MARQUETTE UNIVERSITY

BE THE DIFFERENCE.

# Dynamics Of Understory Plants Across an Elevational Gradient

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# Background

- Goal of ecology = determine mechanisms that drive species abundance and diversity
- This is important because climate change threatens biodiversity
- Young life stages have disproportionate influence on patterns of diversity at later life stages

# Gap

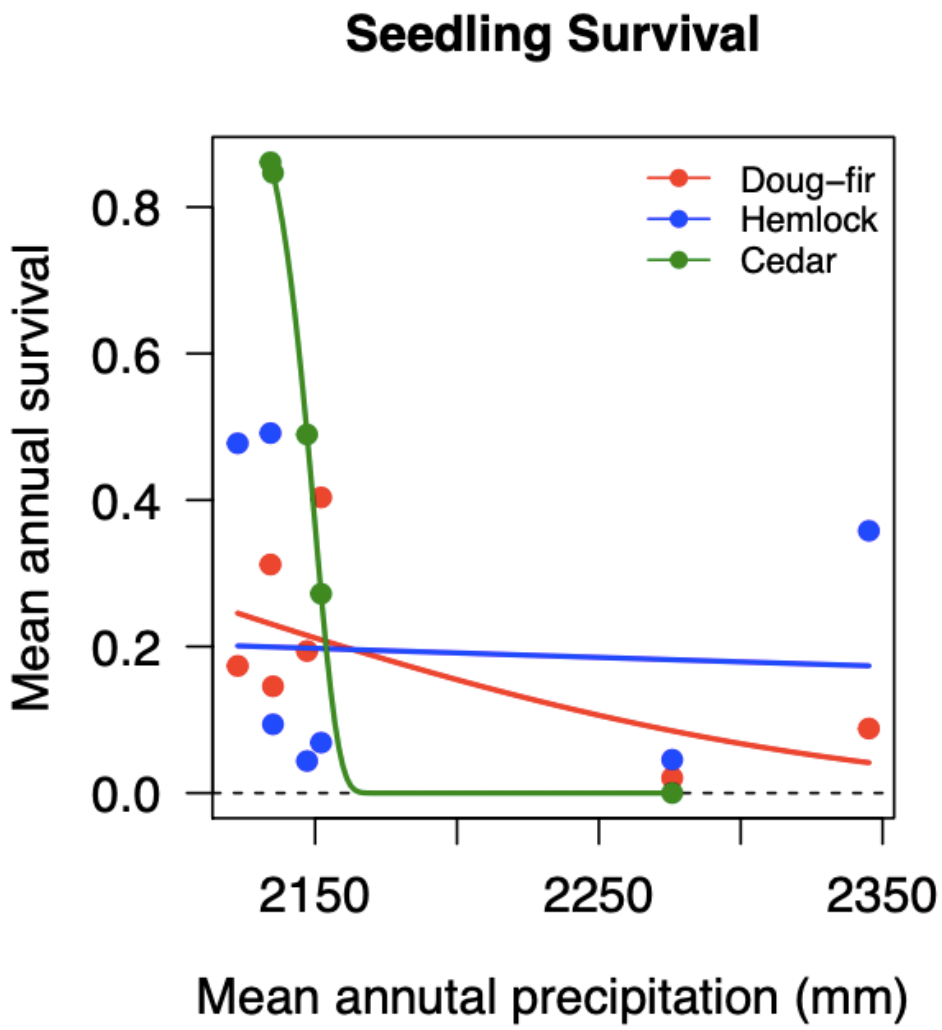
- Little is known about drivers of seedling survival across elevational gradients.
- Predictions:
  - Lower survival in warm/wet climate
  - Lower survival near adults of the same species

# Methods

- Surveyed 248 1-$m^2$ plots along an elevational gradient
  - Each plant was tagged with a unique ID in 2019, and survival assessed in 2020
- Each plot was paired with a large adult tree (> 30 cm diameter)
- 3 tree species, 2,423 seedlings

# Results

- Climate Effects
  - Seedlings in warmer/wetter environments had lower survival
- Nearby adult effects
  - 2 species: Decreased survival near adults of the same species
  - 1 species: Increased survival near adults of the same species



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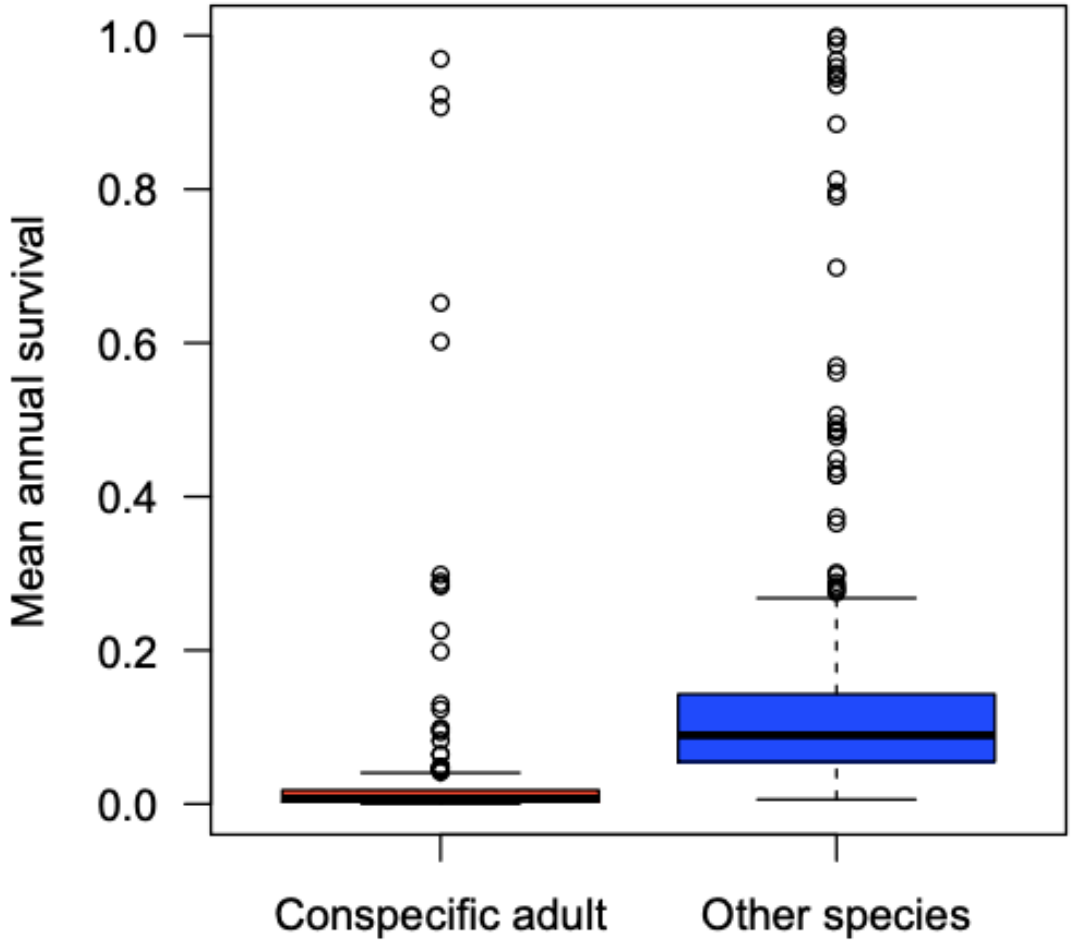

# Implications

- Climate and neighborhood adults have important effects on seedling survival that will determine the maintenance of plant diversity.
- Understanding the effects of climate on seedling survival will help us better predict responses of plant communities to climate change.

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