

How Bacterial Diversity Impacts the Hatching Success of European Birds

Sonya Utecht, Department of Biomedical Informatics, University of Arkansas for Medical Sciences, Little Rock, AR

Methods

Imported into
QIIME2

Deblur
Trim Length 100

Closed Reference
OTU picking
(Greengenes)

Filtered
mitochondria,
archaea, and low
frequency OTUs

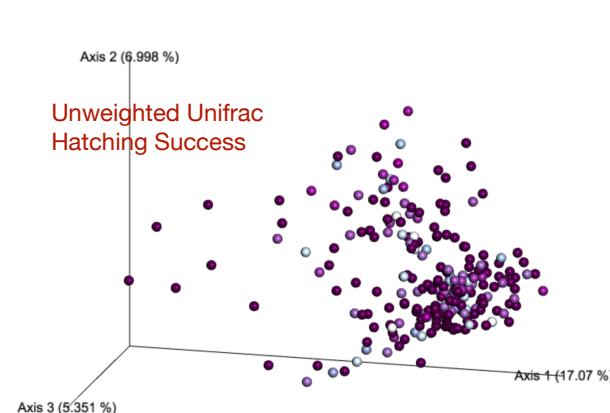
Align to tree
Core Metrics
Taxa Barplot

Beta Diversity
significance

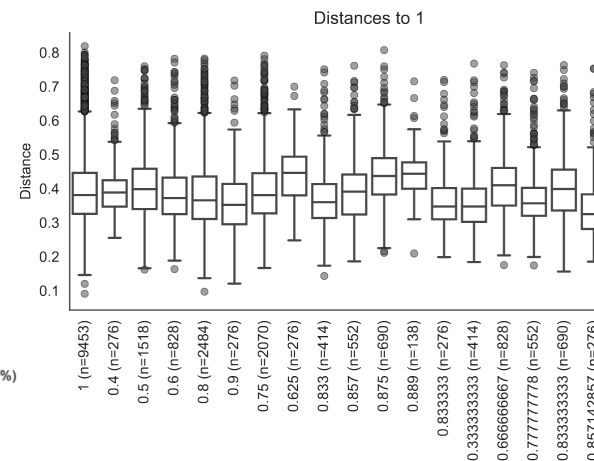


Results

The **ratios of common bacterial taxa are similar** between species regardless of their hatching success rates.



Unweighted Unifrac distances of nest communities with darker colors representing higher hatching success rates.



Box and whisker graph showing how 100% hatching rate nests are nearly as similar to each other as they are to every other nest.

OTU community samples by host bird species

Athene noctua

Little Owl

100%

Hirundo rustica

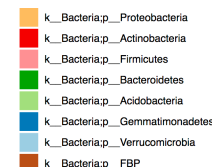
Barn Swallow

95.0%

Turdus merula

Common Blackbird

89.2%



Hypothesis

Bacterial diversity will have a noticeable relationship with hatching success.

Certain bacterial taxa will have higher appearance rates in clutches with lower success rates.

Introduction

16S rRNA Sequence data was obtained from the paper "*Bacterial density rather than diversity correlates with hatching success across different avian species.*"

The authors monitored 600 nest boxes as well as several wild nests. Eggs were swabbed at the start of incubation and after the clutch was completed.

The final dataset included 157 clutches from 17 bird species.

A total of 609 sequences were obtained.

Discussion

Research with negative results or small effect sizes can still contribute to the field.

Reproducibility should always be a major focus in scientific papers.