

Sunflower Adaptation

Amilsa Ferreira, Truc Bui, Kesline Jean Baptiste



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Introduction

What are we studying

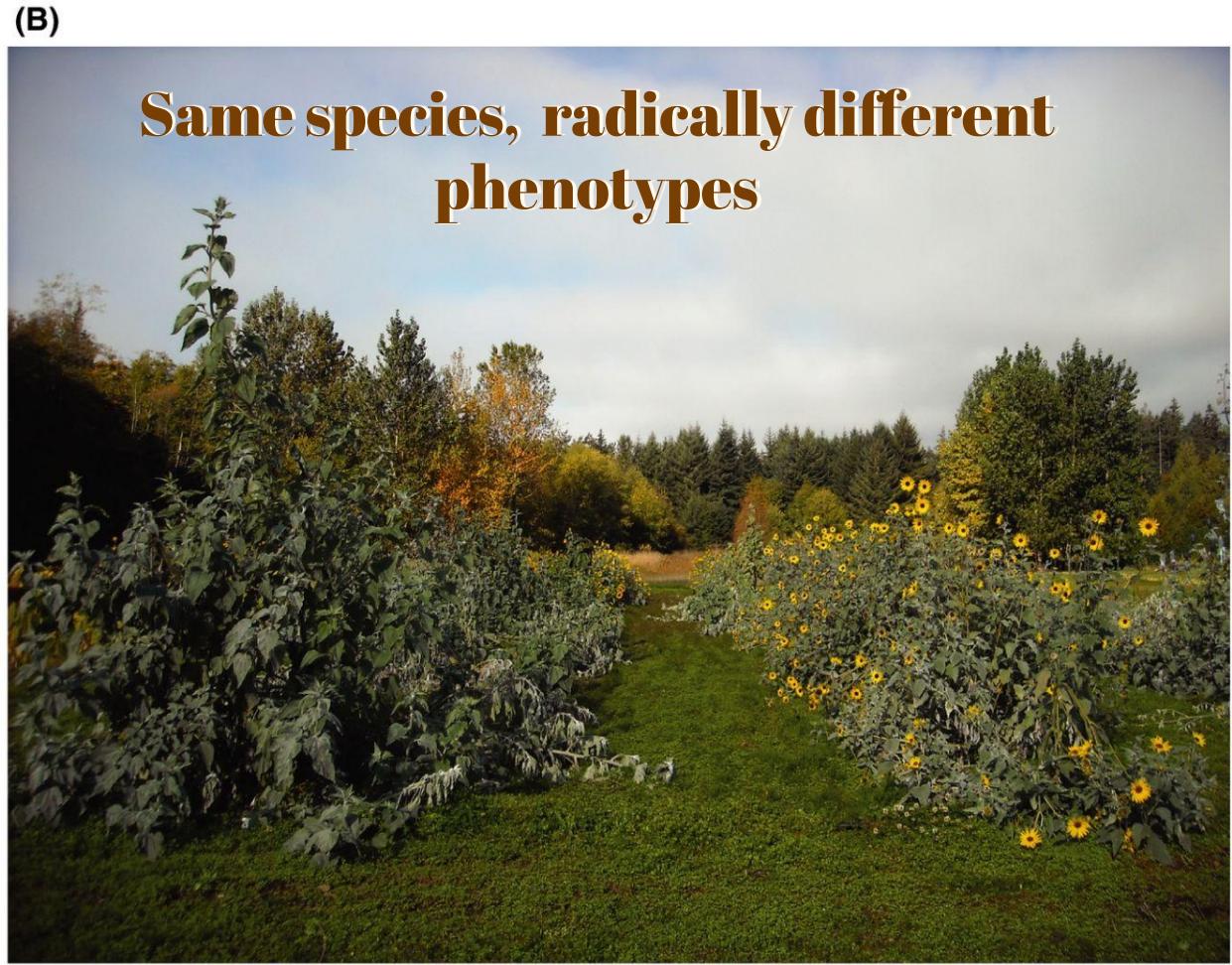
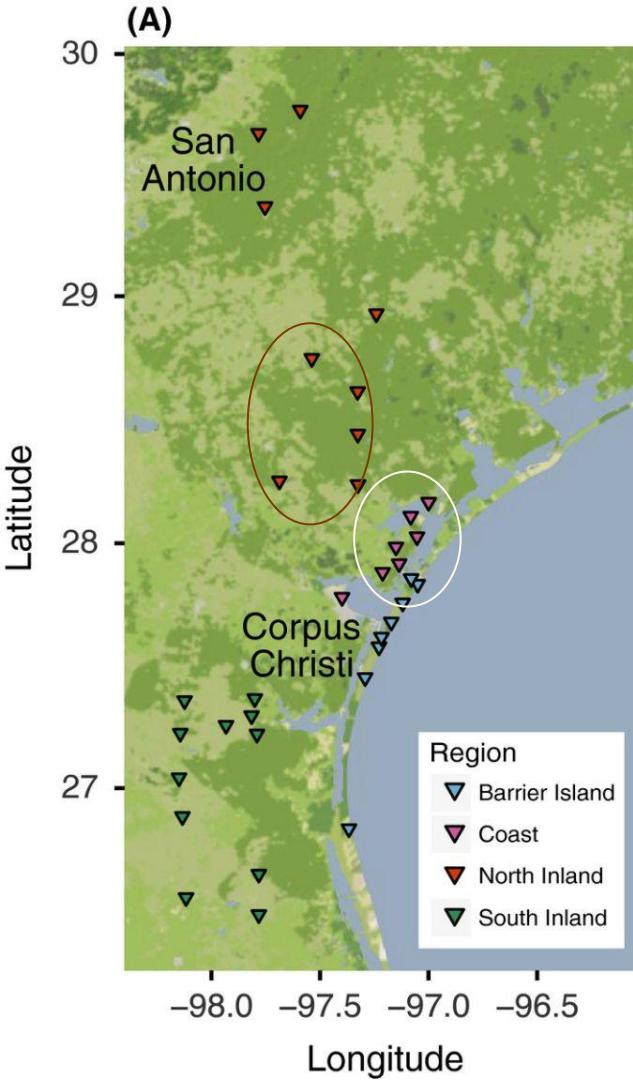
- We're answering questions about the phenotypic variation observed in silver leaf sunflower using RNA seq data.

Why sunflowers

- We wanted to see how RNA seq data could be used to answer questions in a different setting other than human.



Helianthus argophyllus



Key Insights from Moyers & Rieseberg (2016): *Helianthus argophyllus* populations exhibit two life history syndromes



Tall, late-flowering plants with small initial flowerheads

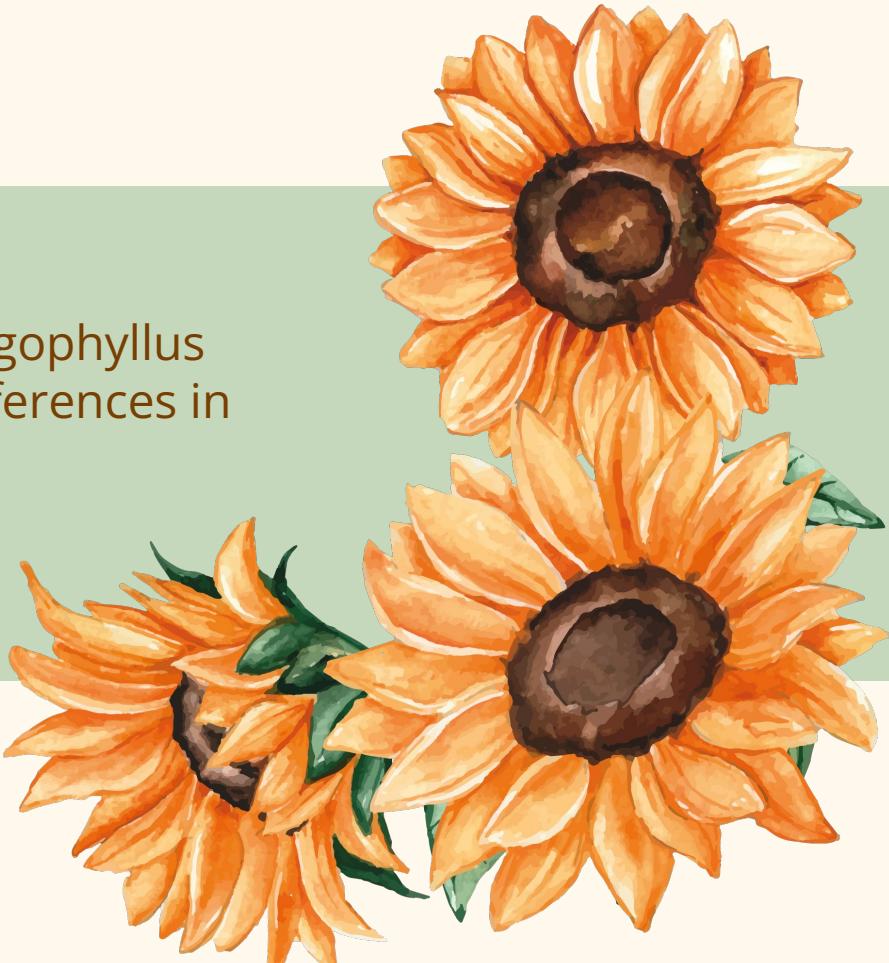


Short, early-flowering plants with large flowerheads.

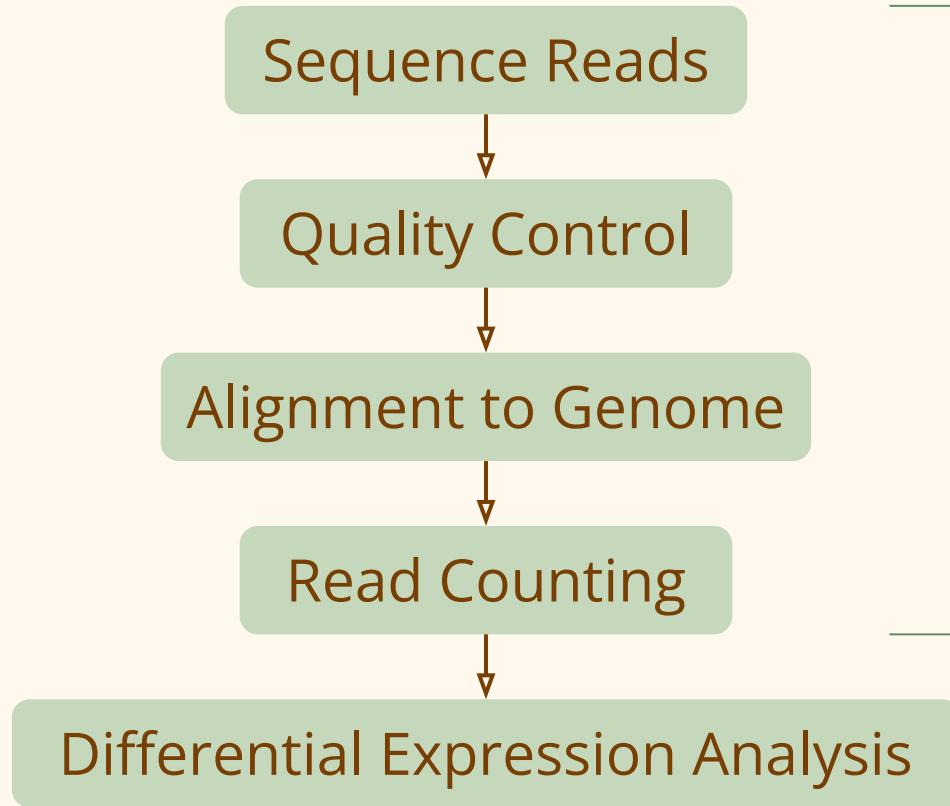


Hypothesis

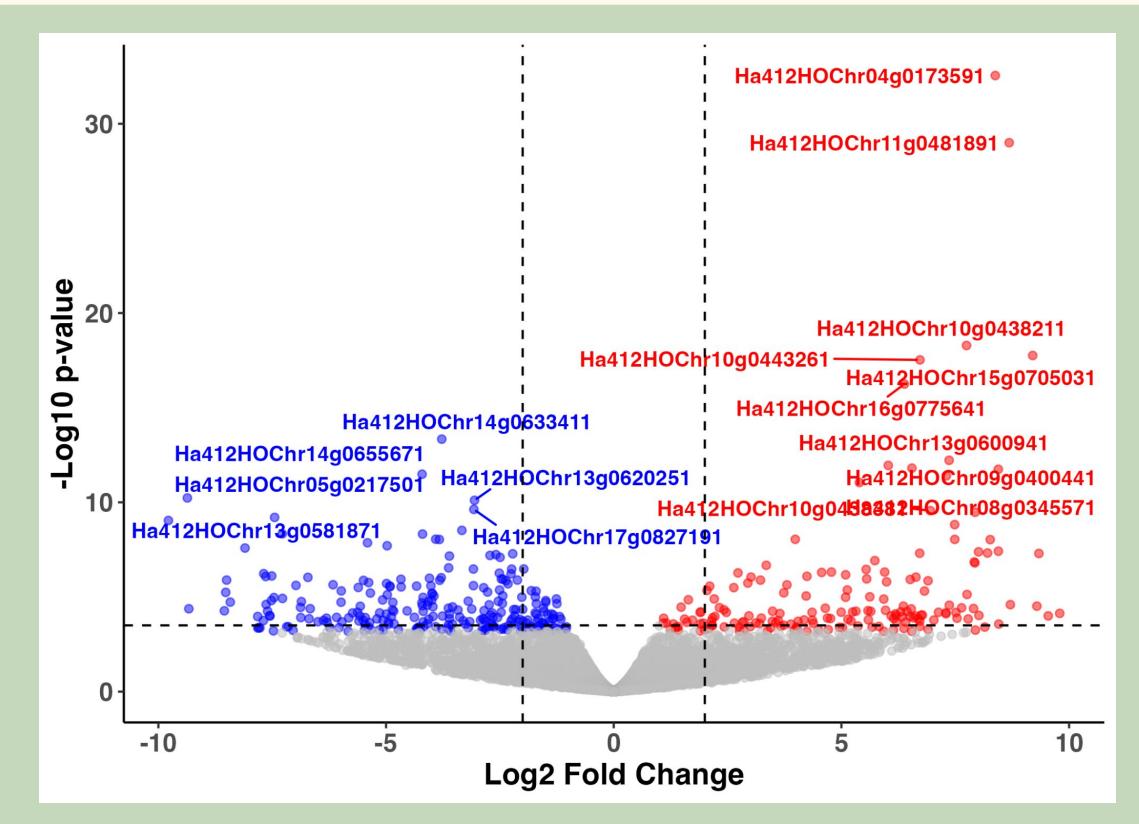
Phenotypic variation in *Helianthus argophyllus* (Silver leaf Sunflower) is driven by differences in gene expression.



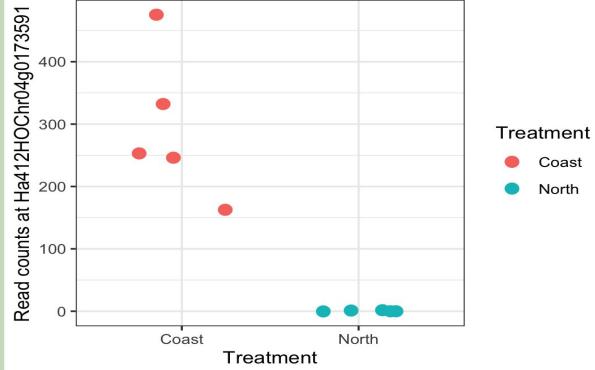
Methods



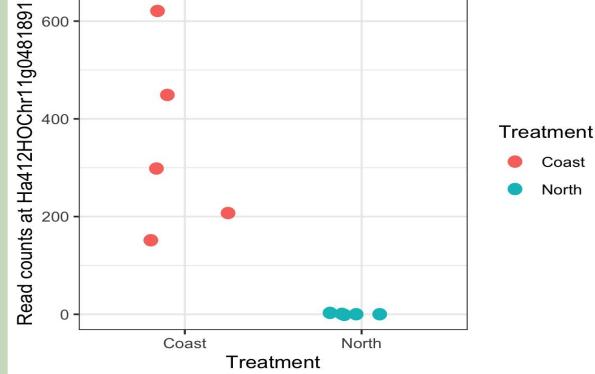
Results



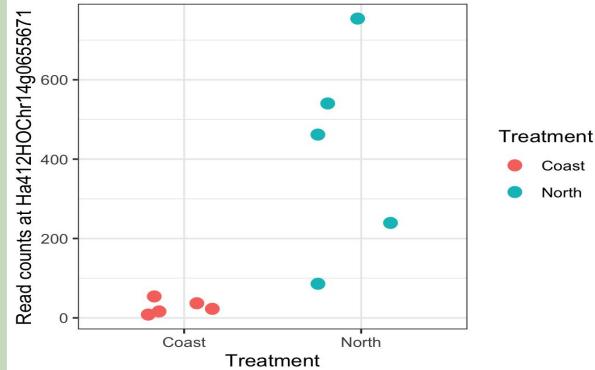
Phospholipase A2 homolog 1 (Pollen development)



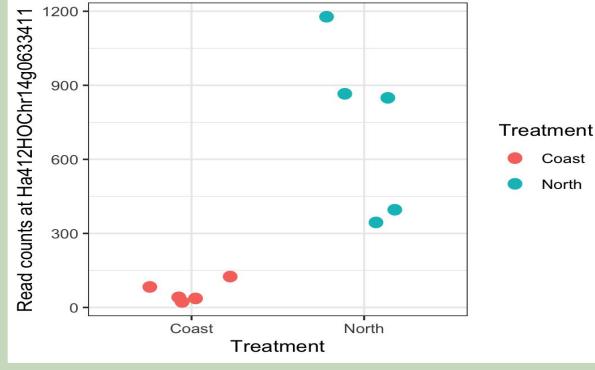
Dentin Sialophosphoprotein



Ribosomal Protein S12

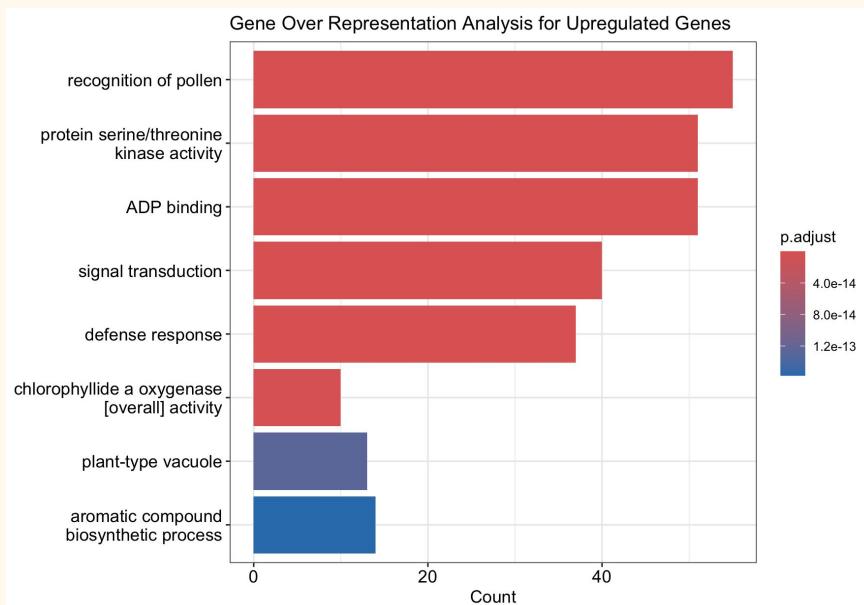


Rps12 Ribosomal Protein S12

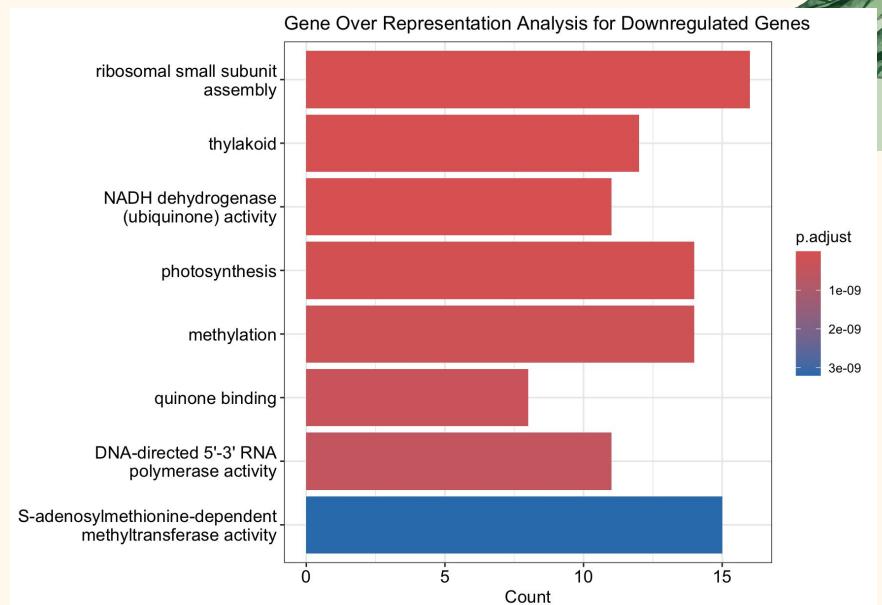


Enrichment Analysis

Upregulated



Downregulated





Results Summary



Gene ending	Expression	Gene name	Function
3591	Overexpressed	phospholipase A2 homolog 1	Involved in pollen germination
1891	Overexpressed	dentin sialophosphoprotein	Uncharacterized
3411	Underexpressed	rps12 ribosomal protein S12	Protein synthesis, translation
5671	Underexpressed	ribosomal protein S12	Protein synthesis, translation



Questions?

References

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