

Appendix C: Large-scale copies of figures

E. Greenhalgh

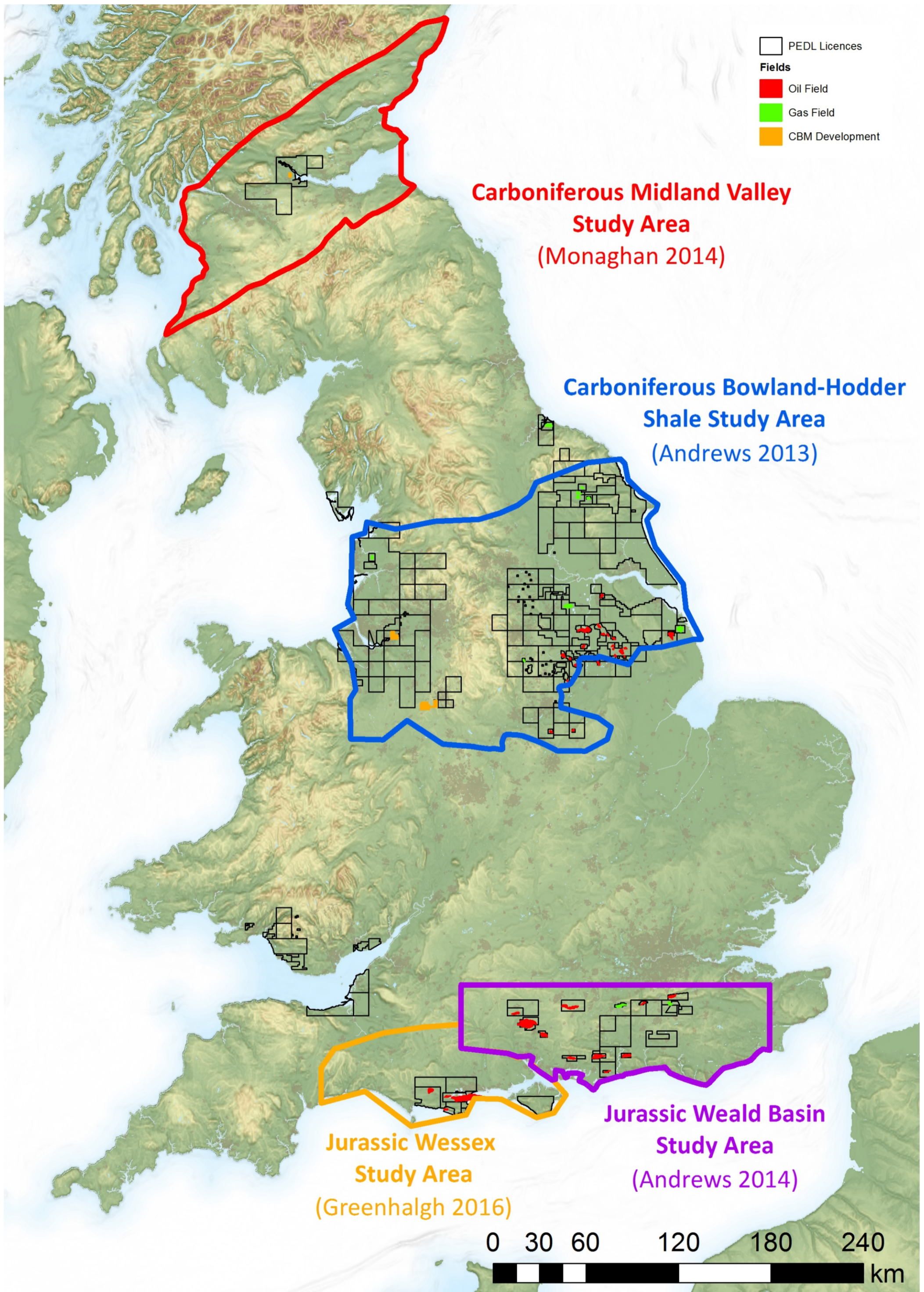


Figure 1. Location of the BGS/OGA Wessex study area in southern Britain, with previous BGS/DECC shale study areas, currently licensed blocks and hydrocarbon fields. Other shale oil and shale gas plays may exist.

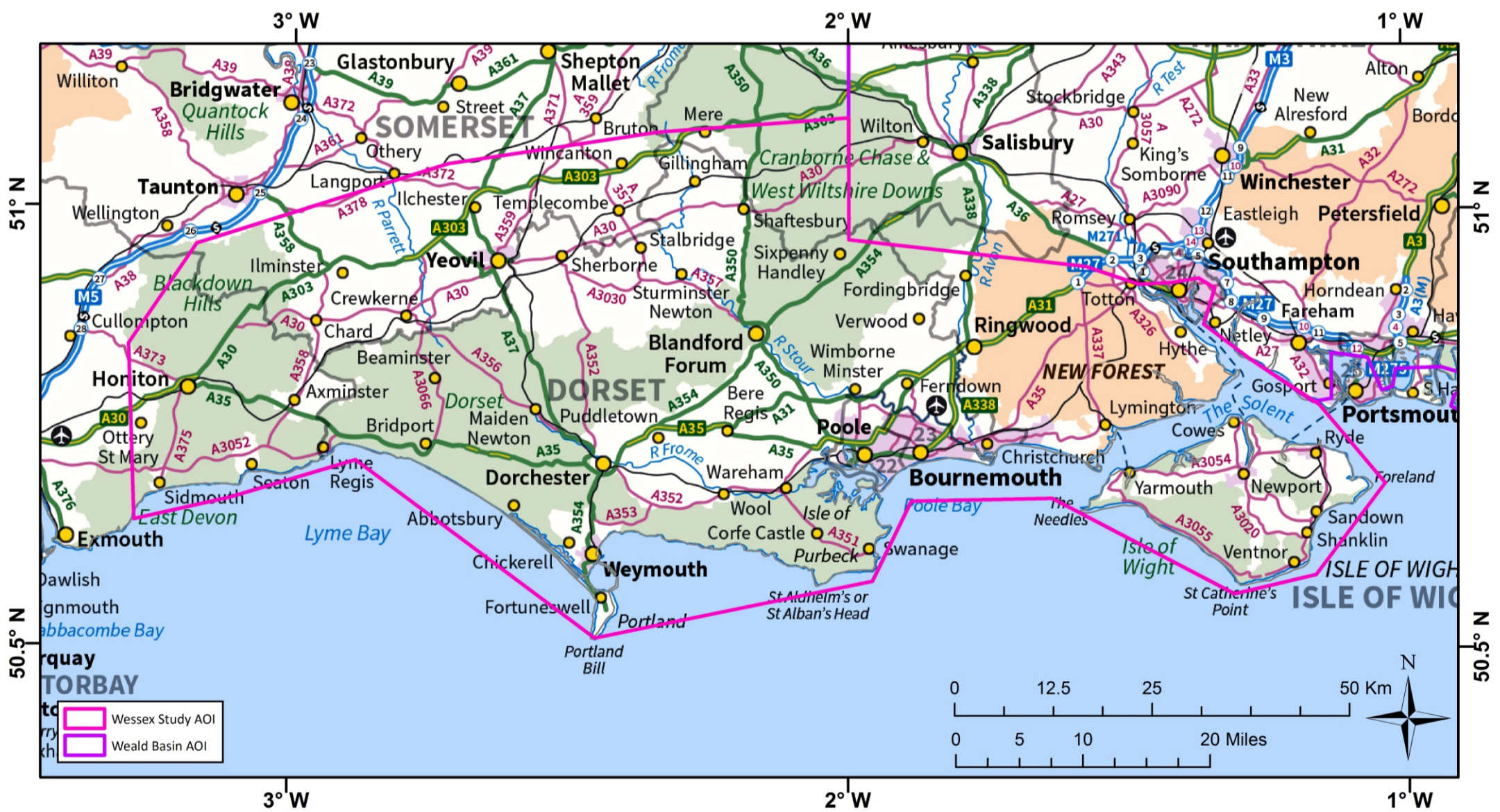
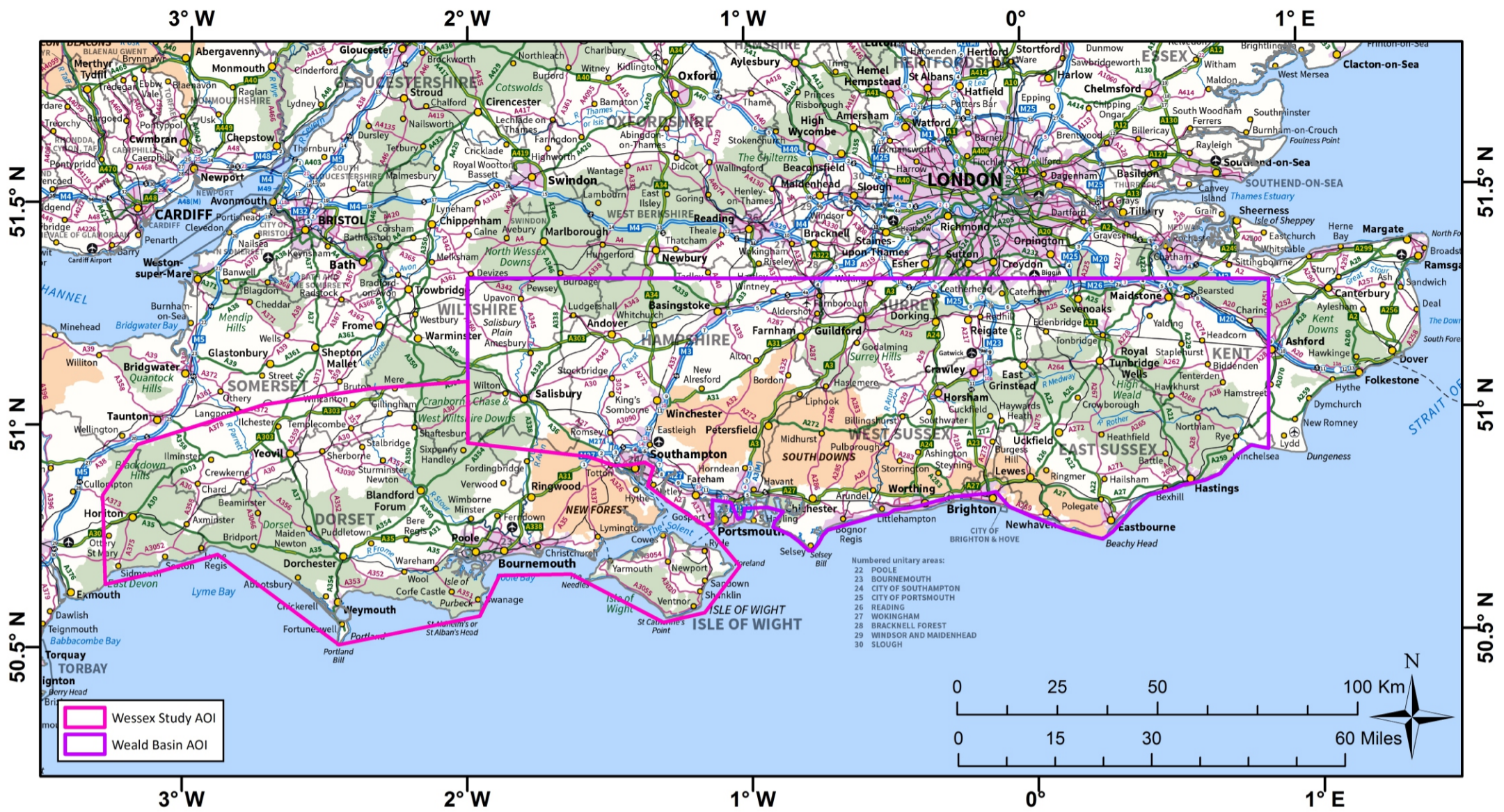


Figure 2. (Top) Location of the BGS/DECC shale oil Weald Basin study and the BGS/OGA Wessex study area, southern Britain. (Bottom) Zoom-in of location of the Wessex study area. Contains Ordnance Survey data © Crown copyright and database right 2016.

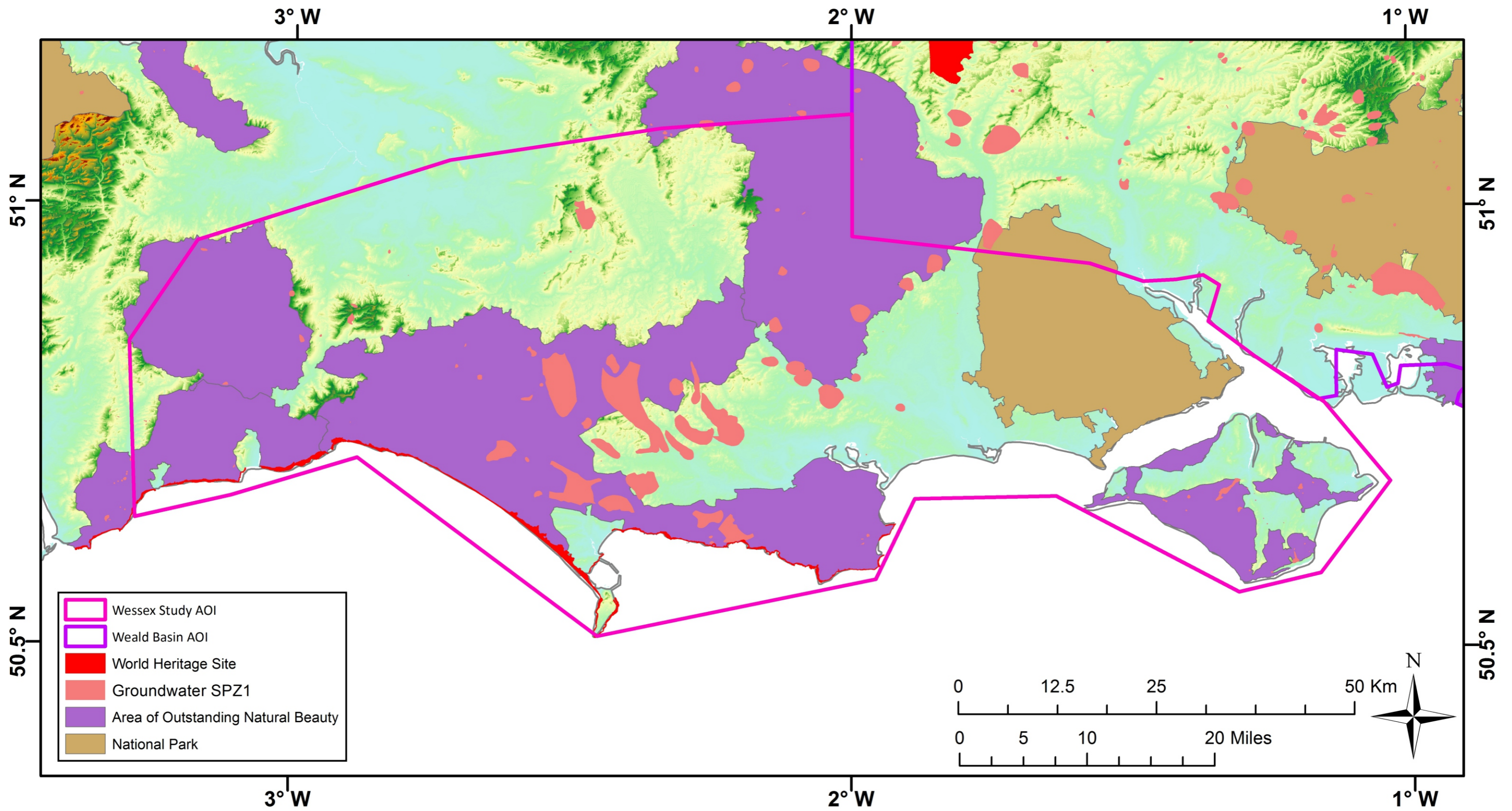


Figure 3. Areas considered to be protected under the 2015 Infrastructure Act, where hydraulic fracturing (fracking) may only be permitted at burial depths of 1200 m (c. 3950 ft) or greater. Background is shaded-relief topography. Contains Ordnance Survey data © Crown copyright and database right (2016). Data sources: Areas of Outstanding Natural Beauty & National Parks © Natural England copyright, 2016. Contains Ordnance Survey data © Crown copyright and database right (2016); World Heritage Sites © Historic England (2016). Contains Ordnance Survey data © Crown copyright and database right (2016) The Historic England GIS Data contained in this material was obtained on 21/04/2016. The most publicly available up to date Historic England GIS Data can be obtained from <http://www.HistoricEngland.org.uk>; Groundwater Source Protection Zones (SPZ) © Environment Agency copy right and/or database right 2016.

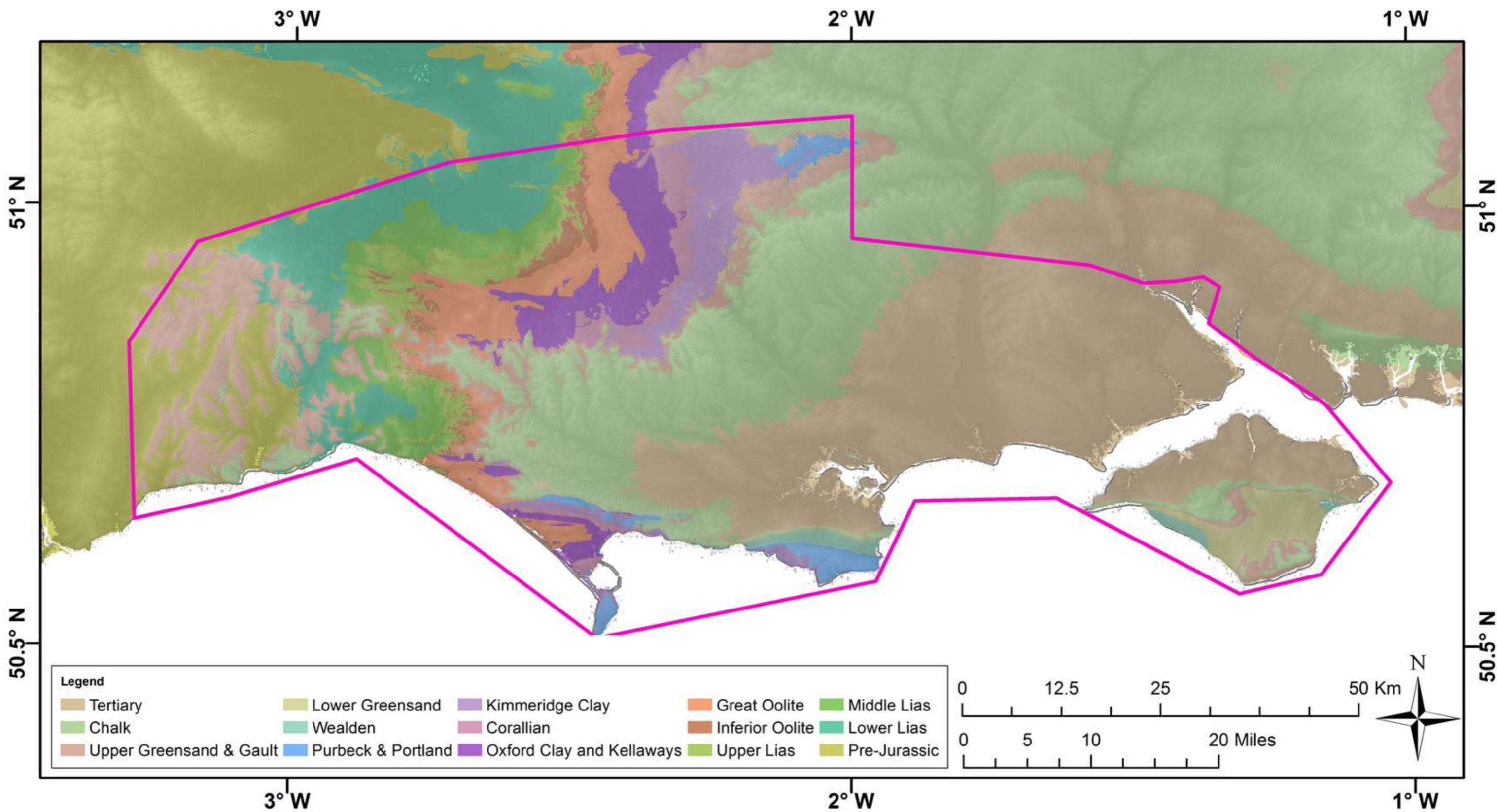


Figure 4. Surface geology of the study area with hill-shaded relief, with the Wessex study area (shown in pink). Surface geology from BGS 1:50,000 scale DiGMapGB © NERC.

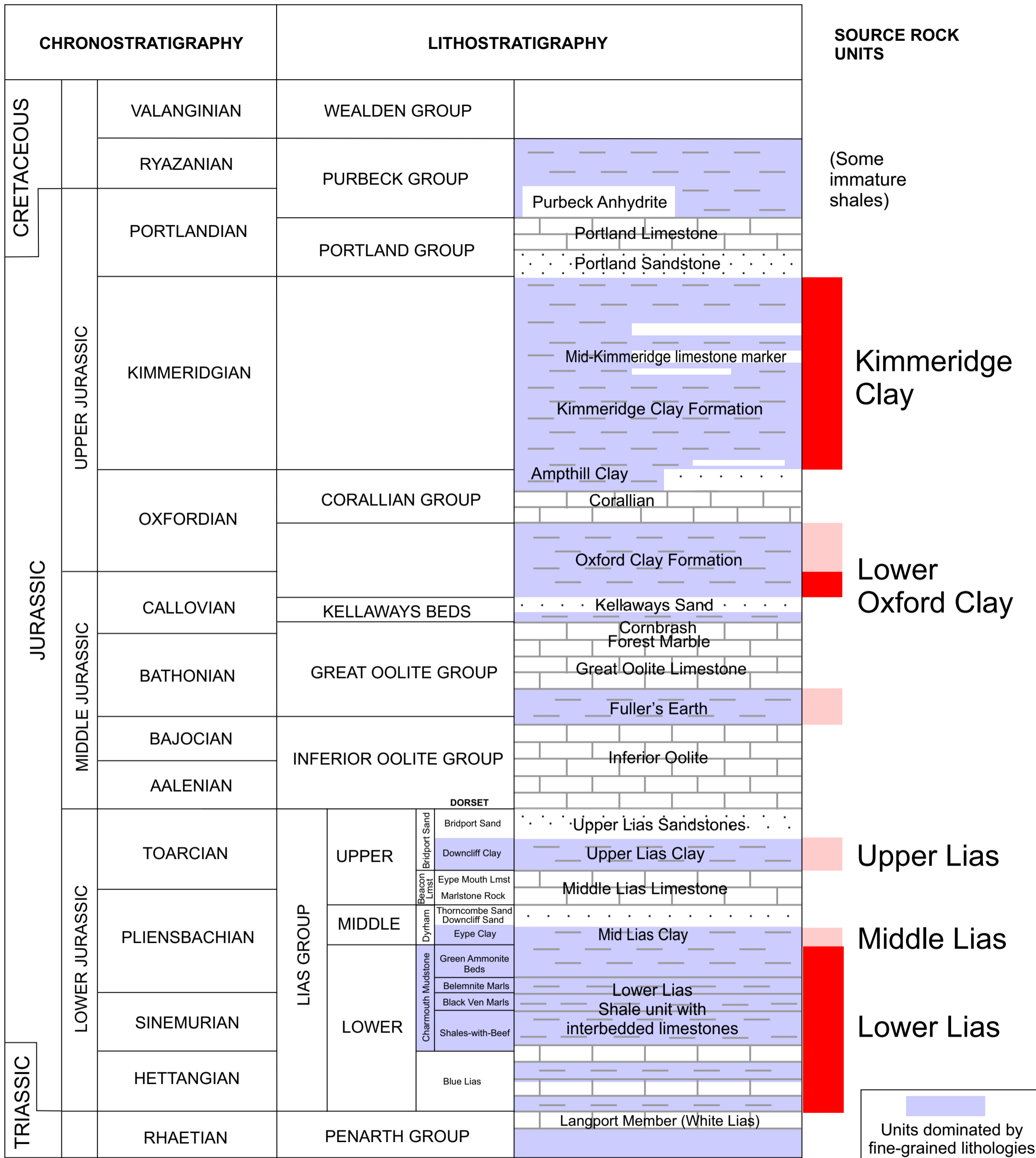


Figure 5. Generalised stratigraphic column for the Jurassic of the Wessex area showing the main source rock intervals (in red) and other potential source rock intervals (in pink). Adapted from Andrews (2014).

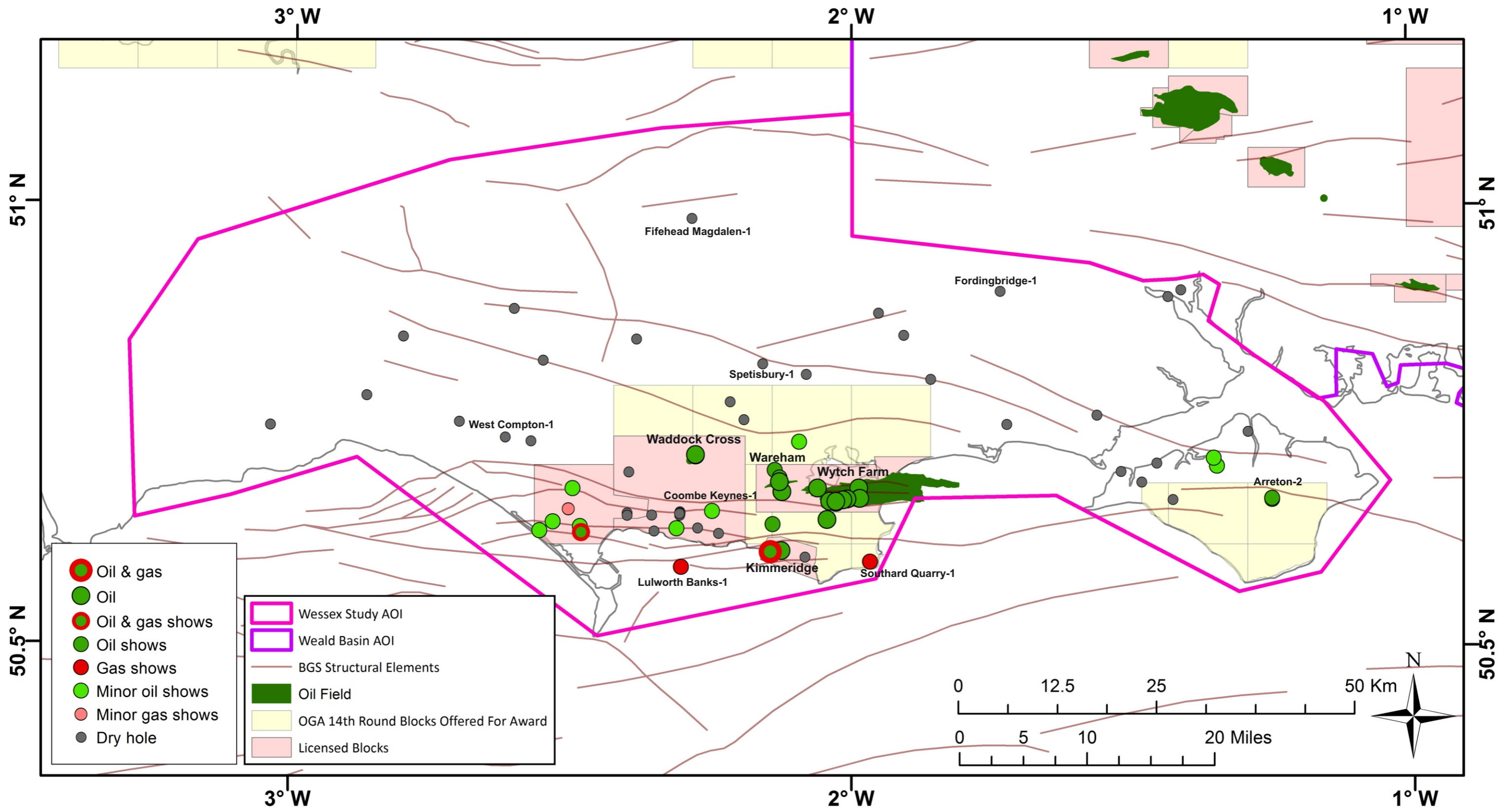


Figure 6. Distribution of producing oil fields, discovery wells and well with hydrocarbon shows within the study area, based on well reports and published literature. Also shown are areas currently licensed or offered for award for exploration, and main BGS structural elements (British Geological Survey, 1996) Contains British Geological Survey materials © NERC (2016).

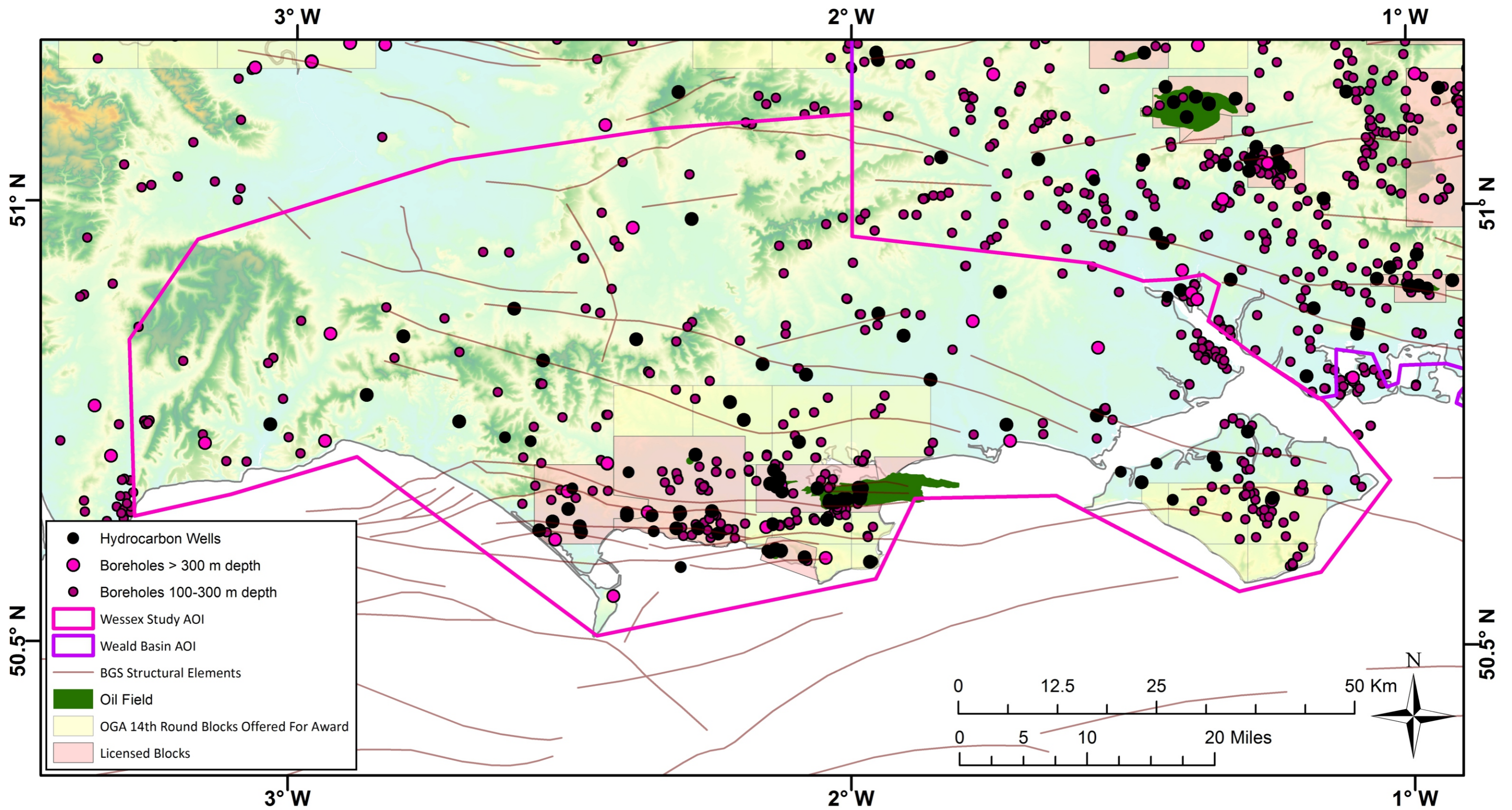


Figure 7. Exploration, appraisal and development wells, and deep boreholes (> 100 m total depth) of the Wessex area. Background is hill-shaded topography. Contains Ordnance Survey data © Crown copyright and database right (2016). Contains British Geological Survey materials © NERC (2016).

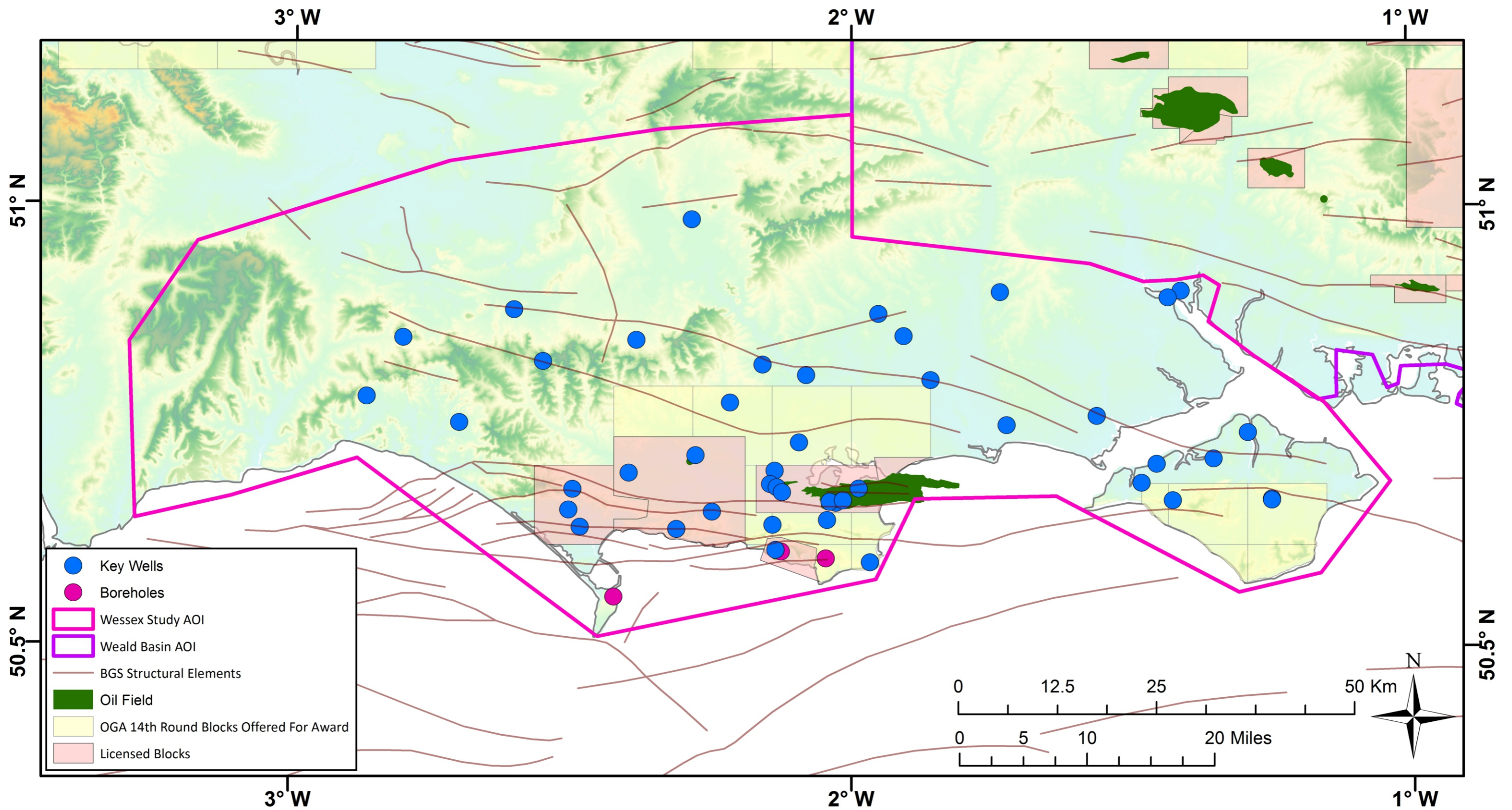


Figure 8. Distribution of wells with time-depth data available for this study (blue). Also shown are the boreholes for which stratigraphical and geochemical data were available (pink). Background is hill-shaded topography. Contains Ordnance Survey data © Crown copyright and database right (2016). Contains British Geological Survey materials © NERC (2016).

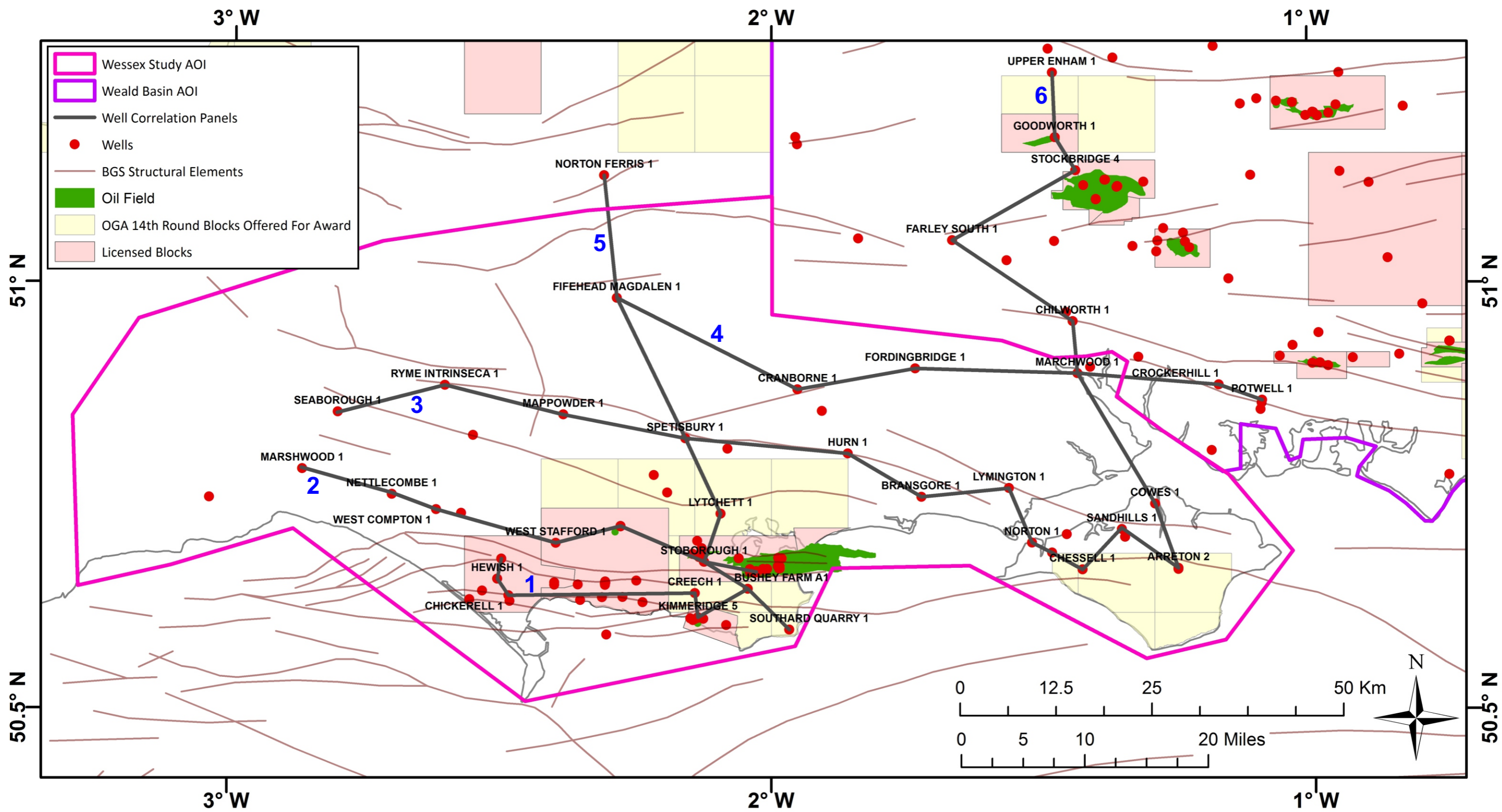


Figure 9. Location of the six well correlation panels shown in Appendix B, with the main BGS structural elements. Contains British Geological Survey materials © NERC (2016).

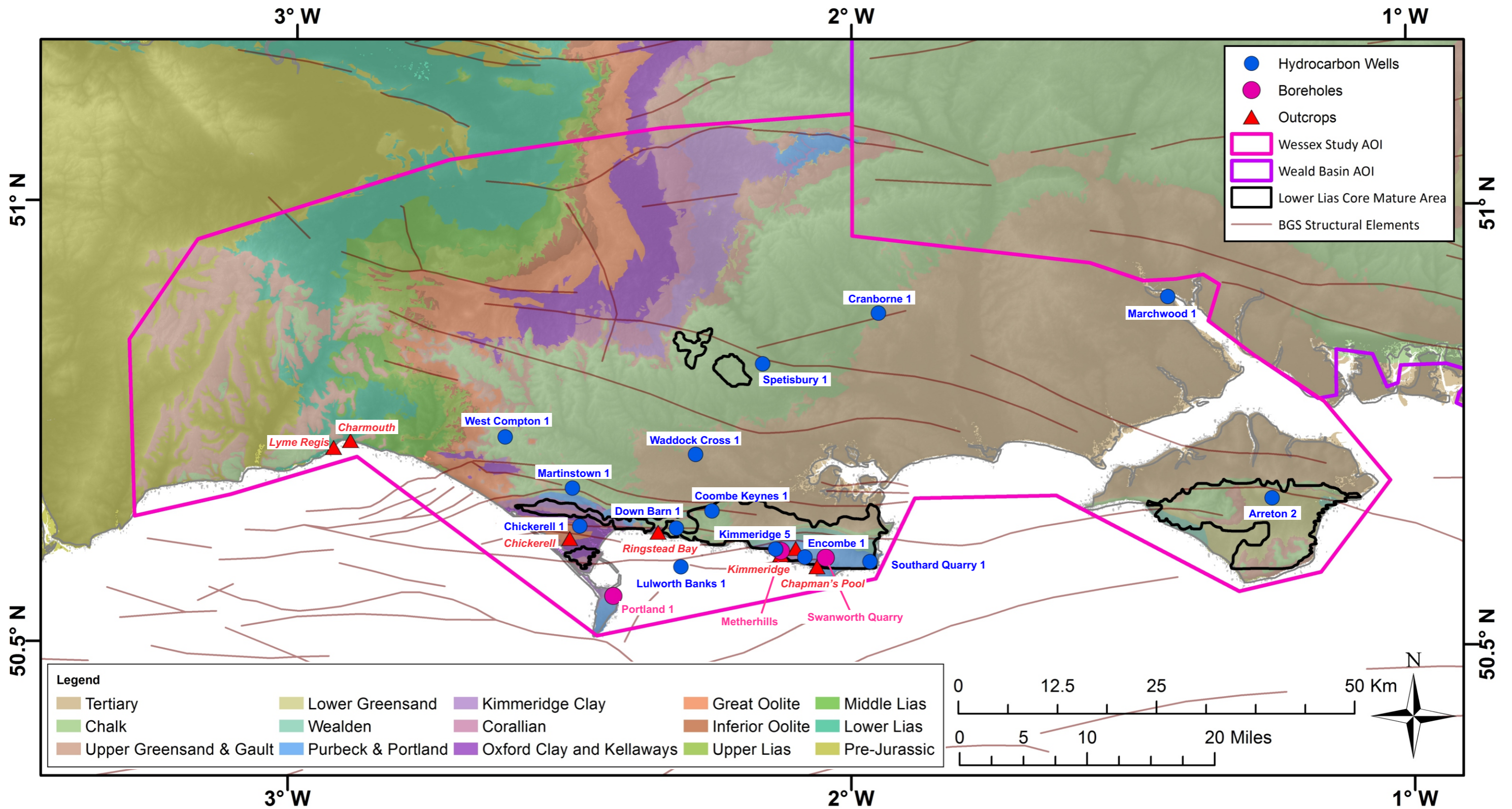


Figure 10. Location of wells, boreholes and outcrops for which geochemical data were available for this study. Also shown is the area within which the Lower Lias is believed to have reached sufficient maturity for oil generation (black polygon). Background is the outcrop geology from BGS 1:50,000 scale DiGMapGB © NERC. Contains British Geological Survey materials © NERC (2016).

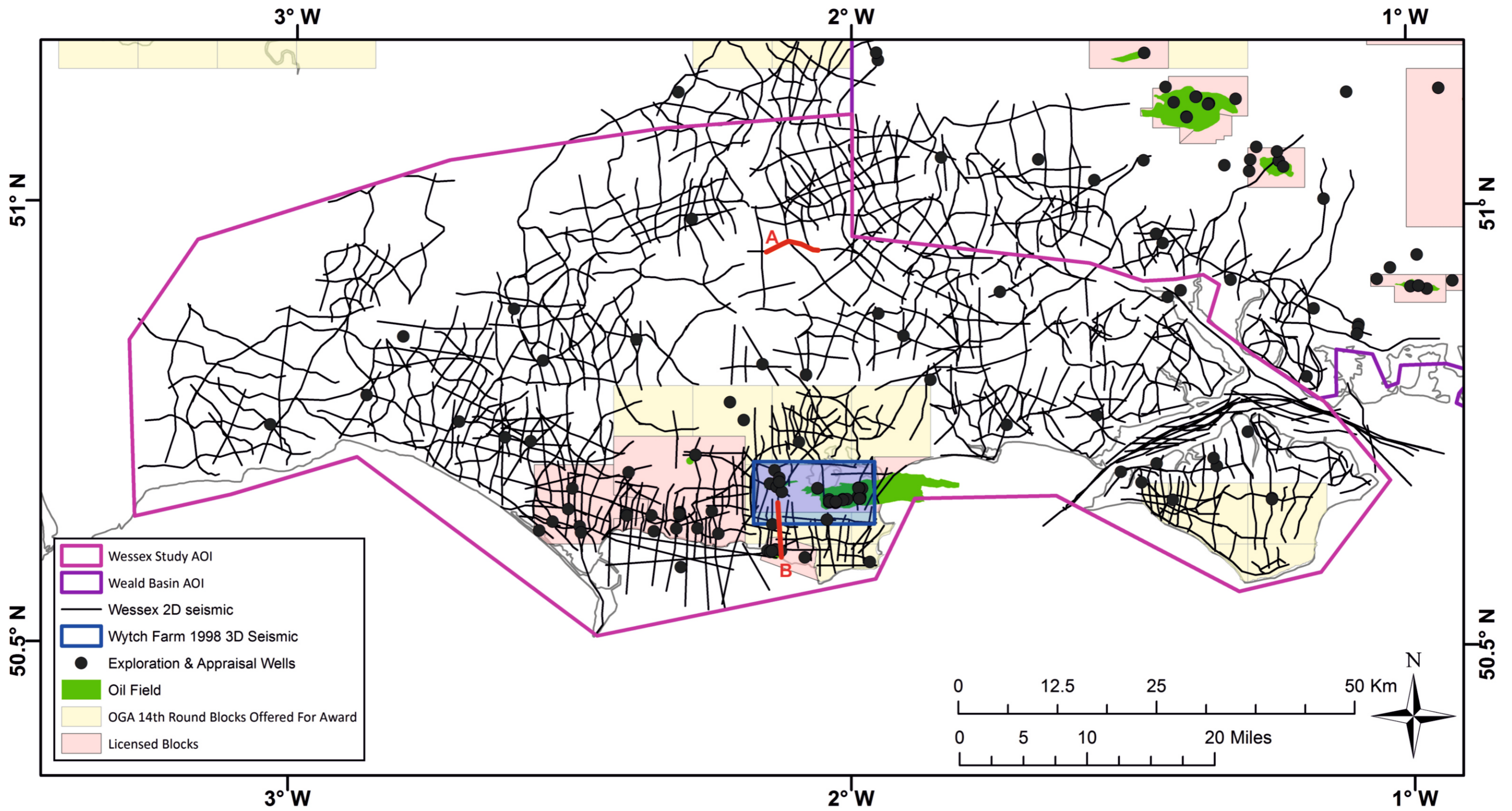


Figure 11. Location of 2D and Wytch Farm 3D seismic data used to map the subsurface in the study area. Lines A & B show the location of the data shown in Figure 12. All seismic data were obtained from the UK Onshore Geophysical Library (UKOGL <http://ukogl.org.uk/>).

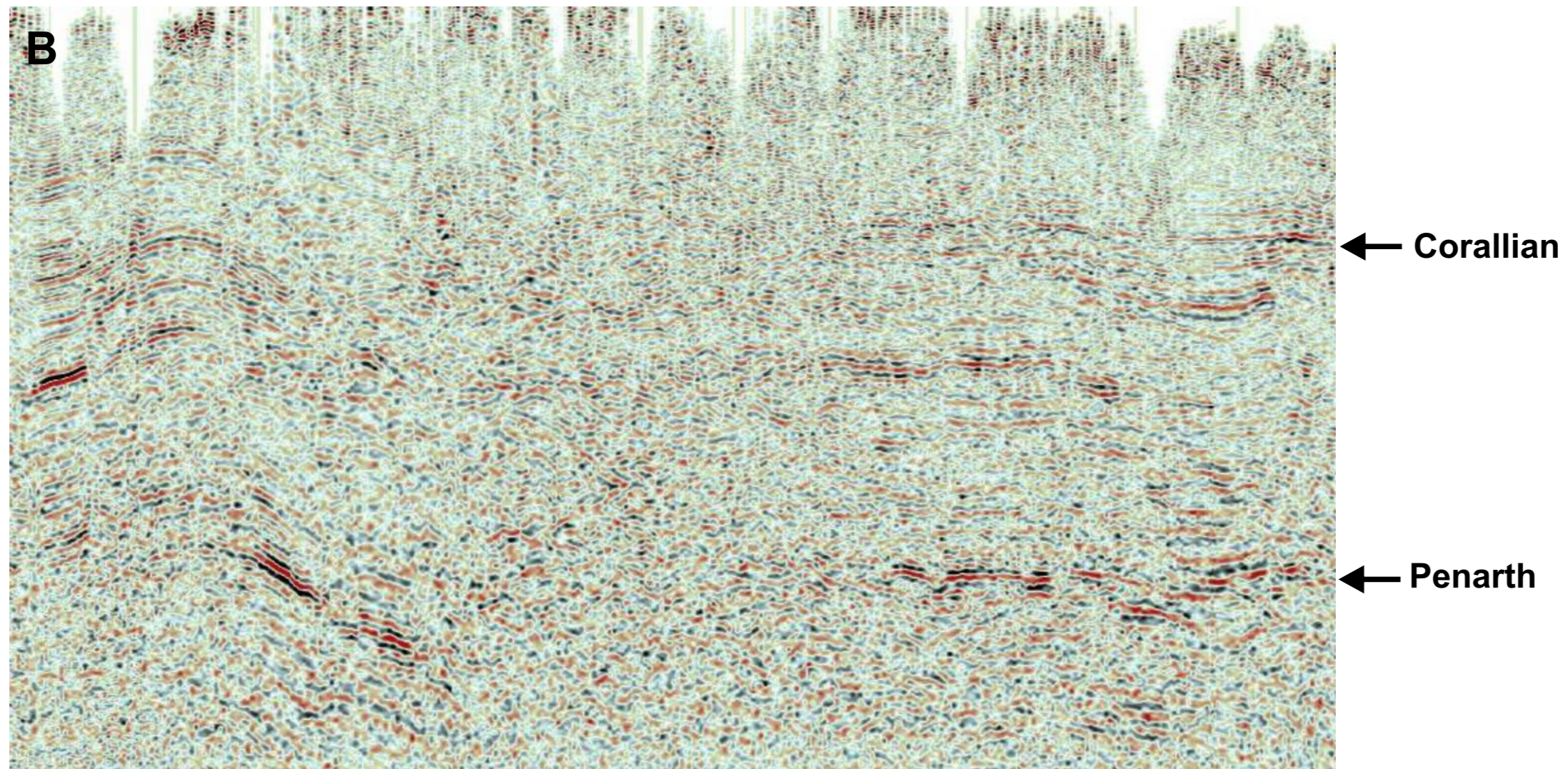
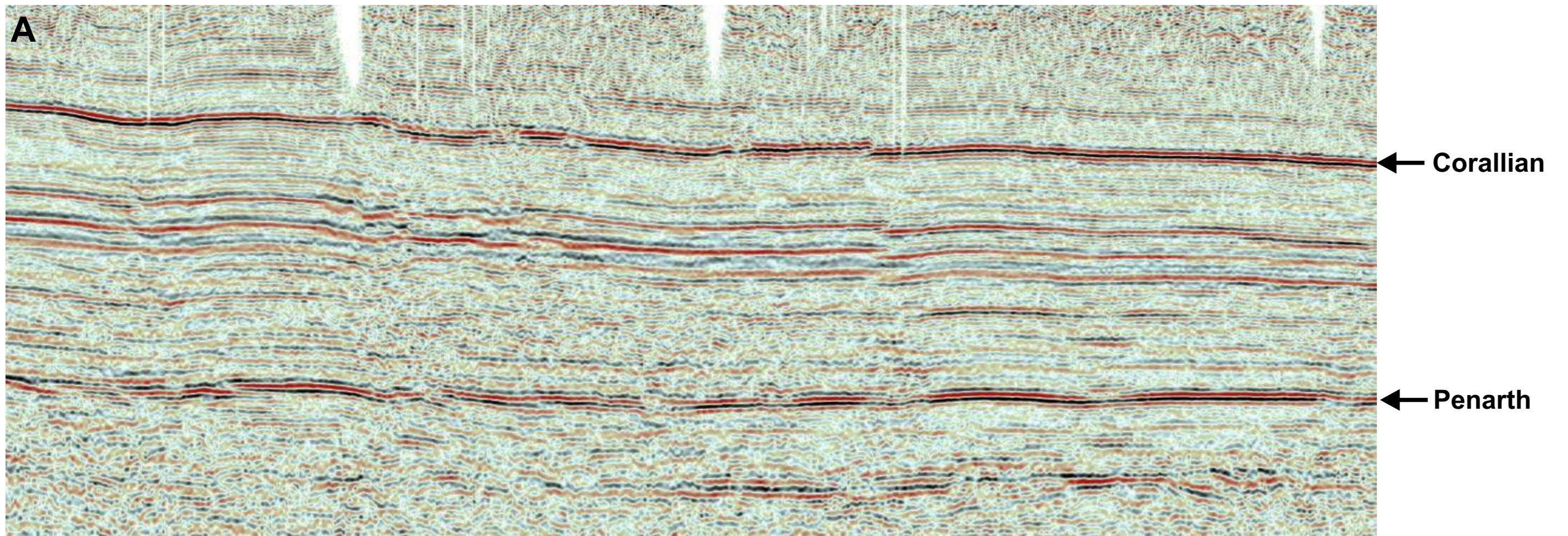


Figure 12. Comparison of seismic data quality from a tectonically quiet area (A – Line HB-84-014) with a structurally complex area (B – Line BP78-02-233), demonstrating the reduction in data quality in highly faulted areas. Seismic lines provided by UKOGL.