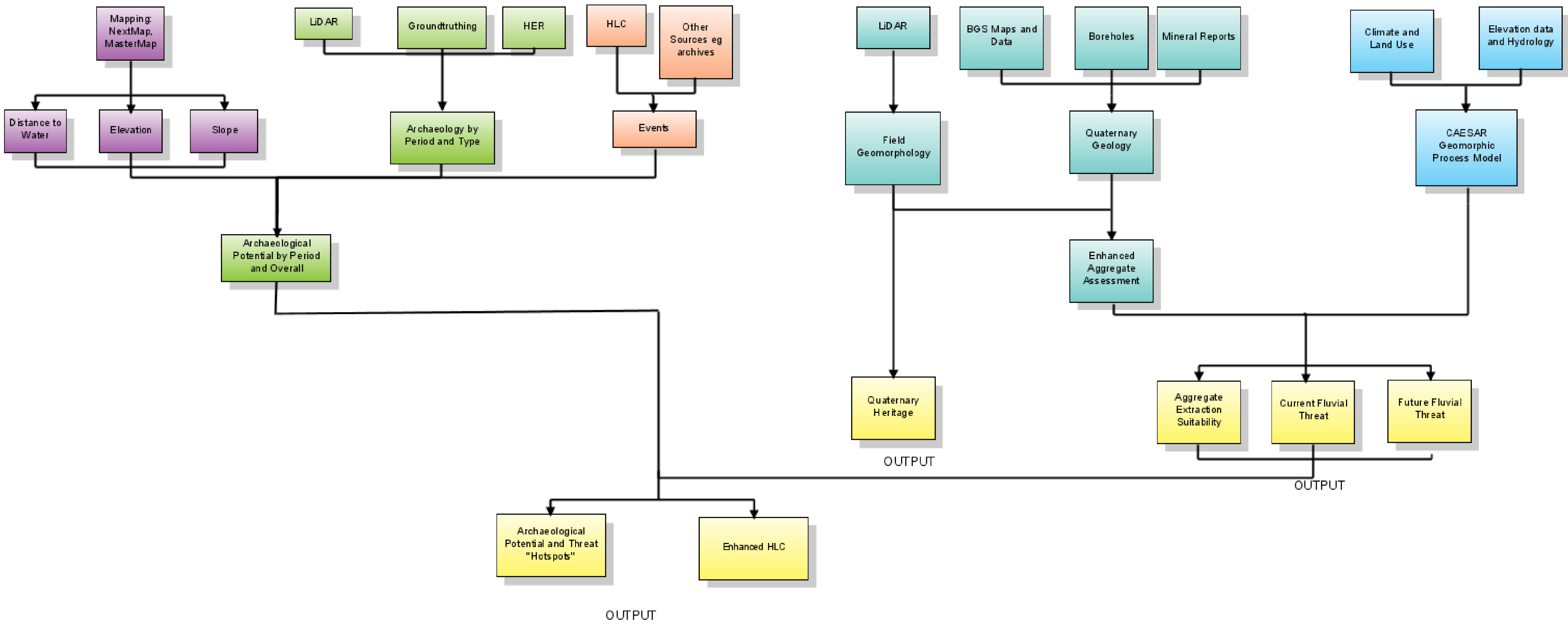


Figure 28: Workflow diagram showing the main phases of the project

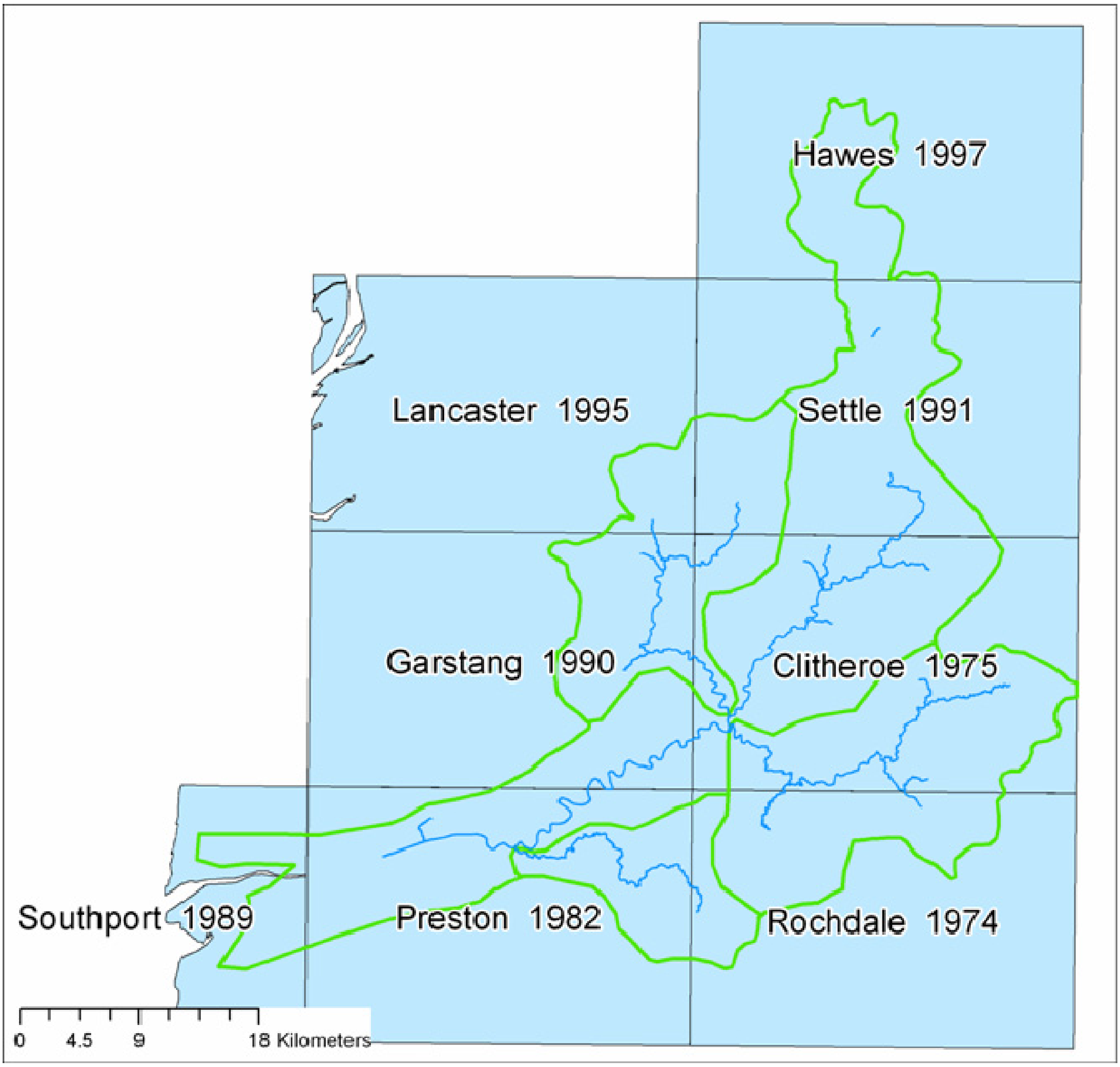


Figure 29: Map sheets for the Ribble catchment of the solid and drift geology available from the British Geological Survey and their respective publication dates

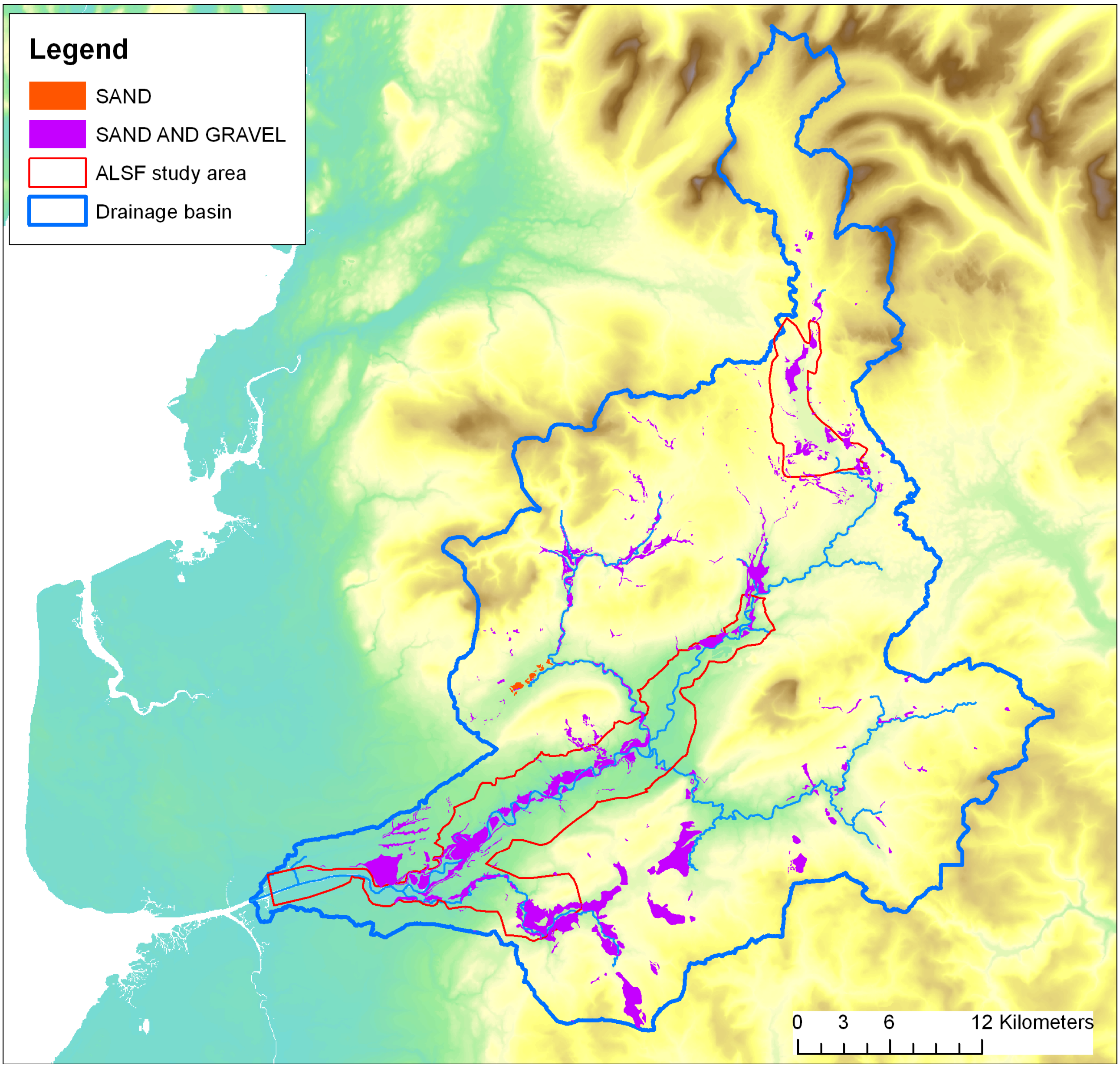


Figure 30: Sand and gravel reserves from BGS mapping

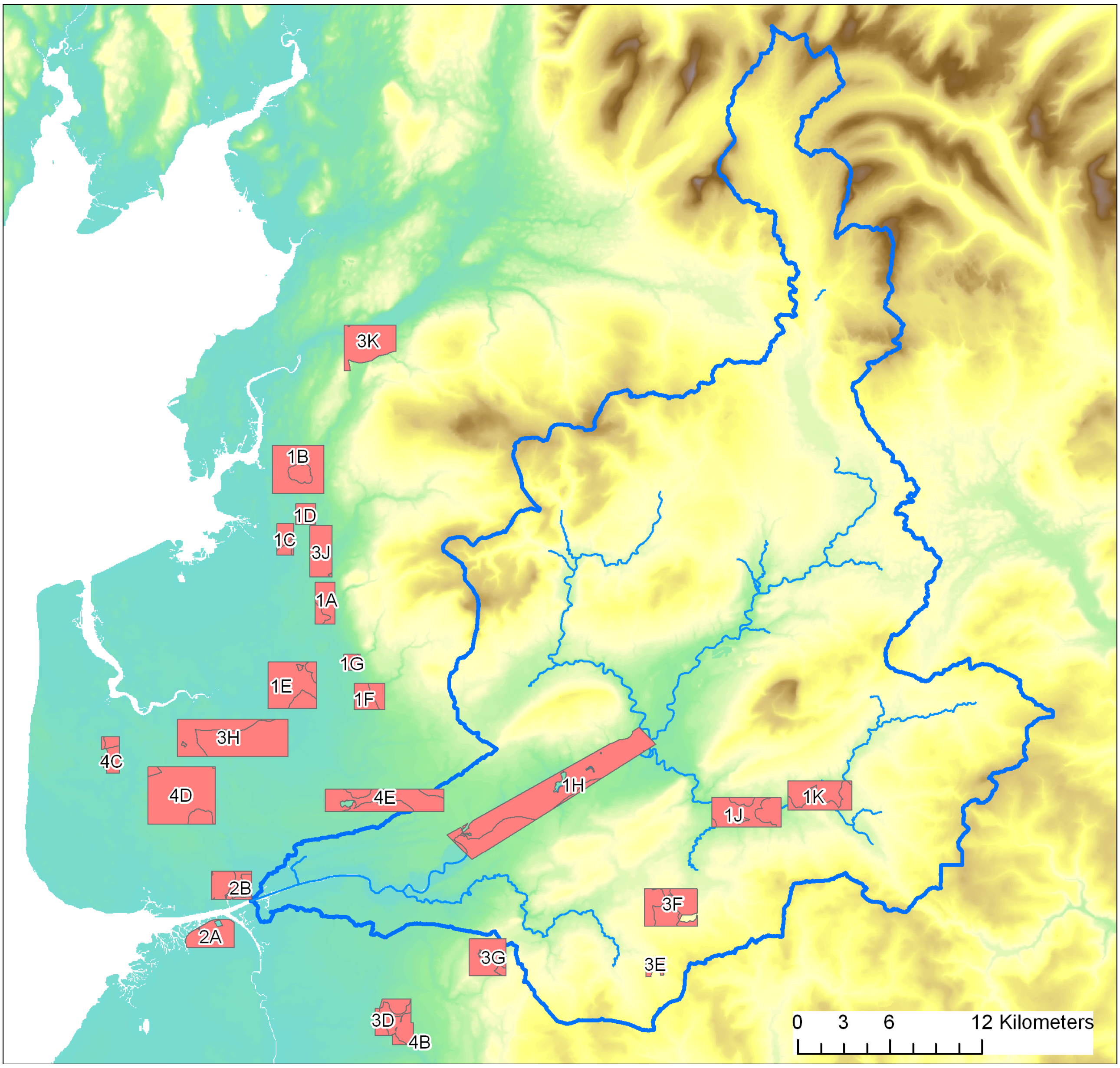


Figure 31: Study areas for both the Entec UK Ltd and Geoplan Ltd Lancashire County Council sand and gravel surveys

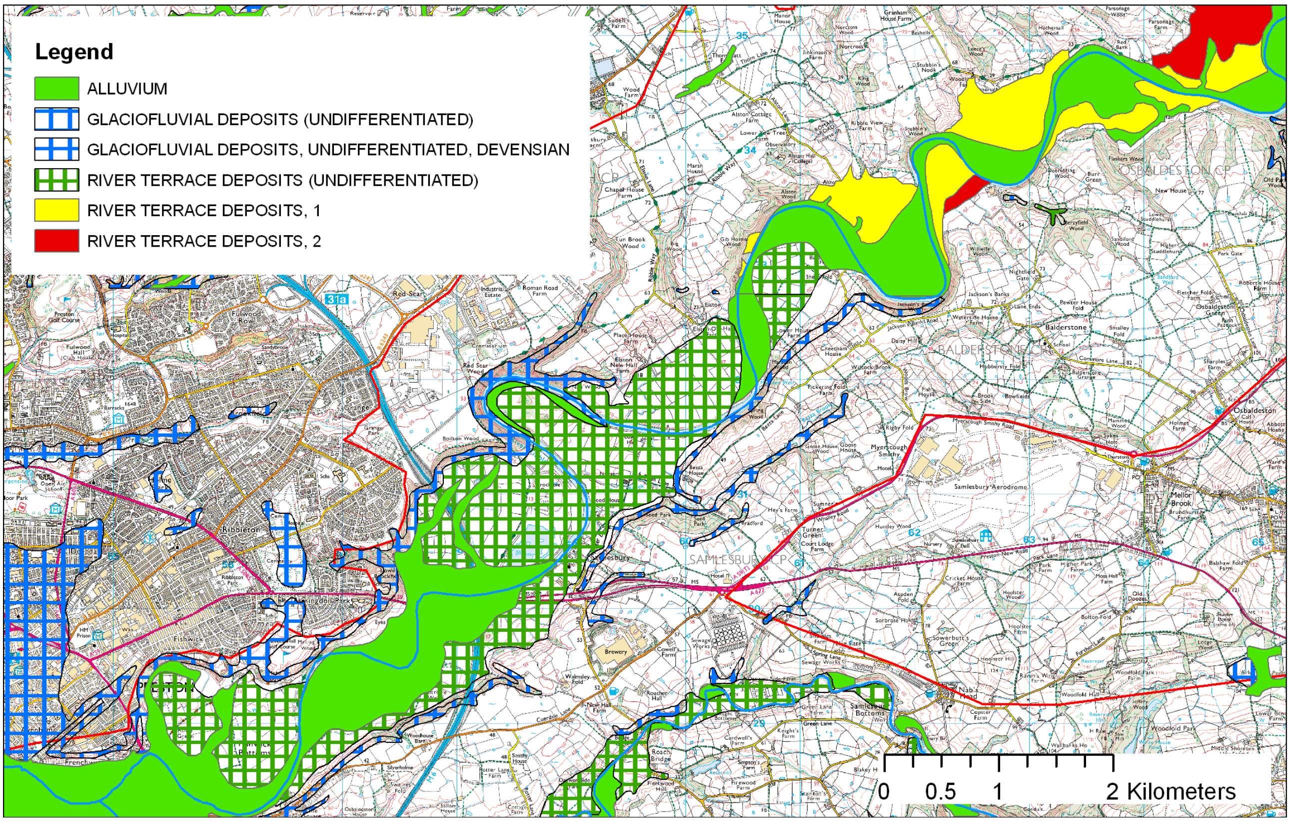


Figure 32: River terrace data within the BGS sheets for the reach to the east of Preston

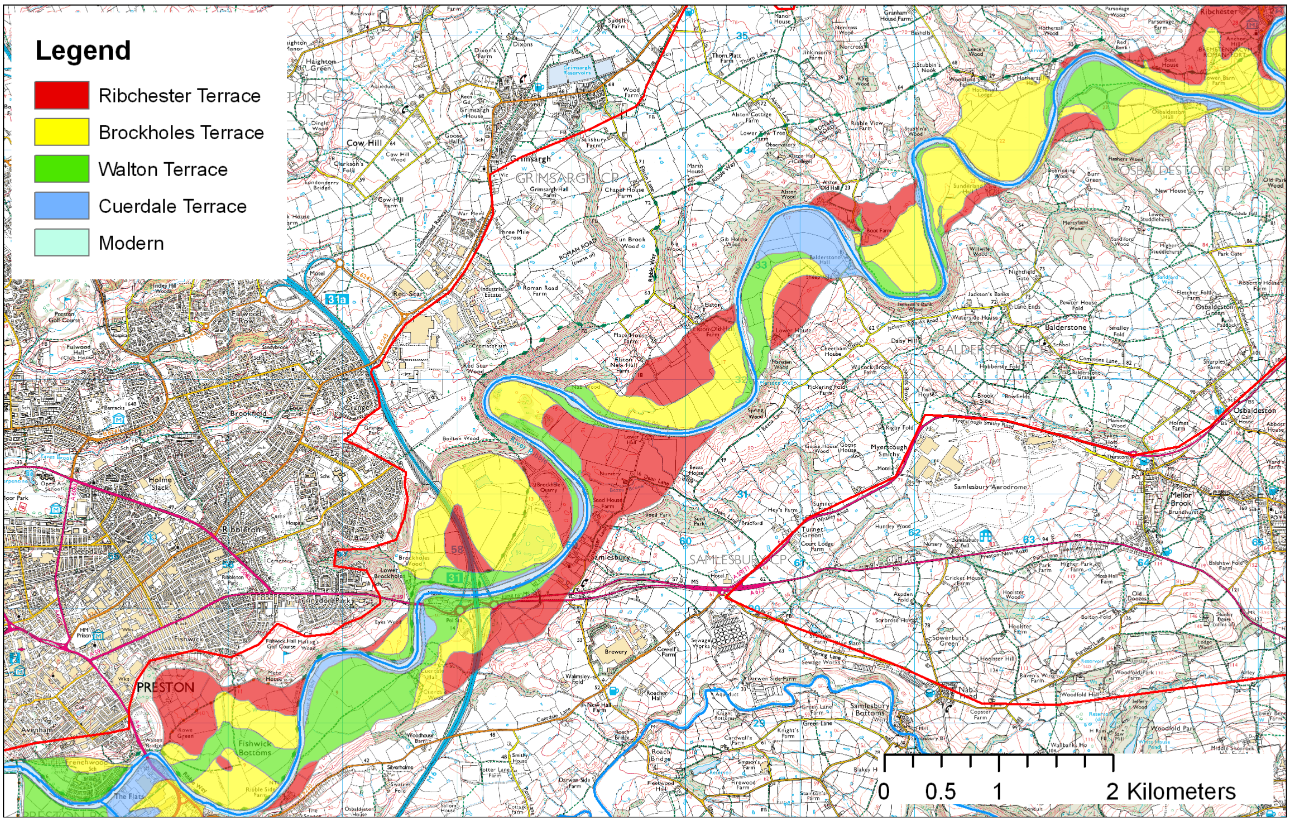


Figure 33: River terrace data for the reach to the east of Preston from the mapping of Chiti (2004)

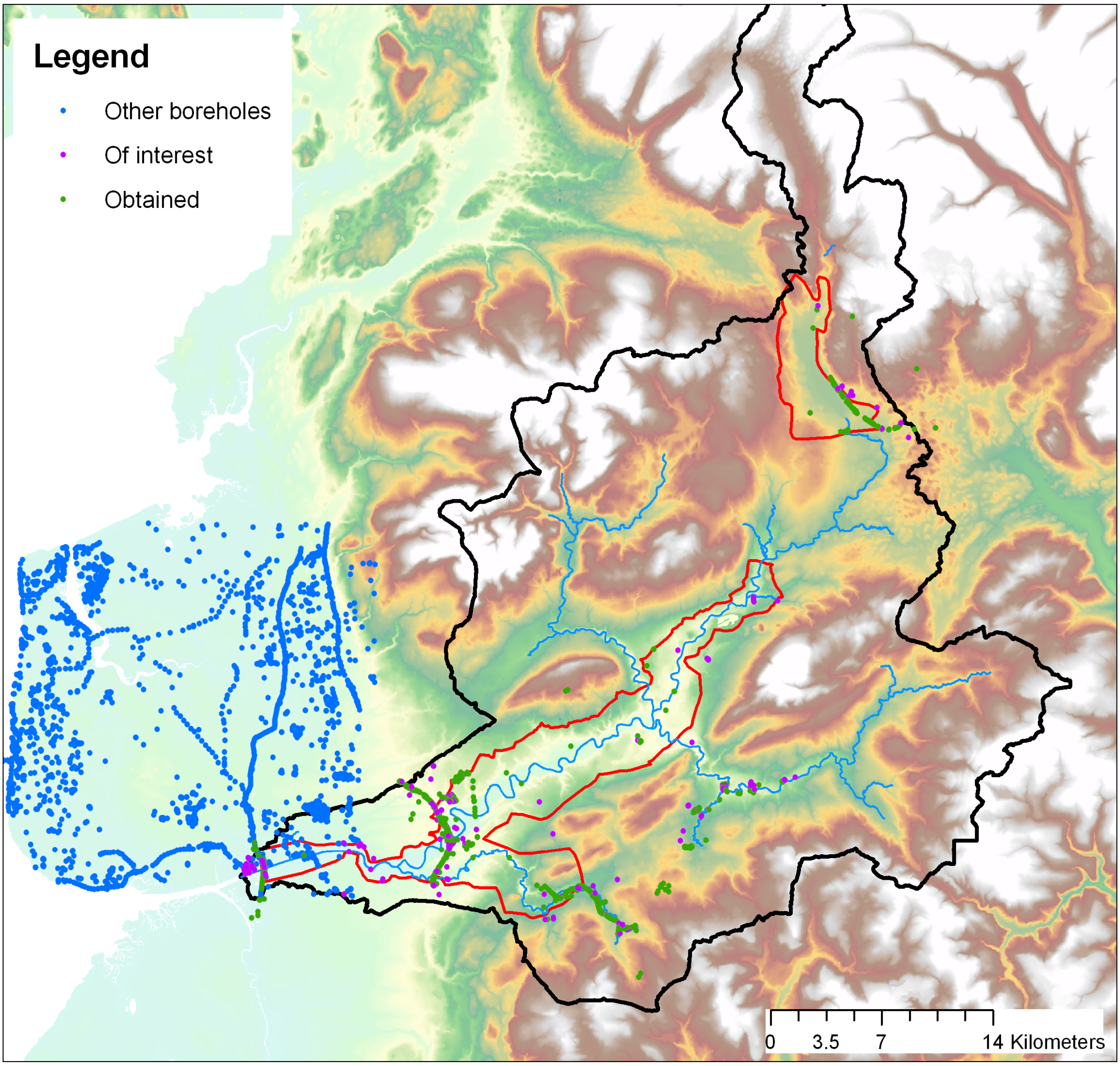


Figure 34: Borehole availability and coverage of useful borehole records from the study area and lowland north Lancashire

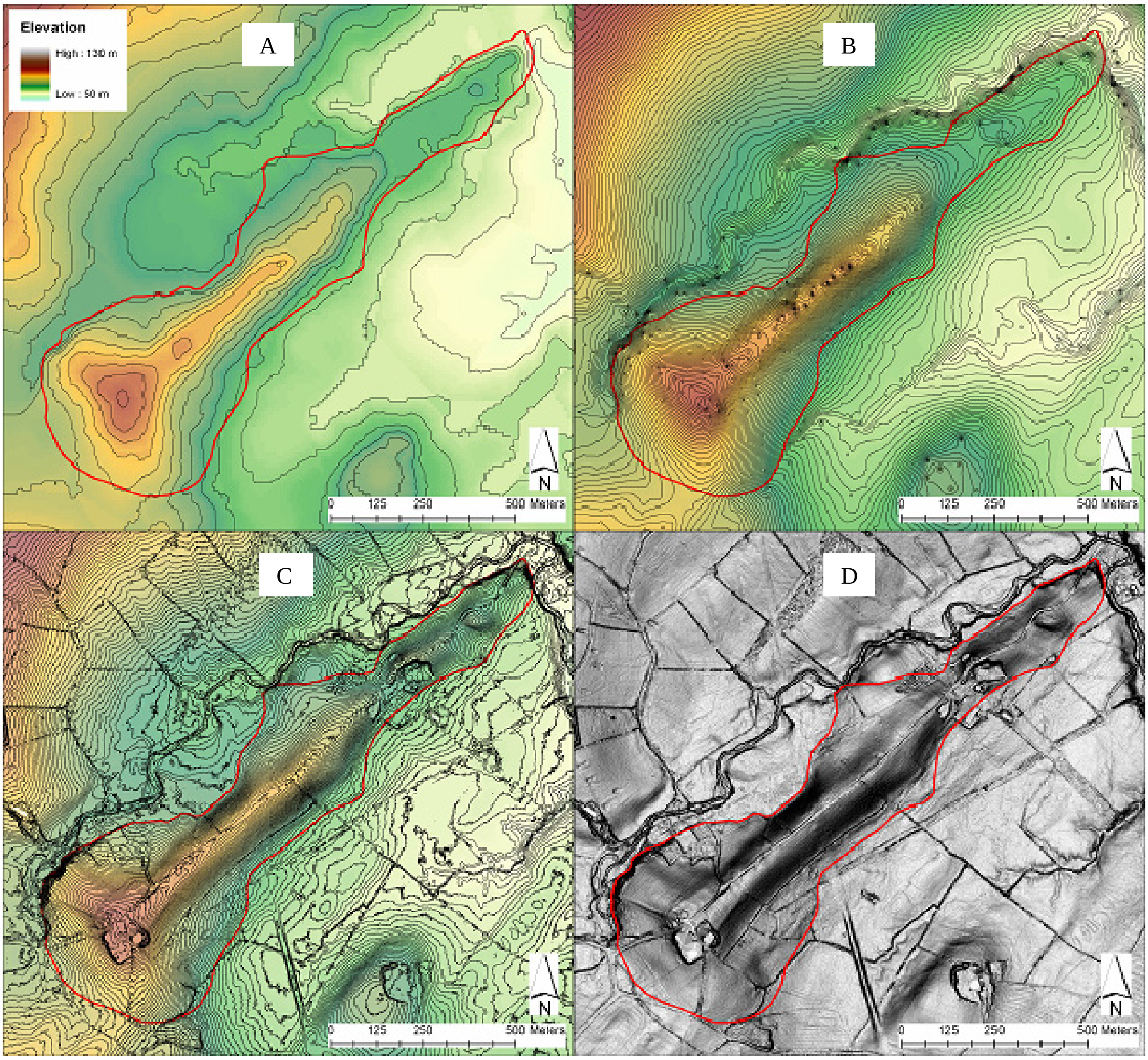


Figure 35: Digital elevation datasets for a small esker ridge northwest of Clitheroe. A. Ordnance survey Profile ™; B. Intermap NEXTMAP ™; C. Environment Agency LiDAR; and D. a slope raster derived from Environment Agency LiDAR data

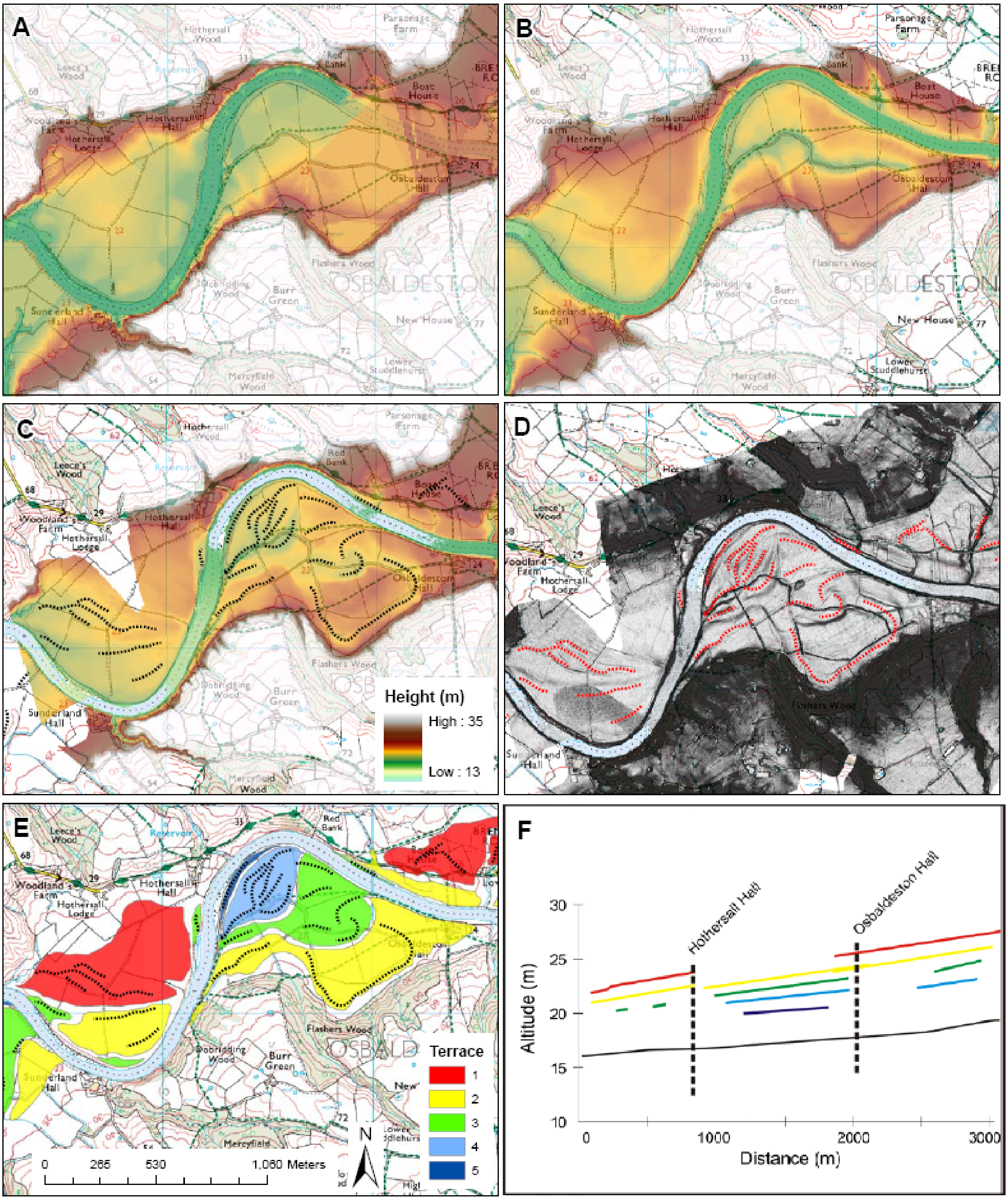


Figure 36: Sediment-landform relationship depicted by DEM data sources at Osbaldeston Hall, Lower Ribble. A. OS Profile DEM. B. NEXTMap bare ground DEM. C. LiDAR bare ground DEM identifying the distribution of palaeochannels. Legend depicts the heights for A-C. D. Slope angles derived from the LiDAR data with light depicting flat ground and the distribution of palaeochannels. E. River terrace mapping undertaken using the LiDAR data. F. Height range plot for the river terraces derived from the LiDAR data. 1:25000 background map (© Crown Copyright Ordnance Survey: an Edina Digimap supplied product)

Figure 37: Van Walt percussion coring at Lower House Farm, Lower Ribble

Figure 38: Exposures of basal fluvial channel and bar-form gravels overlain by a 500 mm thick peat-bed near Whalley

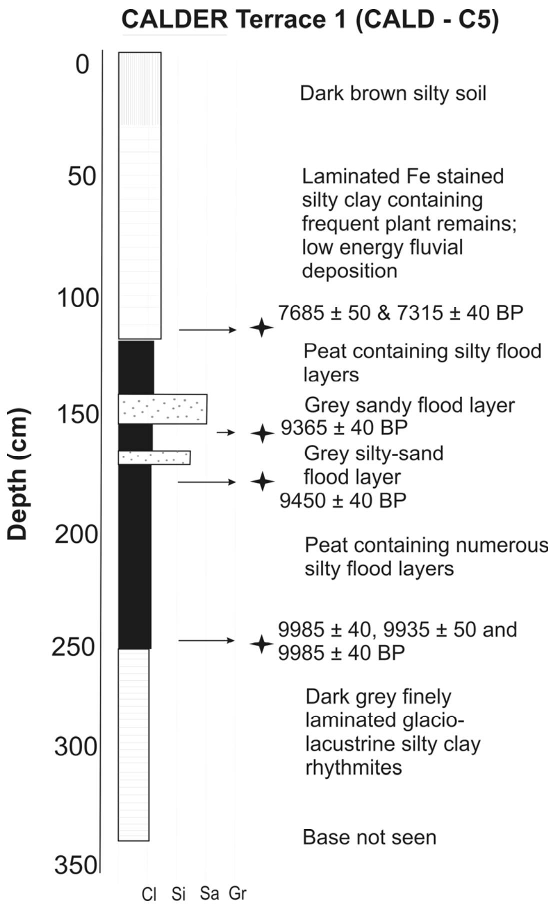


Figure 39: Example lithostratigraphic log from terrace 1 of the Lower Calder, near Whalley

Figure 40: OSL sampling from exposures at Brockholes gravel pit (right); and (left) typical sands targeted for OSL dating that predominantly are reworked Permo-Triassic bedrock

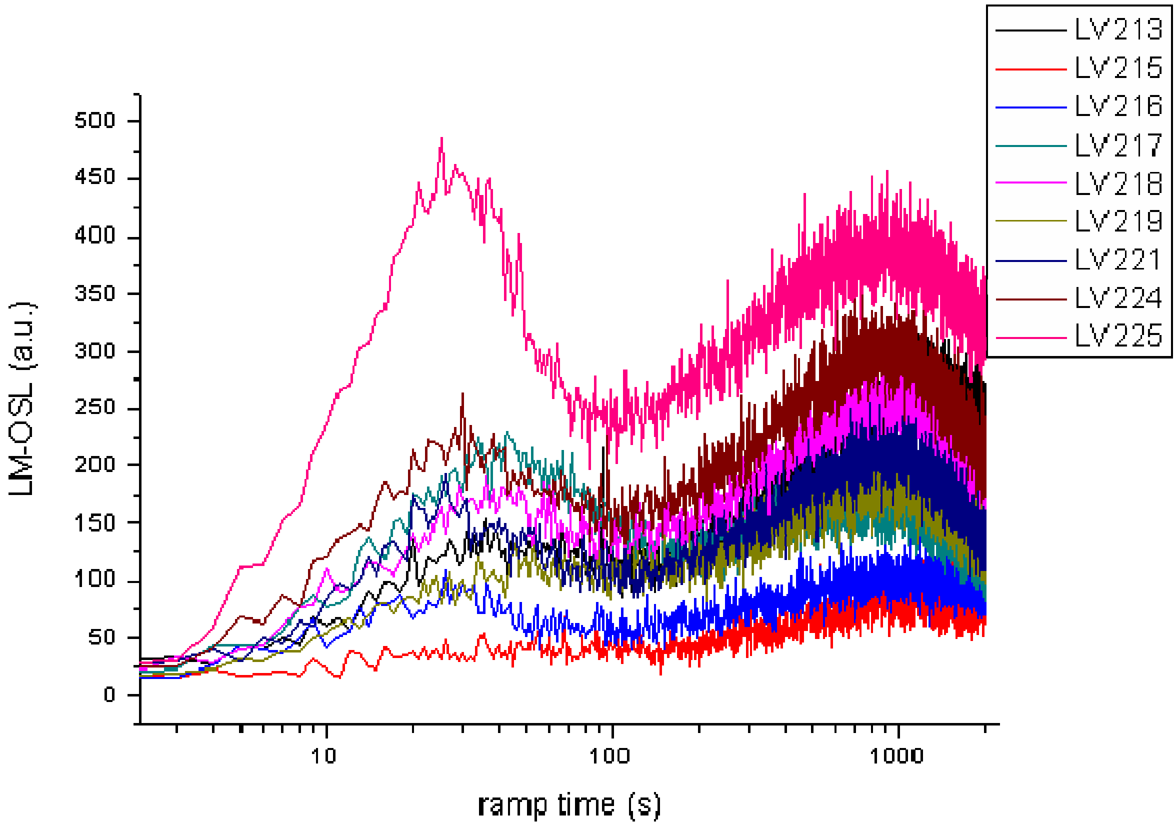


Figure 41: Linear-modulated OSL of most of the samples investigated. Ramp time is the time used to ramp the power of the blue light stimulation from 0% to 92%. On all aliquots the natural dose was bleached and a laboratory dose of ~89 Gy given. A preheat of 240°C for 10 s was used and the LM-OSL was recorded at 160°C

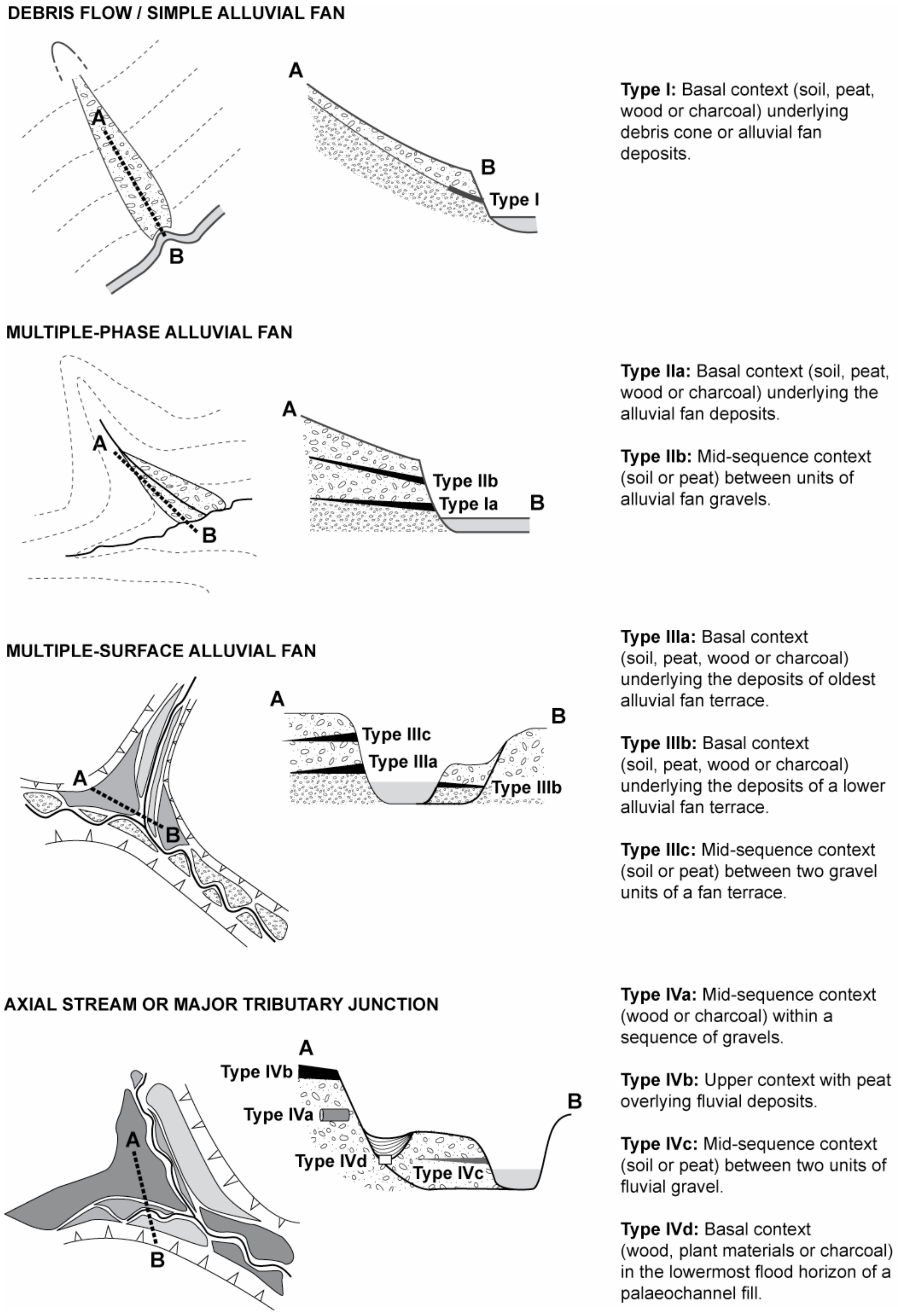


Figure 42: Landform and depositional contexts used for radiocarbon dating of geomorphic changes in alluvial and hill-slope units

A

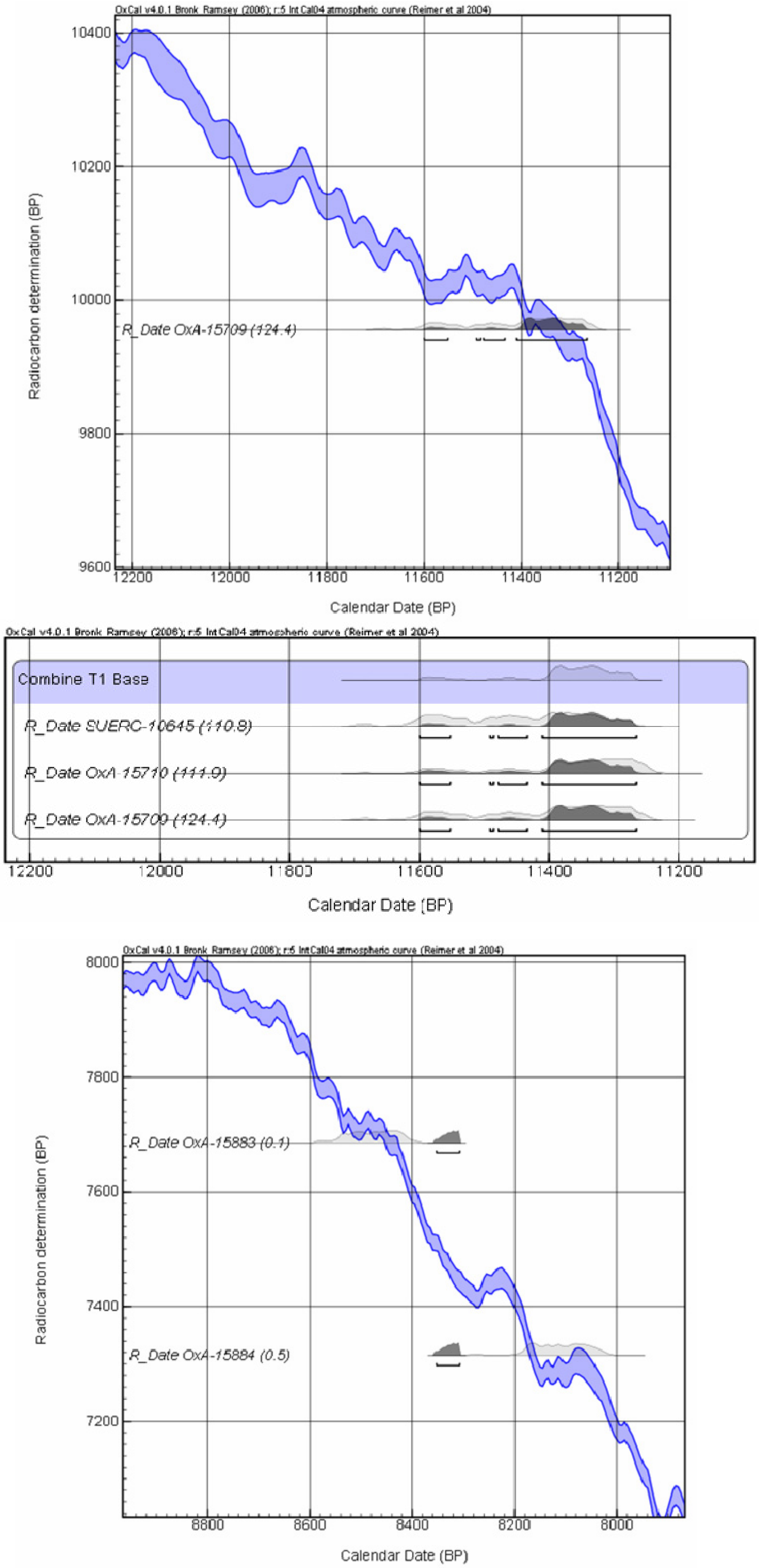


Figure 43: Radiocarbon calibrations showing a) a single date against the calibration curve; b) the combining of three dates; and c) a failed combine of two dissimilar dates. All analysis used the OxCal software (v 4.0: https://c14.arch.ox.ac.uk/oxcal/OxCalPlot.html: Bronk Ramsey 1995; 1998; 2001)

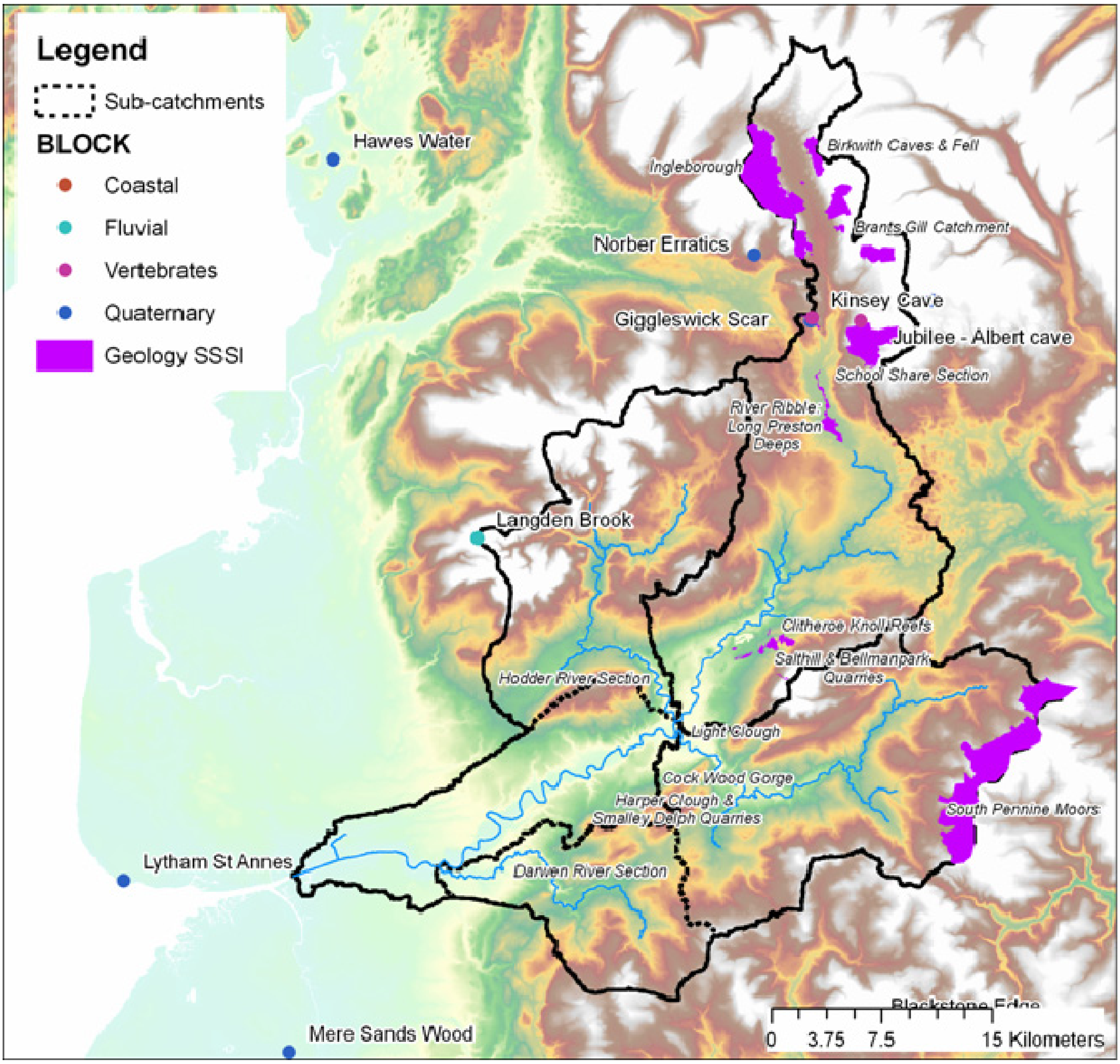


Figure 44: Geological SSSI and Geological Conservation Review sites in the Ribble basin

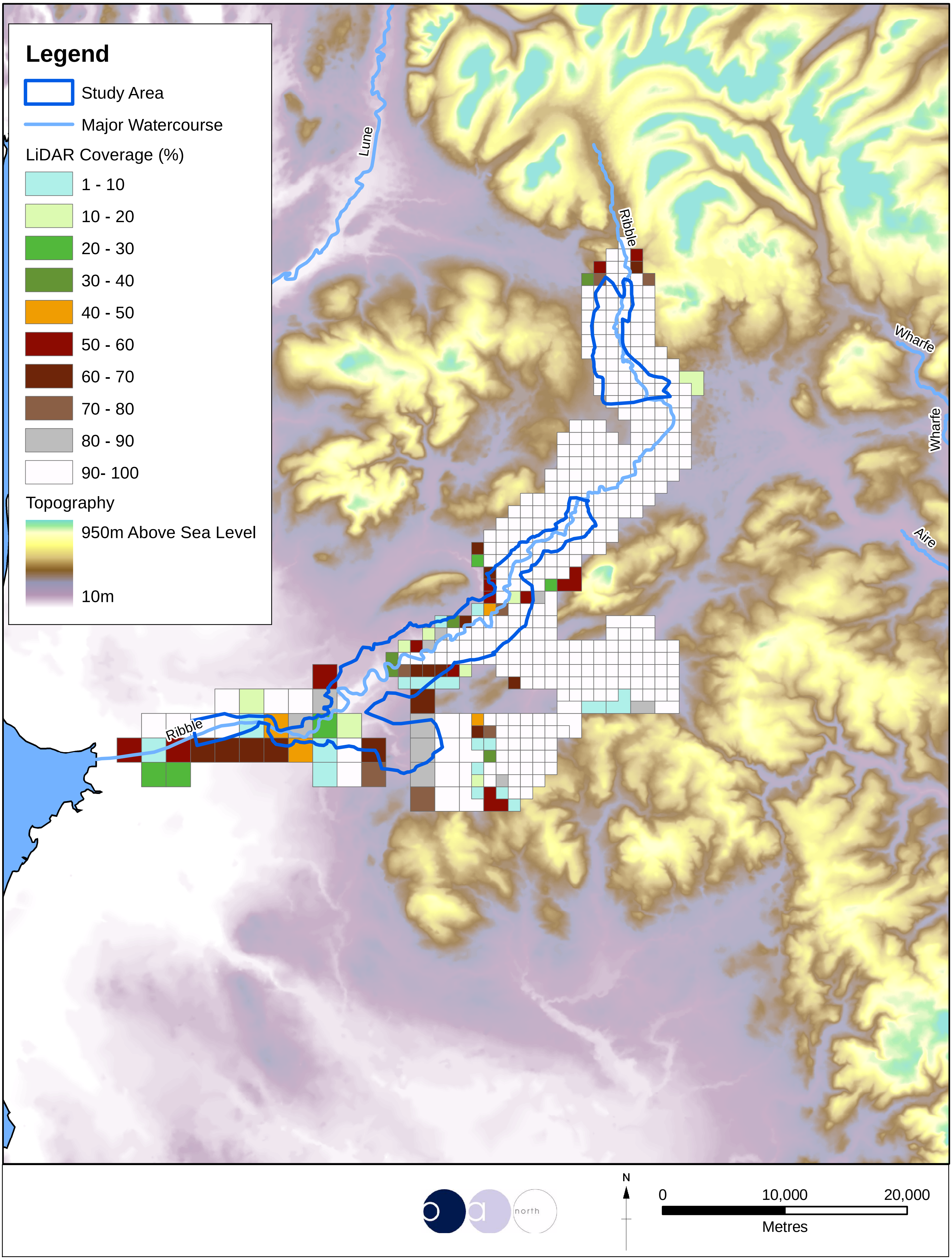


Figure 45: Available LiDAR coverage for the Ribble Valley area, at outset of Ribble Valley ALSF project in 2005

Figure 46: Example of LiDAR slope model, showing the area around Waddington village

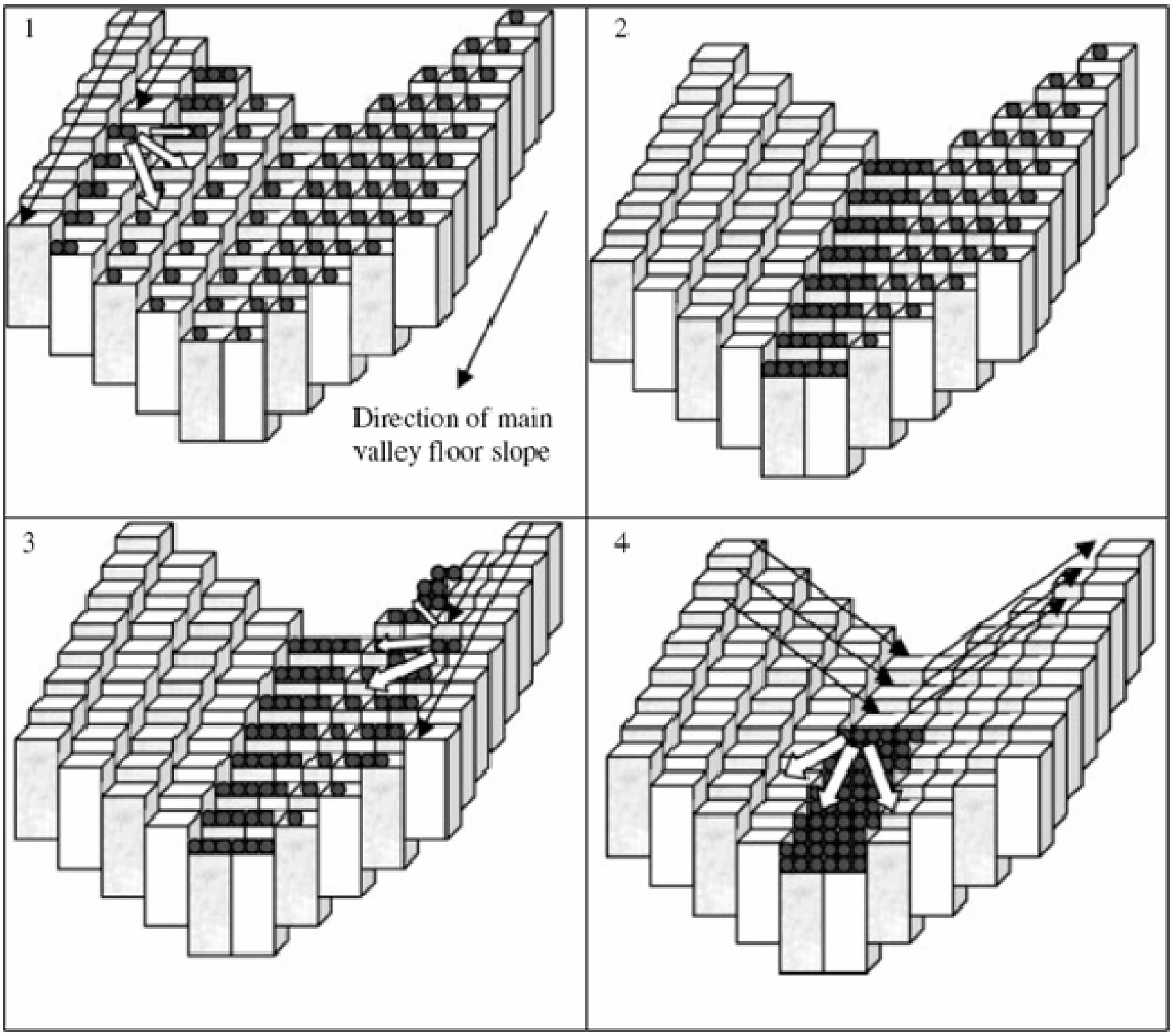


Figure 47: Schematic diagram of the CAESAR scanning flow routing algorithm (from Coulthard *et al* 2001)

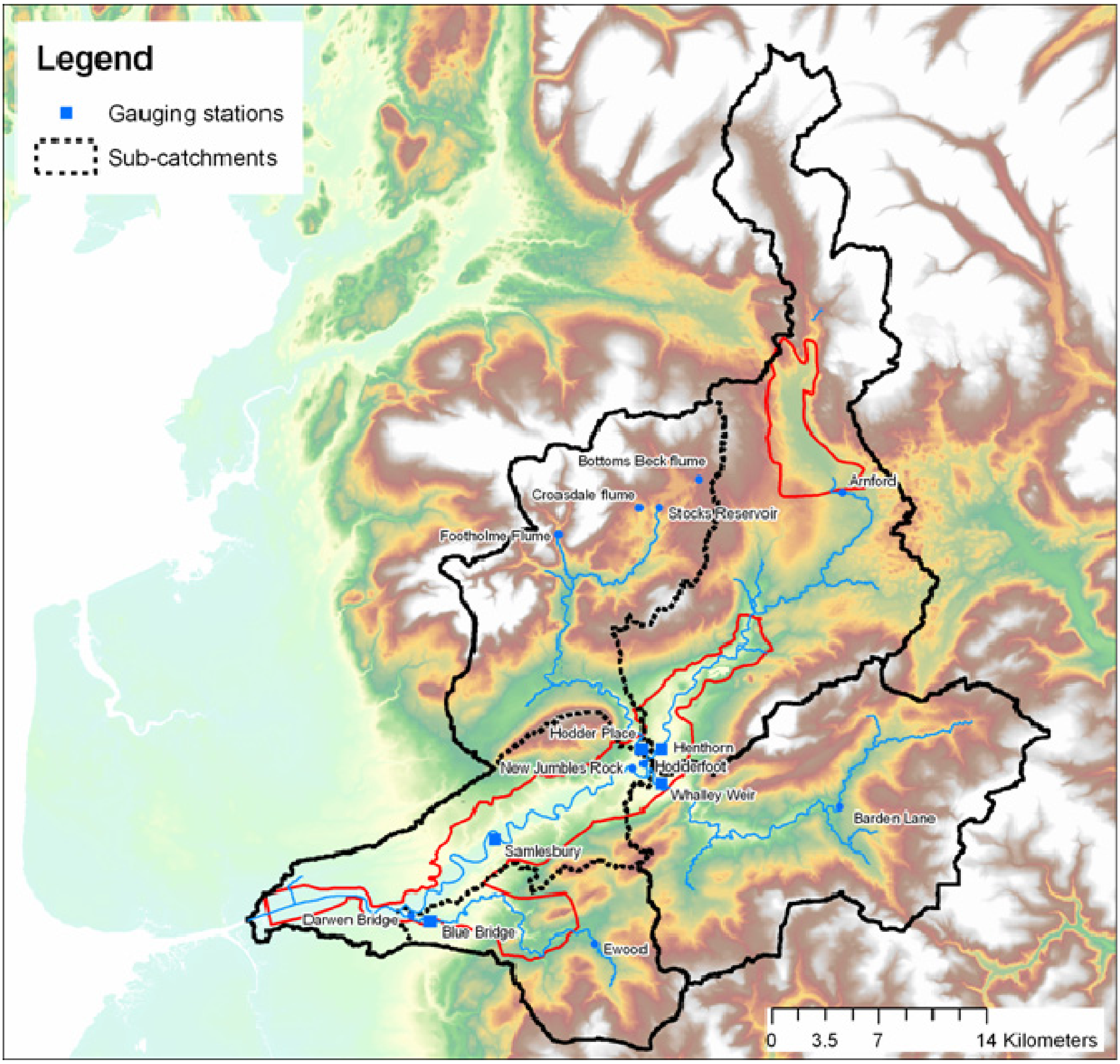


Figure 48: Location of gauging stations and subdivision of the Ribble catchment

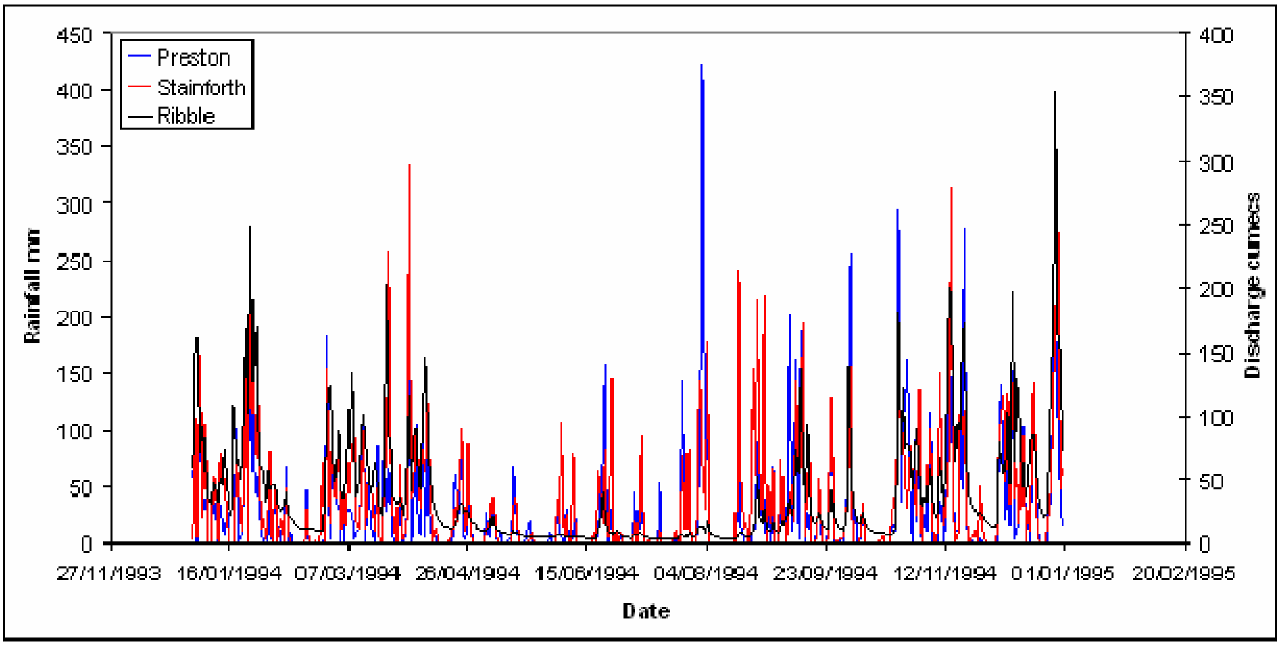


Figure 49: River discharge for the Ribble at Samlesbury and the rainfall recorded at Preston and Stainforth throughout 1994

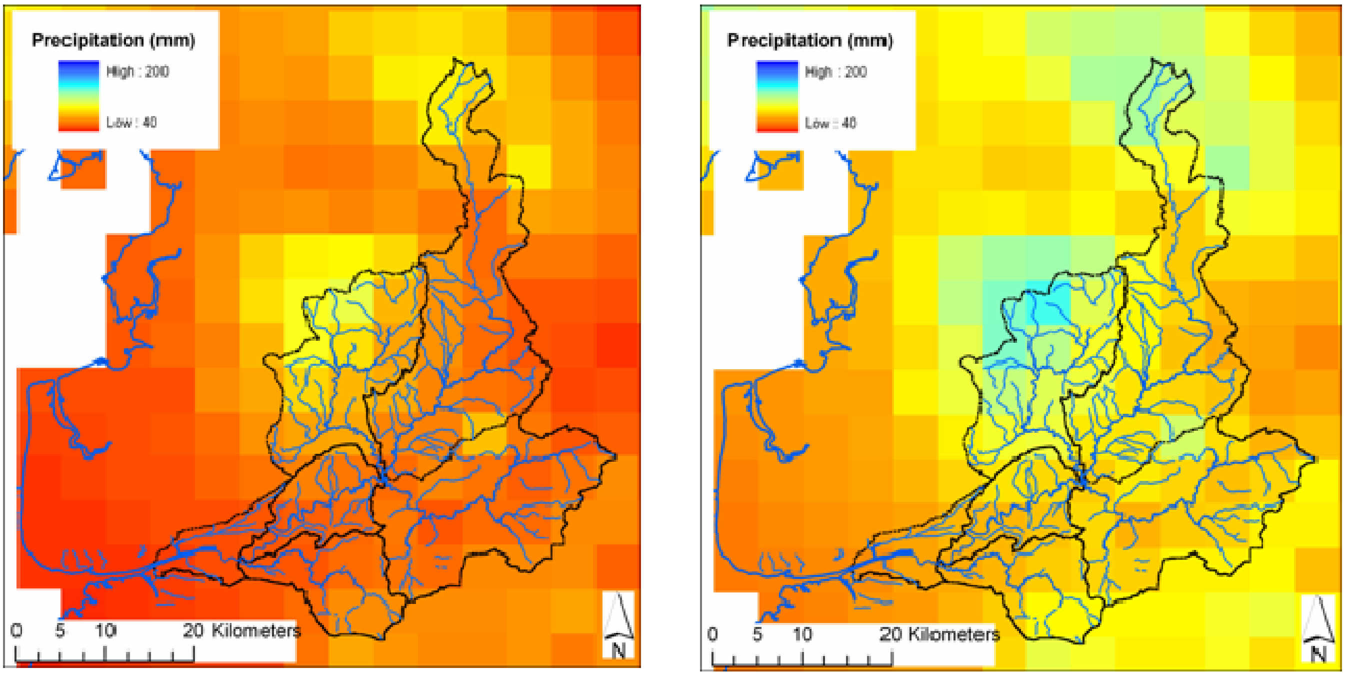


Figure 50: Future precipitation for August rainfall during 2080 following both high (right) and low (left) emissions scenario across the Ribble (UKCIP 2002)

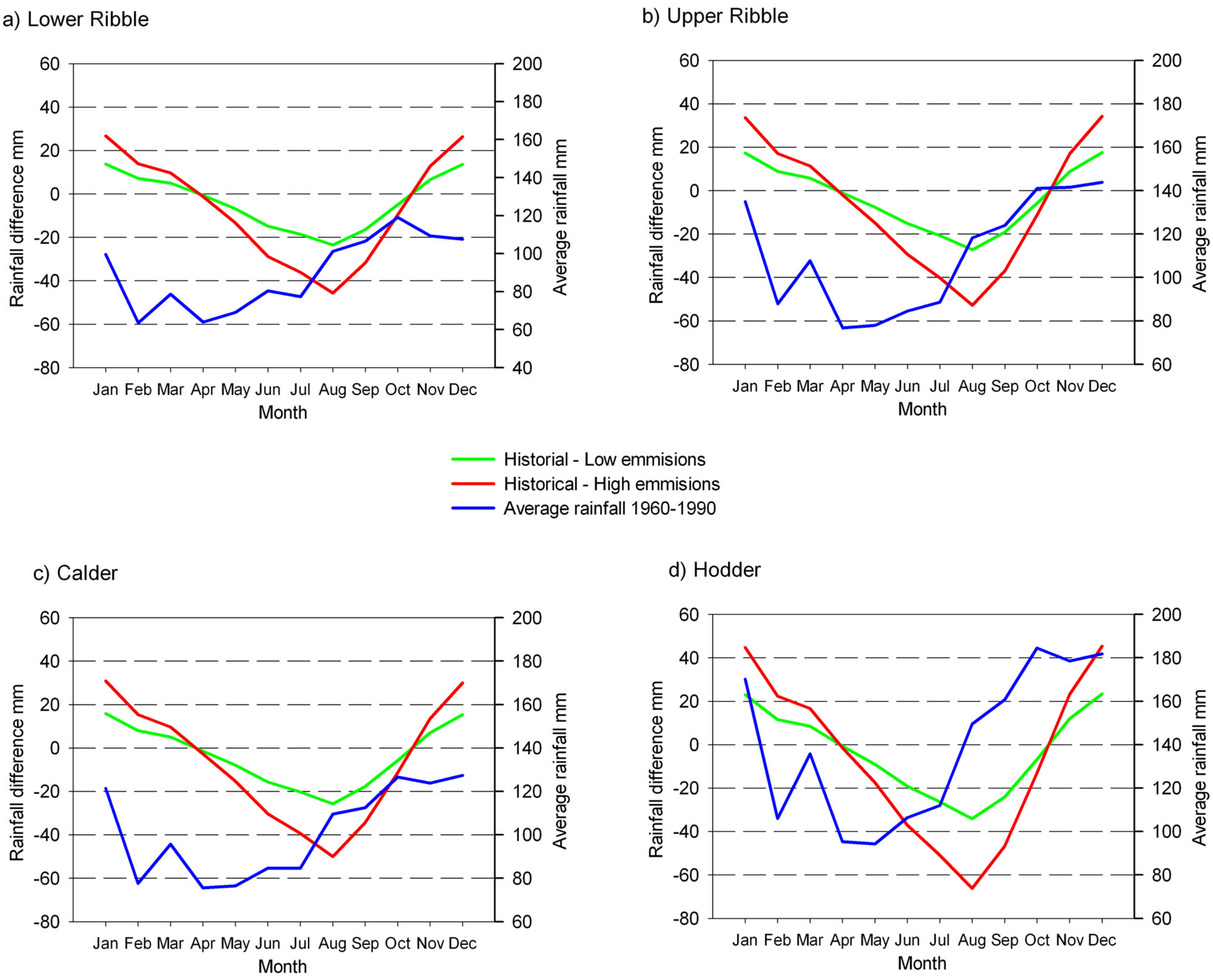


Figure 51: Recorded long-term (1960-1990) sub-catchment average monthly rainfall for the four main sub-catchments, and difference plots between long-term (1960-1990) average monthly rainfall and the UKCIP predictions for sub-catchment average rainfall in the 2080's for high and low emission scenarios

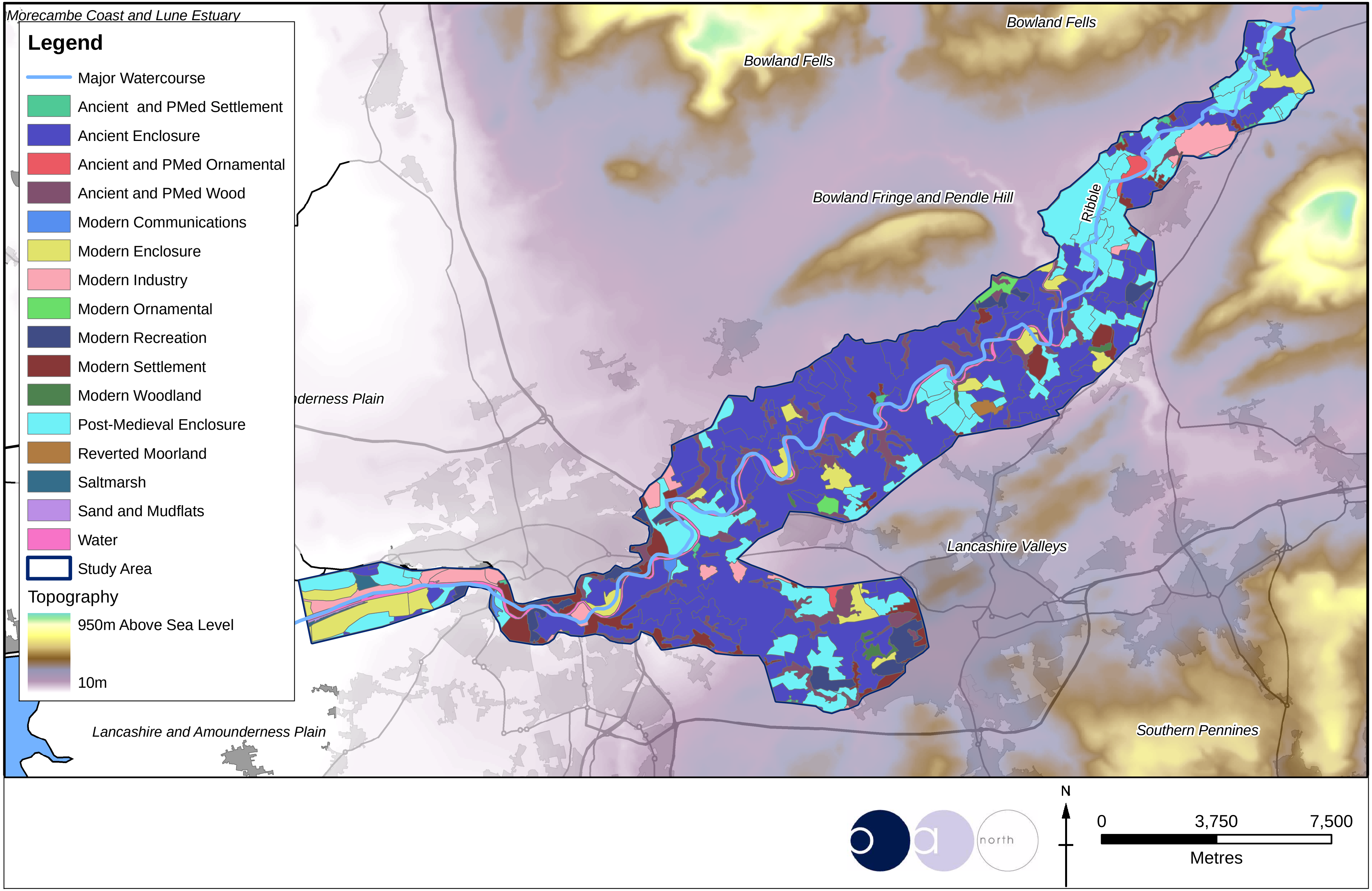
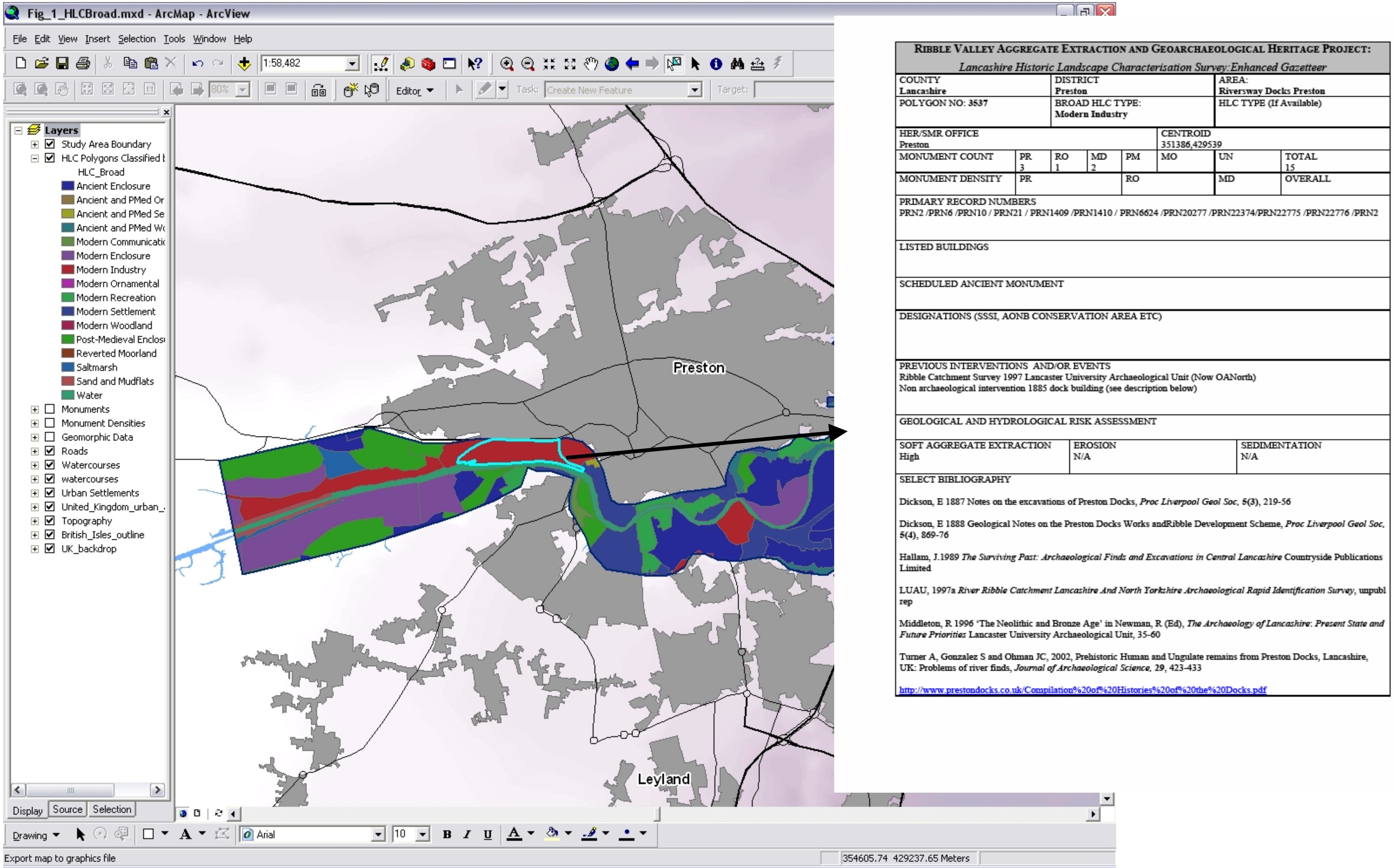


Figure 52: Individual HLC polygons displayed by broad type



RIBBLE VALLEY AGGREGATE EXTRACTION AND GEOARCHAEOLOGICAL HERITAGE PROJECT:

Lancashire Historic Landscape Characterisation Survey: Enhanced Gazetteer

COUNTY **Lancashire**	DISTRICT **Preston**	AREA: **Riversway Docks Preston**
POLYGON NO: **3537**	BROAD HLC TYPE: **Modern Industry**	HLC TYPE (If Available)

HER/SMR OFFICE Preston	CENTROID 351386,429539

MONUMENT COUNT	PR 3	RO 1	MD 2	PM	MO	UN	TOTAL 15

MONUMENT DENSITY	PR	RO	MD	OVERALL

PRIMARY RECORD NUMBERS
PRN2 /PRN6 /PRN10 / PRN21 / PRN1409 /PRN1410 / PRN6624 /PRN20277 /PRN22374/PRN22775 /PRN22776 /PRN2

LISTED BUILDINGS

SCHEDULED ANCIENT MONUMENT

DESIGNATIONS (SSSI, AONB CONSERVATION AREA ETC)

PREVIOUS INTERVENTIONS AND/OR EVENTS
Ribble Catchment Survey 1997 Lancaster University Archaeological Unit (Now OANorth)
Non archaeological intervention 1885 dock building (see description below)

GEOLOGICAL AND HYDROLOGICAL RISK ASSESSMENT

SOFT AGGREGATE EXTRACTION High	EROSION N/A	SEDIMENTATION N/A

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http://www.prestondocks.co.uk/Compilation%20of%20Histories%20of%20the%20Docks.pdf

Figure 53: Enhanced HLC gazetteer, activated by clicking the corresponding polygon within the GIS