

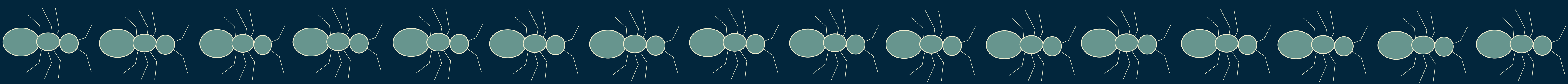
Just like you, invasive ants diet too:
How do micronutrients affect colony
fitness in Tawny crazy ants?

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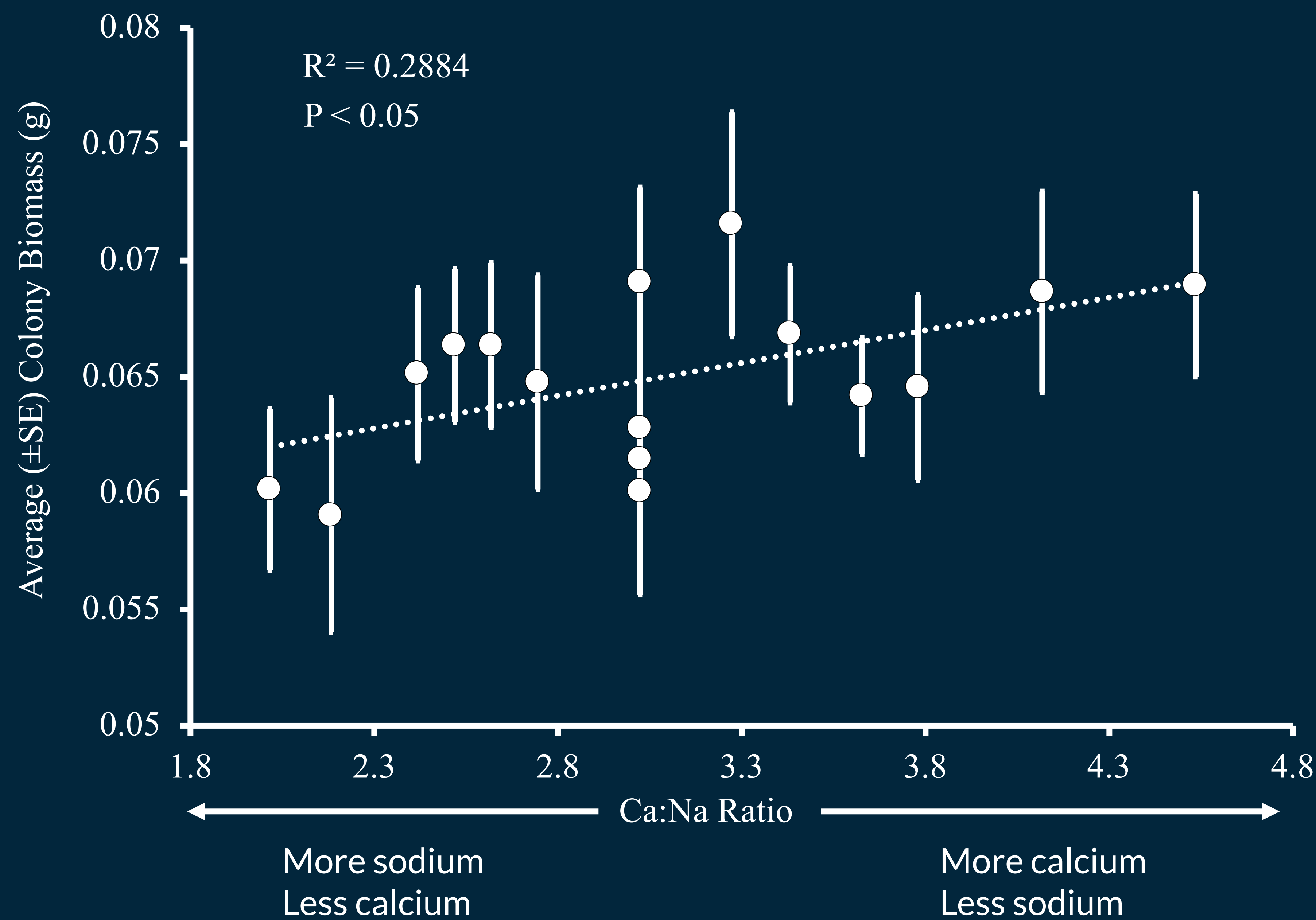
- BACKGROUND:
- Humans have altered nearly every major nutrient cycle with little understanding of the ecological consequences.
 - Micronutrients, which are less abundant in living tissue, are required to build consumers, fuel their activity, and, ultimately, can have cascading effects on populations.
 - The abundance of the invasive tawny crazy ant (*Nylanderia fulva*), for example, is limited by calcium (Ca) and stressed by sodium (Na); however, little is known how micronutrients affect the fitness of consumers, especially invasive arthropods.

- METHODS:
- To determine how Ca and Na affect the colony fitness of *N. fulva*:
- We collected 208 colonies in 2018 and 2019 at the University of Houston Coastal Center and conducted feeding trials that manipulated the Ca:Na ratio in food by 10%, 25%, and 50%.
 - Each colony started with 3 queens, 100 workers, and no brood (eggs, larvae, pupae).
 - We fed each colony every other day for 50 days, and then counted the number of queens, workers, and brood and measured fresh colony biomass at the end of the experiment.

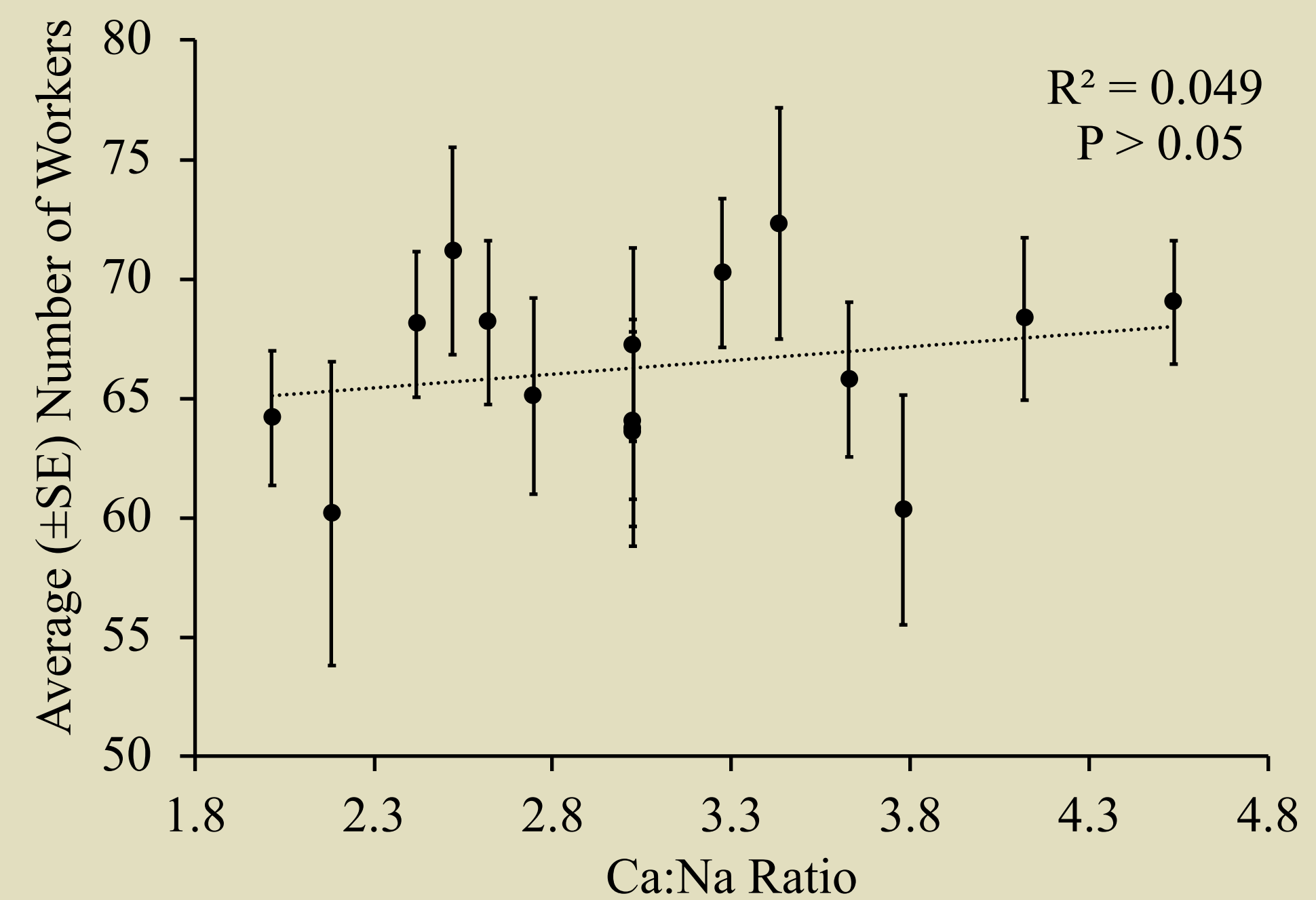
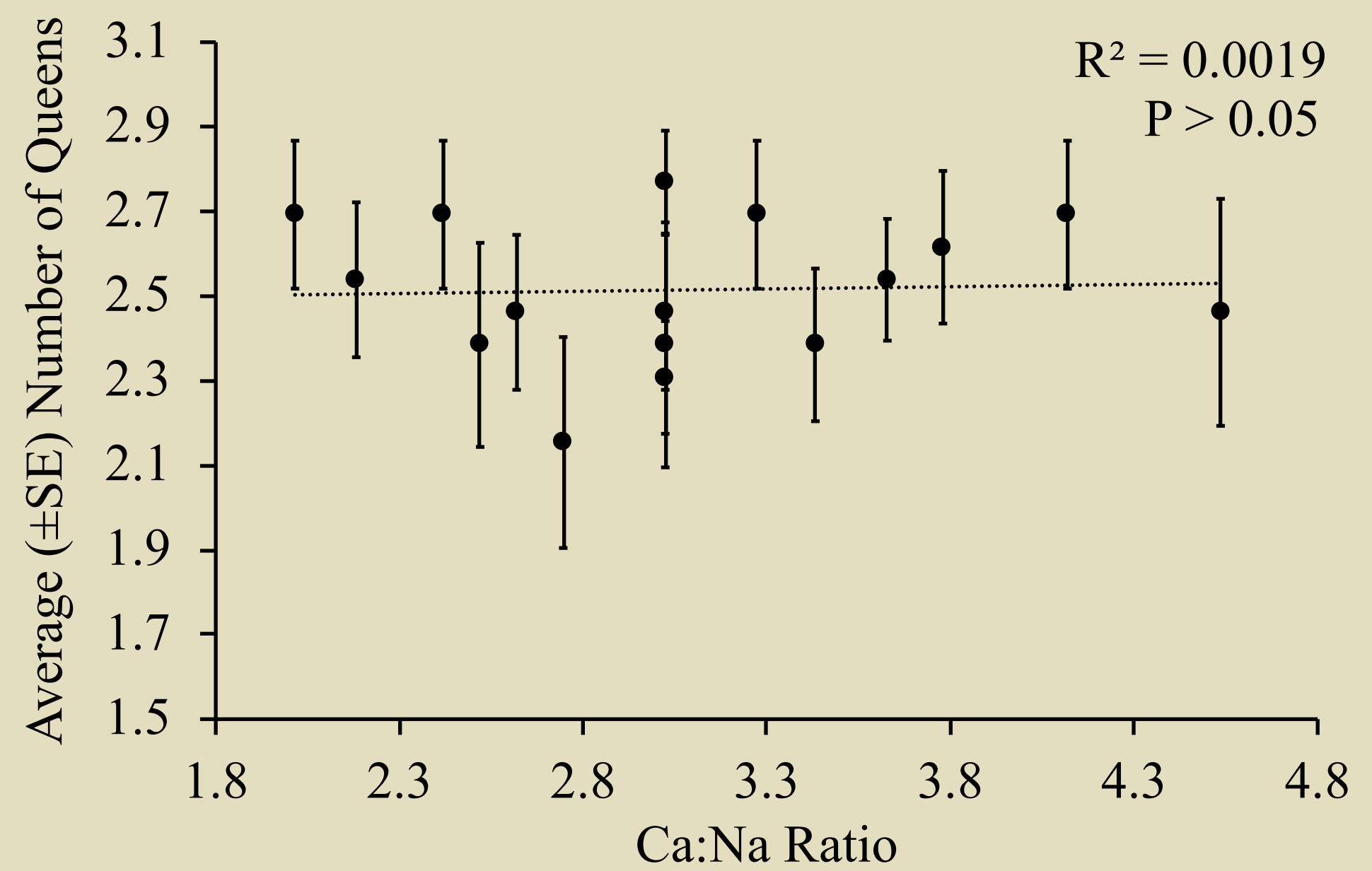
- RESULTS/DISCUSSION:
- The Ca:Na ratio had little effect on the number of queens and workers across treatments ($P > 0.05$).
 - Colony biomass increased with increasing amounts of Ca in the diet, while biomass decreased with increasing amounts of Na in the diet ($P < 0.05$).
 - These results indicate that changes in colony biomass may be due to a change in the number of brood or worker size and suggests Ca may aid in this species ability to reach extreme densities in its invasive range.



Tawny crazy ant colonies are **LARGER** when
they consume more **CALCIUM**, but **SMALLER**
when they consume more **SODIUM**.



- N. fulva* is an invasive ant that arrived in Texas in 2002 from South America¹.
- Populations can reach extremely high densities and reduce the abundance and richness of native ants and non-ant arthropods².
- These ants are so successful because they are highly polygynous and polydomous, show no intraspecific aggression, and have formed an expansive supercolony that expands from Florida to Texas³.



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