**Table S1 Earlier data of NFRs measured in the SCS**

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| Method | Sampling area | NFR/ nmol N L−1 d−1 | References |
| The original bubble method | Northern South China Sea | 0-1.58 | (Zhang, 2011) |
| Northeastern South China Sea and the upstream of Kuroshio | 0.11-1.53 | (Chen et al., 2014) |
| Southern Taiwan Strait | 0.2-1.1 | (Lin, 2014) |
| Pearl River Estuary | 0-0.2 | (Liu et al., 2016) |
| The upwelling region near the coast of Vietnam | 0.01-1.27 | (Voss et al., 2006) |
| The northwestern South China Sea coastal upwelling region | 0.1-5.6 | (Zhang et al., 2015) |
| Southern Taiwan Strait | 0-7.5 | (Wen et al., 2017) |
| Beibu Gulf | 0-0.6 | (Lin, 2014) |
| Southwestern  South China Sea | n.d.-0.90 | This study |
| Daya Bay | 0.34-41.35 | This study |
| The 15N2-enriched seawater method | Northern South China Sea | 0.05–1.34 | (Chen et al., 2018) |
| Northern South China Sea | 1.6-22.7 | (Lu et al., 2018) |
| The open area of the  South China Sea | n.d.-2.08 | This study |
| Daya Bay | 1.53-108.32 | This study |