

# Food Preference Among the Crab Species at Elkhorn Slough

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Group Photo ( Crystal Gallardo, Elsy Romero, Paloma Espiritu, Alejandra Castro-Alvarez, Jay Sinclair)

## Map of our six traps



six traps, three on each side of the levy at the southmarsh in Elkhorn Slough



Levy at the southmarsh in Elkhorn Slough (PC: Alejandra C.)

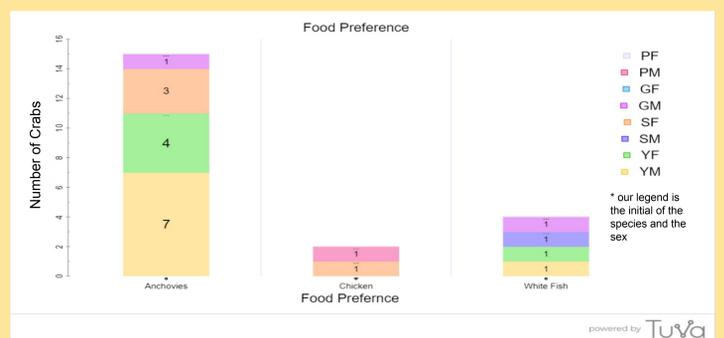
## Introduction

- With our background research, our group addressed the impact of invasive species on the Elkhorn Slough ecosystems.
- European Green Crab is an invasive species originally from the northeastern coast of Europe that was accidentally transported to the East coast of the U.S.
- The European Green Crab, like other invasive species, have shown signs of killing off native species such as the Yellow Mud Crab, Striped Shore Crab, and the Pacific Rock Crab because of the lack of predator threats that they receive.
- Our group researched food preference among crab species with the intention of finding the preference of the invasive European Green Crab.
- Testable Question: Does food preference affect the abundance and richness of crabs at Elkhorn Slough?**
- Hypothesis:** We think the anchovies or the white fish cat food would be the bait of choice because both baits are aquatic species which could resemble the fish species within the slough.
- Our research was meant to help scientists with the removal of invasive species from the infested areas due to the harm they might cause and ensure the safety of ecosystems within the slough.

## Methods

- We used a bucket to fill containers with water and labeled them with the location and crab trap bait.
- Afterward, we pulled in our six traps (3 on each side of the levee) and measured abundance, richness, and identified the sex.
- Lastly, we tested for salinity and dissolved oxygen levels (GLOBE protocol) with a water depth sampler which gathered water from the slough at five ft. below the surface.
  - If an invasive crab was found, it was handled by the slough staff and not put back in the water.

## Results



- This graph shows that the majority of the crabs preferred the anchovies over both types of cat food.
- We managed to find four European Green Crabs over the course of our research data days even though Peggy had mentioned they weren't that common anymore.
- The majority of the crabs we found were Yellow Mud Crabs.
- The table below contains the total amount of the species found.

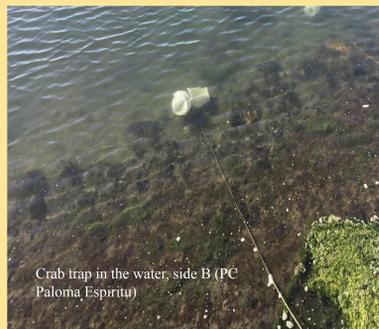
Species	Male	Female
European Green Crab	2	1
Pacific Rock Crab	1	0
Striped Shore Crab	1	3
Yellow Mud Crab	7	5



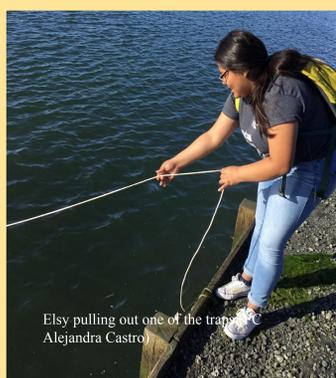
Crystal making sure there are no more crabs (PC: Paloma E.)



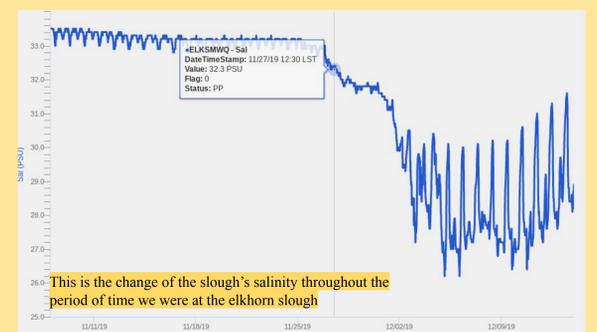
Crystal and Paloma analyzing a crab (PC: Alejandra Espiritu)



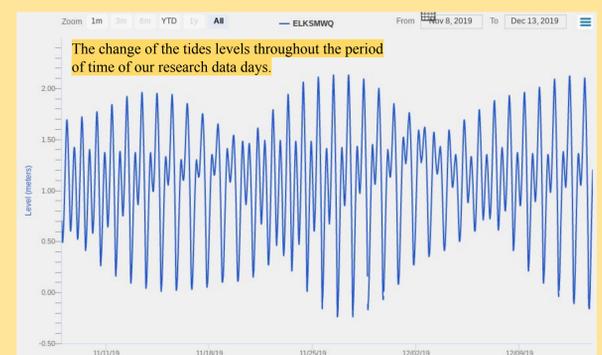
Crab trap in the water, side B (PC: Paloma Espiritu)



Elsy pulling out one of the traps (PC: Alejandra Castro)



This is the change of the slough's salinity throughout the period of time we were at the elkhorn slough



The change of the tides levels throughout the period of time of our research data days.

## Discussion

- The majority of crabs found in traps were located in traps where the bait was anchovies or white fish cat food.
- Anchovies and whitefish are both aquatic species which we believe could've given a sense of familiarity, due to the slough being full of different species of fish.
- Salinity levels and the tide levels affected our results because we noticed the number of crabs decrease since we weren't catching as much compared to past days
- We observed a significant change in levels of salinity due to rainfall during those last few weeks.
- Next Steps:** If this project were to be continued, we would add another location and spread the traps further apart to obtain more accurate results.

Group collecting water with the depth sampler for salinity test (PC: Monica Morales)



## Gravid European Green Crab



Gravid crab (PC: Elsy R.)

A female European Green Crab can have up to 200,000 eggs at a time and reproduce up to twice a year. It was a major success when finding this gravid crab because we prevented the number of invasive crabs from increasing and invading the slough once again.

## Acknowledgements

Special thanks to everyone who contributed to our project. To our project advisor Will Federman, our science mentor Jay Sinclair, our teacher Satina Ciandro, the Elkhorn Slough staff, especially Peggy Foletta and Bruny Mora for setting our crab traps and the Monterey Bay Aquarium staff.

## Literature Cited

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