

Table 1. Average values and standard errors (\pm SE) for bacterial variables and primary production during TYP1 (1), TYP3 (3) and TYP4 (4) cruises, and morphological characteristics of the atolls studied. Atolls are ranked by increasing permeability. Average \pm SE are determined from campaign averages. Depth: estimated average depth. Permeability: percentage of immersed rim allowing water exchanges between lagoon and ocean (from Andréfouët et al. 2001a). BTR: bacterial turnover rate. PEA: potential exoproteolytic activity

| Atoll | Lagoon area (km ²) | Total area (km ²) | Dry land (% of total) | Depth (m) | Permeability | Bacterial abundance (10 ⁸ cell l ⁻¹) | Bacterial production (µg C l ⁻¹ d ⁻¹) | BTR (d ⁻¹) | PEA ^a (µM d ⁻¹) | Chl a ^b (µg l ⁻¹) | Primary production ^c (µgC l ⁻¹ d ⁻¹) | Cruise |
|-----------|--------------------------------|-------------------------------|-----------------------|-----------|--------------|---|--|------------------------|--|--|--|--------|
| Taiaro | 11.84 | 17.25 | 31 | 13 | 0.9 | 1.84 ± 0.04 | 5.33 ± 0.43 | 0.15 ± 0.02 | 0.70 ± 0.04 | 0.35 ± 0.05 | 20.0 ± 0.1 | 3 4 |
| Reka-Reka | 0.74 | 5.16 | 86 | 1 | 1.7 | 1.61 ± 0.30 | 43.6 ± 3.2 | 1.54 ± 0.33 | 11.5 ± 0.5 | 0.43 ± 0.05 | 91.0 ± 12.4 | 1 3 4 |
| Tepoto | 1.56 | 6.15 | 75 | 5 | 15.2 | 1.13 ± 0.21 | 4.67 ± 0.82 | 0.23 ± 0.05 | 3.22 ± 0.11 | 0.18 ± 0.02 | 32.9 ± 5.6 | 1 3 4 |
| Marokau | 217.50 | 256.04 | 15 | 28 | 17.4 | 1.53 ± 0.02 | 2.18 ± 0.02 | 0.07 ± 0.00 | 1.71 ± 0.10 | 0.19 ± 0.04 | 7.8 ± 0.7 | 3 4 |
| Hikueru | 82.47 | 107.05 | 23 | 28 | 17.9 | 1.00 ± 0.07 | 3.33 ± 0.21 | 0.17 ± 0.00 | 1.72 ± 0.12 | 0.19 ± 0.02 | 9.3 ± 0.4 | 1 3 4 |
| Haraiki | 10.43 | 25.46 | 59 | 12 | 18.9 | 1.44 ± 0.29 | 7.74 ± 1.47 | 0.29 ± 0.02 | 3.35 ± 0.16 | 0.33 ± 0.05 | 30.2 ± 1.2 | 1 3 4 |
| Hiti | 15.28 | 25.48 | 40 | 10 | 19.4 | 2.07 ± 0.24 | 4.76 ± 0.07 | 0.12 ± 0.01 | 2.05 ± 0.06 | 0.26 ± 0.01 | 17.0 ± 0.4 | 3 4 |
| Amanu | 210.30 | 244.00 | 14 | 42 | 21.2 | 0.93 | 3.34 | 0.15 | | 0.14 | | 1 |
| Kauehi | 315.12 | 343.40 | 8 | 45 | 21.6 | 0.99 ± 0.14 | 2.57 ± 0.47 | 0.16 ± 0.06 | 0.46 ± 0.07 | 0.15 ± 0.01 | 7.9 ± 1.0 | 1 3 4 |
| Tuanake | 25.68 | 38.09 | 33 | 25 | 24.2 | 1.02 | 1.38 | 0.07 | | 0.14 | | 1 |
| Nihiru | 79.51 | 100.22 | 21 | 21 | 24.5 | 0.95 ± 0.19 | 3.15 ± 0.59 | 0.21 ± 0.07 | 1.52 ± 0.09 | 0.14 ± 0.03 | 8.8 ± 0.8 | 1 3 4 |
| Tekokota | 5.11 | 7.30 | 30 | 3 | 59.5 | 0.22 ± 0.04 | 1.00 ± 0.06 | 0.28 ± 0.08 | 2.59 ± 0.30 | 0.02 ± 0.00 | 1.2 ± 0.2 | 1 3 4 |
| Ocean | | | | | | 0.54 ± 0.01 | 0.33 ± 0.04 | 0.031 ± 0.003 | 0.29 ± 0.07 | 0.05 ± 0.01 | 2.5 ± 0.1 | 3 4 |

^aDetermined only during TYP4 cruise; SE represents divergence between stations; ^bfrom Charpy & Blanchot (1998); ^cdetermined only during TYP3 and TYP4 cruises