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CORRECTION
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Corrigendum: N_2 Fixation in the Eastern Arabian Sea: Probable Role of Heterotrophic Diazotrophs

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A Corrigendum on

N_2 Fixation in the Eastern Arabian Sea: Probable Role of Heterotrophic Diazotrophs
by Kumar, P. K., Singh, A., Ramesh, R., and Nallathambi, T. (2017). Front. Mar. Sci. 4:80. doi: 10.3389/fmars.2017.00080

In the original article, there were errors in the text, **Figure 5** and **Figure 6**, and **Tables 1** and **2**. We made a mistake in the reporting N_2 fixation and carbon uptake rates. While reporting mean N_2 fixation and mean carbon uptake rates, we forgot to include the duplicate values in calculation in the original article. We provide correct values in the following sections, figures and tables as described. Corrections have been made to the **Results and Discussion** section (sub-section "**N_2 Fixation Rate and Carbon Uptake,**" first line of first paragraph and sixteenth line of the first paragraph), the **Conclusion** (eighth line), as well as **Figures 5** and **6** and **Tables 1** and **2**.

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RESULTS AND DISCUSSION

In the sub-section **"N_2 Fixation Rate and Carbon Uptake,**" first line of the first paragraph:

N_2 fixation rates varied from 4 to 238 nM N h^{-1}, while carbon uptake rate ranged between 16 and 1628 nM C h^{-1} (**Figure 5**).

In sixteenth line of the first paragraph:

Heterotrophs contributed up to 52% to the total N_2 fixation (estimated from light and dark incubations, assuming light incubations correspond to phototrophic and dark to heterotrophic).

CONCLUSION

In the eighth line:

Based on the higher N_2 fixation values at the surface for dark incubation, we hypothesize that heterotrophic fixers dominantly (about 52% of total N_2 fixation is by heterotrophs) play an important role in fixing N_2.

In the original article, there were mistakes in **Figure 5**, **Figure 6**, **Table 1** and **Table 2** as published. The figures and tables are now redrawn and reported with the revised N_2 fixation and carbon uptake rates. In **Table 2**, we reported areal rates wrongly in the last row. The corrected **Figure 5**, **Figure 6**, **Table 1** and **Table 2** are presented below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

REFERENCES

Benavides, M., and Voss, M. (2015). Five decades of N_2 fixation research in the North Atlantic Ocean. *Front. Mar. Sci.* 2:40. doi: 10.3389/fmars.2015.00040

Singh, A., Lomas, M., and Bates, N. (2013). Revisiting N_2 fixation in the North Atlantic Ocean: significance of deviations from the Redfield Ratio, atmospheric deposition and climate variability. *Deep Sea Res. Part II Top. Stud. Oceanogr.* 93, 148–158. doi: 10.1016/j.dsr2.2013.04.008

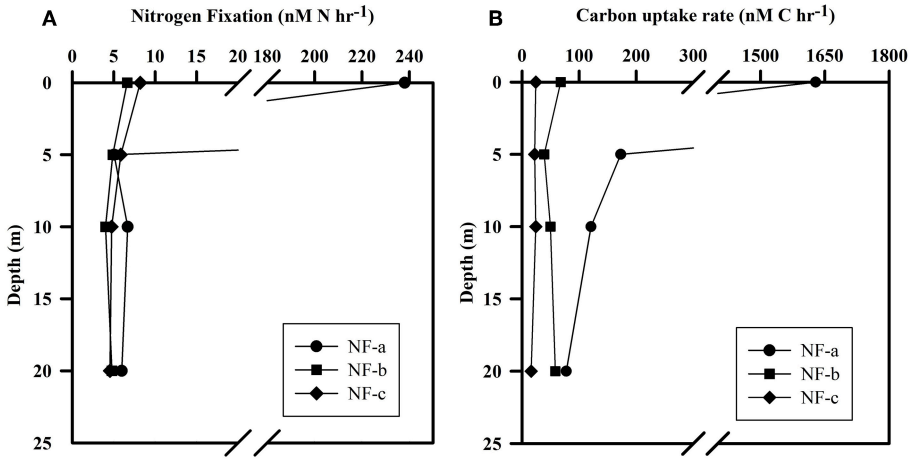

FIGURE 5 | (A) N_2 fixation rate and **(B)** Carbon uptake rate at the sampling location (NF-a, NF-b, and NF-c) for light (at ambient conditions) incubation for samples at different depths.

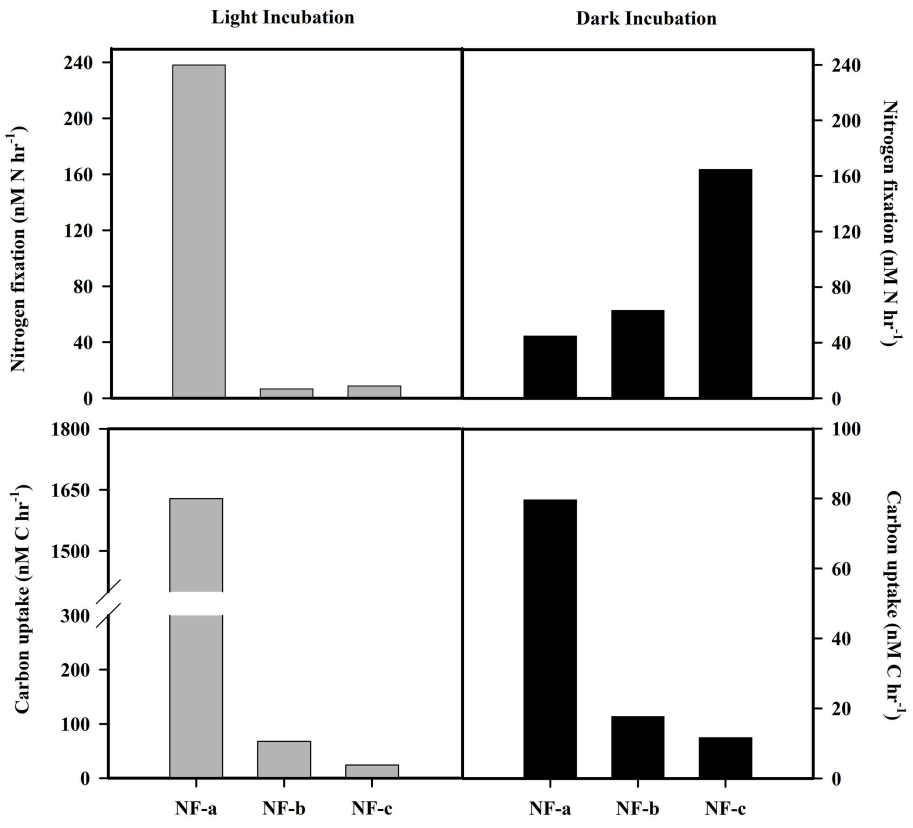

FIGURE 6 | N_2 fixation and carbon uptake rate at surface for light (gray bars) and dark (black bars) incubation.

TABLE 1 | Sampling Date, Latitude (°N), Longitude (°E), water depth (m), Nutrients concentrations (μM), N:P, P* (μM), particulate organic carbon (POC, μM) and nitrogen (PON, μM), N_2 fixation (nM N h^{-1}) and carbon (C) uptake (nM C h^{-1}) at the three locations sampled in the eastern Arabian Sea.

Date and Station	Lat	Long	Depth	NO_2	NO_3	PO_4^{3-}	SiO_4	N:P	P*	POC	PON	N_2 fixation	C uptake
10-May-10; NF-a	13.87	74.36	0	0.04	0.37	0.22	0.00	1.66	0.20	73	51	238.07	1628
			5	0.04	0.66	0.13	0.00	4.94	0.10	26	5	5.05	173
			10	0.06	0.76	0.18	0.00	4.25	0.13	21	7	6.68	121
			20	0.02	0.45	0.13	0.19	3.34	0.10	23	5	5.98	78
12-May-10; NF-b	17.12	73.11	0	0.06	0.76	0.53	1.69	1.42	0.49	24	6	6.63	68
			5	0.02	0.97	0.31	1.44	3.11	0.25	23	5	4.88	39
			10	0.00	0.67	0.27	0.63	2.51	0.22	21	4	4.01	50
			20	0.00	0.81	0.22	0.94	3.66	0.17	18	4	4.78	58
14-May-10; NF-c	14.96	73.84	0	0.14	2.42	0.71	0.00	3.40	0.56	44	25	8.70	24
			5	0.12	0.90	0.22	0.00	4.05	0.17	20	4	6.19	22
			10	0.12	0.58	0.09	0.00	6.53	0.05	16	4	5.38	24
			20	0.02	0.91	0.00	0.00	NA	−0.06	15	3	6.15	16

TABLE 2 | Summary of Photic N_2 fixation rates in the world oceans (Table updated after Singh et al., 2013; Benavides and Voss, 2015).
(Only last row in the original Table 2 should be replaced by the following row).

Methodology	Areal Rates (μmol N m^{-2} d^{-1})	Region	References
$^{15}N_2$ tracer-bubble method*	1,140–8,405	Eastern Arabian Sea	This study