

Yosemite Big Wall Plant Adaptation Project

By: Xitlaly Gomez Vega

Agenda

Topics Covered

Monkeyflower background

The Project in a nutshell

My experience

Moving Forward

Mimulus laciniatus

AKA Cutleaf Monkeyflowers





Characteristics

Annual herb

Blooms: APR-JUL

Size: 0.1-1.3 ft

Color: Yellow

Reproduction mode: Mostly Self-fertilizing

Threats: Low

Habitat

Endemic to California

Inhabit the Sierra Nevada Mountains

High elevations

Adapted to various Climate Conditions

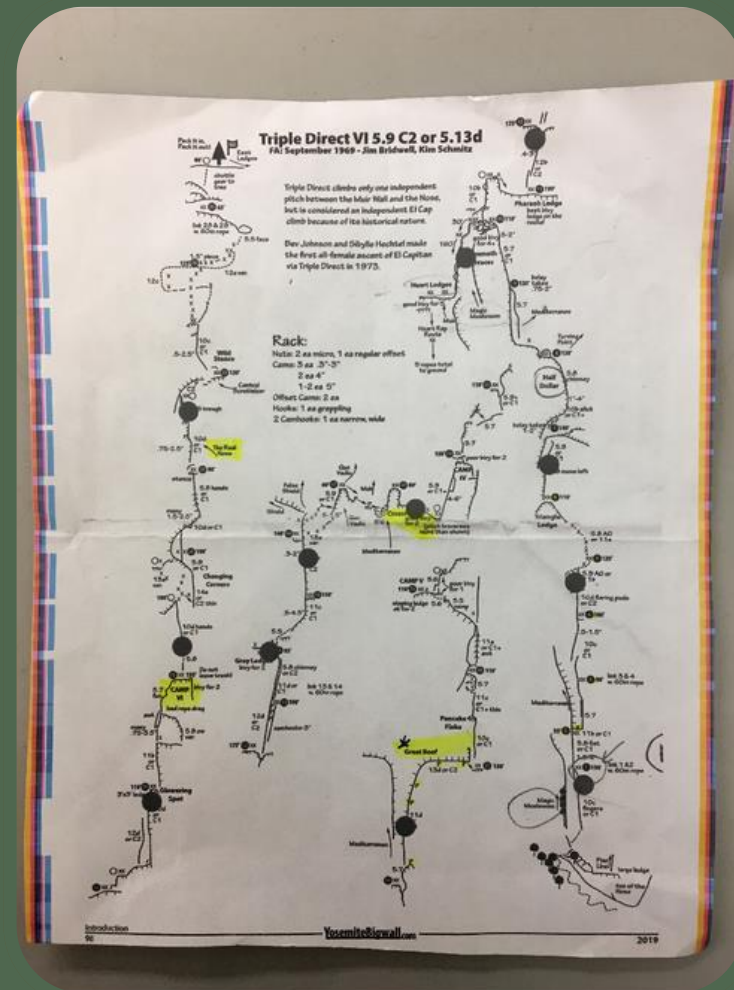




The Seeds

SUPER SUPER SUPER TINY :0

THE PROJECT IN A NUTSHELL



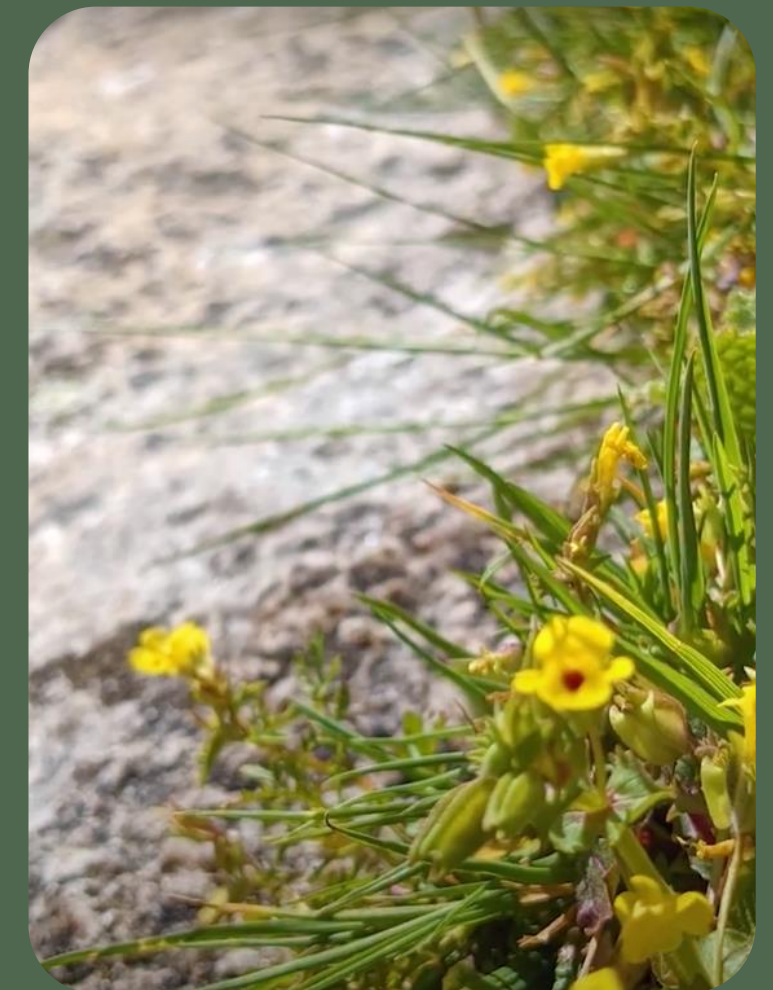
Seed Collection

Majority from Yosemite
Valley



El Capitan

Studying the Adaptation in
monkeyflowers across
steep walls



Mimulus laciniatus

The plant in question



What the Project Entails



Collaborative Effort

- Jason Sexton & Diana Tataru
- Yosemite climbing management
- Greenhouse staff

Question

- How can plants inhabit an environment (like El Capitan) with an extreme climate gradient?
- How do they manage to live on the steepest environments on Earth?

Methods

- Seeds collected across gradient (steep slope)
- Sent for grow out and tissue collection for DNA extraction
- Plant traits are measured

Purpose/relevance

- Can help us understand how plants can adapt to extreme environments
- Understand patterns of gene flow in Yosemite Valley

My Experience

New & Exciting

First time working in a lab

First time regularly meeting with a professor to guide the project

First time planting in an academic setting

Comfortable Experience

Worked closely with Jason Sexton

Met amazing graduate students in the lab that helped me

Set own schedule

Peeked my interest

My general interest revolves around Environmental Justice and Climate Justice, after working on this project I feel motivated to build a connection with plants and do lab research

What I learned

How to organize seed packets

Plant trays

Coordinate with Greenhouse staff

Lab safety

Some Pictures :)



Organizing seeds



Planting trays

Moving Forward

Future Steps:

- Plant traits will be recorded once they've fully grown
- Plant tissue will be collected for DNA extraction
- Other generations will be planted
- Other populations of seeds from different years and outside Yosemite valley will be planted

My plans:

- I will continue to work with professor Jason Sexton with this project during the summer and possibly the fall semester
- Working in the lab setting has made me more interested in pursuing graduate school. I think this experience has given me the opportunity to further explore that possibility and understand how research projects work.
- I will definitely grow more plants at home for fun!



Thank you!

Hope you enjoyed!

Resource Page

-

[https://calscape.org/loc-California/Mimulus-laciniatus-\(Cut-leaved-Monkeyflower\)?srchcr=sc5fc608a7e0a9d](https://calscape.org/loc-California/Mimulus-laciniatus-(Cut-leaved-Monkeyflower)?srchcr=sc5fc608a7e0a9d)

-

<https://www.ccgproject.org/species/mimulus-laciniatus-cutleaf-monkeyflower>

