



Ant Abundance in Stiltgrass (*Microstegium vimineum*)

Meadows

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11th Grade



Ants and Japanese Stiltgrass



<http://freepngimages.com/ant/>

- Over 13,000 species (BBC, 2014)
- Total weight of ants is 8 bn kg more than total weight of humans (BBC, 2014)
- Major role in habitat (Harvard, 2011)
 - Seed dispersal
 - Stir soil
- Eat pests
- Decomposers



<http://proptreecare.com/plant-health-care/invasive-plants/japanese-stilt-grass/>

- *Microstegium vimineum*
- Invasive species
- Present in over 24 states
- Survives in many different conditions
- Decreases biodiversity (NYIS, 2011)
- Threatens native species
- Changes soil pH and soil-litter ratios (Columbia, 2004)



found in similar environments



Introduction & Hypothesis

Knowing all the negative effects of stiltgrass, understanding its direct effects on ant communities is vital in keeping ecosystems in check.

Ant abundance is greater in areas where stiltgrass is absent.

- not adapted to presence
 - primary food source not found in stiltgrass
- 
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Methods

- 8 total transects in 2 sites
- 20m transects
- 5 traps per transect



Methods

- Densiometer to measure canopy cover
- Square meter of land measured for percent areal coverage
- 40 traps total in areas with and without stiltgrass
 - Traps full of water-soap solution



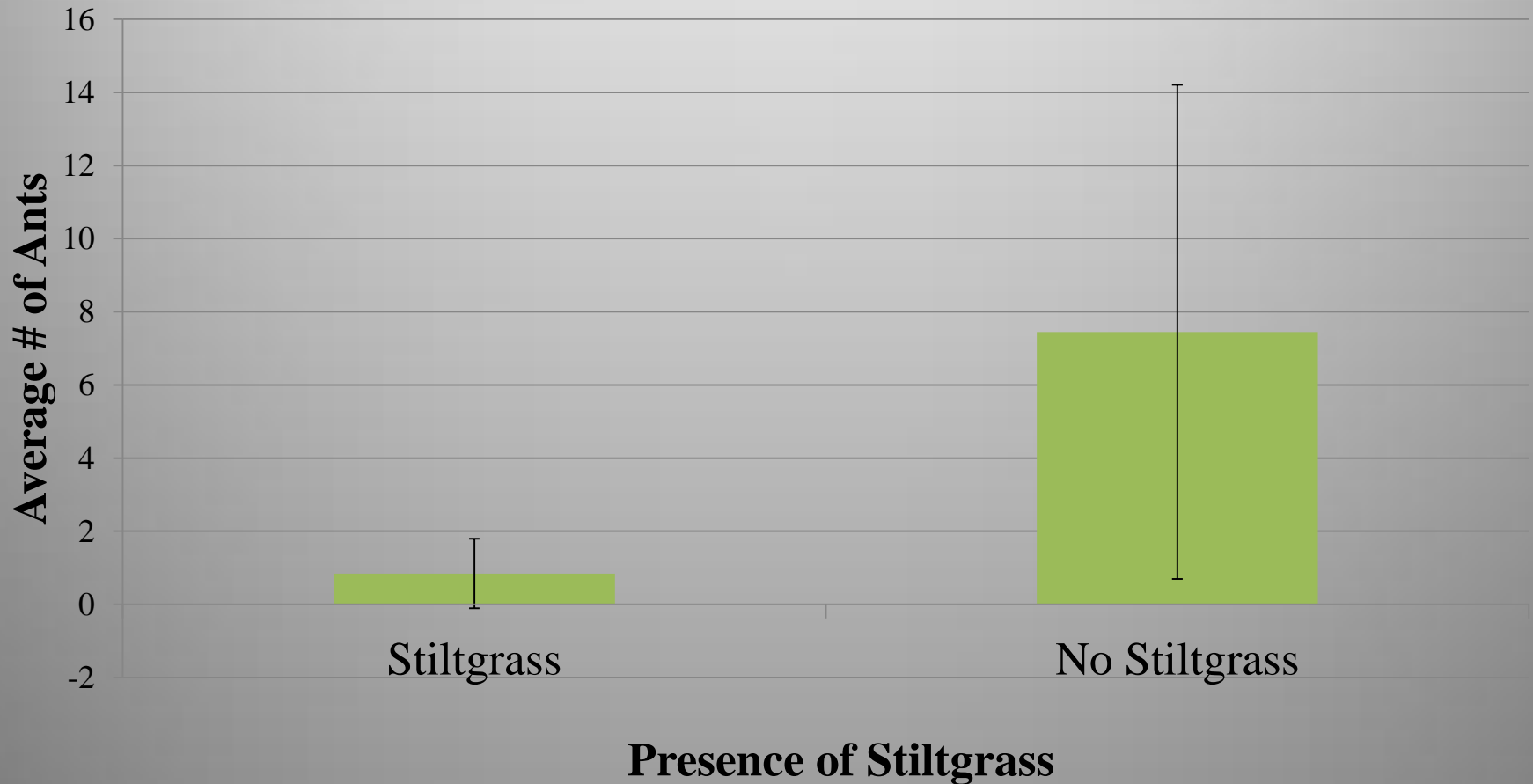
Methods

- Checked sites daily
- Counted ants, species richness, and abundance of non-ant species



Results

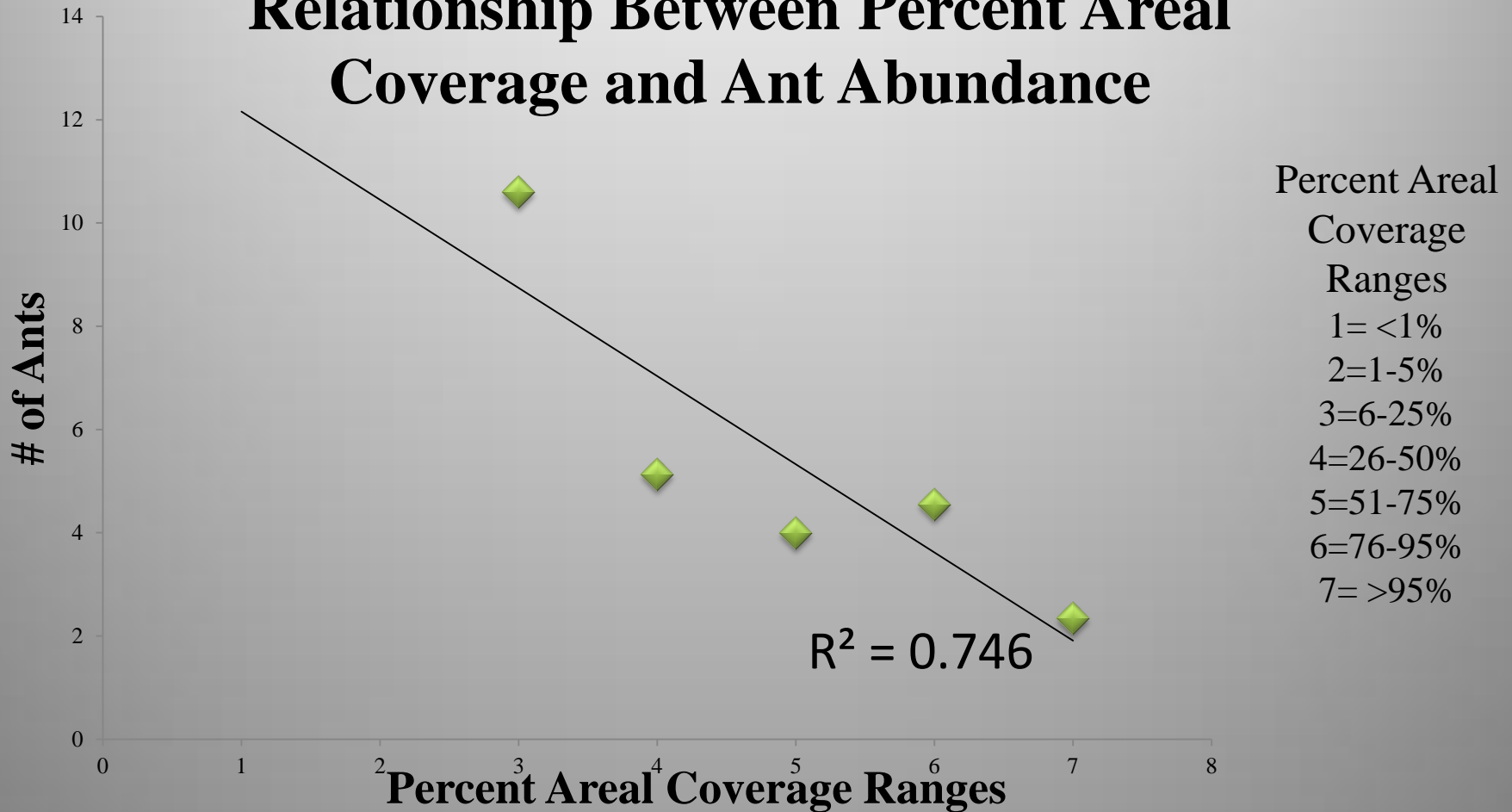
Relationship Between Ants and Stiltgrass





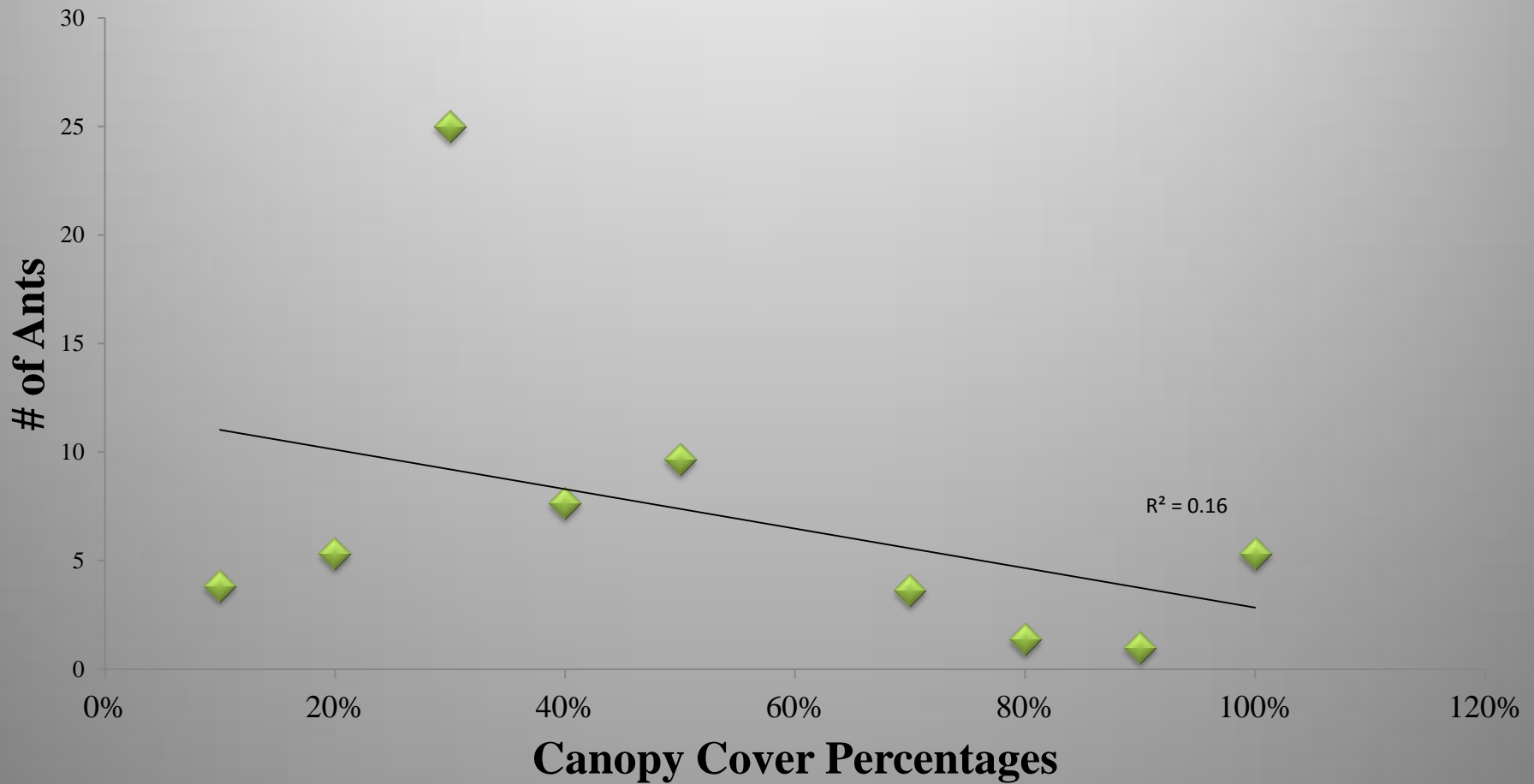
Results

Relationship Between Percent Areal Coverage and Ant Abundance



Results

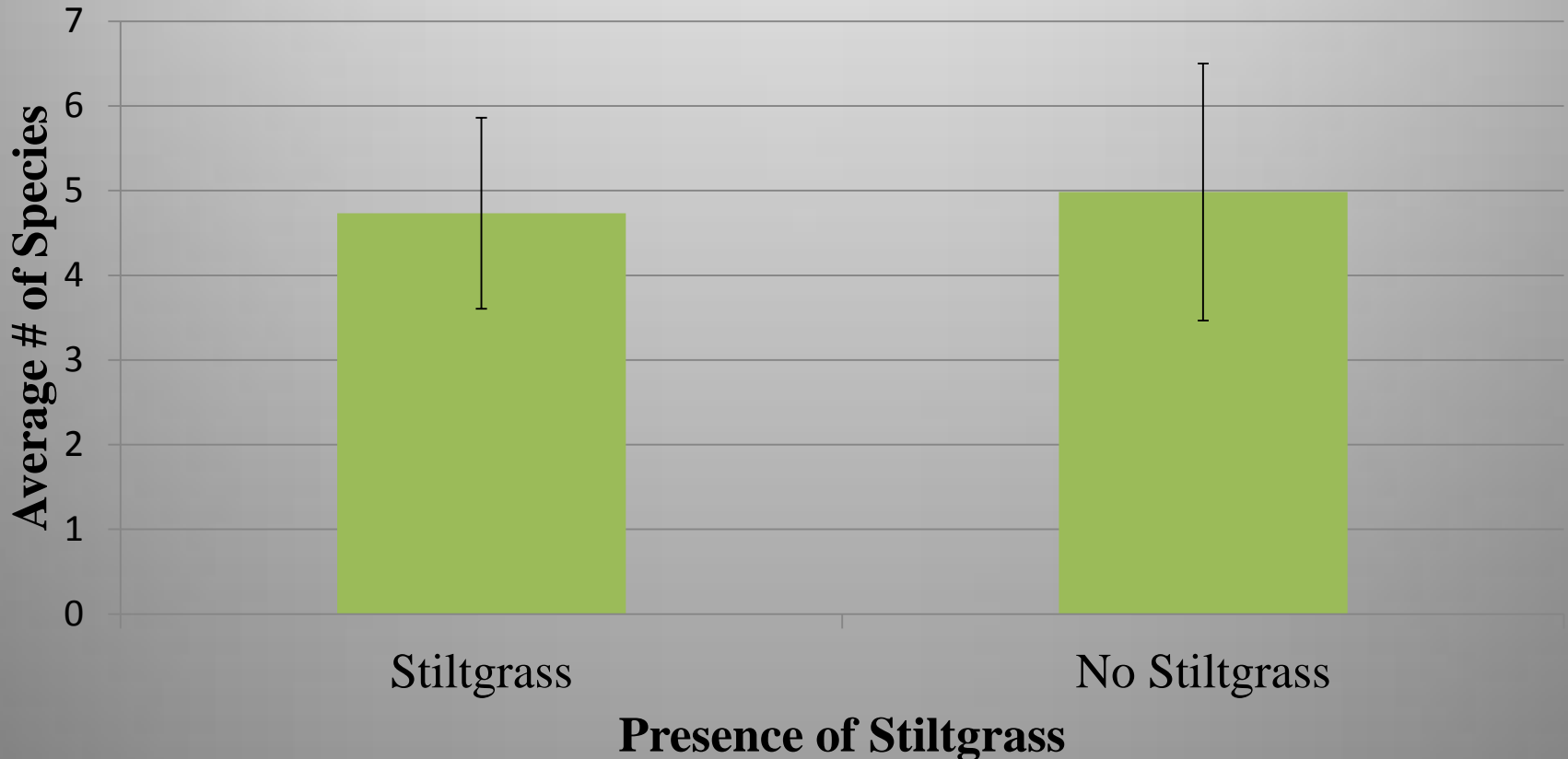
Relationship Between Canopy Cover and Ant Abundance





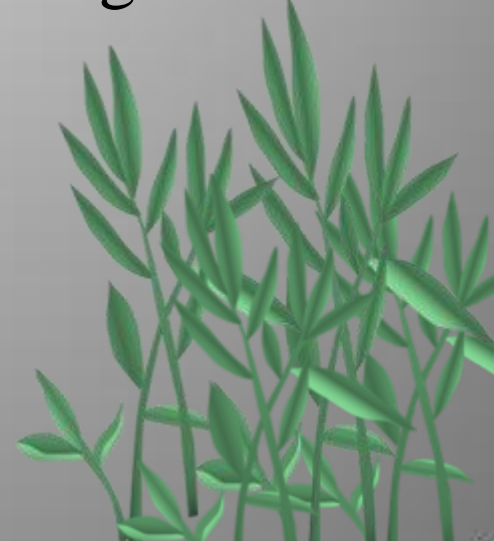
Results

Relationship Between Stiltgrass and Species Richness



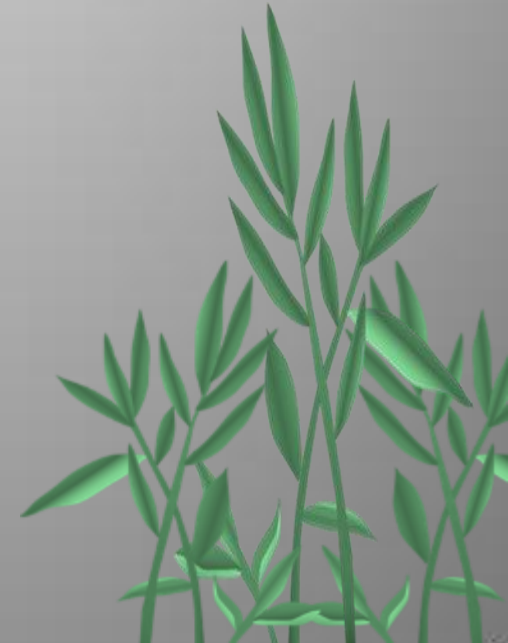
Conclusion

- Ant abundance decreases when Stiltgrass is present.
- A strong, negative relationship exists between ant abundance and areal coverage.
 - More research relating stiltgrass and coverage to ant abundance must be done.



Conclusion

- Canopy cover has little to no effect on ant abundance.
- Species diversity decreases when Stiltgrass is present.
 - although not strongly correlated



Discussion & Future Research

- Rained many days when data collected
- More sites- only 2
- Replication and time to collect data during different times of year



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