

Supplementary material

	T_{amb} (°C)	T_{ass} (°C)	pH	[CH ₄] (μM)	[Mn]d (μM)	[Fe]d (μM)	[Fe]p (μM)	[NO ₃] (μM)	[NH ₄ ⁺] (μM)
MG _M	7.9	8.3 (0.1)	7.3 (0.5)	3.9 (4.3)	0.1 (0.1)	0.6 (0.3)	0.2 (0.0)	64.0 (32.1)	1954.6 (2001.1)
LS _M	4.3	5.8 (0.4)	7.0 (0.2)	2.2 (1.7)	1.0 (0.5)	1.1 (0.9)	2.3 (3.3)	323.8 (326.6)	1025.0 (560.9)
RB _M	3.8	4.0 (0.3)	7.5	36.6	5.6	3	47.6	112	1277
MG _G	7.9	8.9 (0.3)	6.6	40.6	0.7	0.8	0.2	114	265
RB _S	3.8	7-35	6.9	5	27.4	82.4	44.6	142	682

Table S1. Environmental data of assemblages from Menez Gwen (mussels: MG_M and gastropods: MG_G), Lucky Strike (mussels: LS_M) and Rainbow (mussels: RB_M and shrimps: RB_S) vent fields. Mean values followed by standard deviations. Ambient seawater pH estimated at 7.8 from Charlou *et al.* (2002).

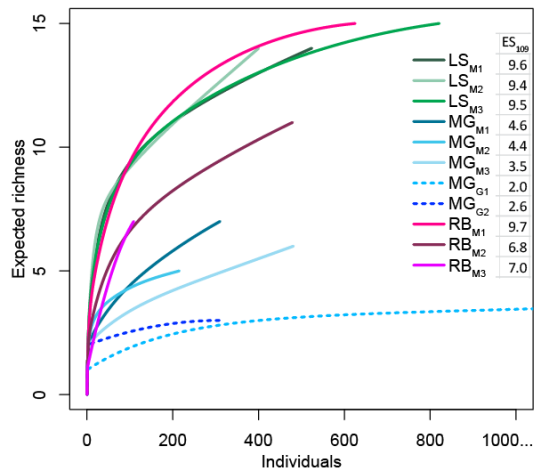
Bacterial_Mat (<i>Beggiatoa</i> sp)	-	-32.6 (0.6)	-2.5 (0.1)	2													
Bacterial_Mat (<i>R.exoculata</i>)	-											-11.1 (0.5)	4.8 (0.3)	5	-9.6 (0.2)	5.9 (0.1)	3
Methane																	
Mean faunal isotopic ratios per sampling unit		$\delta^{13}\text{C}: -25.7 \pm 3.3\%$ $\delta^{15}\text{N}: -0.5 \pm 4.6\%$	$\delta^{13}\text{C}: -23.7 \pm 3.2\%$ $\delta^{15}\text{N}: -0.6 \pm 4.5\%$	$\delta^{13}\text{C}: -26.2 \pm 2.8\%$ $\delta^{15}\text{N}: -0.3 \pm 4.9\%$	$\delta^{13}\text{C}: -25.1 \pm 3.3\%$ $\delta^{15}\text{N}: -1.5 \pm 5.2\%$	$\delta^{13}\text{C}: -25.6 \pm 3.3\%$ $\delta^{15}\text{N}: -1.4 \pm 4.8\%$	$\delta^{13}\text{C}: -25.4 \pm 3.6\%$ $\delta^{15}\text{N}: -0.2 \pm 4.9\%$	$\delta^{13}\text{C}: -18.1 \pm 3.4\%$ $\delta^{15}\text{N}: -4.4 \pm 4.0\%$	$\delta^{13}\text{C}: -16.6 \pm 3.2\%$ $\delta^{15}\text{N}: -5.2 \pm 0.5\%$	$\delta^{13}\text{C}: -19.2 \pm 4.3\%$ $\delta^{15}\text{N}: -5.0 \pm 3.5\%$	$\delta^{13}\text{C}: -19.7 \pm 2.1\%$ $\delta^{15}\text{N}: -2.0 \pm 4.3\%$	$\delta^{13}\text{C}: -19.5 \pm 3.8\%$ $\delta^{15}\text{N}: -3.1 \pm 5.5\%$	$\delta^{13}\text{C}: -11.6 \pm 2.2\%$ $\delta^{15}\text{N}: -6.9 \pm 2.1\%$	$\delta^{13}\text{C}: -17.3 \pm 6.4\%$ $\delta^{15}\text{N}: -5.5 \pm 4.0\%$			
Mean faunal isotopic ratios per assemblage		$\delta^{13}\text{C}: -25.2 \pm 3.2\%$ $\delta^{15}\text{N}: -0.5 \pm 4.6\%$			$\delta^{13}\text{C}: -25.4 \pm 3.2\%$ $\delta^{15}\text{N}: -0.9 \pm 4.8\%$			$\delta^{13}\text{C}: -17.6 \pm 3.2\%$ $\delta^{15}\text{N}: -4.6 \pm 3.3\%$		$\delta^{13}\text{C}: -19.4 \pm 3.6\%$ $\delta^{15}\text{N}: -3.9 \pm 4.1\%$			$\delta^{13}\text{C}: -15.4 \pm 5.9\%$ $\delta^{15}\text{N}: -6.0 \pm 3.4\%$				

Table S2. Mean stable isotope ratios (expressed in ‰) of the species, bacterial mat and methane samples from the thirteen studied assemblages from Lucky Strike (LS_{M1}, LS_{M2} and LS_{M3}), Menez Gwen (MG_{M1}, MG_{M2}, MG_{M3}, MG_{G1} and MG_{G2}) and Rainbow (RB_{M1}, RB_{M2}, RB_{M3}, RB_{S1} and RB_{S2}). Standard deviations are given between parentheses. Consumers trophic guilds are classified, according to the literature and our results, as S: Symbiont bearing, B: Bacterivore and Archivore, D: Detritivore/Scavenger, P: Predator, C: Commensal/Parasite, followed by d: deposit feeder or grazer, s: suspension feeder.

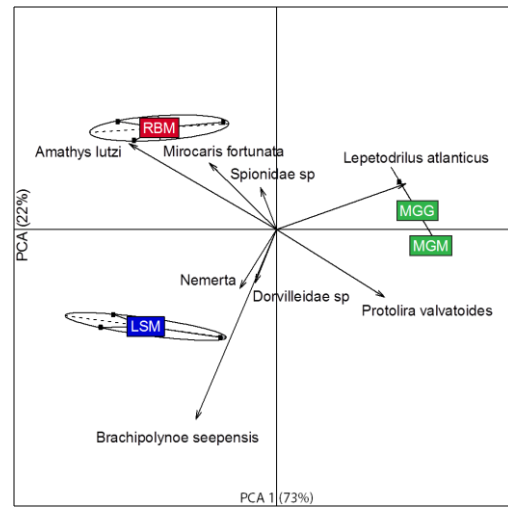
	Wet weight (g)	References
<i>L. atlanticus</i>	$1.41.10^{-2}$	(Husson <i>et al.</i> , 2016)
<i>P. midatlantica</i>	$5.74.10^{-3}$	(Husson <i>et al.</i> , 2016)
<i>P. valvatoides</i>	$4.58.10^{-3}$	(Husson <i>et al.</i> , 2016)
<i>L. costellata</i>	$4.58.10^{-3}$	Extrapolation from <i>P. valvatoides</i>
<i>L. desbruyeresi</i>	$4.58.10^{-3}$	Extrapolation from <i>P. valvatoides</i>
<i>M. fortunata</i>	$2.83.10^{-1}$	(Husson <i>et al.</i> , 2016)
<i>B. mesatlantica</i>	$2.80.10^{-1}$	(Sarrazin and Juniper, 1999)
<i>A. lutzi</i>	$2.2.10^{-2}$	(Bergquist <i>et al.</i> , 2007)
<i>Dorvilleidae sp</i>	2.10^{-4}	(Bergquist <i>et al.</i> , 2007)
<i>S. mesatlantica</i>	$1.4.10^{+1}$	(Decelle <i>et al.</i> , 2010)
<i>Amphipoda</i>	$3.39.10^{-3}$	(Kamenev <i>et al.</i> , 1993)
<i>Aphotopontius sp</i>	$6.74.10^{-3}$	(Gollner <i>et al.</i> , 2007; Gollner <i>et al.</i> , 2006)
<i>Ostracoda</i>	$3.46.10^{-6}$	(Kornicker, 1991)
<i>Nematode</i>	$1.6.10^{-6}$	(Gollner <i>et al.</i> , 2007)
<i>Aplacophore</i>	2.10^{-4}	Portail thesis
<i>Nemerte</i>	2.10^{-4}	Portail thesis

Table S3. Biomass of the species associated to *B. azoricus* assemblages from Menez Gwen and Lucky Strike vent fields.

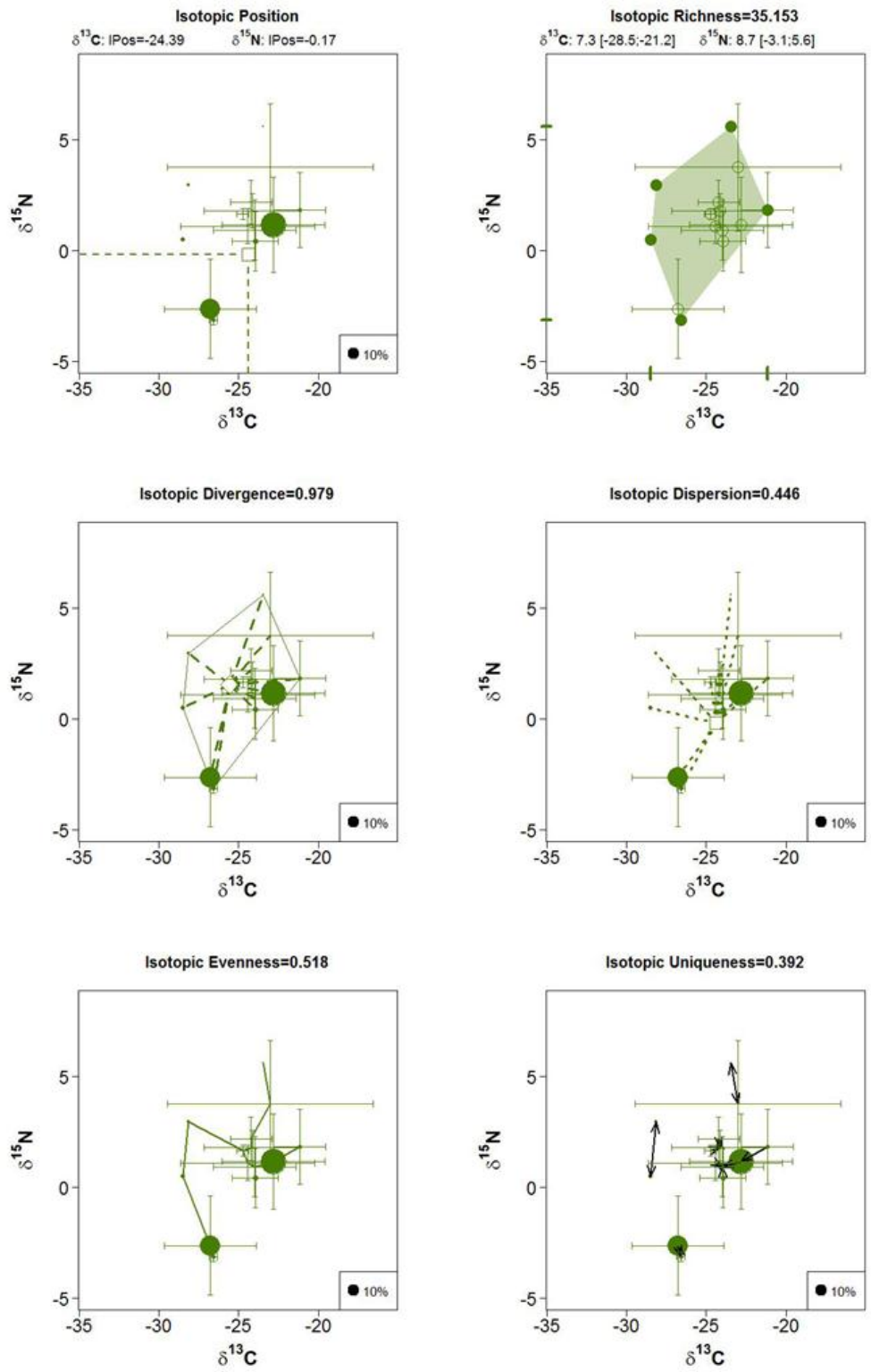
A



B



S1 Figure. (A) Rarefaction curves and alpha diversity estimations (ES₁₀₉) of macrofaunal communities within epifaunal assemblages on the Menez Gwen (MG), Lucky Strike (LS) and Rainbow (RB) vent fields, (B) Between-group principal component analysis (CNESS method). Only species contributing to more than 2% of the variance are shown. MG_G, MG_M: gastropods and mussels from MG, RB_M: mussels from RB, LS_M: mussels from LS.



S2 Figure. Illustrations of functional metric calculations.

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