*Supplement of*

**Acidification impacts and acclimation potential of Caribbean benthic foraminifera assemblages in naturally discharging low-pH water**

**Daniel François et al.**

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**Table S1 -** Polynomial model selection analyses data using Akaike's information criterion (AIC). Each values are given for the best three models. AIC = akaike Information Criterion; AIC weight = akaike weights by relative likelihood; Cum. AIC wt = cumulative weights; L = log-likelihood; P = significance level; R2 = level of variation explained.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Taxonomic metric | Best model | AIC | AIC weight | Cum. AIC wt | L | P | R2 |
| **Shannon's H′** | pH | 26.96 | 0.47 | 0.47 | -9.93 | < 0.01 | 0.72 |
|  |  | 29.58 | 0.13 | 0.60 | -11.24 | < 0.01 | 0.68 |
|  | Calcite | 29.64 | 0.12 | 0.72 | -11.28 | < 0.01 | 0.68 |
| **Species richness** | pH | 196.65 | 0.38 | 0.38 | -94.78 | < 0.01 | 0.67 |
|  |  | 197.60 | 0.24 | 0.62 | -95.26 | < 0.01 | 0.65 |
|  | Ω Calcite | 197.94 | 0.20 | 0.83 | -95.42 | < 0.01 | 0.65 |
| **Evenness** | pH | -67.05 | 0.37 | 0.37 | 37.07 | < 0.01 | 0.64 |
|  | CT | -66.5 | 0.28 | 0.28 | 36.80 | < 0.01 | 0.63 |
|  | pH + | -64.43 | 0.10 | 0.10 | 37.17 | < 0.01 | 0.64 |
| **Density** | AT | 401.79 | 0.32 | 0.32 | -197.35 | < 0.01 | 0.25 |
|  | CT | 401.99 | 0.29 | 0.61 | -197.45 | < 0.01 | 0.25 |
|  | pH | 403.56 | 0.13 | 0.74 | -198.23 | 0.02 | 0.20 |

**Table S2 - Raw data of taphonomical, assemblage average test size, taxonomic metrics and discoloration counts. Legend: S = species richness, N = density, J' = evenness, H' = Diversity, Size = assemblage test size**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample ID | Poorly preserved tests (%) | Optimally preserved tests (%) | Well preserved tests (%) | S | N (ind.cm3) | J' | H'(loge) | Size (mm2) | Discoloration (ind.cm3) |
| 1 | 61.7 | 12.8 | 25.5 | 19 | 114 | 0.62 | 1.8 | 0.83 | 0 |
| 2 | 60.3 | 13.2 | 26.5 | 14 | 103 | 0.62 | 1.6 | 0.98 | 0 |
| 3 | 62.0 | 12.8 | 25.2 | 11 | 80 | 0.66 | 1.6 | 0.99 | 0 |
| 4 | 53.8 | 10.5 | 35.7 | 21 | 114 | 0.66 | 2.0 | 0.84 | 0 |
| 6 | 38.2 | 20.6 | 41.2 | 21 | 63 | 0.58 | 1.8 | 0.91 | 0 |
| 7 | 36.1 | 20.1 | 43.8 | 32 | 36 | 0.67 | 2.3 | 0.94 | 0 |
| 8 | 17.9 | 37 | 45.1 | 31 | 220 | 0.71 | 2.4 | 0.52 | 0 |
| 9 | 17.0 | 37 | 46 | 44 | 480 | 0.79 | 3.0 | 0.30 | 0 |
| 10 | 15.5 | 36.3 | 48.2 | 40 | 396 | 0.73 | 2.7 | 0.31 | 0 |
| 12 | 9.3 | 36.1 | 54.5 | 55 | 568 | 0.87 | 3.5 | 0.20 | 0 |
| 13 | 13.1 | 39.2 | 47.7 | 52 | 1092 | 0.86 | 3.4 | 0.15 | 0 |
| 14 | 9.3 | 47.1 | 43.5 | 68 | 1882 | 0.91 | 3.8 | 0.14 | 0 |
| 15 | 10.7 | 48 | 41.3 | 71 | 2167 | 0.91 | 3.9 | 0.15 | 0 |
| 16 | 38.6 | 21.8 | 39.6 | 29 | 112 | 0.67 | 2.3 | 0.59 | 0 |
| 17 | 40.7 | 29.3 | 30 | 35 | 68 | 0.66 | 2.3 | 0.76 | 1 |
| 18 | 17.6 | 31.9 | 50.5 | 52 | 56 | 0.79 | 3.1 | 0.55 | 1 |
| 19 | 15.9 | 30.6 | 53.6 | 47 | 307 | 0.80 | 3.1 | 0.31 | 0 |
| 20 | 19.6 | 39.5 | 40.9 | 58 | 460 | 0.84 | 3.4 | 0.25 | 0 |
| 21 | 23.9 | 26.4 | 49.7 | 42 | 211 | 0.65 | 2.4 | 0.24 | 0 |
| 22 | 48.2 | 26.4 | 25.5 | 32 | 139 | 0.72 | 2.5 | 0.30 | 0 |
| 23 | 30.5 | 32 | 37.5 | 37 | 138 | 0.80 | 2.9 | 0.21 | 0 |
| 24 | 27.4 | 47.2 | 25.4 | 44 | 189 | 0.85 | 3.2 | 0.13 | 0 |
| 25 | 25.8 | 32.4 | 41.8 | 42 | 400 | 0.80 | 3.0 | 0.17 | 0 |
| 44 | 20.8 | 37.2 | 42 | 53 | 225 | 0.81 | 3.2 | 0.50 | 0 |
| 45 | 8.1 | 53.9 | 38 | 57 | 1392 | 0.89 | 3.6 | 0.16 | 0 |
| 46 | 12.5 | 49.1 | 38.3 | 65 | 471 | 0.81 | 3.4 | 0.32 | 0 |

**Table S4 - Raw data of functional and test type groups.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample ID | Agglutinated (%) | Opportunistic (%) | Small miliolids (%) | Small rotaliids (%) | Symbiont bearing (%) |
| 1 | 9.1 | 0.0 | 27.8 | 37.5 | 25.6 |
| 2 | 16.4 | 0.0 | 45.3 | 18.8 | 19.5 |
| 3 | 11.6 | 0.0 | 47.3 | 21.4 | 19.6 |
| 4 | 15.2 | 0.0 | 31.9 | 35.1 | 17.8 |
| 6 | 19.5 | 0.0 | 18.4 | 11.4 | 50.8 |
| 7 | 9.8 | 0.6 | 20.2 | 23.1 | 46.2 |
| 8 | 10.7 | 0.4 | 22.2 | 20.4 | 46.2 |
| 9 | 7.6 | 0.7 | 22.9 | 28.4 | 40.4 |
| 10 | 6.3 | 0.7 | 20.1 | 25.0 | 47.8 |
| 12 | 7.3 | 2.2 | 37.7 | 20.5 | 31.9 |
| 13 | 4.0 | 2.4 | 37.3 | 26.5 | 29.7 |
| 14 | 2.3 | 1.2 | 46.7 | 26.5 | 23.3 |
| 15 | 2.2 | 4.0 | 42.0 | 27.6 | 24.2 |
| 16 | 9.1 | 0.0 | 31.0 | 34.5 | 25.4 |
| 17 | 11.0 | 1.9 | 41.6 | 24.0 | 21.4 |
| 18 | 8.3 | 0.5 | 37.6 | 28.8 | 24.9 |
| 19 | 8.4 | 1.9 | 30.4 | 34.6 | 24.3 |
| 20 | 5.1 | 2.6 | 38.7 | 20.9 | 32.3 |
| 21 | 1.5 | 0.4 | 22.7 | 61.7 | 13.6 |
| 22 | 1.3 | 0.4 | 35.0 | 50.9 | 12.4 |
| 23 | 1.6 | 0.0 | 40.5 | 42.1 | 15.9 |
| 24 | 1.2 | 1.2 | 58.5 | 28.9 | 10.3 |
| 25 | 0.0 | 1.4 | 39.5 | 44.9 | 14.1 |
| 44 | 9.5 | 1.3 | 33.2 | 32.8 | 23.3 |
| 45 | 10.5 | 3.5 | 36.8 | 31.4 | 17.8 |
| 46 | 6.5 | 1.6 | 34.5 | 38.3 | 18.9 |

**Table S5 - Raw data of test density, calcite lamellae diameter, test volume, and test diameter measured in *Archaias angulatus* individuals living at low (7.1 pH units) and high-pH conditions (8.1 pH units) at spring Gorgos.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Individual ID | pH | Density (g/cm³) | Chamber wall thickness (mm³) | Volume (mm³) | Test diameter (mm) |
| 1 | 7.96 | 2.17 | 0.048 | 0.10521 | 0.826 |
| 2 | 7.96 | 2.79 | 0.037 | 0.05552 | 0.750 |
| 3 | 7.96 | 2.29 | 0.041 | 0.03342 | 0.794 |
| 4 | 7.96 | 2.49 | 0.053 | 0.03757 | 0.819 |
| 5 | 7.1 | 1.28 | 0.044 | 0.04886 | 0.819 |
| 6 | 7.1 | 1.34 | 0.054 | 0.04612 | 0.851 |
| 7 | 7.1 | 1.35 | 0.051 | 0.03704 | 0.693 |
| 8 | 7.1 | 1.32 | 0.055 | 0.06280 | 0.737 |