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Funding Source: NSF-REU Program in Biological Sciences & Biochemistry

Male phonotactic responses in gray treefrogs (Hyla versicolor)

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Many anuran amphibians, better known as frogs and toads, use acoustic signals as a means of communication. Female frogs choose mates by moving towards males making a particular call (phonotaxis). Non-calling males, which have been termed satellites, may also associate with these calling males as a result of male-male competition for mates. My project addressed the question of whether male frogs have phonotactic preferences similar to those of females. Most Hyla versicolor females prefer calls with a faster-than-average call rate, longer-than-average call duration and low frequency. My main goal was to verify whether H. versicolor males demonstrate phonotactic behavior, and if so, to determine whether they have preferences similar to females. I also wanted to learn if non-calling males were inferior to calling males. I used two methods to answer these questions. During field observations, H. versicolor males (calling and non-calling) were weighed, their calls recorded and body temperature taken. We found no evidence to indicate that non-calling males are smaller or produce less attractive calls than callers. In laboratory phonotaxis experiments, synthetic signals from two speakers were played and the successive movements of individual males were observed. The results indicated that H. versicolor males express phonotactic responses and also have acoustic preferences, which are similar to female preferences. Fourteen of 22 males moved within 20cm of a speaker, and most of these (13) chose the call with characteristics favored by females. Based on these results we speculate that the ability of males to recognize attractive calls may maximize the reproductive success of satellite males.