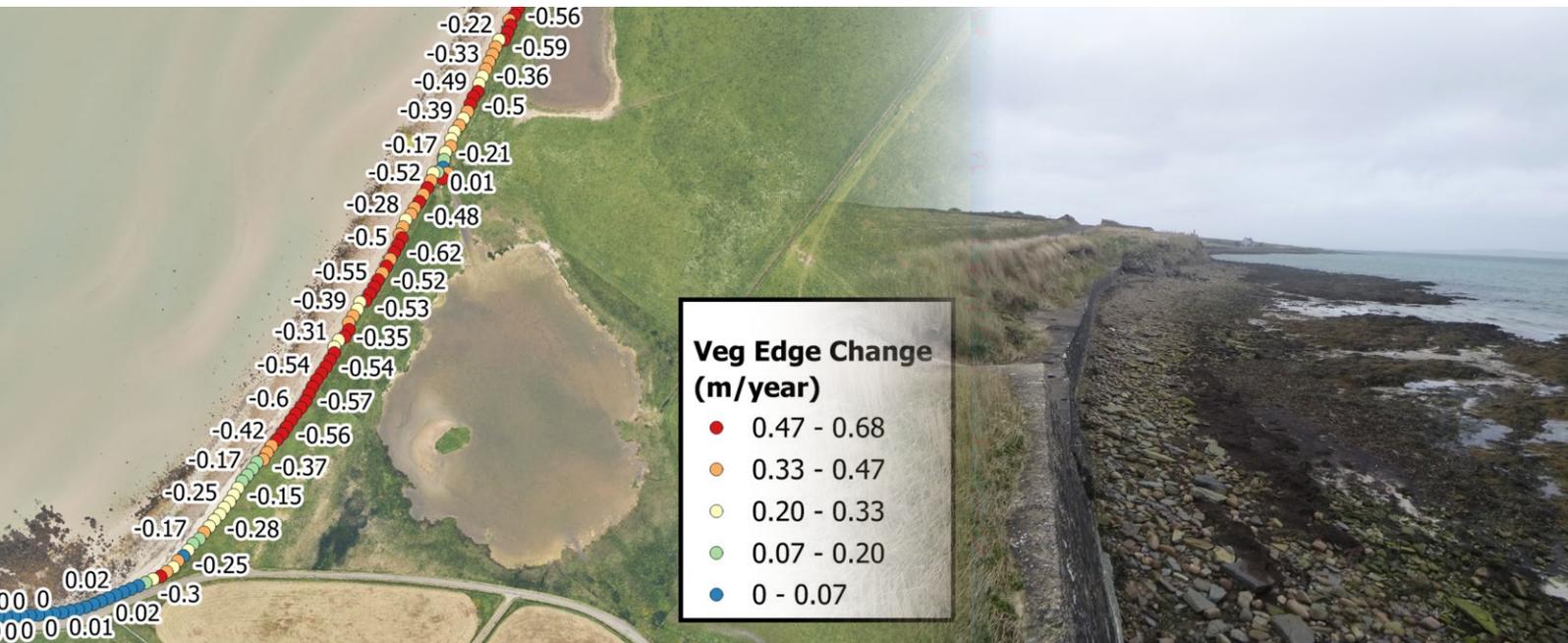


Case Study



The Orkney Islands Council



Client:

The Orkney Islands Council is the local authority for the Orkney Islands in Scotland, providing information and key services to residents, businesses and visitors to the Isles.



ORKNEY
ISLANDS COUNCIL

Industry:

Local Government

Product:

Aerial Photography

“We’re still very early in the journey of carrying out these kinds of assessments, but they’ve shown great promise in highlighting areas of coastline most at risk, particularly on ferry linked islands where it is difficult to resource regular on-the-ground surveys. The confidence in these results will only improve with further rounds of aerial photography as well. The ability to integrate the photography seamlessly with GIS makes it really easy to work with as well. A great resource for a local authority to have access to, and very grateful to Alistair Rennie for showing me to how use it in this way. ”

Sam Harris

Flood Risk Officer at Orkney Islands Council

Summary:

Orkney Islands Council is using Bluesky's aerial photography, accessed through the Government Digital Service's Aerial Photography for Great Britain (APGB) resource, to better understand and improve how coastal erosion is monitored across the islands. By applying NatureScot's (Scotland's Nature Agency) developed methodologies to high resolution photography spanning multiple years, the Council has been able to establish an evidence-based approach to assessing long term vegetation retreat.

Challenge:

Erosion poses an increasing threat to key infrastructure across the islands leading the Council to look to improve how it identifies and monitors vegetation retreat – a challenge that requires detailed, high resolution data over multiple years to picture how the coastline is changing.

Although the Council had access to LiDAR and orthophotography captured in 2023, this only provided a single snapshot in time. Without historical data for comparison, it proved difficult to assess long term trends, track changes in vegetation, identify and monitor areas of erosion, or evaluate the performance of existing coastal defence infrastructure.

Solution:

Via the APGB resource, Orkney Islands Council gained access to highly accurate aerial photography, including both the latest photography available and an extensive historical archive. This provided the foundation for detailed analysis to assess coastal change.

Using the historical data, the Council's Flood Risk Officer, Sam Harris, carried out an initial pilot analysis applying erosion assessment techniques developed by Alistair Rennie of NatureScot. These methods had previously been applied by Alistair Rennie to study vegetation retreat along much of the coastline of Sanday, in Orkney. By combining this methodology with APGB's extensive historical aerial photography archive, Sam was able to assess long term vegetation retreat at Rothiesholm, an area of Stronsay where coastal erosion is known to be encroaching on infrastructure. This area was pertinent to the research as it offered areas of coastline both with and without coastal defences. Analysing multiple years of high resolution photography revealed a clear contrast between more stable sections of coastline protected by the defences and adjacent areas with no defences where significant erosion was noted, providing actionable data to inform future coastal management.

Results:

Access to the APGB aerial photography has significantly enhanced Orkney Islands Council's capability to monitor and assess coastal erosion at a local scale. Comparing consistently high resolution photography across multiple time periods, at a level of detail far exceeding freely available sources, has enabled the Council to develop a robust method for monitoring and understanding long term vegetation retreat and landscape change.

The initial pilot analysis at Rothiesholm on Stronsay resulted in evidencing the effectiveness and influence of coastal defences. This insight helps strengthen the Council's evidence base for coastal management, supporting more informed decision making around monitoring and future coastal defence investment. This approach can now be applied to other locations across Orkney, helping to identify erosion hotspots and target areas for ongoing observation and intervention.

	Imagery Specification	
Resolution	12.5cm	25cm
Coverage	Great Britain	Great Britain
Accuracy XY	± 30cm rmse	± 60cm rmse
Formats	Include: JPG, TIFF, ECW	Include: JPG, TIFF, ECW
Standard Projection	British National Grid	British National Grid
Tile Size	1km x 1km (8,000 x 8,000 pixels)	1km x 1km (4,000 x 4,000 pixels)
Metadata	Gemini 2.3	Gemini 2.3

Get in touch today at support@apgb.co.uk