



Female Fertility Announcement: Does Female House Wrens (*Troglodytes aedon*) Singing Behavior Prior to Clutch Initiation Predict Reproductive Success?

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Does female house wren singing rate and song repertoire prior to clutch initiation predict reproductive success?

Do house wrens primarily sing in response to their male counterparts or are their songs independent of male interaction?

How many songs do females have in their repertoire, and which song is used most often by females?

Recording Females at Their Nests

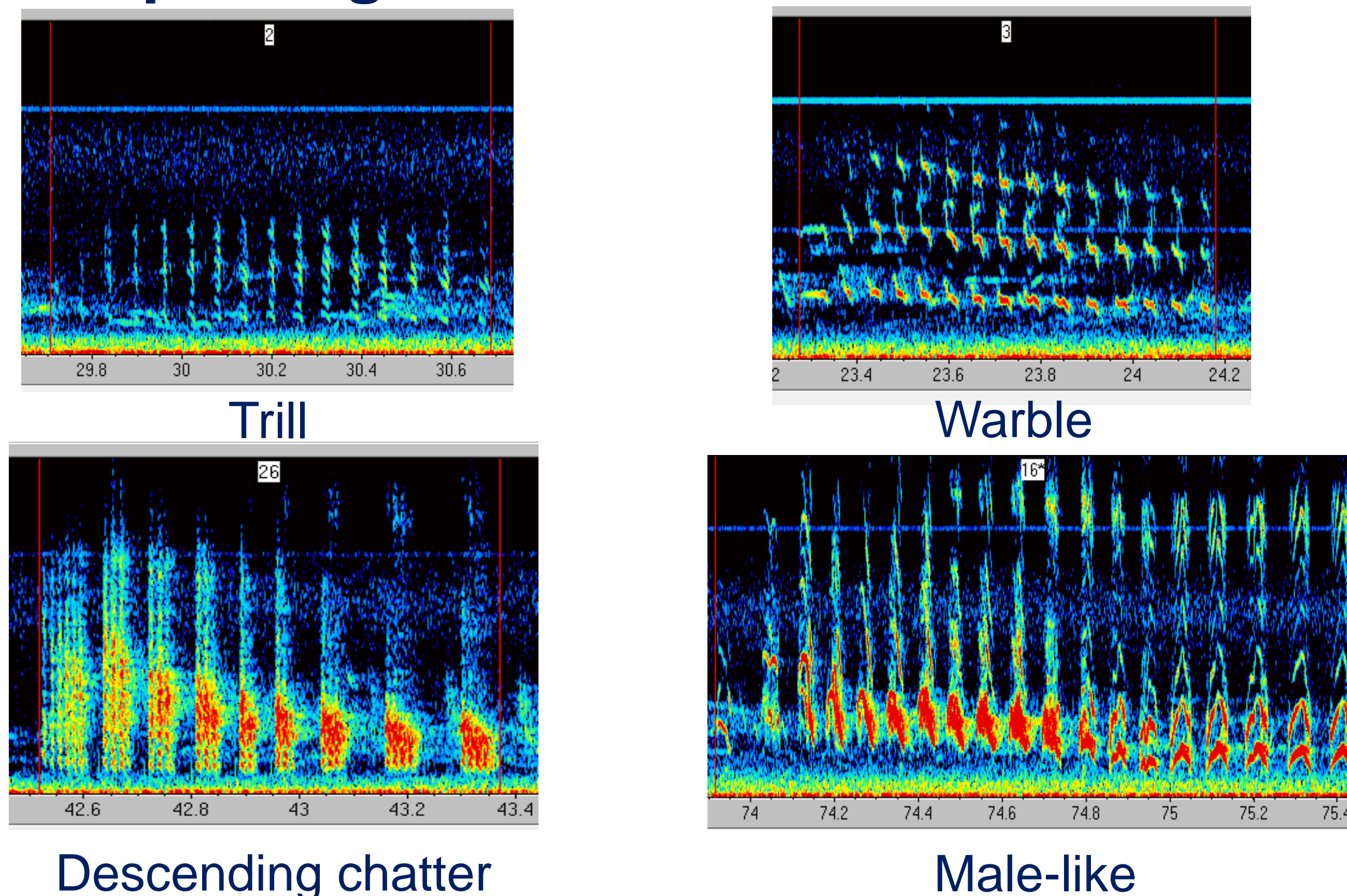
Experimental Design:

- Recorded females (N = 46) during their fertile period across 52 clutches.
- Initial analysis of female songs includes 81 hours of recordings over 27 days by 7 females.
- Measured reproductive success of all females as clutch initiation date, number of eggs laid, number of nestlings that survive to day 10 post-hatch.

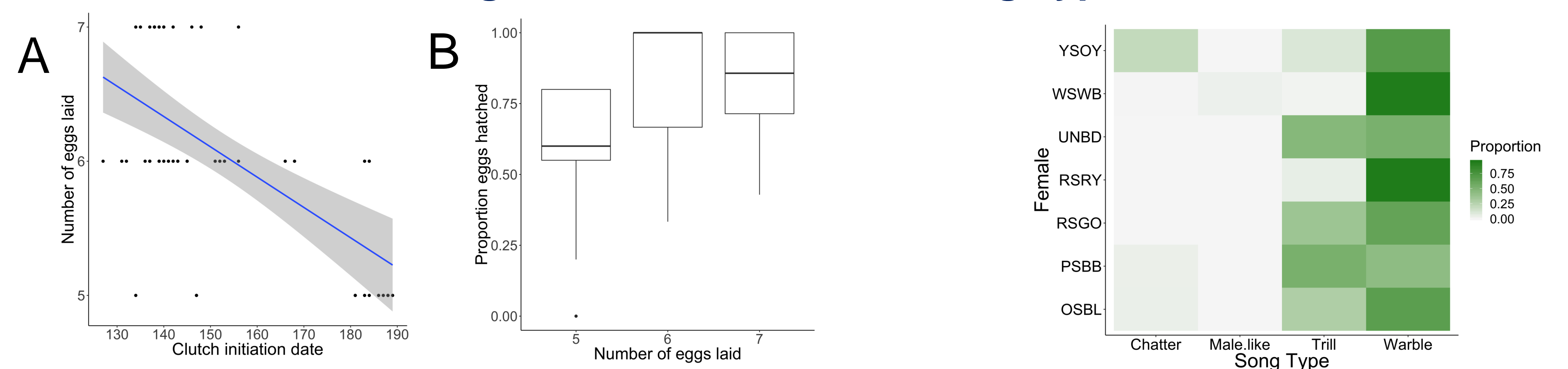


We monitored breeding house wrens in nest boxes placed at 3 natural areas in southwest Michigan. We recorded females singing at their nest boxes. House wrens are double brooded and typically lay 5-7 eggs per clutch.

Spectrograms of Female Vocalizations



Assessing Female House Wren Song Types

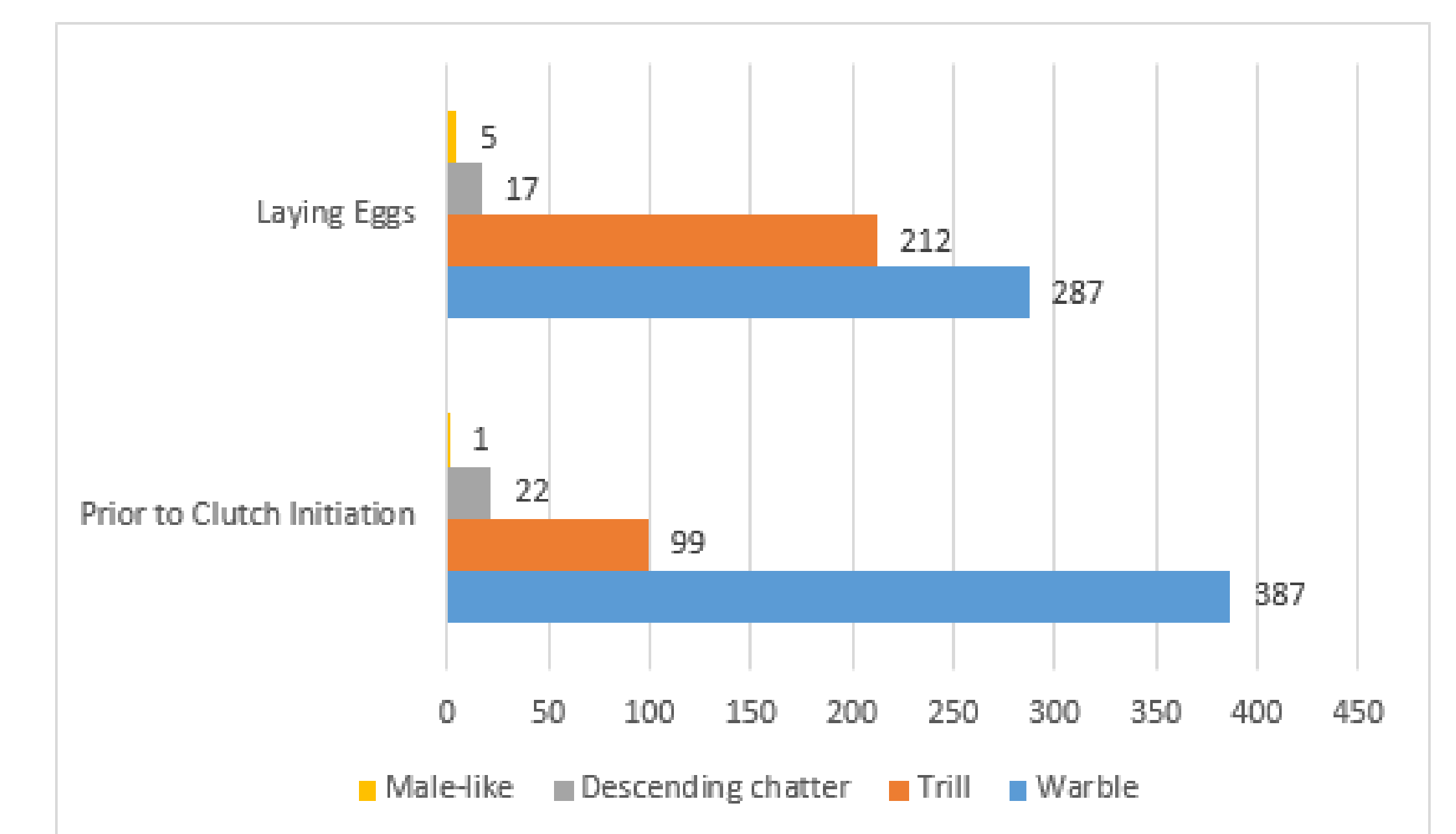


Reproductive success varies among females: Female house wrens that **(A)** initiate clutches earlier in the season (2016-17) were **(B)** more likely to lay eggs that hatch and develop into nestlings that survive.

Heat Map: For female house wrens, warbles and trills appear to be the primary means of communication, while descending chatter and male-like were used a fraction of the time.

With the understanding that reproductive success does vary among female house wrens, an investigation into the song diversity and rate of use can answer my ultimate research question: Does female house wren singing rate and song repertoire predict reproductive success?

Song Types According to Reproductive Stage: All seven female house wrens observed were recorded while laying, with five of these females also being recorded prior to clutch initiation. In both stages, warbles prevailed as the main song type, although trills and male-like songs appeared to be more prevalent among those females laying eggs. An average of 148 songs was recorded for each female, ranging from a total of 19 to 284 songs recorded per female.



Next steps: Determine if increased female singing is a function of nest protection or a deterrent of rival females from male partners.

Measure whether females that are more vocal have a higher proportion of extra-pair offspring.