



Wave Moretto

Group member: Allegra Stahl

Year: Junior

Advisor: Rita Mehta

Knotty Behavior: Impacts of acute temperature changes on the unique feeding behaviors of *Gymnothorax mordax*

The California moray eel, *Gymnothorax mordax*, is a benthic predatory resident of the southern California kelp forests. Opportunistic feeders, *G. mordax* employ a variety of interesting prey handling behaviors that enable them to manipulate large prey. These behaviors include ramming prey against objects, spinning, shaking, and knotting. After observing the feeding behaviors of several *G. mordax* under laboratory conditions, we decided to vary water temperatures to mimic the differences in temperatures *G. mordax* experience throughout their geographic range. The temperature differential from Winter to Summer months, especially during El Nino events can be as much as 12 degrees fahrenheit. We hypothesized that higher temperatures would facilitate more manipulation of large prey. Six *G. mordax* were acutely exposed to four treatment temperatures and their subsequent feeding behaviors were filmed and quantified. We compared the means of several time and temperature variables across the different temperature treatments. Our preliminary data show a significant relationship between temperature and the number of knots observed ($p=0.0468$, $F=3.0573$) and the total time spent ramming prey ($p=0.0417$, $F=3.1714$). Understanding the limitations of prey handling behaviors and the environmental factors that affect the feeding behaviors an individual moray can employ has major implications on predator-prey relationships in the marine community. Additionally, examining the effects of temperature change on an animal's feeding behavior is a timely and prevalent topic considering rising global temperatures today.



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