Automated Milkweed Counts

Employing Remote Sensing & Machine Learning

SBA SIMPLE BUSINESS AUTOMATION
EARTH-CHANGING SOLUTIONS

How did we get here?

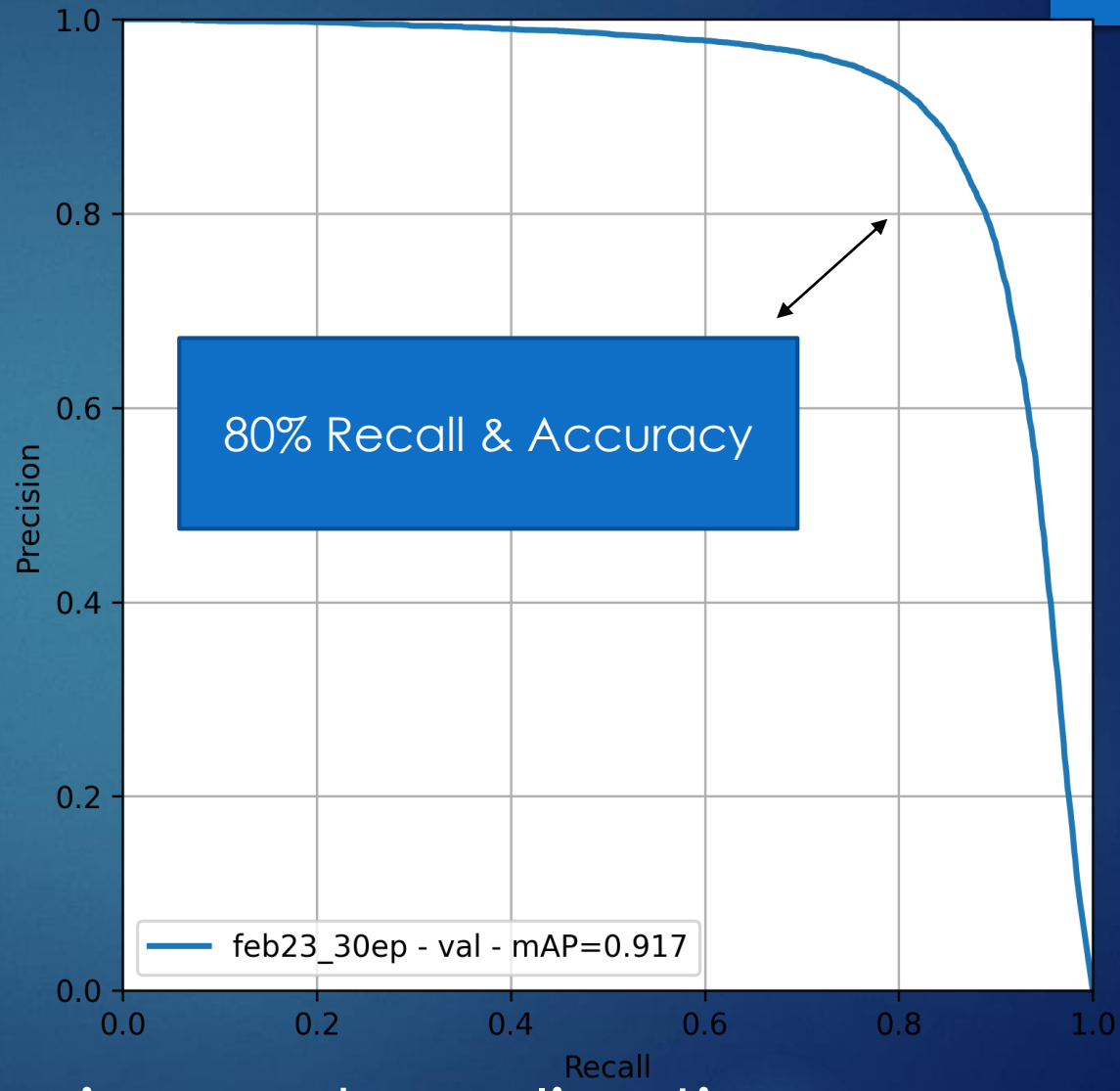
- Wendy described the need.
- Then, the current method.
- Idea!
- Is it possible?
- Can we make it better?
- How can we reduce costs?
- Can it be automated?
- What are the results?

How it works

- Capture standardized imagery
- Annotate each plant
- Annotated imagery trains the AI
- Evaluate new images with the trained algorithm
- Evaluate the inference data for accuracy.

Objective

- Known Limitations
- Humans also inaccurate
- Goal - 80% Recall & Accuracy



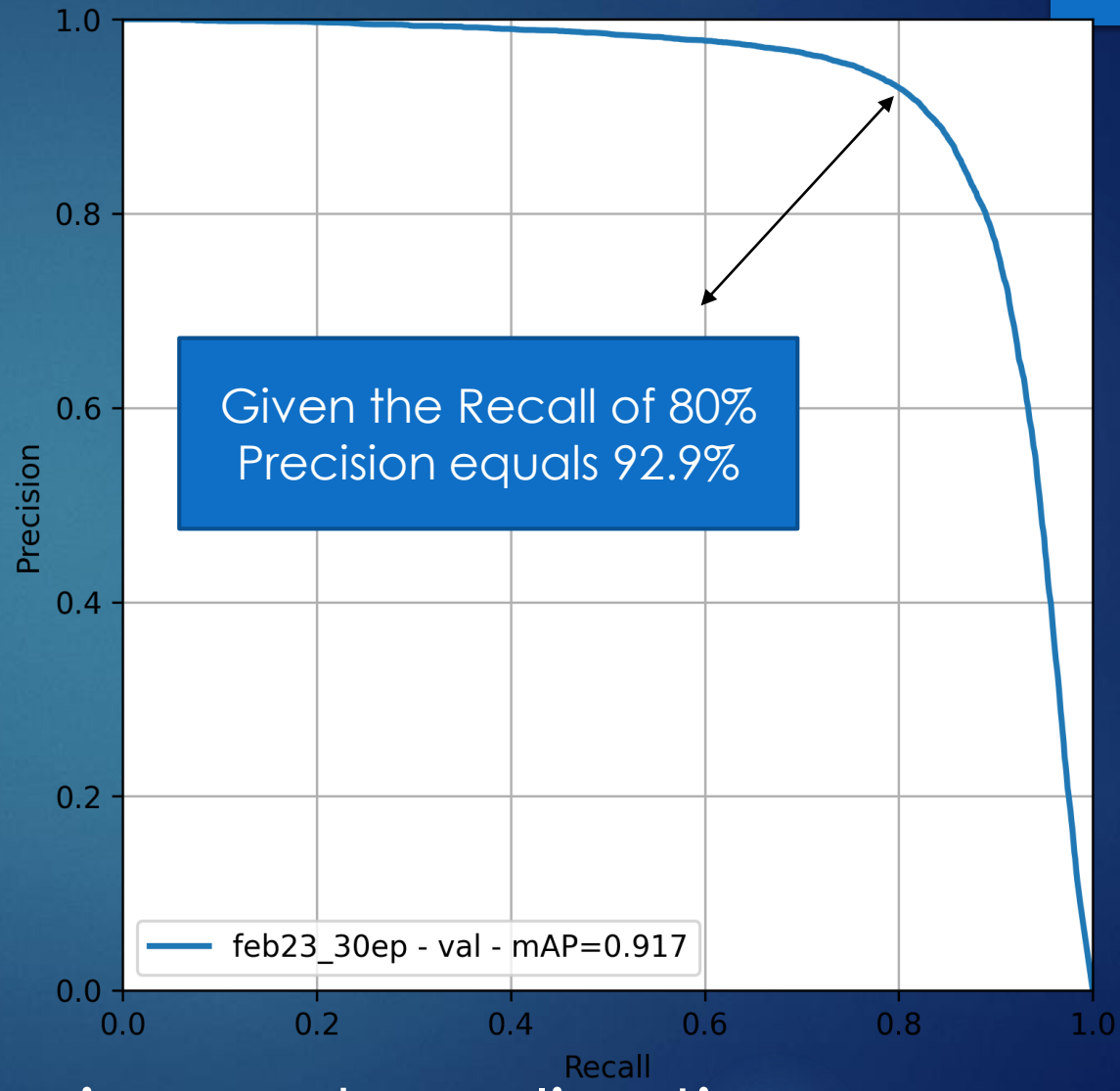
Replicate with different species and applications.

Objective

- Goal - 80% Recall & Accuracy

Result

- At 80% Recall
- Accuracy is 92.9%
- <50x more data



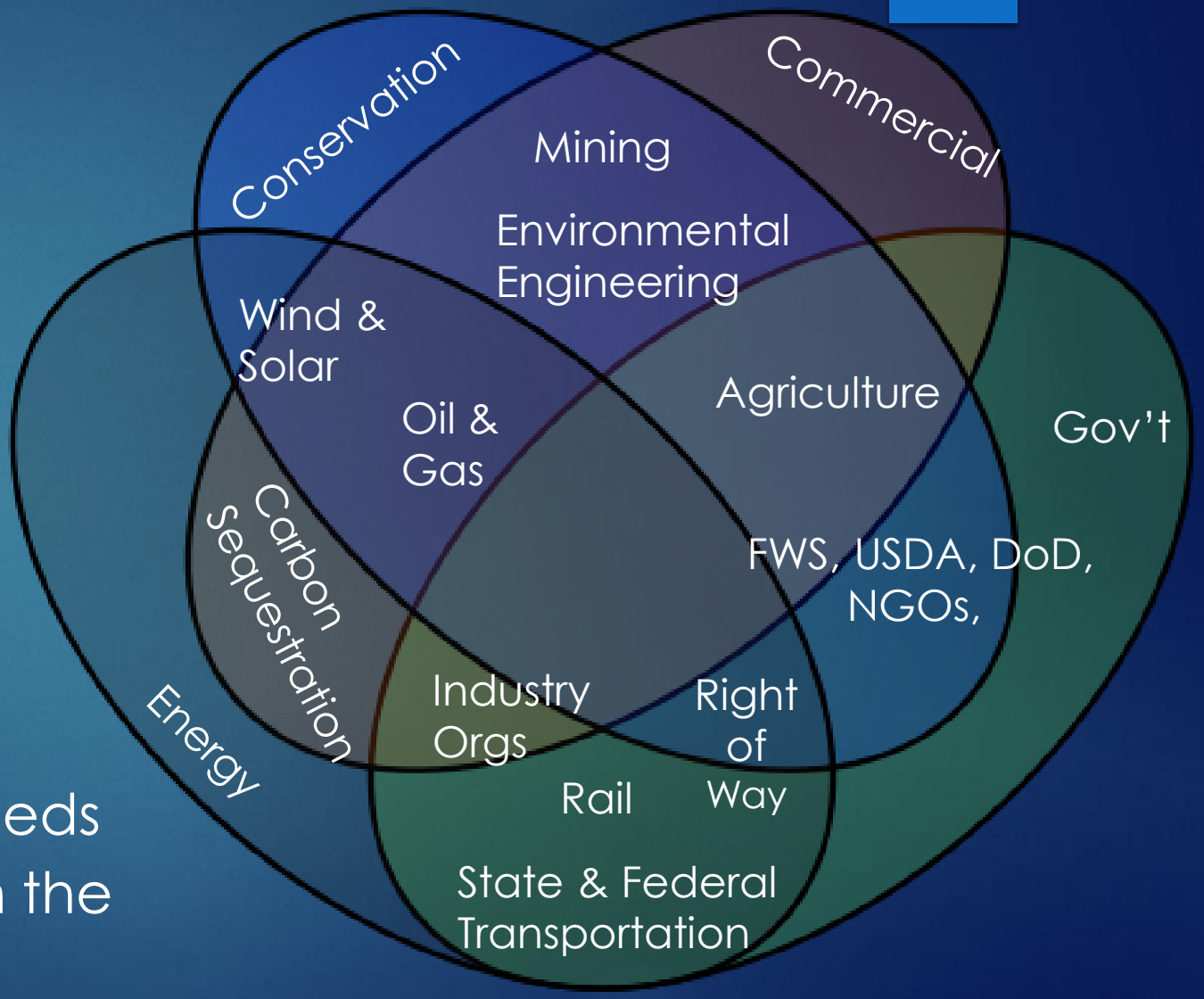
Replicate with different species and applications.

Scalable to Support Massive Data

- >50x Productivity Increase
- Data collection
  - Automated Flight App
  - Manual Input
  - Fulfill Federal Requirements
  - Fulfill Specific Use Cases – ROWs, roadsides, field edges, Solar…
- Data Tool
  - Machine Learning, Storage, & Evaluation
    - Process 100 images per second
    - Organization
    - Standardization
    - Data Visualization
  - Data Transfer – APIs
  - Reporting

GIS Tool with AI Capabilities

- Same Data – Different Uses
- Multiple Plant Species
- Same Images – Multiple Algorithms
- Similar needs across sectors
- Aggregation by industry or species
- Shareable & Exportable
- Federally compliant UAS solution
- Self-help annotation pipeline
- Bring your own algorithm
- APIs capable of supporting your needs
- Phase 2 - Manual data recording in the field



Thank You

Greg Emerick-
Phone: 763-381-1359
Email: GDE@SimpleBusinessAutomation.com