

Figure 19. Generalised depth cross-sections through the Bowland Basin, Cheshire Basin, Widmerpool Trough, Gainsborough Trough and Edale Basin. For location of the sections, see Figure 17.

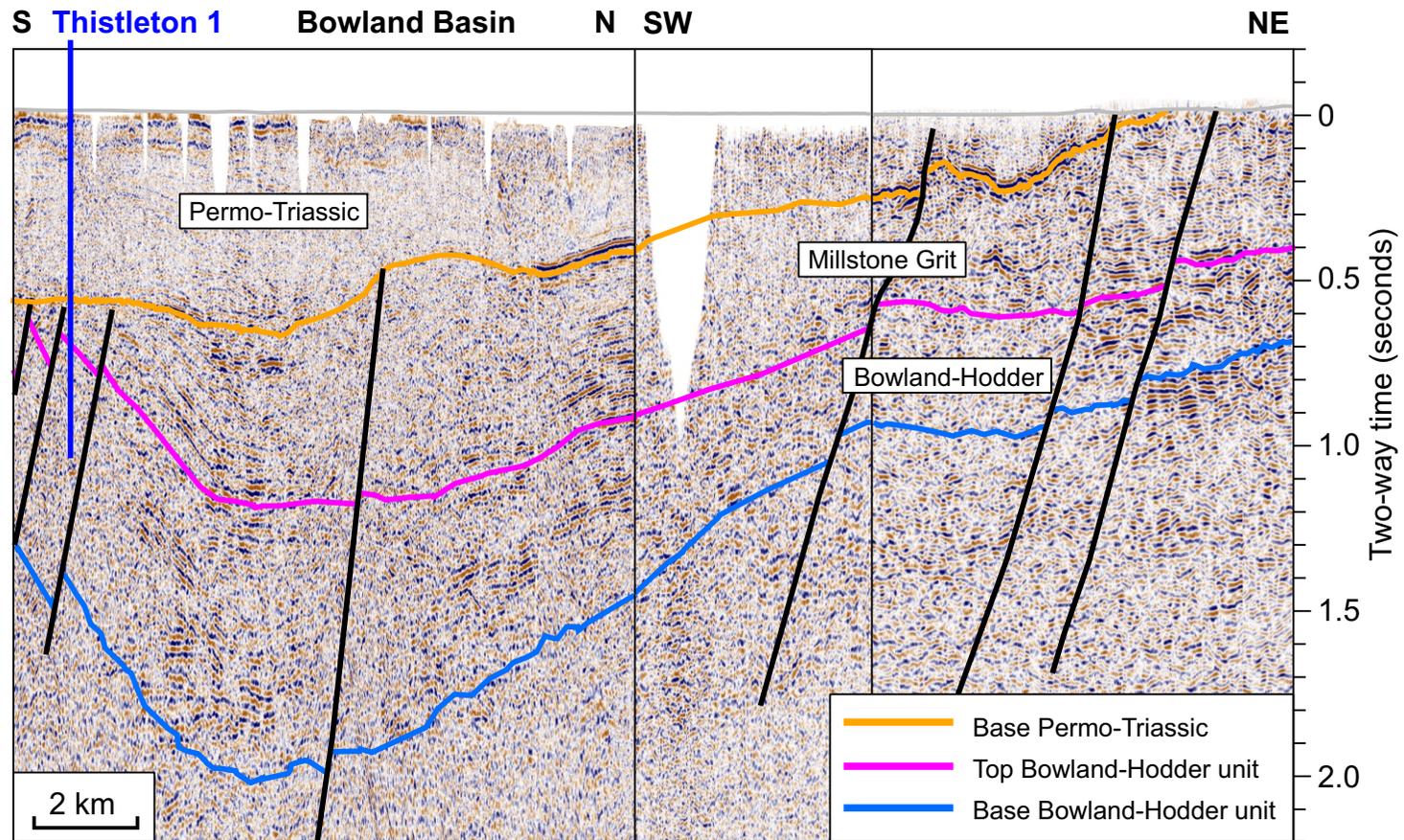


Figure 20. Seismic example across the deepest-buried part of the Bowland Basin showing thickening of the Bowland-Hodder unit towards the basin depocentre. The Thistleton 1 well terminated in Brigantian-aged shales and sandstones and the lower Bowland-Hodder unit was not reached. However, the Hodder Mudstone Formation is at least 3000 ft (900 m) thick in the Plantation Farm Anticline outcrop section located 25 km ENE of Thistleton 1 (Riley 1990), and a section of similar thickness is expected to be present in the area overlain by Permo-Triassic strata. For location of the section, see Figure 18.

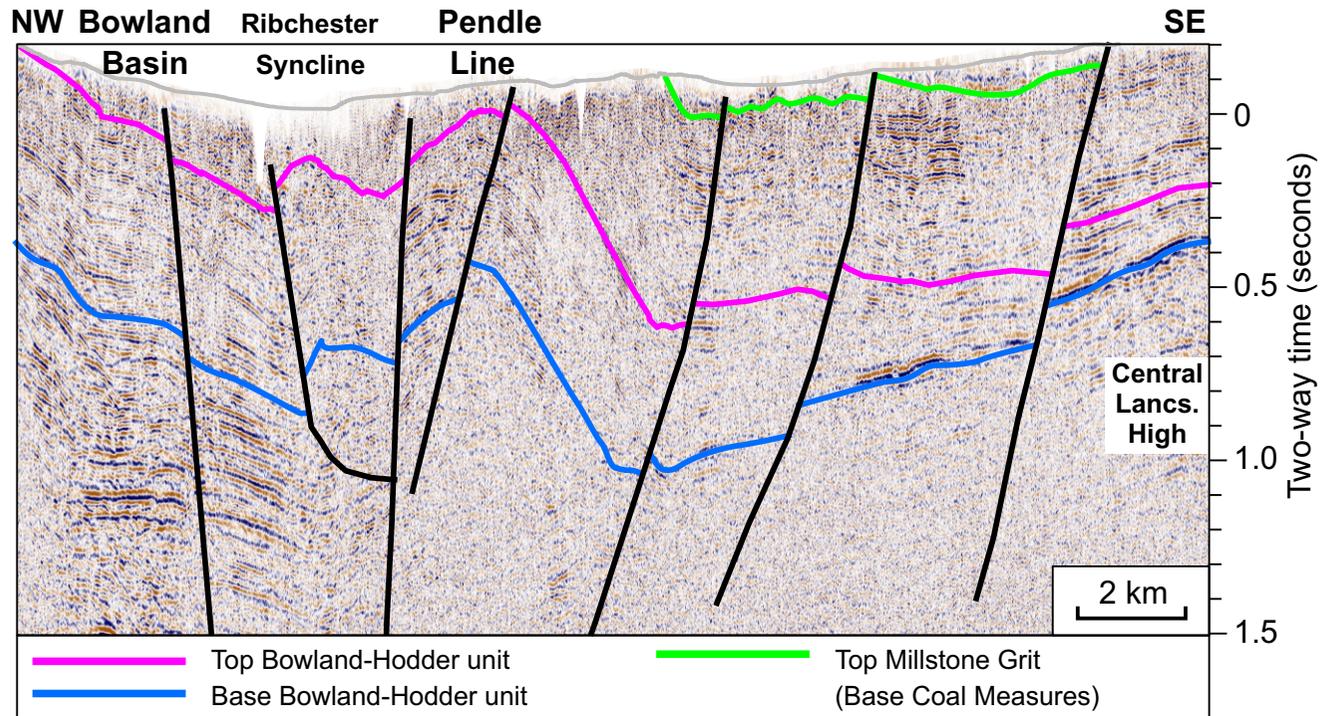


Figure 21. Seismic example across a folded and uplifted part of the Bowland Basin. The Pendle Line and associated monocline mark the southern boundary of the Bowland Basin; Westphalian Coal Measures crop out in the south-east. For location of the section, see Figure 18.

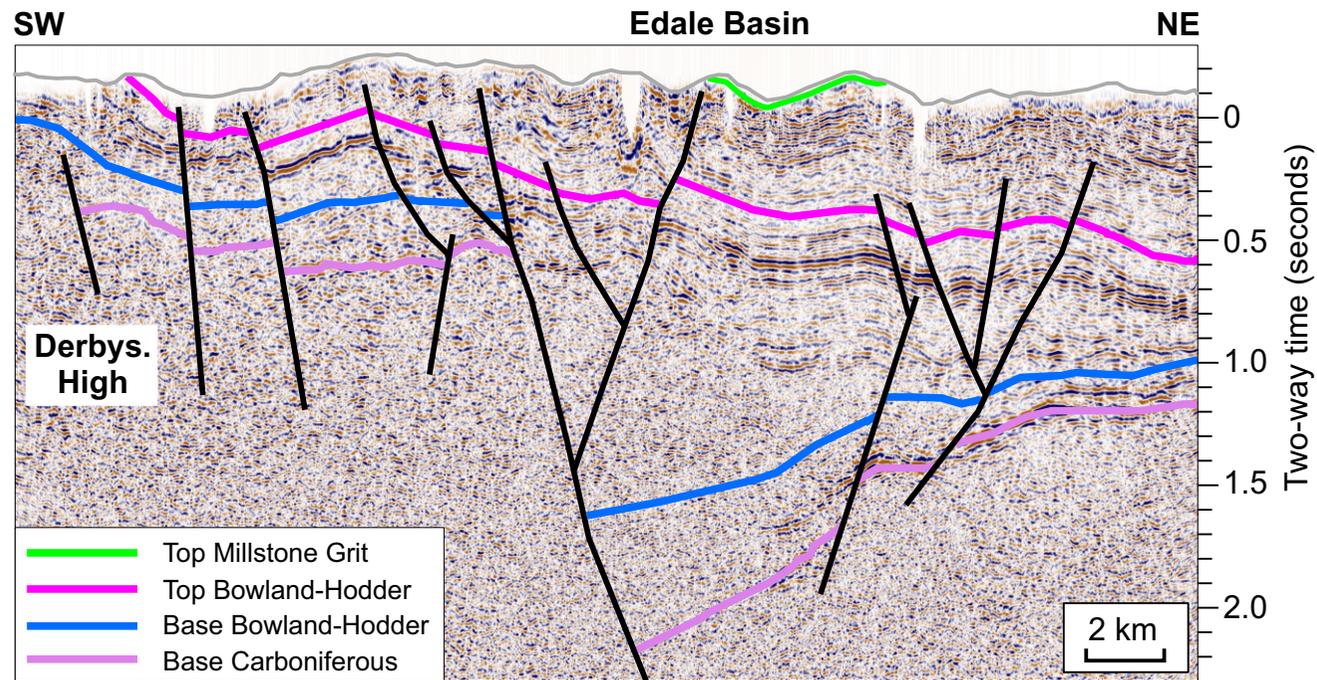


Figure 22. Seismic example across the Edale Basin where very thick basal shales are interpreted. On the adjacent Derbyshire High, the Bowland-Hodder unit comprises platform carbonates topped by relatively thin upper Bowland-Hodder shales. For location of the section, see Figure 18.

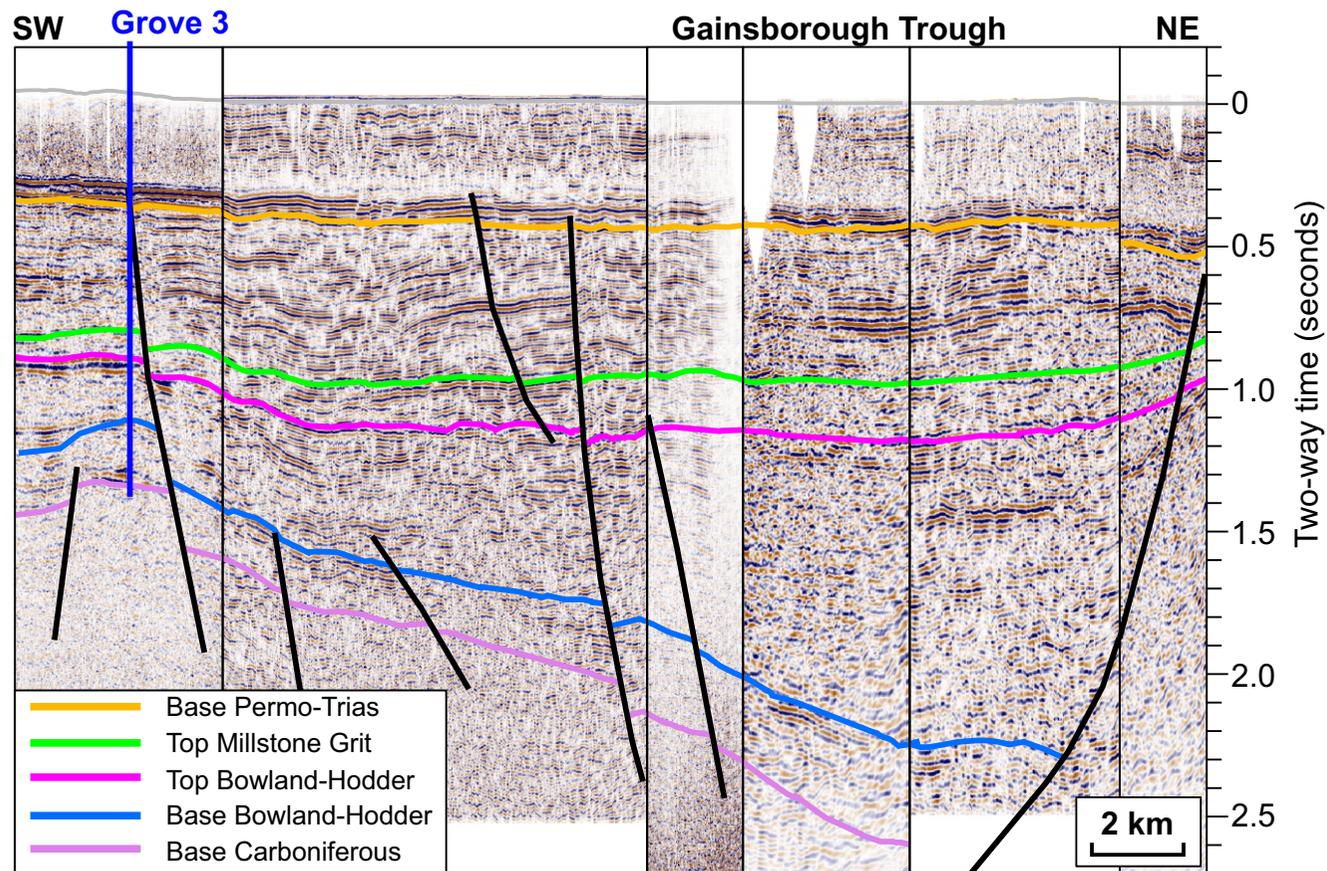


Figure 23. Seismic example across the Gainsborough Trough. The Grove 3 well is located on the East Midlands Shelf and illustrates the platform limestone-dominated nature of the Bowland-Hodder unit that was deposited on an Early Carboniferous platform high area. For location of the section, see Figure 18.

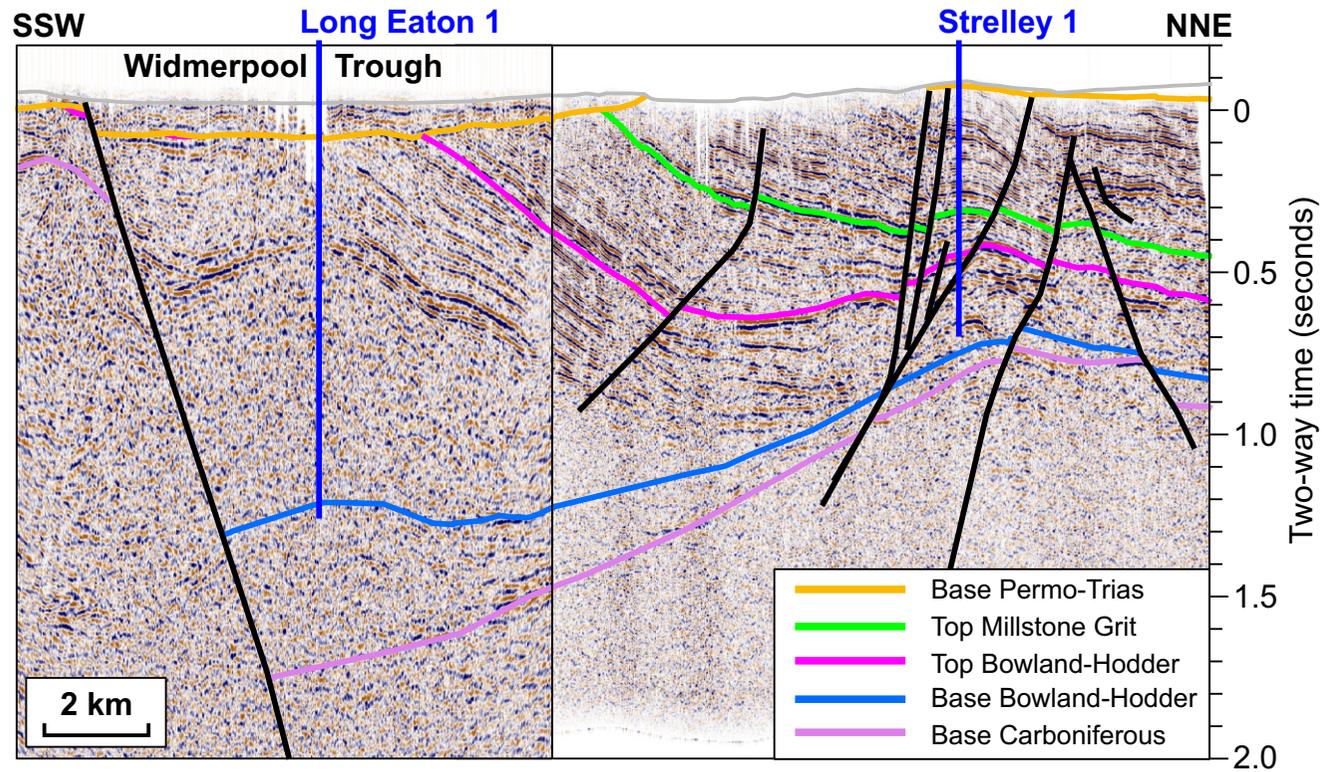


Figure 24. Seismic example across the Widmerpool Trough, showing inversion of the basin depocentre and localised erosion of the upper part of the Bowland-Hodder unit beneath the base Permian unconformity. The Long Eaton 1 well penetrated 8028 ft (2447 m) of the Bowland-Hodder unit before reaching a limestone of possible Chadian age. For location of the section, see Figure 18.

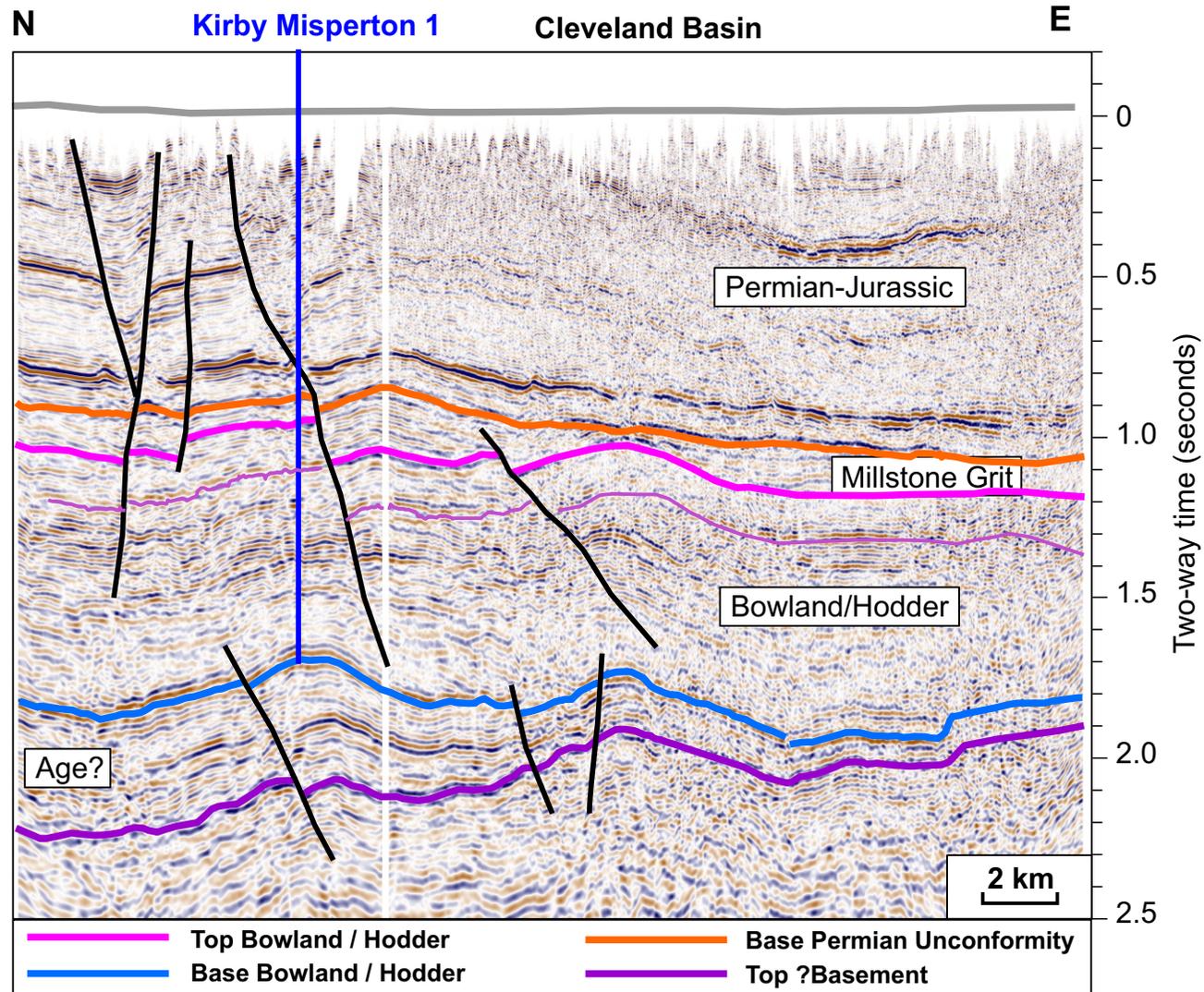


Figure 25. Seismic example across the Cleveland Basin, showing the presence of older wedging strata (of unknown age) beneath the Bowland-Hodder unit. The Kirby Misperton 1 well terminates in the 'Fell Sandstone', but the older part of the Bowland-Hodder unit is also sand-prone in this well. For location of the section, see Figure 18.

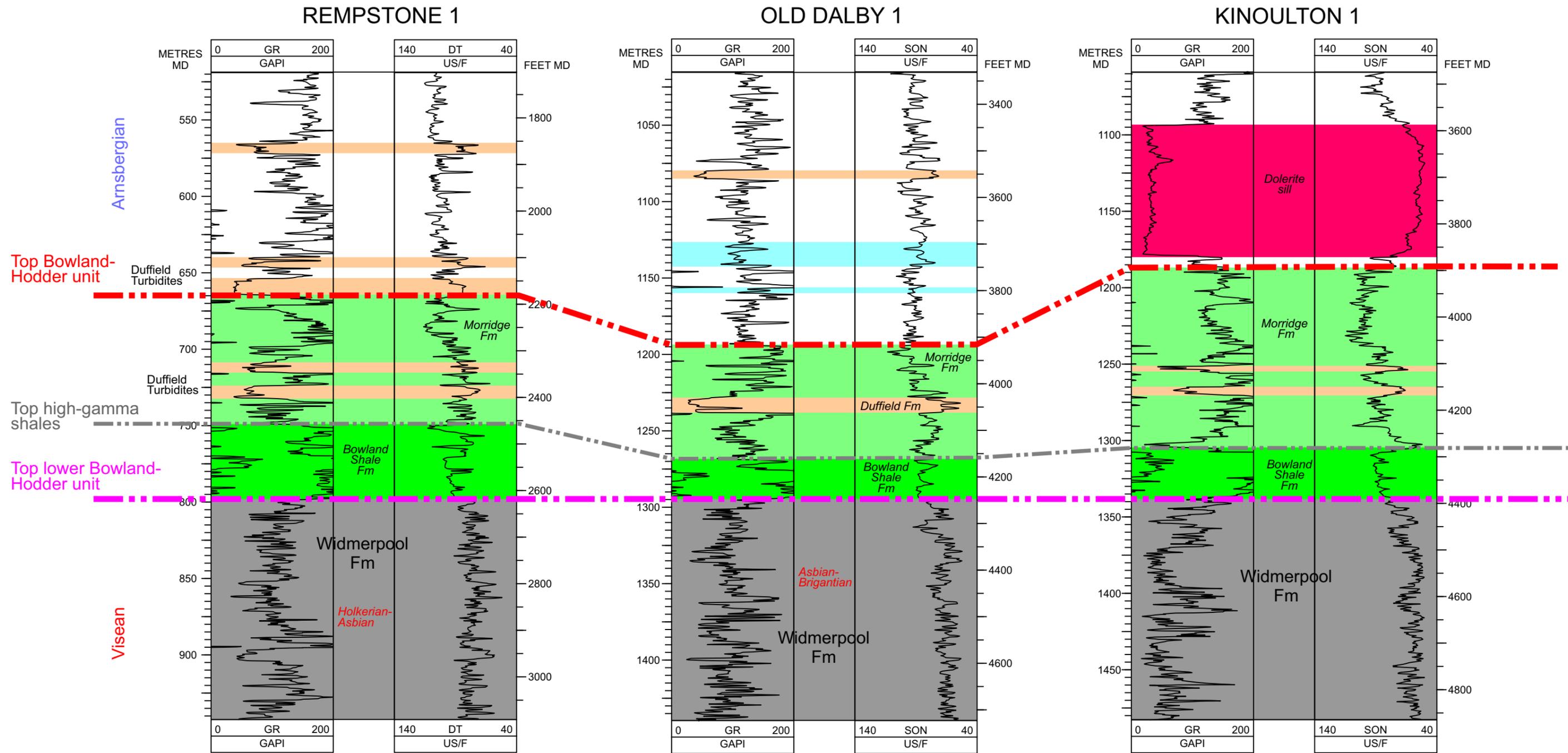


Figure 27. Geophysical well-log correlation of the upper Bowland-Hodder unit between Rempstone 1, Old Dalby 1 and Kinoulton 1 located in the Widmerpool Gulf (see Appendix D iv for the complete correlation diagram). The upper part of the Bowland-Hodder unit contains correlateable units.

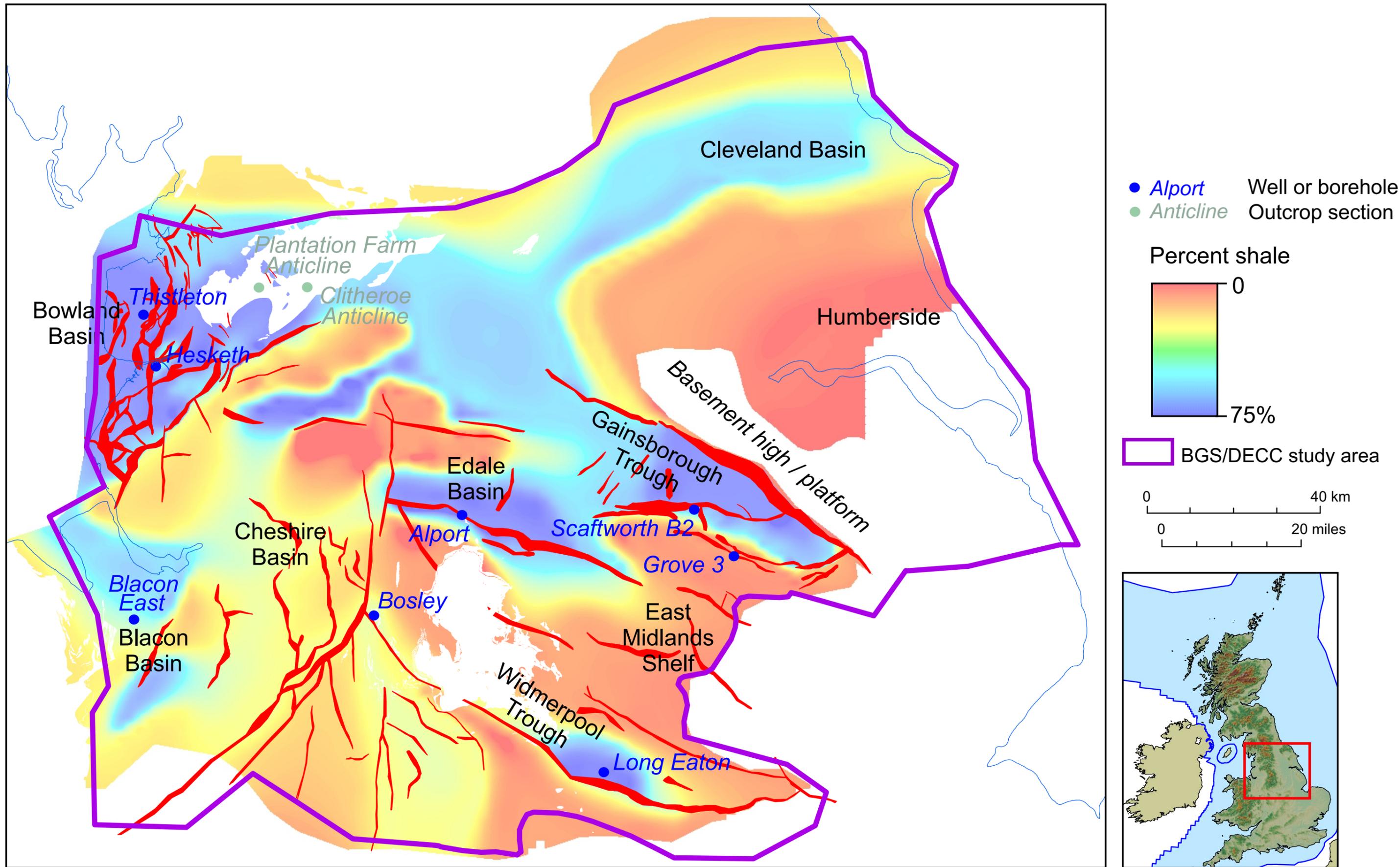


Figure 29. Predicted shale percentages within the lower part of the Bowland-Hodder seismic unit used to condition the 3D volume during the calculation of in-place gas resources.

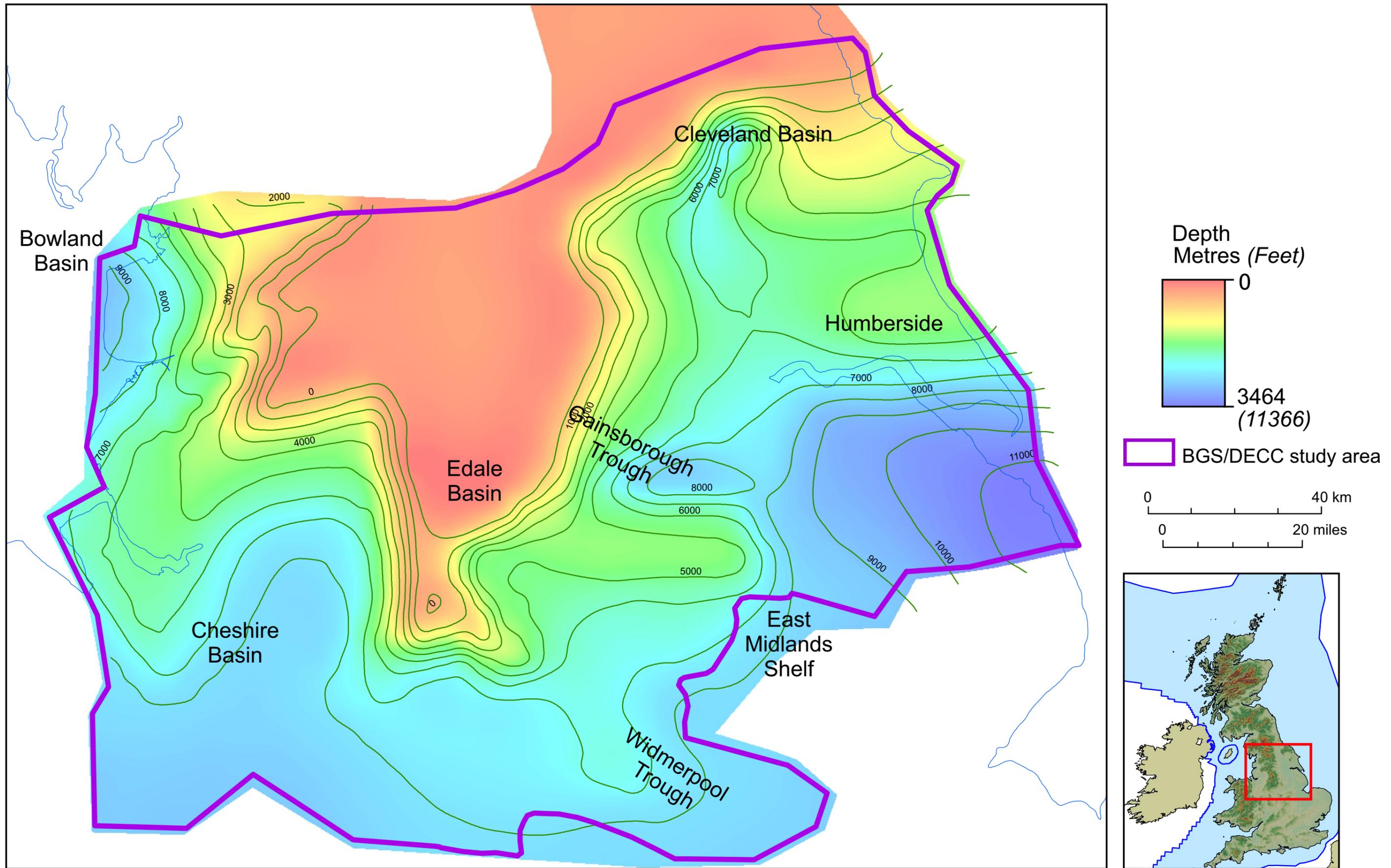


Figure 38. Estimated present-day depth (feet) to the top of the gas window ($R_0 = 1.1\%$), central Britain. Note: the shallowest colour includes areas where this isomaturity surface is above sea-level and also above the land surface.

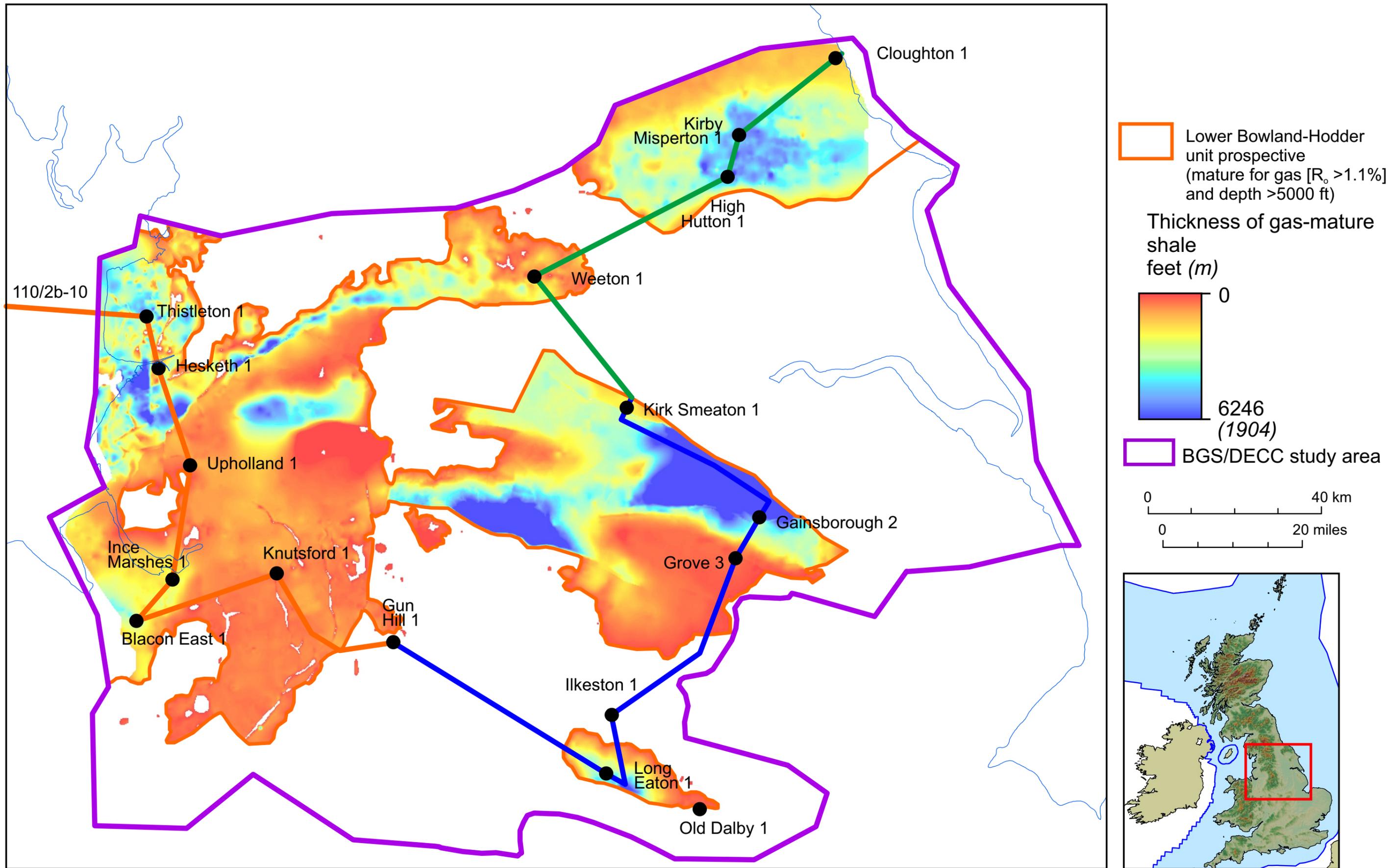


Figure 40. Thickness and distribution of shales of the lower Bowland-Hodder unit that are within the gas window and at a depth greater than 5000 ft.

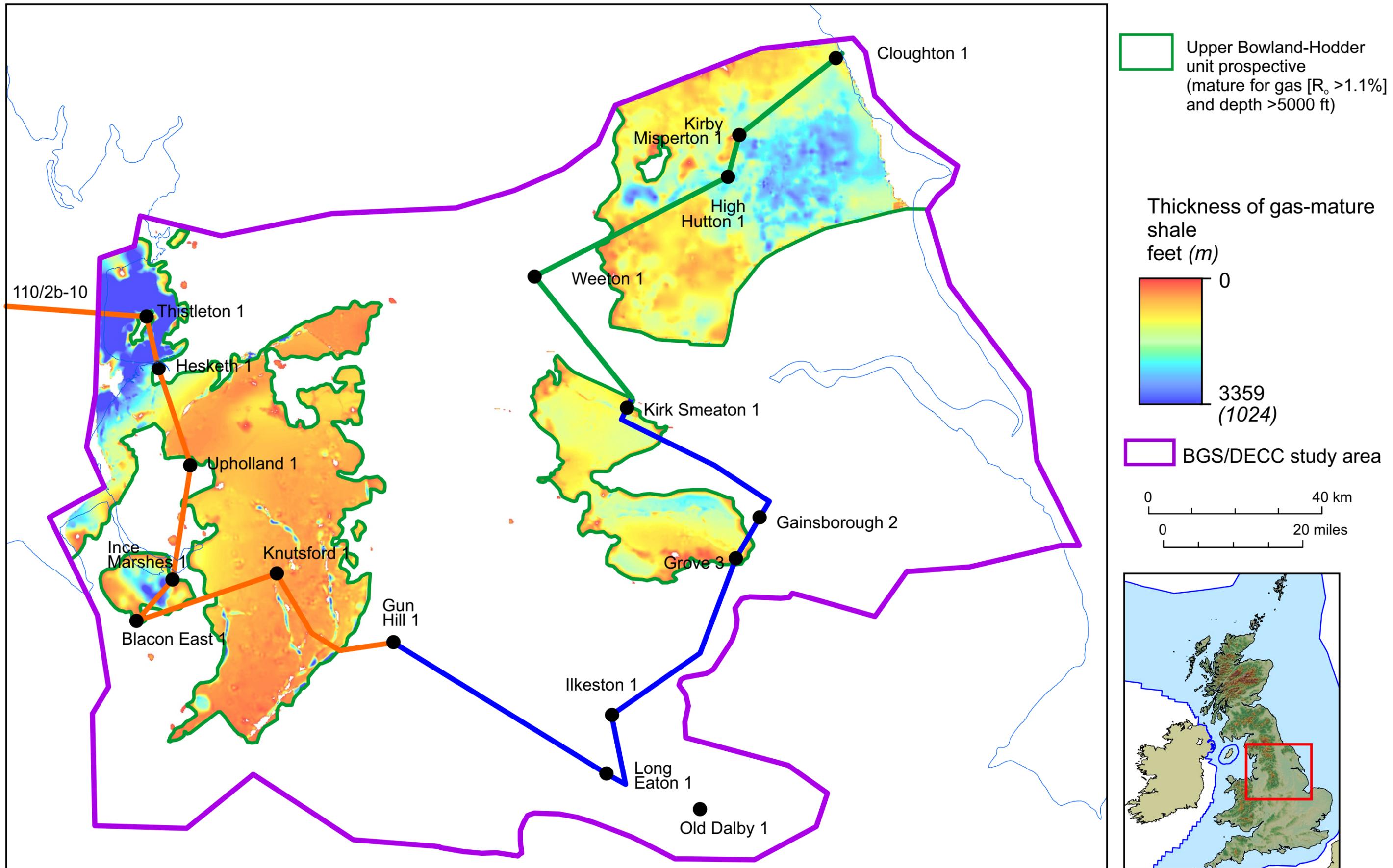


Figure 41. Thickness and distribution of shales of the upper Bowland-Hodder unit that are within the gas window and at a depth greater than 5000 ft.

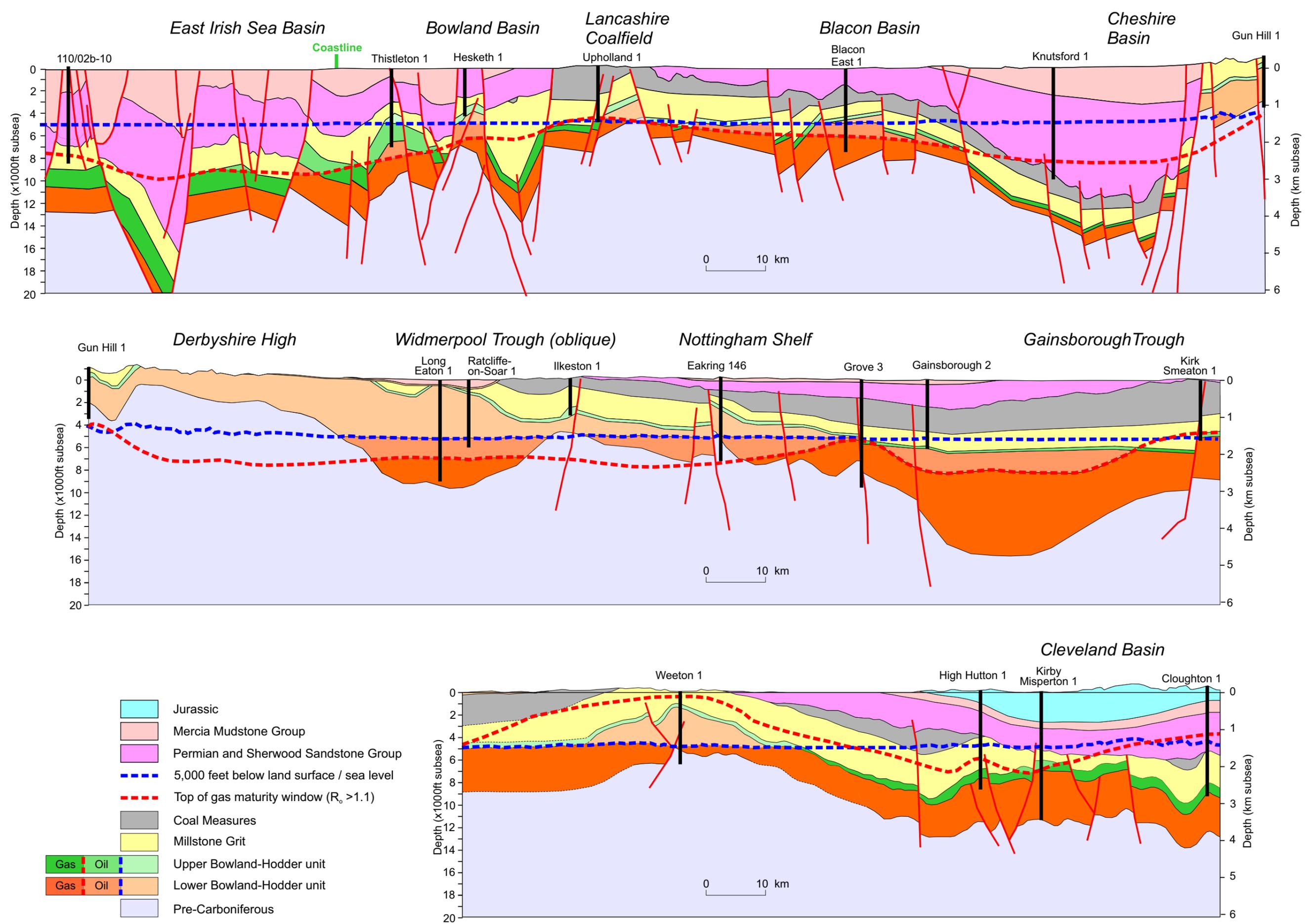


Figure 42. Schematic geological cross-sections indicating where the Bowland-Hodder unit might be considered a shale gas target (labelled 'Gas' in the key). Liquids potential, where not thermally mature for gas (labelled "Oil"), are not considered within the scope of this study. For location of the section, see Figure 40 or 41.

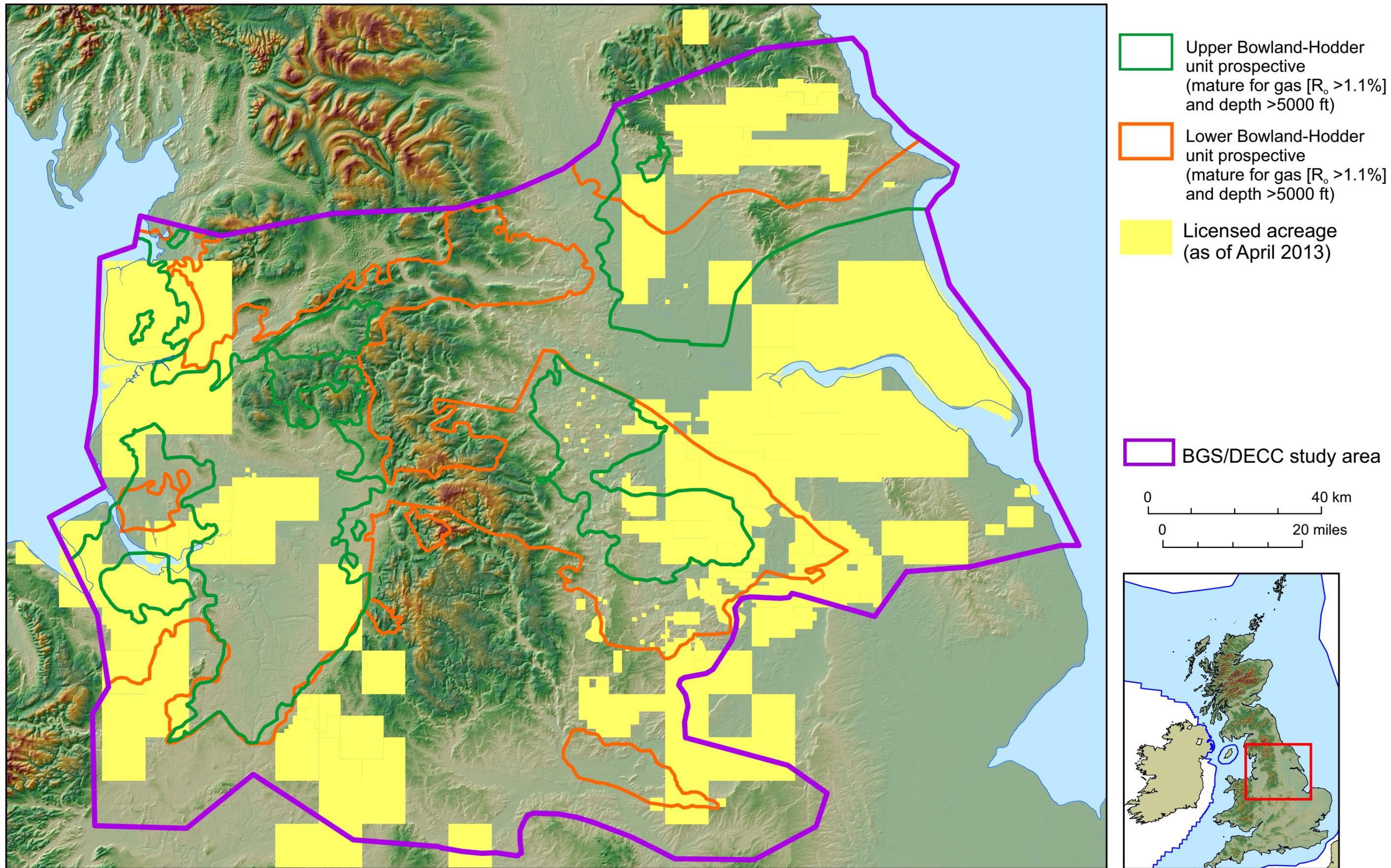


Figure 43. Summary of areas prospective for gas in the upper and lower parts Bowland-Hodder unit in central Britain with currently licensed acreage shown.

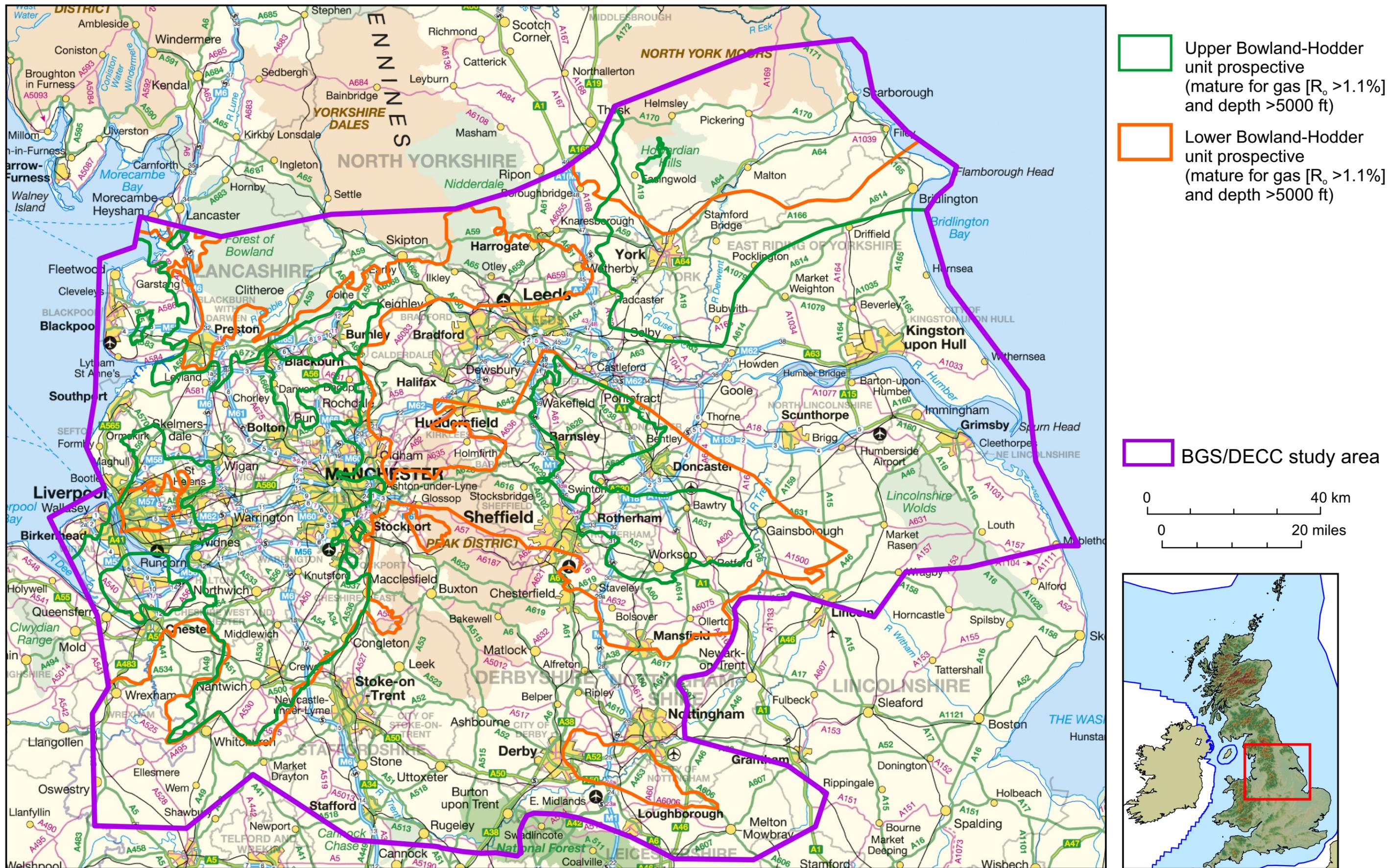


Figure 44. Summary of areas prospective for gas in the upper and lower parts Bowland-Hodder unit in relation to the urban areas of central Britain.

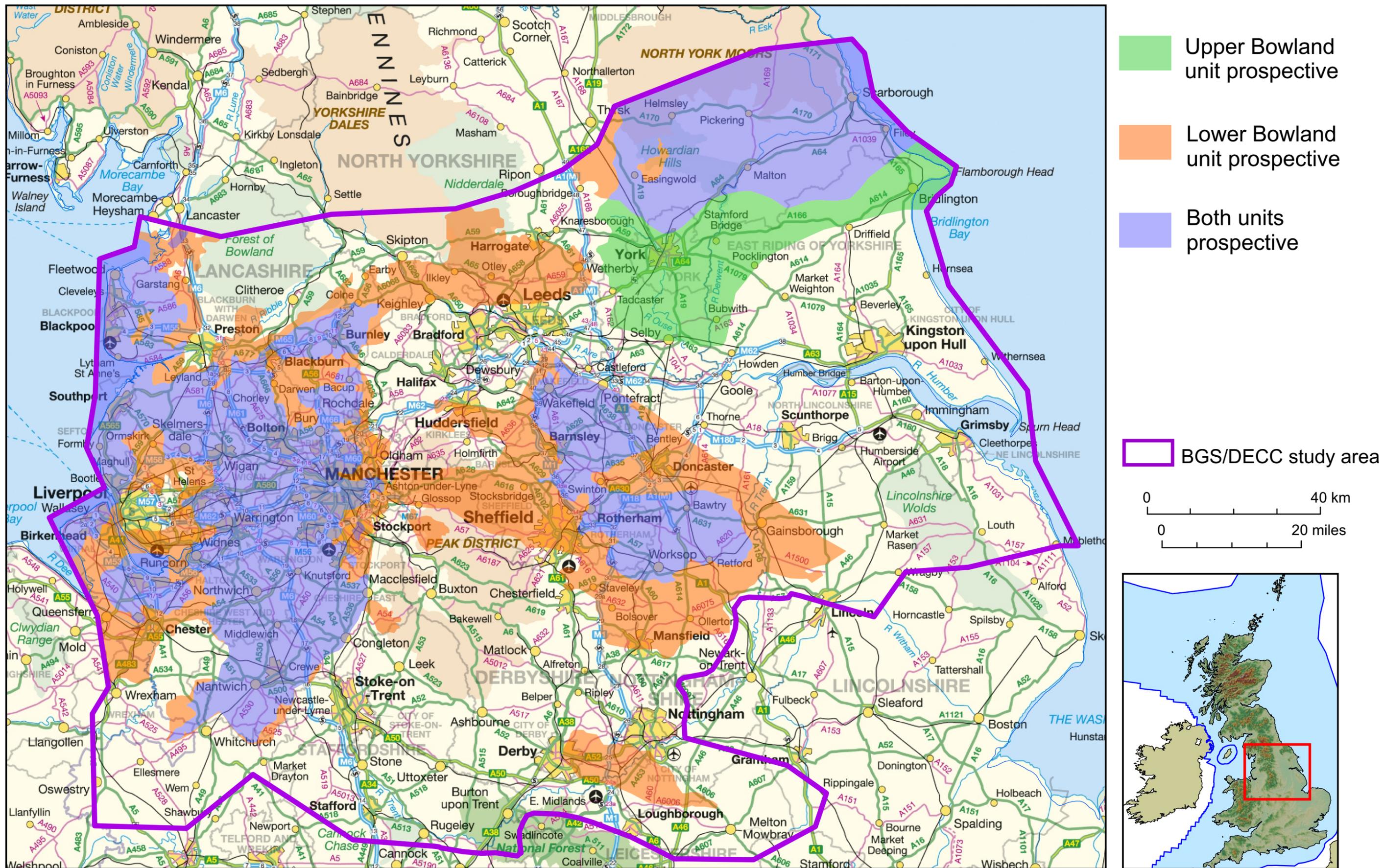


Figure 44. Summary of areas prospective for gas in the upper and lower parts Bowland-Hodder unit in relation to the urban areas of central Britain.