Supplemental Table 1. Depth profiles of 210Pb, CRS-derived dating of vertical increments, sediment accumulation rates, and sediment characteristics. Gray-shaded increments were considered background total 210Pb activities in the core vertical profile. Red text are interpolated values for missing measurements. DPM=disintegrations per minute.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coring location | Increment mid-depth (cm) | Bulk density (g cm-3) | C (%) | N (%) | P  (mg g-1) | Total 210Pb activity (dpm g-1) | Total 210Pb error (dpm g-1) | Unsupported 210Pb  (dpm g-1) | Age (yr) | Age uncertainty (± yr) | Vertical accretion (mm yr-1) | Sediment accumulation (g m-2 yr-1) | C accumulation (g-C m-2 yr-1) | N accumulation (g-N m-2 yr-1) | P accumulation (mg-P m-2 yr-1) |
| W1 | 0.5 |  | 18.3 | 1.22 | 0.89 |  | 0.17 | 4.31 | 0.0 | 0.2 |  | 659 | 120.9 | 8.03 | 586 |
| Tidal | 1.5 | 0.12 | 15.9 | 1.08 | 0.77 | 6.28 | 0.17 | 4.31 | 2.0 | 0.1 | 7.5 | 620 | 98.8 | 6.70 | 476 |
| Freshwater | 2.5 | 0.13 | 16.6 | 0.99 | 0.81 | 6.45 | 0.19 | 4.47 | 3.9 | 0.2 | 6.4 | 563 | 93.4 | 5.58 | 458 |
| Forest | 3.5 | 0.13 | 17.2 | 0.97 | 0.72 | 6.21 | 0.17 | 4.24 | 6.4 | 0.2 | 5.5 | 549 | 94.5 | 5.30 | 393 |
|  | 4.5 | 0.13 | 17.9 | 1.16 | 0.79 | 6.21 | 0.17 | 4.23 | 8.8 | 0.2 | 5.1 | 511 | 91.5 | 5.92 | 405 |
|  | 5.5 | 0.15 | 17.6 | 1.05 | 0.72 | 7.72 | 0.26 | 5.74 | 11.5 | 0.4 | 4.8 | 346 | 61.0 | 3.63 | 250 |
|  | 6.5 | 0.19 | 18.4 | 0.92 | 0.73 | 6.33 | 0.17 | 4.35 | 16.3 | 0.4 | 4.0 | 393 | 72.2 | 3.61 | 286 |
|  | 7.5 | 0.16 | 16.2 | 0.93 | 0.75 | 6.17 | 0.17 | 4.19 | 21.4 | 0.4 | 3.5 | 348 | 56.5 | 3.22 | 261 |
|  | 8.5 | 0.14 | 18.4 | 0.88 | 0.64 | 6.21 | 0.17 | 4.23 | 26.6 | 0.4 | 3.2 | 293 | 54.0 | 2.57 | 189 |
|  | 9.5 | 0.15 | 16.5 | 1.15 | 0.78 | 5.35 | 0.10 | 3.37 | 31.8 | 0.3 | 3.0 | 313 | 51.6 | 3.60 | 243 |
|  | 10.5 | 0.15 | 18.4 | 1.09 | 0.71 | 5.16 | 0.11 | 3.18 | 36.8 | 0.4 | 2.9 | 284 | 52.3 | 3.09 | 201 |
|  | 11.5 | 0.18 | 23.3 | 1.72 | 0.67 | 5.25 | 0.10 | 3.27 | 42.8 | 0.5 | 2.7 | 229 | 53.3 | 3.93 | 154 |
|  | 12.5 | 0.12 | 18.4 | 1.16 | 0.62 | 4.40 | 0.09 | 2.42 | 51.9 | 0.4 | 2.4 | 233 | 42.8 | 2.70 | 145 |
|  | 13.5 | 0.11 | 21.3 | 1.37 | 0.61 | 3.96 | 0.08 | 1.98 | 57.7 | 0.4 | 2.3 | 238 | 50.8 | 3.25 | 145 |
|  | 14.5 | 0.13 | 26.6 | 1.49 | 0.59 | 3.83 | 0.08 | 1.85 | 62.7 | 0.6 | 2.3 | 217 | 57.9 | 3.25 | 128 |
|  | 15.5 | 0.13 | 26.0 | 1.61 | 0.64 |  |  | 1.94 | 69.5 | 0.7 | 2.2 | 169 | 43.9 | 2.71 | 107 |
|  | 16.5 | 0.13 | 25.4 | 1.73 | 0.68 | 4.00 | 0.09 | 2.02 | 78.5 | 1.0 | 2.1 | 122 | 31.0 | 2.11 | 83 |
|  | 17.5 | 0.22 | 23.0 | 1.37 | 0.59 | 3.38 | 0.07 | 1.40 | 91.9 | 2.0 | 1.9 | 116 | 26.7 | 1.59 | 68 |
|  | 18.5 | 0.31 | 8.0 | 0.52 | 0.63 | 2.67 | 0.06 | 0.69 | 120.5 | 5.9 | 1.5 | 96 | 7.7 | 0.50 | 61 |
|  | 19.5 | 0.52 | 7.3 | 0.51 | 0.65 | 1.98 | 0.05 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| W2 | 0.5 | 0.13 | 16.9 | 1.05 | 0.68 | 7.12 | 0.19 | 5.27 | 0.0 | 0.3 |  | 286 | 48.4 | 3.00 | 194 |
| Moderately | 1.5 | 0.13 | 20.7 | 1.61 | 0.69 | 5.76 | 0.11 | 3.91 | 4.9 | 0.2 | 3.1 | 331 | 68.4 | 5.33 | 229 |
| salt- | 2.5 | 0.12 | 24.1 | 1.43 | 0.72 | 5.89 | 0.12 | 4.04 | 9.0 | 0.3 | 2.8 | 282 | 67.8 | 4.03 | 203 |
| impacted | 3.5 | 0.16 | 28.5 | 2.38 | 0.72 | 5.39 | 0.10 | 3.54 | 13.6 | 0.3 | 2.6 | 279 | 79.4 | 6.64 | 201 |
| forest | 4.5 | 0.12 | 21.8 | 1.63 | 0.62 | 6.04 | 0.12 | 4.19 | 19.9 | 0.3 | 2.3 | 193 | 42.1 | 3.15 | 119 |
|  | 5.5 | 0.12 | 27.5 | 1.52 | 0.66 | 5.27 | 0.12 | 3.42 | 26.5 | 0.4 | 2.1 | 193 | 52.9 | 2.92 | 126 |
|  | 6.5 | 0.08 | 26.8 | 1.95 | 0.66 | 4.39 | 0.10 | 2.54 | 33.4 | 0.3 | 1.9 | 210 | 56.2 | 4.09 | 139 |
|  | 7.5 | 0.10 | 26.0 | 1.90 | 0.59 | 4.05 | 0.08 | 2.20 | 37.5 | 0.4 | 2.0 | 213 | 55.3 | 4.05 | 126 |
|  | 8.5 | 0.09 | 30.0 | 2.40 | 0.61 | 4.20 | 0.09 | 2.35 | 42.8 | 0.4 | 2.0 | 169 | 50.7 | 4.06 | 103 |
|  | 9.5 | 0.14 | 34.8 | 2.39 | 0.53 | 3.33 | 0.07 | 1.48 | 48.8 | 0.6 | 1.9 | 222 | 77.2 | 5.30 | 117 |
|  | 10.5 | 0.11 | 31.4 | 2.50 | 0.45 | 2.37 | 0.07 | 0.51 | 55.7 | 0.5 | 1.9 | 516 | 161.9 | 12.91 | 230 |
|  | 11.5 | 0.07 | 33.4 | 2.41 | 0.45 | 3.26 | 0.08 | 1.41 | 57.8 | 0.4 | 2.0 | 176 | 58.9 | 4.26 | 80 |
|  | 12.5 | 0.12 | 31.5 | 2.63 | 0.44 | 3.55 | 0.08 | 1.69 | 61.9 | 0.8 | 2.0 | 129 | 40.7 | 3.39 | 56 |
|  | 13.5 | 0.14 | 31.0 | 2.80 | 0.51 | 3.62 | 0.08 | 1.77 | 73.0 | 1.5 | 1.9 | 88 | 27.2 | 2.46 | 45 |
|  | 14.5 | 0.10 | 33.4 | 2.53 | 0.52 | 3.36 | 0.09 | 1.51 | 95.6 | 2.3 | 1.5 | 51 | 17.0 | 1.29 | 26 |
|  | 15.5 | 0.18 | 23.6 | 1.50 | 0.57 | 2.36 | 0.06 | 0.50 | 127.5 | 7.3 | 1.2 | 56 | 13.3 | 0.85 | 32 |
|  | 16.5 | 0.21 | 9.3 | 0.63 | 0.49 | 1.90 | 0.04 |  |  |  |  |  |  |  |  |
|  | 17.5 | 0.25 | 10.3 | 0.66 | 0.50 | 1.89 | 0.05 |  |  |  |  |  |  |  |  |
|  | 18.5 | 0.24 | 7.8 | 0.46 | 0.45 | 1.83 | 0.04 |  |  |  |  |  |  |  |  |
|  | 19.5 | 0.22 | 11.4 | 0.69 | 0.48 | 1.79 | 0.04 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| W3 | 1 | 0.07 | 26.2 | 1.25 | 0.33 | 6.60 | 0.13 | 5.13 | 0.0 | 0.3 |  | 230 | 60.2 | 2.88 | 76 |
| Highly | 3 | 0.15 | 33.2 | 2.05 | 0.57 | 4.54 | 0.09 | 3.07 | 6.8 | 0.6 | 4.4 | 310 | 102.8 | 6.34 | 177 |
| salt- | 5 | 0.10 | 32.2 | 2.40 | 0.50 | 3.53 | 0.07 | 2.05 | 18.1 | 0.5 | 2.8 | 326 | 104.9 | 7.83 | 162 |
| impacted | 7 | 0.12 | 31.1 | 2.36 | 0.47 | 3.55 | 0.07 | 2.08 | 25.3 | 0.7 | 2.8 | 258 | 80.2 | 6.08 | 120 |
| forest | 9 | 0.10 | 31.2 | 2.17 | 0.51 | 3.45 | 0.07 | 1.98 | 36.6 | 0.8 | 2.5 | 190 | 59.4 | 4.12 | 97 |
|  | 11 | 0.12 | 32.0 | 1.98 | 0.26 | 3.10 | 0.07 | 1.63 | 49.9 | 1.3 | 2.2 | 153 | 48.9 | 3.02 | 40 |
|  | 13 | 0.10 | 26.6 | 1.81 | 0.37 | 2.41 | 0.06 | 0.94 | 70.3 | 1.7 | 1.8 | 141 | 37.4 | 2.55 | 52 |
|  | 15 | 0.13 | 30.7 | 1.79 | 0.37 | 2.35 | 0.06 | 0.87 | 89.9 | 4.3 | 1.7 | 82 | 25.2 | 1.47 | 30 |
|  | 17 |  |  |  |  | 2.16 |  | 0.69 |  |  |  |  |  |  |  |
|  | 19 | 0.16 |  |  |  | 1.47 | 0.04 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| W4 | 0.5 | 0.13 | 14.0 | 0.62 | 0.91 |  |  | 4.82 | 0.0 | 0.2 |  | 317 | 44.4 | 1.97 | 289 |
| Oligohaline | 1.5 | 0.13 | 14.0 | 0.62 | 0.91 |  |  | 4.82 | 4.4 | 0.2 | 3.4 | 277 | 38.8 | 1.72 | 252 |
| marsh | 2.5 | 0.12 | 14.0 | 0.62 | 0.91 | 6.79 | 0.12 | 5.43 | 9.3 | 0.3 | 2.7 | 211 | 29.5 | 1.31 | 192 |
|  | 3.5 | 0.16 | 13.4 | 0.59 | 0.68 | 6.24 | 0.11 | 4.88 | 15.6 | 0.4 | 2.2 | 192 | 25.7 | 1.14 | 130 |
|  | 4.5 | 0.12 | 14.9 | 0.67 | 0.68 | 4.53 | 0.09 | 3.18 | 25.2 | 0.3 | 1.8 | 219 | 32.6 | 1.47 | 149 |
|  | 5.5 | 0.12 | 17.6 | 0.74 | 0.72 | 6.74 | 0.16 | 5.39 | 31.0 | 0.6 | 1.8 | 108 | 19.0 | 0.80 | 78 |
|  | 6.5 | 0.08 | 15.2 | 1.04 | 0.75 | 6.58 | 0.14 | 5.22 | 44.5 | 0.6 | 1.5 | 73 | 11.1 | 0.76 | 55 |
|  | 7.5 | 0.09 | 15.4 | 0.71 | 0.82 |  |  | 4.38 | 58.3 | 0.8 | 1.3 | 57 | 8.8 | 0.40 | 46 |
|  | 8.5 | 0.09 | 15.1 | 0.79 | 0.66 | 4.90 | 0.09 | 3.54 | 79.0 | 1.3 | 1.1 | 37 | 5.6 | 0.29 | 24 |
|  | 9.5 | 0.14 | 17.2 | 0.75 | 0.68 | 1.81 | 0.06 | 0.46 | 128.9 | 5.6 | 0.7 | 60 | 10.3 | 0.45 | 41 |
|  | 10.5 | 0.11 | 19.8 | 0.85 | 0.49 | 1.59 | 0.04 | 0.24 | 168.9 | 10.4 | 0.6 | 33 | 6.5 | 0.28 | 16 |
|  | 11.5 | 0.07 | 18.2 | 0.87 | 0.66 | 1.32 | 0.04 |  |  |  |  |  |  |  |  |
|  | 12.5 | 0.12 | 14.9 | 0.86 | 0.61 | 1.35 | 0.03 |  |  |  |  |  |  |  |  |
|  | 13.5 | 0.14 | 17.4 | 0.77 | 0.65 | 1.34 | 0.04 |  |  |  |  |  |  |  |  |
|  | 14.5 | 0.10 | 16.9 | 0.80 | 0.59 | 1.40 | 0.03 |  |  |  |  |  |  |  |  |