



Roinn Cumarsáide, Gníomhaithe
ar son na hAeráide & Comhshaoil
Department of Communications,
Climate Action & Environment



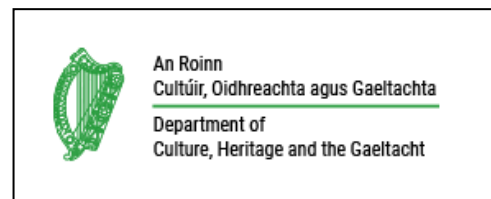
Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Revealing Secrets of the Irish Landscape: Open Topographic Data Viewer

Shane Carey

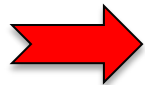
Geological Survey Ireland – Groundwater Programme

25/05/18

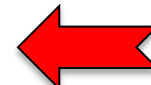


LiDAR and Collaboration

- Background: GSI and LiDAR
 - Seabed Mapping Programme; Karst feature mapping; Turlough flooding/flooded
- Collaboration in Acquisition
 - Coillte forestry resource mapping ... next to limestone areas that GSI want to map



[Open Topographic Data Viewer](#)



- DCCAE
 - Geological Survey Ireland
- DCHG
 - National Monument Service
 - National Parks and Wildlife
- Discovery Programme/ Heritage Council



LiDAR and how it works

- LiDAR (Light detection and ranging)
- 1. Laser pulse emitted
- 2. Detector records the time it takes for the pulse to bounce back.
- 3. Pulses that bounce off trees and buildings return first, followed by signals from the ground.

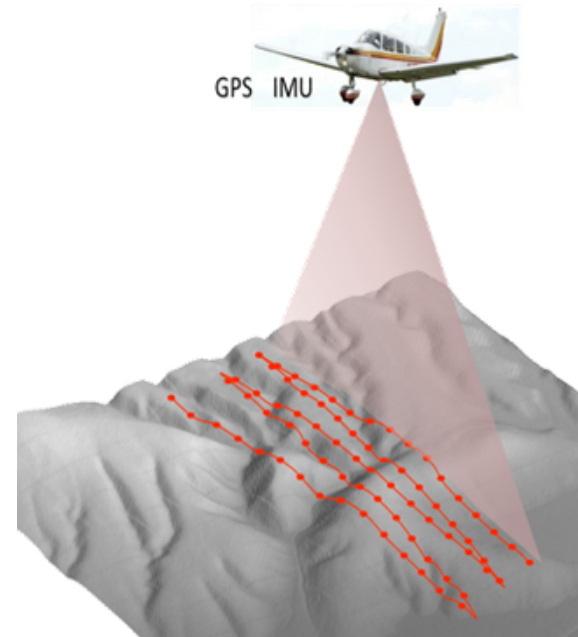
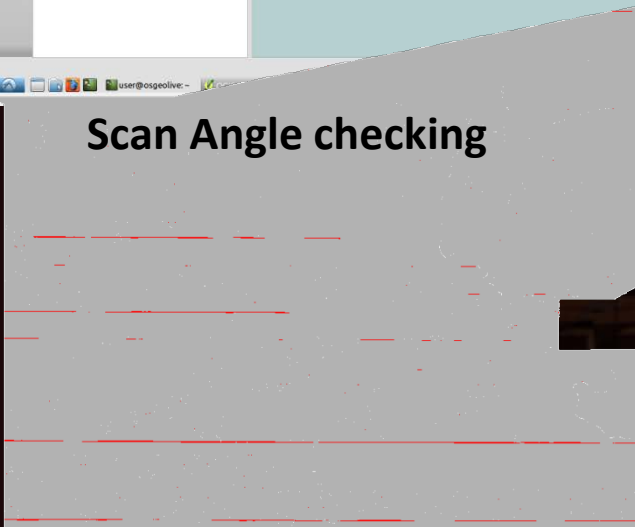
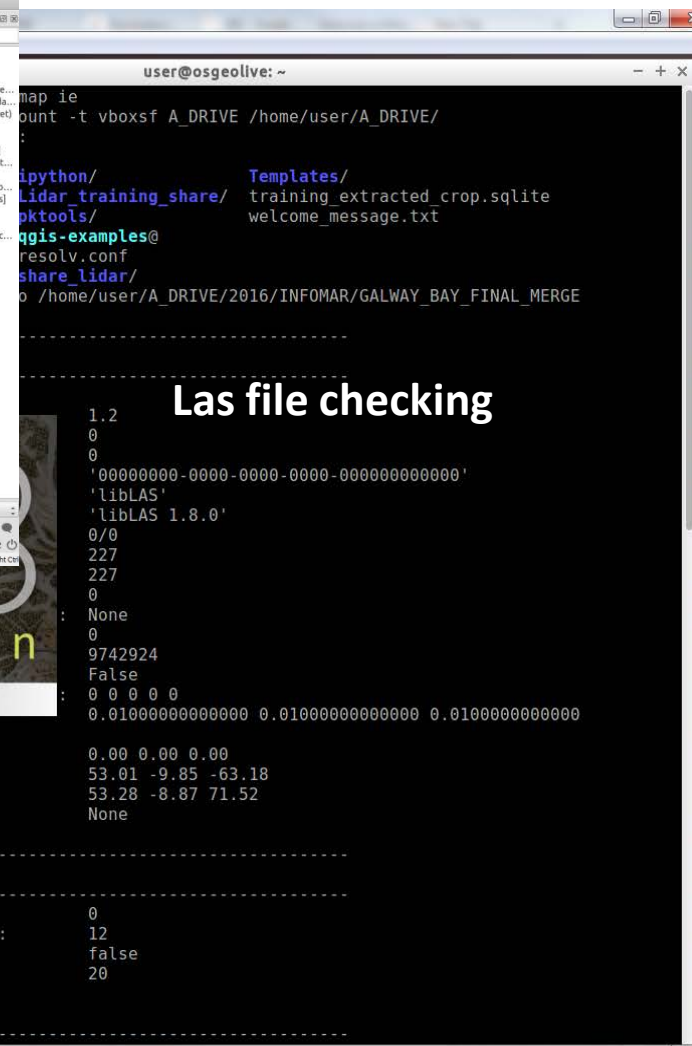


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LiDAR so far: Some stats

- Area: $\sim 1100\text{km}^2$
- Average flight height: 900m
- Data type: Las files
- Each las file $\frac{1}{2}$ GB in size
- Typical survey area:
 - ~ Over half a billion points
- Parallel processing
- All processing preformed with Open source tools

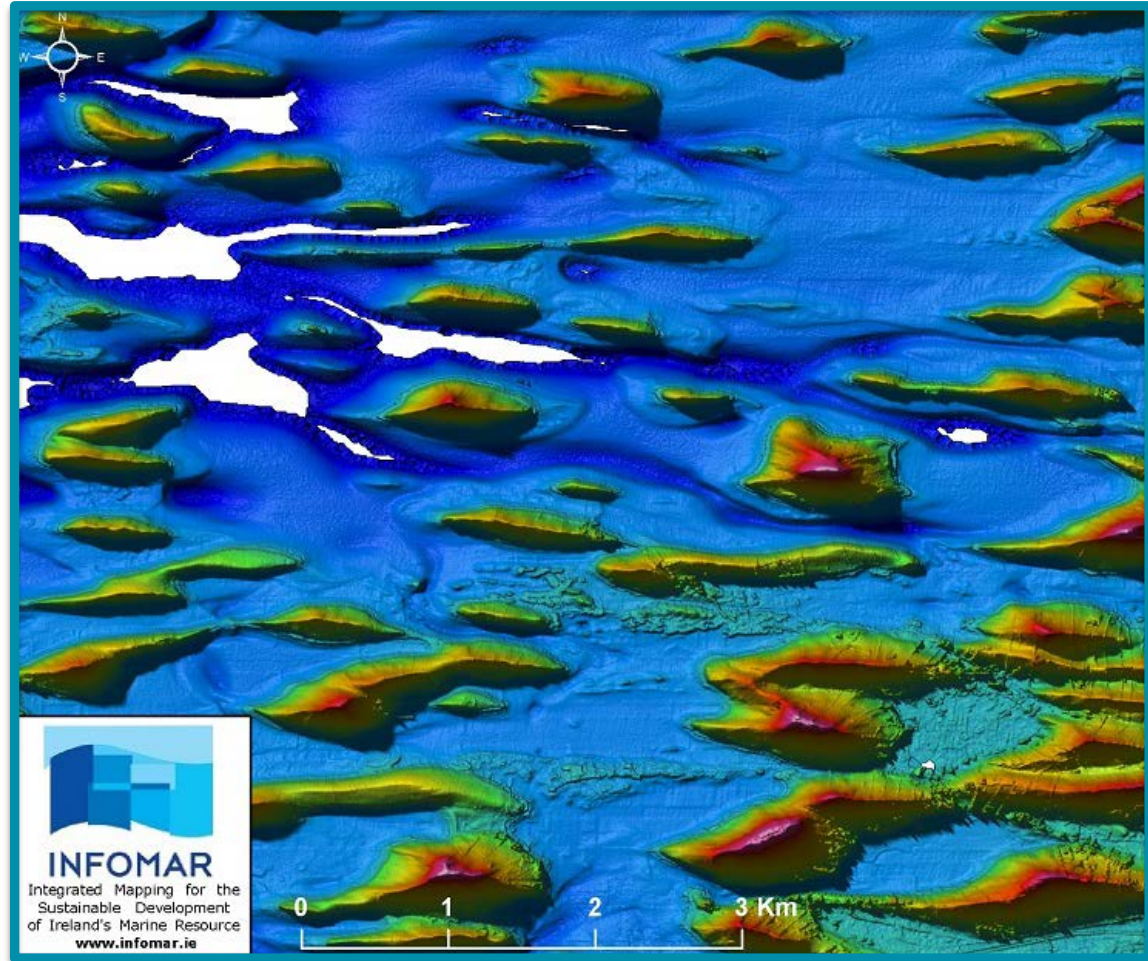


The image is a screenshot of a presentation slide. At the top, there is a taskbar with several icons: a blue circle with a white 'A', a blue square with a white 'B', a blue square with a white 'C', a green square with a white 'D', and a green square with a white 'E'. To the right of these icons is a text box that says "user@osgeolive: ~". The main content of the slide is the title "Scan Angle checking" in a large, bold, black font. The background of the slide is a light gray with a subtle, abstract pattern of red and white lines. In the bottom right corner, there is a small, dark, rectangular object that appears to be a piece of paper or a card.

A terminal window showing a shell prompt `user@osgeolive: -` and a row of application icons including a globe, a folder, a document, a web browser, and a music player.

Applications

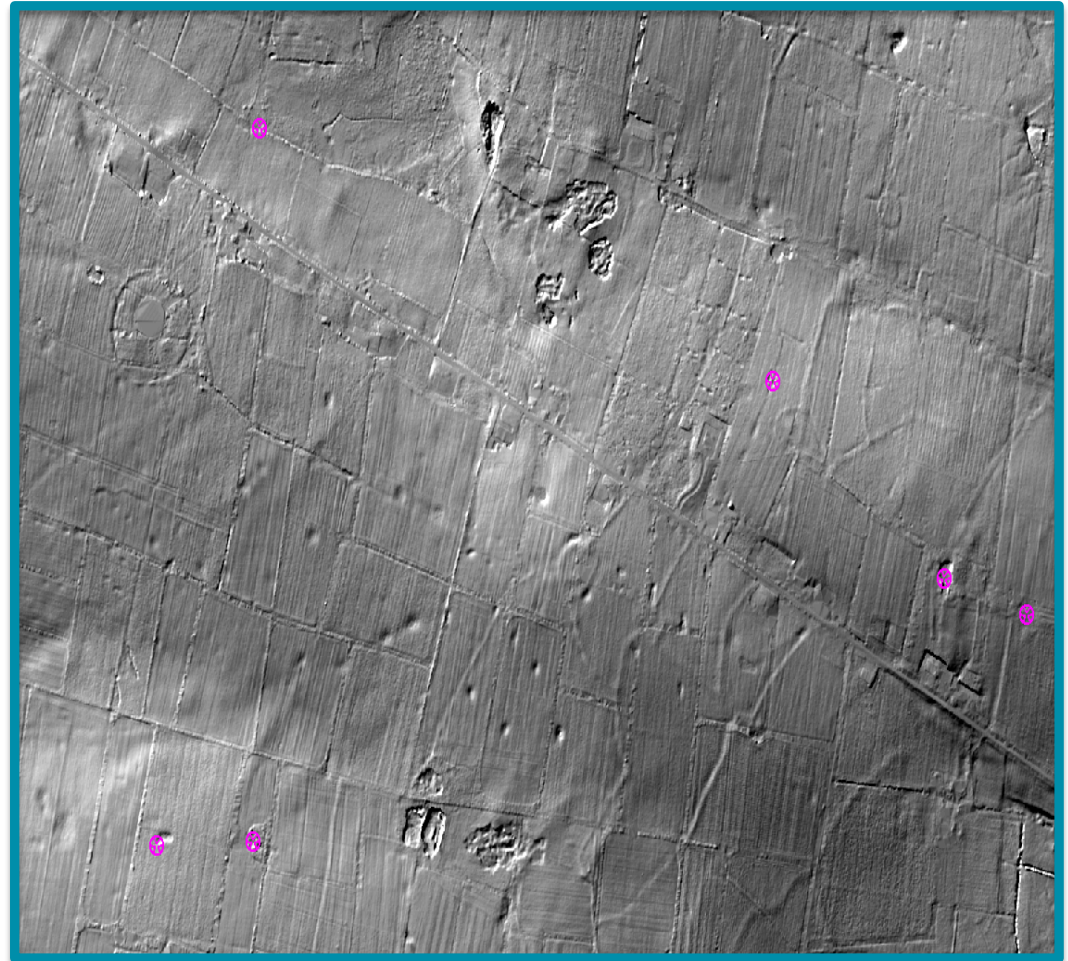
- Geology
 - Seabed mapping
 - Karst feature mapping
 - Bedrock mapping
- Flood modelling
- Forestry
- Archaeology
 - Feature extraction
- Habitat studies
 - Peatbog monitoring



Applications

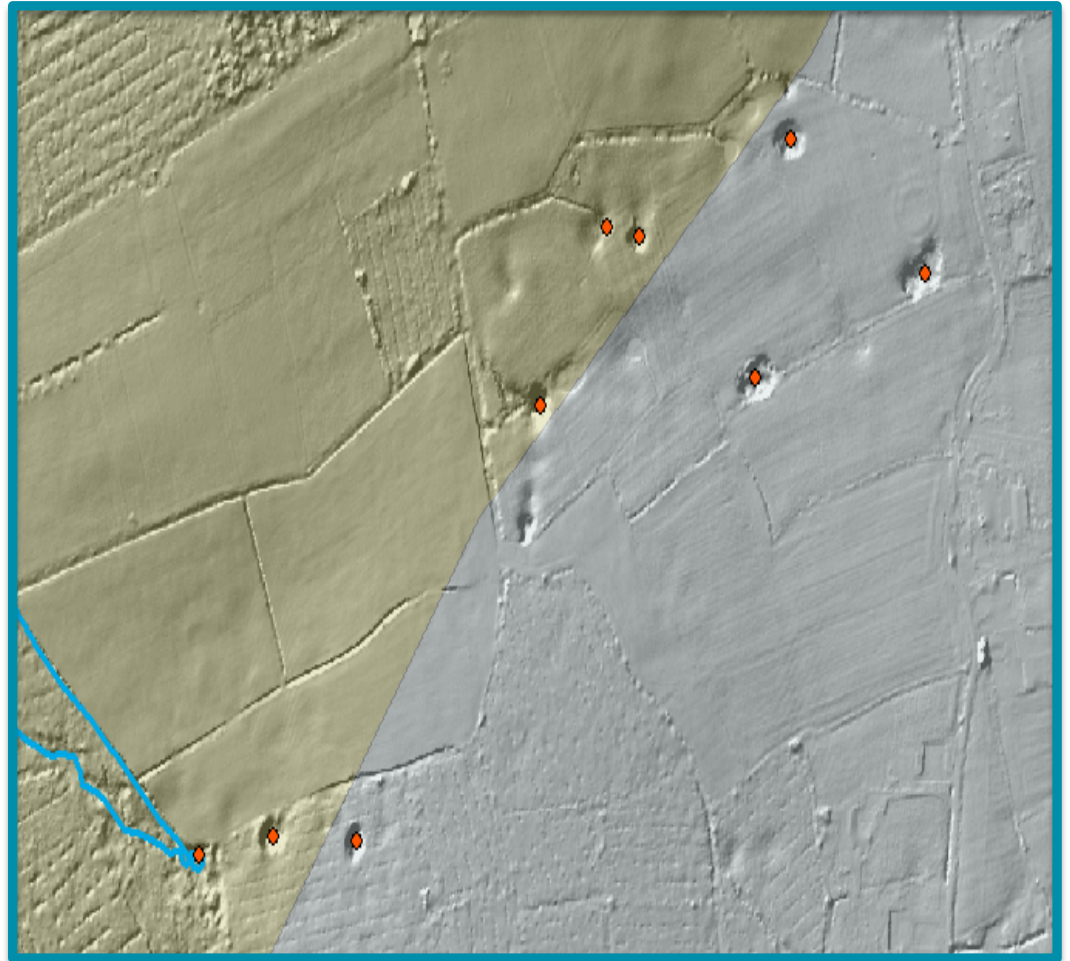


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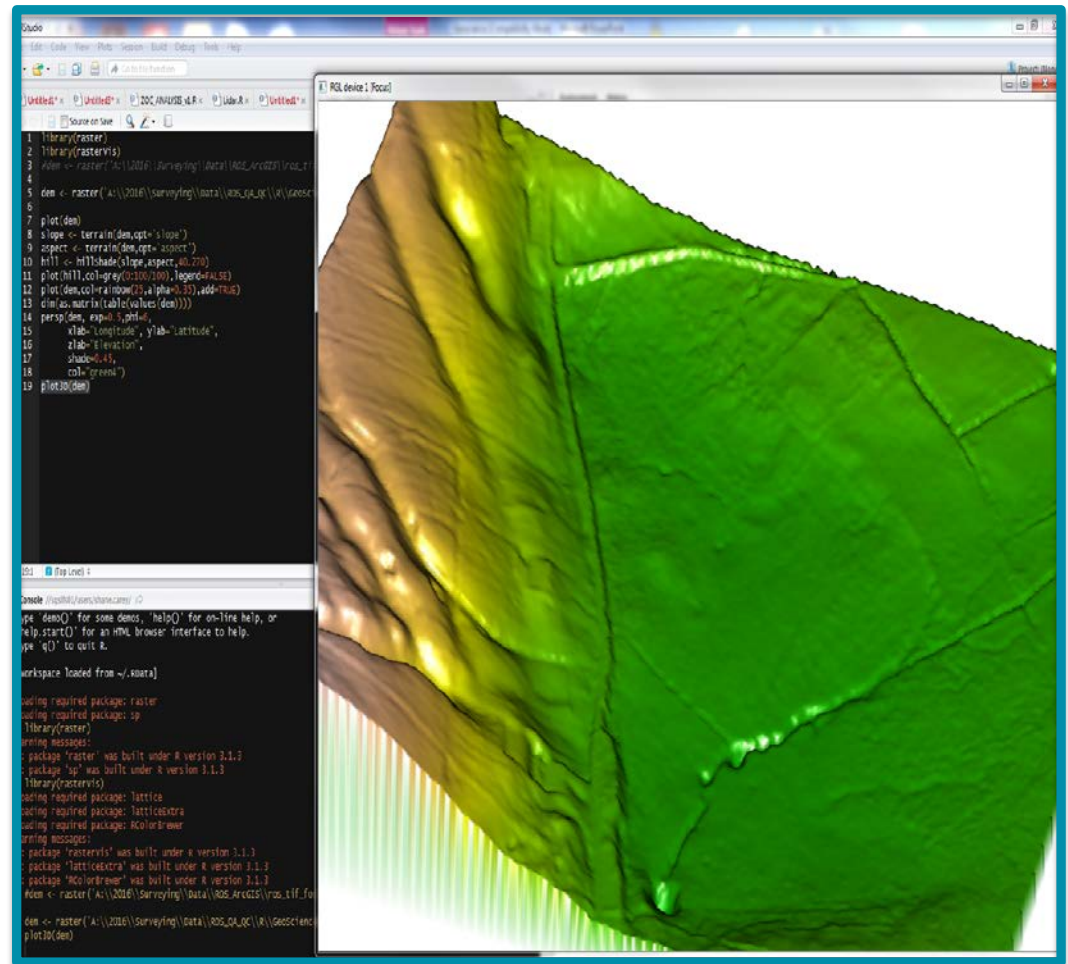
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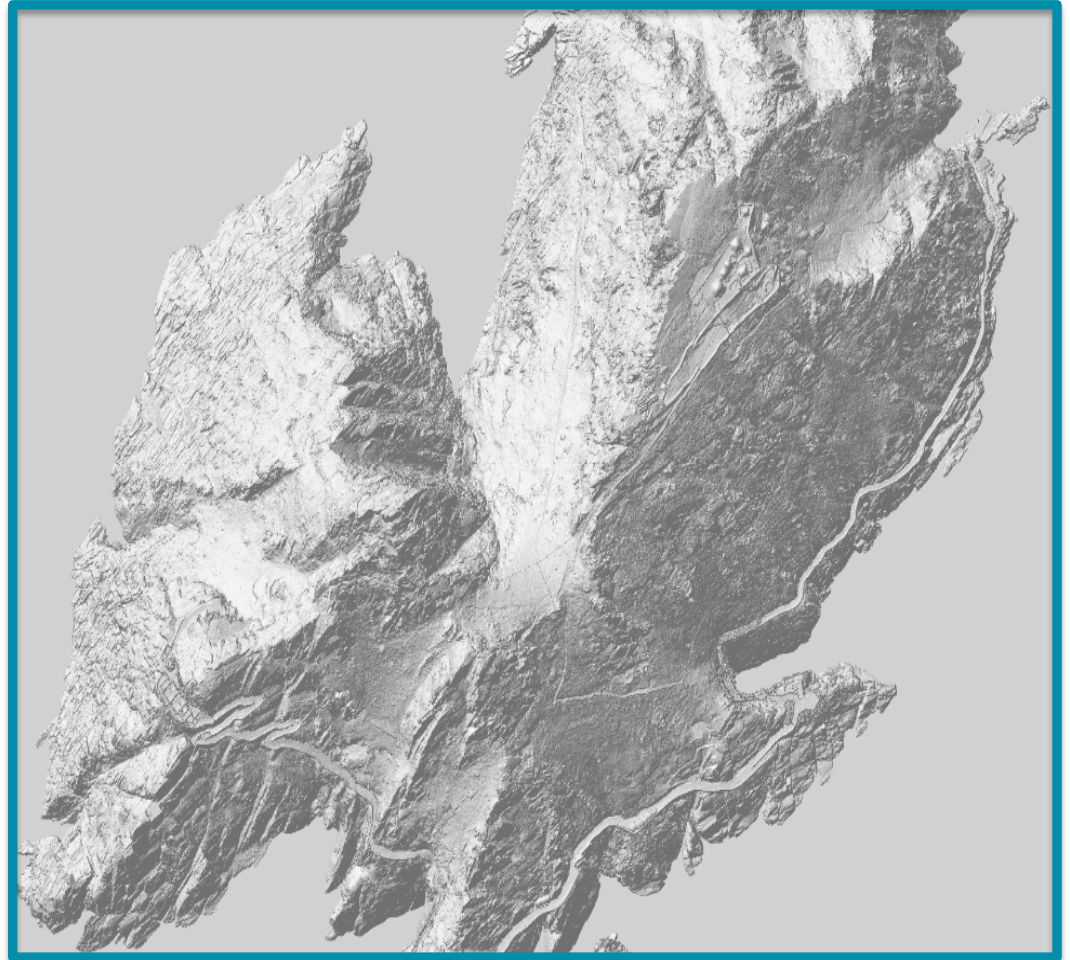
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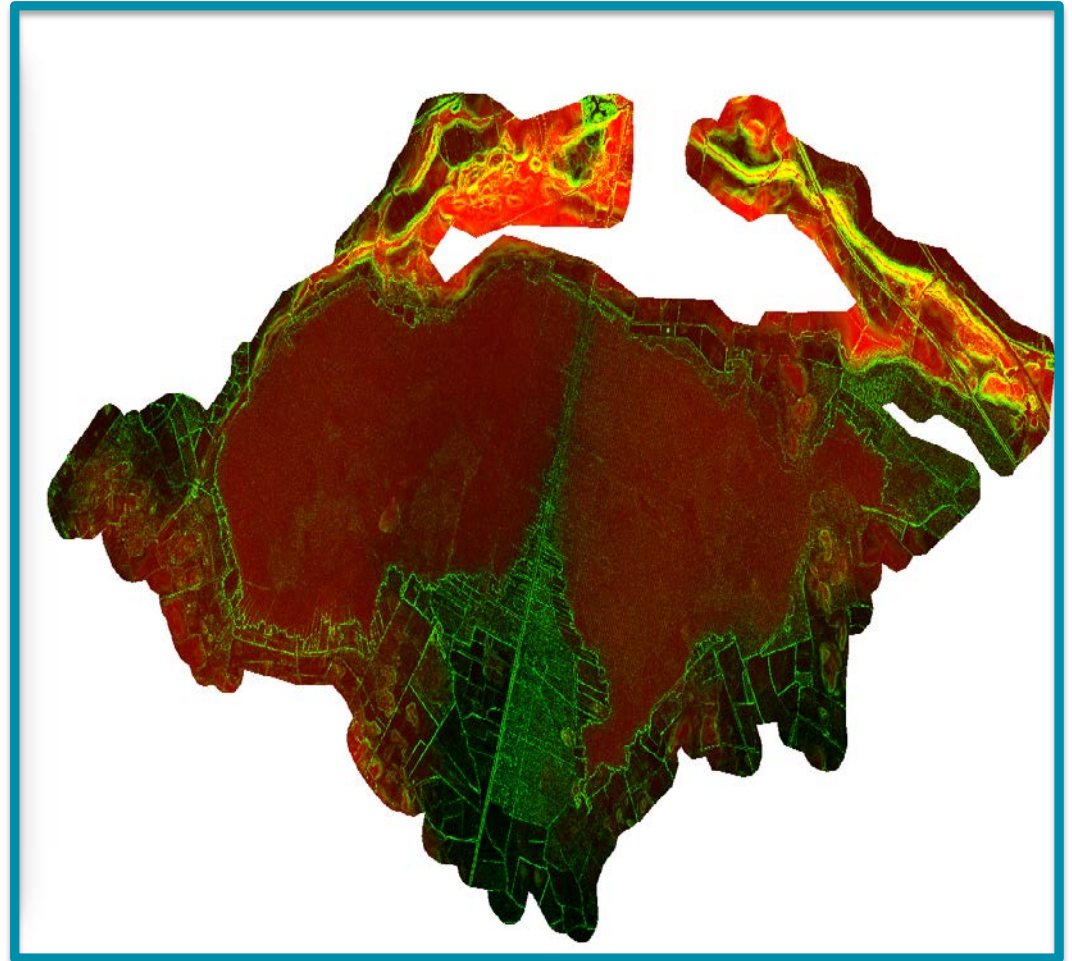
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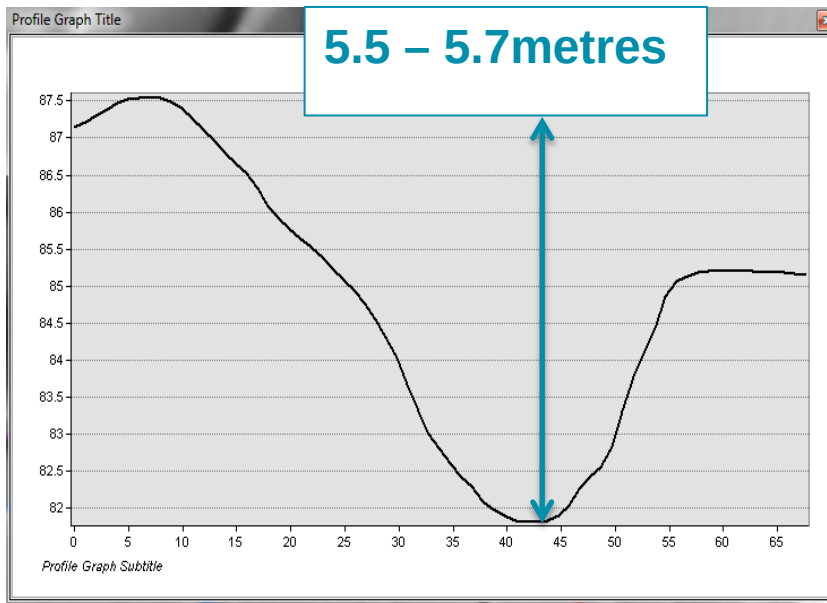
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Roscommon Lidar 2016: Swallow holes

Swallow holes

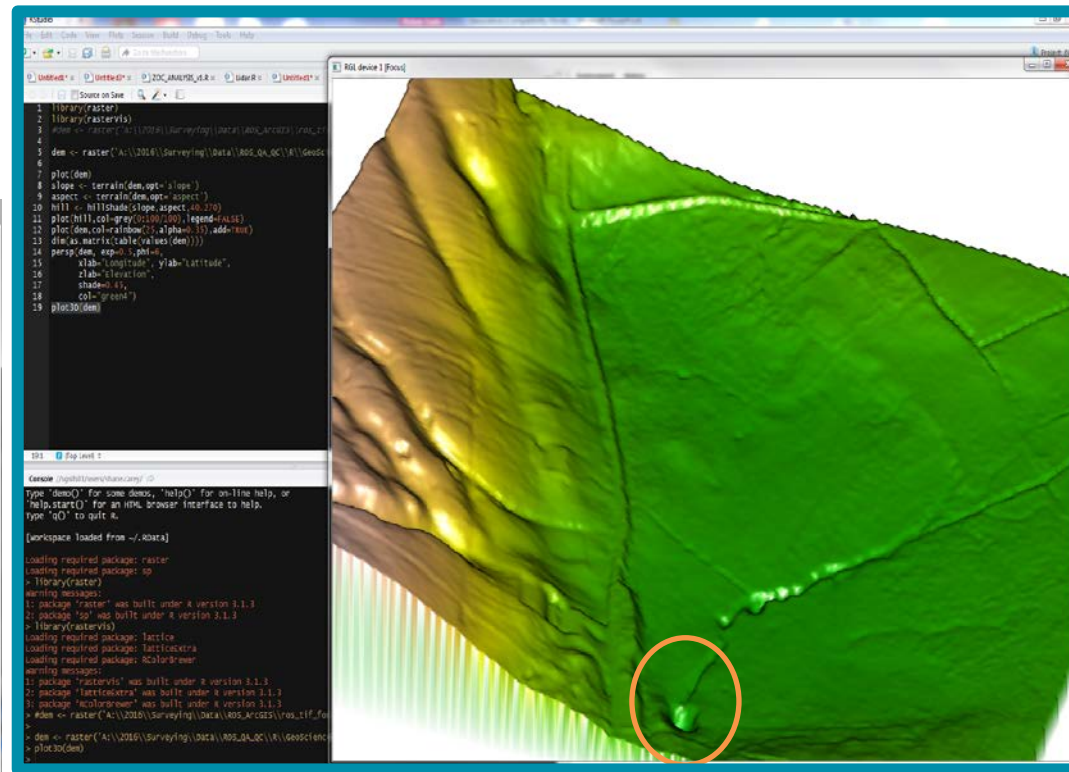
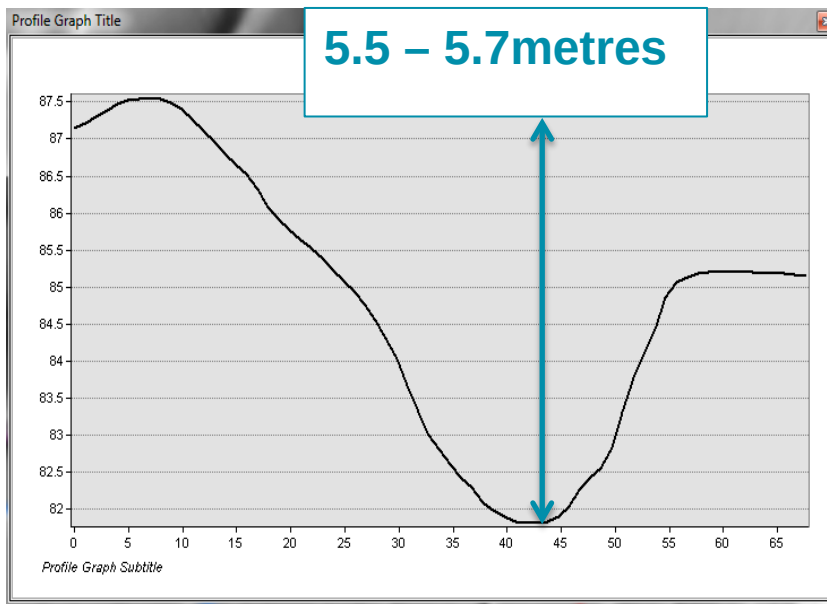
- Dimensions for flood modelling



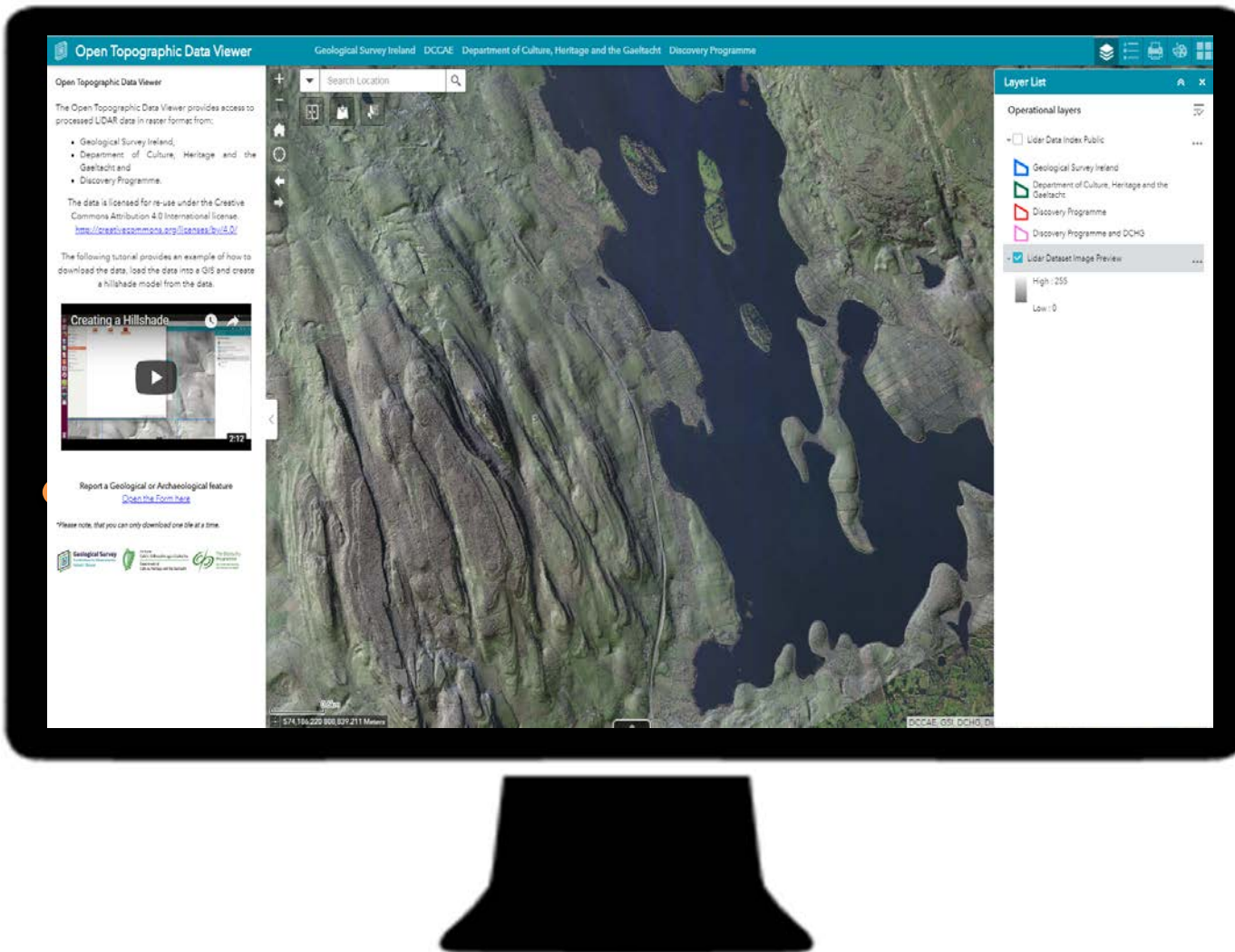
Roscommon Lidar 2016: Swallow holes

Swallow holes

- Dimensions for flood modelling



Open Topographic Data Viewer





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Thank you for listening!