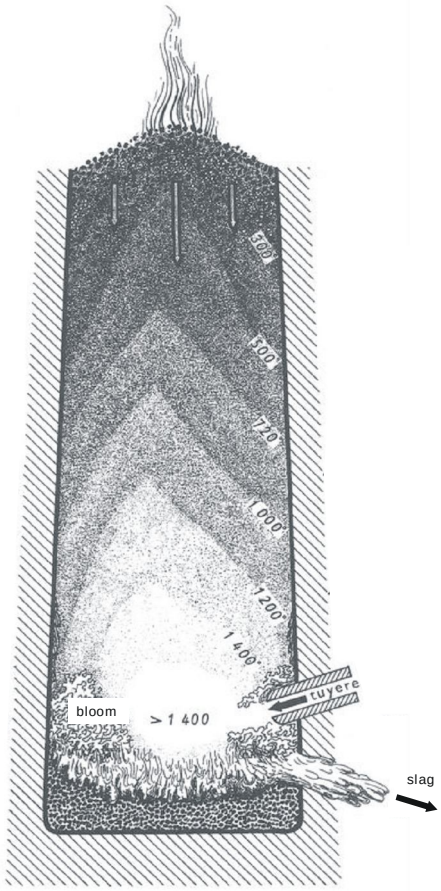
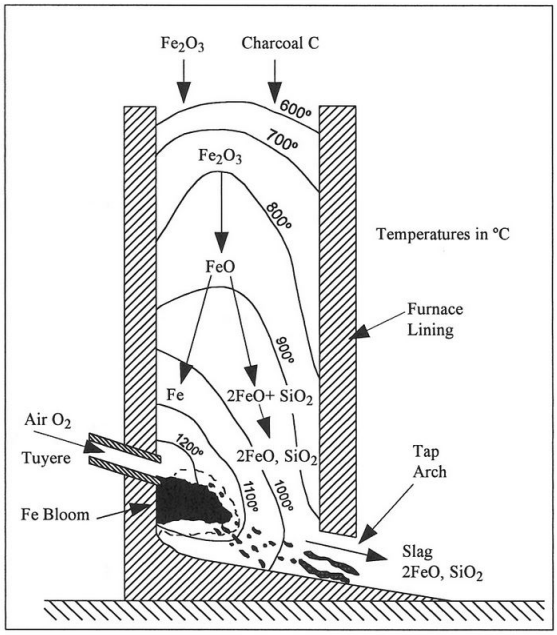
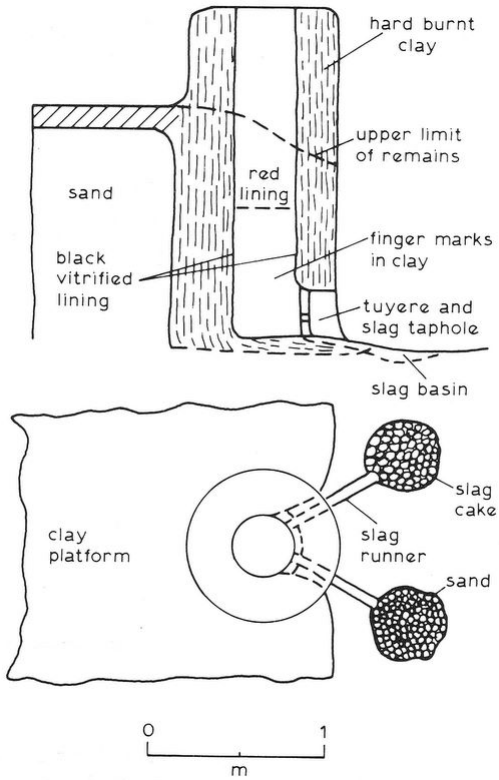


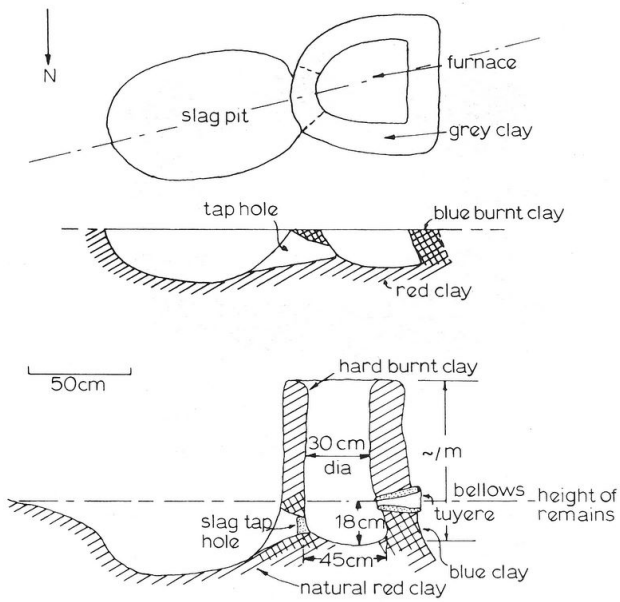


(a) (b)

Figure 3.1: Schematic sections of an iron smelting furnace indicating the temperature contours, as perceived by (a) Pleiner (2000, 134) and (b) McDonnell (1995b).



Ashwicken, Norfolk



Stamford, Lincs.

Figure 3.2: Reconstructions of iron smelting furnaces showing typical dimensions (Tylecote 1990).

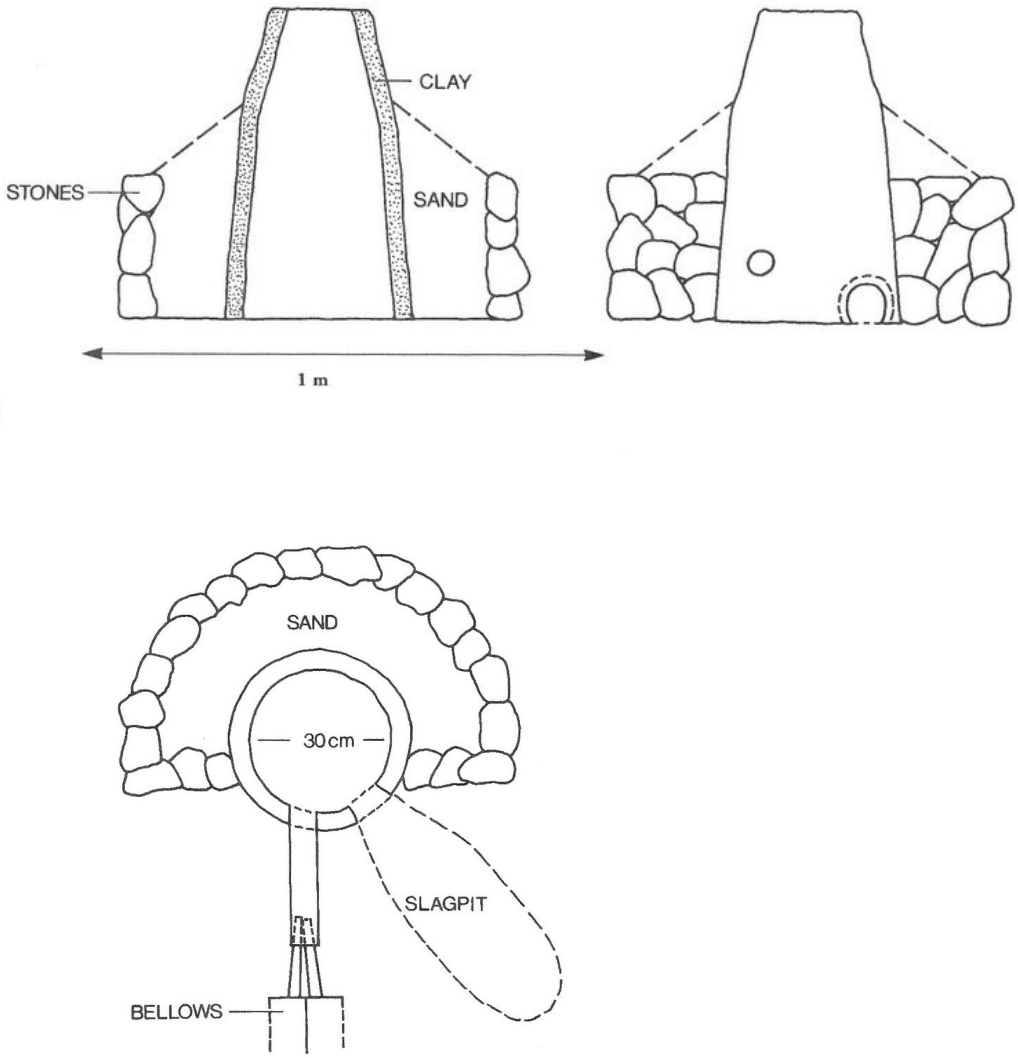


Figure 3.3: Reconstruction of the Østland iron smelting furnace (after Borup 1997).

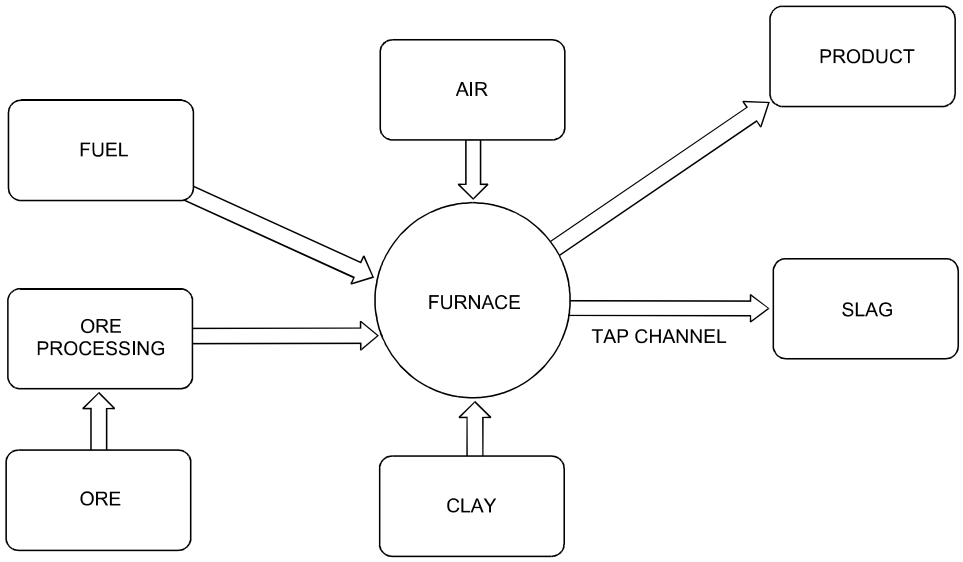


Figure 3.4: Flow diagram to show main components of a medieval/post-medieval iron smelting furnace site.

Hagg End

Ewecote

Stingamires

Figure 3.5: Hagg End, Ewecote and Stingamires iron smelting furnaces in various stages of excavation. (Photos: author)

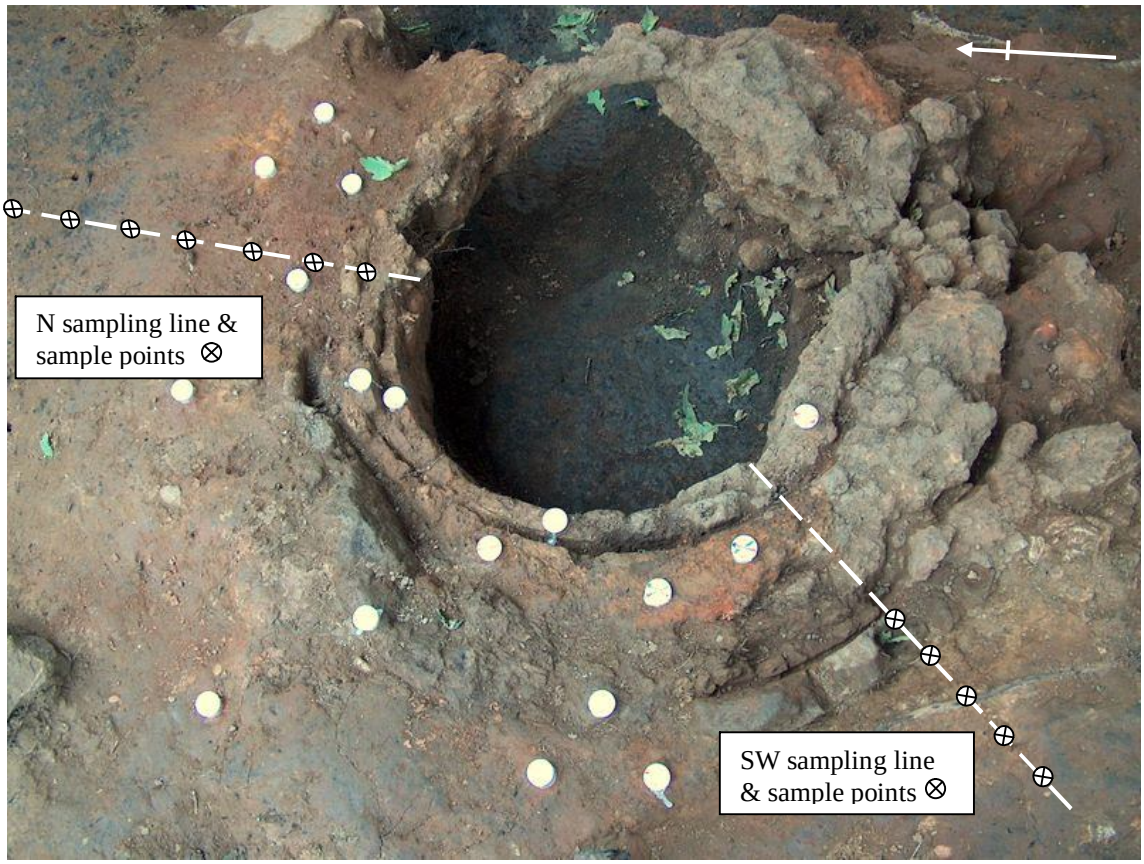


Figure 3.6: Hagg End iron smelting furnace linear magnetic susceptibility sampling points, at 10cm intervals and showing relationship to archaeomagnetic dating samples. (Photo: author)

Figure 3.7: Stingamires Trench 2 iron smelting furnace linear magnetic susceptibility sampling points, at 5cm intervals and showing relationship to archaeomagnetic dating samples. (Photo: author)

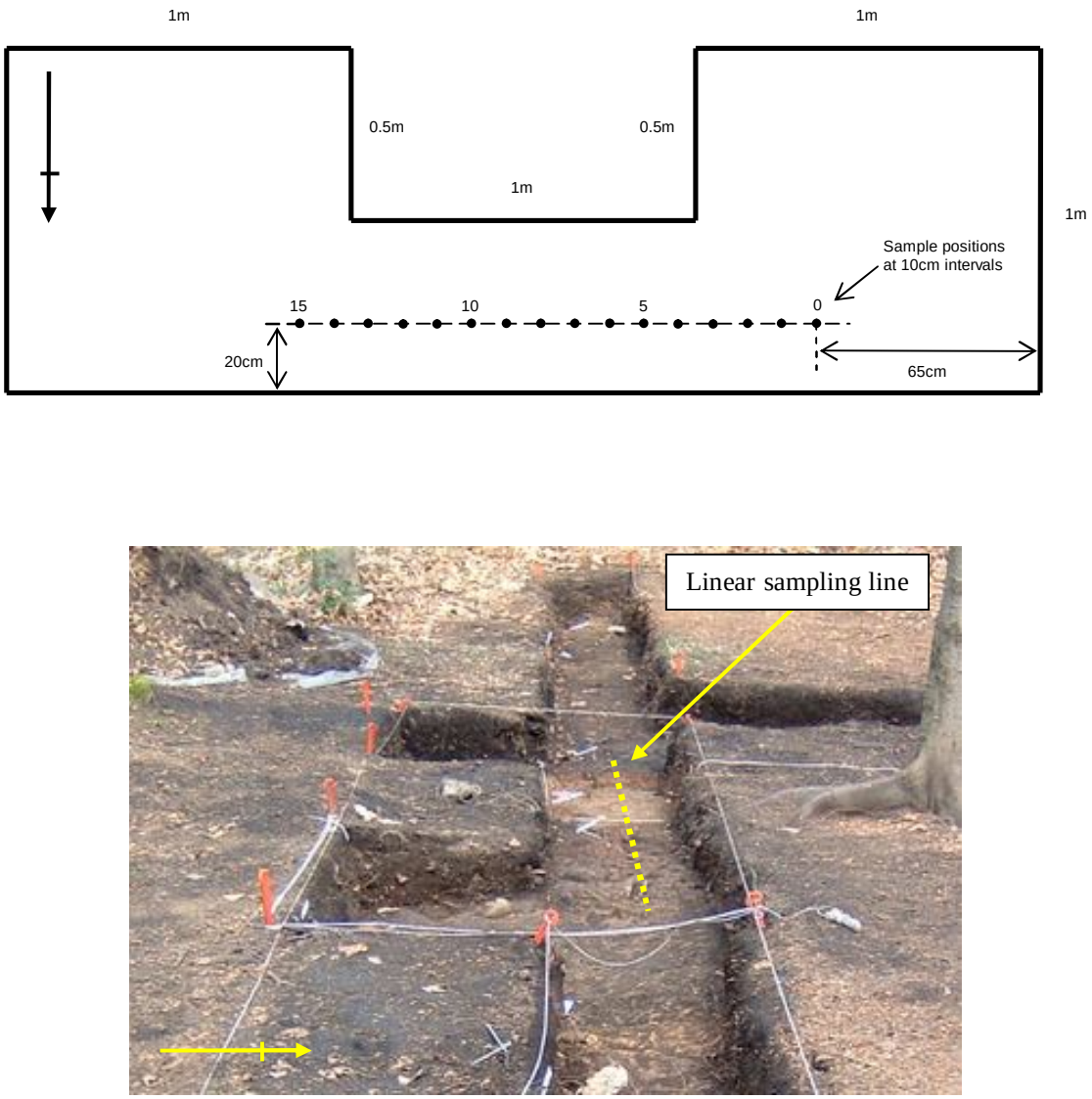


Figure 3.8: Myers Wood Trench A ore roasting/charcoal production area linear magnetic susceptibility sampling points, at 10cm intervals. (Photo: G. Clay)

Figure 3.9: Stingamires Trench 1 ore roasting area monoblock. (Photo: author)

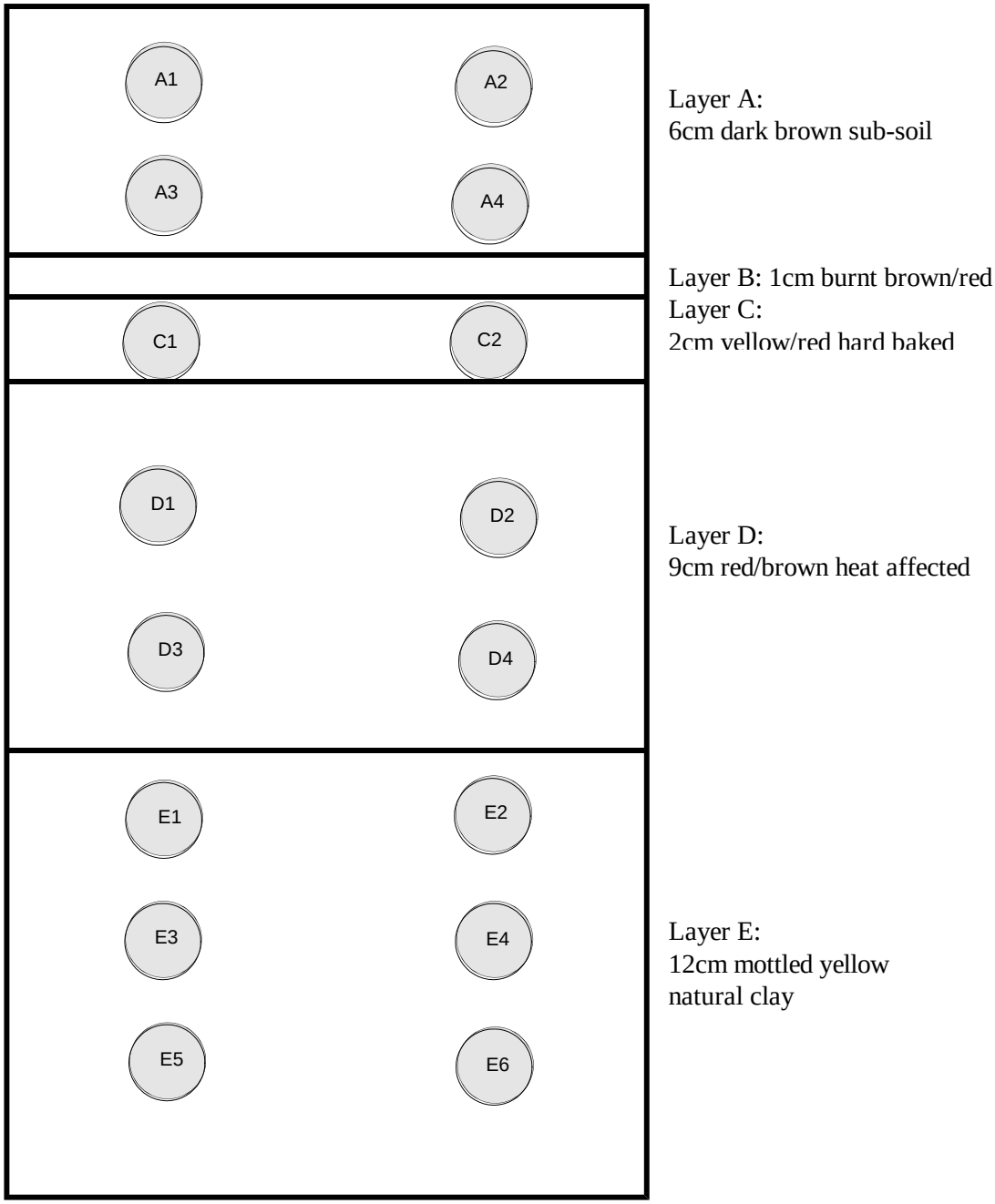
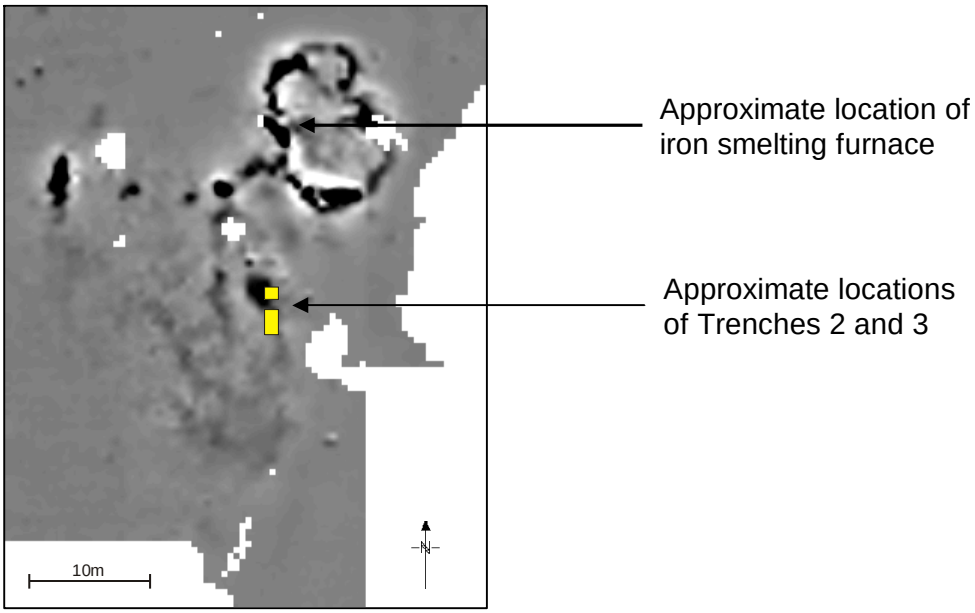
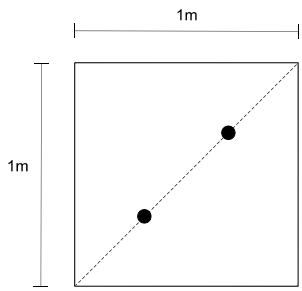


Figure 3.10: Stingamires Trench 1 ore roasting area monoblock: magnetic susceptibility sampling points.



Trench 2 contexts 201 and 202. Sample positions 45cm from the corners shown.



Trench 3:

- contexts 301 and 302: sample positions at 40cm spacings along centre line.
- contexts 304 and 305: sample positions at centre of sub-trench in NE corner.

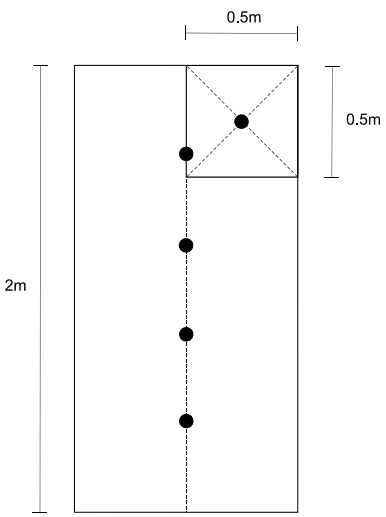


Figure 3.11: Hagg End iron smelting furnace Trenches 2 and 3: location of trenches relative to furnace, and susceptibility sampling points.

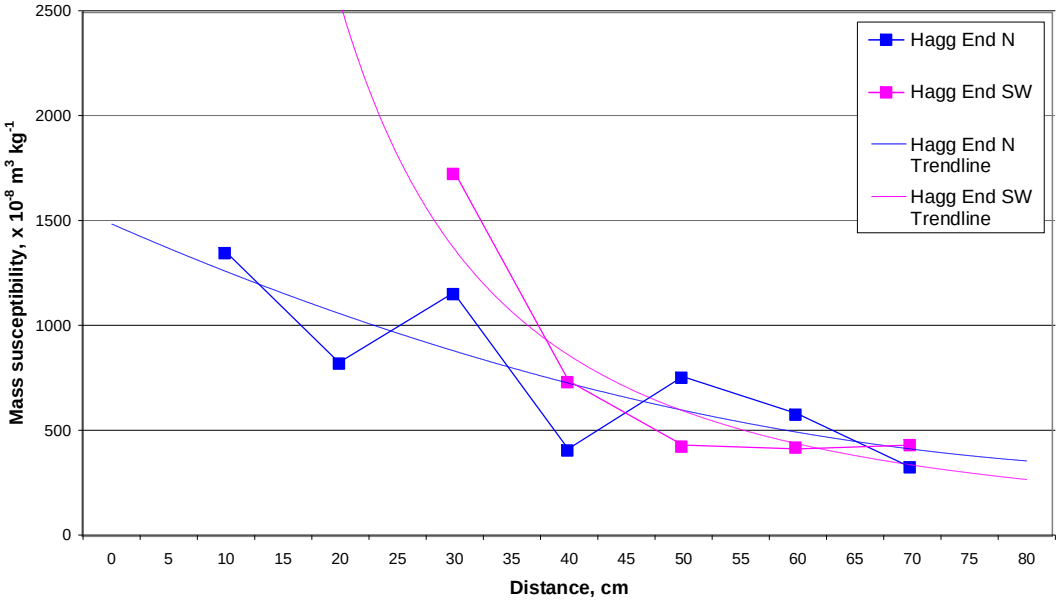


Figure 3.12: Hagg End iron smelting furnace: linear sampling magnetic susceptibility variations with distance from furnace internal surface.

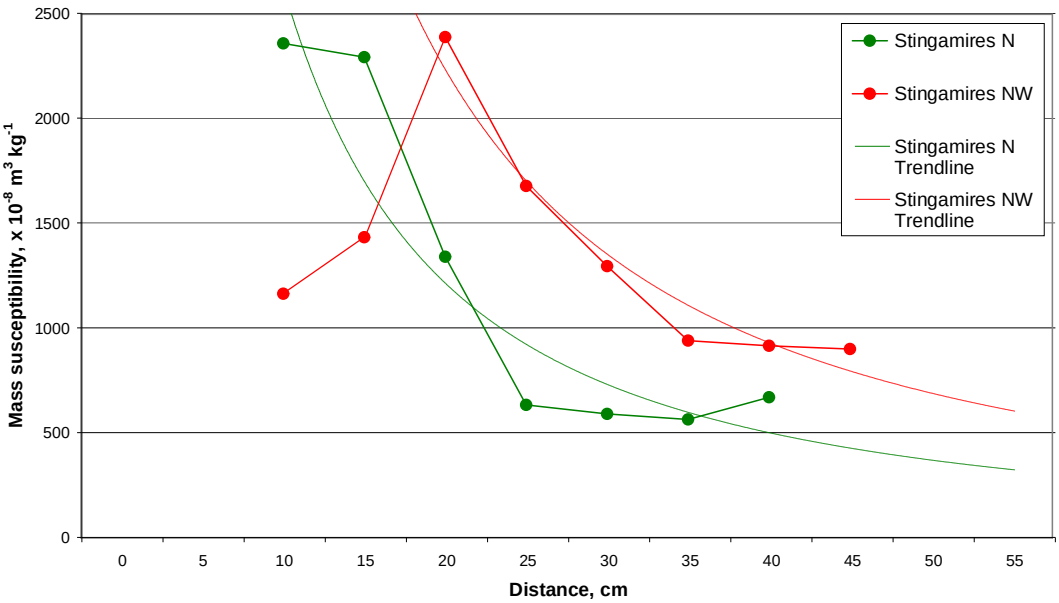


Figure 3.13: Stingamires iron smelting furnace: linear sampling magnetic susceptibility variations with distance from furnace internal surface.

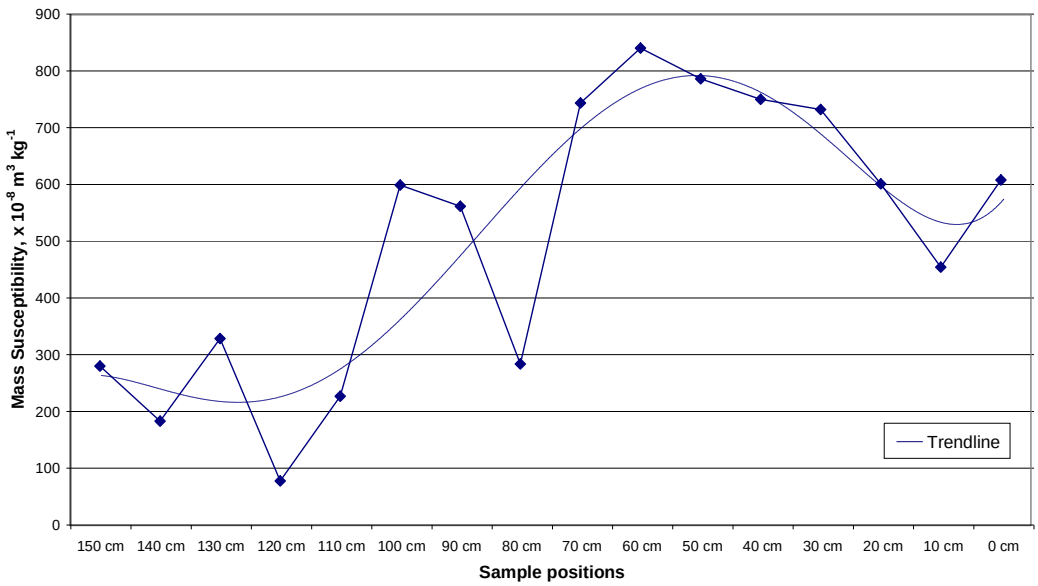


Figure 3.14: Myers Wood Trench A ore roasting/charcoal production area: linear sampling magnetic susceptibility variations with distance. Refer to Figure 3.8 for relative positions of sample points.

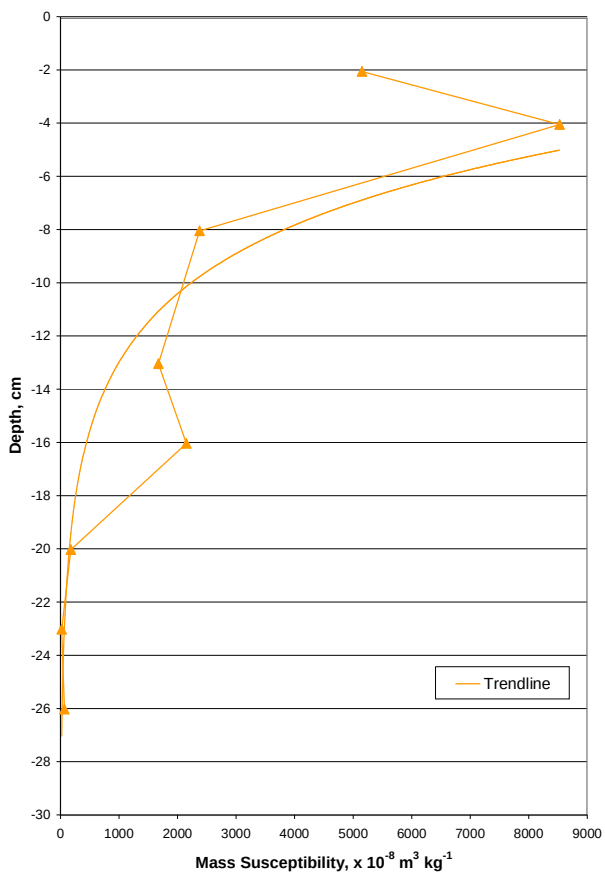


Figure 3.15:

Stingamires Trench 1 ore roasting area monoblock: linear sampling magnetic susceptibility variations with depth.

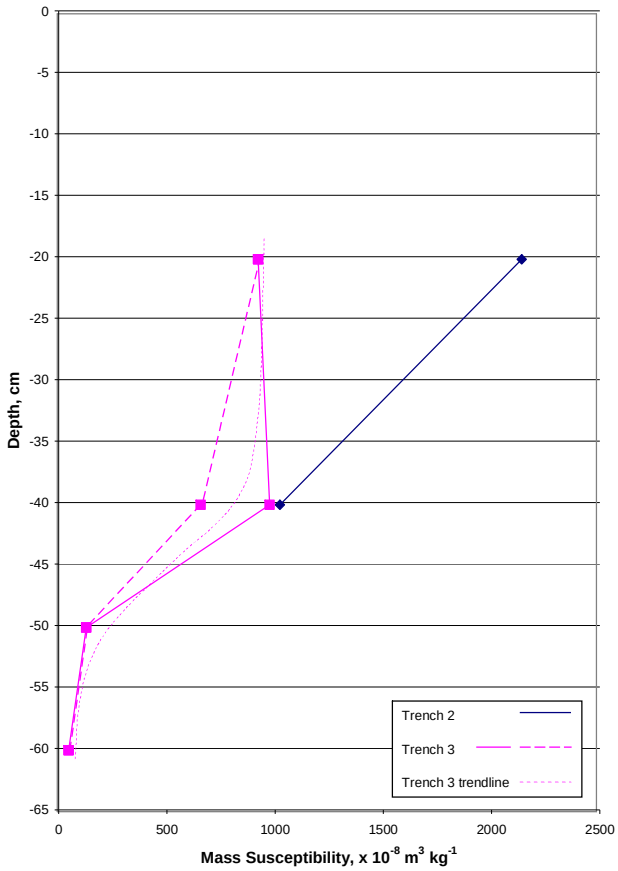


Figure 3.16:

Hagg End Trenches 2 and 3: magnetic susceptibility variations with depth.

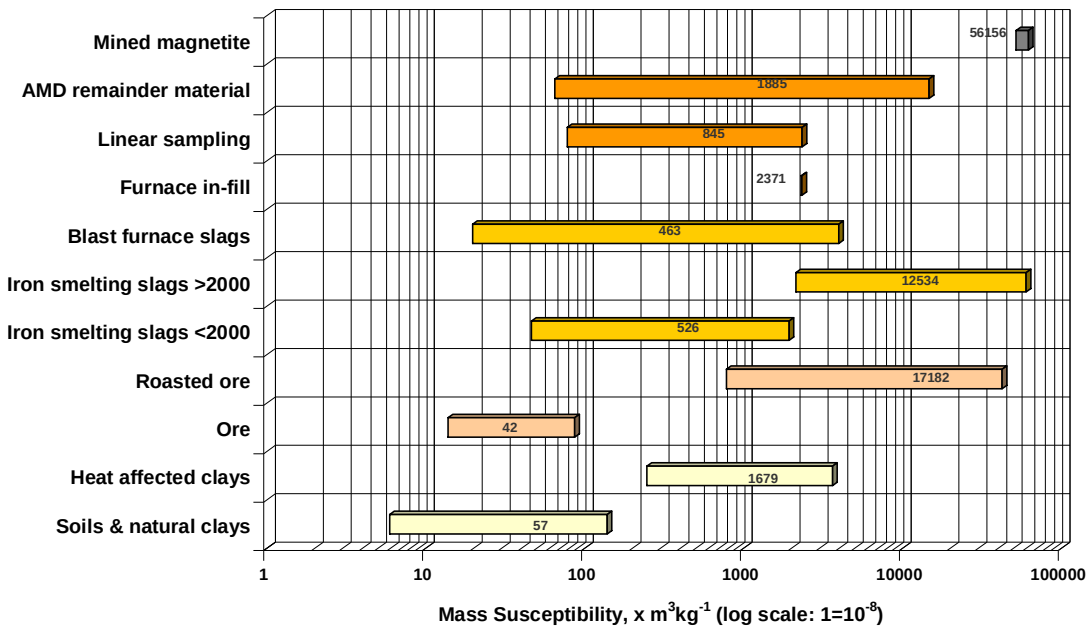


Figure 3.17: Magnetic susceptibility of iron smelting related materials: comparison with soils, natural clays and heat affected clays from iron smelting sites (internal figures denote mean values).

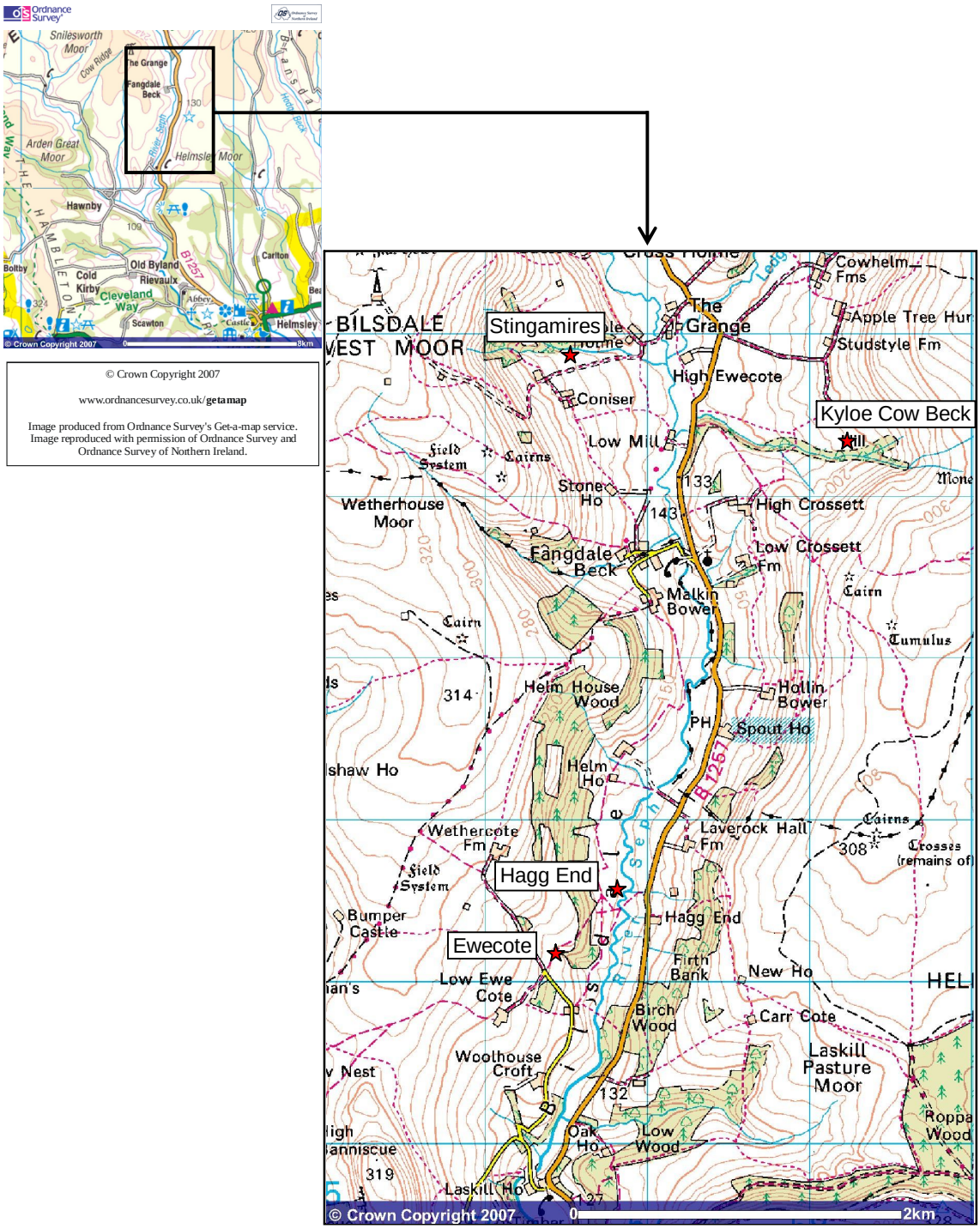
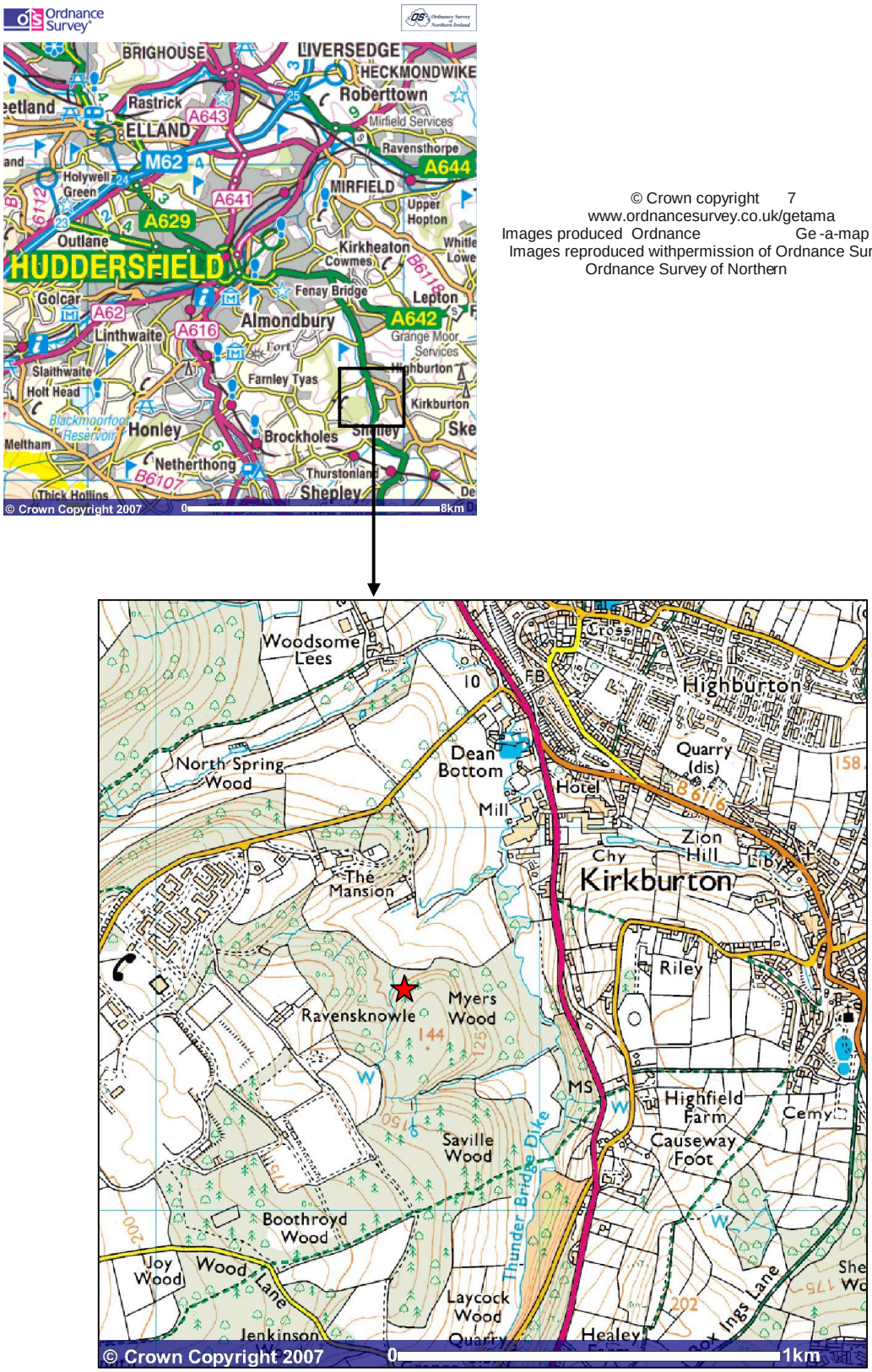


Figure 3.18: Map of Bilsdale, North Yorkshire, showing the locations of the iron smelting sites featured in this research.



© Crown copyright 7
www.ordnancesurvey.co.uk/getama
Images produced Ordnance Ge -a-map
Images reproduced withpermission of Ordnance Survey and Ordnance Survey of Northern

Figure 3.19: Myers Wood iron smelting site location map.

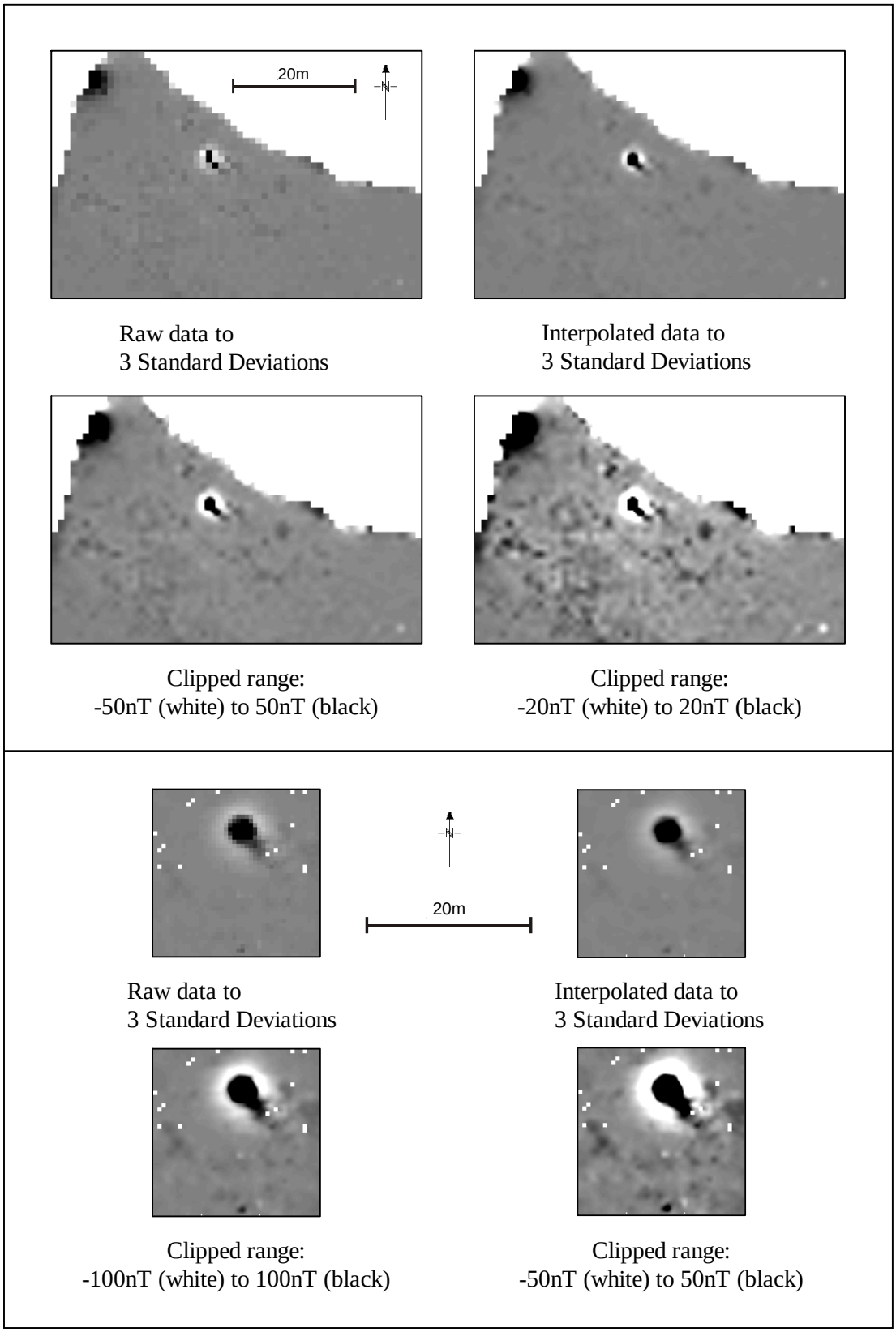


Figure 3.20: Ewecote iron smelting site magnetometer survey plots. 6 off 20m x 20m grids (upper) and 4 off 10m x 10m grids (lower) – raw and clipped data. (Data courtesy of R. Vernon)

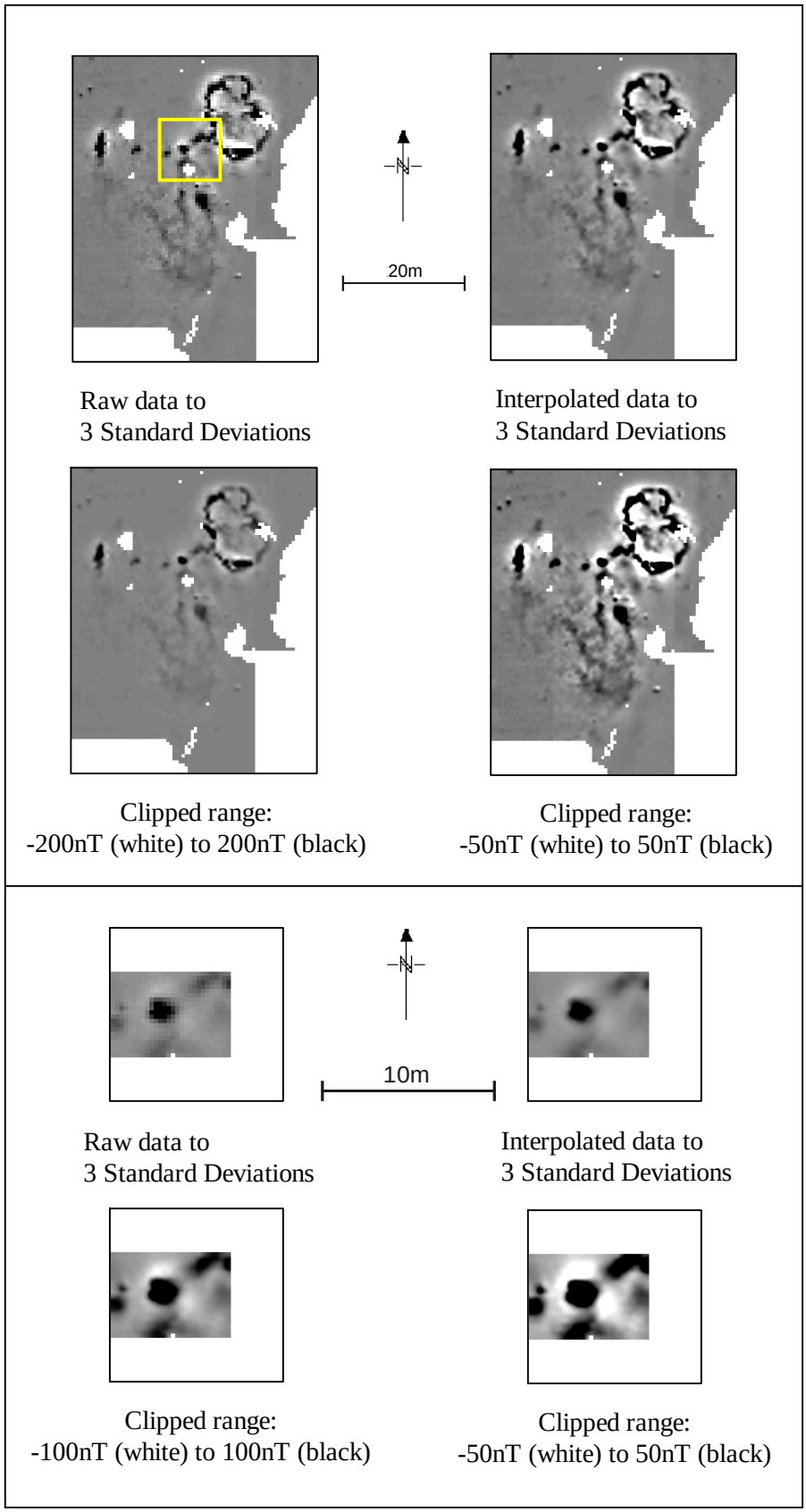


Figure 3.21: Hagg End iron smelting site magnetometer survey plots. 18 off 10m x 10m grids (upper) and 4 off 5m x 5m grids (lower) – raw and clipped data. (Data courtesy of R. Vernon)

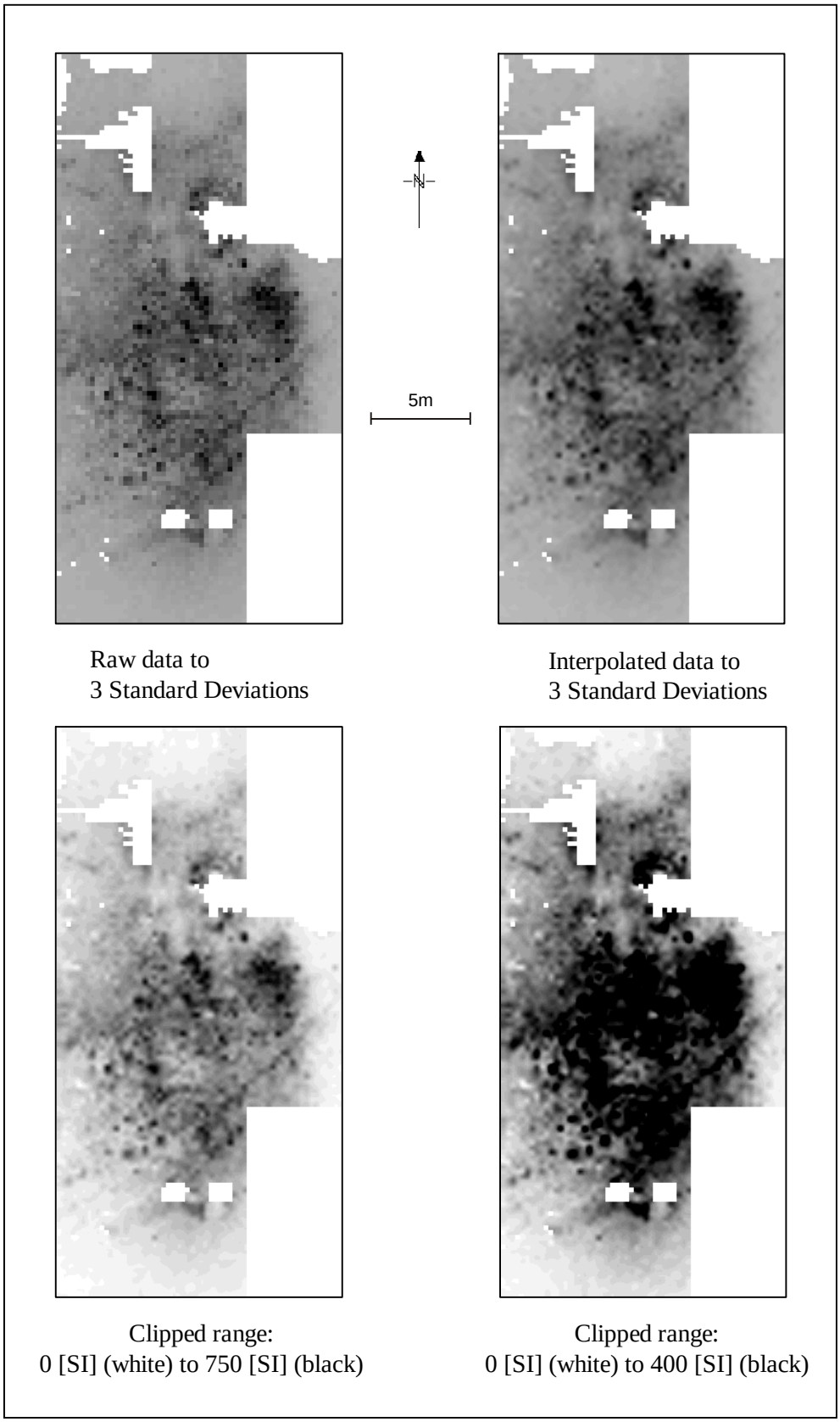


Figure 3.22: Hagg End iron smelting site magnetic susceptibility survey plots. 14 off 5m x 5m grids – raw and clipped data. (Data source: author)

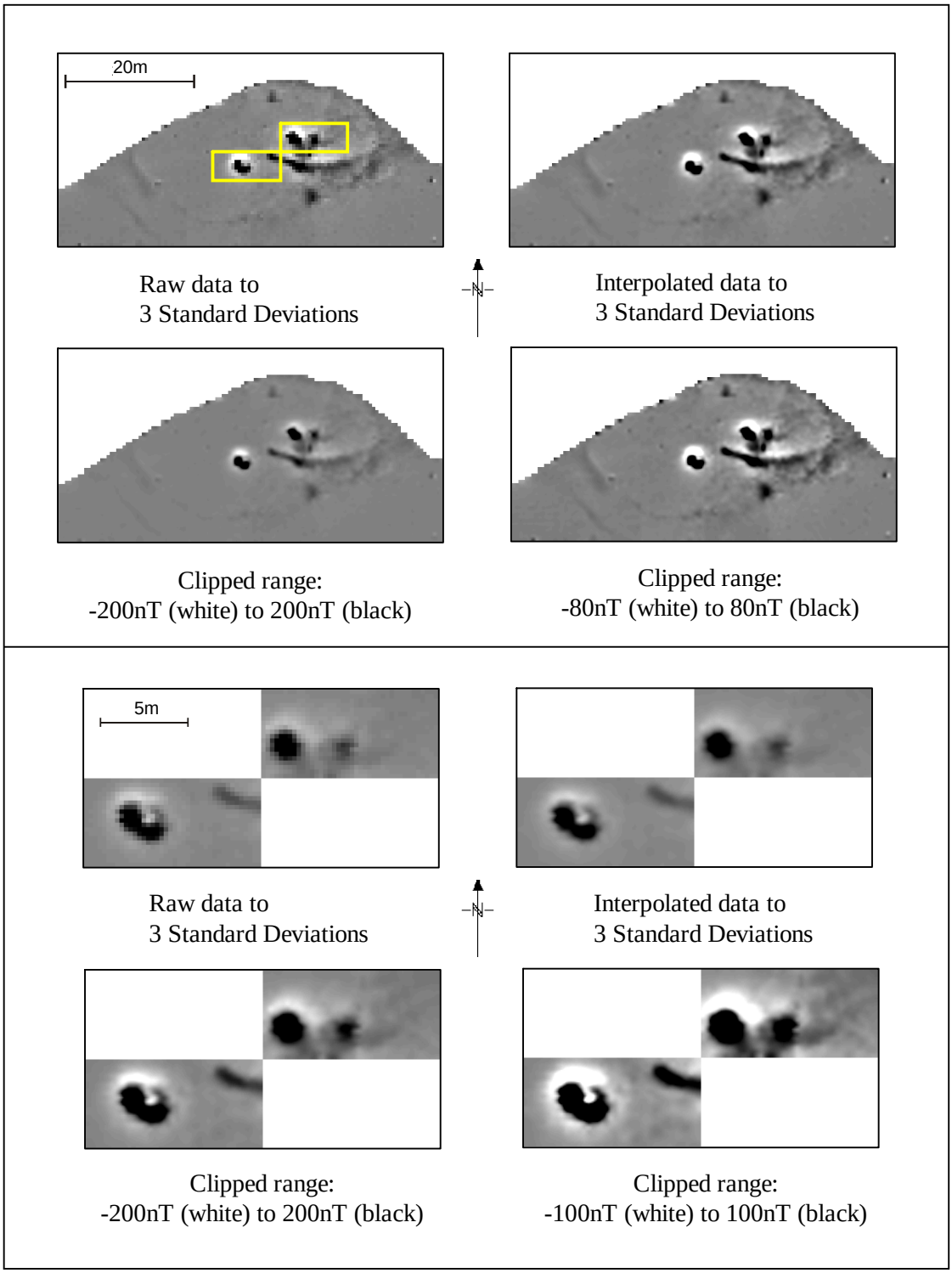


Figure 3.23: Stingamires iron smelting site magnetometer survey plots. 15 off 10m x 10m grids (upper) and 4 off 5m x 5m grids (lower) – raw and clipped data. (Data courtesy of R. Vernon)

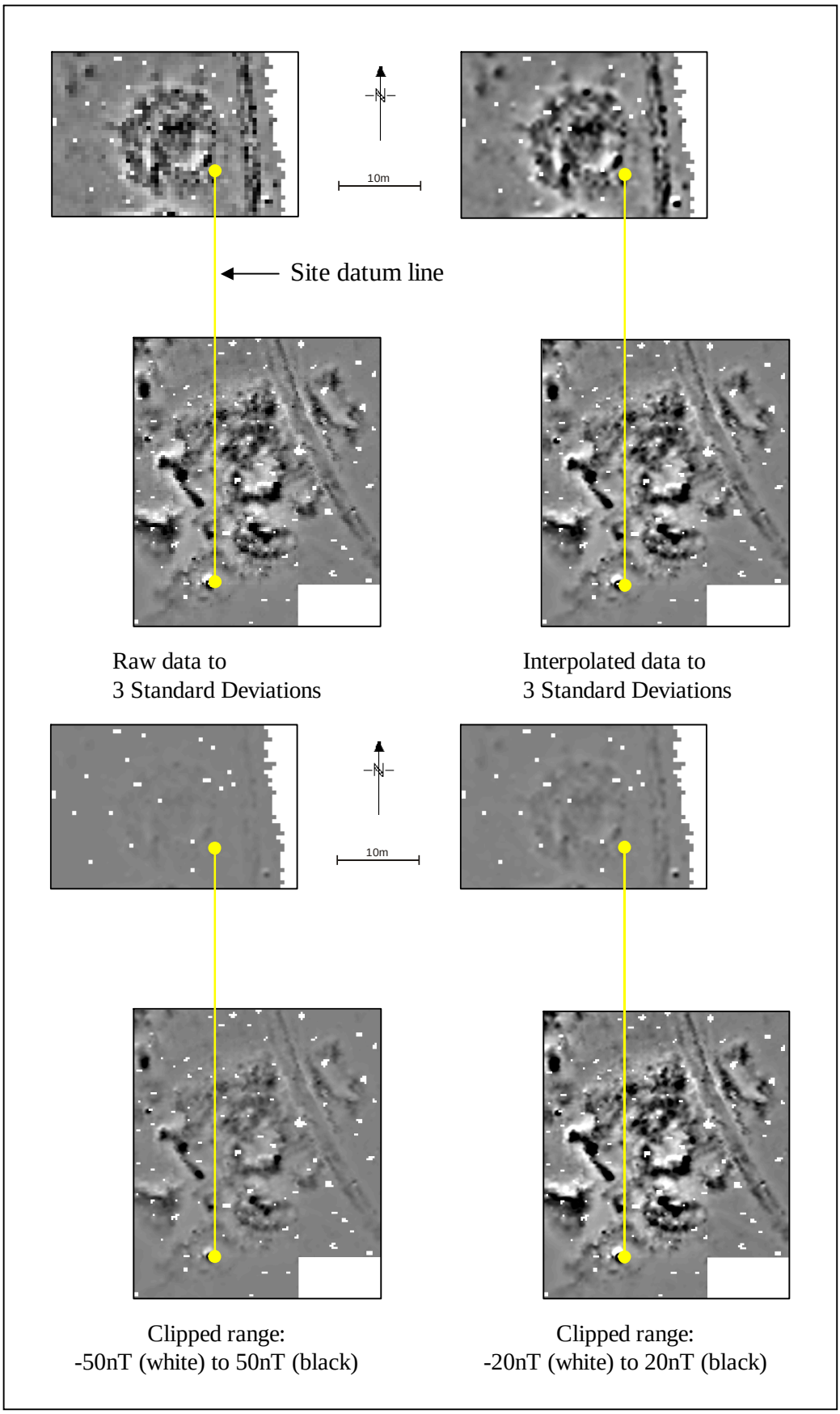


Figure 3.24: Myers Wood iron smelting site magnetometer survey plots. 6 off 10m x 10m grids (upper block) and 40 off 5m x 5m grids (lower block) – raw and clipped data. Both blocks to the same scale. (Data courtesy of R. Vernon)

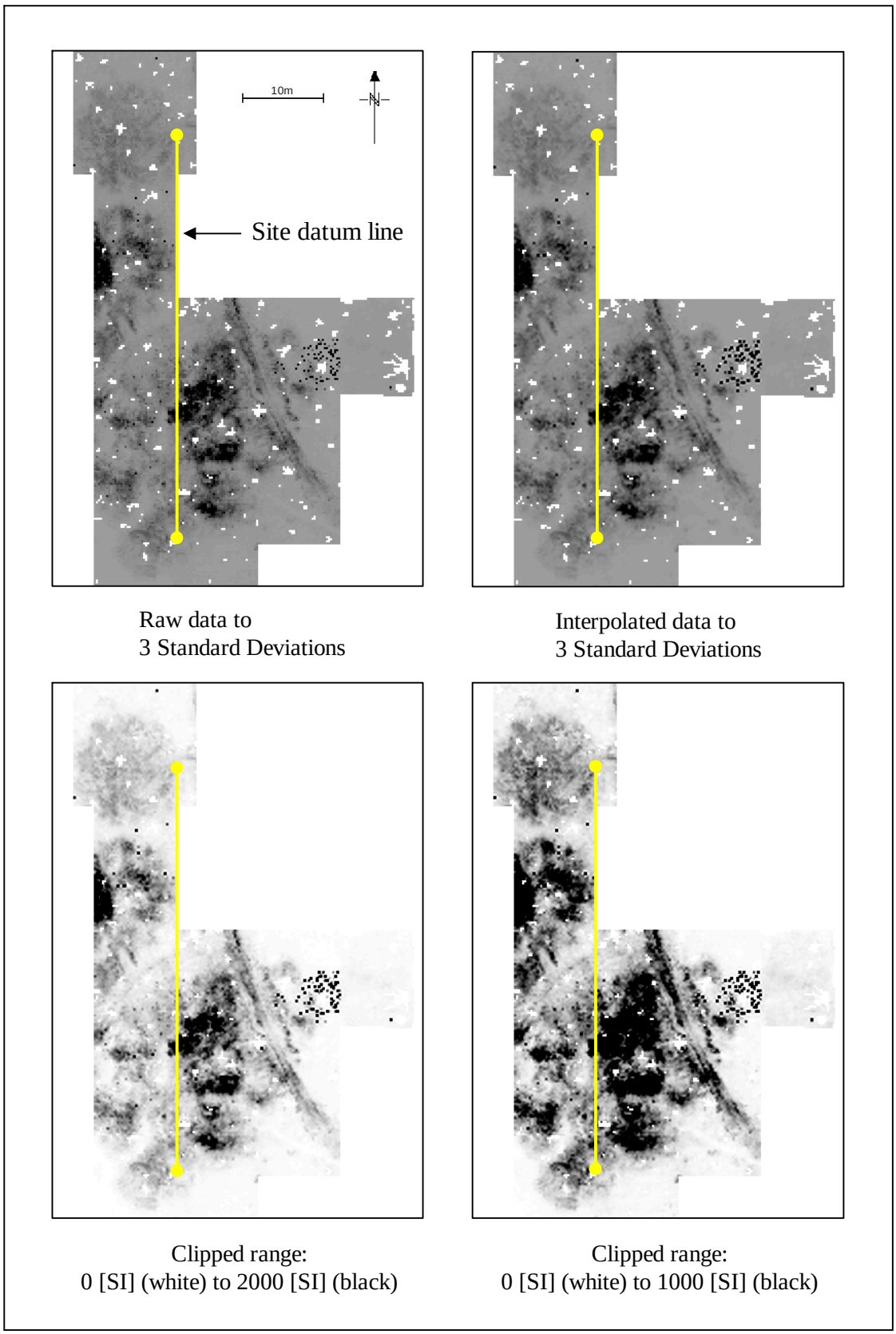
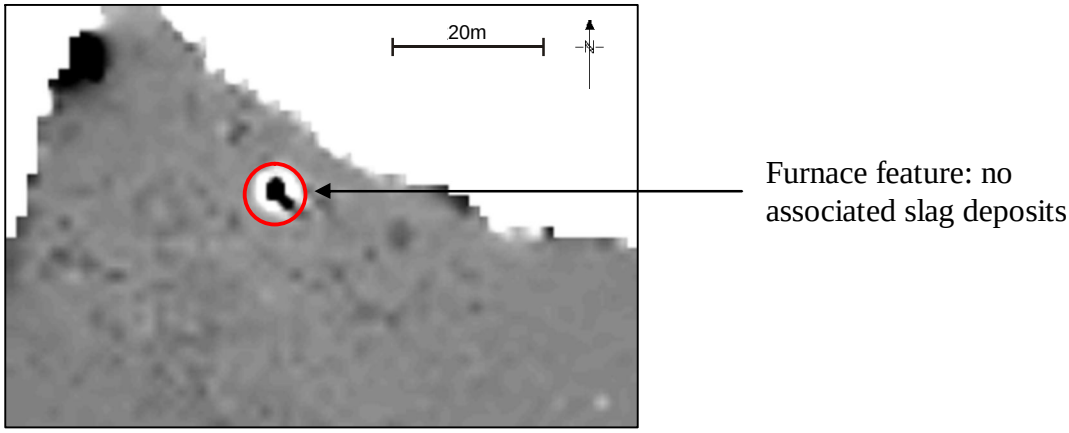


Figure 3.25: Myers Wood iron smelting site magnetic susceptibility survey plots. 64 off 5m x 5m grids – raw and clipped data. (Data source: author)

Ewecote:



Hagg End:

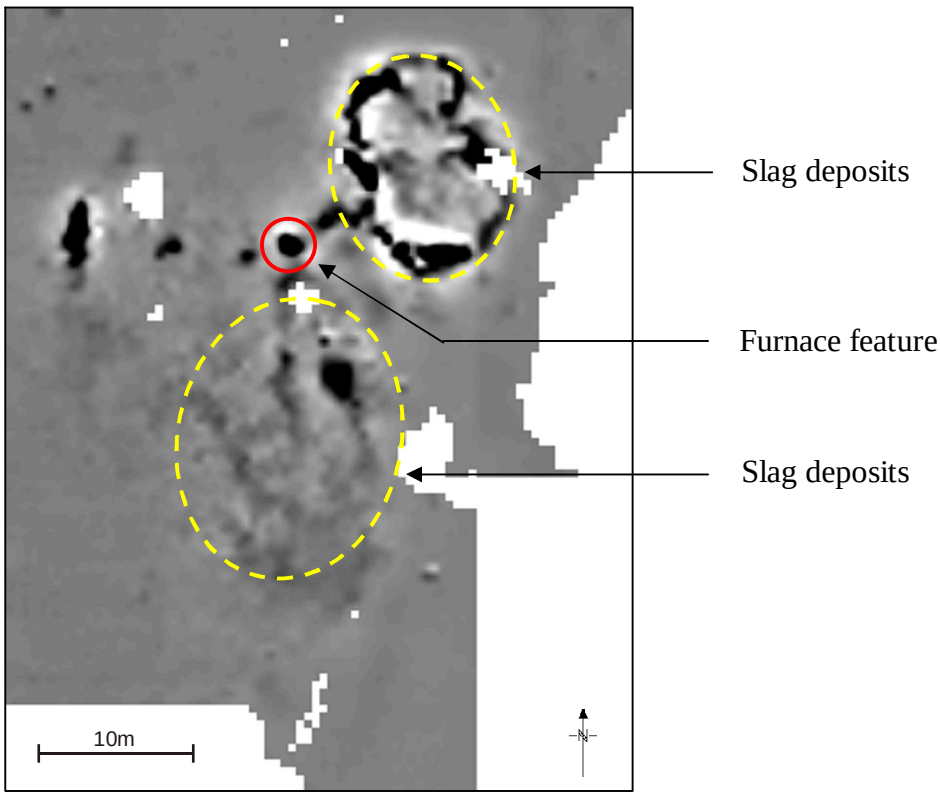
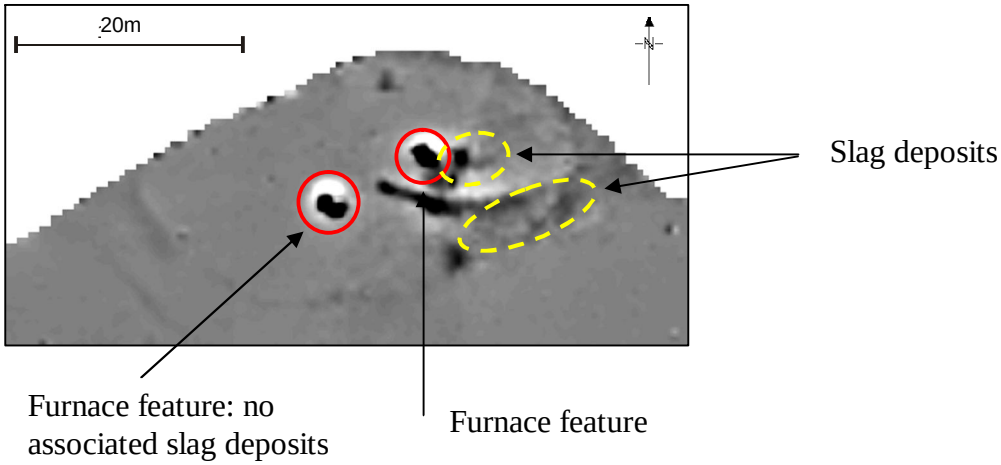


Figure 3.26: Magnetometer survey plots of the four iron smelting sites featured in this research, superimposed with the interpretations of the principal magnetic anomalies.

Stingamires:



Myers Wood:

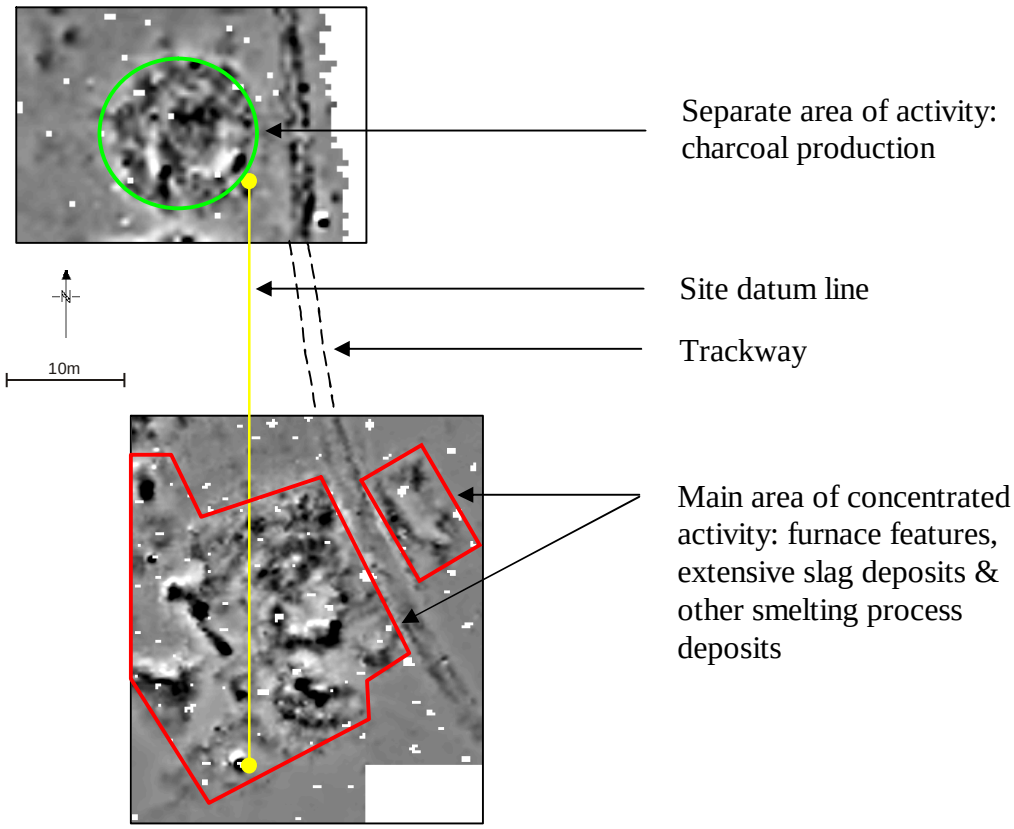


Figure 3.26 (cont'd): Magnetometer survey plots of the four iron smelting sites featured in this research, superimposed with the interpretations of the principal magnetic anomalies.

Figure 3.27: Stingamires ore roasting area. (Photo: author)

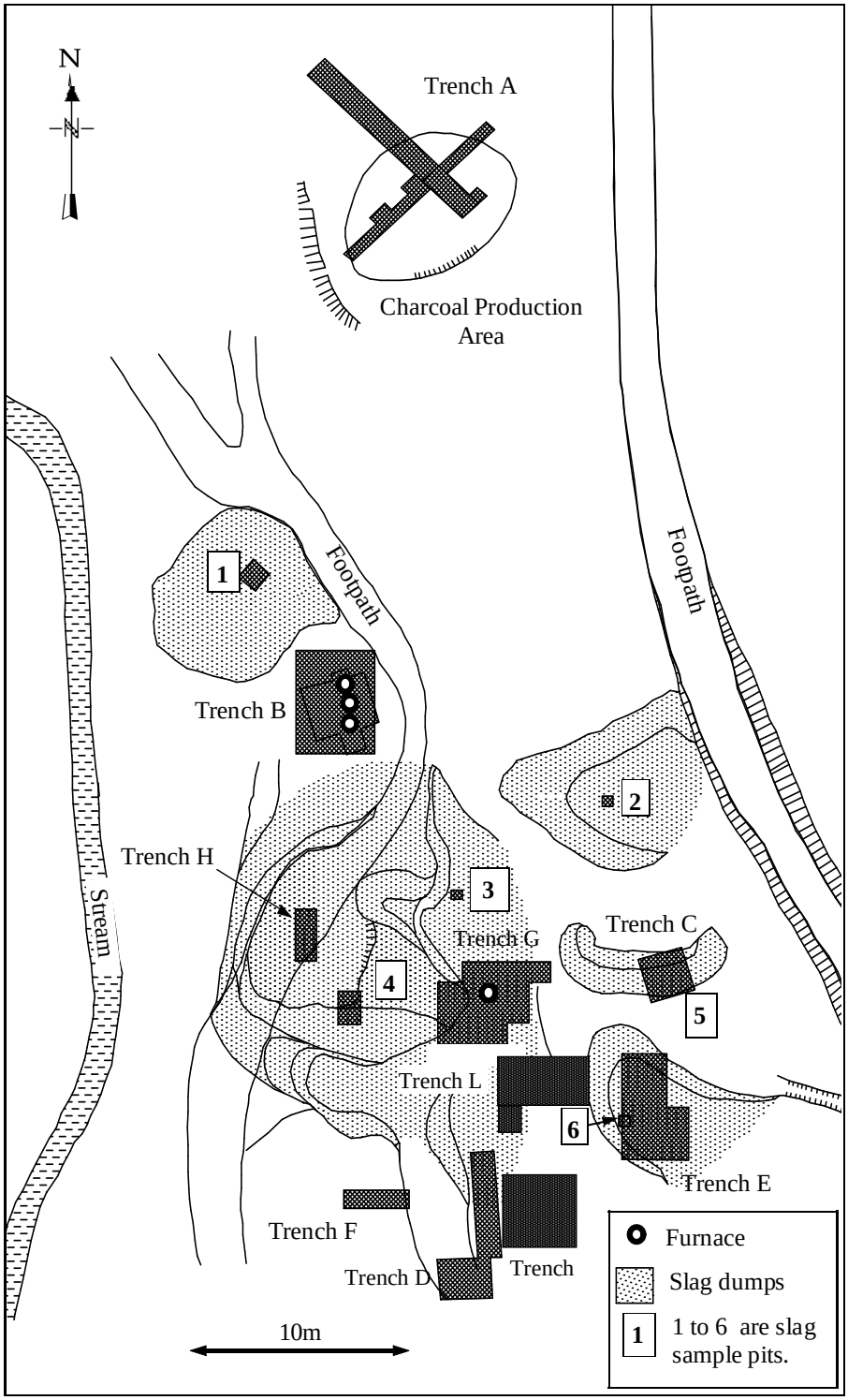


Figure 3.28: Myers Wood iron smelting site location plan (after R. Vernon).

Trench A: charcoal production area. (Photo: G. Clay)

Trench B: furnace feature. (Photo: R. Vernon)

Trench G: furnace feature. (Photo: R. Vernon)

Figure 3.29: Myers Wood iron smelting site features.

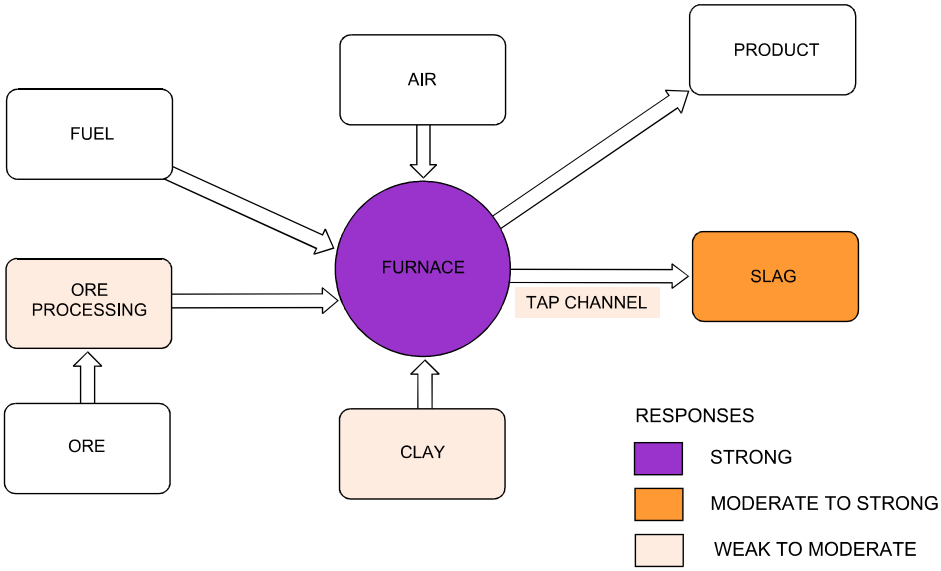


Figure 3.30: The predicted responses to magnetic geophysical survey of the main components of a medieval/post-medieval iron smelting furnace site.

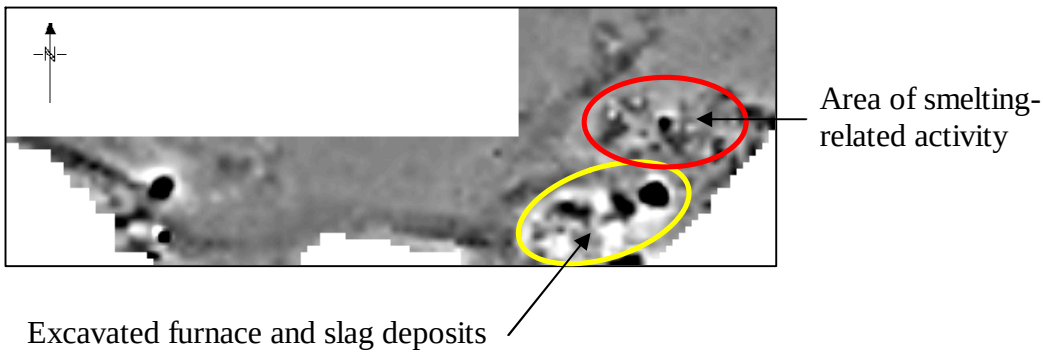


Figure 3.31: Kyloe Cow Beck iron smelting site 10m grid magnetometer survey plot – clipped data range -80nT (white) to 80nT (black). (Data courtesy of R. Vernon)