

# DO DRAGONFLY LARVAE SURVIVE IN MOSQUITO DUNK TREATMENT?

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11<sup>th</sup> Grade

# INTRODUCTION

- What are Mosquito Dunks?
  - Mosquito dunks are doughnut looking objects you put in water to kill mosquito larvae over a month
  - The active ingredient in Mosquito Dunks is *Bacillus thuringiensis strain israelensis* (Bti)



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AAQS

# INTRODUCTION

- Importance of Dragonfly nymphs
  - Predators of small fish and mosquitos
- Negatives of Mosquitos
  - Spread blood diseases
  - They are annoying
- Importance of Mosquitos
  - Food source
- Dragonflies live for 4 years and 7 months
- Mosquitos live for 10-56 days



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# PURPOSE AND HYPOTHESIS

- **Purpose:** what effect the mosquito dunks had on the mortality of the dragonfly nymphs
- **Hypothesis:** None if the dragonfly nymphs will die due to the Mosquito dunks

# METHODS

- 12 buckets (C: None, 1/2, 1/4, 1/8)
- 4 Dragonfly nymphs in each from the Teatown lakes
- Label each bucket and randomize where they are
- Place 3 oak leaves in each bucket as a food source and cover
- Take water quality measurements every day
  - pH, Temperature, Conductivity, Dissolved Oxygen and Algae
- Independent variable: amount of a mosquito dunk
- Response variable: mortality of the dragonfly nymphs

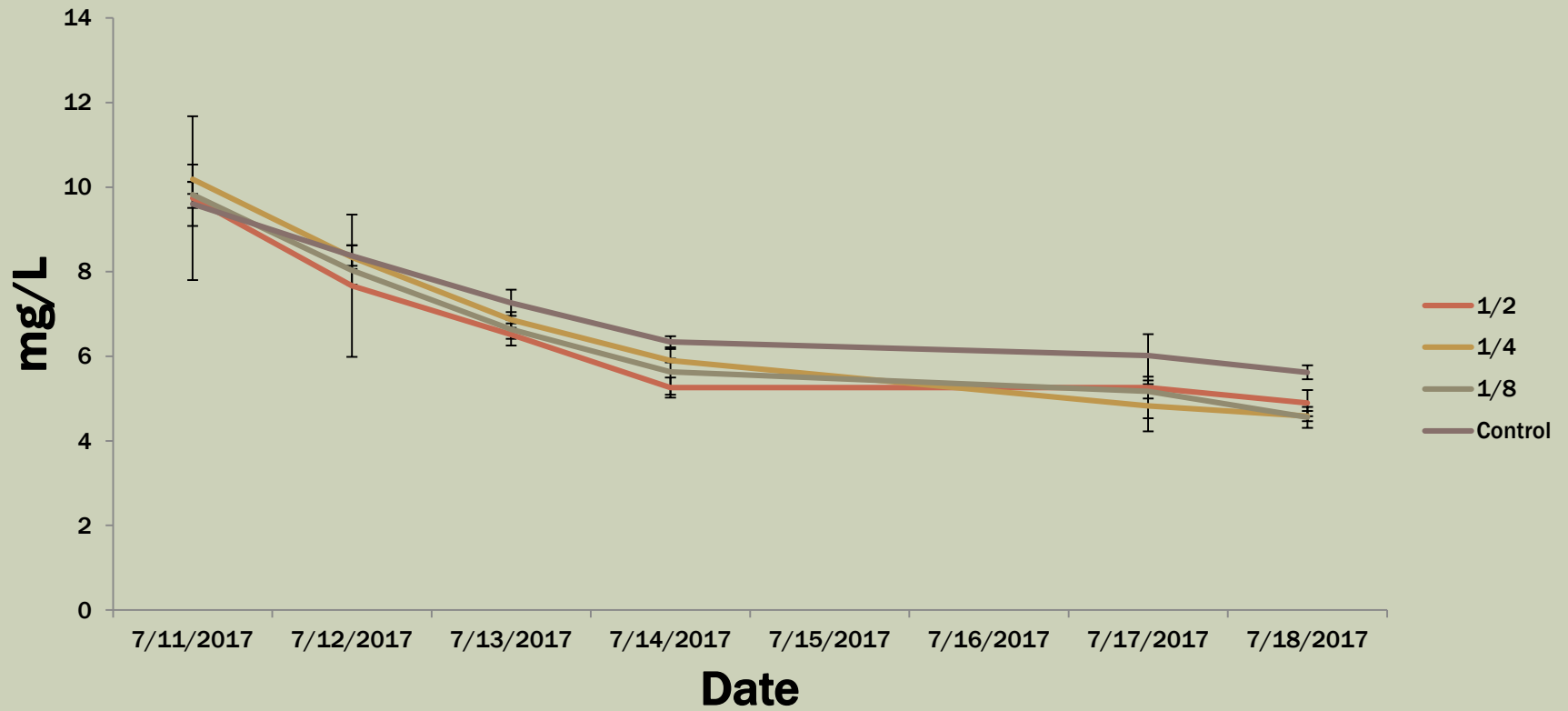


# METHODS



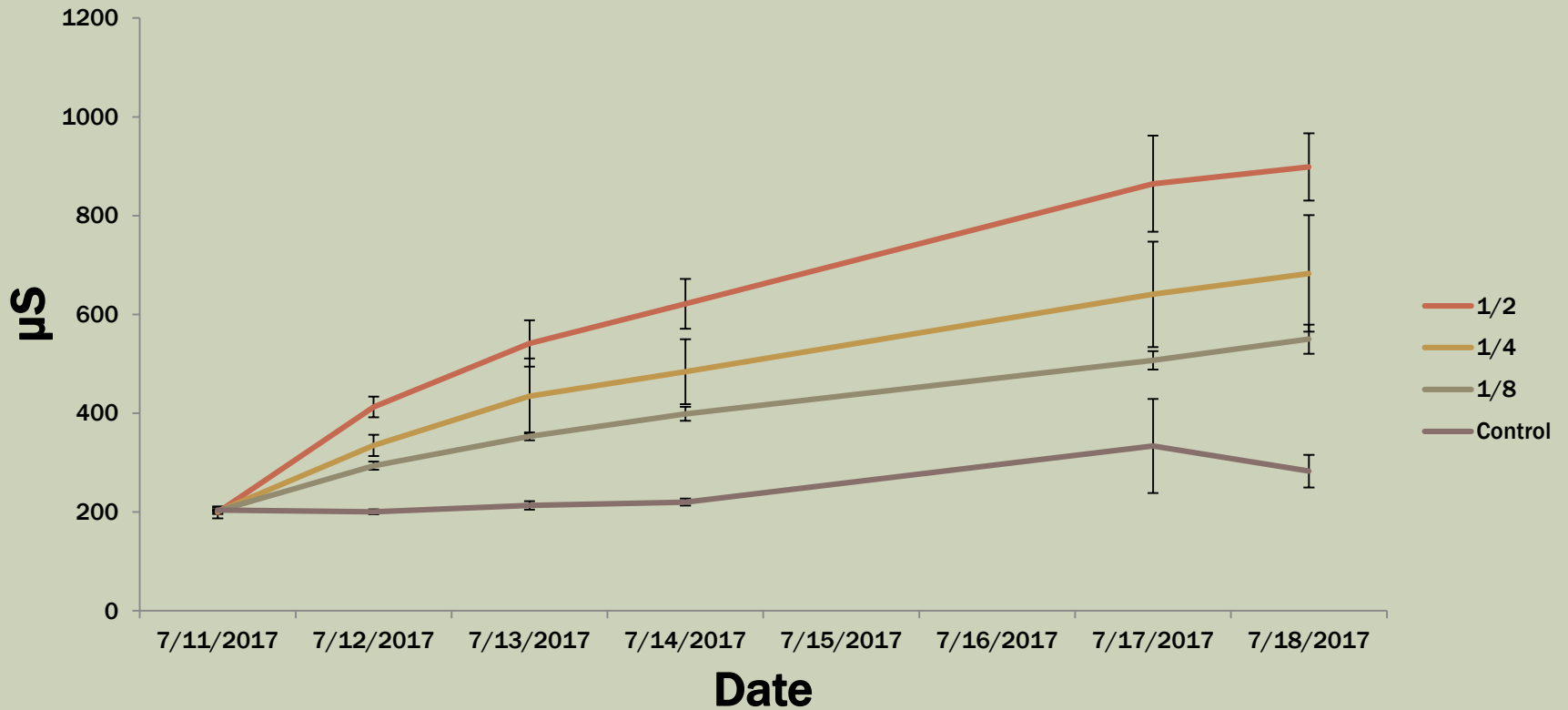
# RESULTS

## Dissolved Oxygen



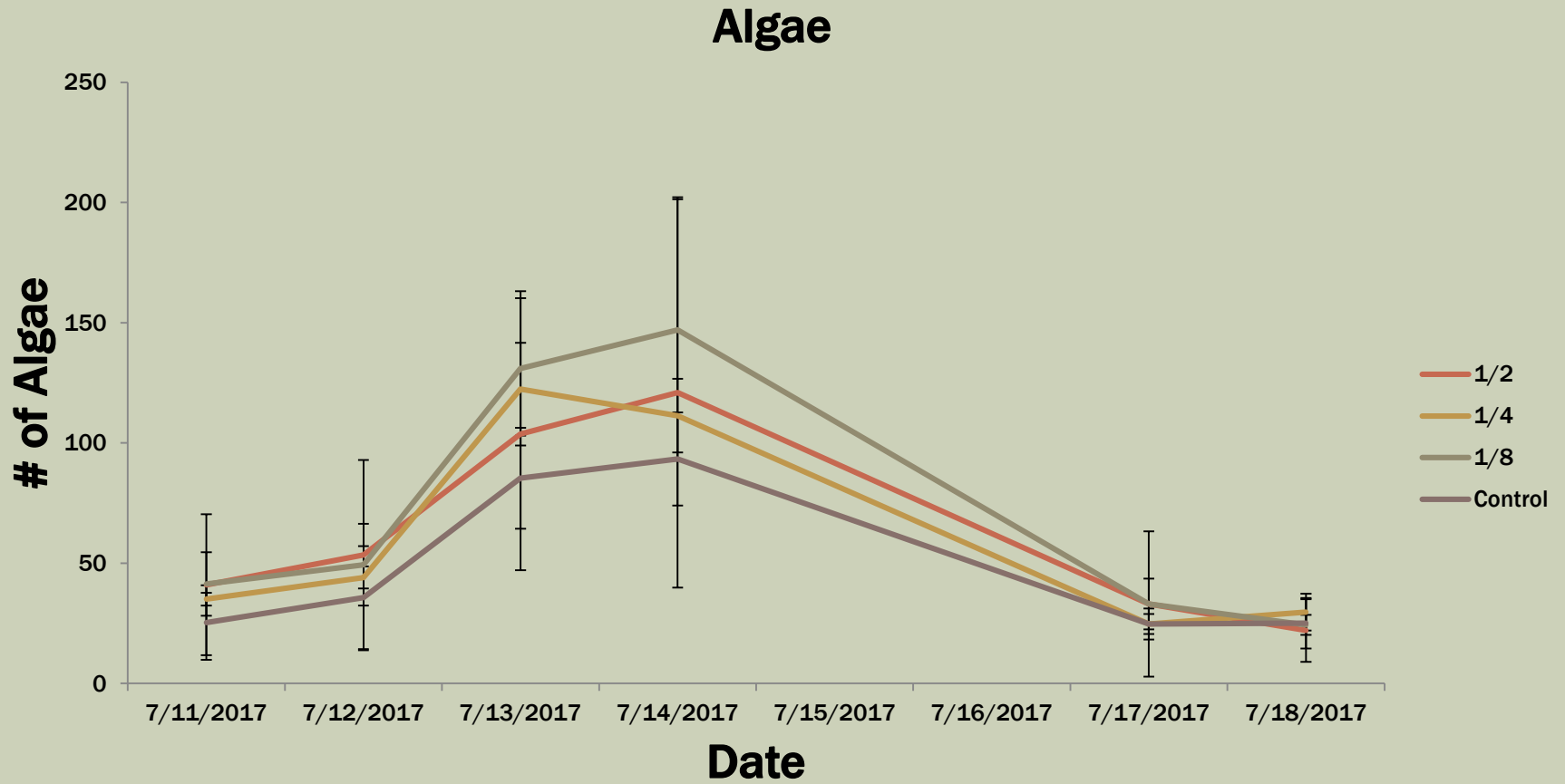
# RESULTS

## Conductivity

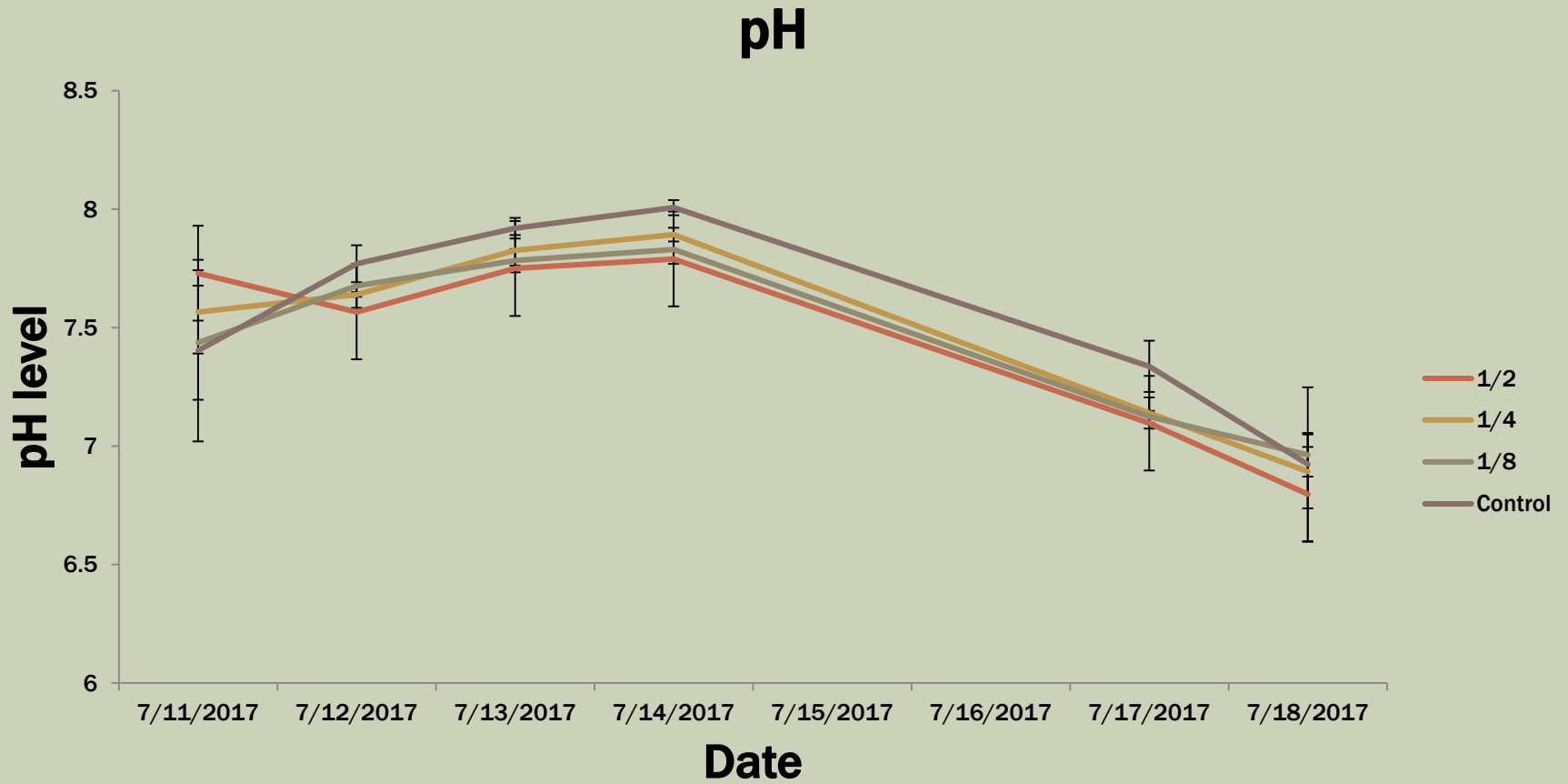




# RESULTS



# RESULTS



# OBSERVATIONS

- Some of the dragonfly nymphs had missing limbs
- In the end some zooplankton were more noticeable in the buckets
- Most Nymphs died of natural causes in water with  $\frac{1}{8}$  of a dunk

# CONCLUSION

- None of the Dragonfly nymphs died due to the Mosquito dunks
- Conductivity dramatically increased
- Dissolved Oxygen decreased
- pH decreased
- Algae increased and then decreased
- My results supported my hypothesis regarding mortality

# NEXT STEPS

## Problems

- Not able to watch them all day
- Limited time

Next study to find the effect of Mosquito dunks on other aquatic invertebrates

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