Supplementary Table 3: ^{15}N enrichment values (at%) of microbial community members measured by NanoSIMS after nighttime incubation of microbial mat samples with $^{15}N_2$. Asterisks indicate cells measured for natural abundance in T0 mat samples (not incubated with $^{15}N_2$). The depicted data of *Deltaproteobacteria* and unidentified cells refer to single cell measurements. For small filamentous C*yanobacteria,* depicted values represent the mean of 3-10 cells measured per filament. For *Lyngbya* spp.-related *Cyanobacteria* (due to their large size), isotope enrichment measurements were conducted by focused and accelerated sputtering utilizing high primary ion beam currents (~1 nA, 2 µm beam size).

Analyzed cell type	^{15}N (at%)	Analyzed cell type	^{15}N (at%)	Analyzed cell type	^{15}N (at%)	Analyzed cell type	^{15}N (at%)	Analyzed cell type	^{15}N (at%)
Lyngbya spp.	2.78	small filamentous	0.84	*Delta-*	0.38		0.37	unidentified single	0.99
	2.56	C*yanobacteria*	0.40	*proteobacteria*	0.38	*Deltaproteobacteria*	0.37	cells	1.57
	1.12		0.39		0.35	(natural abundance)*	0.37		3.85
	0.40		0.92		0.37		0.37		4.76
	0.59		0.52		0.38		0.37		7.41
	0.61		0.42		0.38		0.37		2.91
	1.89		0.97		0.37		0.37		0.99
	2.92		0.53		0.36		0.37		1.37
	1.89		0.44		0.37		0.37		1.24
	7.65		0.66		0.36		0.37		0.89
	0.38		0.37		0.39		0.37		0.94
	1.74		0.71		0.37		0.37		2.08
	8.01		0.77		0.37		0.37		0.78
	1.78		1.18		0.41		0.38		0.76
	0.39		0.94		0.37		0.38		4.18
	14.54		0.39		0.37		0.39		6.58
	13.30		0.91		0.37		0.38		3.39
	1.10		0.60		0.36	**average**	**0.37**		2.89
	4.56		0.67		0.37	**SD**	**0.01**		1.90
	2.54		0.40		0.37	**SE**	**0.00**		4.30
	1.22		1.17		0.39				2.61
	1.93		0.61		0.39				0.84
	1.50		0.80		0.40			**average**	**2.60**
	0.85		0.99		0.39			**SD**	**1.92**
	1.24		0.54		0.39			**SE**	**0.41**
	3.35		0.80		0.38				
	2.84		0.41		0.39				
	9.37		0.98		0.38				
	1.69		0.40		0.38				
	4.63		0.72		0.36				
	9.70		1.32		0.39				
	1.85		0.70		0.41				
	5.63		0.47		0.37				
	8.02		0.43		0.35				
	11.38		0.67		0.38				
	1.81		0.67		0.36				
	6.23		0.76		0.36				
	6.90		1.25		0.36				
	0.38		0.61		0.37				
	0.40		0.48		0.38				
	6.70		0.83		0.40				
	2.07		0.71		0.36				
	2.57		1.02		0.37				
	13.17		0.74		0.37				
	1.82		0.80		0.38				
	9.28		0.46		0.37				
	9.29		0.42		0.38				
	8.93		0.46		0.38				
	11.70		0.52		0.38				
	2.93		0.43		0.38				
average	**4.40**		0.44		0.38				
SD	**4.02**		0.46		0.38				
SE	**0.57**		0.46		0.38				
			0.70		0.37				
			0.99	**average**	**0.38**				
			0.45	**SD**	**0.01**				
			0.41	**SE**	**0.00**				
			0.54						
			0.62						
			0.80						
			0.52						
			0.63						
			0.48						
			0.66						
			0.53						
			0.53						
			0.62						
			0.49						
			0.77						
			0.51						
			0.46						
			0.51						
			0.43						
			0.40						
			0.57						
			0.75						
			0.47						
			0.55						
			0.45						
			0.44						
			0.50						
			0.57						
			0.49						
			0.66						
			0.51						
			0.66						
			0.69						
			1.20						
			0.85						
			0.50						
			0.44						
			0.46						
			0.51						
			0.78						
			0.79						
			0.46						
			0.39						
			0.52						
			0.61						

	0.55
	0.45
	0.40
	0.42
	0.41
	0.36
	0.36
	0.64
	0.40
	0.41
	0.37
	0.46
	0.53
	0.48
	0.97
	0.68
	0.47
	0.39
	0.73
	0.40
	0.37
	0.47
	0.58
average	**0.60**
SD	**0.21**
SE	**0.02**