

Monitoring Riparian Restoration & Pollinator Enhancement in the McKenzie River Watershed



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What is Restoration & Research?

Restoration & Research is a student-led research team, organized through the University of Oregon's Environmental Leadership Program.

Introduction

This project at Whitewater Ranch focuses on restoring riparian habitat and pollinator populations at an organic blueberry and timber farm. The UO Restoration & Research Team monitors the presence of pollinators, restores Goose Creek's riparian zones, and studies the success rate of native flora in burned slash piles (in partnership with the Ponisio Lab).

Why is this project important?

This project tackles habitat decline and builds climate resistance. The team's findings will guide future restoration efforts, and help find a balance between agricultural profitability and ecological stewardship.

Goose Creek Restoration

Methods

Riparian Restoration at Goose Creek

- Gardening tools were employed to manage blackberries within the Goose Creek area. Native Oregon plants were introduced to Goose Creek based on monitoring previous year's plantings. 18 species were planted in a patch along Goose Creek. Crown height, competing vegetation, and other attributes of past team's native plantings were monitored by this year's Environmental Leadership Program team.

Pollinator Surveys:

- The team counted and recorded the number of pollinators within predetermined 60 meter blueberry transects.

Water Temperature Monitoring:

- The team gathered water temperature data for Goose Creek using a temperature probe.

Photo Point Analysis:

- Photographs were taken in designated locations along Goose Creek to analyze long-term growth.

Water Temperature Averages

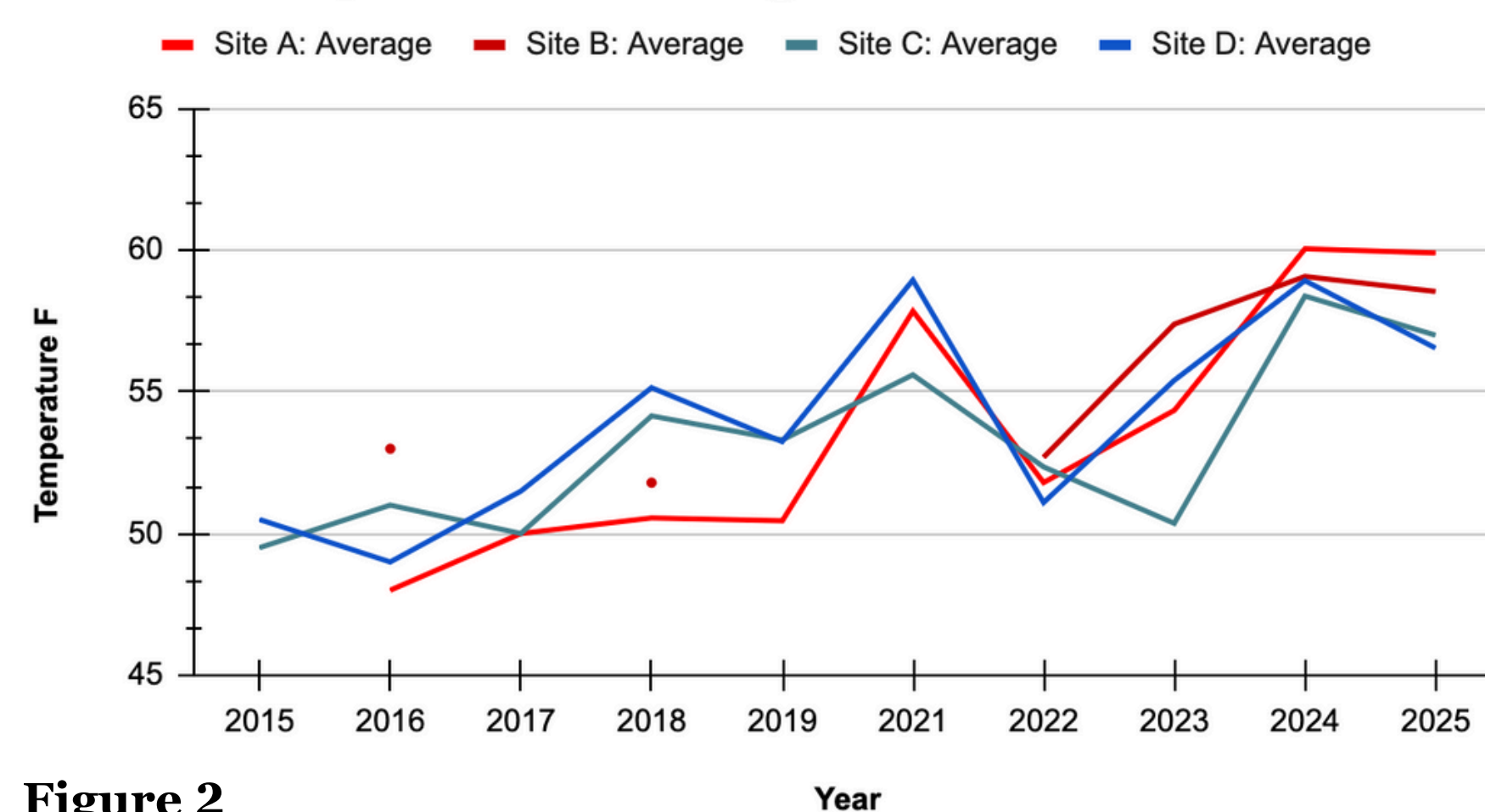


Figure 2

Burned Slash Piles

Methods

Burn Slash Pile Vegetation Monitoring:

- Team members monitored revegetation efforts using quadrat plots and according to field guides, recorded presence/ absence data. Plots had been flagged with numbers that specified species planted within the plot.

Catch and Release Pollinator Monitoring:

- The team practiced netting and capturing pollinators within the burned slash piles in order to monitor the presence and abundance of the species.

Ponisio Lab Germination Survey Locations

Fig. 5: Students conducted native floral species surveys in collaboration with the Ponisio Lab



Goose Creek Study Area

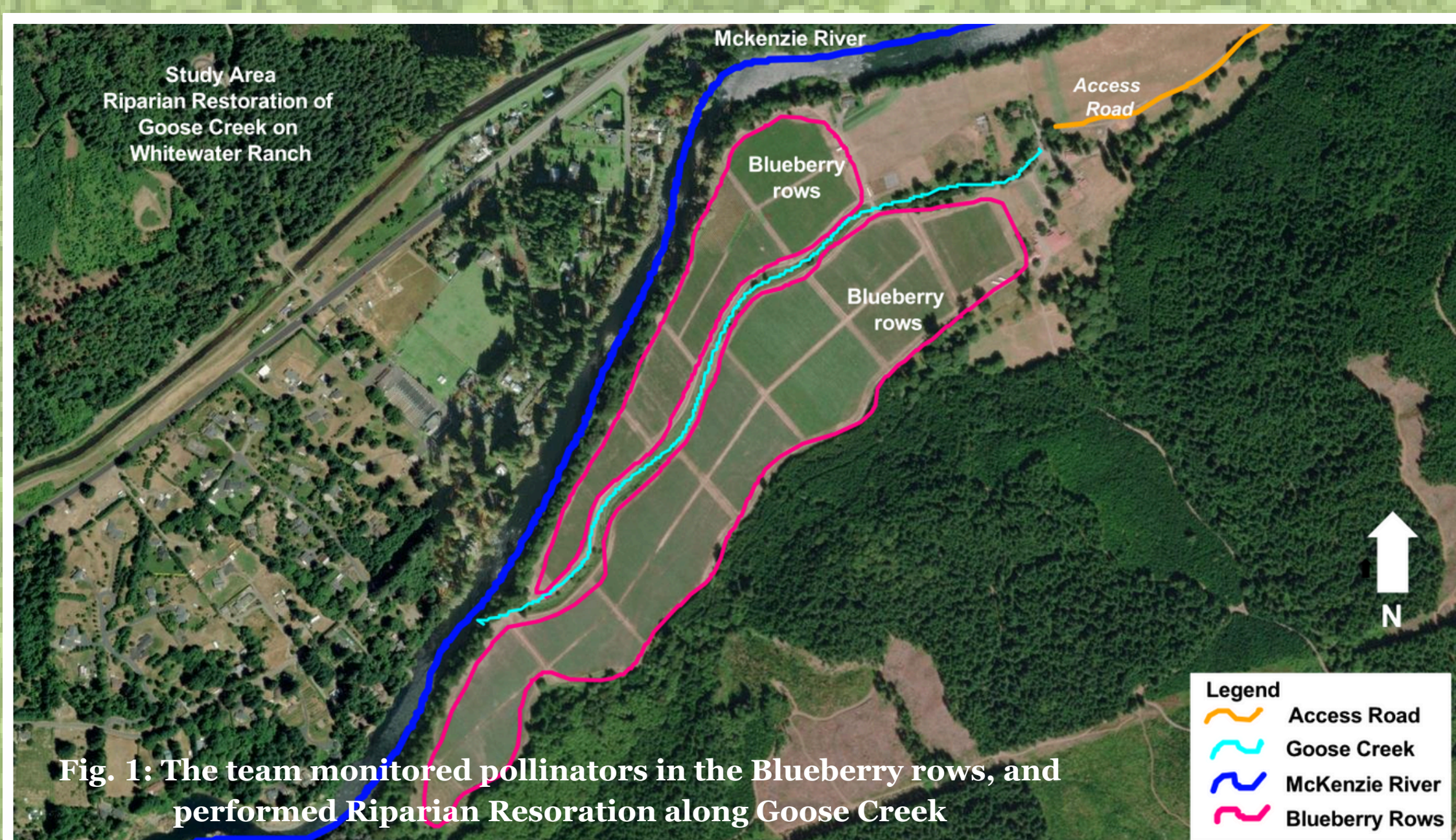


Fig. 1: The team monitored pollinators in the Blueberry rows, and performed Riparian Restoration along Goose Creek

Percent Cover of Each Species 22-25

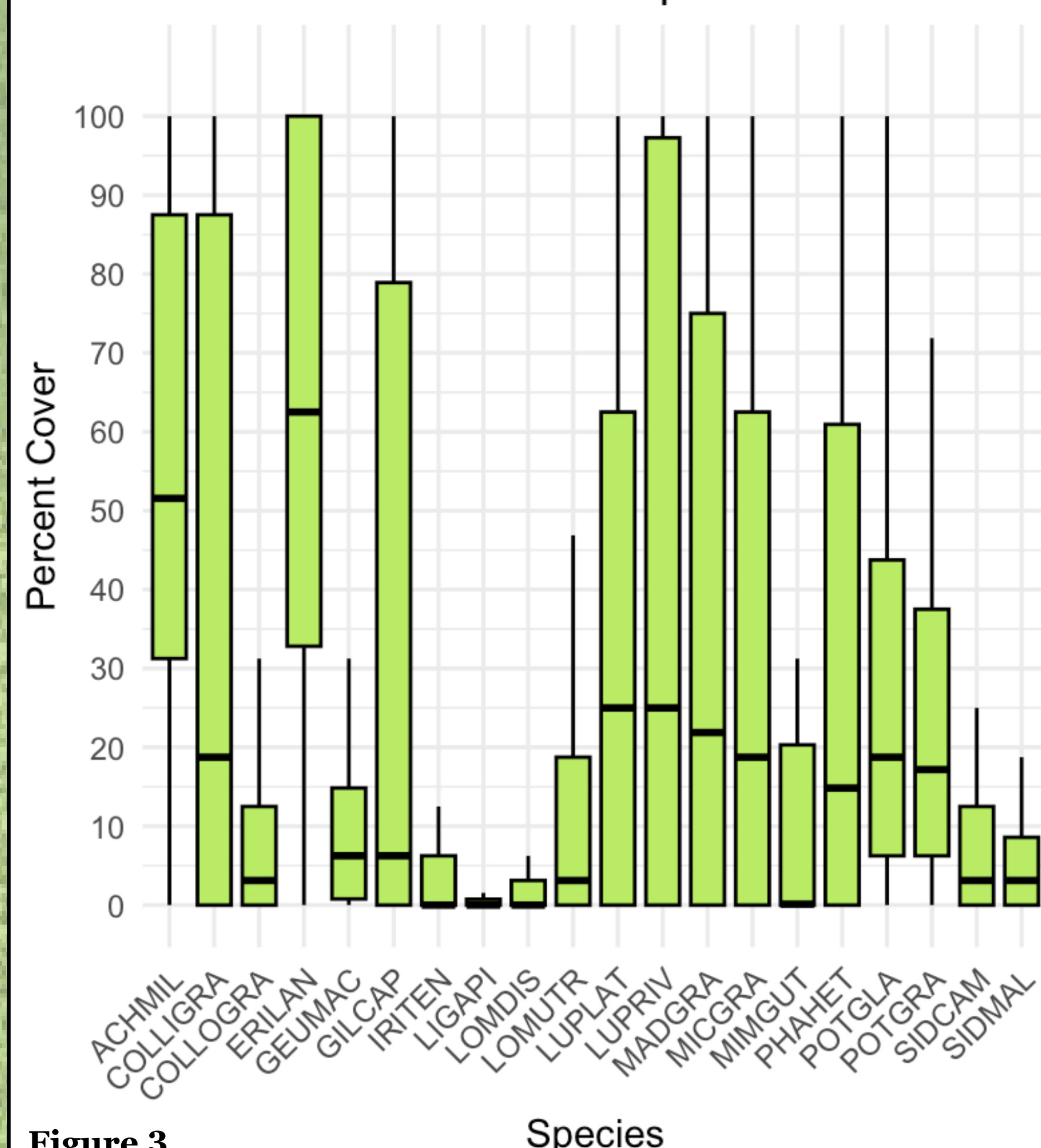


Figure 3

Native Pollinator Abundance Per Year

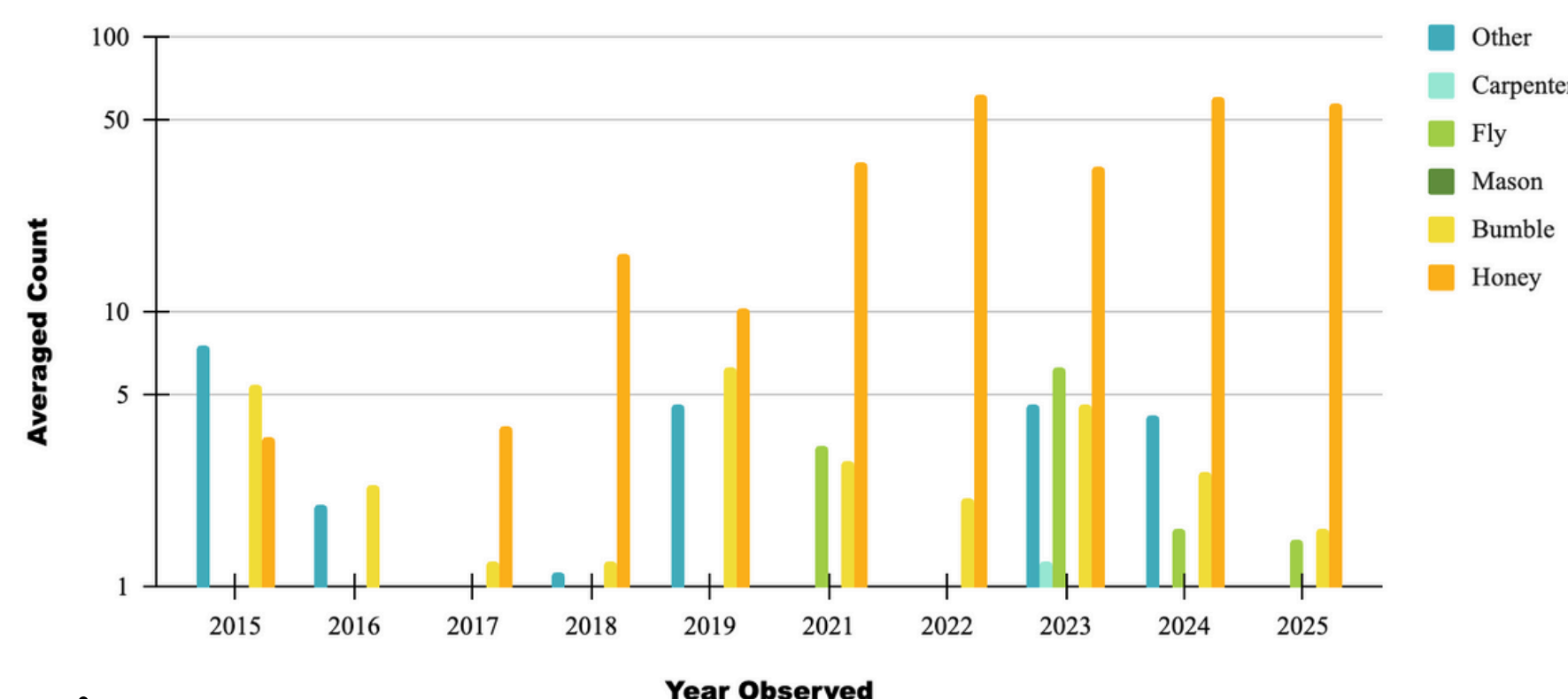


Figure 4

Results & Discussion

Riparian Restoration at Goose Creek:

Beaver-damaged willows protected using with cage fencing
Native species planted adjacent to the creek, successfully providing future shading to reduce water temperature.
Large areas of invasive blackberries were removed to reduce competition.

Pollinator Surveys:

Average pollinator counts have increased, especially the honeybees.
Early bloom monitoring yields higher counts overall. (see Figure 4)

Water Temperature Monitoring:

Average temperatures across all four monitoring spots remained similar to temperatures recorded in the last several years (see Figure 2).
Rising water temperatures does not mean that the restoration project along Goose Creek has been unsuccessful; it just may mean different teams need to try new approaches to cool down the creek.

Photopoint Analysis:

Vegetation in each of the locations is thriving and is in free-to-grow status.

Results & Discussion

Burn Slash Pile Vegetation Monitoring:

- Team members successfully monitored all 19 burned slash piles and recorded measures of success and vigor. Plots had been flagged with numbers that specified species planted within the plot.
- (See Figure 3) The species with the highest percent cover on average was E. lanatum (ERILAN). Other species with a high percent cover include: L. rivularis (LUPRIV), A. millefolium (ACHMIL), and C. grandiflora (COLLIGRA).

Catch and Release Pollinator Monitoring:

- The samples revealed a high count of honeybees, with bumble bees, flies, and beetles in the mix as well.



Acknowledgements

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