



Native Seed Restoration Project

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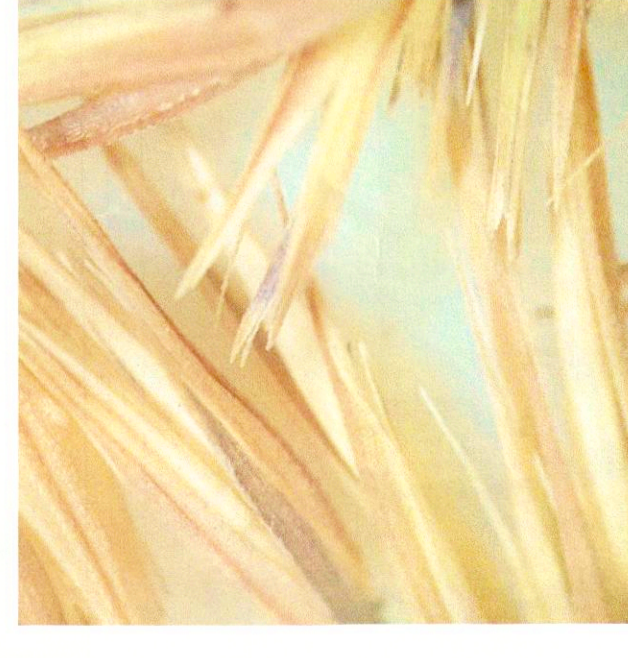


SERVICE PROJECT GOAL

The Biology 211 Fall 2017 class partnered with the Rio Mora Wildlife Refuge in a Service-Learning Project to research the seed viability of banked species needed for ecosystem restoration and resilience projects.



Students collecting native plant seeds at RMNWR Fall 2017

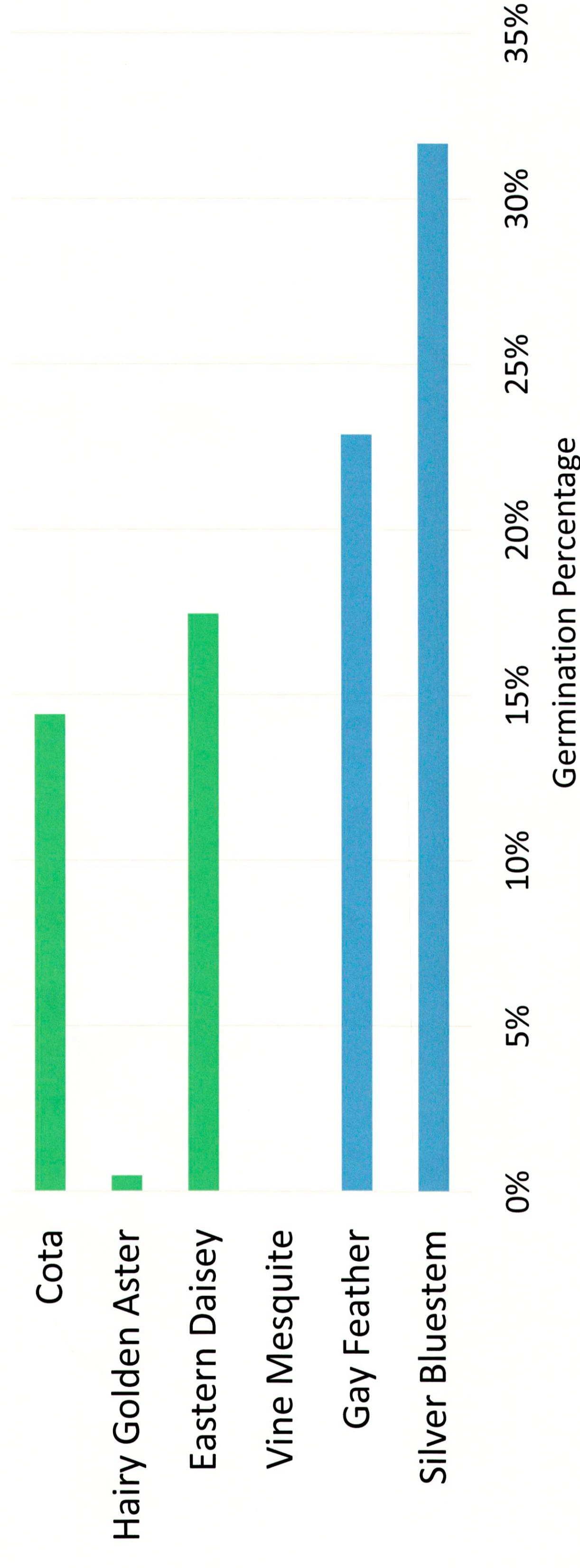


METHODS

- Students designed experiments in the NIMHU greenhouse to determine the germination percentage for native plant species in the RMNWR seed bank.
- Experimental conditions: changes to water, light, soil fertilizers, planting density, and interspecific plant interactions.
- Paying close attention to conditions for germinating Cota, an important native medicinal herb
- Twelve groups of students used 20 replicates and planted 2-4 seeds per replicate to observe germination percentages.

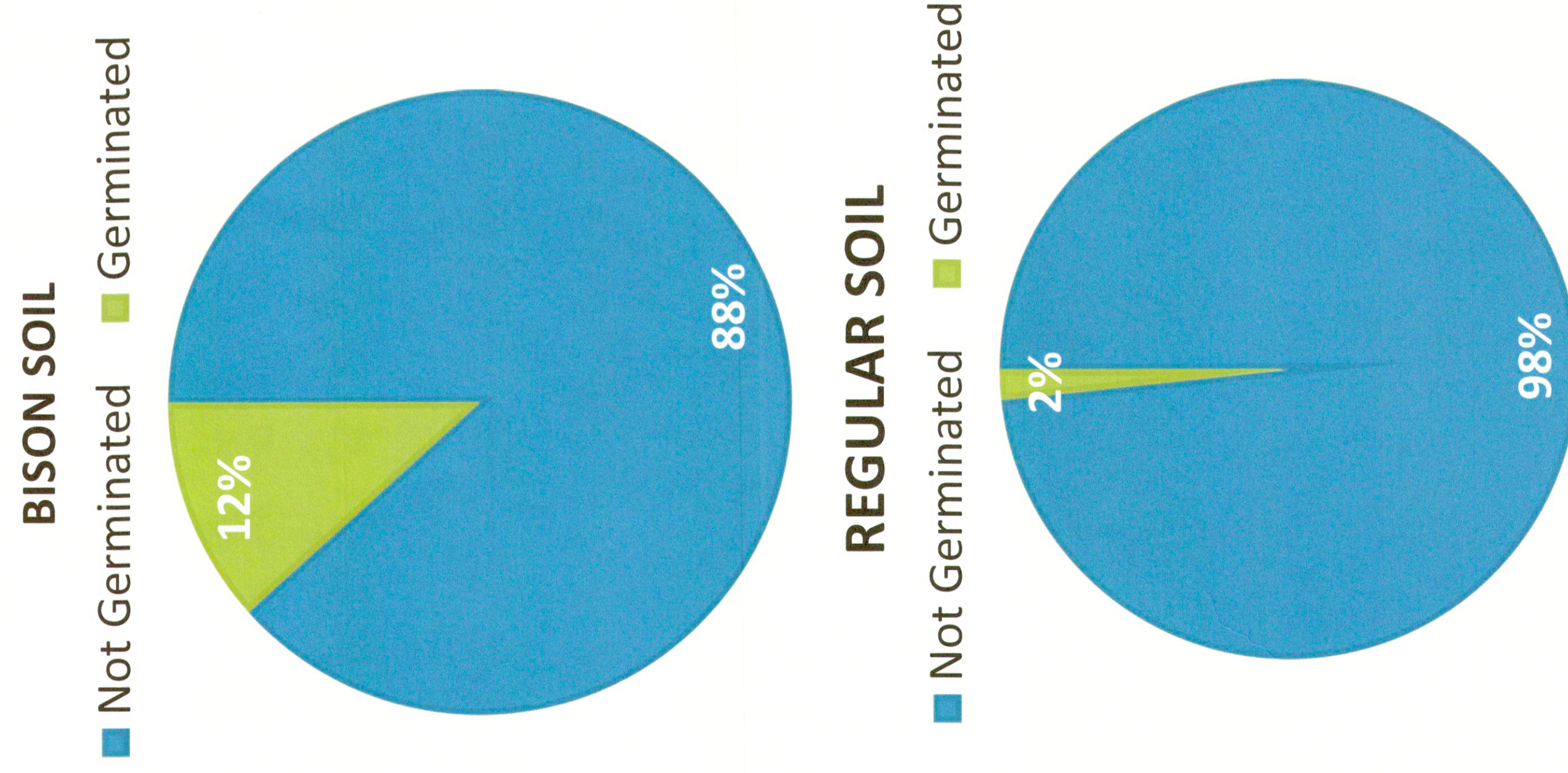
RESULTS

- Forbs and grasses germinated with similar success.
- Median forb germination was 14% and median grass germination was 23%.
- Two out of six species tested did not germinate (0-1%).



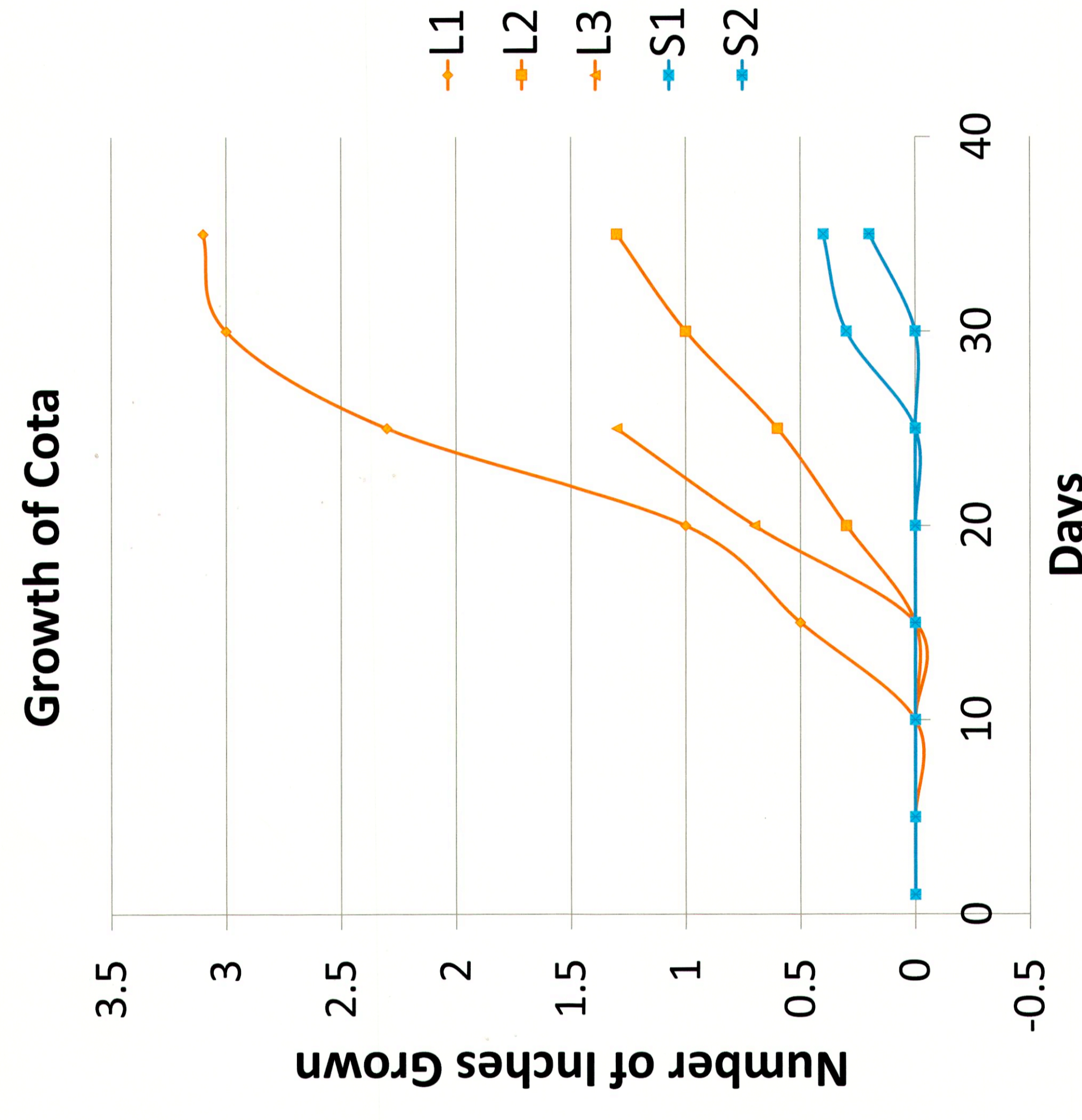
Germination success for native species of forbs and grasses

BISON FERTILIZER & SOIL



SHADE & LIGHT

Cota grown in full sun germinated 3/10 seeds within 15 days whereas cota grown in shade only germinated 2/10 seeds within 30 days. Those in the sun grew twice as tall as those in the shade.



DISCUSSION

This service learning partnership with RMNWR provides information about native plant species germination percentages and conditions that plants encounter.

Rio Mora can use this information to begin their restoration with a seed mix that is successful and resilient in the local habitat.



Cota



Hairy Gld Aster



Gay Feather



Silver Bluestem

E. Daisey



Acknowledgements:

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