

Supplemental Table 2: Most abundant OTUs within each spatial group based on average relative abundance. Taxonomy was determined by the RDP Classifier tool with an 80% confidence threshold.

Environment	Taxonomy (<i>Phylum, Class, Order, Family, Genus</i>)	Average relative abundance within group (%)	
River	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae, Flavobacterium</i>	4.1	
	<i>Proteobacteria, Betaproteobacteria, Burkholderiales, Comamonadaceae</i>	4.0	
	<i>Proteobacteria</i>	3.4	
	Unknown Bacteria	3.3	
	<i>Actinobacteria, Actinobacteridae, Actinomycetales</i>	2.7	
	<i>Proteobacteria, Betaproteobacteria, Methylophilales, Methylophilaceae</i>	2.4	
	<i>Actinobacteria, Actinobacteridae, Actinomycetales</i>	2.4	
	<i>Verrucomicrobia</i>	1.8	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae, Flavobacterium</i>	1.6	
	<i>Actinobacteria</i>	1.3	
		Sum: 27.0	
	Estuary	<i>Proteobacteria, Gammaproteobacteria, Oceanospirillales</i>	2.5
		<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>	2.4
<i>Proteobacteria, Alphaproteobacteria, Rhodobacterales, Rhodobacteraceae</i>		1.2	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Cryomorphaceae, Fluviicola</i>		1.2	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		1.2	
<i>Proteobacteria, Alphaproteobacteria, Rhodobacterales, Rhodobacteraceae</i>		1.1	
<i>Proteobacteria, Betaproteobacteria, Burkholderiales, Comamonadaceae</i>		1.1	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae, Flavobacterium</i>		0.9	
<i>Bacteroidetes</i>		0.8	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		0.7	
		Sum: 13.0	
Plume		<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>	3.9
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae, Ulvibacter</i>	3.5	
	<i>Proteobacteria, Alphaproteobacteria, Rhodobacterales, Rhodobacteraceae</i>	2.7	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae, Polaribacter</i>	2.0	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>	1.8	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Cryomorphaceae</i>	1.7	
	Unknown Bacteria	1.5	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales</i>	1.3	
	<i>Verrucomicrobia, Opitutae</i>	1.2	
	<i>Proteobacteria, Alphaproteobacteria, Rhodobacterales, Rhodobacteraceae</i>	1.2	
		Sum: 20.8	
	Epipelagic	<i>Proteobacteria, Alphaproteobacteria, Rhodobacterales, Rhodobacteraceae</i>	5.6
Unknown Bacteria		3.0	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		2.0	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		2.0	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		1.8	
<i>Cyanobacteria, Cyanobacteria, Family II, GpIIa</i>		1.7	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		1.6	
<i>Proteobacteria, Gammaproteobacteria</i>		1.5	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		1.2	
<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>		1.2	
		Sum: 21.7	
Mesopelagic	<i>Proteobacteria, Alphaproteobacteria, Rickettsiales, SAR11, Pelagibacter</i>	14.0	
	<i>Proteobacteria</i>	1.5	
	<i>Proteobacteria, Alphaproteobacteria</i>	1.2	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae,</i>	1.1	
	<i>Proteobacteria, Gammaproteobacteria</i>	1.0	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae, Polaribacter</i>	0.9	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>	0.9	
	Unknown Bacteria	0.7	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales</i>	0.6	
	<i>Proteobacteria, Alphaproteobacteria, Rickettsiales, SAR11, Pelagibacter</i>	0.4	
	Sum: 22.2		
Shelf Bottom	<i>Proteobacteria, Gammaproteobacteria</i>	16.4	
	<i>Proteobacteria, Gammaproteobacteria</i>	3.2	
	<i>Proteobacteria, Gammaproteobacteria</i>	2.2	
	<i>Proteobacteria, Gammaproteobacteria</i>	2.2	
	Unknown Bacteria	1.1	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>	1.0	
	<i>Proteobacteria, Gammaproteobacteria</i>	1.0	
	<i>Actinobacteria</i>	0.8	
	<i>Bacteroidetes</i>	0.7	
	<i>Bacteroidetes</i>	0.7	
		Sum: 29.3	
Slope Bottom	Unknown Bacteria	8.4	
	Unknown Bacteria	4.2	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>	2.7	
	<i>Proteobacteria, Alphaproteobacteria, Rickettsiales, SAR11, Pelagibacter</i>	1.8	
	<i>Proteobacteria, Gammaproteobacteria</i>	1.8	
	<i>Proteobacteria, Alphaproteobacteria, Rickettsiales, SAR11, Pelagibacter</i>	1.7	
	<i>Proteobacteria, Gammaproteobacteria</i>	1.3	
	<i>Bacteroidetes, Flavobacteria, Flavobacteriales, Flavobacteriaceae</i>	1.2	
	<i>Proteobacteria, Alphaproteobacteria, Rickettsiales, SAR11, Pelagibacter</i>	1.1	
	Unknown Bacteria	0.9	
	Sum: 25.1		