

Supplementary Table 1. ANOVA output for sex-based canyon wren song transmission comparisons of Blur Ratio (BR), Excess Attenuation (EA), Signal-to-noise Ratio (SNR), and Signal Consistency (SC) measurements. P-values significant at the  $\alpha = 0.05$  level have been bolded.

| Female Song vs. Male Cheet Comparisons |    |         |         |         |                 |
|----------------------------------------|----|---------|---------|---------|-----------------|
| Blur Ratio (BR)                        |    |         |         |         |                 |
|                                        | df | SSE     | MSE     | F-value | p-value         |
| Signal Type                            | 1  | 0.15    | 0.01    | 0.32    | 0.90            |
| Distance                               | 1  | 0.52    | 0.52    | 42.51   | < <b>0.0001</b> |
| Song ID                                | 38 | 1.07    | 0.28    | 2.36    | <b>0.006</b>    |
| Type:Distance                          | 1  | 0.02    | 0.01    | 1.45    | 0.236           |
| Excess Attenuation (EA)                |    |         |         |         |                 |
|                                        | df | SSE     | MSE     | F-value | p-value         |
| Signal Type                            | 1  | 2145.7  | 2145.7  | 10.96   | <b>0.001</b>    |
| Distance                               | 1  | 349.4   | 349.4   | 1.78    | 0.185           |
| Song ID                                | 38 | 80.5    | 80.5    | 0.41    | 0.553           |
| Type:Distance                          | 1  | 368.0   | 368.0   | 0.84    | 0.361           |
| Signal-to-Noise Ratio (SNR)            |    |         |         |         |                 |
|                                        | df | SSE     | MSE     | F-value | p-value         |
| Signal Type                            | 1  | 1883.60 | 1883.60 | 50.50   | < <b>0.0001</b> |
| Distance                               | 1  | 1740.11 | 1740.11 | 46.64   | < <b>0.0001</b> |
| Song ID                                | 38 | 16.7    | 16.7    | 0.49    | 0.505           |
| Type:Distance                          | 1  | 309.10  | 309.14  | 8.29    | <b>0.015</b>    |

| Signal Consistency (SC) |    |      |      |         |                 |
|-------------------------|----|------|------|---------|-----------------|
|                         | df | SSE  | MSE  | F-value | p-value         |
| Signal Type             | 1  | 0.53 | 0.53 | 57.15   | < <b>0.0001</b> |
| Distance                | 1  | 0.01 | 0.01 | 0.12    | 0.729           |
| Song ID                 | 38 | 0.01 | 0.01 | 0.63    | 0.429           |
| Type:Distance           | 1  | 0.01 | 0.01 | 0.12    | 0.741           |