

Drone Use & Storm Arwen

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1. Survey windblow more safely



2. Check inaccessible areas



3. Quickly determine presence/absence.





Layers ● Add





- Overlays (0) >
- Plant Health >
- Elevation >
- Cut/Fill >

Media ● Upload

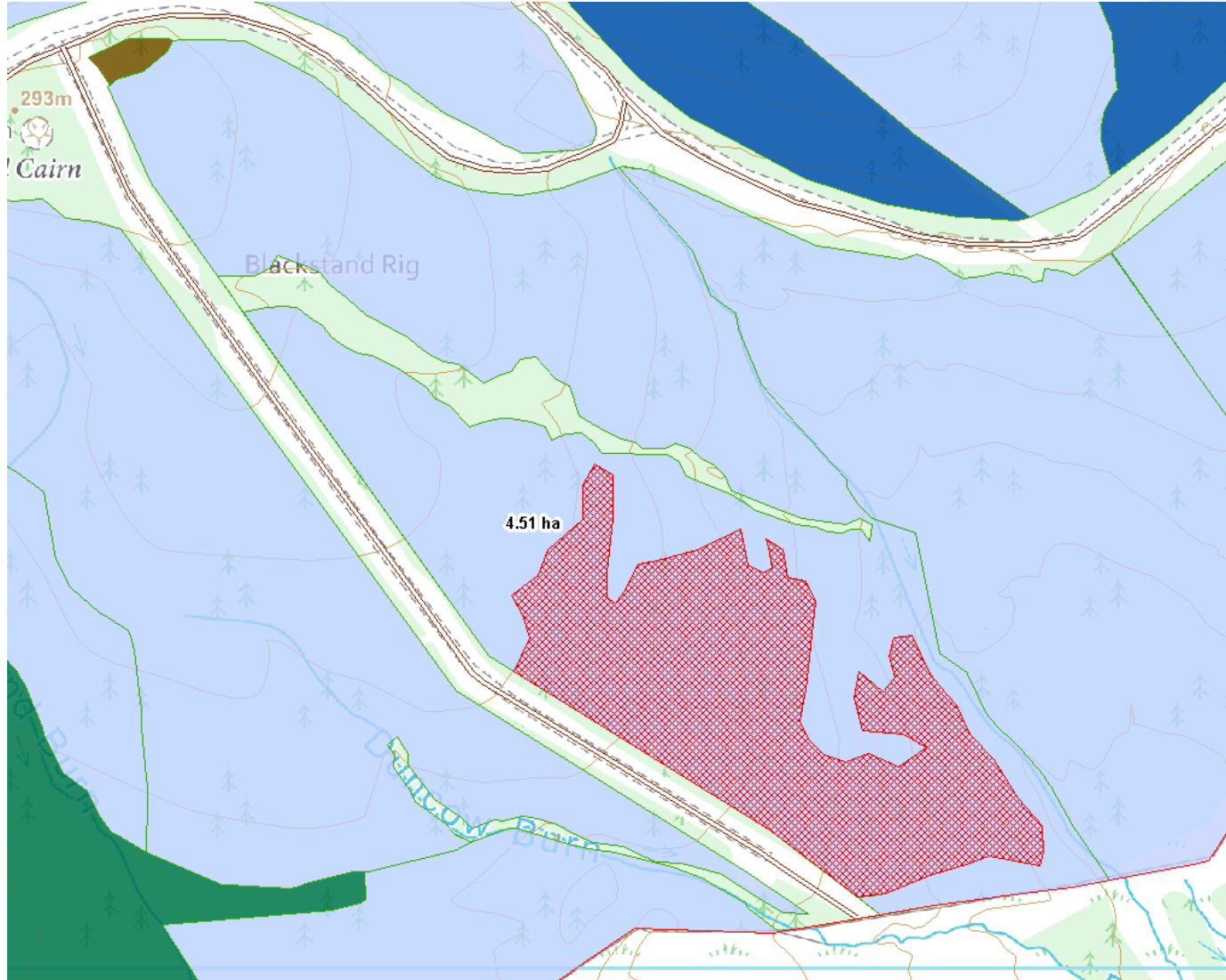
- Map Photos (145) >
- Annotations (0) >
- Issues (0) >

Map Details >

How is the map quality? 👍 👎 <

-  Agremo Plant Count & Health >
-  Leaflet Tile Layer >
-  ArcGIS Web Tile Layer >
-  Copy Annotations >





With drones we can:

- Map areas of windblow safely and precisely.
- Quickly check for presence/absence of significant blow.
- Survey areas which are otherwise inaccessible.



Other exciting applications...



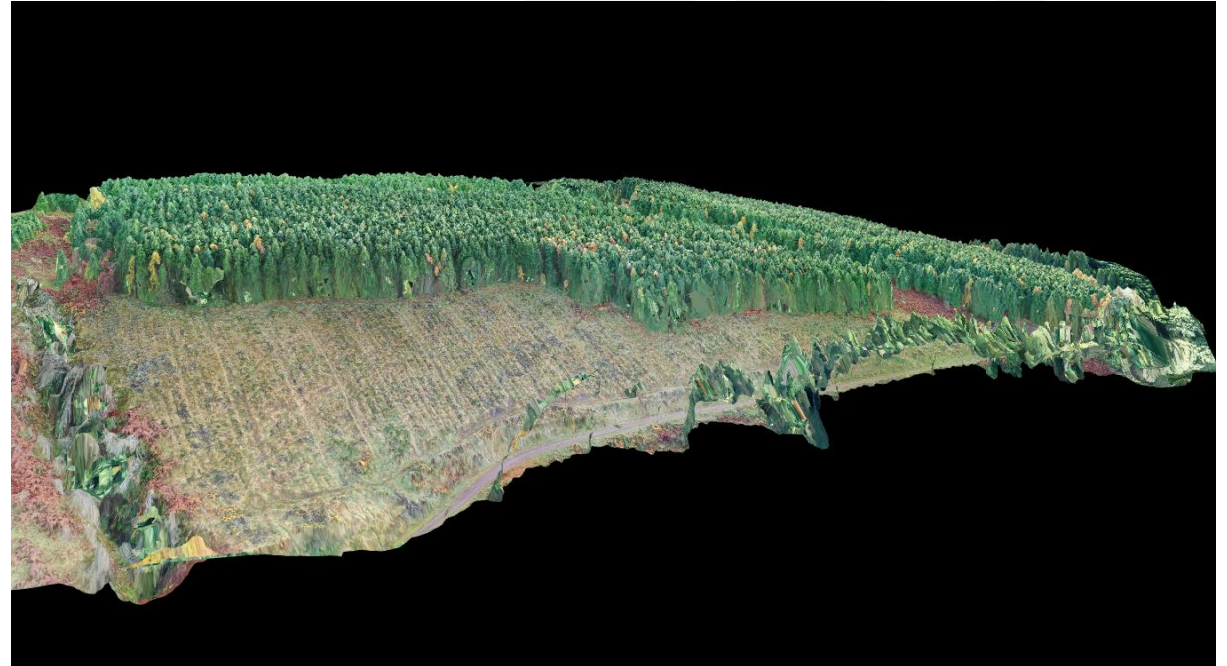


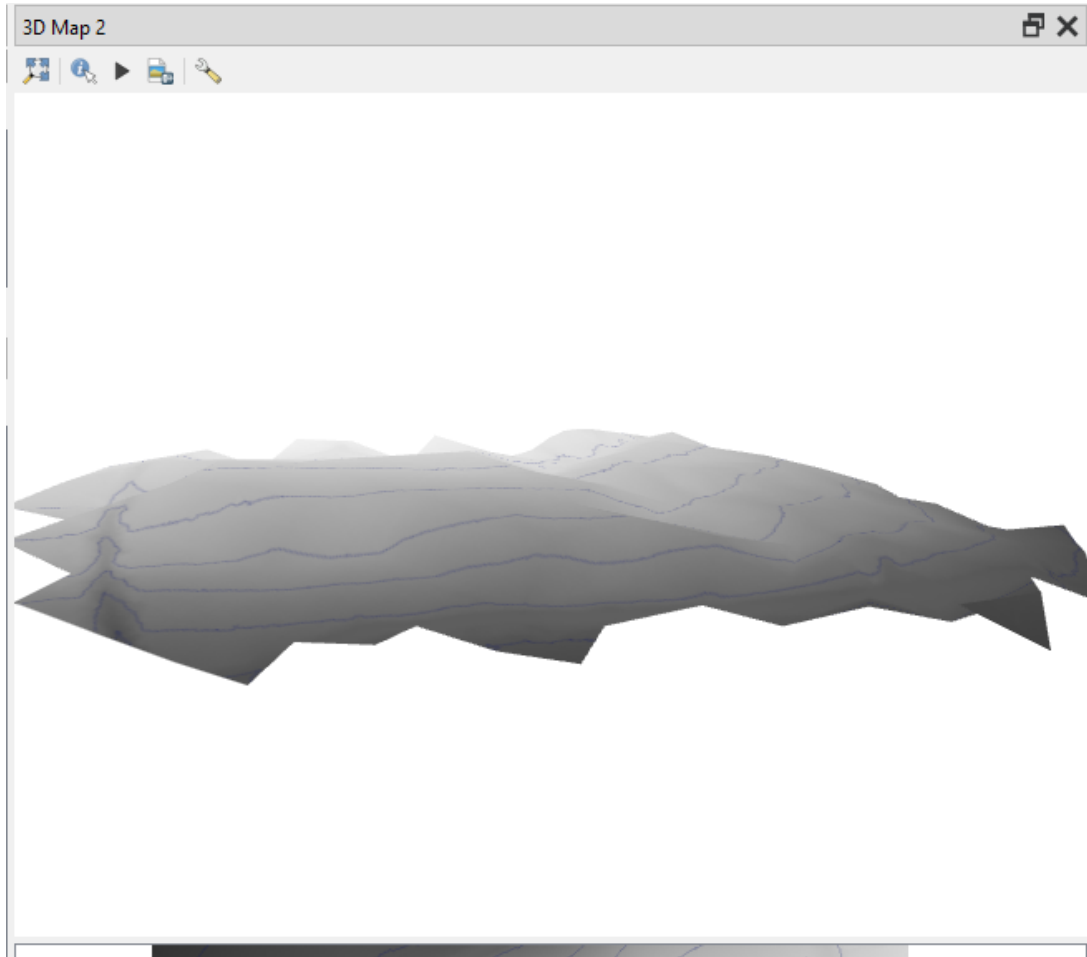
The state of drone use in UK forestry:

- We are increasingly moving towards mass adoption.
- ‘Core’ use-cases are emerging which solve legitimate practical challenges, including windblow surveys and quantification of ground prep.
- To continue to develop this technology, we need the ‘enthusiasts’ to keep identifying new applications, and the ‘sceptics’ to keep the enthusiasts feet on the ground.

Measuring top-heights in teenage Sitka spruce

- Drones allow us to quickly and cheaply generate 3D models of features which we can take measurements from.
- A limitation of this is the inability to penetrate the forest canopy with optical sensors.
- But – is there a workaround?





- Sub-canopy terrain can be extracted from existing datasets, such as a SEPA LiDAR DTM, available under an Open Government Licence.
- This 'plugs the gap' and makes mensuration with the drone possible.

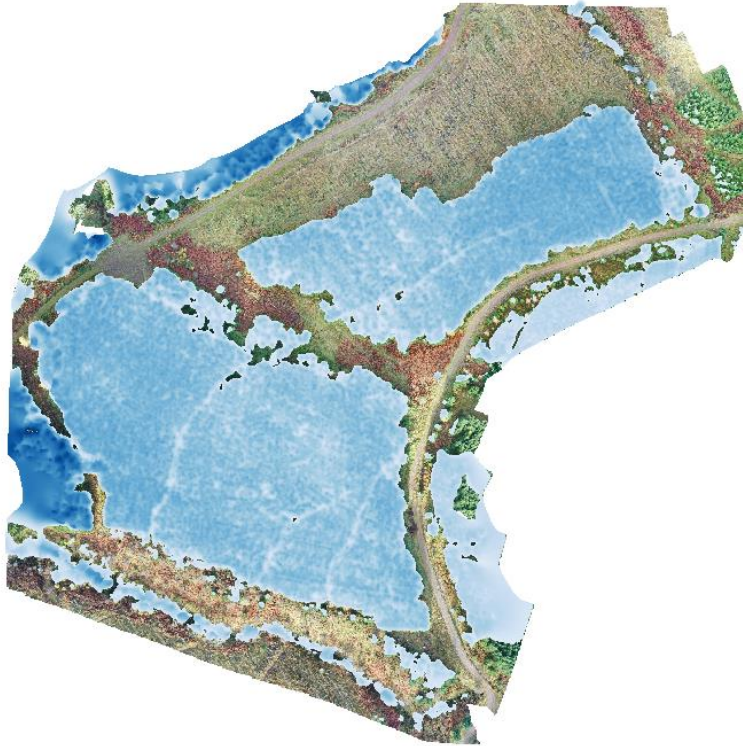
The result:

Statistic	Value
Count	9
Sum	32.602

Selected features only

Layers

- Canopy Heights
 - 5.67
 - 9.34
 - 13
 - 16.7
 - 20.3
 - 24
 - 27.4
 - 30.2
- CorrectedDSM
 - 214.857
 - 301.731
- Result
- GCP
- Orthomosaic_export_TueNov0...
- LIDAR derived DTM
 - 185.1
 - 294.595
- Drone derived DSM
 - 227.734
 - 295.884
- NX99SW_50CM_DTM_PHASE3

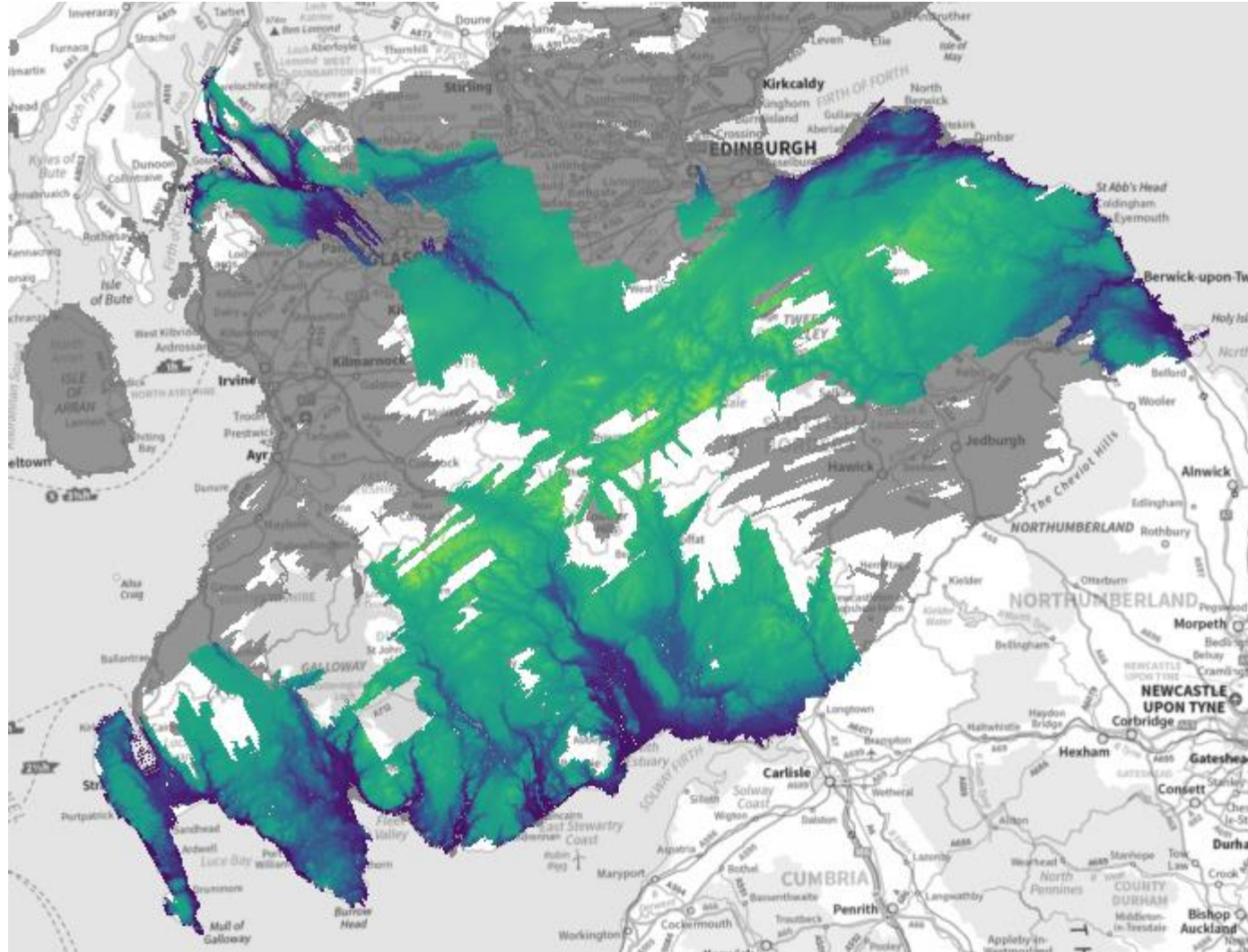
A close-up view of the blue canopy height map. The blue color is more uniform here. An 'Identify Results' window is open over the map, showing the following data:

Feature	Value
0	Canopy_Heights
Canopy_Heights	
Band 1	18.506744
(Derived)	

Mode: Current layer Auto open form

View: Tree [Help](#)

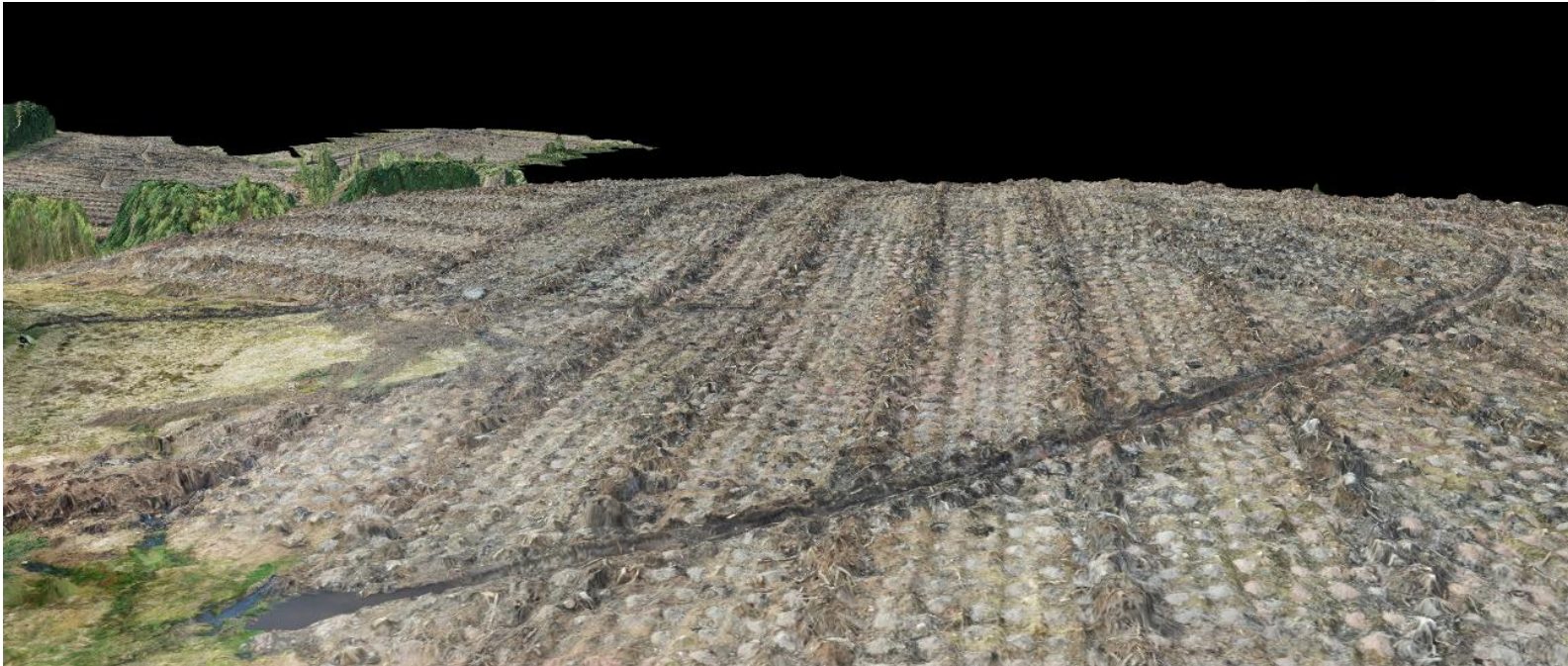
'Phase III – LiDAR Coverage'



Operational datasets for use now:



Baseline site data for use in the future:





Closing remarks

- Drones help us solve practical challenges and drive operational efficiency, but they also help us capture baseline site information – data assets that have future value.
- There is an opportunity cost associated with not capturing sub-canopy terrain data, at the one point in the rotation where there are no trees in the way!



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