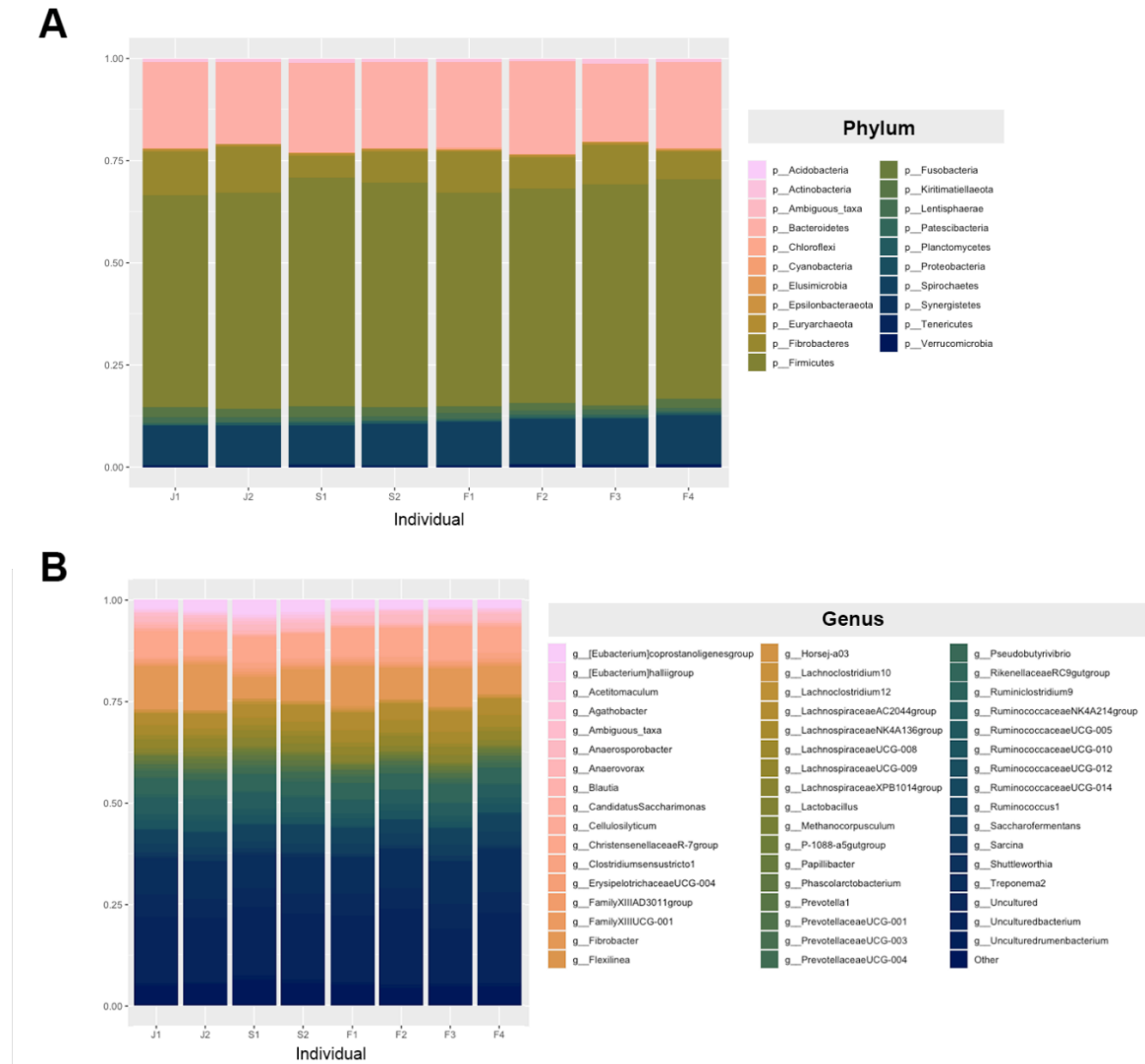
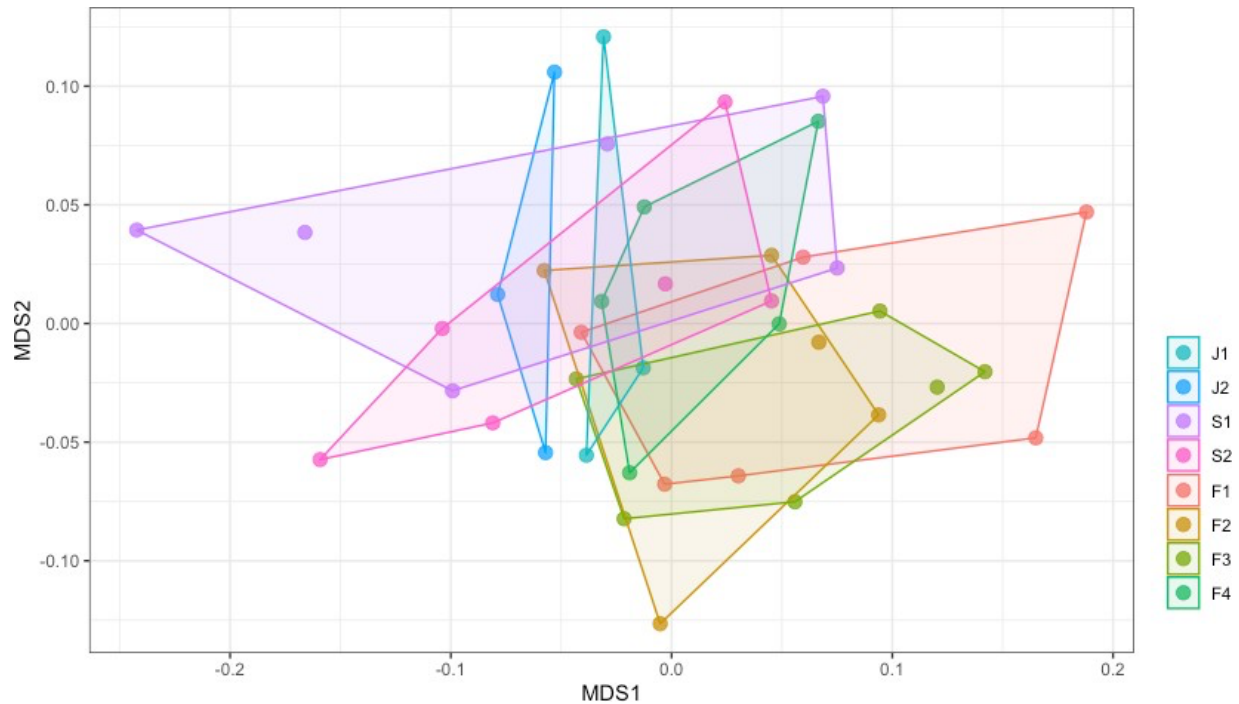


## Additional File 1



**Figure S1.** (A) Phylum - and (B) genus - level bar charts representing microbial community composition across n=8 female southern white rhinoceros at the North Carolina Zoo between 2020-2021.



**Figure S2.** Multidimensional scaling (MDS) plot comparing Bray-Curtis dissimilarity across n=8 female southern white rhinoceros at the North Carolina Zoo sampled between 2020-2021.

**Table S1.** Summary of samples collected and datapoints used for age and seasonality statistical comparisons across n=8 female southern white rhinoceros at the North Carolina Zoo between July-September 2020 and January-March 2021.

Individual	Summer Collection Period			Winter Collection Period		
	July	August	September	January	February	March
J1	No	No	No	Yes <sup>A</sup>	Yes <sup>A</sup>	Yes <sup>A,S</sup>
J2	No	No	No	Yes <sup>A</sup>	Yes <sup>A</sup>	Yes <sup>A,S</sup>
S1	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>
S2	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>
F1	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>
F2	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>A,S</sup>	Yes <sup>*</sup>	Yes <sup>A,S</sup>
F3	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>
F4	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>S</sup>	Yes <sup>A,S</sup>	Yes <sup>A,S</sup>	No

\*Datapoint fell under rarefaction threshold (<36,100 reads) and was filtered out of dataset

<sup>A</sup>Datapoint used for age-related statistical comparisons.

<sup>S</sup>Datapoint used for seasonality statistical comparisons.