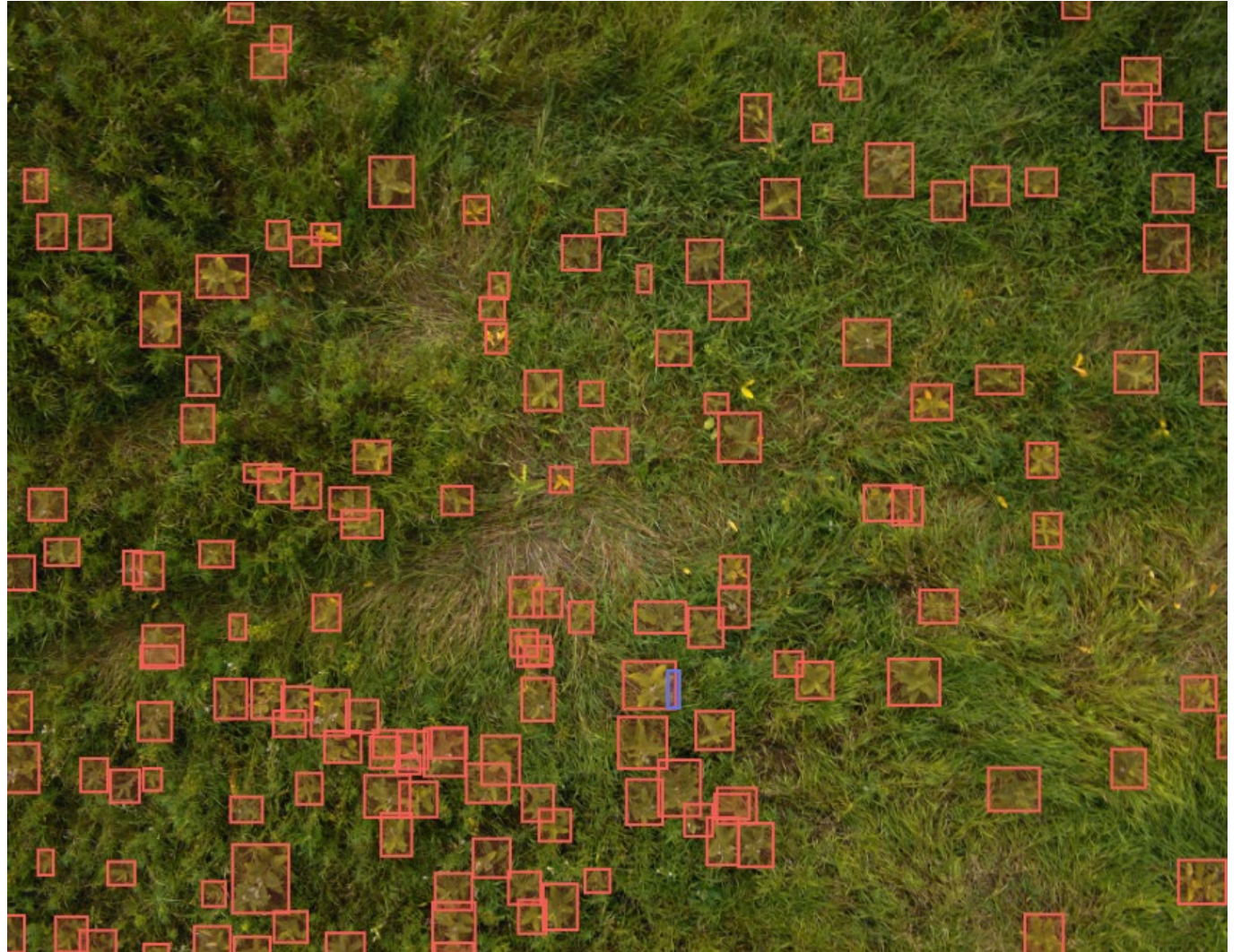

MJV CONSERVATION REMOTE SENSING PROGRAM

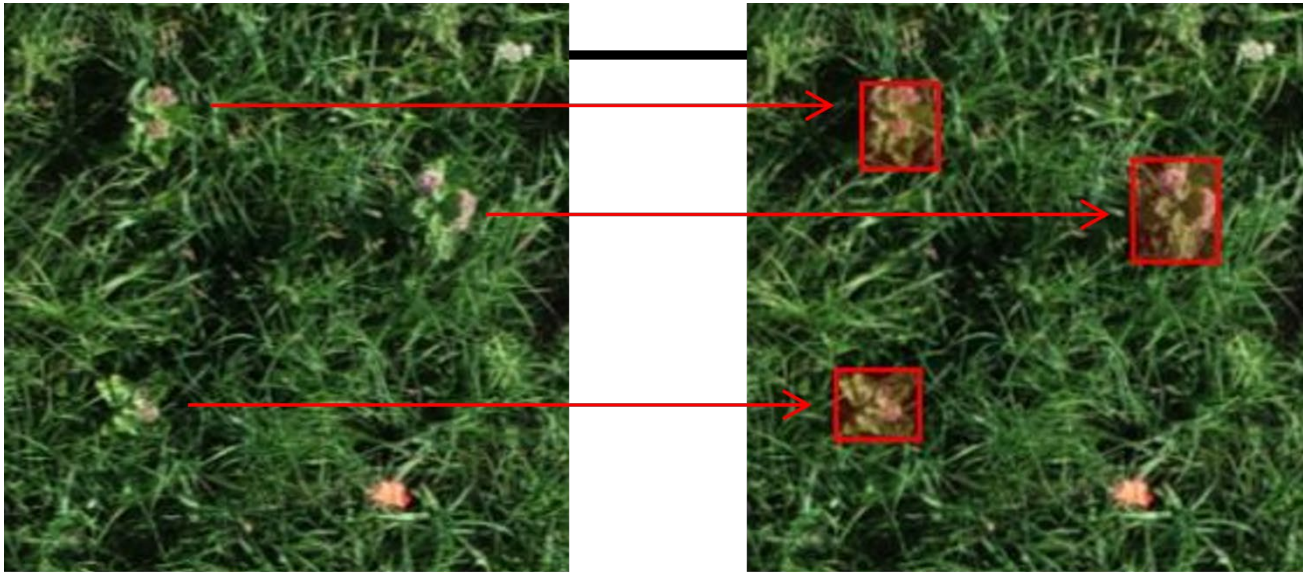




REMOTE SENSING TERMS

- Artificial Intelligence
- Computer Vision
- Machine Learning
 - Train
 - Evaluate
 - Correct Errors
 - Retrain
 - Confirm





PERFORMANCE AND OUTPUTS

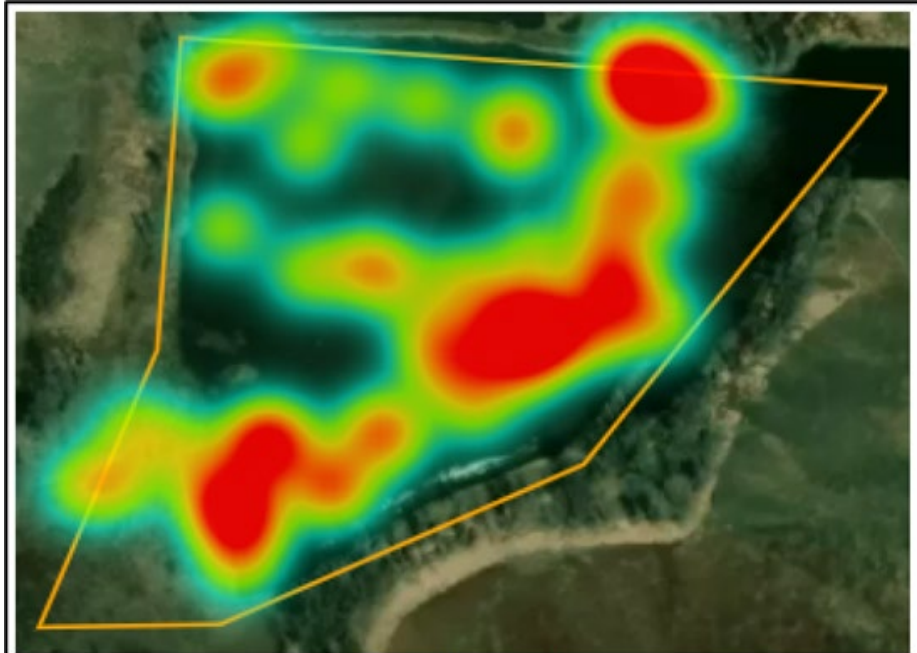


Figure 3. Heatmap of milkweed stem density in the flight plan as determined by the common milkweed analytic v1.

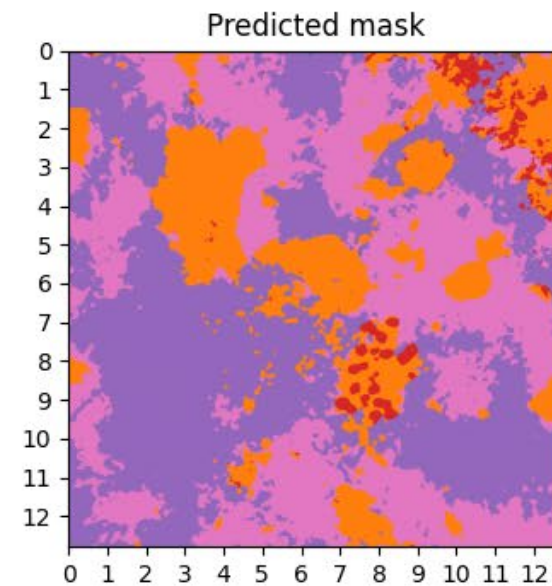
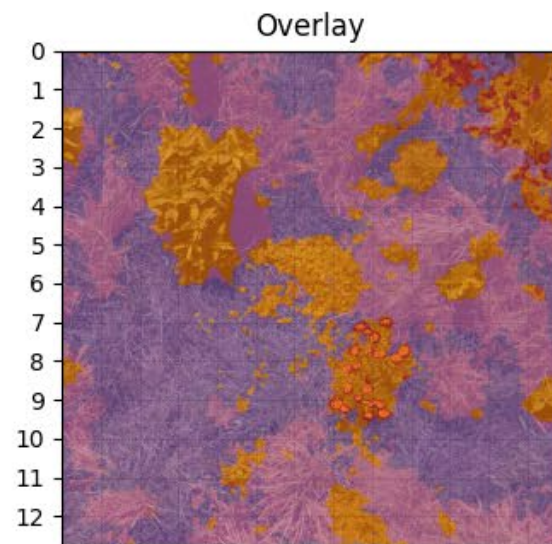
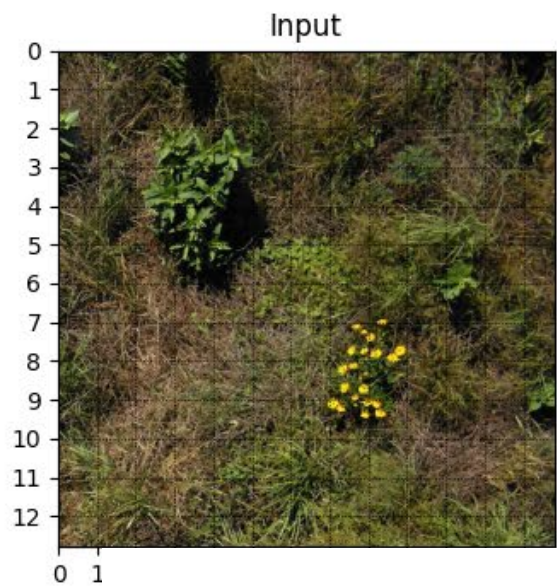
- Milkweed Model:

- 80% + Recall
- 93% Precision
- ~1/10 acre/image
- 2 min/acre survey time
- 30-100ft flight altitude

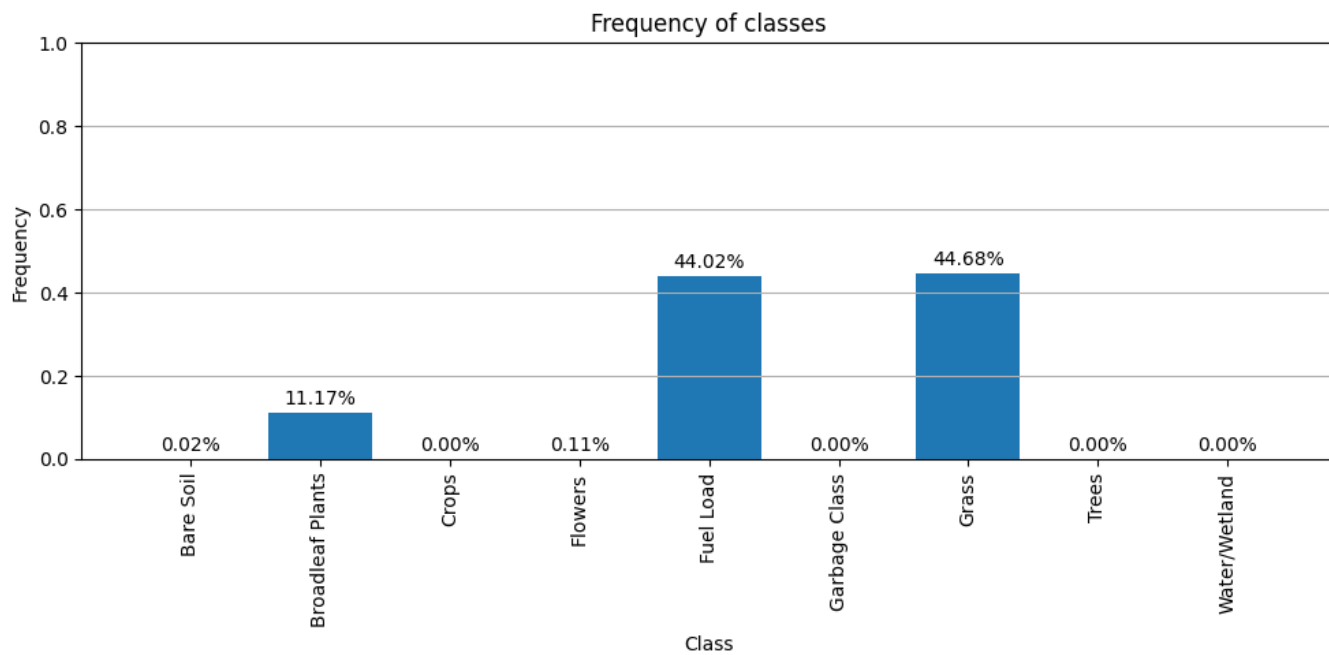


- Floral Resource Model (in development) - multiple categories
- Site reports

Segmentation of '097_00023_northarrowwood_img0020770277_tr'



- Bare Soil
- Broadleaf Plants
- Crops
- Flowers
- Fuel Load
- Garbage Class
- Grass
- Trees
- Water/Wetland



Flight Report for Eastwood Solar Site, 5/28/2023

Project: Eastwood
Region: North core
State: Minnesota
County: Blue Earth
Produced By Monarch Joint Venture

Analytic: Common Milkweed Analytic V1
Land use: Rights-of-way (ROW)
Flight Plan Area: 60.39 acres
Photo Footprint: 4.80 acres
Percent Photo Coverage: 7.94%

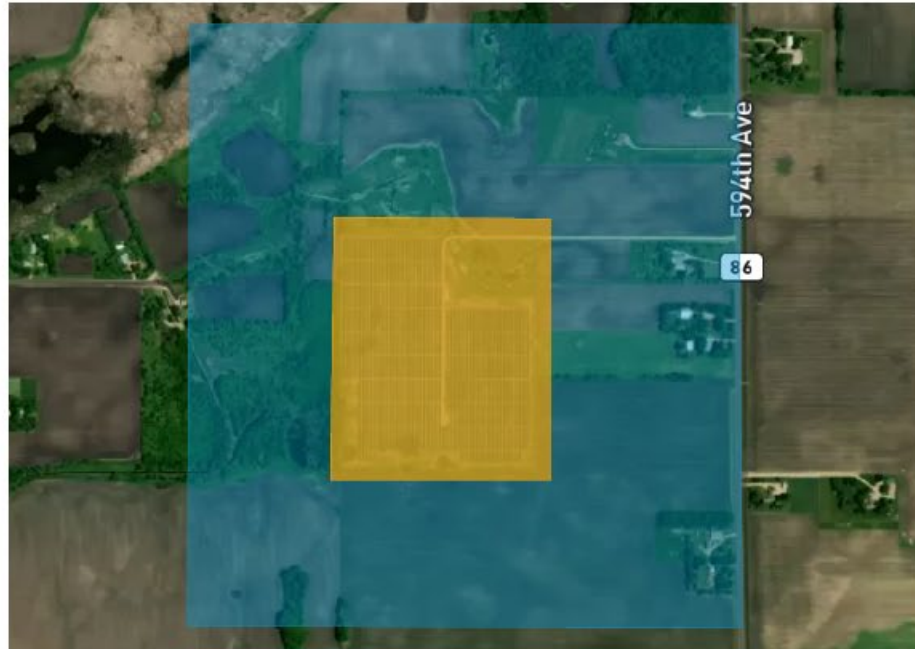


Figure 1. Overview of the project area and flight plan(s).



Figure 3. Heatmap of milkweed stem density in the flight plan as determined by the common milkweed analytic v1.

We are still learning...

- How do we maximize efficiency:
 - Affordable, compliant platforms
 - Ground Sample Distance
 - Ground coverage
 - Supplemental data
- What field situations will confuse the model (for example, vegetation height, diversity, lookalike species, milkweed density)?
- How does the remote sensing model compare to other monitoring protocols?

