

NSAC 2025

BloomWatch (An Observation Application)

PROJECT WORK BY PUNEET ANAND

Challenge

02/07

- To design a dynamic visual tool that uses Nasa's Earth Observations.
- The tool should display/detect plant blooming events within a region.
- Detection should advance solutions for monitoring, predicting, or managing vegetation. Optional: Leverage Nasa's imagery to detect bloom events.
- Could you define the scale for this tool?
- What kind of decisions can be informed by the tool?

The Dynamic Tool

[LINK TO THE TOOL >](#)

Monitor the Blooms

Exploring the California Superblooms

This page presents bloom screenshots collected from Nasa Worldview (Link available under the Resources tab). Filter by the Region & Month.

Follow along to explore the possible solutions/advances offered by this tool.

Region in California

Period

All

All



Independence, california, jan, 6
2025-01-06 • Independence

January



Independence, california, jan, 29
2025-01-29 • Independence

January



Independence, california, feb, 14
2025-02-14 • Independence

February



Independence, california, feb, 23
2025-02-23 • Independence

February



Independence, california, mar, 3
2025-03-03 • Independence

March



Independence, california, mar, 27
2025-03-27 • Independence

March



Independence, california, apr, 3
2025-04-03 • Independence

April



Independence, california, apr, 28
2025-04-28 • Independence

April



Independence, california, may, 22
2025-05-22 • Independence

May



Independence, california, june, 23
2025-06-23 • Independence

June



Independence, california, july, 26
2025-07-26 • Independence

July

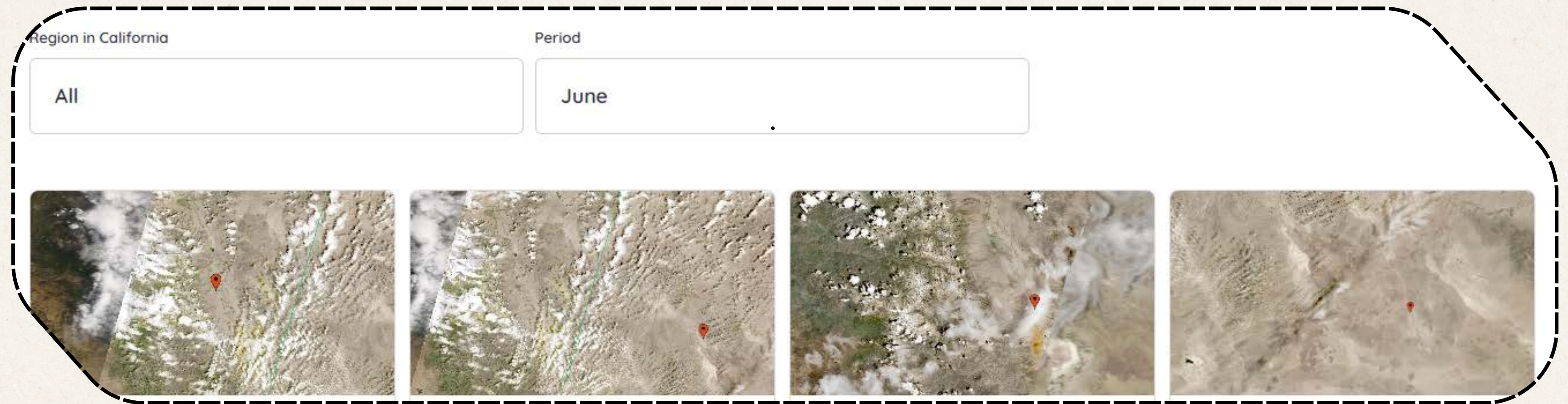


Independence, california, aug, 27
2025-08-27 • Independence

August

What the tool does?

- The tool displays the snapshots of the regions being observed for bloom detection.
- The tool uses the image's metadata to categorize them by their location.
- The tool uses the image's metadata to categorize them by the month of the Year.



Potential Usages

05/07

- **Signature Quality of the Flower - Color**
- **If color is yellow, orange, or red; then carotenoids and betalains.**
- **If color is deep reds, violets, or blues; then anthocyanins.**
- **Flowers are ephemeral (bloom lasts only a few weeks); detection of species from color can make it easier for the land observers to create and execute a plan for their upcoming study.**
- **Flowering is impacted by temperature, daylight, precipitation, etc. These images can be used to make predictions about the weather in upcoming years, and improve phenology assessments.**
- **The tool can be re-programmed to monitor the plant blooming events across the globe, and could further help in understanding the benefits of bloom events for conservation.**
- **The tool could also help in the detection of invasive species (the metadata has to be updated)**

Resources

06/07

- Microsoft Co-Pilot
- Wildflower Bloom Observations - [Link](#)
- NASA takes to the Air to Study Wildflowers - [Link](#)
- Example of California Superblooms - [Link](#)
- California Superbloom Images - [Link](#)

Thank you

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