**Supplementary Information Table 1.** Sample levels in core 2012002PGC133 from Kyuquot Sound (British Columbia, Canada), with indication of sample code, depth below seafloor, sample weight, number of *Lycopodium* marker grains and total dinoflagellate cysts counted, and counts of *Hiddenocysta matsuokae* sp. nov., gen. nov., Forma 1 and Forma 2.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample n°** | **Depth (cm)** | **Sediment dry weight (g)** | ***Lycopodium* marker grains counted** | **Total dinoflagellate cysts counted** | ***Hiddenocysta matsuokae* Forma 1** | ***Hiddenocysta matsuokae* Forma 2** |
| 15-684 | 1 | 2,738 | 31 | 295 | 1 | 1 |
| 15-683 | 5 | 2,627 | 31 | 295 |   | 1 |
| 15-682 | 10 | 2,171 | 19 | 317 |   | 1 |
| 15-681 | 15 | 2,534 | 29 | 284 |   | 3 |
| 15-680 | 20 | 2,045 | 21 | 272 |   | 1 |
| 15-679 | 25 | 2,103 | 36 | 302 |   |   |
| 15-678 | 30 | 1,695 | 44 | 311 |   | 1 |
| 15-677 | 31 | 1,955 | 27 | 297 |   |   |
| 15-676 | 40 | 2,031 | 36 | 288 |   | 3 |
| 15-675 | 50 | 2,628 | 38 | 300 |   |   |
| 15-674 | 60 | 1,131 | 60 | 325 |   | 2 |
| 15-673 | 70 | 1,521 | 43 | 299 |   | 1 |
| 15-672 | 81 | 1,213 | 44 | 315 |   |   |
| 15-671 | 90 | 1,783 | 28 | 317 |   | 3 |
| 15-670 | 100 | 1,216 | 29 | 299 |   | 3 |
| 15-669 | 110 | 1,572 | 9 | 317 |   | 2 |
| 15-668 | 120 | 1,499 | 42 | 296 |   |   |
| 15-667 | 130 | 1,488 | 54 | 312 | 3 | 2 |
| 15-666 | 140 | 1,412 | 49 | 317 |   |   |
| 15-665B | 150 | 1,917 | 45 | 289 |   | 3 |
| 15-665A | 160 | 1,606 | 52 | 297 |   | 1 |
| 15-664 | 170 | 1,814 | 31 | 287 |   | 3 |
| 15-663 | 180 | 1,564 | 40 | 295 | 1 | 1 |
| 15-662 | 190 | 1,517 | 35 | 258 |   | 3 |
| 15-661 | 200 | 1,496 | 43 | 306 |   | 2 |
| 15-660 | 210 | 1,478 | 51 | 311 |   | 2 |
| 15-659 | 220 | 1,506 | 45 | 307 |   | 2 |
| 15-658 | 230 | 1,458 | 47 | 301 | 2 | 1 |
| 15-657 | 240 | 1,479 | 81 | 298 |   |   |
| 15-656 | 250 | 2,103 | 56 | 321 |   | 3 |
| 15-655 | 260 | 2,006 | 45 | 280 |   | 2 |
| 15-654 | 270 | 1,743 | 70 | 312 |   |   |
| 15-653 | 280 | 1,772 | 46 | 295 |   |   |
| 15-652 | 290 | 1,526 | 73 | 287 | 1 |   |
| 15-651 | 300 | 1,764 | 73 | 277 |   | 1 |
| 15-650 | 310 | 1,603 | 38 | 291 | 1 | 1 |
| 15-649 | 320 | 1,544 | 47 | 291 |   | 2 |
| 15-648 | 330 | 1,792 | 48 | 298 |   |   |
| 15-647 | 340 | 1,482 | 44 | 306 | 1 |   |
| 15-646 | 350 | 1,784 | 51 | 321 |   | 1 |
| 15-645 | 360 | 1,669 | 53 | 284 |   | 1 |
| 15-644 | 370 | 1,516 | 51 | 301 |   |   |
| 15-643 | 380 | 1,33 | 65 | 324 |   |   |
| 15-642 | 390 | 1,674 | 59 | 257 |   |   |
| 15-641 | 400 | 1,739 | 49 | 316 |   |   |
| 15-640 | 410 | 1,59 | 35 | 314 |   | 1 |
| 15-639 | 420 | 1,936 | 61 | 317 | 1 |   |
| 15-638 | 430 | 2,265 | 30 | 276 | 2 |   |
| 15-637 | 440 | 2,079 | 29 | 310 | 2 |   |
| 15-636 | 450 | 1,608 | 45 | 308 | 2 |   |
| 15-635 | 460 | 1,986 | 54 | 310 | 1 |   |
| 15-634 | 470 | 1,851 | 78 | 308 | 2 |   |
| 15-633 | 480 | 1,899 | 47 | 319 | 1 | 3 |
| 15-632 | 490 | 1,95 | 44 | 309 | 1 | 1 |
| 15-631 | 500 | 1,802 | 46 | 293 | 1 | 1 |
| 15-630 | 510 | 1,942 | 33 | 308 | 1 | 1 |
| 15-629 | 520 | 2,226 | 28 | 290 |   |   |
| 15-628 | 530 | 2,026 | 48 | 321 | 1 |   |
| 15-627 | 540 | 1,977 | 47 | 312 |   | 1 |
| 15-626 | 550 | 1,899 | 40 | 291 |   |   |
| 15-625 | 560 | 2,186 | 31 | 288 | 1 |   |
| 15-624 | 570 | 2,194 | 27 | 282 | 2 |   |
| 15-623 | 580 | 2,364 | 42 | 295 |   | 1 |
| 15-622 | 590 | 2,234 | 29 | 308 | 3 |   |
| 15-621 | 600 | 1,777 | 29 | 314 | 1 |   |
| 15-620 | 610 | 2,034 | 52 | 310 | 1 |   |
| 15-619 | 620 | 2,307 | 76 | 293 |   |   |
| 15-618 | 630 | 2,145 | 31 | 306 | 1 |   |
| 15-617 | 640 | 2,455 | 31 | 307 | 1 | 2 |
| 15-616 | 650 | 2,116 | 39 | 282 | 1 | 2 |
| 15-615 | 660 | 1,995 | 40 | 254 | 1 |   |
| 15-614 | 670 | 2,11 | 14 | 293 |   | 3 |
| 15-613 | 680 | 2,371 | 17 | 333 | 1 | 3 |
| 15-612 | 690 | 2,058 | 51 | 323 | 1 | 3 |
| 15-611 | 700 | 2,742 | 11 | 283 | 2 | 2 |
| 15-610 | 710 | 2,23 | 23 | 303 |   | 3 |
| 15-609 | 720 | 2,062 | 39 | 327 | 3 | 1 |
| 15-608 | 730 | 2,554 | 62 | 327 |   | 2 |
| 15-607 | 740 | 2,131 | 52 | 367 | 3 |   |
| 15-606 | 750 | 1,879 | 61 | 324 |   |   |
| 15-605 | 760 | 2,128 | 52 | 326 | 2 | 1 |
| 15-604 | 770 | 2,036 | 53 | 385 | 2 |   |
| 15-603 | 780 | 2,19 | 71 | 337 | 2 |   |
| 15-602 | 790 | 2,426 | 51 | 365 | 2 |   |
| 15-601 | 800 | 2,224 | 49 | 433 | 1 |   |
| 15-600 | 810 | 2,54 | 28 | 341 | 1 |   |
| 15-599 | 820 | 2,173 | 23 | 319 |   |   |
| 15-598 | 830 | 2,645 | 21 | 378 | 1 |   |
| 15-597 | 840 | 2,359 | 26 | 310 |   |   |
| 15-596 | 850 | 1,98 | 28 | 340 | 1 |   |
| 15-595 | 860 | 2,445 | 37 | 299 |   |   |
| 15-594 | 870 | 2,418 | 45 | 309 | 2 |   |
| 15-593 | 880 | 2,569 | 40 | 347 |   |   |
| 15-592 | 890 | 2,243 | 68 | 432 |   |   |
| 15-591 | 900 | 2,392 | 79 | 341 | 1 |   |
| 15-590 | 910 | 1,896 | 87 | 389 |   |   |
| 15-589 | 920 | 2,642 | 62 | 367 |   |   |
| 15-588 | 930 | 2,385 | 32 | 293 |   |   |
| 15-587 | 940 | 2,359 | 32 | 417 |   |   |
| 15-586 | 950 | 2,398 | 161 | 311 |   |   |
| 15-585 | 960 | 2,116 | 109 | 348 |   |   |
| 15-584 | 970 | 2,41 | 32 | 318 |   |   |
| 15-583 | 980 | 1,757 | 183 | 321 |   |   |