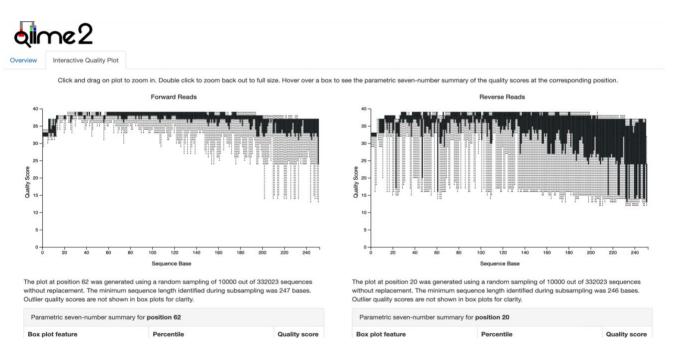
- 1.) I believe the population, sex, and flock columns will be useful for beta and alpha diversity. Population will help distinguish between migratory vs.resident. Sex can help if diversity differs between sex. Flock will help for diversity analysis as it groups sex and population together.
- 2.) Based on the plot, I would choose to trim --p-trunc-len-f 240, --p-trunc-len-r 180, --p-trim-left-f 0, & --p-trim-left-r 0. This is because for the forward reads you can see that the quality scores start to decrease after 240, similar with 180 on the reverse reads. For the start, I didn't trim anything because the quality scores were high. It also ensures that you don't accidently cut off your primers.



3.) Yes, there are 16 in total with less than 10,000 reads. There are 147_S172_L001, 80_S123_L001, 206_S124_L001, 386_S173_L001, 11_S125_L001, 375_S99_L001, 56_S151_L001, 273_S101_L001, 79_S103_L001, 267_S150_L001, 339_S174_L001, 179_S127_L001, 124_S152_L001, 270_S126_L001, 164_S100_L001, & 302_S171_L001.

QIIME 2		Library View Forum		
dime2view	File: rep-seqs.qzv ×	Visualization Citations Provenance Metadata		
Sequence Length Statistics	Seven-Number	Seven-Number Summary of Sequence Lengths		
Download sequence-length statistics as a TSV	Download seven-num	nber summary as a TSV		

"Values rounded down to pearest whole number

Sequence Table

to BLAST a sequence against the NCBI nt database, click the sequence and then click the View report button on the resulting page.

Download your sequences as a raw FASTA file

Click on a Column header to sort the table

Feature ID	Sequence
15bd8361441d322d66a955c10a723c14	${\tt TACOTAGGGTGCGAGCGTTGTCCGGAATTATTGGGCGTAAAGGGCTTGTAGGCGGTTTGTCGCGTCTGCCGTGAAATCCTCTGGCTTAACTGGGGGCGTGCGGTAGGGCAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGTGCGGTAGGGGAGACTTGAGGGAGAGACTTGAGGGAGAGACTTGAGGGAGAGACTTGAGGGAGACTTGAGGGAGAGAGA$
eea25d0f370ae036c20e4ed1e0011f62	${\tt TACGAAGGGGCTAGCGTTGCTCGGAATTACTGGGCGTAAAGGGCGCGTAGGCCGGTCGTTAAGTTAGAGGTGAAAGCCCAGGGCTCAACCCTGGAATTGCCTTTAAAACTGGCGGCCTTGAGTATGGCAGAGGTATGGCAGAGGGTAAGGCCAGGGGTTAAGTTAGAGGGTGAAAGGCCAGGGCTCAACCCTGGAATTGCCTTTAAAACTGGCGGCCTTGAGTATGGCAGAGGTATGGCAGAGGGTAAGGCCAGGGGTTAAGTTAGAGGTGAAAGGCCAGGGCTCAACCCTGGAATTGCCTTTAAAACTGGCGGCCTTGAGTATGGCAGAGGTATGGCAGAGGGTAAGGCCAGGGCTCAACCCTGGAATTGCCTTTAAAACTGGCAGAGGTATGGCAGAGGGTATGGCAGAGGGTAAGGCCAGGGGTAAGGCCAGGGGTAAGGCCAGGGGTAAGGCCAGGGGTAAGGCAGAGGGTAAGGCAGAGGGTAAAGGCCAGGGGTAAGGCAGAGGGTAAGGCAGAGGGTAAGGCAGAGGGTAAGGCAGAGGGAGG$
f1d9b0b4ff58ba38ee9d97e4ee69a444	${\tt TACAGAGGTCTCAAGCGTTGTTCGGATTCATTGGGCGTAAAGGGTGCGTAGGTGGGCCGTAAGTCAGGTGTGAAATCTCGGGGCTTAACCCCGAAACTGCACTTGATACTGCGGTGCTCGAGTACTGGAGAGGAGAGAGA$
3700a95cdc8d59af294675940775b368	${\tt TACGGAGGGTGCGAGCGTTGTCCGGATTTATTGGGTTTAAAGGGTGCGTAGGTGGCTAATTAAGTCAGTGGTGAAATACAGCCCCTTAACGGTTGAGGTGCCATTGATTAGCTTGAAATAATTGGAGGCTGGAAATAATTGGAGGAGGAGGAGGAGGAGGAGGAGGAGG$
0e9ae3d0137092a4fbf8d113097c38af	${\tt TACGGAGGGTCCAAGCGTTATCCGGATTCACTGGGTTTAAAGGGAGCGTAGGAGGGCAGGTAAGTCAGTGGTGAAATCTTCGAGCTTAACTCGGAAACTGCCGTTGATACTATCTGTCTTGAATACCGTGGAGATGAGTAGTCAGTGGAGATGAGTGAG$
f7a6ecf244e3a3a6170cc1c85e715c68	${\tt TACGTAGGGTGCGAGCGTTAATCGGAATTACTGGGCGTAAAGCGTGCGCAGGCGGTTTTGTAAGTCAGATGTGAAATCCCCGGGCTCAACCTGGGAACTGCATTTGAGACTGCAAGGCTAGAGTGCAGAGGGGGGGG$
543821cf93fe47b5c277b6838f055c92	${\tt TACGAAGGCTCAACCGTTACTCGGAATTACTGGGCGTAAAGGGTCCGTAGGTGGTTTTTTAAGTCCGTTGTGAAATCCCTGGGCTCAACCTGGGAATGGCAGTGGATACTGGAAAGCTAGAGTGCGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGTAGAGGGGATAGGGAATGGCAGTAGAGGGGGTAGAGGGGGTAGAGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGTAGAGGGGGG$
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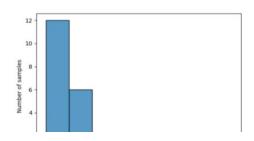
QIIME 2					Library	View	Forum
dilme	2 _{view}	File: table.qzv ×	Visualization	Citations	Provena	nce	Metadata
Overview	Interactive Sample Detail	Feature Detail					

Table summary

Summary Statistic	Value
Number of samples	24
Number of features	2,727
Total frequency	255,817

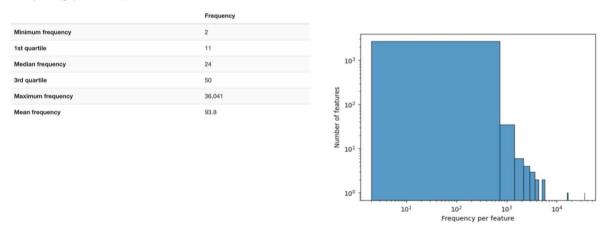
Frequency per sample

Frequency	
204	
2,366.2	
5,883	
11,775	
50,191	
10,659	
	204 2,366.2 5,883 11,775 50,191

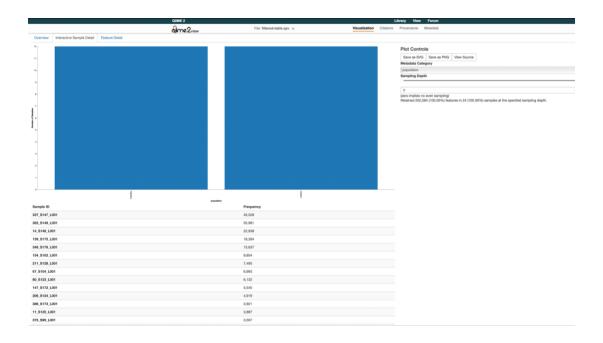




Frequency per feature



- 4.) My top 3 hits sorted by confidence levels are 0.999999339764707, 0.9999998136930262, and 0.9999997261496054. When sorted by taxon by top 3 hits were all unassigned.
- 5.) Level 3 of taxonomy would be Class. A trend I noticed was that most of the top hits based on confidence were from the class alphaproteobacterial, cytophagia, actinobacteria, and grammaproteobacteria.
- 6.) The cutoff value I would choose is 9,000 as it contains adequate amount of samples with high reads, while discarding the samples under 9,000 as it wouldn't be ideal for alpha and beta diversity.





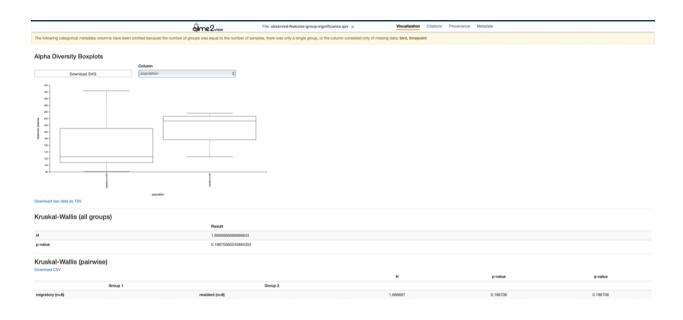
7.) Alpha diversity measures the richness and evenness of the samples provided. The differences between the two alpha diversities used is that for observed features it measures the numbers of unique taxa in the samples, which only focuses on the richness of the sample. While Shannon diversity measures the combination of richness and evenness, which focuses on the number of taxa present how are they are distributed.

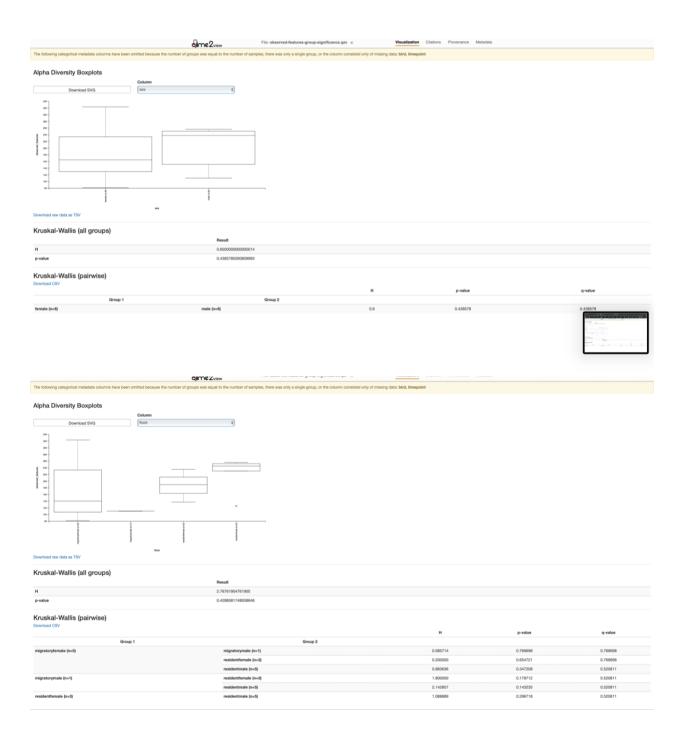
8.)

υ.,			
	Category	Alpha Diversity	q-value
		Metric	

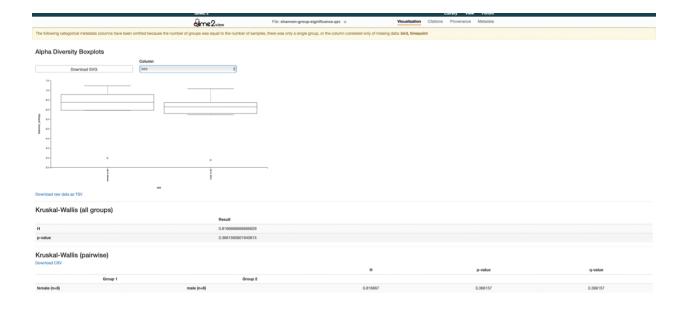
Population	Shannon	0.698535
Population	Observed Features	0.196706
Sex	Shannon	0.366157
Sex	Observed Features	0.438578
Flock	Shannon	0.514897
Flock	Observed Features	0.428858

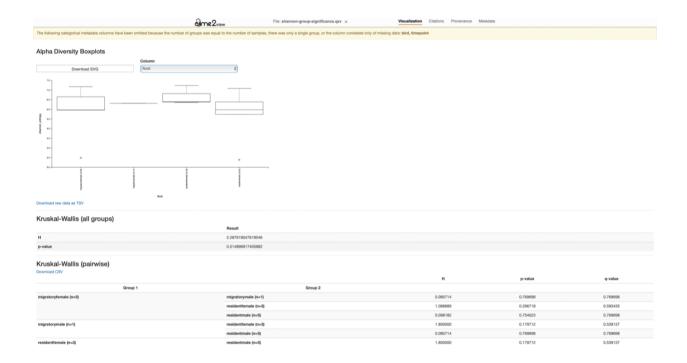
No, there aren't any significant comparisons between the metadata as all q-values are < 0.05.





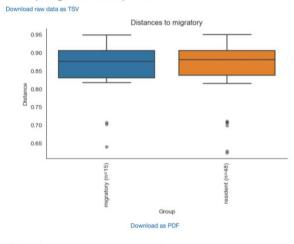


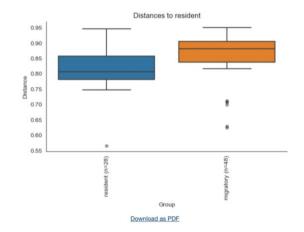




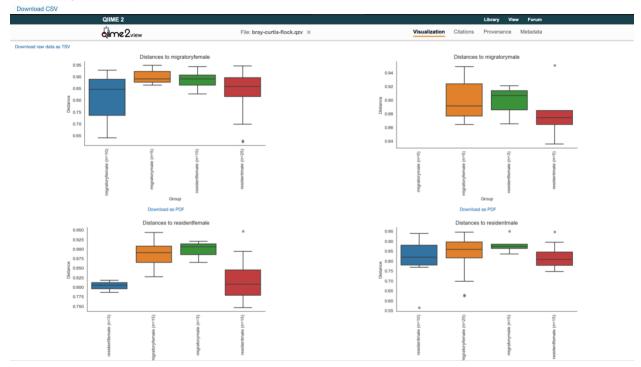
9.) Yes, there are significance in population (p-value 0.049) and flock (p-value 0.022). This shows that population, resident vs. migratory birds is different. While flock shows a difference between the different groups.

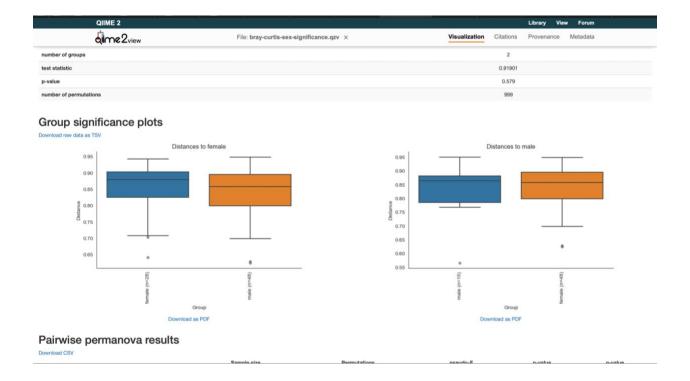
Group significance plots



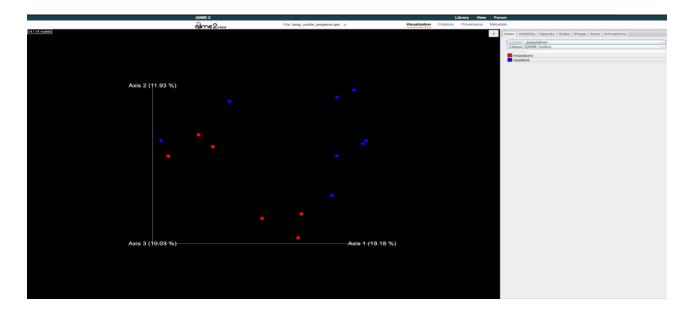


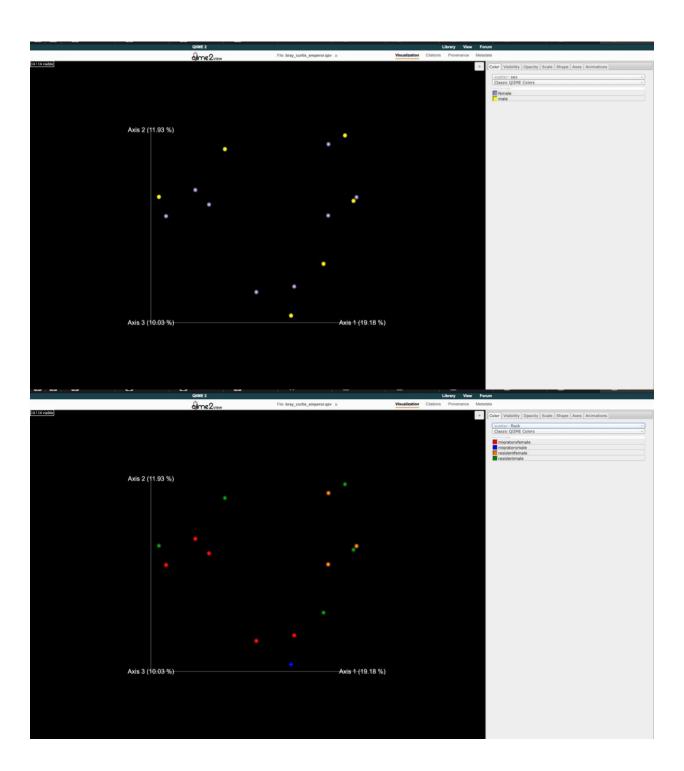
Pairwise permanova results



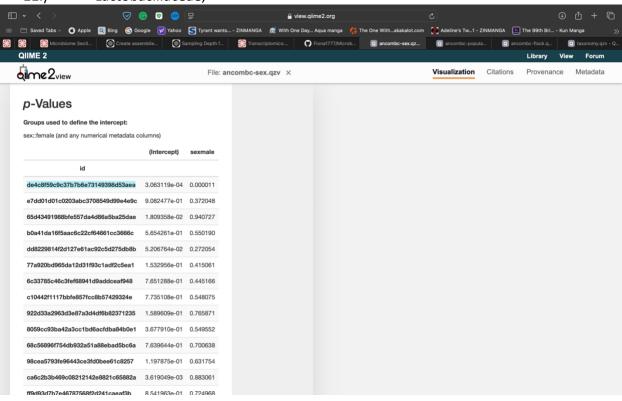


10.) It helps visually confirm the patterns as all data is in one plot. Since population and flock showed significance there should be clusters of the similar groups together. For population you can see the migratory being lower on the axis compared to the residents.

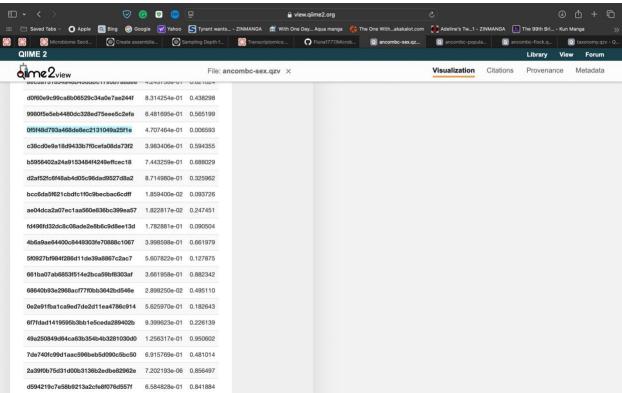




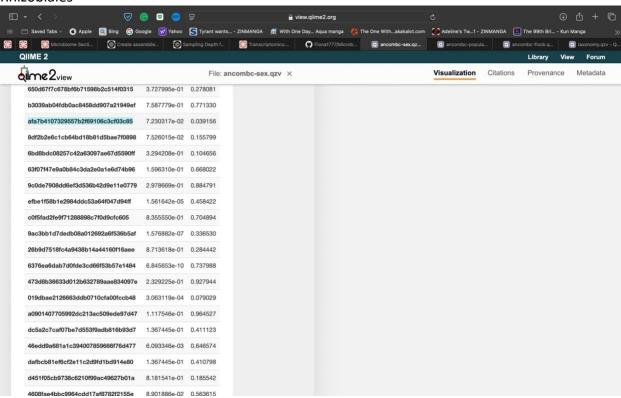
11.) Lactobacillaceae,



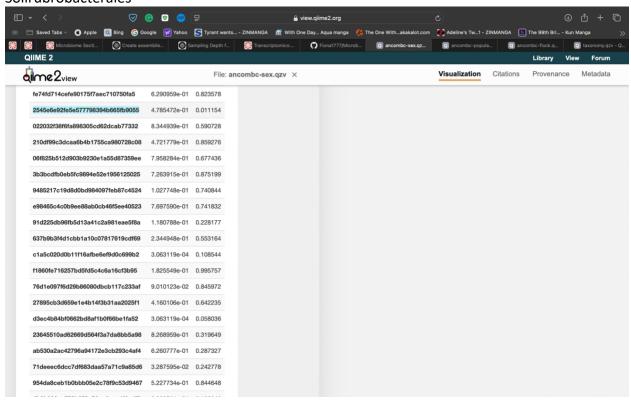
Comamonadaceae



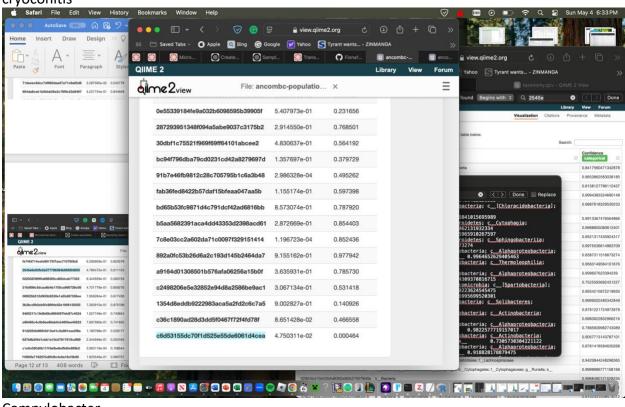
Rhizobiales



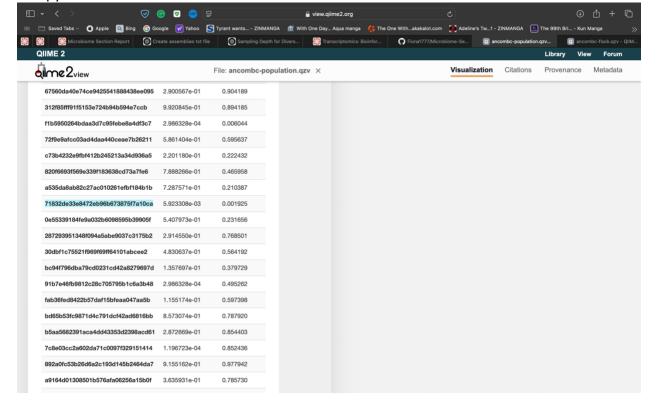
Solirubrobacterales



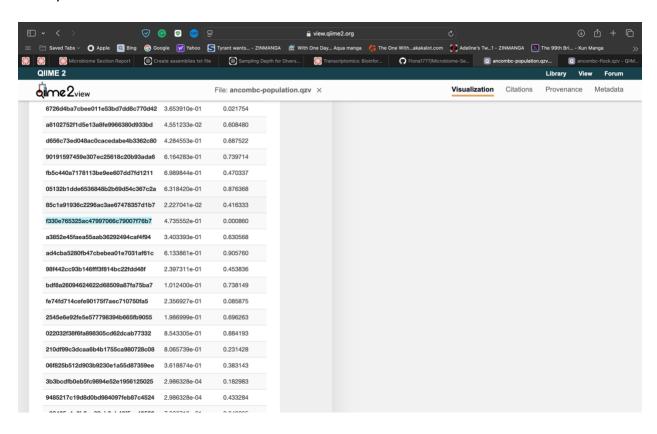
cryoconitis



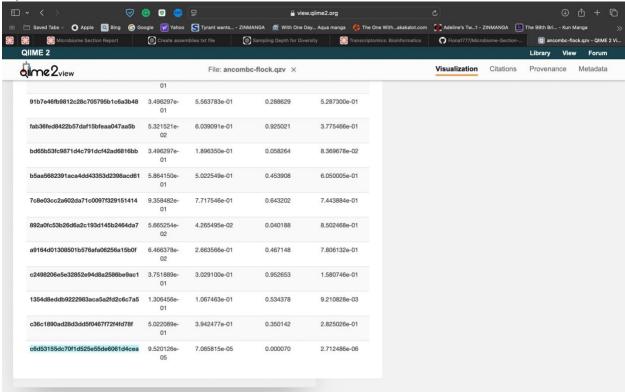
Campylobacter



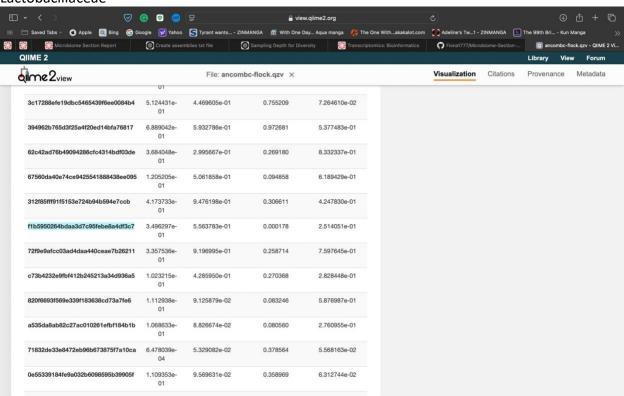
Brachybacterium



cryoconitis



Lactobacillaceae



E.coli

