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How does decreasing pH affect the anti-predator response in two species of intertidal snails?

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Predator-prey interactions are often complex and seemingly small disruptions in the system have large consequences. As anthropogenic CO₂ emissions continue to increase and the ocean acidifies in a process called ocean acidification, many marine organisms are documented showing maladaptive behavioral responses. This paper studies the effect of decreasing pH on the response of two important intertidal snails, *T. funebris* and *T. brunnea*, when exposed to predator-conditioned water. Both species live at different heights in the intertidal and are exposed to distinctly different pH conditions. Five discrete pH levels were assessed in this experiment ranging from 7.7-6.5. The results demonstrate that *T. funebris* and *T. brunnea* both exhibit a degraded anti-predator response at low pH, and that their responses do not significantly vary between species. This study suggests that *T. brunnea* is more tolerant to low pH conditions than previously predicted, and that both species are at risk in a projected acidified ocean.

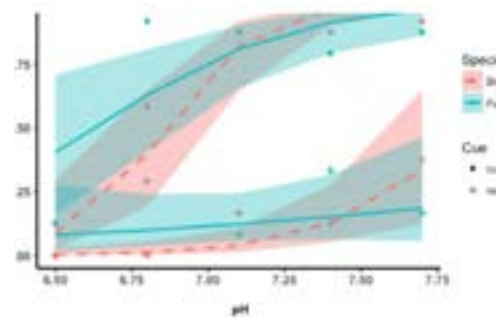


Figure 4. The effect of pH on proportion of time spent out of the water when *T. funebris* and *T. brunnea* were exposed to cue and no cue. Solid shaded lines represent their respective logistic regression lines and shaded areas represent 95% confidence intervals.

Biography

Shelby C Bacus is a graduate student at the University of California, Davis, where she is currently conducting research at Bodega Marine Laboratory investigating how physical and biological stressors affect marine invertebrates. After graduating she plans on pursuing her Ph.D. in marine ecology and biological oceanography.

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