	9,407
	Dry	2,880
	WWTP	0
Raritan River	CSO	1,804
	Storm	22,406
	River	3,971
	Dry	1,480
	WWTP	14
Upper NY Bay	CSO	1,953
	Storm	0
	River	0
	Dry	0
	WWTP	29





# Appendix C-3

## Baseline Loads



Volume

Fecal Coliform

Enterococcus

E. Coli

Combined Sewer Outfalls		
Waterbody	Outfall	Total Discharge (MG/Yr)
Arthur Kill	EL030	2
Arthur Kill	EL031	15
Arthur Kill	EL032	7
Arthur Kill	EL037	55
Arthur Kill	PA002	64
Arthur Kill	PA003	33
Arthur Kill	PA004	9
Arthur Kill	PA005	10
Arthur Kill	PA006	19
Arthur Kill	PA007	5
Arthur Kill	PA008	3
Arthur Kill	PA009	2
Arthur Kill	PA010	2
Elizabeth River	EL003	59
Elizabeth River	EL005	85
Elizabeth River	EL008	8
Elizabeth River	EL010	17
Elizabeth River	EL011	17
Elizabeth River	EL012	4
Elizabeth River	EL014	1
Elizabeth River	EL016	16
Elizabeth River	EL021	1
Elizabeth River	EL022	66
Elizabeth River	EL026	53
Elizabeth River	EL027	35
Elizabeth River	EL028	34
Elizabeth River	EL029	41
Elizabeth River	EL035	40
Elizabeth River	EL036a	10
Elizabeth River	EL036b	33
Elizabeth River	EL038	8
Elizabeth River	EL040	14
Elizabeth River	EL041	172
Elizabeth River	EL042	37
Elizabeth River	EL043	0
Hackensack River	HK001	105
Hackensack River	HK002	151
Hackensack River	JC001	90
Hackensack River	JC002	49
Hackensack River	JC003	85
Hackensack River	JC004	34
Hackensack River	JC005	17
Hackensack River	JC006	92
Hackensack River	JC007	46
Hackensack River	JC008	130
Hackensack River	JC009	50
Hackensack River	JC010	37
Hackensack River	NB003	154

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	8
Arthur Kill	EL031	160
Arthur Kill	EL032	30
Arthur Kill	EL037	362
Arthur Kill	PA002	1,534
Arthur Kill	PA003	1,152
Arthur Kill	PA004	110
Arthur Kill	PA005	261
Arthur Kill	PA006	423
Arthur Kill	PA007	44
Arthur Kill	PA008	30
Arthur Kill	PA009	7
Arthur Kill	PA010	12
Elizabeth River	EL003	192
Elizabeth River	EL005	935
Elizabeth River	EL008	144
Elizabeth River	EL010	97
Elizabeth River	EL011	85
Elizabeth River	EL012	44
Elizabeth River	EL014	2
Elizabeth River	EL016	171
Elizabeth River	EL021	17
Elizabeth River	EL022	1,325
Elizabeth River	EL026	1,294
Elizabeth River	EL027	170
Elizabeth River	EL028	161
Elizabeth River	EL029	419
Elizabeth River	EL035	434
Elizabeth River	EL036a	84
Elizabeth River	EL036b	265
Elizabeth River	EL038	74
Elizabeth River	EL040	146
Elizabeth River	EL041	1,250
Elizabeth River	EL042	287
Elizabeth River	EL043	0
Hackensack River	HK001	1,811
Hackensack River	HK002	2,697
Hackensack River	JC001	4,545
Hackensack River	JC002	2,271
Hackensack River	JC003	3,999
Hackensack River	JC004	1,375
Hackensack River	JC005	591
Hackensack River	JC006	4,338
Hackensack River	JC007	1,872
Hackensack River	JC008	3,555
Hackensack River	JC009	2,168
Hackensack River	JC010	1,718
Hackensack River	NB003	2,151

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	9
Arthur Kill	EL031	81
Arthur Kill	EL032	34
Arthur Kill	EL037	270
Arthur Kill	PA002	470
Arthur Kill	PA003	295
Arthur Kill	PA004	52
Arthur Kill	PA005	77
Arthur Kill	PA006	136
Arthur Kill	PA007	27
Arthur Kill	PA008	15
Arthur Kill	PA009	8
Arthur Kill	PA010	8
Elizabeth River	EL003	262
Elizabeth River	EL005	467
Elizabeth River	EL008	54
Elizabeth River	EL010	81
Elizabeth River	EL011	79
Elizabeth River	EL012	24
Elizabeth River	EL014	4
Elizabeth River	EL016	88
Elizabeth River	EL021	8
Elizabeth River	EL022	450
Elizabeth River	EL026	393
Elizabeth River	EL027	163
Elizabeth River	EL028	157
Elizabeth River	EL029	220
Elizabeth River	EL035	220
Elizabeth River	EL036a	53
Elizabeth River	EL036b	167
Elizabeth River	EL038	44
Elizabeth River	EL040	76
Elizabeth River	EL041	858
Elizabeth River	EL042	187
Elizabeth River	EL043	0
Hackensack River	HK001	674
Hackensack River	HK002	982
Hackensack River	JC001	1,003
Hackensack River	JC002	517
Hackensack River	JC003	907
Hackensack River	JC004	329
Hackensack River	JC005	151
Hackensack River	JC006	980
Hackensack River	JC007	449
Hackensack River	JC008	1,020
Hackensack River	JC009	507
Hackensack River	JC010	392
Hackensack River	NB003	913

Combined Sewer Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	EL030	6
Arthur Kill	EL031	107
Arthur Kill	EL032	22
Arthur Kill	EL037	252
Arthur Kill	PA002	984
Arthur Kill	PA003	732
Arthur Kill	PA004	73
Arthur Kill	PA005	167
Arthur Kill	PA006	272
Arthur Kill	PA007	30
Arthur Kill	PA008	20
Arthur Kill	PA009	5
Arthur Kill	PA010	8
Elizabeth River	EL003	147
Elizabeth River	EL005	622
Elizabeth River	EL008	94
Elizabeth River	EL010	69
Elizabeth River	EL011	61
Elizabeth River	EL012	30
Elizabeth River	EL014	2
Elizabeth River	EL016	114
Elizabeth River	EL021	11
Elizabeth River	EL022	855
Elizabeth River	EL026	830
Elizabeth River	EL027	123
Elizabeth River	EL028	116
Elizabeth River	EL029	279
Elizabeth River	EL035	289
Elizabeth River	EL036a	57
Elizabeth River	EL036b	181
Elizabeth River	EL038	50
Elizabeth River	EL040	97
Elizabeth River	EL041	859
Elizabeth River	EL042	196
Elizabeth River	EL043	0
Hackensack River	HK001	1,176
Hackensack River	HK002	1,749
Hackensack River	JC001	2,871
Hackensack River	JC002	1,435
Hackensack River	JC003	2,528
Hackensack River	JC004	871
Hackensack River	JC005	375
Hackensack River	JC006	2,741
Hackensack River	JC007	1,186
Hackensack River	JC008	2,272
Hackensack River	JC009	1,372
Hackensack River	JC010	1,086
Hackensack River	NB003	1,410

Hackensack River	NB005	26
Hackensack River	NB006	0
Hackensack River	NB007	14
Hackensack River	NB008	24
Hackensack River	NB009	28
Hackensack River	NB010	1
Hackensack River	NB011	20
Hackensack River	NB014	7
Hackensack River	RP001	18
Hackensack River	RP002	4
Hackensack River	RP003	15
Hackensack River	RP004	19
Hackensack River	RP005	9
Hackensack River	RP006	1
Hudson River	FL001	73
Hudson River	FL002	13
Hudson River	GU001	38
Hudson River	JC020	69
Hudson River	JC025	46
Hudson River	JC026	2
Hudson River	JC028	84
Hudson River	JC029	230
Hudson River	NB004	13
Hudson River	NH002A1	191
Hudson River	NH002A2	26
Hudson River	NH003A	95
Hudson River	NH005A	65
Hudson River	NH006A	17
Hudson River	NH008A	15
Hudson River	NH012A	8
Hudson River	NH013A	243
Hudson River	NH015A	25
Kill Van Kull	BA001	380
Kill Van Kull	BA002	12
Kill Van Kull	BA003	8
Kill Van Kull	BA004	0
Kill Van Kull	BA008	6
Kill Van Kull	BA009	3
Kill Van Kull	BA010	15
Kill Van Kull	BA011	5
Kill Van Kull	BA022	0
Kill Van Kull	BA024	0
Kill Van Kull	BA037	1
Newark Bay	BA012	12
Newark Bay	BA013	1
Newark Bay	BA014	13
Newark Bay	BA015	45
Newark Bay	BA016	6
Newark Bay	BA017	52
Newark Bay	BA018	14
Newark Bay	BA019	35
Newark Bay	BA020	10

Hackensack River	NB005	329
Hackensack River	NB006	0
Hackensack River	NB007	495
Hackensack River	NB008	255
Hackensack River	NB009	376
Hackensack River	NB010	8
Hackensack River	NB011	206
Hackensack River	NB014	54
Hackensack River	RP001	373
Hackensack River	RP002	67
Hackensack River	RP003	77
Hackensack River	RP004	222
Hackensack River	RP005	141
Hackensack River	RP006	8
Hudson River	FL001	2,334
Hudson River	FL002	779
Hudson River	GU001	1,312
Hudson River	JC020	3,180
Hudson River	JC025	2,364
Hudson River	JC026	105
Hudson River	JC028	3,863
Hudson River	JC029	9,359
Hudson River	NB004	216
Hudson River	NH002A1	2,104
Hudson River	NH002A2	64
Hudson River	NH003A	980
Hudson River	NH005A	148
Hudson River	NH006A	32
Hudson River	NH008A	26
Hudson River	NH012A	12
Hudson River	NH013A	668
Hudson River	NH015A	41
Kill Van Kull	BA001	5,475
Kill Van Kull	BA002	47
Kill Van Kull	BA003	42
Kill Van Kull	BA004	1
Kill Van Kull	BA008	35
Kill Van Kull	BA009	12
Kill Van Kull	BA010	107
Kill Van Kull	BA011	13
Kill Van Kull	BA022	0
Kill Van Kull	BA024	1
Kill Van Kull	BA037	4
Newark Bay	BA012	47
Newark Bay	BA013	1
Newark Bay	BA014	68
Newark Bay	BA015	478
Newark Bay	BA016	49
Newark Bay	BA017	1,383
Newark Bay	BA018	175
Newark Bay	BA019	279
Newark Bay	BA020	48

Hackensack River	NB005	150
Hackensack River	NB006	0
Hackensack River	NB007	127
Hackensack River	NB008	132
Hackensack River	NB009	163
Hackensack River	NB010	6
Hackensack River	NB011	107
Hackensack River	NB014	36
Hackensack River	RP001	124
Hackensack River	RP002	24
Hackensack River	RP003	72
Hackensack River	RP004	107
Hackensack River	RP005	55
Hackensack River	RP006	4
Hudson River	FL001	622
Hudson River	FL002	161
Hudson River	GU001	338
Hudson River	JC020	728
Hudson River	JC025	517
Hudson River	JC026	22
Hudson River	JC028	884
Hudson River	JC029	2,241
Hudson River	NB004	83
Hudson River	NH002A1	1,053
Hudson River	NH002A2	110
Hudson River	NH003A	514
Hudson River	NH005A	278
Hudson River	NH006A	73
Hudson River	NH008A	63
Hudson River	NH012A	33
Hudson River	NH013A	1,052
Hudson River	NH015A	103
Kill Van Kull	BA001	2,279
Kill Van Kull	BA002	54
Kill Van Kull	BA003	36
Kill Van Kull	BA004	1
Kill Van Kull	BA008	28
Kill Van Kull	BA009	14
Kill Van Kull	BA010	76
Kill Van Kull	BA011	22
Kill Van Kull	BA022	0
Kill Van Kull	BA024	2
Kill Van Kull	BA037	5
Newark Bay	BA012	53
Newark Bay	BA013	3
Newark Bay	BA014	62
Newark Bay	BA015	247
Newark Bay	BA016	30
Newark Bay	BA017	402
Newark Bay	BA018	79
Newark Bay	BA019	178
Newark Bay	BA020	45

Hackensack River	NB005	217
Hackensack River	NB006	0
Hackensack River	NB007	314
Hackensack River	NB008	170
Hackensack River	NB009	247
Hackensack River	NB010	5
Hackensack River	NB011	137
Hackensack River	NB014	37
Hackensack River	RP001	240
Hackensack River	RP002	43
Hackensack River	RP003	55
Hackensack River	RP004	147
Hackensack River	RP005	92
Hackensack River	RP006	5
Hudson River	FL001	1,487
Hudson River	FL002	490
Hudson River	GU001	834
Hudson River	JC020	2,012
Hudson River	JC025	1,492
Hudson River	JC026	66
Hudson River	JC028	2,443
Hudson River	JC029	5,930
Hudson River	NB004	140
Hudson River	NH002A1	1,399
Hudson River	NH002A2	52
Hudson River	NH003A	655
Hudson River	NH005A	123
Hudson River	NH006A	28
Hudson River	NH008A	23
Hudson River	NH012A	11
Hudson River	NH013A	531
Hudson River	NH015A	37
Kill Van Kull	BA001	3,584
Kill Van Kull	BA002	35
Kill Van Kull	BA003	30
Kill Van Kull	BA004	1
Kill Van Kull	BA008	24
Kill Van Kull	BA009	9
Kill Van Kull	BA010	74
Kill Van Kull	BA011	10
Kill Van Kull	BA022	0
Kill Van Kull	BA024	1
Kill Van Kull	BA037	3
Newark Bay	BA012	35
Newark Bay	BA013	1
Newark Bay	BA014	48
Newark Bay	BA015	319
Newark Bay	BA016	33
Newark Bay	BA017	885
Newark Bay	BA018	115
Newark Bay	BA019	190
Newark Bay	BA020	34

Newark Bay	BA026	1
Newark Bay	BA028	0
Newark Bay	BA029	7
Newark Bay	BA030	2
Newark Bay	BA034	0
Newark Bay	EL001	83
Newark Bay	EL002	32
Newark Bay	EL034	74
Newark Bay	EL039	10
Newark Bay	JC011	79
Newark Bay	JC013	98
Newark Bay	NE023	23
Newark Bay	NE023_Stor	239
Newark Bay	NE025	65
Newark Bay	NE026	23
Newark Bay	NE027	14
Newark Bay	NE030	11
Newark Bay	NE030_Stor	46
Passaic River	EN001	17
Passaic River	HR001	2
Passaic River	HR002	3
Passaic River	HR003	13
Passaic River	HR004	0
Passaic River	HR005	20
Passaic River	HR006	8
Passaic River	HR007	14
Passaic River	KE001	4
Passaic River	KE004	13
Passaic River	KE006	122
Passaic River	KE007	90
Passaic River	KE010	27
Passaic River	NE002	98
Passaic River	NE003	0
Passaic River	NE003_Stor	60
Passaic River	NE004	2
Passaic River	NE005	24
Passaic River	NE008	99
Passaic River	NE009	191
Passaic River	NE010	191
Passaic River	NE014	194
Passaic River	NE015	84
Passaic River	NE016	57
Passaic River	NE017	114
Passaic River	NE018	81
Passaic River	NE022	45
Passaic River	PT001	14
Passaic River	PT002	0
Passaic River	PT003	1
Passaic River	PT004	0
Passaic River	PT005	2
Passaic River	PT006	25
Passaic River	PT007	34

Newark Bay	BA026	2
Newark Bay	BA028	0
Newark Bay	BA029	34
Newark Bay	BA030	3
Newark Bay	BA034	0
Newark Bay	EL001	841
Newark Bay	EL002	142
Newark Bay	EL034	476
Newark Bay	EL039	33
Newark Bay	JC011	3,174
Newark Bay	JC013	3,373
Newark Bay	NE023	188
Newark Bay	NE023_Stor	371
Newark Bay	NE025	631
Newark Bay	NE026	205
Newark Bay	NE027	90
Newark Bay	NE030	77
Newark Bay	NE030_Stor	72
Passaic River	EN001	173
Passaic River	HR001	17
Passaic River	HR002	10
Passaic River	HR003	35
Passaic River	HR004	1
Passaic River	HR005	89
Passaic River	HR006	59
Passaic River	HR007	53
Passaic River	KE001	16
Passaic River	KE004	42
Passaic River	KE006	1,631
Passaic River	KE007	762
Passaic River	KE010	137
Passaic River	NE002	1,248
Passaic River	NE003	0
Passaic River	NE003_Stor	93
Passaic River	NE004	22
Passaic River	NE005	1,110
Passaic River	NE008	3,002
Passaic River	NE009	5,872
Passaic River	NE010	5,872
Passaic River	NE014	6,822
Passaic River	NE015	2,292
Passaic River	NE016	858
Passaic River	NE017	1,621
Passaic River	NE018	1,964
Passaic River	NE022	280
Passaic River	PT001	479
Passaic River	PT002	2
Passaic River	PT003	3
Passaic River	PT004	2
Passaic River	PT005	24
Passaic River	PT006	390
Passaic River	PT007	672

Newark Bay	BA026	5
Newark Bay	BA028	0
Newark Bay	BA029	34
Newark Bay	BA030	7
Newark Bay	BA034	1
Newark Bay	EL001	449
Newark Bay	EL002	148
Newark Bay	EL034	360
Newark Bay	EL039	44
Newark Bay	JC011	765
Newark Bay	JC013	867
Newark Bay	NE023	118
Newark Bay	NE023_Stor	995
Newark Bay	NE025	345
Newark Bay	NE026	119
Newark Bay	NE027	68
Newark Bay	NE030	54
Newark Bay	NE030_Stor	193
Passaic River	EN001	93
Passaic River	HR001	10
Passaic River	HR002	14
Passaic River	HR003	56
Passaic River	HR004	1
Passaic River	HR005	93
Passaic River	HR006	41
Passaic River	HR007	64
Passaic River	KE001	18
Passaic River	KE004	55
Passaic River	KE006	715
Passaic River	KE007	464
Passaic River	KE010	125
Passaic River	NE002	565
Passaic River	NE003	0
Passaic River	NE003_Stor	251
Passaic River	NE004	9
Passaic River	NE005	254
Passaic River	NE008	819
Passaic River	NE009	1,593
Passaic River	NE010	1,593
Passaic River	NE014	1,740
Passaic River	NE015	657
Passaic River	NE016	348
Passaic River	NE017	679
Passaic River	NE018	598
Passaic River	NE022	219
Passaic River	PT001	122
Passaic River	PT002	1
Passaic River	PT003	4
Passaic River	PT004	1
Passaic River	PT005	13
Passaic River	PT006	155
Passaic River	PT007	230

Newark Bay	BA026	2
Newark Bay	BA028	0
Newark Bay	BA029	25
Newark Bay	BA030	3
Newark Bay	BA034	0
Newark Bay	EL001	562
Newark Bay	EL002	103
Newark Bay	EL034	331
Newark Bay	EL039	25
Newark Bay	JC011	2,012
Newark Bay	JC013	2,144
Newark Bay	NE023	128
Newark Bay	NE023_Stor	344
Newark Bay	NE025	423
Newark Bay	NE026	138
Newark Bay	NE027	63
Newark Bay	NE030	53
Newark Bay	NE030_Stor	67
Passaic River	EN001	116
Passaic River	HR001	11
Passaic River	HR002	7
Passaic River	HR003	28
Passaic River	HR004	1
Passaic River	HR005	65
Passaic River	HR006	41
Passaic River	HR007	40
Passaic River	KE001	12
Passaic River	KE004	32
Passaic River	KE006	1,072
Passaic River	KE007	517
Passaic River	KE010	98
Passaic River	NE002	823
Passaic River	NE003	0
Passaic River	NE003_Stor	87
Passaic River	NE004	15
Passaic River	NE005	702
Passaic River	NE008	1,914
Passaic River	NE009	3,742
Passaic River	NE010	3,742
Passaic River	NE014	4,334
Passaic River	NE015	1,465
Passaic River	NE016	561
Passaic River	NE017	1,062
Passaic River	NE018	1,259
Passaic River	NE022	195
Passaic River	PT001	304
Passaic River	PT002	1
Passaic River	PT003	2
Passaic River	PT004	1
Passaic River	PT005	16
Passaic River	PT006	255
Passaic River	PT007	434

Passaic River	PT010	5
Passaic River	PT012	2
Passaic River	PT013	10
Passaic River	PT014	0
Passaic River	PT015_Comb	1
Passaic River	PT015_Stor	0
Passaic River	PT016	13
Passaic River	PT017	7
Passaic River	PT021_Comb	7
Passaic River	PT021_Stor	0
Passaic River	PT022	22
Passaic River	PT023_Comb	9
Passaic River	PT023_Stor	0
Passaic River	PT024_Comb	16
Passaic River	PT024_Stor	0
Passaic River	PT025	97
Passaic River	PT026	1
Passaic River	PT027	48
Passaic River	PT028_Comb	0
Passaic River	PT028_Stor	80
Passaic River	PT029_Comb	12
Passaic River	PT029_Stor	193
Passaic River	PT030	3
Passaic River	PT031	8
Passaic River	PT032	16
Raritan River	PA011	10
Raritan River	PA013	33
Raritan River	PA014	12
Raritan River	PA015	14
Raritan River	PA016	103
Raritan River	PA017	9
Raritan River	PA019	62
Upper NY Bay	BA006	12
Upper NY Bay	BA006_stor	26
Upper NY Bay	BA007	56
Upper NY Bay	BA021	53
Upper NY Bay	JC014	22
Upper NY Bay	JC015	30
Upper NY Bay	JC016	75
Upper NY Bay	JC018	198
<b>Total CSO</b>		<b>7,804</b>

Passaic River	PT010	35
Passaic River	PT012	9
Passaic River	PT013	183
Passaic River	PT014	0
Passaic River	PT015_Comb	2
Passaic River	PT015_Stor	0
Passaic River	PT016	120
Passaic River	PT017	104
Passaic River	PT021_Comb	184
Passaic River	PT021_Stor	0
Passaic River	PT022	756
Passaic River	PT023_Comb	203
Passaic River	PT023_Stor	0
Passaic River	PT024_Comb	315
Passaic River	PT024_Stor	0
Passaic River	PT025	1,300
Passaic River	PT026	1
Passaic River	PT027	792
Passaic River	PT028_Comb	0
Passaic River	PT028_Stor	125
Passaic River	PT029_Comb	367
Passaic River	PT029_Stor	300
Passaic River	PT030	13
Passaic River	PT031	46
Passaic River	PT032	278
Raritan River	PA011	158
Raritan River	PA013	670
Raritan River	PA014	197
Raritan River	PA015	330
Raritan River	PA016	1,050
Raritan River	PA017	33
Raritan River	PA019	341
Upper NY Bay	BA006	72
Upper NY Bay	BA006_stor	40
Upper NY Bay	BA007	291
Upper NY Bay	BA021	555
Upper NY Bay	JC014	1,874
Upper NY Bay	JC015	2,498
Upper NY Bay	JC016	2,465
Upper NY Bay	JC018	5,147
<b>Total CSO</b>		<b>149,505</b>

Passaic River	PT010	23
Passaic River	PT012	8
Passaic River	PT013	66
Passaic River	PT014	1
Passaic River	PT015_Comb	3
Passaic River	PT015_Stor	0
Passaic River	PT016	67
Passaic River	PT017	42
Passaic River	PT021_Comb	53
Passaic River	PT021_Stor	0
Passaic River	PT022	195
Passaic River	PT023_Comb	66
Passaic River	PT023_Stor	0
Passaic River	PT024_Comb	110
Passaic River	PT024_Stor	0
Passaic River	PT025	567
Passaic River	PT026	3
Passaic River	PT027	303
Passaic River	PT028_Comb	0
Passaic River	PT028_Stor	335
Passaic River	PT029_Comb	99
Passaic River	PT029_Stor	805
Passaic River	PT030	16
Passaic River	PT031	38
Passaic River	PT032	104
Raritan River	PA011	63
Raritan River	PA013	227
Raritan River	PA014	77
Raritan River	PA015	103
Raritan River	PA016	555
Raritan River	PA017	41
Raritan River	PA019	295
Upper NY Bay	BA006	56
Upper NY Bay	BA006_stor	108
Upper NY Bay	BA007	262
Upper NY Bay	BA021	289
Upper NY Bay	JC014	356
Upper NY Bay	JC015	475
Upper NY Bay	JC016	646
Upper NY Bay	JC018	1,515
<b>Total CSO</b>		<b>52,102</b>

Passaic River	PT010	24
Passaic River	PT012	6
Passaic River	PT013	119
Passaic River	PT014	0
Passaic River	PT015_Comb	2
Passaic River	PT015_Stor	0
Passaic River	PT016	81
Passaic River	PT017	68
Passaic River	PT021_Comb	118
Passaic River	PT021_Stor	0
Passaic River	PT022	481
Passaic River	PT023_Comb	131
Passaic River	PT023_Stor	0
Passaic River	PT024_Comb	203
Passaic River	PT024_Stor	0
Passaic River	PT025	854
Passaic River	PT026	1
Passaic River	PT027	515
Passaic River	PT028_Comb	0
Passaic River	PT028_Stor	116
Passaic River	PT029_Comb	234
Passaic River	PT029_Stor	278
Passaic River	PT030	10
Passaic River	PT031	32
Passaic River	PT032	181
Raritan River	PA011	103
Raritan River	PA013	433
Raritan River	PA014	129
Raritan River	PA015	212
Raritan River	PA016	702
Raritan River	PA017	25
Raritan River	PA019	242
Upper NY Bay	BA006	50
Upper NY Bay	BA006_stor	37
Upper NY Bay	BA007	207
Upper NY Bay	BA021	371
Upper NY Bay	JC014	1,176
Upper NY Bay	JC015	1,568
Upper NY Bay	JC016	1,567
Upper NY Bay	JC018	3,294
<b>Total CSO</b>		<b>96,671</b>

Stormwater Outfalls		
Waterbody	Outfall	Total Discharge, (MG/Yr)
Arthur Kill	49a.1	32,319
Arthur Kill	50.1	6,767
Arthur Kill	64.1	5,544
Elizabeth River	56a.d	0
Hackensack River	126.d	753
Hackensack River	136.d	1,771
Hackensack River	145.d	600

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	2,070
Arthur Kill	50.1	17
Arthur Kill	64.1	7,137
Elizabeth River	56a.d	0
Hackensack River	126.d	2
Hackensack River	136.d	169
Hackensack River	145.d	10

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	2,532
Arthur Kill	50.1	9
Arthur Kill	64.1	19,147
Elizabeth River	56a.d	0
Hackensack River	126.d	0
Hackensack River	136.d	6
Hackensack River	145.d	4

Stormwater Outfalls		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	49a.1	1,035
Arthur Kill	50.1	8
Arthur Kill	64.1	6,614
Elizabeth River	56a.d	0
Hackensack River	126.d	1
Hackensack River	136.d	85
Hackensack River	145.d	5

Hackensack River	146.d	475
Hackensack River	151.d	724
Hackensack River	152.d	4,133
Hackensack River	160.d	388
Hackensack River	BerrysCka.	4,802
Hudson River	Hudson1.1	2,427
Hudson River	Hudson2.1	3,322
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	2,222
Overpeck Creek	165.1	1,302
Passaic River	104.1	3,479
Passaic River	111.d	320
Passaic River	115.d	926
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	5,807
Passaic River	Frank's Cr	320
Raritan River	12a.d	5,210
Raritan River	14.1	14,102
Raritan River	18.d	3,137
Raritan River	31.d	8,269
Raritan River	7.1	0
Raritan River	9.d	5,332
Upper NY Bay	Hudson3.1	0
Raritan River	10.d	3,344
<b>Total Stormwater</b>		<b>117,794</b>

Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	5,595
Hackensack River	160.d	0
Hackensack River	BerrysCka.	955
Hudson River	Hudson1.1	2,847
Hudson River	Hudson2.1	2,974
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	1,688
Overpeck Creek	165.1	0
Passaic River	104.1	4,846
Passaic River	111.d	110
Passaic River	115.d	107
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	240
Passaic River	Frank's Cr	24
Raritan River	12a.d	6,965
Raritan River	14.1	402
Raritan River	18.d	4,092
Raritan River	31.d	10,293
Raritan River	7.1	0
Raritan River	9.d	7,013
Upper NY Bay	Hudson3.1	0
Raritan River	10.d	111
<b>Total Stormwater</b>		<b>57,669</b>

Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	2,047
Hackensack River	160.d	0
Hackensack River	BerrysCka.	976
Hudson River	Hudson1.1	7,638
Hudson River	Hudson2.1	7,979
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	4,529
Overpeck Creek	165.1	0
Passaic River	104.1	12,994
Passaic River	111.d	294
Passaic River	115.d	287
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	188
Passaic River	Frank's Cr	38
Raritan River	12a.d	2,548
Raritan River	14.1	439
Raritan River	18.d	10,979
Raritan River	31.d	27,615
Raritan River	7.1	0
Raritan River	9.d	2,566
Upper NY Bay	Hudson3.1	0
Raritan River	10.d	129
<b>Total Stormwater</b>		<b>102,942</b>

Hackensack River	146.d	0
Hackensack River	151.d	0
Hackensack River	152.d	5,186
Hackensack River	160.d	0
Hackensack River	BerrysCka.	478
Hudson River	Hudson1.1	2,639
Hudson River	Hudson2.1	2,756
Newark Bay	82b.1	0
Newark Bay	NewarkBay1	1,565
Overpeck Creek	165.1	0
Passaic River	104.1	4,490
Passaic River	111.d	102
Passaic River	115.d	99
Passaic River	124.1	0
Passaic River	80.1	0
Passaic River	99.1	154
Passaic River	Frank's Cr	12
Raritan River	12a.d	6,456
Raritan River	14.1	390
Raritan River	18.d	3,793
Raritan River	31.d	9,540
Raritan River	7.1	0
Raritan River	9.d	6,499
Upper NY Bay	Hudson3.1	0
Raritan River	10.d	110
<b>Total Stormwater</b>		<b>52,015</b>

River Discharges		
Waterbody	Outfall	Total Discharge (MG/Yr)
Hudson River	Hudson R	12,598,365
Hackensack River	Hackensa	24,024
Passaic River	Passaic	291,144
Passaic River	Saddle R	29,487
Raritan River	Raritan	307,549
Hudson River	Norman K	37,330
Hudson River	Mooorden	13,647
Hudson River	Esopus C	524,778
Hudson River	Wallkill	1,093,778
Hudson River	Wappinge	235,858
Hudson River	Croton R	198,145
Hudson River	Sawmill	157,328
Hudson River	Catskill	259,269
Passaic River	1392500.1	8,978
Elizabeth River	1393450.1	8,422
Passaic River	110.1	9,019
Passaic River	120a.d	8,023
Raritan River	23.1	56,047
<b>Total River</b>		<b>15,861,188</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	46,597
Hackensack River	Hackensa	161
Passaic River	Passaic	3,960
Passaic River	Saddle R	1,371
Raritan River	Raritan	7,625
Hudson River	Norman K	1
Hudson River	Mooorden	1
Hudson River	Esopus C	20
Hudson River	Wallkill	41
Hudson River	Wappinge	9
Hudson River	Croton R	8
Hudson River	Sawmill	6
Hudson River	Catskill	10
Passaic River	1392500.1	1,820
Elizabeth River	1393450.1	4,702
Passaic River	110.1	3,817
Passaic River	120a.d	1,460
Raritan River	23.1	1,215
<b>Total River</b>		<b>72,823</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	13,508
Hackensack River	Hackensa	75
Passaic River	Passaic	5,771
Passaic River	Saddle R	2,255
Raritan River	Raritan	8,032
Hudson River	Norman K	1
Hudson River	Mooorden	1
Hudson River	Esopus C	20
Hudson River	Wallkill	41
Hudson River	Wappinge	9
Hudson River	Croton R	8
Hudson River	Sawmill	6
Hudson River	Catskill	10
Passaic River	1392500.1	1,396
Elizabeth River	1393450.1	1,206
Passaic River	110.1	4,483
Passaic River	120a.d	1,195
Raritan River	23.1	1,306
<b>Total River</b>		<b>39,323</b>

River Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Hudson River	Hudson R	23,299
Hackensack River	Hackensa	128
Passaic River	Passaic	3,851
Passaic River	Saddle R	1,388
Raritan River	Raritan	7,377
Hudson River	Norman K	1
Hudson River	Mooorden	1
Hudson River	Esopus C	20
Hudson River	Wallkill	41
Hudson River	Wappinge	9
Hudson River	Croton R	8
Hudson River	Sawmill	6
Hudson River	Catskill	10
Passaic River	1392500.1	2,714
Elizabeth River	1393450.1	4,502
Passaic River	110.1	2,667
Passaic River	120a.d	2,264
Raritan River	23.1	1,188
<b>Total River</b>		<b>49,474</b>

Dry-weather Loads		
Waterbody	Outfall	Total Discharge (MG/Yr) Equivalent

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)

Dry-weather Loads		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)

Elizabeth River	Elizabeth	16
Hackensack River	Hackensack	67
Passaic River	Passaic	30
Raritan River	Raritan	16
<b>Total Dry Load</b>		<b>129</b>

Elizabeth River	Elizabeth	2,500
Hackensack River	Hackensack	10,100
Passaic River	Passaic	4,620
Raritan River	Raritan	2,370
<b>Total Dry Load</b>		<b>19,590</b>

Elizabeth River	Elizabeth	421
Hackensack River	Hackensack	1,700
Passaic River	Passaic	779
Raritan River	Raritan	400
<b>Total Dry Load</b>		<b>3,300</b>

Elizabeth River	Elizabeth	1,560
Hackensack River	Hackensack	6,320
Passaic River	Passaic	2,880
Raritan River	Raritan	1,480
<b>Total Dry Load</b>		<b>12,240</b>

WWTP Discharges		
Waterbody	Outfall	Total Discharge (MG/Yr)
Upper NY Bay	PVSC	77,727
Hackensack River	BCUA001	27,997
Arthur Kill	JMEUC	21,570
Raritan River	NJ0020141	39,372
Hudson River	NHSA001	2,530
Hudson River	Woodcliff	1,062
Hudson River	NHSA002	5,265
Hudson River	NJ0020591	1,087
Arthur Kill	NJ0024643	9,190
Arthur Kill	NJ0024953	4,471
Hackensack River	NJ0025038	1,121
Hackensack River	NJ0034339	2,206
<b>Total WWTP</b>		<b>193,599</b>

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	PVSC	147
Hackensack River	BCUA001	53
Arthur Kill	JMEUC	41
Raritan River	NJ0020141	74
Hudson River	NHSA001	5
Hudson River	Woodcliff	2
Hudson River	NHSA002	10
Hudson River	NJ0020591	2
Arthur Kill	NJ0024643	17
Arthur Kill	NJ0024953	8
Hackensack River	NJ0025038	2
Hackensack River	NJ0034339	4
<b>Total WWTP</b>		<b>366</b>

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	PVSC	29
Hackensack River	BCUA001	11
Arthur Kill	JMEUC	8
Raritan River	NJ0020141	15
Hudson River	NHSA001	1
Hudson River	Woodcliff	0
Hudson River	NHSA002	2
Hudson River	NJ0020591	0
Arthur Kill	NJ0024643	3
Arthur Kill	NJ0024953	2
Hackensack River	NJ0025038	0
Hackensack River	NJ0034339	1
<b>Total WWTP</b>		<b>73</b>

WWTP Discharges		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Upper NY Bay	PVSC	29
Hackensack River	BCUA001	11
Arthur Kill	JMEUC	8
Raritan River	NJ0020141	15
Hudson River	NHSA001	1
Hudson River	Woodcliff	0
Hudson River	NHSA002	2
Hudson River	NJ0020591	0
Arthur Kill	NJ0024643	3
Arthur Kill	NJ0024953	2
Hackensack River	NJ0025038	0
Hackensack River	NJ0034339	1
<b>Total WWTP</b>		<b>73</b>

Totals by Waterbody		
Waterbody	Outfall	Total Discharge (MG/Yr)
Arthur Kill		80,088
Elizabeth River		9,192
Hackensack River		70,286
Hudson River		15,135,443
Kill Van Kull		431
Newark Bay		3,217
Passaic River		359,735
Raritan River		442,621
Upper NY Bay		78,199

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		13,421
Elizabeth River		14,800
Hackensack River		52,755
Hudson River		80,122
Kill Van Kull		5,736
Newark Bay		13,929
Passaic River		63,159
Raritan River		42,940
Upper NY Bay		13,091

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		23,184
Elizabeth River		5,683
Hackensack River		14,750
Hudson River		38,099
Kill Van Kull		2,518
Newark Bay		10,199
Passaic River		44,182
Raritan River		55,389
Upper NY Bay		3,736

Totals by Waterbody		
Waterbody	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill		10,348
Elizabeth River		11,144
Hackensack River		34,999
Hudson River		46,546
Kill Van Kull		3,771
Newark Bay		9,648
Passaic River		47,027
Raritan River		38,691
Upper NY Bay		8,300

Totals by Source		
Source	Outfall	Total Discharge (MG/Yr)
CSO		7,804
Storm		117,794
River		15,861,188
Dry		129
WWTP		193,599

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		149,505
Storm		57,669
River		72,823
Dry		19,590
WWTP		366

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		52,102
Storm		102,942
River		39,323
Dry		3,300
WWTP		73

Totals by Source		
Source	Outfall	Total Load (10 <sup>12</sup> cfu/Yr)
CSO		96,671
Storm		52,015
River		49,474
Dry		12,240
WWTP		73

Totals by Source by Waterbody		
Waterbody	Source	Total Discharge (MG/Yr)
Arthur Kill	CSO	227
	Storm	44,630
	River	0
	Dry	0
	WWTP	35,231

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	4,131
	Storm	9,224
	River	0
	Dry	0
	WWTP	67

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	1,484
	Storm	21,687
	River	0
	Dry	0
	WWTP	13

Totals by Source by Waterbody		
Waterbody	Source	Total Load (10 <sup>12</sup> cfu/Yr)
Arthur Kill	CSO	2,677
	Storm	7,658
	River	0
	Dry	0
	WWTP	13

Elizabeth River	CSO	754
	Storm	0
	River	8,422
	Dry	16
	WWTP	0
Hackensack River	CSO	1,227
	Storm	13,645
	River	24,024
	Dry	67
	WWTP	31,324
Hudson River	CSO	1,252
	Storm	5,750
	River	15,118,497
	Dry	0
	WWTP	9,944
Kill Van Kull	CSO	431
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	995
	Storm	2,222
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	2,202
	Storm	10,852
	River	346,650
	Dry	30
	WWTP	0
Raritan River	CSO	244
	Storm	39,393
	River	363,596
	Dry	16
	WWTP	39,372
Upper NY Bay	CSO	472
	Storm	0
	River	0
	Dry	0
	WWTP	77,727

Elizabeth River	CSO	7,598
	Storm	0
	River	4,702
	Dry	2,500
	WWTP	0
Hackensack River	CSO	35,701
	Storm	6,733
	River	161
	Dry	10,100
	WWTP	59
Hudson River	CSO	27,589
	Storm	5,821
	River	46,692
	Dry	0
	WWTP	19
Kill Van Kull	CSO	5,736
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	12,241
	Storm	1,688
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	40,785
	Storm	5,327
	River	12,427
	Dry	4,620
	WWTP	0
Raritan River	CSO	2,780
	Storm	28,875
	River	8,840
	Dry	2,370
	WWTP	74
Upper NY Bay	CSO	12,944
	Storm	0
	River	0
	Dry	0
	WWTP	147

Elizabeth River	CSO	4,056
	Storm	0
	River	1,206
	Dry	421
	WWTP	0
Hackensack River	CSO	9,930
	Storm	3,033
	River	75
	Dry	1,700
	WWTP	12
Hudson River	CSO	8,875
	Storm	15,617
	River	13,603
	Dry	0
	WWTP	4
Kill Van Kull	CSO	2,518
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	5,670
	Storm	4,529
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	14,502
	Storm	13,800
	River	15,101
	Dry	779
	WWTP	0
Raritan River	CSO	1,360
	Storm	44,276
	River	9,338
	Dry	400
	WWTP	15
Upper NY Bay	CSO	3,707
	Storm	0
	River	0
	Dry	0
	WWTP	29

Elizabeth River	CSO	5,082
	Storm	0
	River	4,502
	Dry	1,560
	WWTP	0
Hackensack River	CSO	22,784
	Storm	5,754
	River	128
	Dry	6,320
	WWTP	12
Hudson River	CSO	17,752
	Storm	5,395
	River	23,394
	Dry	0
	WWTP	4
Kill Van Kull	CSO	3,771
	Storm	0
	River	0
	Dry	0
	WWTP	0
Newark Bay	CSO	8,083
	Storm	1,565
	River	0
	Dry	0
	WWTP	0
Passaic River	CSO	26,407
	Storm	4,856
	River	12,885
	Dry	2,880
	WWTP	0
Raritan River	CSO	1,844
	Storm	26,787
	River	8,565
	Dry	1,480
	WWTP	15
Upper NY Bay	CSO	8,270
	Storm	0
	River	0
	Dry	0
	WWTP	29





# Appendix D

Additional Hydrodynamic  
Model Calibration /  
Validation Figures

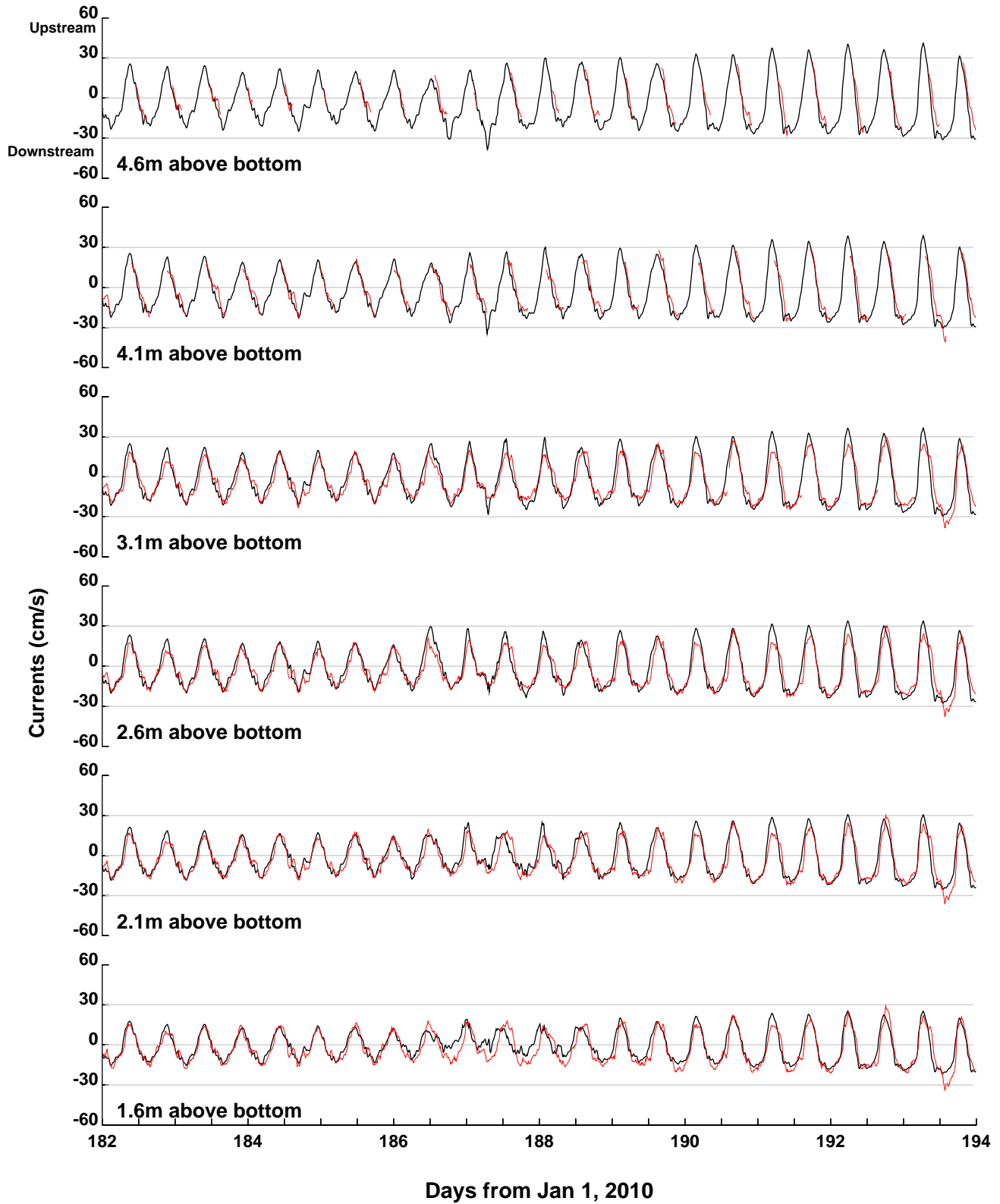


# Appendix D-1

## Current Velocity Calibration – 12-Day Period

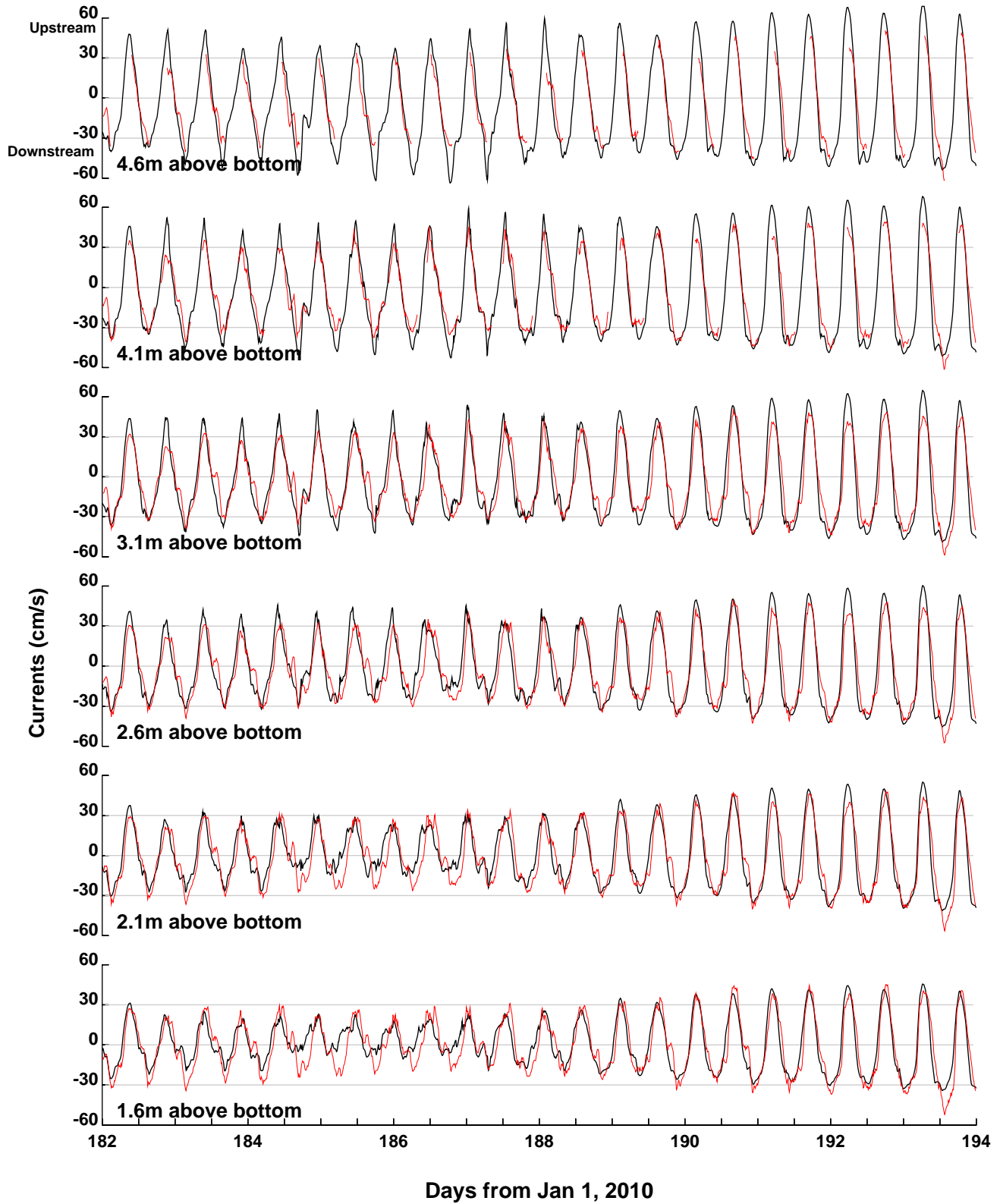
# 135 (LPR)

— ADCP  
— MODEL



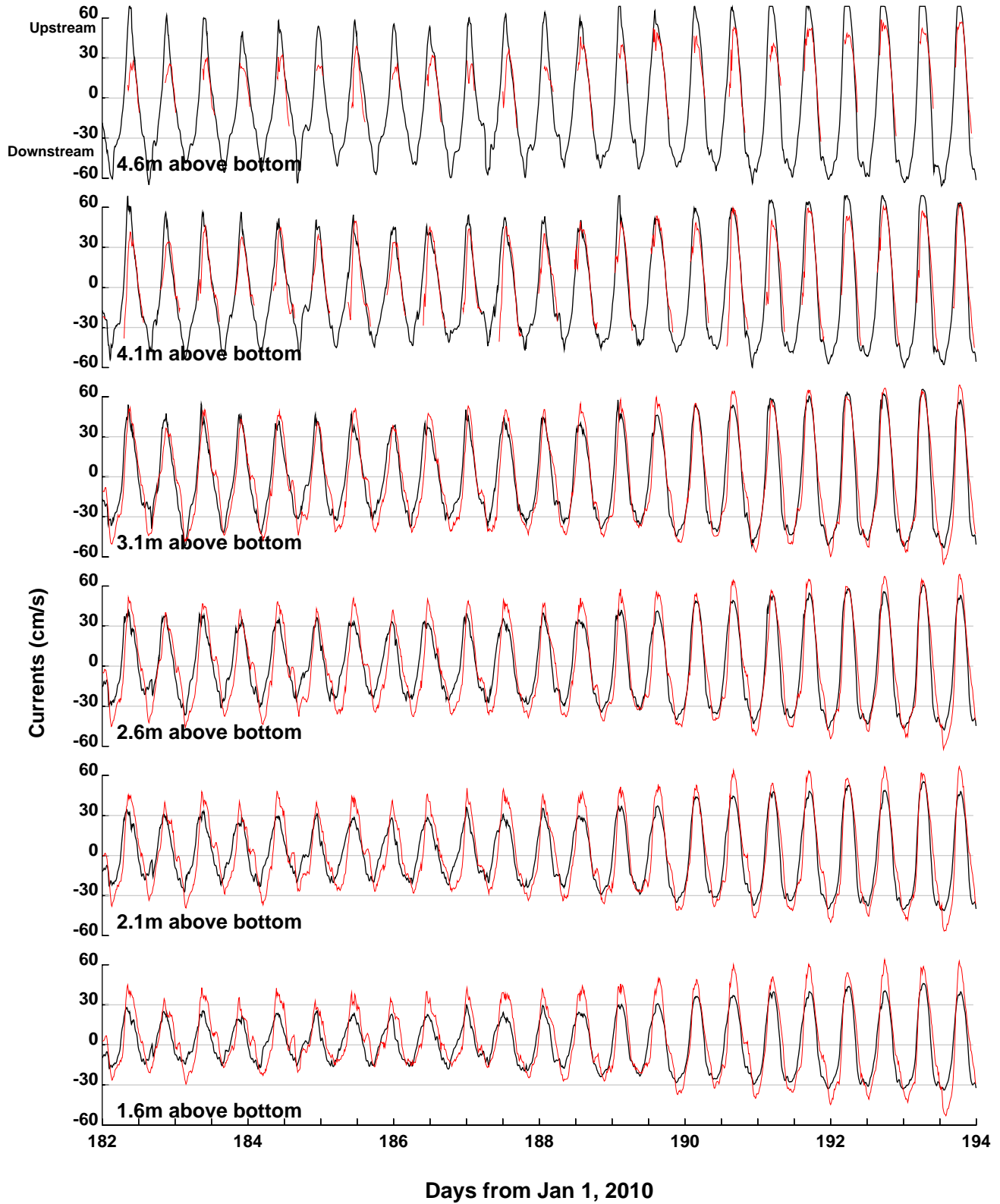
# 102 (LPR)

— ADCP  
— MODEL



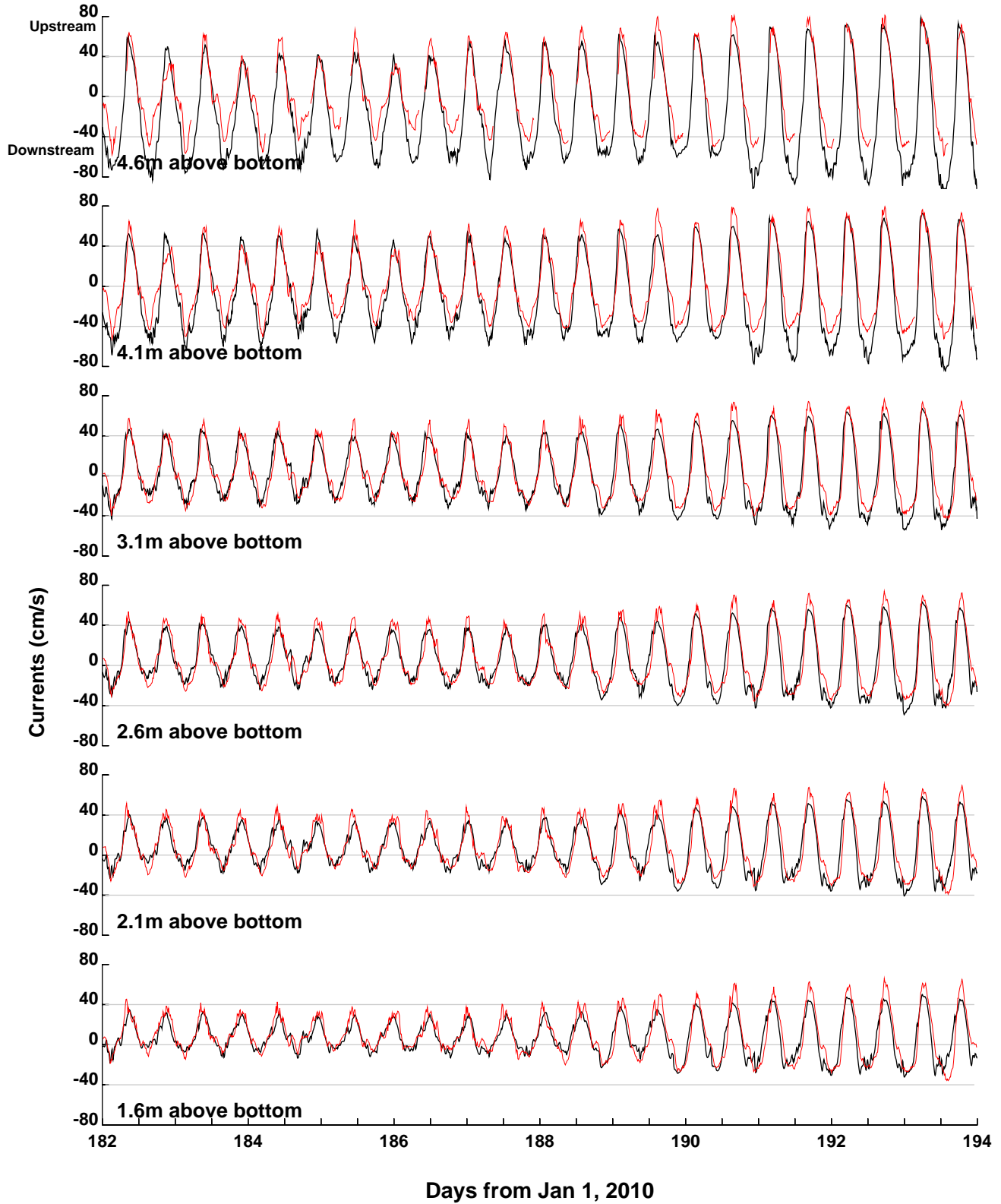
### 067 (LPR)

— ADCP  
— MODEL



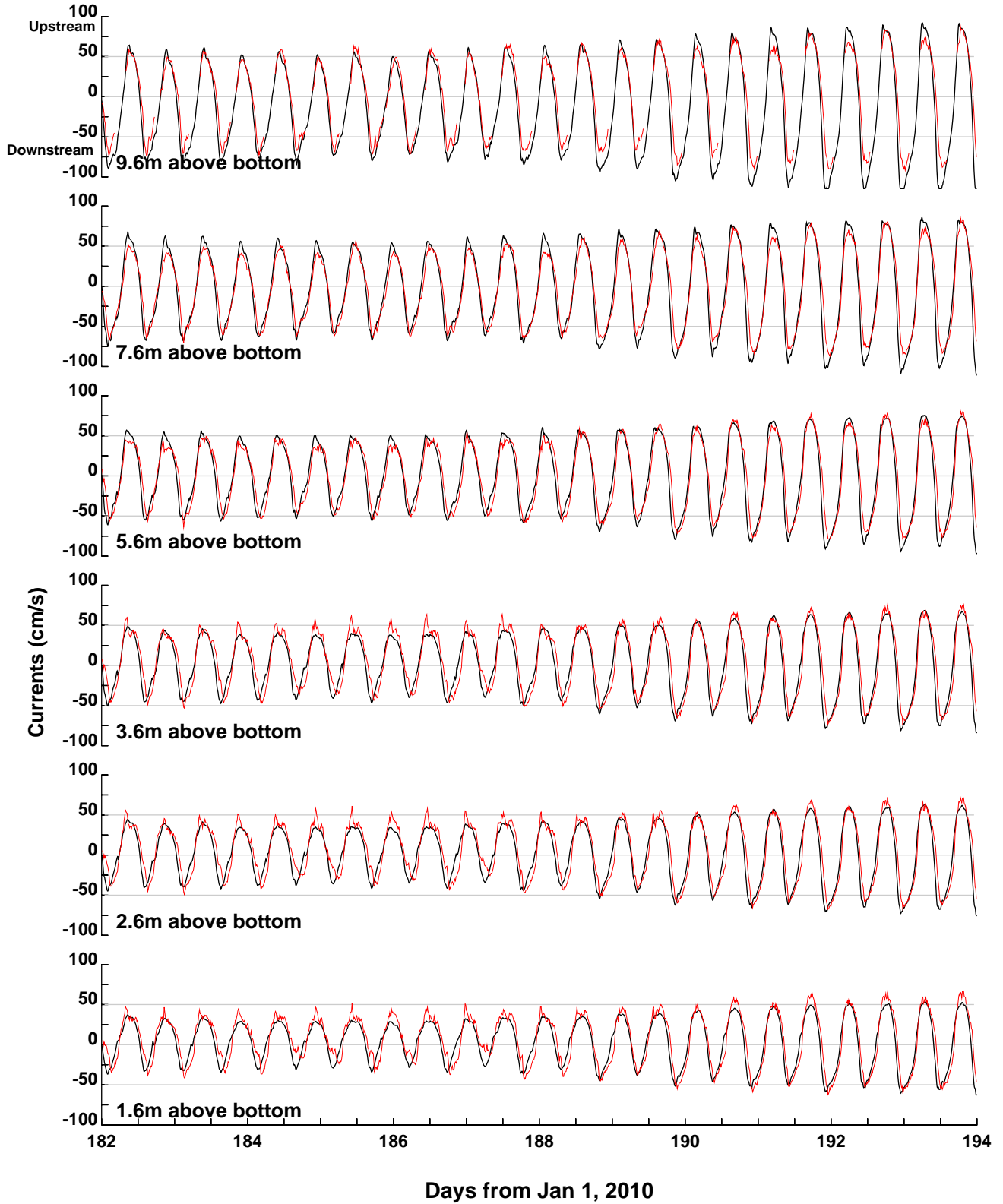
### 042 (LPR)

— ADCP  
— MODEL



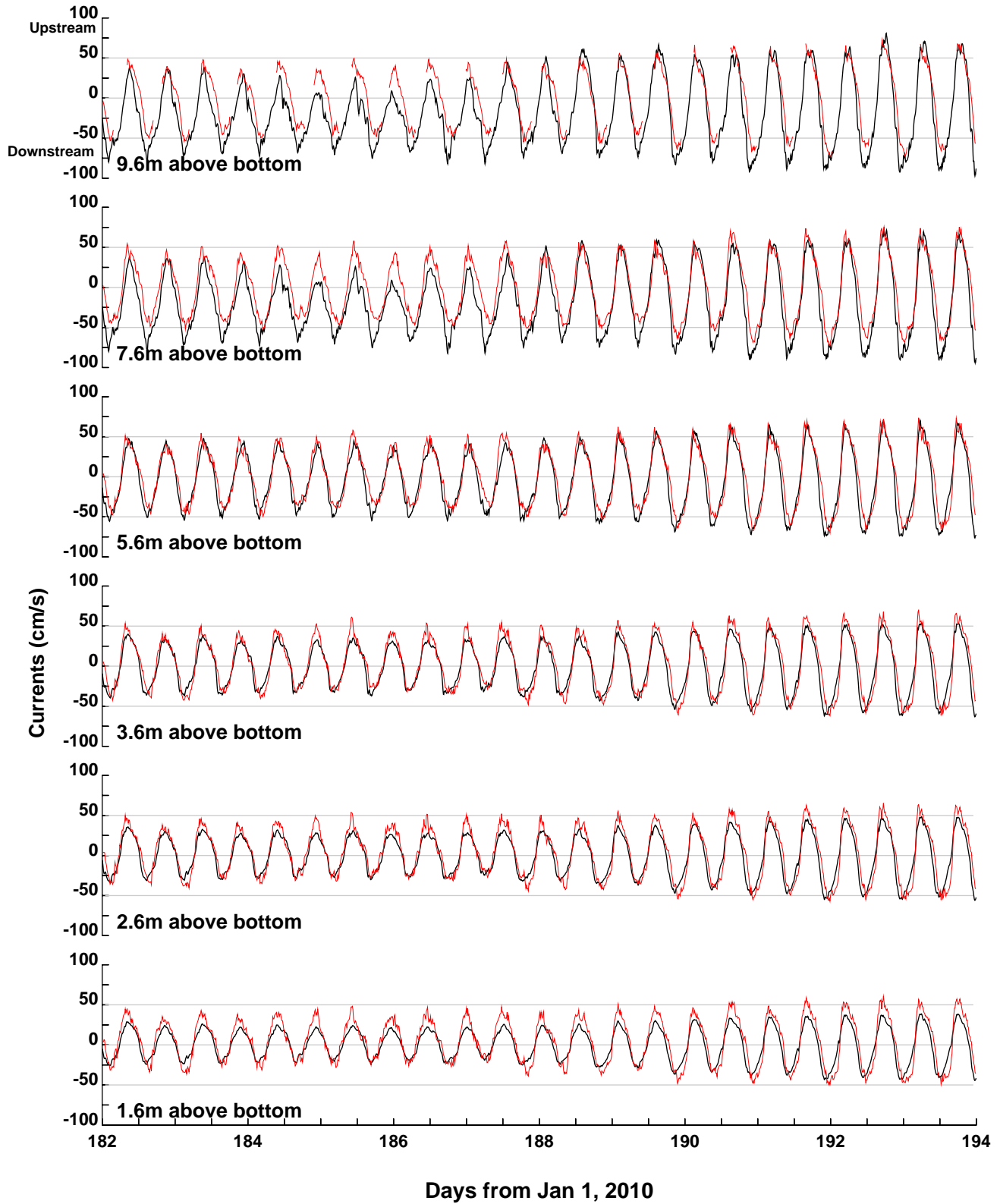
# HKN (Hackensack River)

— ADCP  
— MODEL



# NBN (Newark Bay North)

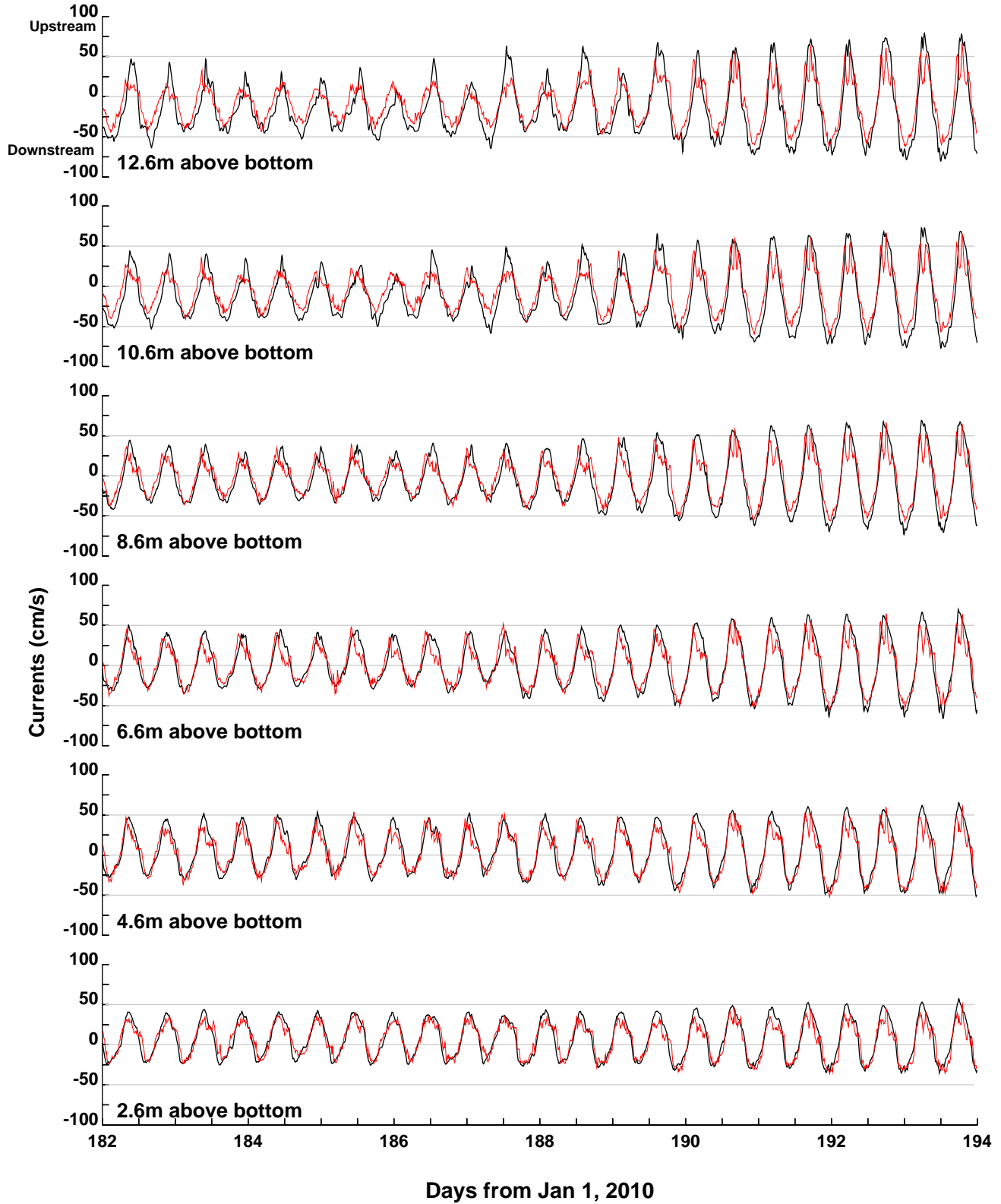
— ADCP  
— MODEL





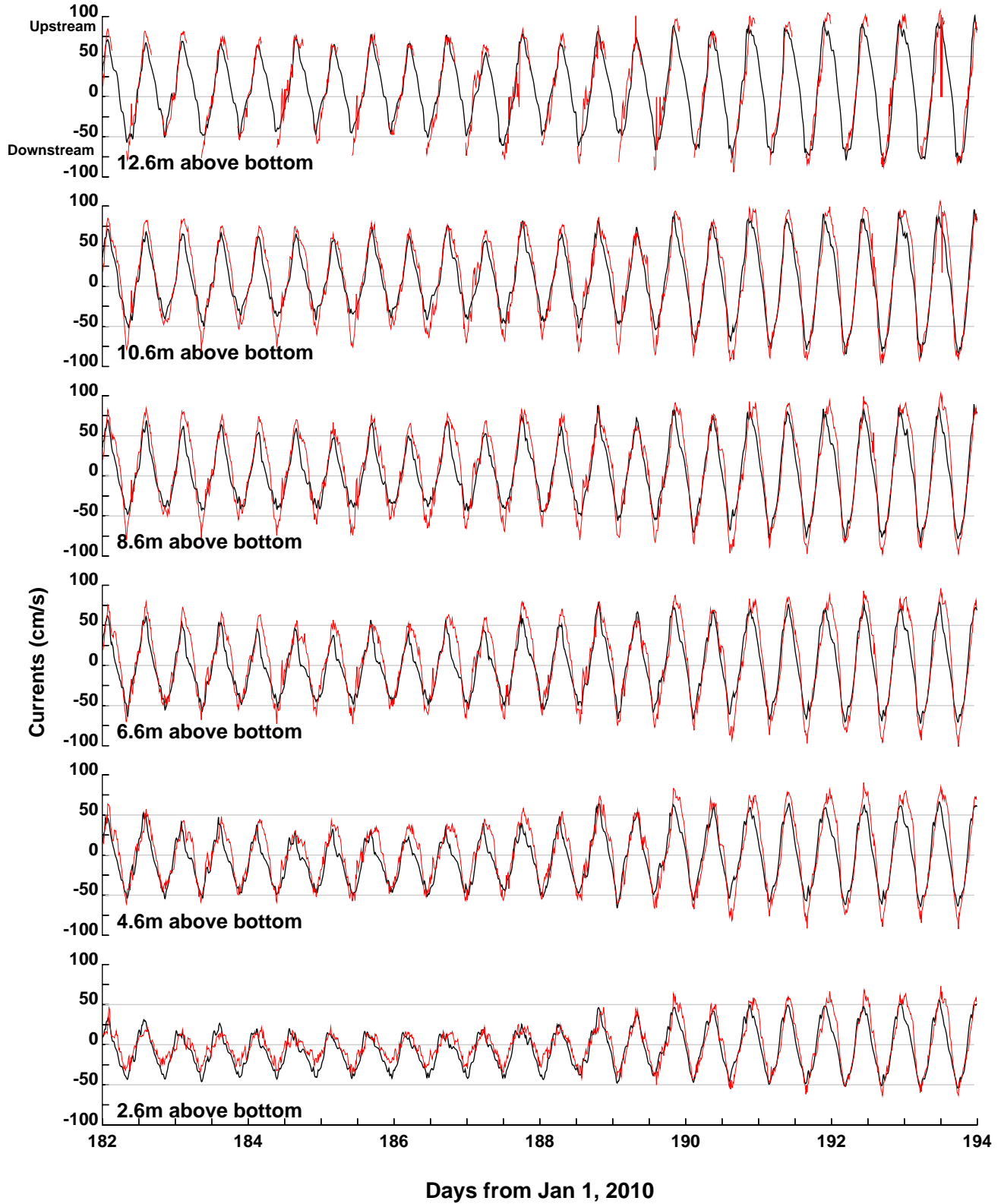
# NBS (Newark Bay South)

— ADCP  
— MODEL



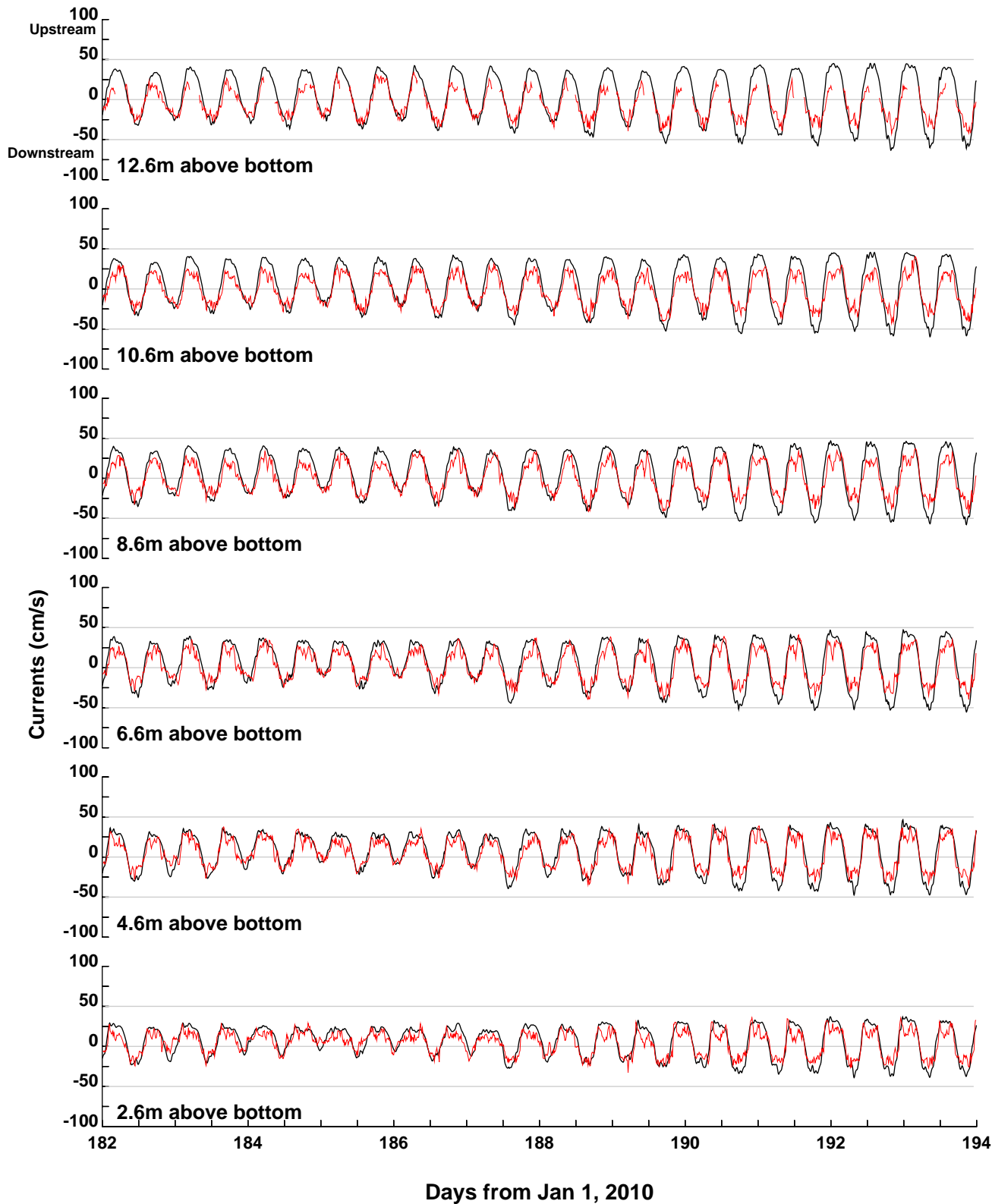
# KVK (Kill van Kull)

— ADCP  
— MODEL



# ARK (Arthur Kill)

— ADCP  
— MODEL

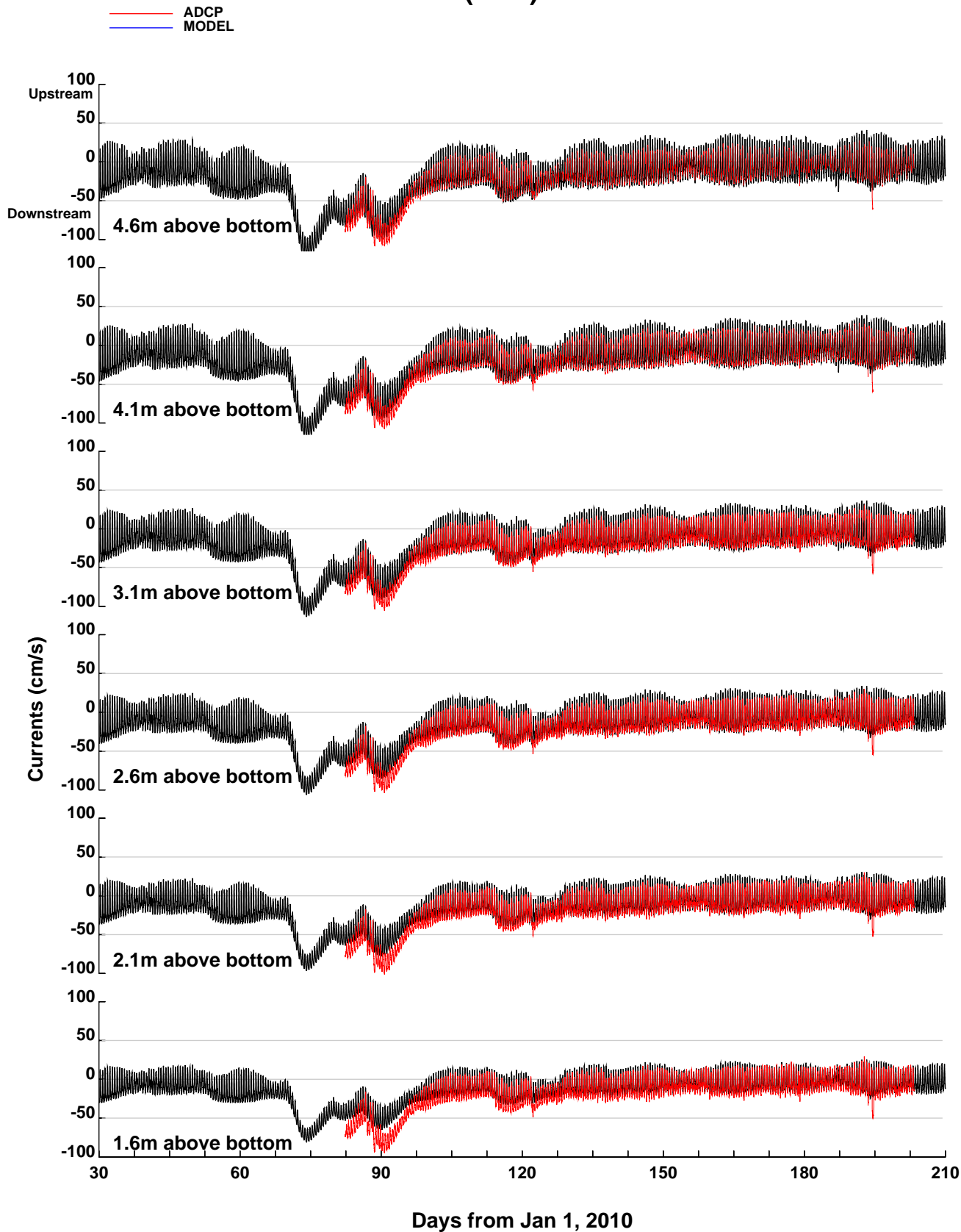




## Appendix D-2

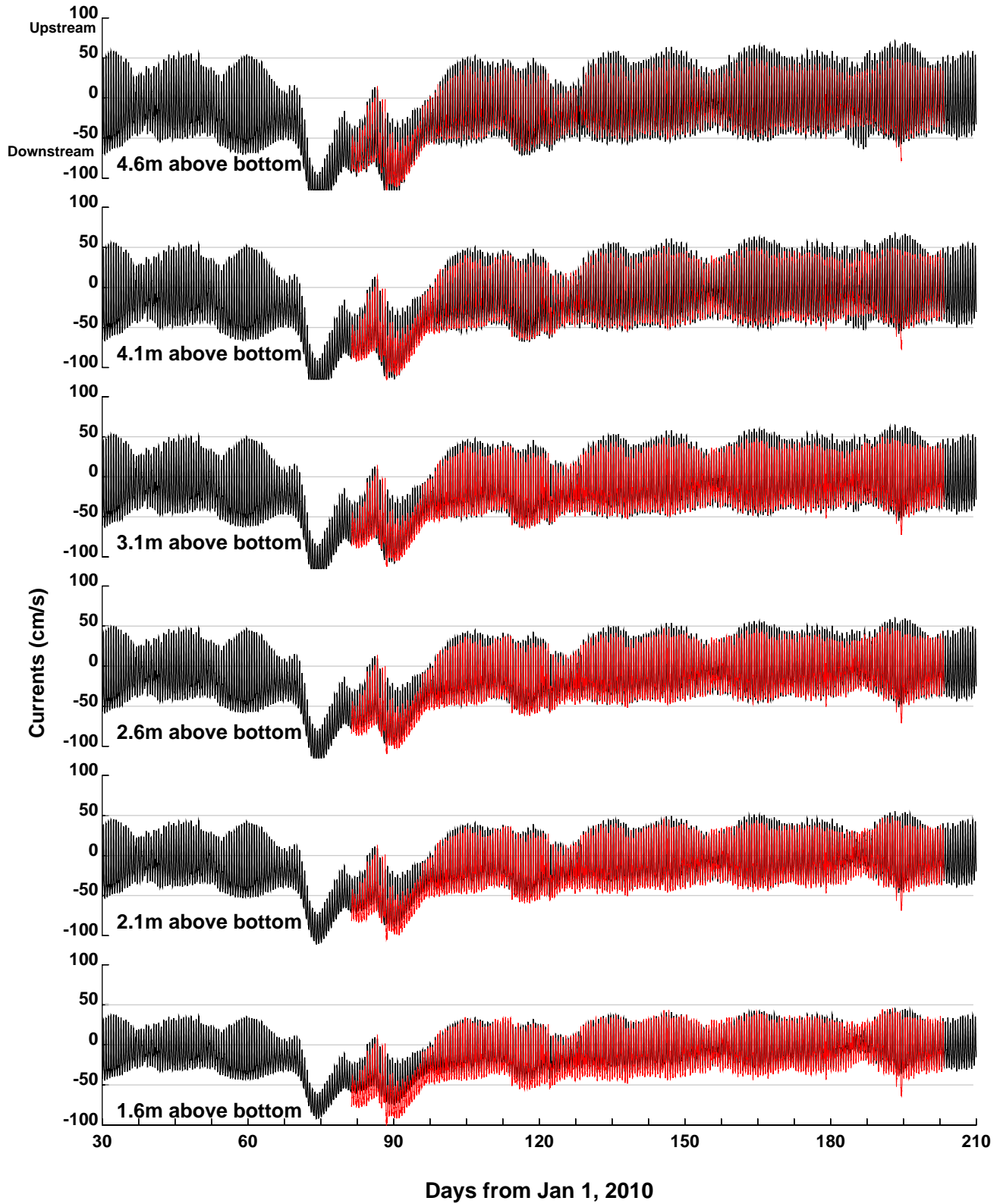
### Current Velocity Calibration – 6-Month Period

# 135 (LPR)

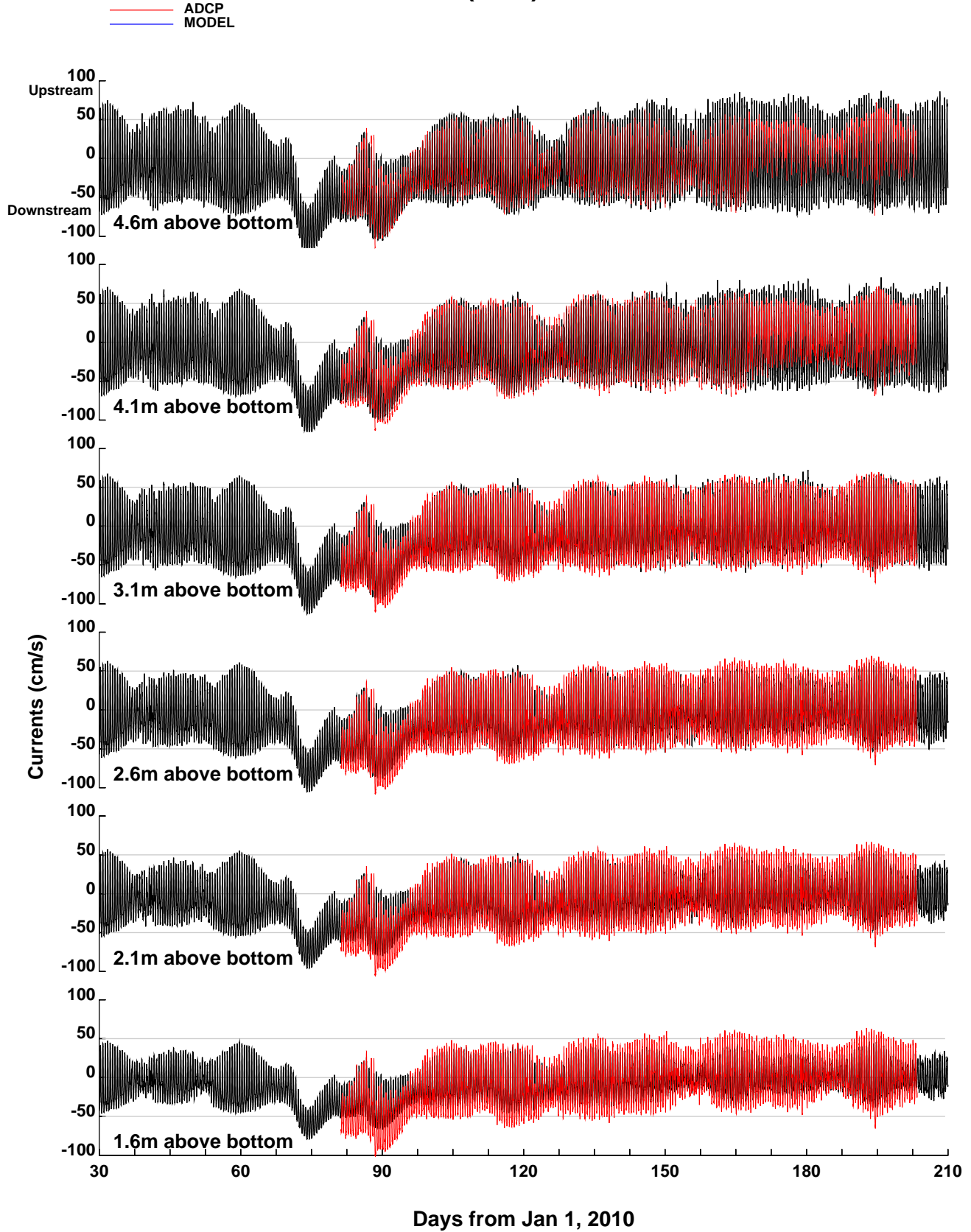


# 102 (LPR)

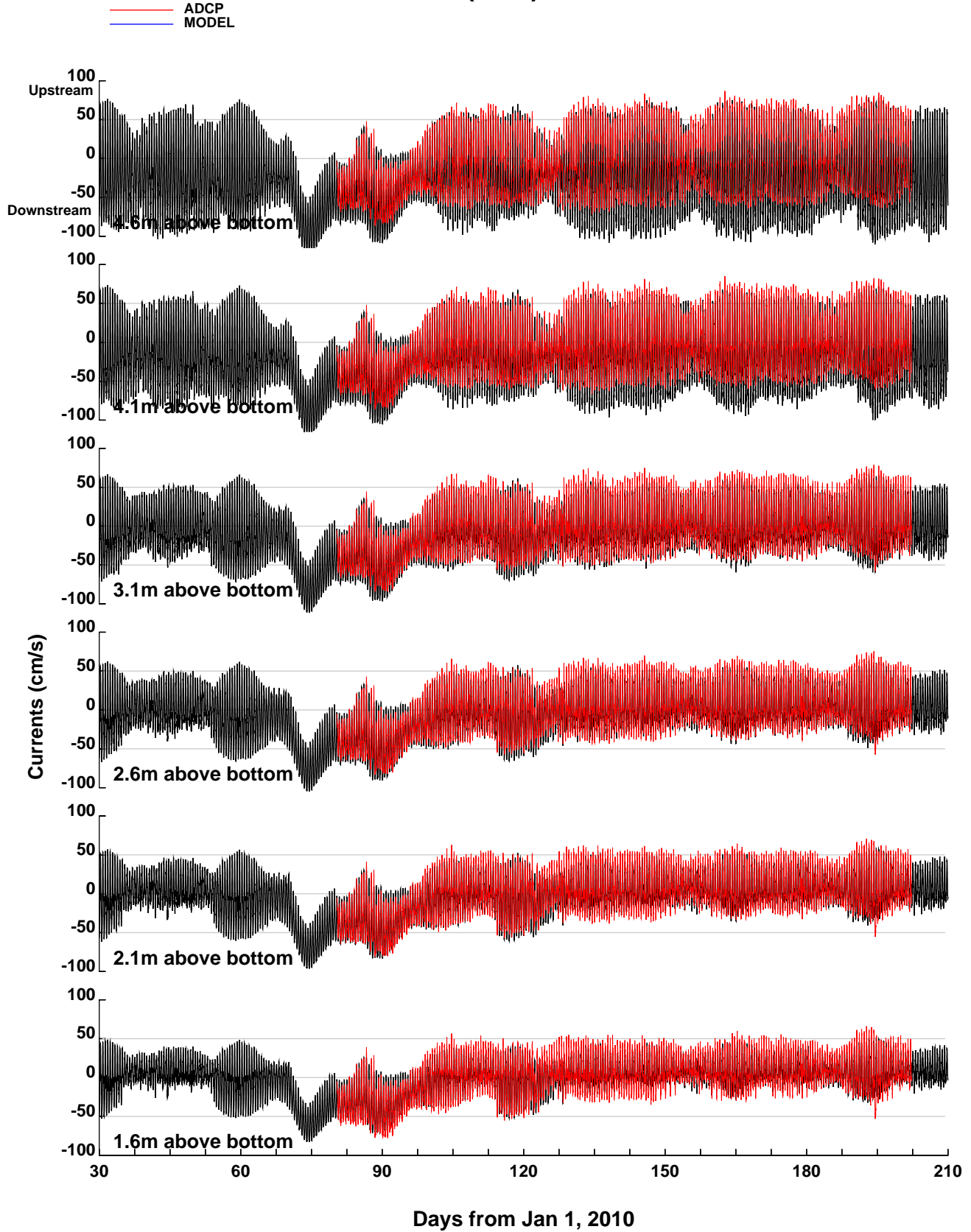
— ADCP  
— MODEL



### 067 (LPR)



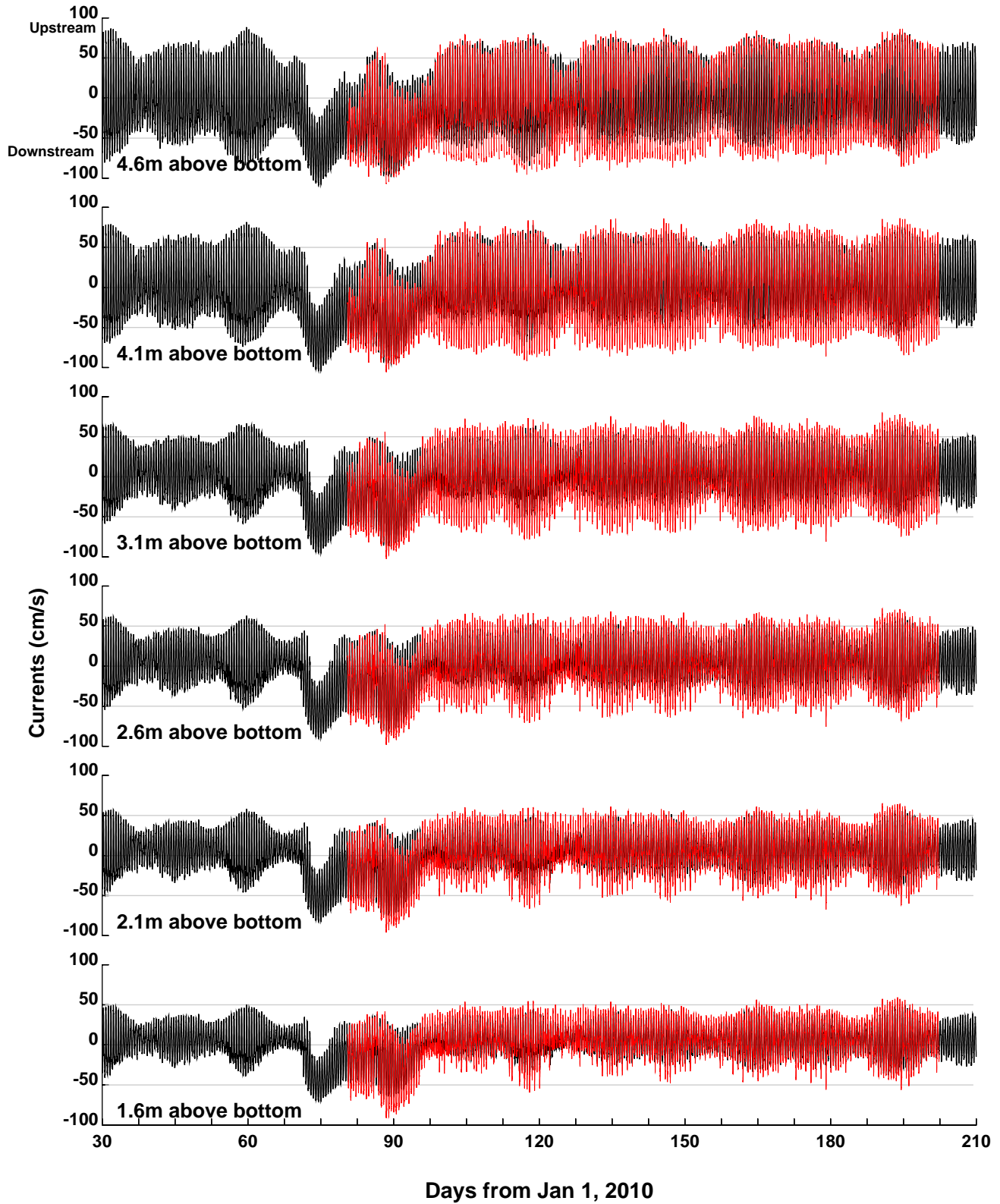
### 042 (LPR)





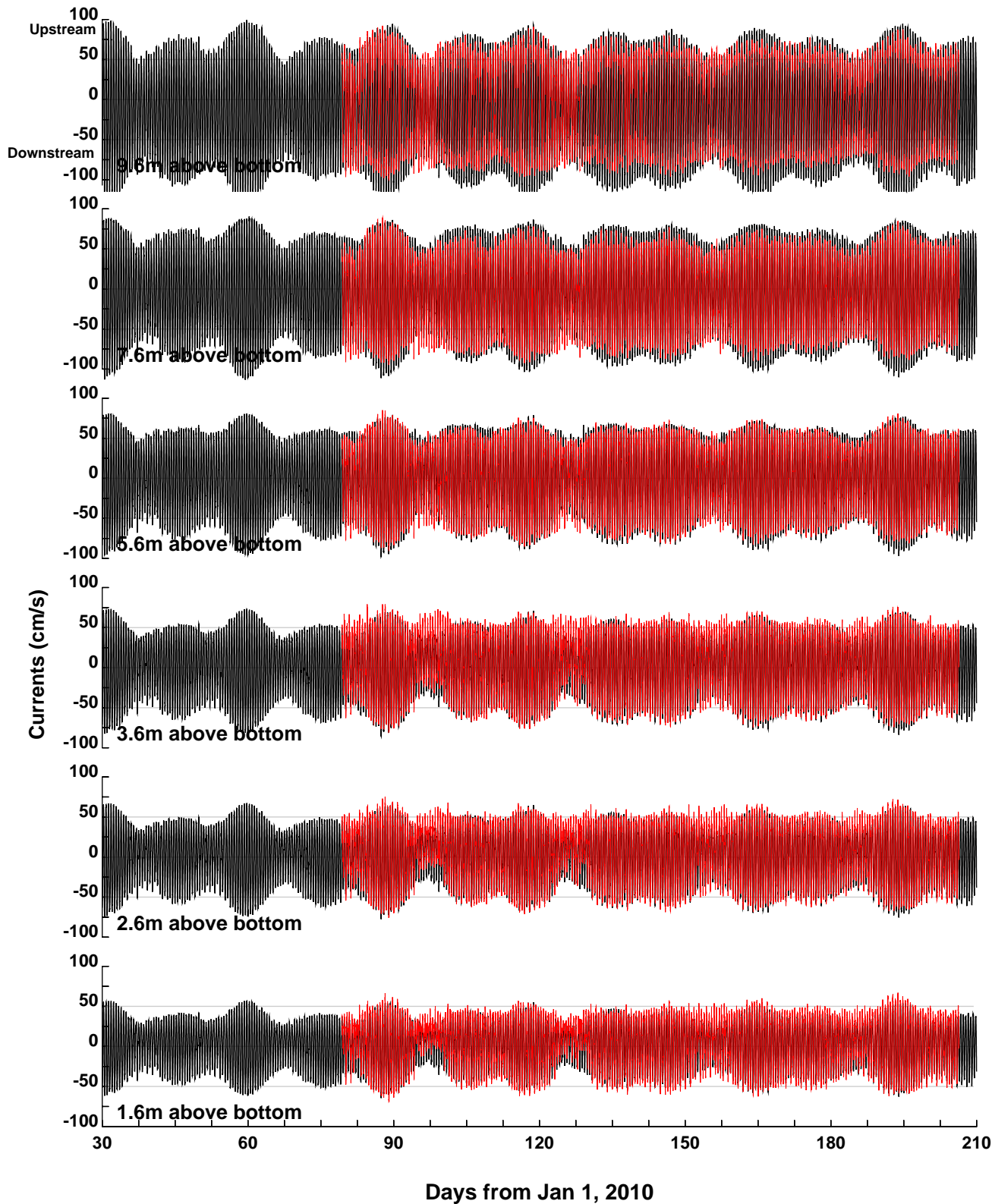
# 014 (LPR)

— ADCP  
— MODEL



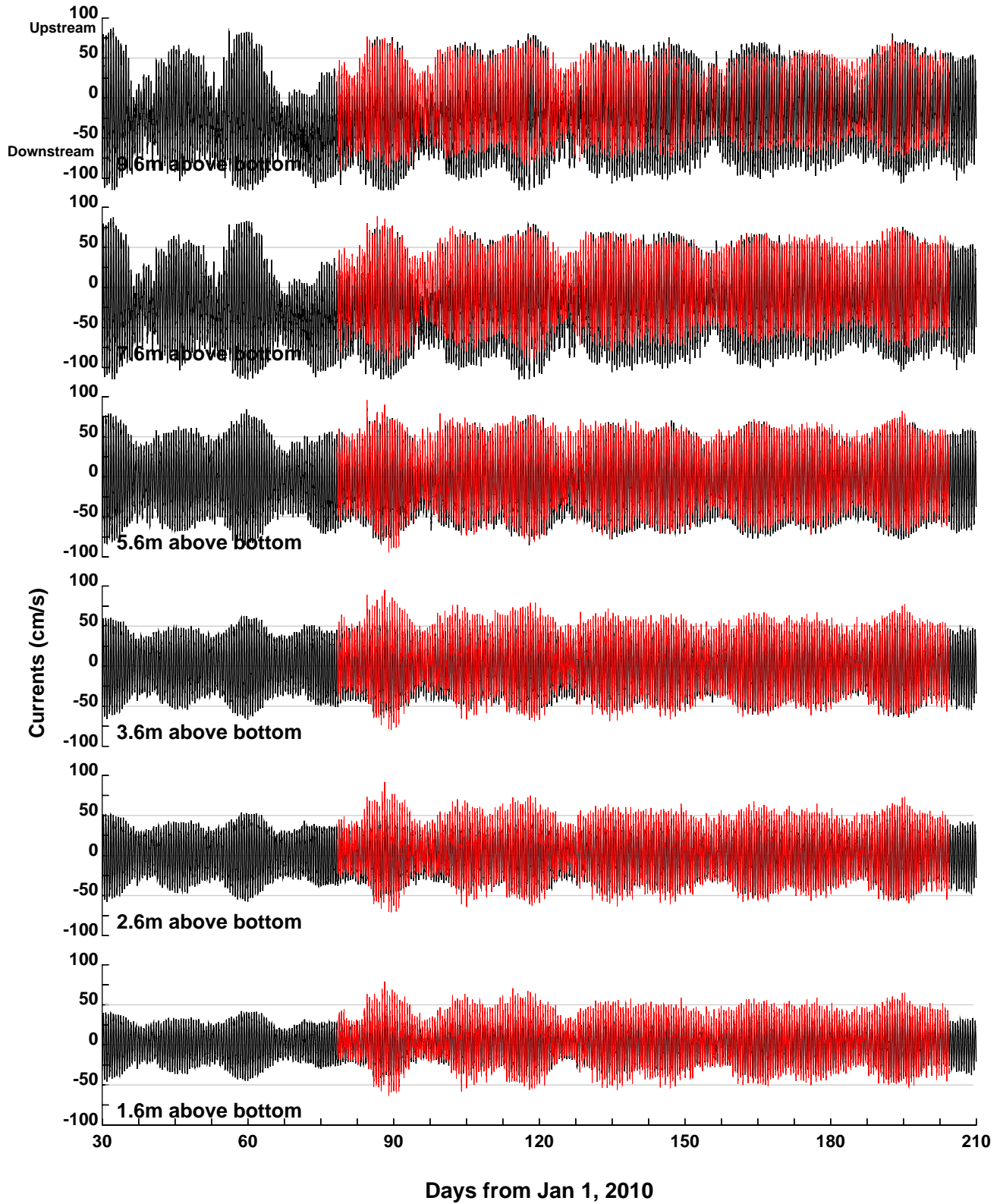
# HKN (Hackensack River)

— ADCP  
— MODEL

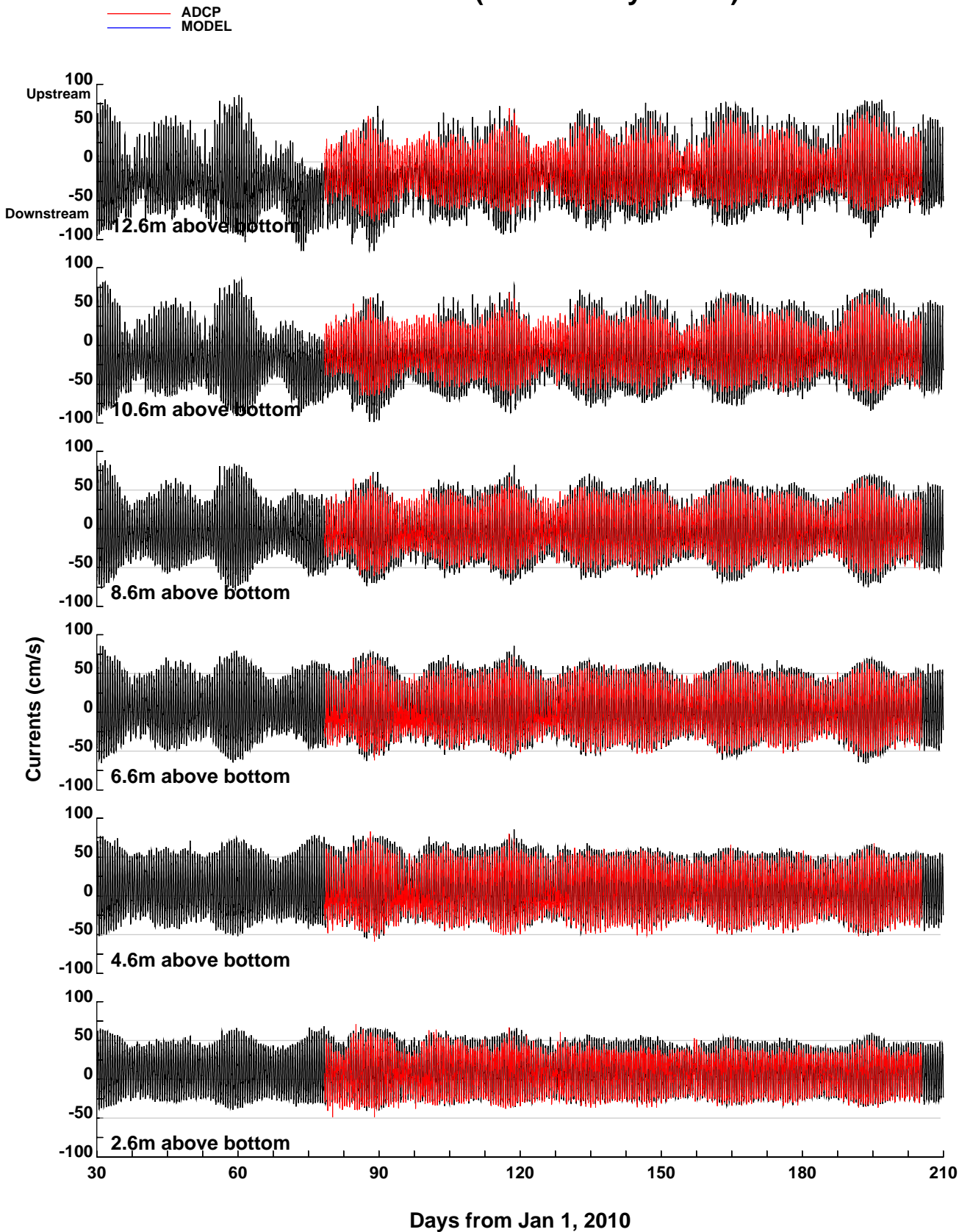


# NBN (Newark Bay North)

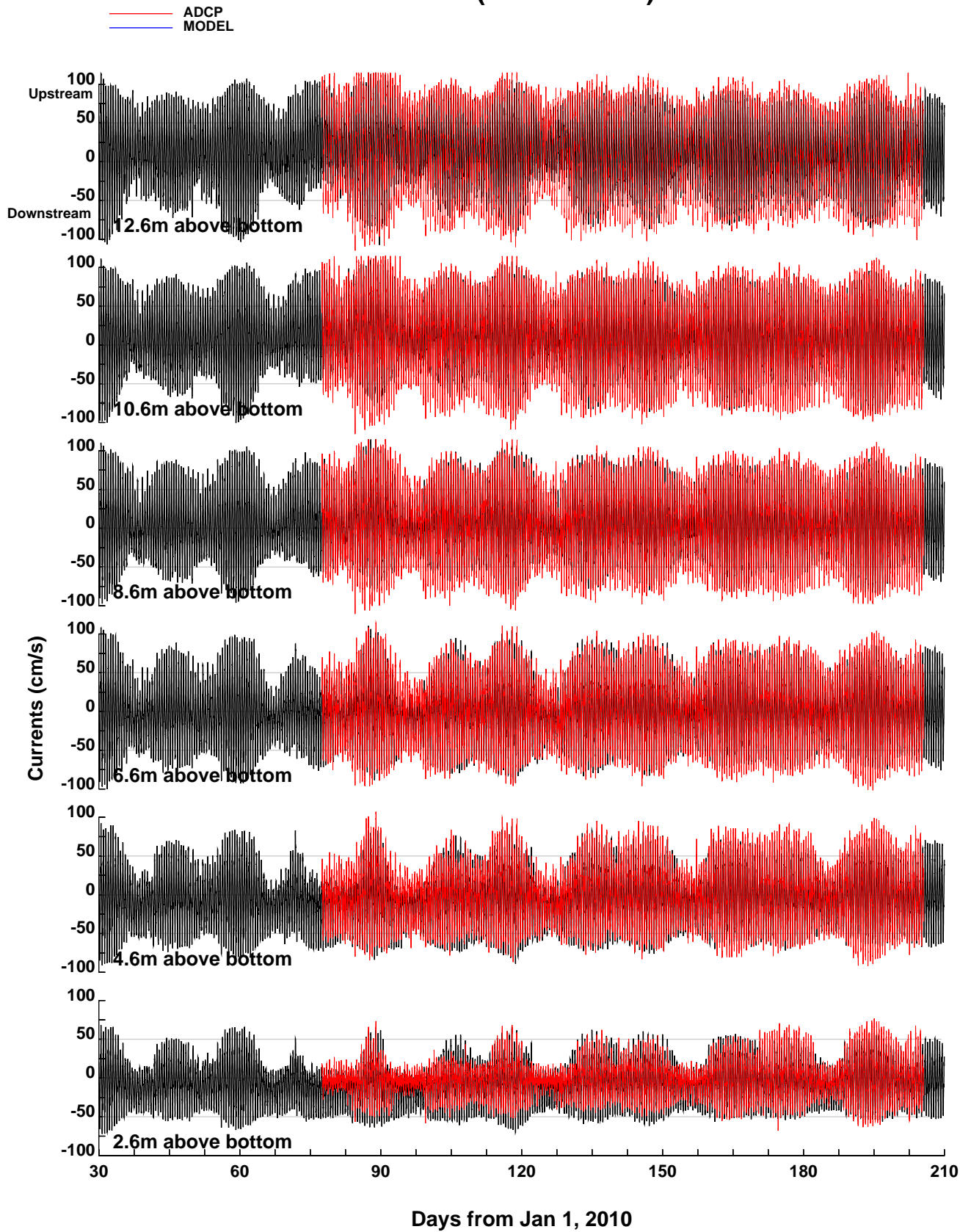
— ADCP  
— MODEL



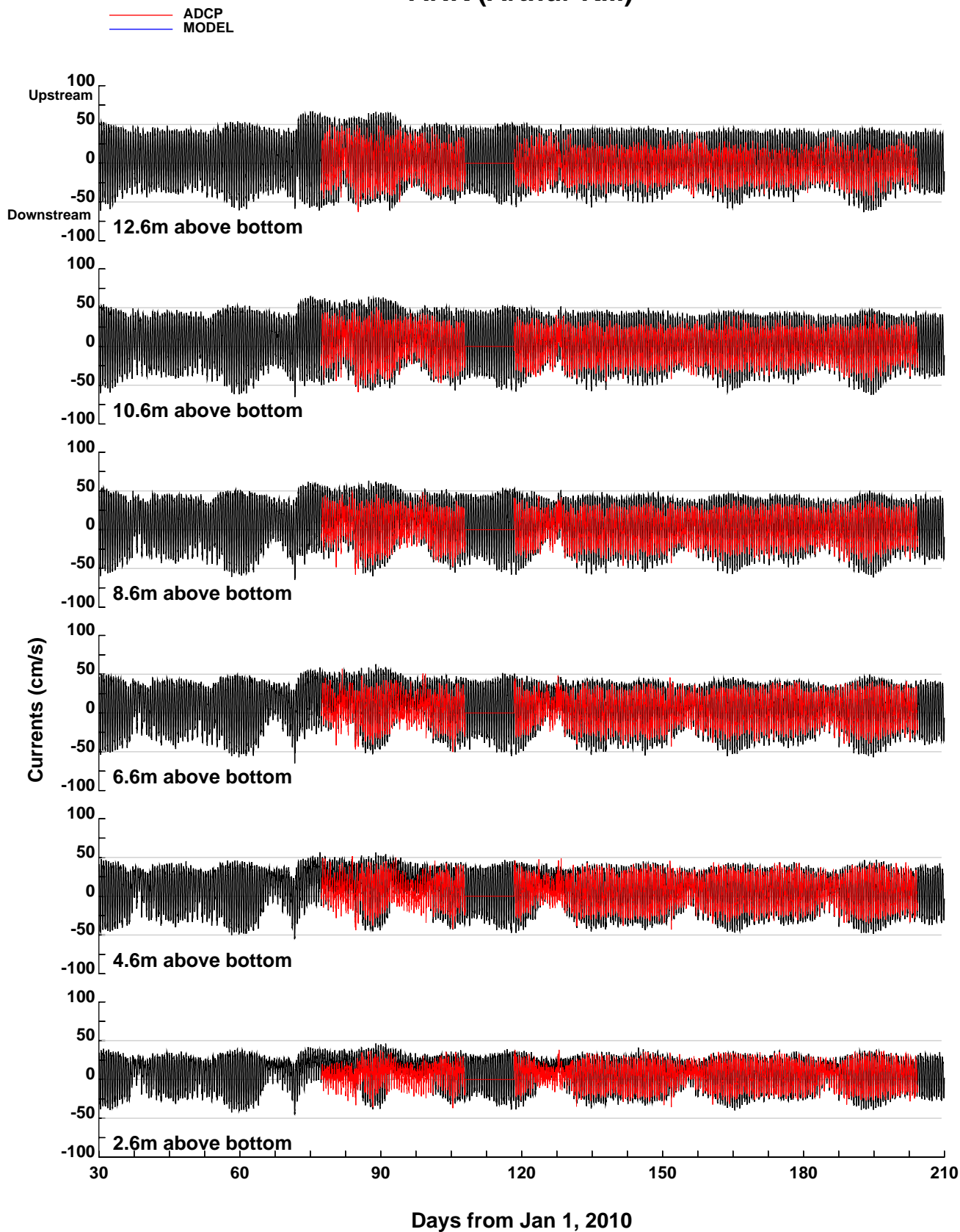
### NBS (Newark Bay South)



### KVK (Kill van Kull)



# ARK (Arthur Kill)

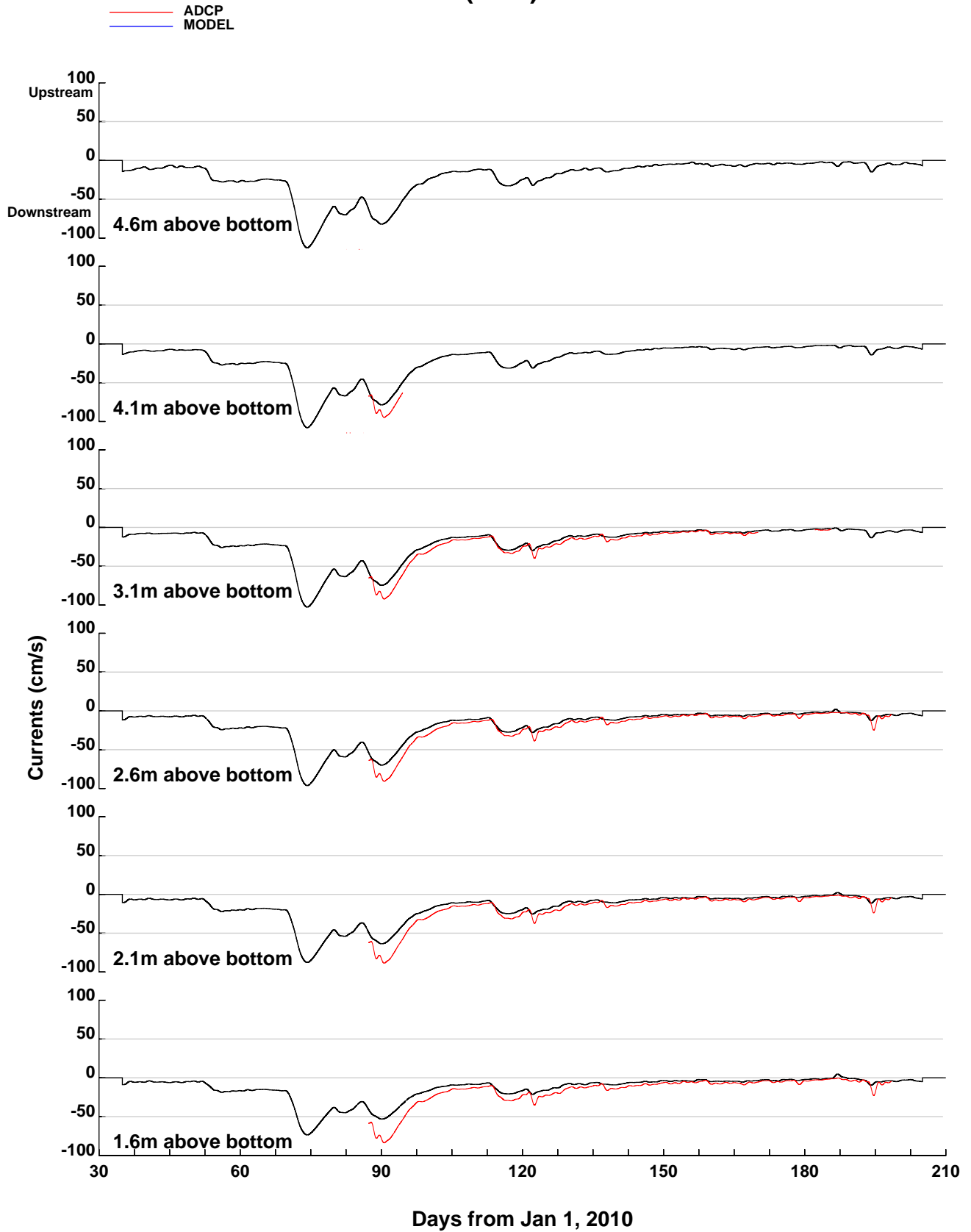




## Appendix D-3

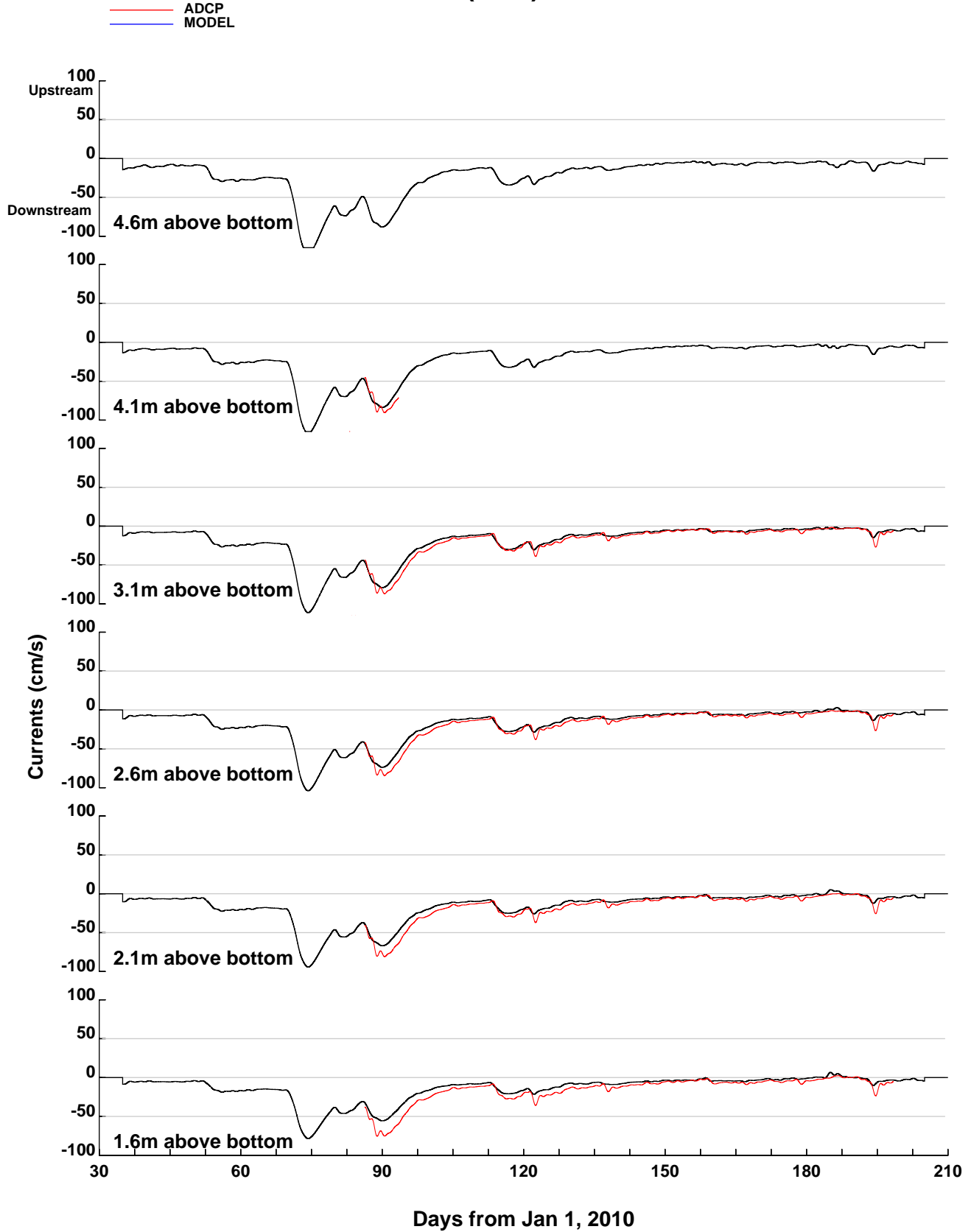
Current Velocity Calibration –  
6-Month Period with  
Low-Pass Filter

# 135 (LPR)

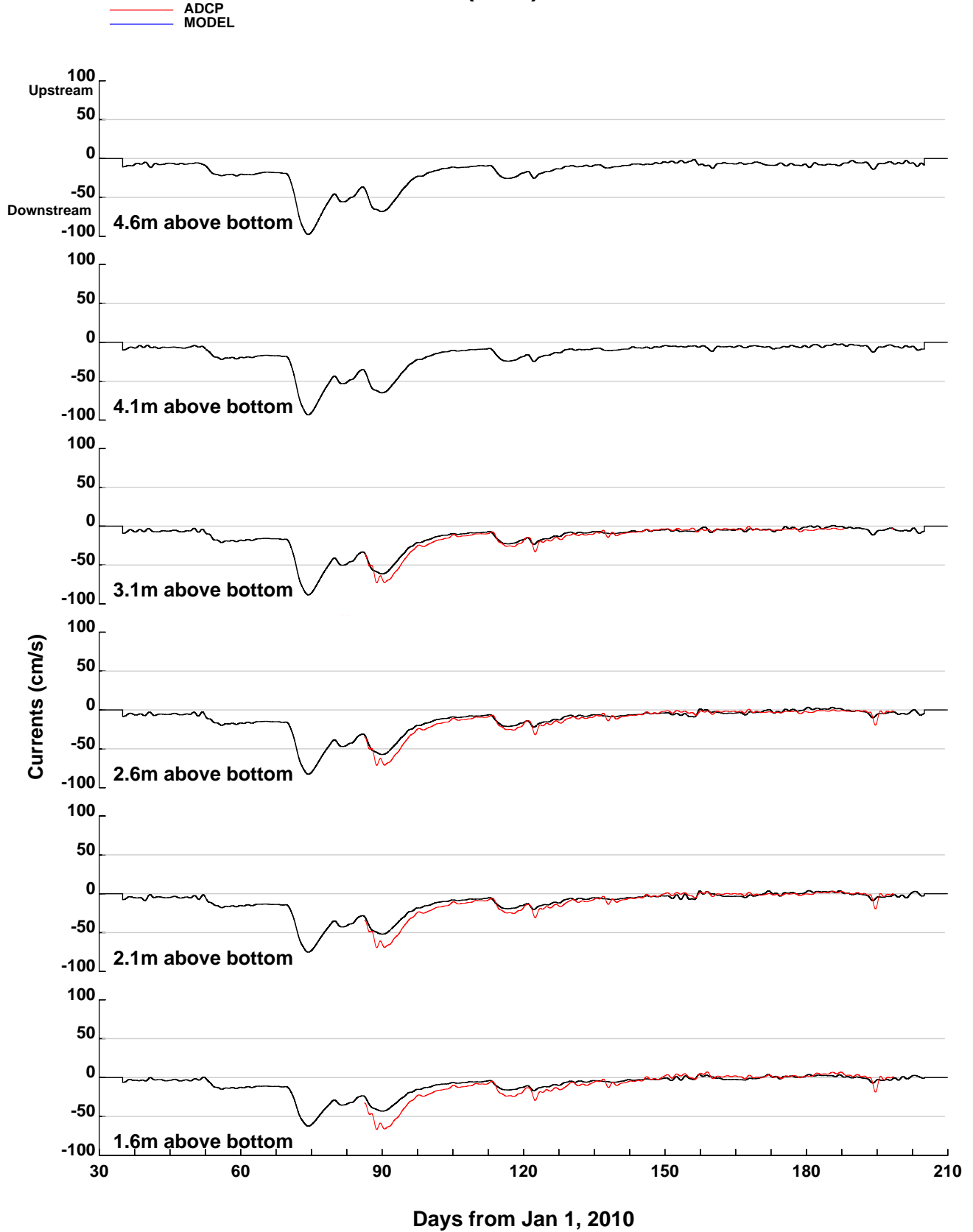




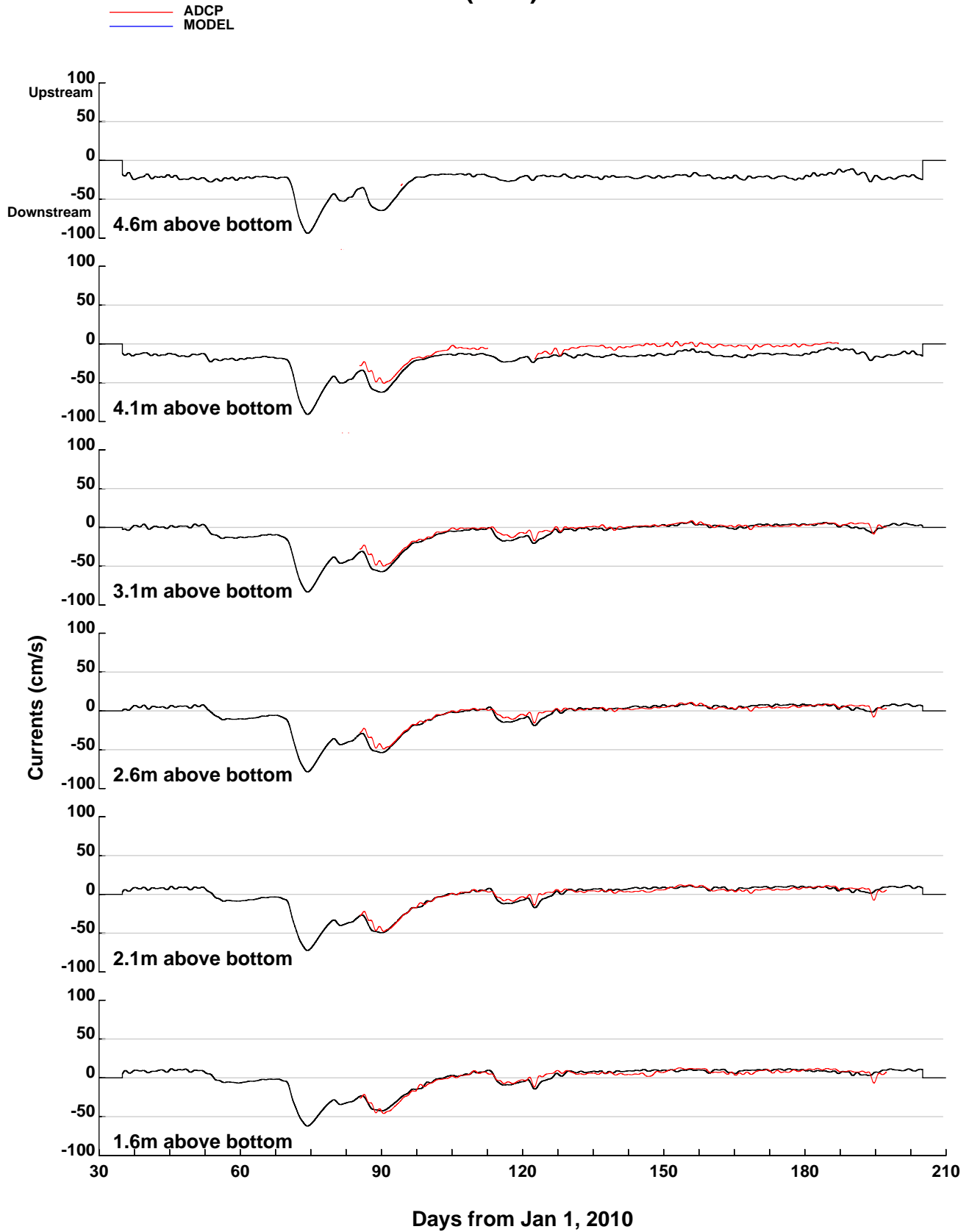
# 102 (LPR)



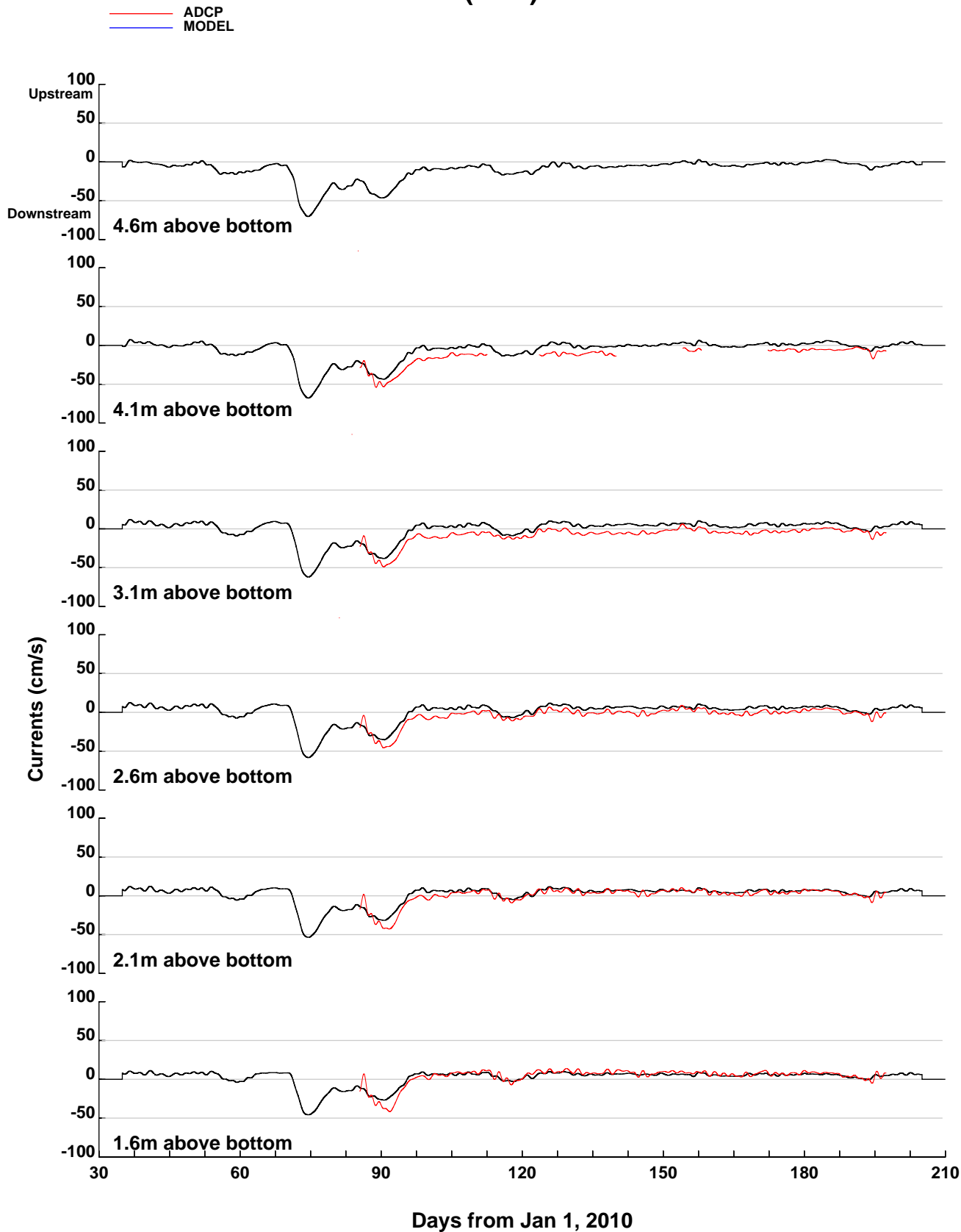
### 067 (LPR)



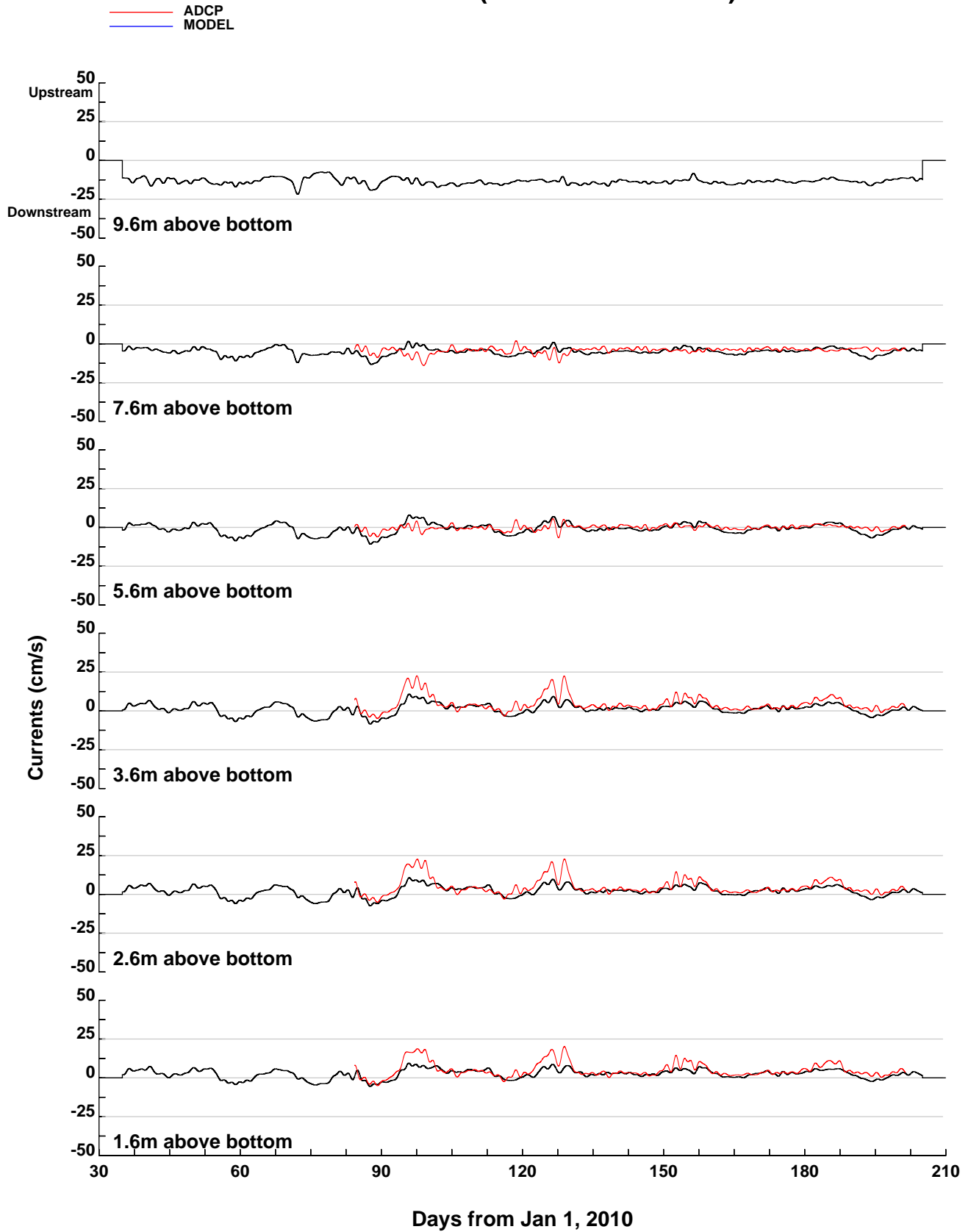
### 042 (LPR)



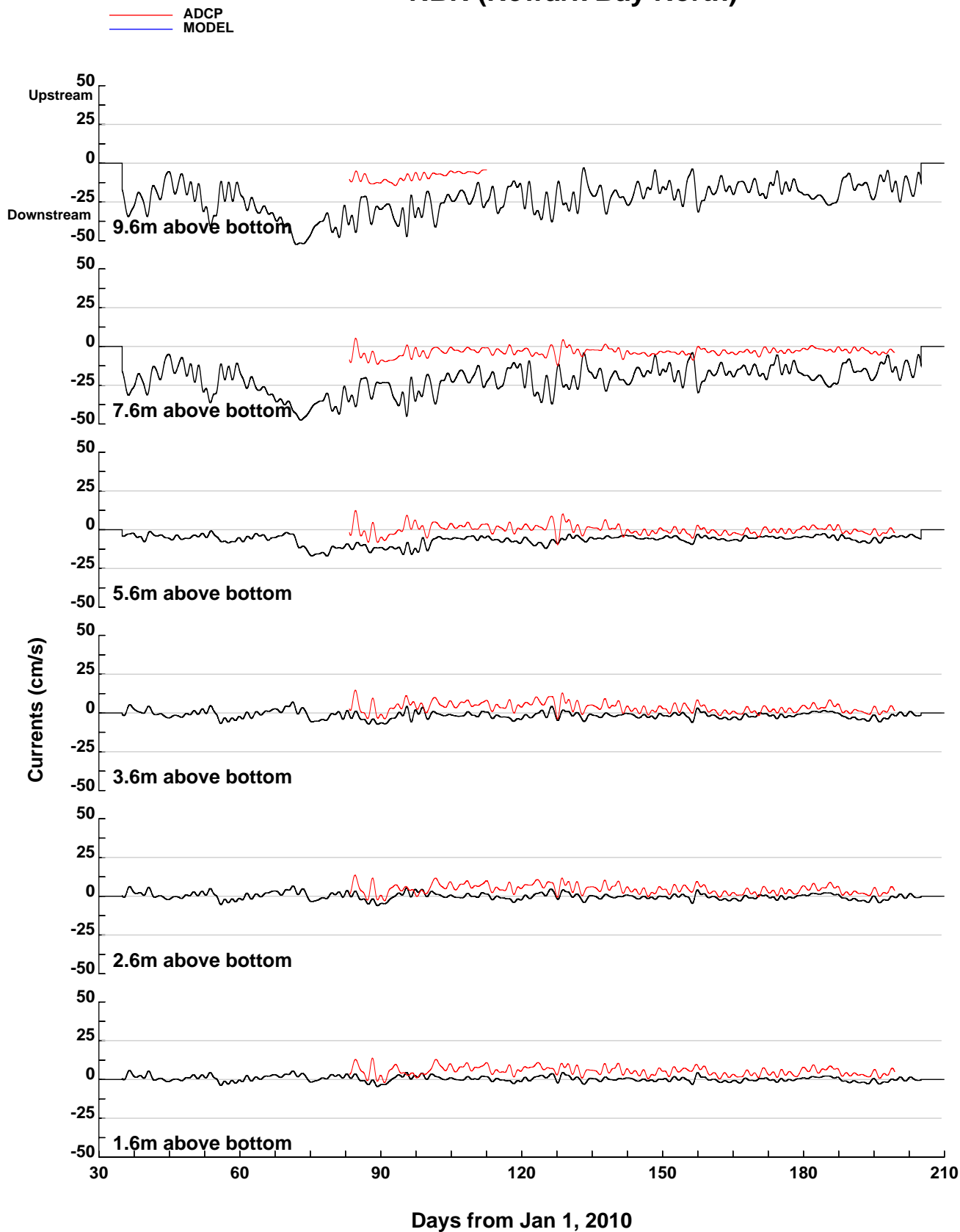
### 014 (LPR)



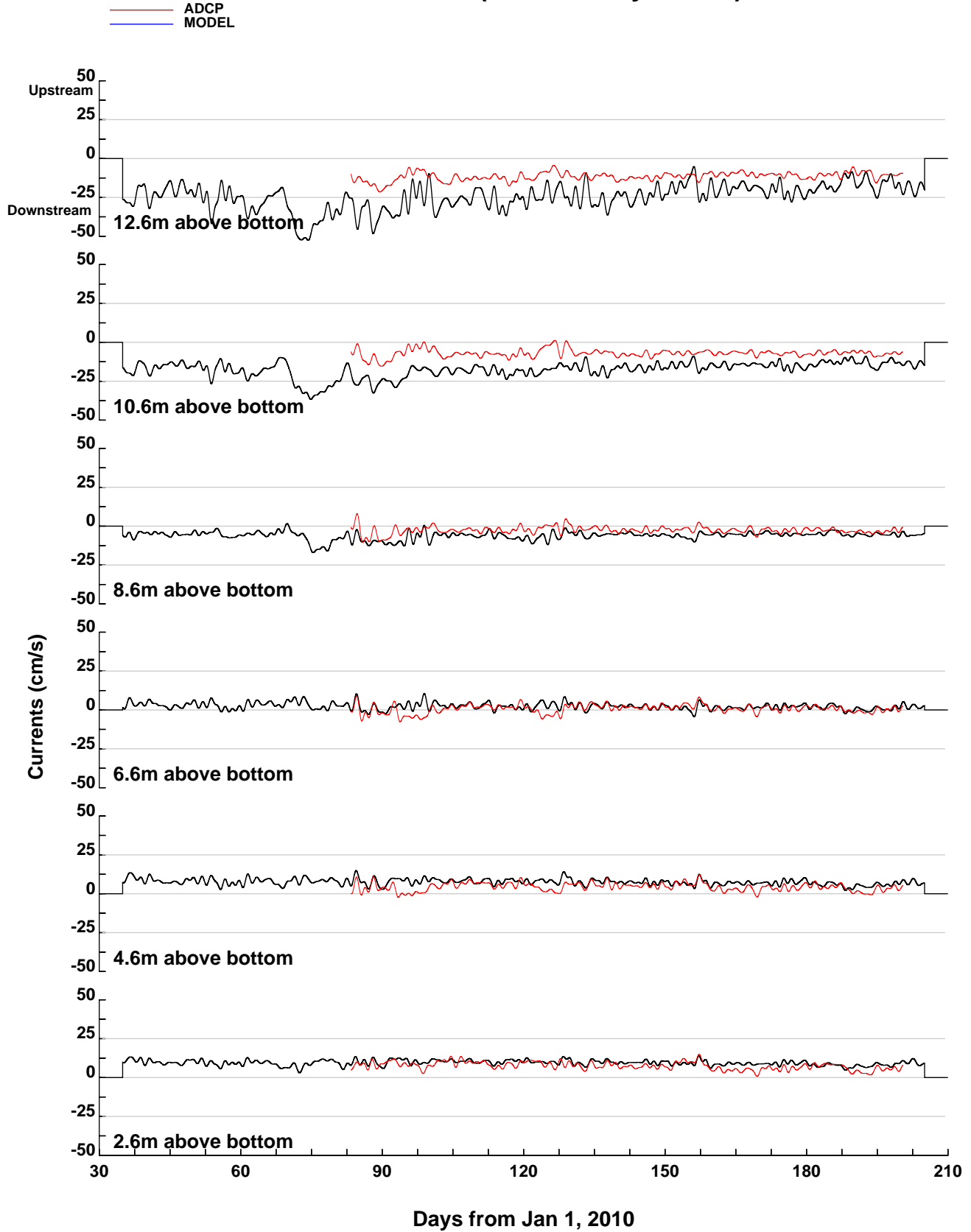
# HKN (Hackensack River)



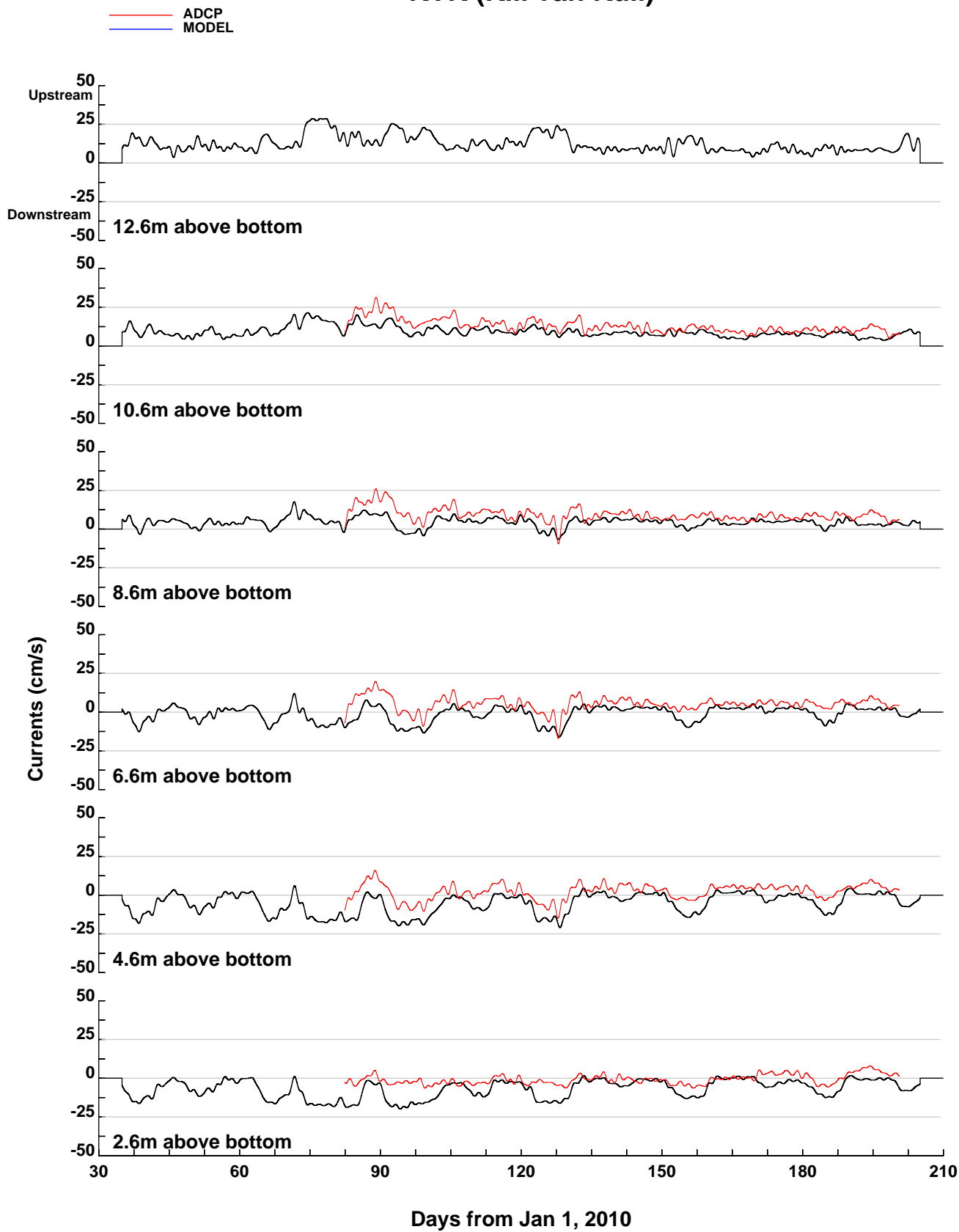
### NBN (Newark Bay North)



### NBS (Newark Bay South)

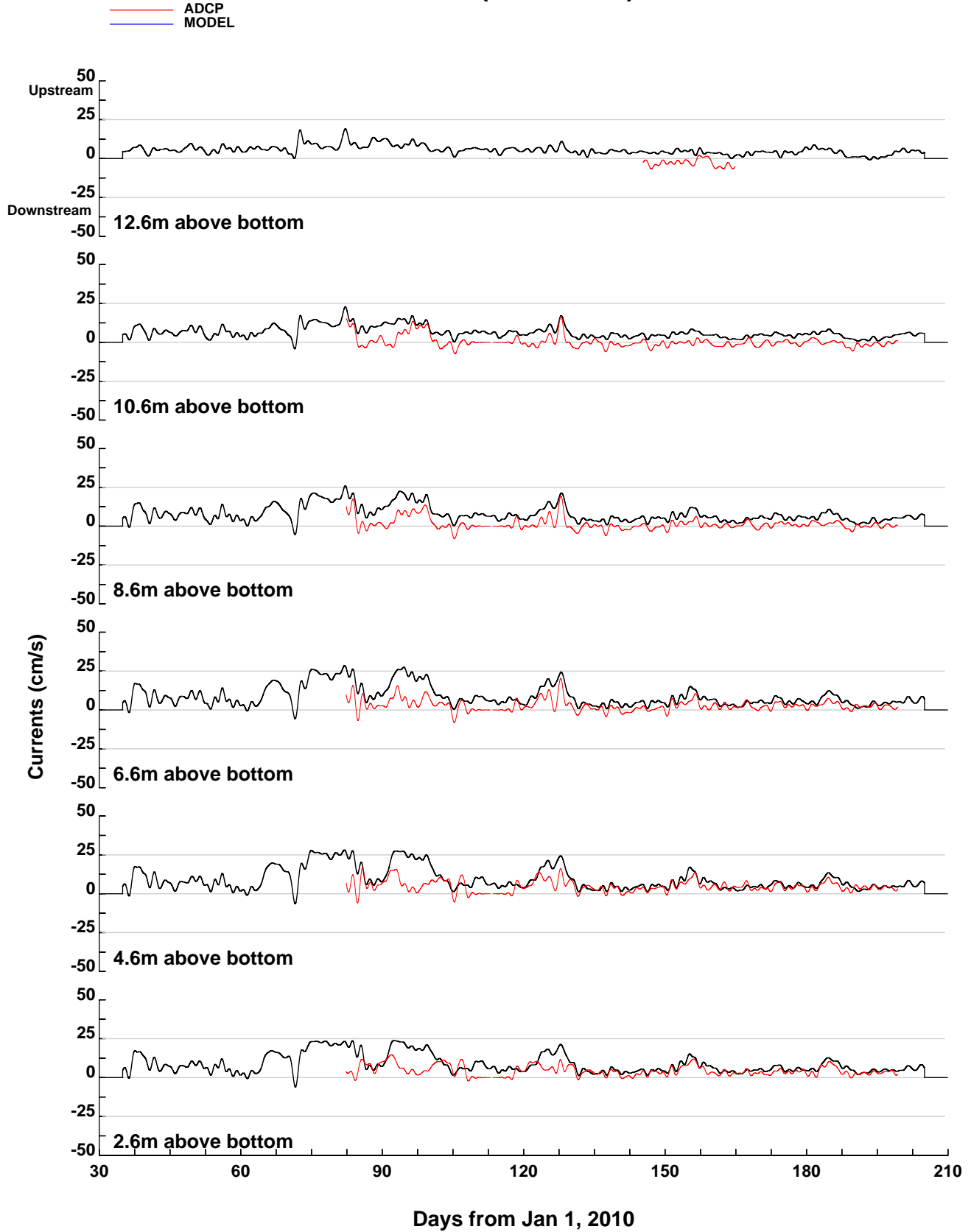


# KVK (Kill van Kull)





# ARK (Arthur Kill)





# Appendix E

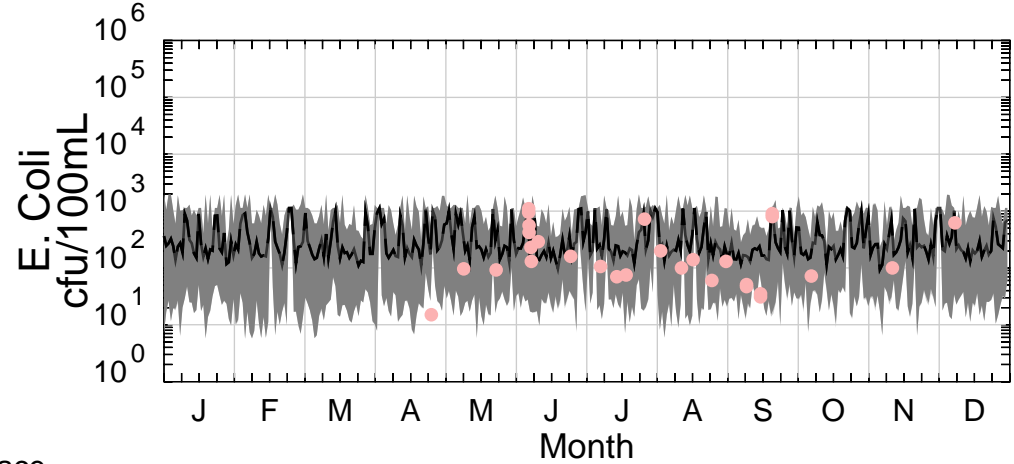
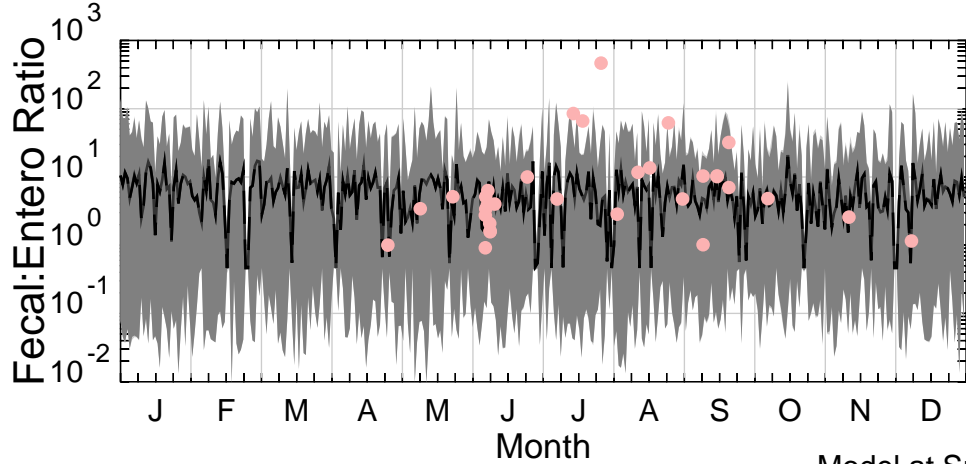
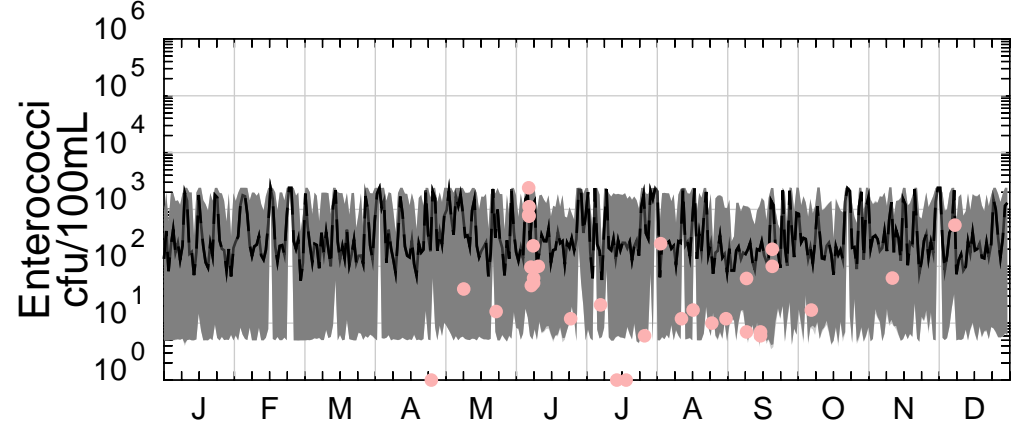
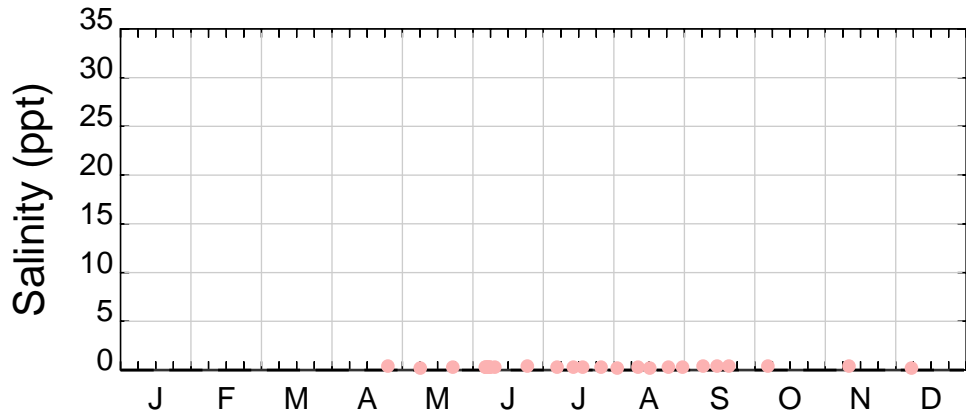
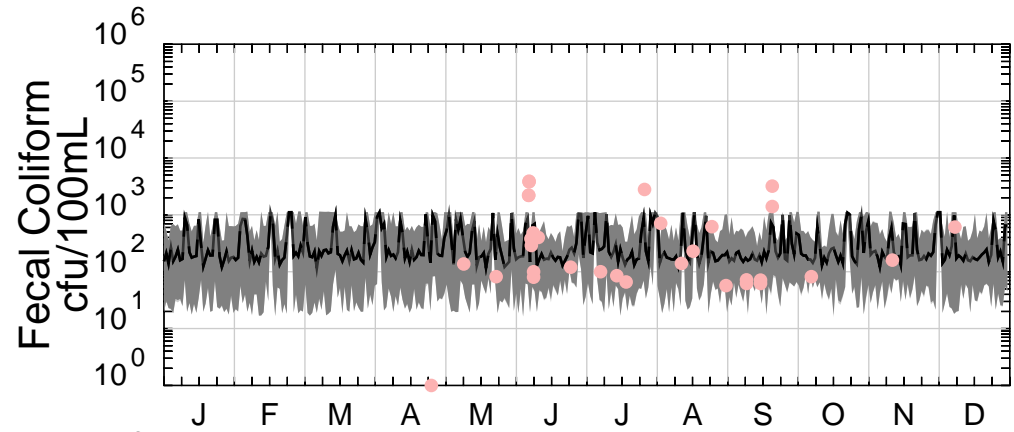
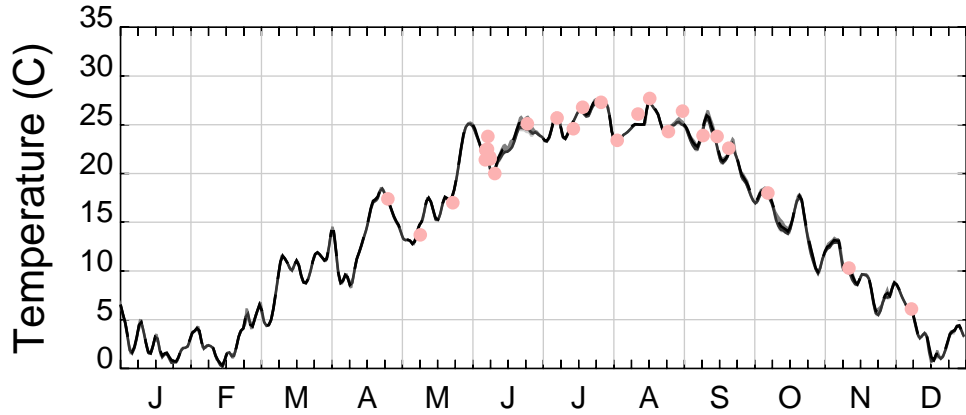
## Additional Water Quality Model Calibration Figures



# Appendix E-1

## Additional Calibration Annual Time-Series Figures

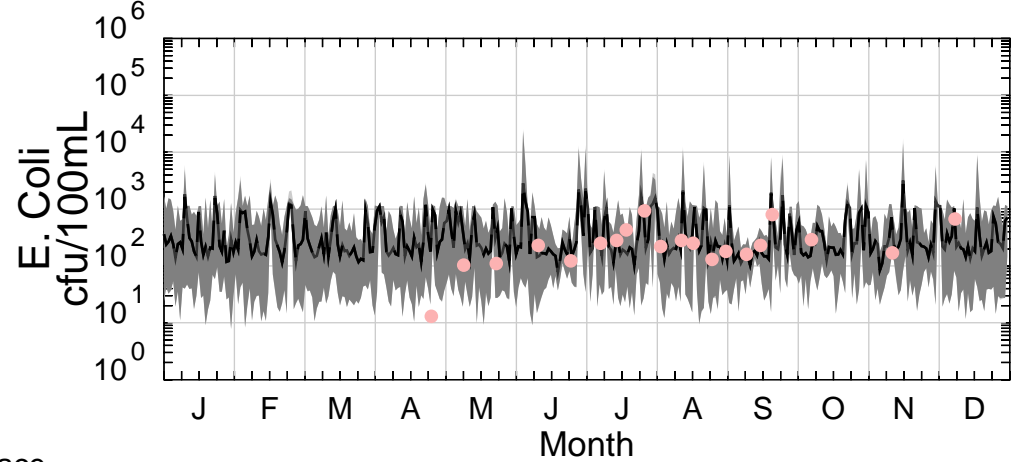
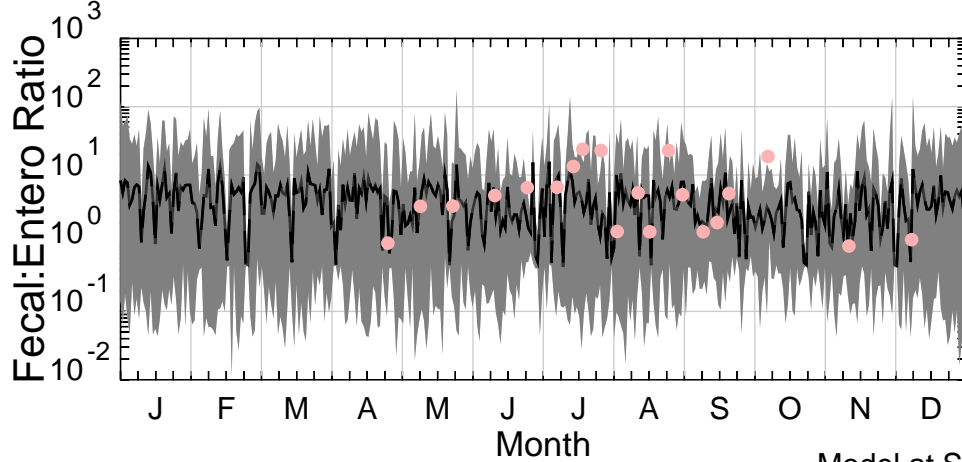
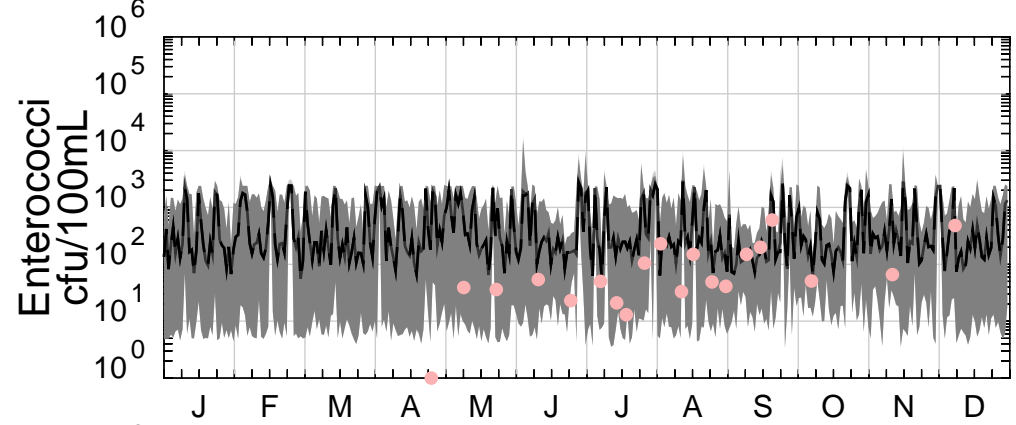
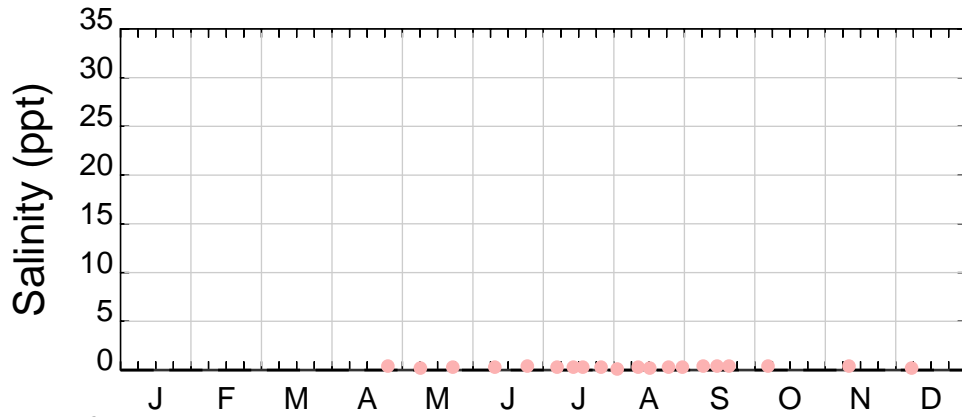
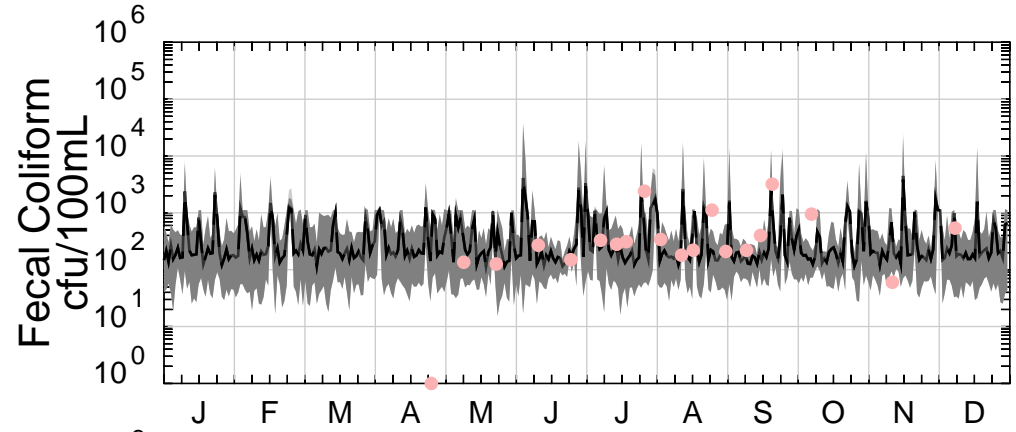
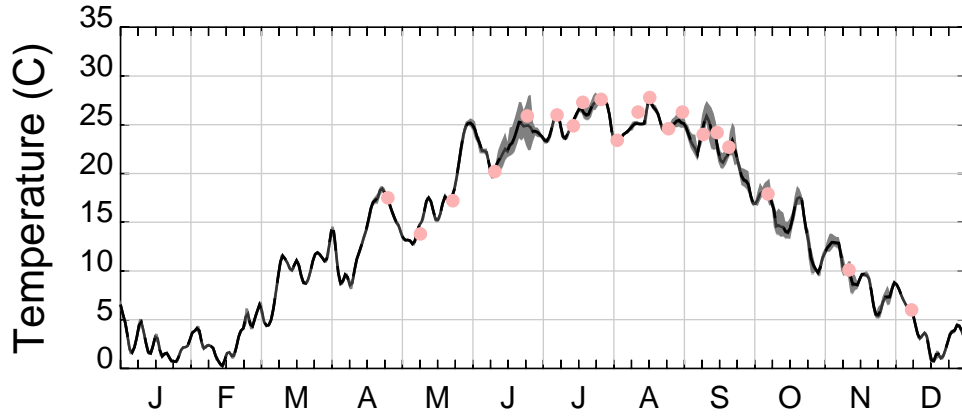
**Station: B24**



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

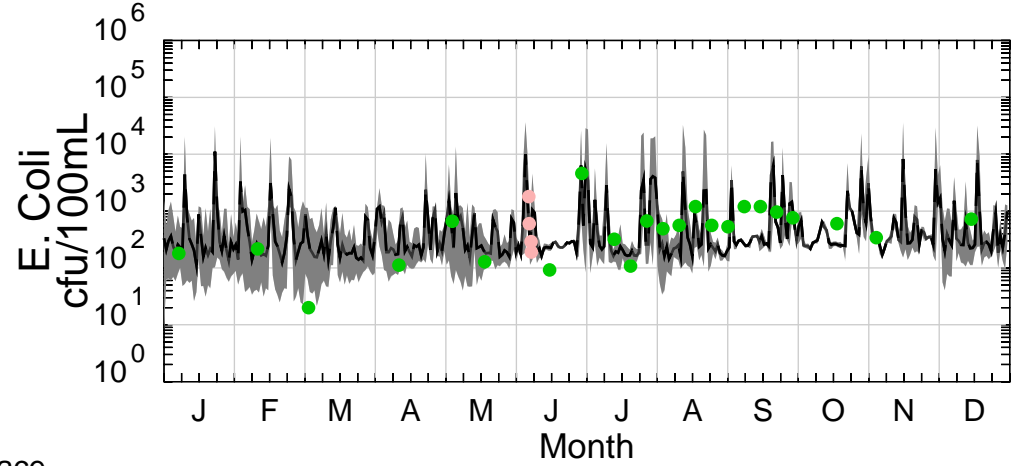
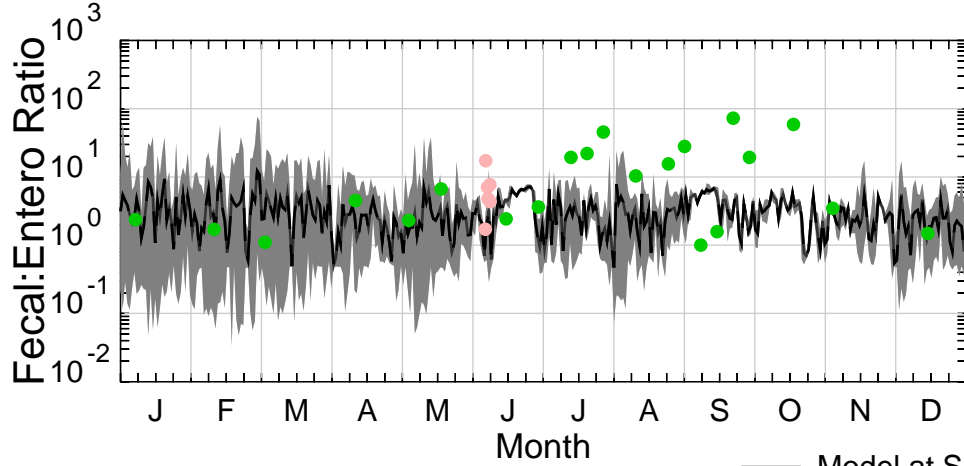
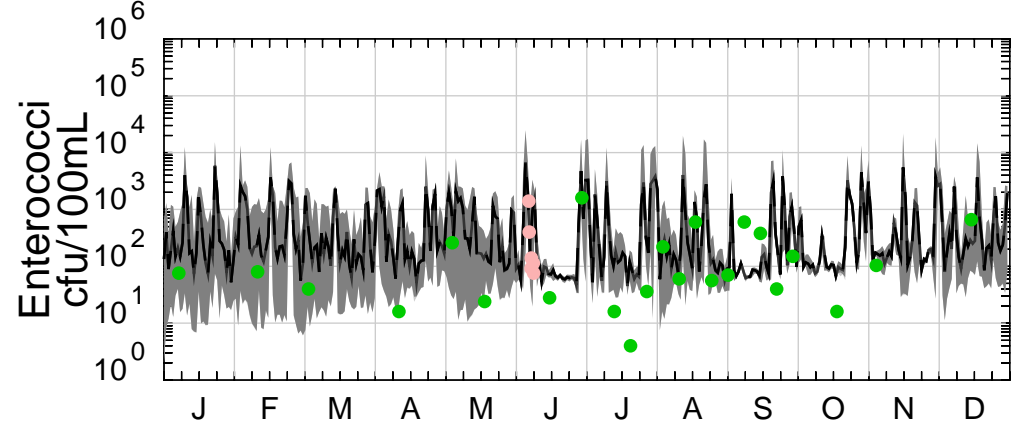
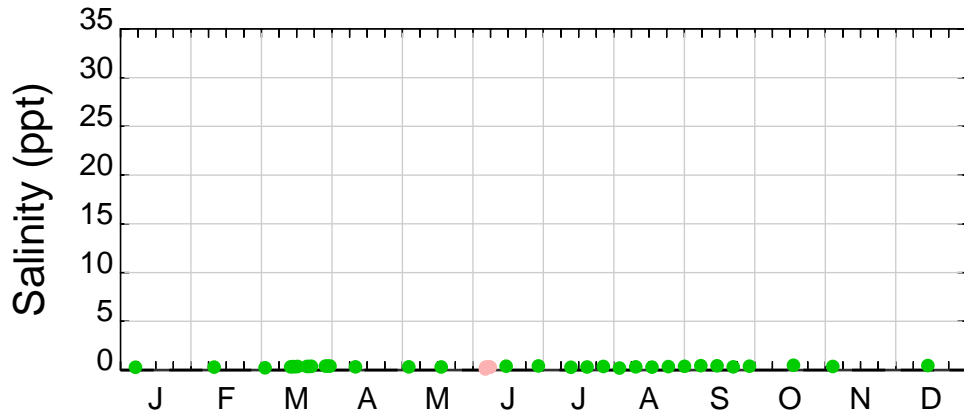
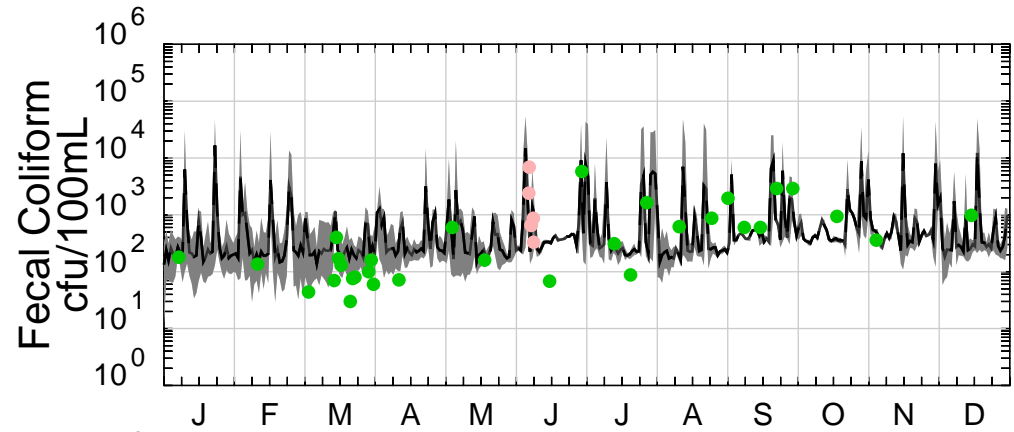
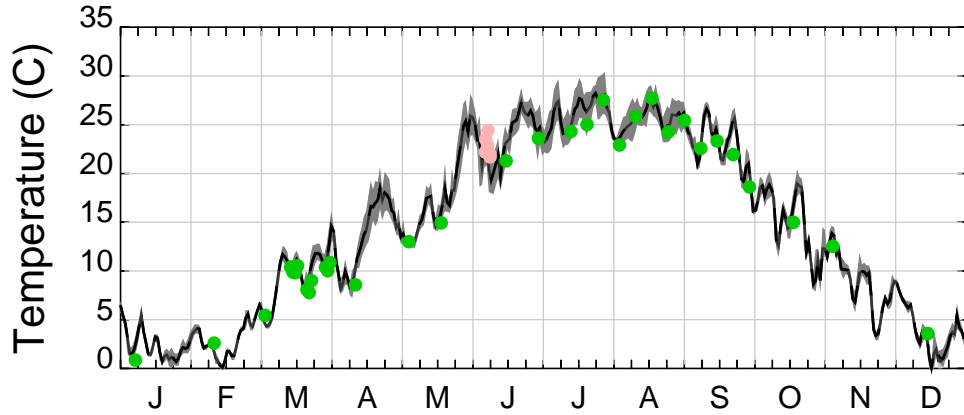
Station: 2



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

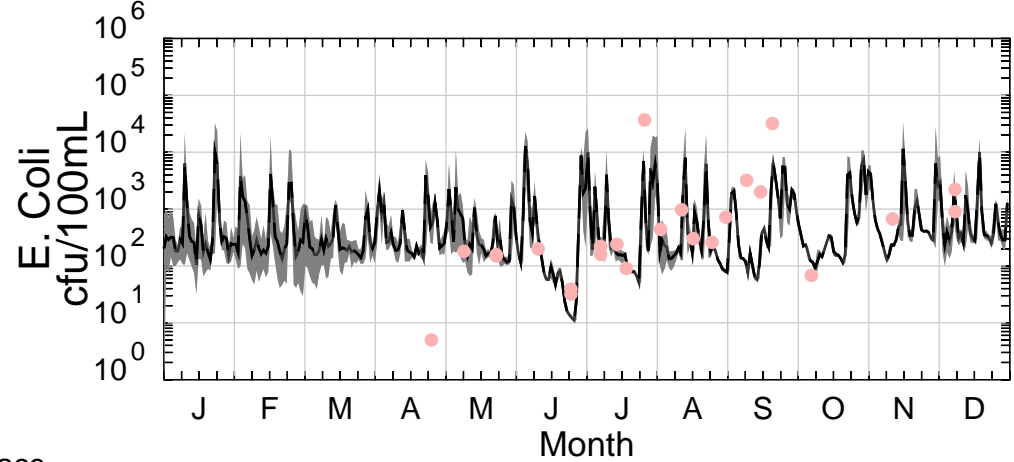
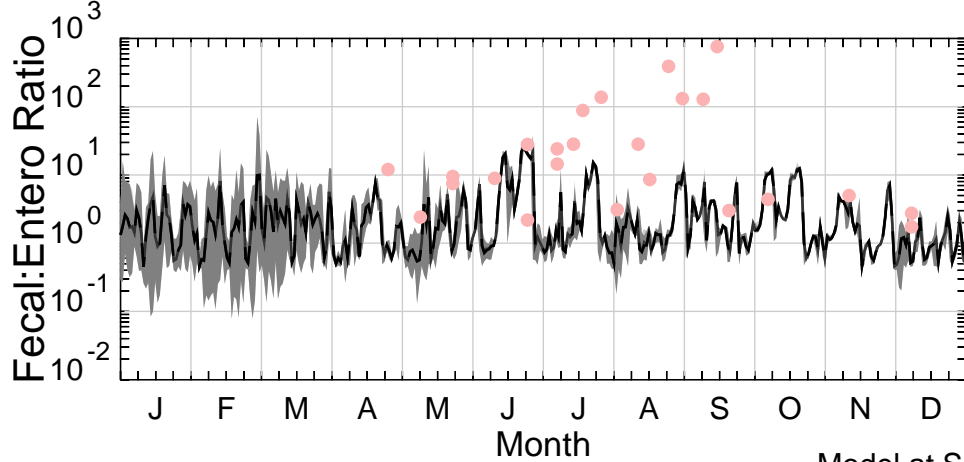
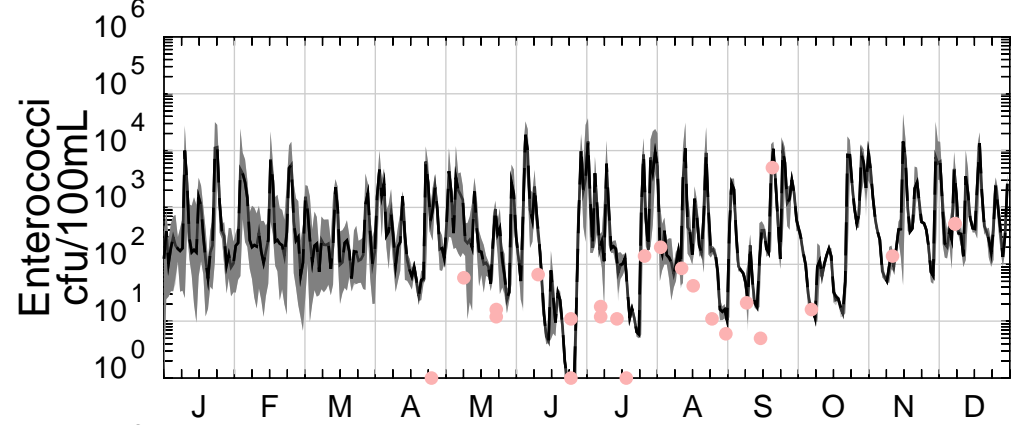
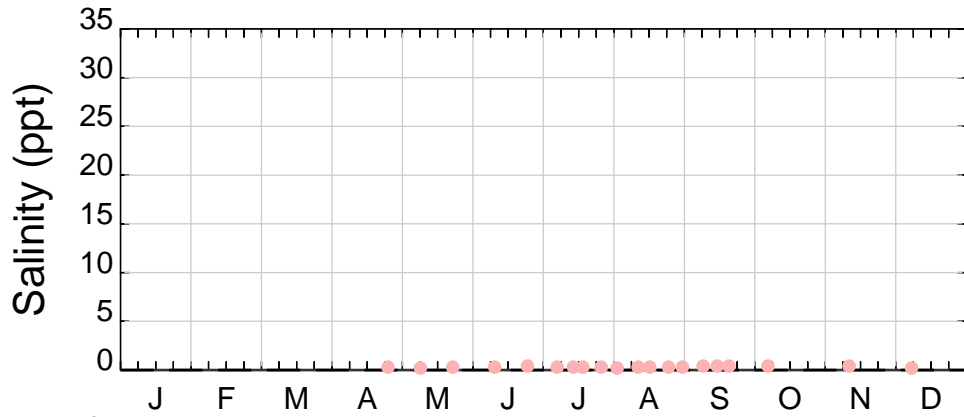
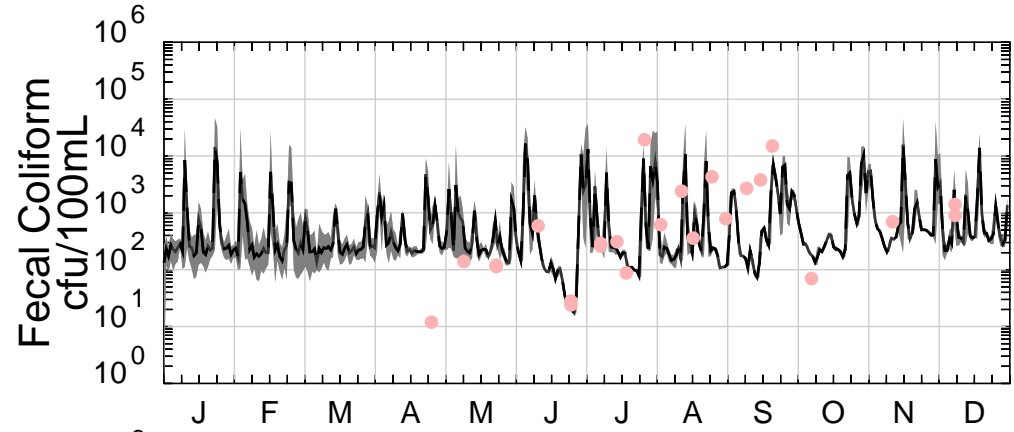
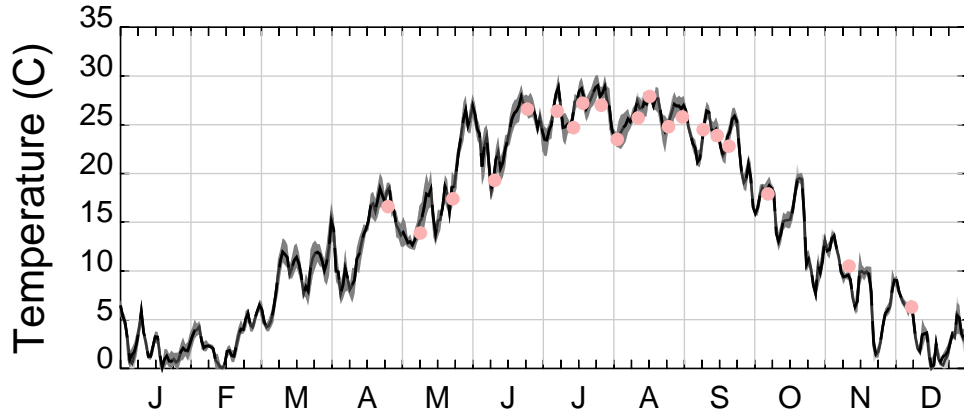
Station: 3



Model = 2016  
 Data = 2016

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

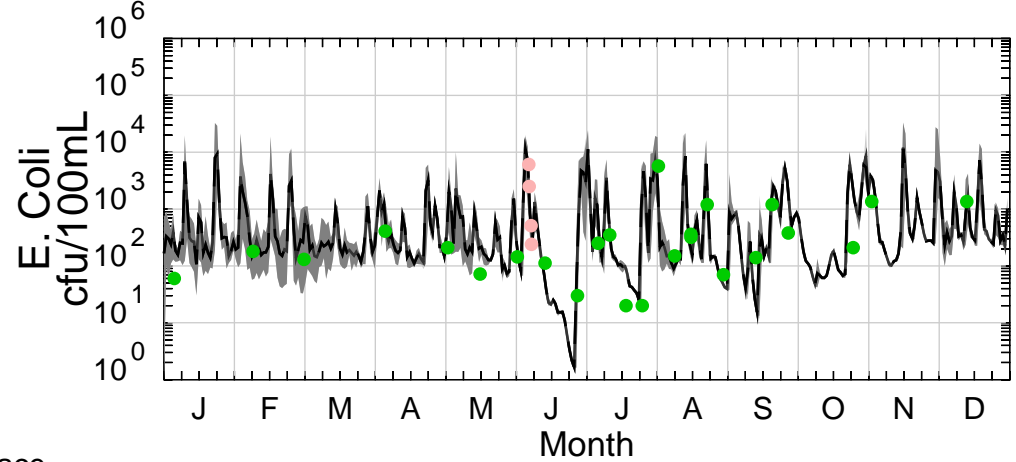
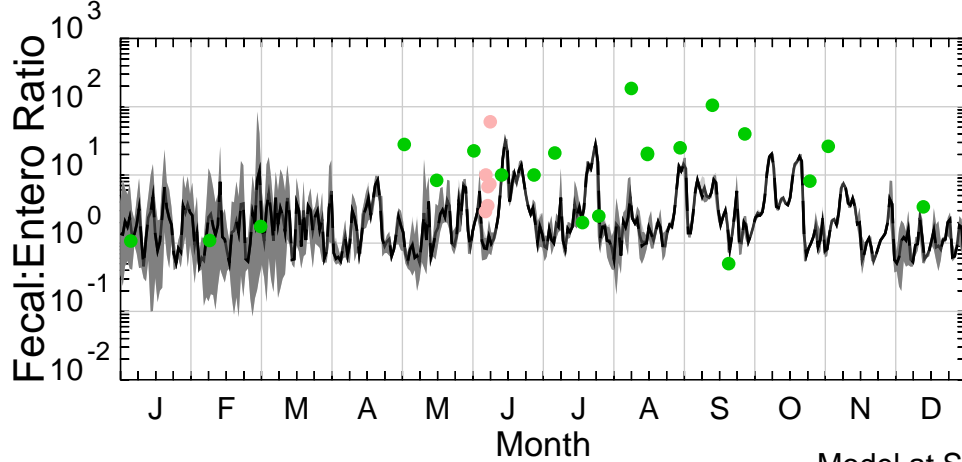
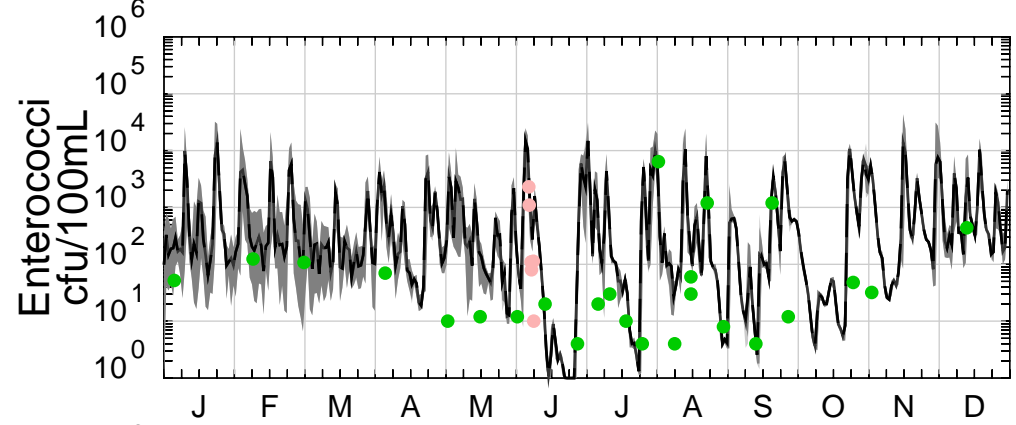
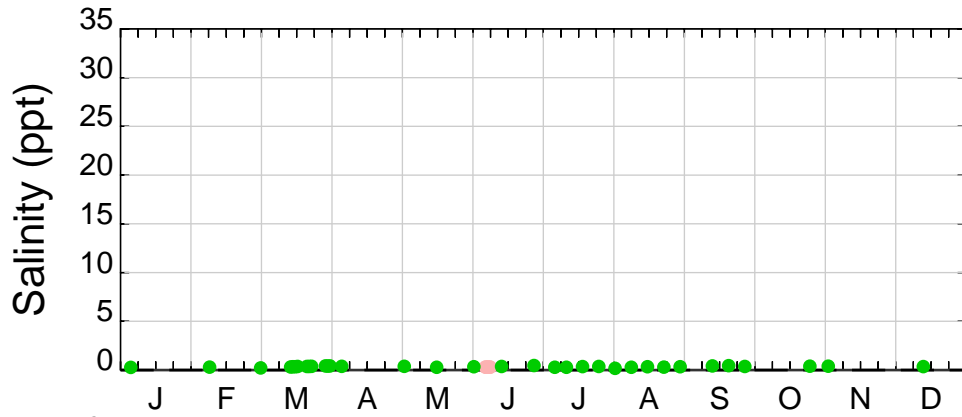
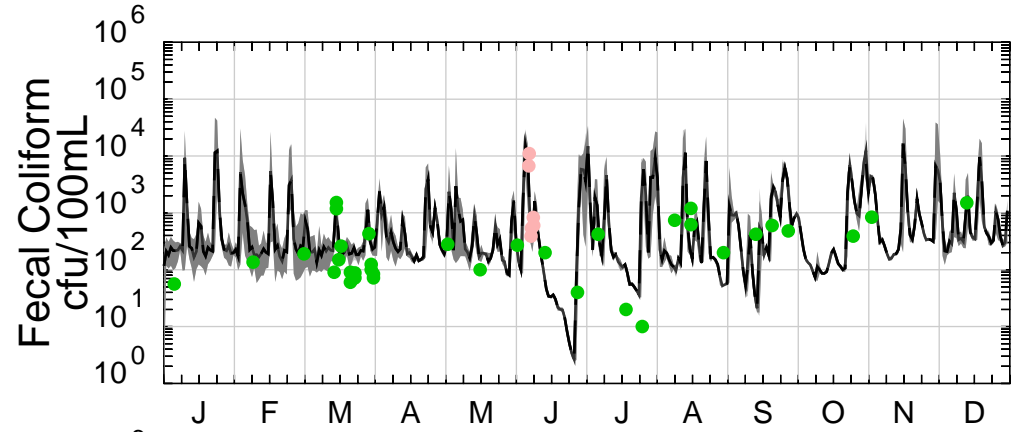
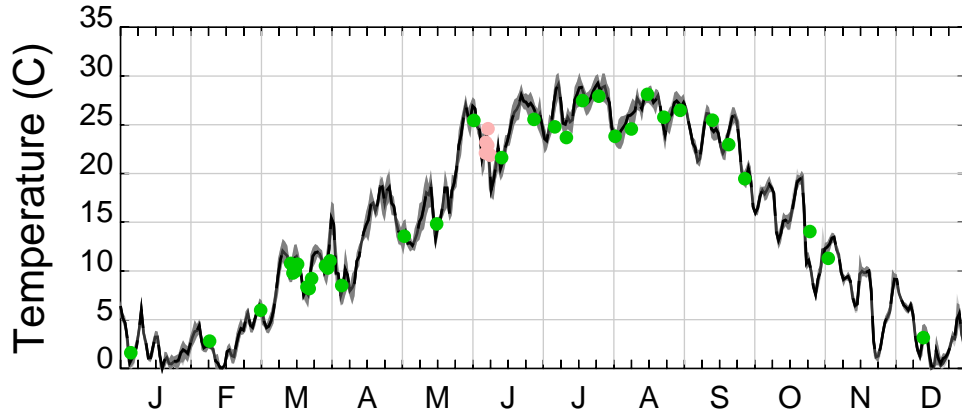
Station: B22



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

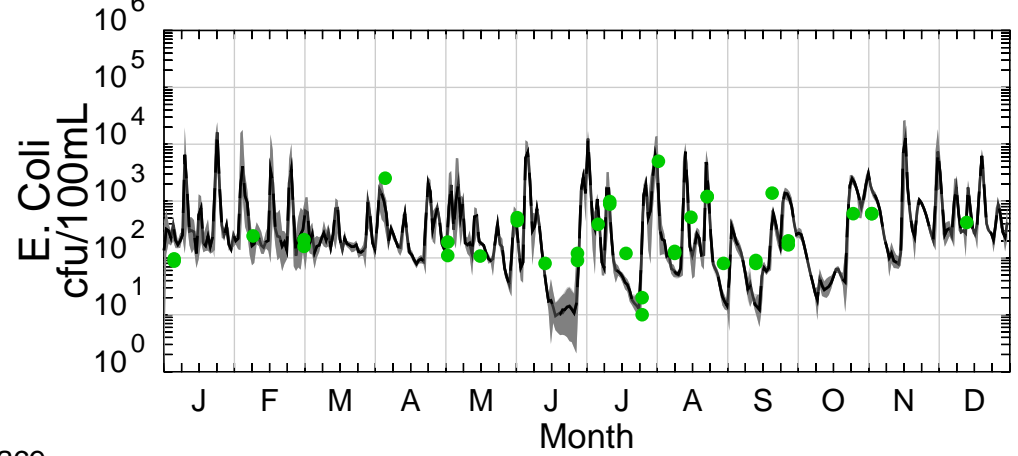
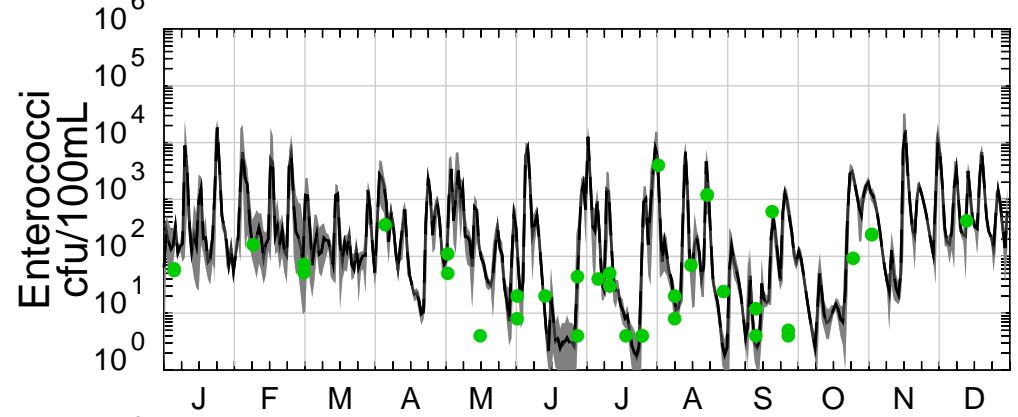
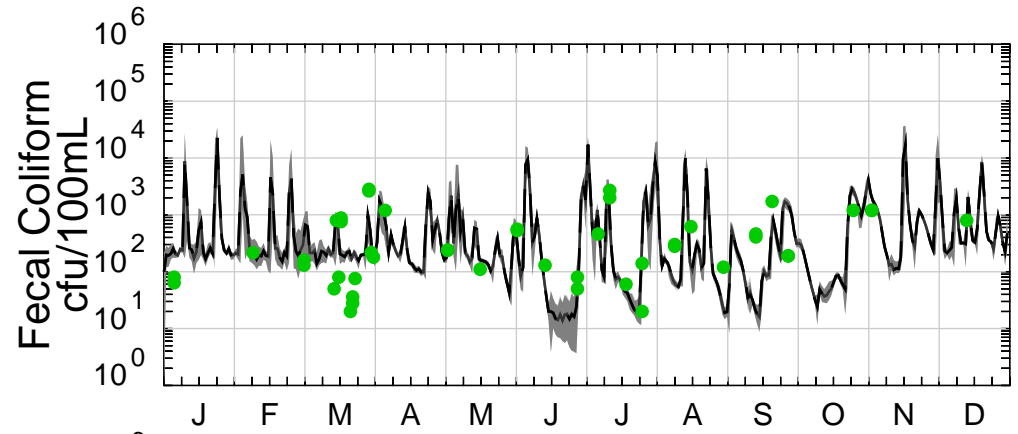
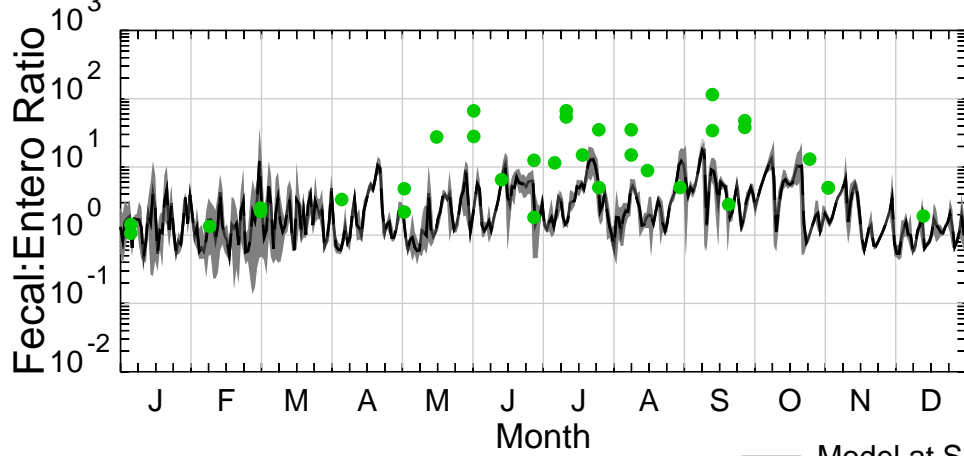
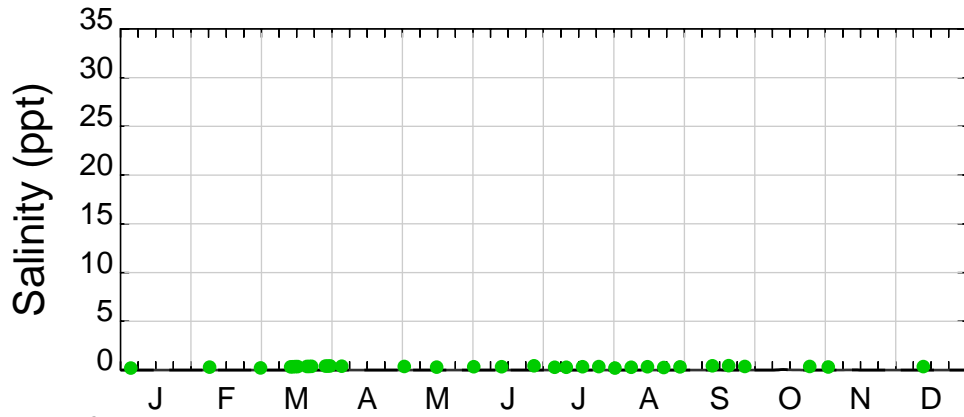
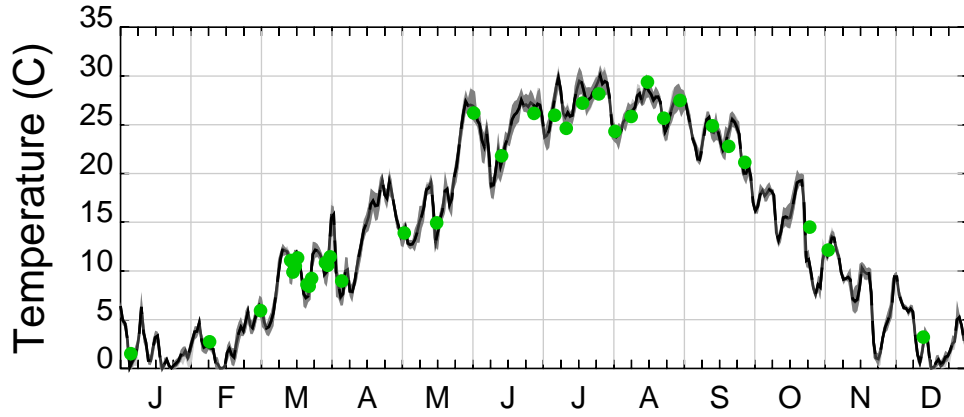


Model = 2016  
 Data = 2016

- 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



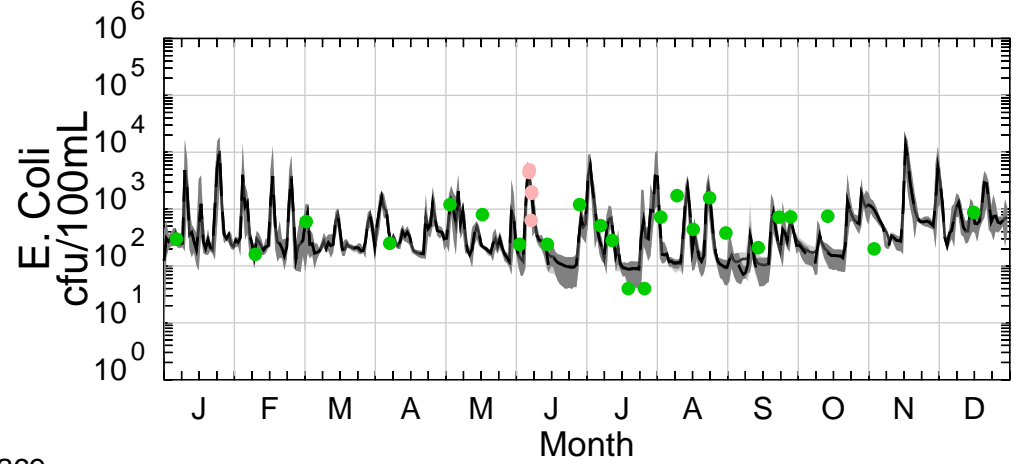
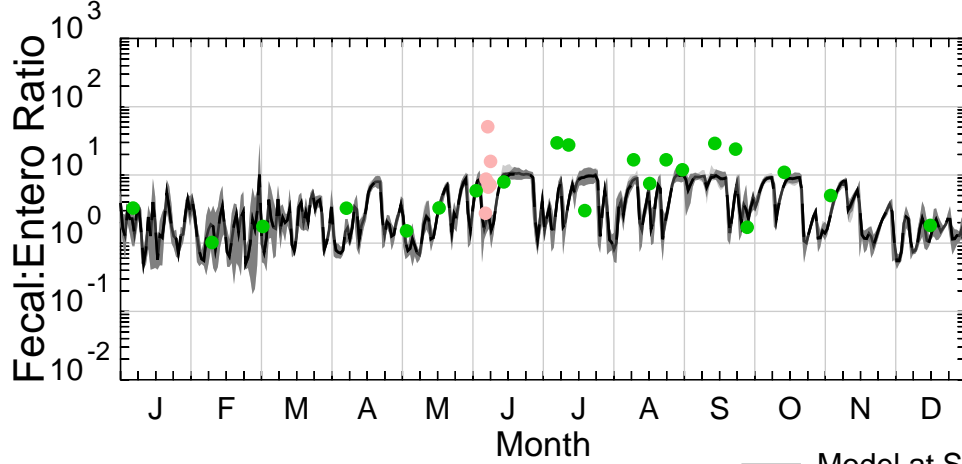
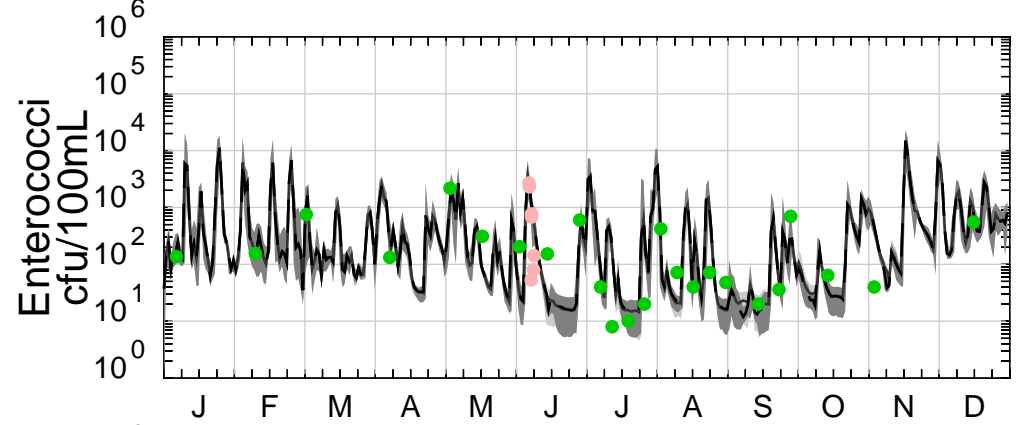
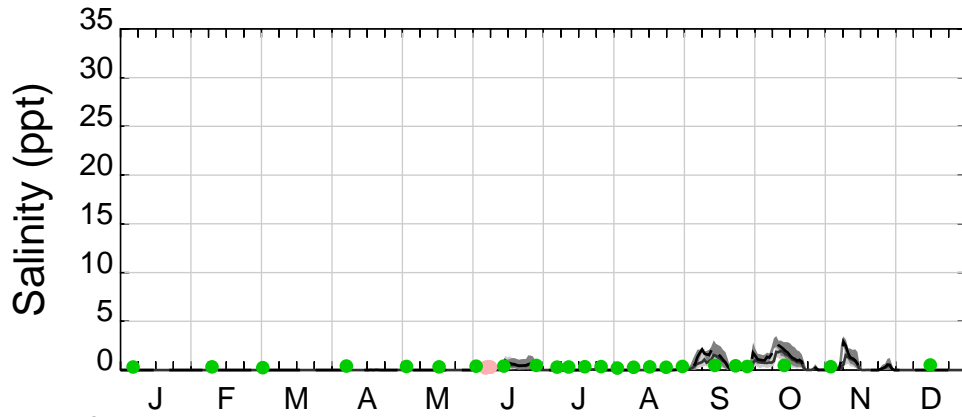
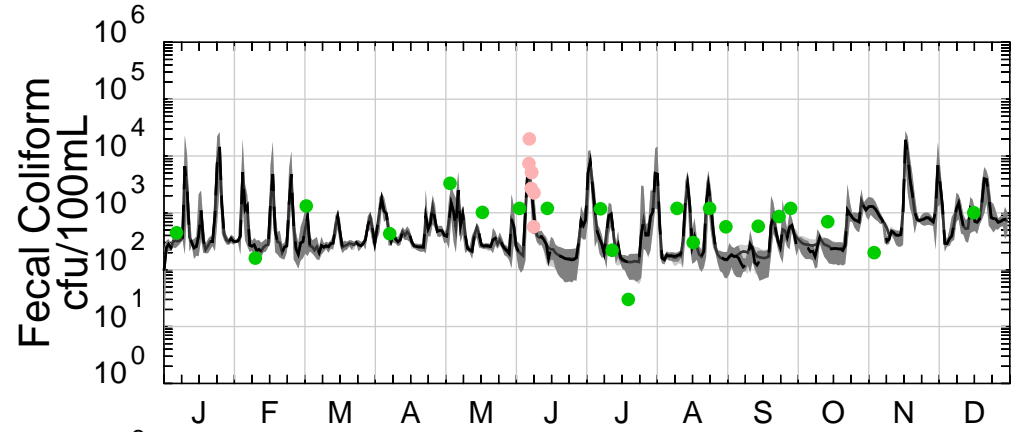
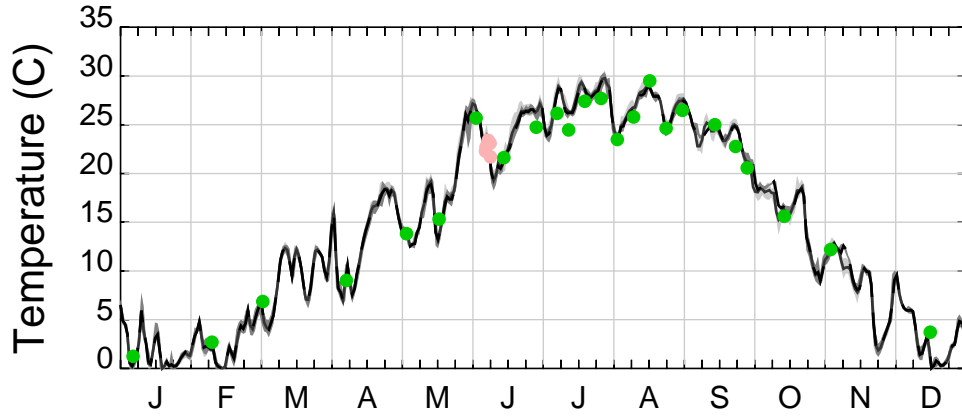
Station: 5



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

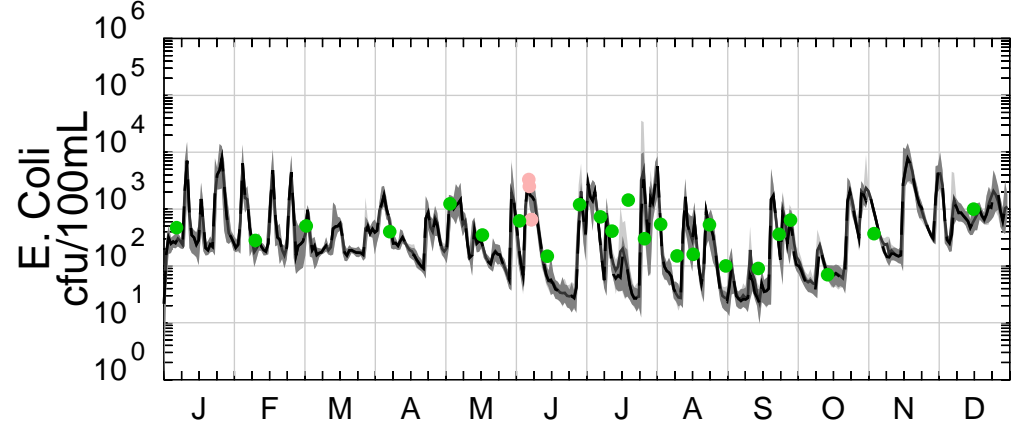
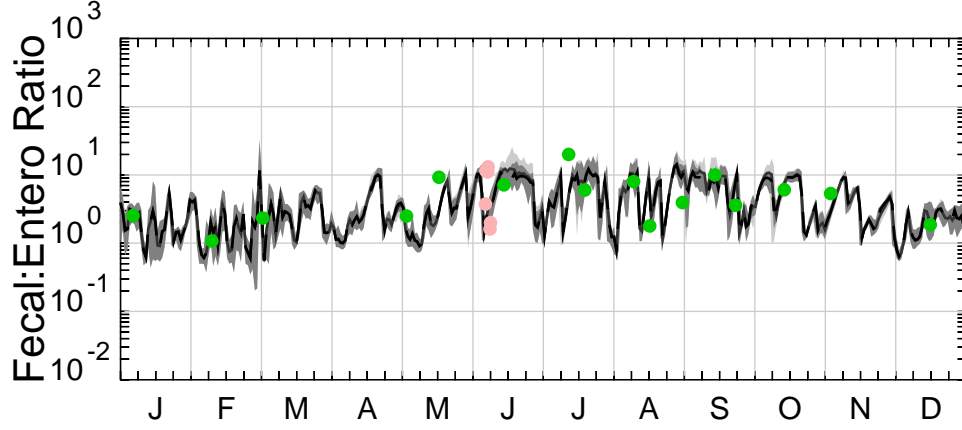
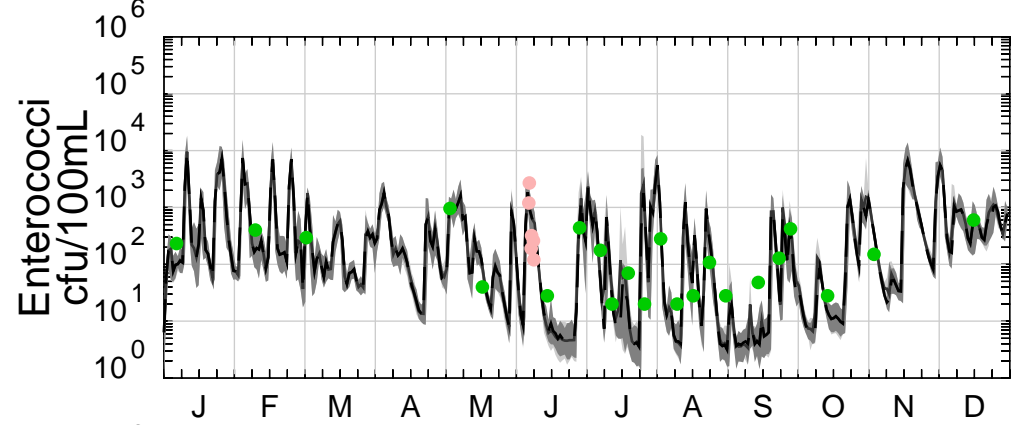
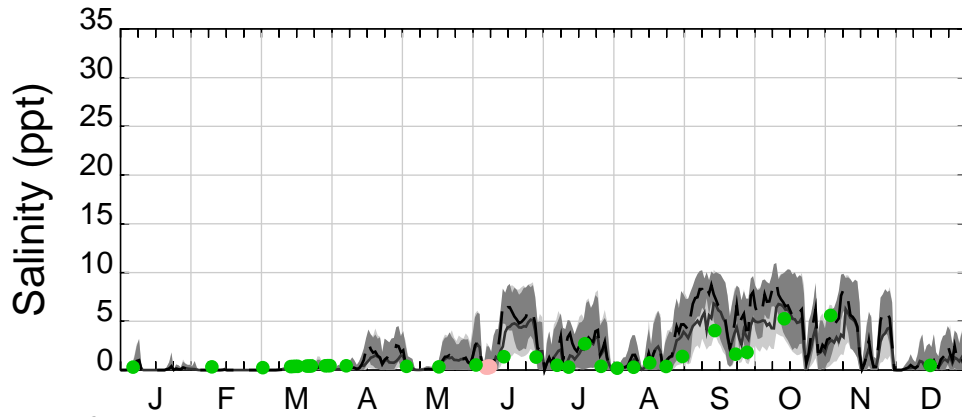
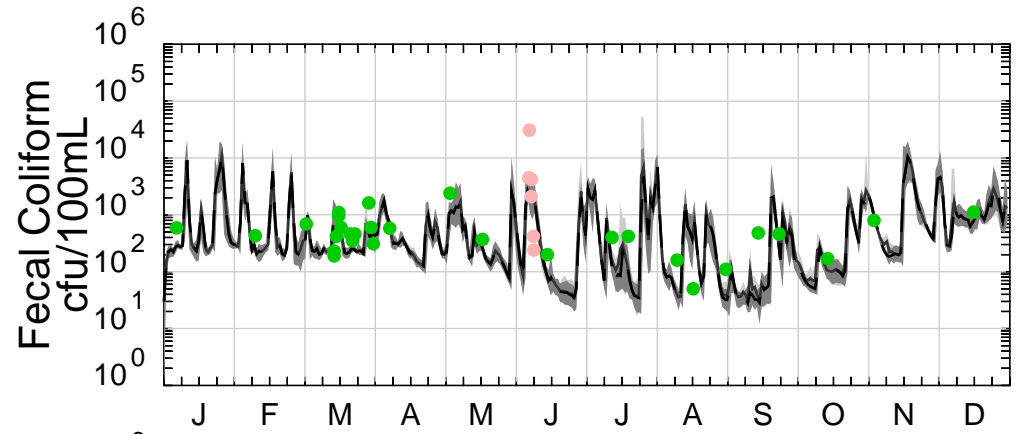
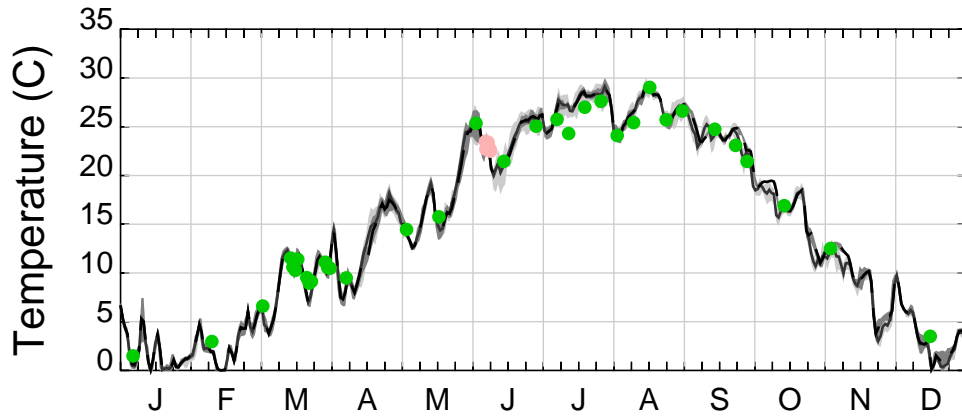
Station: 7



- Model 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: 8

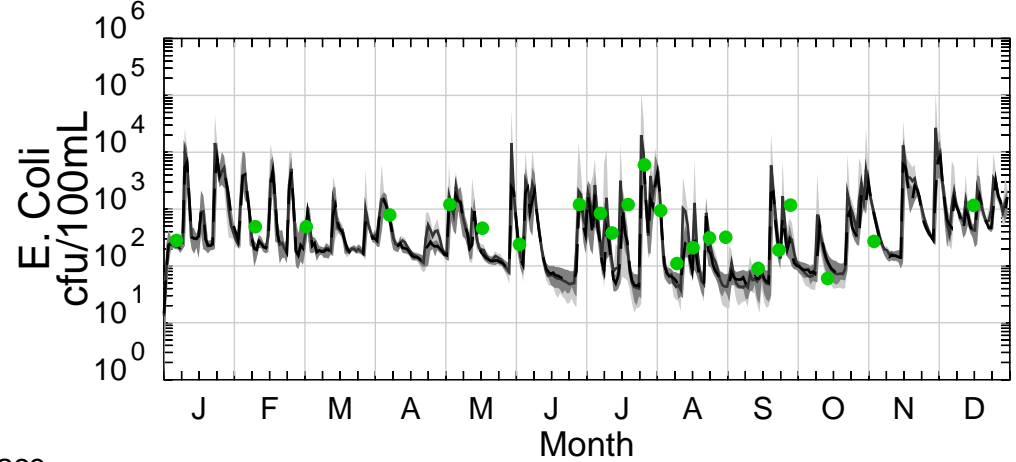
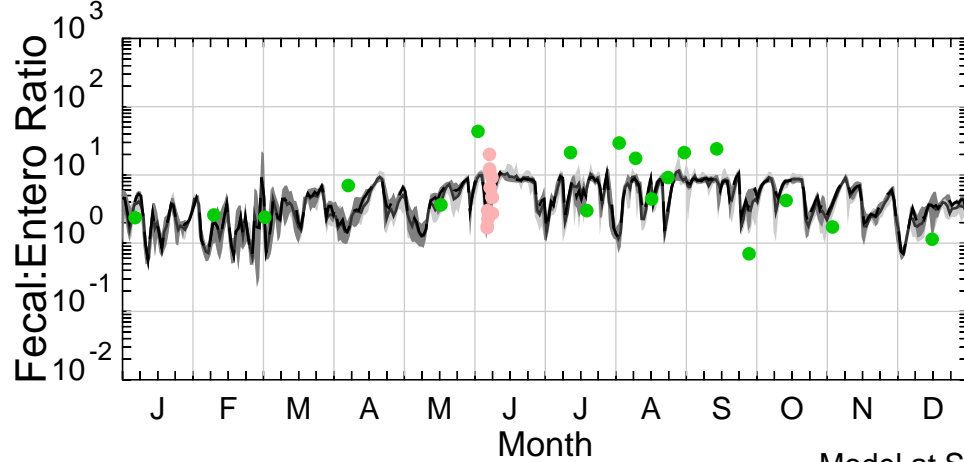
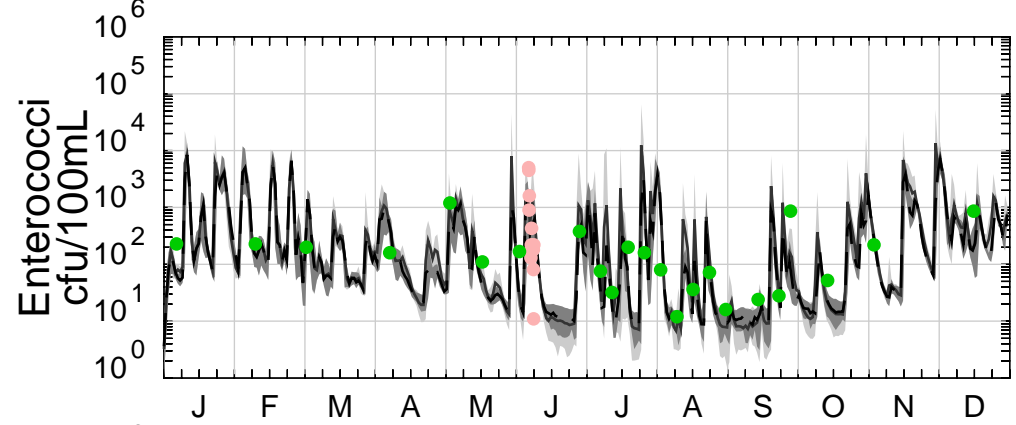
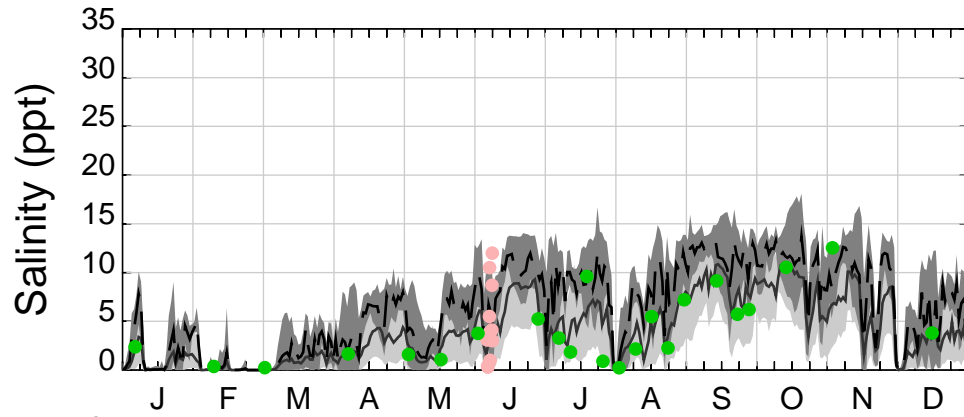
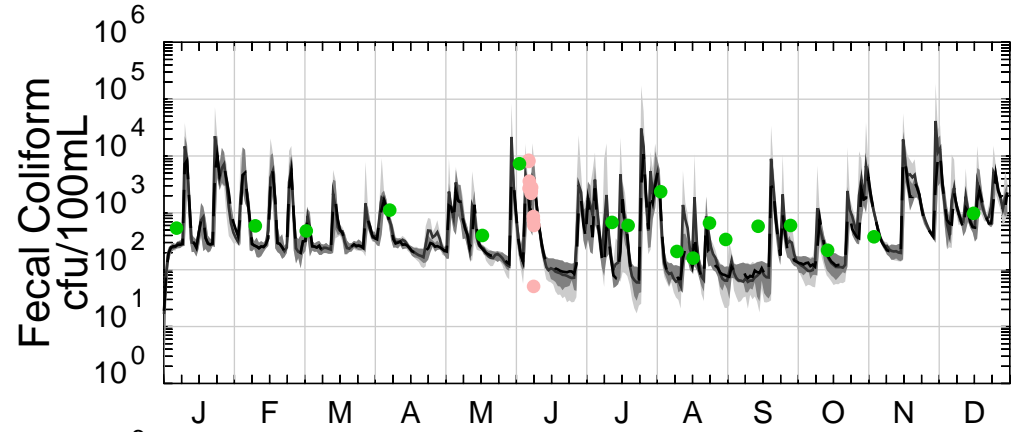
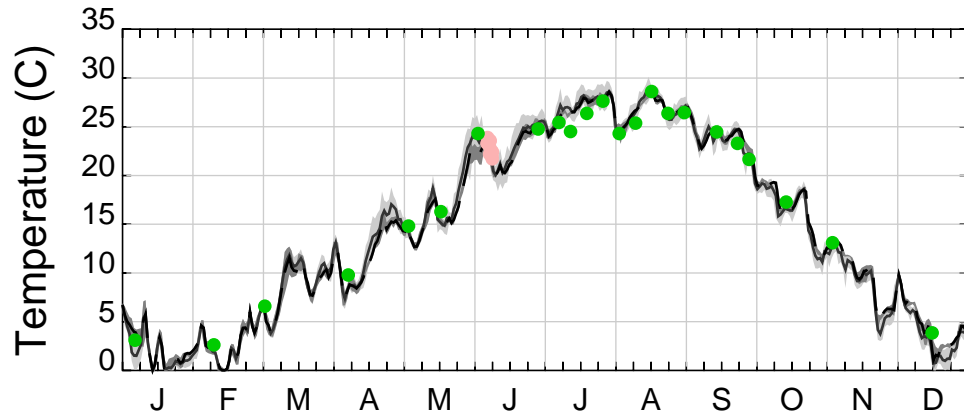


Model = 2016  
 Data = 2016

— 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

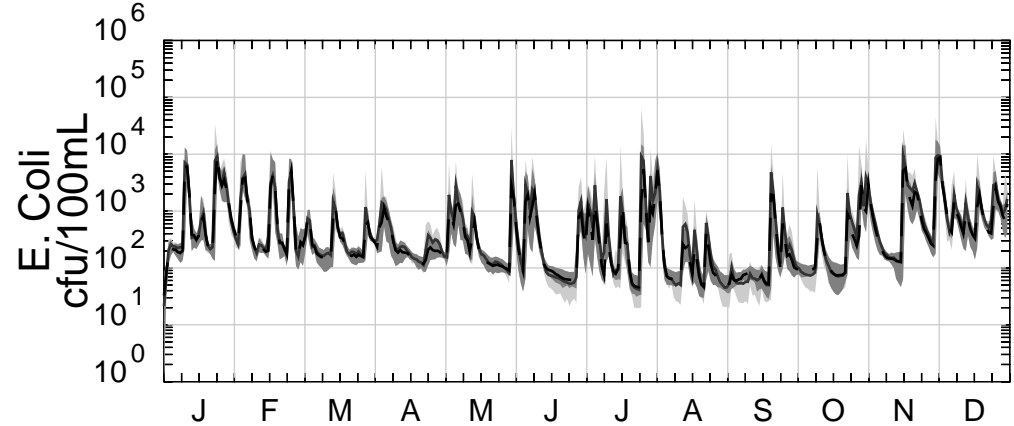
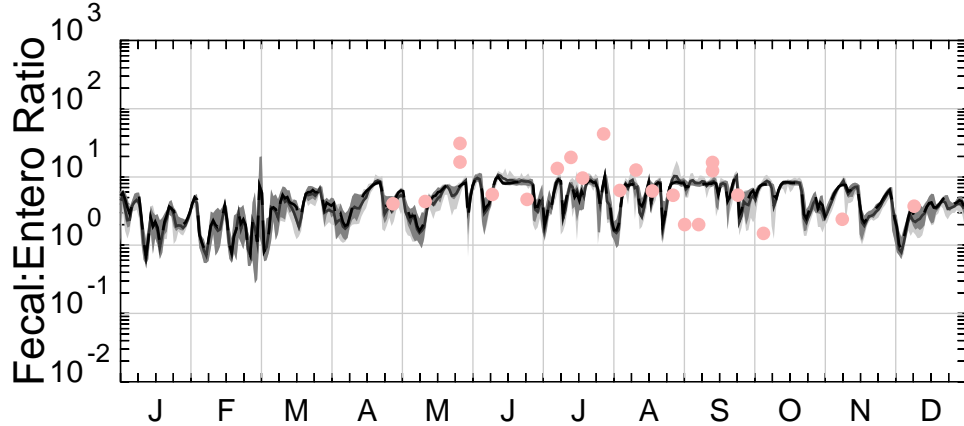
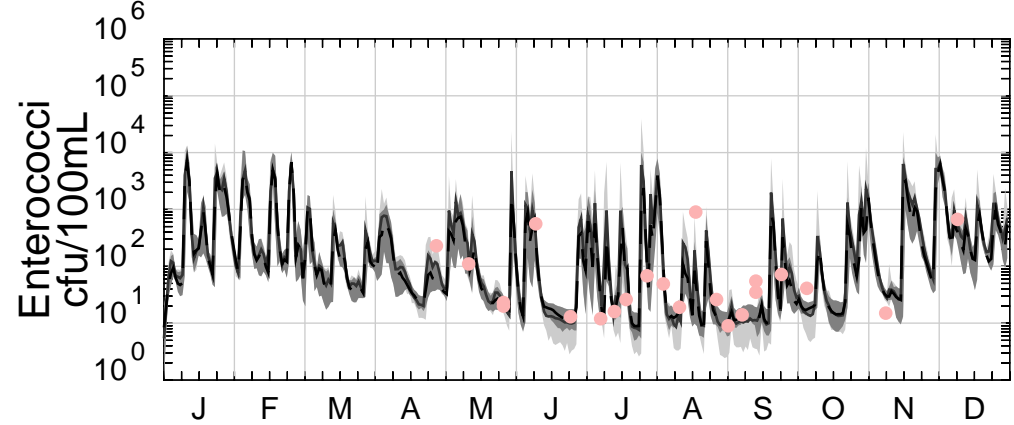
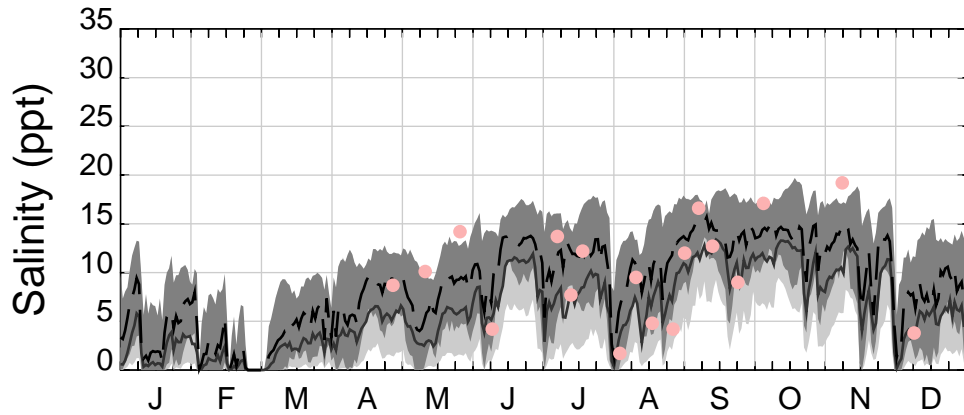
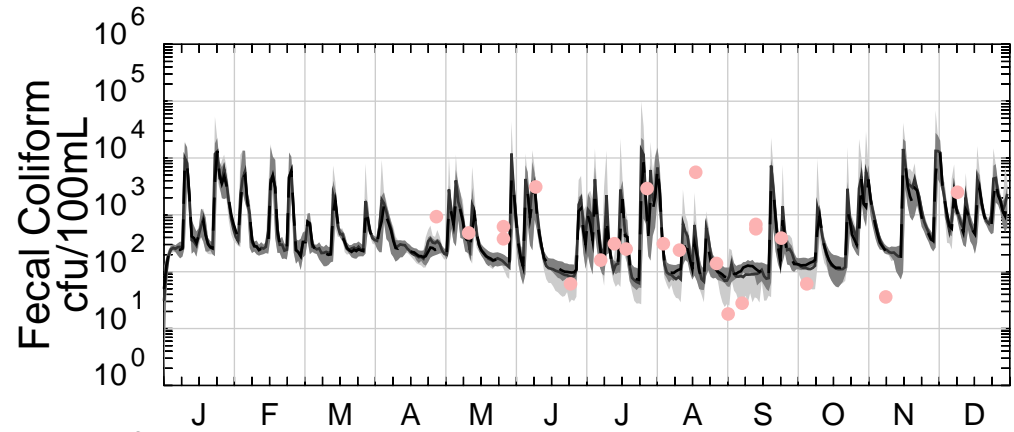
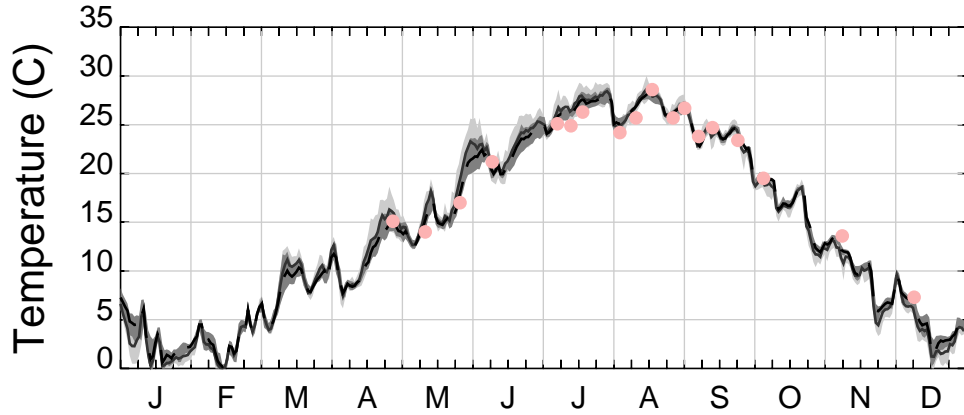
Station: 10



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

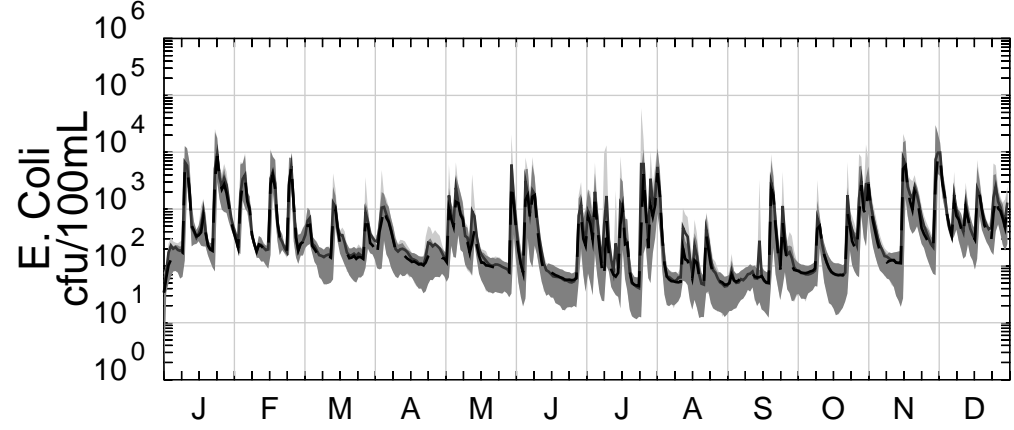
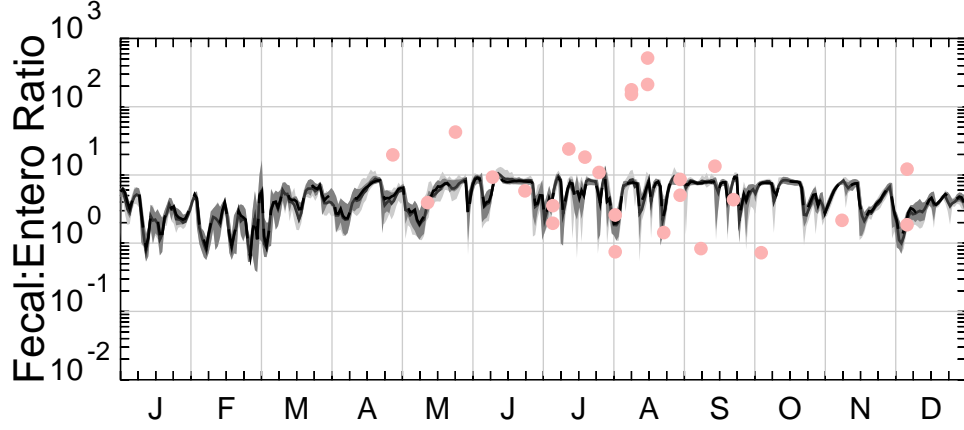
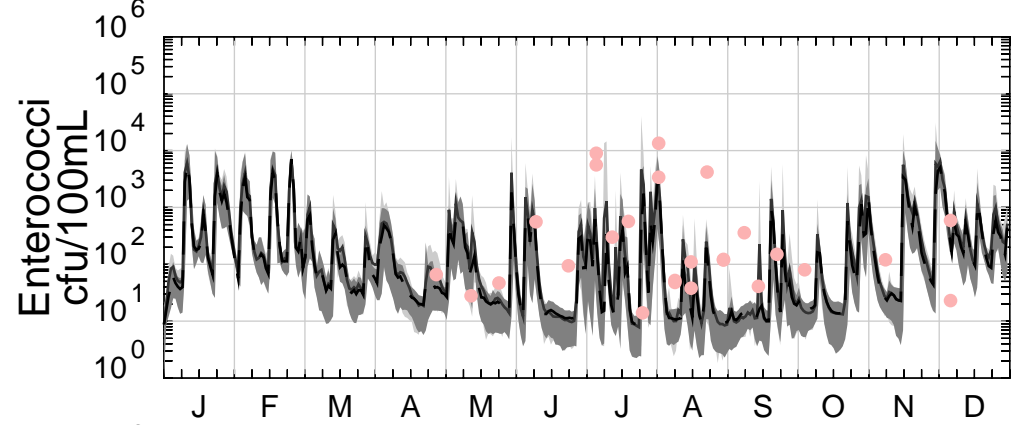
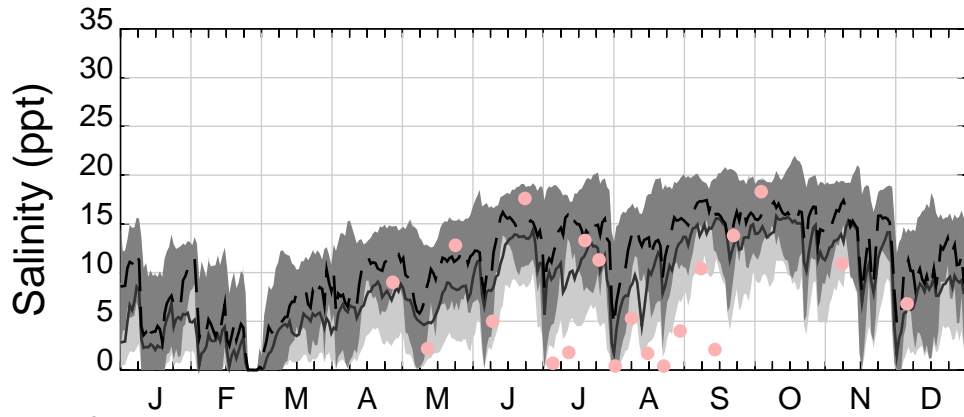
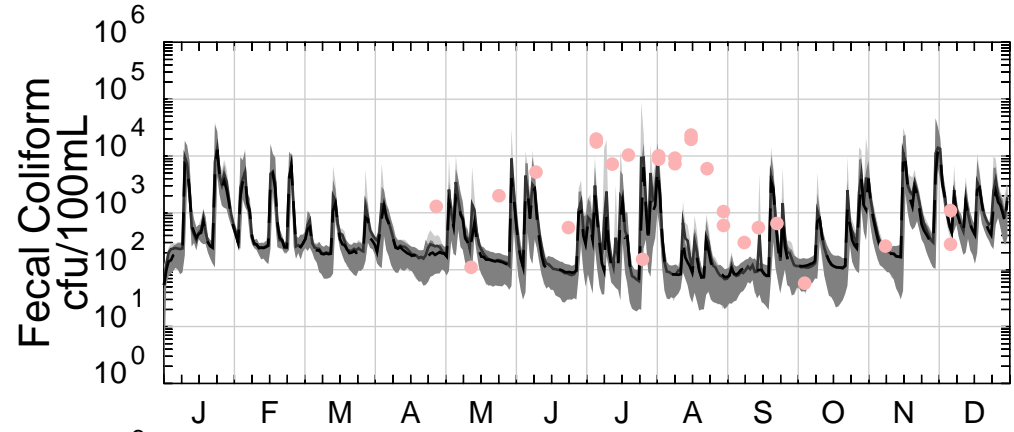
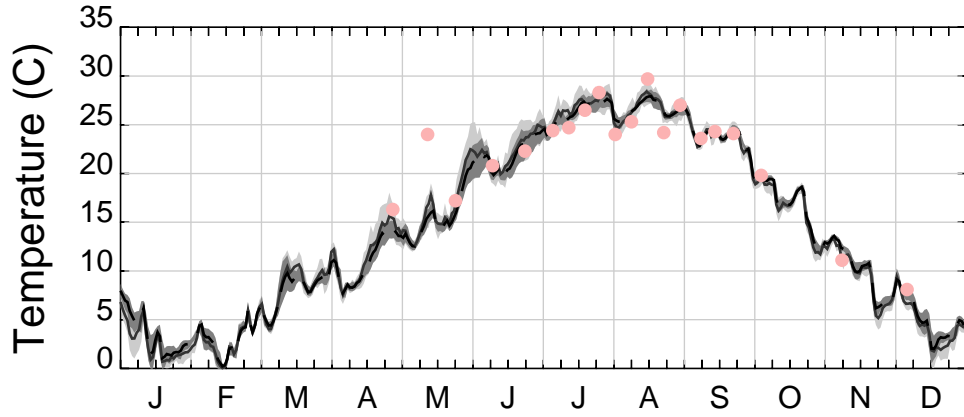
Station: 11



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**

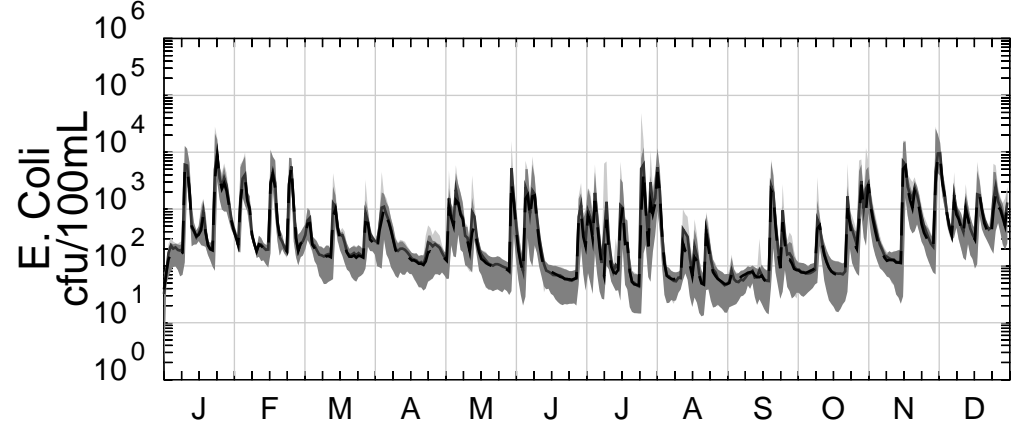
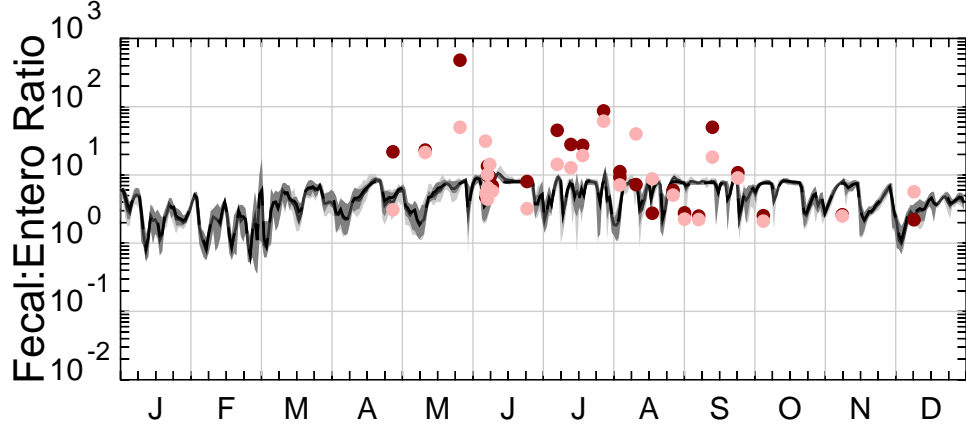
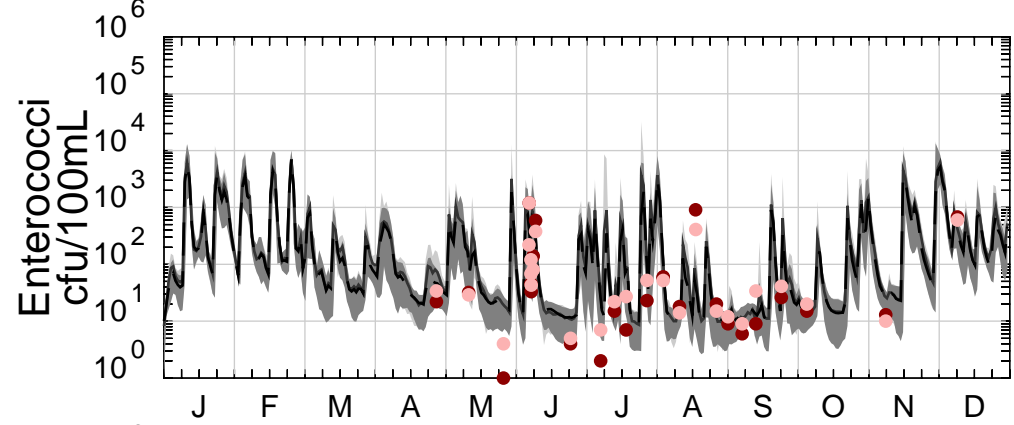
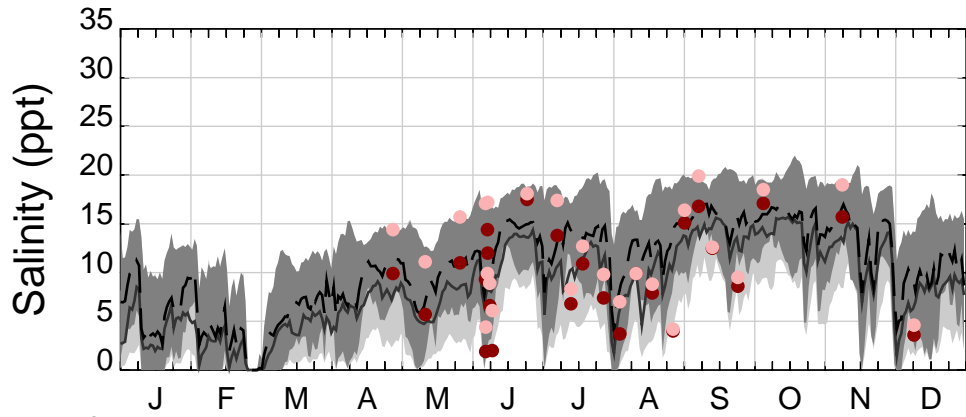
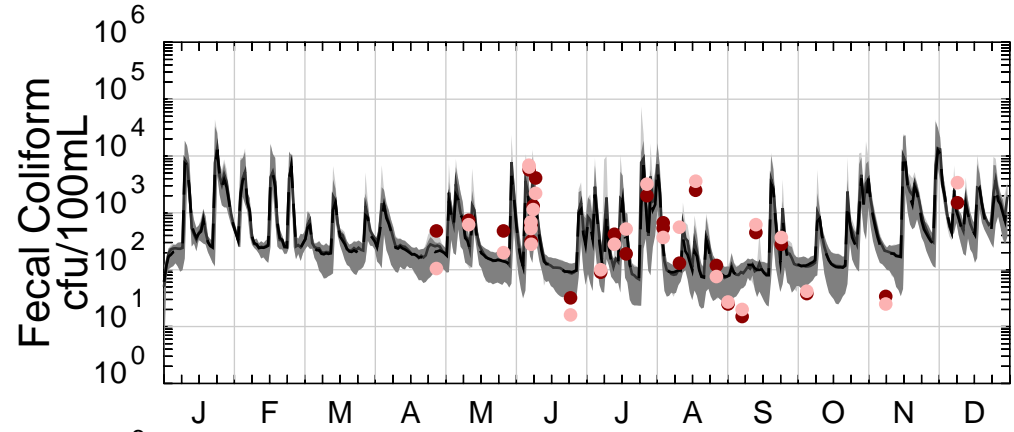
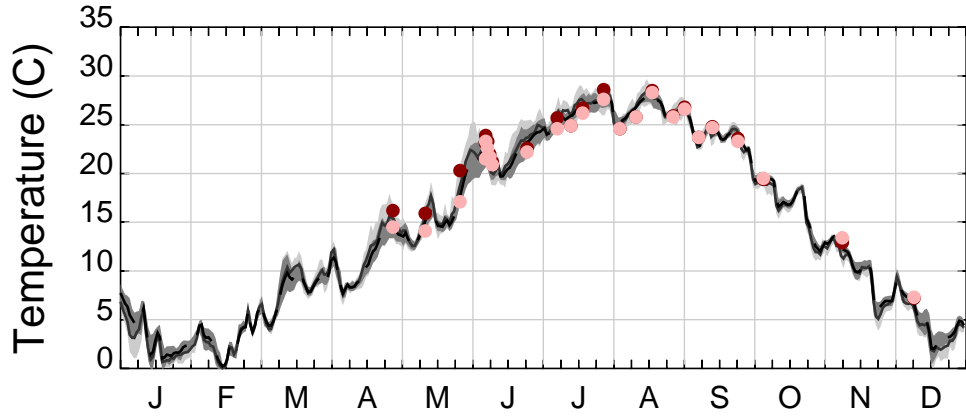


Model = 2016  
 Data = 2016

— 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

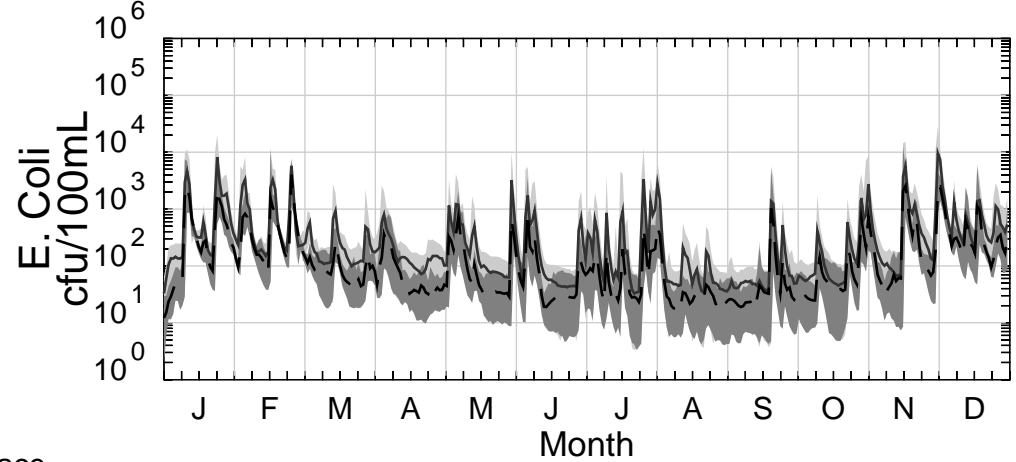
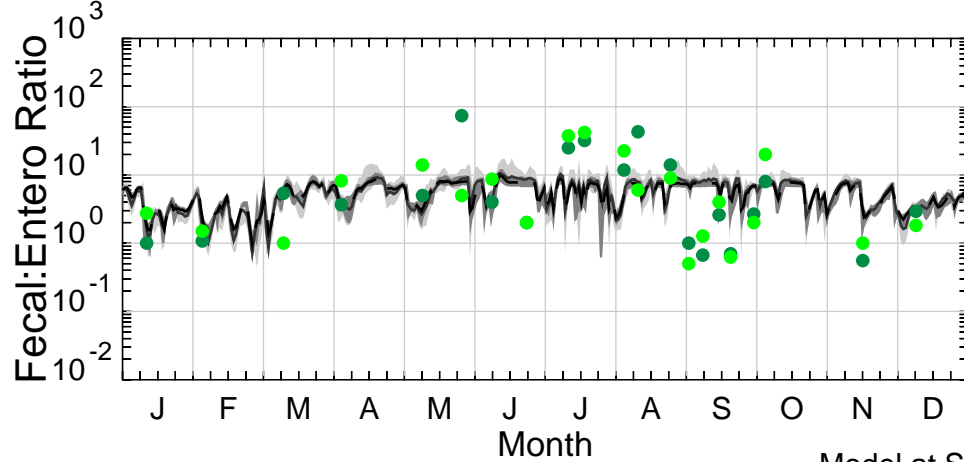
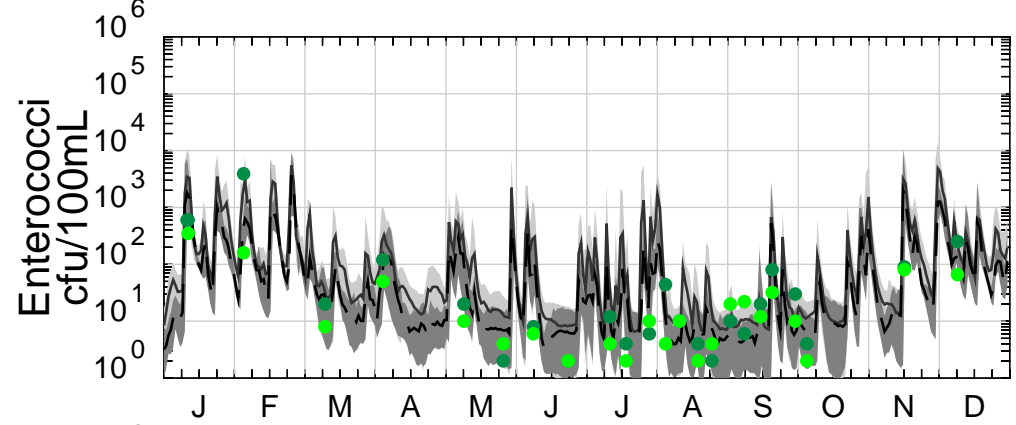
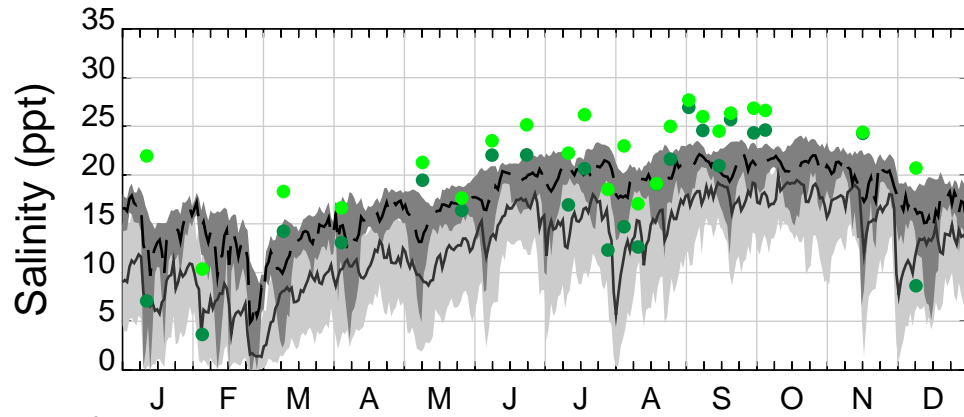
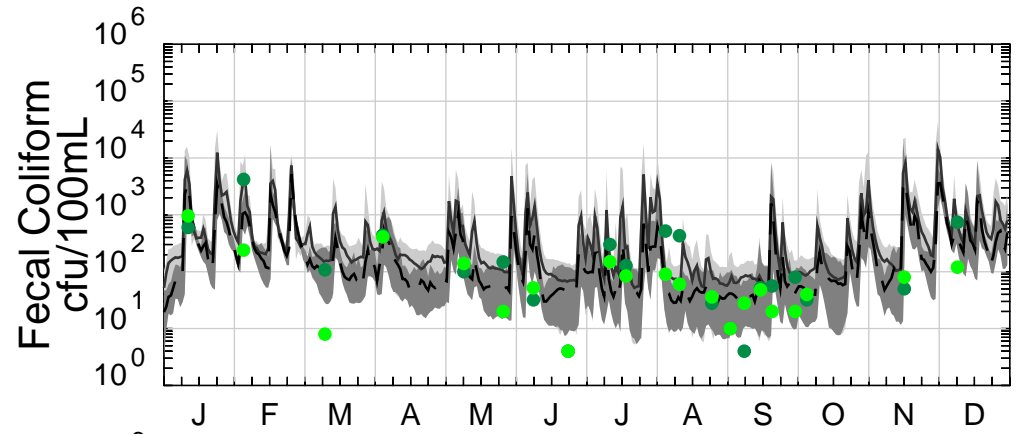
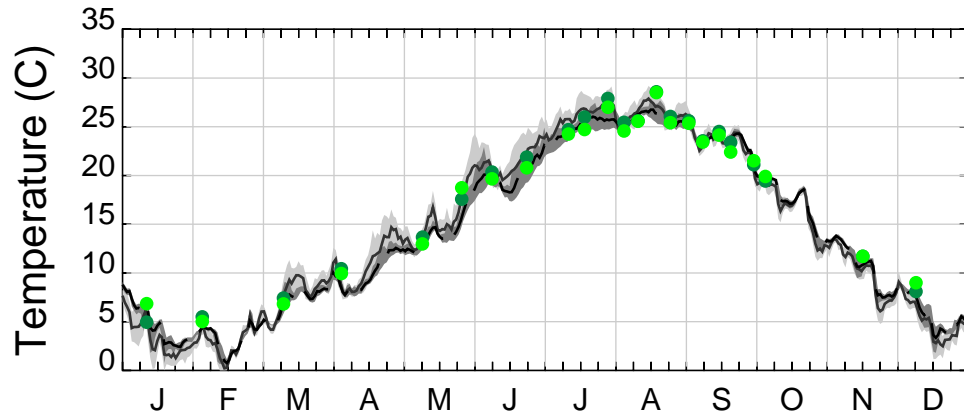
**Station: B6**



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

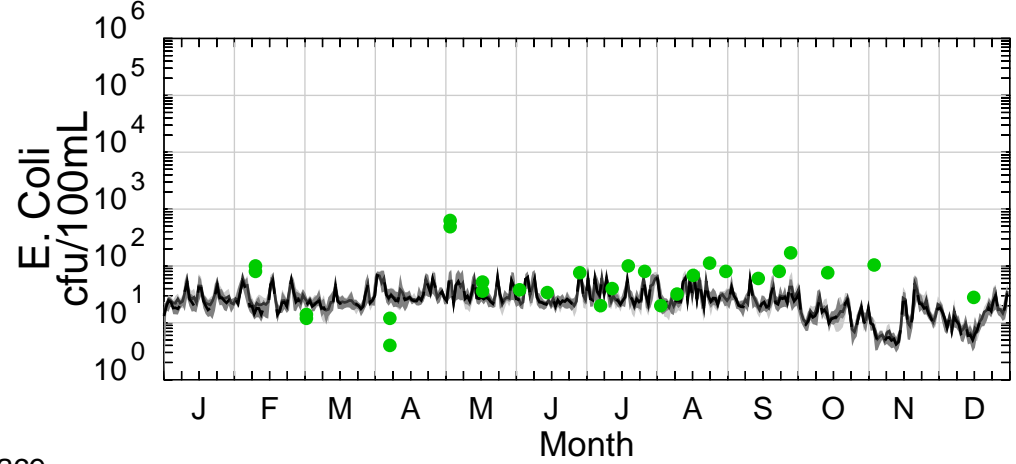
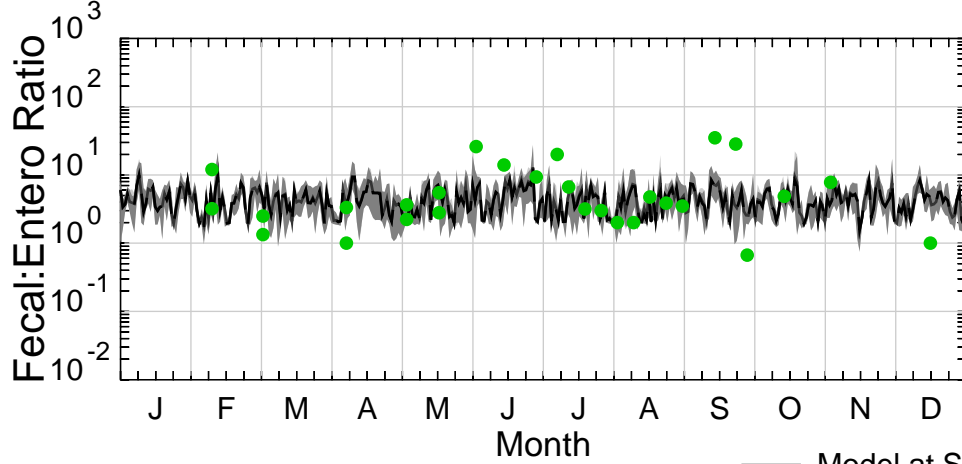
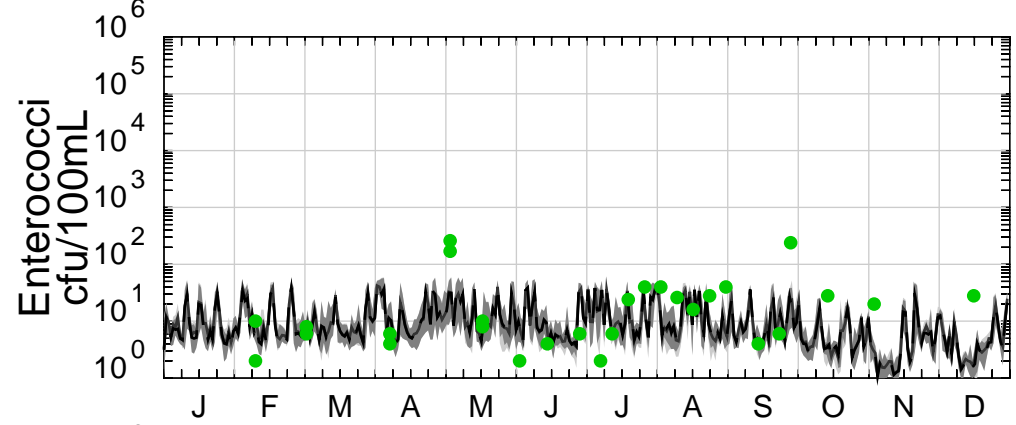
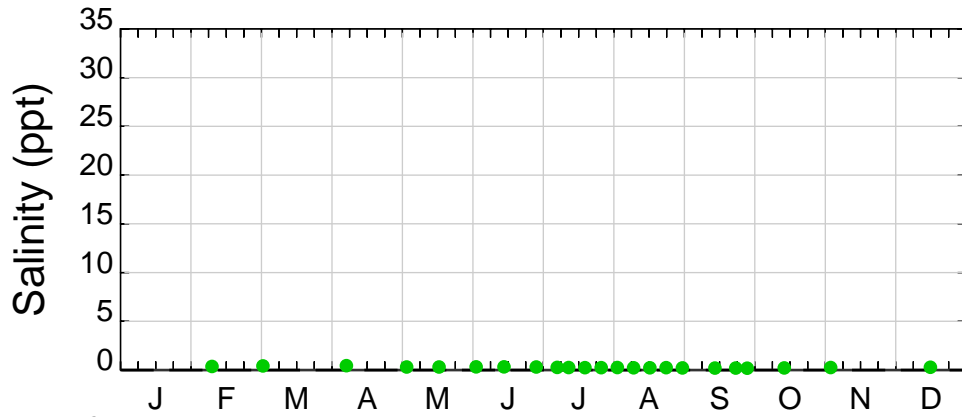
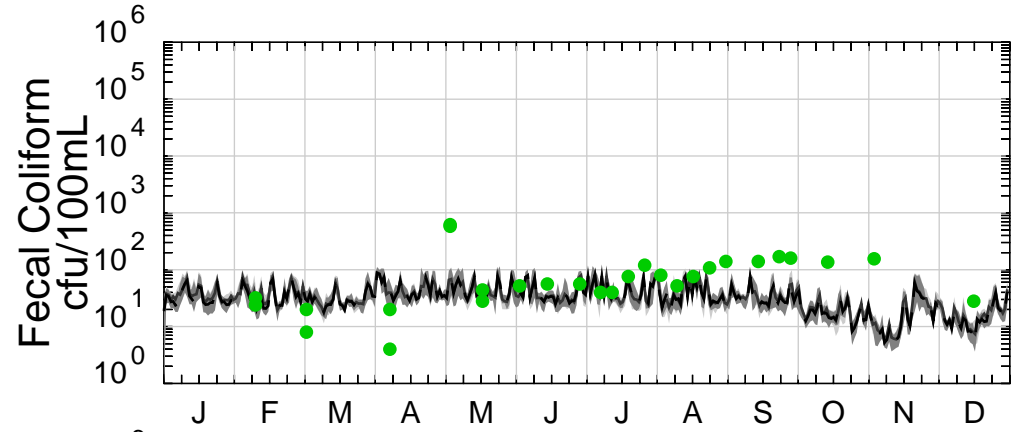
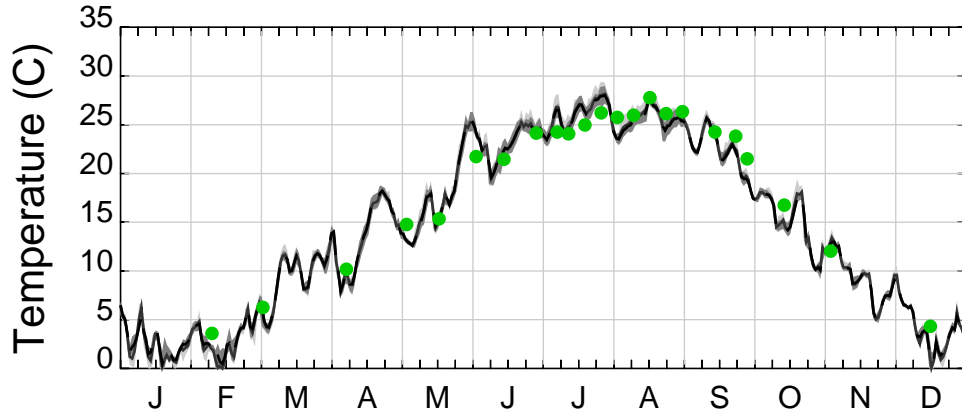


Model = 2016  
 Data = 2016

- 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



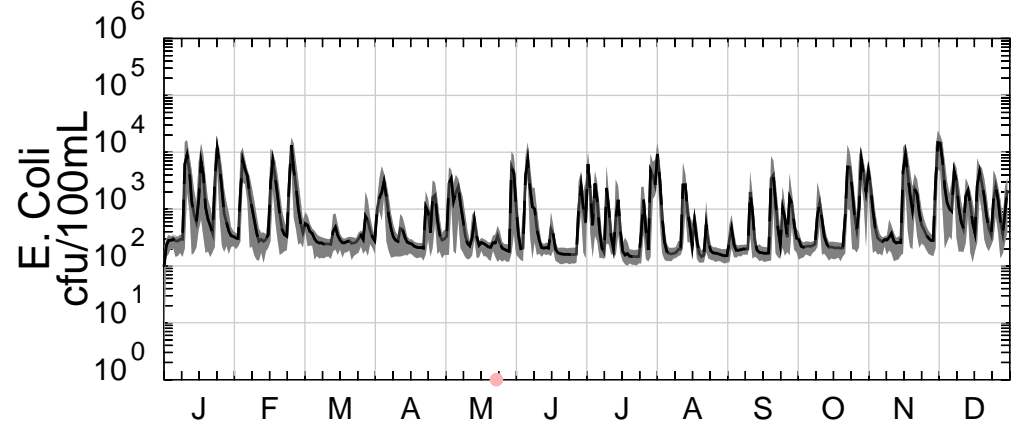
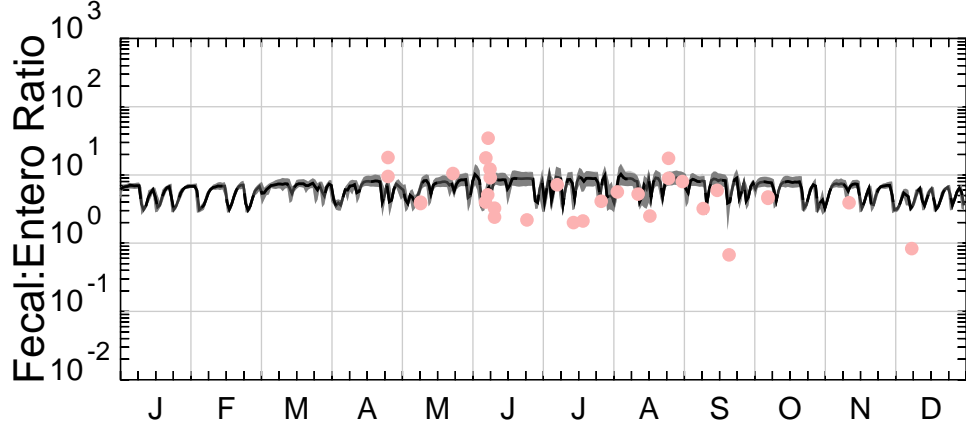
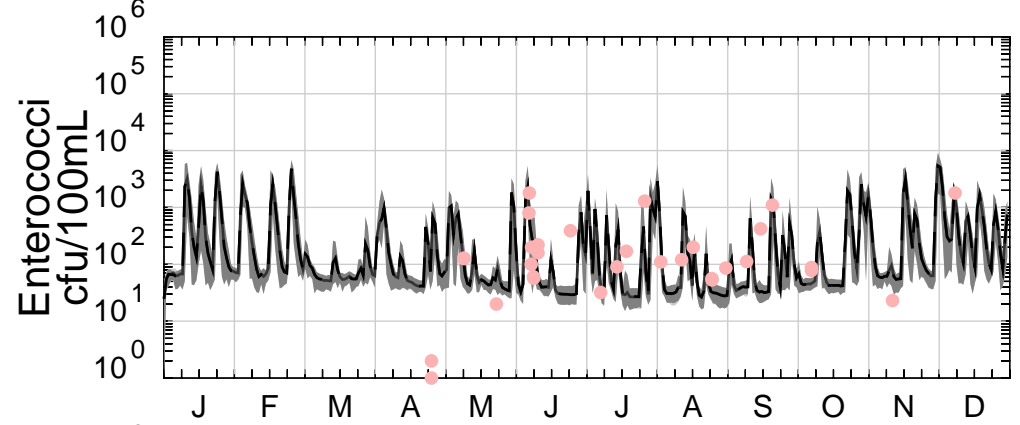
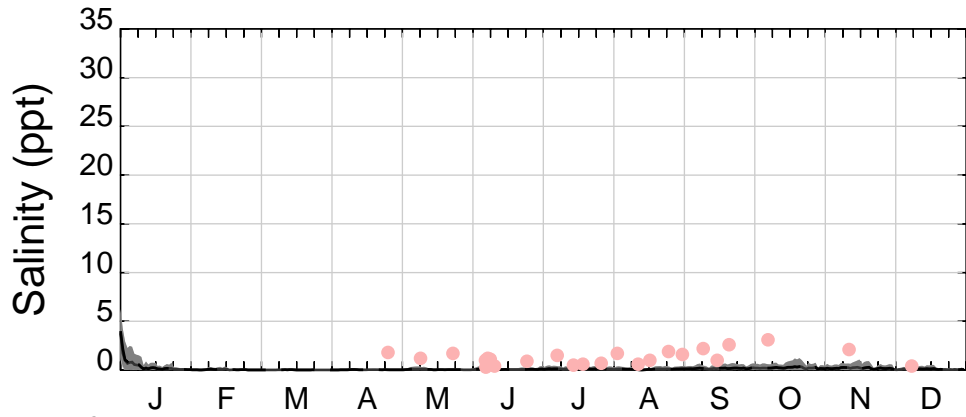
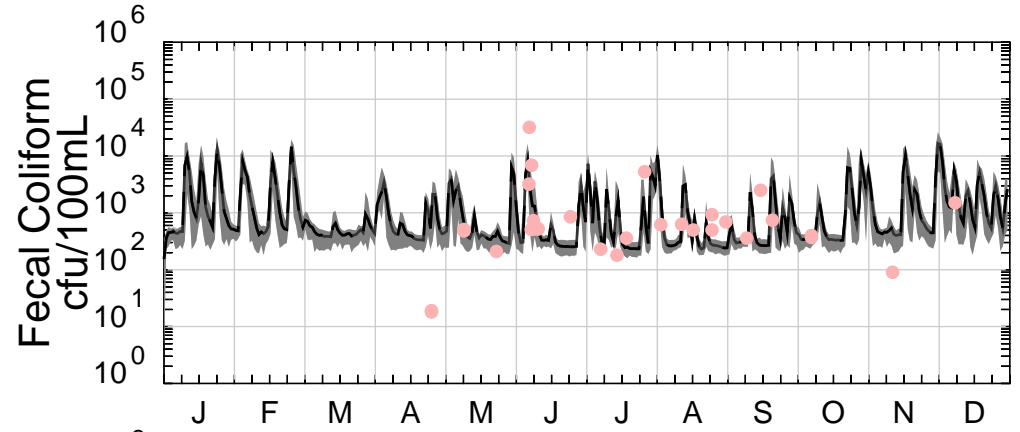
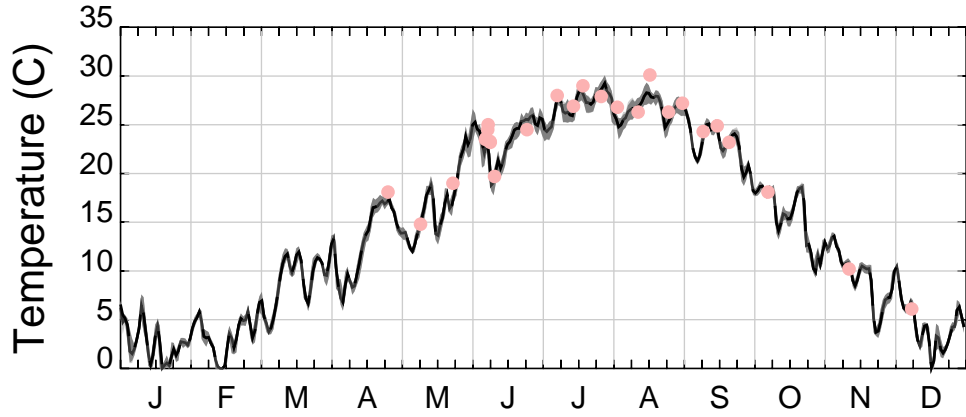
Station: 13



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

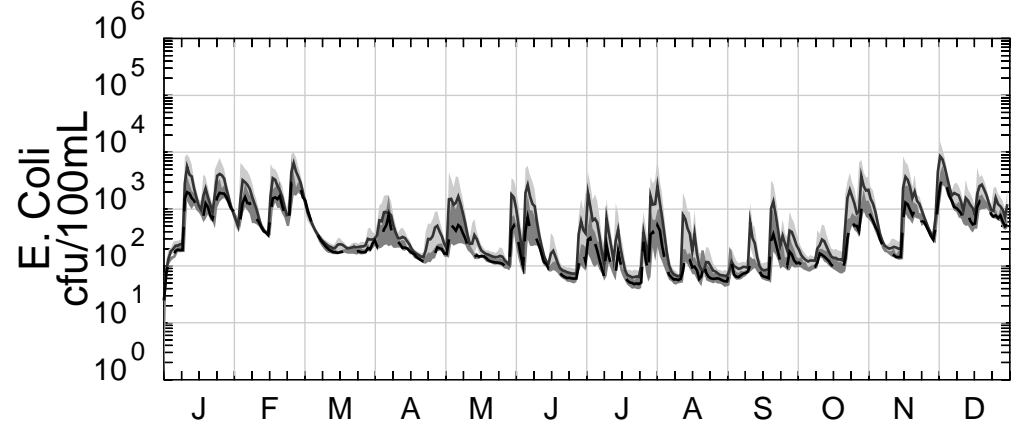
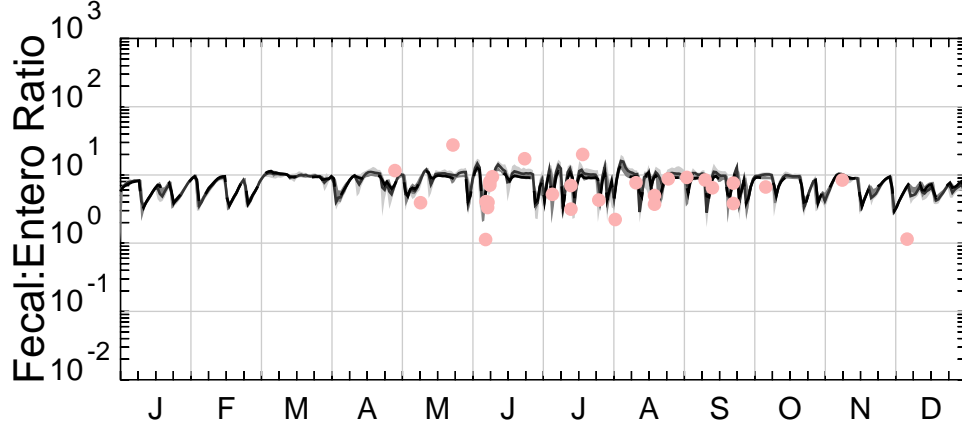
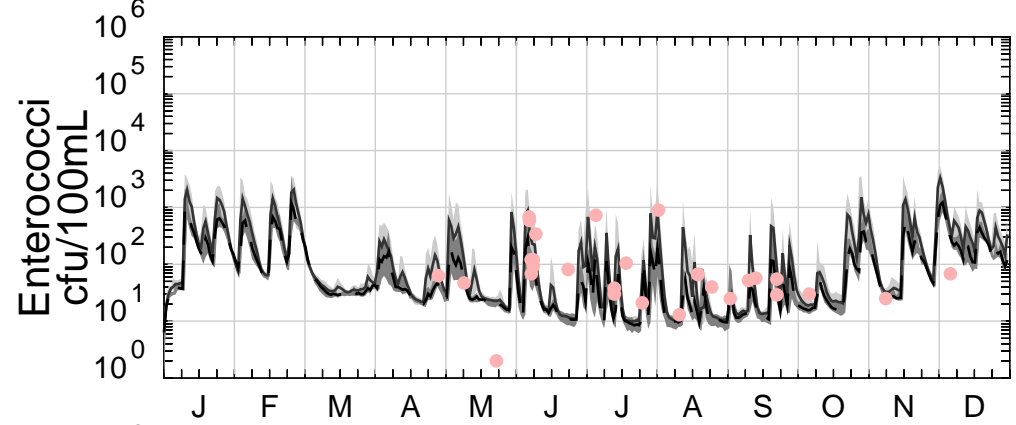
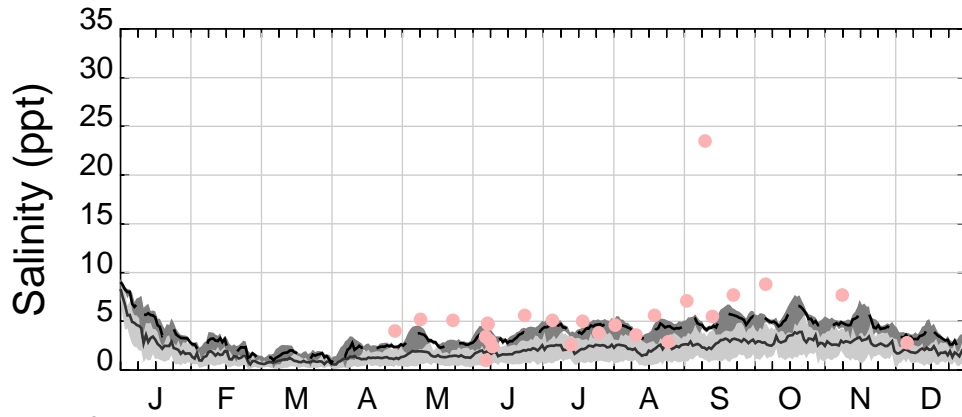
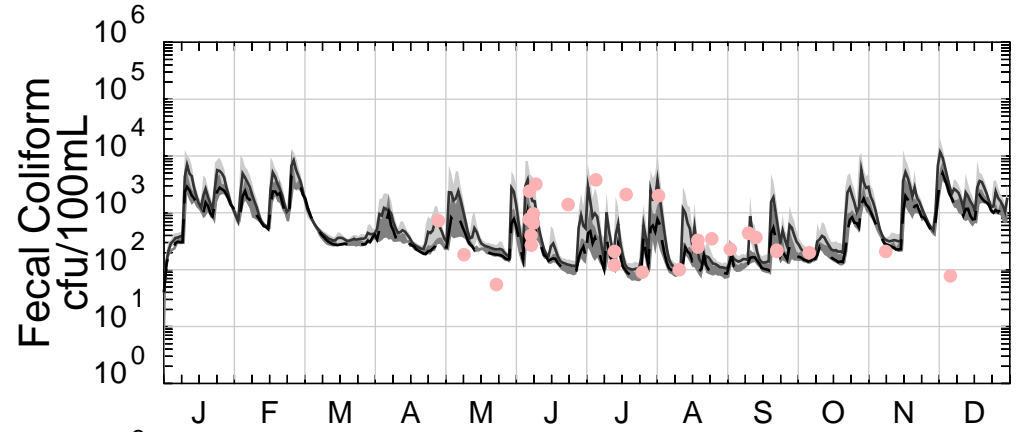
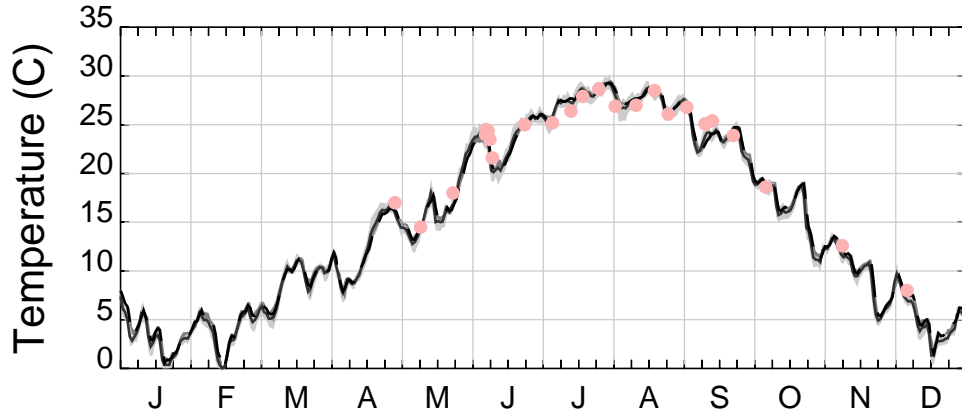
Station: B1



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

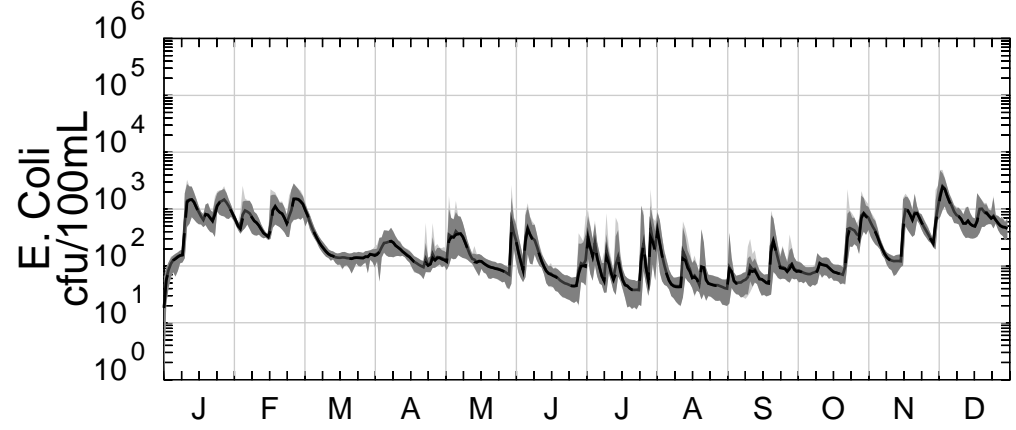
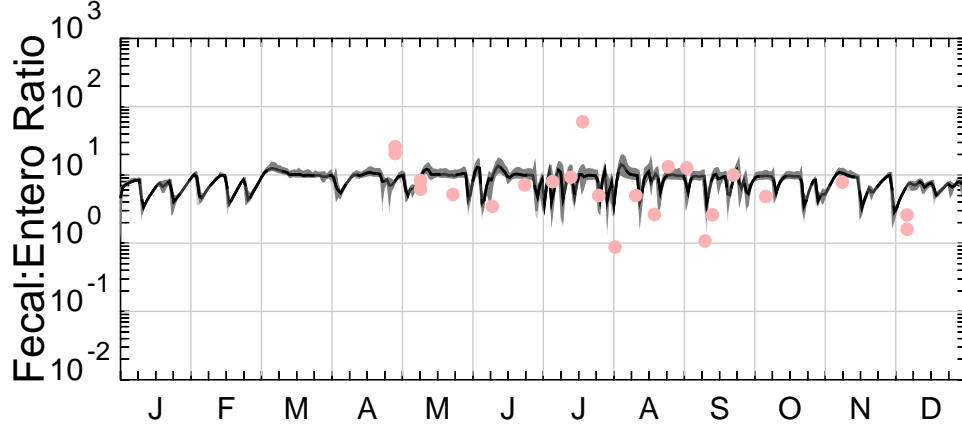
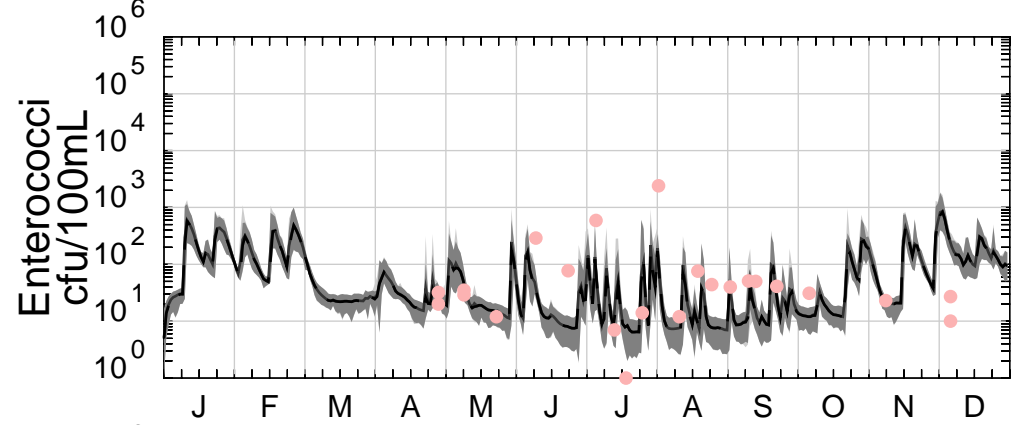
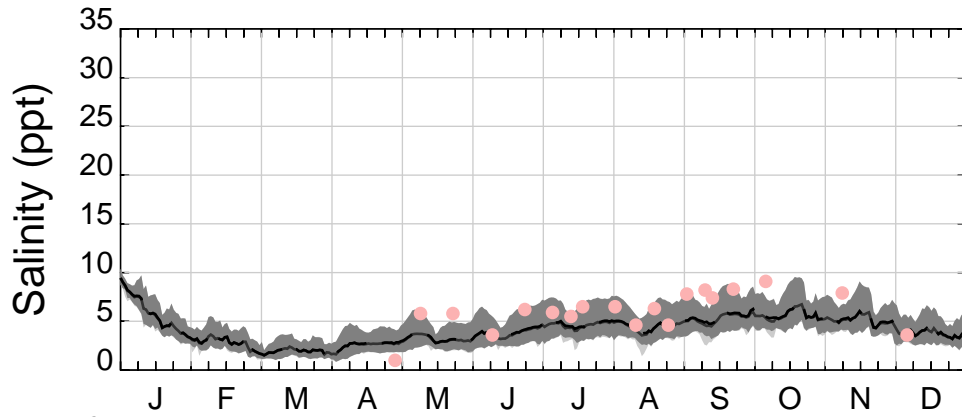
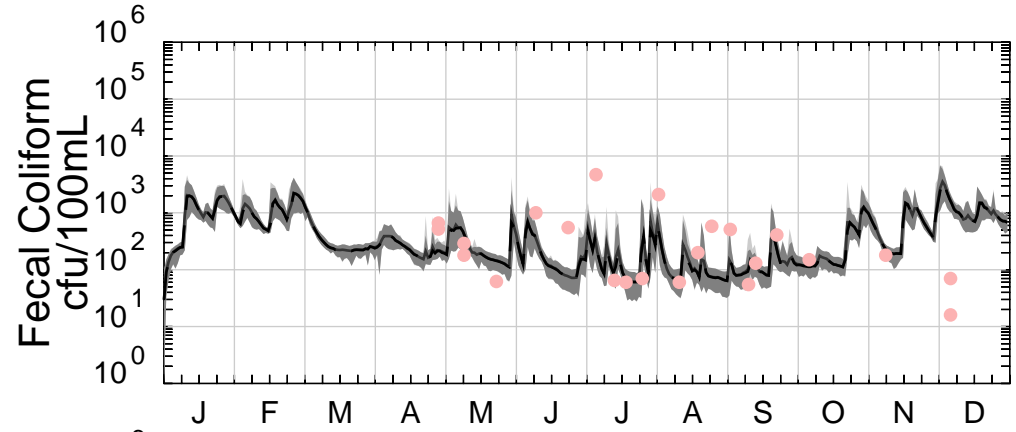
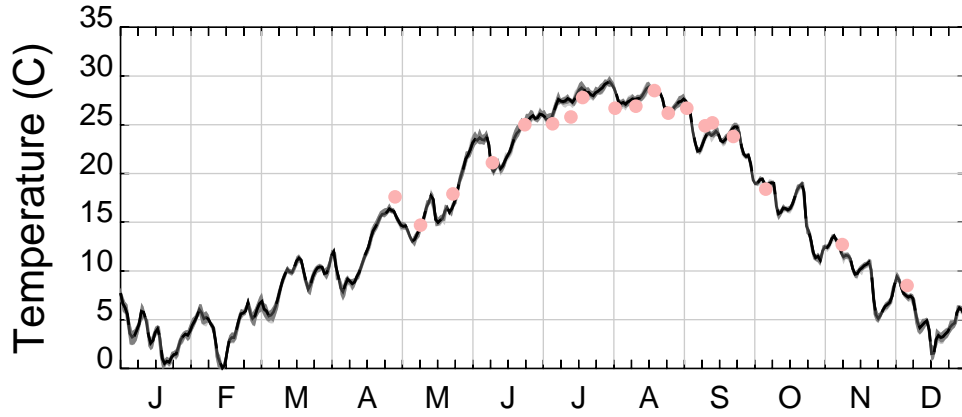


Model = 2016  
 Data = 2016

— 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**

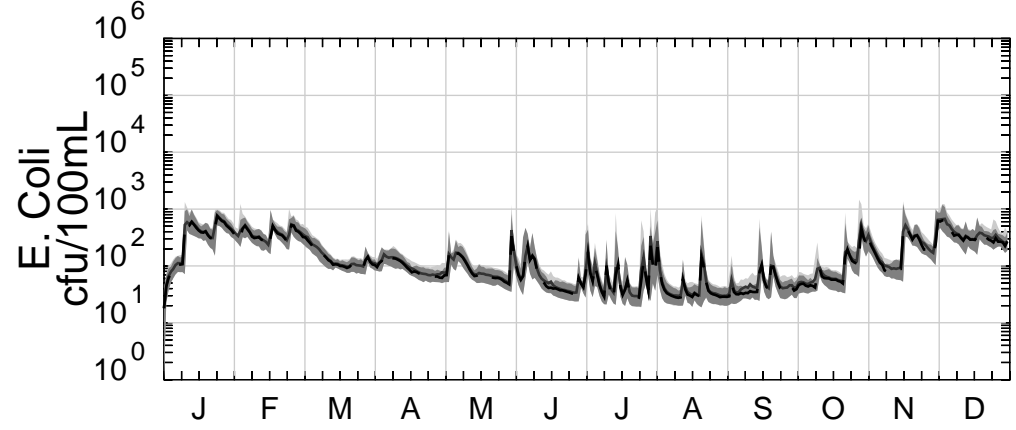
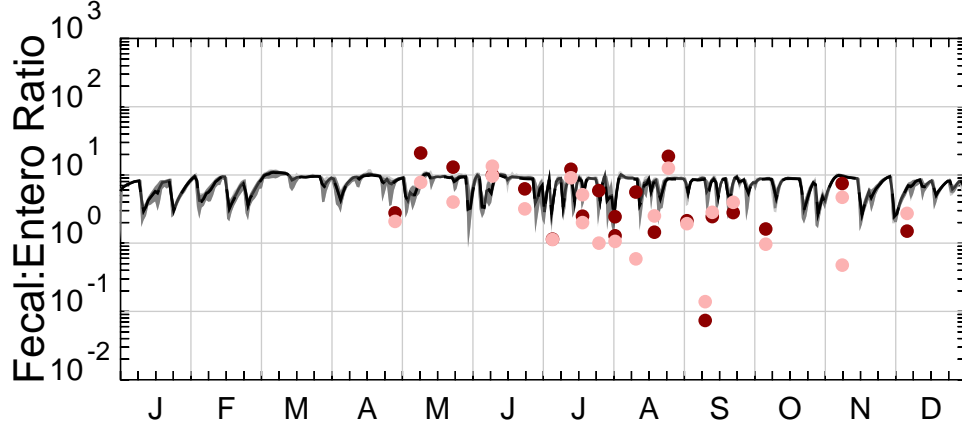
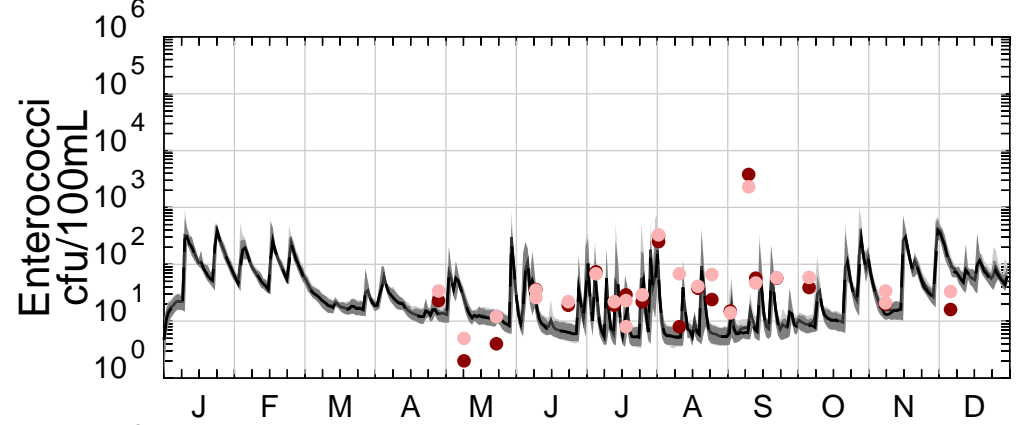
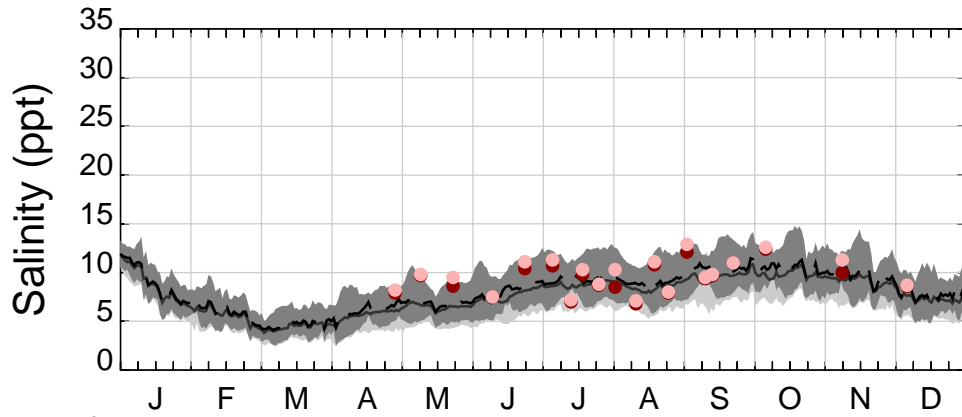
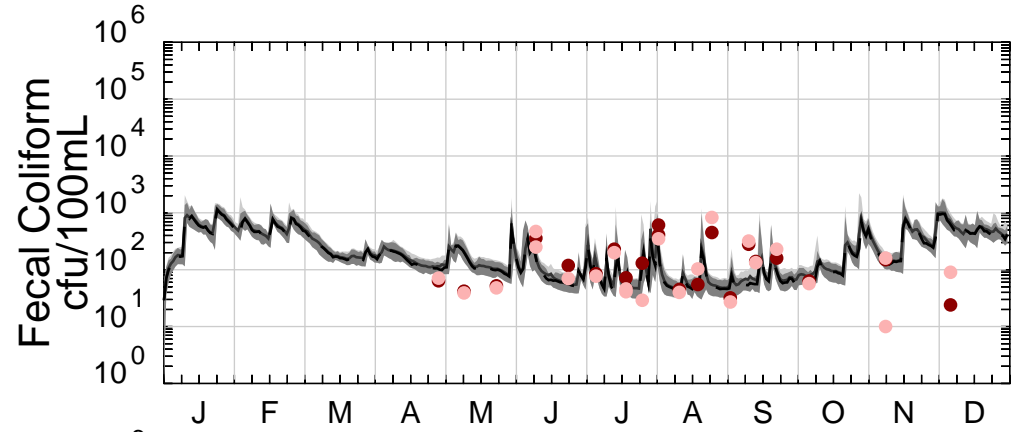
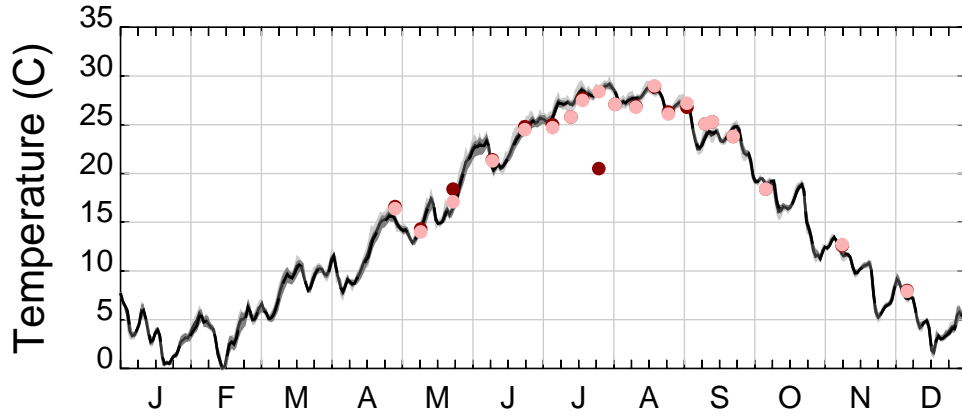


Model = 2016  
 Data = 2016

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

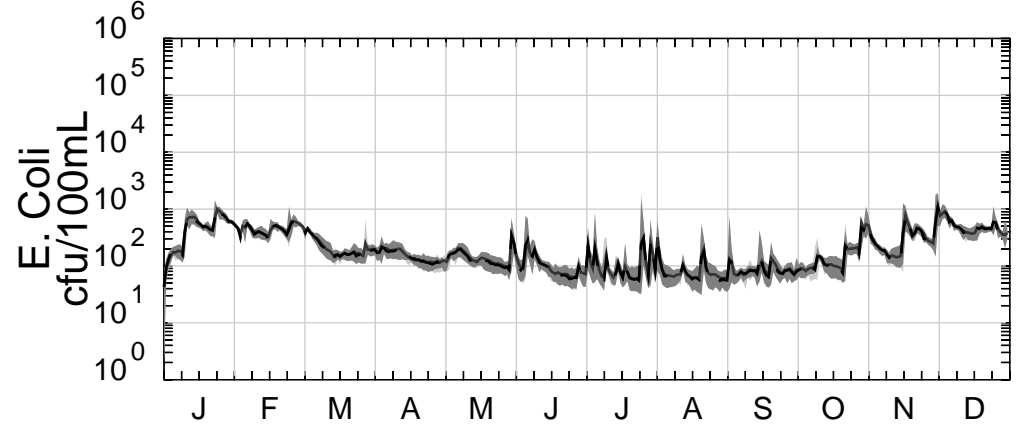
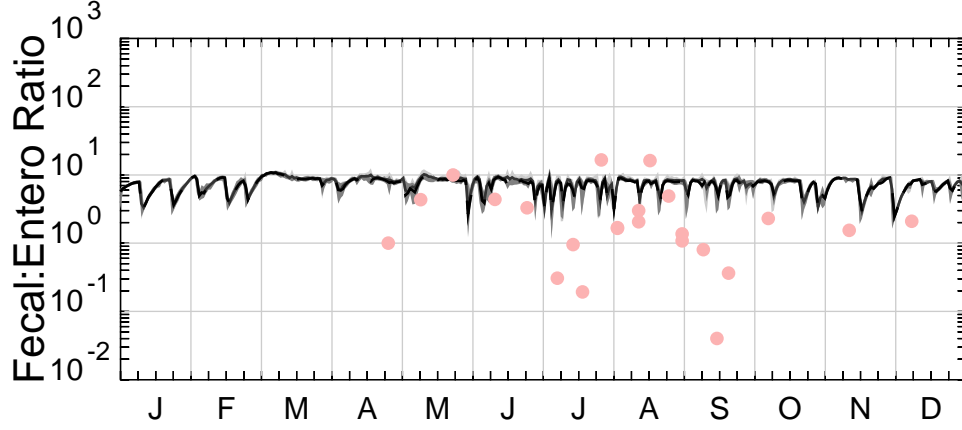
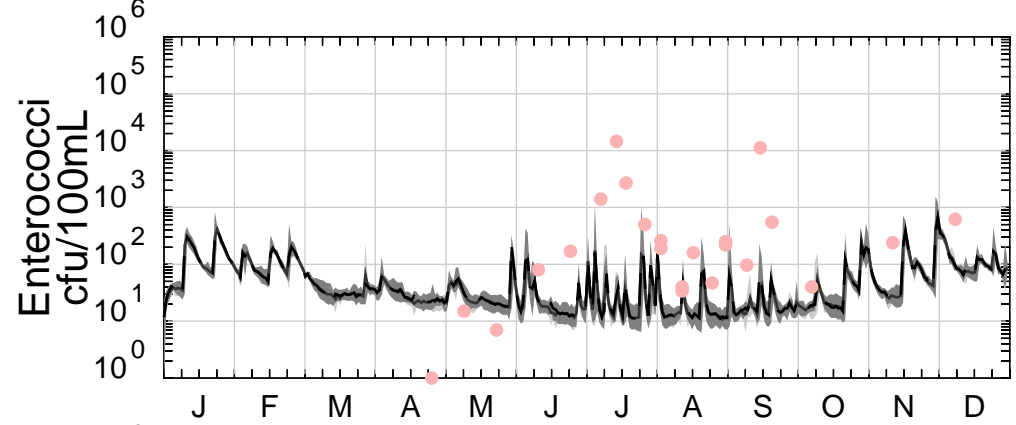
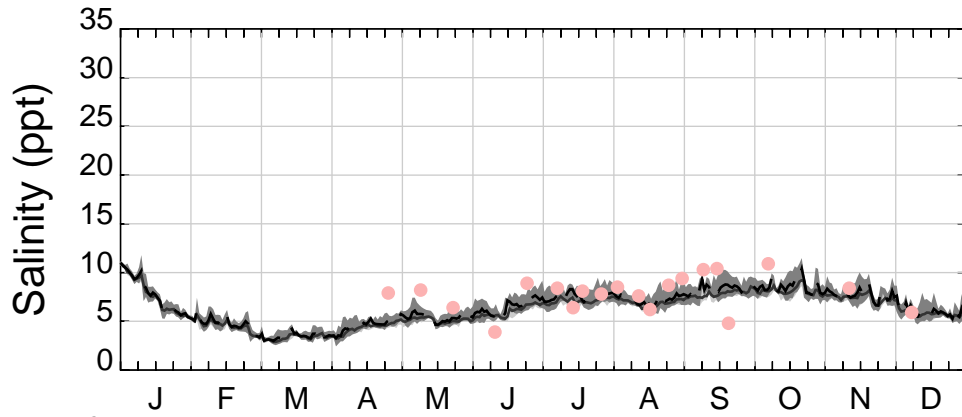
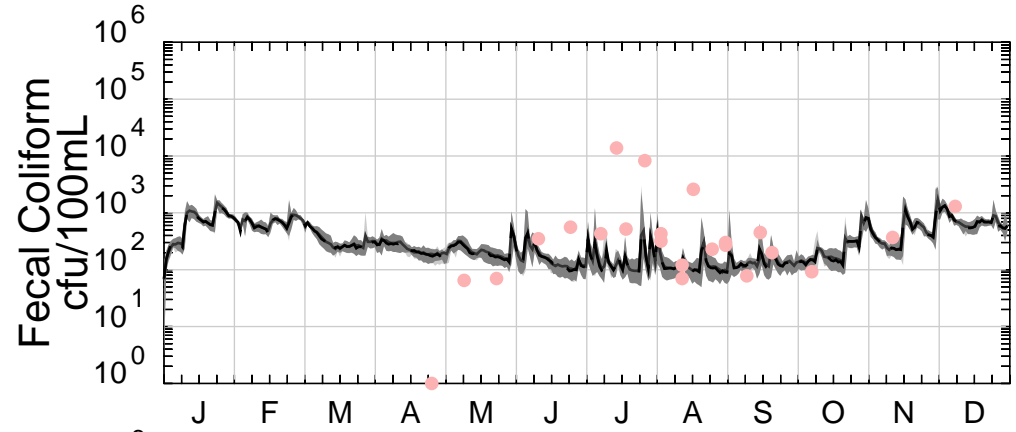
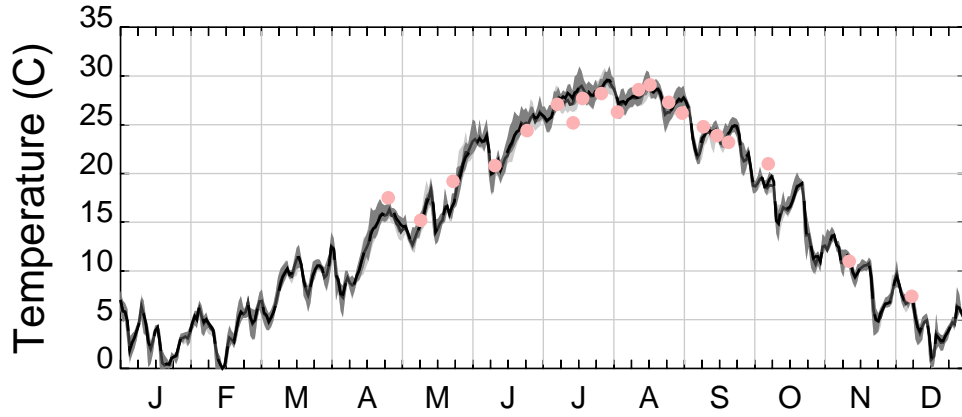


Model = 2016  
 Data = 2016

— 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

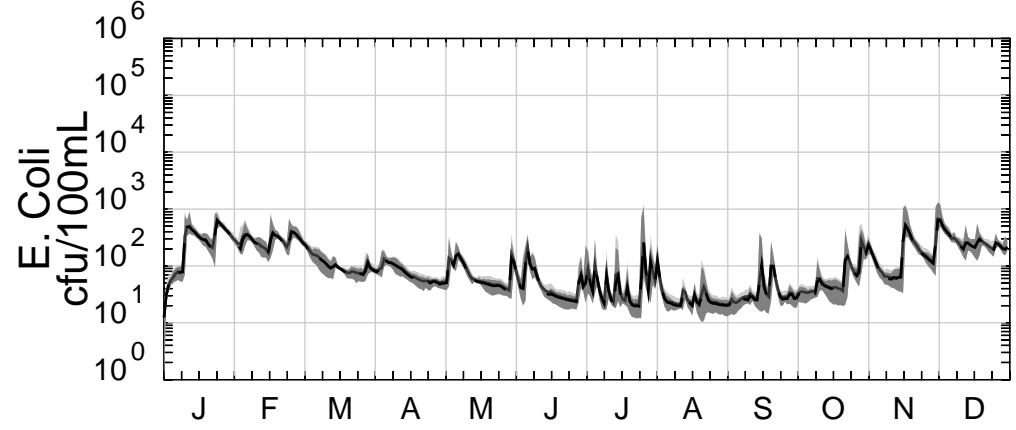
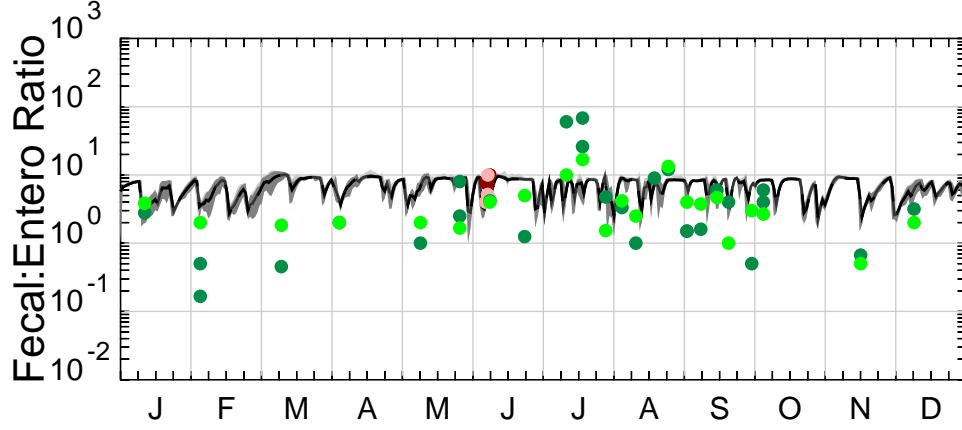
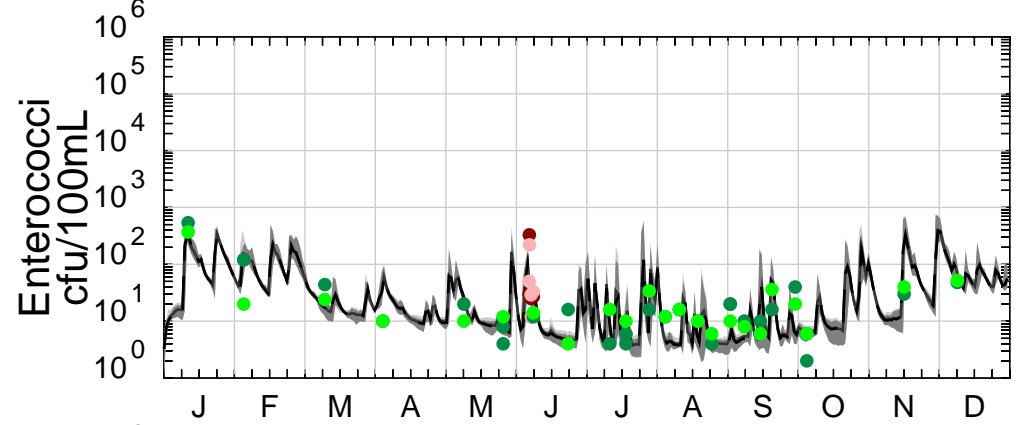
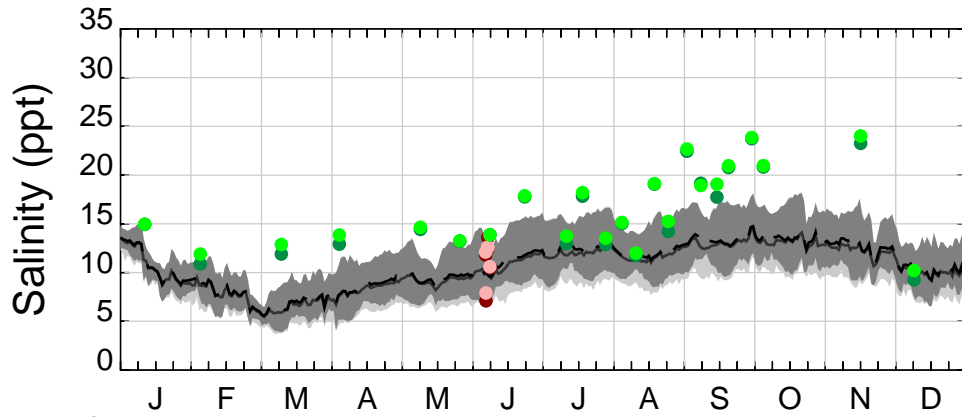
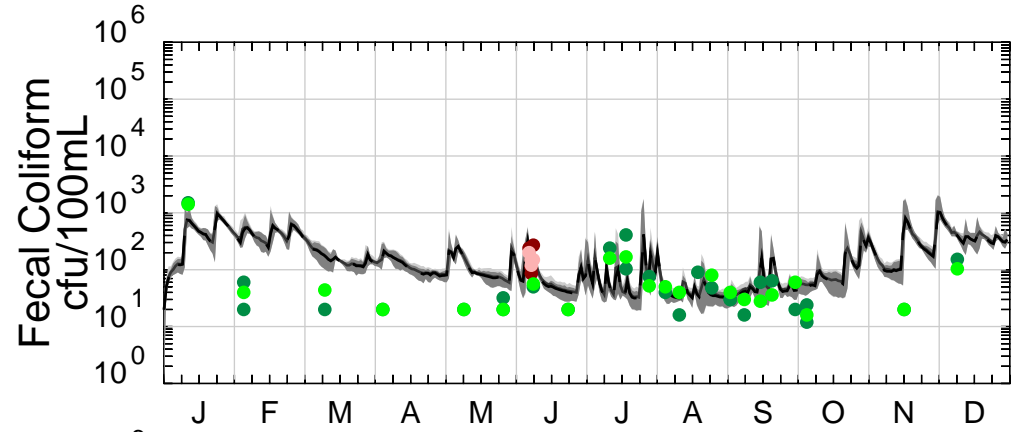
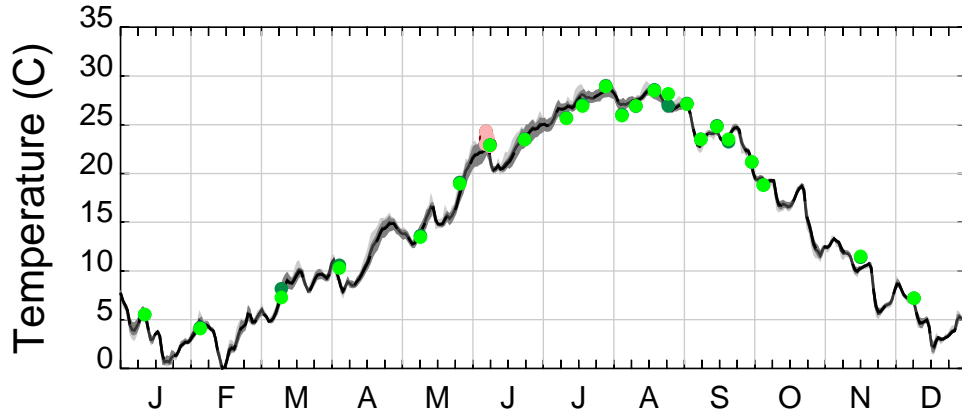
Station: B4



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

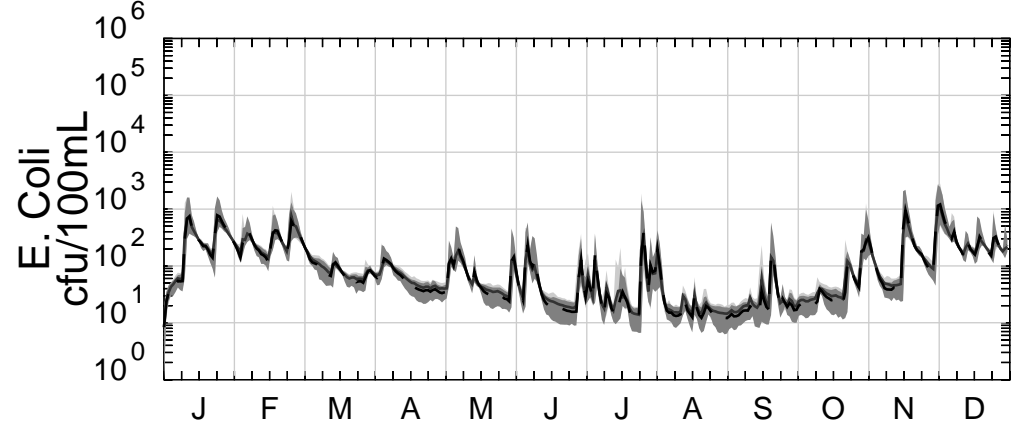
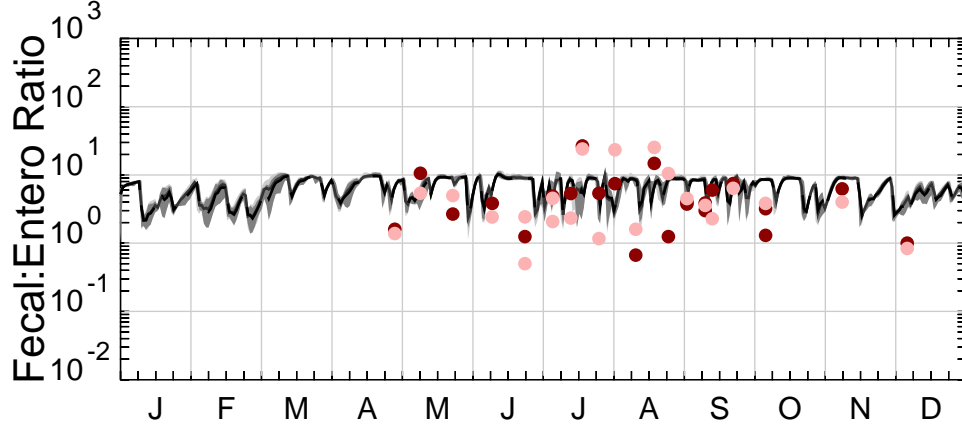
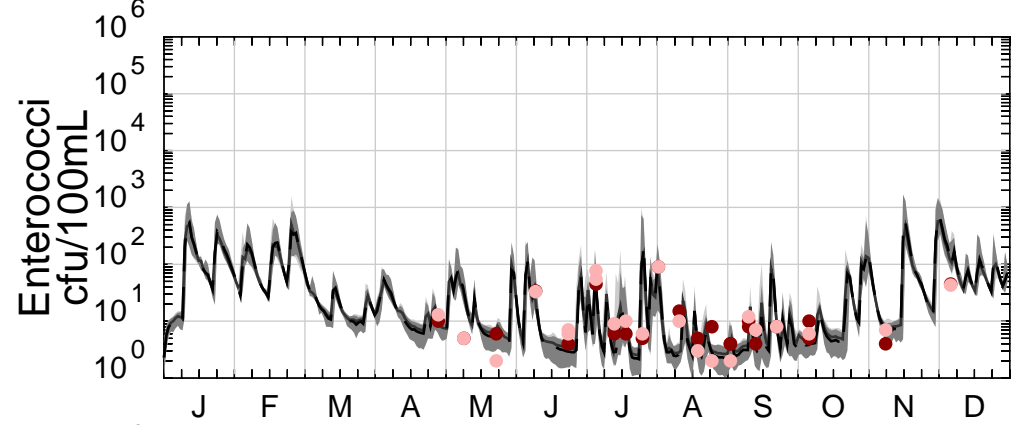
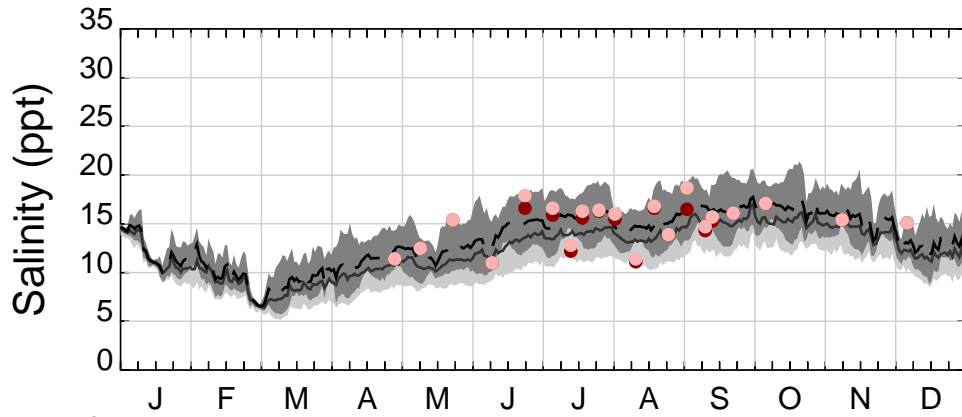
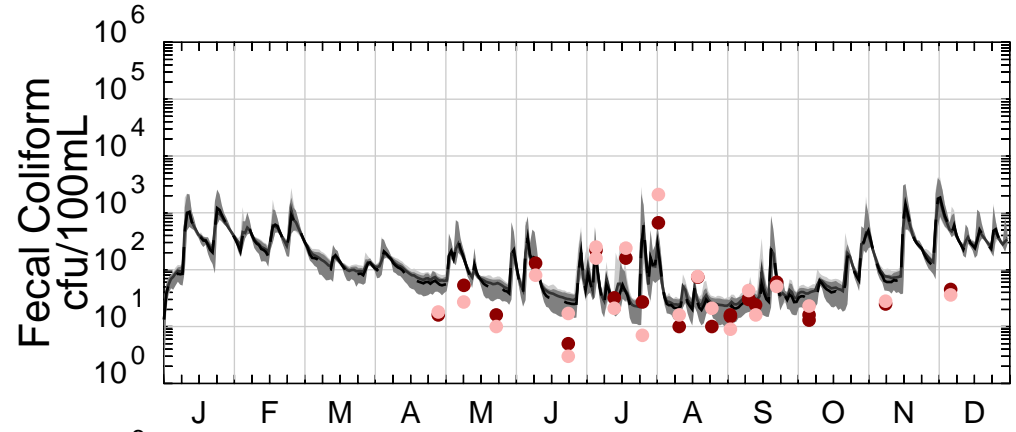
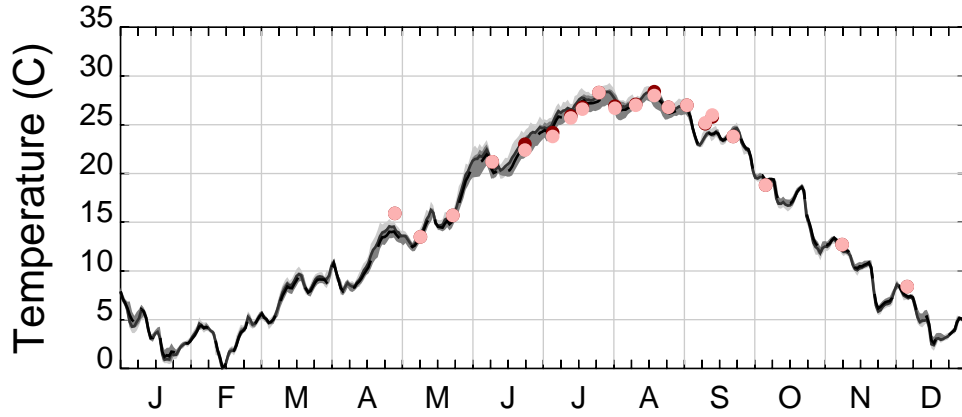
Station: 14



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

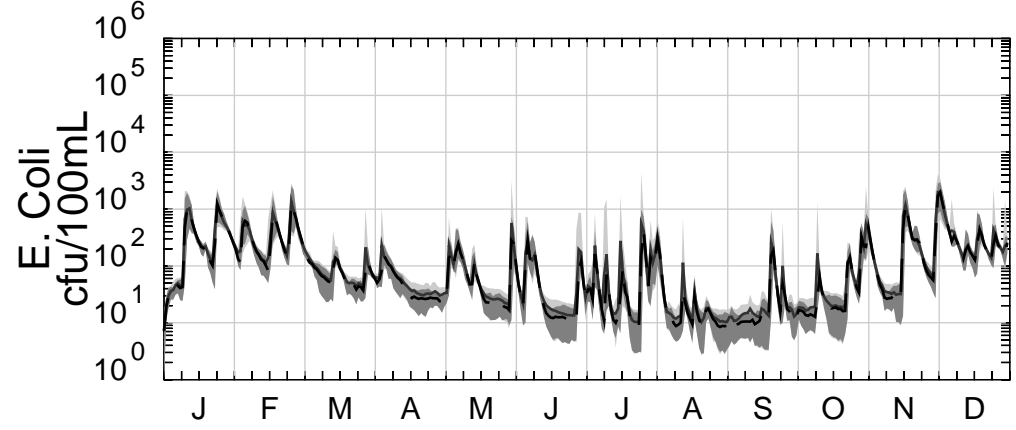
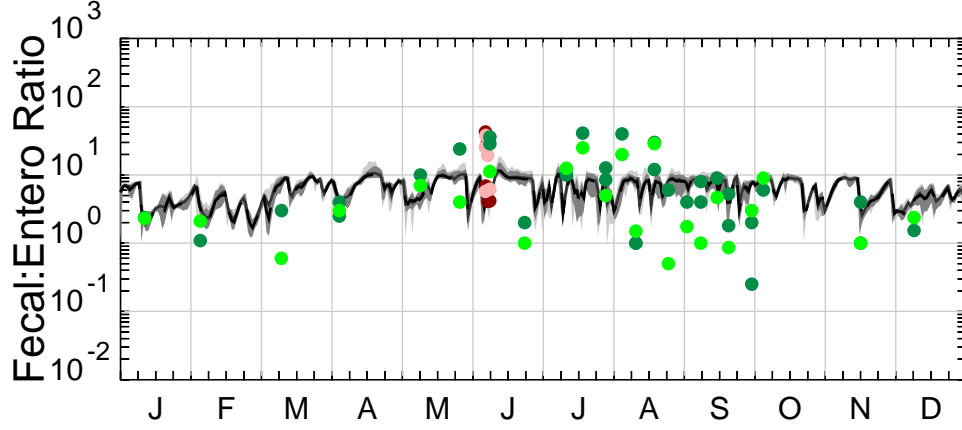
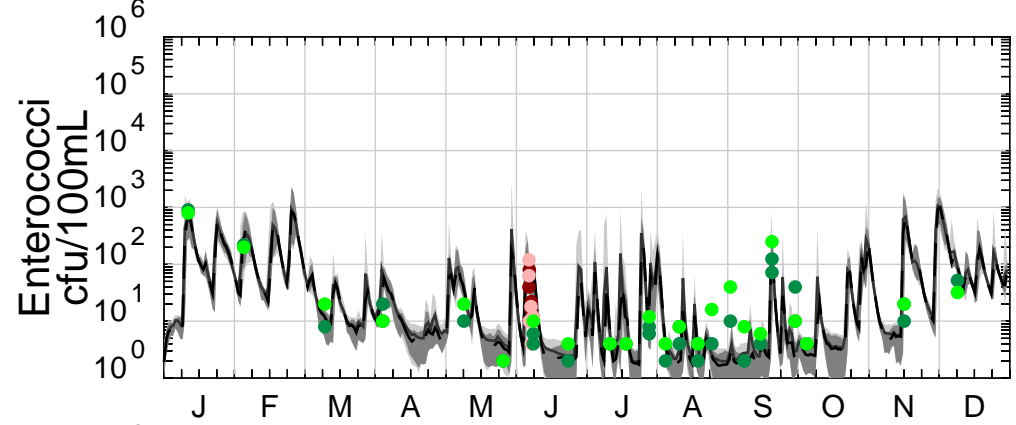
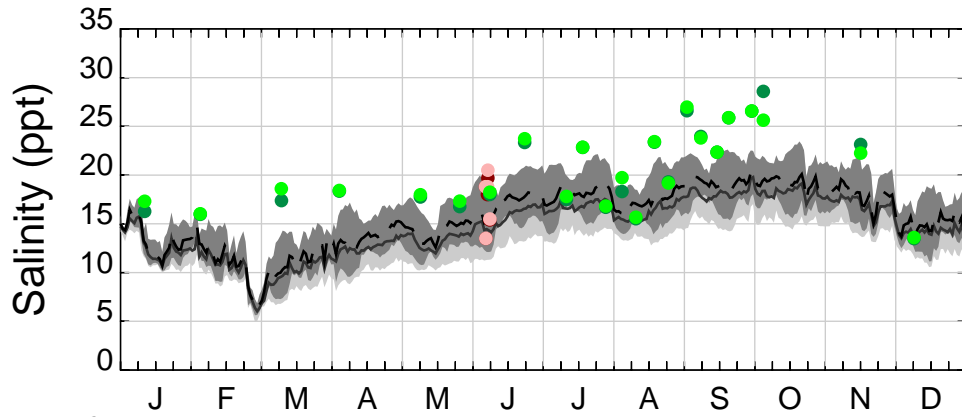
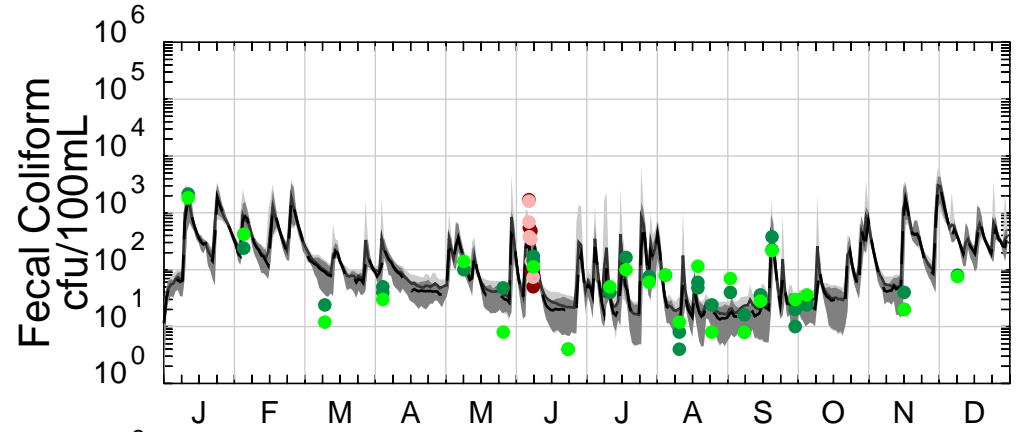
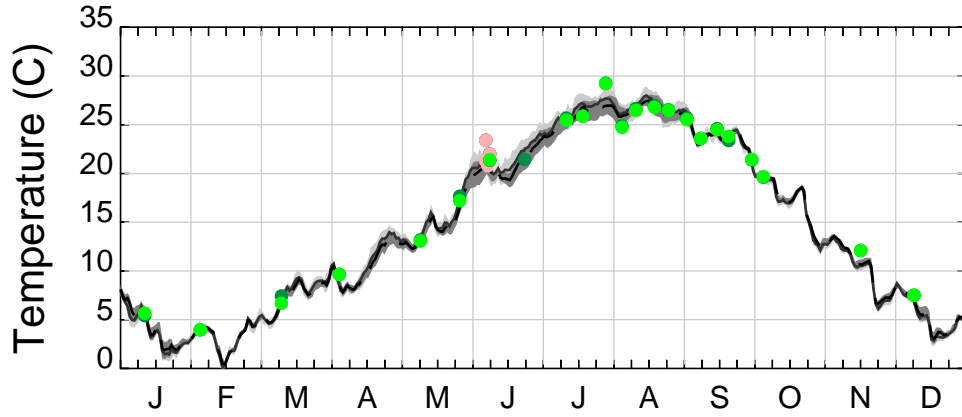


Model = 2016  
 Data = 2016

- 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



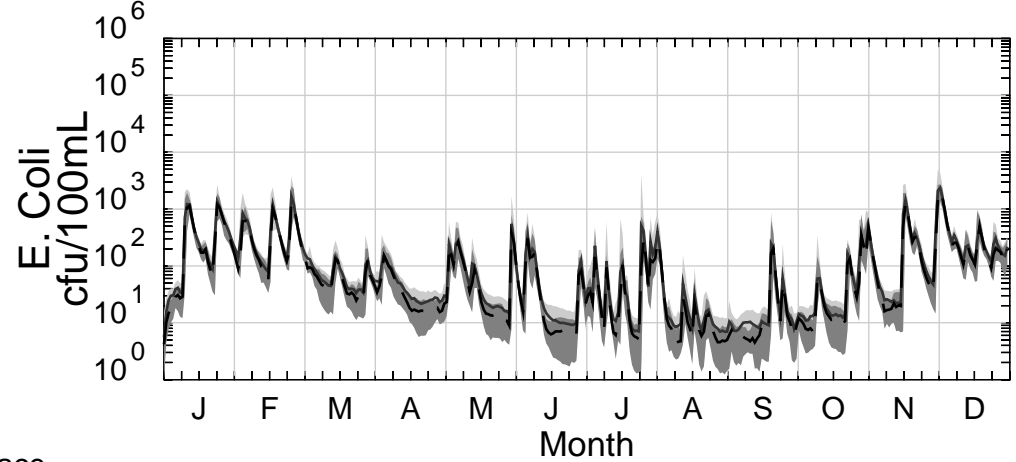
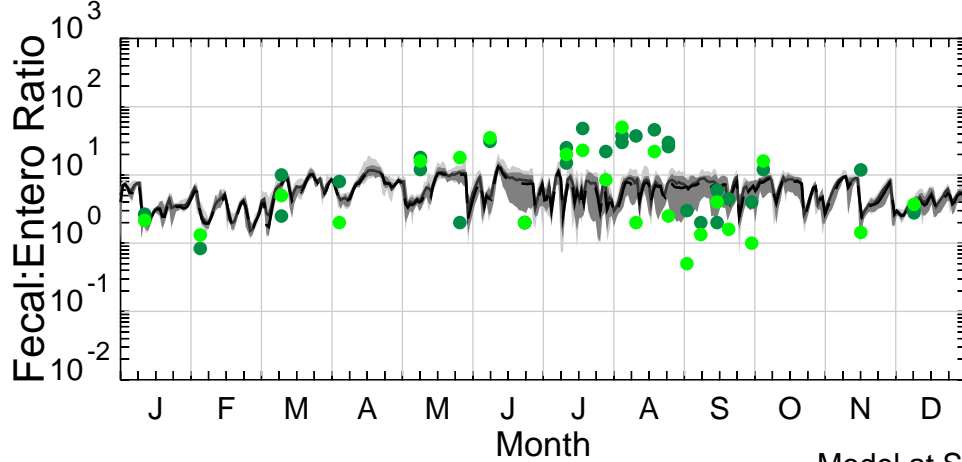
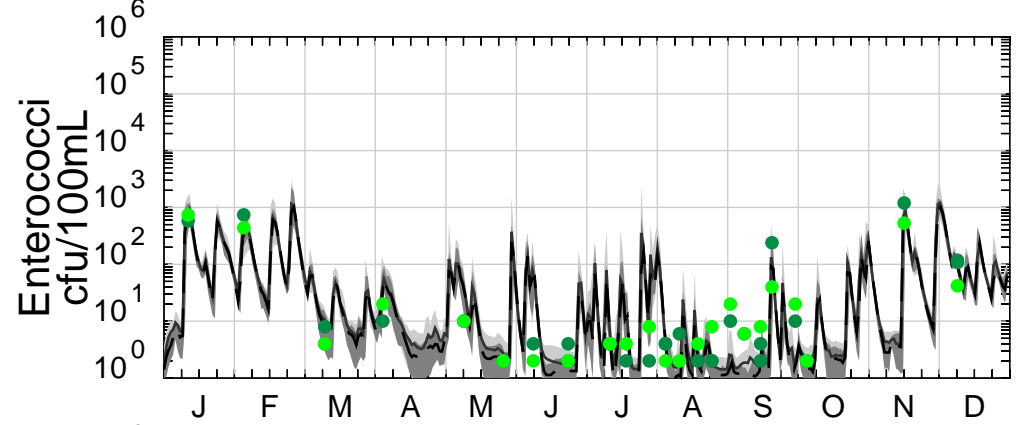
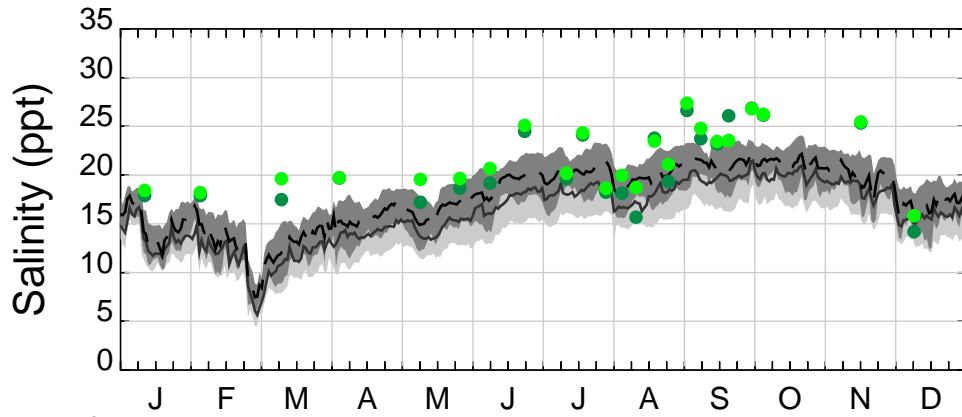
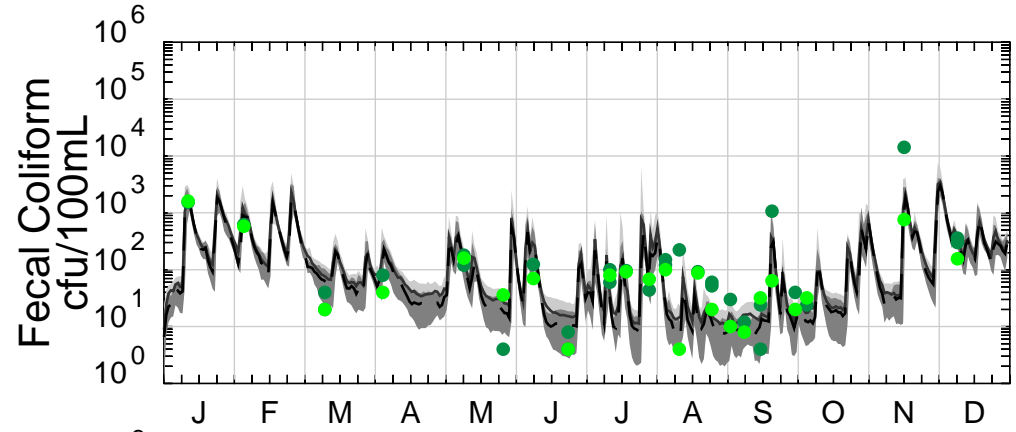
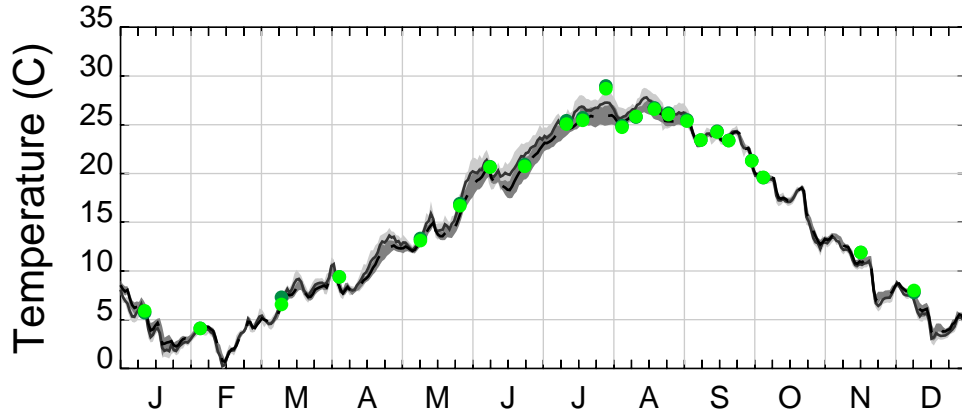
Station: 15



Model = 2016  
 Data = 2016

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

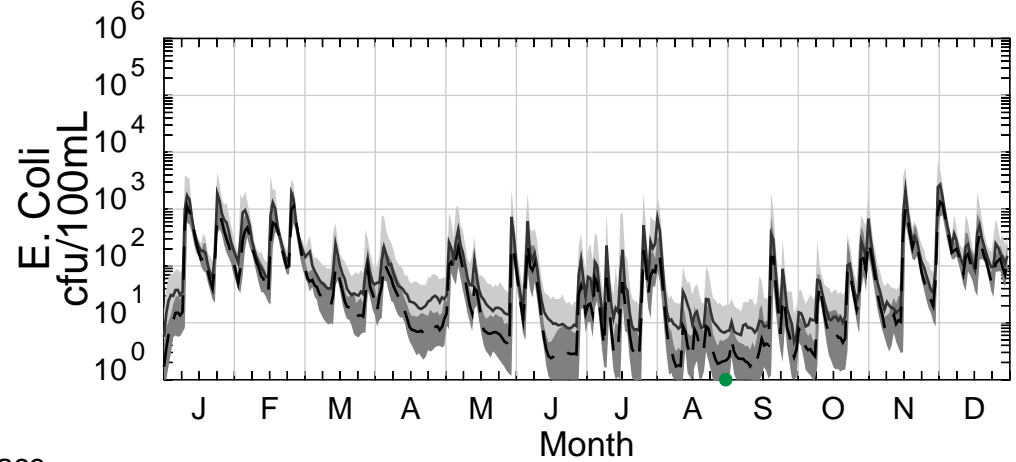
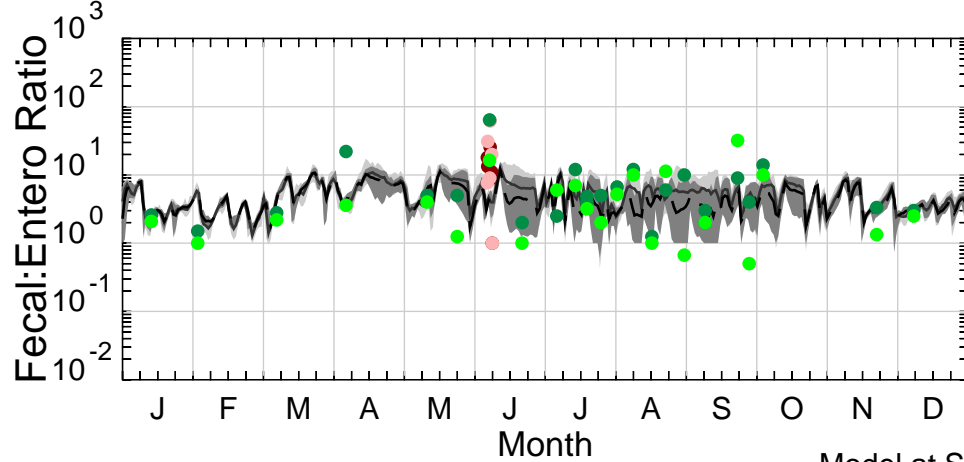
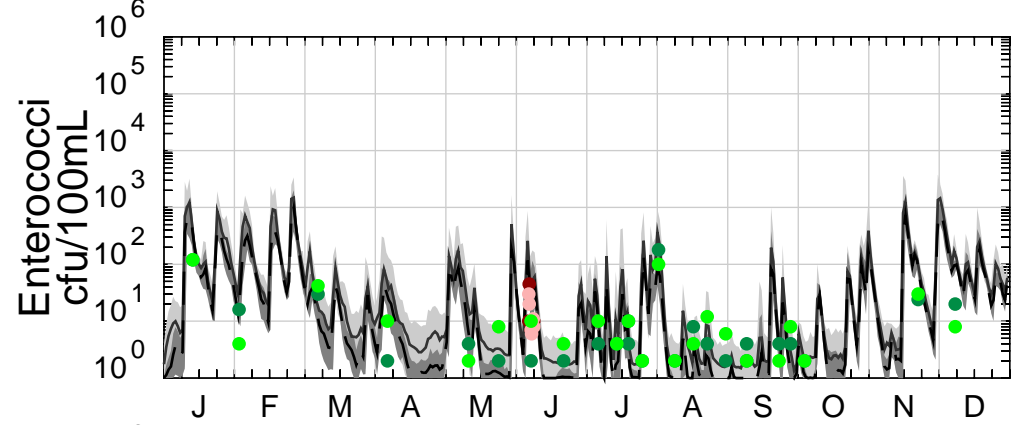
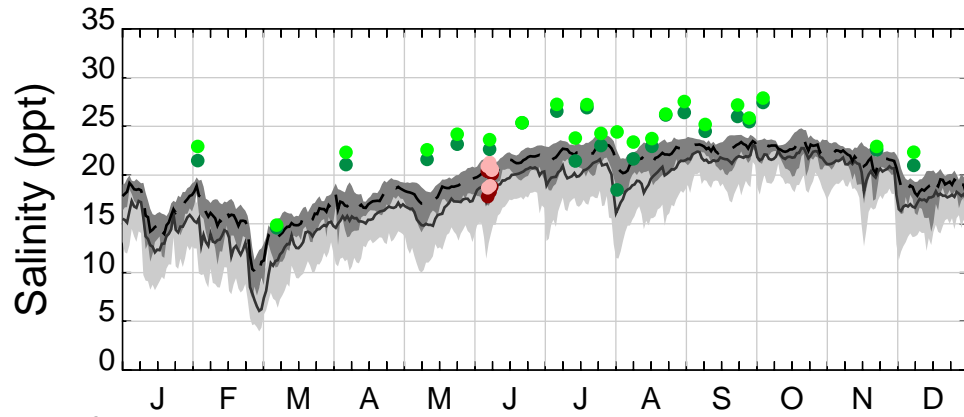
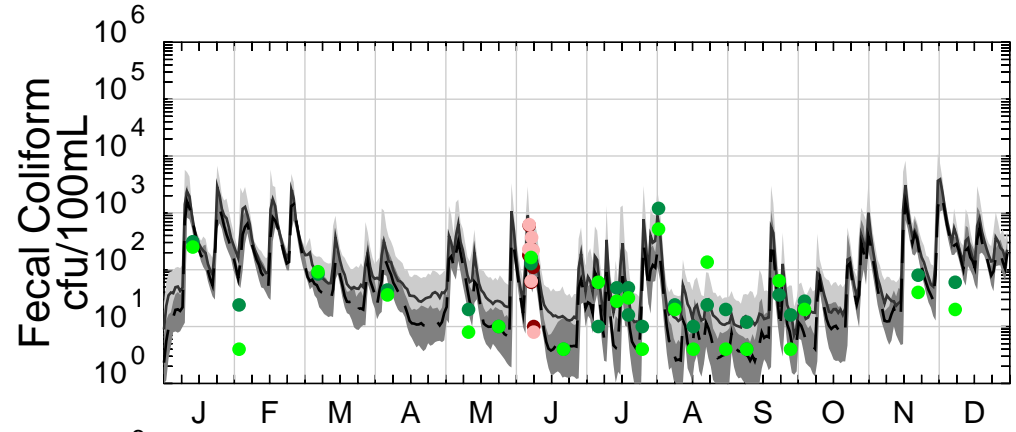
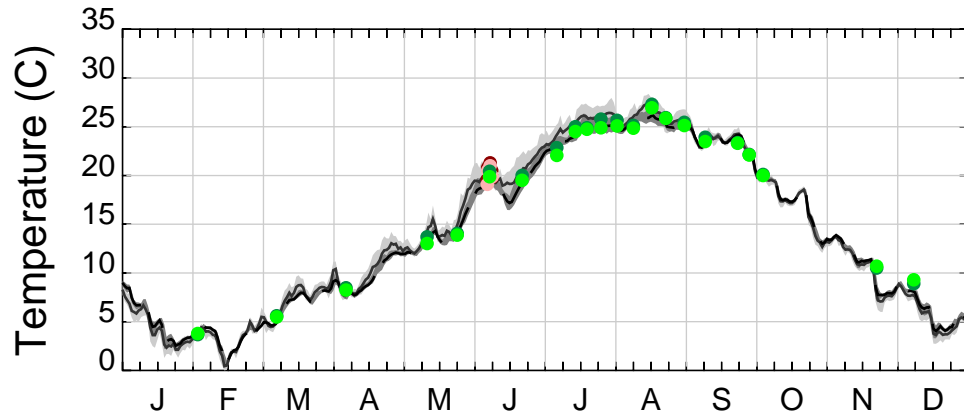
Station: 16



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

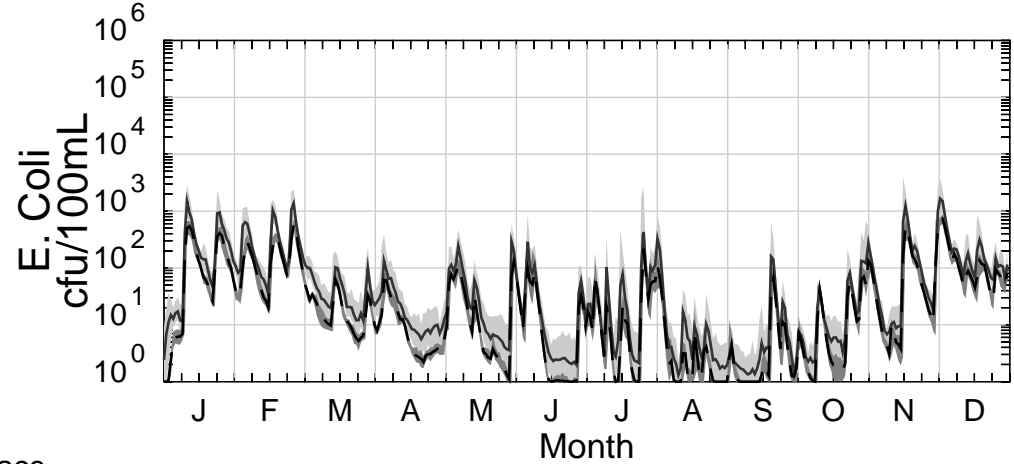
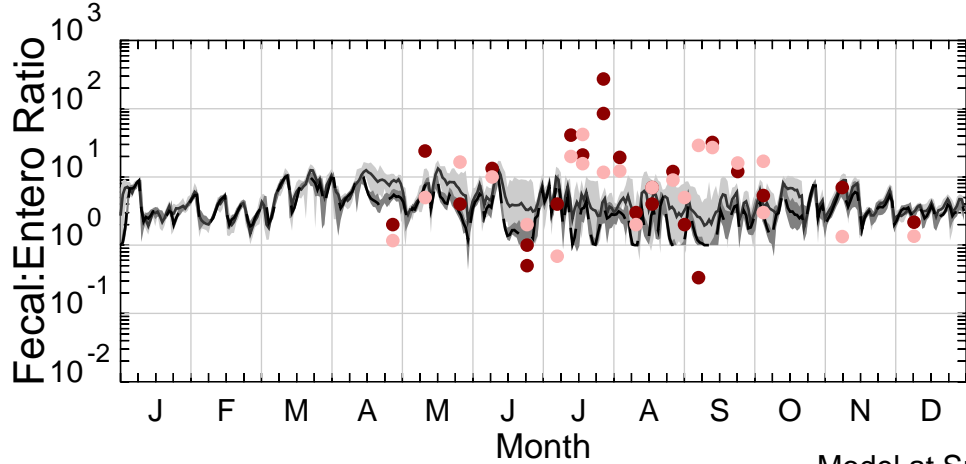
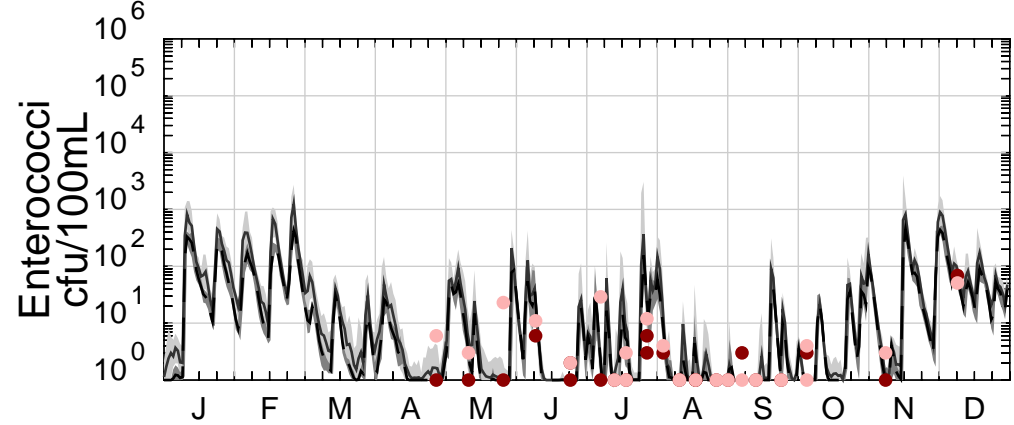
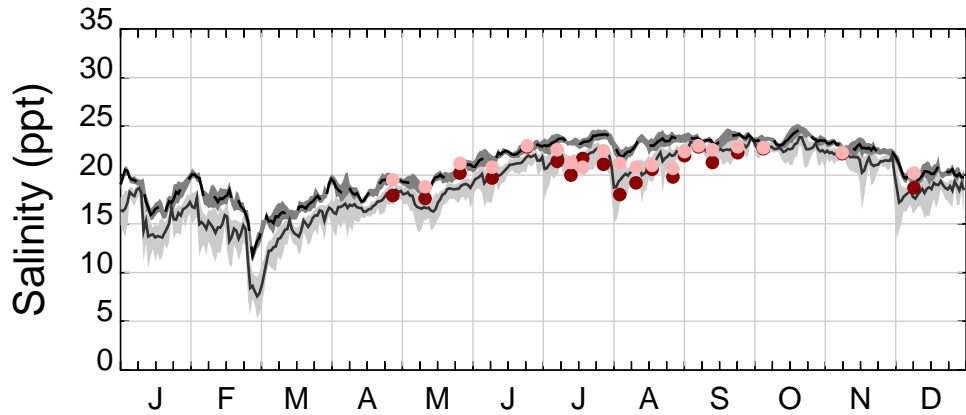
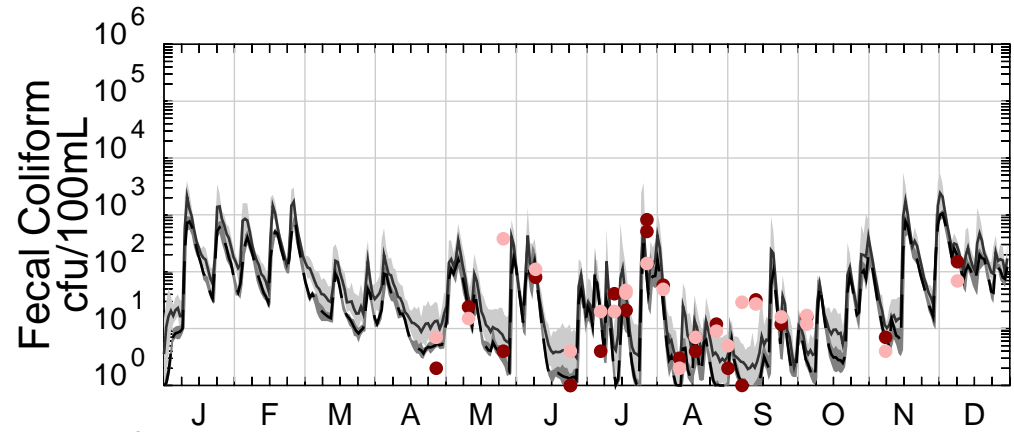
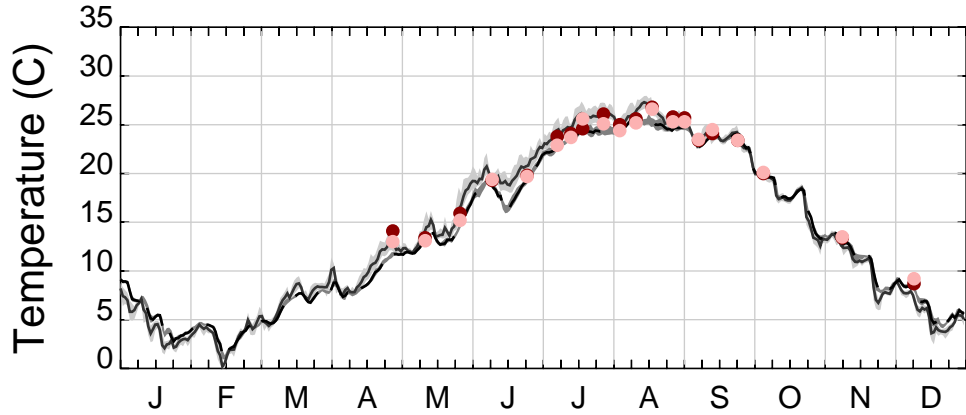
Station: 17



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

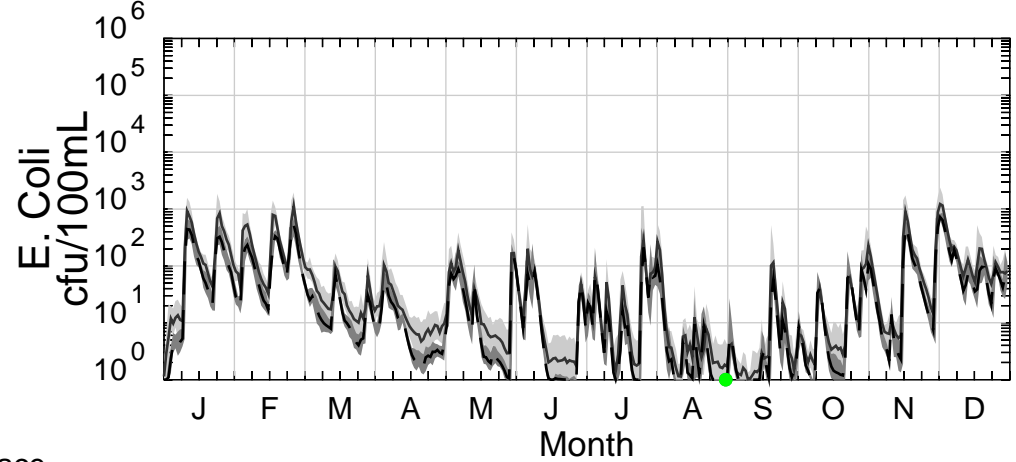
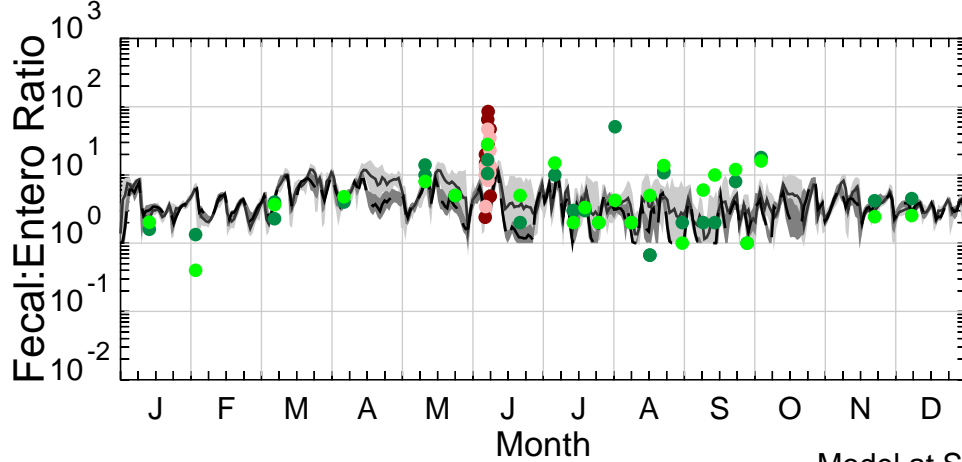
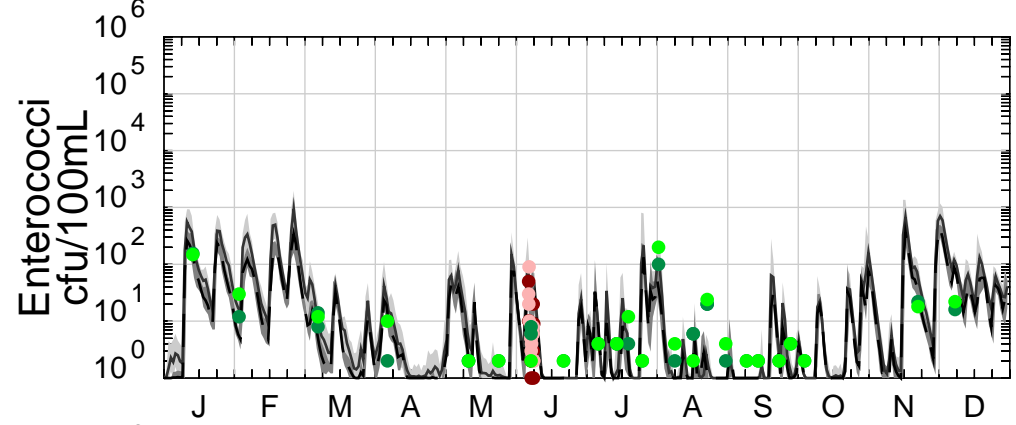
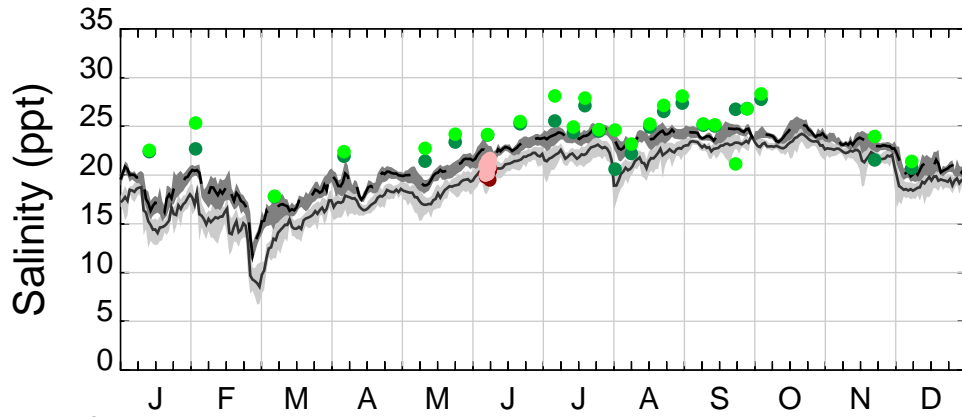
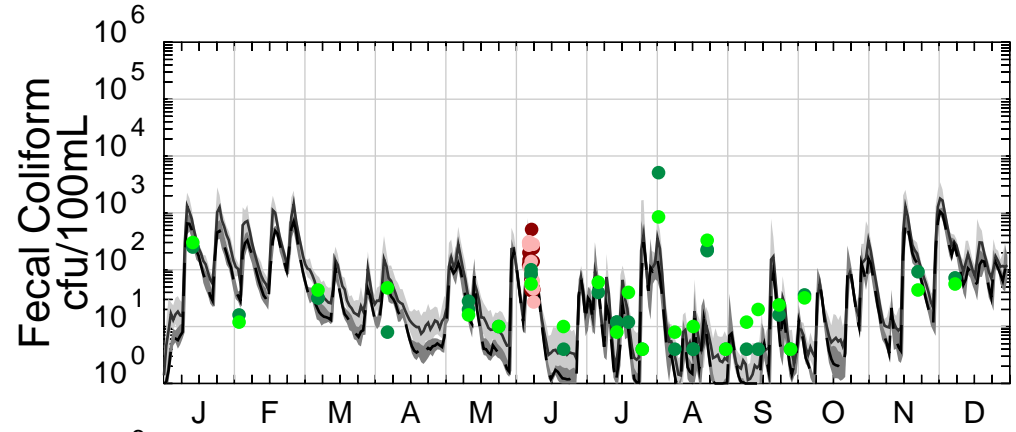
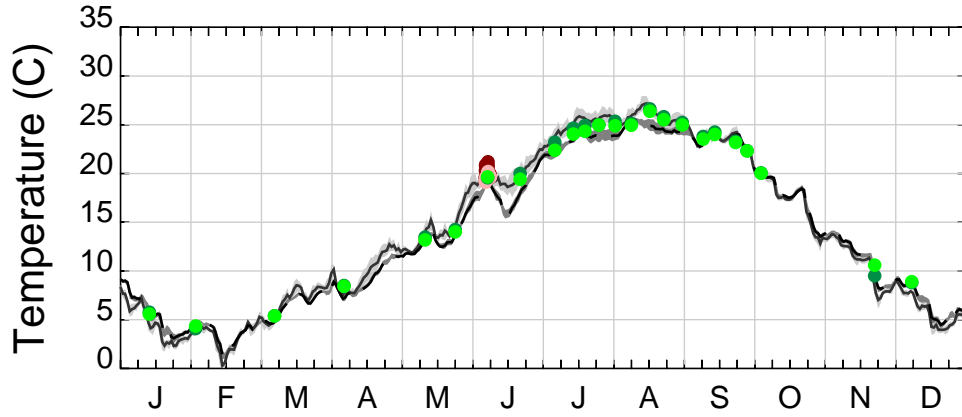
**Station: B10**



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

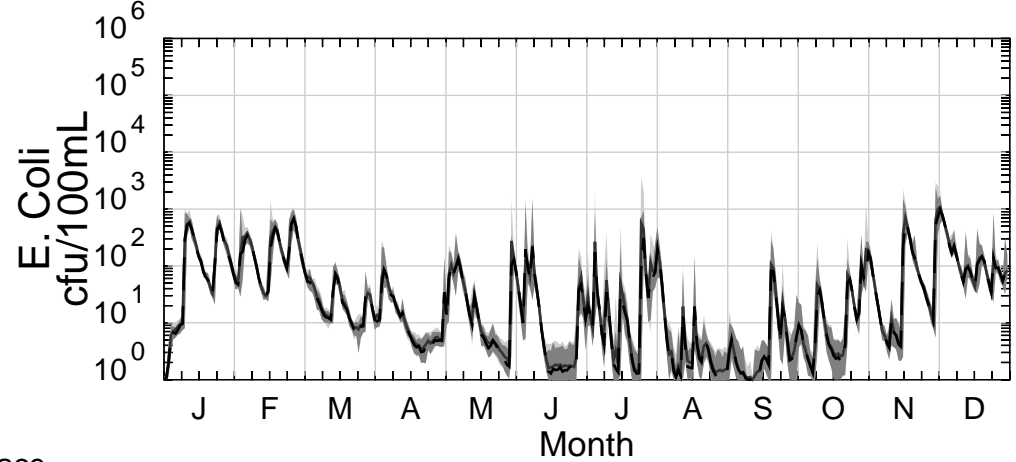
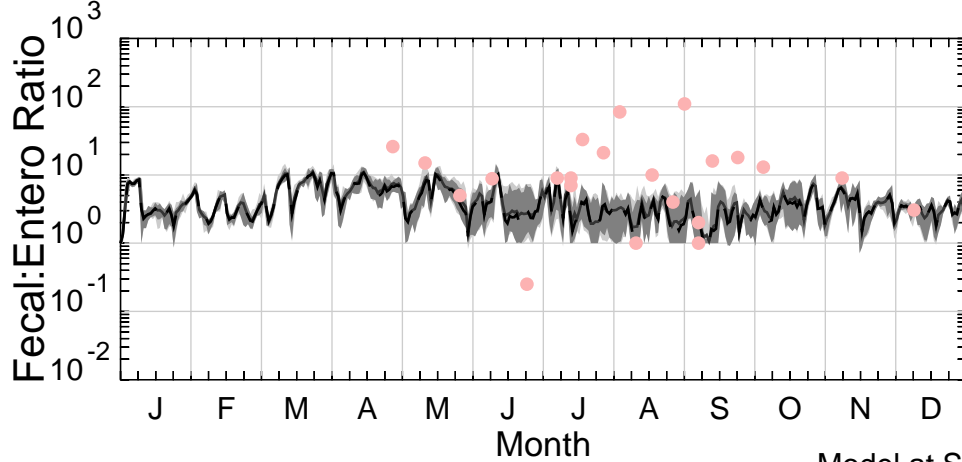
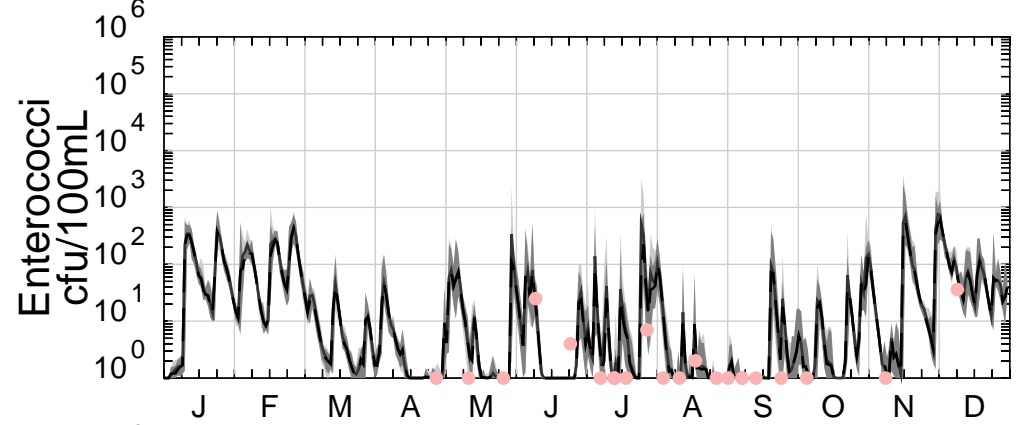
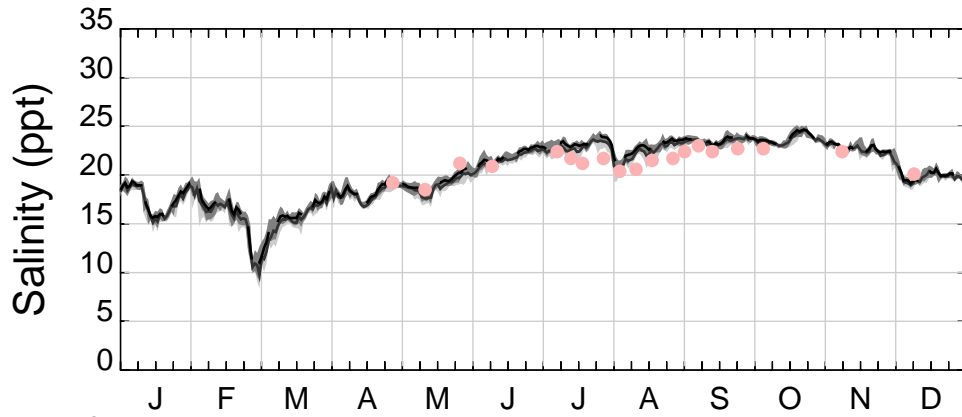
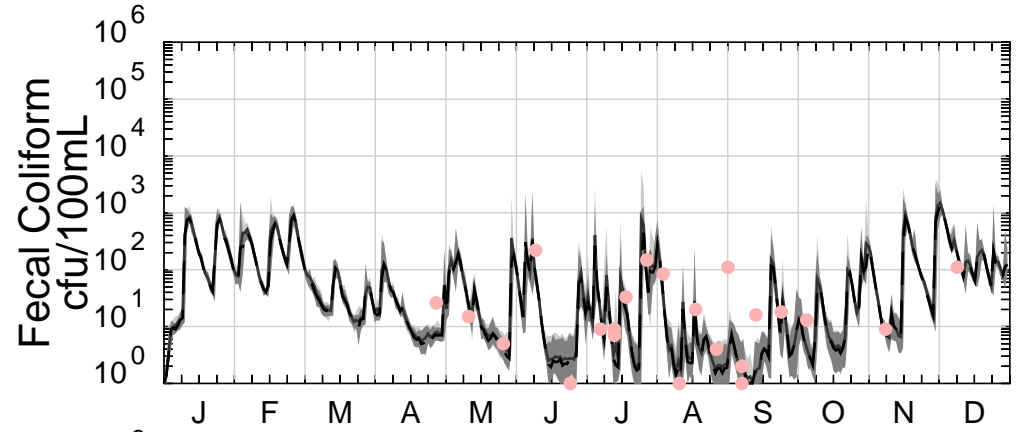
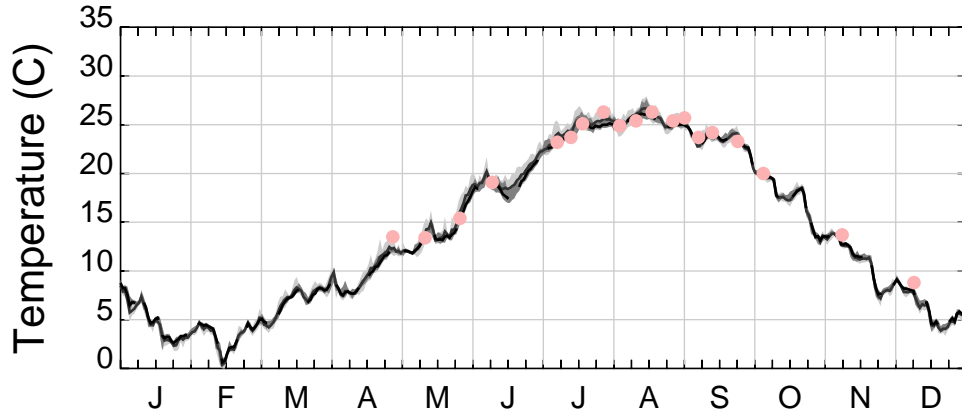
Station: 18



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

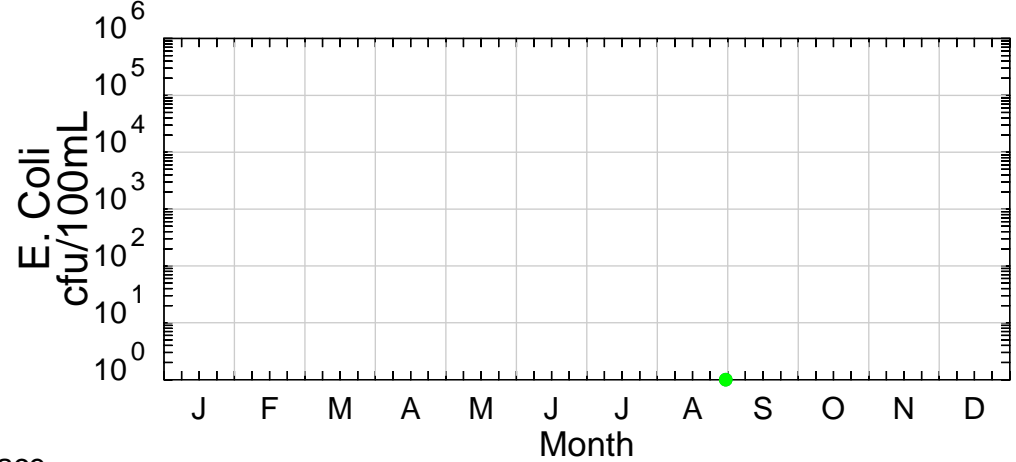
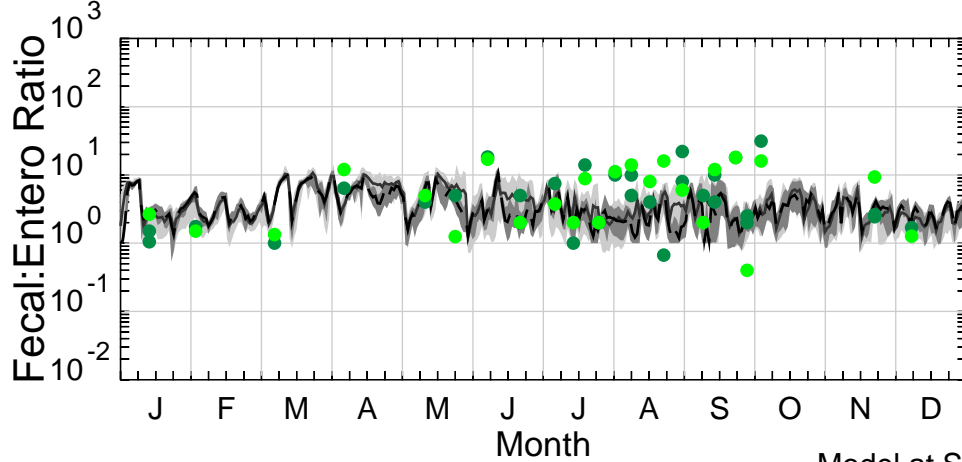
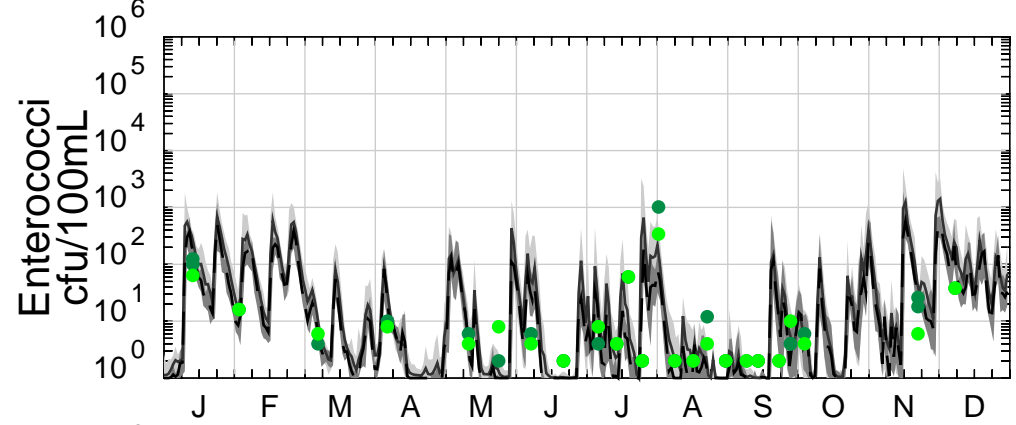
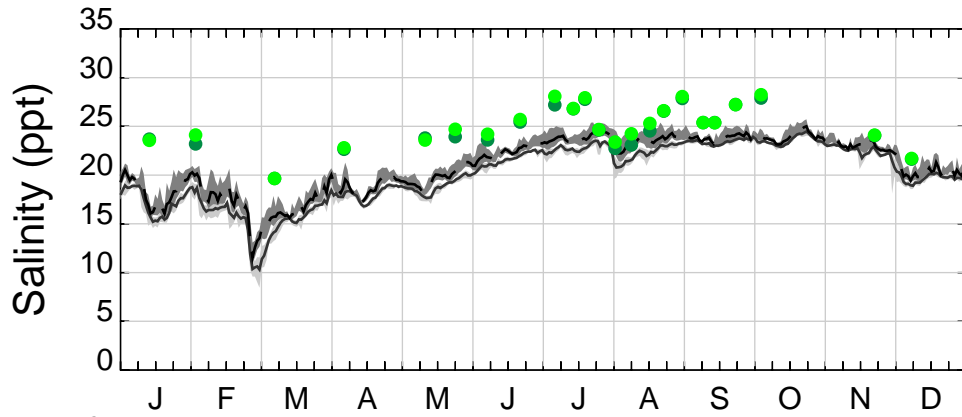
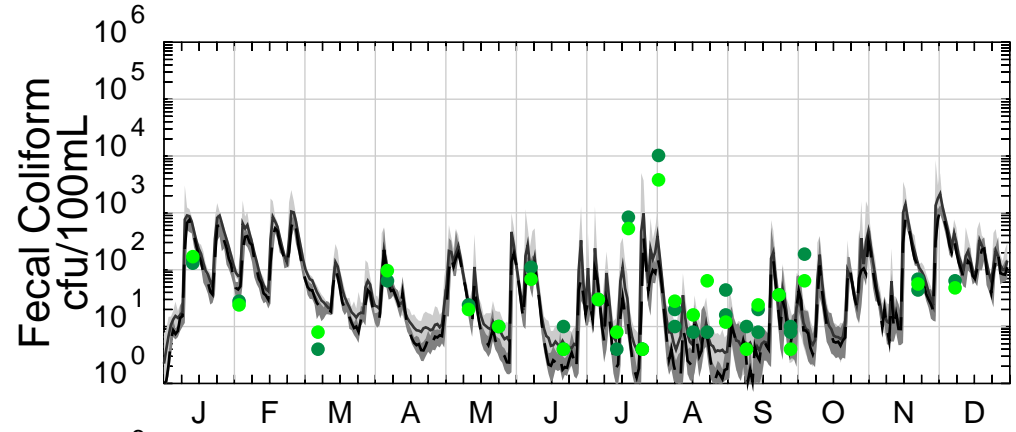
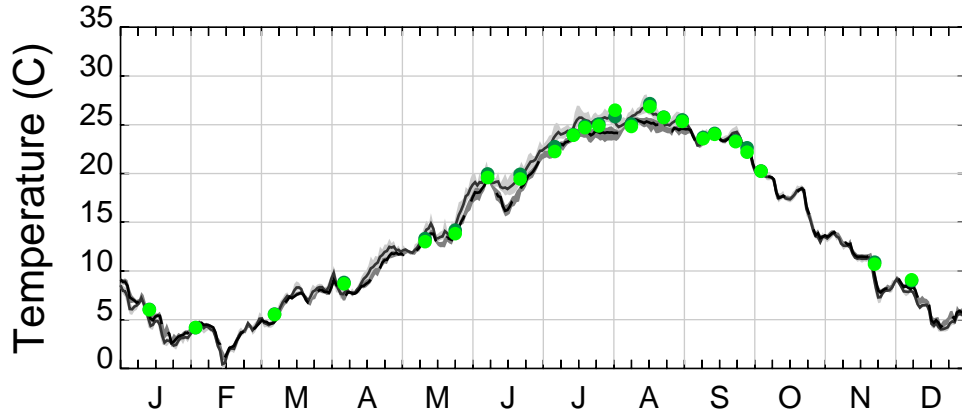
**Station: B17**



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

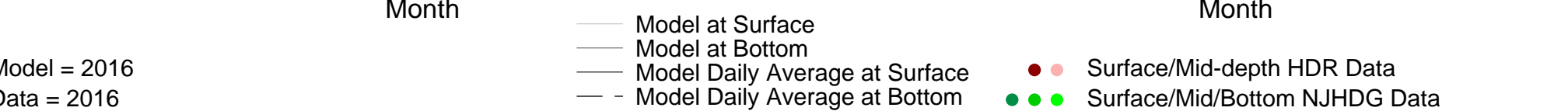
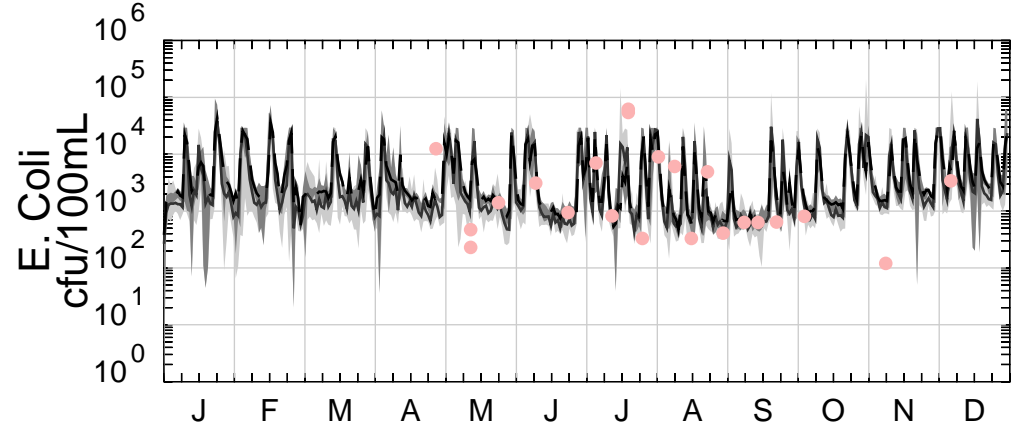
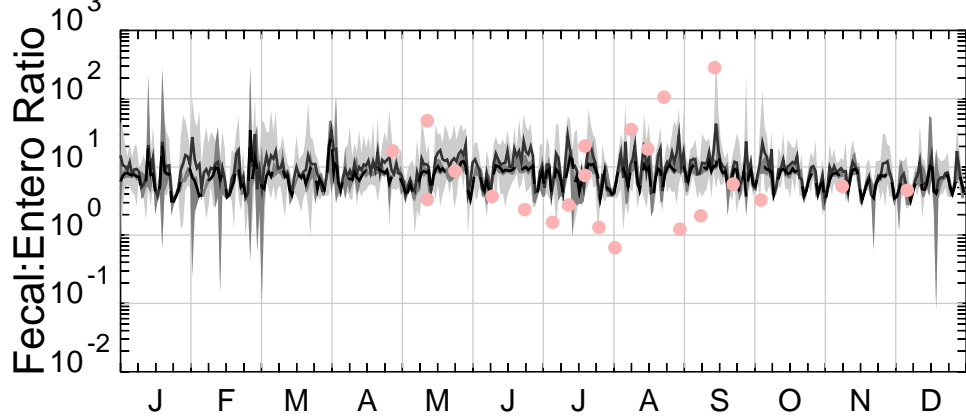
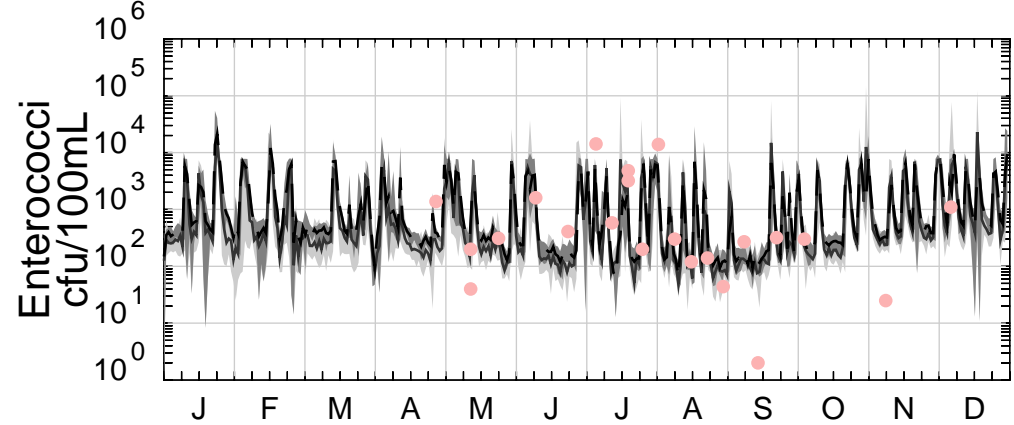
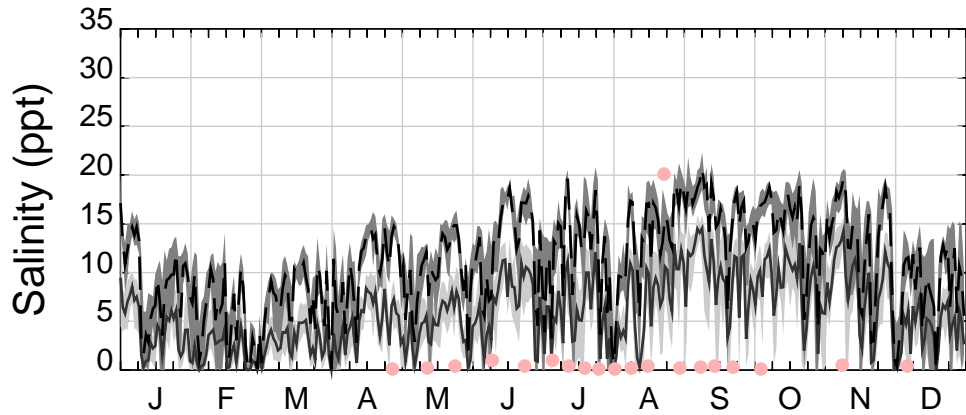
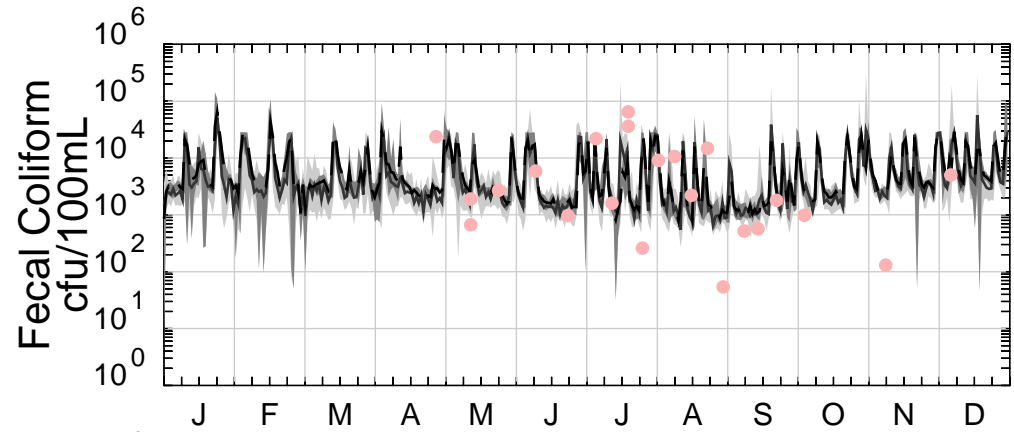
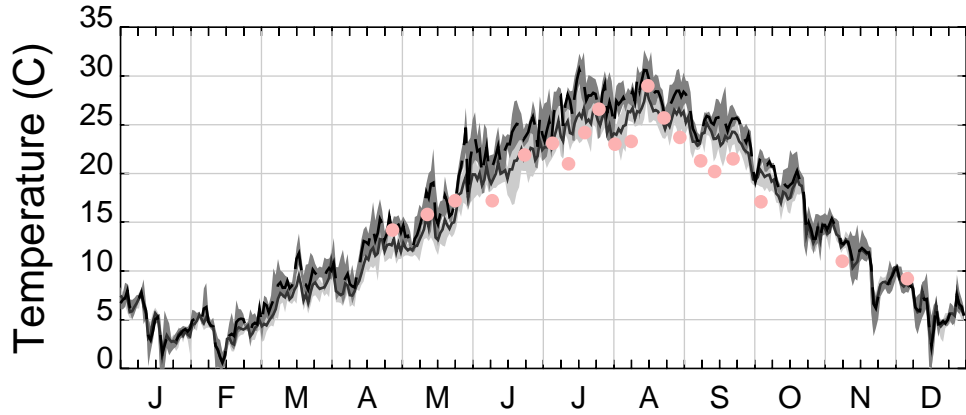
Station: 19



Model = 2016  
 Data = 2016

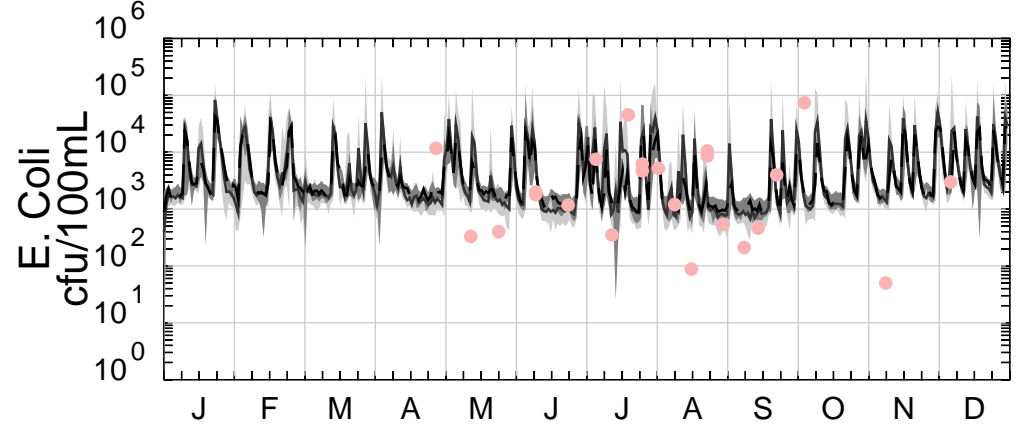
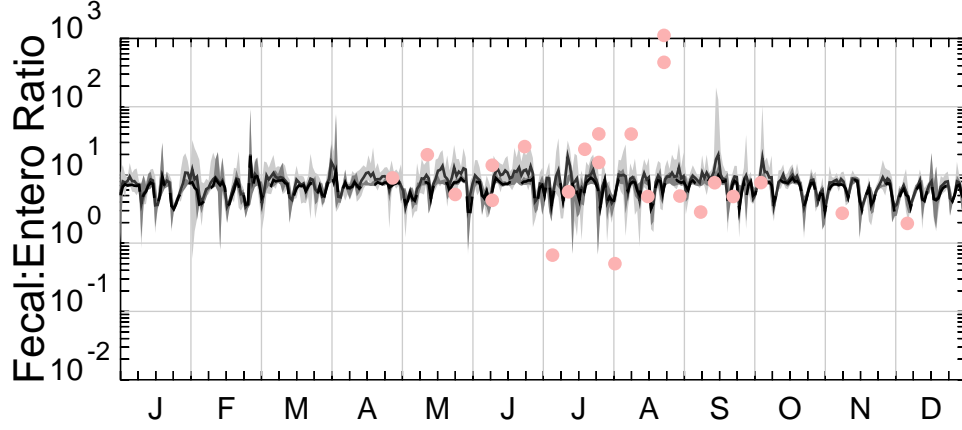
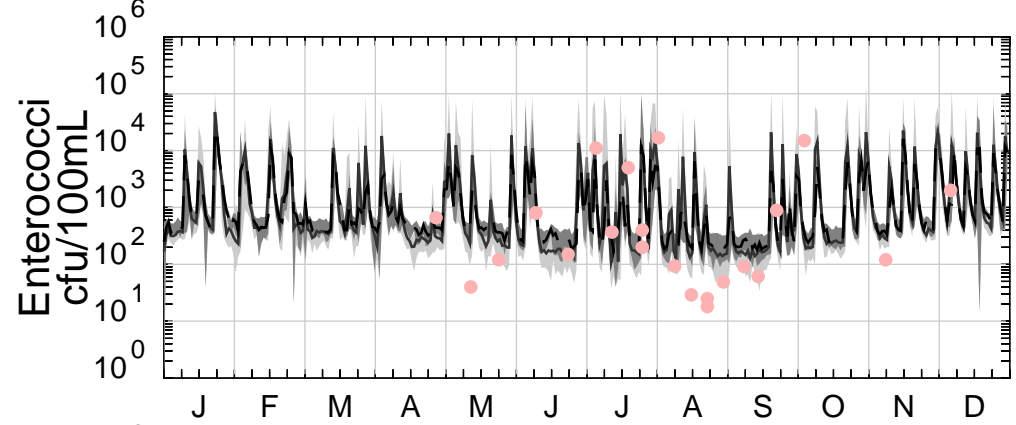
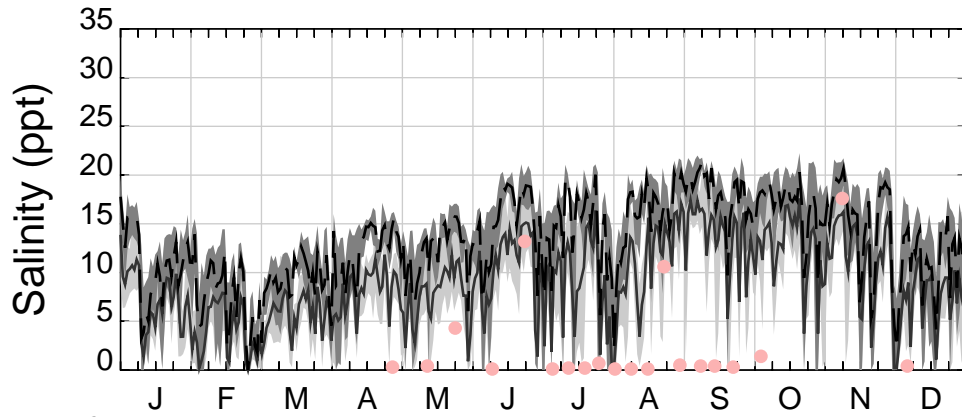
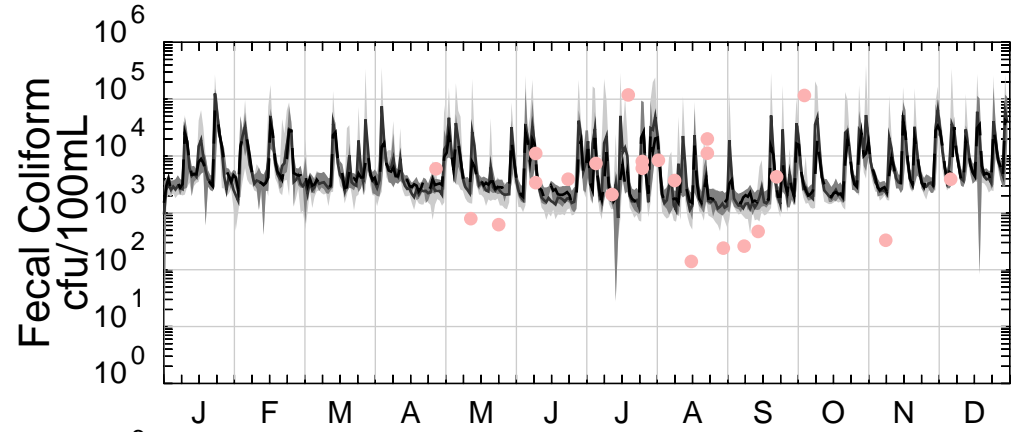
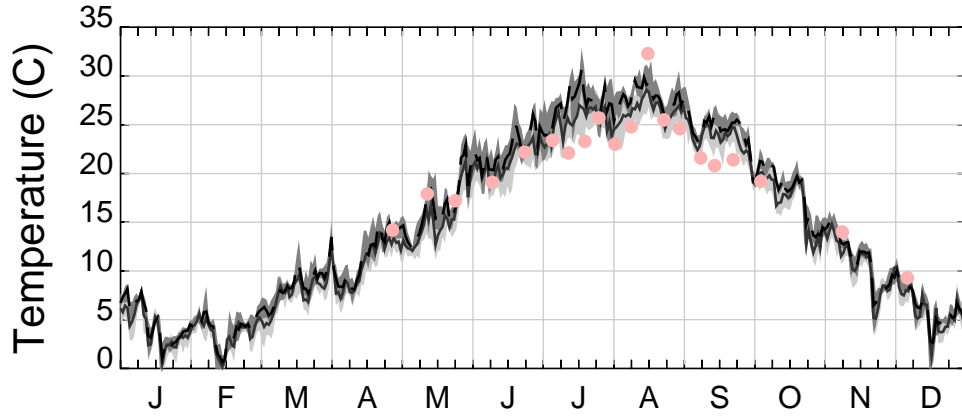
- Model at Surface
- Model at Bottom
- Model Daily Average at Surface
- - Model Daily Average at Bottom
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data

**Station: B16**





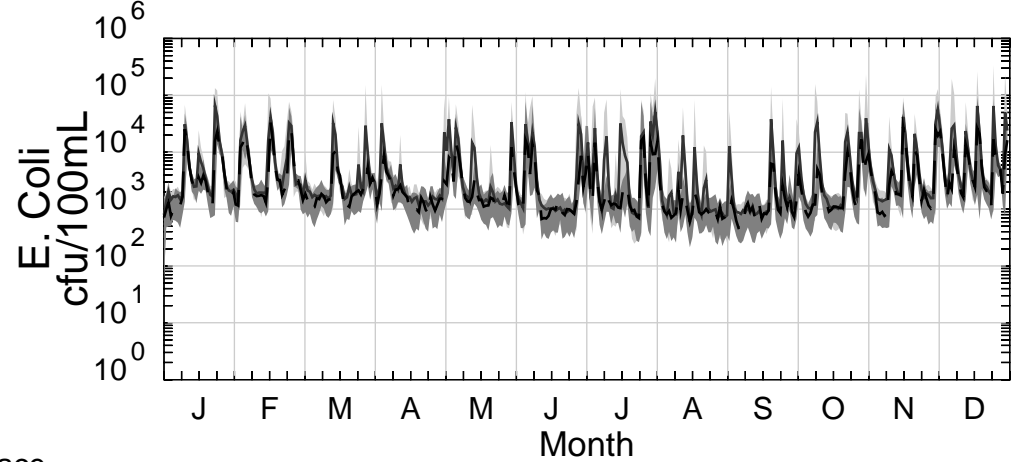
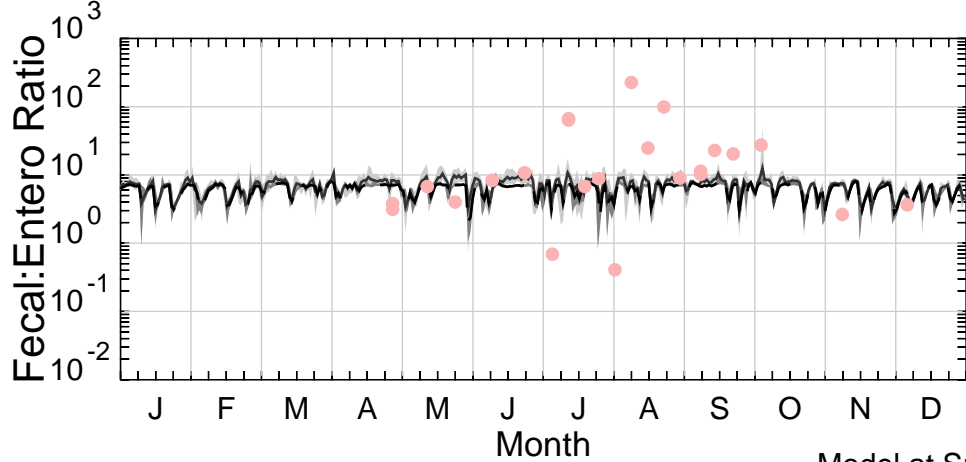
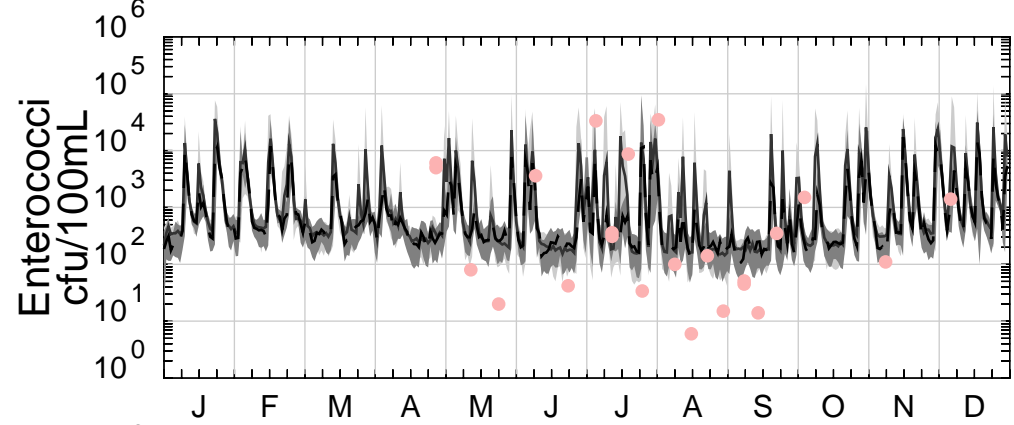
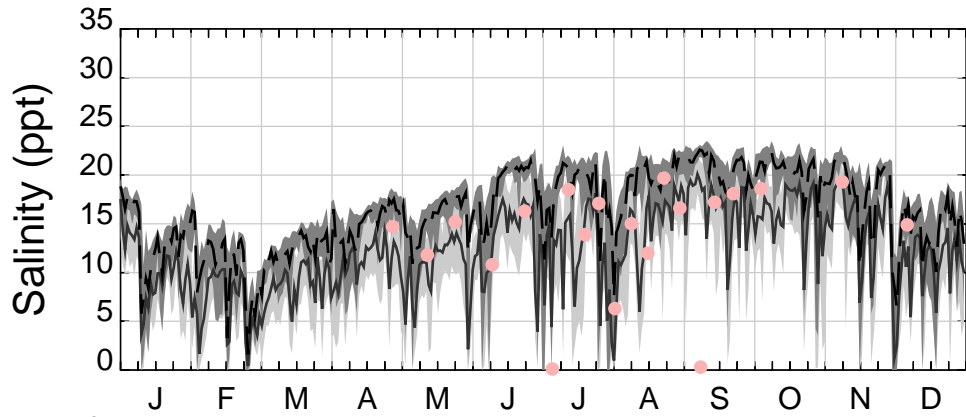
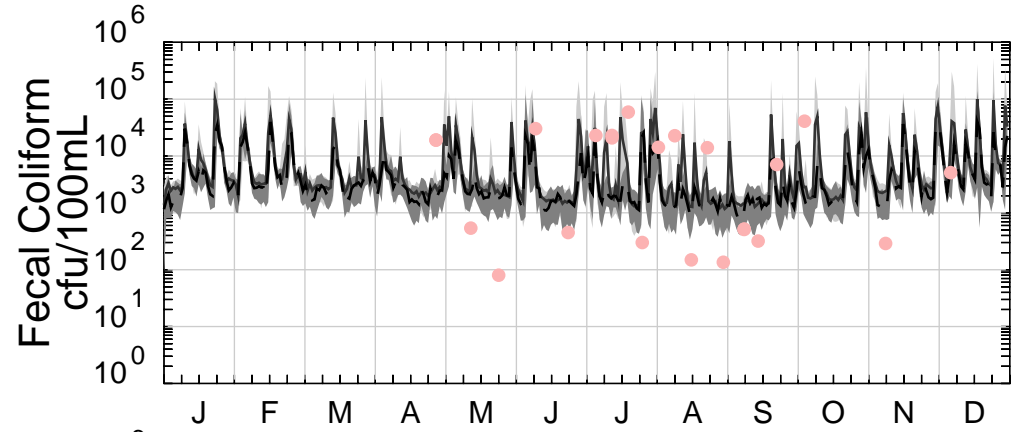
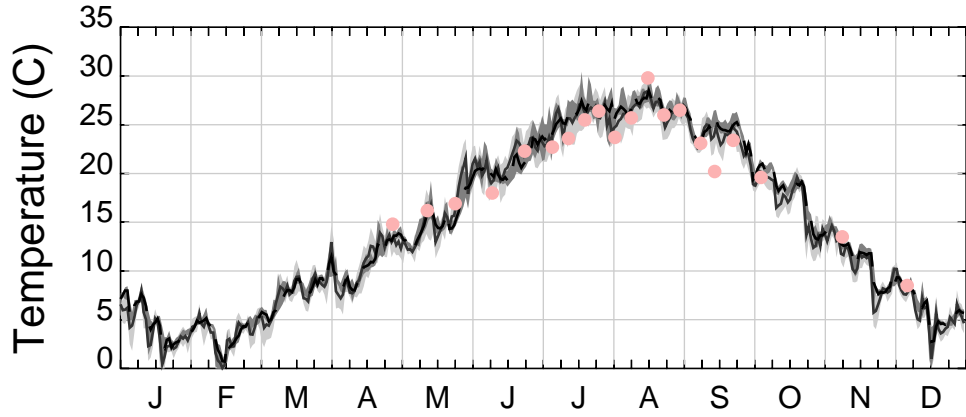
**Station: B14**



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

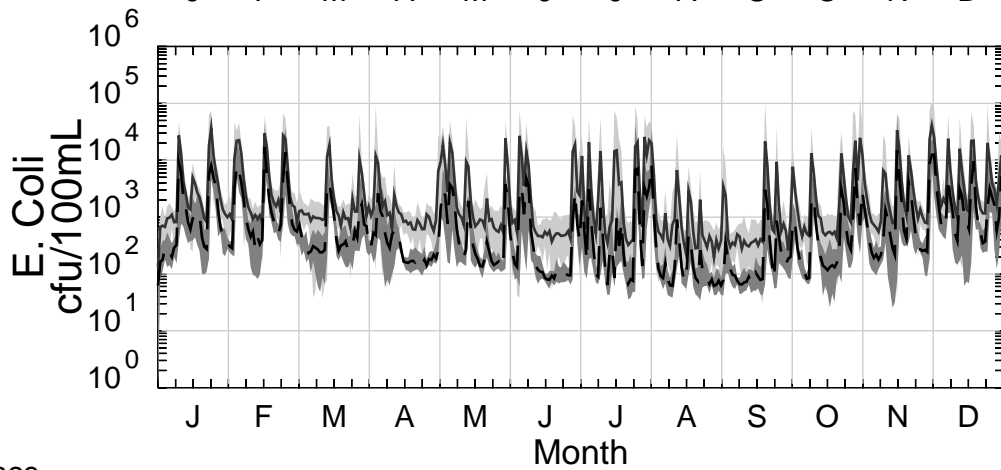
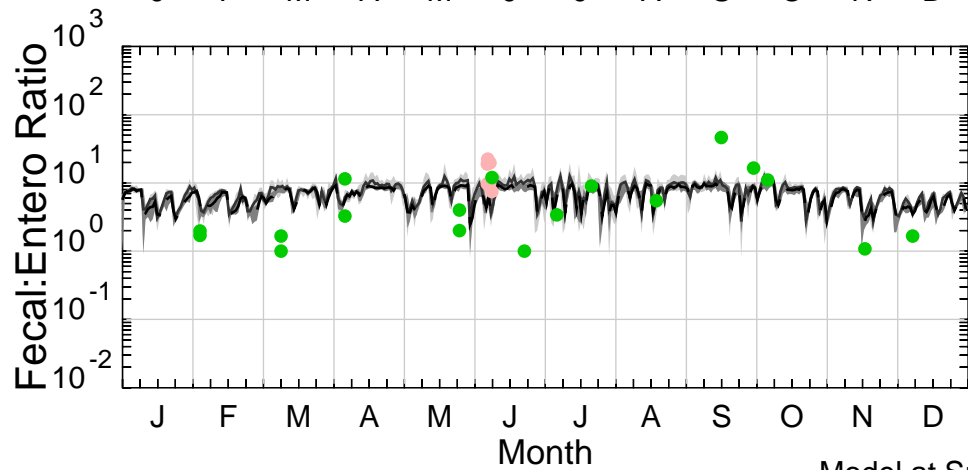
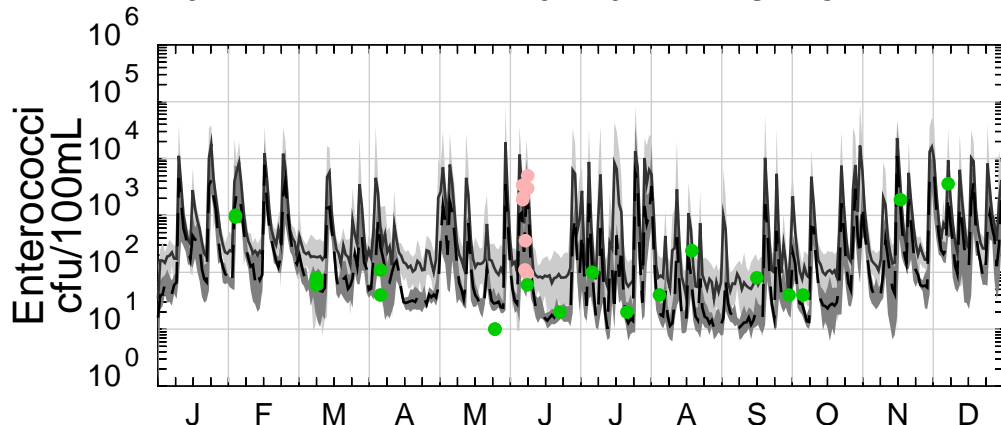
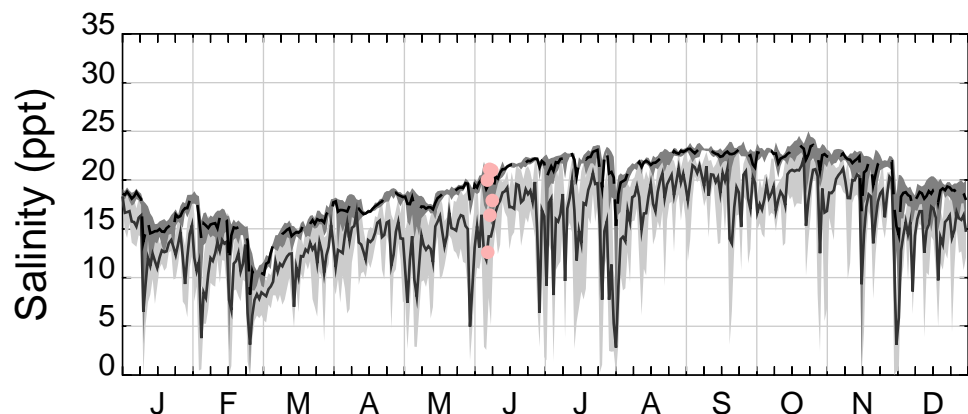
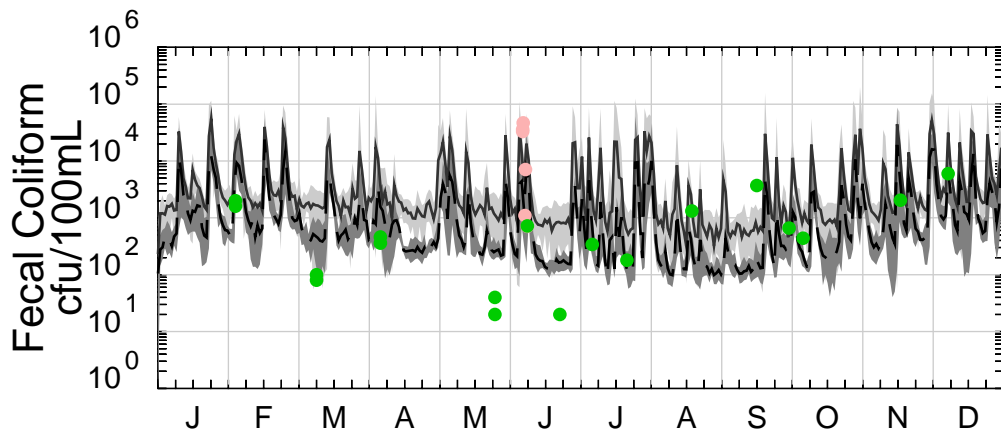
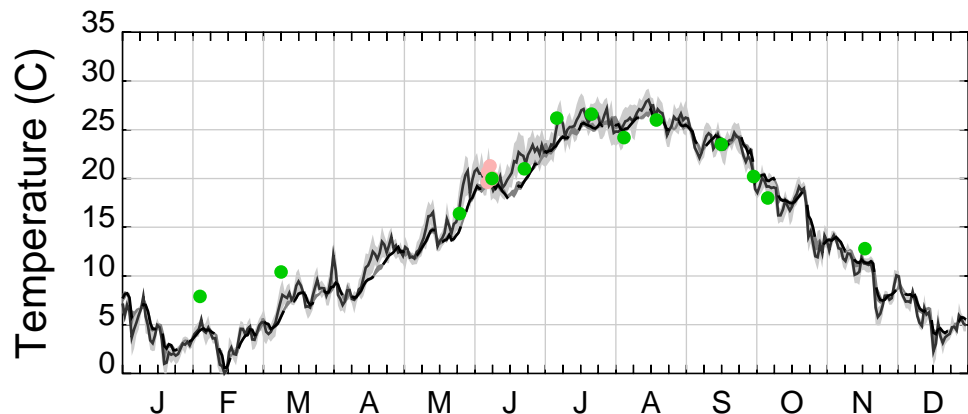
**Station: B13**



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

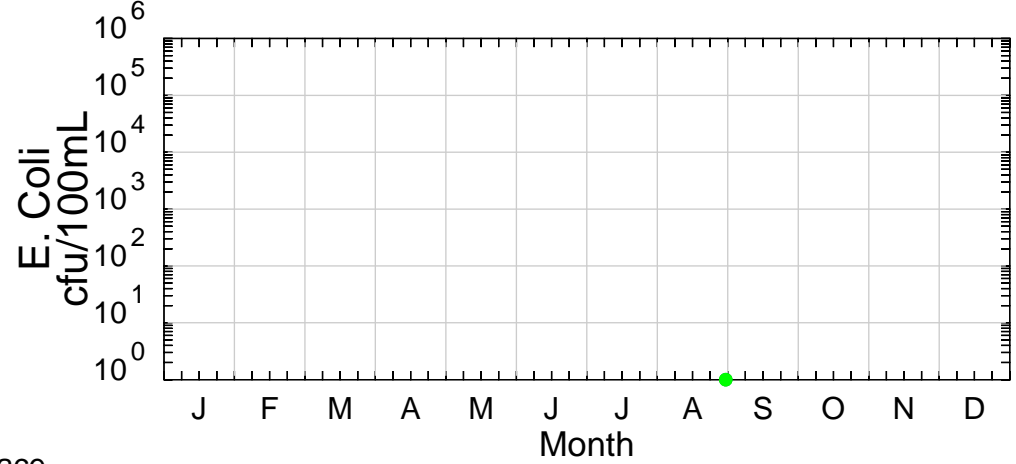
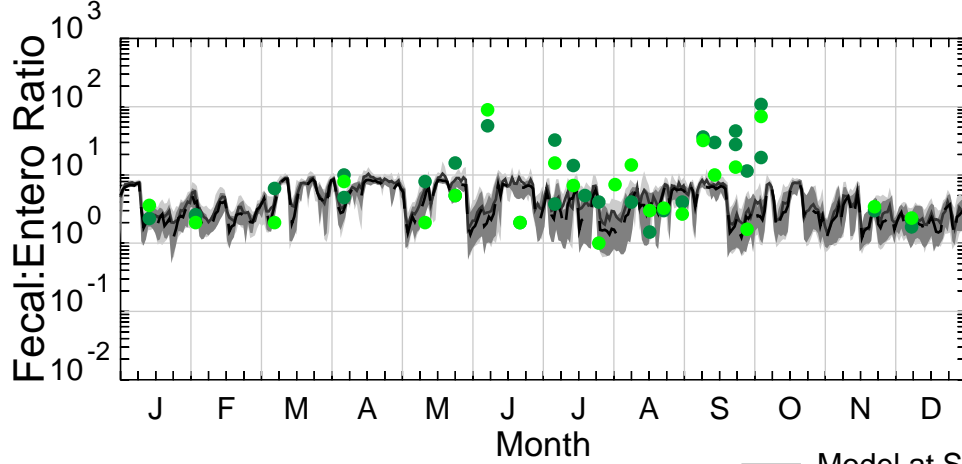
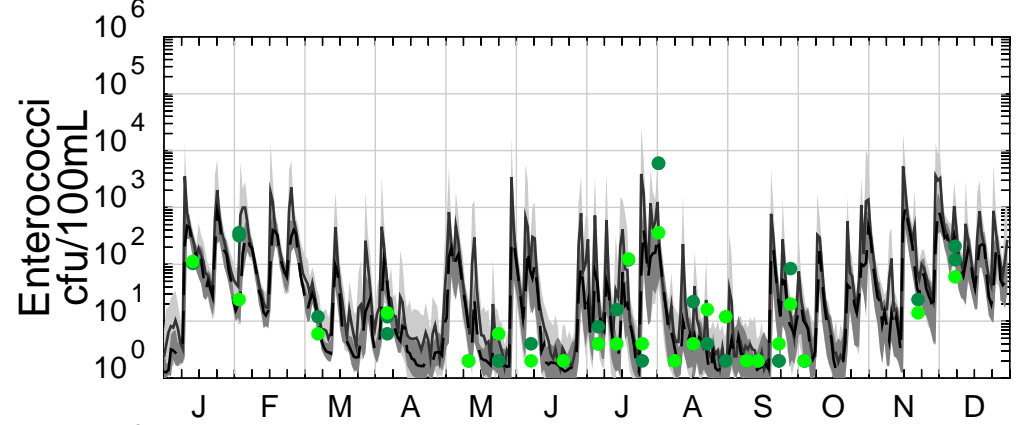
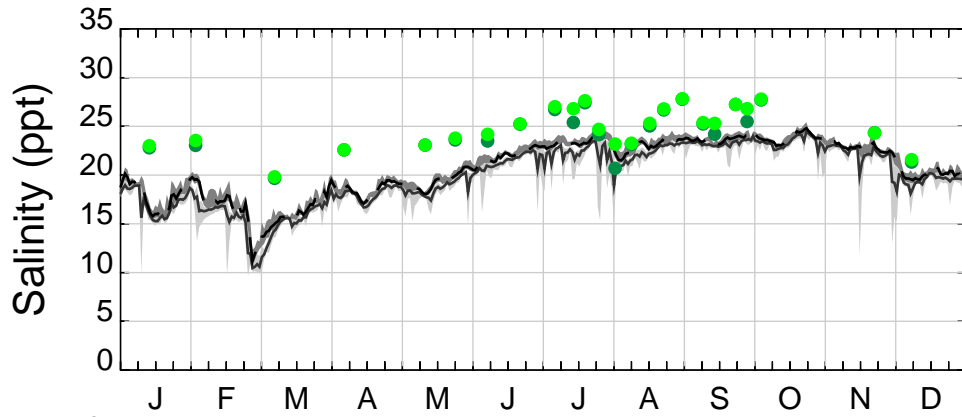
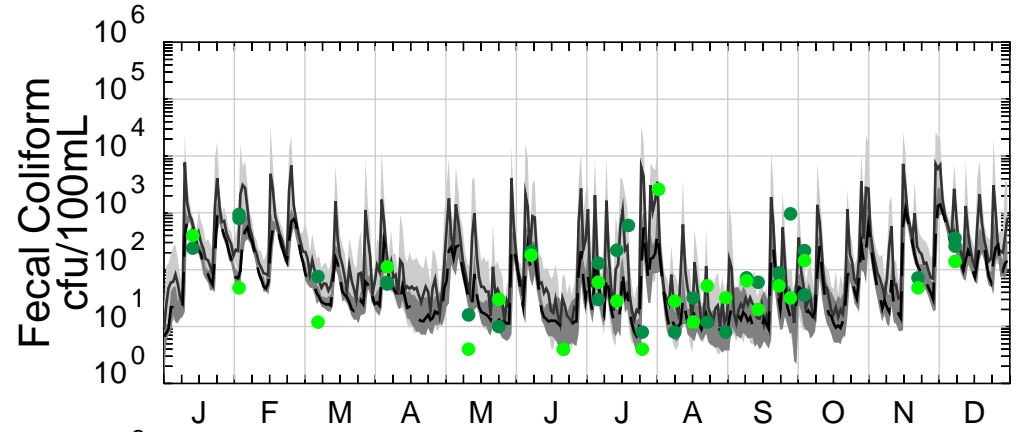
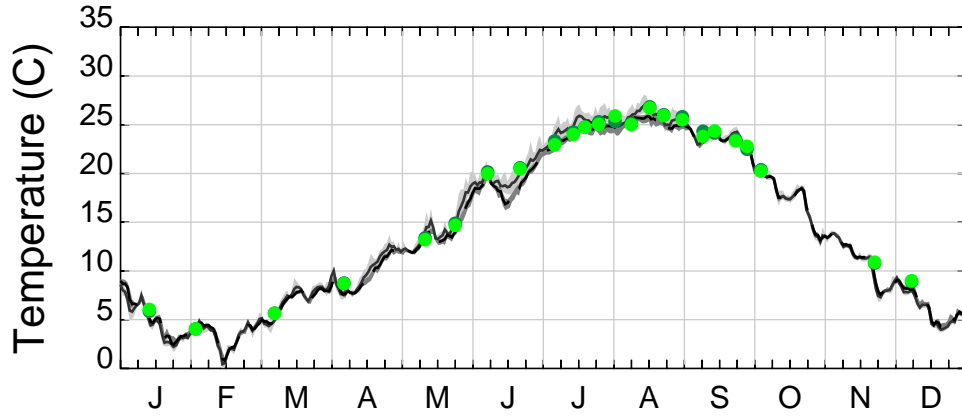
Station: 20



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

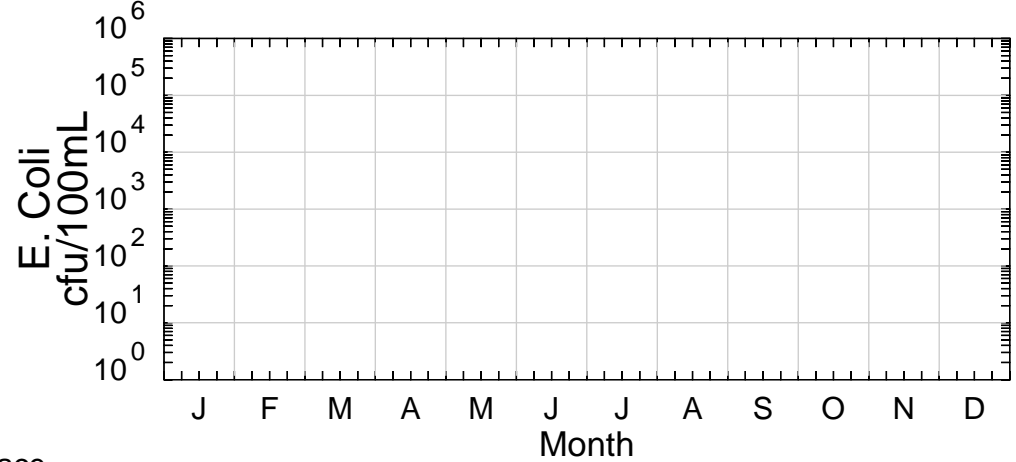
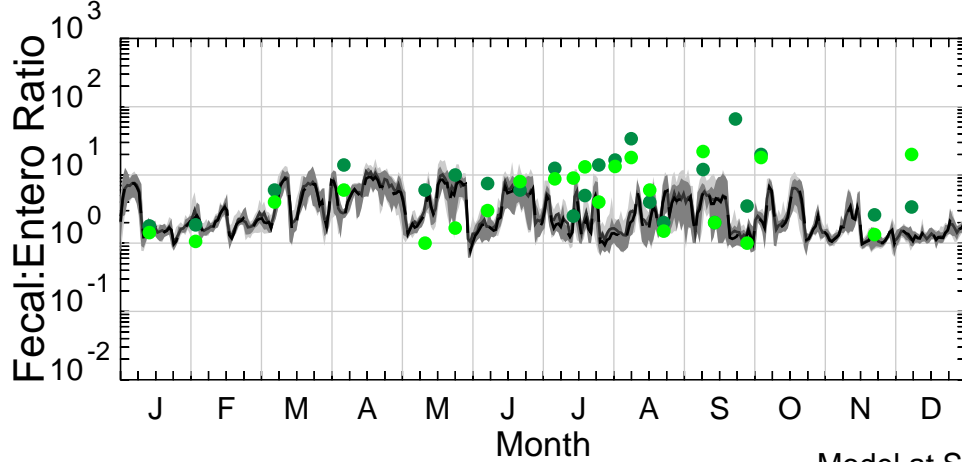
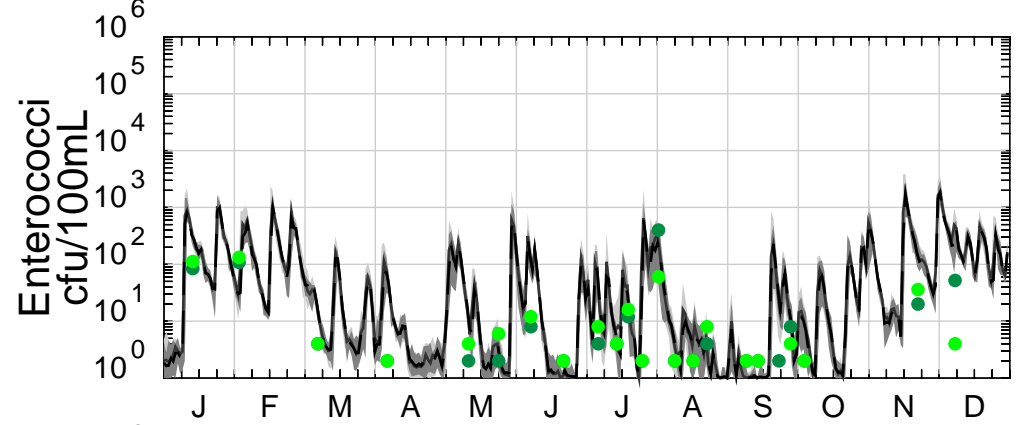
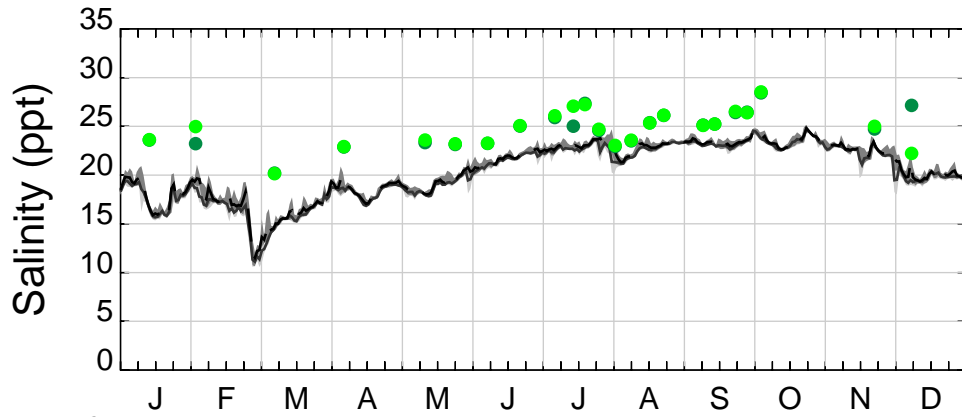
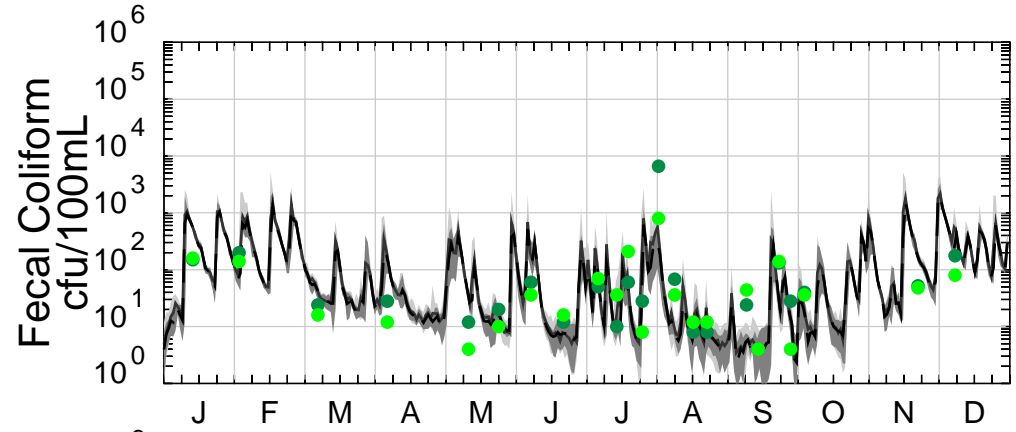
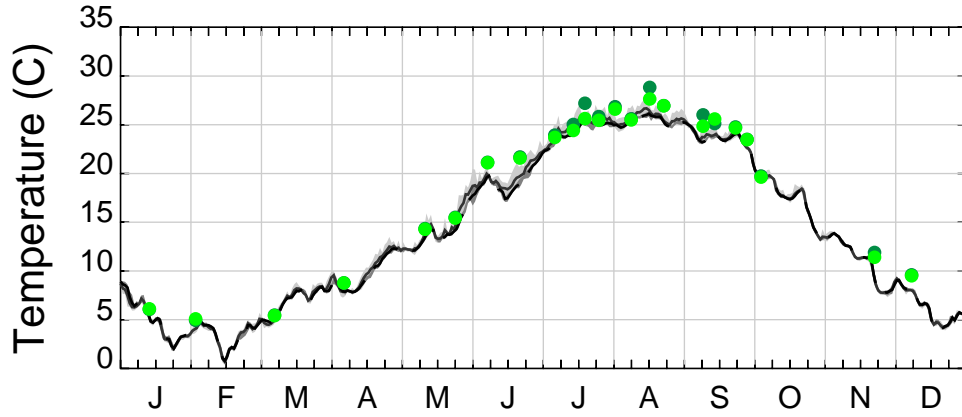


Model = 2016  
 Data = 2016

— 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

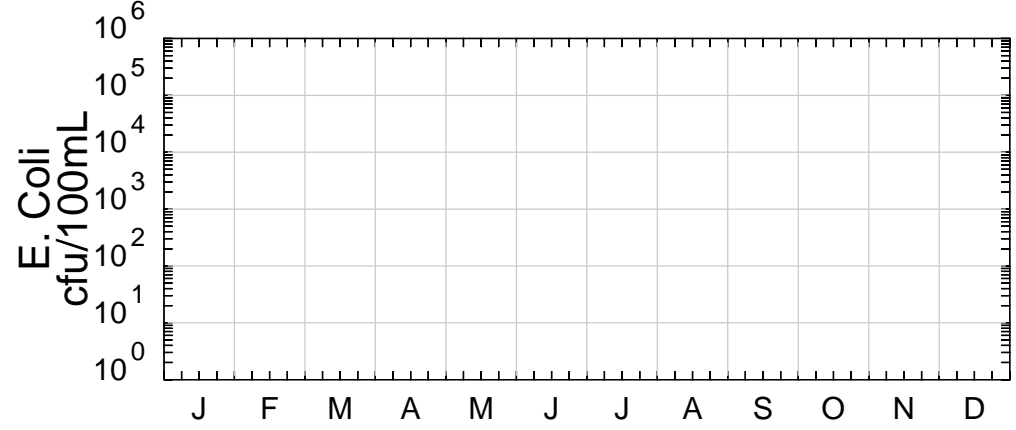
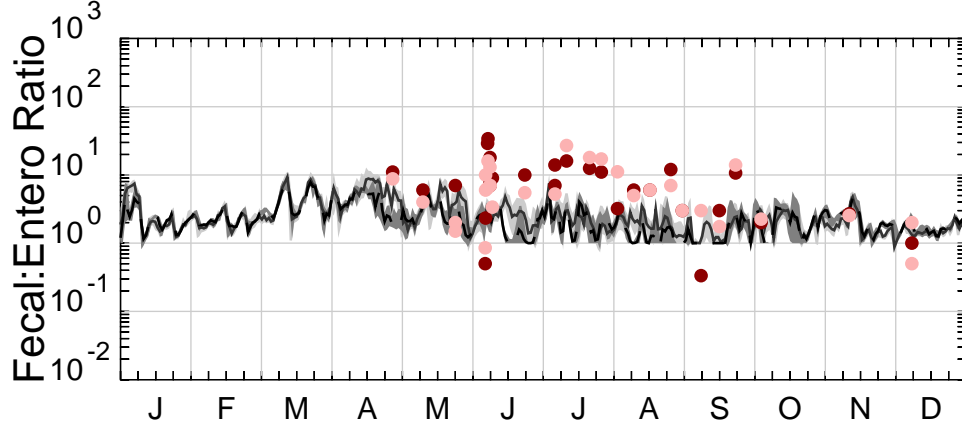
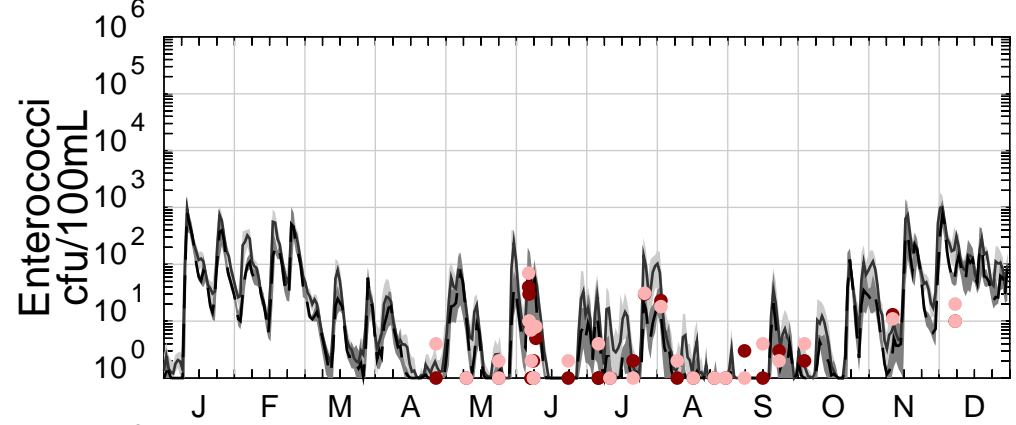
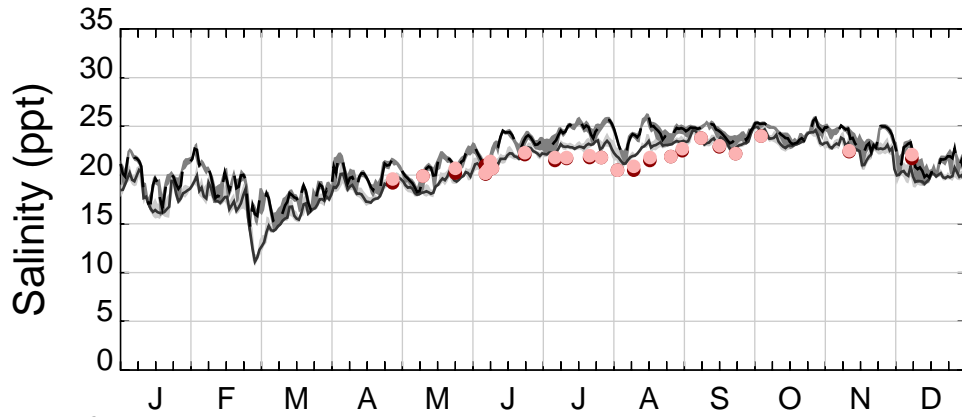
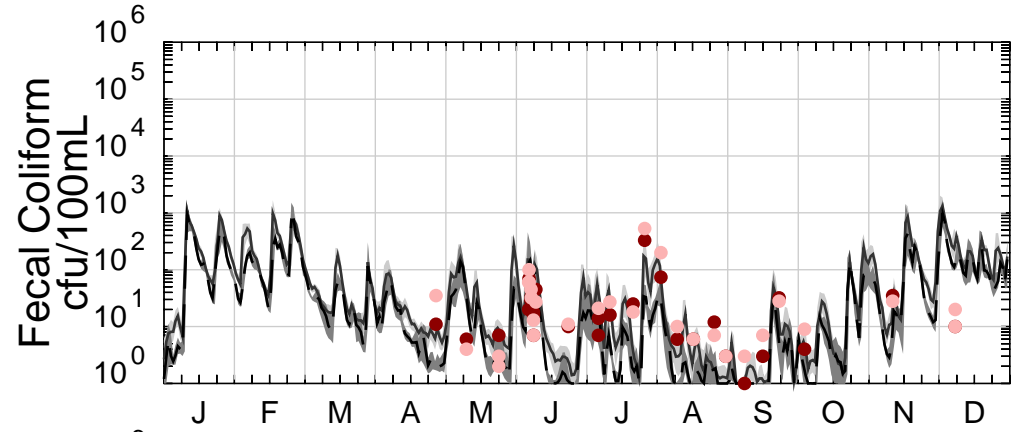
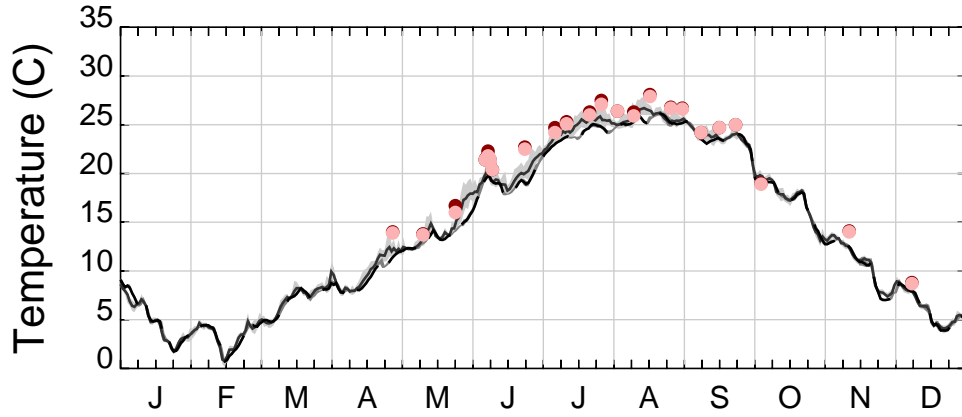


Model = 2016  
 Data = 2016

— 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

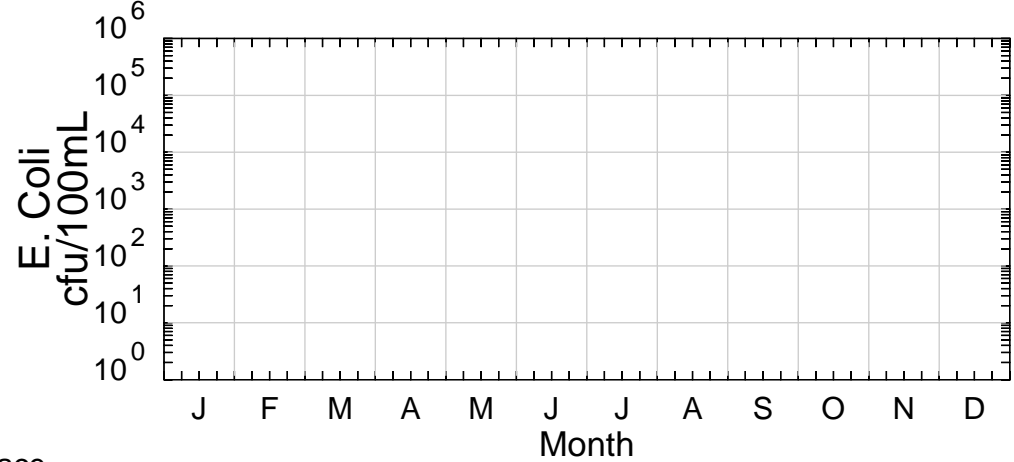
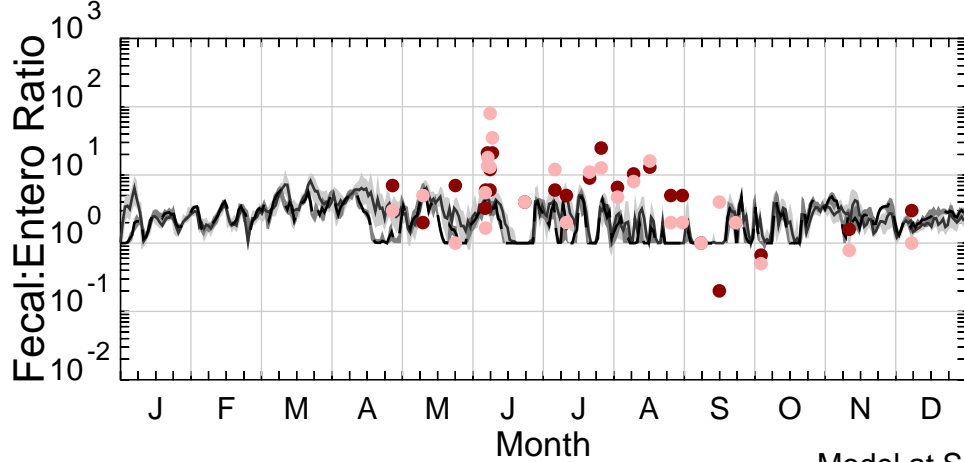
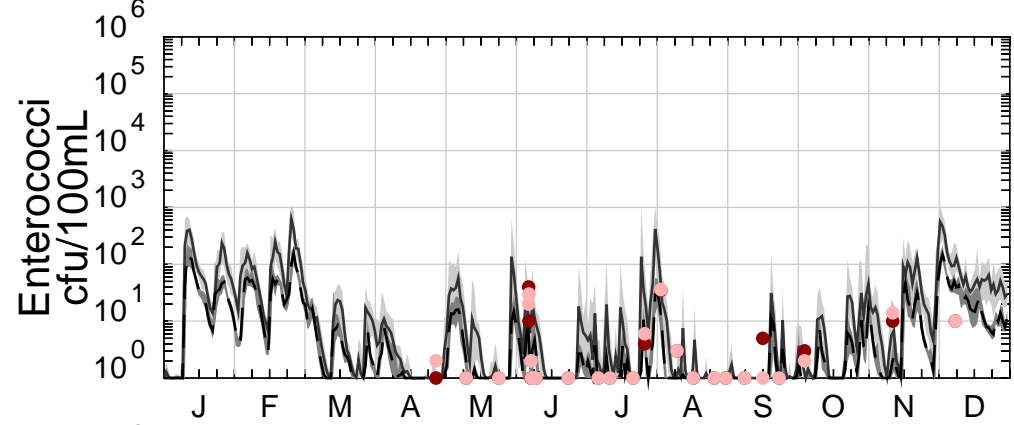
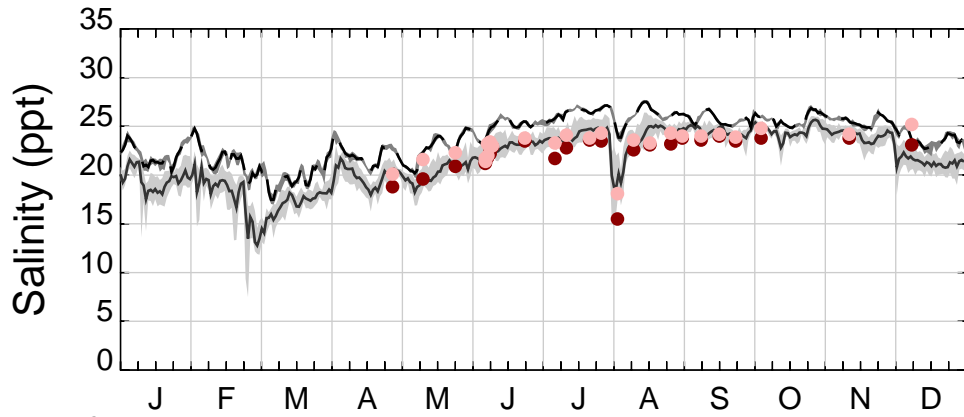
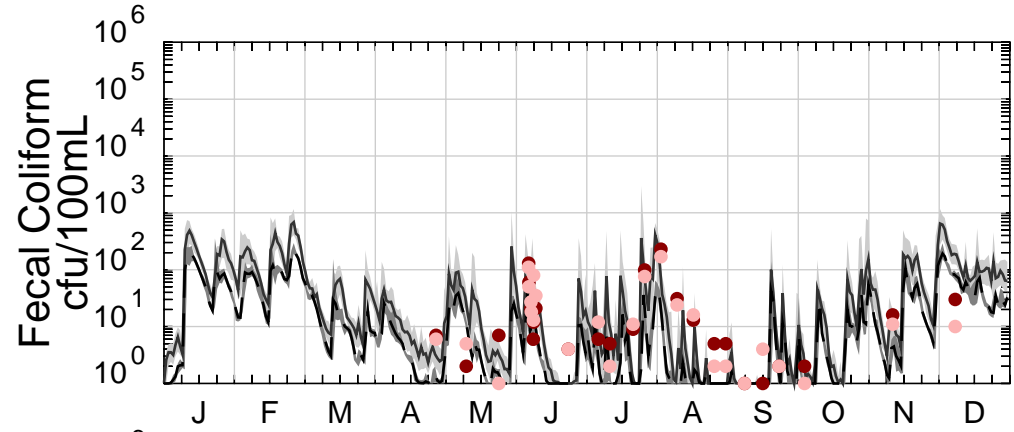
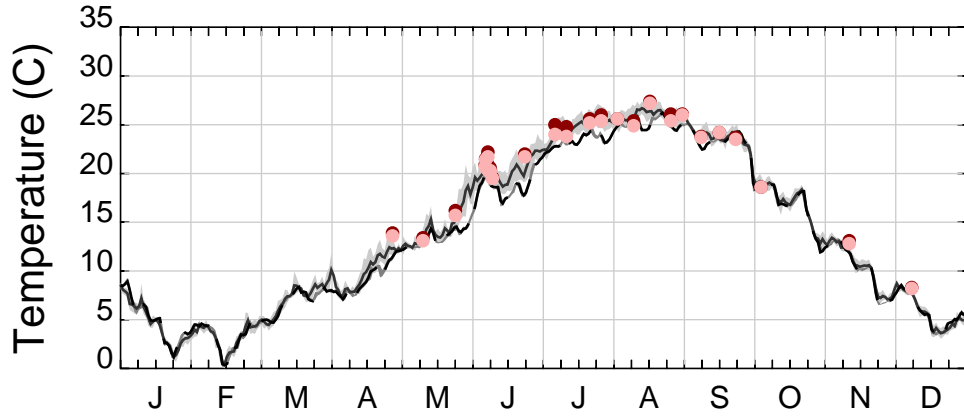
Station: 24



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

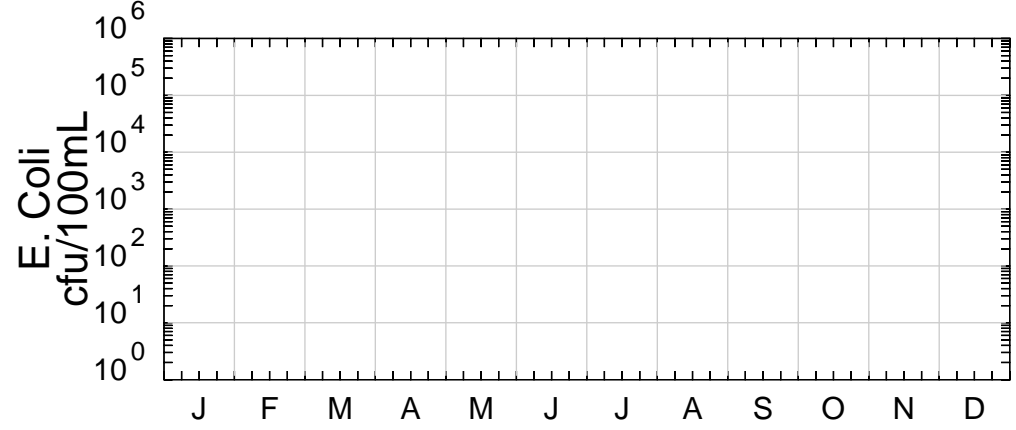
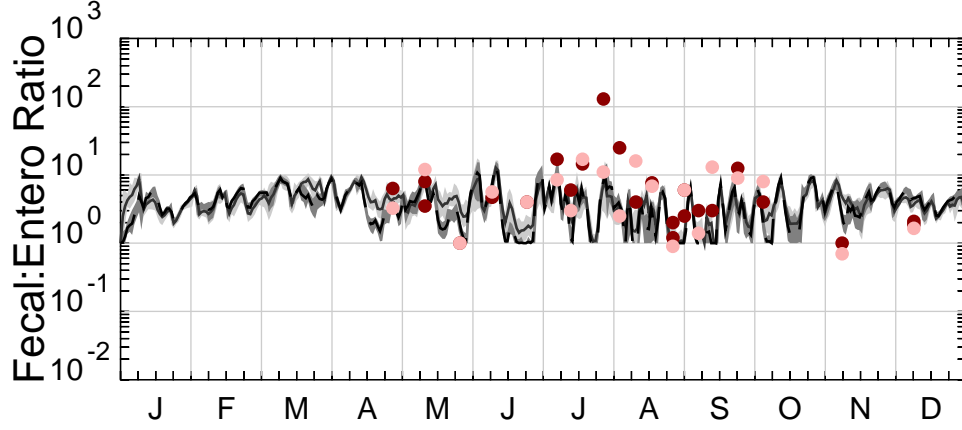
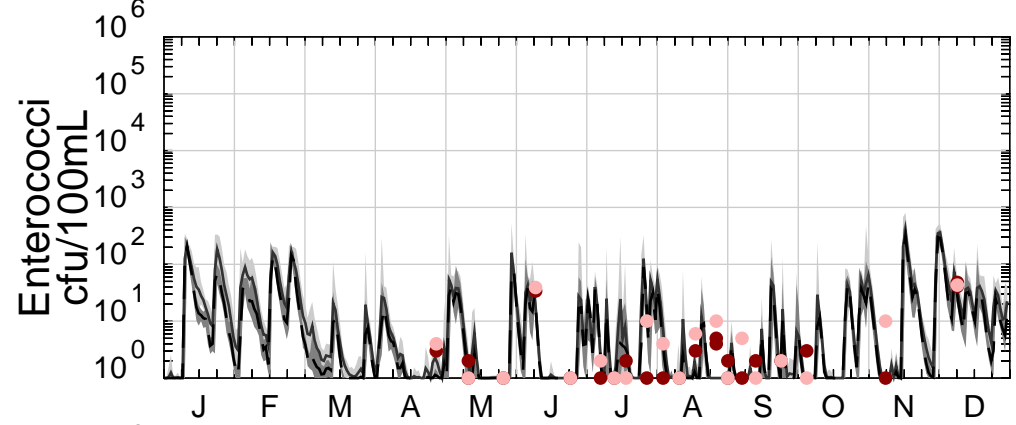
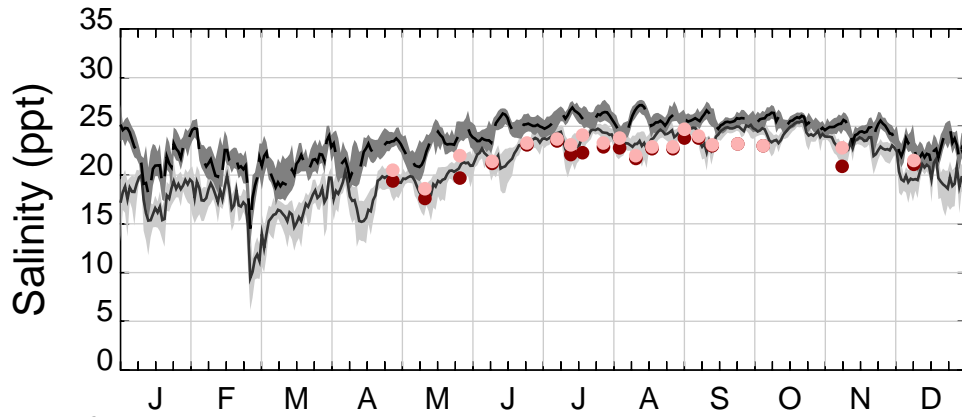
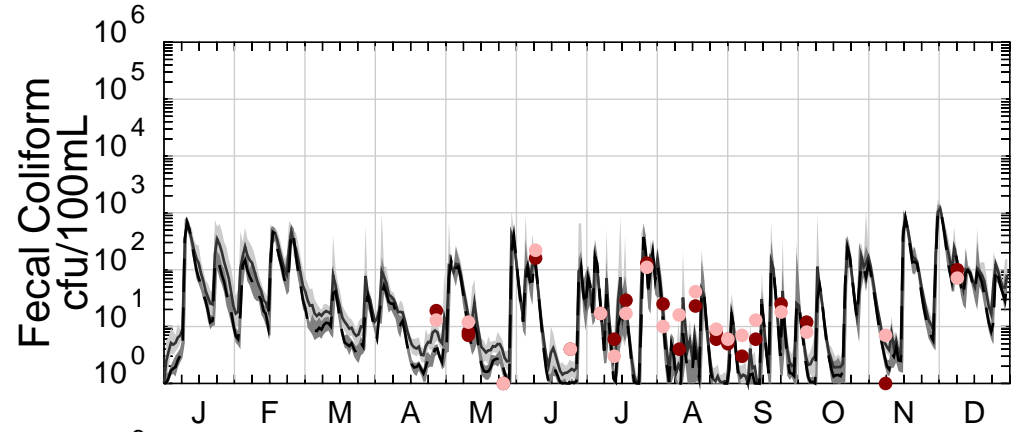
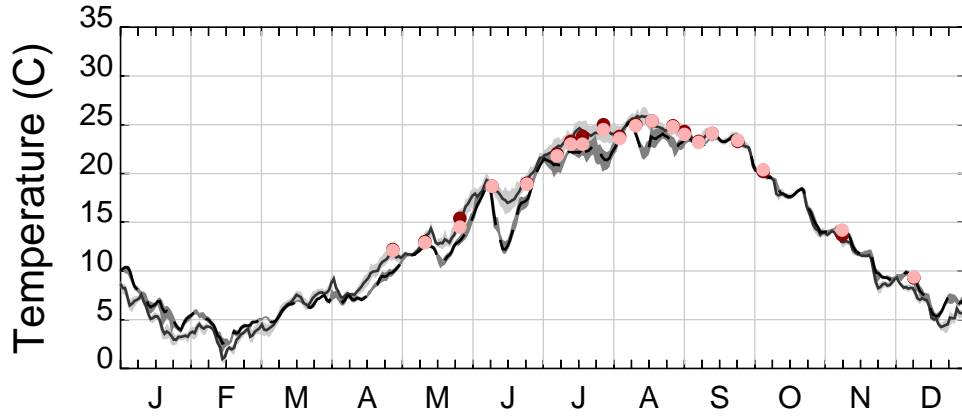
**Station: B15**



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**

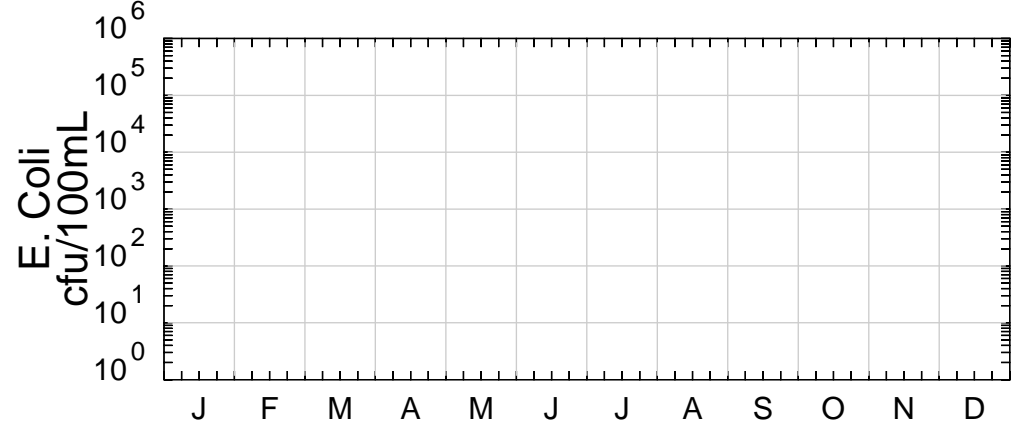
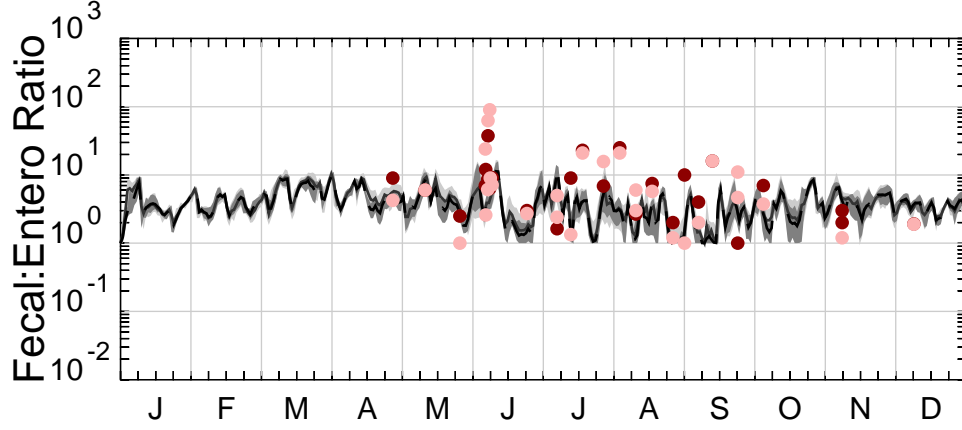
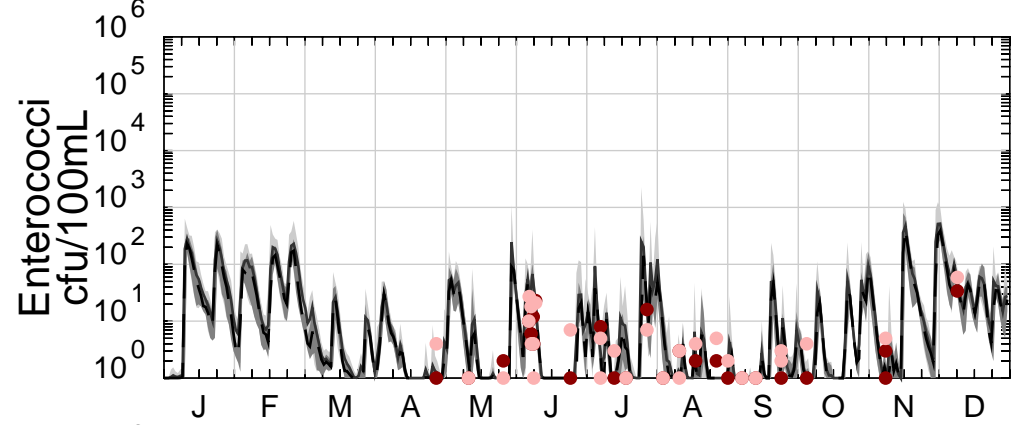
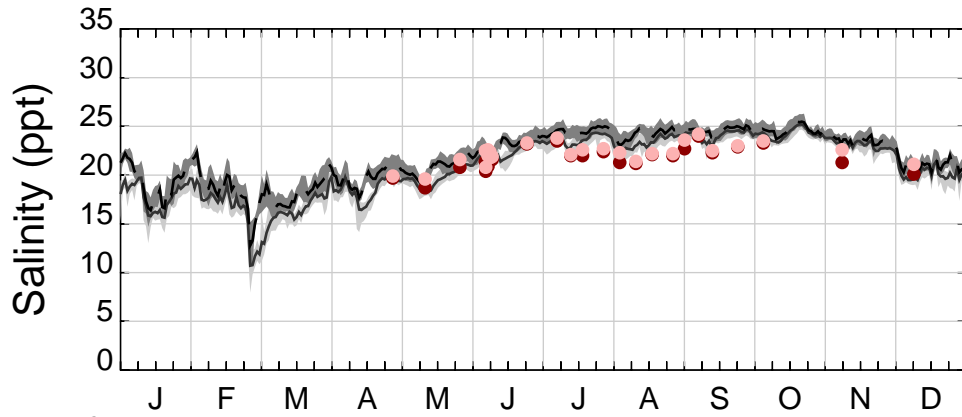
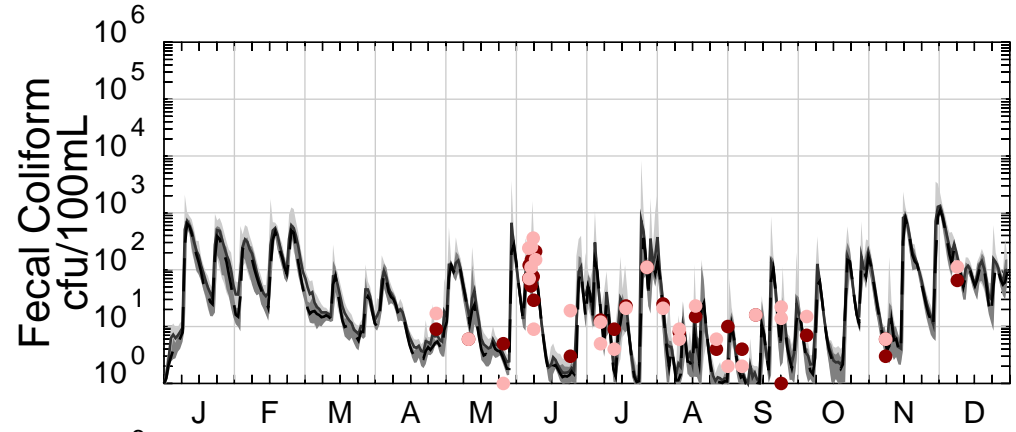
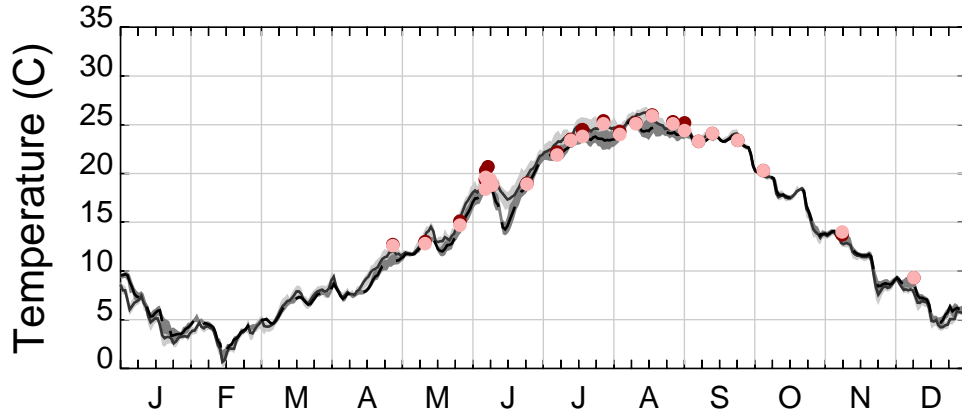


Model = 2016  
 Data = 2016

- 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



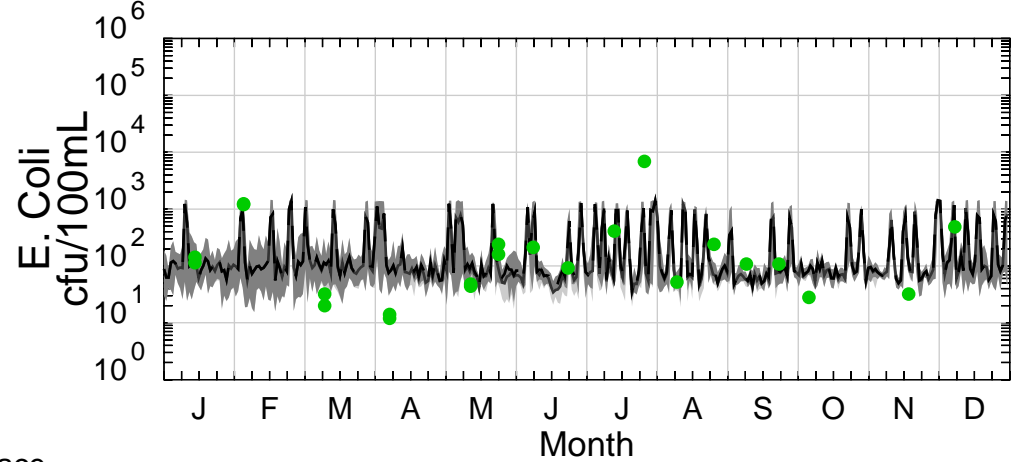
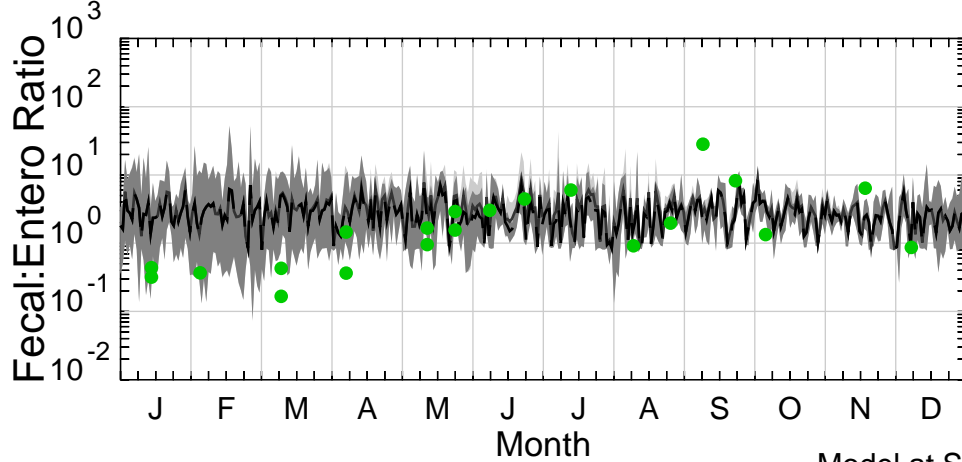
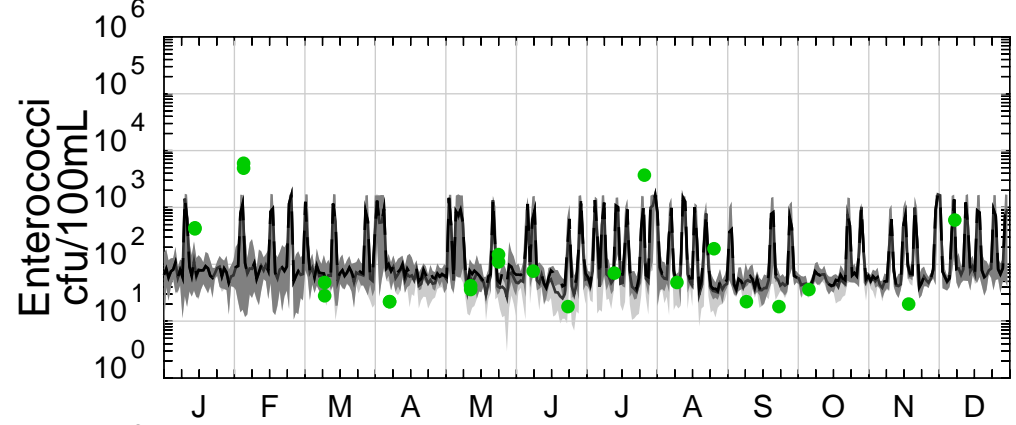
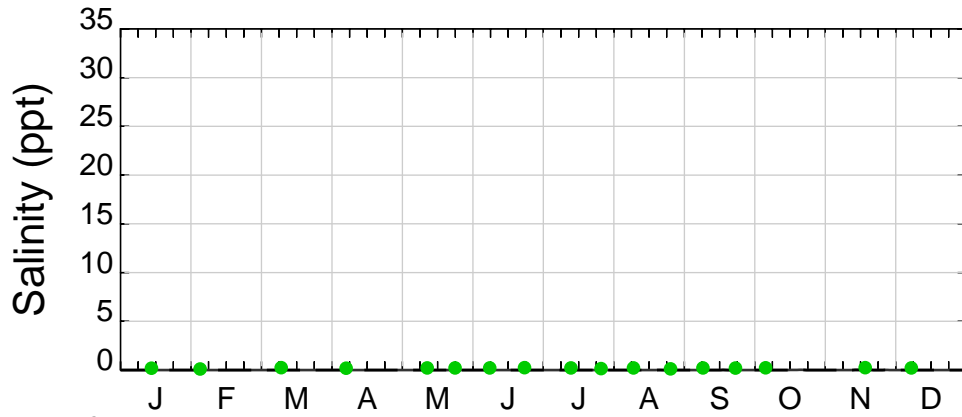
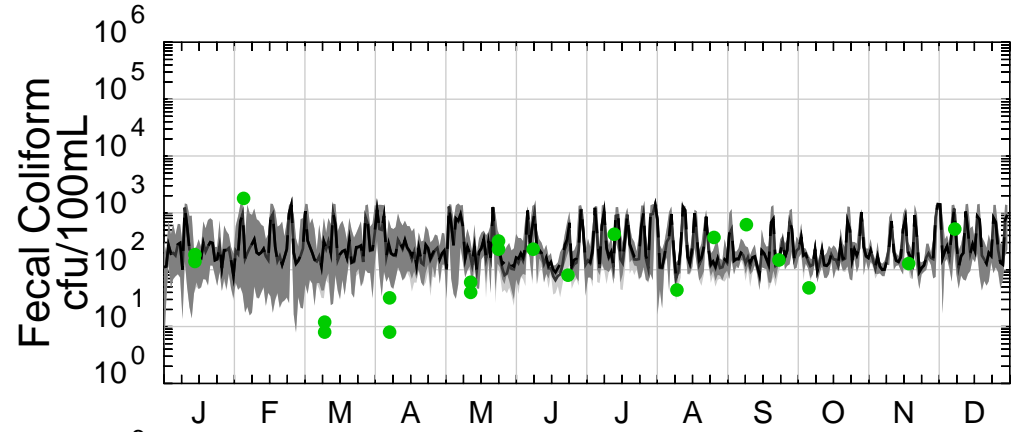
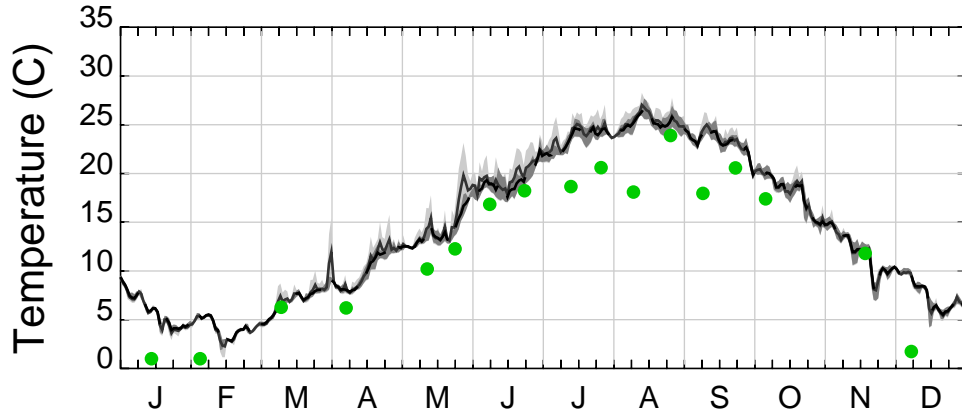
**Station: B12**



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

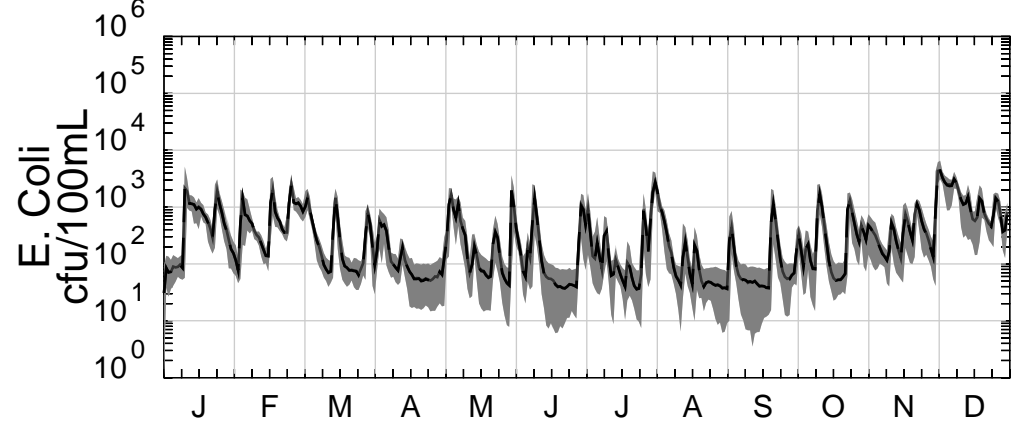
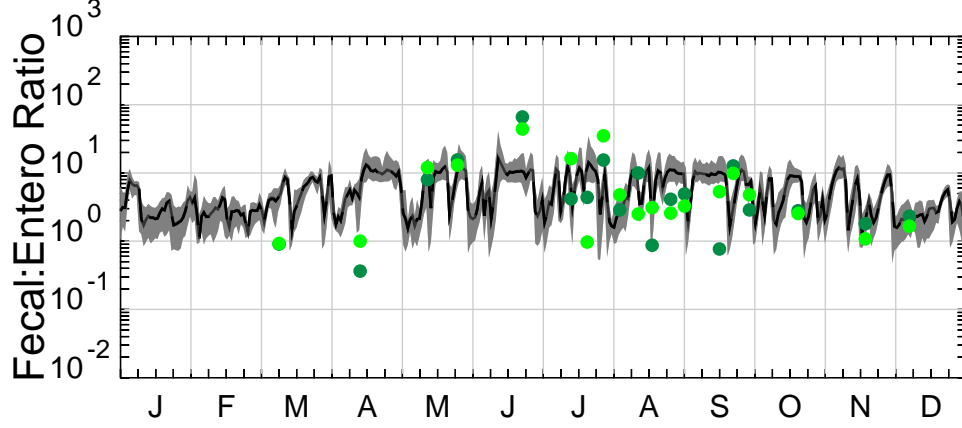
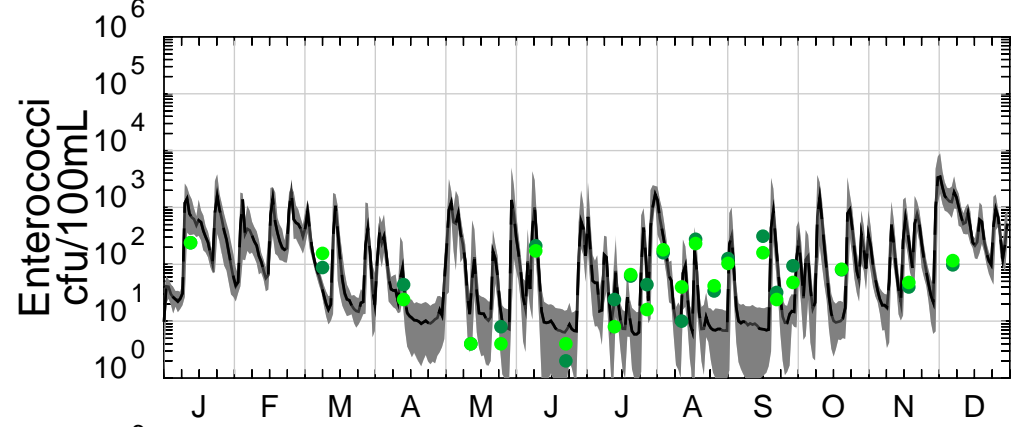
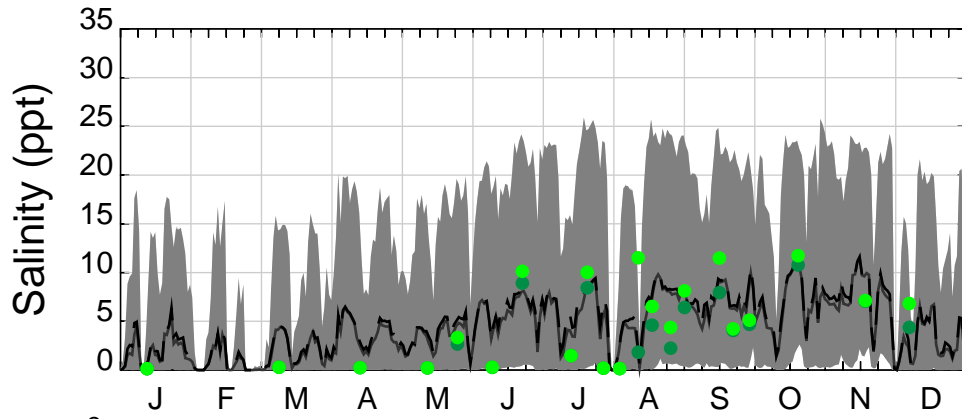
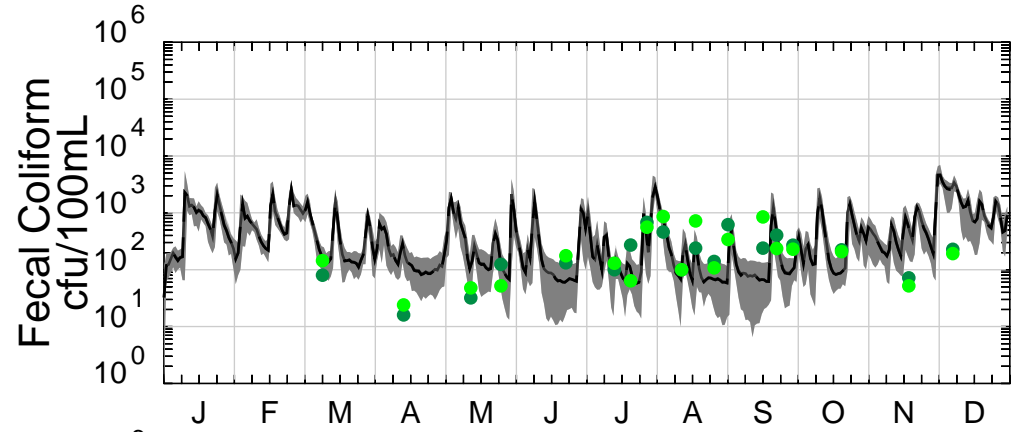
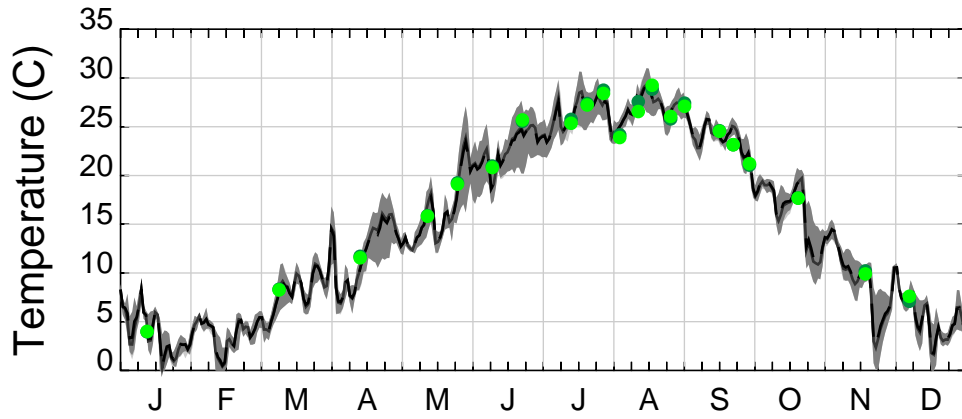
Station: 25



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

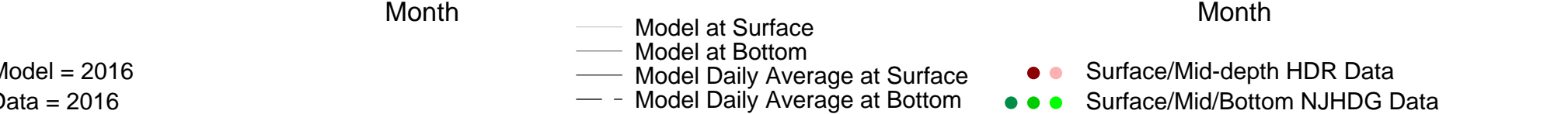
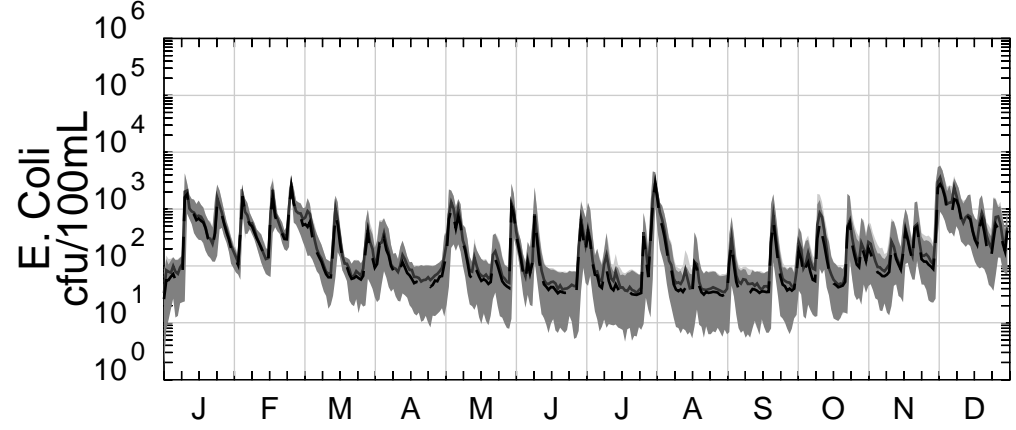
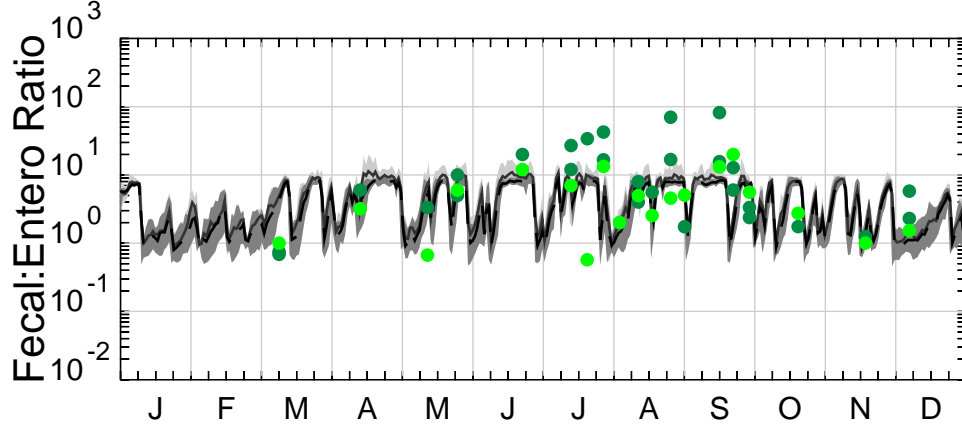
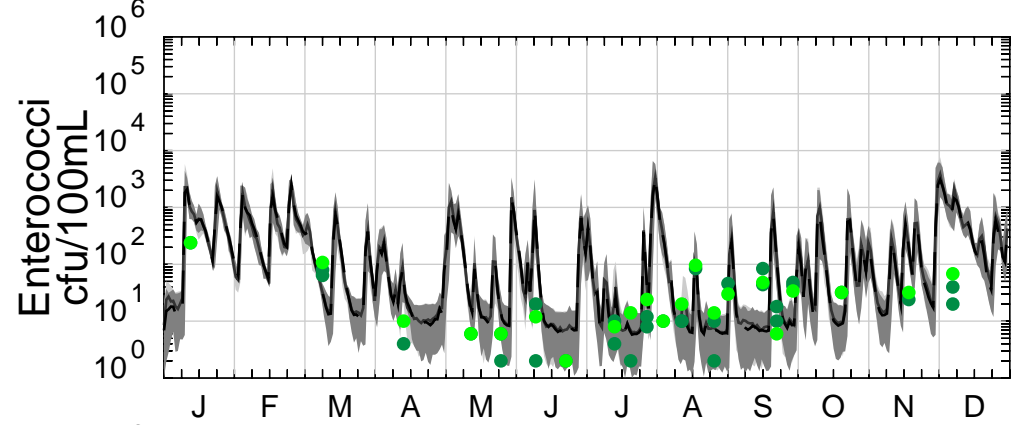
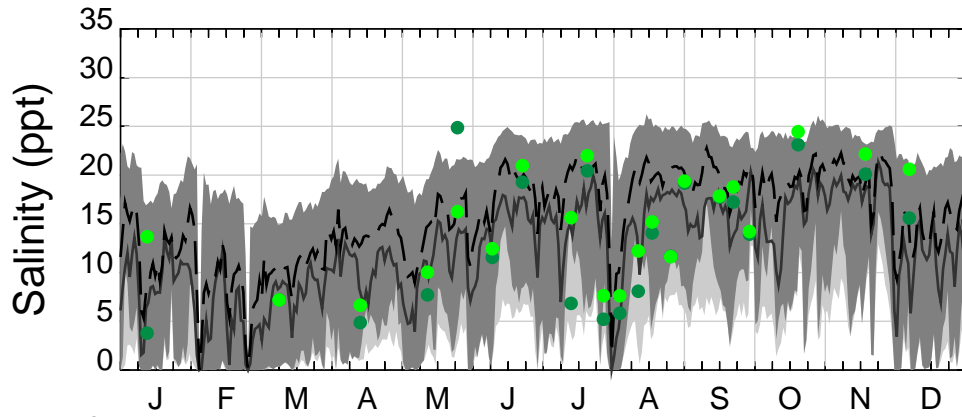
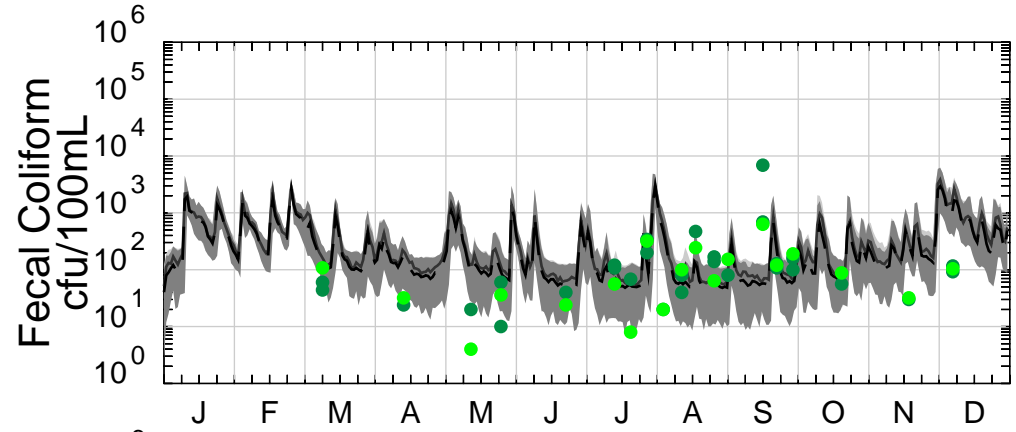
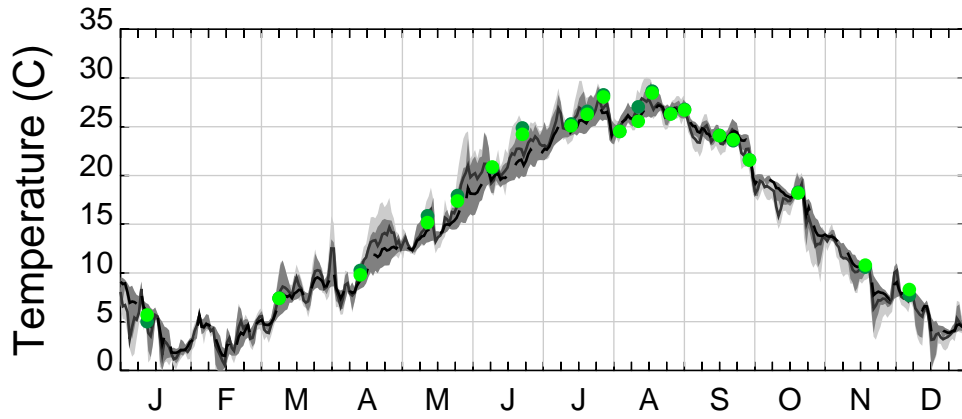


Model = 2016  
 Data = 2016

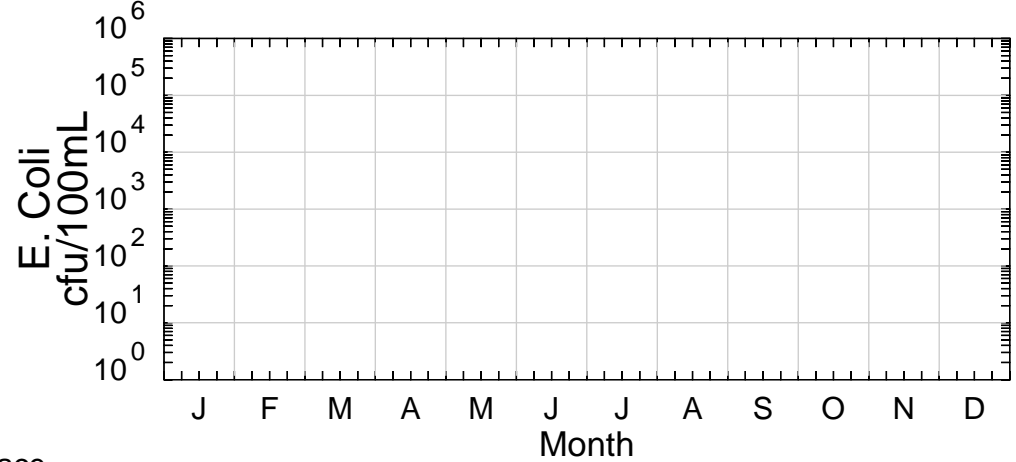
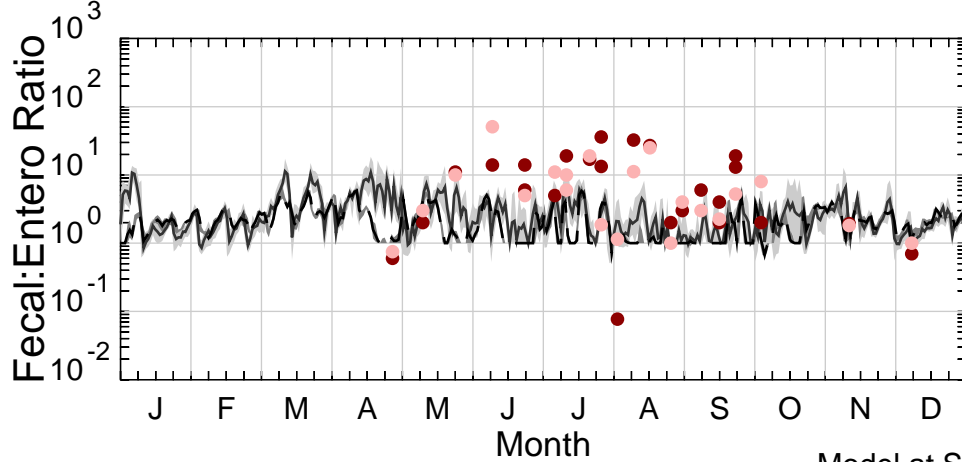
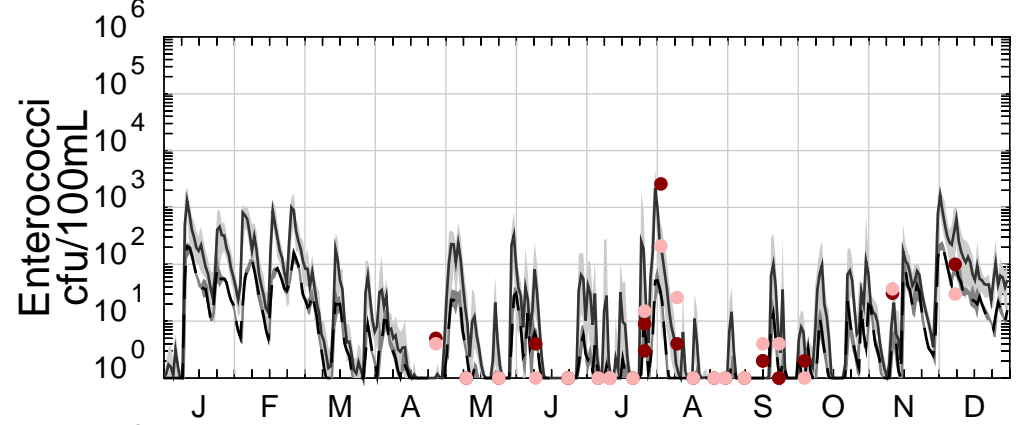
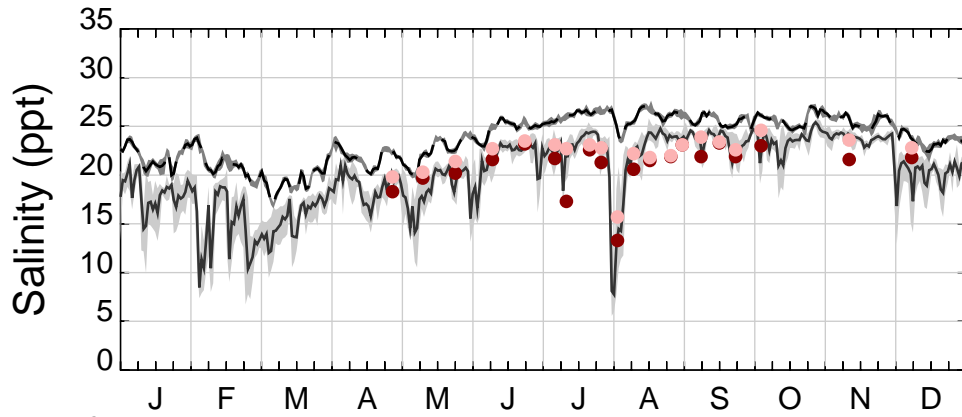
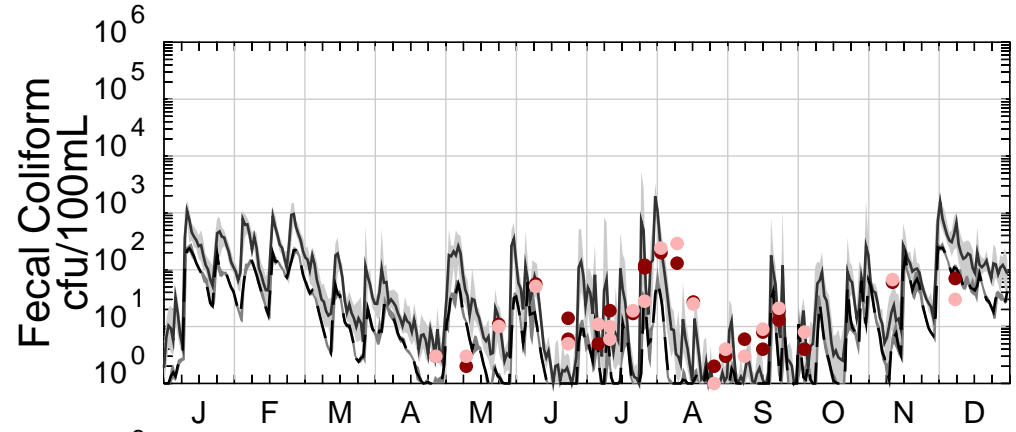
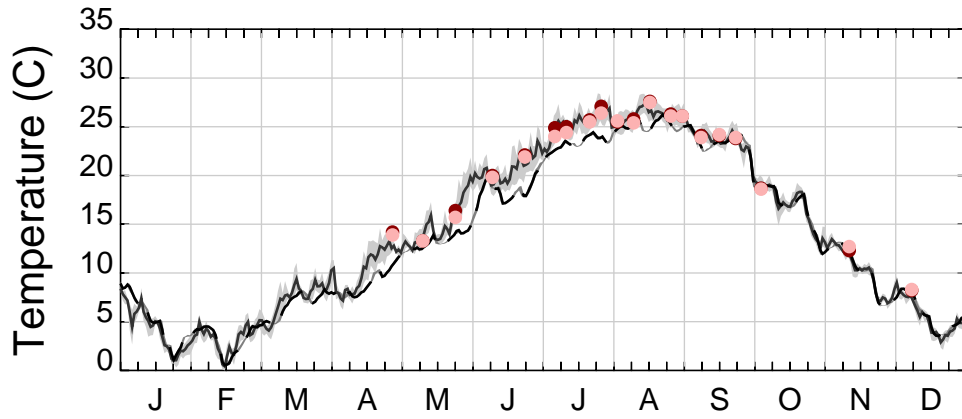
— Model at Surface  
 — Model at Bottom  
 — Model Daily Average at Surface  
 - - Model Daily Average at Bottom

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

Station: 27



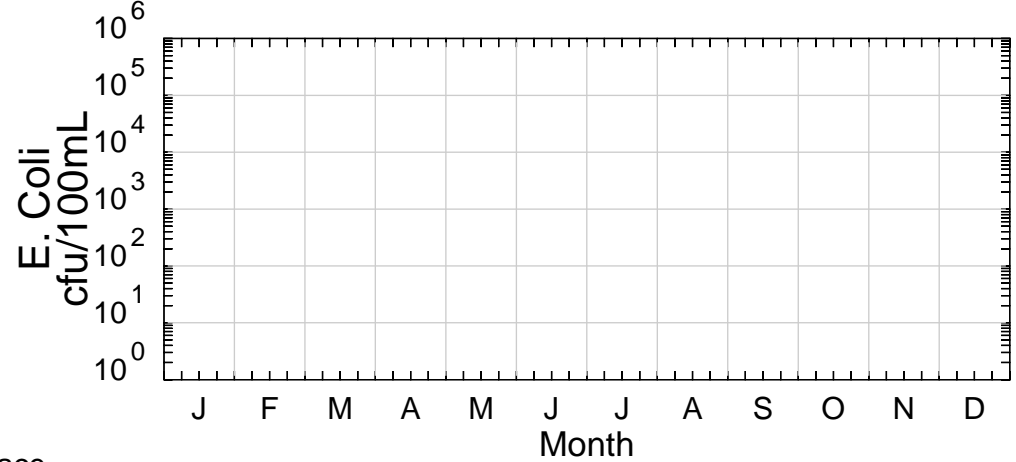
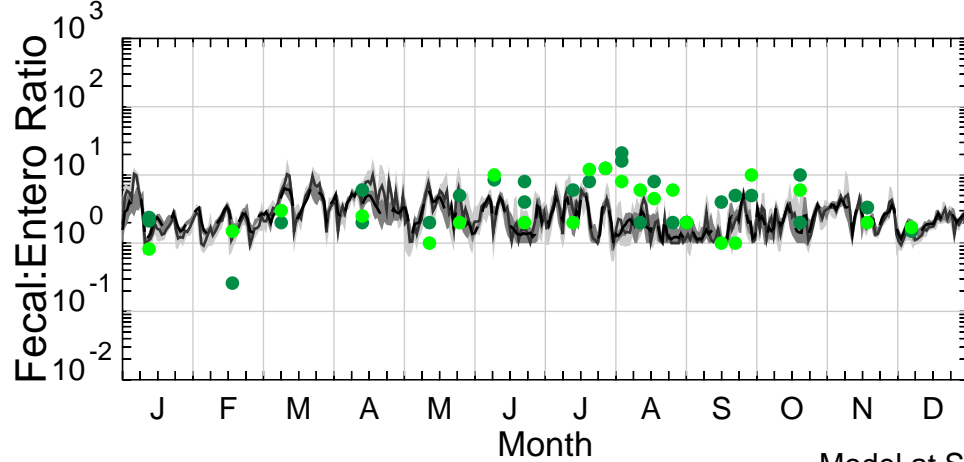
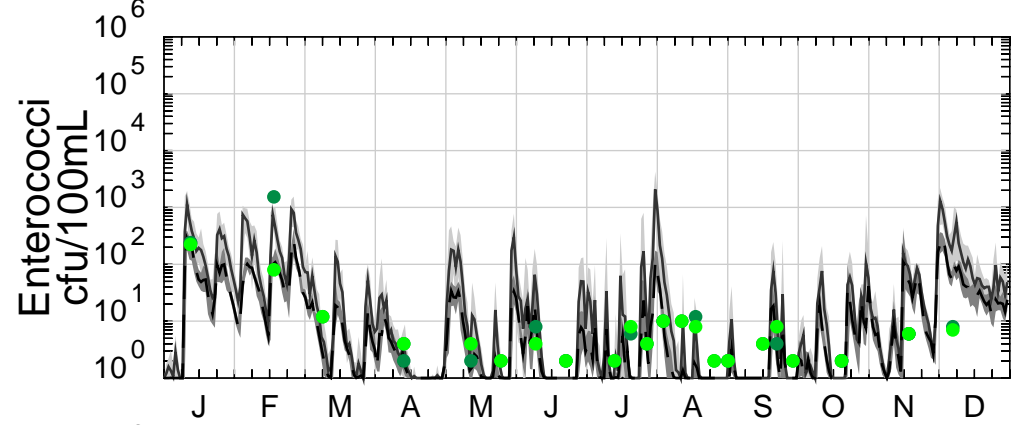
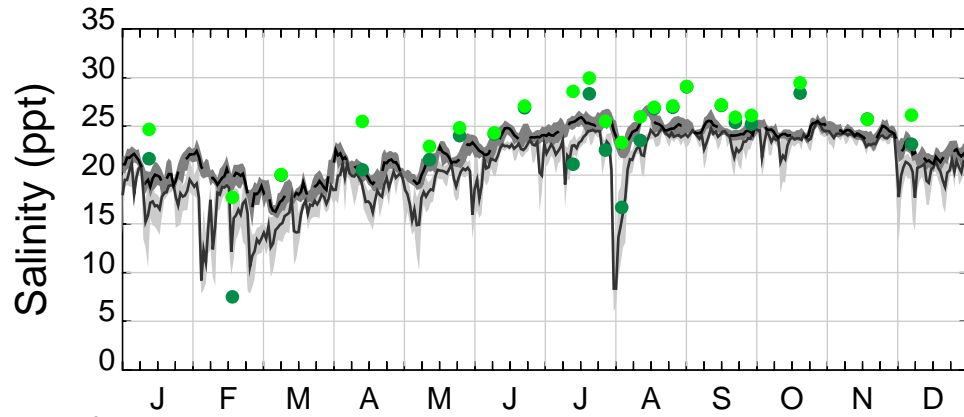
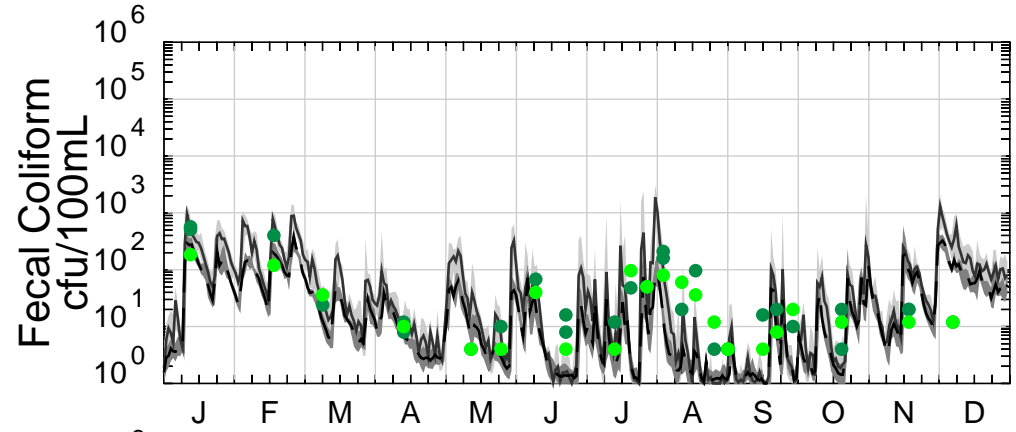
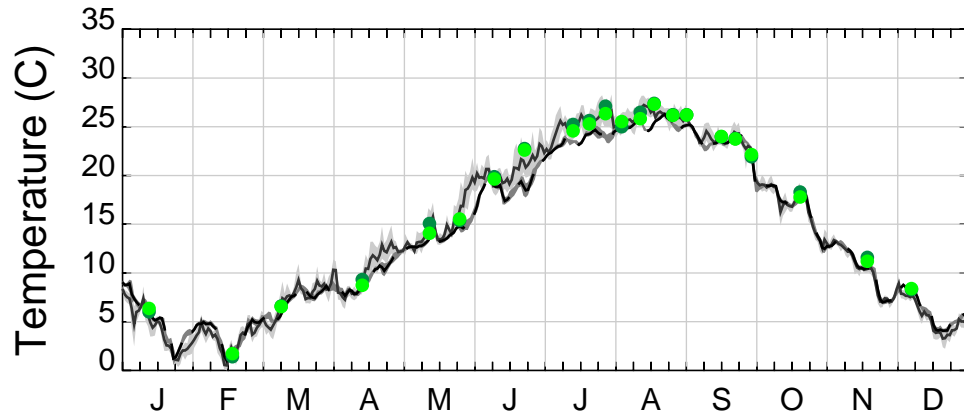
**Station: B19**



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

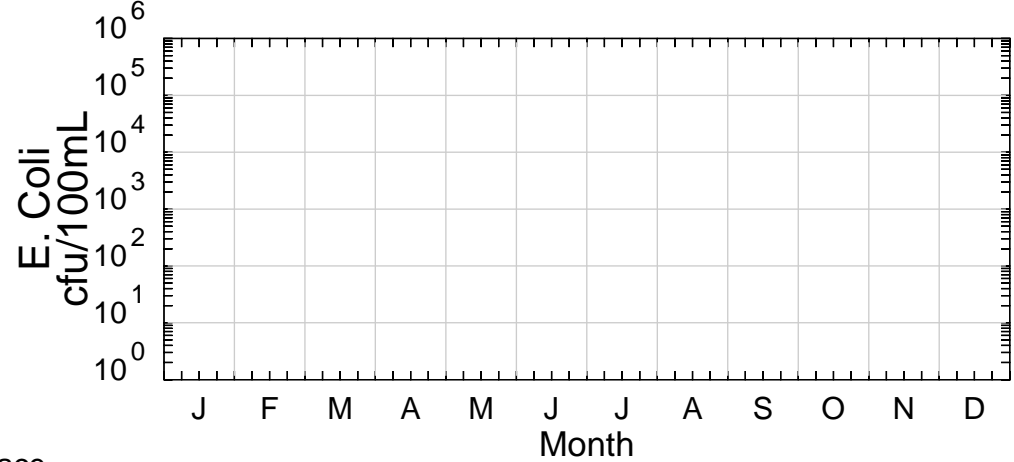
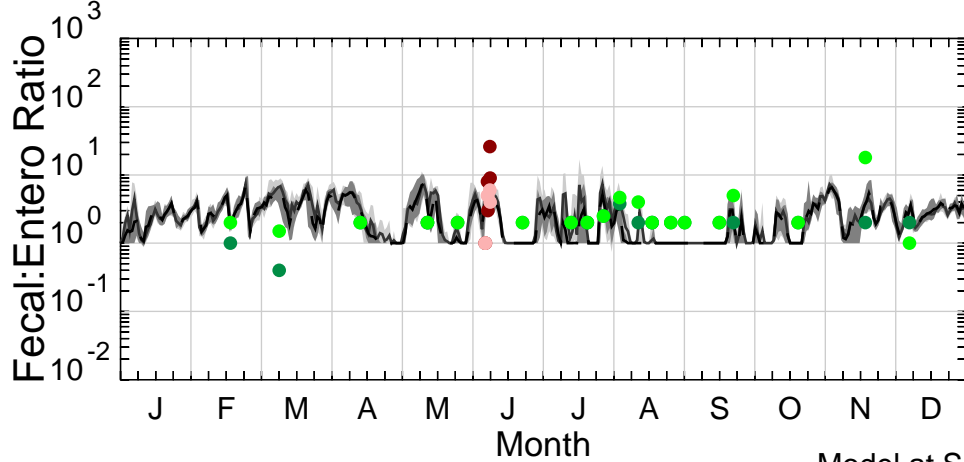
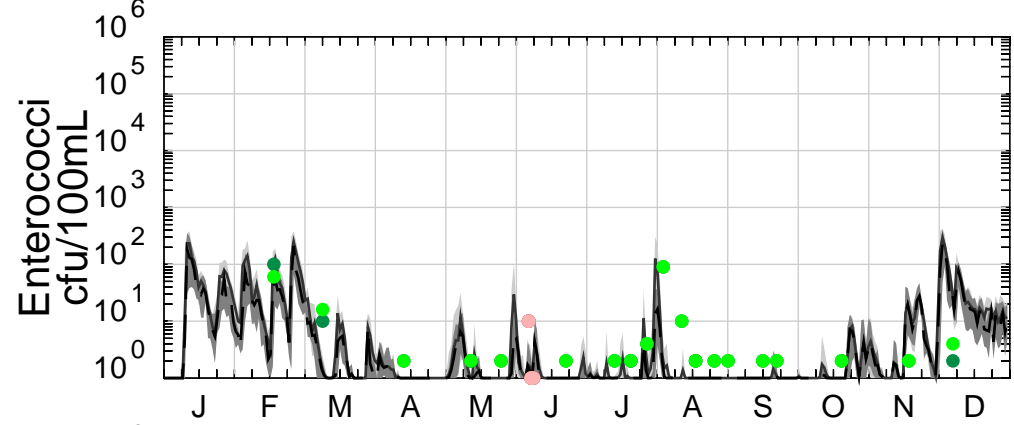
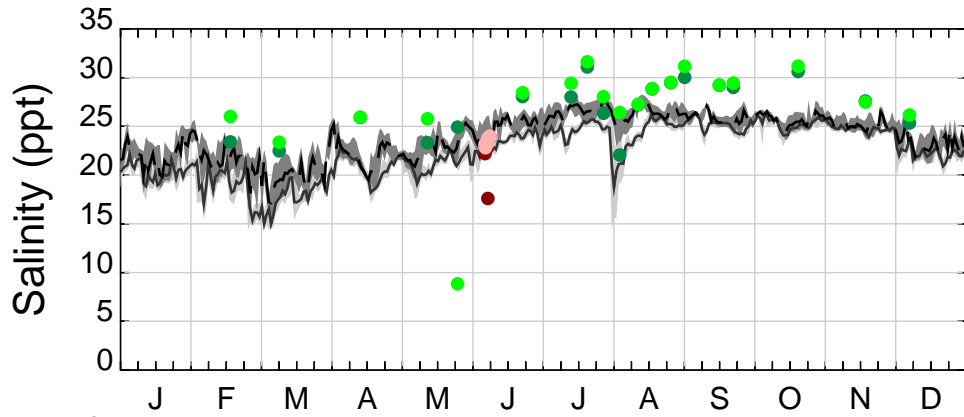
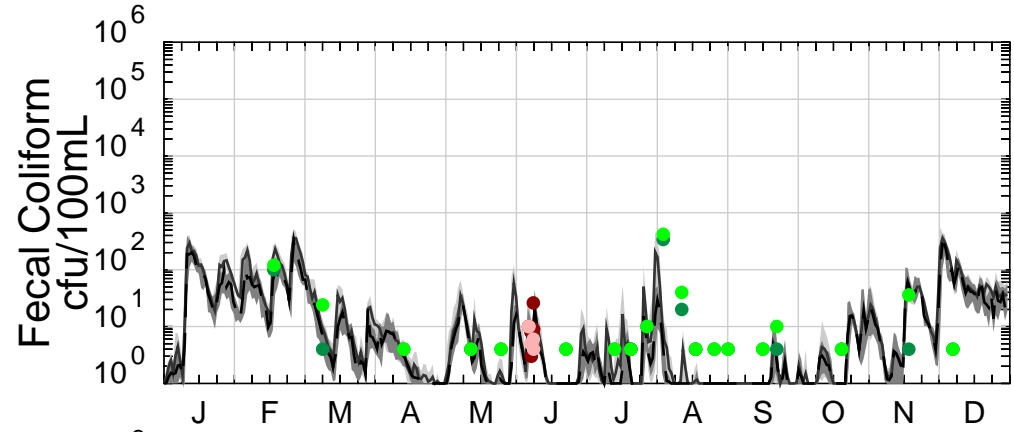
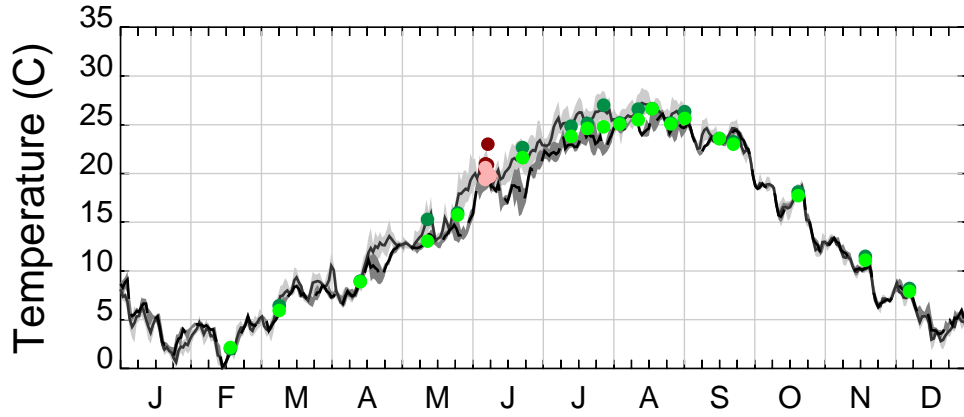
Station: 28



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

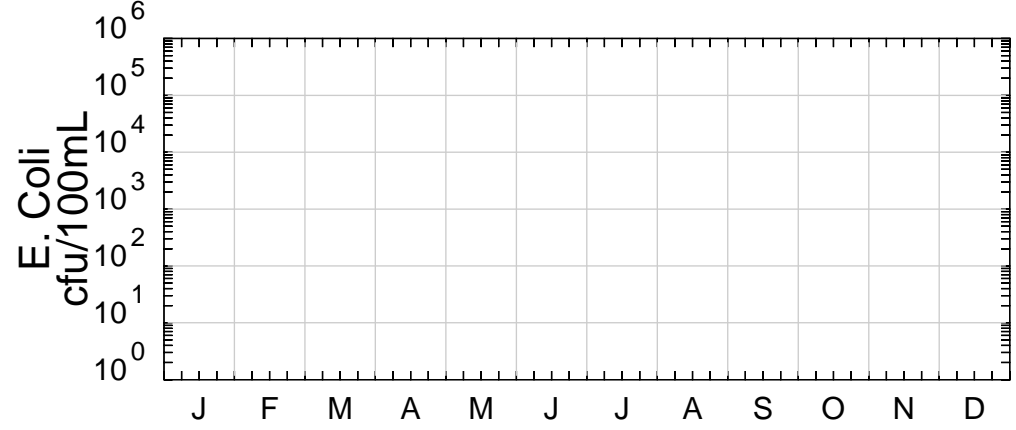
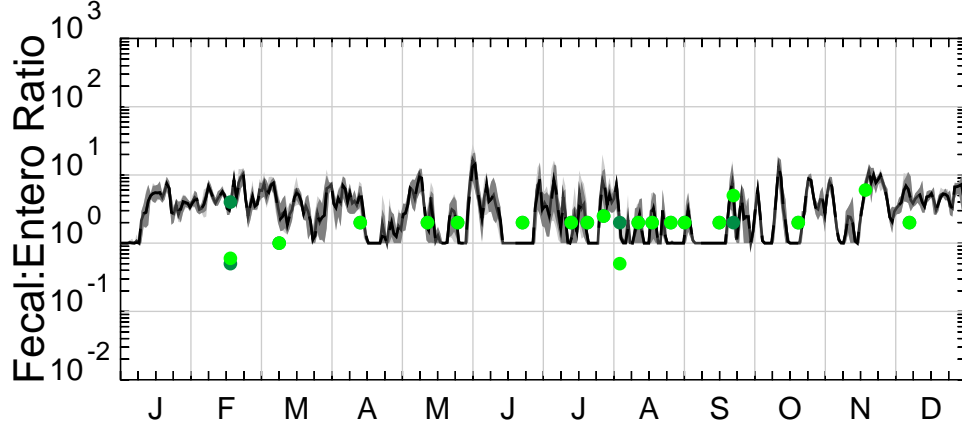
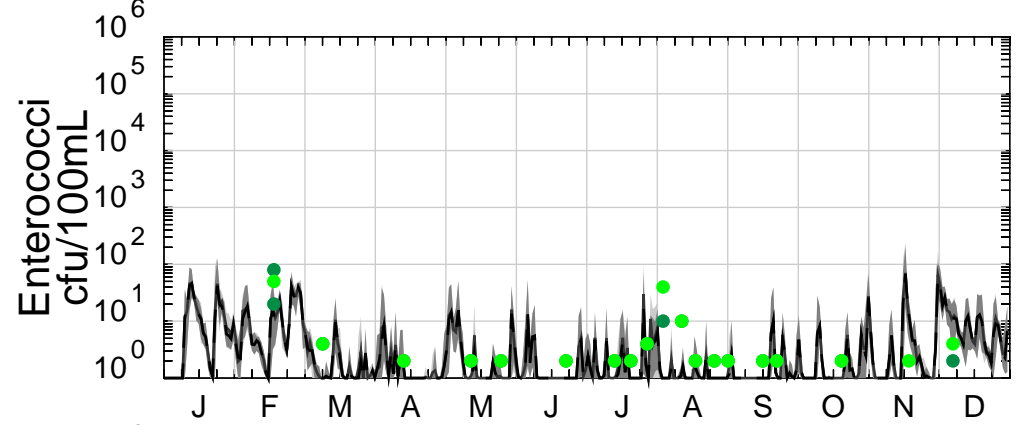
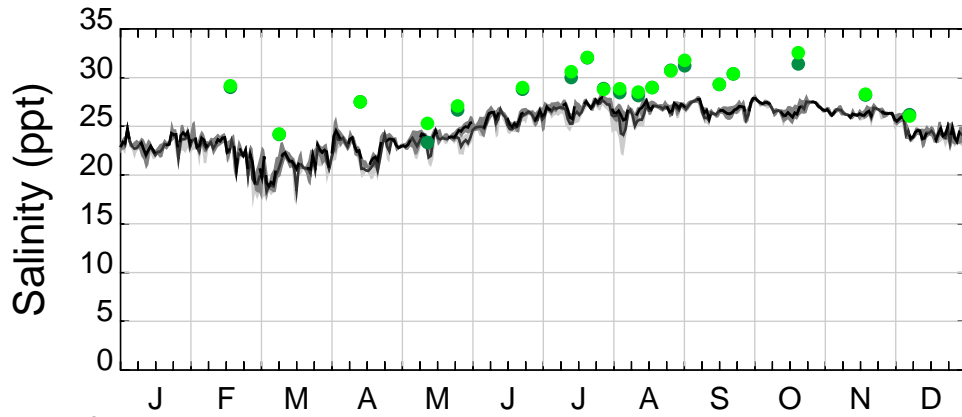
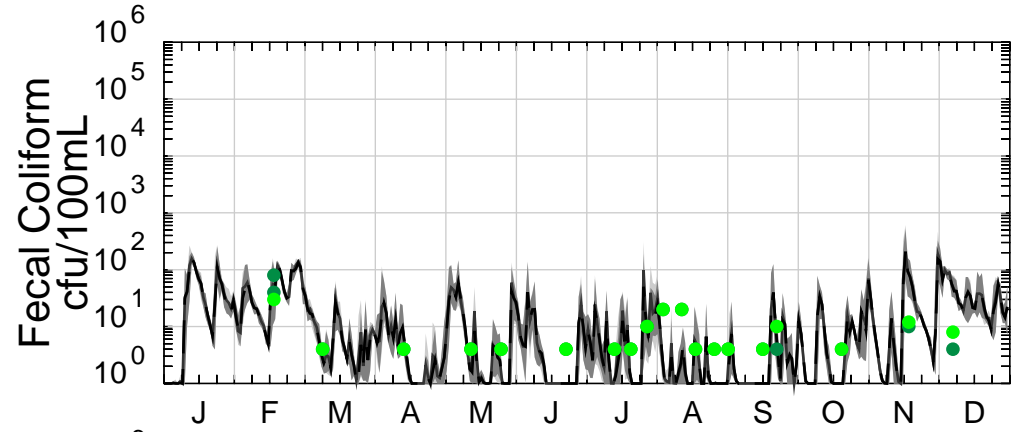
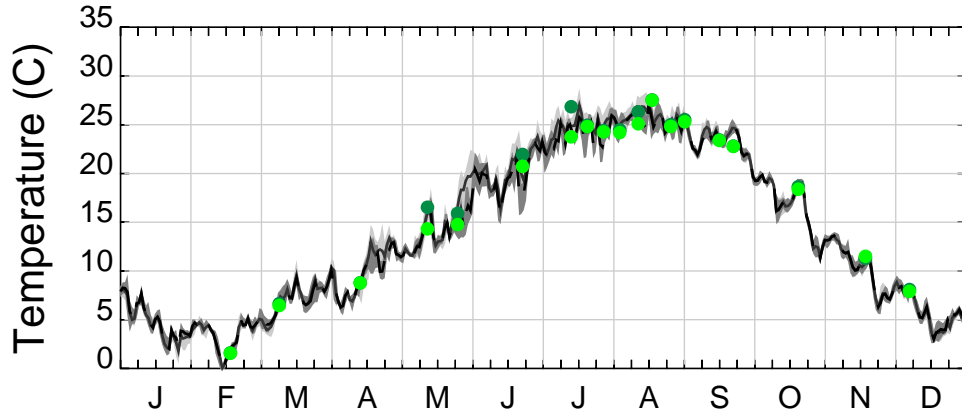
Station: 29



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

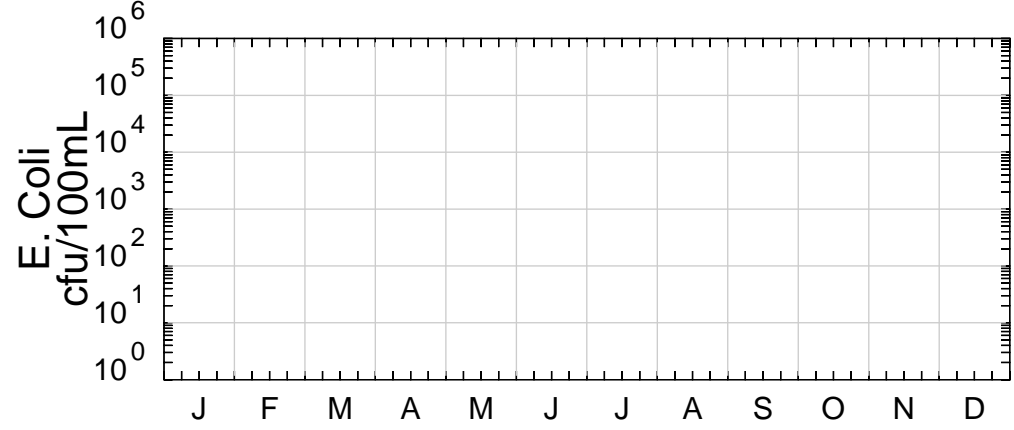
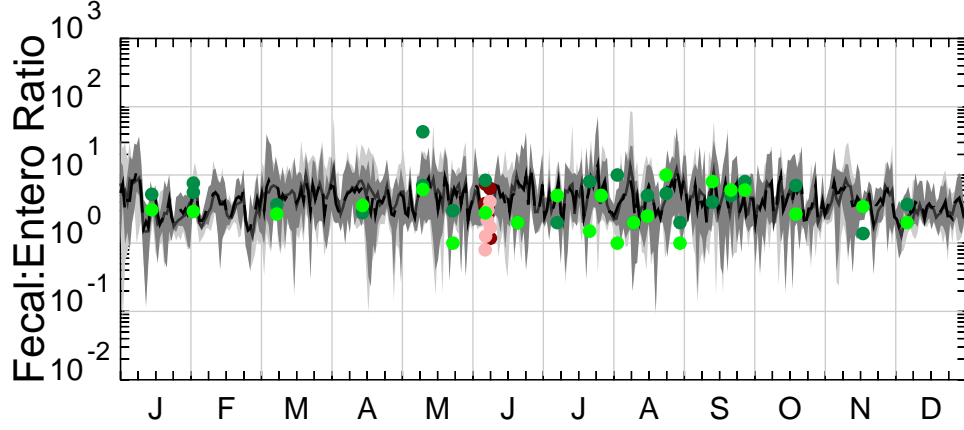
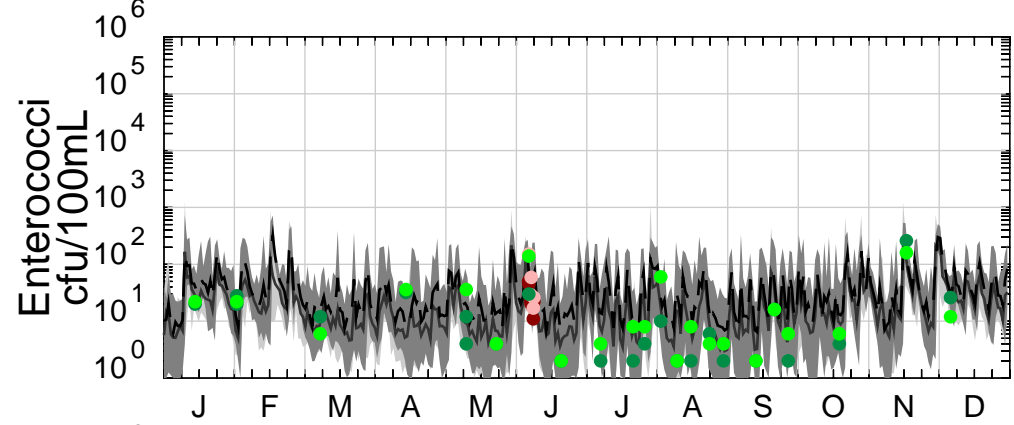
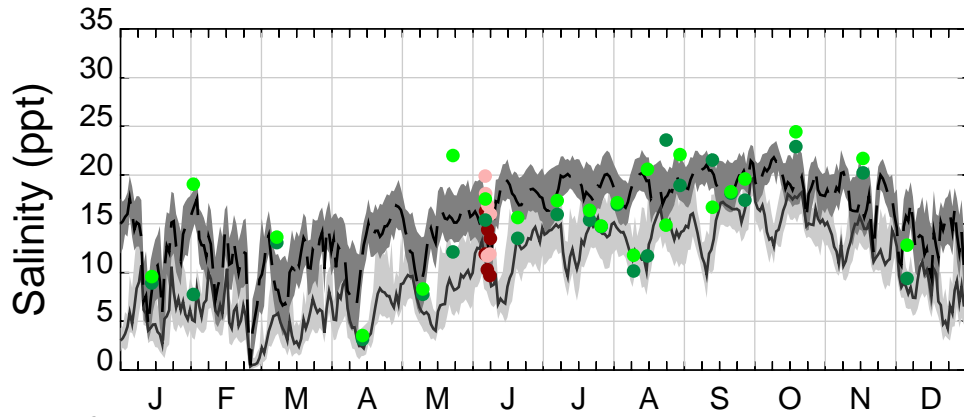
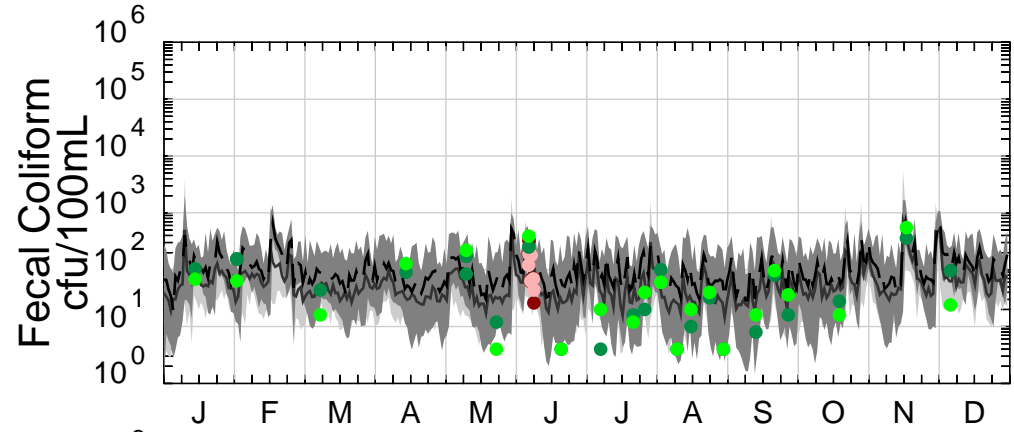
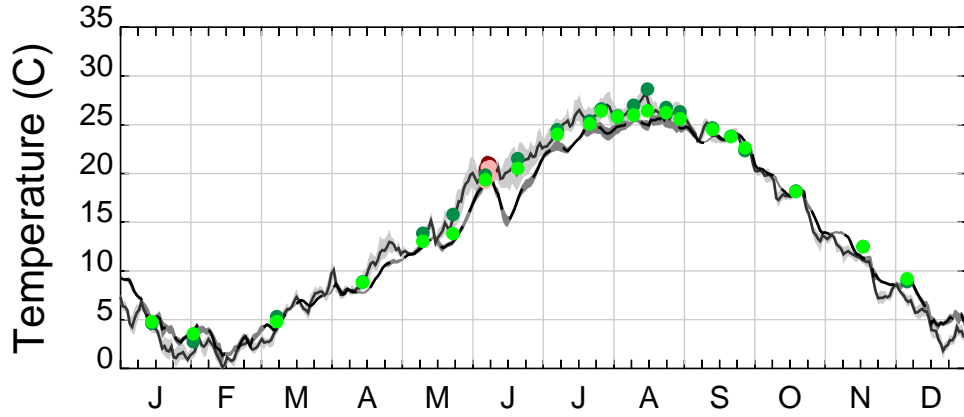


— Model at Surface  
 — Model at Bottom  
 — Model Daily Average at Surface  
 - - Model Daily Average at Bottom  
 ● Surface/Mid-depth HDR Data  
 ● Surface/Mid/Bottom NJHDG Data

Model = 2016  
 Data = 2016



Station: 31

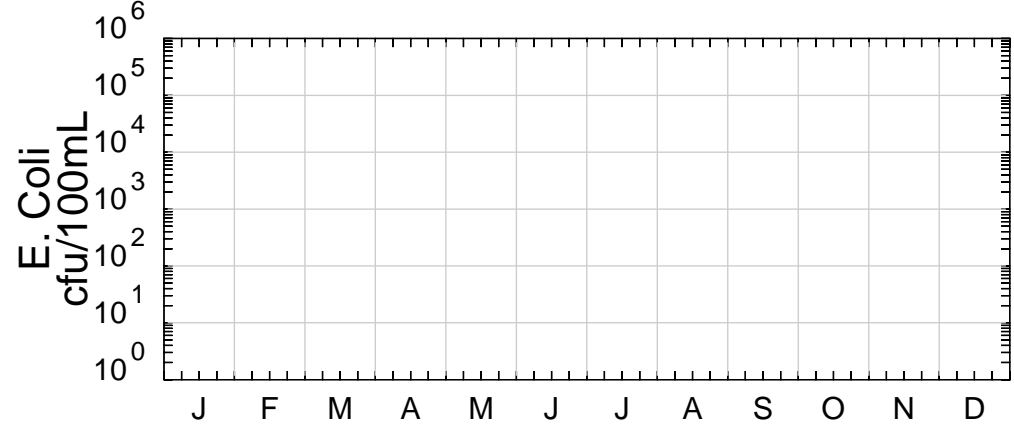
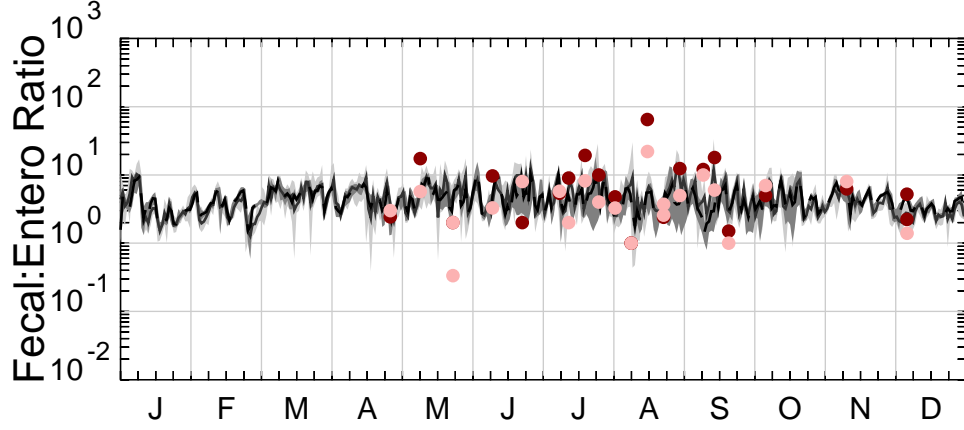
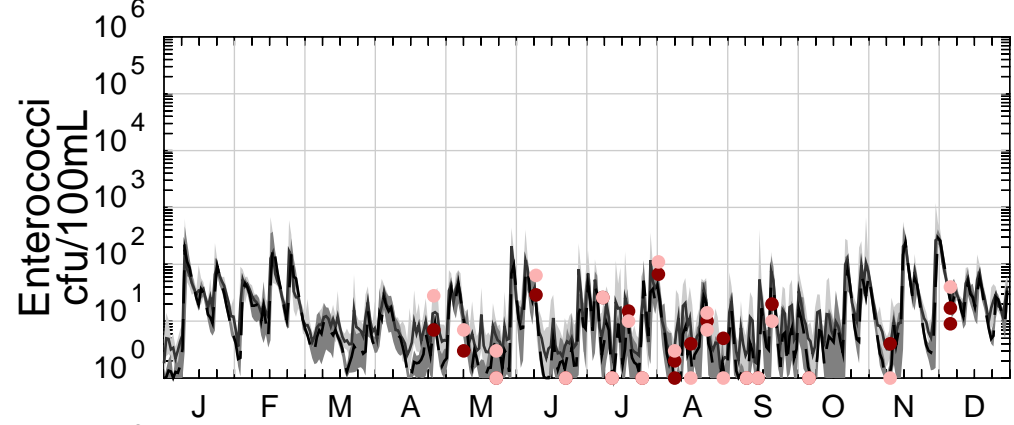
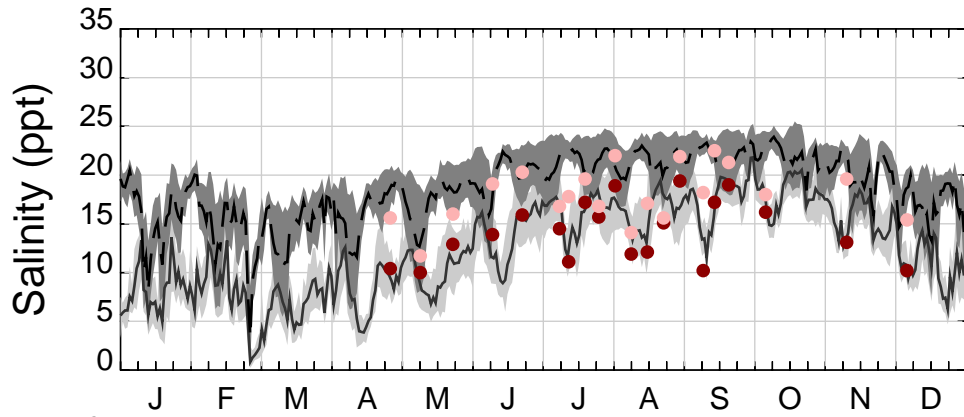
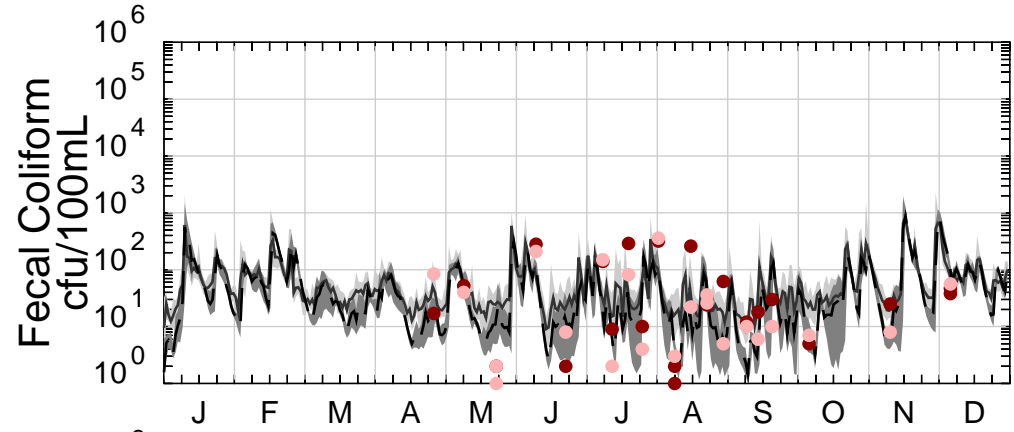
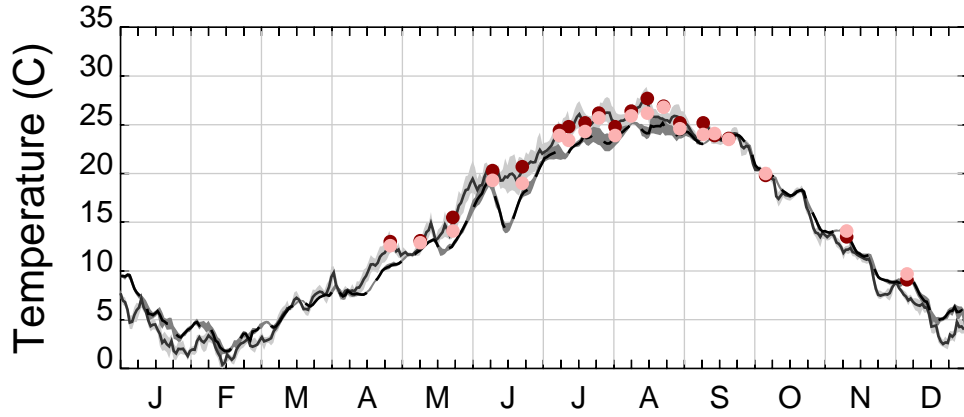


Model = 2016  
 Data = 2016

— 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

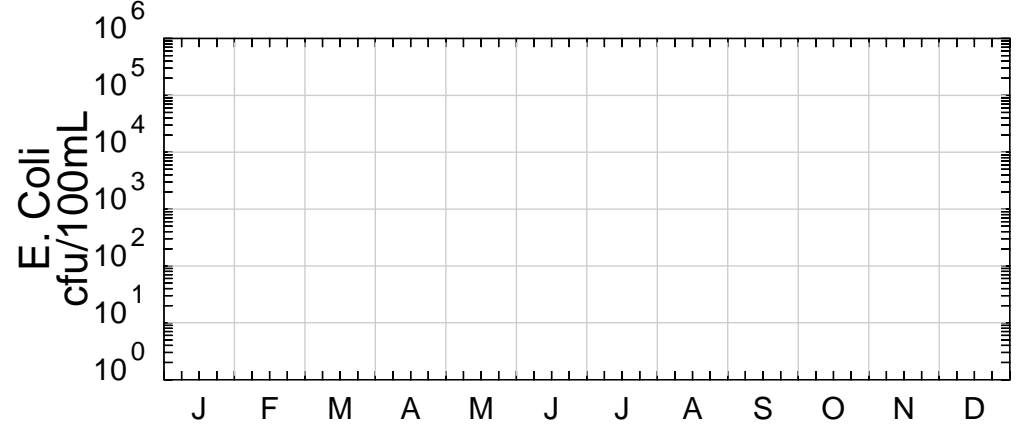
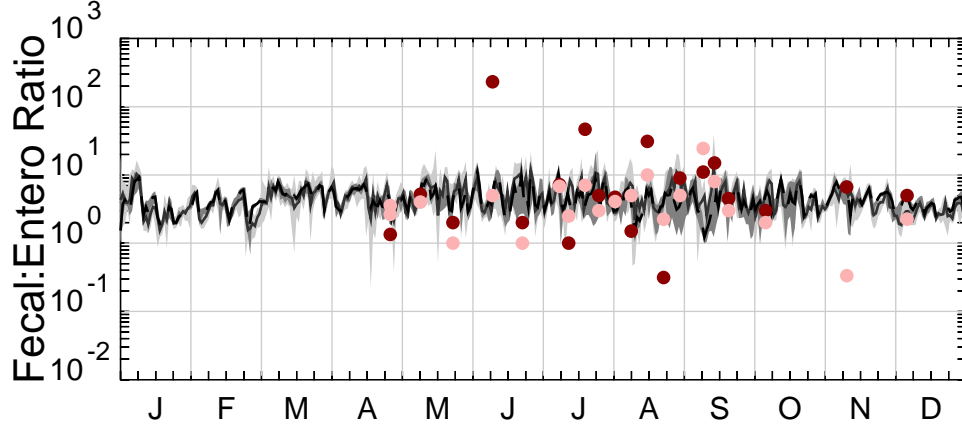
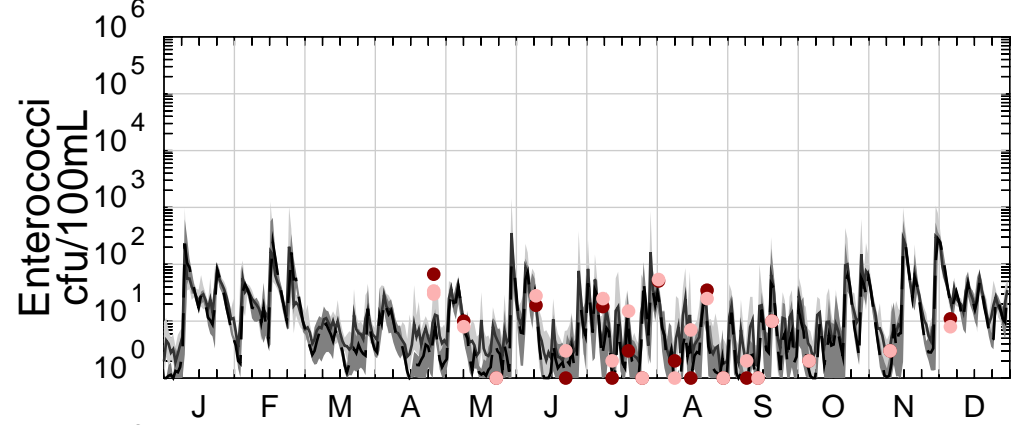
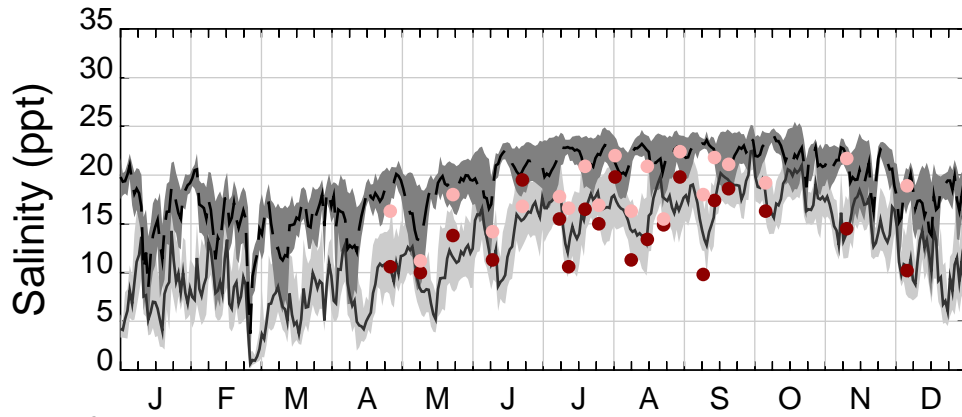
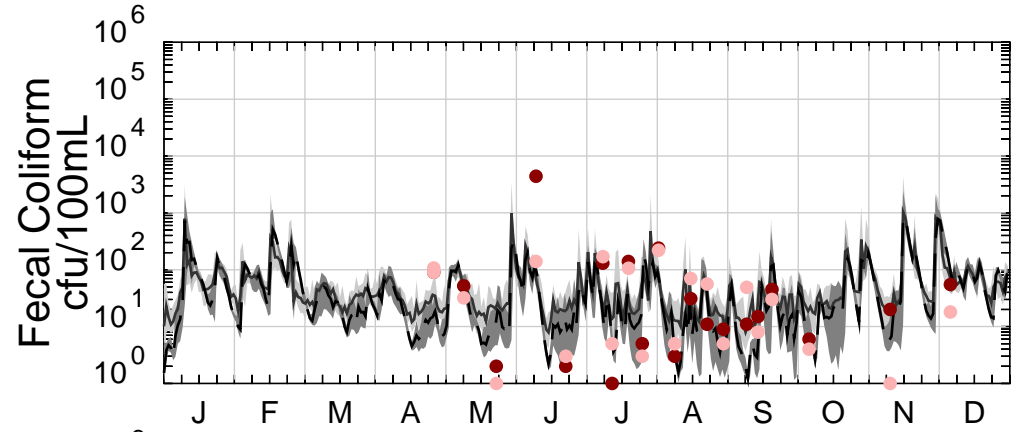
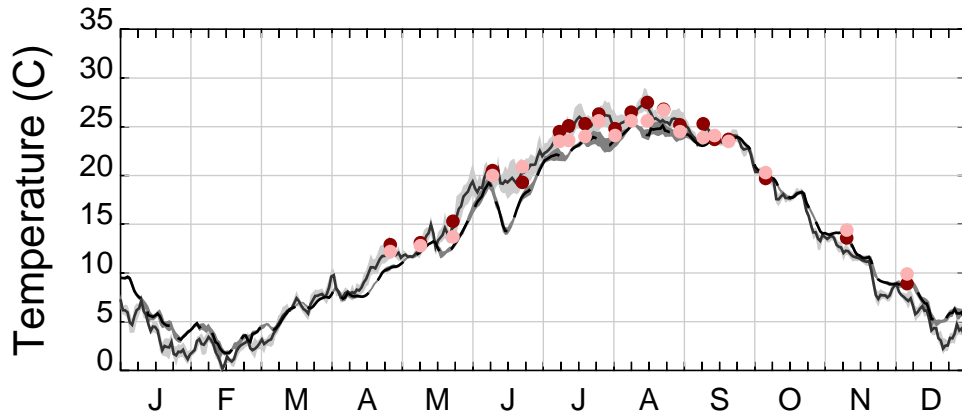
**Station: B5A**



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**

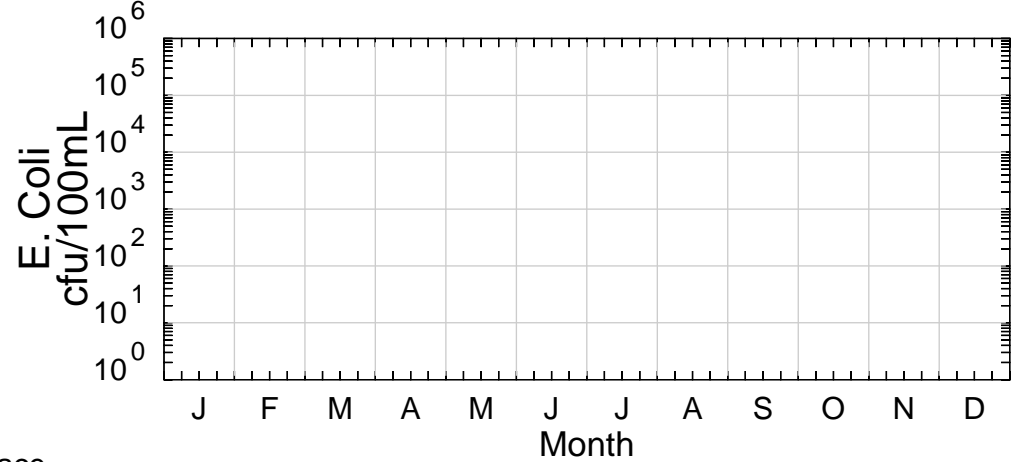
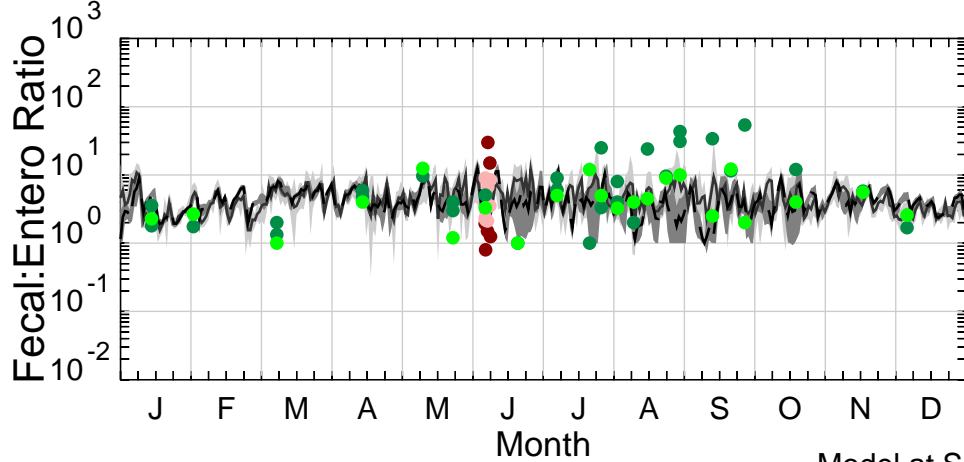
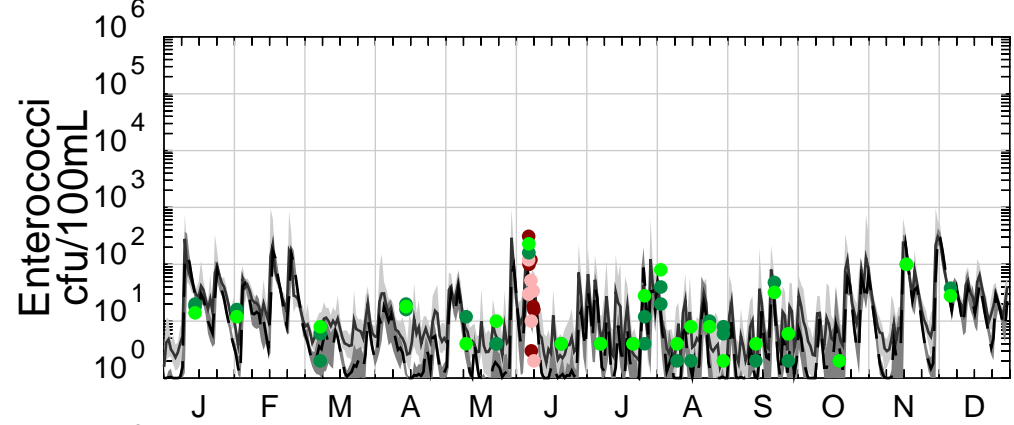
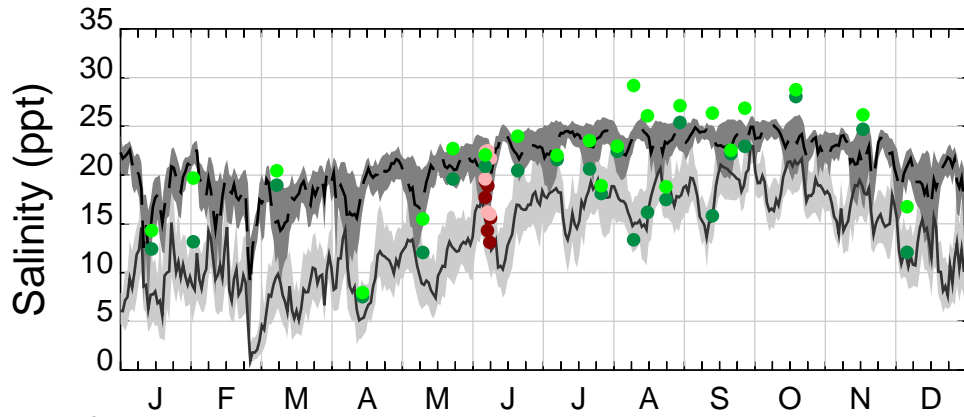
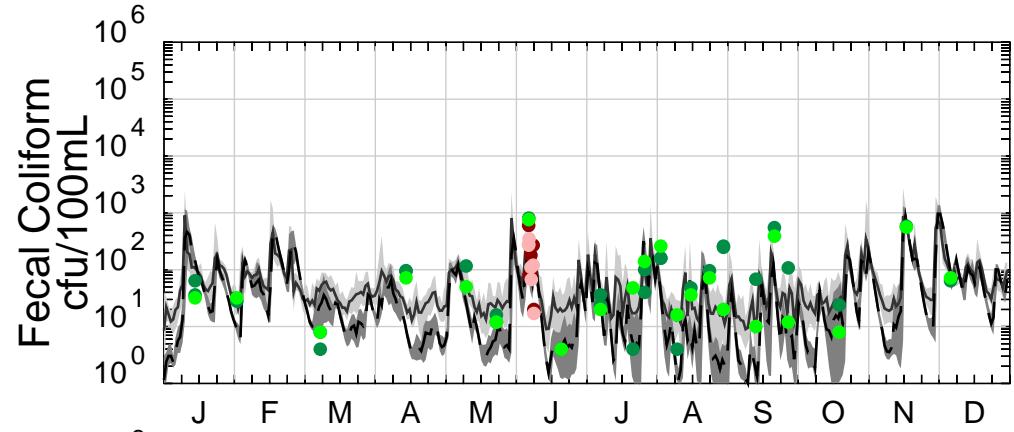
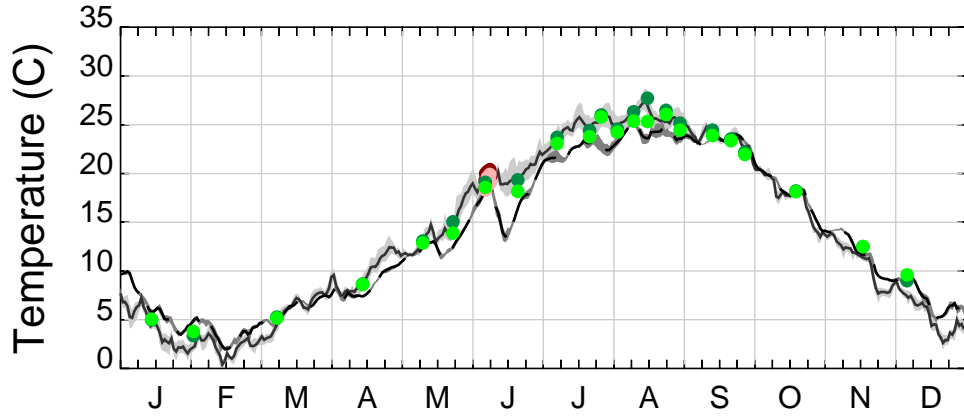


Model = 2016  
 Data = 2016

— 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

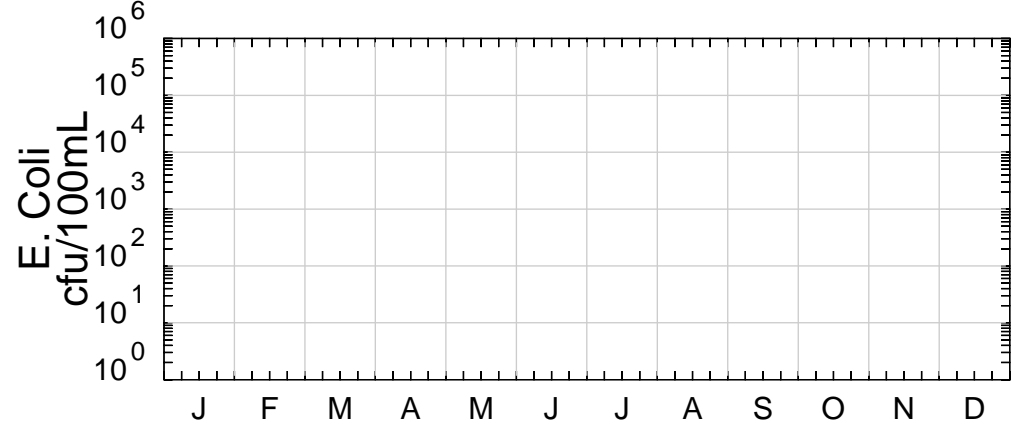
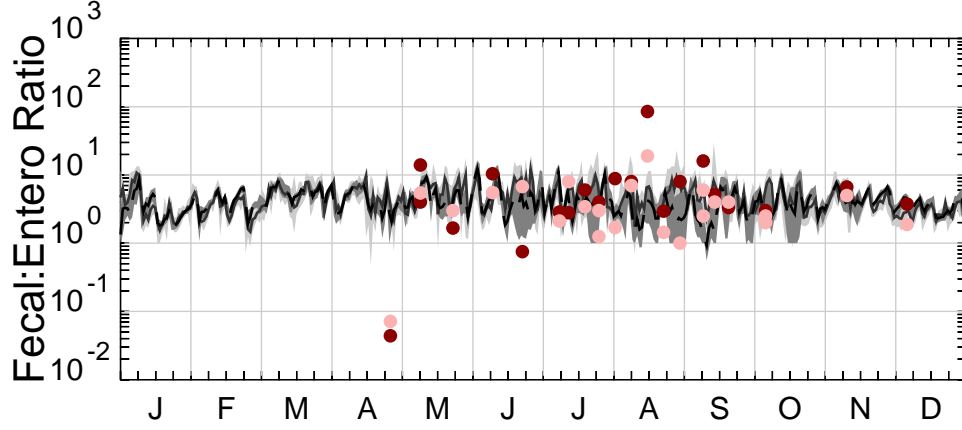
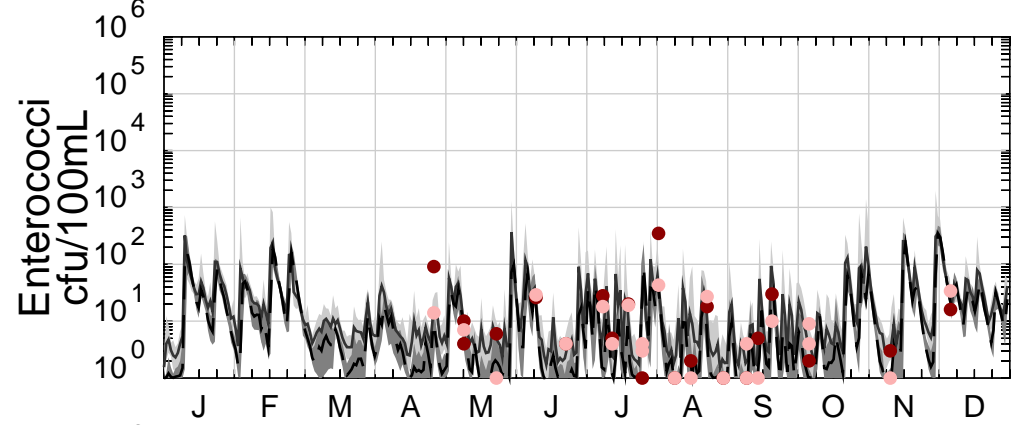
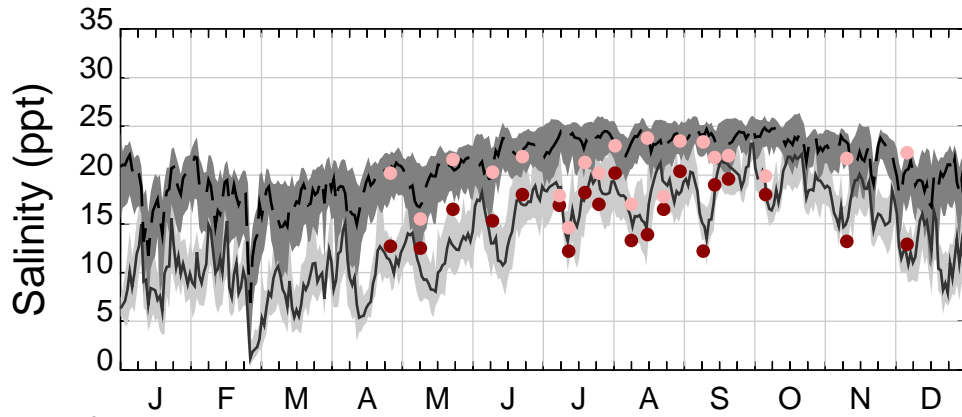
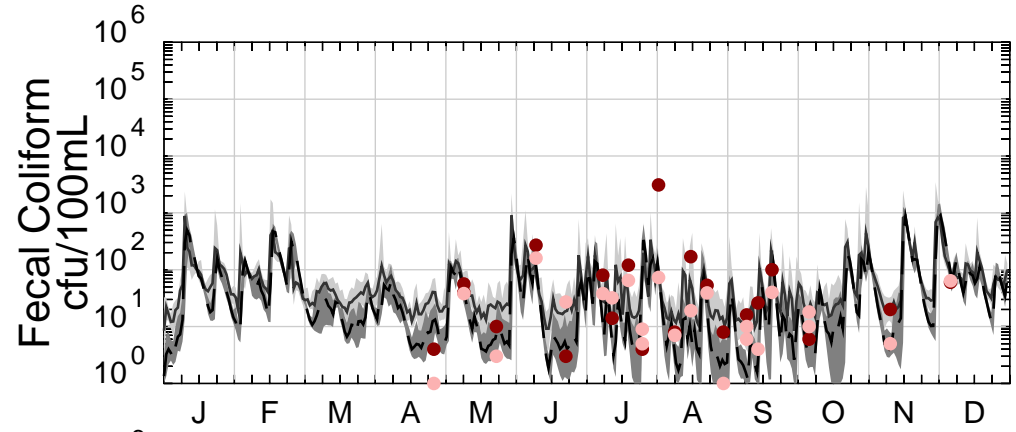
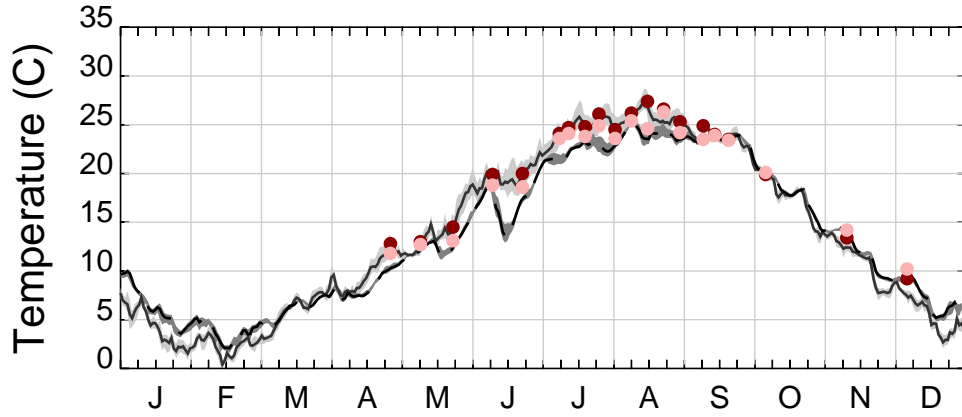
Station: 32



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

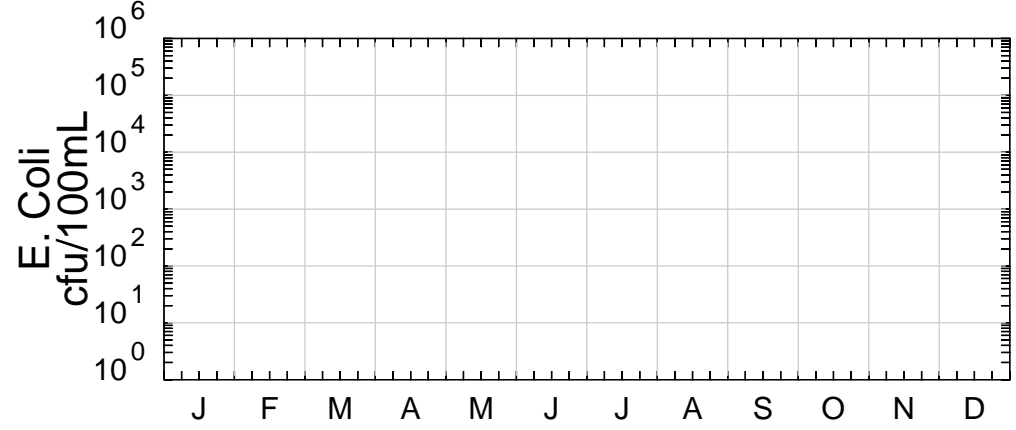
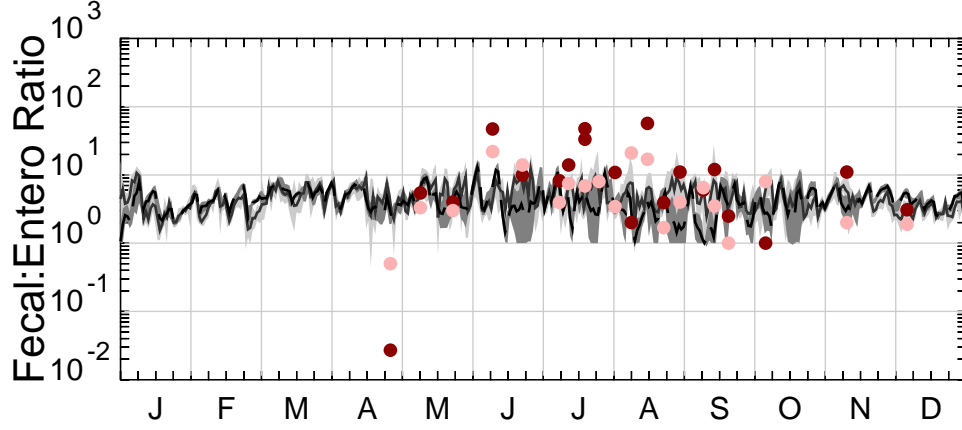
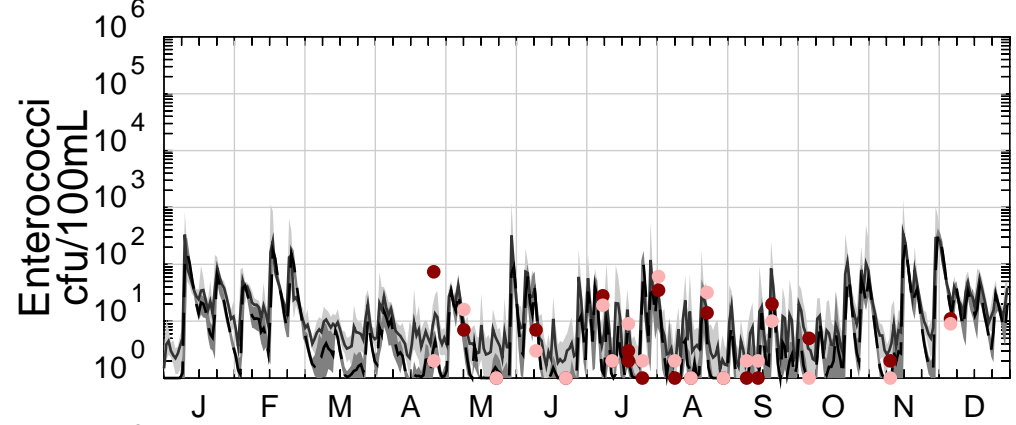
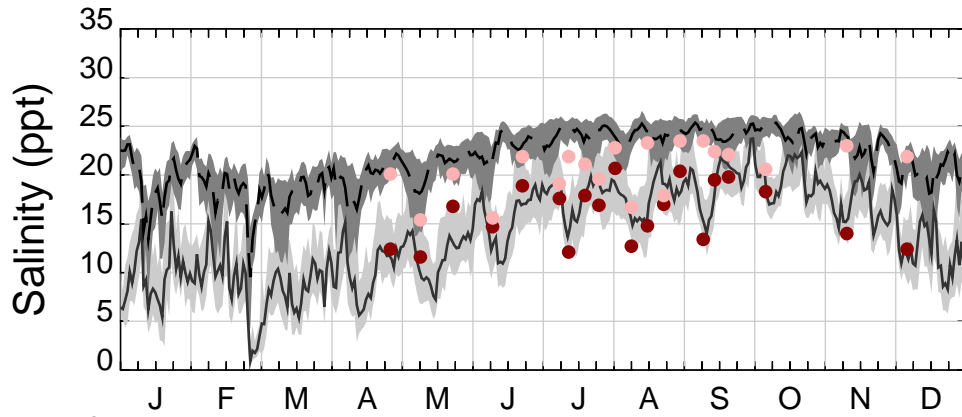
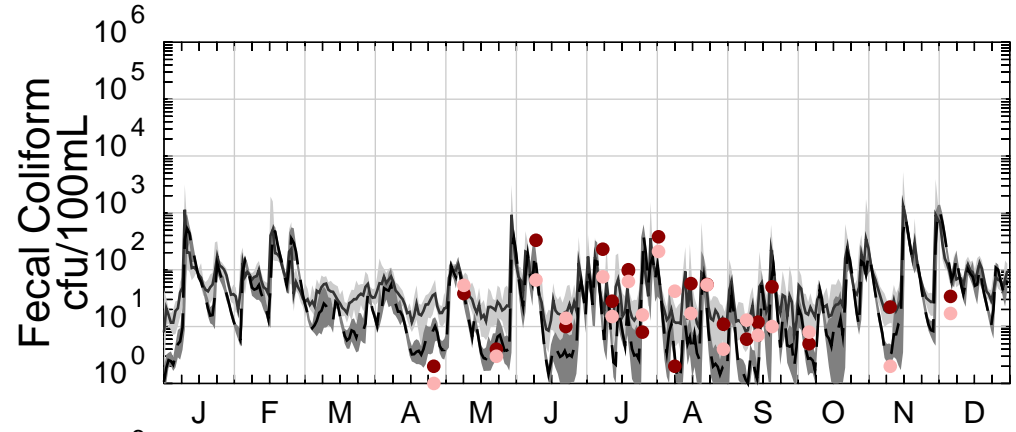
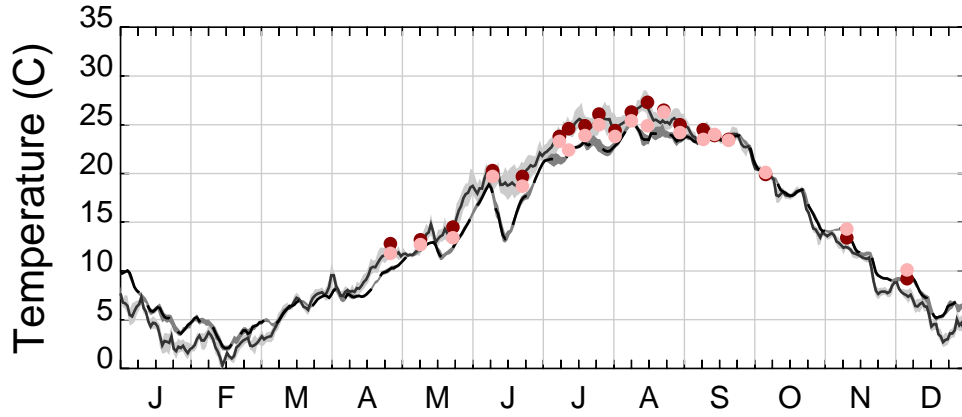
Station: B18A



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**

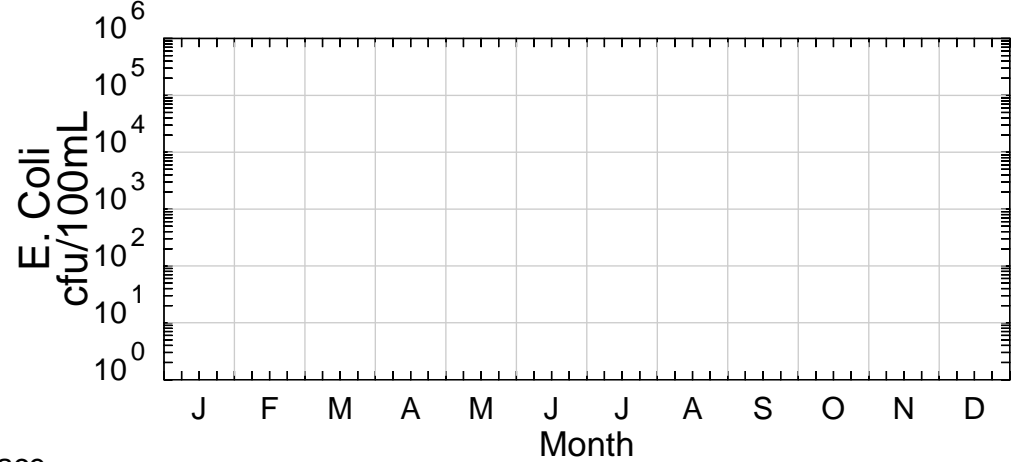
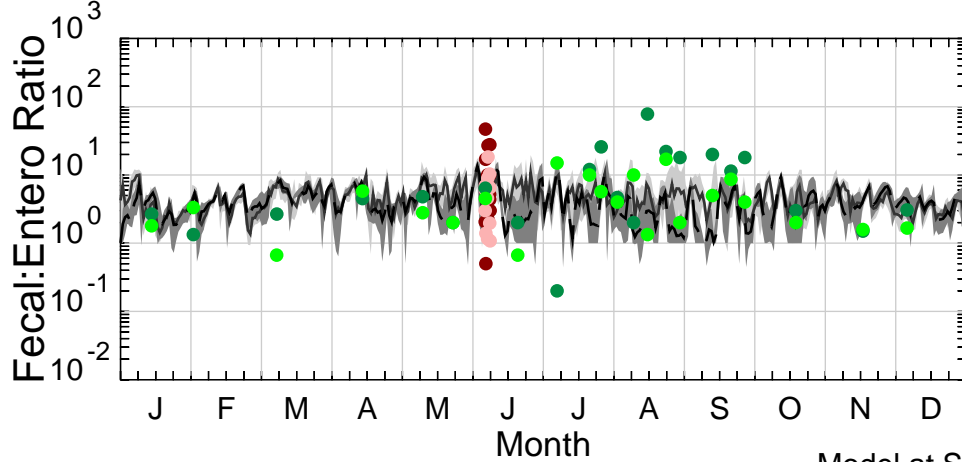
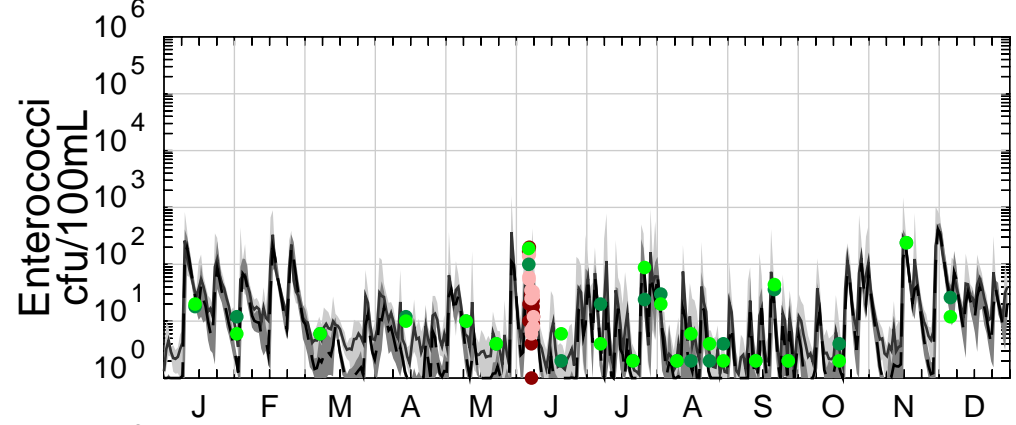
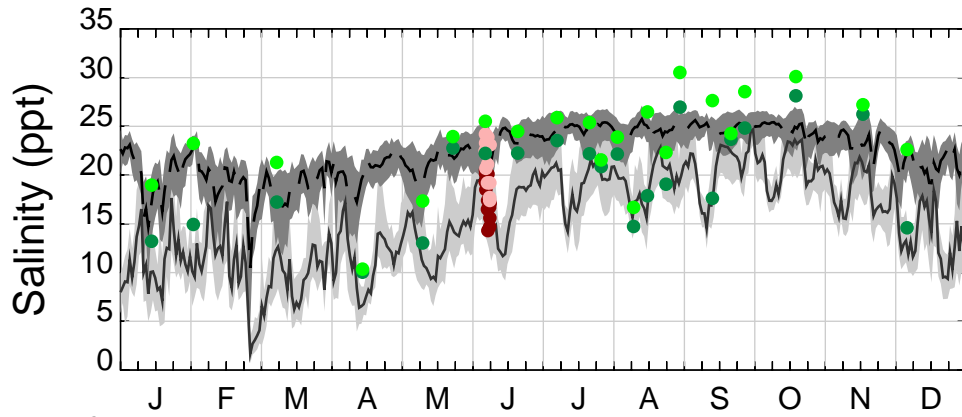
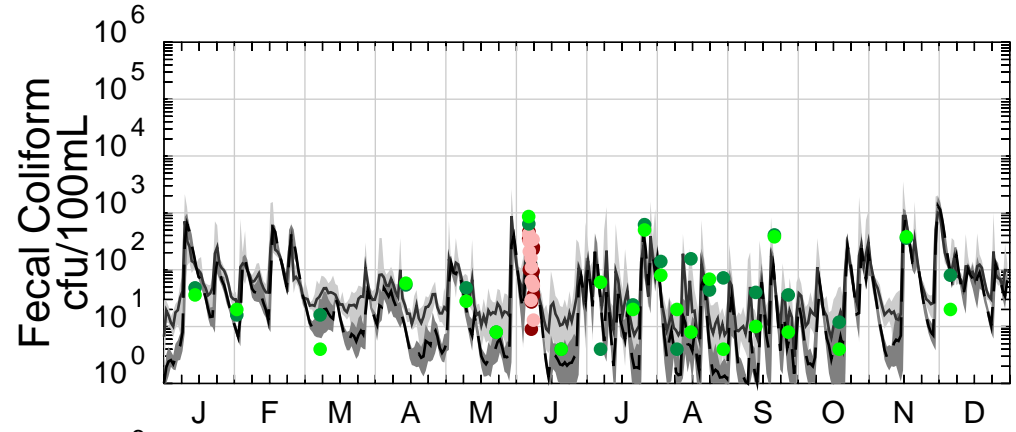
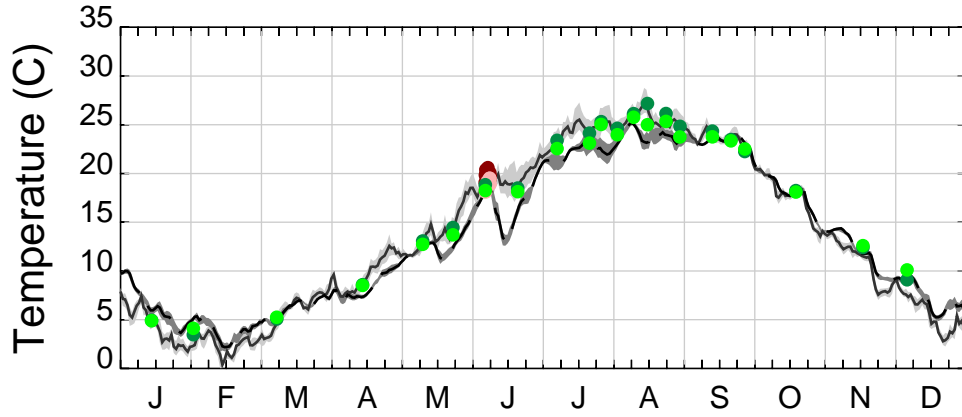


Model = 2016  
 Data = 2016

— 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

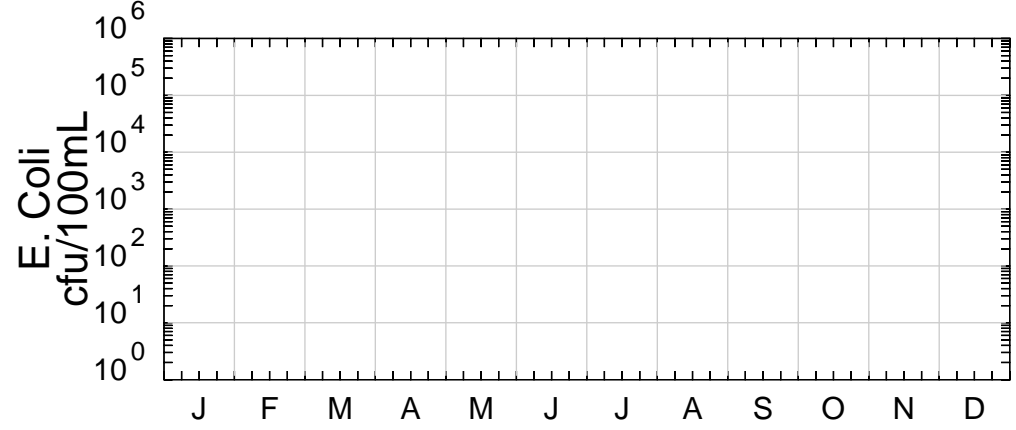
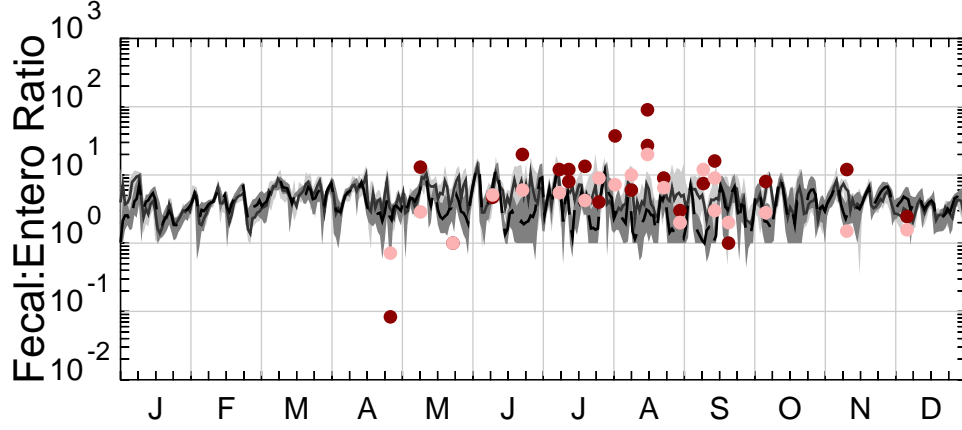
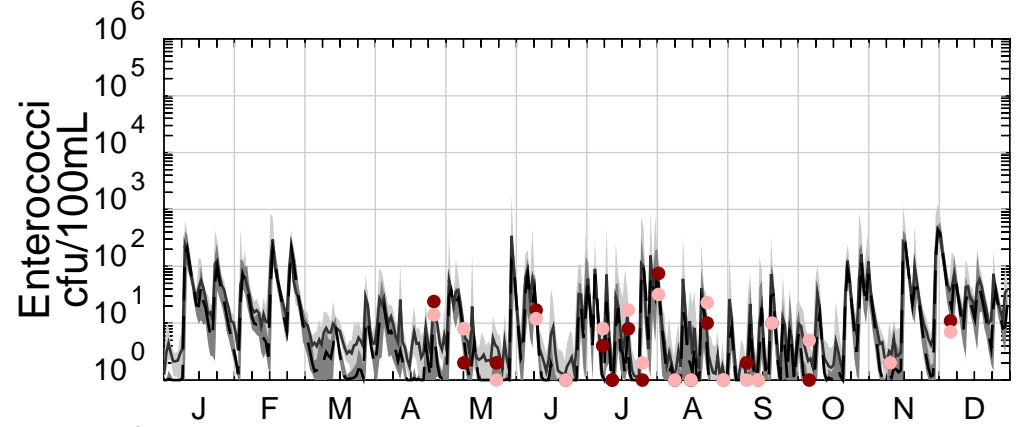
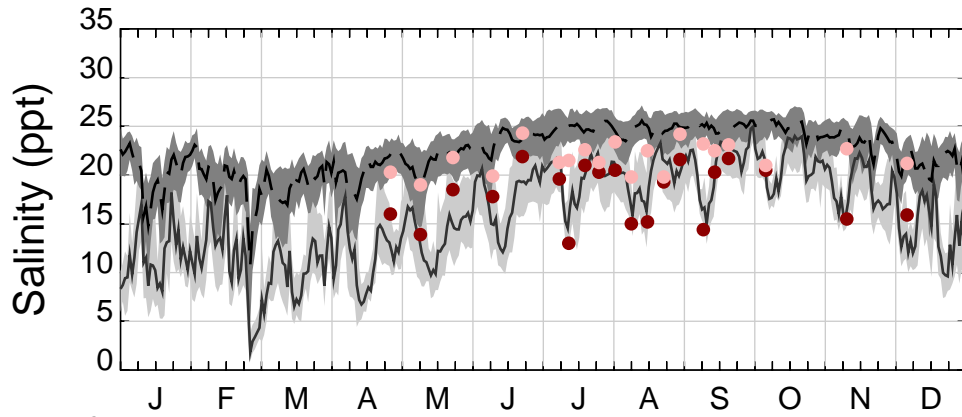
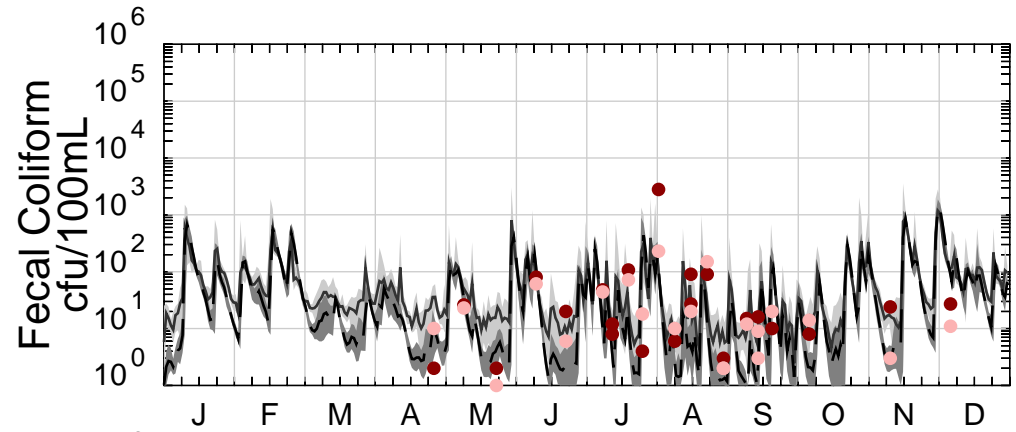
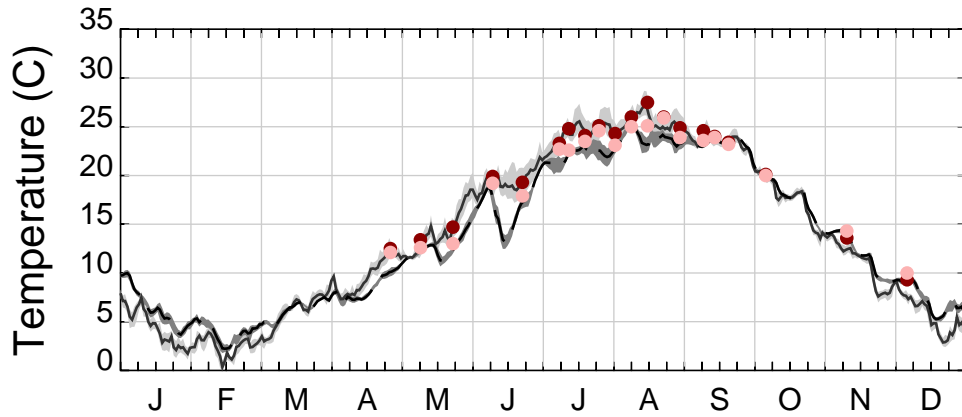
Station: 33



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



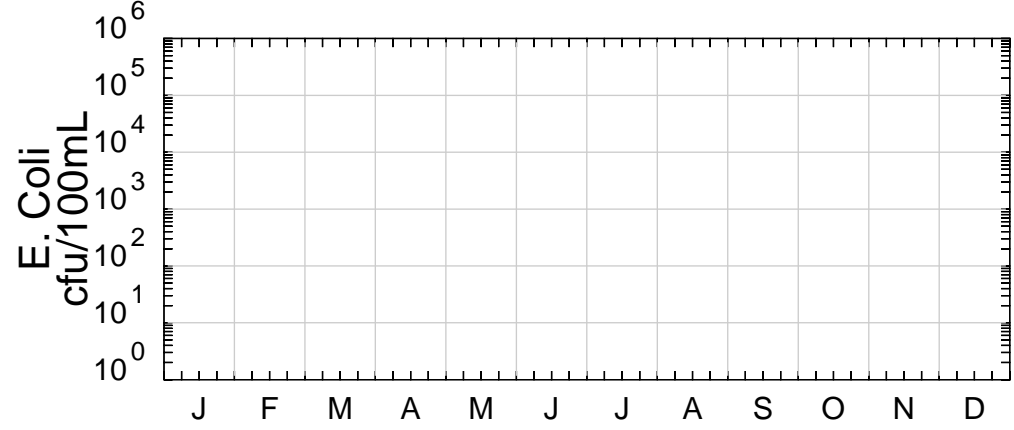
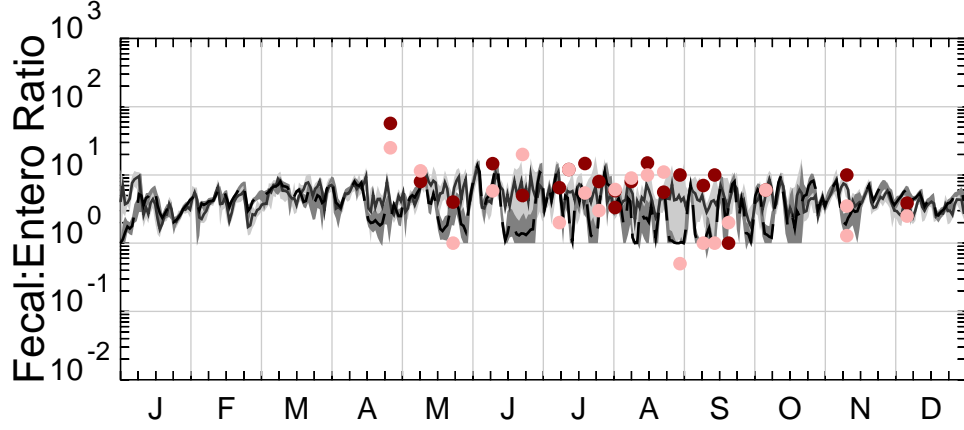
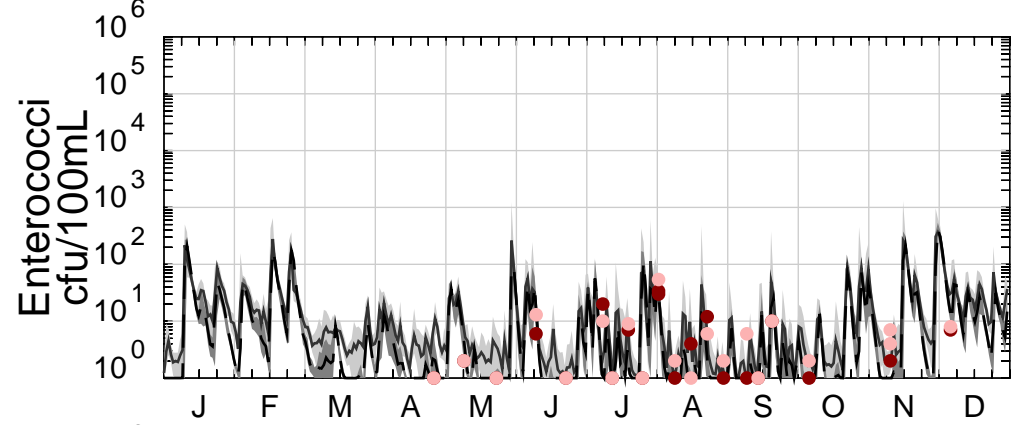
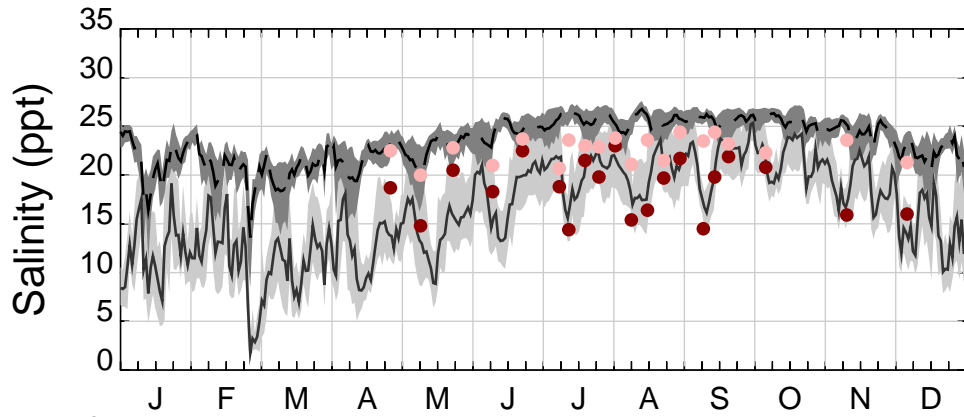
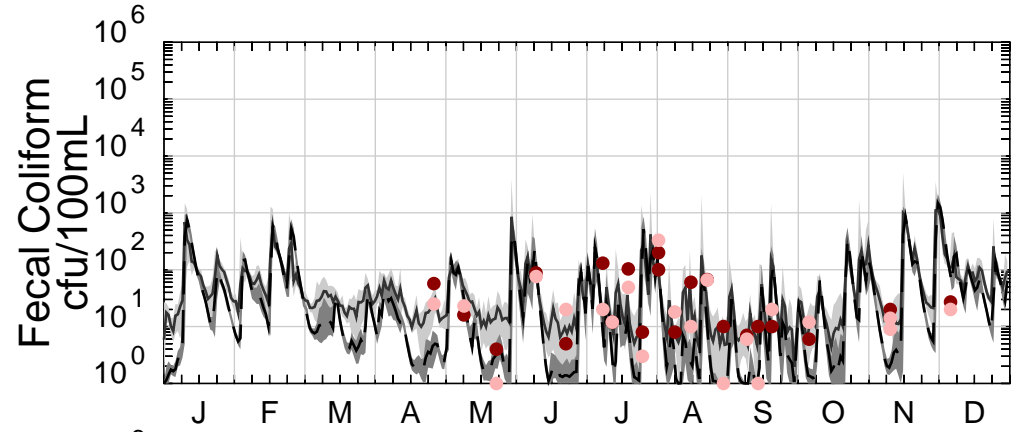
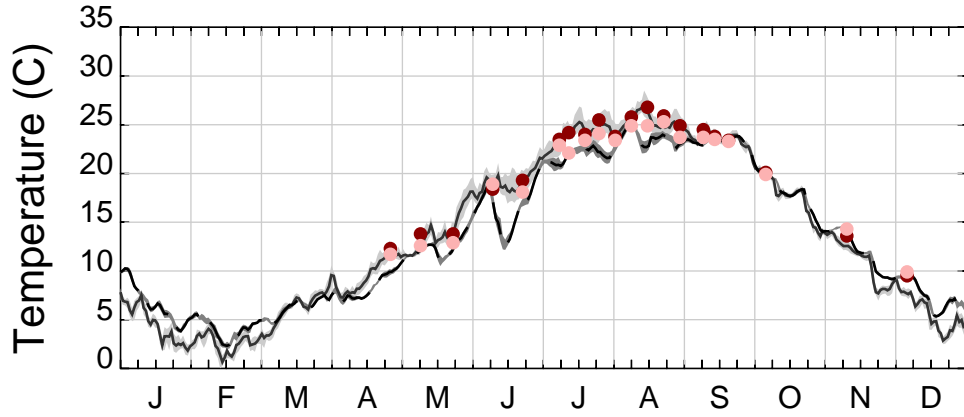
Model = 2016  
 Data = 2016

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



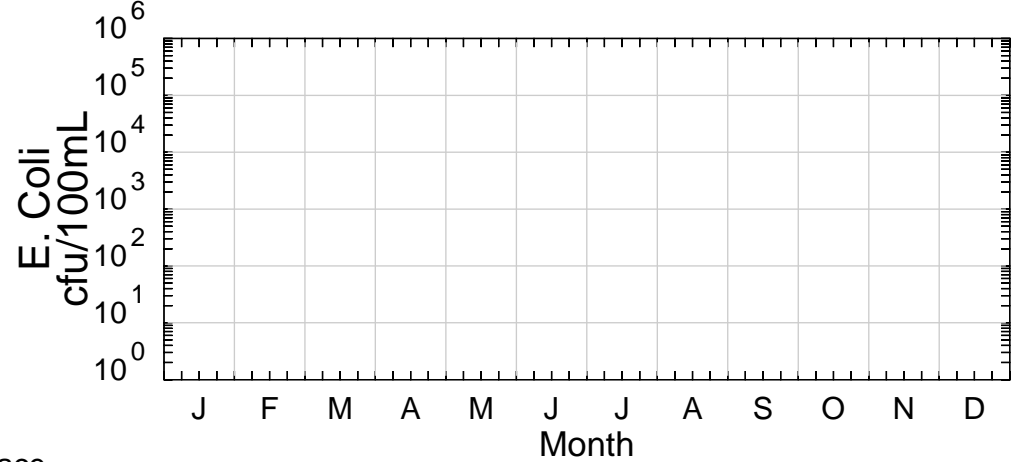
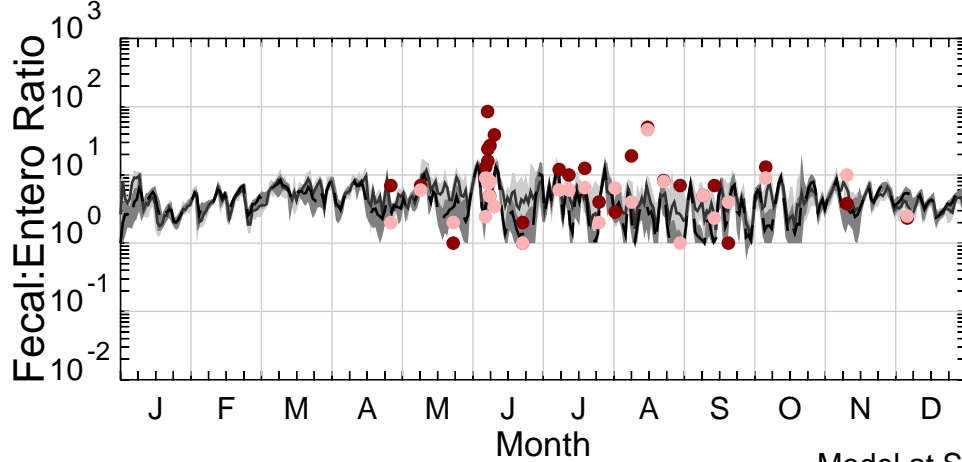
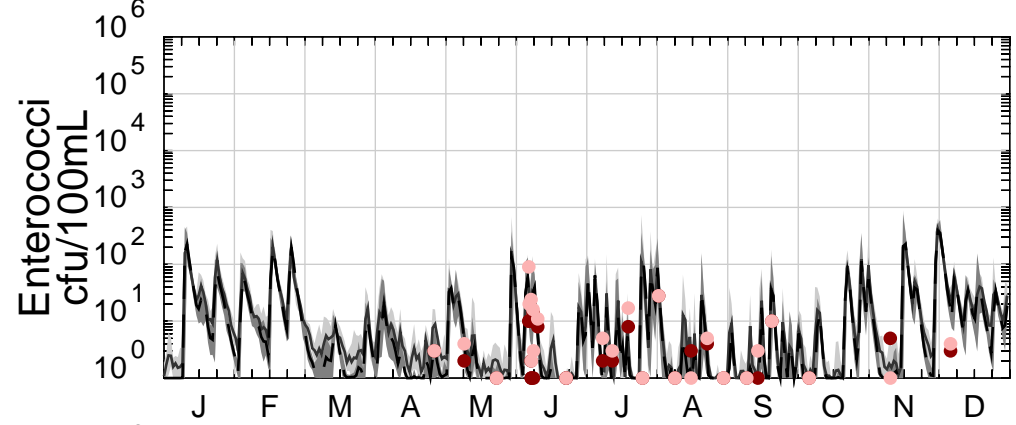
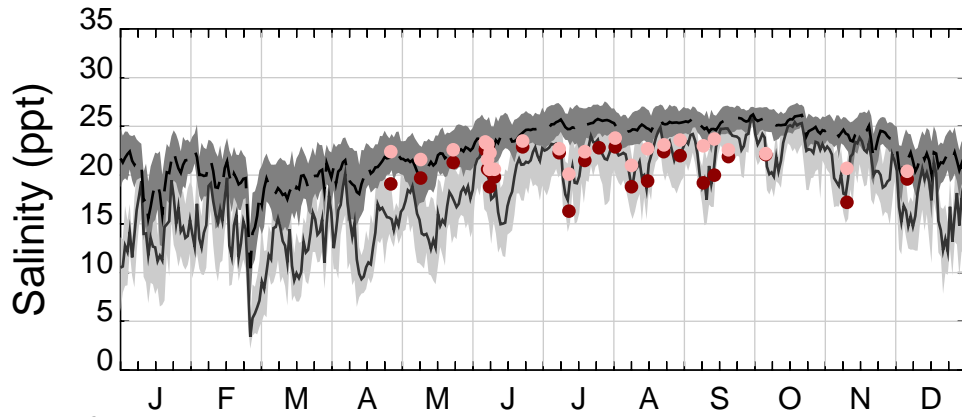
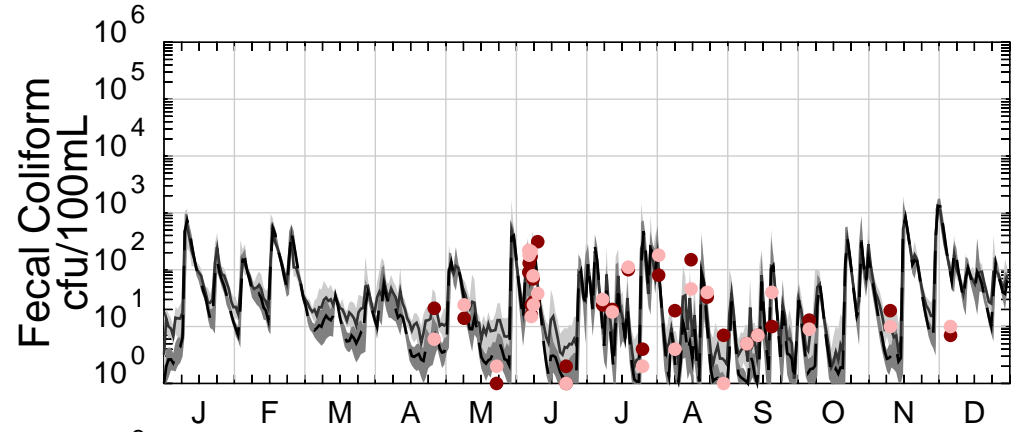
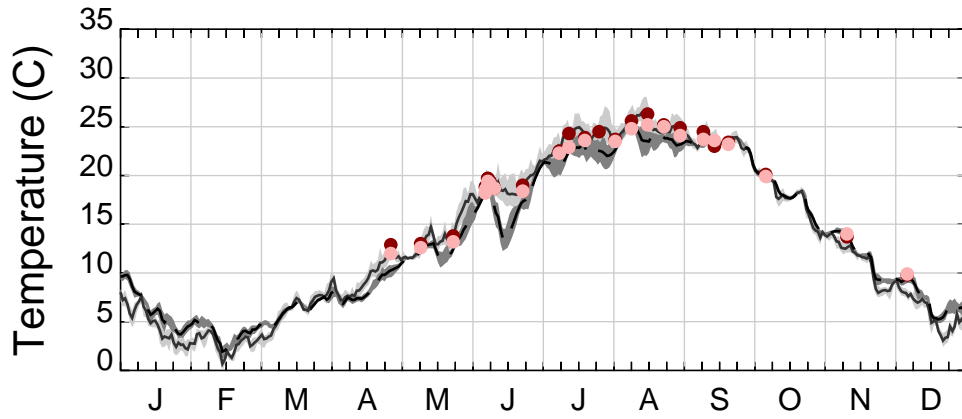
Station: B23B



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

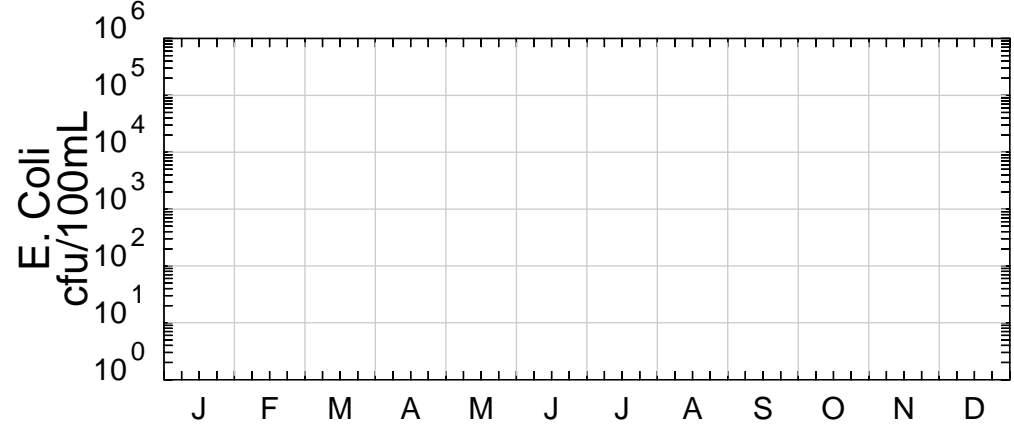
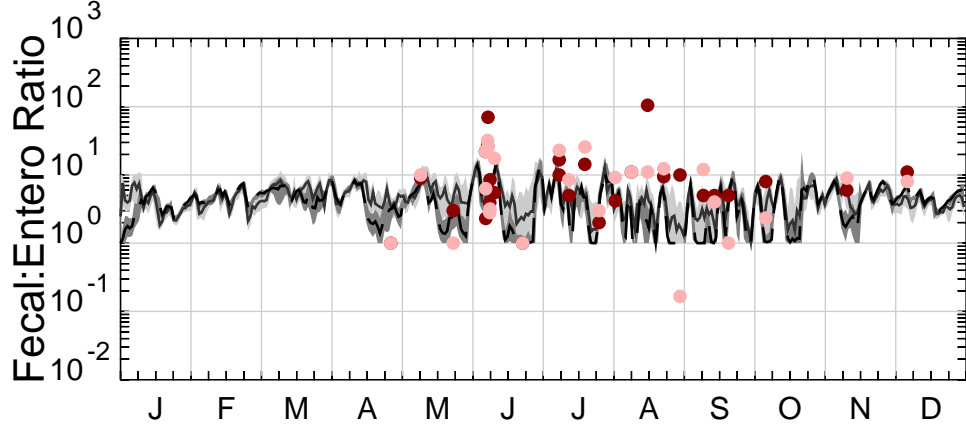
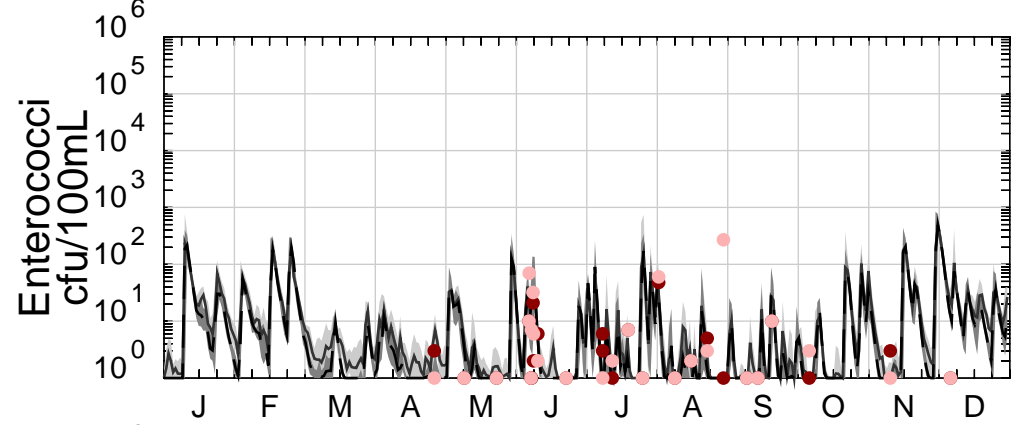
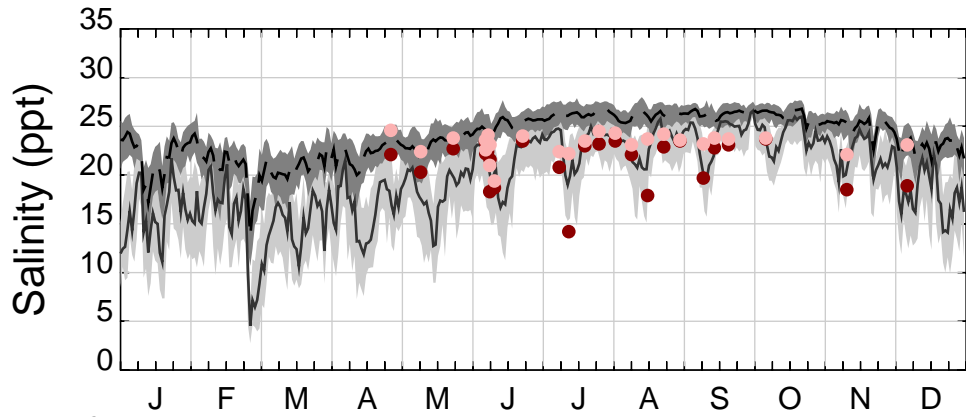
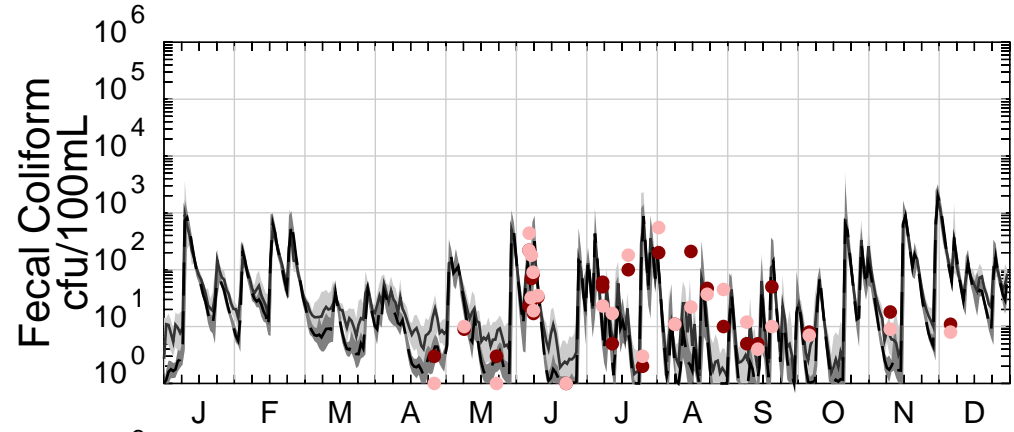
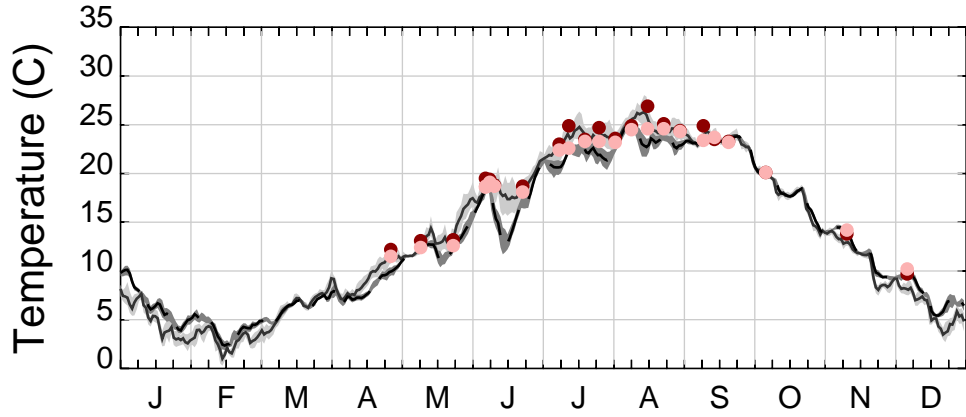
**Station: B26**



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

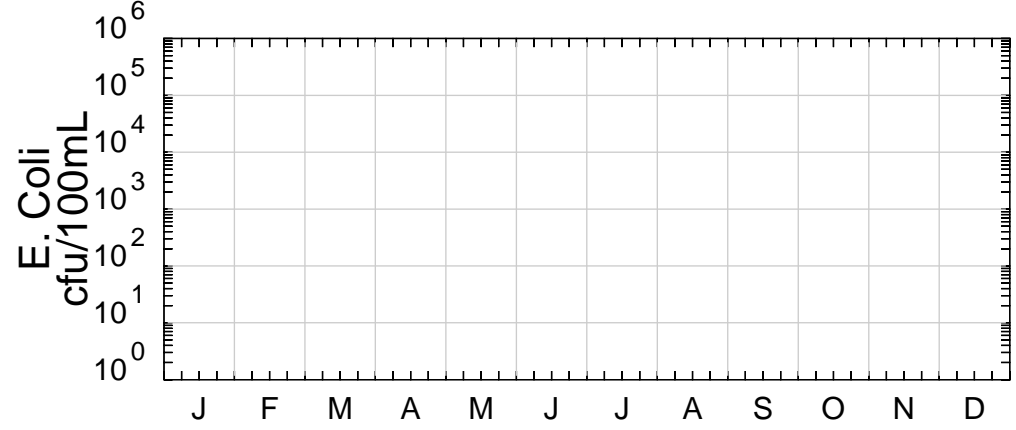
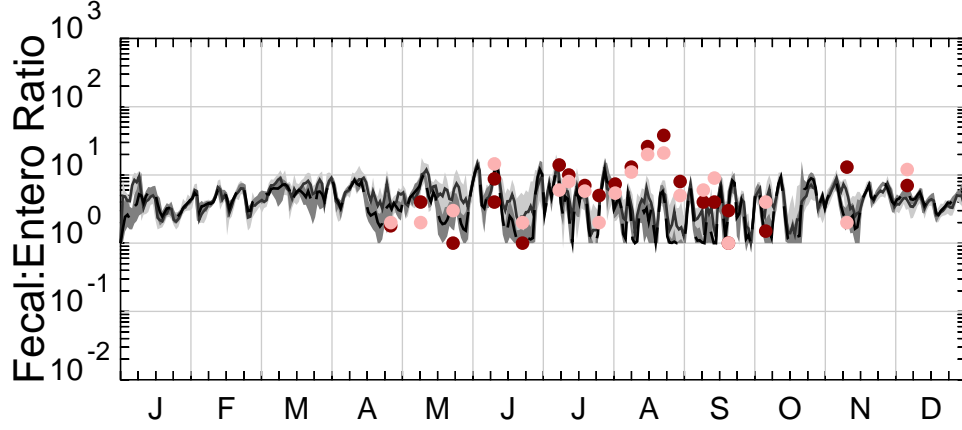
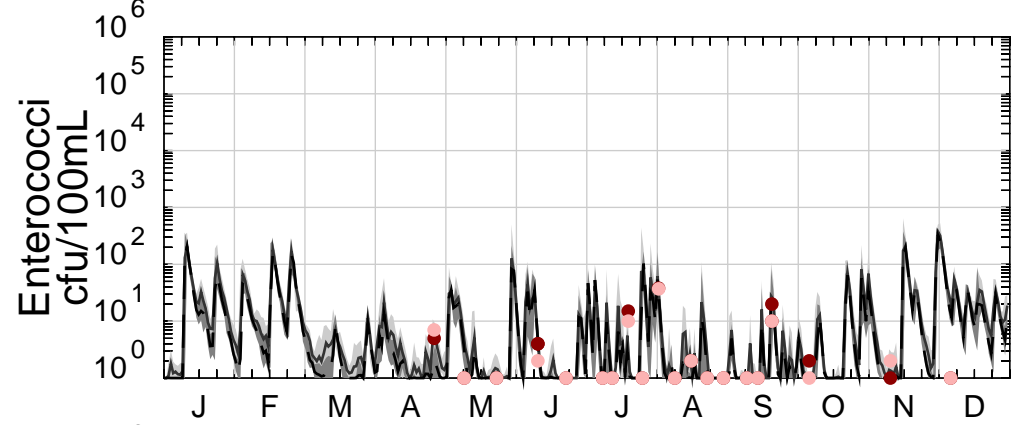
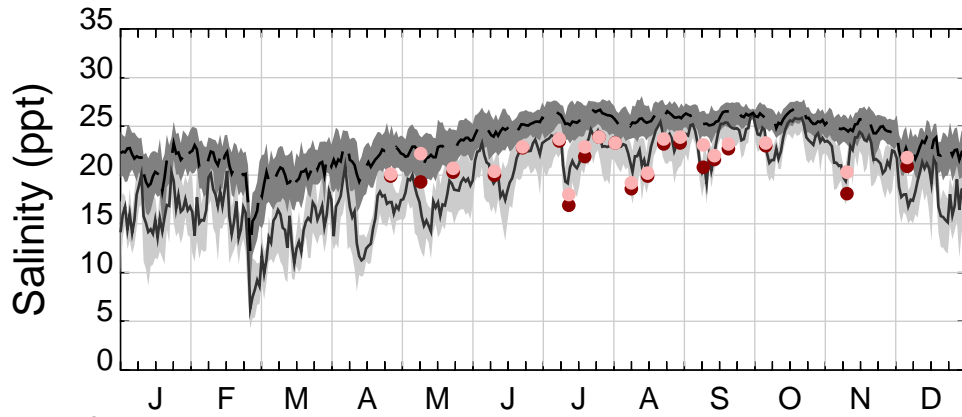
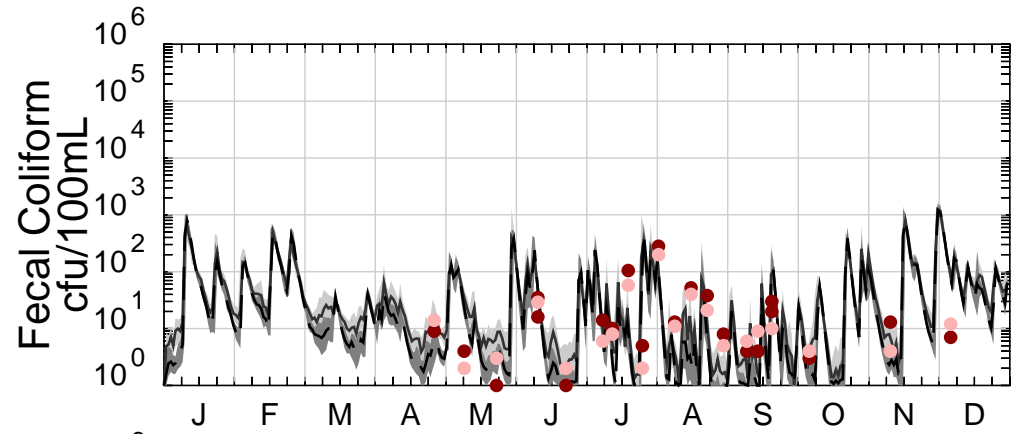
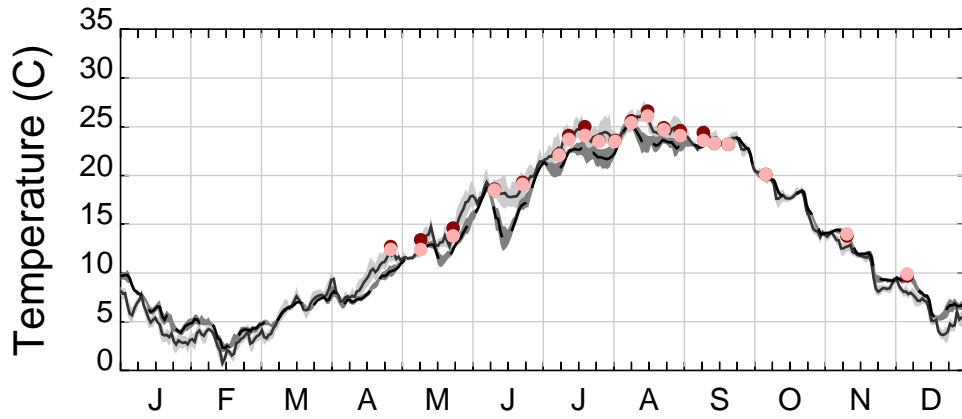
**Station: B27**



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

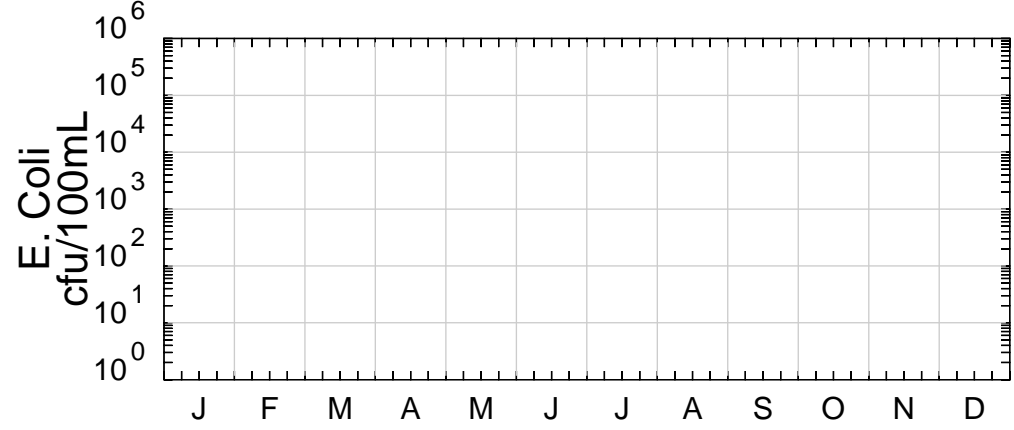
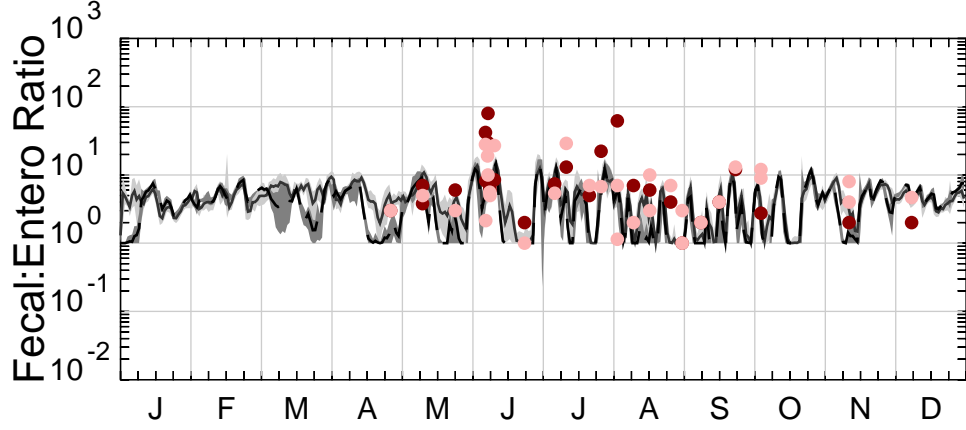
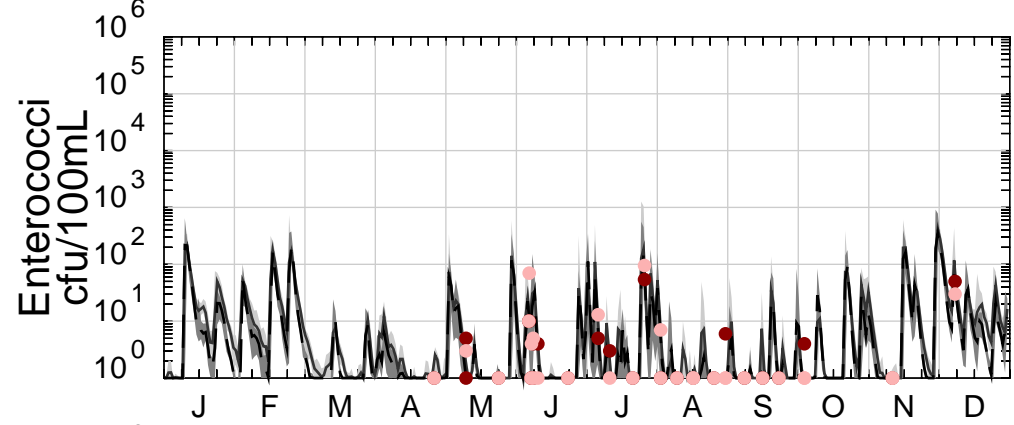
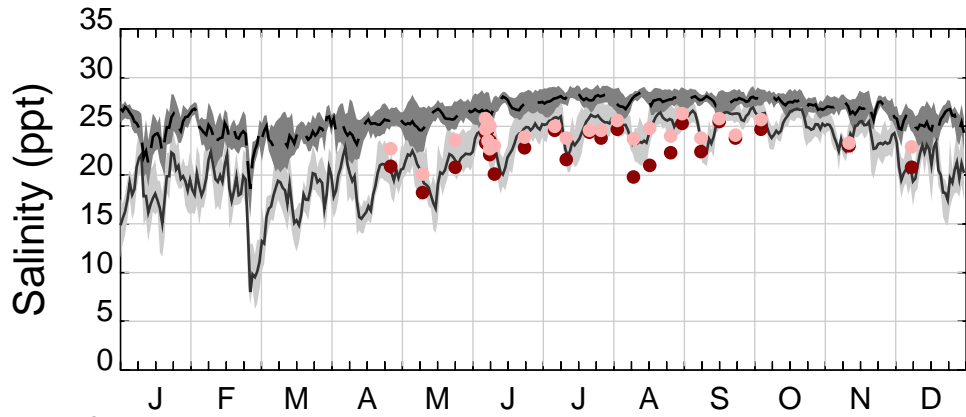
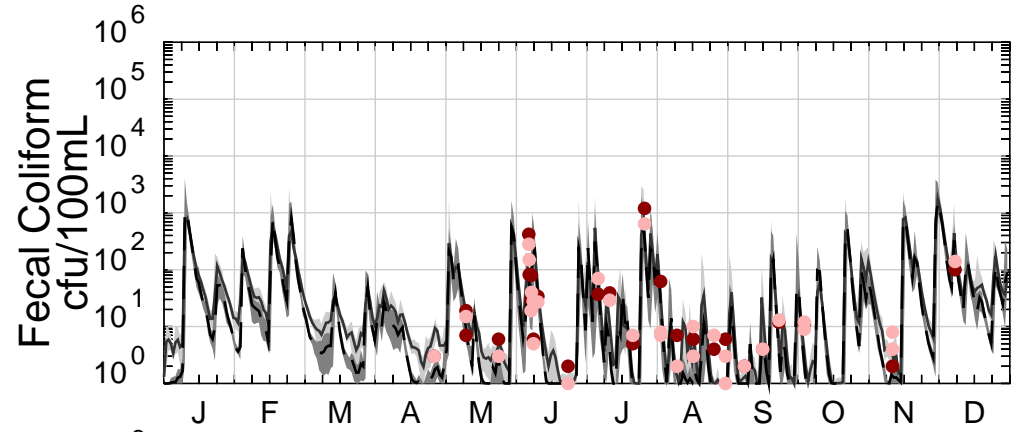
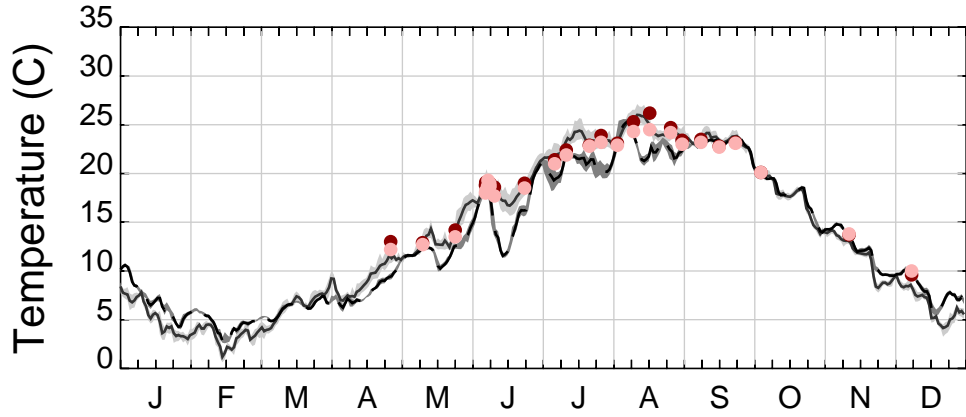
Station: B9



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

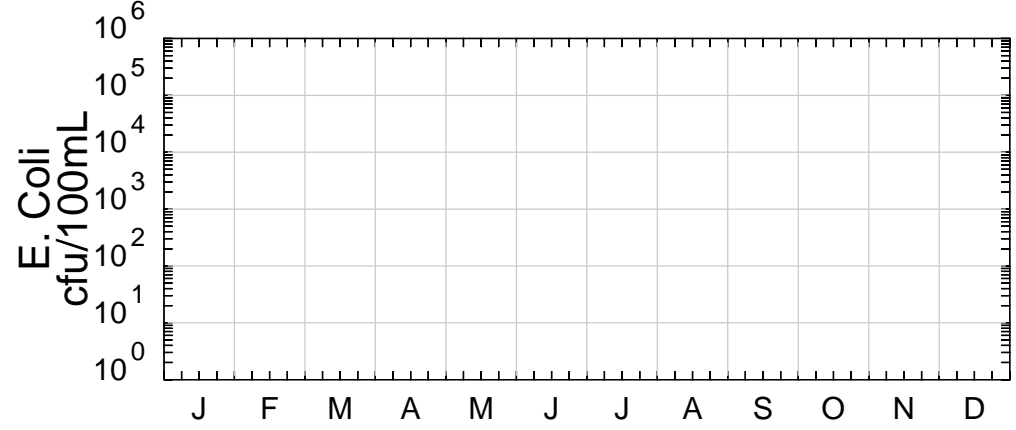
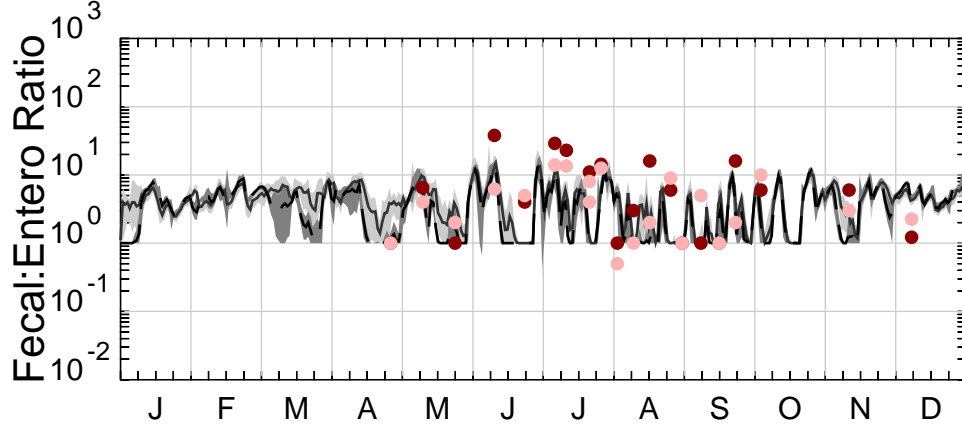
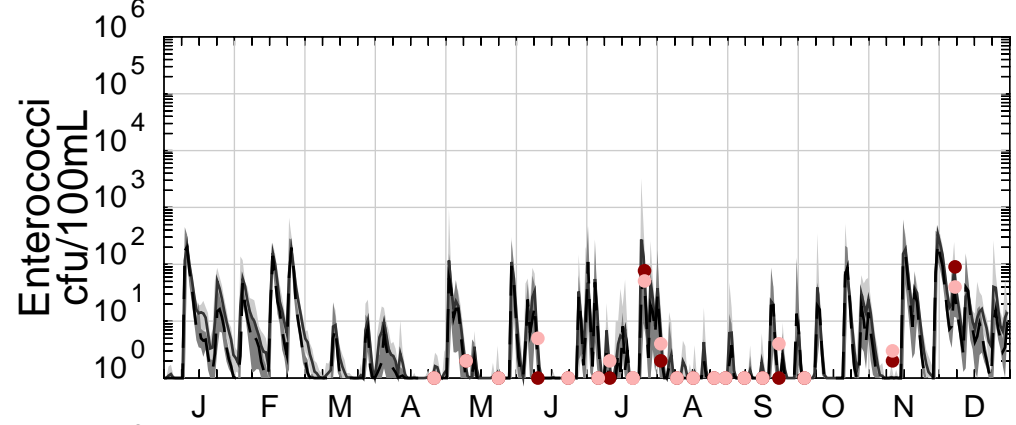
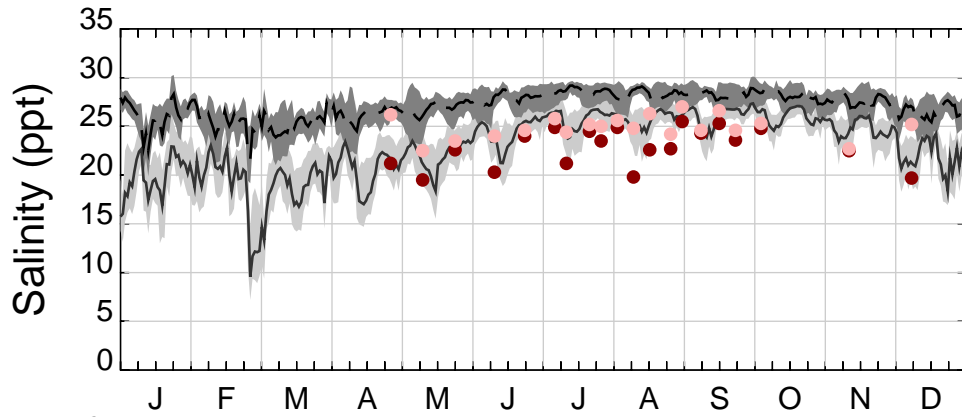
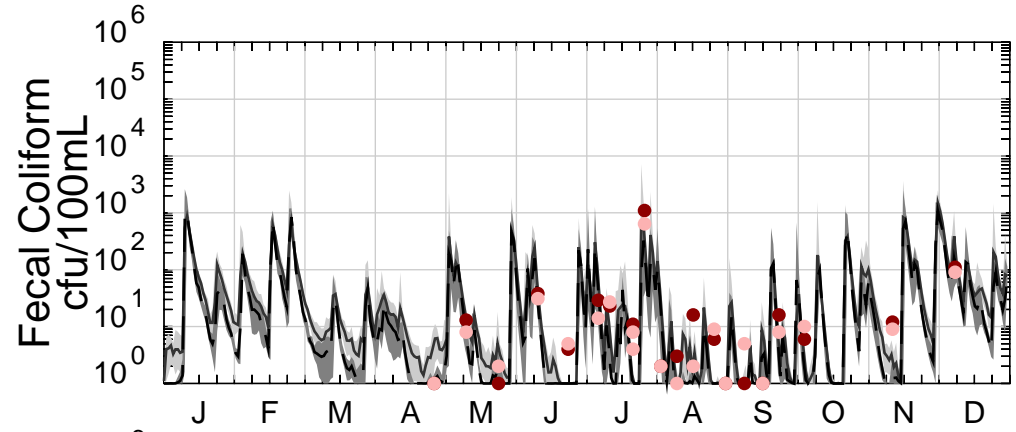
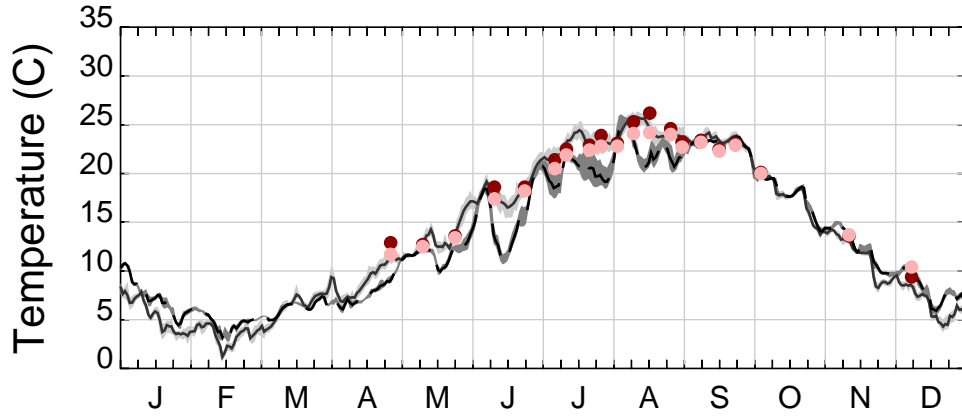
**Station: B28**



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

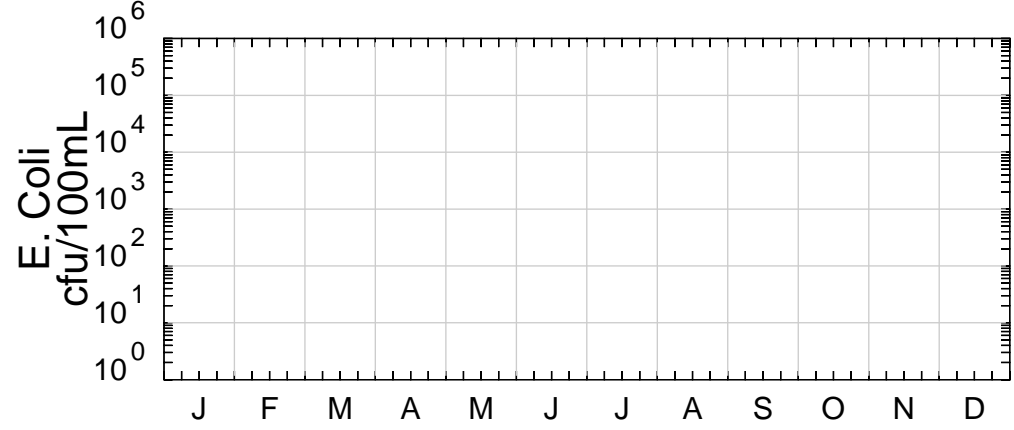
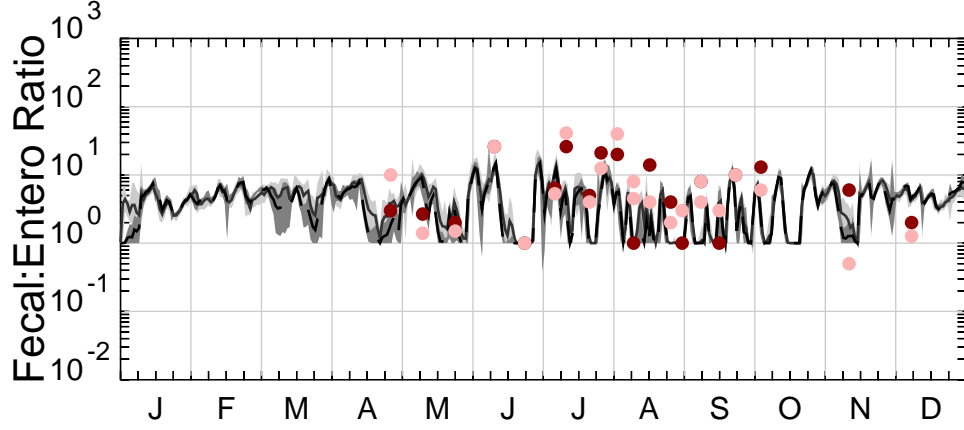
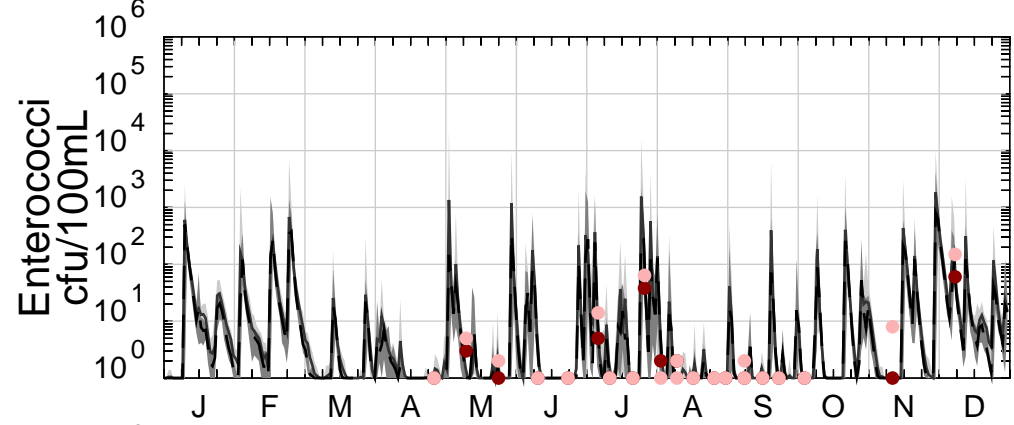
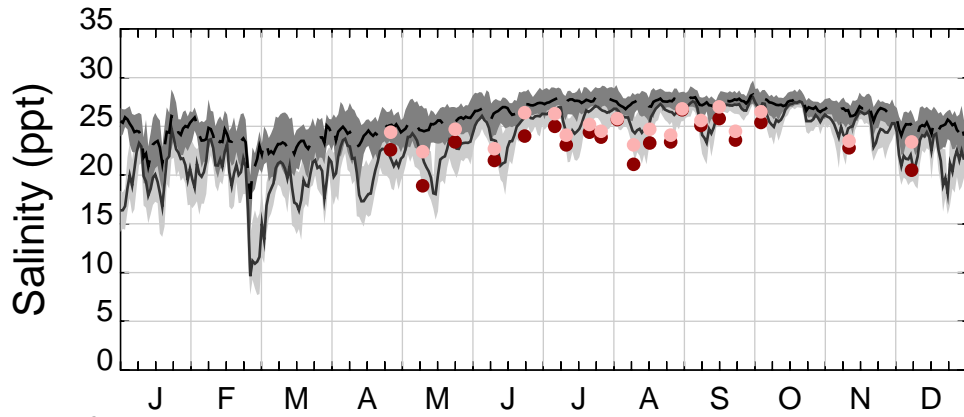
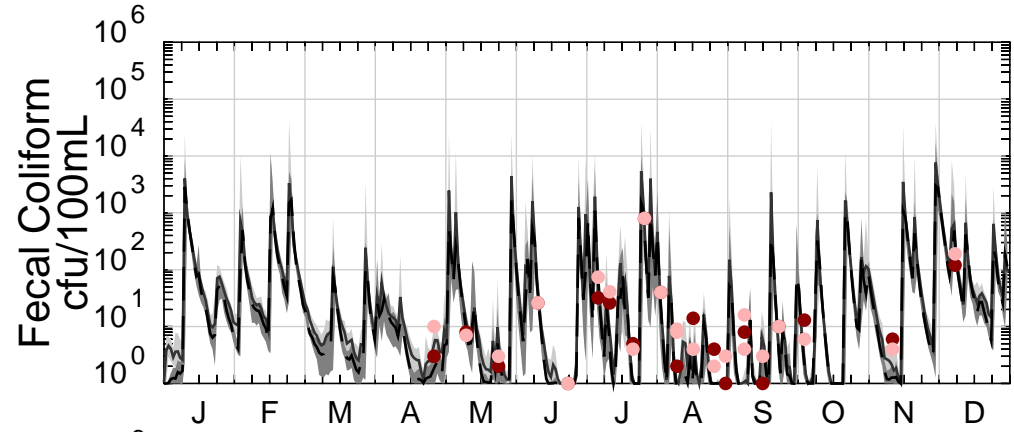
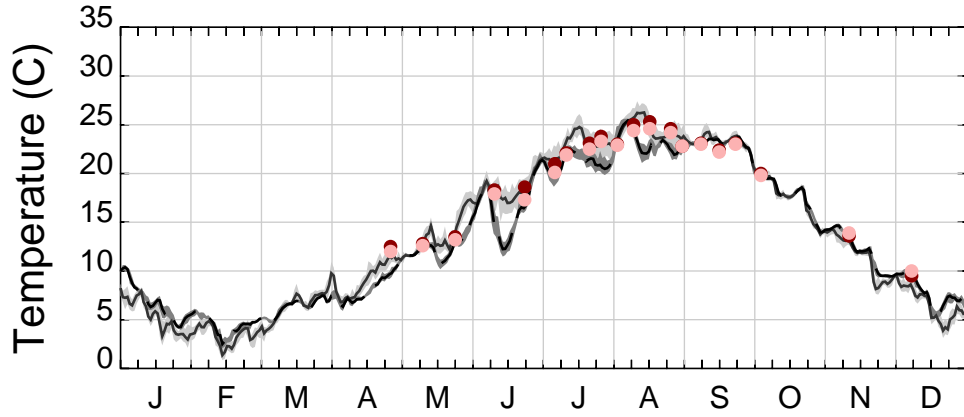
Station: B21A



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**



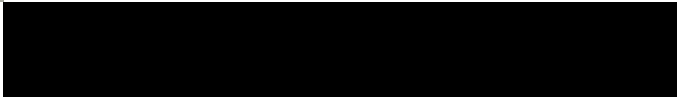

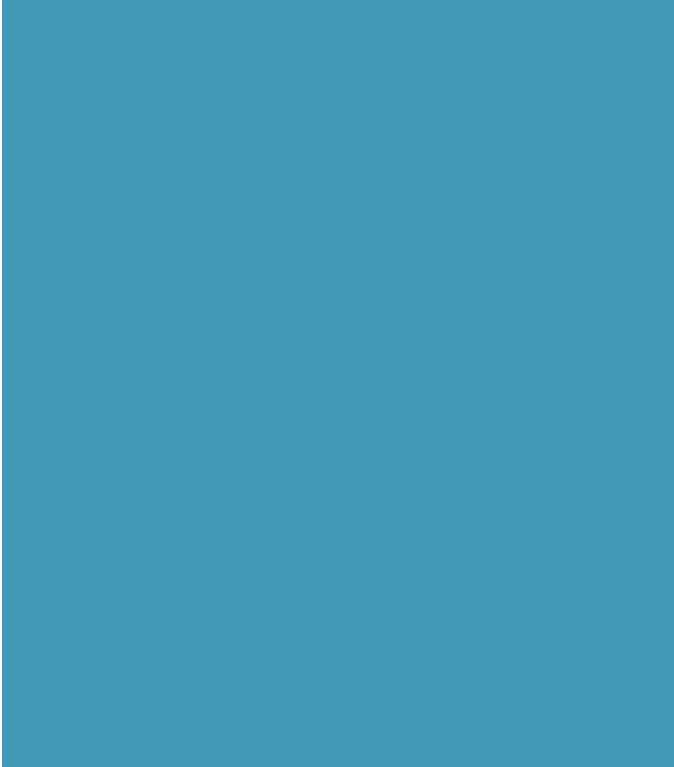
Model = 2016  
 Data = 2016

- 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

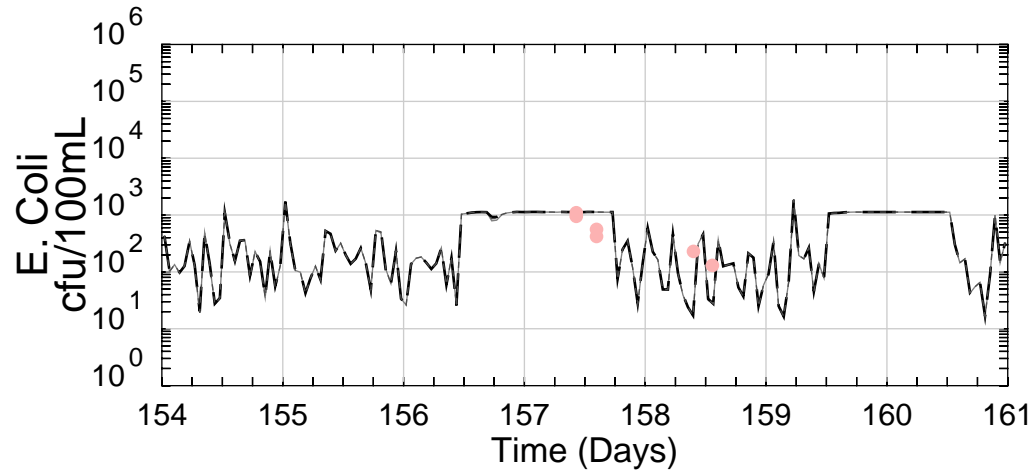
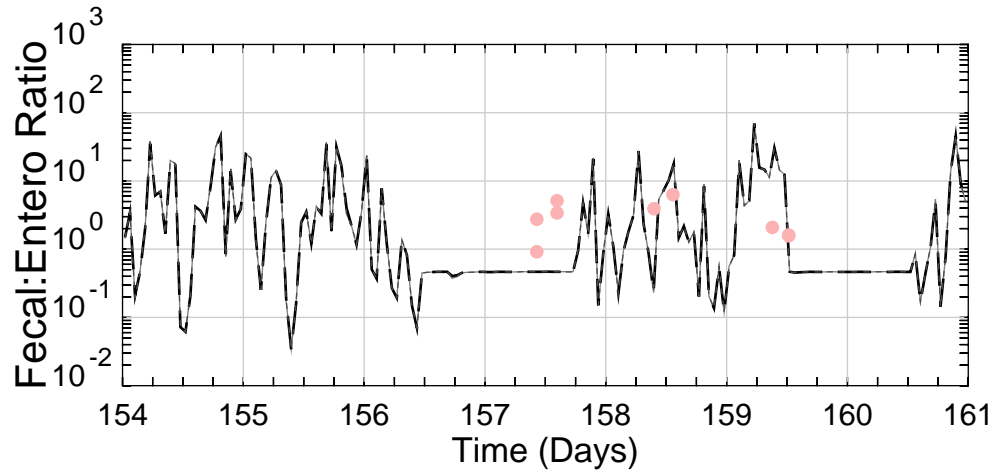
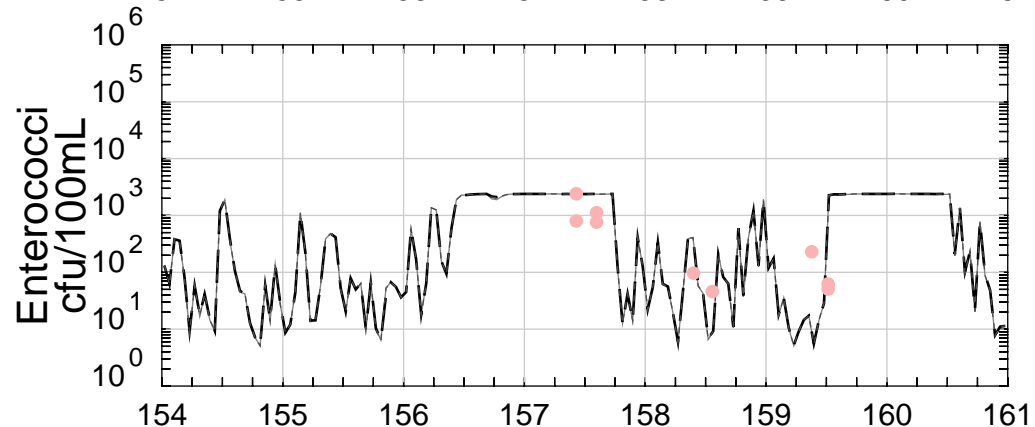
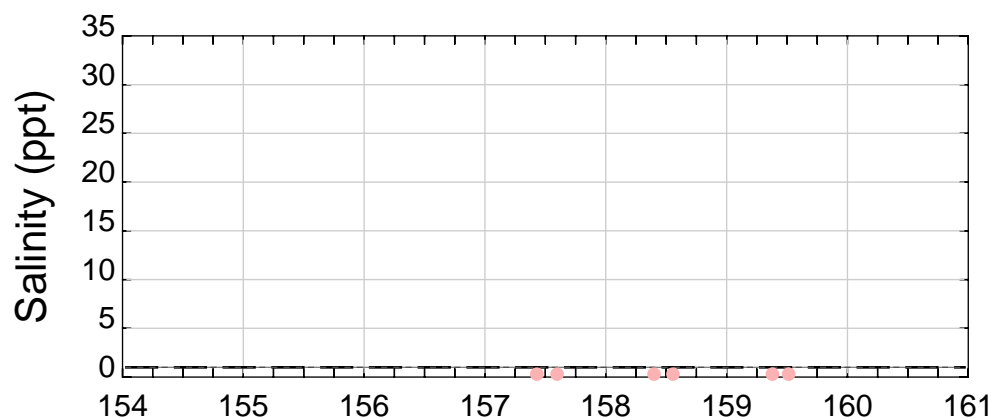
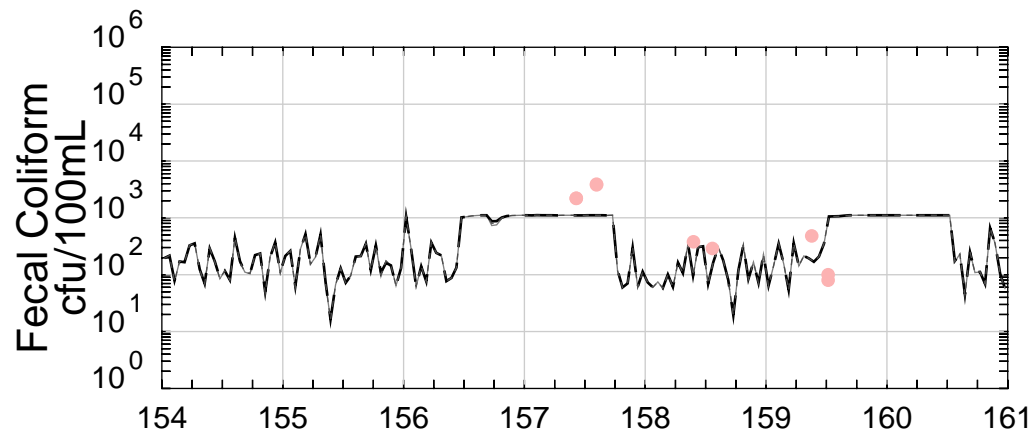
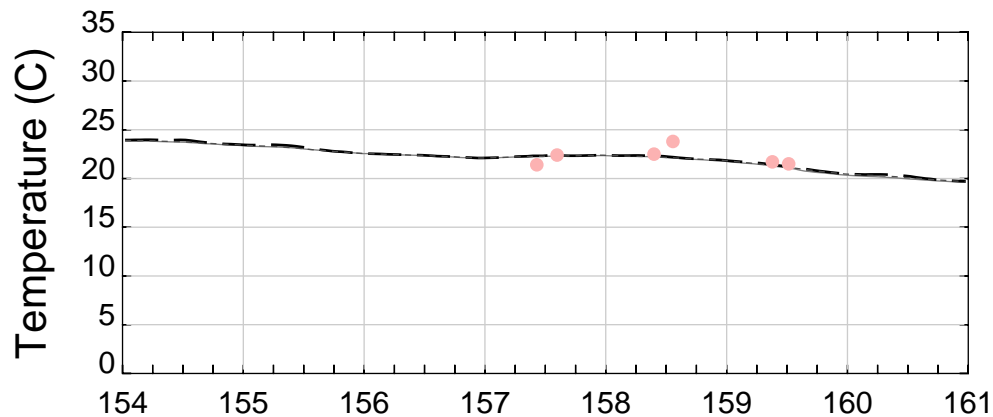




# Passaic River & Tributaries Passaic River

## FW2

### Station: B24 Event 1 (June 3-9)



Model = 2016  
Data = 2016

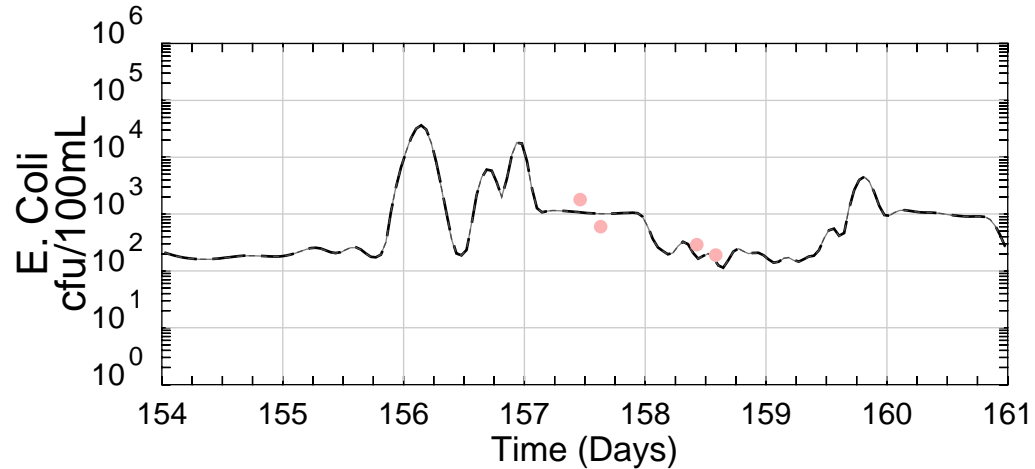
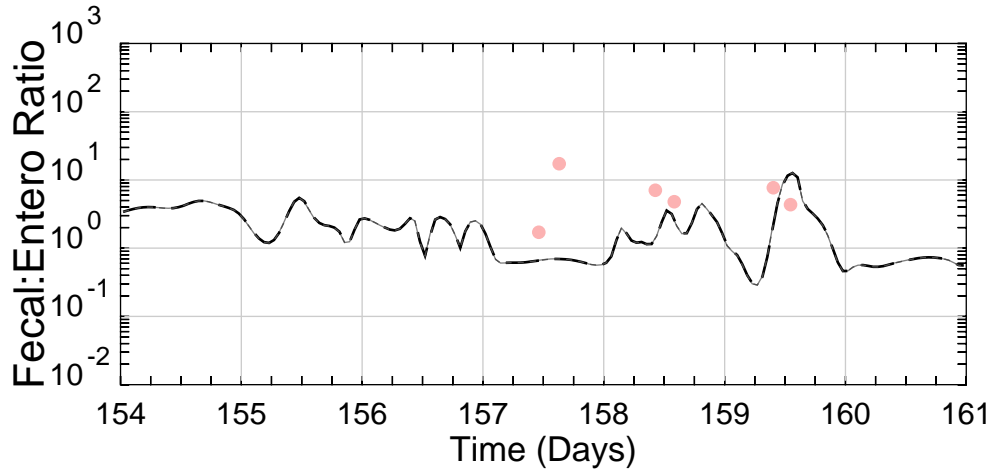
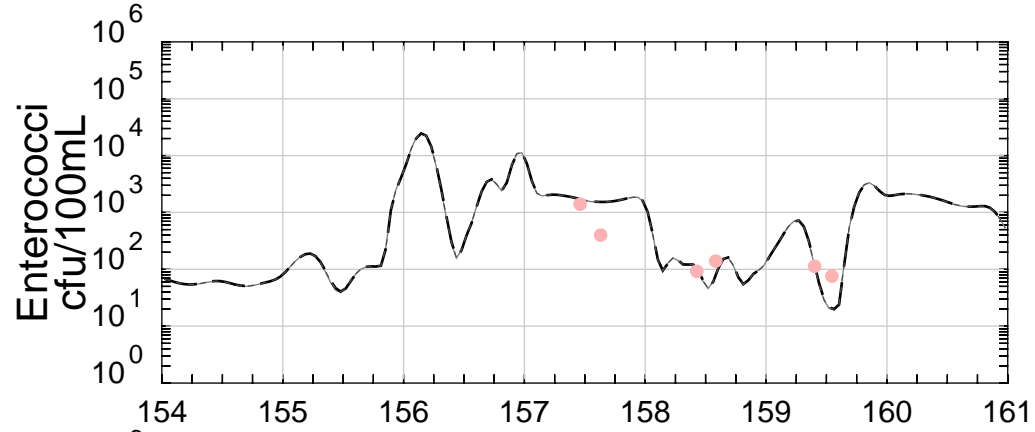
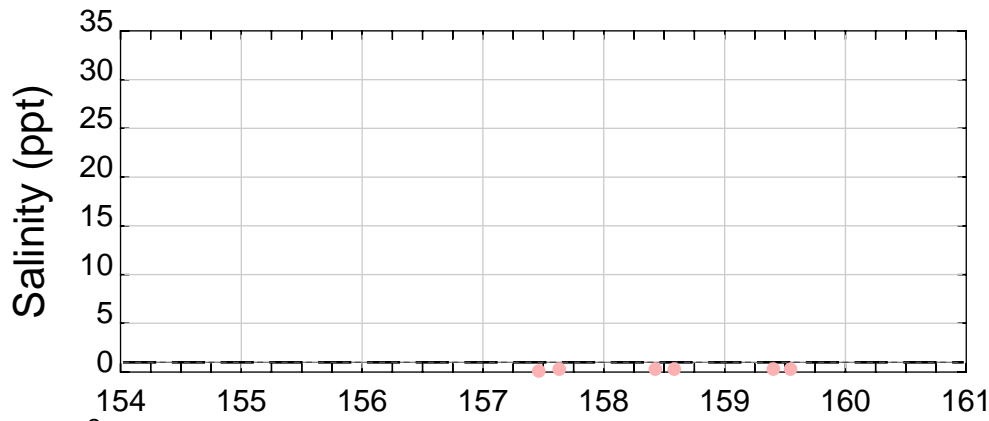
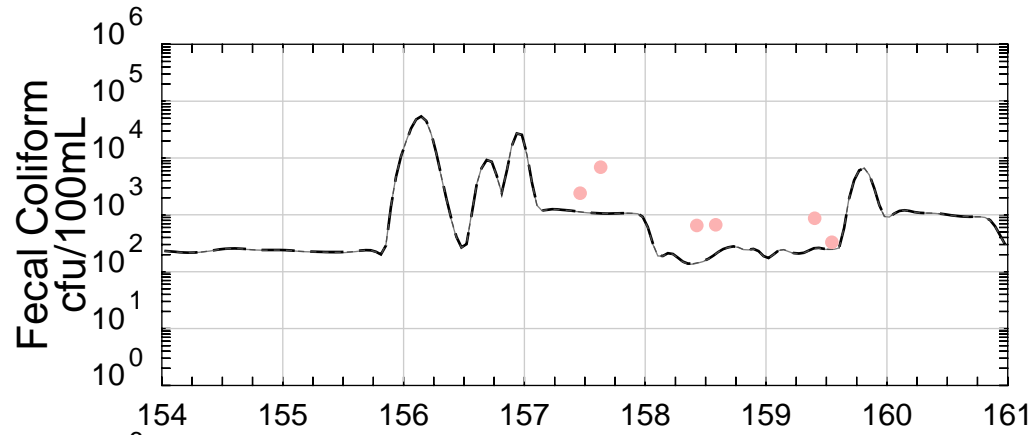
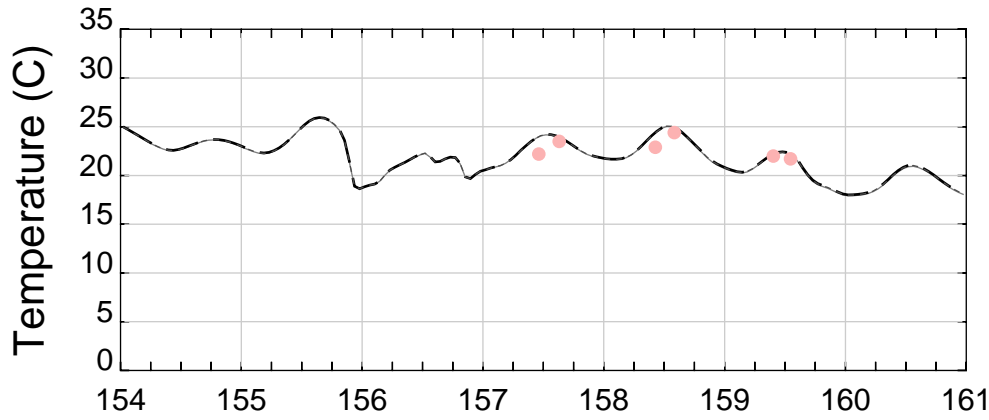
- Model at Surface
- - - Model at Mid-Depth
- . - Model at Bottom

- 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

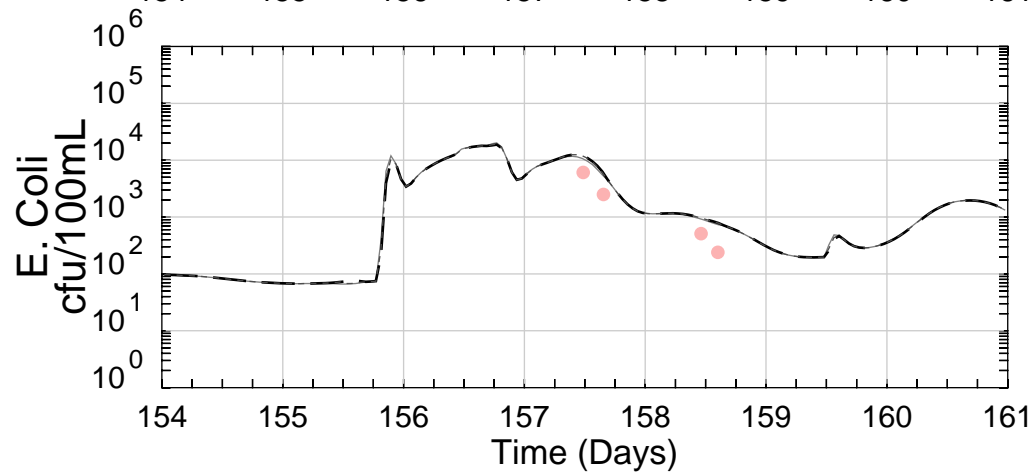
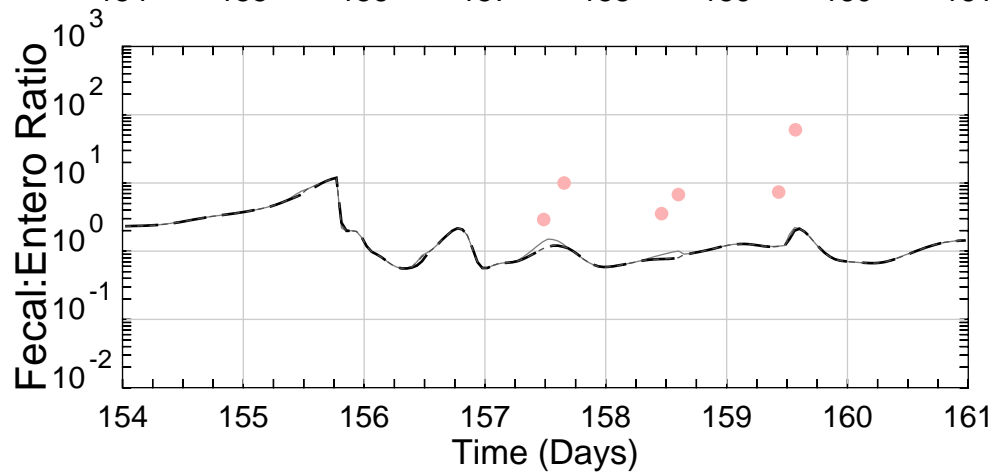
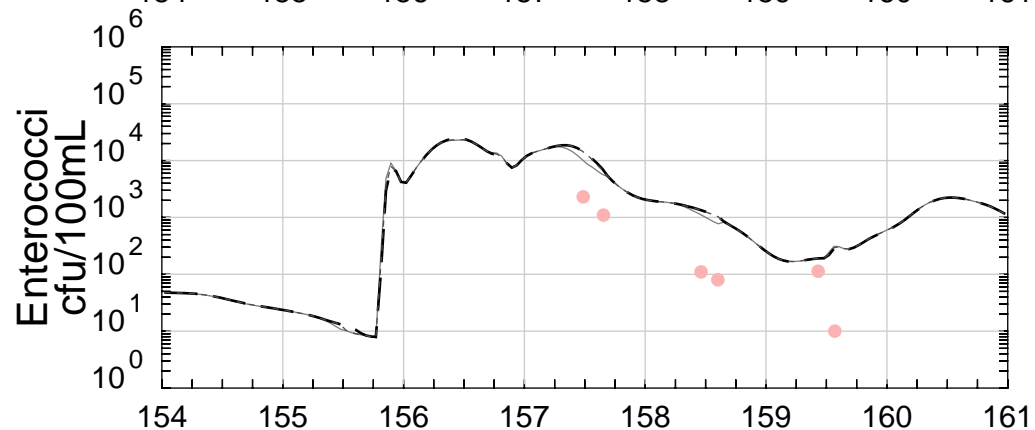
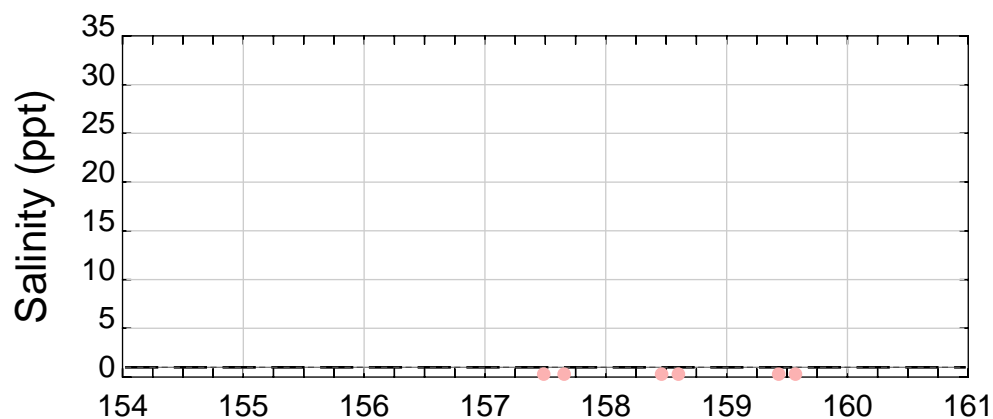
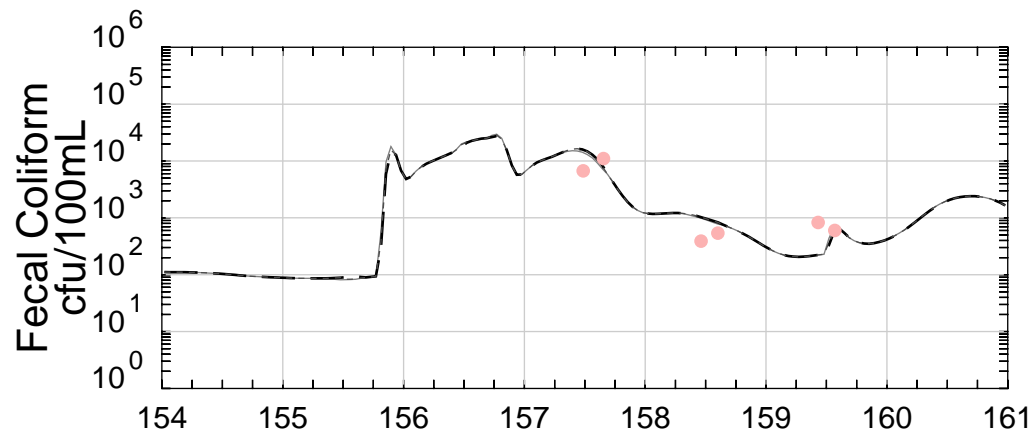
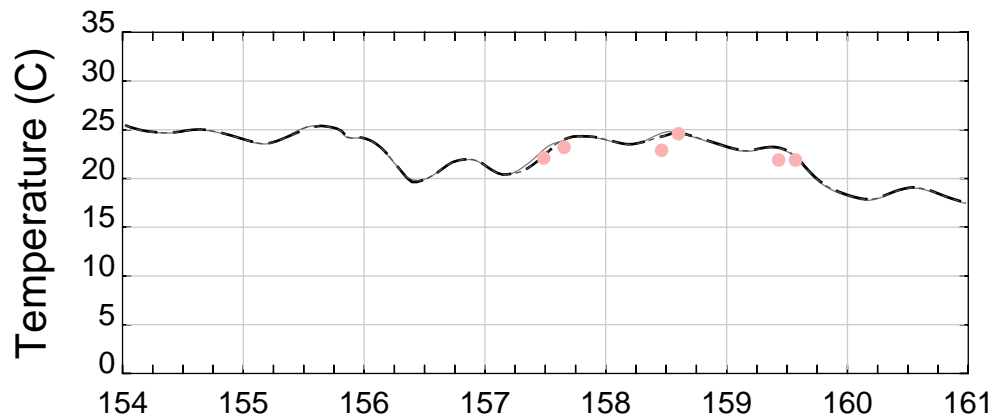
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- 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

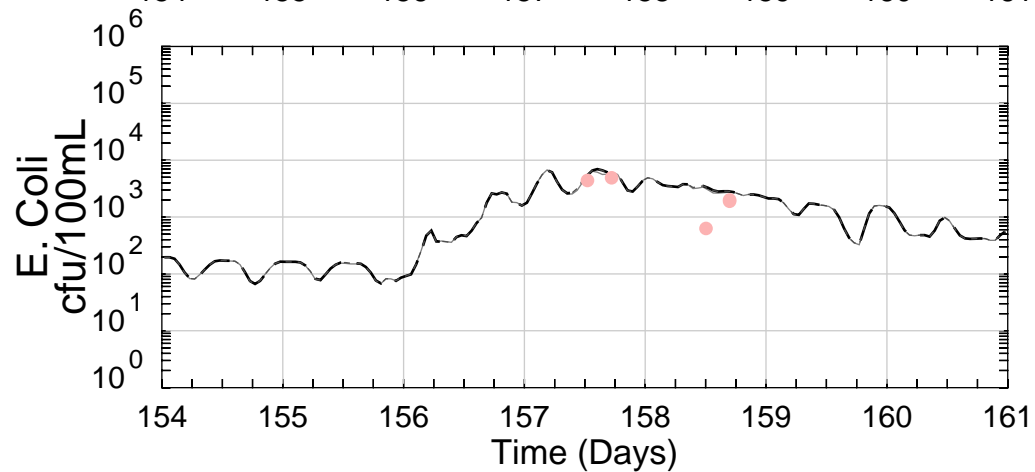
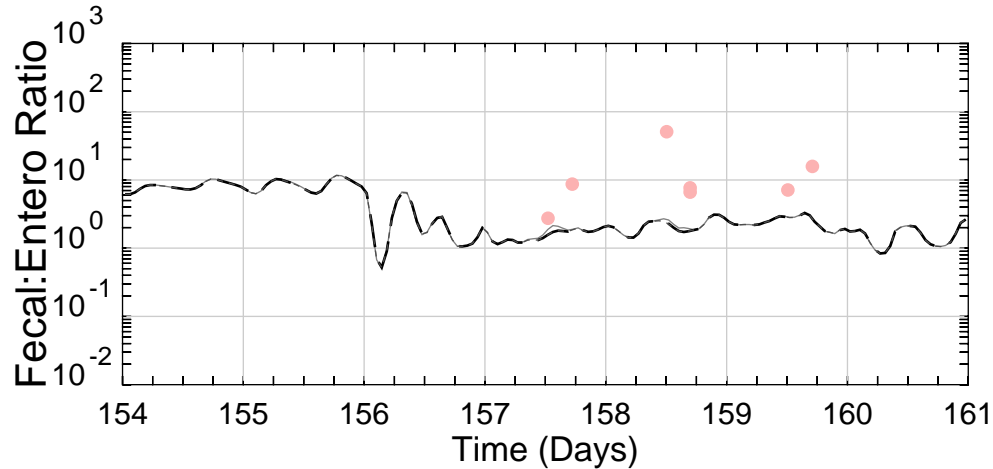
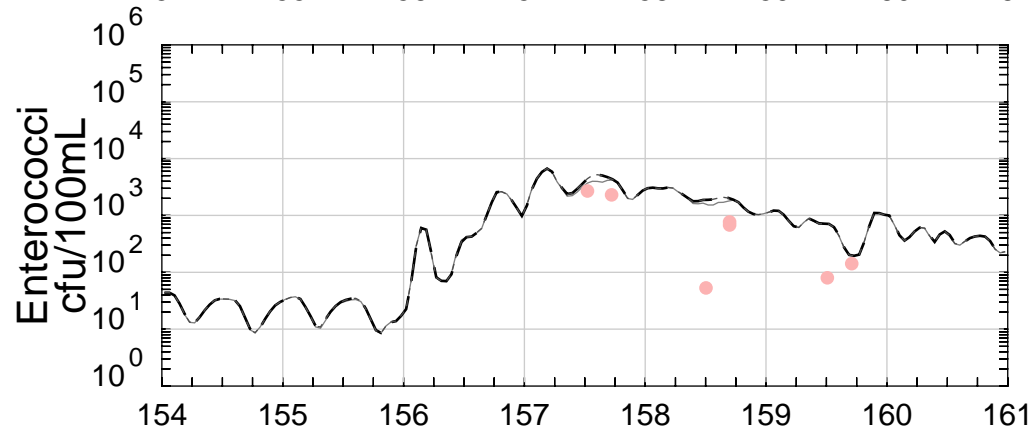
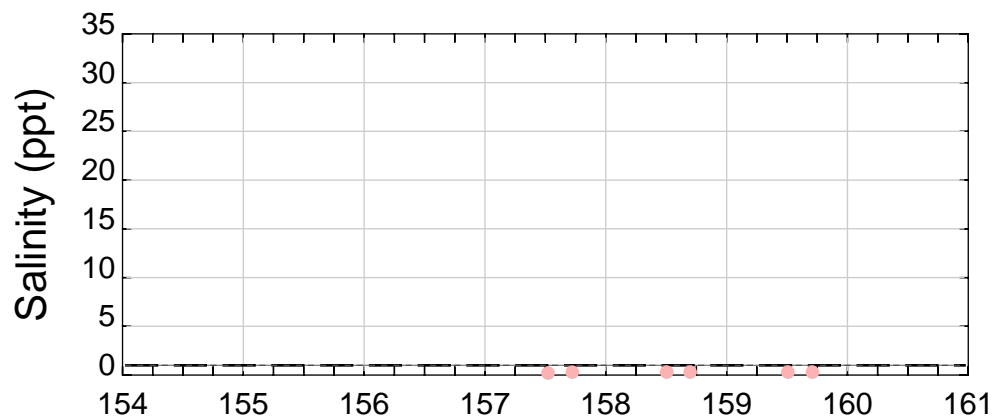
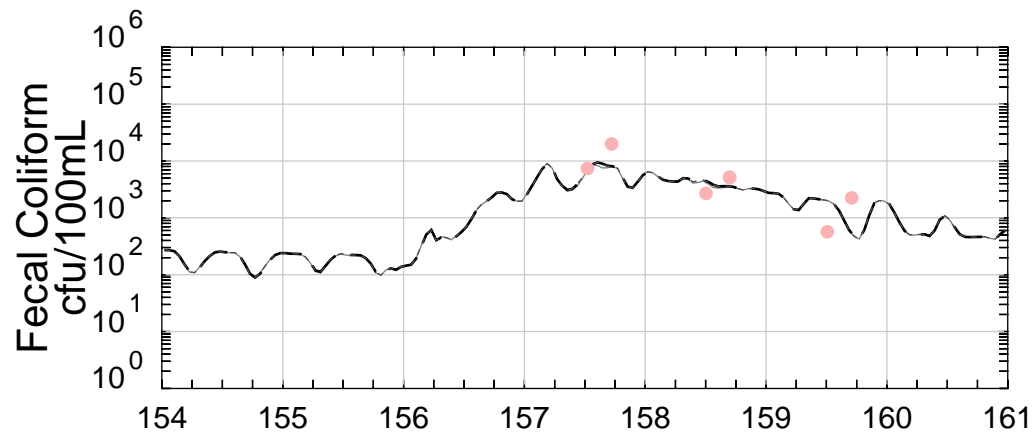
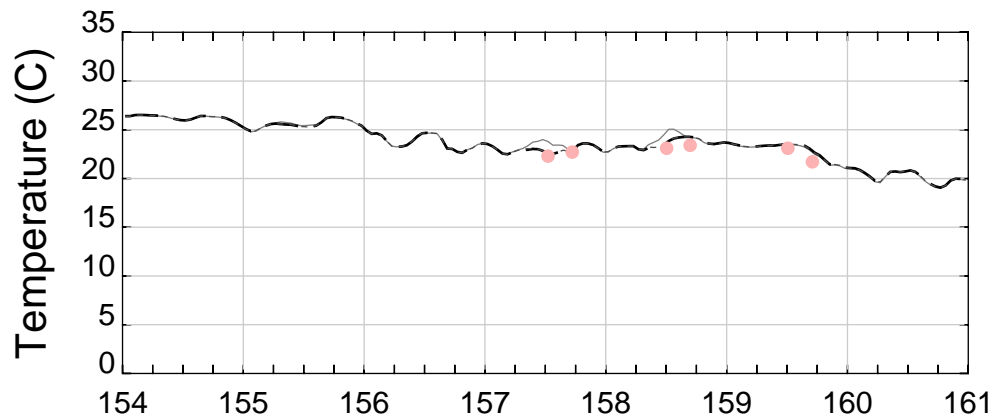
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- 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

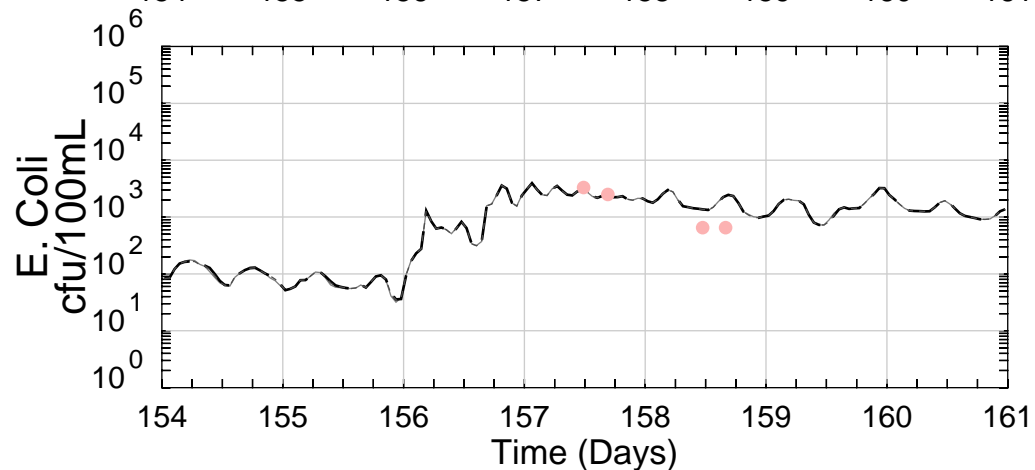
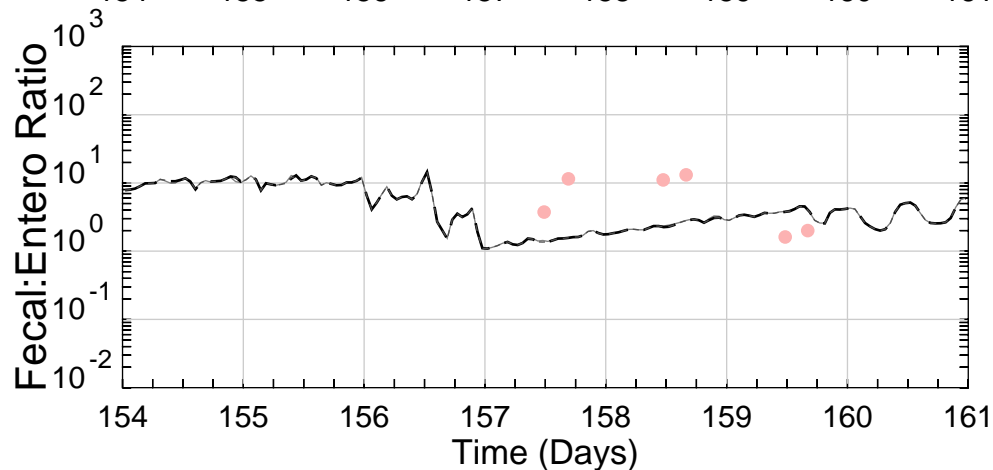
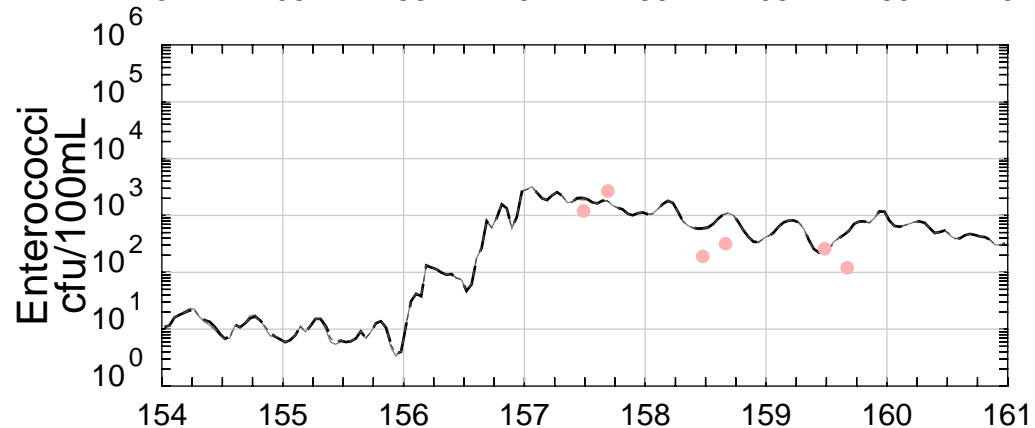
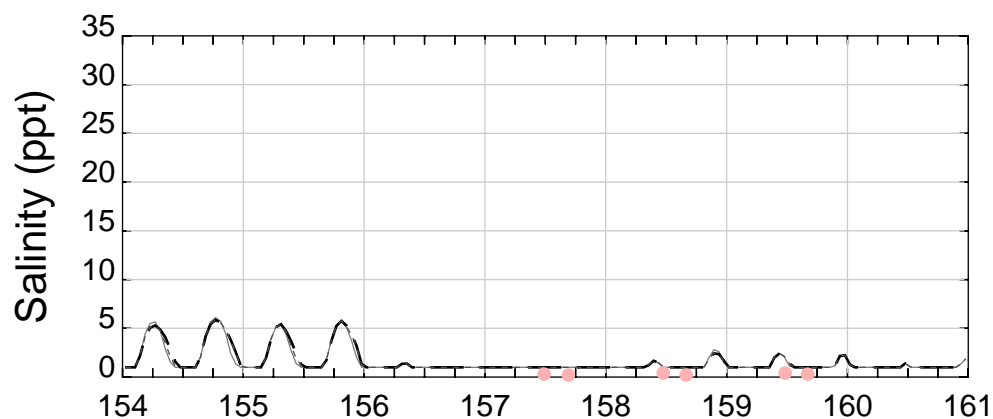
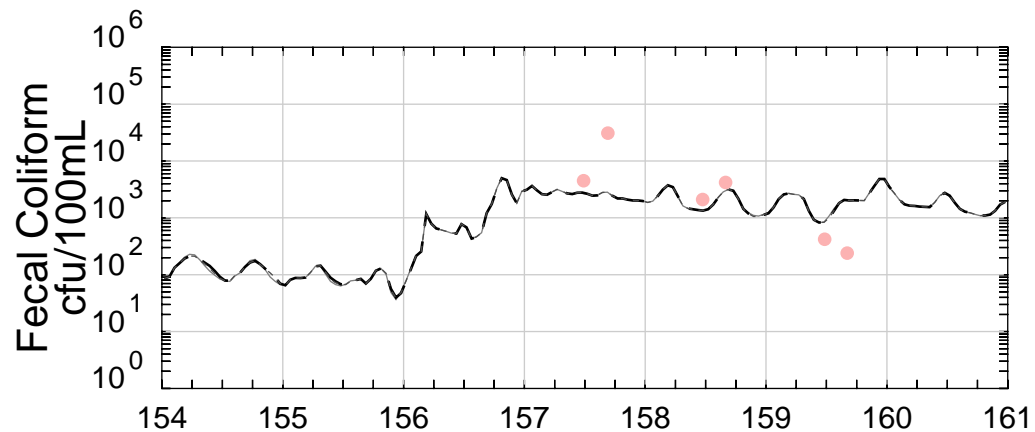
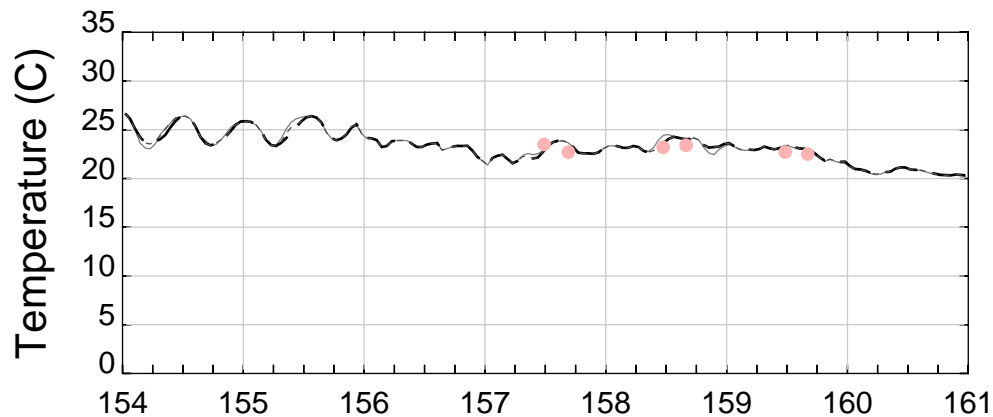
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- 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

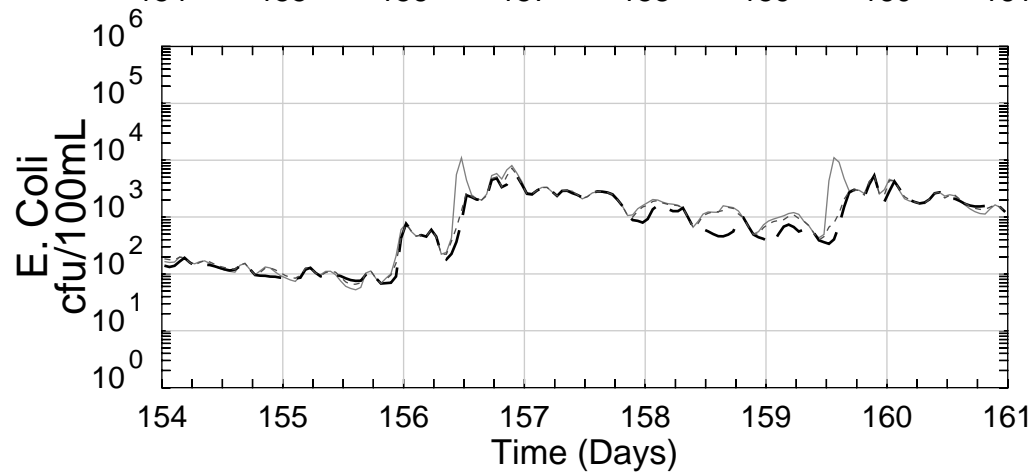
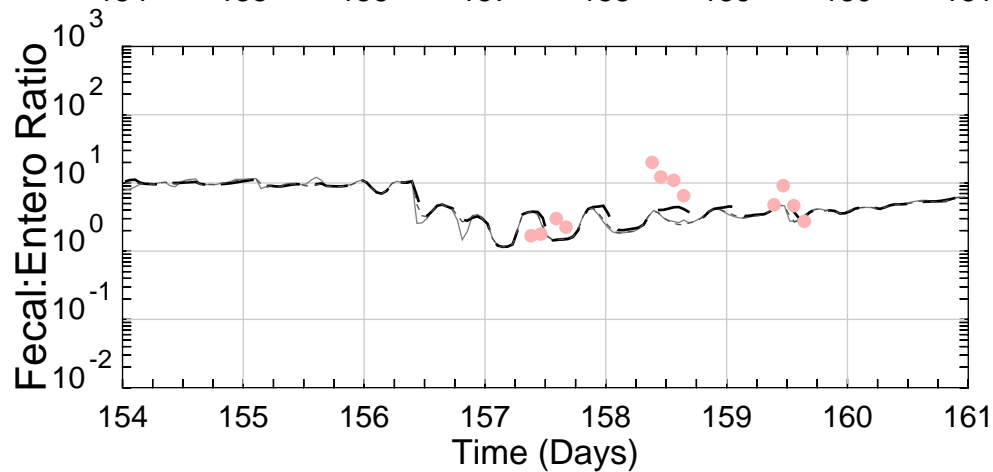
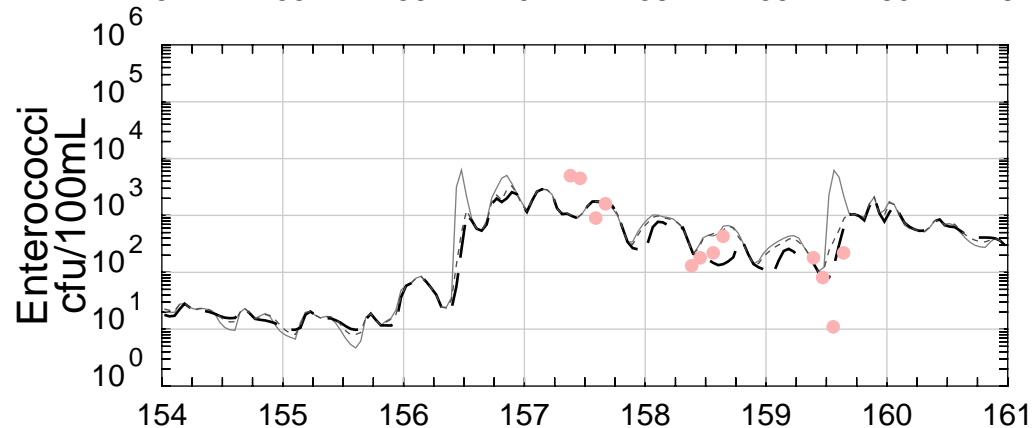
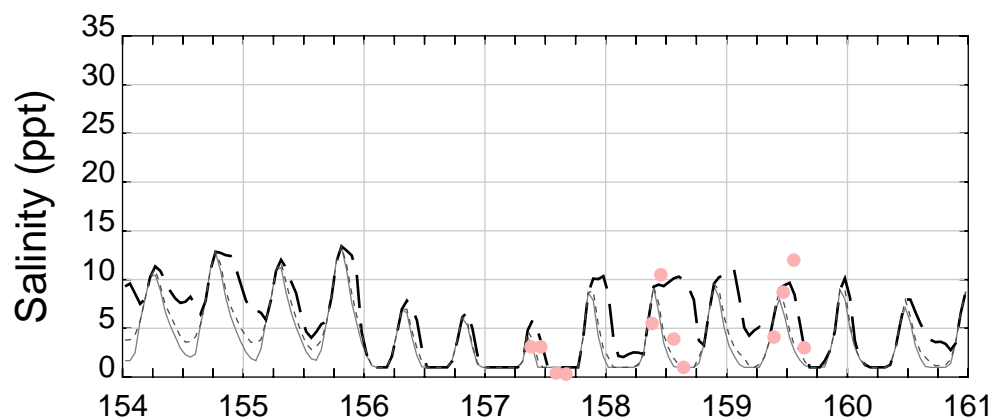
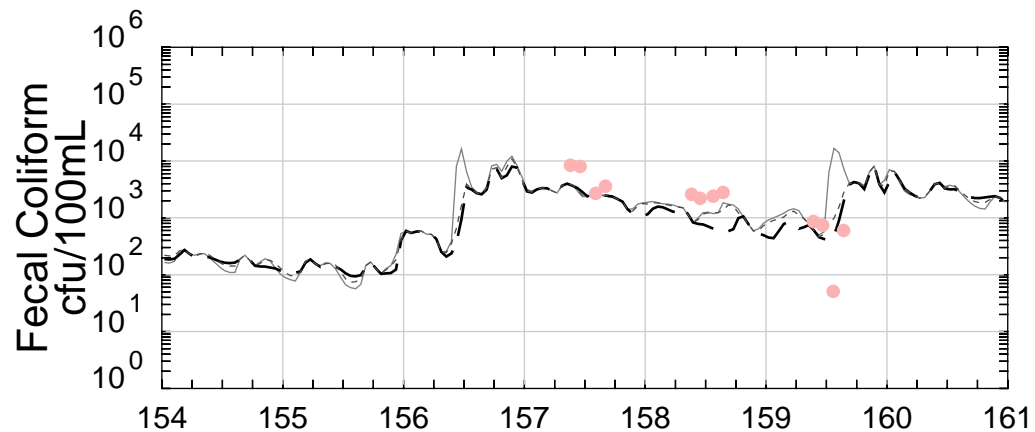
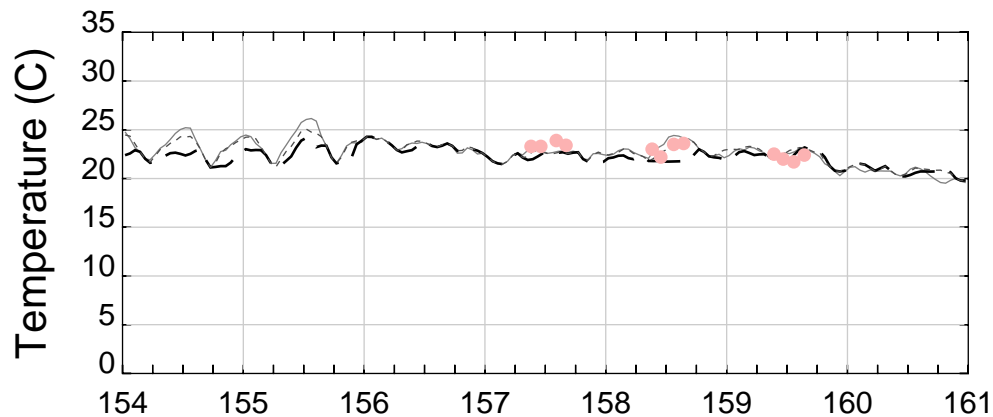
— Model at Surface  
 - - - Model at Mid-Depth  
 - - - Model at Bottom

● 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

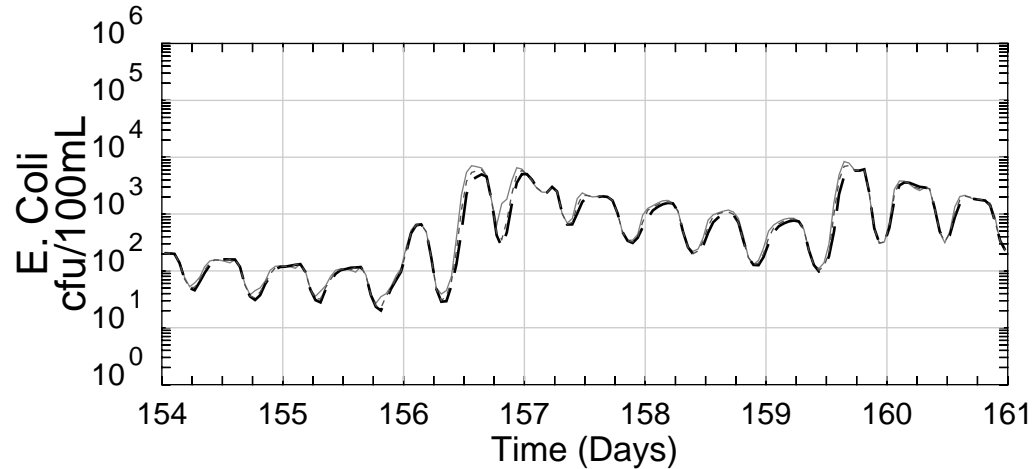
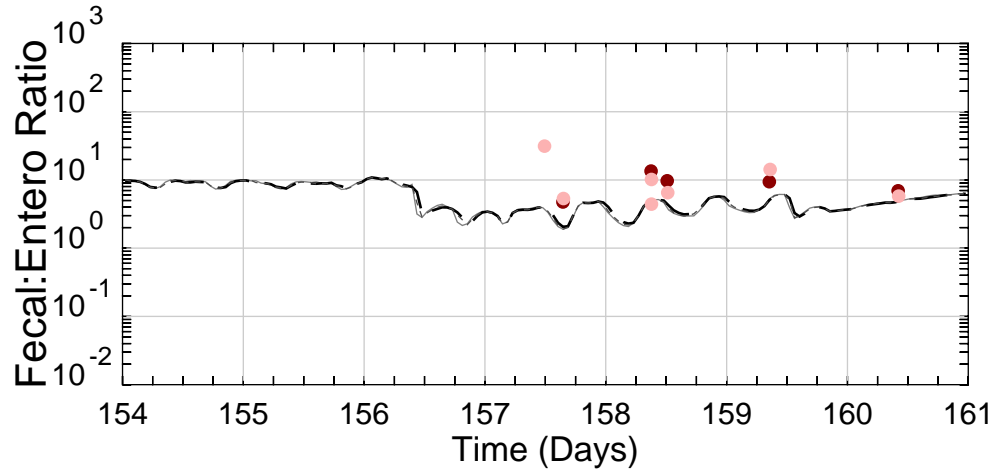
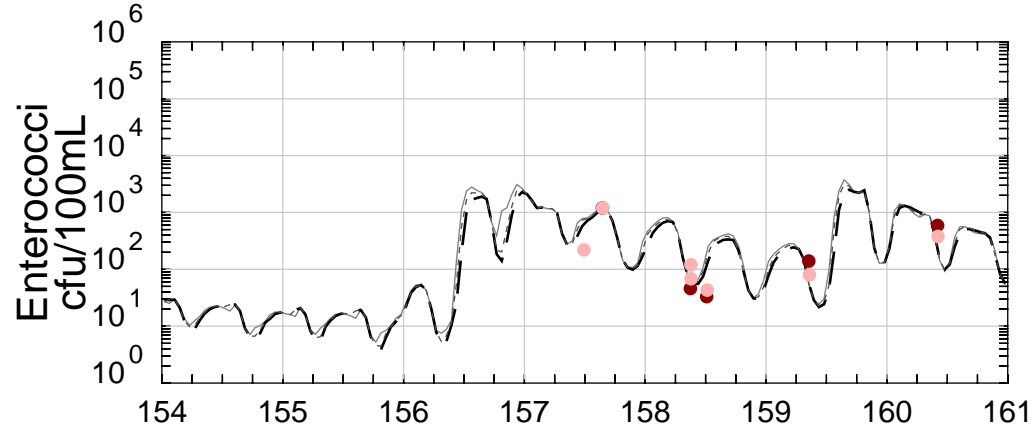
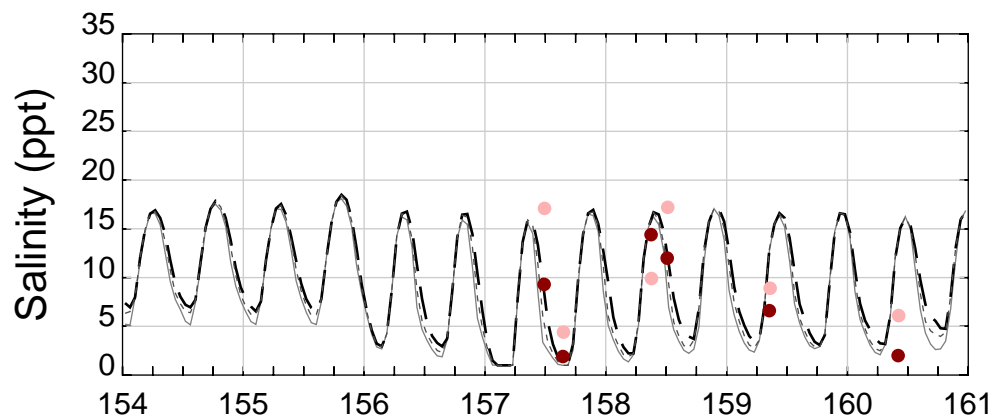
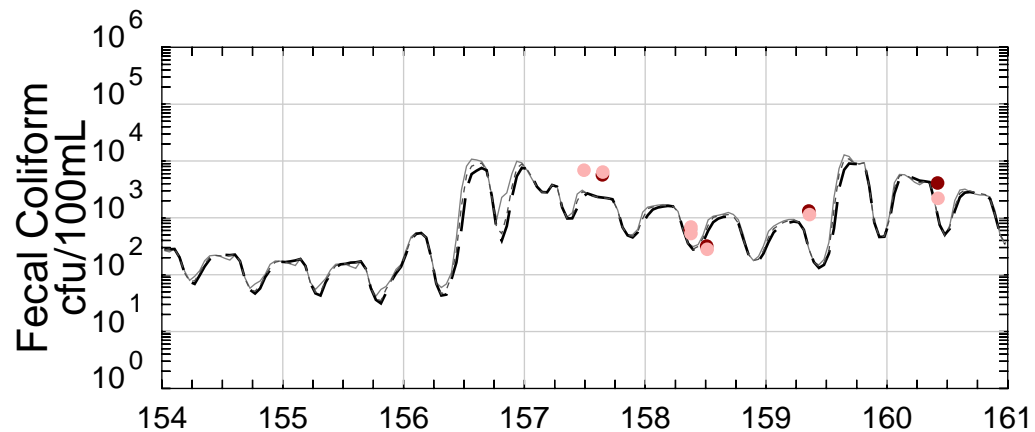
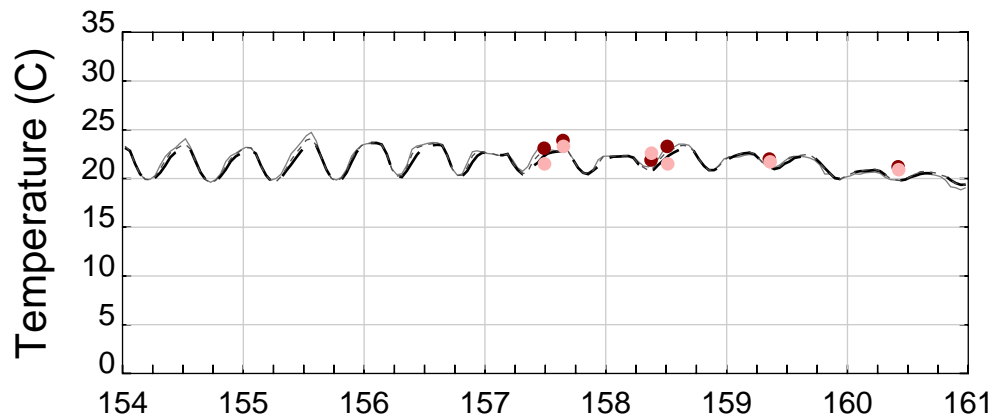
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- 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

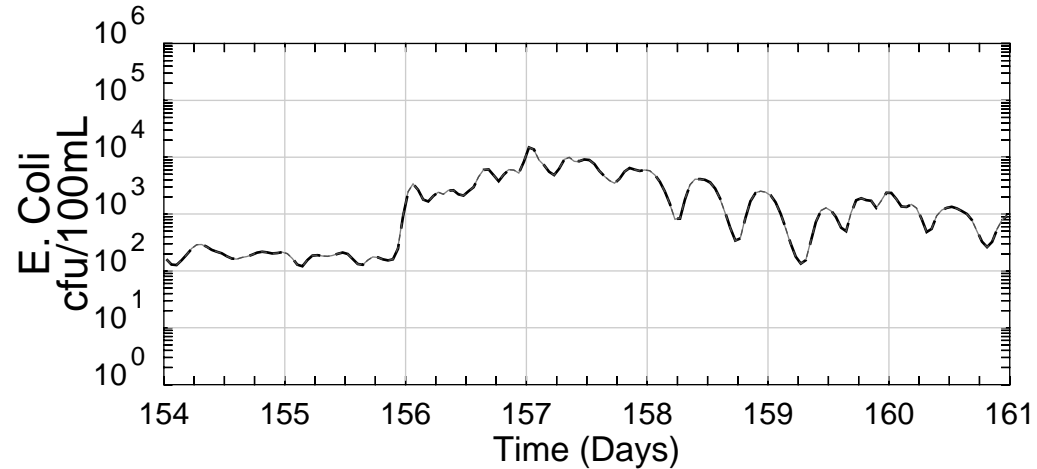
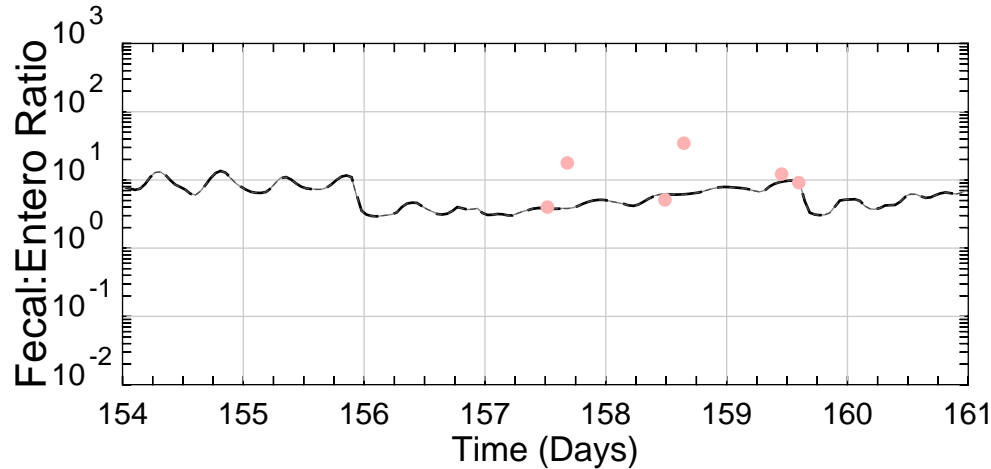
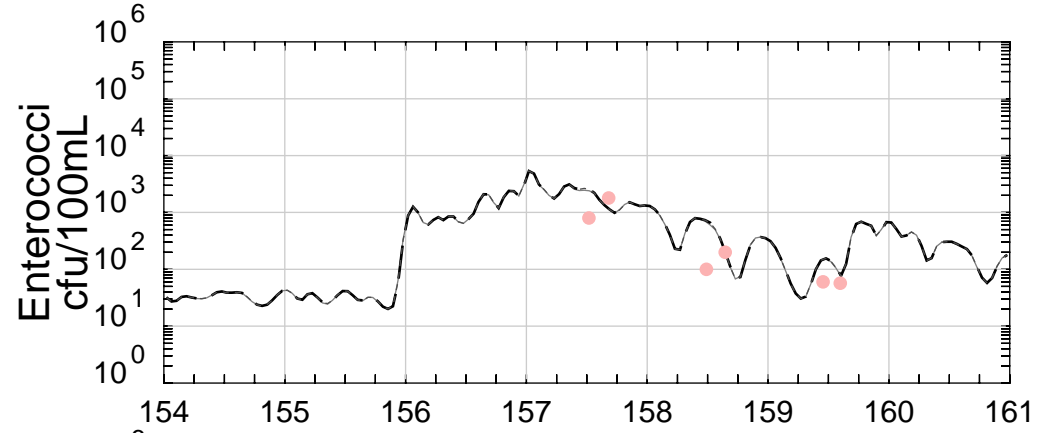
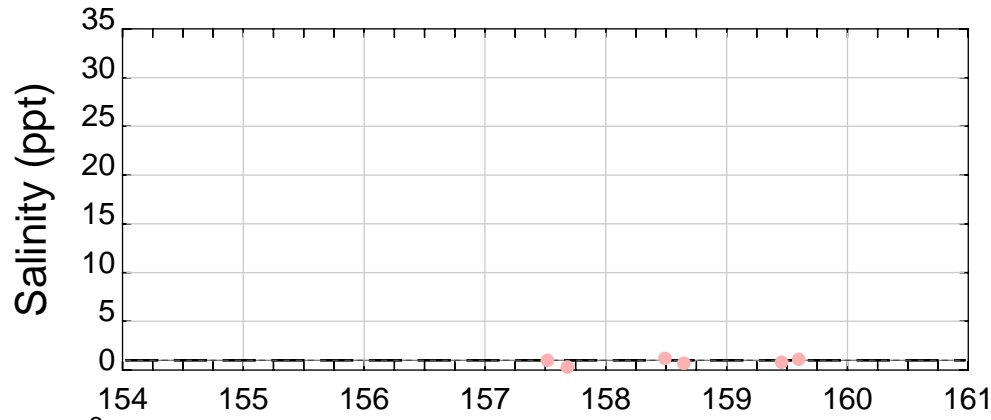
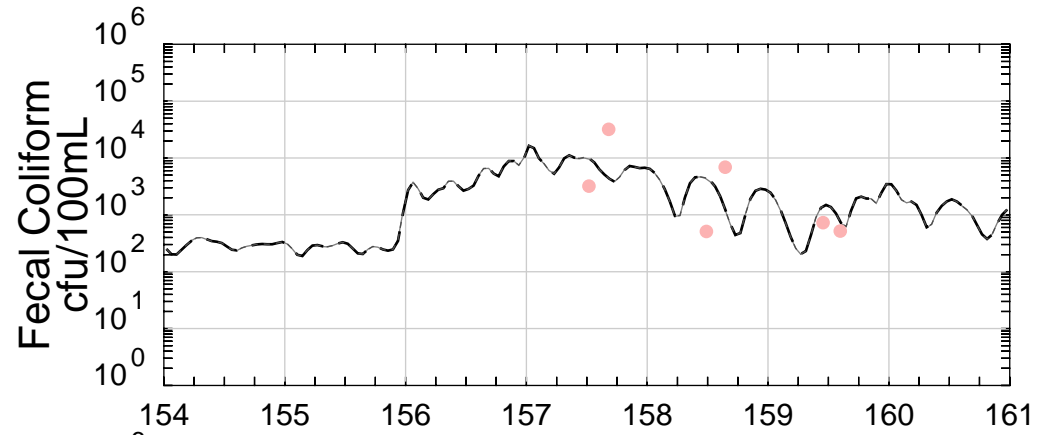
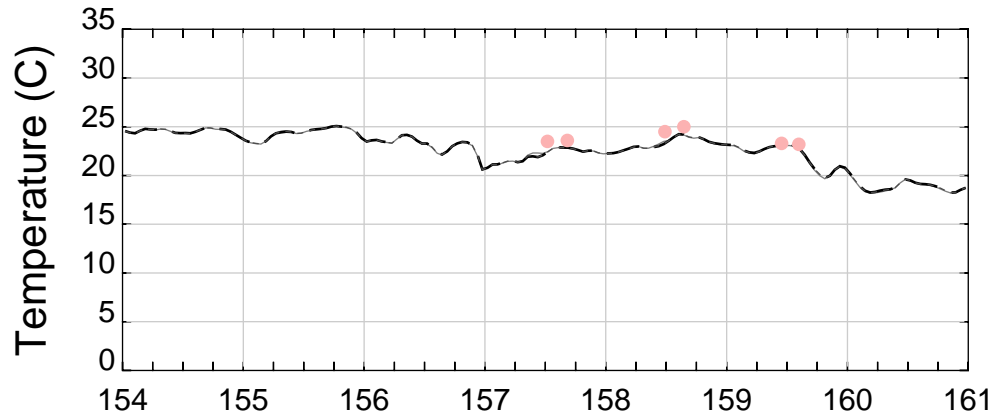
— Model at Surface  
 - - - Model at Mid-Depth  
 - - - Model at Bottom

● 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

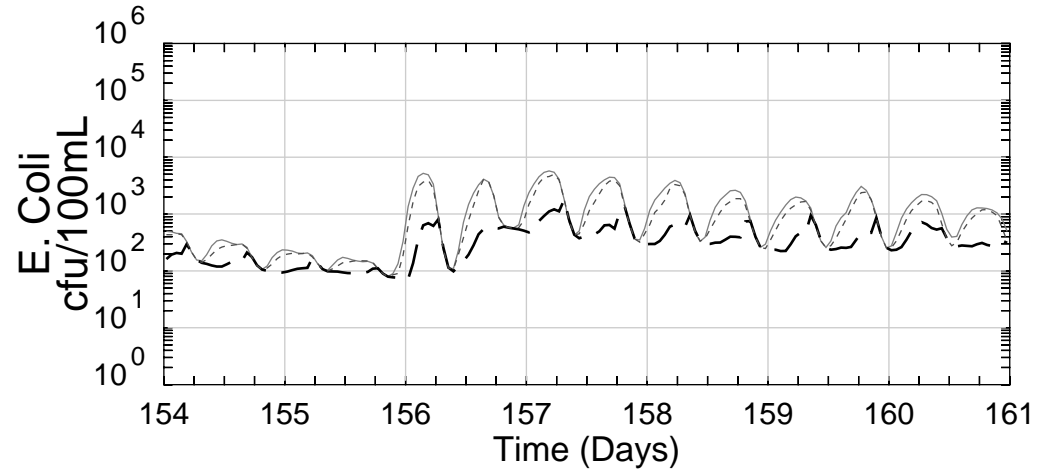
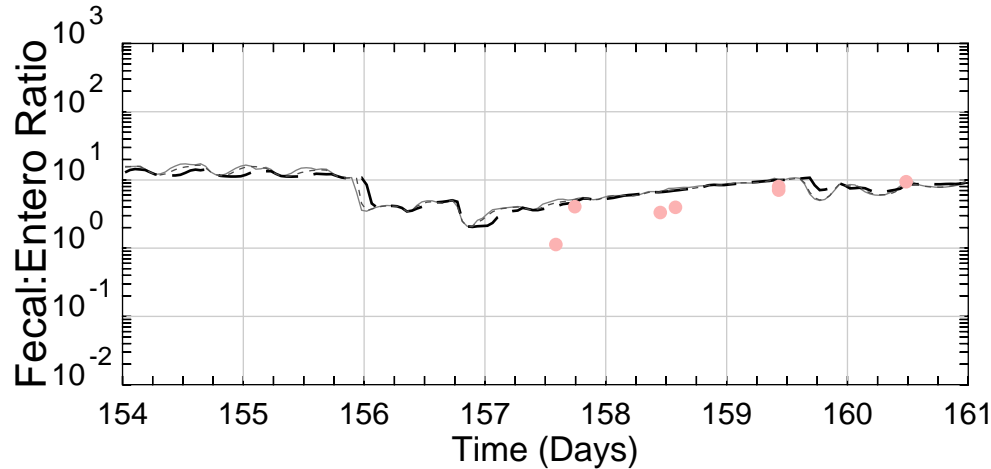
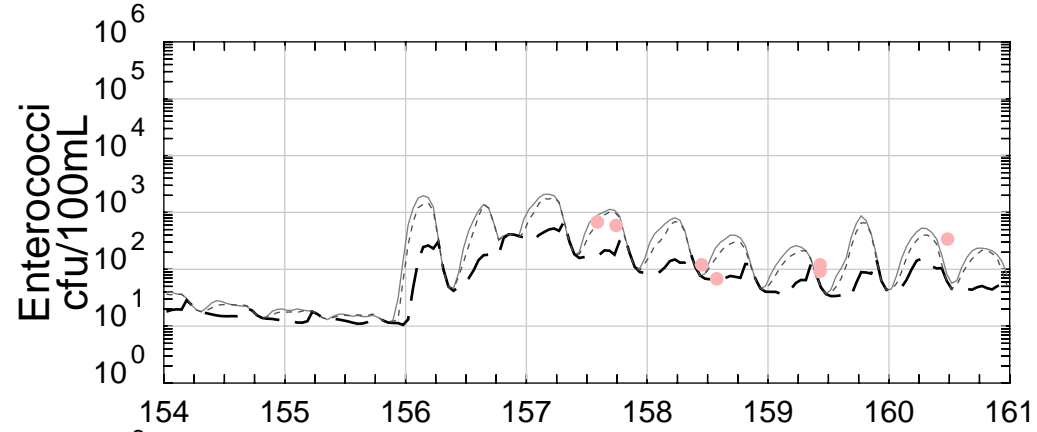
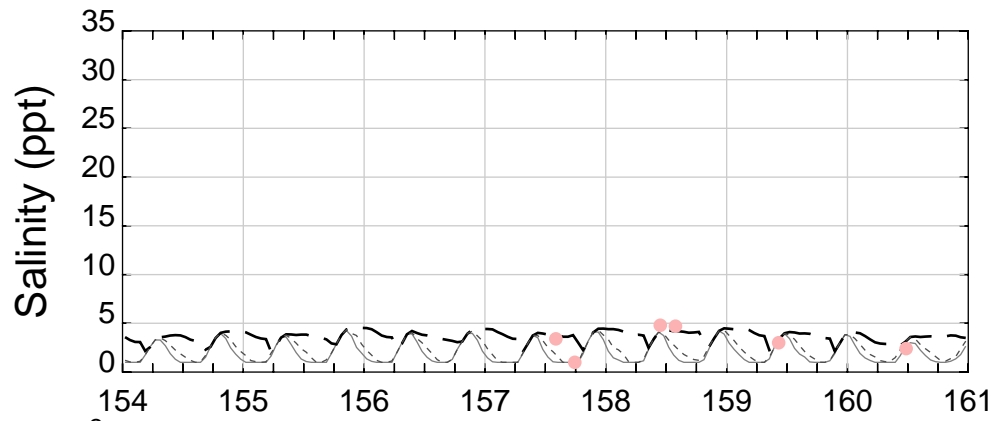
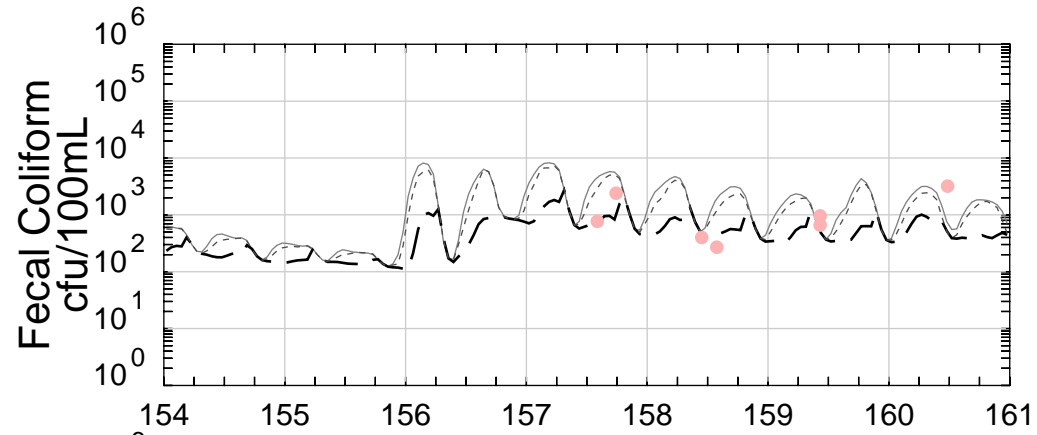
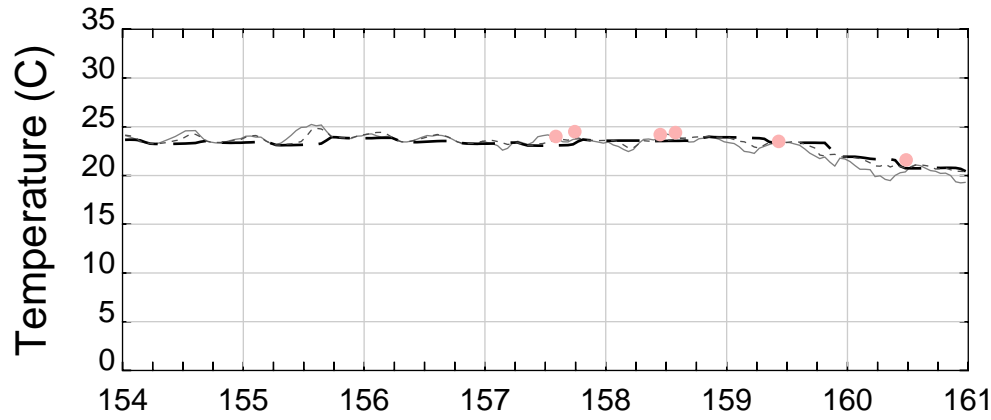
- Surface/Mid-depth HDR Data
- Surface/Mid/Bottom NJHDG Data



# Hackensack River & Tributaries Hackensack River

SE1

Station: B2 Event 1 (June 3-9)



Model = 2016  
Data = 2016

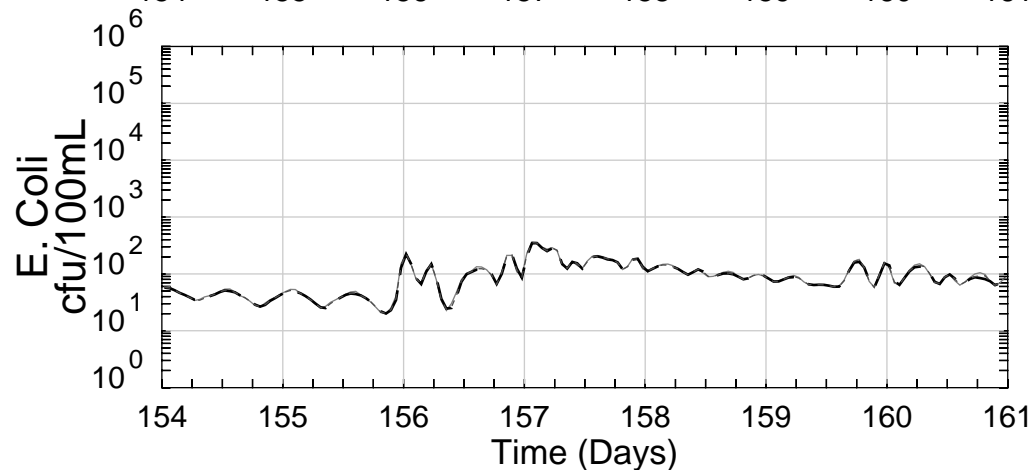
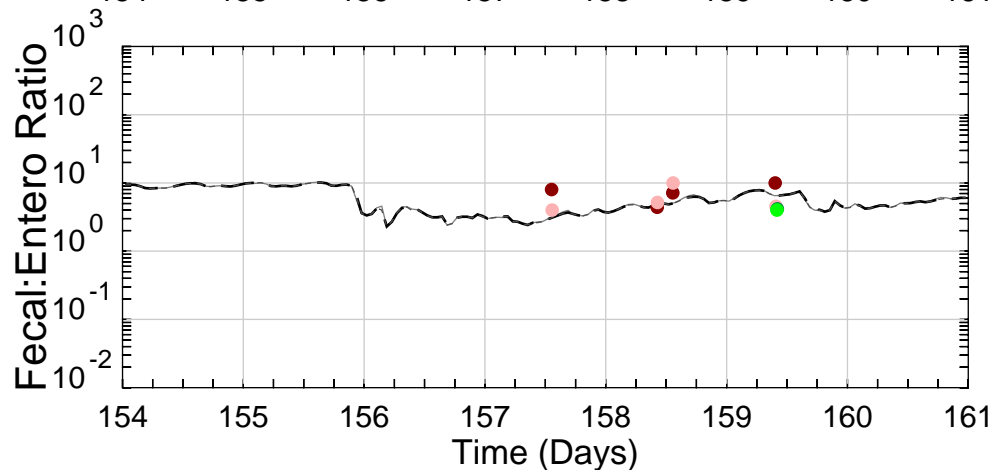
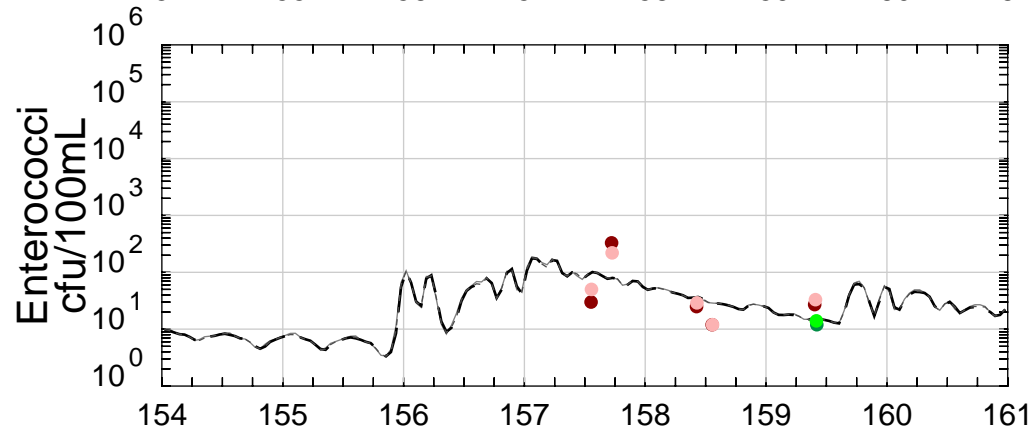
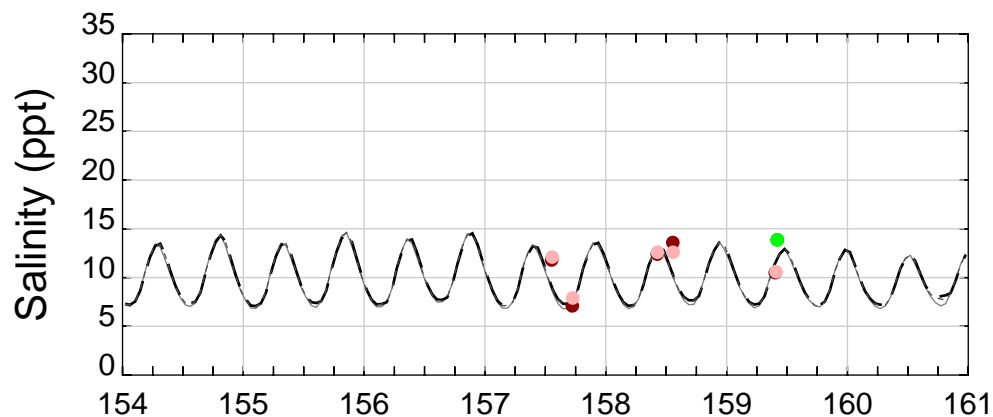
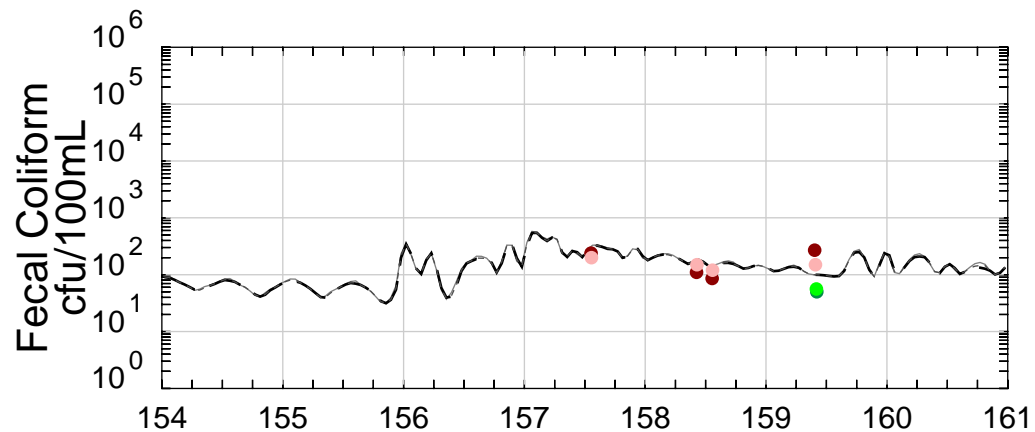
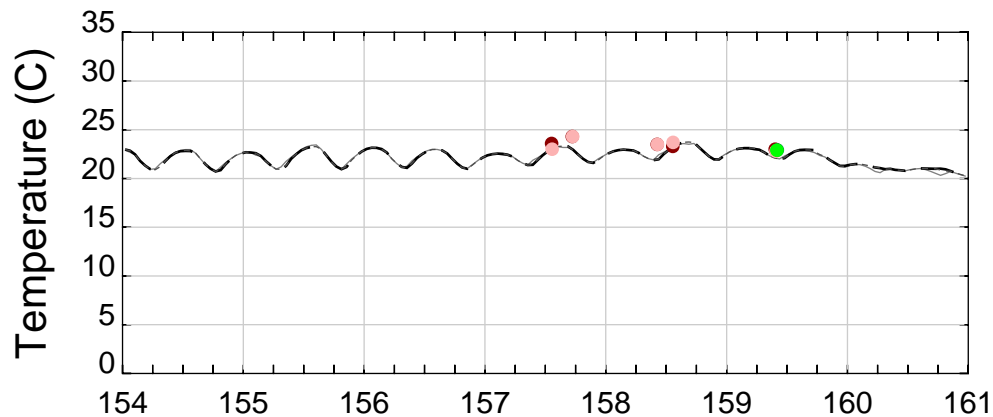
— Model at Surface  
 - - - Model at Mid-Depth  
 - - - Model at Bottom

● 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

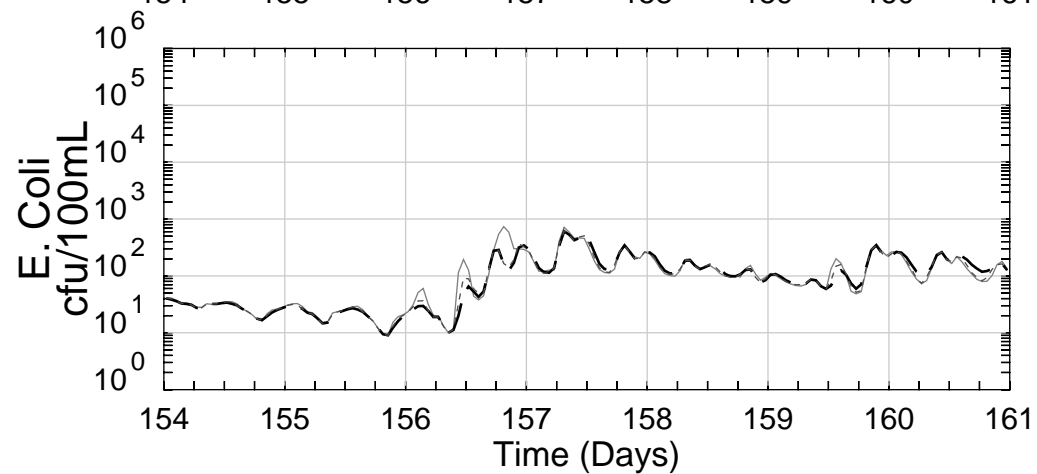
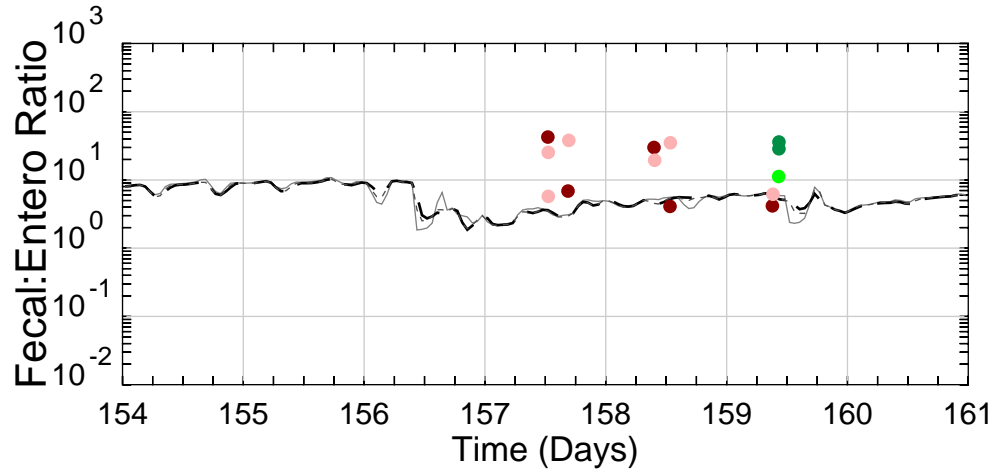
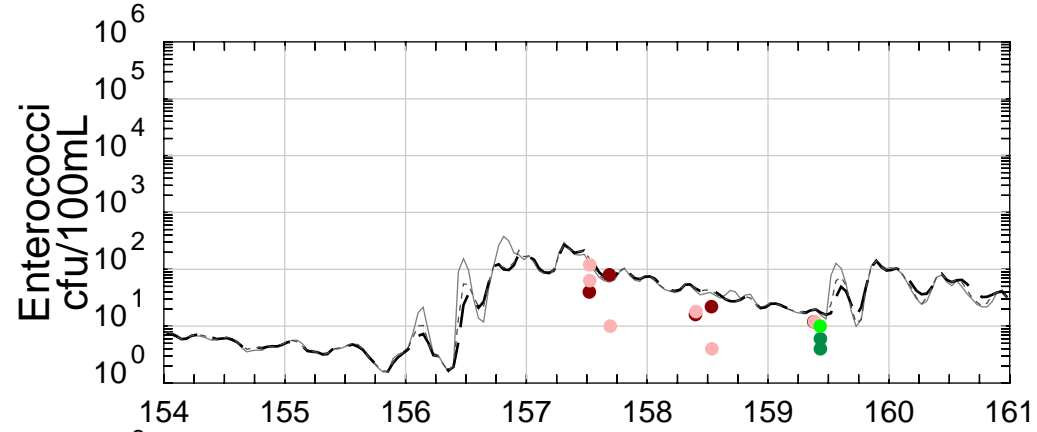
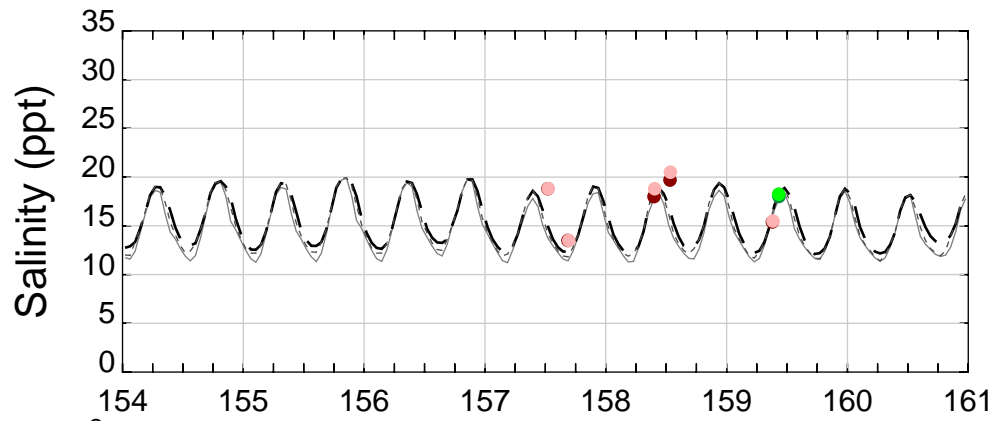
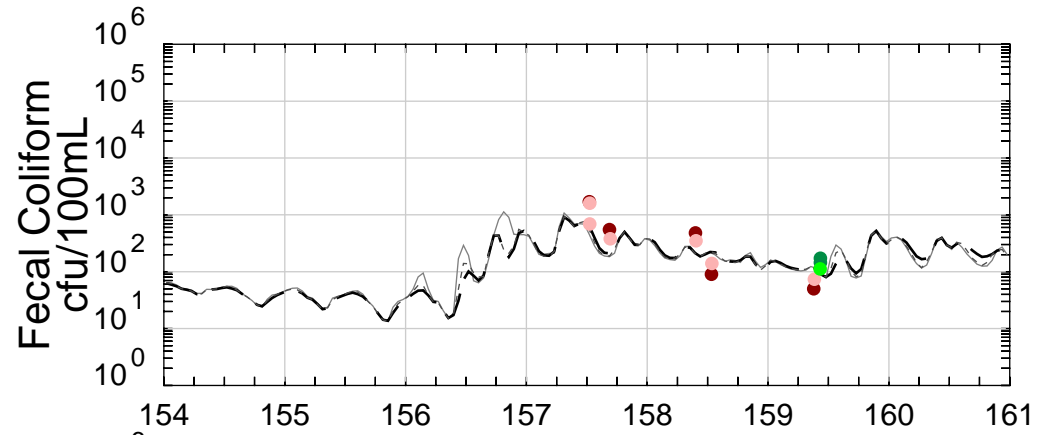
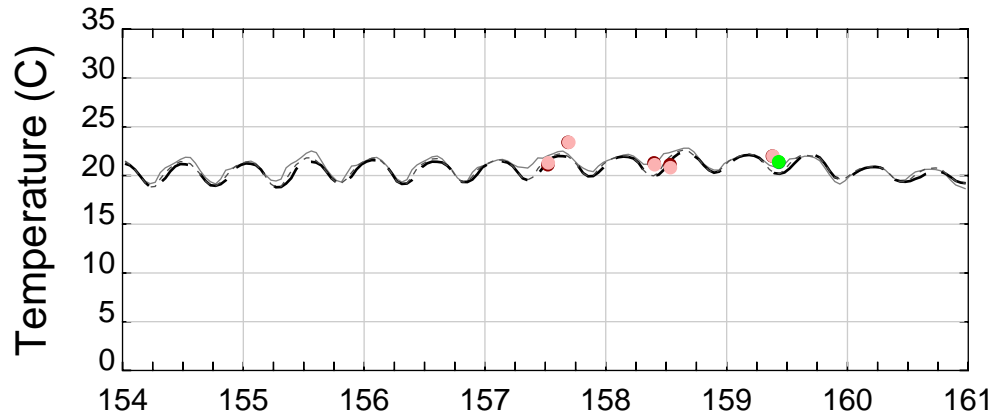
— Model at Surface  
 - - - Model at Mid-Depth  
 - - - Model at Bottom

● 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

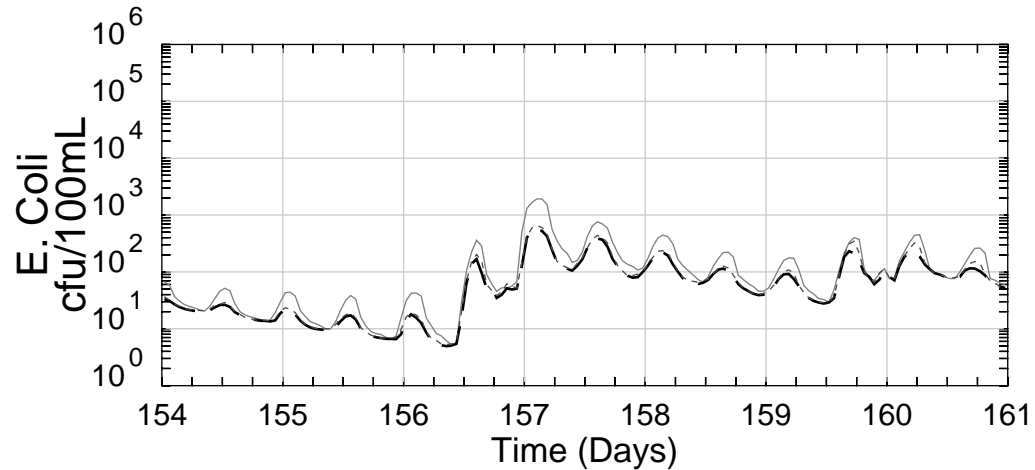
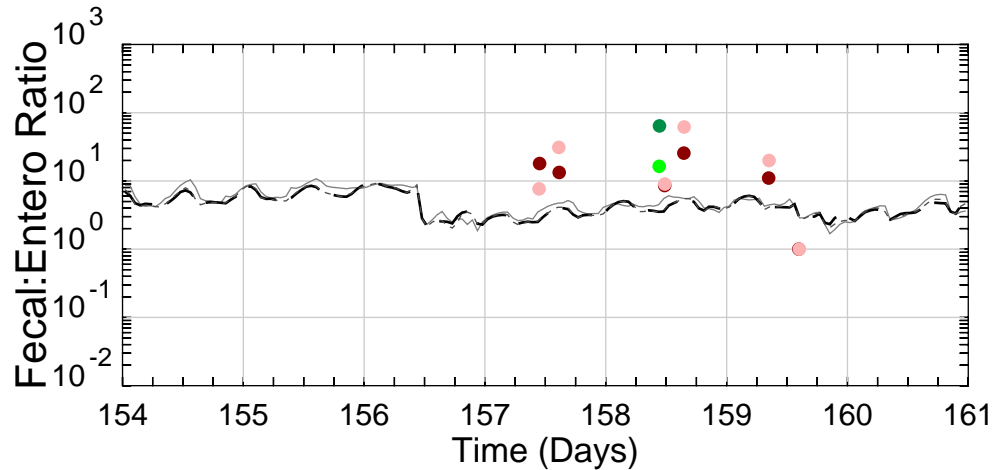
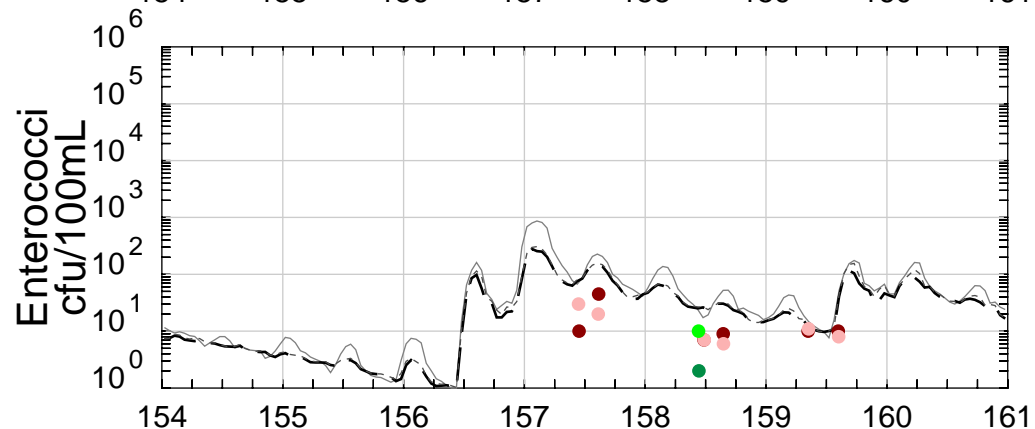
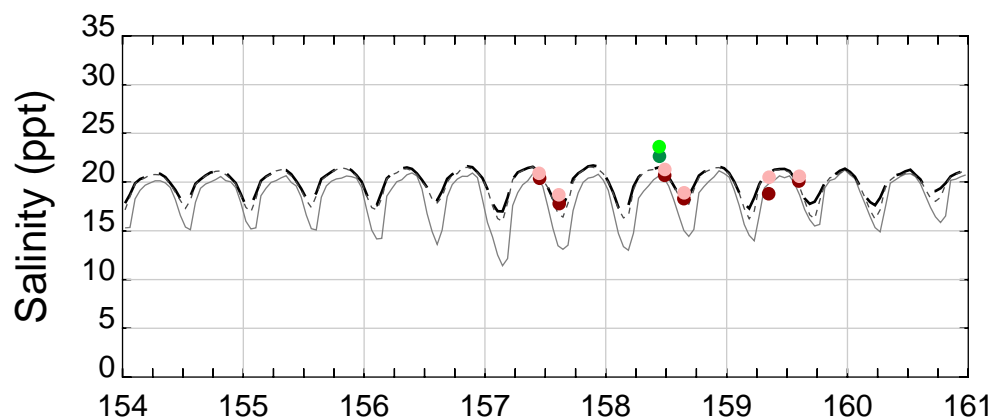
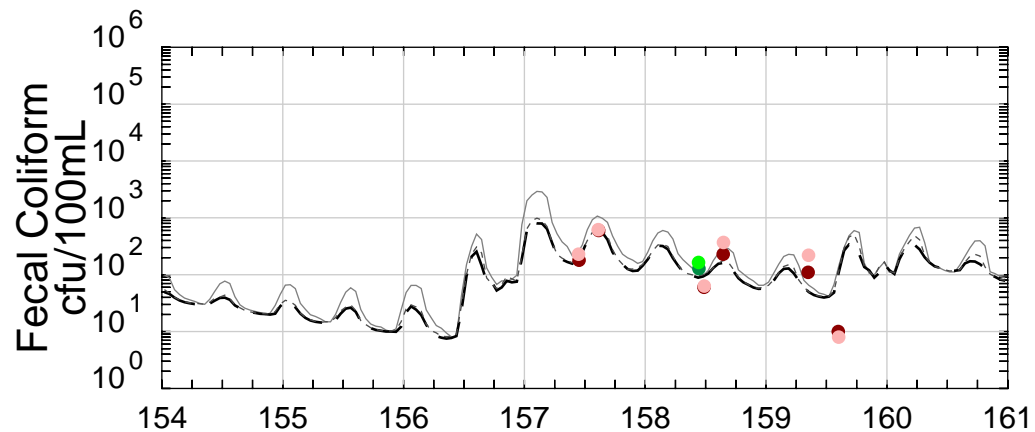
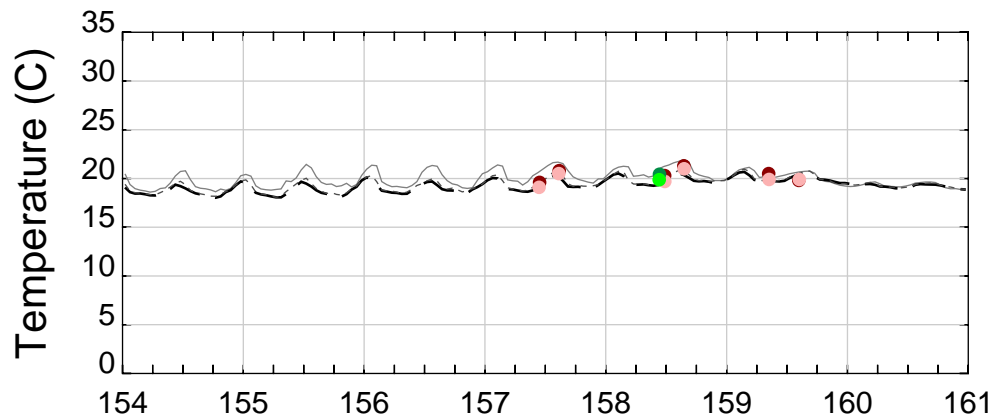
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom

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

# Newark Bay & Tributaries Newark Bay

SE3

Station: 17 Event 1 (June 3-9)

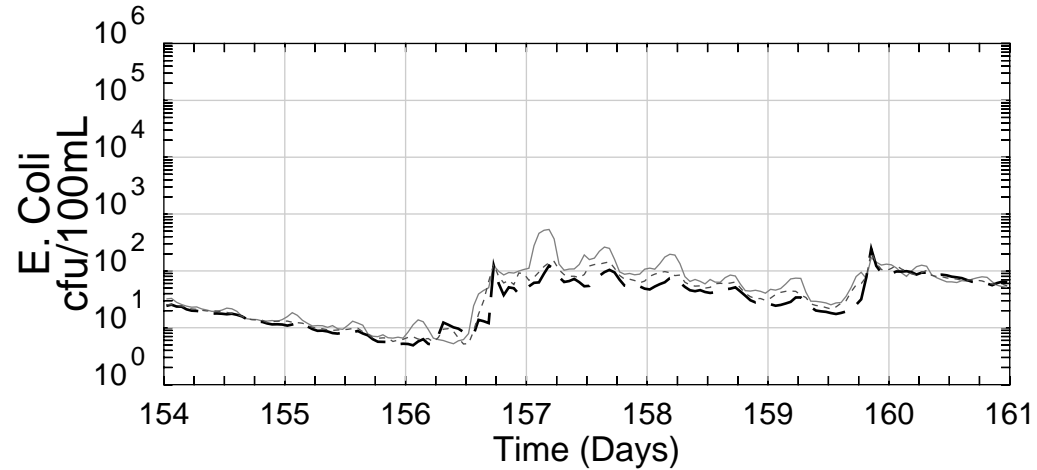
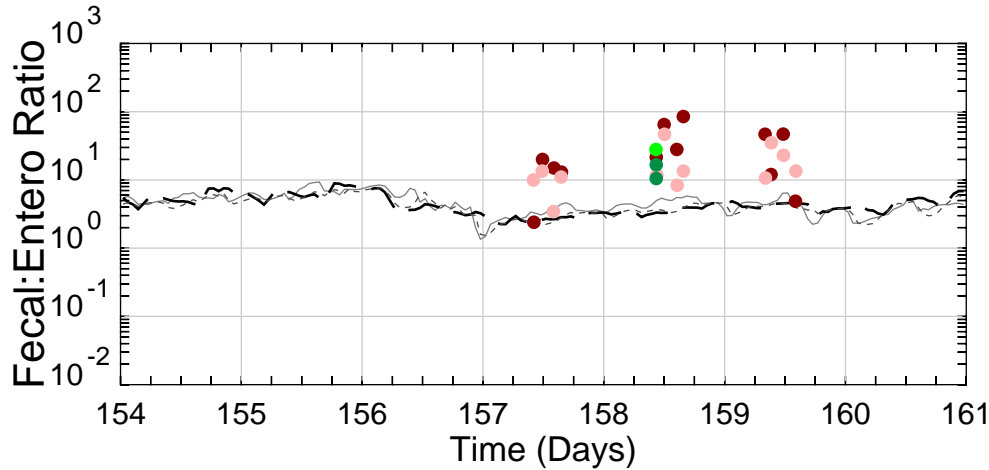
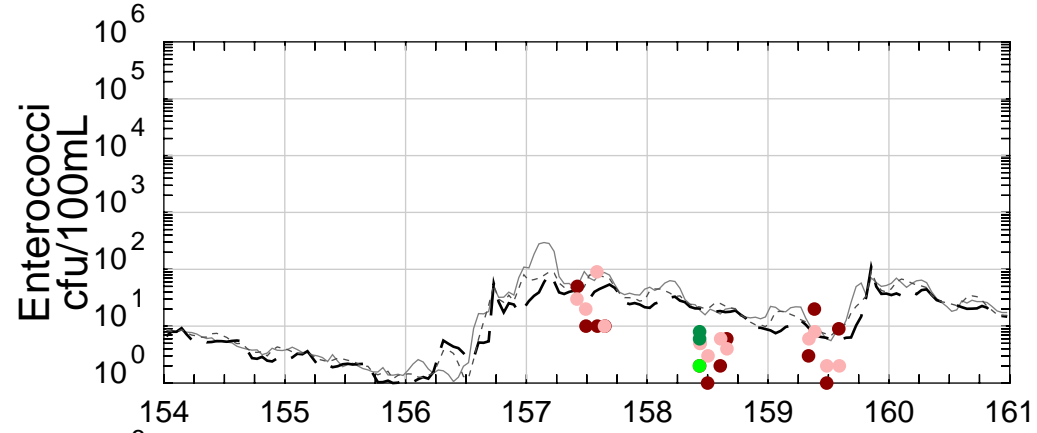
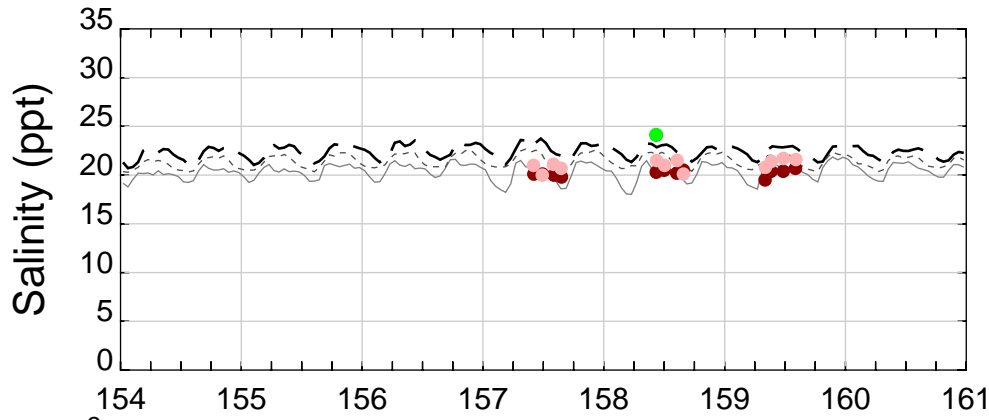
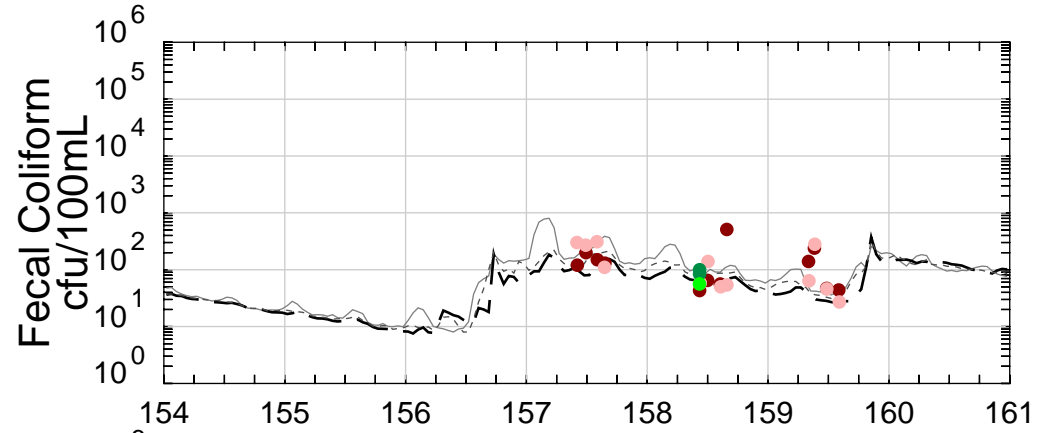
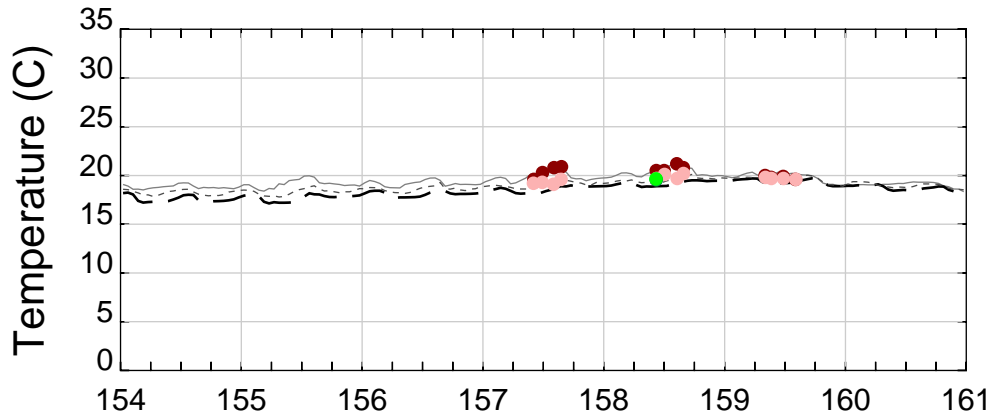


Model = 2016  
Data = 2016

— 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)

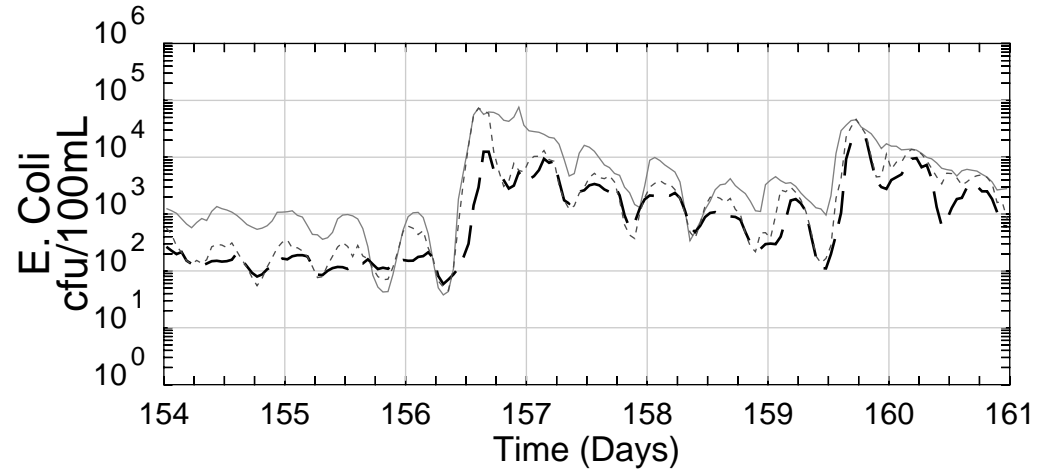
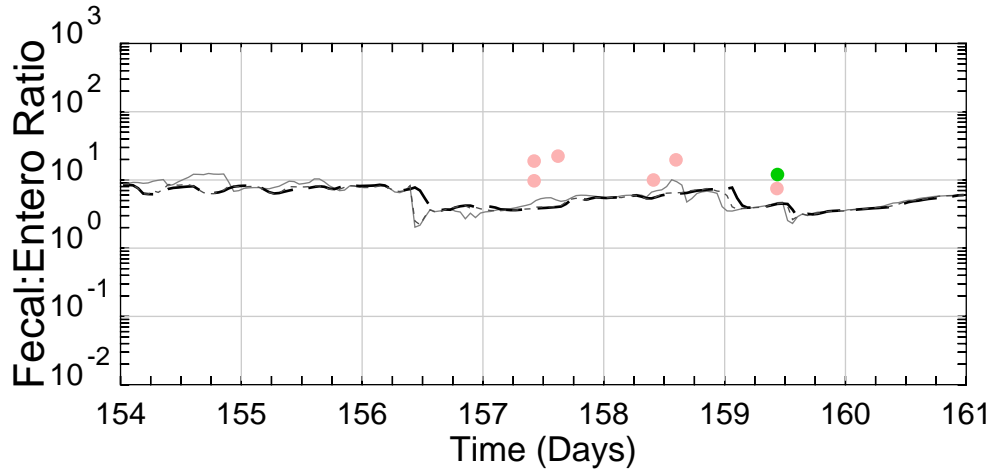
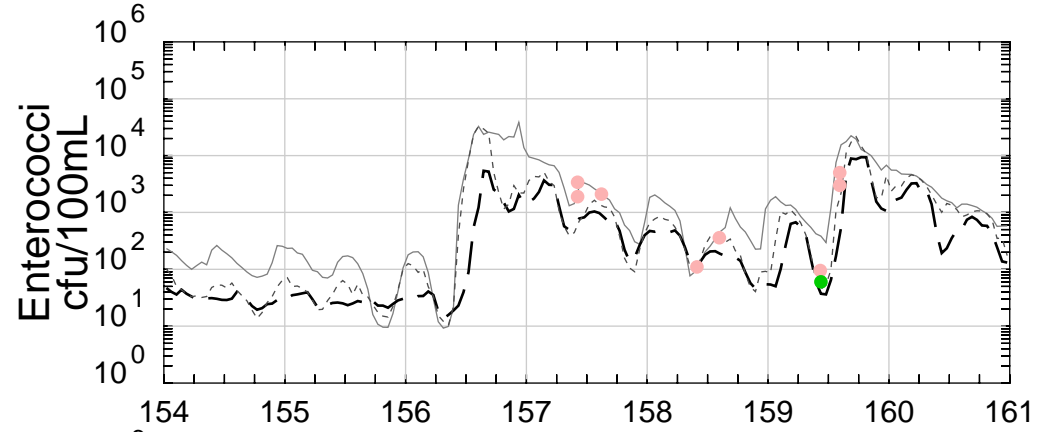
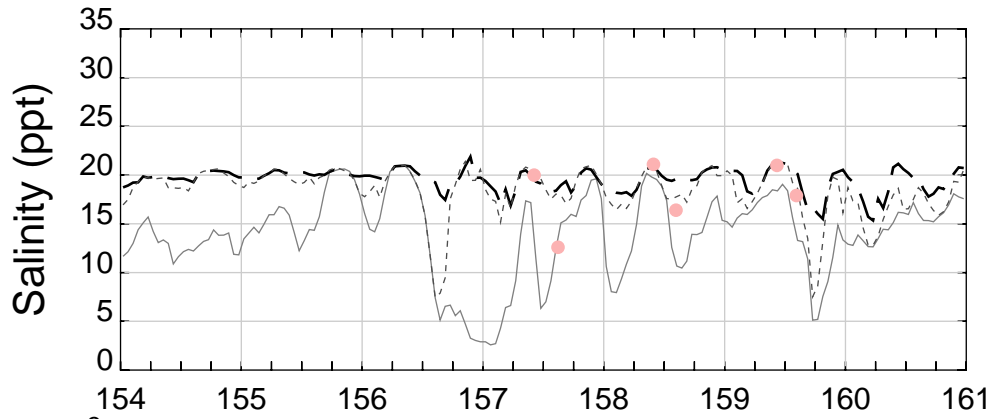
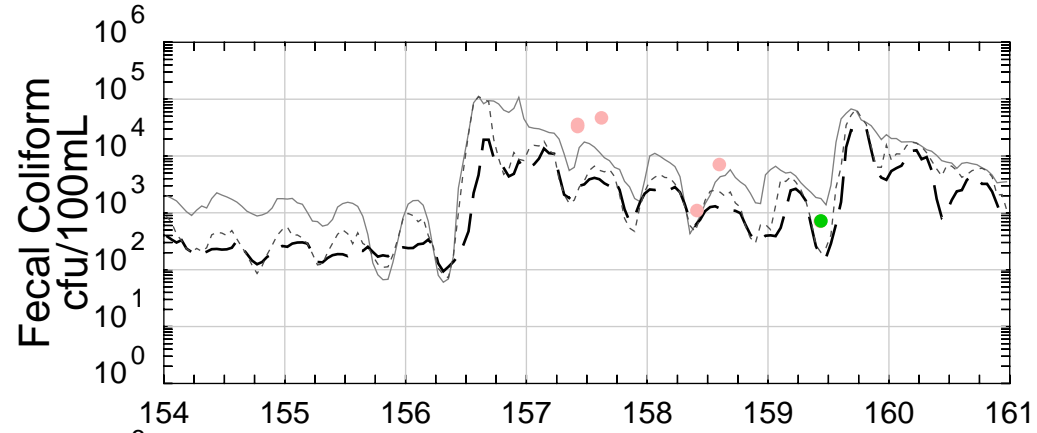
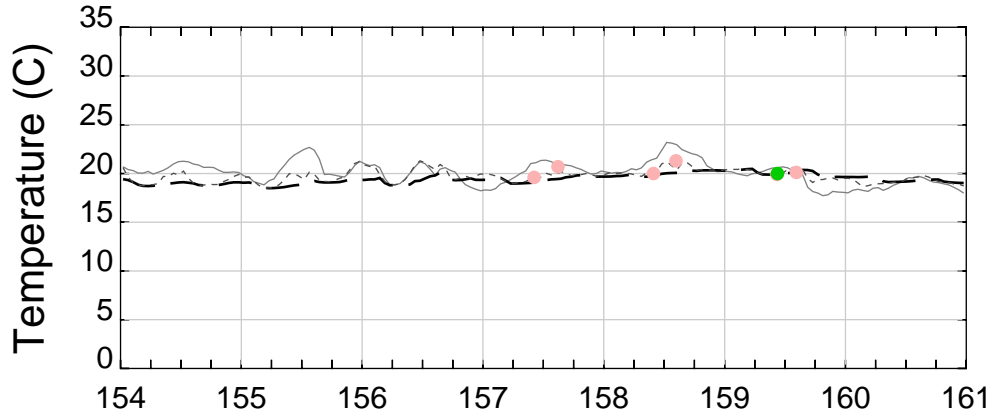


Model = 2016  
 Data = 2016

— 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

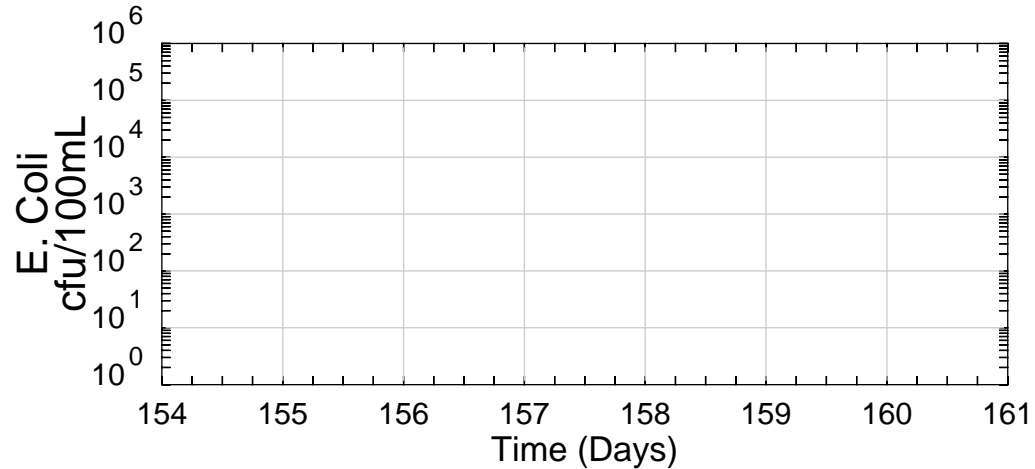
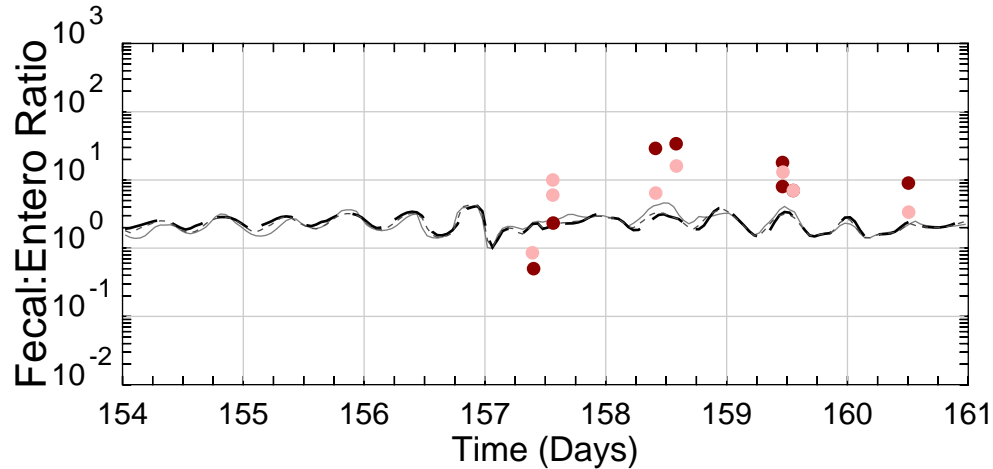
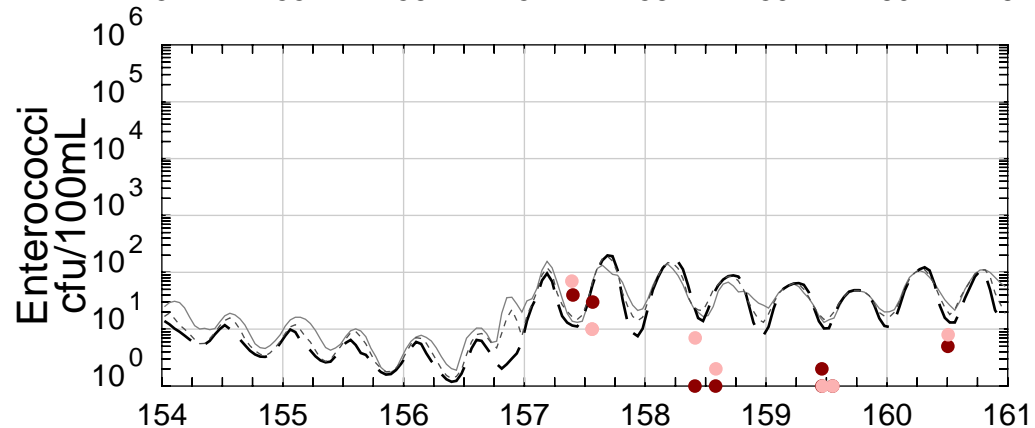
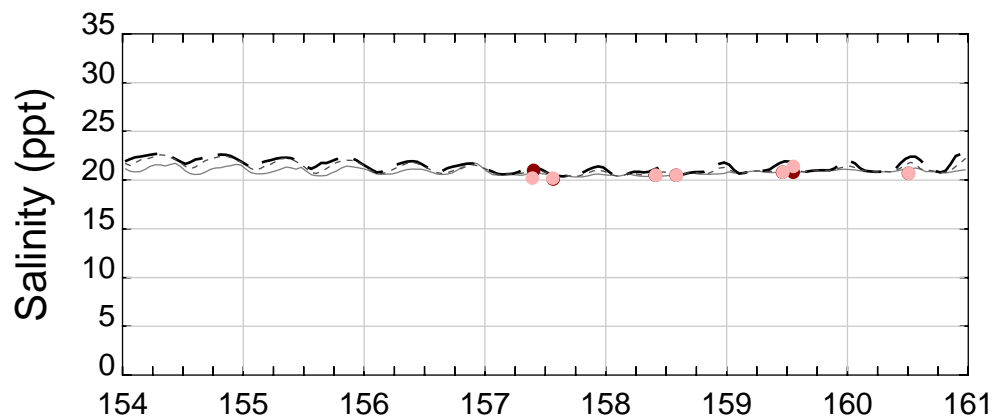
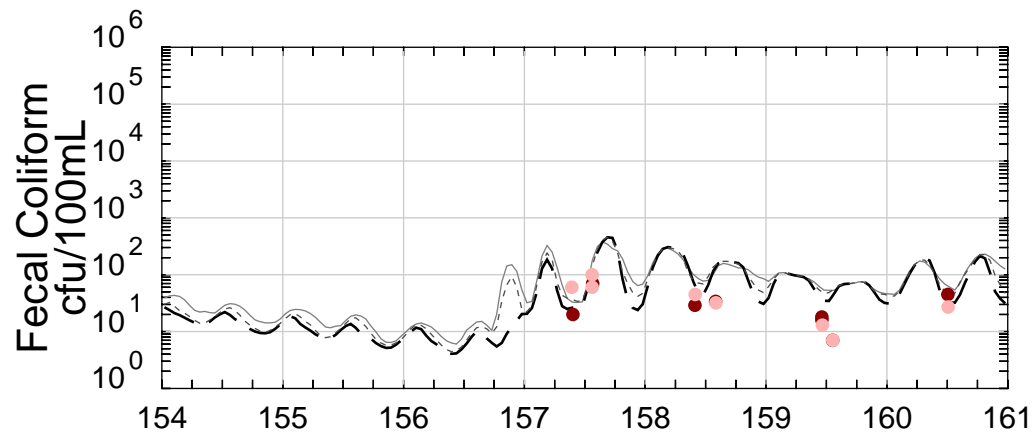
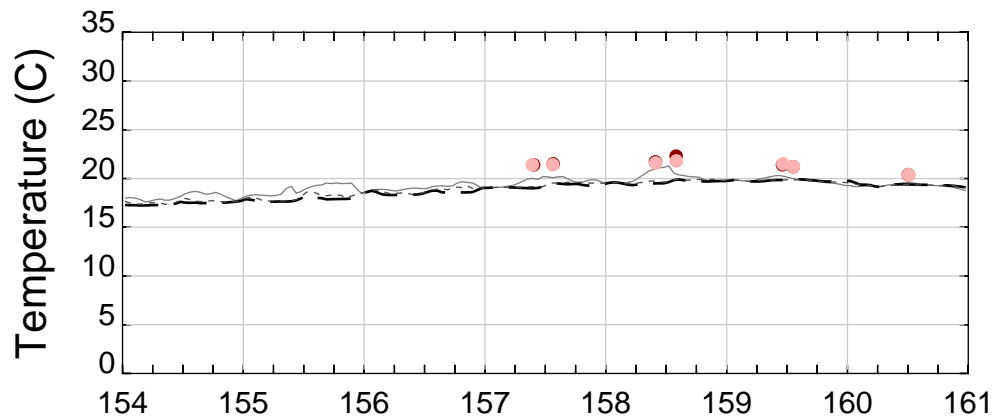
— Model at Surface  
 - - - Model at Mid-Depth  
 - . - Model at Bottom

● 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

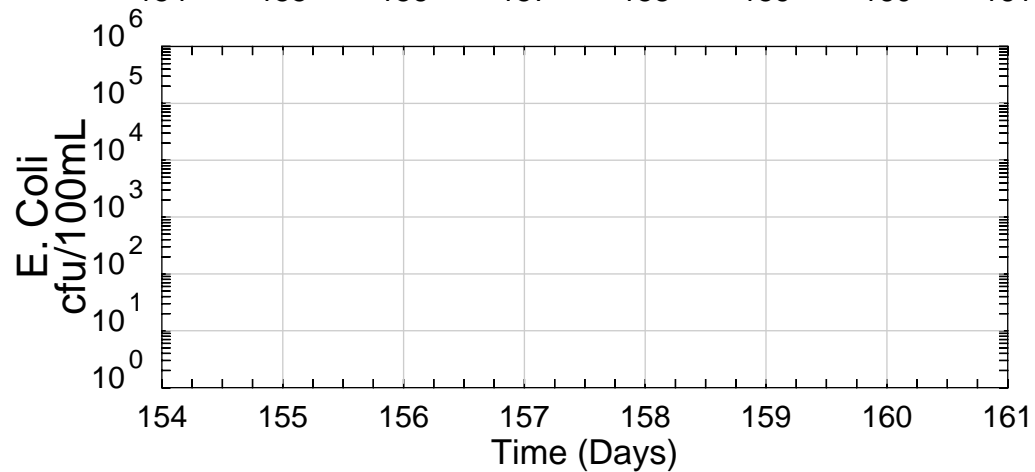
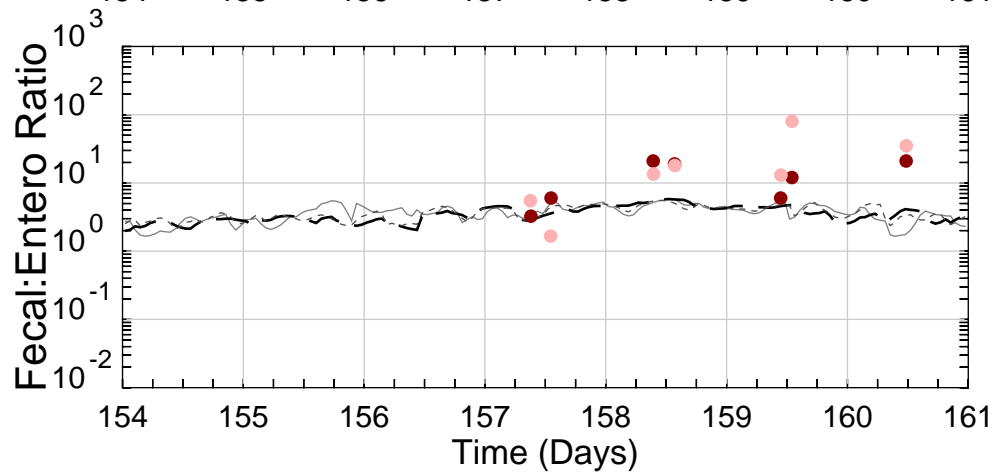
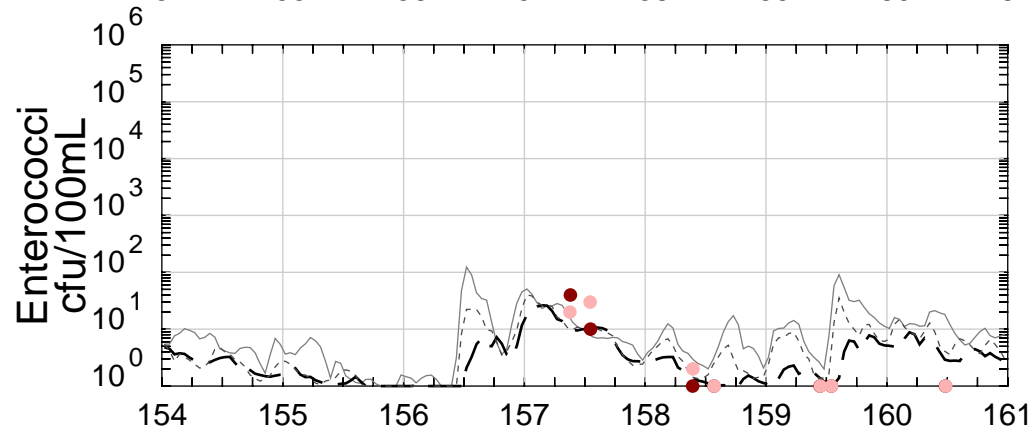
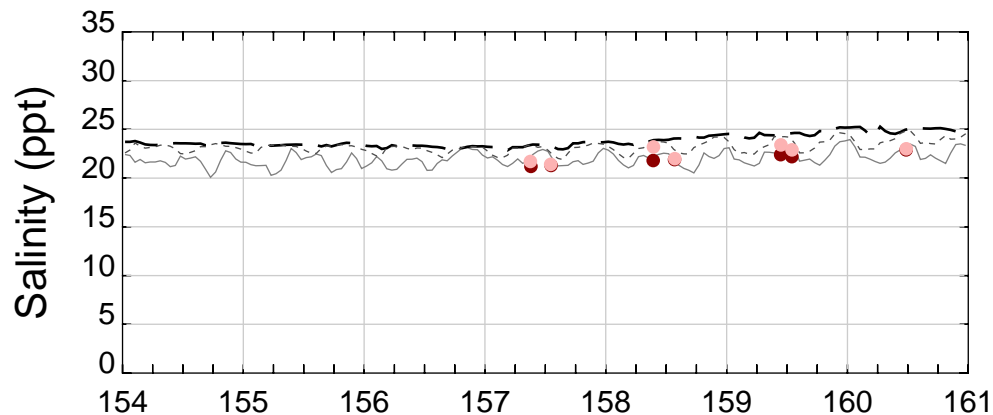
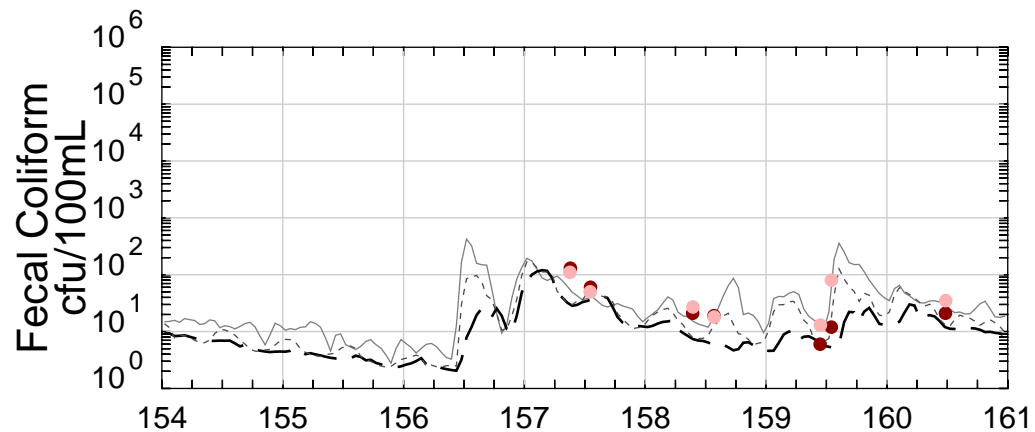
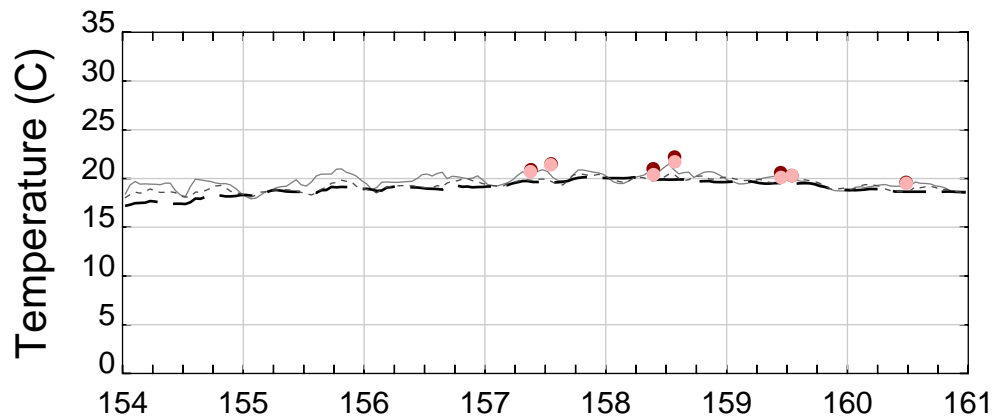
— Model at Surface  
 - - - Model at Mid-Depth  
 - · - Model at Bottom

● 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

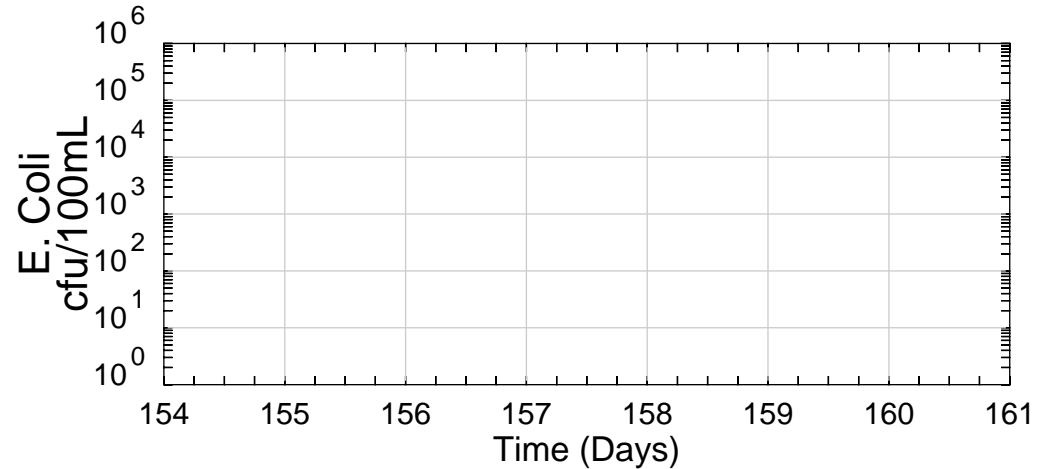
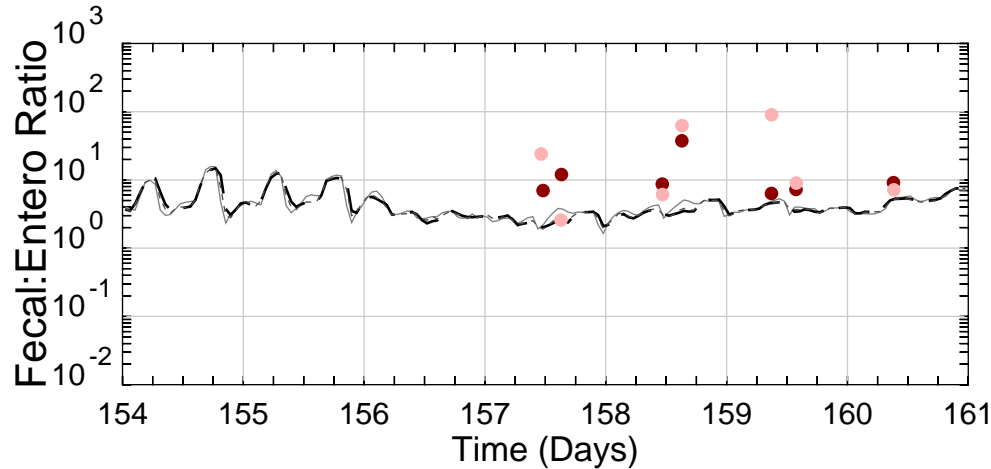
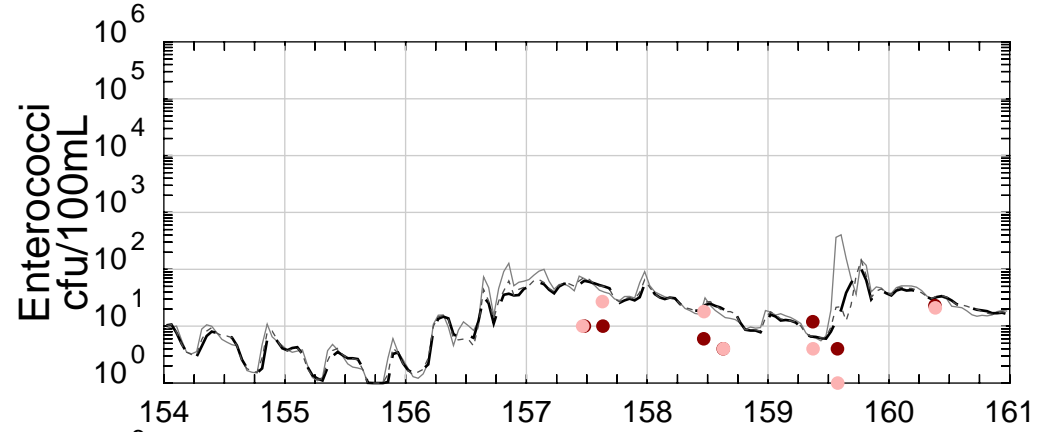
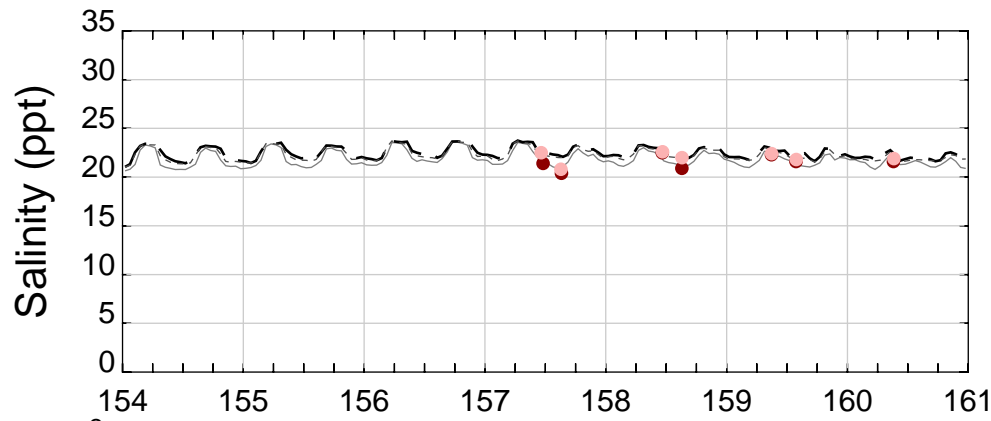
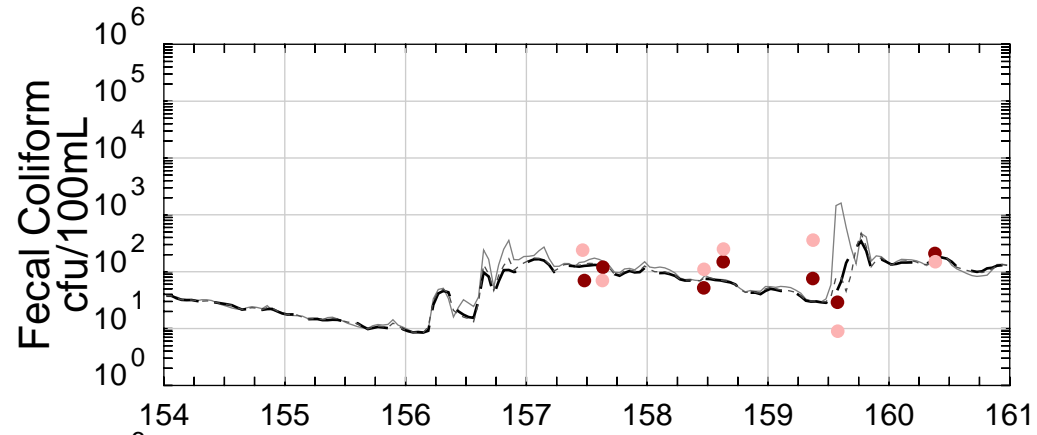
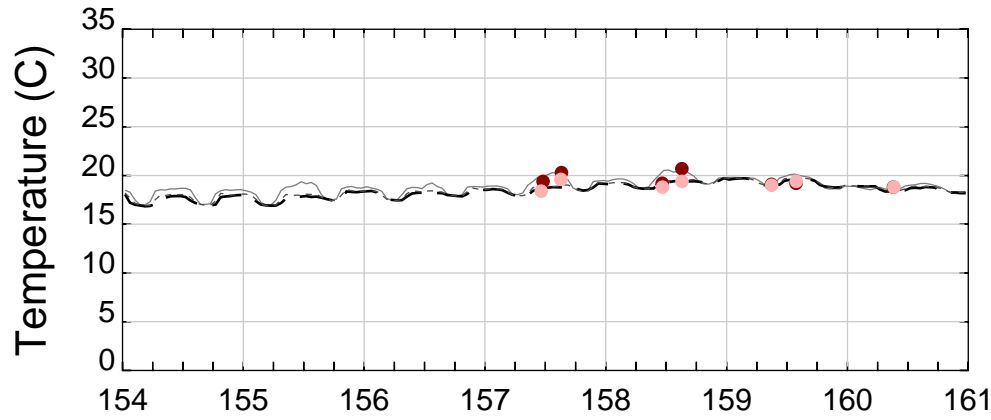
- ● Surface/Mid-depth HDR Data
- ● ● Surface/Mid/Bottom NJHDG Data



# Hudson River, Upper Bay Kill Van Kull

SE3

Station: B12 Event 1 (June 3-9)



Model = 2016  
Data = 2016

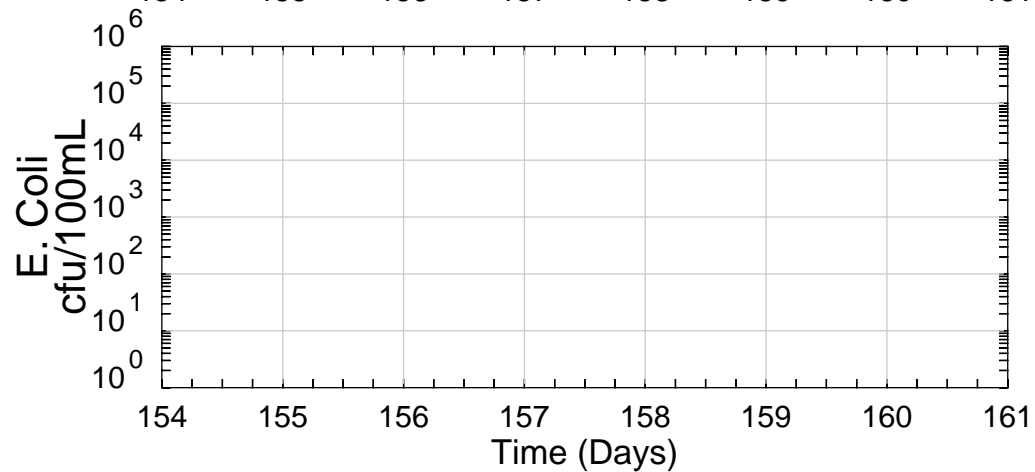
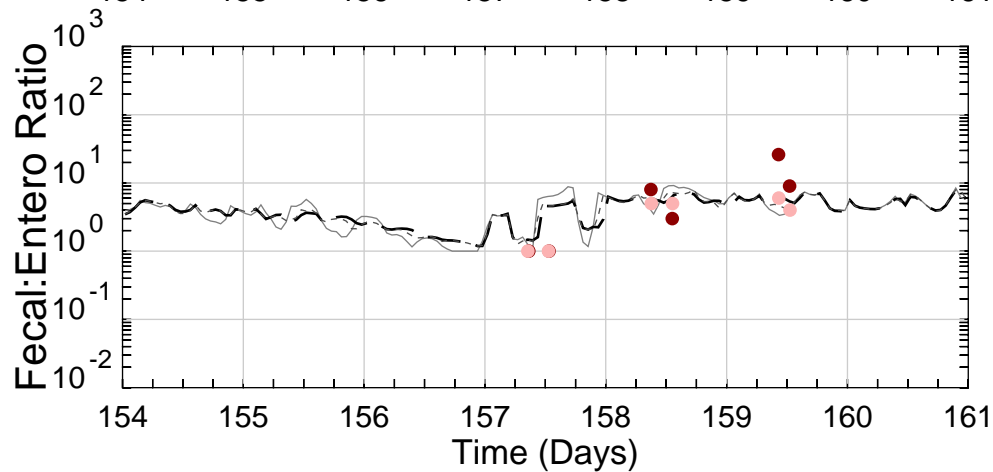
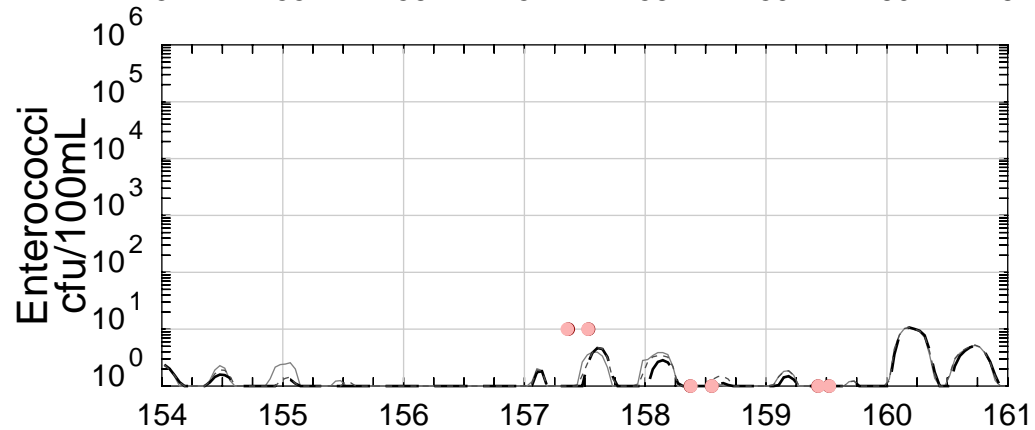
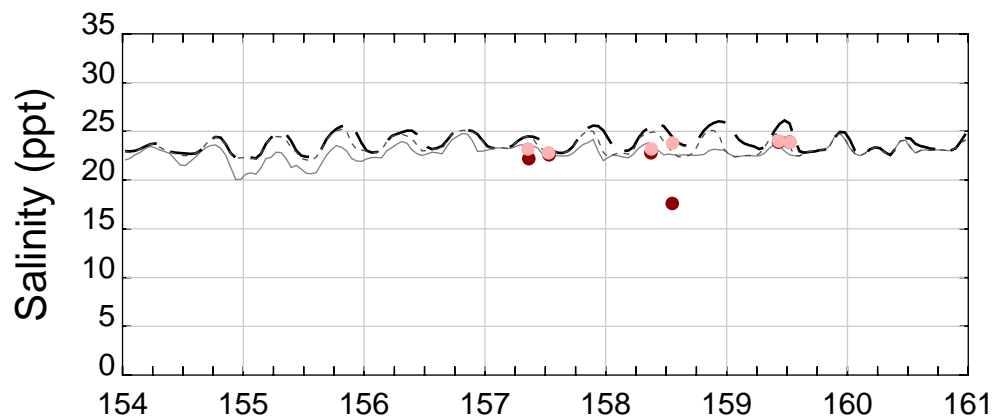
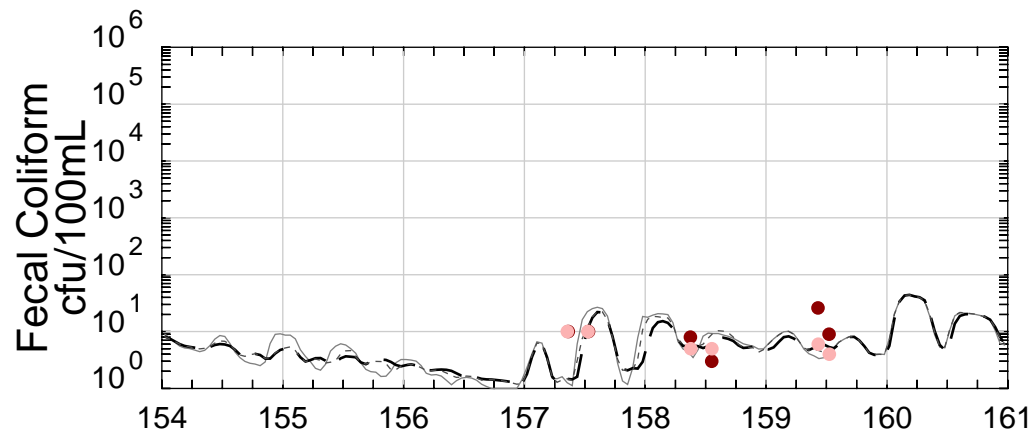
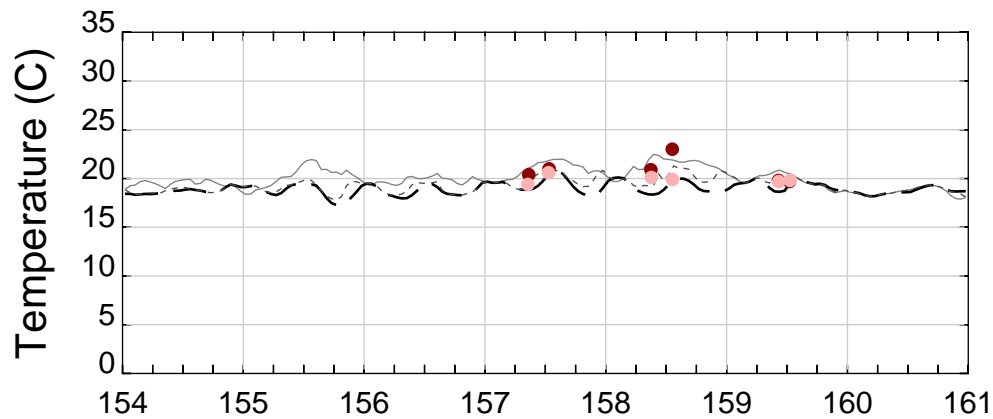
- Model at Surface
- - - Model at Mid-Depth
- - - Model at Bottom

- ● 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

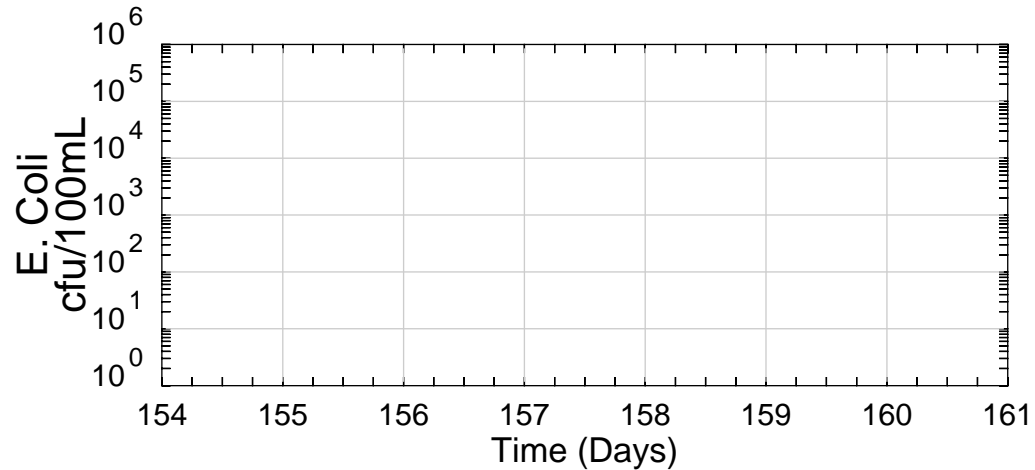
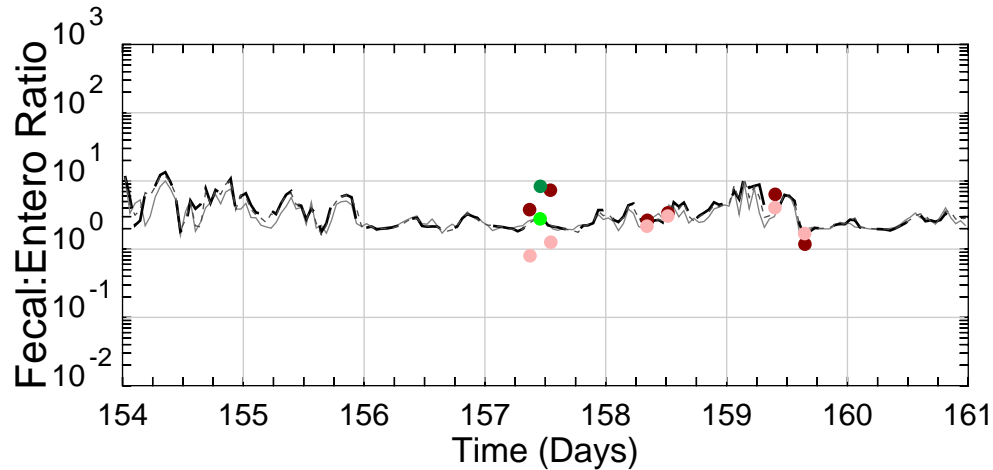
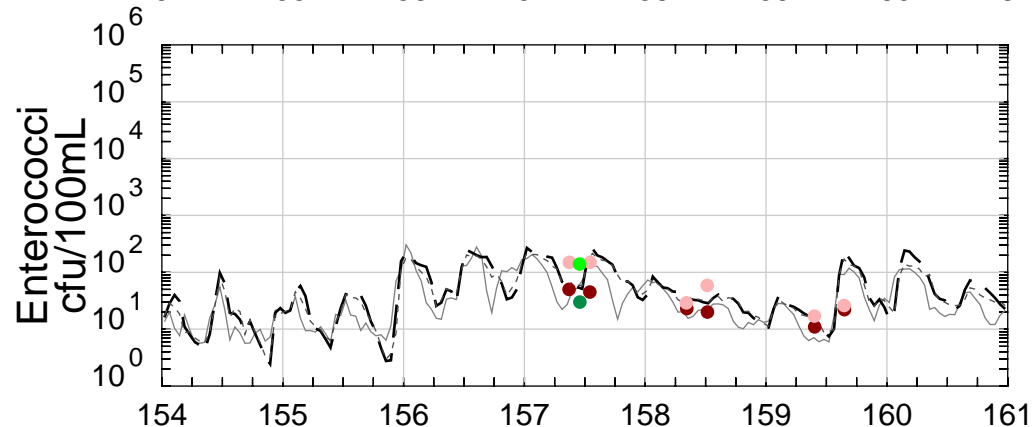
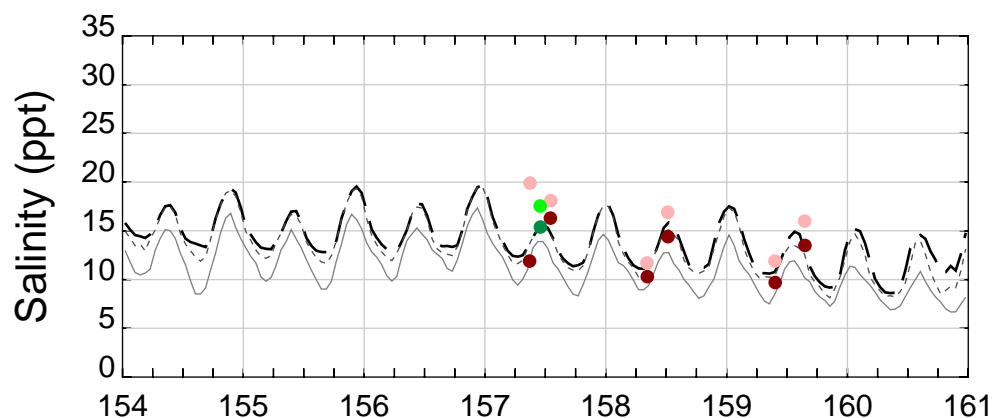
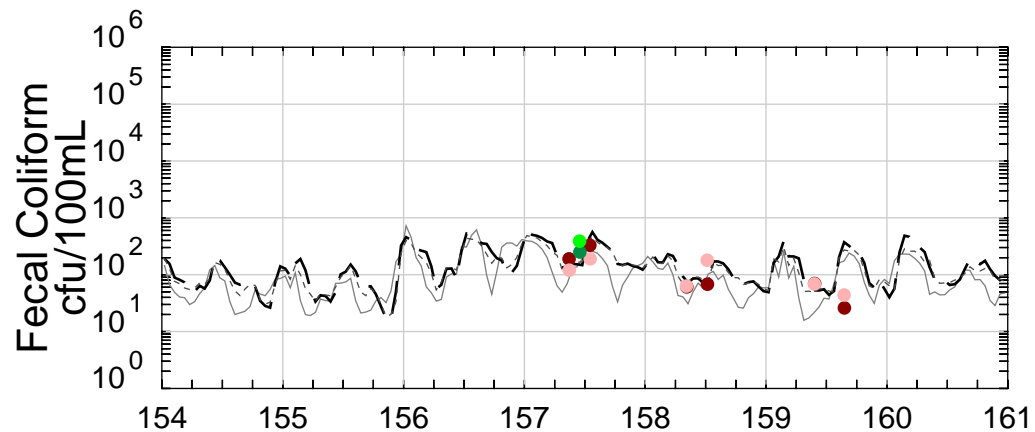
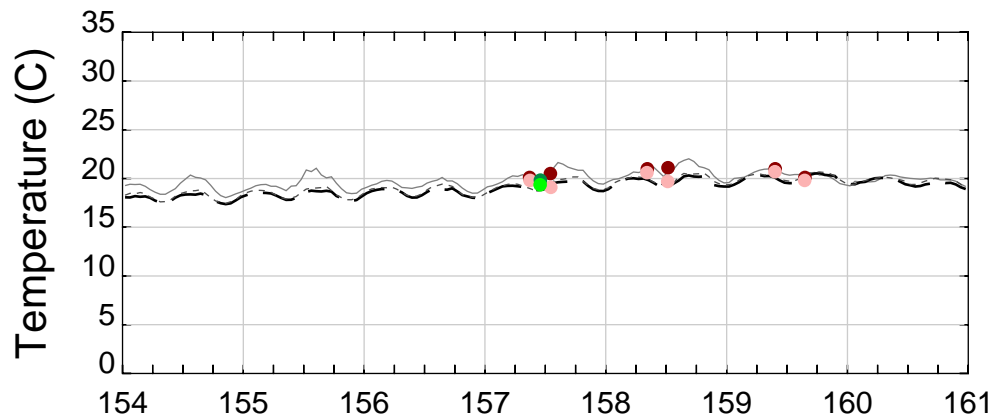
— Model at Surface  
 - - - Model at Mid-Depth  
 - - - Model at Bottom

● 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

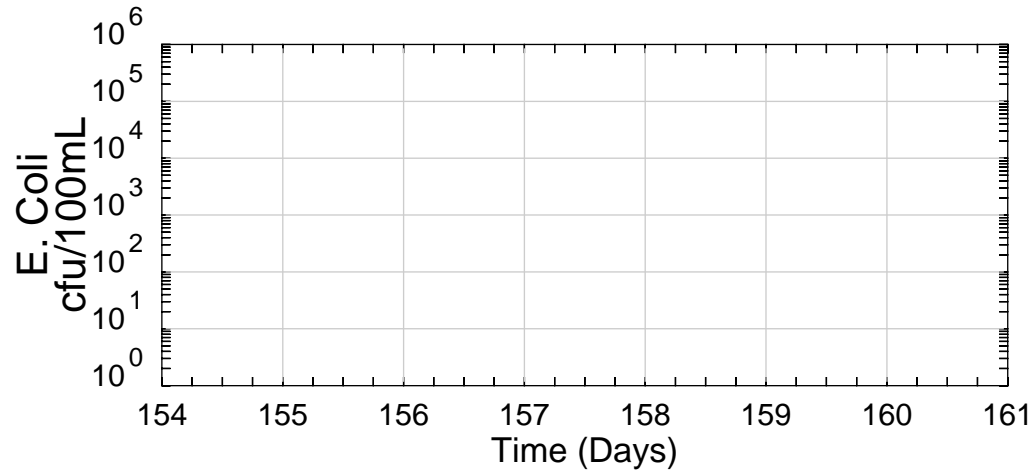
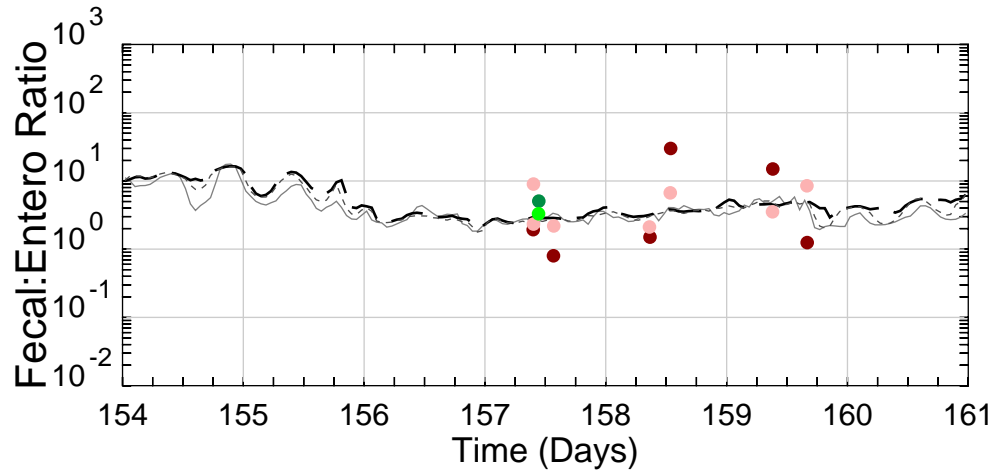
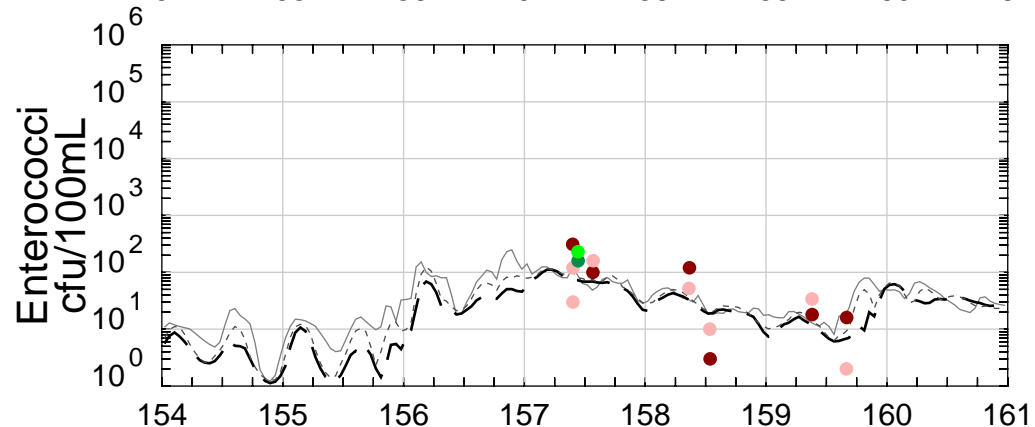
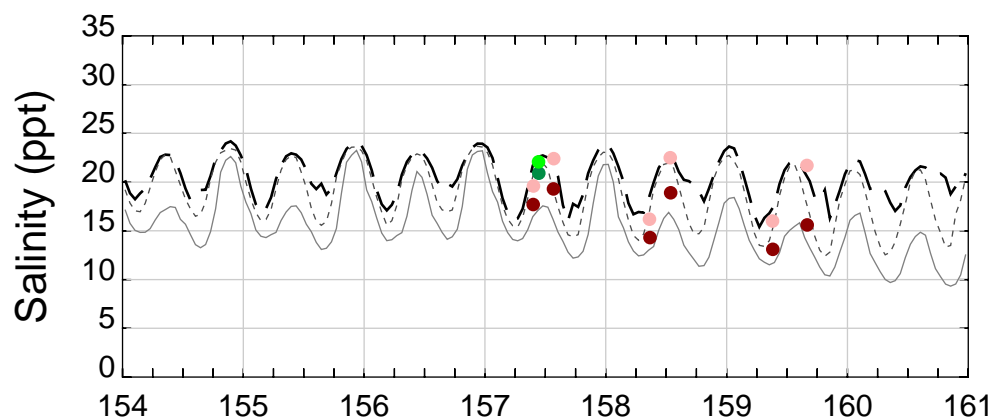
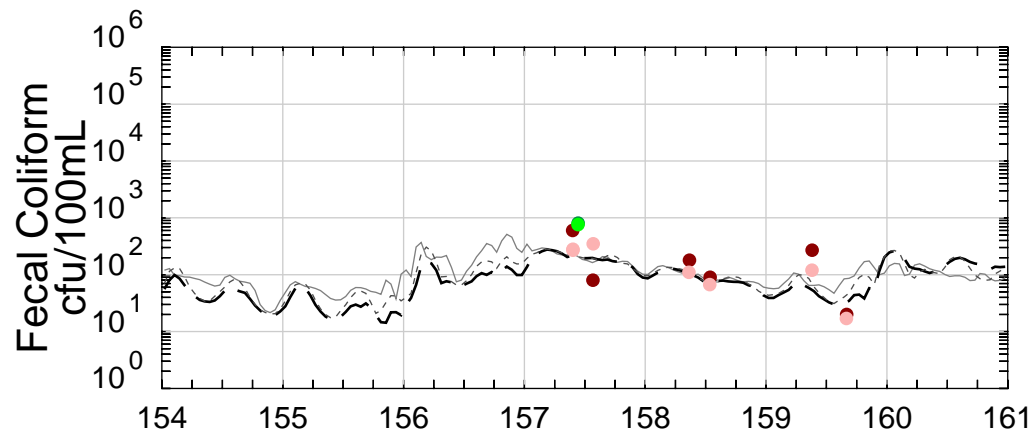
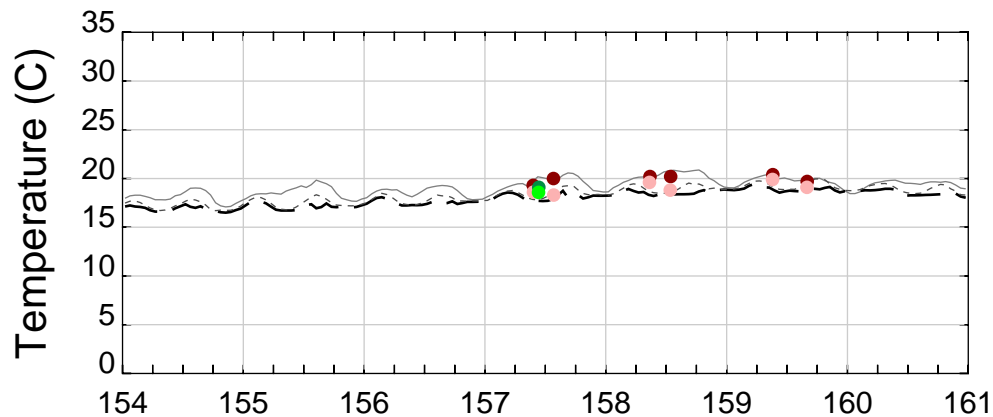
— Model at Surface  
 - - - Model at Mid-Depth  
 - - - Model at Bottom

● ● 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

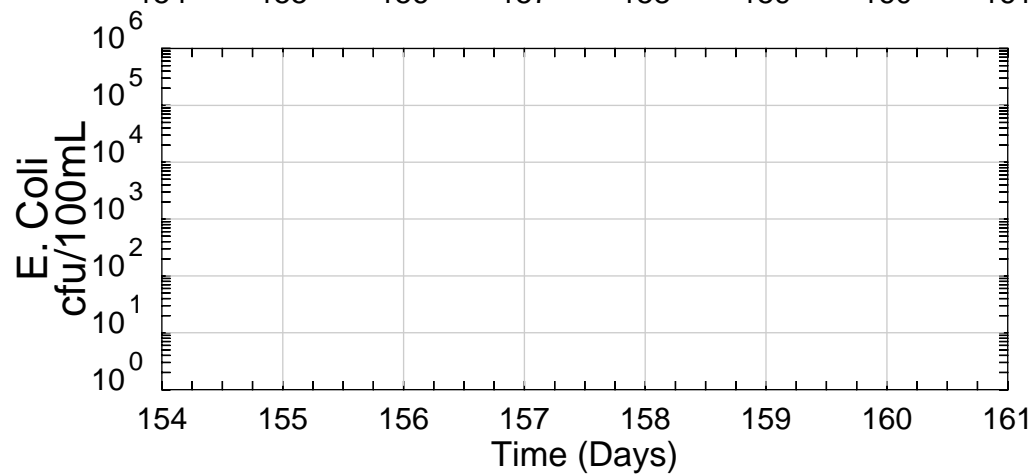
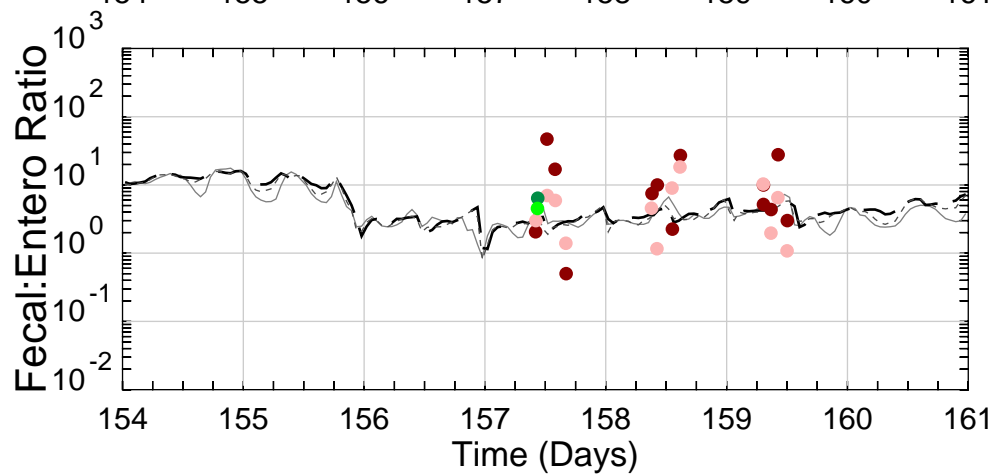
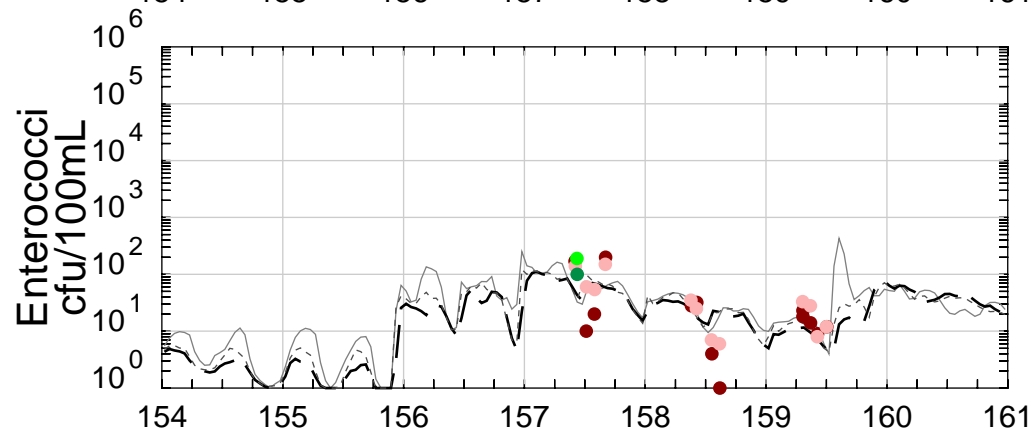
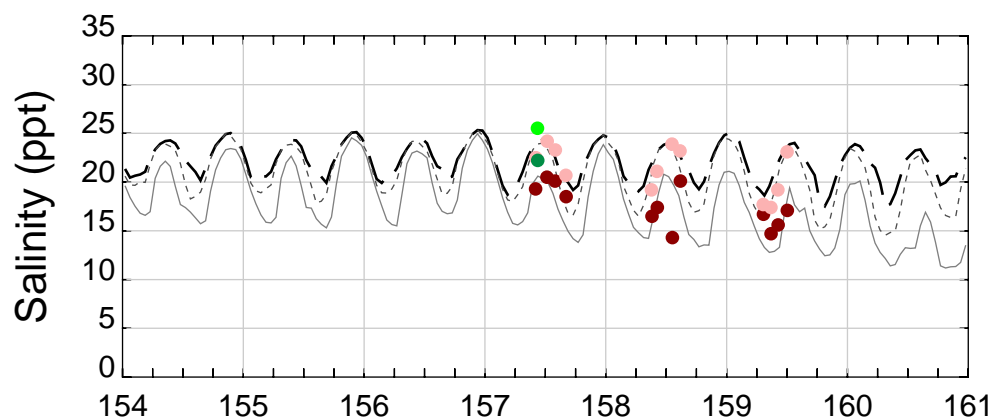
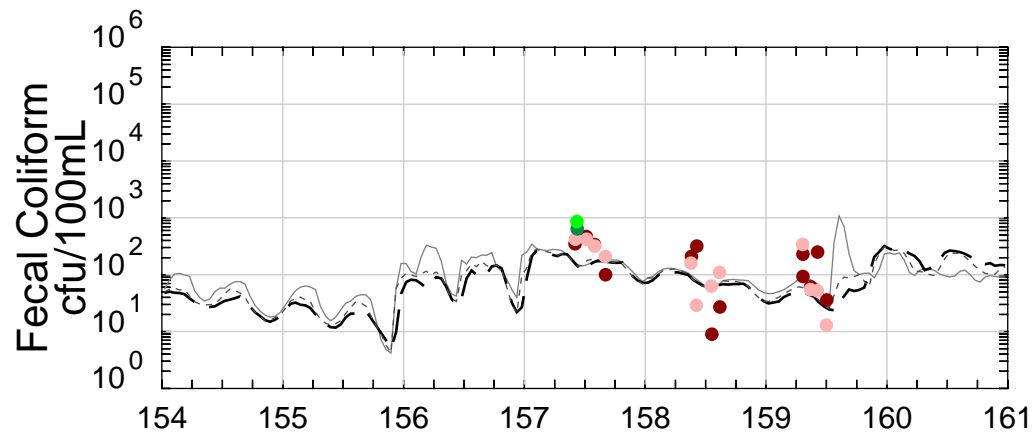
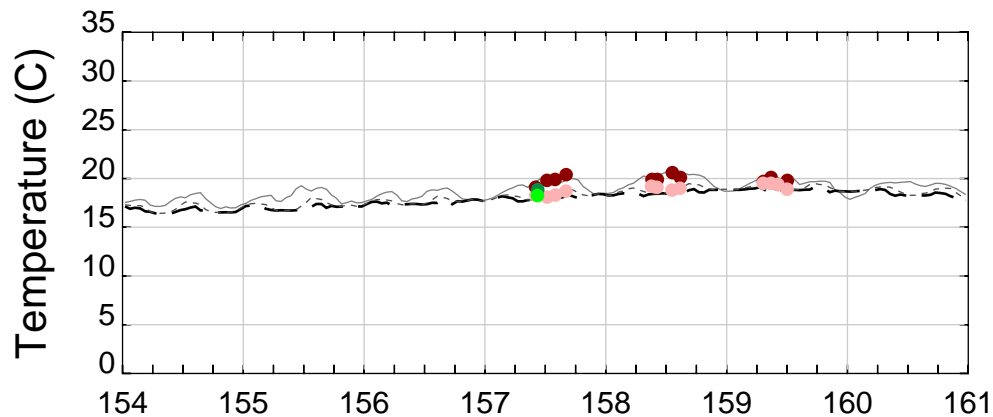
— Model at Surface  
 - - - Model at Mid-Depth  
 - . - Model at Bottom

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

# Hudson River, Upper Bay Hudson River

SE2

Station: 33 Event 1 (June 3-9)



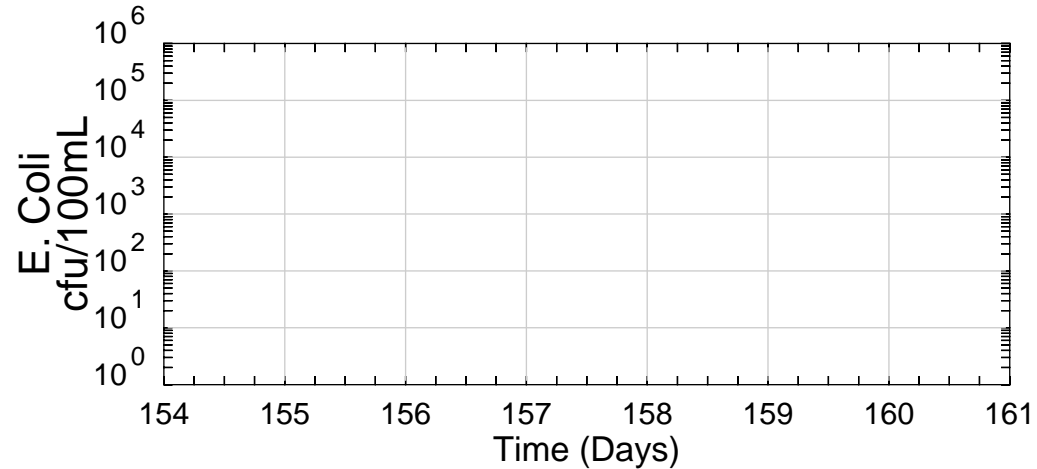
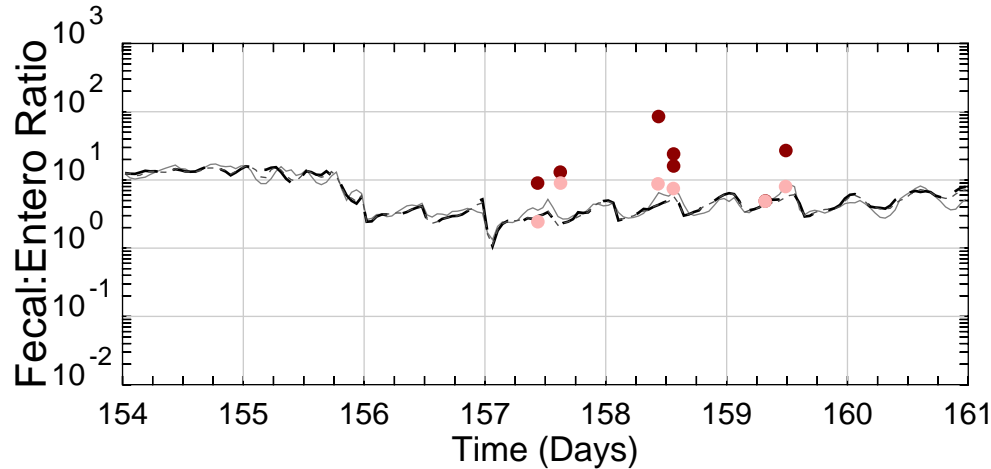
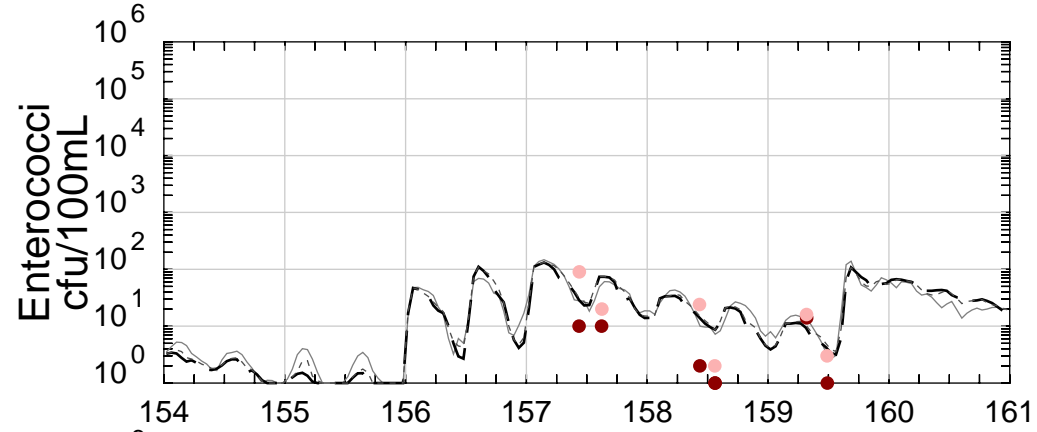
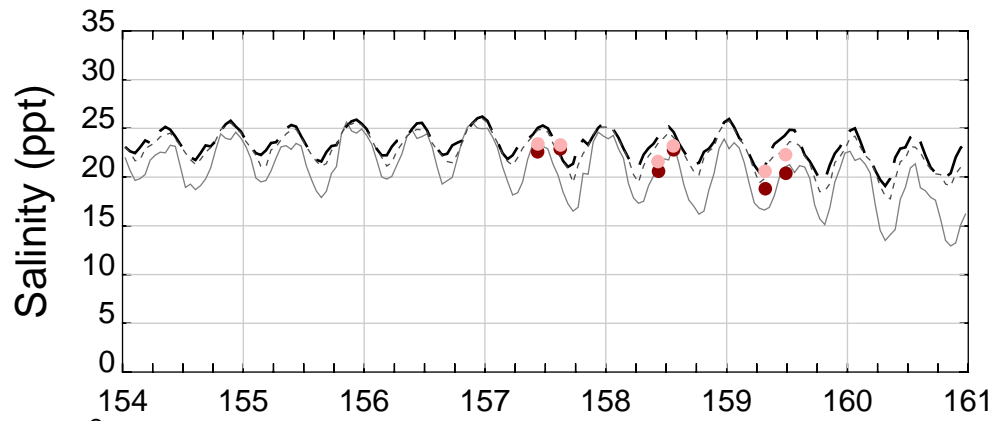
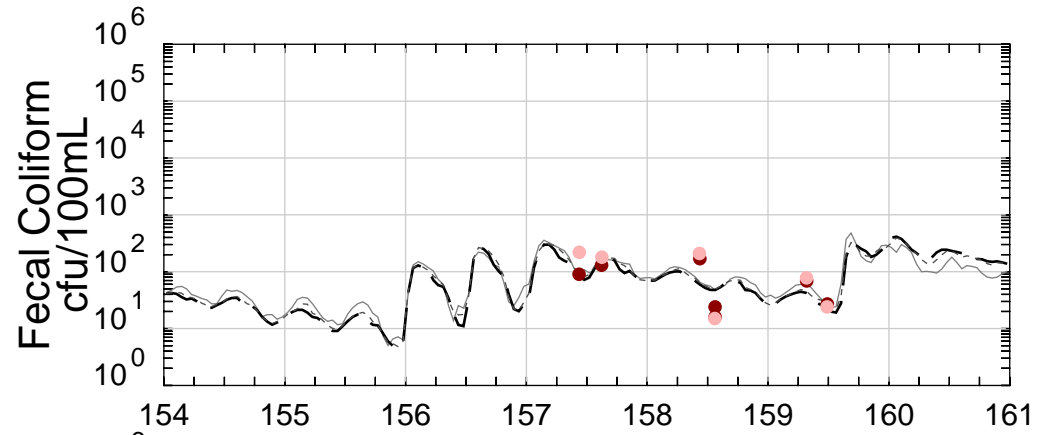
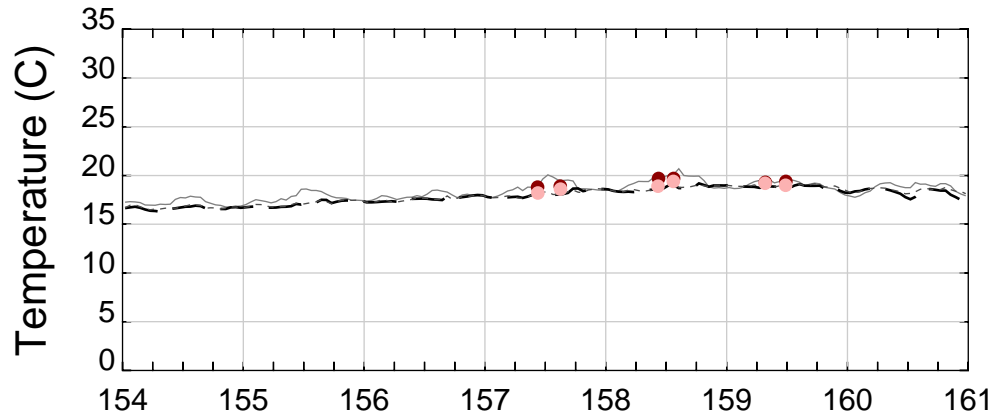
Model = 2016  
Data = 2016

- 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

Station: B26 Event 1 (June 3-9)



Model = 2016  
Data = 2016

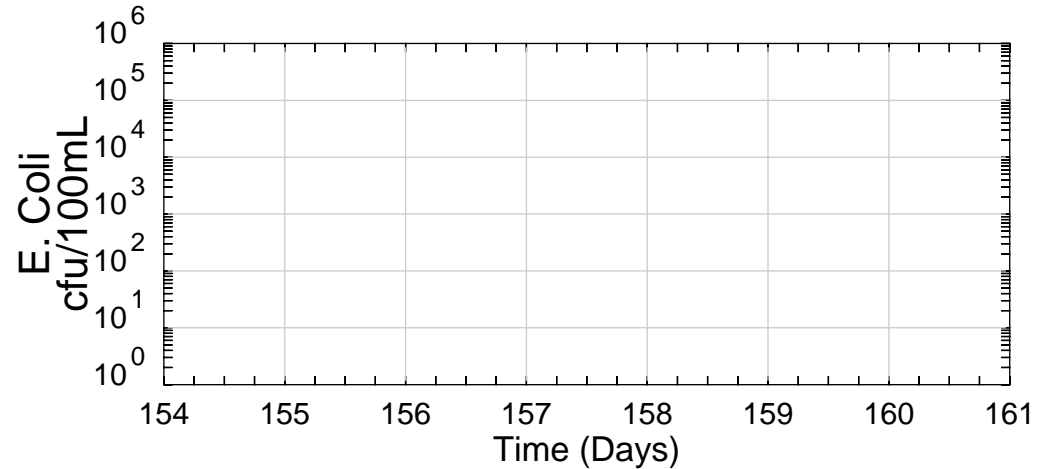
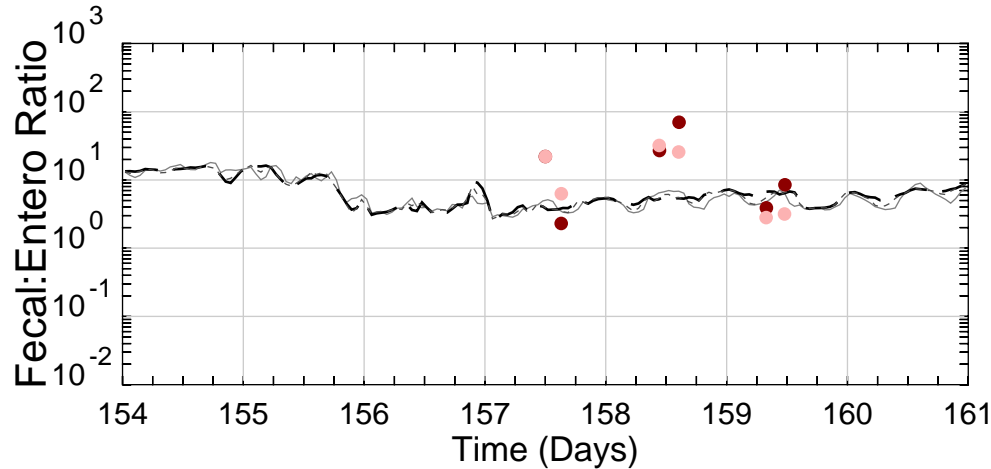
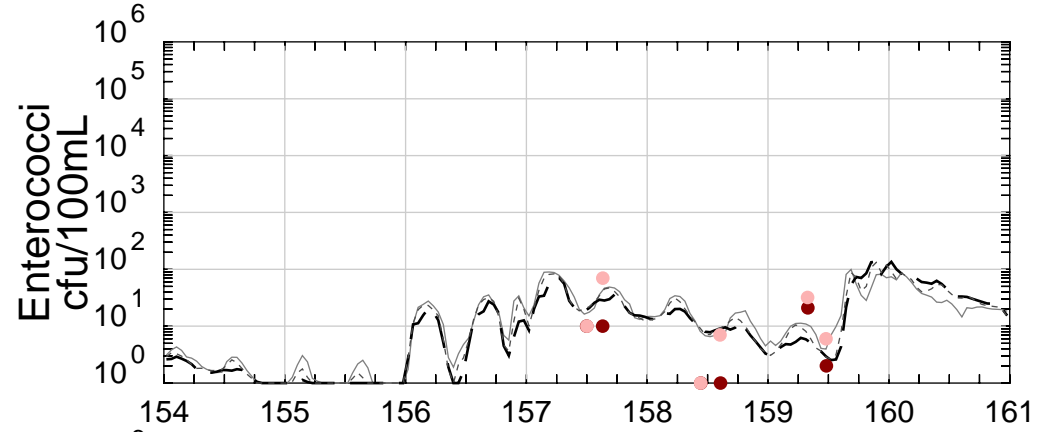
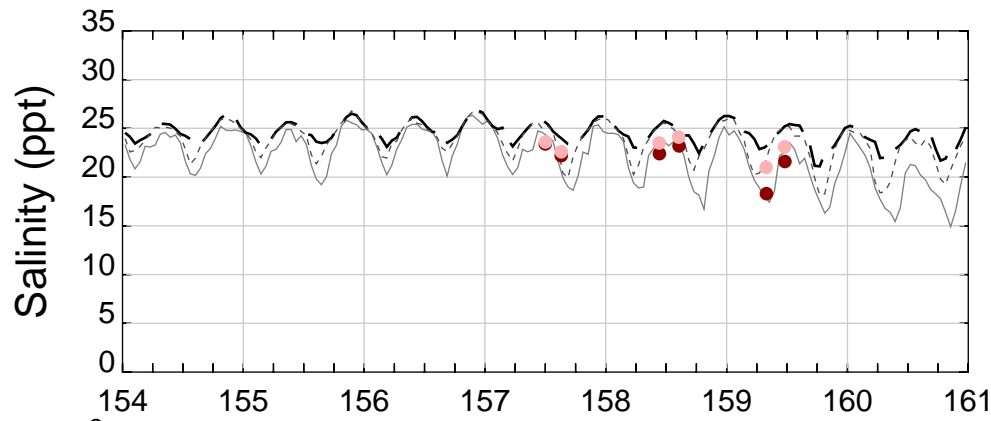
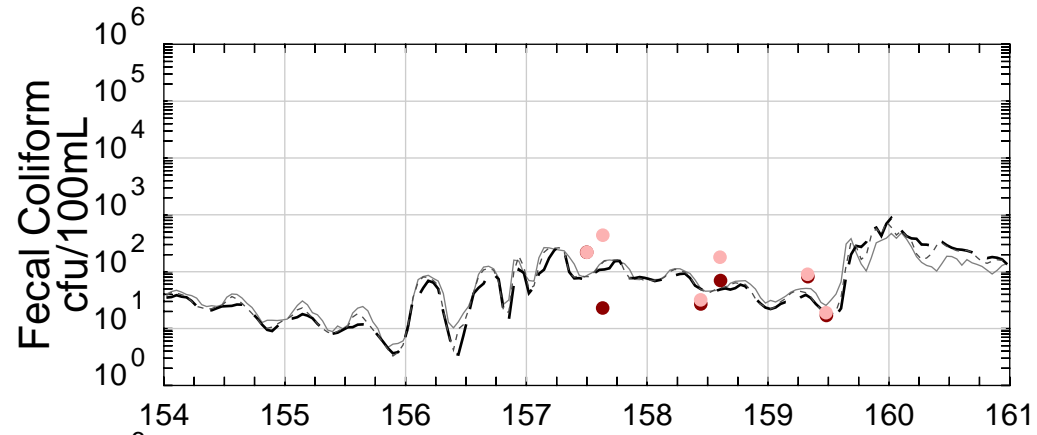
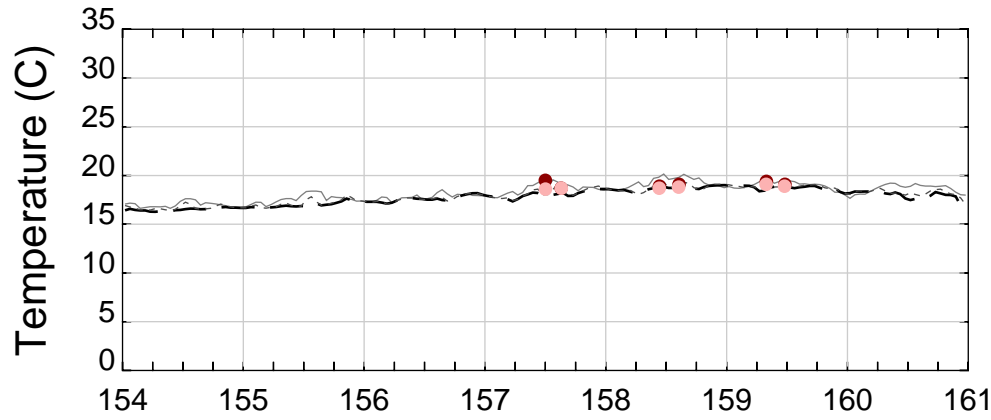
— Model at Surface  
 - - - Model at Mid-Depth  
 - · - Model at Bottom

● 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

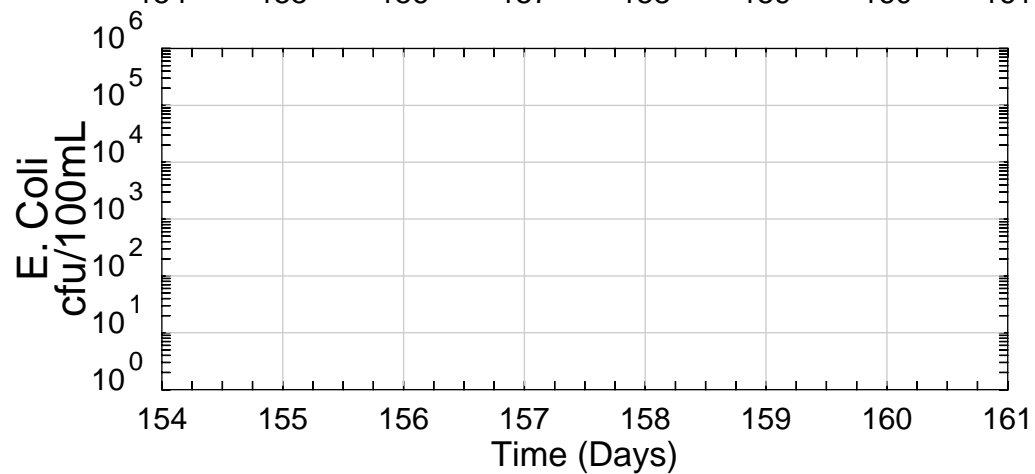
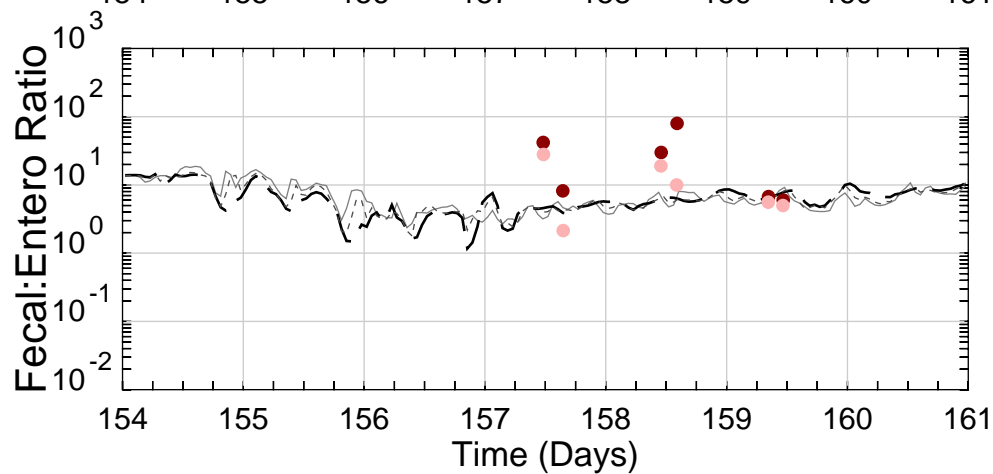
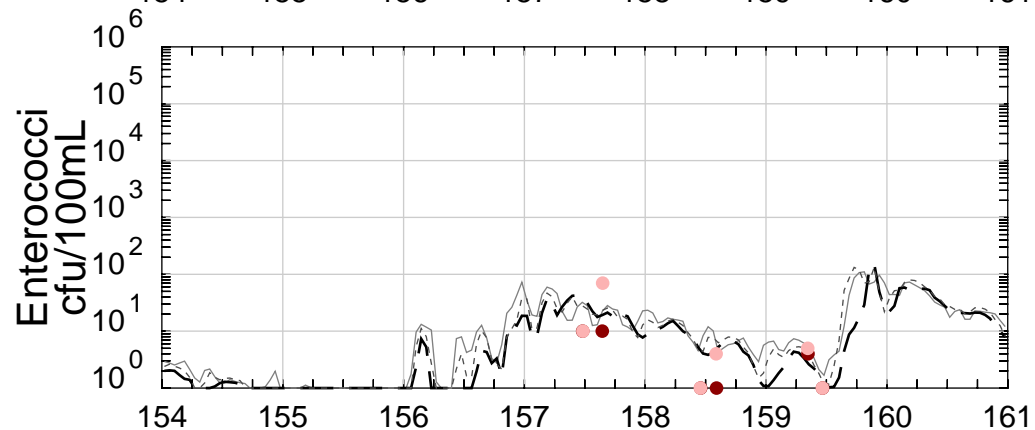
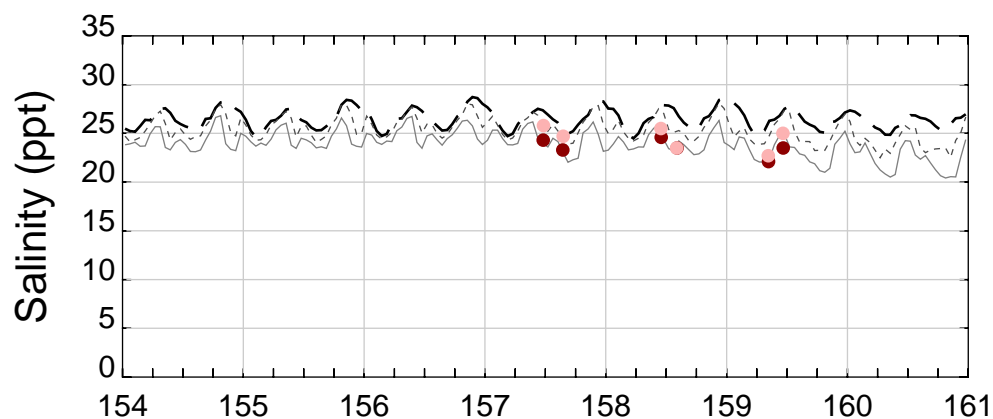
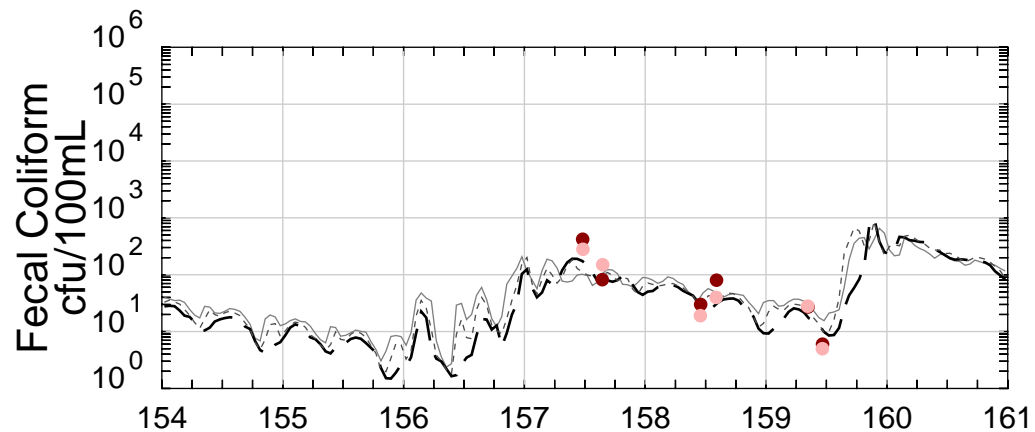
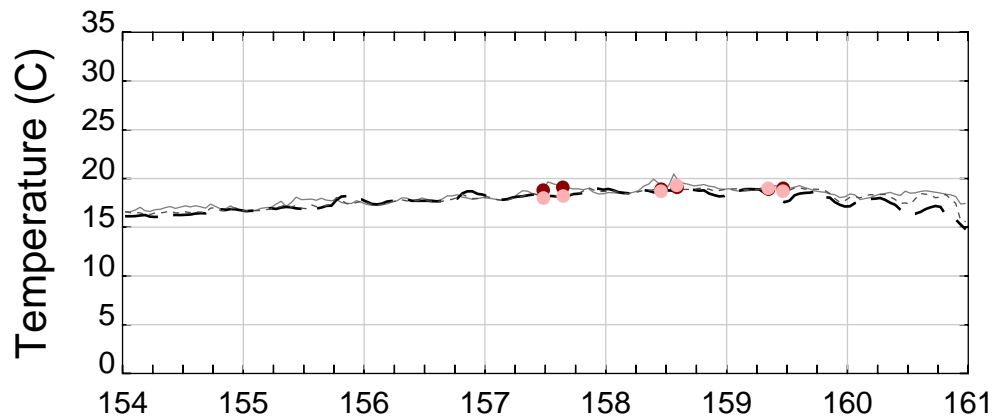
- Model at Surface
- - - Model at Mid-Depth
- · - Model at Bottom

- ● 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