**Holobiont dysbiosis or acclimatization? Shift in the microbial taxonomic diversity and functional composition of a cosmopolitan sponge subjected to chronic pollution in a Patagonian Bay**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | high | medium | low | Reference | Guideline-Aquatic Life | Guideline-Recreation | Guideline-Agricultural |
| Nitrate (mg/L) | 62-9913.5-5.323.7-6.838.1-9.94 | 49-7412.34 | 1.5-3.52< 2.532.5-2.74 | 1Saad et al. 20192Martinetto et al. 20103Martinetto et al. 20104Marello et al. in prep | < 16  | < 43 |  |
|  |  |  |  |  |  |  |  |
| Nitrite (mg/L) | 0.064 | ND | 0.0005 | Marello et al. in prep |  | < 4.3 |  |
|  |  |  |  |  |  |  |  |
| Ammonia (mg/L) | 0.037-1.310.23-1.52 | NA | 0.009-0.151< 0.122 | 2Martinetto et al. 20103Martinetto et al. 2010 | < 1.1 | - |  |
|  |  |  |  |  |  |  |  |
| Pb (mg/kg) | 13-15 | 8-10 | NA | Idaszkin et al. 2015, Marinho et al. 2016 | < 30.2 |  | < 1.4 |
|  |  |  |  |  |  |  |  |
| Zn (mg/kg) | 25-48 | 17-25 | NA | Idaszkin et al. 2015, Marinho et al. 2016 | < 124 |  | < 200 |
|  |  |  |  |  |  |  |  |
| Cu (mg/kg) | 3.5-11 | 5 | NA | Idaszkin et al. 2015, Marinho et al. 2016 | < 19 |  | < 63 |
|  |  |  |  |  |  |  |  |

Table S1: Concentration of nutrients and heavy metals pollutants reported previously for the studied sites. Canada Government guidelines reference values are included for reference. ND: non-detected concentration; NA: not available data.