



# Population Density of *Carcinus maenas* in Seadrift Lagoon

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## Background

- 1800 – European green crabs, *Carcinus maenas*, invades the eastern coast of the United States.
- 1989 – Green crabs discovered in the San Francisco Bay (Grosholz & Ruiz, 2011).
- Seadrift Lagoon became an ideal model to study eradication efforts due to its isolated location and dense population of Green crabs.
- 2009 European Green crab Eradication Project is initiated (Brown, 2011).

## Aim

- Estimate current population size.
- Assess the population dynamics over duration of eradication project.



## Hypothesis:

The population of Green crab has shown a significant decrease as a result of the eradication project.



## Methods

### I. Estimating Population:

#### Mark

- Week 1: 90 collapsible traps placed in Seadrift Lagoon
- All collected Green crabs are marked by clipping spines and then returned to lagoon

#### Recapture

- Week 2: Trapping without replacement

#### Analysis

- Modified Schnable Method

### II. Assessment of eradication project over time

- Analysis of accumulative data for Green crab trapping at Seadrift Lagoon from 2009 to 2012.

## Results

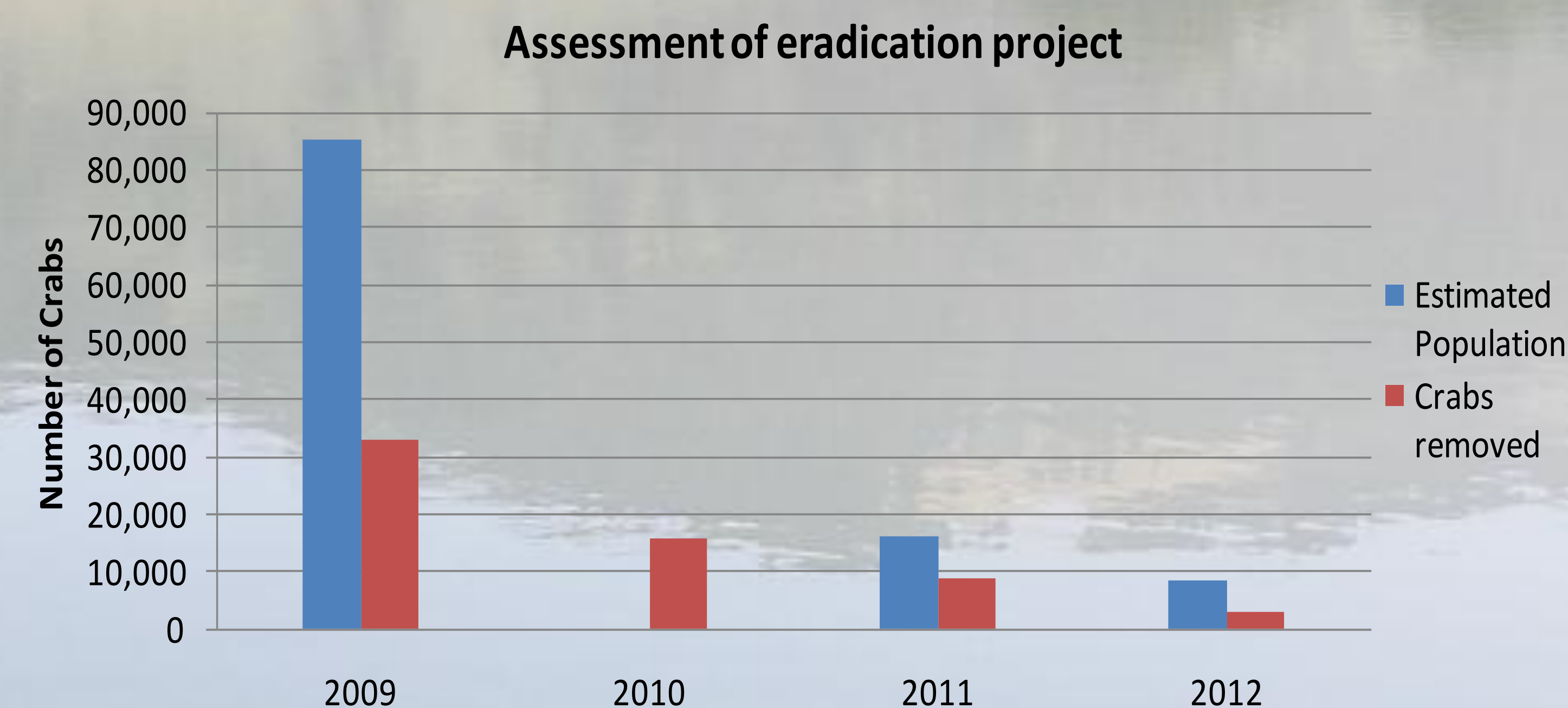


Figure 1: Progression of Eradication in Seadrift Lagoon. No data available for estimated population on 2010.

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## References

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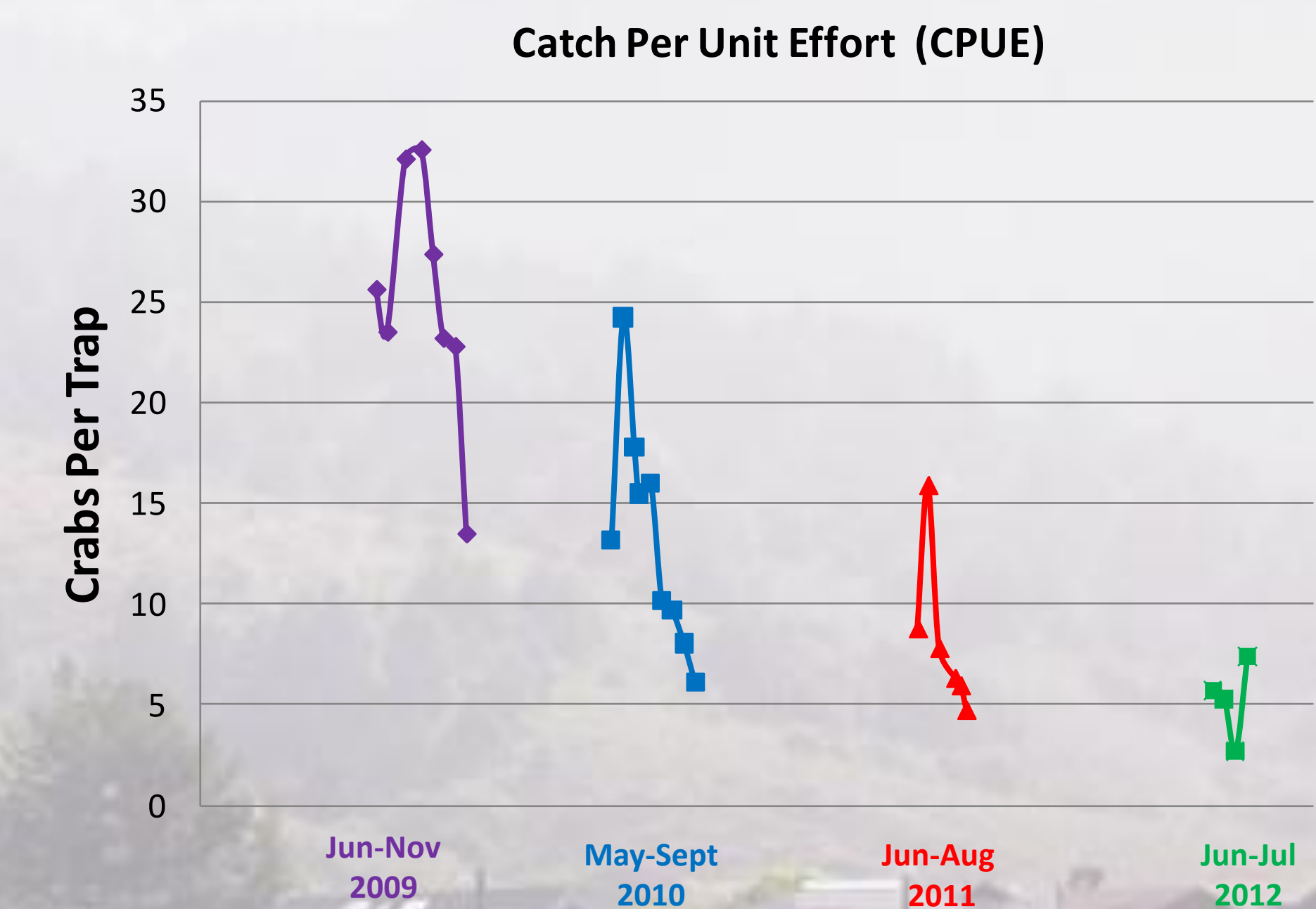


Figure 2: Number of crabs caught per trap in Seadrift Lagoon from June 2009 to July 2012 (catch per unit effort).

## Conclusions

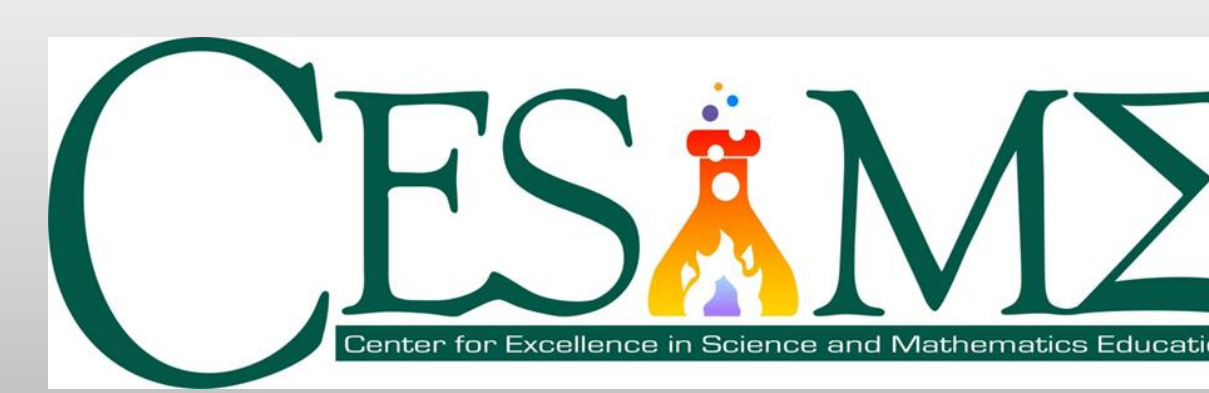
- In order to completely eradicate Green crab from Seadrift, there would need to be an increase in effort.
- Current efforts have been shown to impact the population, potentially driving it to non-sustainable numbers.

## Future Research

- Exploration of Bolinas Lagoon for Green crab.
- Investigate the role of water temperature in the procreation habits of Green crab.
- Assess whether the eradication project has been successful in aiding the reestablishment of indigenous crab species.



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