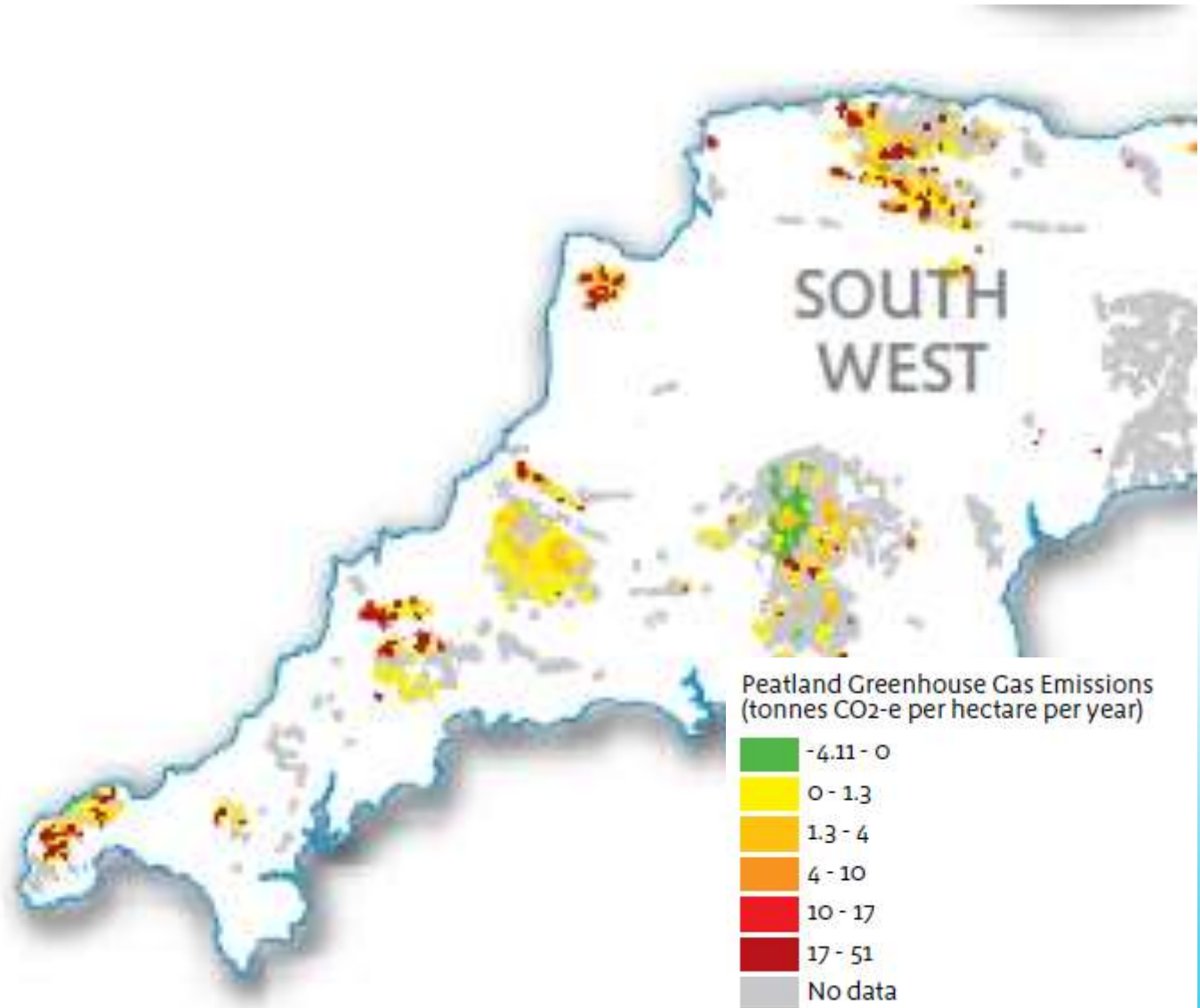*Using Earth Observation to map, measure and monitor peatland for South West Water in the UK*

Philip Briscoe, philip.briscoe@rezatec.com
David Smith, dmsmith@southwestwater.co.uk

1

Distribution of upland peatlands in South West England

Peatland Greenhouse Gas Emissions
(tonnes CO2-e per hectare per year)

- -4.11 - 0
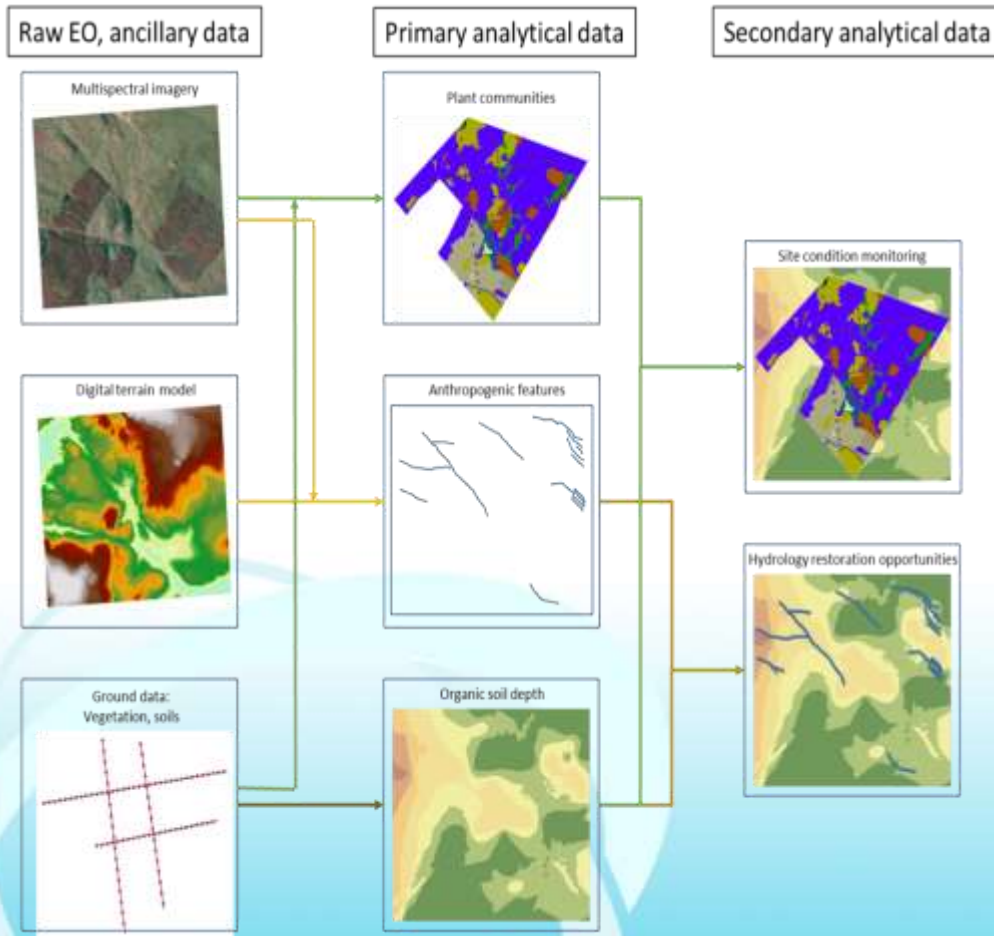- 0 - 1.3
- 1.3 - 4
- 4 - 10
- 10 - 17
- 17 - 51
- No data

Most of Exmoor's peatlands have been affected by peat-cutting, drainage, or past over-burning and grazing.

Severe Erosion

Solution: Automated, scalable delivery of data products

Product
Pipeline leakage detection
Soil Movement
Vegetation Management
Hazard Risk Management
Subsidence

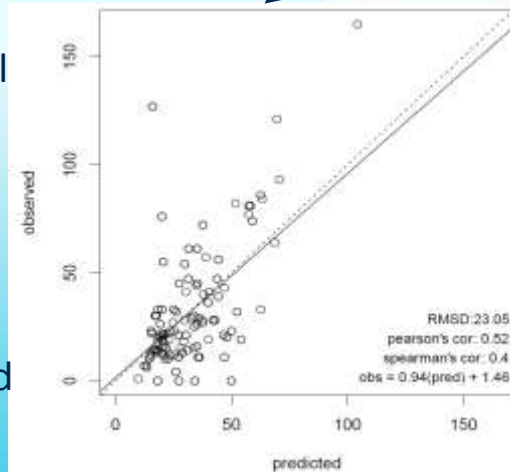# Processing and modelling to extract soil moisture

rezatec analyzing earth data

Apply preliminary processing algorithms (e.g. radiometric calibration, terrain correction, debursting, speckle filtering) to extract calibrated, corrected backscatter
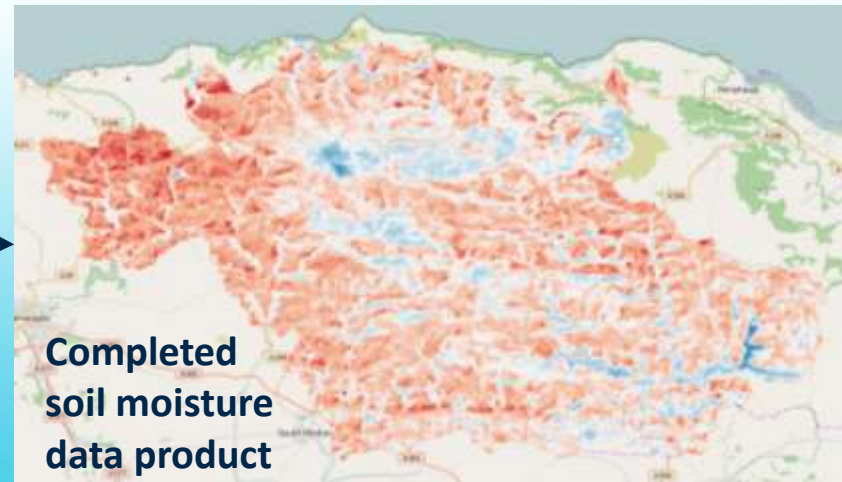
Uncalibrated, unprocessed synthetic aperture radar backscatter (raw data)
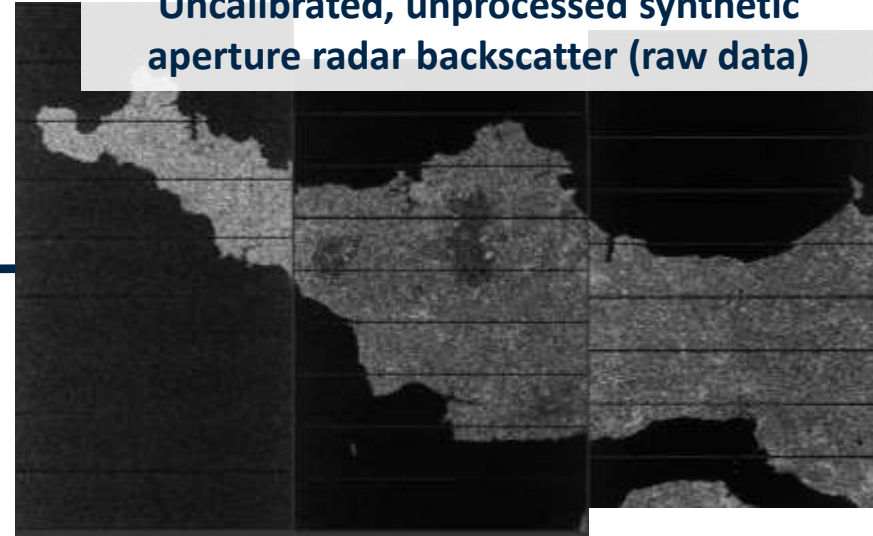
Apply empirical modelling to extract relationship between calibrated backscatter and soil moisture

RMSD: 23.05
pearson's cor: 0.52
spearman's cor: 0.4
obs = 0.94(pred) + 1.46

Completed soil moisture data product

6

Peat Soil Depth

Soil Moisture

Vegetation Analysis (+ve & –ve)
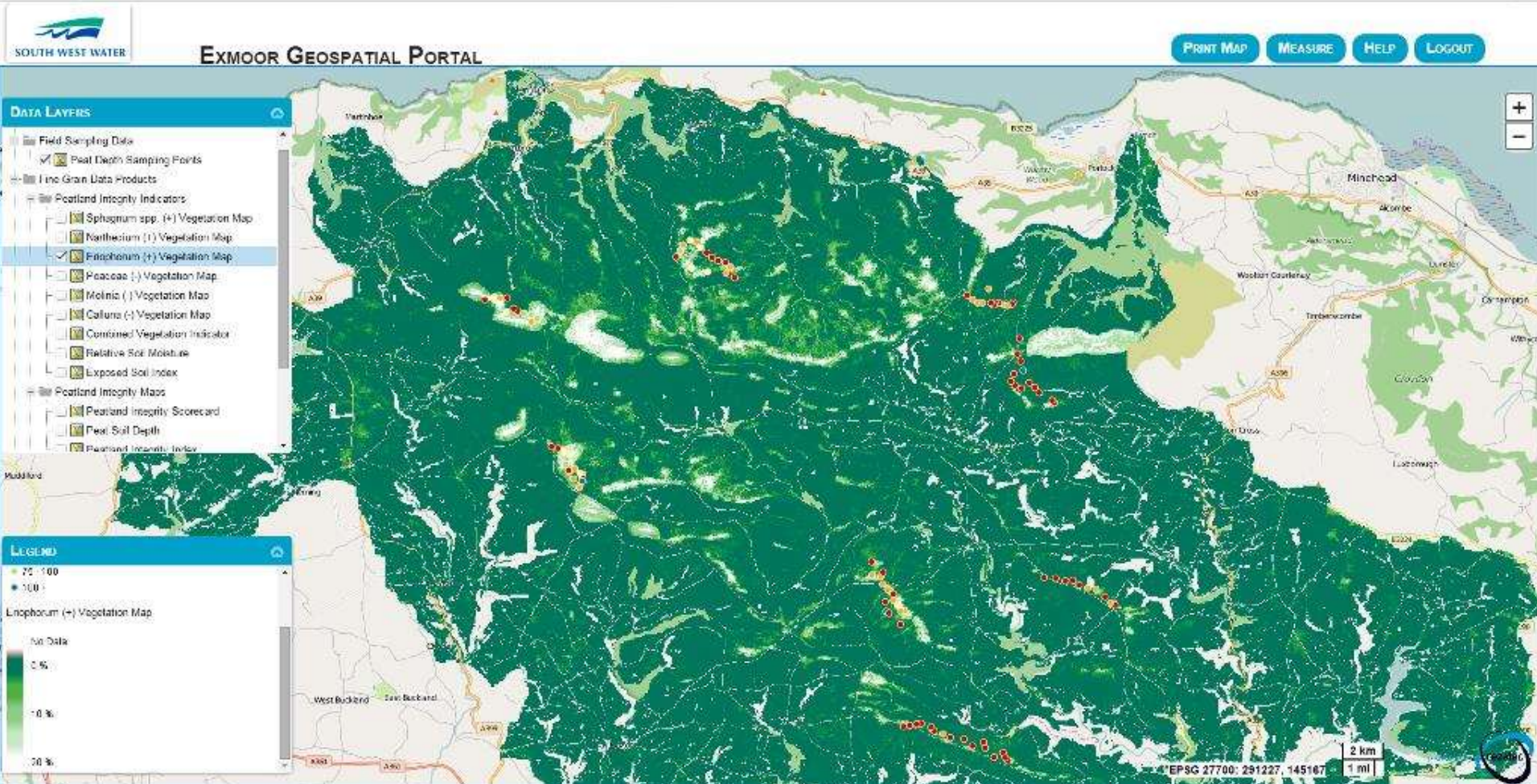
Peatland Integrity Index
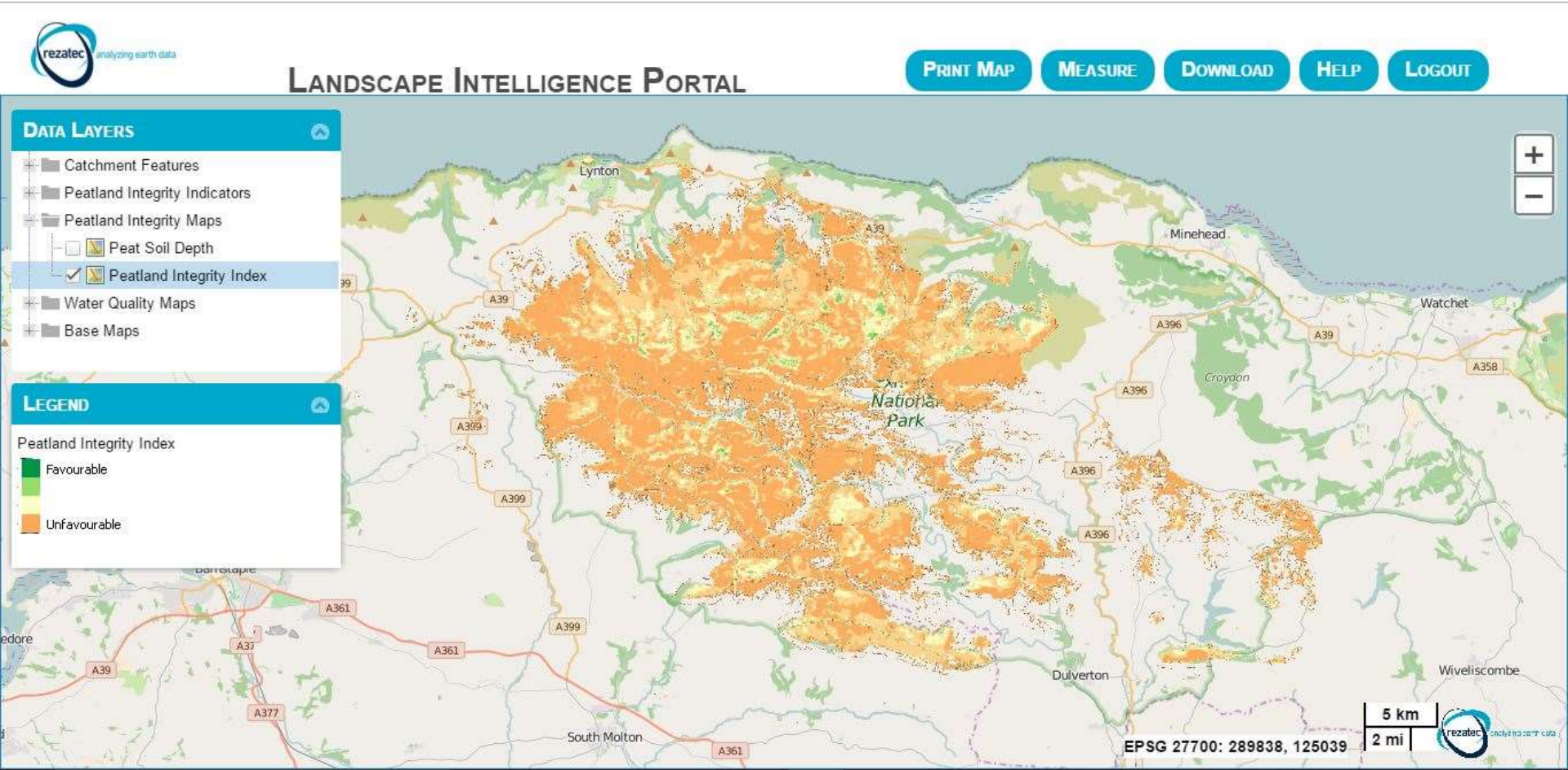
Water quality risk index
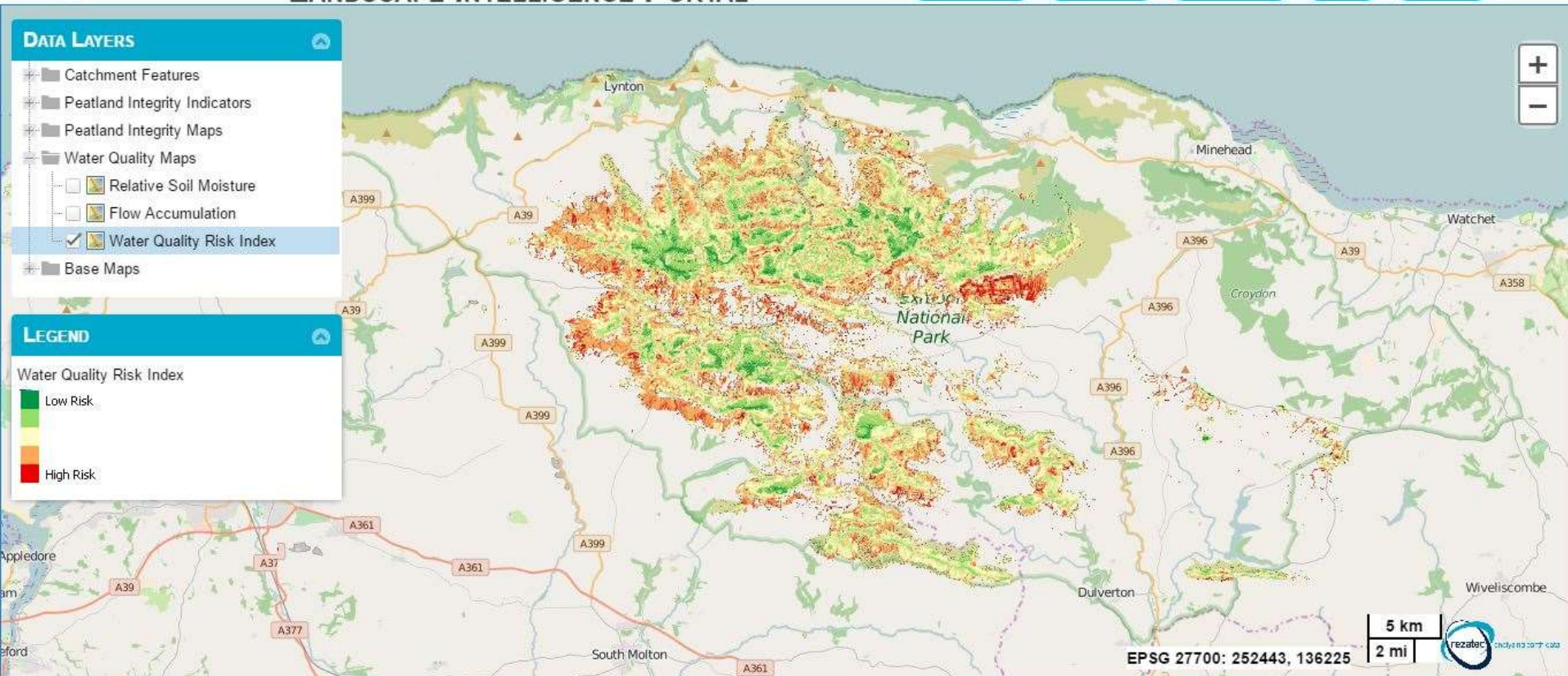
Eroded area after restoration

Thank You

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