



**FRONTIER**  
How You Measure Matters  
**PRECISION+**



# MOSQUITO & VECTOR CONTROL

mesa

JUNIPER

FieldSeeker GIS for Mosquito Control

quantum flight arms

esri Partner Network Gold

AUTEL ROBOTICS

dji AGRICULTURE ENTERPRISE

Trimble Authorized Distribution Partner

PRODUCTS | TRAINING | REPAIR | RENTALS

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# Using UAS with FieldSeeker GIS Software and ArcGIS Online



**Chad Minter**  
GIS Software Solutions Manager

**FieldSeeker<sup>®</sup> GIS**  
for Mosquito Control 

Larviciding | Adulthooding | Surveillance | Service Request  
Public Notification App | UAS Sales & Services | GIS Professional Services

[www.frontierprecision.com/mosquito](http://www.frontierprecision.com/mosquito)



# Agenda

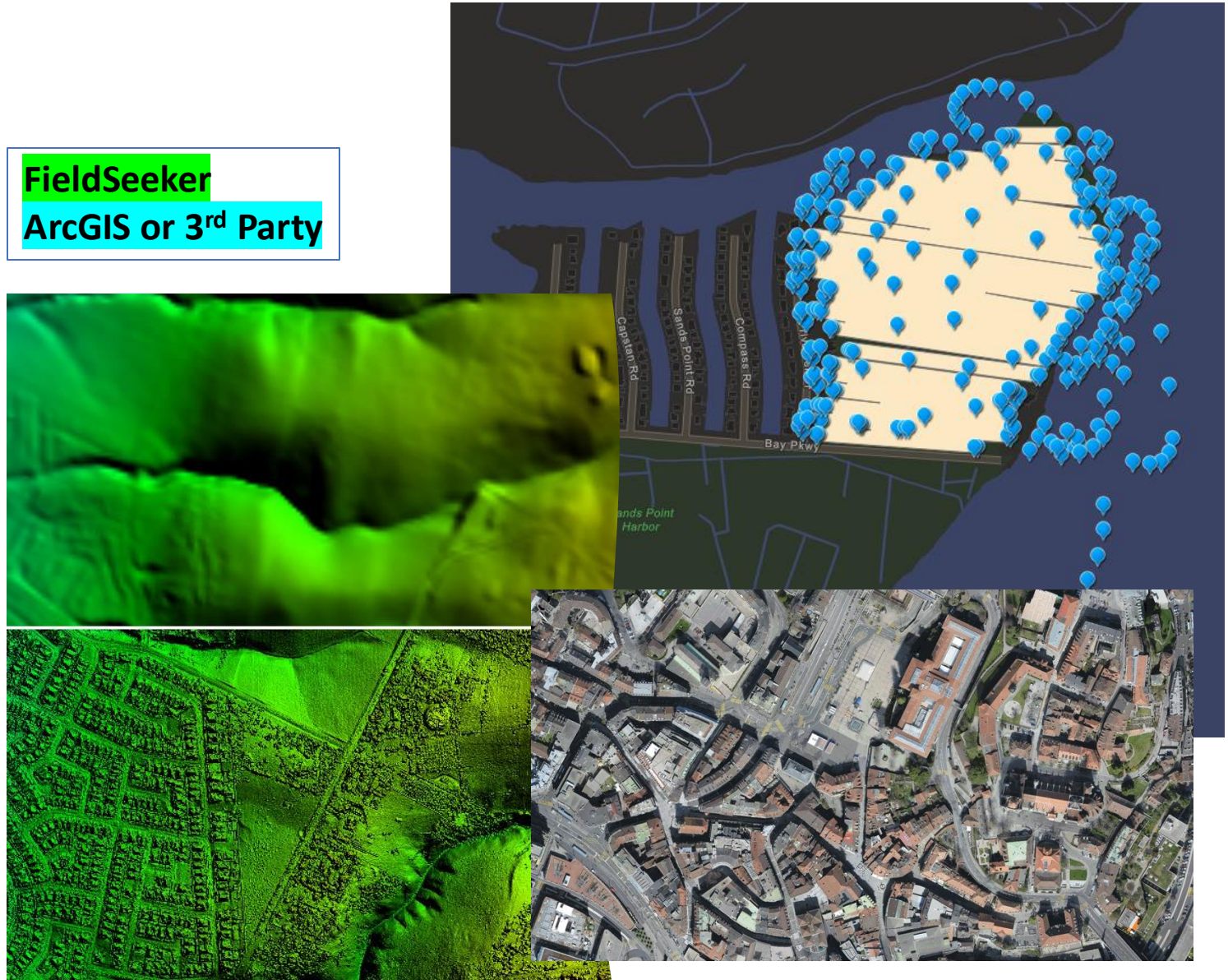
- UAS Scenarios
  - Automated Treatments
  - Mapping
  - Inspection
- Integration with ArcGIS Online and FieldSeeker
- Frontier Portfolio



# UAS Scenarios

- **Application Drones\***
  - Planned Treatment Areas
  - Treatment Data and Map
- **Mapping**
  - Orthomosaic\*
  - Thermal, VARI, other indices
  - Feature Identification
- **Visual Inspection\***
- **Managing and Sharing deliverables\***

FieldSeeker  
ArcGIS or 3<sup>rd</sup> Party





## Treatment Drones

- Rapidly deploy in hard-to-reach areas
- Reduced labor costs and improved safety
- Automate routine treatments and surveillance
- Track treatment activities with cloud-based platforms
- Import UAS activities into FieldSeeker to use in Reporting



← Exit | Task Time: 2021/12/31-2022/01/01 | 2 Total Record(s)

Task Area	No. of Aircraft	No. of Pilots
0.35 ac	1 Aircraft	1 person

Spraying Task		
Spraying Area	Flight Duration	Total Amount Sprayed
0.35 ac	5.3 min	3.52 L

Flight Statistics

Field Management

Aircraft Management

Team Management

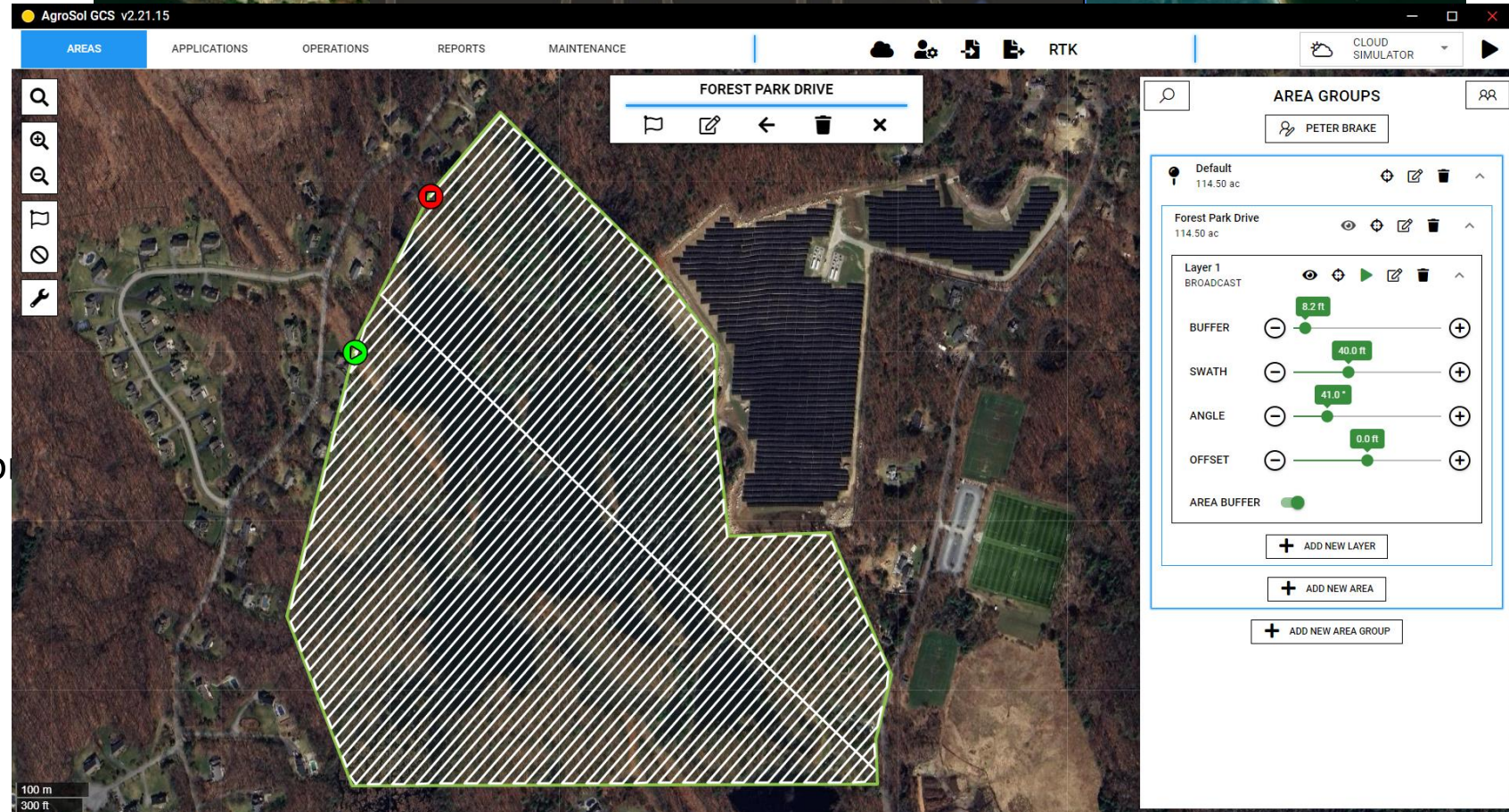
Regulatory Authority



# Automated Treatments

## - Create Proposed Treatment Area Polygons

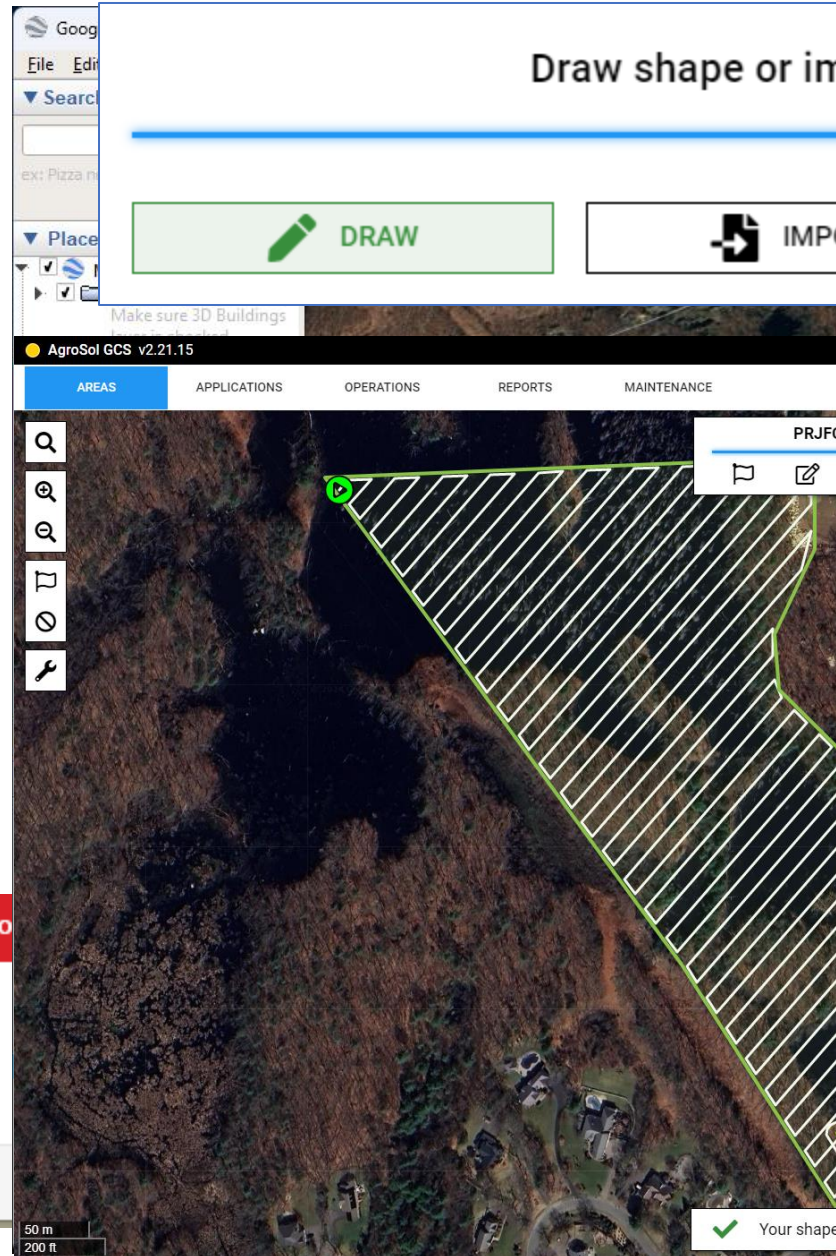
- In FieldSeeker GIS
  - Visualize along with operational data
- In office or mobile app
  - From Nearby Polygon Locations or Draw Partial Area
  - Standalone, or during Site Visit or Field Scouting
- In Flight Planning Software





# Automated Treatments

- Review and Export Proposed Treatment Areas
  - See total acres for selected areas
  - Set product and app rate
  - Edit details
  - Print for contractor or pilot
  - Export KML, SHP, or Ag .n01
  - Import into flight plan software



ProposedTreatmentArea Report

#	METHOD	COMMENT#	ZONE	NAME	ACRES	DUE DATE	PRIORITY
1	Drone	No Data	No Data	Forest Park Dr	26.22719164834869	8/2/2024 4:30 pm	No Data

# Automated Treatments

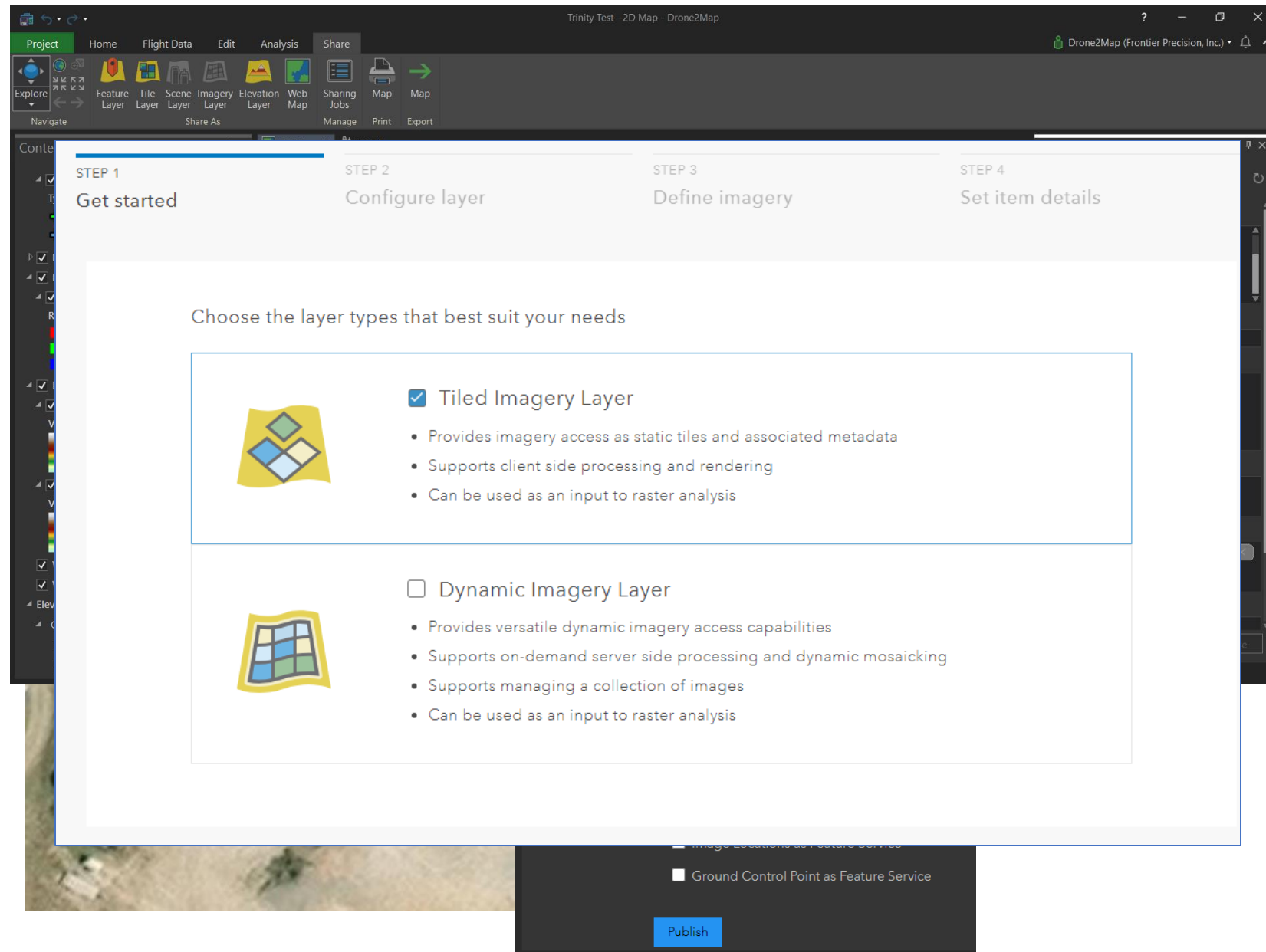
- Enter Treatment and Complete PTA
- Import Aerial Data
  - Treatment details will auto-populate for Hyllo AgroSol
  - User enters required treatment details not found in the data itself
  - Treatment record is created and available in reports
  - Aerial Spray Line polygons are created

The screenshot illustrates the 'Import Aerial Data' process in the FieldSeeker GIS application. The main interface shows a map of a coastal region with a yellow polygon and blue points representing aerial data. Two 'Import Aerial Data' dialog boxes are open, one above the other, both showing the 'Import Sortie Data' tab. The top dialog has a 'Browse...' button. The bottom dialog is a detailed form for entering treatment parameters, including fields for File Name, Status, log, secondary, Location Name, Pilot, Air Craft, Product, Product Qty, Acres Treated (with a note: 'The treated acres will be figured out as soon as you import the file'), App Rate, Swath Width, Zone, Start Date, Start Time, and End Date. A legend at the bottom left shows 'INDIVIDUAL FEATURES' with a white circle and 'SINGLE MULTI-PART FEATURE' with a blue circle. A 'Save' button is visible at the bottom right.



# Mapping

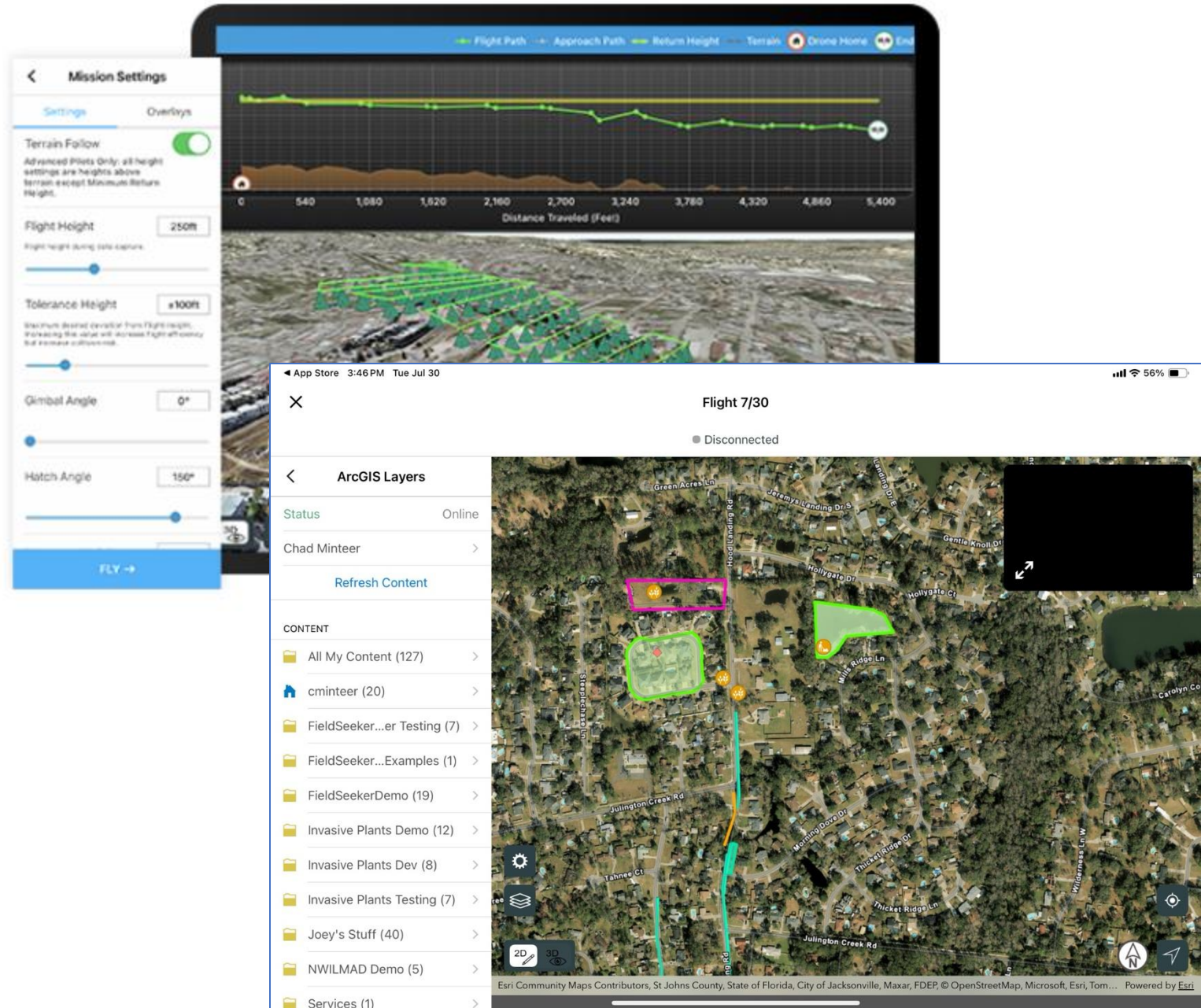
- **Orthomosaic Image - Up to Date, High Resolution (New Development, After Storm or Flood, Before and After imagery)**
  - Created by drone software (Drone2Map, SiteScan, Skydio Cloud, Pix4D, DroneDeploy, DJI Terra, etc.)
  - Available as GeoTIFF
  - Drone2Map and SiteScan can share directly to ArcGIS Online
  - Files from other sources can be added directly in ArcGIS Online and published as a hosted tile layer or dynamic image layer





# Mapping

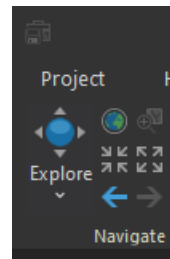
- **Esri Drone2Map** – local computer offline until published to ArcGIS Online
- **SiteScan for ArcGIS** – in separate storage cloud (unlimited) until published to ArcGIS Online
- **ArcGIS Flight** – 3D flight planning, incorporate other ArcGIS Online layers
- **ArcGIS Online Credit Usage**
  - Storage: 1.2 credits / 1GB / mt
  - Dynamic imagery: additional daily credit usage based on number of images





# Inspection — Drone2Map\*

- Inspect Drone Photos and Export a Report or Feature Service
  - Create Inspection Schema
  - Add points and polygons
  - Measure distance, area, height
  - Generate inspection report
  - Share Inspection Features as a hosted feature layer with attachments
- \* Part of Drone2Map Advanced



**Overview**

**Table Of Contents**

Name	
<a href="#">Standing water</a>	
<a href="#">swimming.pool</a>	

**Standing water**

Name	Standing water
SITECOND	Full
COMMENTS	
TIRECOUNT	
NEXTACTION	field inspection

**Snapshots**

DJI\_0647.jpg

**Share Feature Layers**

Details Properties

Layers

- Control
- Flight Data
- Inspection Features
- Measurements

Title

Catalog

- Add portal item to web catalog
- Create new web catalog

Folder

- FieldSeeker Customer Testing
- FieldSeeker Workflow Examples
- FieldSeekerDemo
- Invasive Plants Demo
- Invasive Plants Dev

Description

Tags

Drone2Map × D2M × Imagery ×

Groups

Share



# Inspection - SiteScan

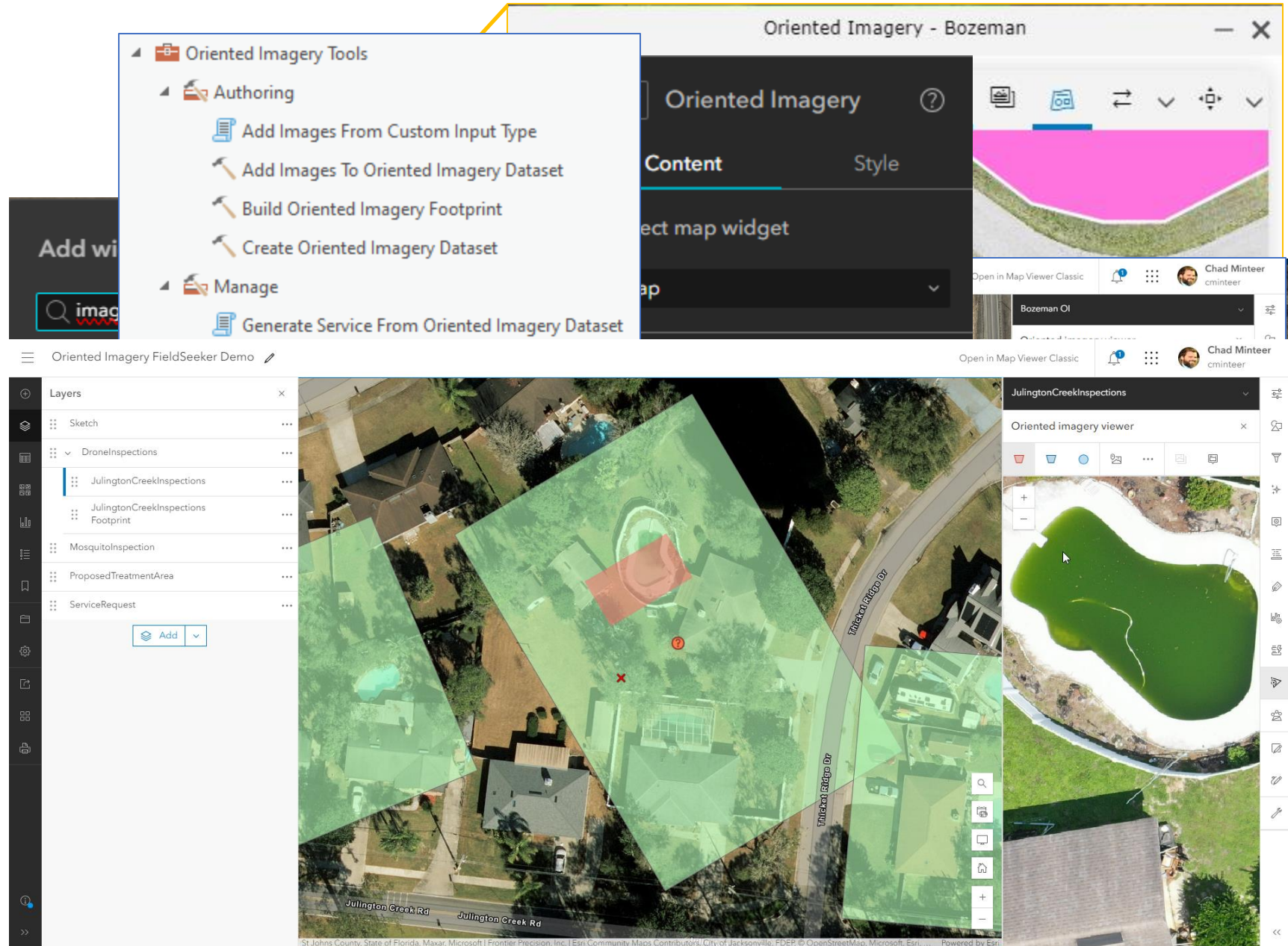
- Measure, count, sketch, inspect, export
  - Area, volume, cut and fill
  - Draw points and lines
  - Counter tool
  - Export
  - Photo inspector and download
    - Include as a feature attachment





# Oriented Imagery

- View photo footprints and orientation on map
  - Any photo from drone, phone, etc.
  - Esri QuickCapture
- View overlays
- Digitize features
- New Map Viewer
- Esri Sample Viewer App
- Experience Builder widget





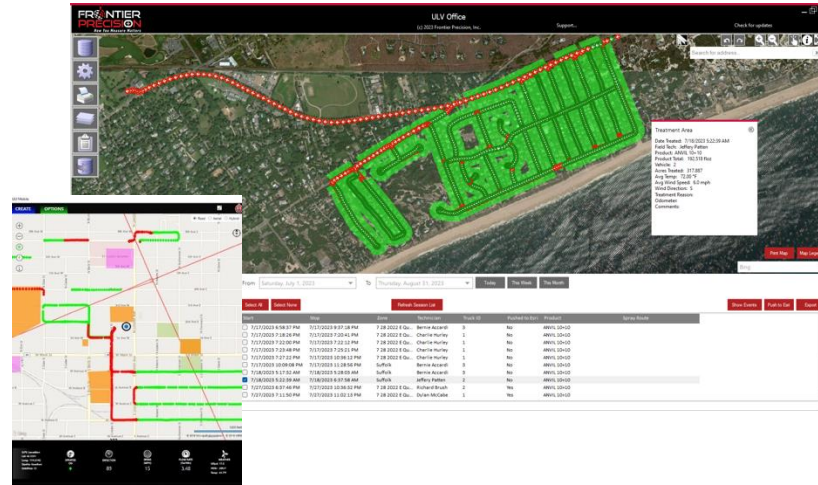
# Other Workflows

- Other 2D and 3D drone mapping products – DTMs, DEMs, and contours
- Feature identification – green pools
- Dynamic Imagery – analysis (indices such as NDVI, VARI)
- SiteScan or Drone2Map – thermal, NDVI (multispectral)
- LIDAR – DTMs, DEMs, contours



**Future Webinars and Presentations**

# FieldSeeker Portfolio

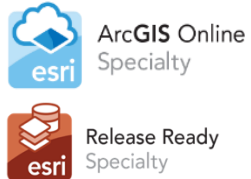


- FieldSeeker Core Software
  - Office web app (browser-based)
  - Mobile app (iOS, Android, Windows)
    - Available on app stores
  - VectorSurv Gateway Integration (optional)
- ArcGIS Online licenses
- Drone2Map licenses
- SiteScan licenses

- FieldSeeker Windows ULV
  - Office app (Windows 10/11)
  - Mobile app (Windows 10/11)
- AirMar Ultrasonic Weather Station
  - Direct integration



- Mesa 3 (7" W10)
- Mesa 4 (7" W11)
- Mesa Pro (10" W11)
- Extended Care
- Accessories

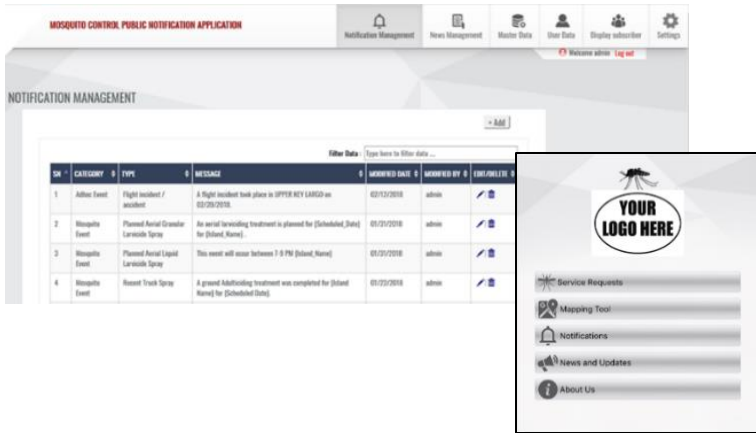


- Unlimited remote support
- Optional Onsite Training





# FieldSeeker Portfolio



**FRONTIER PRECISION**  
UNMANNED

**FieldSeeker**<sup>®</sup> GIS  
for Invasive Plant Control



- Public Notification App
  - Office management app (browser-based)
  - Branded Mobile app (iOS, Android)
    - Available on app stores
  - Integrates with FieldSeeker and ArcGIS Online

- Hylio Treatment drones
- Blue List Mapping drones (Skydio, Freefly)
- LIDAR drones
- Training, data services, after-sales support
- DJI Agras Repair

- Noxious weed management
- Aquatics and lake management
- Contracts and billing

## Weather Recording

### Truck Mounted

#### Ultrasonic Weather Sensor

- Compatibility with FieldSeeker Windows ULV mobile software
- Compact, easy installation
  - Connects USB to Mesa Tablet
- Weather parameters recorded as part of the ULV spray session:
  - Wind Speed/Direction
  - Air Temperature
  - Barometric Pressure
  - Relative Humidity



### Weather Monitoring Station

#### At the office or remote location

- Compatibility with FieldSeeker Core / ArcGIS Online
- Low power, compact, easy installation
- Use by itself or part of a large network
- Weather parameters available:
  - Wind Speed, Gust, Direction
  - Air Temperature, Relative Humidity
  - Vapor Pressure, Barometric Pressure
  - Precipitation and Lightning Strikes

Technical support included as part of the FieldSeeker annual maintenance.





## Here to Serve Mosquito & Vector Control Solutions Team



*Linda Glover  
Sales Manager*



*Chad Minter,  
GISP, UAS Pilot  
Product Manager*



*Tyler McGarrity  
Support*



*Chris McCabe  
Support  
UAS Pilot*



*Peter Brake  
Treatment Drones  
UAS Pilot*



*Skylar Brown  
Support*



*Dedicated  
Software Development Staff*



*Dedicated  
GIS Professional Services Staff*



*Dedicated  
UAV Pilots and Aircraft*



# Questions? Demos, Trials, Pricing

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**FieldSeeker<sup>®</sup> GIS**  
for Mosquito Control 

**Larviciding | Adulticiding | Surveillance | Service Request**  
**Public Notification App | UAS Sales & Services | GIS Professional Services**

# Support, Training, Knowledge Base, Feedback

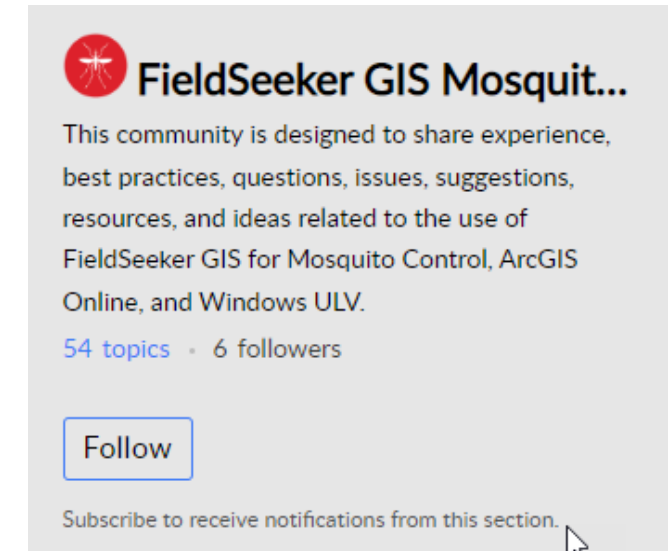
<https://support.frontierprecision.com>  
[mosquitosupport@frontierprecision.com](mailto:mosquitosupport@frontierprecision.com)



**Knowledge Base  
Training Videos**



**Feedback  
Changelog**



The screenshot shows a community page header for "FieldSeeker GIS Mosquit...". It includes a red circular icon with a white mosquito. The text describes the community's purpose: "This community is designed to share experience, best practices, questions, issues, suggestions, resources, and ideas related to the use of FieldSeeker GIS for Mosquito Control, ArcGIS Online, and Windows ULV." It also shows "54 topics · 6 followers" and a "Follow" button. At the bottom, there is a link to "Subscribe to receive notifications from this section." with a mouse cursor pointing to it.

**Follow for  
Notifications**