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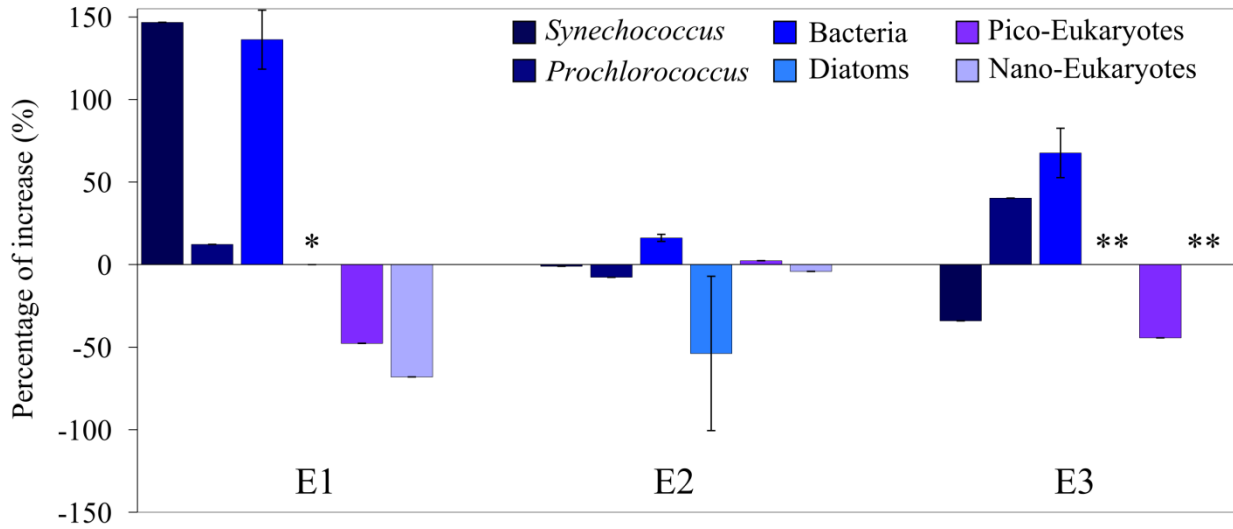
*Supplement of*

## **Transfer of diazotroph-derived nitrogen to the planktonic food web across gradients of $N_2$ fixation activity and diversity in the western tropical South Pacific Ocean**

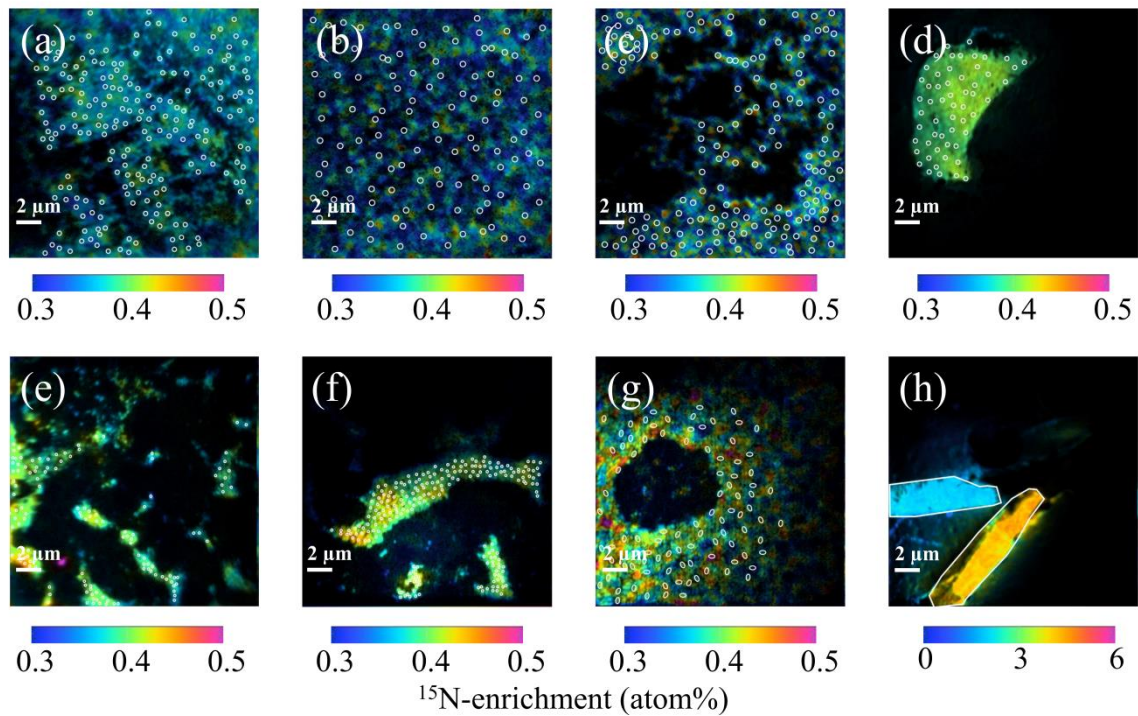
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5 Figure 1: Relative increase of cells abundance associated to *Synechococcus*, *Prochlorococcus*, bacteria, diatoms, pico-eukaryotes and nano-eukaryotes (blue pattern) after 48 h for E1, E2 and E3. Error bars represent the standard deviation of triplicate counts and the propagated analytical errors. \* Diatoms were not counted at T0. \*\* Diatoms and nano-eukaryotes were not analyzed for E3.



**Figure 2:** NanoSIMS images showing the  $^{15}\text{N}$ -enrichment after 48 h of incubation in the presence of  $^{15}\text{N}_2$  for *Prochlorococcus* (a,b), pico-eukaryotes (c,d), heterotrophic bacteria (e,f), *Synechococcus* (g), and *Trichodesmium* (h). The ROIs are represented in white line.

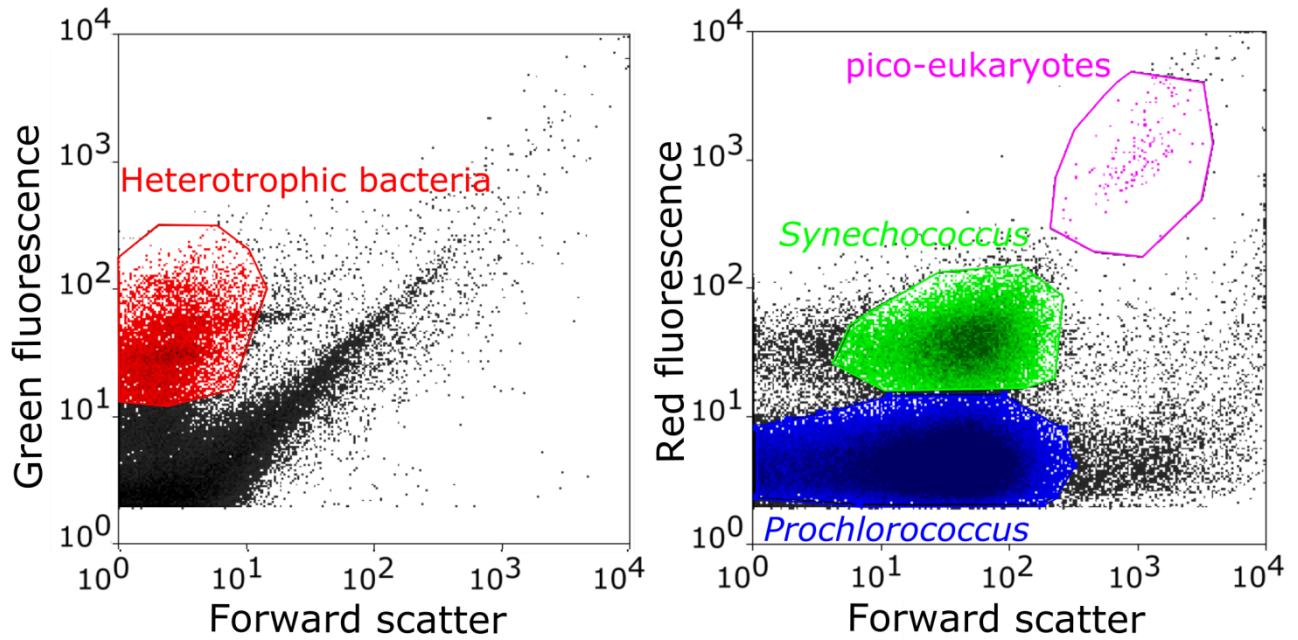


Figure 3: Clustering of planktonic communities by flow cytometry on green fluorescence vs. forward scatter cytograms: heterotrophic bacteria (red), *Prochlorococcus* (blue), *Synechococcus* (green), and the pico-eukaryotes (pink)

**Table 1: Number of ROIs analyzed for diazotrophs (*Trichodesmium* in E1 and E2, UCYN-B in E3), *Synechococcus*, *Prochlorococcus*, bacteria, diatoms, pico-eukaryotes and nano-eukaryotes, for E1, E2 and E3.**

Experiment	diazotrophs	<i>Synechococcus</i>	<i>Prochlorococcus</i>	bacteria	diatoms	pico-euk.	nano-euk.
E1	30	87	32	200	8	111	60
E2	25	156	213	85	33	200	29
E3	192	50	115	70	0	70	0