



Leveraging drones, remote sensing, and machine learning to solve environmental problems

Sky Wave™ couples drones and artificial intelligence to track and analyze surface changes

Are you working on a project that is running into the following challenges?

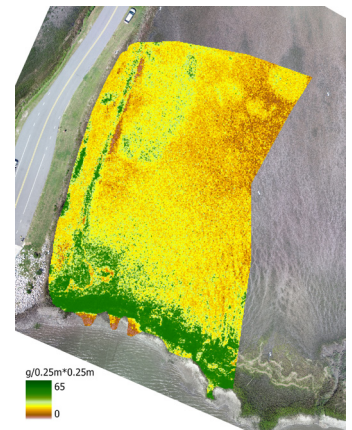
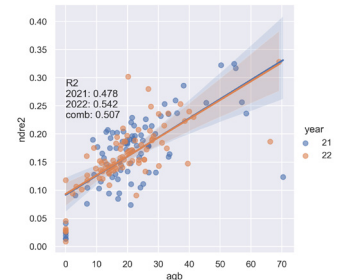
- Incomplete site knowledge
- Time-consuming and expensive data collection
- Overwhelming data volume
- Concerns over field worker safety
- Wanting data that traditional methods can not address

Sky Wave is your solution!

Our multi-discipline team can create a custom plan integrating data collection, analysis, and delivery to solve problems. We bring all the pieces—data collection, management, processing, and analysis—together in an efficient digital pipeline to support informed conclusions and decision making.

How it works: the digital pipeline

Pick a part or combination of our digital pipeline process.



Biomass represented in Sky Wave delivery products

Sky Wave is led by multi-disciplinary experts who create integrated solutions to your challenges.

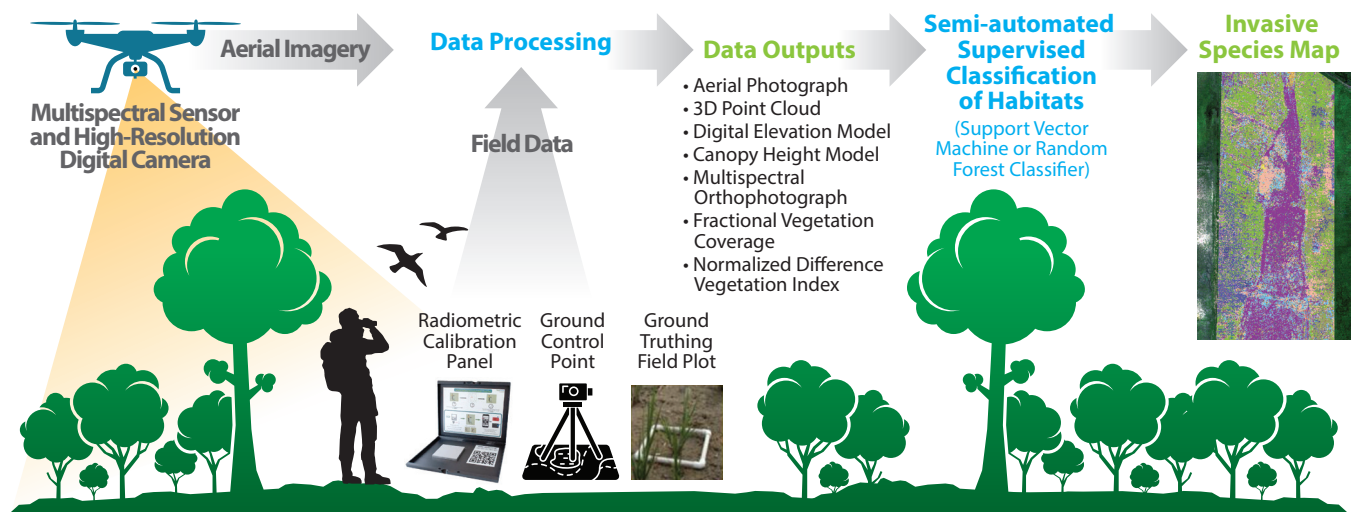
- Surveyors
- Scientists
- Remote sensing scientists
- Engineers
- FAA-certified drone pilots
- Artificial intelligence engineers
- Geologists

Mapping Invasive Species

Hillsborough County, Florida

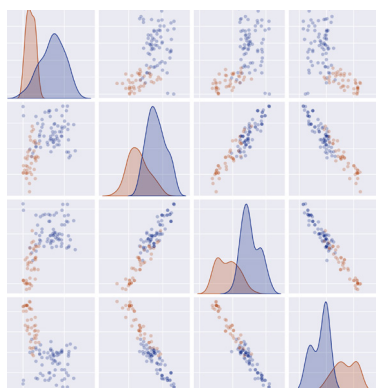
Challenge: The County needed to identify invasive species and assess native species success on restoration lands, but traditional methods were time-consuming, labor-intensive, and potentially dangerous for field staff.

Solution: The Sky Wave team mapped two 100-acre sites with 10-band multispectral sensors on drones. **They covered an area in less than an hour that would have taken field crews days to complete.** Applying machine learning, the team sorted through gigabytes of multispectral data to identify the target native and invasive species based on their unique spectral signature. The team provided the County with maps of over 30 native and invasive species. The machine learning models were over 80 percent accurate, resulting in spatially explicit data on invasive species.



Restoration Monitoring at a National Park

National Park Service, Georgia



Challenge: Tidal salt marsh restoration monitoring requires evaluating environmental parameters, including hydrology, elevation, soil, vegetative cover, and biomass. The Park Service needed to assess contractor performance and meet regulatory compliance criteria for the restoration at Fort Pulaski National Park.

Solution: The Sky Wave team captured high-resolution digital and multispectral images with drones. The team then designed a custom machine learning model incorporating the 3D site model and plant health data from multispectral sensors to estimate and track biomass across the site. **The Park Service got a holistic, spatially explicit dataset on environmental parameters that would not have been possible using traditional methods.** Annual data collection allows them to assess

site-wide changes over time. The 3D site model helped assess contractor performance and direct re-grading work to promote the growth of tidal marsh plant species while providing data for regulatory compliance.

For more information, contact:

Brendan Brown | Natural Resources Discipline Leader

BrownBV@cdmsmith.com | +1 (407) 660-6300