

## **Chronic and acute effects of reduced salinity on the respiration rate of the hermit crab *Pagurus longicarpus***

*Pagurus longicarpus* is one of at least 16 hermit crab species distributed in estuaries along the coast from Nova Scotia to northern Florida. Estuarine conditions make it likely that *P. longicarpus* experiences fluctuations in salinity, resulting in the need for these organisms to acclimate to the changing environment. Acclimation can be achieved through the physiological mechanism of osmoregulation. In a study of acute and chronic effects of salinity, the respiration rate of hermit crabs were measured after crabs were held in the laboratory in three different salinity treatments (35, 25, and 15 practical salinity unit (psu)) for 6 weeks. Results reveal that crabs in low salinity (15 psu) had an average respiration rate two times higher than the hermit crabs in the control salinity (35 psu). The data indicate that lower salinity increased stress on the organism; therefore, reduced salinities may have a detrimental impact on the success and survival of this prominent species. The results highlight the importance of understanding the relationship between organisms and salinity changes in the environment.

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