

Periwinkle Response Project



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Salt Marsh Periwinkle

- Scientific name: *Littoria Irrorata*
- Max length 30 mm (takes about 2-3 years)
- Hermaphrodites-- Reproduce in the summer
- Found in all levels of marsh, but mostly in mid-marsh
- Relationship with *Spartina Alterniflora*-- Fungal Farming and Vertical Migration in Response to Various Factors.
- Vertical migration has been shown to be highly entrainable
- Density: 50-2000 per square meter (higher in winter)



Our Little Experiment

- Snails placed in bucket and mesh enclosure
- Control, either two crabs and one crushed, or three crabs, depending on experiment
- Null hypothesis: no discernible response to predators or dead prey
- Alternative hypothesis: the snails do exhibit a response to crabs or squashed compatriots



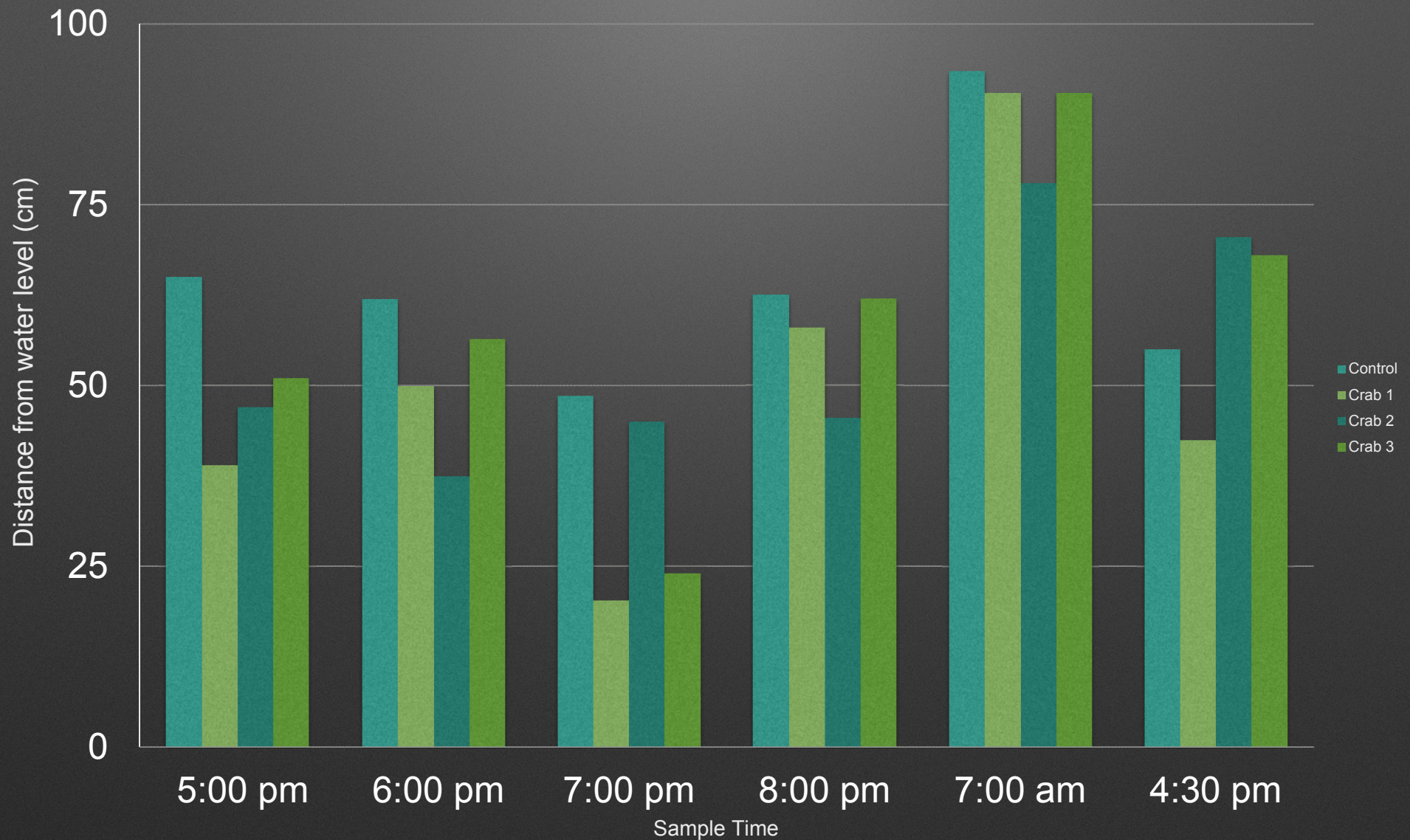




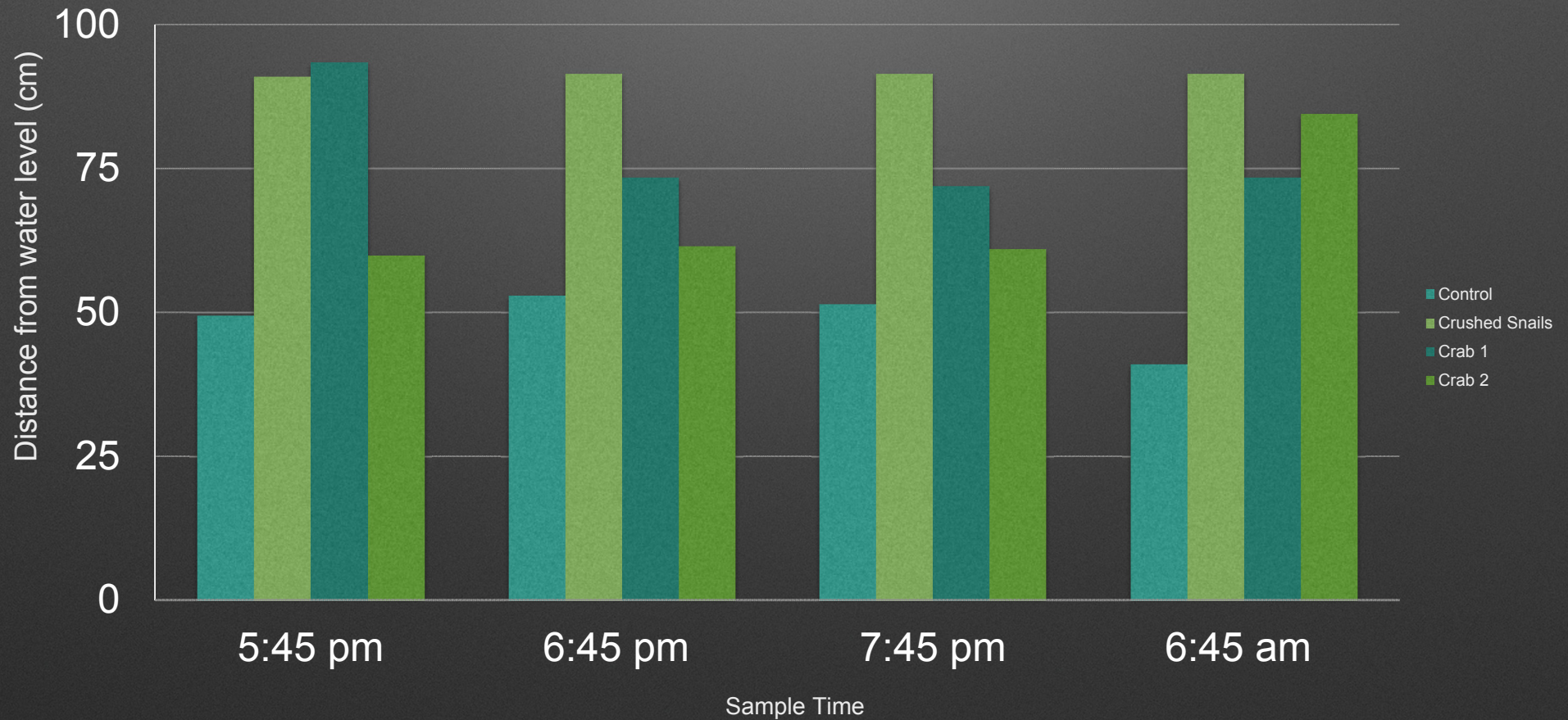


A Bit of Data

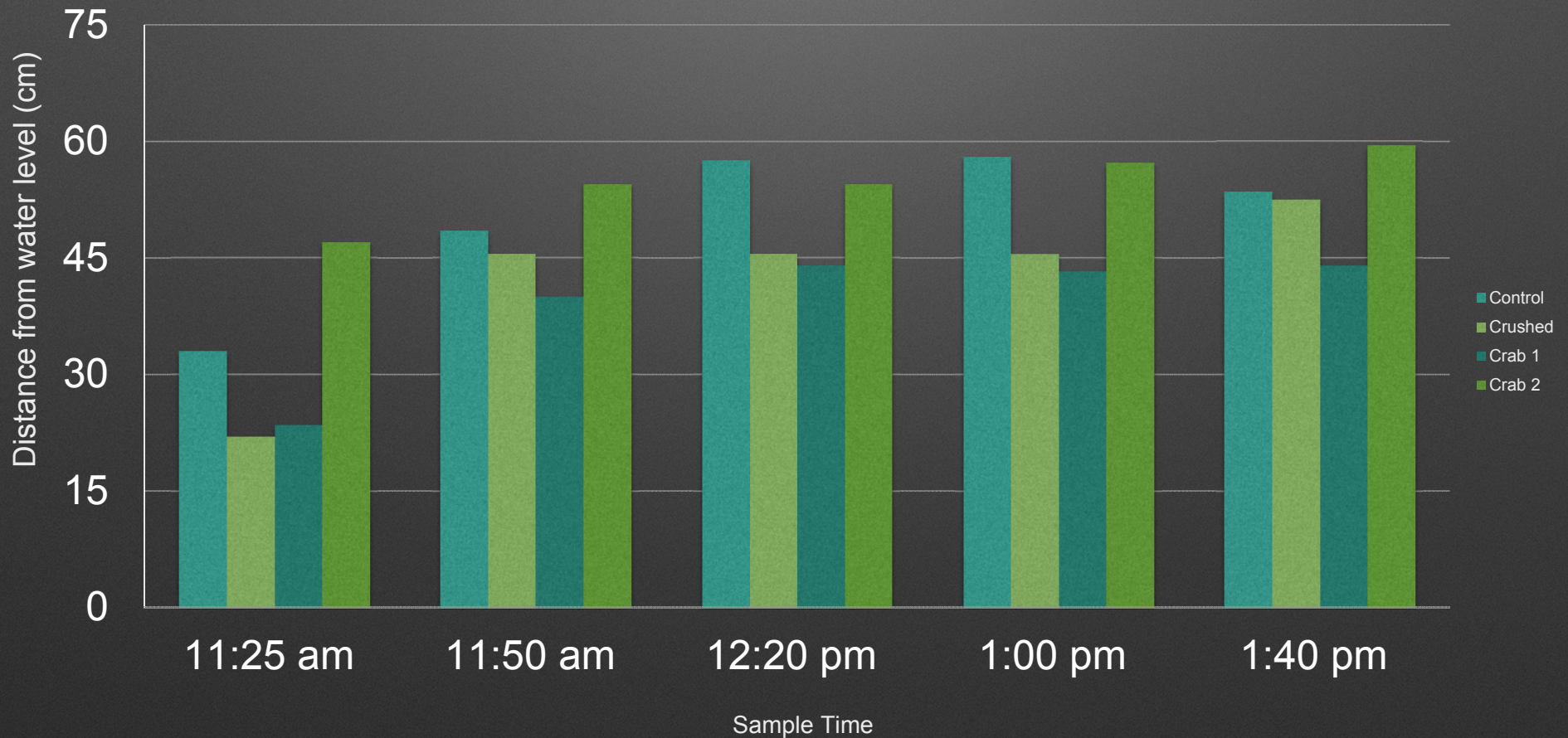
Experiment 1



Experiment 2- Crushed Snail Added



Experiment 3: Flask and Spartina Eschewed, Measurements Clarified



Some Observations

- Experiment 1: Initial southwestern aggregations; minimal use of *S. Alterniflora*-- impeded by flask; eventually dispersed; proclivity for repose at water level limited, but worth noting
- Experiment 2: Immediate vertical movement for most subjects; vertical movement evident in predators (3rd bucket); marginally increased use of *S. Alterniflora*; W/SW still apparently preferred; more easterly placement in morning; another diaspora by end of second day
- Experiment 3: Markedly increased delay in vertical movement; seemingly less prone to flee with any semblance of alacrity; not much disparity between enclosures; limited clumping



Cut us Some Slack! :

Conclusion/Discussion

- Vertical movement definitely affected by presence of predator and crushed snails; host of factors affect vertical movement; very adaptable behavior
- Presence of Spartina could be an important cue; clustering could also be a defensive response; hard to distinguish between factors
- For further study: more organic study sites; different predators; monitor more often to observe migratory habits; more extensive measuring

- <http://link.springer.com/article/10.2307%2F1353172>
- http://www.enn.com/top_stories/article/3294
- www.dnr.sc.gov/cwcs/pdf/MarshPeriwinkle.pdf