The effect of noise pollution on the behavior of common hermit crabs (Pagurus longicarpus)

Increases in anthropogenic noise in the ocean have demonstrated concerning impacts on marine organisms, such as decreasing anti-predator behavior or disruptions to communication and/or feeding. Coastal species are particularly vulnerable to increases in noise due to the localization of anthropogenic activities near coasts. The common hermit crab, *Pagurus longicarpus*, is one species that may be negatively impacted by noise pollution. This laboratory study investigated whether exposure to anthropogenic noise impacted the common behaviors of hermit crabs. Hermit crabs were collected from Castine, ME, and individuals were exposed to a fixed sound frequency of 200 Hz at approximately 90 dB. The behavioral responses to noise stimuli were recorded and compared to an ethogram. Hermit crabs did not demonstrate any significant changes in behavior when exposed to the experimental noise treatment. Nonetheless, trends in behaviors observed, such as decreased walking behavior and an increase in burrowing behaviors were captured. The ethogram developed within this study and the results of this experiment pose a number of questions and avenues for further research.

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