



YellowScan

Designed to Innovate.

## SUCCESS STORY

# Forestry Management

CLIMATE CHANGE

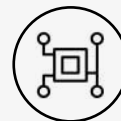
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*One of the big factors for us was access. It's really hard to go walk tens or hundreds of acres and figure out what's happening there, but with the drone and LiDAR scanner, we can map that in maybe 15 to 20 minutes and process that in just a few hours.*

Adam Zylka, UAS Team Lead, UVM-SAL



UAV USED  
DJI M300



SOLUTION  
Mapper

## Organization need.

In June of 2021, Vermont was suffering the largest gypsy moth caterpillar infestation in 30 years. They devoured the leaves on trees, causing bare patches in spots that normally would be lush and green. The University of Vermont Spatial Analysis Lab (UVM-SAL) just happened to be in the right place at the right time to document this phenomenon.

They have nearly a decade of experience using drone technology, but up until this point, only employed imaging sensors on their drones. Understanding the changes to the forest structure caused by the outbreak required active sensing, they needed to acquire a LiDAR solution and get trained quickly so they could be operational and continue tracking the rapidly evolving event..

## Solution.

The YellowScan Mapper's easy-to-use workflow and quick training that UVM-SAL received was critical to the mission's success. Frontier Precision, a member of YellowScan's Global Partner Network, arranged for an on-site training session in Vermont.

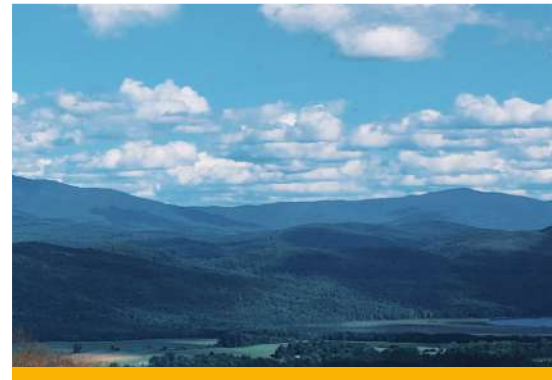


The University of Vermont

Organisation: University of Vermont,  
Spatial Analysis Lab

Website: [www.site.uvm.edu/sal/](http://www.site.uvm.edu/sal/)

Country: USA



## SUCCESS STORY

# Results

### Acquisition.

They collected data at the same location in July during peak defoliation and then again in August as the leaves recovered and now have a baseline for future studies. The captured photos and point cloud data show a profile comparison of the same area of trees at the site.

### Mission parameters.

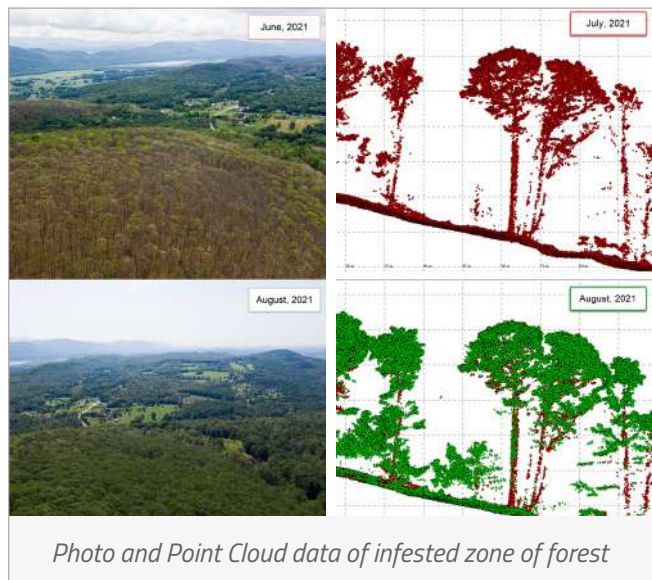
- **Flight speed:** 10m/s
- **Flight altitude:** 70m AGL
- **Trajectory correction:** PPK using CORS station operated by Vermont Agency of Transportation (VTrans)
- **LAZ point cloud:** 500+ ppm2, Approx. 45 acre (1 flight), ground points classified in YellowScan CloudStation software solution
- **DEM /DSM/nDSM:** ~ 4 cm/pixel GSD

### Benefits.

- Best cost-performance ratio
- High point density, advanced accuracy / precision
- Low-weight, turn-key and simple to operate
- Can be mounted quickly on most professional grade UAVs

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### Results.

The UVM-SAL Team now has baseline of data points to compare with in the spring of 2022 when the caterpillars will return. The data is being shared with colleagues in the US Forest Service in an effort to better understand the infestation and to determine any longer-term effects on the forest from this event.

*"We are thrilled with the experience and data that we collected with the YellowScan Mapper. The LiDAR system has given us a new tool in our arsenal to study and better understand the forests in Vermont",* stated Jarlath O'Neil-Dunne, Director of the Spatial Analysis Lab, UVM-SAL.