

Supp. Table S1

	QIIME De-multiplexing				OCTUPUS De-multiplexing								AmpliconNoise	
	18S Region 1		18S Region 2		18S Region 1				18S Region 2				18S Region 1	
	Forward (A) Adapter >199bp	Reverse (B) Adapter >199bp	Forward (A) Adapter >199bp	Reverse (B) Adapter >199bp	Forward (A) Adapter Trimmed	Reverse (B) Adapter >199bp	Forward (A) Adapter Trimmed	Reverse (B) Adapter >199bp	Forward (A) Adapter Trimmed	Reverse (B) Adapter >199bp	Forward (A) Adapter Trimmed	Reverse (B) Adapter >199bp	Forward (A) Adapter >199bp	Reverse (B) Adapter >199bp
Pacific128	27,745	28,281	30,961	32,701	36,642	30,364	40,066	38,243	35,369	33,469	41,966	38,871	-	-
Pacific237	22,929	19,701	11,164	11,825	28,870	26,859	14,055	13,344	25,352	23,792	14,811	13,711	-	-
Pacific321	37,364	35,380	20,391	23,804	45,489	41,988	24,985	23,872	42,911	41,172	28,662	27,126	-	-
Pacific422	25,911	23,968	6,391	8,650	32,617	29,807	9,921	9,362	29,746	28,403	11,450	9,905	-	-
Pacific528	33,969	26,495	10,592	11,776	41,980	38,996	14,197	13,547	37,644	35,858	14,859	14,029	-	-
Atlantic22#1	1,711	770	1,259	1,597	2,351	2,177	1,622	1,518	2,563	2,464	2,117	1,980	1,403	688
Atlantic25#2	13,989	12,796	4,623	5,823	17,236	15,652	6,563	6,300	15,935	15,087	7,252	6,798	10,502	11,253
Atlantic29	25,756	24,421	17,850	23,228	32,123	30,139	23,833	22,669	30,229	28,945	29,241	27,528	-	-
Atlantic43	22,730	21,076	20,348	20,849	28,802	26,654	25,562	23,478	27,176	25,897	26,795	25,102	-	-
Atlantic45	20,472	19,107	14,074	15,310	25,399	23,733	17,876	16,823	23,955	22,853	19,360	18,159	-	-
ShallowCalif	39,181	35,928	23,836	23,377	49,541	45,224	28,985	27,745	44,591	42,203	28,925	27,303	-	-
ShallowGulf	34,421	34,445	20,516	19,852	44,247	38,785	26,884	25,355	41,840	40,199	25,136	23,607	-	-

	Sediment	Collection	Latitude	Longitude	Depth
Pacific128	Fine mud	16-Sep-08	43° 59.971' N	130° 23.531' W	3200 m
Pacific237	Fine mud	18-Sep-08	42° 33.588' N	131° 55.040' W	3585 m
Pacific321	Fine mud	21-Sep-08	39° 59.400' N	125° 52.406' W	3664 m
Pacific422	Fine mud	21-Sep-08	39° 59.695' N	125° 26.385' W	2712 m
Pacific528	Fine mud	23-Sep-08	36° 48.024' N	123° 41.774' W	3678 m
Atlantic22#1	Fine mud	15-Aug-08	35° 33.28' N	9° 41.92' W	4321 m
Atlantic25#2	Fine mud	16-Aug-08	35° 44.75' N	9° 59.27' W	4630 m
Atlantic29	Fine mud	17-Aug-08	36° 13.06' N	10° 01.82' W	4878 m
Atlantic43	Fine mud	22-Aug-08	38° 21.66' N	9° 59.08' W	4572 m
Atlantic45	Fine mud	23-Aug-08	38° 23.18' N	10° 24.13' W	4835 m
ShallowCalif	Medium sand	4-Jul-08	31° 1.509' N	114° 49.912' W	intertidal
ShallowGulf	Fine sand	3-Jul-08	27° 54.348' N	97° 2.906' W	3m

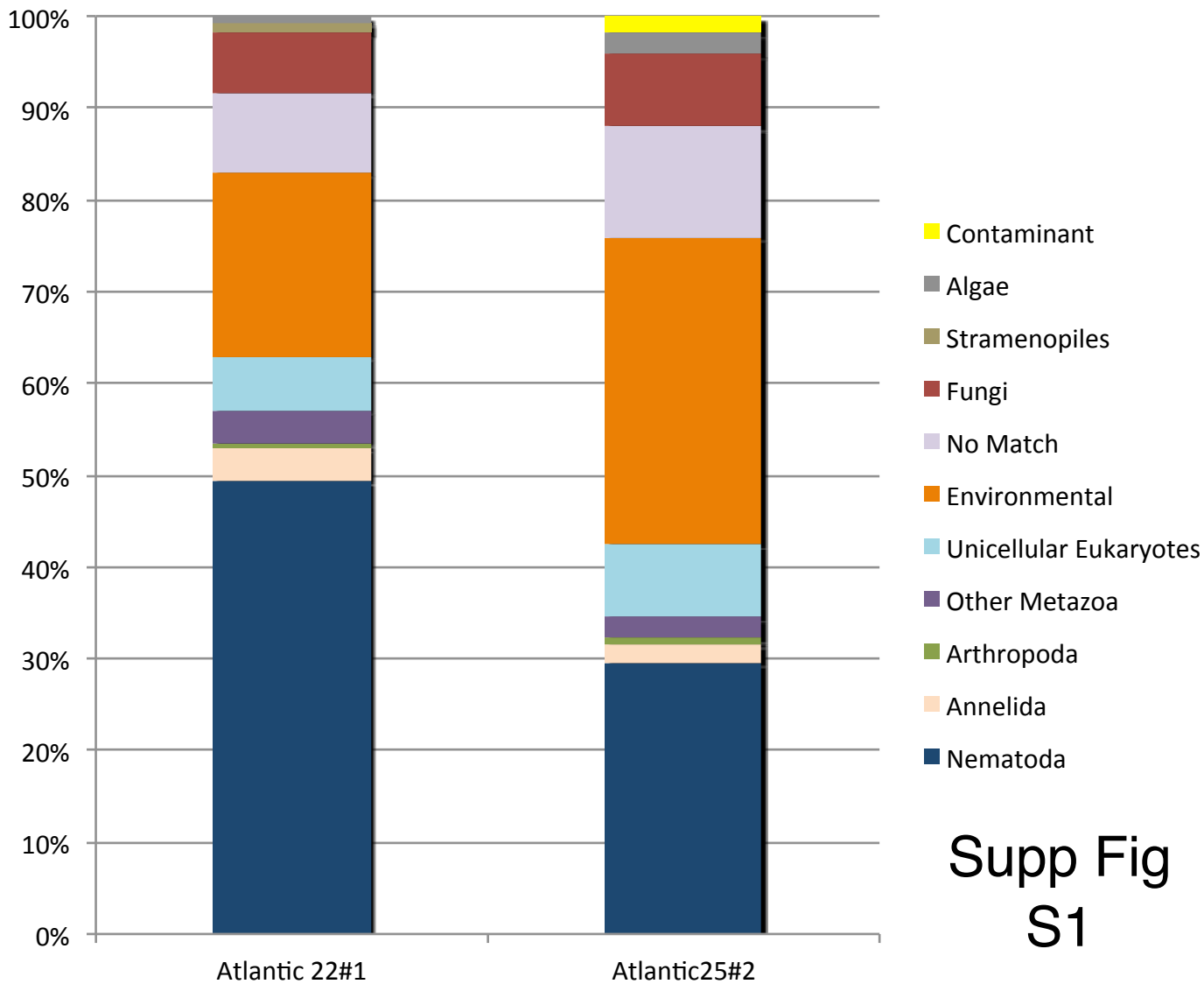
1 **Table S2:**

Taxa	Region 1	Region 2	Region 1	Region 2
	95%	95%	99%	99%
Metazoa	1,360	1,461	43,255	25,668
<i>Nematoda</i>	765	879	27,020	15,518
<i>Annelida</i>	217	197	7,073	3,869
<i>Arthropoda</i>	128	178	2,280	2,323
<i>Platyhelminthes</i>	83	71	3,330	2,476
<i>Brachiopoda</i>	0	4	0	17
<i>Bryozoa</i>	3	3	43	3
<i>Chaetognatha</i>	0	0	0	1
<i>Chordata</i>	8	8	48	96
<i>Cnidaria</i>	22	1	445	9
<i>Ctenophora</i>	2	2	2	5
<i>Echinodermata</i>	3	2	10	5
<i>Entoprocta</i>	0	0	3	0
<i>Gastrotricha</i>	12	7	65	21
<i>Gnathostomulida</i>	0	10	1	38
<i>Hemichordata</i>	14	4	1,032	368
<i>Kinorhyncha</i>	4	9	34	275
<i>Loricifera</i>	3	3	19	66
<i>Mollusca</i>	25	62	317	292
<i>Nematomorpha</i>	0	1	0	0
<i>Nemertea</i>	10	8	80	57
<i>Porifera</i>	40	2	820	5
<i>Priapulida</i>	0	2	0	6
<i>Rotifera</i>	0	1	0	14
<i>Sipuncula</i>	4	3	469	201
<i>Tardigrada</i>	13	4	160	3
Fungi	225	163	9,984	2,445
Unicellular eukaryotes	738	1,257	15,198	22,020
Environmental	774	686	12,687	9,775
No match	480	354	11,345	1,868
Algae	111	96	975	861
Stramenopiles	137	146	1,771	1,583
Total	3,825	4,163	95,215	64,220

2

3

Taxonomic Proportions from Denoised Data (OCTUPUS 99%)



Supp Fig
S1



Fig S2

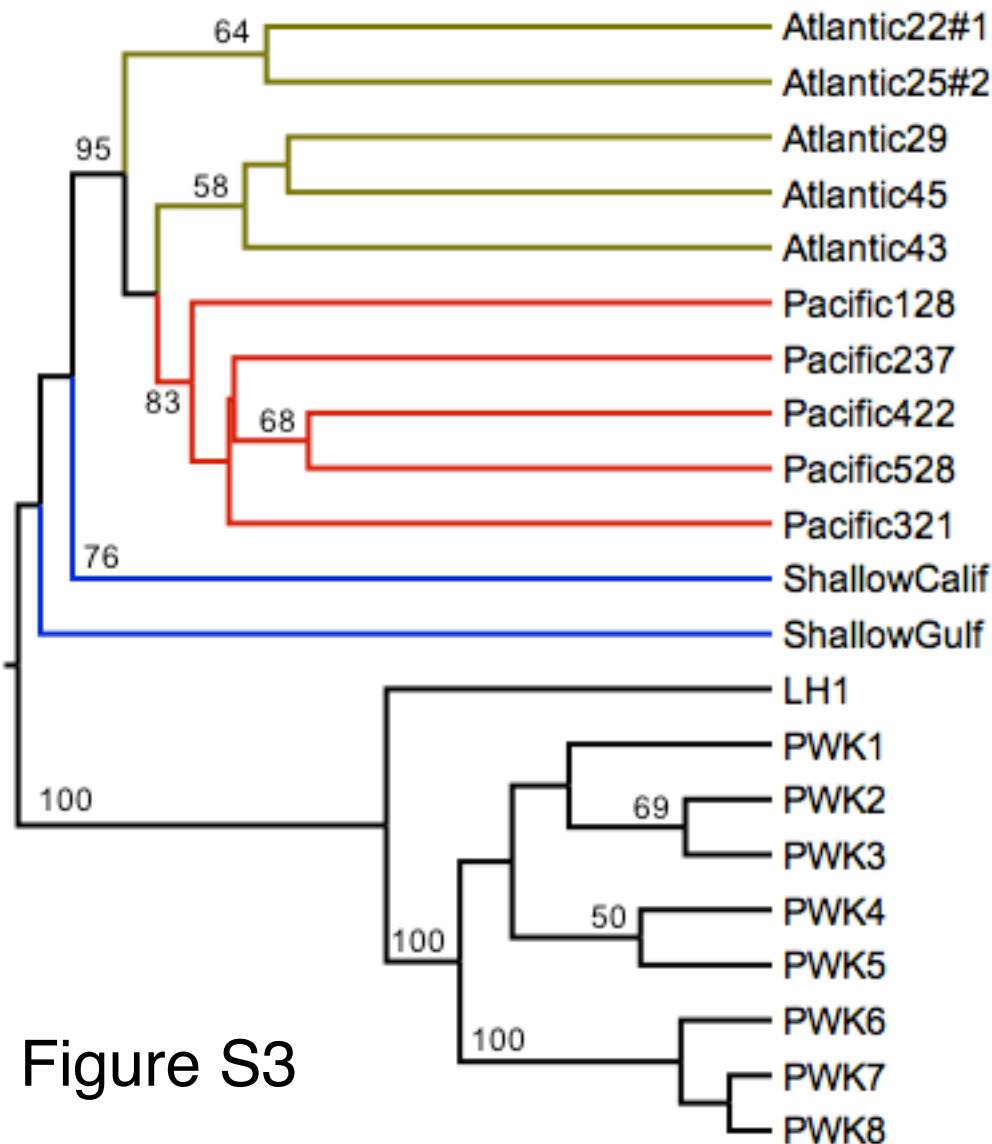


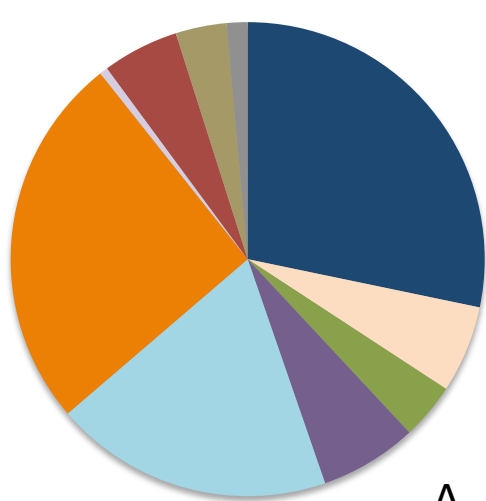
Figure S3

UCLUST OTUs 95%

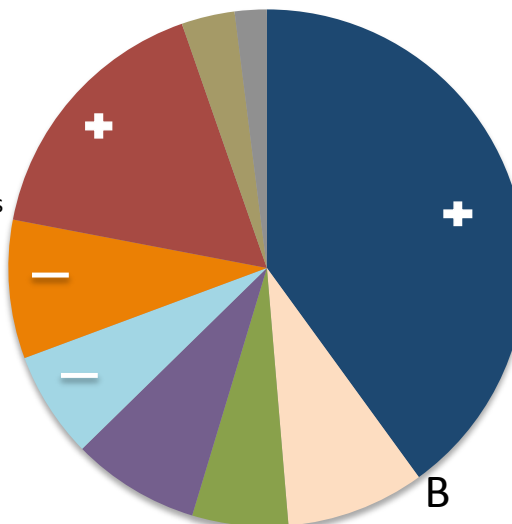
Fig S4

Eurybathic OTUs 95%

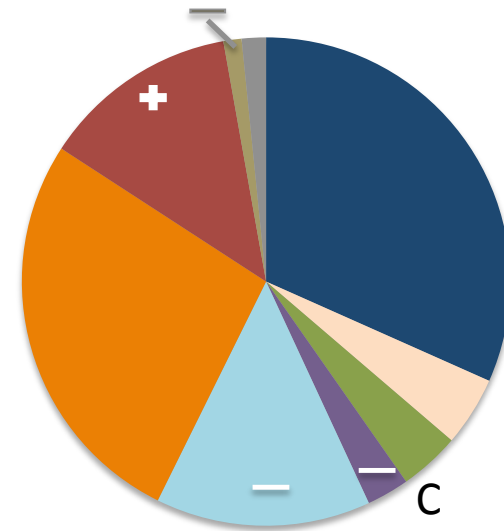
Cosmopolitan Deep-sea OTUs 95%



A



B

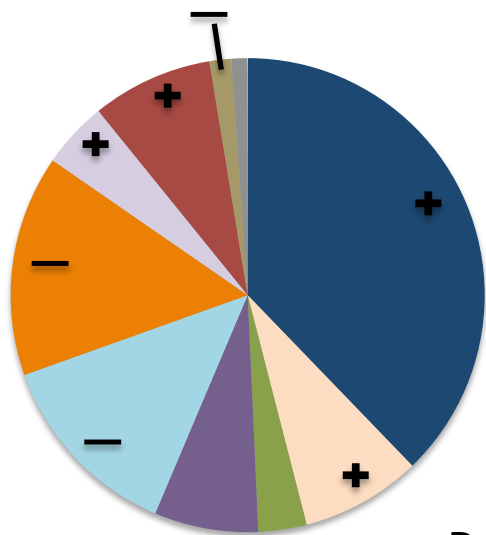


C

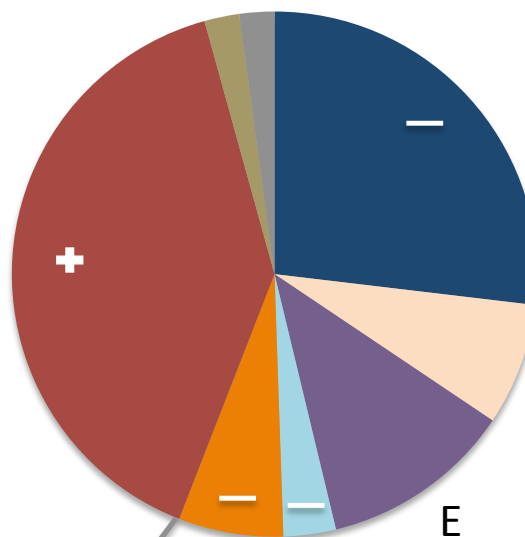
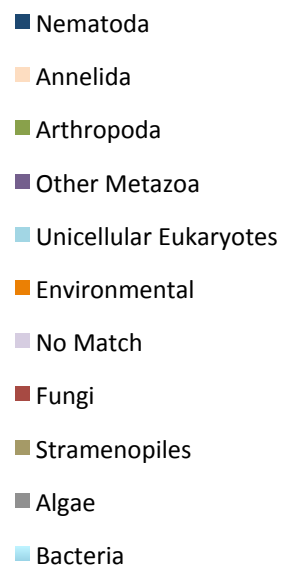
UCLUST OTUs 99%

Eurybathic OTUs 99%

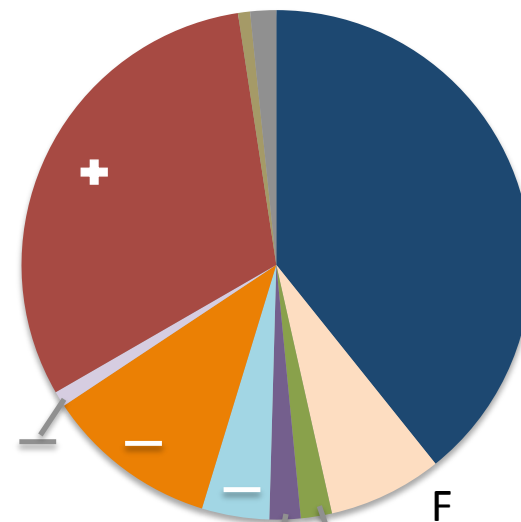
Cosmopolitan Deep-sea OTUs 99%



D



E



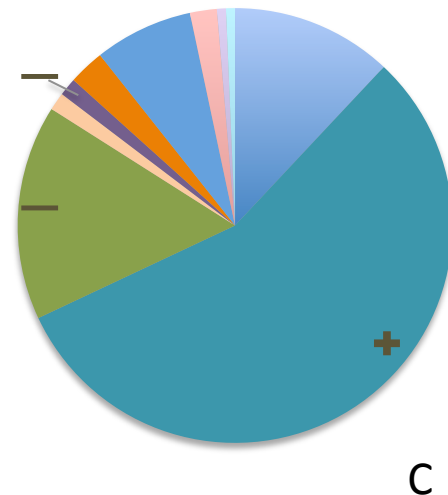
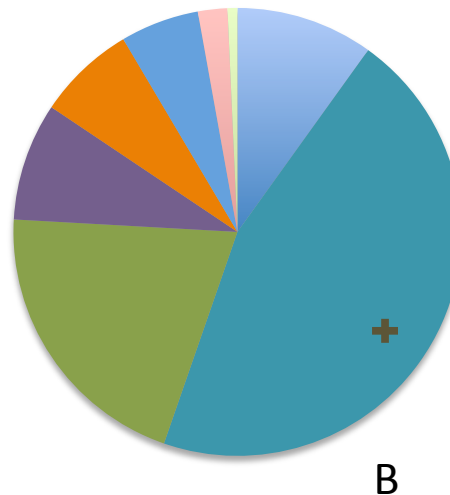
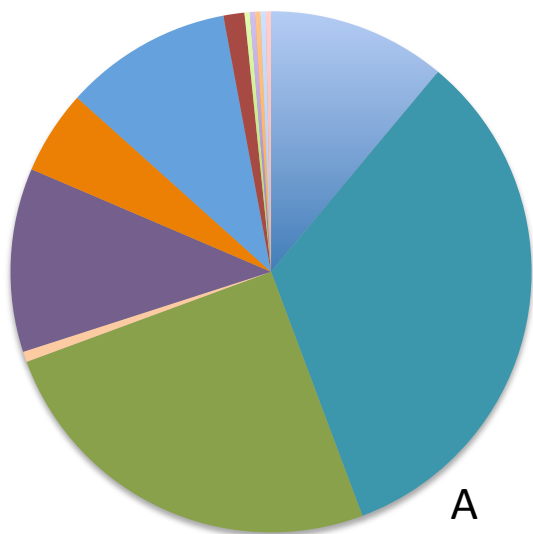
F

Nematode OCTUs 95%

Fig S5

Eurybathic Nematodes 95%

Cosmopolitan Deep-sea Nematode OCTUs 95%



Nematode OCTUs 99%

Eurybathic Nematodes 99%

Cosmopolitan Deep-sea Nematode OCTUs 99%

