

**Ciliate diversity and distribution across horizontal and vertical
scales in the open ocean**

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Supplementary Material (1):

Figure S1, Figure S2, Figure S3, Figure S4, Table S1 and Table S3.

If any problem visualizing Supplementary Material, please
contact ocanalsd@gmail.com

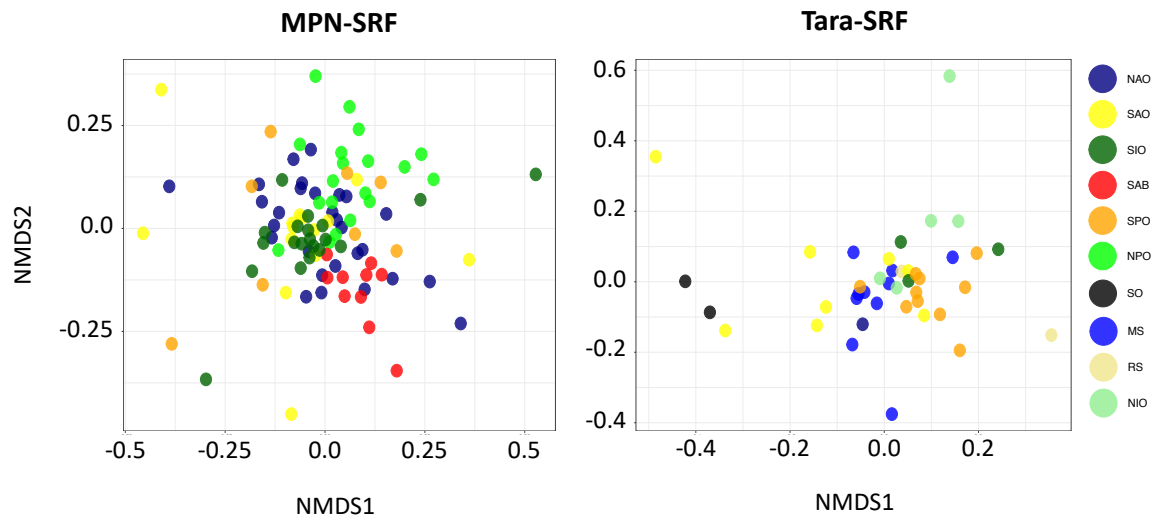


Figure S1. Placement of ciliate assemblages from MPN-SRF and Tara-SRF in a non-metric multidimensional scaling (NMDS) plot by oceanic region. Stress values: 0.232 (MPN-SRF) and 0.169 (Tara-SRF). NAO: North Atlantic Ocean, MS: Mediterranean Sea, RS: Red Sea, NIO: North Indian Ocean, SIO: South Indian Ocean, SAO: South Atlantic Ocean, SO: Southern Ocean, SPO: South Pacific Ocean, SAB: South Australian Bight, NPO: North Pacific Ocean.

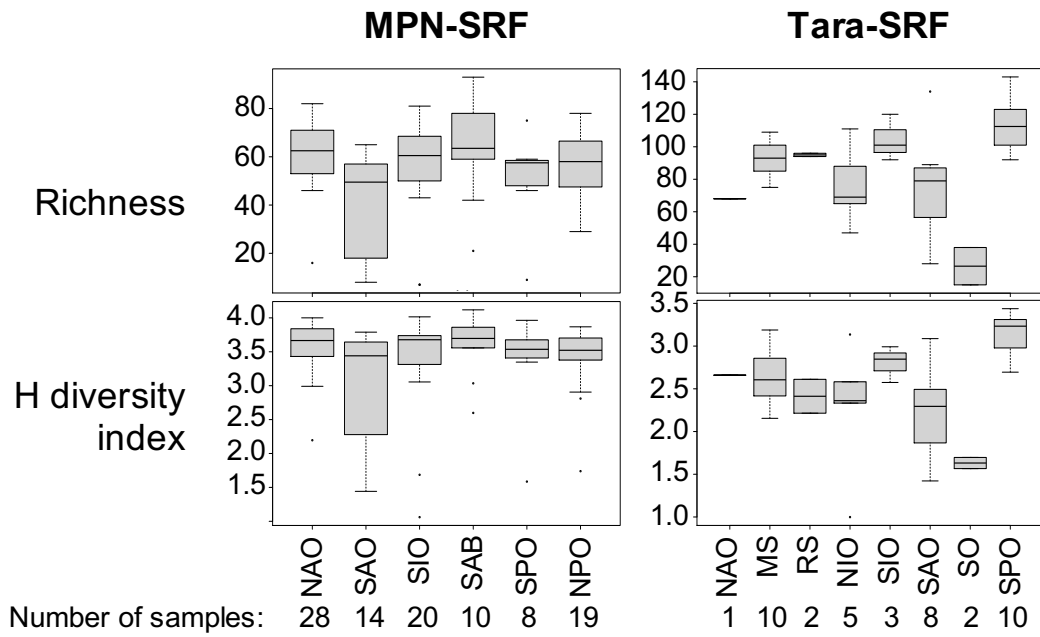


Figure S2. Boxplots displaying the richness and H diversity index values in each oceanic region from MPN-SRF and Tara-SRF datasets. NAO: North Atlantic Ocean, MS: Mediterranean Sea, RS: Red Sea, NIO: North Indian Ocean, SIO: South Indian Ocean, SAO: South Atlantic Ocean, SO: Southern Ocean, SPO: South Pacific Ocean, SAB: South Australian Bight, NPO: North Pacific Ocean.

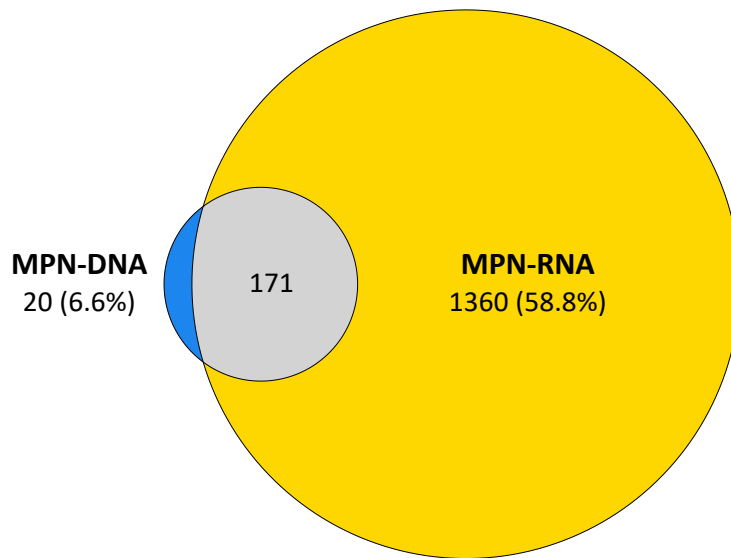


Figure S3. OTU overlap between MPN-DNA and MPN-RNA surveys. Number in parenthesis refers to the percentage of ciliate abundance these OTUs represent.

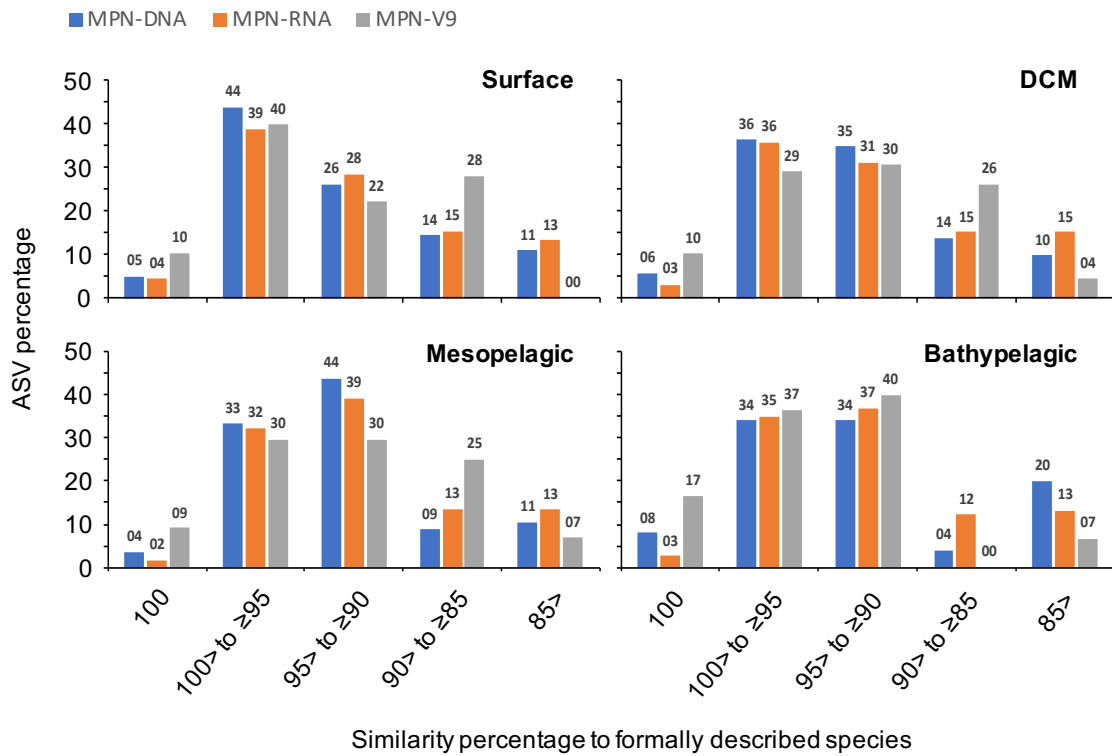


Figure S4. Average of sequence similarity against reference sequences of formally described ciliate species by layer in the MPN-DNA, MPN-RNA and MPN-V9 vertical profiles.

Table S1. Results of PERMANOVA tests. It shows to what extent longitude, latitude and environmental parameters explain the variations in ciliate community composition from MPN-SRF and Tara-SRF. Degree of freedom is 1 in all cases.

Parameter	MPN-SRF			Tara-SRF		
	F	R	pvalue	F	R	pvalue
Latitude	2.6	0.025	0.0001	3.7	0.062	0.0001
Longitude	3.0	0.028	0.0001	2.9	0.049	0.002
Temperature	3.2	0.030	0.0001	9.3	0.157	0.0001
Conductivity	2.7	0.025	0.0001	1.5	0.025	0.13
Chlorophyll	1.7	0.016	0.002	3.5	0.059	0.001
Salinity	0.8	0.007	0.83	2.9	0.048	0.015
Nitrates	0.9	0.009	0.62	1.8	0.031	0.048
Phosphates	0.9	0.008	0.75	1.1	0.018	0.34
Silicates	1.2	0.012	0.14	1.0	0.017	0.40
Oxygen	1.4	0.013	0.04	1.54	0.026	0.09
Turbidity	1.1	0.010	0.31	-	-	-

Table S3. List of the 14 most abundant and widely distributed phylotypes in the ocean surface retrieved by linking V4 and V9 sequences from MPN-SRF and Tara-SRF datasets.

Phylotype genbank accession number	Stations	Phylotype closest species (% identity)	Group	V4 sequence % identity to		V9 sequence % identity to		Mean relative abundance (%)		
				phylotype	phylotype	phylotype	phylotype	Total	MPN	Tara
KJ760553	111	<i>Laboea strobila</i> (97.2)	Oligotrichida	100	100	100	100	4.16	3.24	6.38
JX188358	110	<i>Hexasterias problematica</i> (96.1)	Prostomatea	99.7	100	100	100	1.23	1.20	1.31
GU819329	100	<i>Strombidium</i> sp. (93)	Oligotrichida	99.5	100	100	100	0.66	0.80	0.30
KJ759491	98	<i>Pseudotontonia</i> sp. (97.6)	Oligotrichida	99.2	100	100	100	1.19	1.59	0.24
KJ763611	97	<i>Cardiostomatella vermiformis</i> (91.7)	Oligohymenophorea	99.2	99.2	99.2	99.2	6.57	1.79	18.11
KJ763318	95	<i>Pseudotontonia</i> sp. (97.5)	Oligotrichida	100	100	100	100	1.19	1.52	0.40
KJ763106	91	<i>Strombidium</i> sp. (94)	Oligotrichida	100	100	100	100	1.09	1.09	1.08
JX188331	75	<i>Cardiostomatella vermiformis</i> (100)	Oligohymenophorea	100	100	100	100	1.12	1.17	1.01
JX567406	56	<i>Steenstrupiella steenstrupii</i> (99.9)	Tintinnina	100	100	100	100	0.63	0.28	1.48
KJ762833	50	<i>Strombidium</i> sp. (93.5)	Oligotrichida	100	100	100	100	0.34	0.32	0.38
GQ265955	47	<i>Pseudocohnilembus persalinus</i> (100)	Oligohymenophorea	100	100	100	100	1.03	0.99	1.14
KJ763091	47	<i>Strombidium</i> sp. (92.8)	Oligotrichida	100	100	99.2	99.2	0.32	0.42	0.07
KF662565	44	<i>Eutintinnus fraknoi</i> (96.6)	Tintinnina	100	100	100	100	0.22	0.26	0.12
KF130185	34	<i>Varistrombidium kielum</i> (98.4)	Oligotrichida	99.7	100	100	100	0.30	0.36	0.16