

**Table S1.** Age-depth model using Bayesian statistics to reconstruct accumulation history for sedimentary deposit of core NAT-5.

| Depth | Min Age | Max Age | Median Age | Mean Age | Depth | Min Age | Max Age | Median Age | Mean Age |
|-------|---------|---------|------------|----------|-------|---------|---------|------------|----------|
| 0     | -80     | -52     | -67        | -67      | 76    | 2782    | 3056    | 2893       | 2897     |
| 1     | -68     | 47      | -36        | -29      | 77    | 2795    | 3095    | 2920       | 2924     |
| 2     | -64     | 157     | -6         | 9        | 78    | 2804    | 3155    | 2945       | 2951     |
| 3     | -60     | 267     | 24         | 46       | 79    | 2811    | 3217    | 2968       | 2979     |
| 4     | -57     | 377     | 54         | 84       | 80    | 2817    | 3286    | 2991       | 3006     |
| 5     | -54     | 487     | 84         | 121      | 81    | 2841    | 3315    | 3019       | 3033     |
| 6     | -29     | 530     | 124        | 160      | 82    | 2856    | 3338    | 3048       | 3060     |
| 7     | -13     | 573     | 165        | 198      | 83    | 2868    | 3375    | 3076       | 3088     |
| 8     | -1      | 627     | 206        | 236      | 84    | 2879    | 3421    | 3103       | 3115     |
| 9     | 9       | 706     | 244        | 274      | 85    | 2891    | 3482    | 3127       | 3142     |
| 10    | 19      | 786     | 279        | 312      | 86    | 2919    | 3506    | 3156       | 3169     |
| 11    | 53      | 823     | 320        | 352      | 87    | 2941    | 3528    | 3184       | 3197     |
| 12    | 77      | 862     | 362        | 392      | 88    | 2956    | 3562    | 3212       | 3224     |
| 13    | 93      | 918     | 405        | 431      | 89    | 2972    | 3597    | 3240       | 3252     |
| 14    | 108     | 974     | 444        | 471      | 90    | 2985    | 3646    | 3267       | 3279     |
| 15    | 119     | 1055    | 482        | 511      | 91    | 3016    | 3667    | 3294       | 3306     |
| 16    | 157     | 1089    | 521        | 549      | 92    | 3038    | 3691    | 3323       | 3334     |
| 17    | 183     | 1133    | 559        | 588      | 93    | 3055    | 3719    | 3350       | 3361     |
| 18    | 208     | 1179    | 602        | 627      | 94    | 3070    | 3754    | 3378       | 3388     |
| 19    | 226     | 1241    | 637        | 665      | 95    | 3082    | 3800    | 3407       | 3416     |
| 20    | 242     | 1304    | 676        | 704      | 96    | 3114    | 3820    | 3434       | 3442     |
| 21    | 284     | 1334    | 717        | 742      | 97    | 3138    | 3845    | 3463       | 3469     |
| 22    | 320     | 1377    | 758        | 780      | 98    | 3160    | 3871    | 3492       | 3496     |
| 23    | 348     | 1408    | 799        | 818      | 99    | 3181    | 3901    | 3519       | 3522     |
| 24    | 372     | 1451    | 837        | 856      | 100   | 3197    | 3940    | 3546       | 3549     |
| 25    | 390     | 1500    | 873        | 895      | 101   | 3229    | 3956    | 3574       | 3576     |
| 26    | 438     | 1525    | 914        | 934      | 102   | 3263    | 3976    | 3601       | 3604     |
| 27    | 479     | 1564    | 956        | 974      | 103   | 3286    | 3996    | 3631       | 3631     |
| 28    | 504     | 1607    | 1000       | 1014     | 104   | 3307    | 4023    | 3659       | 3658     |
| 29    | 531     | 1653    | 1042       | 1054     | 105   | 3323    | 4055    | 3687       | 3686     |
| 30    | 548     | 1715    | 1082       | 1093     | 106   | 3355    | 4069    | 3714       | 3713     |
| 31    | 586     | 1743    | 1122       | 1133     | 107   | 3380    | 4088    | 3742       | 3740     |
| 32    | 622     | 1775    | 1165       | 1173     | 108   | 3405    | 4113    | 3771       | 3768     |
| 33    | 655     | 1809    | 1206       | 1212     | 109   | 3423    | 4139    | 3800       | 3795     |
| 34    | 681     | 1846    | 1248       | 1252     | 110   | 3442    | 4172    | 3828       | 3822     |
| 35    | 706     | 1900    | 1287       | 1291     | 111   | 3480    | 4188    | 3856       | 3850     |
| 36    | 750     | 1931    | 1327       | 1330     | 112   | 3514    | 4208    | 3885       | 3877     |
| 37    | 787     | 1957    | 1370       | 1369     | 113   | 3545    | 4229    | 3914       | 3905     |
| 38    | 820     | 1991    | 1409       | 1408     | 114   | 3569    | 4256    | 3941       | 3932     |

|    |      |      |      |      |     |      |      |      |      |
|----|------|------|------|------|-----|------|------|------|------|
| 39 | 849  | 2028 | 1450 | 1448 | 115 | 3588 | 4282 | 3968 | 3960 |
| 40 | 876  | 2076 | 1489 | 1487 | 116 | 3632 | 4295 | 3994 | 3987 |
| 41 | 929  | 2105 | 1529 | 1526 | 117 | 3671 | 4310 | 4024 | 4015 |
| 42 | 966  | 2136 | 1569 | 1565 | 118 | 3702 | 4330 | 4051 | 4043 |
| 43 | 999  | 2169 | 1611 | 1604 | 119 | 3724 | 4360 | 4080 | 4070 |
| 44 | 1039 | 2200 | 1654 | 1643 | 120 | 3743 | 4388 | 4108 | 4098 |
| 45 | 1066 | 2238 | 1691 | 1682 | 121 | 3792 | 4400 | 4134 | 4126 |
| 46 | 1121 | 2260 | 1734 | 1722 | 122 | 3839 | 4416 | 4161 | 4153 |
| 47 | 1168 | 2289 | 1773 | 1762 | 123 | 3878 | 4430 | 4188 | 4181 |
| 48 | 1219 | 2318 | 1814 | 1802 | 124 | 3901 | 4450 | 4219 | 4209 |
| 49 | 1253 | 2366 | 1855 | 1843 | 125 | 3922 | 4477 | 4247 | 4236 |
| 50 | 1281 | 2414 | 1896 | 1883 | 126 | 3984 | 4484 | 4271 | 4263 |
| 51 | 1338 | 2434 | 1933 | 1921 | 127 | 4044 | 4492 | 4294 | 4290 |
| 52 | 1387 | 2461 | 1973 | 1959 | 128 | 4087 | 4503 | 4320 | 4317 |
| 53 | 1419 | 2490 | 2013 | 1998 | 129 | 4128 | 4518 | 4348 | 4343 |
| 54 | 1456 | 2525 | 2053 | 2036 | 130 | 4157 | 4540 | 4376 | 4370 |
| 55 | 1488 | 2567 | 2091 | 2074 | 131 | 4173 | 4565 | 4398 | 4391 |
| 56 | 1549 | 2586 | 2132 | 2114 | 132 | 4189 | 4603 | 4418 | 4413 |
| 57 | 1614 | 2605 | 2173 | 2153 | 133 | 4202 | 4645 | 4437 | 4434 |
| 58 | 1659 | 2631 | 2212 | 2193 | 134 | 4215 | 4697 | 4455 | 4455 |
| 59 | 1693 | 2665 | 2252 | 2232 | 135 | 4226 | 4759 | 4473 | 4476 |
| 60 | 1725 | 2707 | 2295 | 2272 | 136 | 4247 | 4777 | 4494 | 4496 |
| 61 | 1790 | 2718 | 2331 | 2311 | 137 | 4262 | 4805 | 4512 | 4516 |
| 62 | 1852 | 2734 | 2371 | 2351 | 138 | 4273 | 4833 | 4531 | 4536 |
| 63 | 1904 | 2756 | 2411 | 2390 | 139 | 4289 | 4870 | 4549 | 4556 |
| 64 | 1931 | 2786 | 2455 | 2430 | 140 | 4298 | 4905 | 4567 | 4576 |
| 65 | 1959 | 2820 | 2494 | 2469 | 141 | 4318 | 4931 | 4588 | 4597 |
| 66 | 2045 | 2835 | 2534 | 2510 | 142 | 4329 | 4958 | 4606 | 4617 |
| 67 | 2132 | 2853 | 2574 | 2551 | 143 | 4340 | 4984 | 4627 | 4637 |
| 68 | 2198 | 2871 | 2615 | 2592 | 144 | 4350 | 5016 | 4648 | 4657 |
| 69 | 2239 | 2897 | 2658 | 2633 | 145 | 4362 | 5050 | 4667 | 4677 |
| 70 | 2276 | 2926 | 2703 | 2674 | 146 | 4382 | 5067 | 4687 | 4698 |
| 71 | 2385 | 2939 | 2732 | 2713 | 147 | 4402 | 5088 | 4708 | 4718 |
| 72 | 2489 | 2955 | 2762 | 2752 | 148 | 4415 | 5114 | 4730 | 4738 |
| 73 | 2596 | 2974 | 2793 | 2791 | 149 | 4426 | 5151 | 4749 | 4758 |
| 74 | 2693 | 3000 | 2828 | 2830 | 150 | 4441 | 5187 | 4767 | 4779 |
| 75 | 2759 | 3028 | 2865 | 2870 |     |      |      |      |      |