

PREVALENCE OF INVASIVE PLANTS GROWING AT BASE OF STREET TREES

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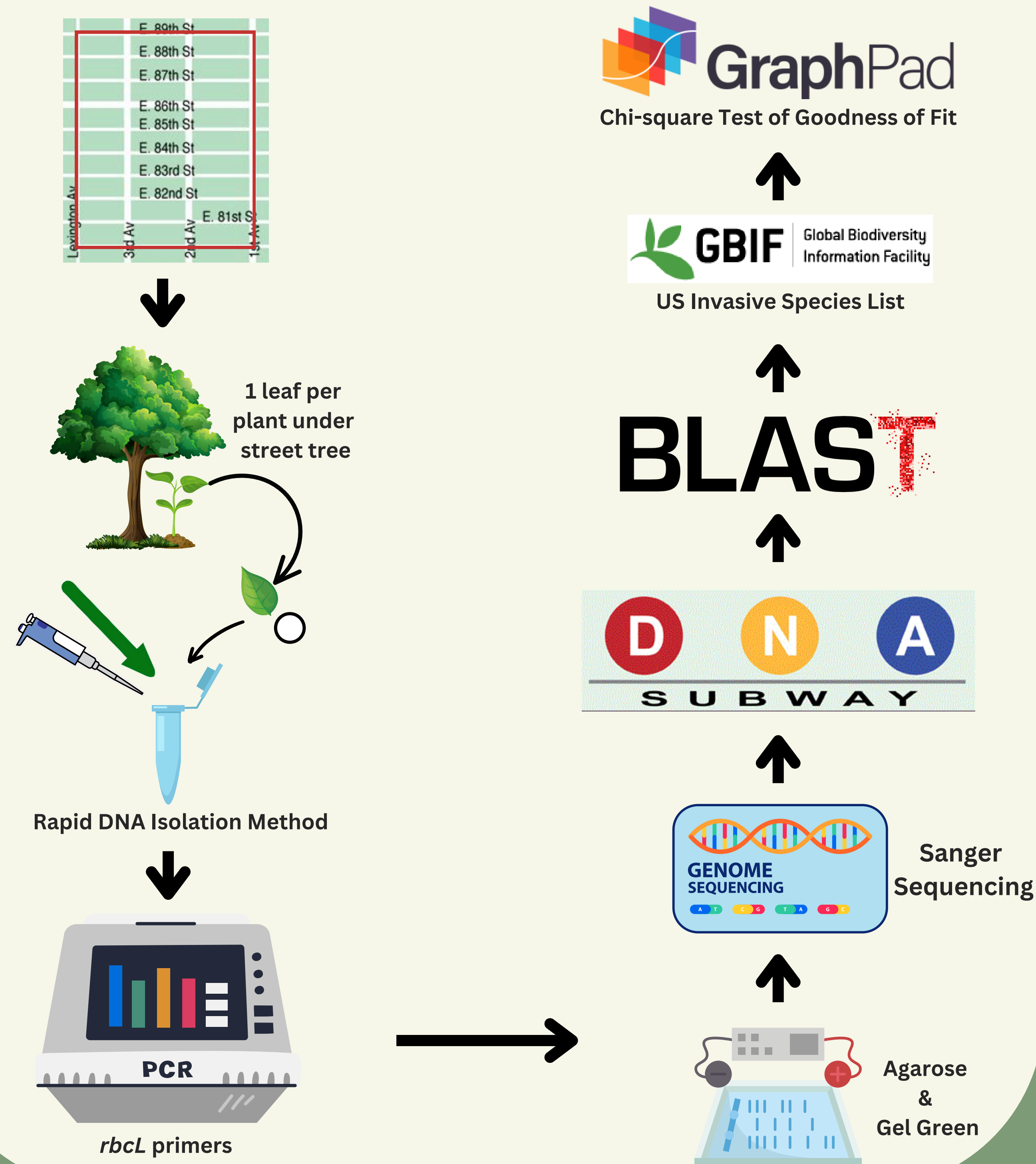
INTRODUCTION

- Street trees offer many benefits e.g. supporting biodiversity, providing shade.
- Base of street trees are often unmulched, allowing other plants to grow in the bare soil.
- 33% of NY flora is non-native; 10% of non-native flora is invasive
- Invasive plants are a huge ecological problem, crowding out/outcompeting native species.
- Invasive plants may be growing at the base of street trees.

QUESTION

What is the prevalence of invasive species growing at the base of street trees?

METHODS



RESULTS

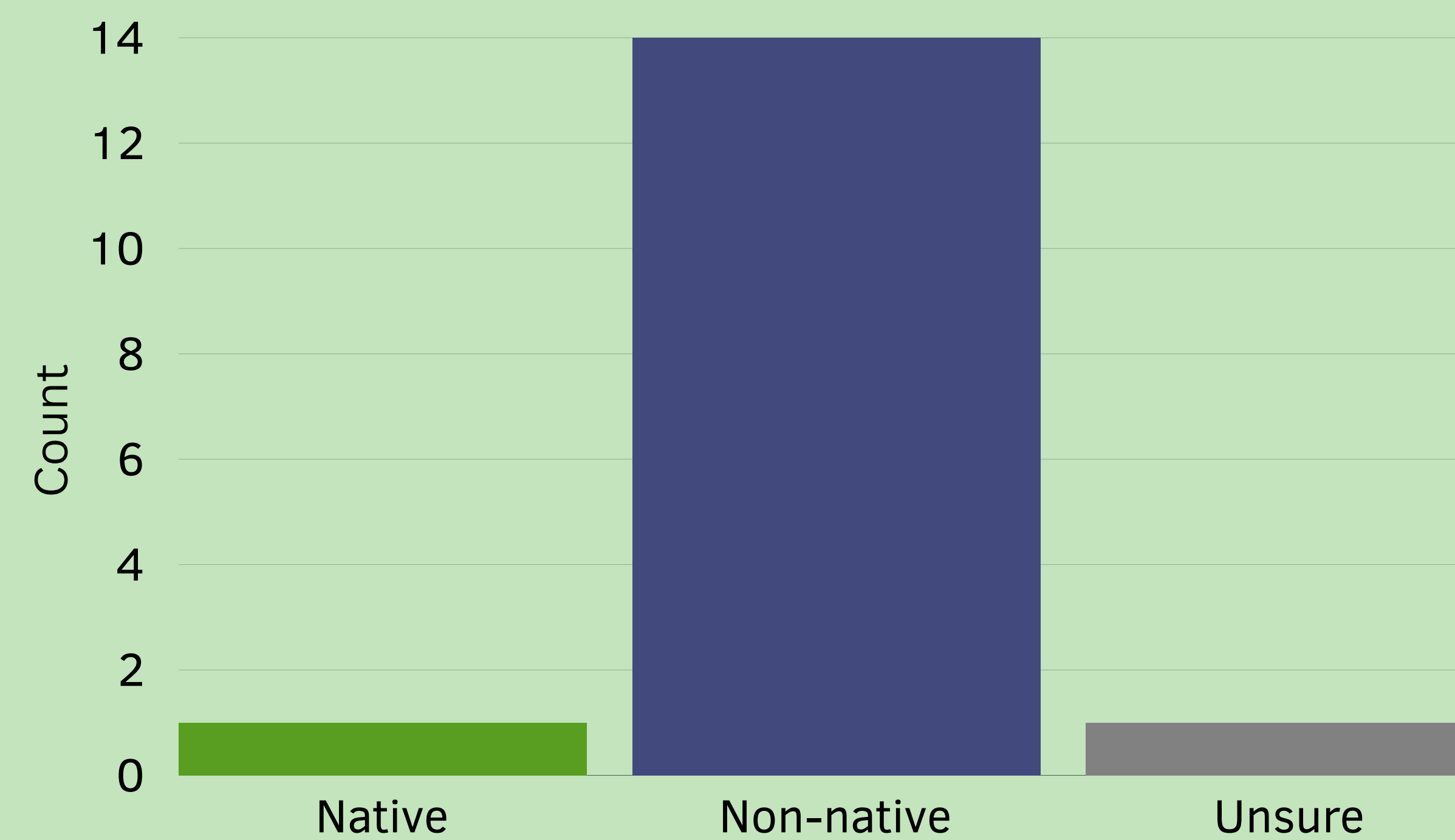


Figure 1. Bar graph showing counts of native vs non-native species of flora. N(native)=1, N(non-native)=14, N(unsure)=1. Chi-square test of goodness of fit, $p=0.0285$

Takeaway: Mostly non-native plants are growing at the base of street trees.

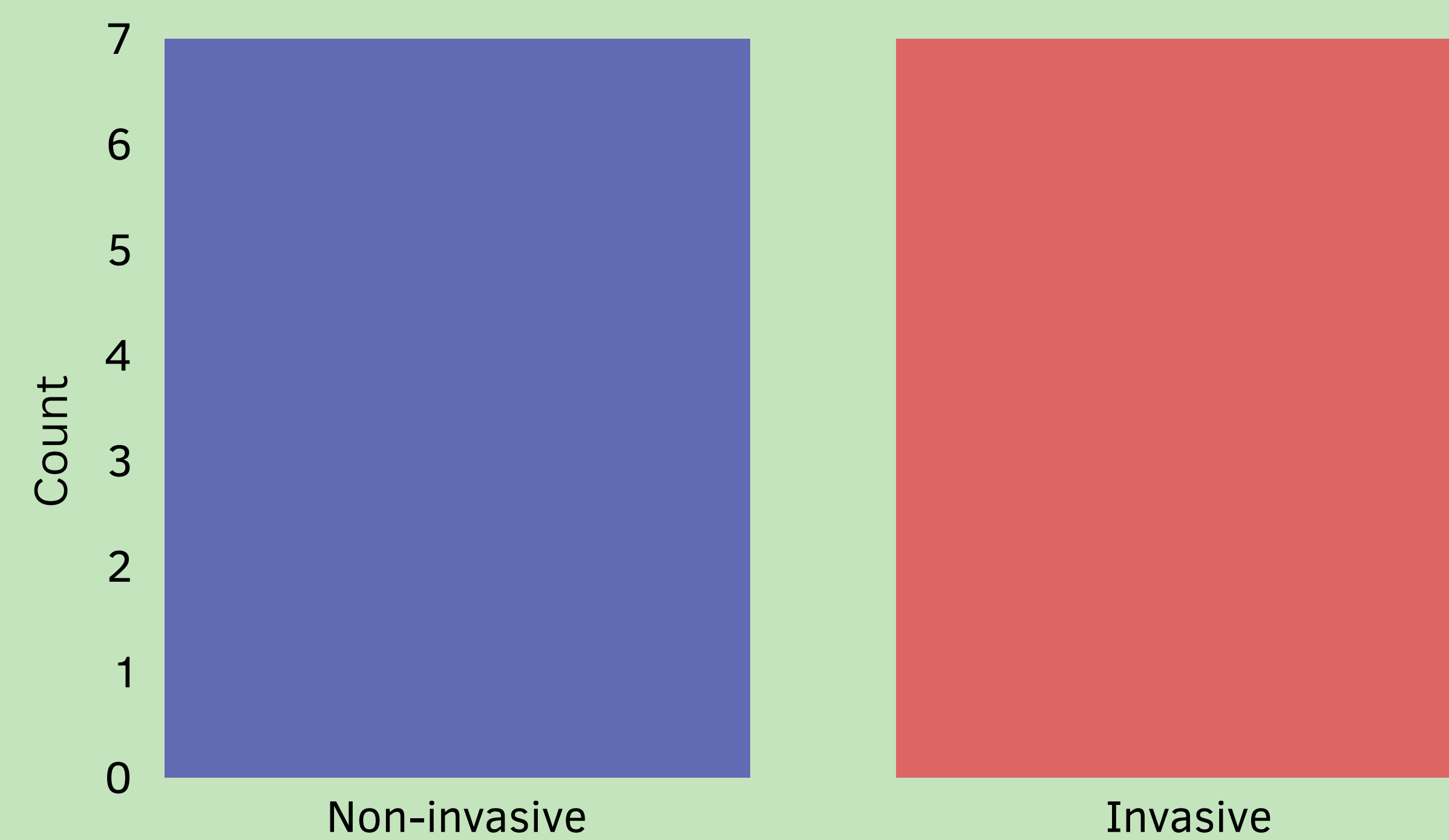


Figure 2. Bar graph showing counts of non-invasive vs invasive species of non-native flora. N(non-invasive)=7, N(invasive)=7. Chi-square test of goodness of fit, $p<0.0001$.

Takeaway: A large chunk of plants growing at the base of street trees are invasive.

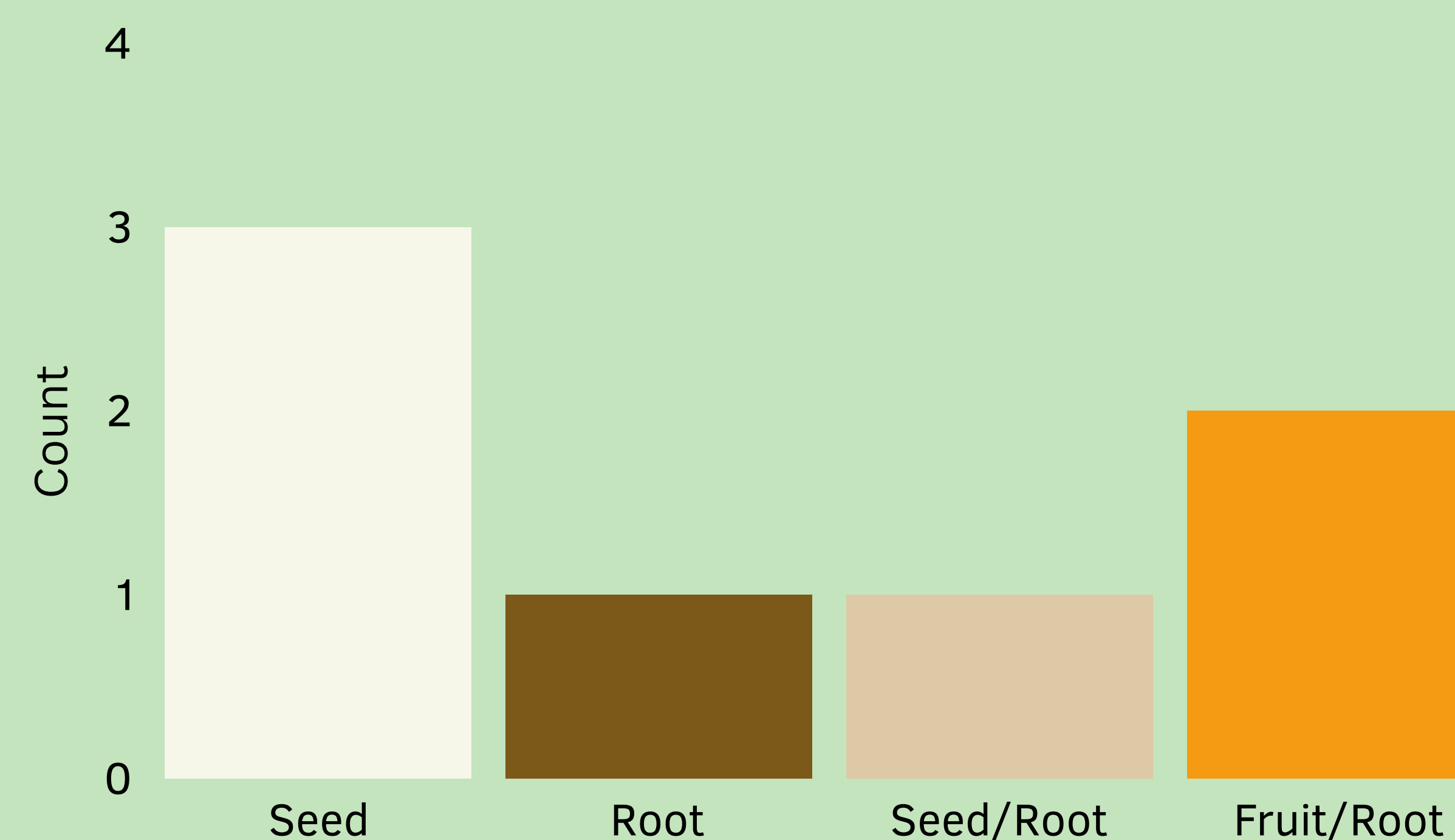


Figure 3. Bar graph showing frequencies of dispersion methods used by invasive species. N(seed)=3, N(root)=1, N(seed/root)=1, N(fruit/root)=2.

Takeaway: Seeds and fruits allow plants to spread long distances. Root systems, like rhizomes, allow plants to spread locally and cover large swaths.

DISCUSSION

- 87.5% of plants were non-native
 - Non-native plants outcompeting native plants
 - 1 sample unclear, barcode not specific enough
- 50% of non-native plants were invasive
 - Possible increased spread of invasive species
- Mostly spread via seeds, fruits, or root system
 - Seeds dispersed by wind, rain, etc.
 - Wildlife eat and spread the fruits
 - Suckers from root system allow for rapid spread
- Samples collected in fall
 - Shorter lived invasive species may be missed
- Samples in more developed/maintained area
 - Other boroughs may have more plants
- Importance of mulching to suppress weeds
- More efforts to remove invasive plants
- Planting of native species below street trees
 - E.g. wildflowers for pollinators

FUTURE RESEARCH

- Invasive plants growing in sidewalk cracks
- Invasive plants growing in subway stations
- Animal species in the bases of trees

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LITERATURE CITED

SCAN HERE

