# Penobscot River Mercury Study

## Results of 2012 monitoring of mercury in Penobscot River and Bay
## With comparisons to previous years

December 2013

## APPENDICES (1 – 11)

Appendix 1. 2012 summary statistics for fish and lobster using raw data for age, length and total Hg concentrations in muscle. The columns labeled 'Targets to Protect' list the percent of samples exceeding Hg target concentrations designed to protect fish, human or predator health, as outlined in the Phase II Report, Chapter 2.

| | | Targets to Protect: | | | THg in fish muscle | | | | | Fish Length | | | | | Fish Age | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Species | 2012 SITE | Fish Health % of samples > 500 ng/g ww THg | Human Health % of samples > 200 ng/g ww THg | Predator Health % of samples > 50 ng/g ww THg | n THg | min THg ng/g ww | max THg ng/g ww | mean THg ng/g ww | SD THg | n LENGTH | min LENGTH mm | max LENGTH mm | mean LENGTH mm | SD LENGTH | n AGE | min AGE years | max AGE years | mean AGE years | SD AGE |
| eel | OV4 | 0 | 50 | 100 | 20 | 52 | 452 | 229 | 118 | 20 | 144 | 626 | 381 | 117 | 20 | 5 | 11 | 7.9 | 1.9 |
| eel | OV2 | 10 | 48 | 100 | 21 | 114 | 821 | 264 | 187 | 21 | 149 | 474 | 329 | 88 | 21 | 4 | 11 | 7.6 | 2.0 |
| eel | BO4 | 40 | 95 | 100 | 20 | 152 | 854 | 495 | 187 | 20 | 223 | 451 | 323 | 58 | 18 | 6 | 11 | 7.5 | 1.1 |
| eel | OB5 | 60 | 100 | 100 | 20 | 213 | 1455 | 609 | 291 | 20 | 288 | 605 | 376 | 84 | 20 | 6 | 12 | 7.9 | 1.6 |
| eel | OB4 | 100 | 100 | 100 | 4 | 599 | 927 | 746 | 140 | 4 | 320 | 409 | 370 | 39 | 4 | 8 | 10 | 8.8 | 1.0 |
| eel | OB1 | 33 | 100 | 100 | 18 | 288 | 833 | 497 | 132 | 18 | 191 | 445 | 283 | 60 | 18 | 4 | 9 | 6.1 | 1.5 |
| rainbow smelt | OB5 | 0 | 33 | 100 | 3 | 106 | 236 | 150.7 | 73.9 | 3 | 58 | 73 | 64.7 | 7.6 | | | | | |
| rainbow smelt | OB1ETR4 | 0 | 7 | 87 | 15 | 32 | 301 | 107.2 | 71.8 | 15 | 116 | 247 | 183.5 | 39.9 | | | | | |
| rainbow smelt | ES02E | 0 | 10 | 80 | 10 | 30 | 215 | 78.2 | 51.0 | 10 | 93 | 200 | 151.4 | 40.3 | | | | | |
| rainbow smelt | ES13 | 0 | 0 | 89 | 9 | 45 | 173 | 79.1 | 40.6 | 9 | 80 | 220 | 155.0 | 56.0 | | | | | |
| rainbow smelt | ESFP | 0 | 0 | 33 | 15 | 32 | 158 | 58.7 | 34.4 | 15 | 79 | 207 | 109.5 | 37.0 | | | | | |
| rainbow smelt | ES07S | 0 | 0 | 0 | 16 | 23 | 37 | 28.6 | 4.0 | 16 | 100 | 132 | 112.2 | 10.2 | | | | | |
| tomcod | OB5 | 0 | 53 | 100 | 15 | 108.0 | 254.5 | 193.0 | 47.5 | 15 | 104 | 184 | 151.3 | 22.9 | | | | | |
| tomcod | OB1ETR4 | 0 | 27 | 100 | 15 | 69.0 | 428.0 | 166.6 | 95.7 | 15 | 125 | 249 | 157.9 | 30.6 | | | | | |
| tomcod | ES02E | 0 | 0 | 100 | 15 | 55.3 | 156.0 | 102.7 | 35.1 | 15 | 113 | 193 | 148.0 | 29.0 | | | | | |
| tomcod | ES13 | 0 | 0 | 100 | 15 | 68.4 | 190.0 | 112.8 | 40.3 | 15 | 91 | 234 | 134.1 | 46.0 | | | | | |
| tomcod | ESFP | 0 | 0 | 93 | 15 | 42.4 | 159.0 | 88.6 | 36.1 | 15 | 91 | 133 | 106.3 | 11.2 | | | | | |
| winter flounder | OB5 | 0 | 0 | 93 | 15 | 48.0 | 102.0 | 68.5 | 14.3 | 15 | 111 | 173 | 138.3 | 20.3 | | | | | |
| winter flounder | OB1E-TR4 | 0 | 0 | 67 | 15 | 34.6 | 153.9 | 70.5 | 30.1 | 15 | 73 | 230 | 120.4 | 41.0 | | | | | |
| winter flounder | ES02E | 0 | 0 | 7 | 14 | 38.6 | 78.0 | 55.0 | 12.1 | 14 | 79 | 170 | 125.7 | 27.8 | | | | | |
| winter flounder | ES13 | 0 | 0 | 17 | 12 | 27.5 | 63.7 | 50.5 | 13.1 | 12 | 65 | 106 | 93.4 | 13.4 | | | | | |
| winter flounder | ESFP | 0 | 0 | 0 | 15 | 22.0 | 96.9 | 39.8 | 18.6 | 15 | 49 | 259 | 114.7 | 61.1 | | | | | |
| winter flounder | ES04W | 0 | 0 | 0 | 16 | 9.0 | 37.4 | 17.7 | 7.1 | 16 | 55 | 249 | 102.0 | 48.0 | | | | | |
| winter flounder | ES07S | 0 | 0 | 133 | 6 | 11.9 | 61.7 | 26.8 | 17.7 | 6 | 136 | 199 | 172.8 | 22.2 | | | | | |
| mummichog | BO5 | 0 | 0 | 100 | 15 | 64.1 | 188 | 98.2 | 35.3 | 15 | 55 | 81 | 65.7 | 7.4 | | | | | |
| mummichog | W21 | 0 | 33 | 100 | 15 | 93.4 | 355 | 181.1 | 70.9 | 15 | 44 | 69 | 57.9 | 7.7 | | | | | |
| lobster tail | Odom Ledge | 0 | 53 | | 15 | 11 | 421 | 207.6 | 125.5 | 15 | 55 | 108 | 88.9 | 13.8 | | | | | |
| lobster tail | South Verona | 33 | 80 | | 15 | 146 | 1,095 | 448.4 | 293.4 | 15 | 60 | 108 | 87.2 | 13.1 | | | | | |
| lobster tail | Ft. Point | 0 | 53 | | 15 | 12 | 414 | 232.1 | 114.9 | 15 | 62 | 98 | 86.2 | 10.5 | | | | | |
| lobster tail | Turner Point | 0 | 33 | | 15 | 114 | 366 | 187.6 | 83.8 | 15 | 75 | 101 | 86.5 | 7.0 | | | | | |
| lobster tail | SW Sears Island | 0 | 25 | | 16 | 7 | 293 | 128.5 | 82.8 | 16 | 72 | 111 | 87.3 | 9.2 | | | | | |
| lobster tail | Parker Cove | 7 | 20 | | 15 | 11 | 528 | 160.5 | 126.3 | 15 | 74 | 113 | 90.1 | 10.8 | | | | | |
| lobster tail | Harborside | 0 | 0 | | 15 | 14 | 161 | 100.5 | 40.7 | 15 | 75 | 102 | 87.9 | 7.7 | | | | | |

Appendix 2. 2012 summary statistics for birds using raw data for total Hg concentrations in blood and feathers. Samples were separated by age class or sex, depending on the species. The columns labeled 'Targets to Protect' list the percent of samples exceeding Hg target concentrations designed to protect bird health, as outlined in the Phase II Report, Chapter 2.

| | | | | THg in Bird Blood | | | | | | THg in Bird Primary Feathers | | | | | | THg in Bird Tail Feathers | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Species | Site | Age Class | Sex | TARGET TO PROTECT: Bird Health % of blood samples > 1.2 µg/g w w THg | Blood n THg | Blood min THg µg/g w w | Blood max THg µg/g w w | Blood mean THg µg/g w w | Blood SD THg | TARGET TO PROTECT: Bird Health % of P1 feather samples > 5.0 µg/g w w THg | P1 Feather n THg | P1 Feather min THg µg/g fw | P1 Feather max THg µg/g fw | P1 Feather mean THg µg/g fw | P1 Feather SD THg | TARGET TO PROTECT: Bird Health % of T6 feather samples > 5.0 µg/g w w THg | T6 Feather n THg | T6 Feather min THg µg/g fw | T6 Feather max THg µg/g fw | T6 Feather mean THg µg/g fw | T6 Feather SD THg |
| NESP | SW1 | AD | M | 100 | 3 | 7.63 | 9.78 | 8.60 | 1.09 | 100 | 3 | 24.7 | 66.8 | 46.7 | 21.1 | 0 | 3 | 2.0 | 3.9 | 2.9 | 1.0 |
| NESP | SW1 | AD | F | 100 | 2 | 4.86 | 6.92 | 5.89 | 1.46 | 100 | 2 | 42.9 | 101.1 | 72.0 | 41.2 | 0 | 2 | 2.6 | 4.2 | 3.4 | 1.1 |
| NESP | SE1 | AD | M | 100 | 5 | 8.85 | 11.80 | 10.29 | 1.08 | 100 | 5 | 11.7 | 98.5 | 62.0 | 36.0 | 20 | 5 | 1.5 | 20.0 | 5.5 | 8.1 |
| NESP | W17N | AD | M | 100 | 8 | 3.59 | 6.24 | 4.77 | 0.83 | 88 | 8 | 4.5 | 72.5 | 19.7 | 22.3 | 0 | 7 | 1.1 | 2.9 | 1.7 | 0.6 |
| NESP | W17N | AD | F | 100 | 2 | 4.89 | 5.64 | 5.27 | 0.53 | 50 | 2 | 2.1 | 52.2 | 27.2 | 35.4 | 0 | 2 | 0.9 | 2.0 | 1.4 | 0.8 |
| NESP | PRN1 | AD | M | 0 | 10 | 0.24 | 0.61 | 0.40 | 0.12 | 30 | 10 | 0.6 | 6.7 | 3.5 | 2.3 | 0 | 10 | 0.6 | 1.6 | 1.0 | 0.3 |
| RWBL | W17N | HY | ns | 0 | 0 | | | | | 50 | 4 | 1.2 | 18.3 | 7.1 | 7.8 | 25 | 4 | 0.8 | 33.1 | 9.9 | 15.5 |
| RWBL | W17N | AD | ns | 83 | 6 | 0.36 | 12.09 | 7.52 | 4.78 | 67 | 6 | 1.6 | 100.1 | 33.1 | 36.5 | 33 | 6 | 0.3 | 56.5 | 14.8 | 22.9 |
| RWBL | SW1 | AD | ns | 100 | 4 | 13.36 | 17.18 | 14.75 | 1.68 | 50 | 4 | 7.3 | 116.1 | 51.2 | 52.7 | 25 | 4 | 0.6 | 5.4 | 2.5 | 2.4 |
| RWBL | SE2 | AD | ns | 100 | 2 | 10.33 | 11.75 | 11.04 | 1.00 | 50 | 2 | 46.4 | 94.1 | 70.3 | 33.7 | 0 | 2 | 0.7 | 2.3 | 1.5 | 1.1 |
| RWBL | PRN1 | AD | ns | 0 | 3 | 0.17 | 0.79 | 0.45 | 0.31 | 67 | 3 | 1.8 | 6.7 | 4.0 | 2.5 | 0 | 3 | 0.3 | 0.9 | 0.5 | 0.3 |
| RWBL | SW1 | HY | ns | 0 | 0 | | | | | 167 | 3 | 1.3 | 24.9 | 11.0 | 12.3 | 33 | 3 | 1.5 | 27.2 | 10.2 | 14.7 |
| SWSP | W17N | AD | ns | 25 | 8 | 0.51 | 1.39 | 0.89 | 0.32 | 75 | 8 | 0.4 | 34.0 | 14.8 | 11.8 | 43 | 7 | 0.5 | 7.2 | 4.3 | 2.1 |
| SWSP | SE | AD | ns | 100 | 6 | 1.40 | 5.87 | 3.26 | 1.94 | 67 | 6 | 1.9 | 47.2 | 19.5 | 17.6 | 67 | 6 | 0.8 | 18.3 | 9.6 | 7.2 |
| SWSP | SW1 | AD | ns | 100 | 5 | 1.84 | 5.56 | 3.90 | 1.34 | 80 | 5 | 3.9 | 68.0 | 20.6 | 26.7 | 60 | 5 | 0.6 | 24.5 | 10.0 | 9.7 |
| SWSP | W17N | HY | ns | 0 | 0 | | | | | 0 | 1 | 1.9 | 1.9 | 1.9 | . | 0 | 1 | 3.4 | 3.4 | 3.4 | . |
| SWSP | PRN1 | AD | ns | 0 | 10 | 0.23 | 0.33 | 0.27 | 0.03 | 11 | 9 | 0.6 | 5.4 | 1.9 | 1.4 | 0 | 9 | 0.5 | 1.4 | 0.9 | 0.4 |
| SWSP | SE | HY | ns | 0 | 0 | | | | | 100 | 1 | 14.3 | 14.3 | 14.3 | . | 100 | 1 | 5.9 | 5.9 | 5.9 | . |
| SWSP | PRN1 | HY | ns | 0 | 0 | | | | | 0 | 1 | 1.5 | 1.5 | 1.5 | . | 0 | 1 | 2.8 | 2.8 | 2.8 | . |

Appendix 3. 2012 summary statistics for blue mussels using raw data for shell length and total and methyl Hg concentrations in soft tissue. None of the blue mussels sampled exceeded the biota target to protect human health of 200 ng MeHg/g ww.

| | | THg in Mussel soft tissue | | | | | MeHg in mussel soft tissue | | | | | Mussel length | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Species | Site | n THg | min THg ng/g dw | max THg ng/g dw | mean THg ng/g dw | SD THg | n MeHg | min MeHg ng/g dw | max MeHg ng/g dw | mean MeHg ng/g dw | SD MeHg | n LENGTH | min LENGTH mm | max LENGTH mm | mean LENGTH mm | SD LENGTH |
| blue mussel | ES04 | 15 | 184 | 349.5 | 279.7 | 48.8 | 5 | 90.9 | 149 | 124.6 | 23.4 | 15 | 57 | 71 | 62.5 | 4.5 |
| blue mussel | ESFP | 15 | 248 | 392 | 317.6 | 44.5 | 5 | 105 | 156 | 130.7 | 21.7 | 15 | 42 | 61 | 53.3 | 5.2 |
| blue mussel | ES13 | 15 | 359 | 675 | 497.8 | 96.4 | 5 | 140 | 240 | 192.2 | 43.0 | 15 | 44 | 62 | 51.5 | 5.4 |
| blue mussel | ES15 | 15 | 285.5 | 624 | 410.7 | 96.8 | 5 | 87.5 | 129 | 112.1 | 17.0 | 15 | 43 | 57 | 50.7 | 3.8 |
| blue mussel | ES04S | 15 | 216 | 447 | 281.0 | 59.9 | 5 | 81.3 | 147 | 111.5 | 30.0 | 15 | 55 | 71 | 62.9 | 4.0 |
| blue mussel | ES13S | 15 | 659 | 1,870 | 948.1 | 296.2 | 5 | 307 | 692 | 428.3 | 152.4 | 15 | 49 | 66 | 59.9 | 4.6 |

Appendix 4. 2012 summary statistics in sediment using raw data for total and methyl Hg in sediment.

| | | | THg in Sediment | | | | | MeHg in sediment | | | | | % MeHg | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sediment Type | Site | Elevation | n THg | min THg ng/g dw | max THg ng/g dw | mean THg ng/g dw | SD THg | n MeHg | min MeHg ng/g dw | max MeHg ng/g dw | mean MeHg ng/g dw | SD MeHg | min % MeHg | max % MeHg | mean % MeHg |
| subtidal | E01-1 | | 3 | 583 | 755 | 680.0 | 88.1 | 2 | 29.0 | 31.7 | 1.4 | 1.9 | 4.2 | 5.0 | 4.6 |
| subtidal | E01-3 | | 3 | 421 | 522 | 458.3 | 55.4 | 2 | 10.9 | 11.3 | 0.2 | 0.3 | 2.5 | 2.7 | 2.6 |
| subtidal | E01-4 | | 3 | 218 | 313 | 257.7 | 49.4 | 2 | 5.2 | 6.8 | 0.8 | 1.1 | 2.1 | 3.1 | 2.6 |
| intertidal | OV4 | | 5 | 102 | 161 | 125.8 | 22.2 | 3 | 2.8 | 5.6 | 0.8 | 1.4 | 2.5 | 3.5 | 3.2 |
| intertidal | OV1 | | 5 | 17 | 20 | 18.4 | 1.1 | 3 | 0.6 | 0.7 | 0.0 | 0.1 | 2.9 | 3.7 | 3.4 |
| intertidal | OV2 | | 5 | 21 | 33 | 27.2 | 4.3 | 3 | 0.2 | 0.3 | 0.0 | 0.1 | 0.6 | 1.2 | 0.9 |
| intertidal | BO5 | | 5 | 75 | 242 | 132.2 | 77.0 | 3 | 1.6 | 4.1 | 0.7 | 1.3 | 1.4 | 2.2 | 1.8 |
| intertidal | OB5 | | 5 | 663 | 1550 | 1088.2 | 331.3 | 3 | 8.9 | 14.0 | 1.5 | 2.6 | 0.7 | 1.3 | 1.0 |
| intertidal | OB1 | | 5 | 324 | 496 | 378.0 | 69.0 | 3 | 7.6 | 11.3 | 1.1 | 1.9 | 2.2 | 2.3 | 2.3 |
| intertidal | ES02 | | 5 | 843 | 1080 | 985.8 | 87.5 | 3 | 16.8 | 27.7 | 3.4 | 6.0 | 1.6 | 3.3 | 2.5 |
| intertidal | ES13 | | 5 | 172 | 432 | 244.0 | 108.0 | 3 | 4.9 | 13.3 | 2.7 | 4.7 | 2.6 | 3.3 | 3.0 |
| intertidal | ES04 | | 5 | 55 | 80 | 64.2 | 9.5 | 3 | 1.6 | 3.9 | 0.8 | 1.3 | 2.9 | 4.8 | 3.5 |
| intertidal | SG1 | | 5 | 5 | 6 | 5.6 | 0.5 | 3 | 0.3 | 0.4 | 0.0 | 0.0 | 5.5 | 6.5 | 6.0 |
| wetland | W63-H | high | 4 | 55 | 390 | 175.8 | 150.6 | 2 | 1.5 | 11.3 | 4.9 | 6.9 | 2.7 | 2.9 | 2.8 |
| wetland | W63-M | medium | 4 | 733 | 912 | 846.0 | 79.6 | 2 | 40.6 | 58.5 | 9.0 | 12.7 | 4.6 | 6.9 | 5.8 |
| wetland | W63-L | low | 4 | 890 | 939 | 911.5 | 20.8 | 2 | 44.3 | 52.4 | 4.1 | 5.7 | 5.0 | 5.7 | 5.4 |
| wetland | W63-MUD | mudflat | 4 | 1080 | 1430 | 1167.5 | 175.0 | 2 | 32.1 | 41.1 | 4.5 | 6.4 | 3.0 | 3.8 | 3.4 |
| wetland | W17-H | high | 4 | 636 | 1010 | 772.3 | 171.3 | 2 | 15.9 | 39.1 | 11.6 | 16.4 | 2.0 | 3.9 | 3.0 |
| wetland | W17-M | medium | 4 | 723 | 947 | 813.8 | 107.6 | 2 | 10.9 | 18.8 | 4.0 | 5.6 | 1.2 | 2.6 | 1.9 |
| wetland | W17-L | low | 4 | 866 | 1000 | 928.5 | 55.4 | 2 | 59.6 | 61.5 | 1.0 | 1.3 | 6.4 | 7.1 | 6.8 |
| wetland | W17-MUD | mudflat | 4 | 524 | 664 | 584.8 | 58.6 | 2 | 15.4 | 15.5 | 0.1 | 0.1 | 2.3 | 3.0 | 2.7 |
| wetland | W65-H | high | 4 | 125 | 279 | 194.3 | 76.6 | 2 | 14.9 | 48.3 | 16.7 | 23.6 | 6.2 | 17.3 | 11.8 |
| wetland | W65-M | medium | 4 | 233 | 427 | 335.0 | 87.5 | 2 | 10.6 | 27.9 | 8.7 | 12.2 | 4.5 | 7.2 | 5.9 |
| wetland | W65-L | low | 4 | 486 | 1040 | 780.5 | 227.8 | 2 | 26.6 | 32.1 | 2.8 | 3.9 | 3.1 | 3.2 | 3.2 |
| wetland | W65-MUD | mudflat | 4 | 308 | 635 | 458.5 | 169.0 | 2 | 8.6 | 9.6 | 0.5 | 0.7 | 2.8 | 3.0 | 2.9 |
| wetland | W21UM-CC | platform | 4 | 189 | 218 | 201.0 | 12.2 | 2 | 13.7 | 15.5 | 0.9 | 1.3 | 7.1 | 7.2 | 7.2 |
| wetland | W21UM-EC | platform | 4 | 494 | 632 | 569.5 | 58.5 | 2 | 27.1 | 55.1 | 14.0 | 19.8 | 5.5 | 9.3 | 7.4 |
| wetland | W21UM-WA | platform | 4 | 131 | 214 | 155.8 | 39.1 | 2 | 5.8 | 6.9 | 0.6 | 0.8 | 4.3 | 5.3 | 4.8 |
| wetland | W21UM-S | platform | 4 | 226 | 365 | 301.3 | 66.2 | 2 | 32.1 | 43.0 | 5.5 | 7.7 | 14.2 | 16.2 | 15.2 |
| wetland | W21-H | high | 4 | 429 | 808 | 602.3 | 175.2 | 2 | 27.9 | 44.8 | 8.5 | 12.0 | 4.1 | 10.4 | 7.3 |
| wetland | W21-M | medium | 4 | 622 | 796 | 689.5 | 82.7 | 2 | 38.5 | 46.3 | 3.9 | 5.5 | 5.8 | 6.2 | 6.0 |
| wetland | W21-L | low | 4 | 770 | 955 | 857.8 | 81.5 | 2 | 22.8 | 32.5 | 4.9 | 6.9 | 2.4 | 4.2 | 3.3 |
| wetland | W21-MUD | mudflat | 4 | 591 | 759 | 696.3 | 74.7 | 2 | 16.2 | 22.2 | 3.0 | 4.2 | 2.7 | 3.2 | 3.0 |
| wetland | W61-H | high | 4 | 77 | 640 | 348.3 | 278.0 | 2 | 4.9 | 18.9 | 7.0 | 9.9 | 3.0 | 3.4 | 3.2 |
| wetland | W61-M | medium | 4 | 236 | 530 | 357.0 | 130.5 | 2 | 9.1 | 12.5 | 1.7 | 2.4 | 3.2 | 3.3 | 3.3 |
| wetland | W61-L | low | 4 | 483 | 576 | 514.8 | 41.6 | 2 | 11.8 | 13.3 | 0.8 | 1.1 | 2.4 | 2.6 | 2.5 |
| wetland | W61-MUD | mudflat | 4 | 276 | 467 | 354.3 | 83.0 | 2 | 10.9 | 12.0 | 0.6 | 0.8 | 3.3 | 3.9 | 3.6 |

Appendix 5. 2012 summary statistics in sediment using total and methyl Hg concentrations normalized to total organic carbon (TOC).

| | | | THg Normalized to Organic Carbon in Sediment | | | | | MeHg Normalized to Organic Carbon in Sediment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sediment Type | Site | Elevation | n THg | min THg ng/gC dw | max THg ng/gC dw | mean THg ng/gC dw | SD THg | n MeHg | min MeHg ng/gC dw | max MeHg ng/gC dw | mean MeHg ng/gC dw | SD MeHg |
| subtidal | E01-1 | | 3 | 9,668 | 12,521 | 11,319 | 1,478 | 2 | 481 | 526 | 503 | 32 |
| subtidal | E01-3 | | 3 | 12,098 | 13,920 | 12,895 | 932 | 2 | 320 | 325 | 322 | 4 |
| subtidal | E01-4 | | 3 | 10,187 | 10,982 | 10,519 | 414 | 2 | 223 | 318 | 270 | 67 |
| intertidal | OV4 | | 5 | 1,275 | 1,813 | 1,501 | 223 | 3 | 38 | 63 | 52 | 13 |
| intertidal | OV1 | | 5 | 1,895 | 2,632 | 2,277 | 280 | 3 | 63 | 84 | 75 | 11 |
| intertidal | OV2 | | 5 | 2,044 | 6,047 | 3,598 | 1,747 | 3 | 26 | 70 | 42 | 24 |
| intertidal | BO5 | | 5 | 2,669 | 16,242 | 6,781 | 5,404 | 3 | 94 | 228 | 150 | 70 |
| intertidal | OB5 | | 5 | 13,601 | 20,530 | 16,971 | 3,094 | 3 | 134 | 185 | 167 | 28 |
| intertidal | OB1 | | 5 | 12,517 | 15,579 | 13,977 | 1,261 | 3 | 282 | 341 | 310 | 30 |
| intertidal | ES02 | | 5 | 11,596 | 15,060 | 13,953 | 1,354 | 3 | 223 | 398 | 334 | 96 |
| intertidal | ES13 | | 5 | 10,787 | 22,381 | 16,808 | 4,375 | 3 | 332 | 583 | 500 | 145 |
| intertidal | ES04 | | 5 | 2,996 | 5,120 | 4,257 | 794 | 3 | 122 | 146 | 134 | 12 |
| intertidal | SG1 | | 5 | 1,852 | 2,500 | 2,169 | 324 | 3 | 111 | 154 | 131 | 22 |
| wetland | W63-H | high | 4 | 4,320 | 6,870 | 5,546 | 1,194 | 2 | 130 | 180 | 155 | 35 |
| wetland | W63-M | medium | 4 | 8,509 | 10,237 | 9,287 | 828 | 2 | 444 | 586 | 515 | 100 |
| wetland | W63-L | low | 4 | 10,000 | 10,801 | 10,431 | 349 | 2 | 538 | 608 | 573 | 50 |
| wetland | W63-MUD | mudflat | 4 | 10,887 | 14,880 | 12,327 | 1,862 | 2 | 327 | 477 | 402 | 106 |
| wetland | W17-H | high | 4 | 2,575 | 4,667 | 3,655 | 1,151 | 2 | 95 | 179 | 137 | 60 |
| wetland | W17-M | medium | 4 | 3,887 | 4,932 | 4,396 | 534 | 2 | 57 | 101 | 79 | 31 |
| wetland | W17-L | low | 4 | 8,257 | 9,423 | 8,915 | 484 | 2 | 527 | 669 | 598 | 100 |
| wetland | W17-MUD | mudflat | 4 | 11,455 | 14,098 | 12,453 | 1,147 | 2 | 327 | 355 | 341 | 20 |
| wetland | W65-H | high | 4 | 407 | 918 | 620 | 253 | 2 | 46 | 159 | 103 | 80 |
| wetland | W65-M | medium | 4 | 829 | 1,630 | 1,203 | 360 | 2 | 38 | 98 | 68 | 43 |
| wetland | W65-L | low | 4 | 8,087 | 11,685 | 9,965 | 1,484 | 2 | 318 | 361 | 339 | 30 |
| wetland | W65-MUD | mudflat | 4 | 7,681 | 10,087 | 9,145 | 1,044 | 2 | 214 | 275 | 245 | 43 |
| wetland | W21UM-CC | platform | 4 | 663 | 840 | 749 | 75 | 2 | 52 | 55 | 54 | 2 |
| wetland | W21UM-EC | platform | 4 | 3,315 | 4,976 | 4,102 | 691 | 2 | 182 | 391 | 286 | 148 |
| wetland | W21UM-W | platform | 4 | 409 | 740 | 516 | 152 | 2 | 19 | 22 | 20 | 2 |
| wetland | W21UM-S | platform | 4 | 954 | 1,995 | 1,529 | 494 | 2 | 135 | 208 | 172 | 51 |
| wetland | W21-H | high | 4 | 2,681 | 6,121 | 4,012 | 1,525 | 2 | 167 | 280 | 224 | 80 |
| wetland | W21-M | medium | 4 | 5,057 | 6,746 | 5,832 | 806 | 2 | 324 | 392 | 358 | 49 |
| wetland | W21-L | low | 4 | 9,772 | 11,661 | 10,461 | 871 | 2 | 278 | 412 | 345 | 95 |
| wetland | W21-MUD | mudflat | 4 | 10,674 | 11,406 | 11,042 | 301 | 2 | 302 | 340 | 321 | 27 |
| wetland | W61-H | high | 4 | 1,075 | 2,199 | 1,642 | 544 | 2 | 43 | 65 | 54 | 16 |
| wetland | W61-M | medium | 4 | 2,314 | 4,141 | 2,985 | 828 | 2 | 81 | 98 | 89 | 12 |
| wetland | W61-L | low | 4 | 4,274 | 5,703 | 4,887 | 596 | 2 | 104 | 128 | 116 | 17 |
| wetland | W61-MUD | mudflat | 3 | 13,019 | 14,480 | 13,981 | 834 | 2 | 480 | 514 | 497 | 24 |

Appendix 6. 2012 summary statistics using raw data for the percent total organic carbon and the percent fines (< 63 µm) in sediment.

| | | | Total Organic Carbon in Sediment | | | | | % Fines (<63 µm) in Sediment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sediment Type | Site | Elevation | n TOC | min % TOC | max % TOC | mean % TOC | SD % TOC | n %fines < 63 µm | min %fines < 63 µm | max %fines < 63 µm | mean %fines < 63 µm | SD %fines < 63 µm |
| subtidal | E01-1 | | 3 | 5.97 | 6.03 | 6.01 | 0.04 | 3 | 0.97 | 0.98 | 0.97 | 0.00 |
| subtidal | E01-3 | | 3 | 3.41 | 3.75 | 3.55 | 0.18 | 3 | 0.83 | 0.84 | 0.83 | 0.01 |
| subtidal | E01-4 | | 3 | 2.14 | 2.85 | 2.44 | 0.37 | 3 | 0.45 | 0.57 | 0.51 | 0.06 |
| intertidal | OV4 | | 5 | 7.29 | 9.75 | 8.40 | 0.94 | 5 | 0.66 | 0.77 | 0.72 | 0.04 |
| intertidal | OV1 | | 5 | 0.70 | 0.95 | 0.82 | 0.09 | 5 | 0.21 | 0.23 | 0.22 | 0.01 |
| intertidal | OV2 | | 5 | 0.43 | 1.37 | 0.89 | 0.38 | 5 | -0.02 | 0.11 | 0.04 | 0.06 |
| intertidal | BO5 | | 5 | 1.49 | 3.24 | 2.19 | 0.78 | 5 | 0.14 | 0.32 | 0.25 | 0.08 |
| intertidal | OB5 | | 5 | 4.79 | 7.55 | 6.33 | 1.09 | 5 | 0.63 | 0.80 | 0.71 | 0.06 |
| intertidal | OB1 | | 5 | 2.23 | 3.68 | 2.73 | 0.61 | 5 | 0.51 | 0.73 | 0.63 | 0.08 |
| intertidal | ES02 | | 5 | 6.64 | 7.53 | 7.08 | 0.36 | 5 | 0.81 | 0.89 | 0.84 | 0.04 |
| intertidal | ES13 | | 5 | 0.84 | 4.01 | 1.68 | 1.32 | 5 | 0.13 | 0.48 | 0.27 | 0.15 |
| intertidal | ES04 | | 5 | 1.25 | 2.67 | 1.59 | 0.61 | 5 | 0.24 | 0.33 | 0.27 | 0.03 |
| intertidal | SG1 | | 5 | 0.24 | 0.28 | 0.26 | 0.02 | 5 | 0.05 | 0.09 | 0.07 | 0.01 |
| wetland | W63-H | high | 4 | 1.15 | 6.28 | 2.99 | 2.26 | 4 | 0.30 | 0.78 | 0.46 | 0.22 |
| wetland | W63-M | medium | 4 | 7.16 | 10.50 | 9.20 | 1.47 | 4 | 0.97 | 0.99 | 0.98 | 0.01 |
| wetland | W63-L | low | 4 | 8.24 | 9.39 | 8.75 | 0.48 | 4 | 0.97 | 0.99 | 0.98 | 0.01 |
| wetland | W63-MUD | mudflat | 4 | 8.61 | 9.92 | 9.49 | 0.60 | 4 | 0.80 | 0.96 | 0.90 | 0.07 |
| wetland | W17-H | high | 4 | 16.80 | 24.70 | 21.83 | 3.57 | 4 | 0.69 | 0.78 | 0.73 | 0.04 |
| wetland | W17-M | medium | 4 | 17.90 | 19.20 | 18.50 | 0.55 | 4 | 0.76 | 0.82 | 0.79 | 0.03 |
| wetland | W17-L | low | 4 | 9.19 | 11.30 | 10.45 | 0.97 | 4 | 0.86 | 0.88 | 0.87 | 0.01 |
| wetland | W17-MUD | mudflat | 4 | 4.37 | 4.95 | 4.70 | 0.24 | 4 | 0.90 | 0.91 | 0.91 | 0.00 |
| wetland | W65-H | high | 4 | 30.20 | 32.90 | 31.43 | 1.33 | 4 | 0.53 | 0.62 | 0.57 | 0.04 |
| wetland | W65-M | medium | 4 | 26.20 | 29.60 | 28.08 | 1.41 | 4 | 0.75 | 0.92 | 0.81 | 0.08 |
| wetland | W65-L | low | 4 | 6.01 | 8.90 | 7.71 | 1.26 | 4 | 0.87 | 0.91 | 0.90 | 0.02 |
| wetland | W65-MUD | mudflat | 4 | 3.49 | 6.30 | 4.93 | 1.39 | 4 | 0.80 | 0.88 | 0.83 | 0.03 |
| wetland | W21UM-CC | platform | 4 | 23.80 | 29.70 | 27.00 | 2.57 | 4 | 0.50 | 0.67 | 0.59 | 0.08 |
| wetland | W21UM-EC | platform | 4 | 12.70 | 14.90 | 14.00 | 0.93 | 4 | 0.82 | 0.83 | 0.82 | 0.01 |
| wetland | W21UM-WA | platform | 4 | 28.90 | 32.00 | 30.43 | 1.36 | 4 | 0.56 | 0.69 | 0.62 | 0.05 |
| wetland | W21UM-S | platform | 4 | 18.30 | 23.70 | 20.30 | 2.51 | 4 | 0.69 | 0.74 | 0.71 | 0.02 |
| wetland | W21-H | high | 4 | 13.20 | 16.70 | 15.35 | 1.52 | 4 | 0.75 | 0.85 | 0.80 | 0.04 |
| wetland | W21-M | medium | 4 | 11.40 | 12.30 | 11.85 | 0.37 | 4 | 0.85 | 0.87 | 0.86 | 0.01 |
| wetland | W21-L | low | 4 | 7.88 | 8.44 | 8.20 | 0.23 | 4 | 0.93 | 0.94 | 0.94 | 0.01 |
| wetland | W21-MUD | mudflat | 4 | 5.37 | 6.85 | 6.31 | 0.65 | 4 | 0.92 | 0.95 | 0.94 | 0.01 |
| wetland | W61-H | high | 4 | 7.16 | 29.10 | 18.52 | 10.86 | 4 | 0.43 | 0.64 | 0.53 | 0.11 |
| wetland | W61-M | medium | 4 | 9.27 | 15.50 | 11.94 | 2.80 | 4 | 0.57 | 0.73 | 0.63 | 0.07 |
| wetland | W61-L | low | 4 | 10.10 | 11.30 | 10.58 | 0.51 | 4 | 0.72 | 0.80 | 0.76 | 0.04 |
| wetland | W61-MUD | mudflat | 3 | 2.12 | 2.50 | 2.26 | 0.21 | 4 | 0.40 | 0.60 | 0.49 | 0.10 |

Appendix 7. Statistical details of the biota temporal trend analyses for American eel, Atlantic tomcod and rainbow smelt. The results of post-hoc power analyses are listed as 1-β. An acceptable power statistic is generally equal to or greater than 0.80.

| | | | Total Hg, adjusted for size/age | | | | Total Hg, adjusted for size/age | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2006-2010 | | | | 2006-2012 | | |
| SPECIES | SITE | # YRs | significant? P = | slope incr(+)\|decr(-) | 1-β | # YRs | significant? P <0.05 | slope incr(+)\|decr(-) | 1-β |
| FISH - Eel | OV4 | 4 | no Δ | | 0.059 | 5 | 0.022 | -0.1024 | |
| | OV5 | 3 | no Δ | | 0.045 | | | | |
| | OV2 | 1 | NA | | | 2 | no Δ | | 0.063 |
| | BO67 | 4 | no Δ | | 0.086 | | | | |
| | BO66 | 3 | no Δ | | 0.093 | | | | |
| | BO3 | 4 | no Δ | | 0.105 | | | | |
| | BO4 | 4 | no Δ | | 0.076 | 5 | no Δ | | 0.134 |
| | OB5 | 4 | no Δ | | 0.085 | 5 | no Δ | | 0.159 |
| | OB3 | 2 | no Δ | | 0.048 | | | | |
| | OB73 | 4 | no Δ | | 0.081 | | | | |
| | OB4 | 2 | no Δ | | 0.042 | 3 | no Δ | | 0.059 |
| | OB1 | 4 | no Δ | | 0.066 | 5 | no Δ | | 0.287 |
| Tomcod | OB5 | 2 | 0.001 | -0.515 | | 3 | no Δ | | 0.129 |
| | OB4 | 2 | no Δ | | 0.056 | | | | |
| | OB1N-5 | 2 | 0.012 | -0.238 | | | | | |
| | OB1E-4 | 4 | no Δ | | 0.184 | 5 | no Δ | | 0.337 |
| | OB1E-3 | 2 | <0.001 | -0.379 | | | | | |
| | OB1S-1 | 3 | 0.01 | -0.121 | | | | | |
| | ES09E | 2 | no Δ | | 0.075 | | | | |
| | ES11N | 4 | no Δ | | 0.086 | | | | |
| | ES02E | 4 | no Δ | | 0.085 | 5 | 0.032 | -0.0572 | |
| | ES05S | 3 | no Δ | | 0.061 | | | | |
| | ES06S | 3 | no Δ | | 0.059 | | | | |
| | ES13 | 1 | — | | | 2 | no Δ | | 0.052 |
| Rainbow Smelt | OB5 | 1 | NA | | | 2 | 0.0009 | +0.4781 | |
| | OB4 | 2 | no Δ | | 0.038 | | | | |
| | OB1NE | 3 | no Δ | | 0.095 | 4 | <0.001 | -0.1778 | |
| | OB1S-1 | 3 | 0.010 | -0.180 | | | | | |
| | ES09E | 2 | <0.001 | -0.382 | | | | | |
| | ES11N | 4 | <0.001 | -0.388 | | | | | |
| | ES02E | 4 | no Δ | | 0.045 | 5 | 0.001 | -0.1171 | |
| | ES05S | 3 | no Δ | | 0.063 | | | | |
| | ES06S | 3 | 0.005 | -0.243 | | | | | |
| | ES15S | 2 | 0.040 | 0.457 | | | | | |
| | ES13 | 2 | 0.013 | -0.671 | | 3 | 0.022 | -0.1548 | |
| | ES13S | 4 | 0.001 | -0.212 | | | | | |
| | ES14N | 3 | no Δ | | 0.075 | | | | |
| | ESFP | 2 | 0.020 | -0.393 | | 3 | no Δ | | 0.115 |
| | ES04W | 3 | <0.001 | -0.235 | | | | | |
| | ES07S | 1 | NA | | | 2 | <0.001 | -0.1824 | |

Appendix 8. Statistical details of the biota temporal trend analyses for winter flounder and mummichog. The results of post-hoc power analyses are listed as 1-β. An acceptable power statistic is generally equal to or greater than 0.80.

| | | | Total Hg, adjusted for size/age | | | | Total Hg, adjusted for size/age | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2006-2010 | | | | 2006-2012 | | |
| SPECIES | SITE | # YRs | significant? P = | slope incr(+)\|decr(-) | 1-β | # YRs | significant? P <0.05 | slope incr(+)\|decr(-) | 1-β |
| Winter Flounder | OB5 | 1 | NA | | | 2 | no Δ | | 0.160 |
| | OB4 | 2 | no Δ | | 0.049 | | | | |
| | OB1E4 | 3 | <0.001 | 0.531 | | 4 | no Δ | | 0.107 |
| | OB1S-1 | 2 | no Δ | | 0.063 | | | | |
| | ES11N | 3 | no Δ | | 0.059 | | | | |
| | ES02E | 3 | no Δ | | 0.058 | 4 | no Δ | | 0.080 |
| | ES05S | 2 | no Δ | | 0.046 | | | | |
| | ES06S | 2 | 0.004 | -0.621 | | | | | |
| | ES15S | 4 | no Δ | | 0.070 | | | | |
| | ES13 | 2 | no Δ | | 0.066 | 3 | no Δ | | 0.102 |
| | ES13S | 4 | no Δ | | 0.069 | | | | |
| | ES14N | 3 | no Δ | | 0.072 | | | | |
| | ES12W | 2 | no Δ | | 0.048 | | | | |
| | ES03W | 2 | no Δ | | 0.046 | | | | |
| | ESFP | 2 | no Δ | | 0.055 | 3 | no Δ | | 0.062 |
| | ES04W | 3 | no Δ | | 0.055 | 4 | no Δ | | 0.060 |
| | ES07S | 2 | no Δ | | 0.062 | 3 | no Δ | | 0.073 |
| Mummichog | BO5 | 2 | 0.005 | -0.124 | | 3 | <0.001 | -0.2162 | |
| | OBINE | 3 | 0.001 | -0.206 | | | | | |
| | W21 | 1 | NA | | | 2 | <0.001 | -0.411 | |

Appendix 9. Statistical details of the biota temporal trend analyses for blue mussels and American lobster. The results of post-hoc power analyses are listed as 1-β. An acceptable power statistic is generally equal to or greater than 0.80.

| | | | Total Hg, adjusted for size | | | | Total Hg, adjusted for size | | | | Methyl Hg | | | Methyl Hg | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2006-2010 | | | | 2006-2012 | | | | 2006-2010 | | | 2006-2012 | | |
| | | # | significant? | trend | | # | significant? | trend | | # | significant? | trend | # | significant? | trend | |
| SPECIES | SITE | YR | P = | incr(+)\|decr(-) | 1-β | yr | P <0.05 | incr(+)\|decr(-) | 1-β | yr | P = | incr(+)\|decr(-) | yr | P = | incr(+)\|decr(-) | |
| SHELLFISH - | ES15 | 4 | <0.001 | -0.133 | | 5 | <0.001 | -0.1195 | | 4 | 0.004 | 0.12 | 5 | no Δ | | |
| Blue Mussel | ES13 | 4 | <0.001 | -0.337 | | 5 | <0.001 | -0.2309 | | 4 | <0.001 | -0.195 | 5 | <0.001 | -0.1901 | |
| | ES12 | 2 | <0.001 | -0.479 | | | | | | 2 | <0.001 | -0.417 | | | | |
| | ES03 | 4 | <0.001 | -0.249 | | | | | | 3 | 0.015 | -0.146 | | | | |
| | ESFP | 2 | no Δ | | | 3 | no Δ | | 0.278 | 2 | no Δ | | 3 | 0.021 | -0.1875 | |
| | ES14 | 3 | <0.001 | -0.274 | | | | | | 3 | no Δ | | | | | |
| | ES10 | 4 | no Δ | | 0.064 | | | | | 3 | no Δ | | | | | |
| | ES04 | 4 | no Δ | | 0.056 | 5 | 0.012 | 0.066 | | 3 | no Δ | | 5 | no Δ | | |
| | ES07 | 4 | no Δ | | 0.057 | | | | | 3 | no Δ | | | | | |
| | ES13-SPRING | 1 | NA | | | 2 | no Δ | | 0.052 | 1 | NA | | 2 | no Δ | | |
| | ES04-SPRING | 1 | NA | | | 2 | 0.005 | 0.2342 | | 1 | NA | | 2 | no Δ | | |
| Lobster tail | Odom Ledge | 3 | no Δ | | 0.046 | 4 | <0.001 | -0.248 | | | | | | | | |
| | S. Verona | 3 | no Δ | | 0.049 | 4 | no Δ | | 0.071 | | | | | | | |
| | Ft. Point | 3 | 0.006 | -0.293 | | 4 | no Δ | | 0.066 | | | | | | | |
| | Turner Point | 4 | no Δ | | 0.058 | 5 | no Δ | | 0.067 | | | | | | | |
| | SW Sears Island | 4 | no Δ | | 0.056 | 5 | no Δ | | 0.061 | | | | | | | |
| | Harborside | 4 | 0.004 | -0.229 | | 5 | <0.001 | -0.2034 | | | | | | | | |
| | Parker Cove | 3 | no Δ | | 0.054 | 4 | 0.009 | -0.1729 | | | | | | | | |
| | Kellys Cove | 2 | no Δ | | 0.059 | | | | | | | | | | | |

Appendix 10. Statistical details of the biota temporal trend analyses for marsh birds, double-crested cormorants and American black ducks. The results of post-hoc power analyses are listed as 1-β. An acceptable power statistic is generally equal to or greater than 0.80.

| | | | Total Hg, adjusted for size | | | | Total Hg, adjusted for size | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2006-2010 | | | | 2006-2012 | | |
| SPECIES | SITE | # Yrs | significant? P = | trend incr(+)\|decr(-) | 1-β | # Yrs | significant? P <0.05 | trend incr(+)\|decr(-) | 1-β |
| BIRDS - Nelson's Sparrow | W-17-N | 3 | no Δ | | 0.045 | 4 | no Δ | | 0.103 |
| | W-17-S | 3 | 0.003 | 0.626 | | | | | |
| | MM-CAR DEALER | 3 | no Δ | | 0.134 | | | | |
| | MM-NORTHEAST | 4 | 0.015 | -0.239 | | | | | |
| | MM-SOUTHEAST | 3 | 0.015 | 0.158 | | 4 | <0.001 | 0.215 | |
| | MM-JETTI | 4 | no Δ | | 0.581 | | | | |
| | MM-SOUTHWEST | 4 | 0.016 | -0.165 | | 5 | no Δ | | 0.242 |
| | MM-SOUTH-174 | 3 | no Δ | | 0.075 | | | | |
| | SCARBOROUGH EAST | 2 | 0.040 | 1.103 | | | | | |
| Swamp Sparrow | W-17-N | 3 | no Δ | | 0.057 | 4 | no Δ | | 0.091 |
| | MM-CAR DEALER | 2 | no Δ | | 0.048 | | | | |
| | MM-SOUTHEAST | 2 | no Δ | | 0.051 | 3 | no Δ | | 0.110 |
| | MM-JETTI | 3 | no Δ | | 0.049 | | | | |
| | MM-SOUTHWEST | 4 | no Δ | | 0.043 | 5 | no Δ | | 0.065 |
| | MM-SOUTH-174 | 4 | 0.045 | -0.333 | | | | | |
| Red-winged Blackbird | W-17-N | 1 | NA | | 0.043 | 2 | no Δ | | |
| | MM-NORTHEAST | 3 | no Δ | | 0.050 | | | | |
| | MM-SOUTHEAST | 2 | 0.038 | 2.718 | | 3 | 0.04 | 0.7529 | |
| | MM-SOUTHWEST | 4 | no Δ | | 0.044 | 5 | no Δ | | 0.045 |
| | MM-SOUTH-174 | 4 | no Δ | | 0.039 | | | | |
| Virginia Rail | MM-SOUTHEAST | 3 | no Δ | | 0.056 | | | | |
| | MM-JETTI | 3 | no Δ | | 0.062 | | | | |
| | MM-SOUTHWEST | 4 | no Δ | | 0.068 | | | | |
| | MM-SOUTH-174 | 2 | <0.001 | 1.08 | | | | | |
| | SCARBOROUGH | 2 | no Δ | | 0.067 | | | | |
| Double-crested Cormorant | Luce Cove | 2 | no Δ | | 1.000 | | | | |
| | Sandy Point | 4 | no Δ | | 0.052 | 5 | no Δ | | 0.077 |
| | Thrumcap | 4 | no Δ | | 0.064 | 5 | no Δ | | 0.078 |
| American Black Duck | Mendall Marsh | 1 | NA | | | 2 | no Δ | | 0.058 |
| | Verona Island | 1 | NA | | | 2 | no Δ | | 0.058 |
| | Frenchman Bay | 1 | NA | | | 2 | no Δ | | 0.060 |

Appendix 11. Statistical details of the sediment temporal trend analyses.

| | | | Total Hg | | | Total Hg | | Total Hg, adjusted for TOC | | | Methyl Hg | | | Methyl Hg | | Methyl Hg, adjusted for TOC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2006-2010 | | | 2006-2012 | | 2006-2012 | | | 2006-2010 | | | 2006-2012 | | 2006-2012 | |
| | | | significant? | slope | | significant? | slope | significant? | slope | | significant? | slope | | significant? | slope | significant? | slope |
| SAMPLE | SITE | n | P = | incr(+)\|decr(-) | n | P <0.05 | incr(+)\|decr(-) | P <0.05 | incr(+)\|decr(-) | n | P = | incr(+)\|decr(-) | n | P = | incr(+)\|decr(-) | P = | incr(+)\|decr(-) |
| Intertidal Sediment | OV4 | 3 | no Δ | | 4 | no Δ | | no Δ | | 3 | no Δ | | 4 | no Δ | | no Δ | |
| | OV1 | 3 | no Δ | | 4 | no Δ | | no Δ | | 3 | 0.001 | -0.782 | 4 | no Δ | | no Δ | |
| | OV2 | 2 | no Δ | | 3 | 0.03 | -0.2122 | no Δ | | 2 | no Δ | | 3 | 0.01 | -0.4502 | 0.024 | -0.3872 |
| | BO5 | 2 | no Δ | | 3 | <0.001 | -0.4465 | 0.002 | -0.291 | 2 | no Δ | | 3 | 0.015 | -0.4257 | no Δ | |
| | OB5 | 3 | no Δ | | 4 | no Δ | | no Δ | | 3 | no Δ | | 4 | 0.051 | -0.3163 | no Δ | |
| | OB1 | 3 | no Δ | | 4 | no Δ | | no Δ | | 3 | no Δ | | 4 | no Δ | | no Δ | |
| | ES02 | 3 | no Δ | | 4 | no Δ | | no Δ | | 3 | no Δ | | 4 | no Δ | | no Δ | |
| | ES13 | 3 | 0.009 | 0.439 | 4 | no Δ | | no Δ | | 3 | no Δ | | 4 | no Δ | | no Δ | |
| | ES04 | 3 | no Δ | | 4 | no Δ | | no Δ | | 3 | 0.003 | -0.648 | 4 | no Δ | | no Δ | |
| | SG1 | 1 | — | | 2 | no Δ | | no Δ | | 1 | — | | 2 | 0.012 | 1.3043 | 0.009 | 1.3082 |
| Subtidal Sediment | E01-1 | 3 | no Δ | | 4 | no Δ | | | | 3 | 0.051 | -0.24 | 4 | no Δ | | | |
| | E01-2 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| | E01-3 | 3 | no Δ | | 4 | no Δ | | | | 3 | no Δ | | 4 | no Δ | | | |
| | E01-4 | 3 | no Δ | | 4 | no Δ | | | | 3 | 0.045 | -0.246 | 4 | no Δ | | | |
| | E01-5 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| Wetland Sediment - High | W63 | 3 | no Δ | | 4 | <0.001 | -0.4789 | | | 3 | 0.04 | -0.537 | 4 | 0.015 | -0.3973 | | |
| | W10 | 3 | no Δ | | | | | | | 3 | 0.051 | 0.723 | | | | | |
| | W17 | 4 | no Δ | | 5 | no Δ | | | | 4 | no Δ | | 5 | no Δ | | | |
| | W65 | 1 | — | | 2 | no Δ | | | | 1 | — | | 2 | no Δ | | | |
| | W21 | 4 | no Δ | | 5 | no Δ | | | | 4 | no Δ | | 5 | no Δ | | | |
| | W25 | 4 | no Δ | | | | | | | 4 | 0.001 | 0.769 | | | | | |
| | W26 | 3 | no Δ | | | | | | | 3 | 0.003 | 1.12 | | | | | |
| | W61 | 1 | — | | 2 | no Δ | | | | 1 | — | | 2 | no Δ | | | |
| Wetland Sediment - Medium | W63 | 3 | no Δ | | 4 | no Δ | | | | 3 | no Δ | | 4 | no Δ | | | |
| | W10 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| | W17 | 4 | no Δ | | 5 | no Δ | | | | 4 | no Δ | | 5 | 0.002 | -0.3418 | | |
| | W65 | 1 | — | | 2 | <0.001 | 0.3606 | | | 1 | — | | 2 | no Δ | | | |
| | W21 | 4 | no Δ | | 5 | 0.032 | -0.0836 | | | 4 | 0.038 | -0.329 | 5 | no Δ | | | |
| | W25 | 4 | no Δ | | | | | | | 4 | no Δ | | | | | | |
| | W26 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| | W61 | 1 | — | | 2 | <0.001 | -0.2251 | | | 1 | — | | 2 | no Δ | | | |
| Wetland Sediment - Low | W63 | 3 | no Δ | | 4 | 0.048 | -0.1211 | | | 3 | no Δ | | 4 | no Δ | | | |
| | W10 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| | W17 | 4 | no Δ | | 5 | no Δ | | | | 4 | no Δ | | 5 | no Δ | | | |
| | W65 | 1 | — | | 2 | no Δ | | | | 1 | — | | 2 | no Δ | | | |
| | W21 | 4 | no Δ | | 5 | no Δ | | | | 4 | no Δ | | 5 | no Δ | | | |
| | W25 | 4 | no Δ | | | | | | | 4 | 0.011 | -0.245 | | | | | |
| | W26 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| | W61 | 1 | — | | 2 | no Δ | | | | 1 | — | | 2 | no Δ | | | |
| Wetland Sediment - Mudflat | W63 | 3 | no Δ | | 4 | no Δ | | | | 3 | no Δ | | 4 | no Δ | | | |
| | W10 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| | W17 | 4 | no Δ | | 5 | 0.021 | -0.1601 | | | 4 | no Δ | | 5 | no Δ | | | |
| | W65 | 1 | — | | 2 | no Δ | | | | 1 | — | | 2 | no Δ | | | |
| | W21 | 4 | 0.016 | -0.295 | 5 | 0.009 | -0.1825 | | | 4 | 0.011 | -0.4088 | 5 | 0.047 | -0.2105 | | |
| | W25 | 4 | 0.044 | -0.245 | | | | | | 4 | 0.036 | -0.336 | | | | | |
| | W26 | 3 | no Δ | | | | | | | 3 | no Δ | | | | | | |
| | W61 | 1 | — | | 2 | no Δ | | | | 1 | — | | 2 | no Δ | | | |