

Appendix 1

Historical shoreline positions

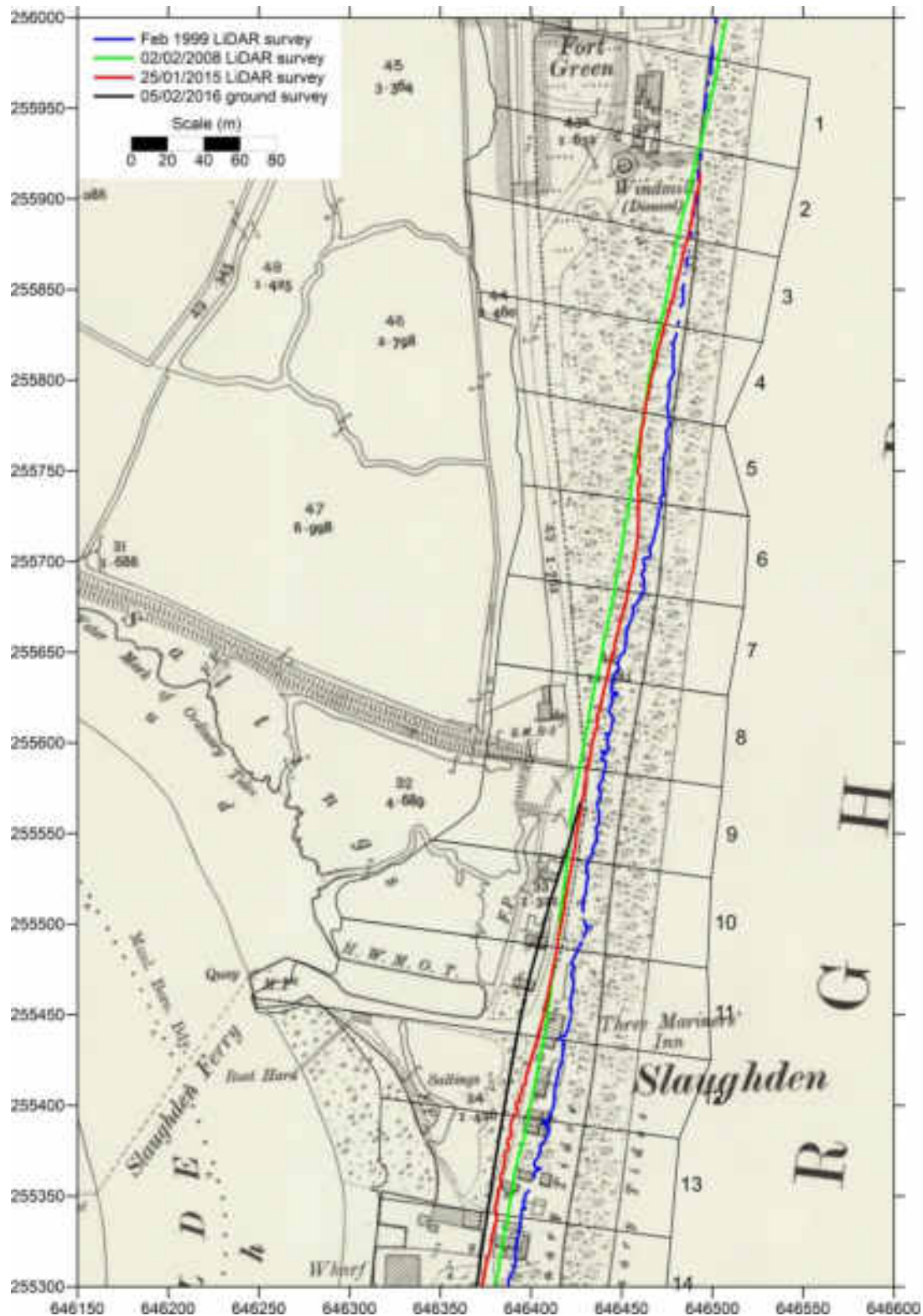


Figure A1.1. Cells 1-14 (Fort Green to Aldeburgh Yacht Club): 25-inch Ordnance Survey map surveyed 1902 (First Edition 1880s survey map not available for this area)

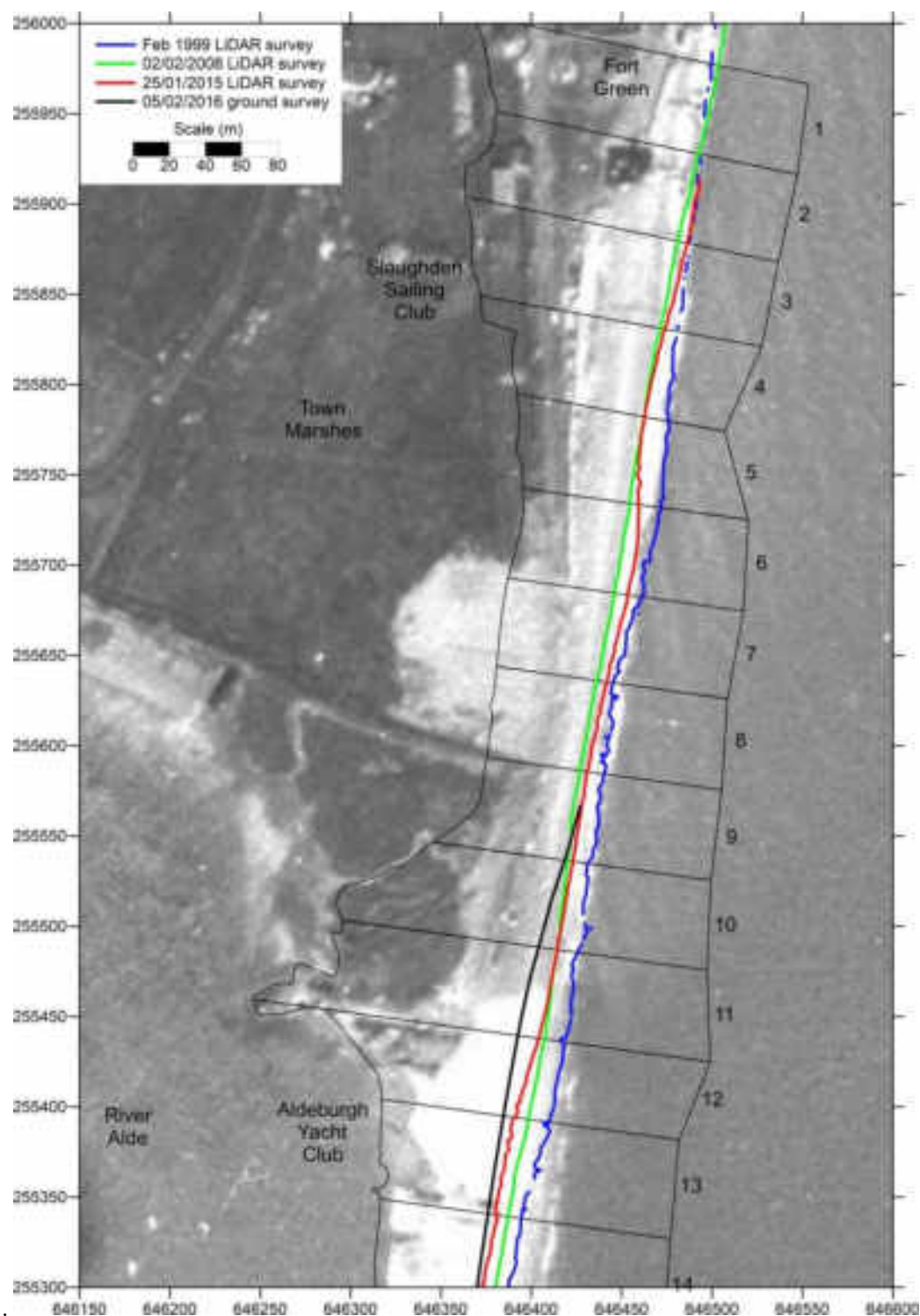


Figure A1.2 Cells 1-14 (Fort Green to Aldeburgh Yacht Club): RAF aerial photos flown in 1945

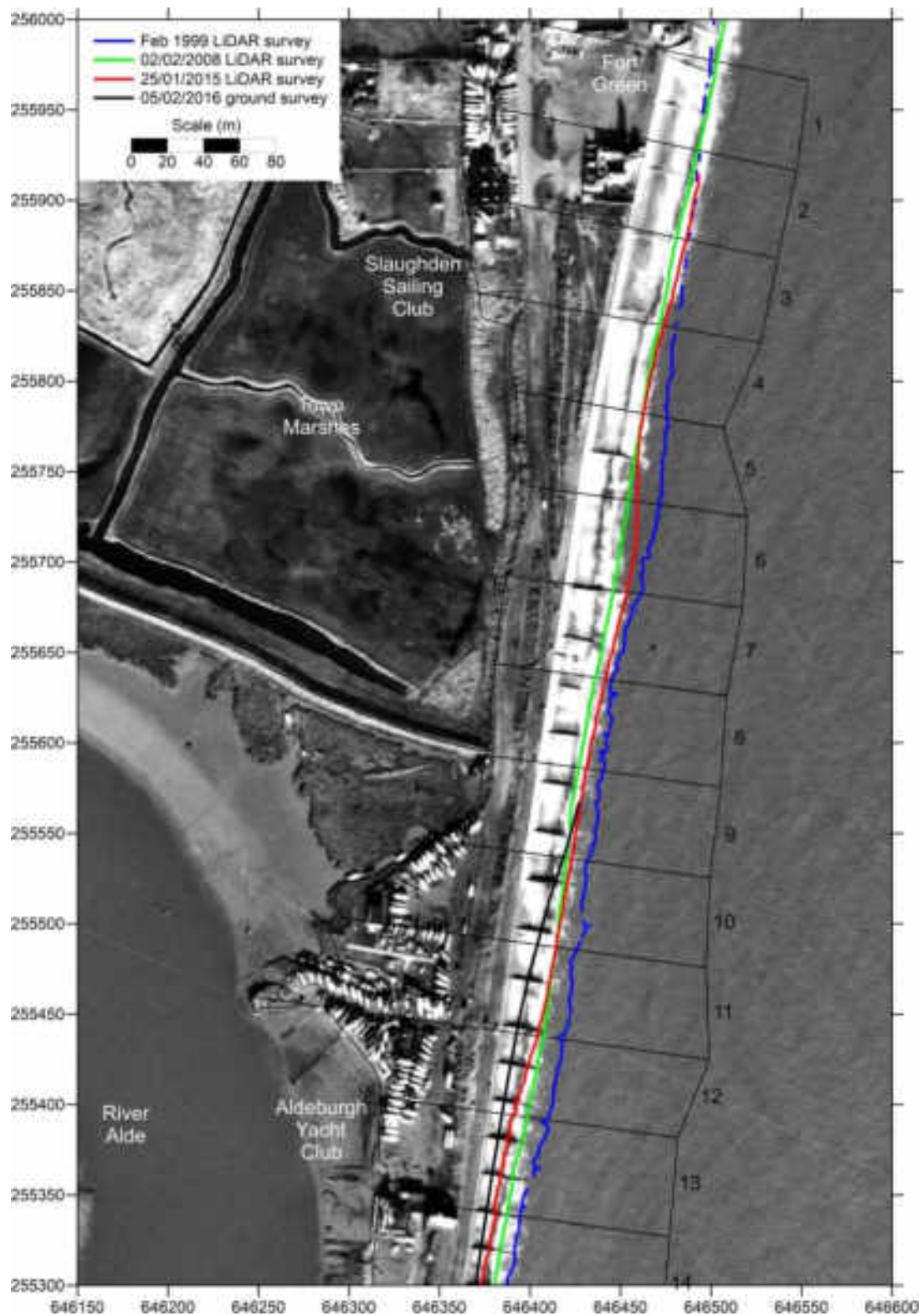


Figure A1.3 Cells 1-14 (Fort Green to Aldeburgh Yacht Club): aerial photos flown 04/02/1983

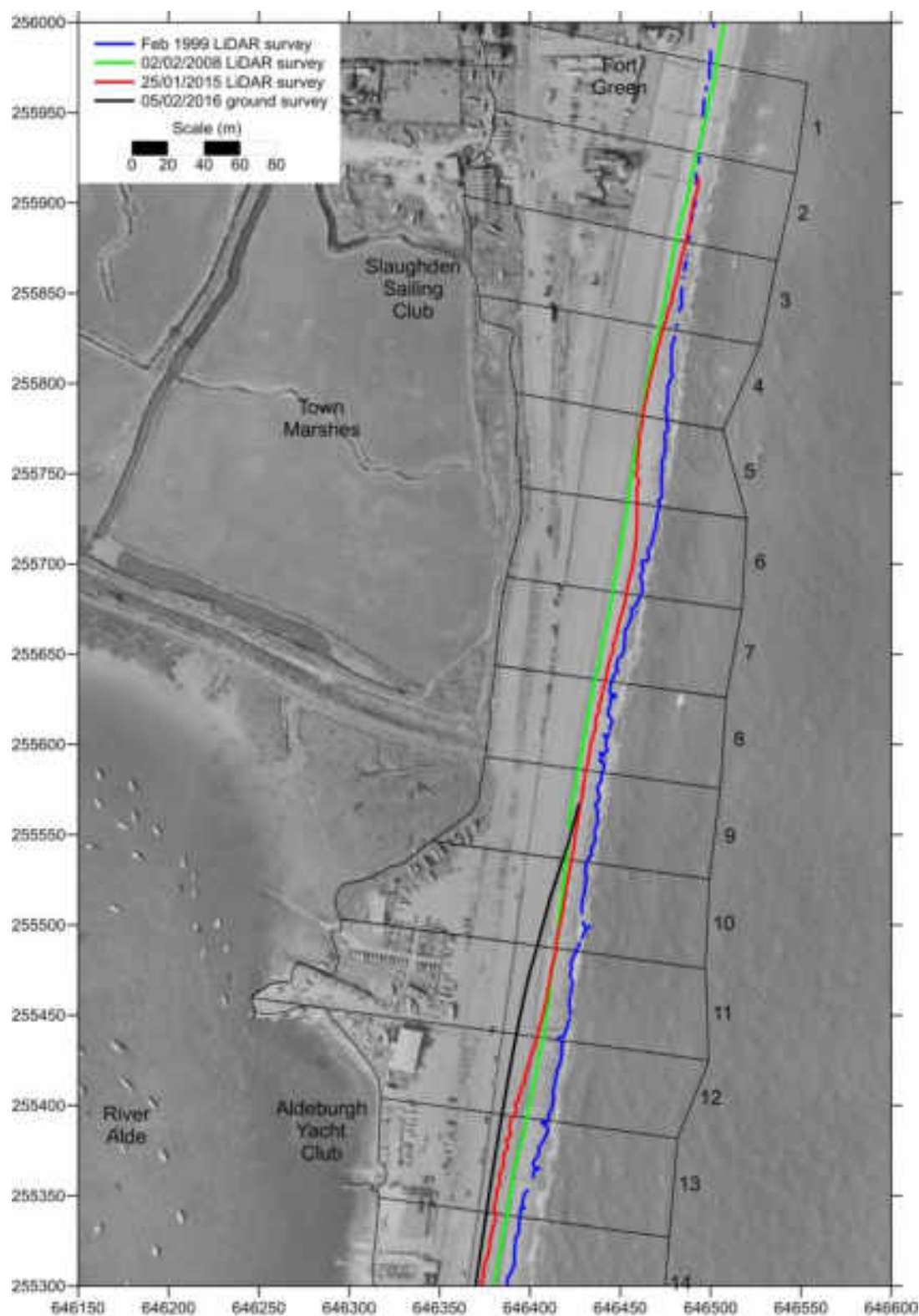


Figure A1.4. Cells 1-14 (Fort Green to Aldeburgh Yacht Club): aerial photos flown summer 1992

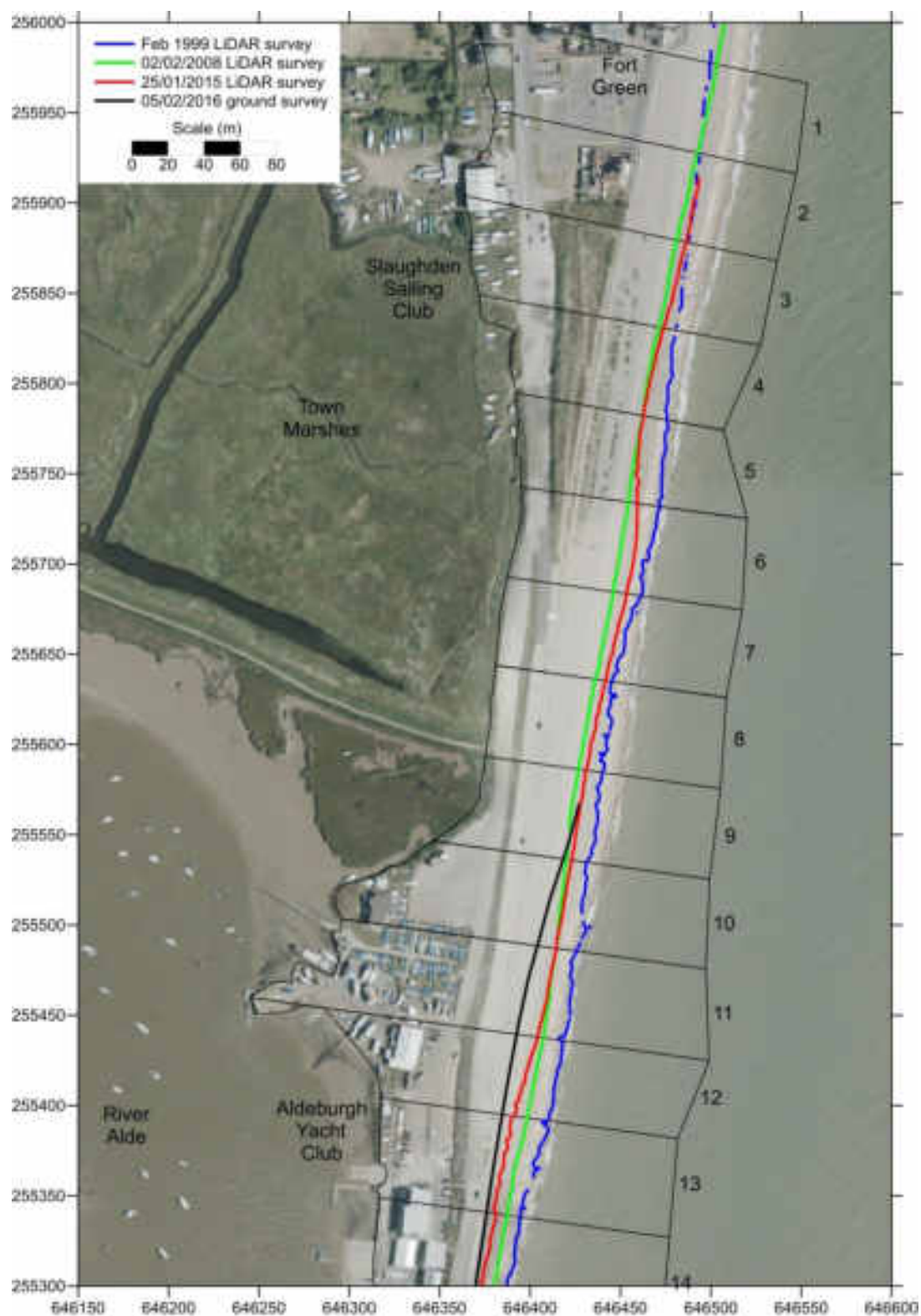


Figure A1.5. Cells 1-14 (Fort Green to Aldeburgh Yacht Club); aerial photos flown 31/10/2014

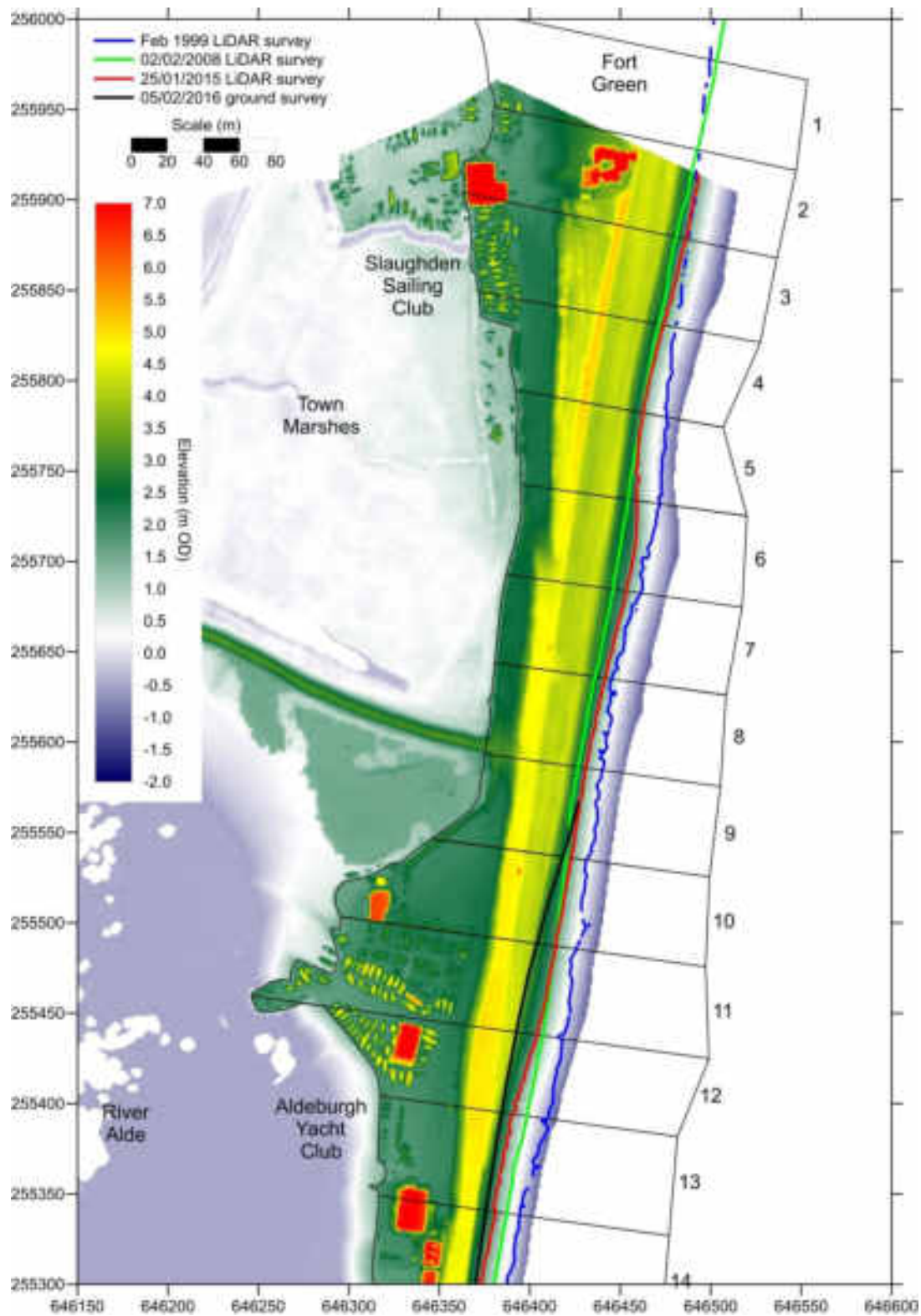


Figure A1.6. Cells 1-14 (Fort Green to Aldeburgh Yacht Club): LiDAR DEM flown 25/01/2015

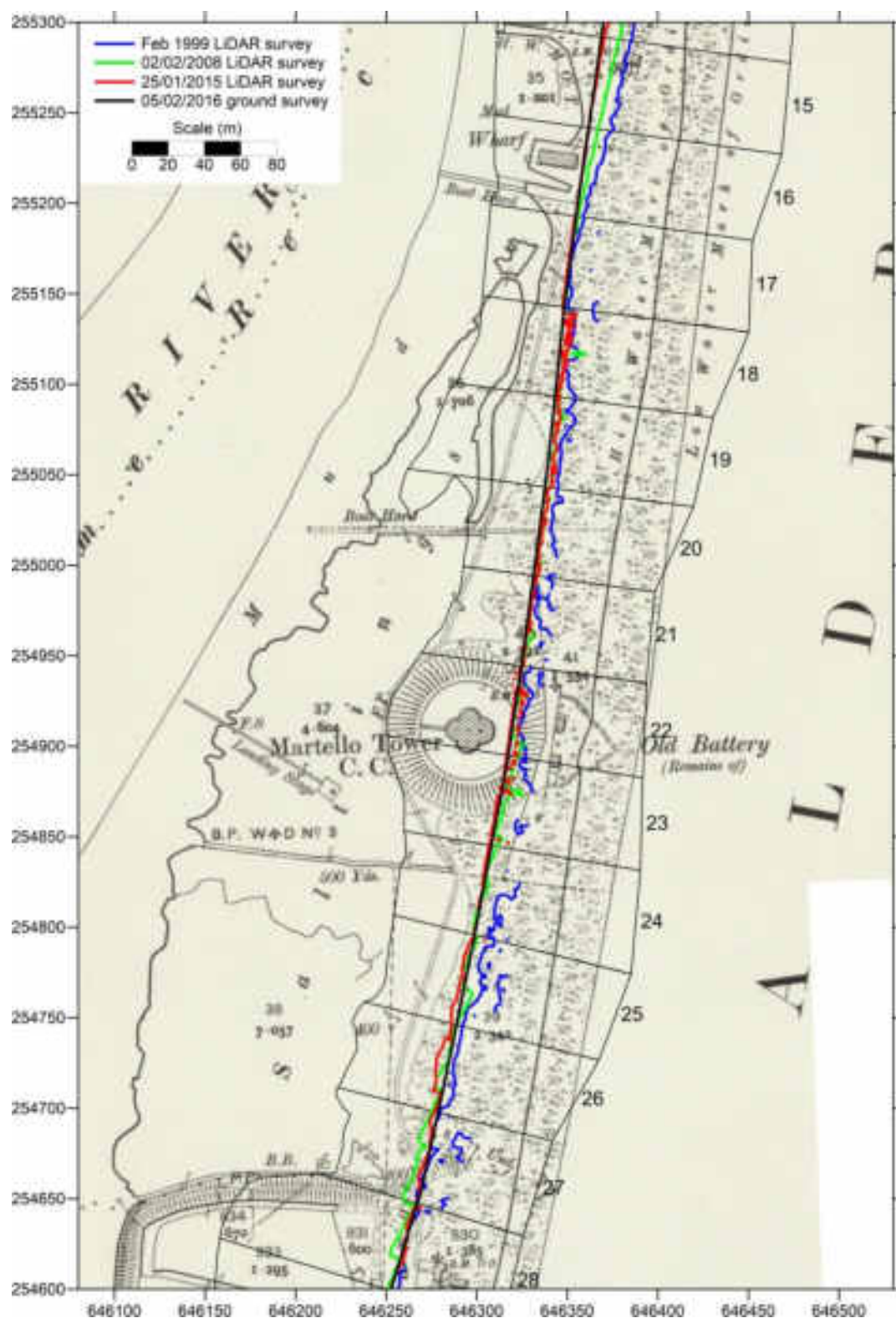


Figure A1.7 Cells 15-28 (Aldeburgh Yacht Club to Lantern Marshes): 25-inch Ordnance Survey map surveyed 1902

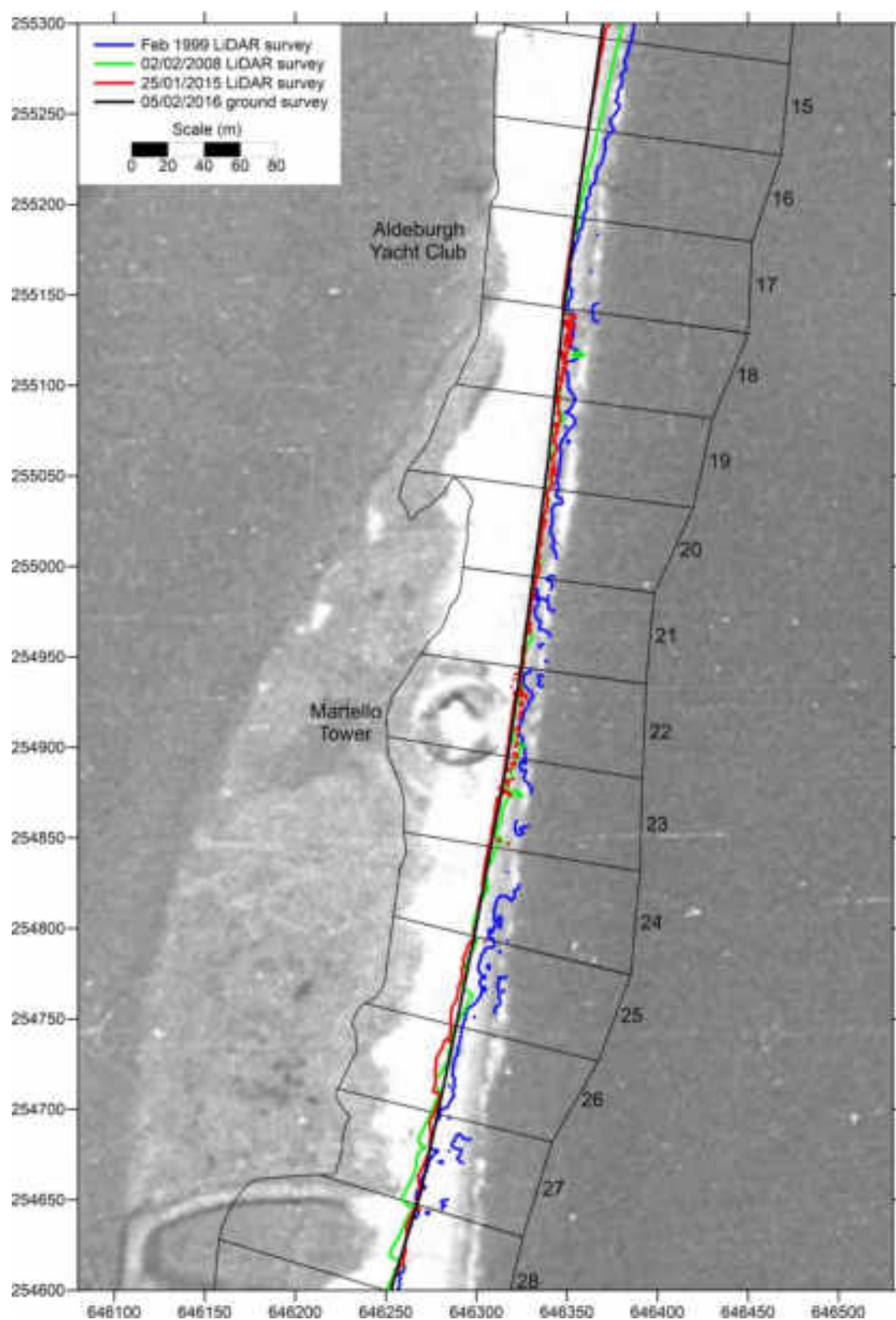


Figure A1.8. Cells 15-28 (Aldeburgh Yacht Club to Lantern Marshes): RAF aerial photos flown in 1945

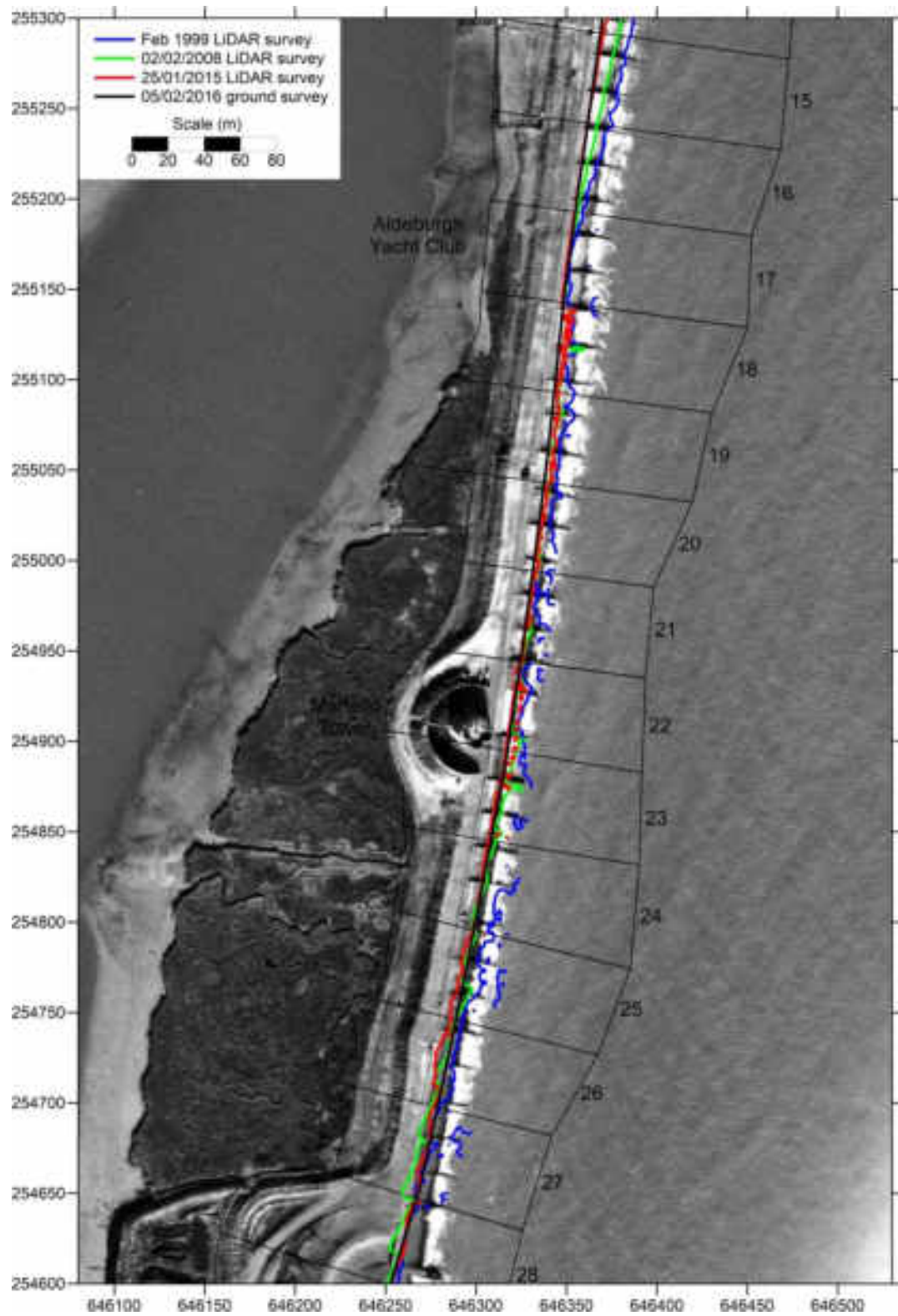


Figure A1.9. Cells 15-28 (Aldeburgh Yacht Club to Lantern Marshes): aerial photos flown 04/02/1983

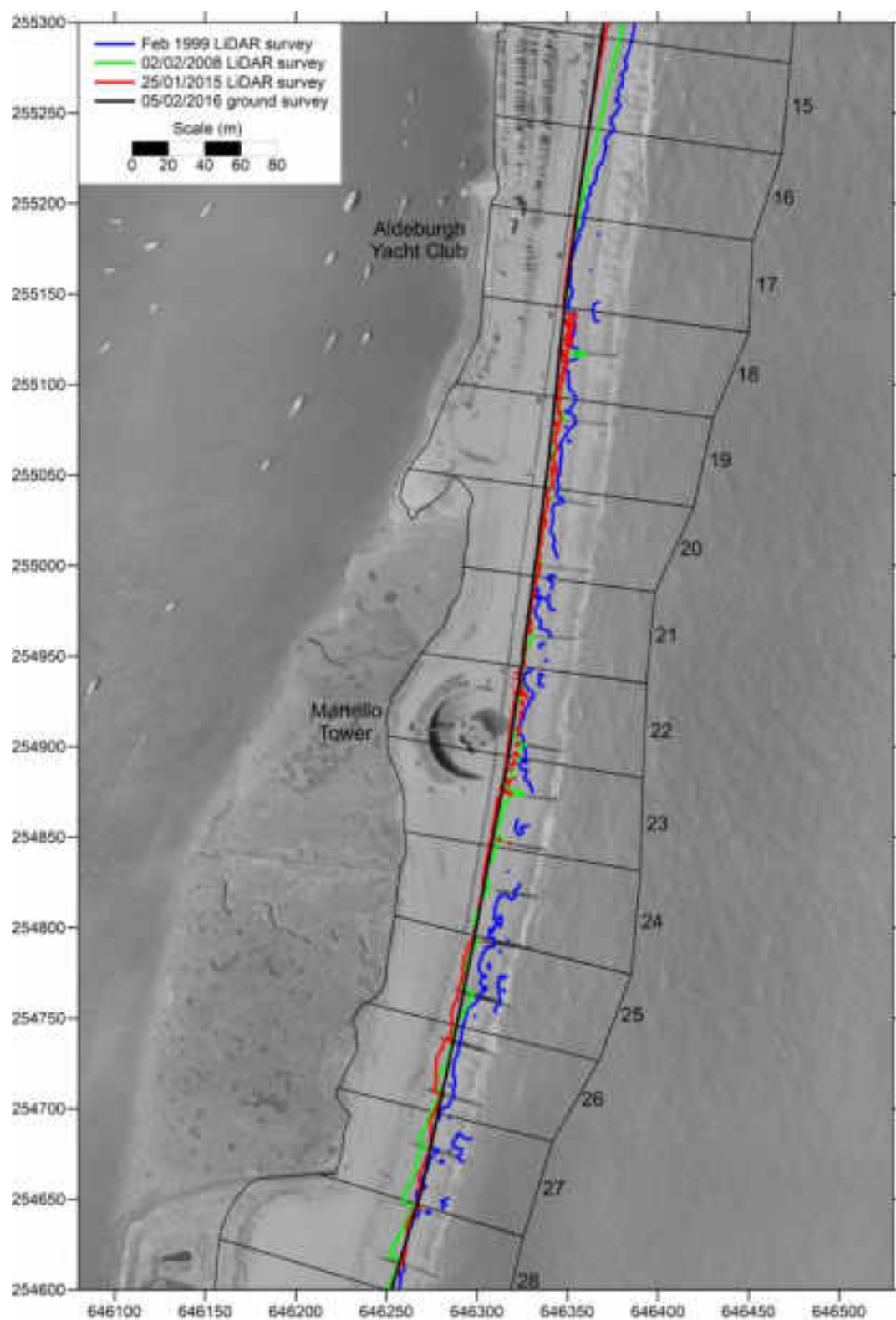


Figure A1.10. Cells 15-28 (Aldeburgh Yacht Club to Lantern Marshes): aerial photos flown summer 1992

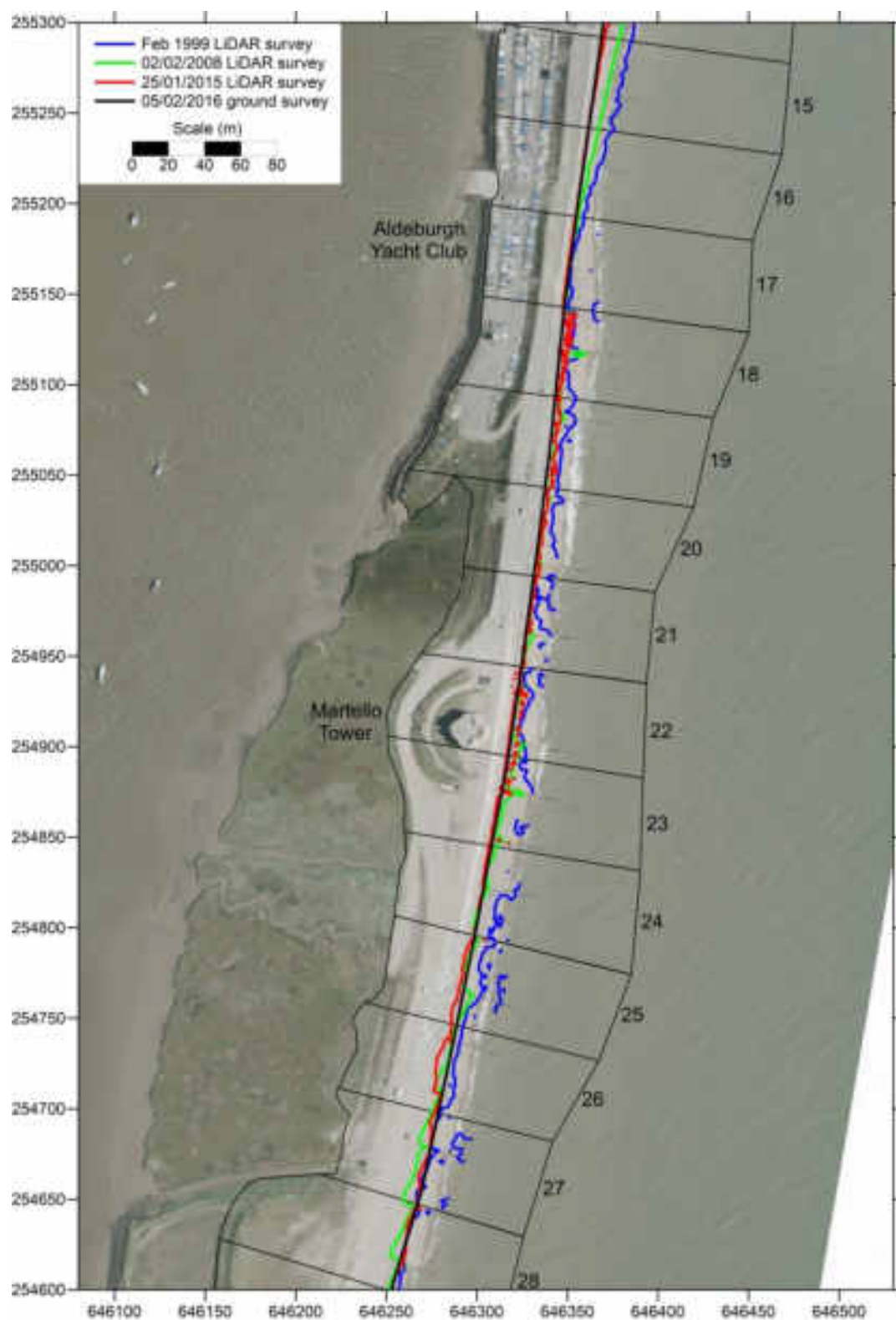


Figure A1.11. Cells 15-28 (Aldeburgh Yacht Club to Lantern Marshes): aerial photos flown 31/10/2014

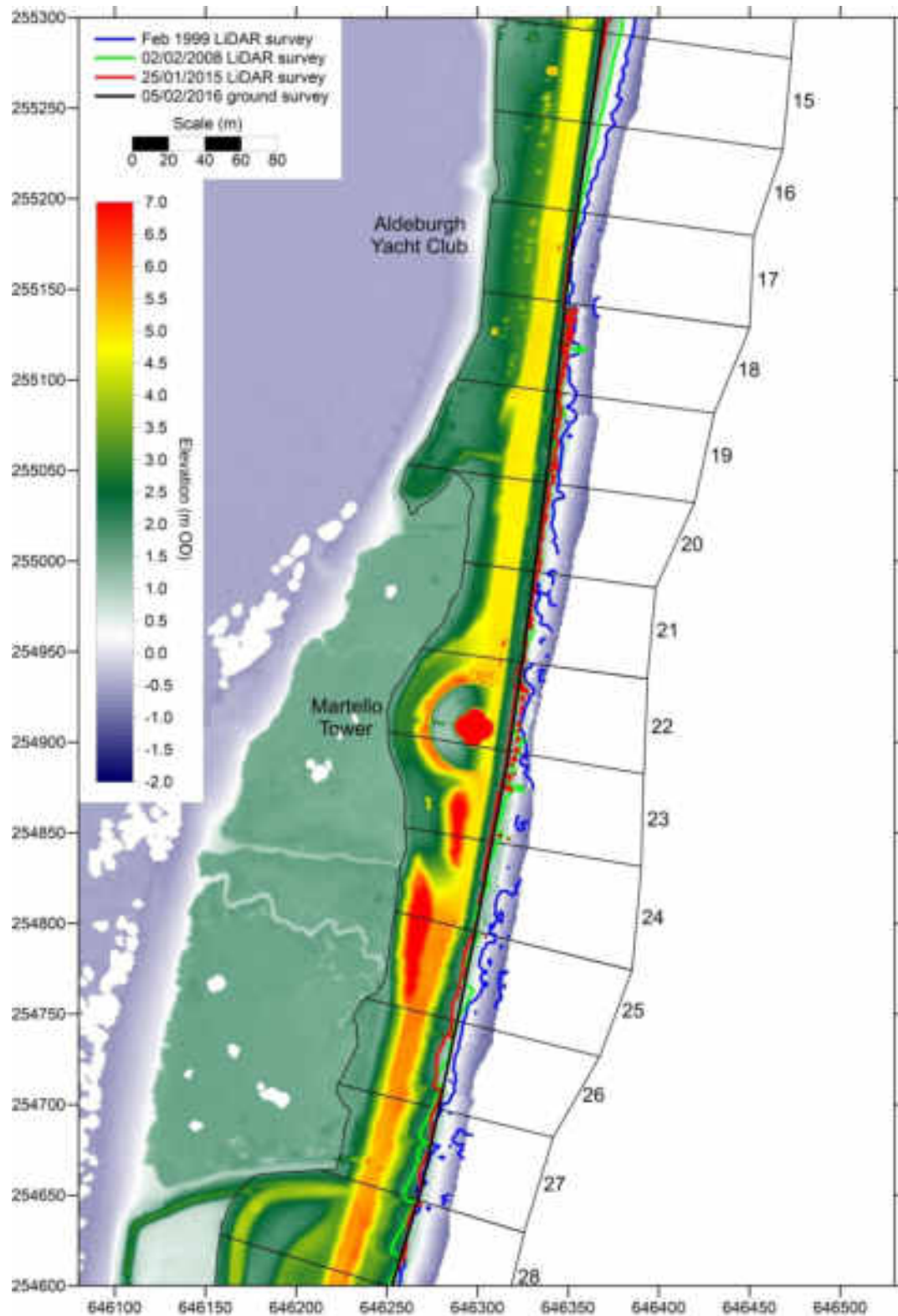


Figure A1.12. Cells 15-28 (Aldeburgh Yacht Club to Lantern Marshes): LiDAR DEM flown 25/01/2015



Figure A1.13. Cells 29-42 (Lantern Marshes): 25-inch Ordnance Survey map surveyed 1881 and 1902

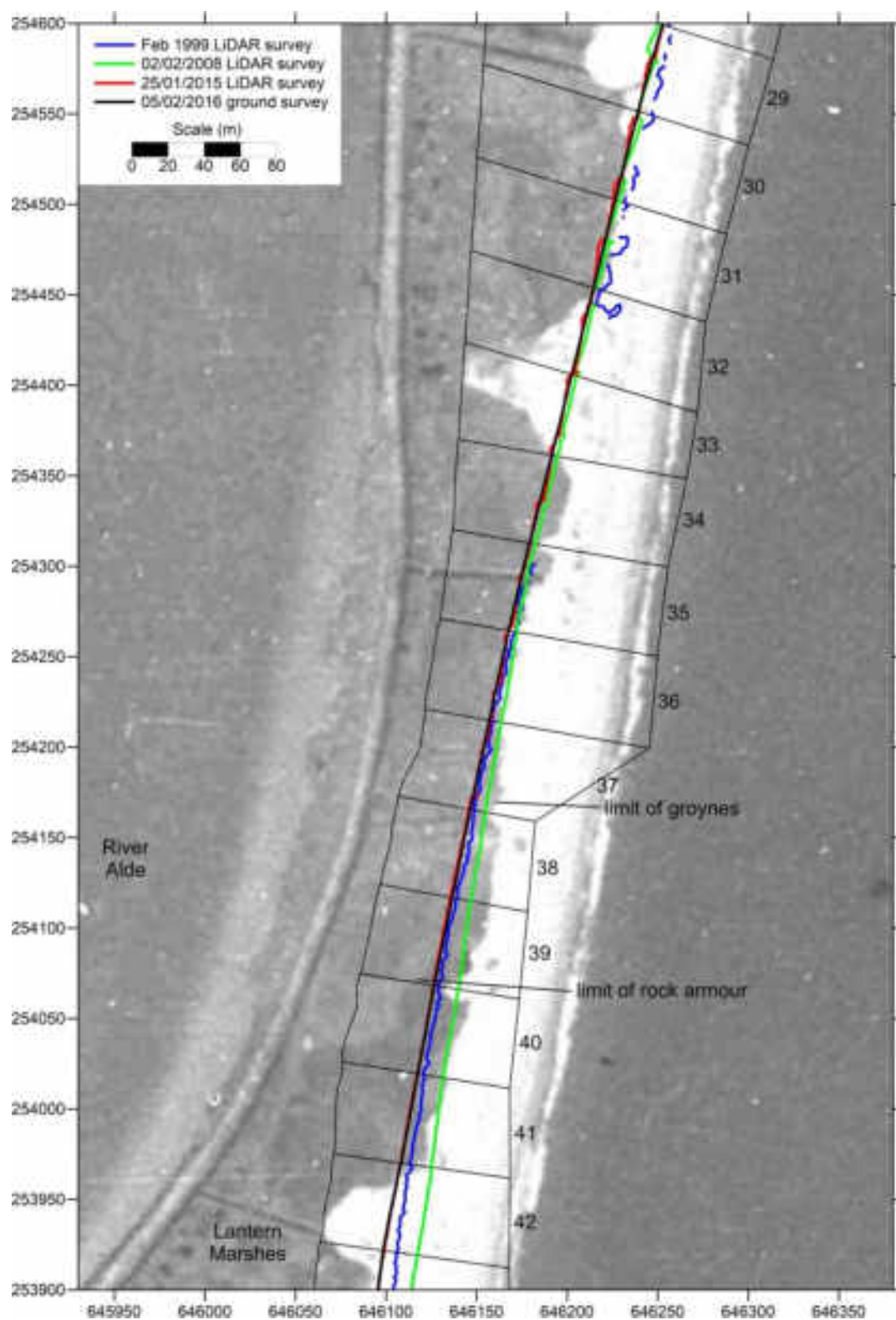


Figure A1.14. Cells 29-42 (Lantern Marshes): RAF aerial photos flown in 1945

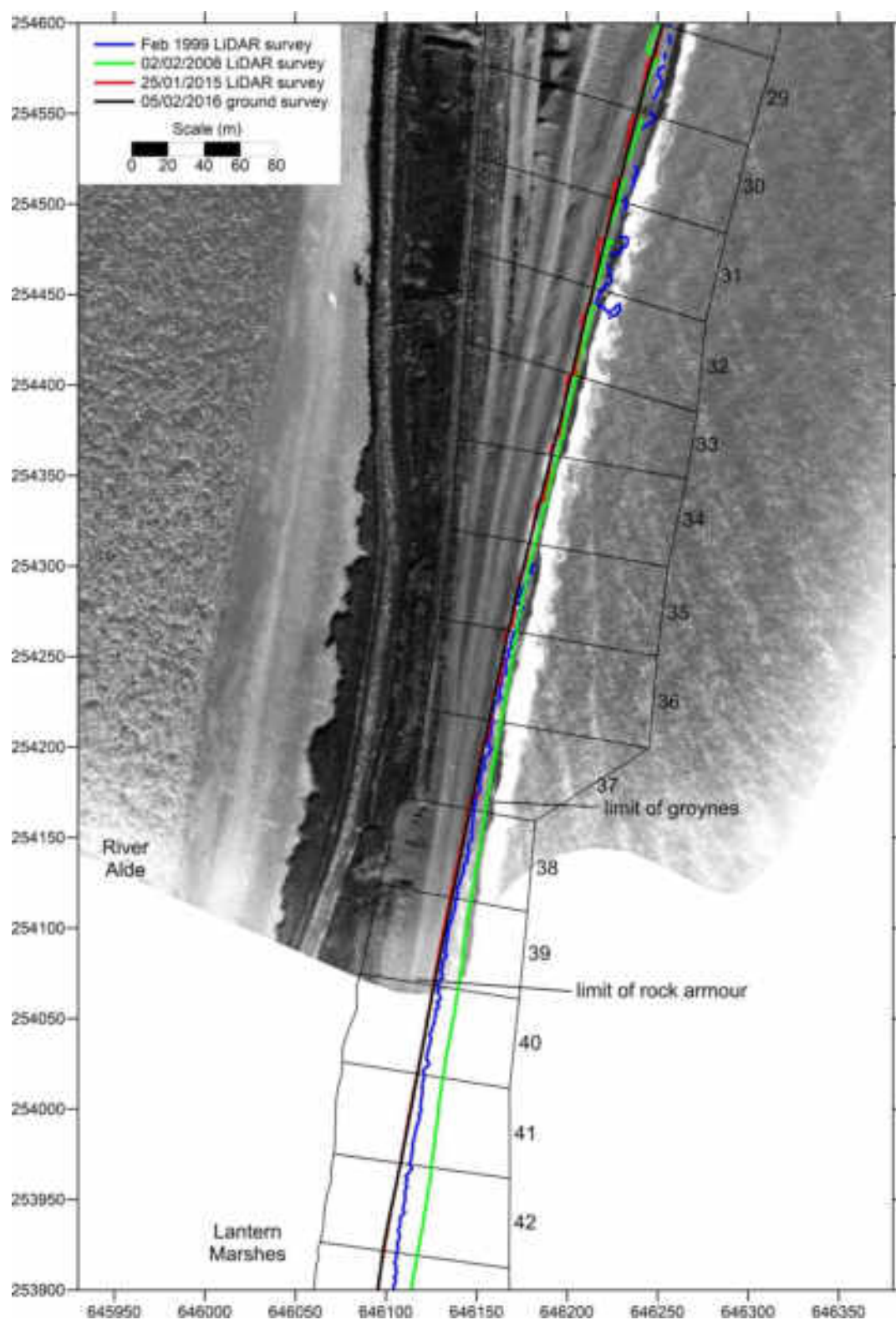


Figure A1.15. Cells 29-42 (Lantern Marshes): aerial photos flown 04/02/1983

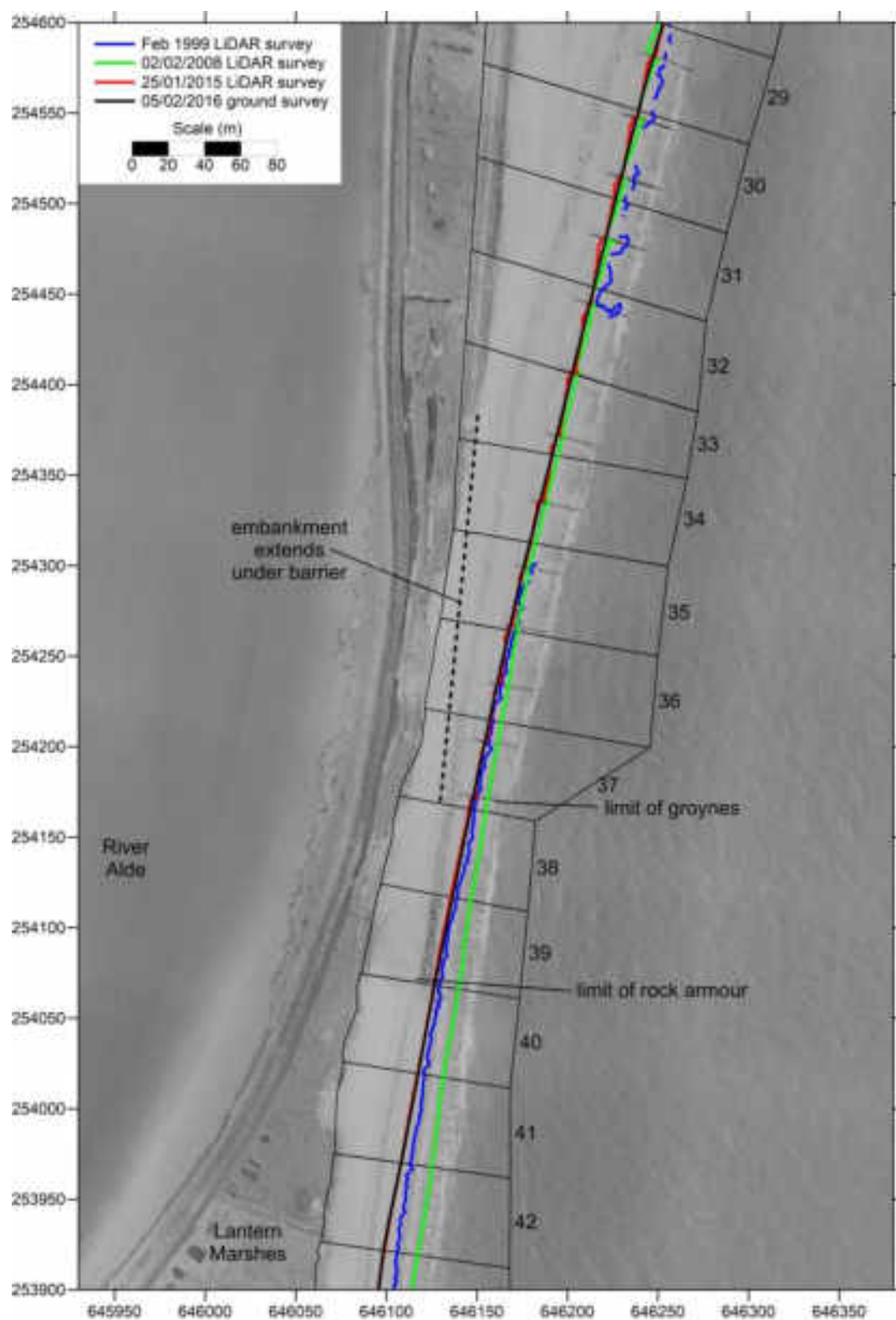


Figure A1.13. Cells 29-42 (Lantern Marshes): aerial photos flown summer 1992

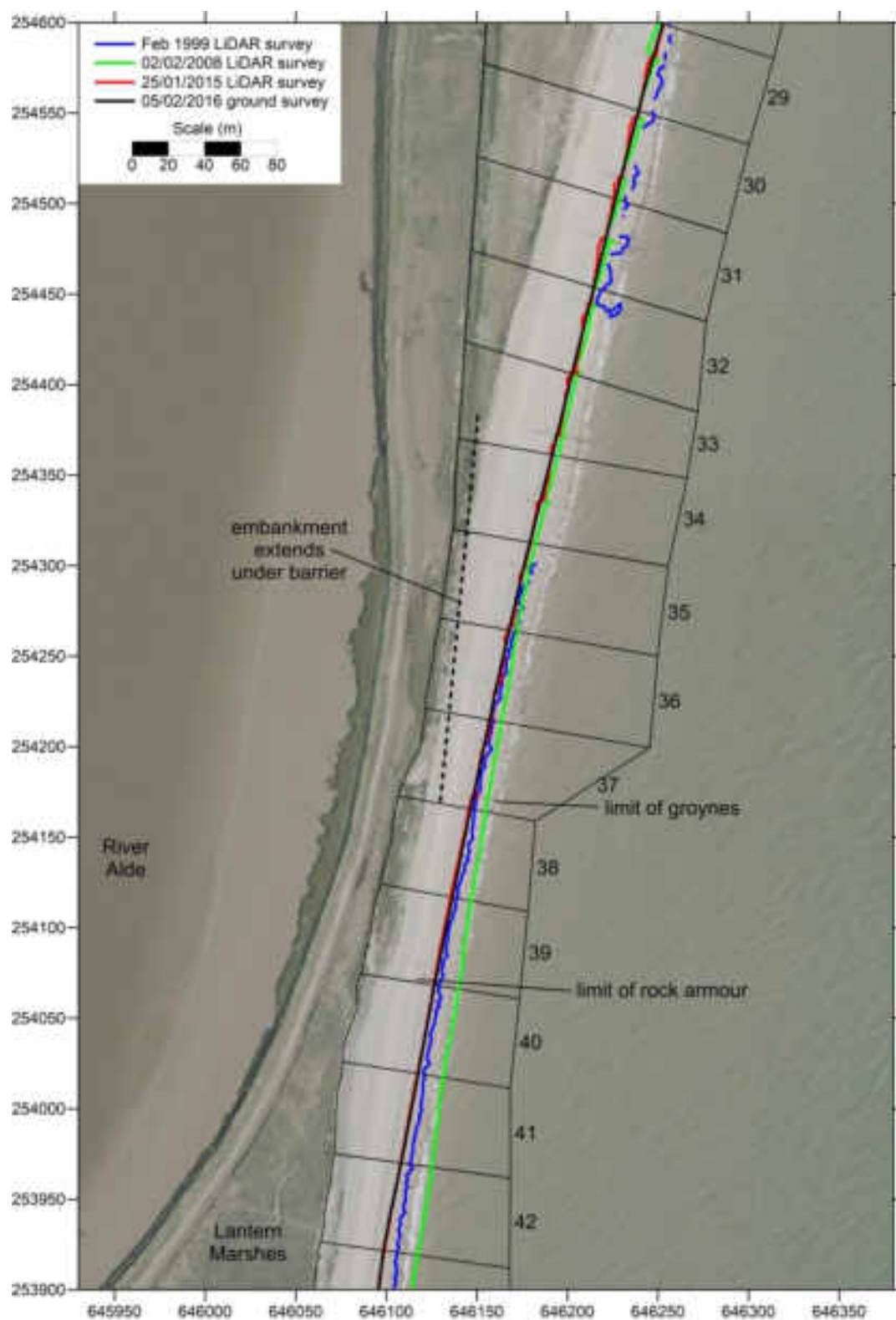


Figure A1.14. Cells 29-42 (Lantern Marshes): aerial photos flown 31/10/2014

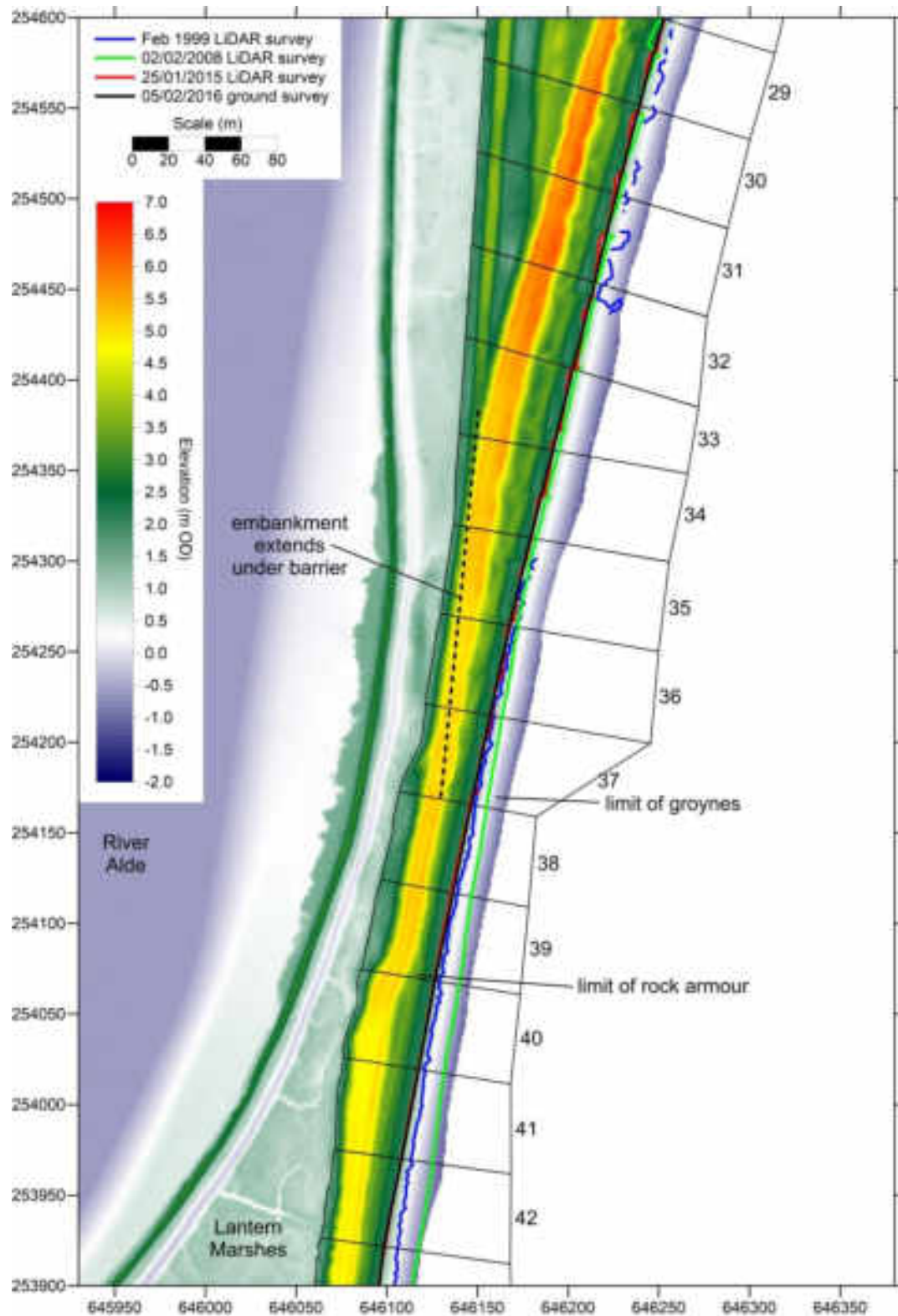


Figure A1.15. Cells 29-42 (Lantern Marshes): LiDAR DEM flown 25/01/2015



Figure A1.16 Cells 43-56 (Lantern Marshes): 25-inch Ordnance Survey map surveyed 1881

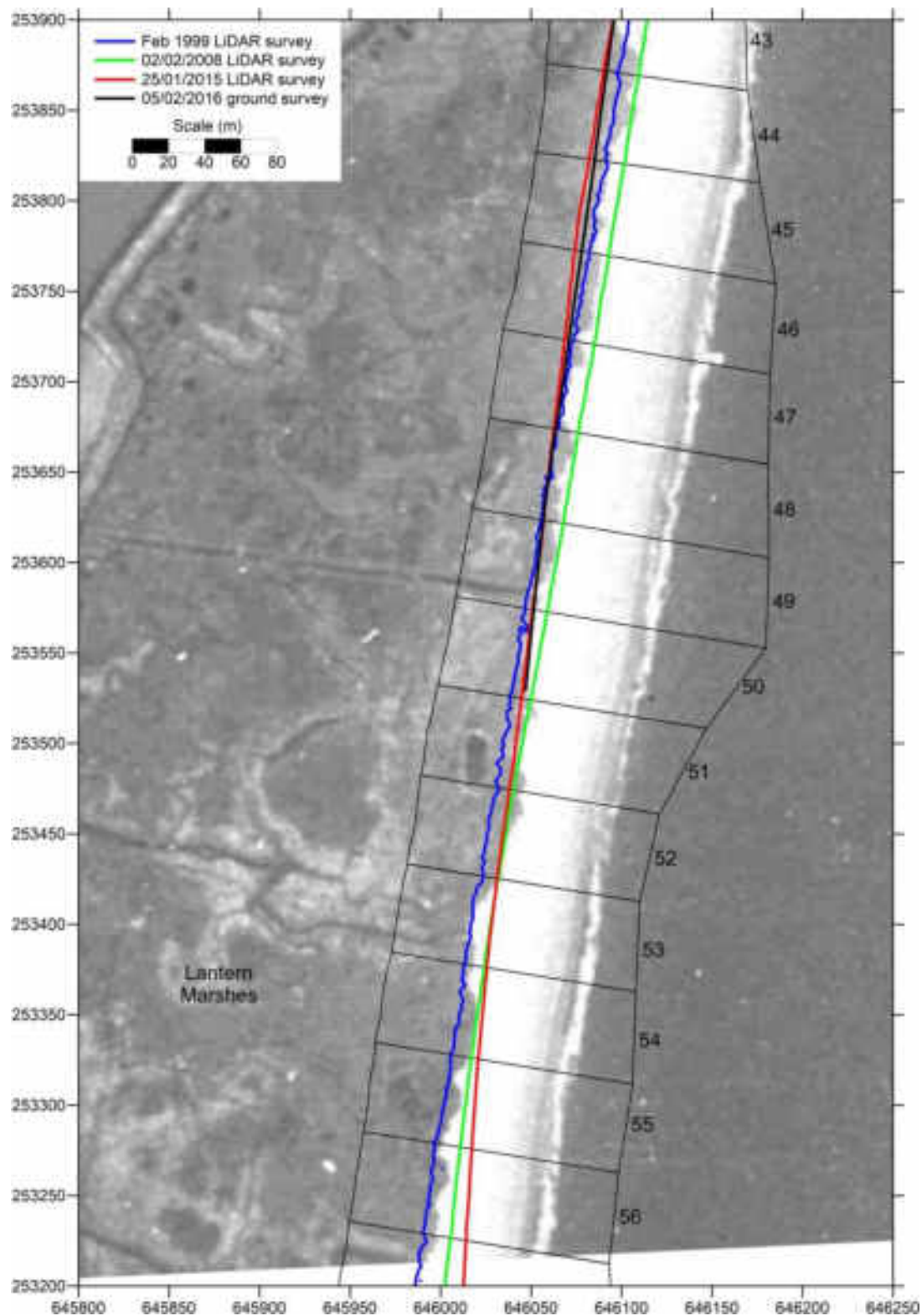


Figure A1.17. Cells 43-56 (Lantern Marshes): RAF aerial photos flown in 1945

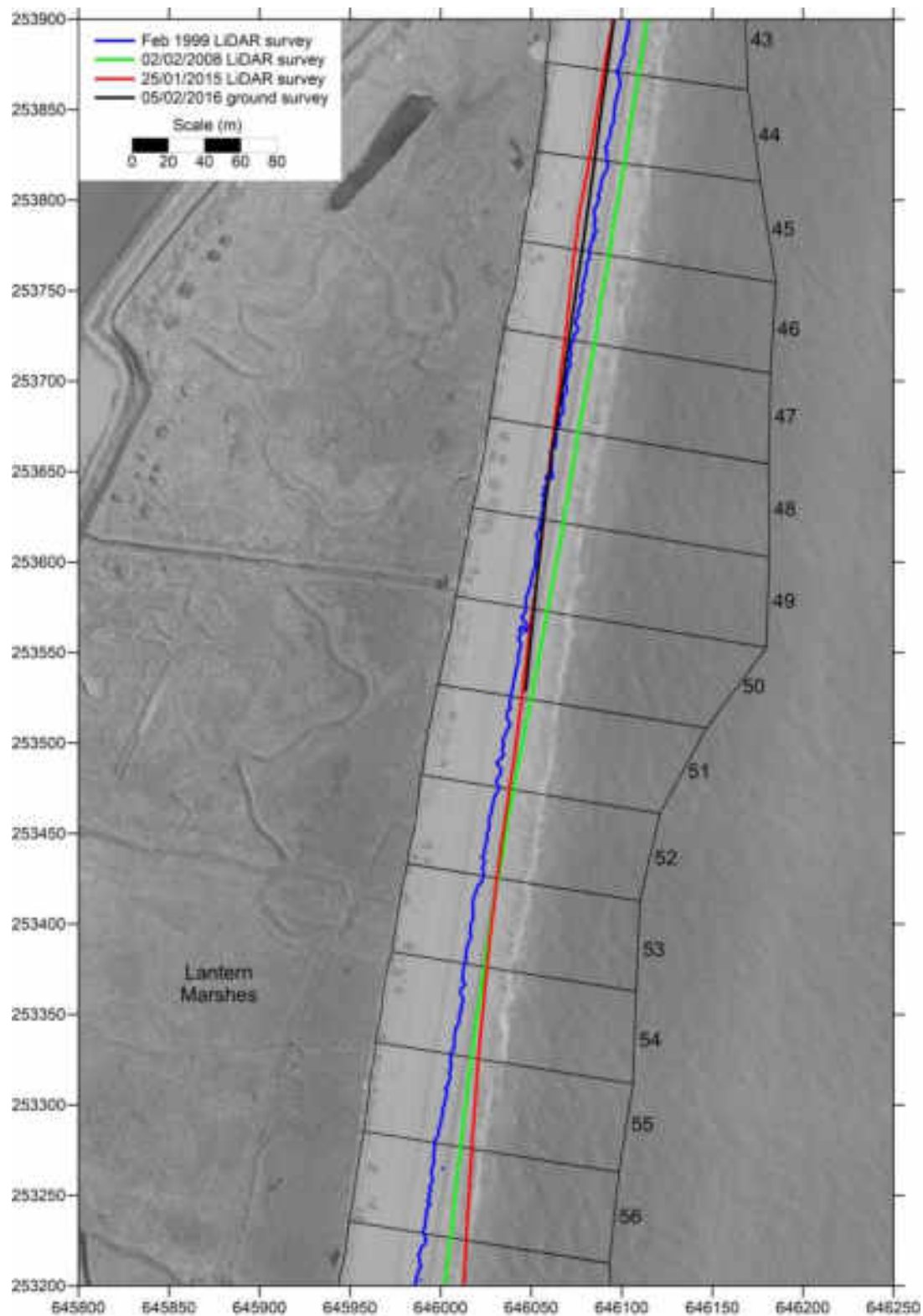


Figure A1.18. Cells 43-56 (Lantern Marshes): aerial photos flown summer 1992

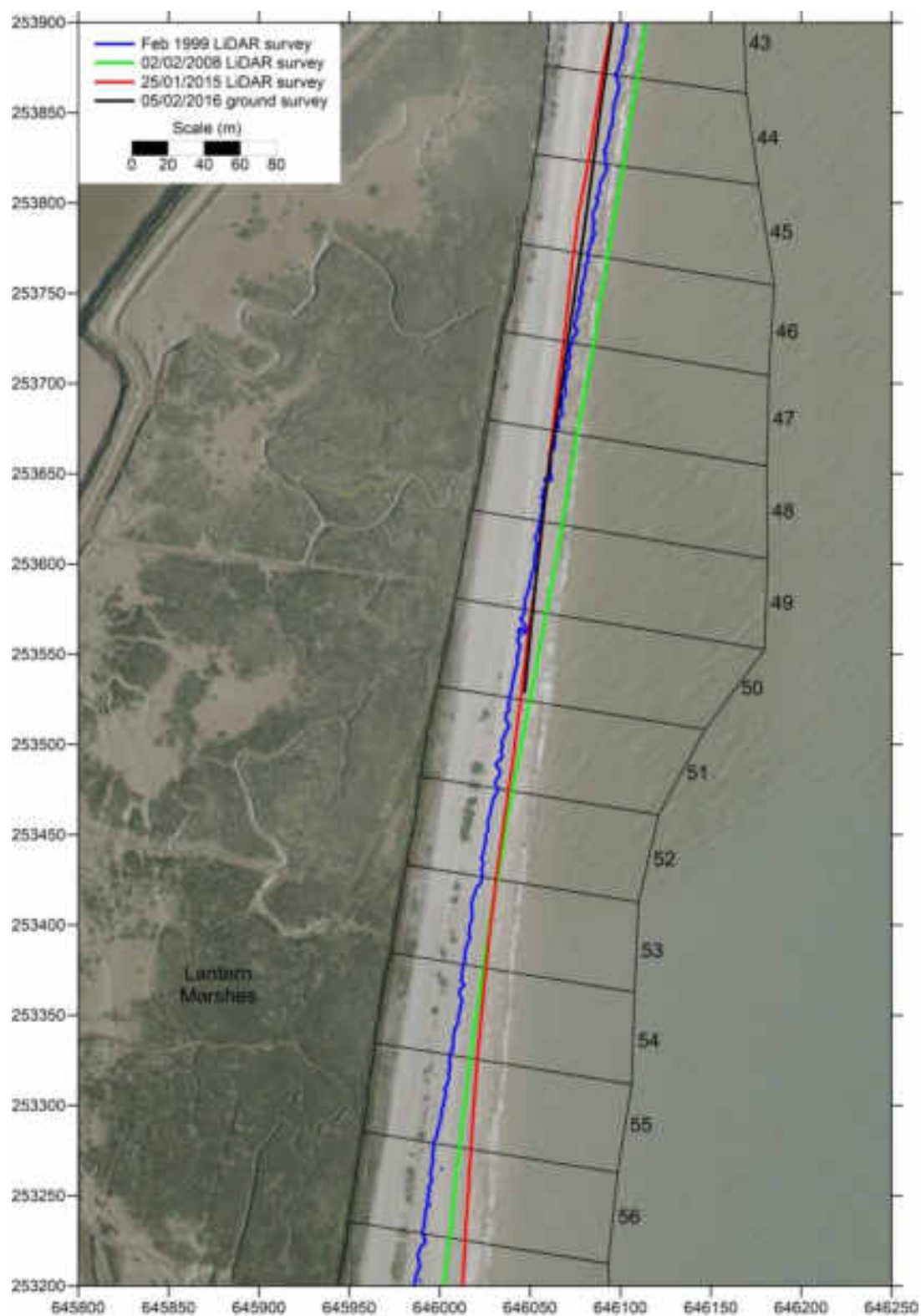


Figure A1.19. Cells 43-56 (Lantern Marshes): aerial photos flown 31/10/2014

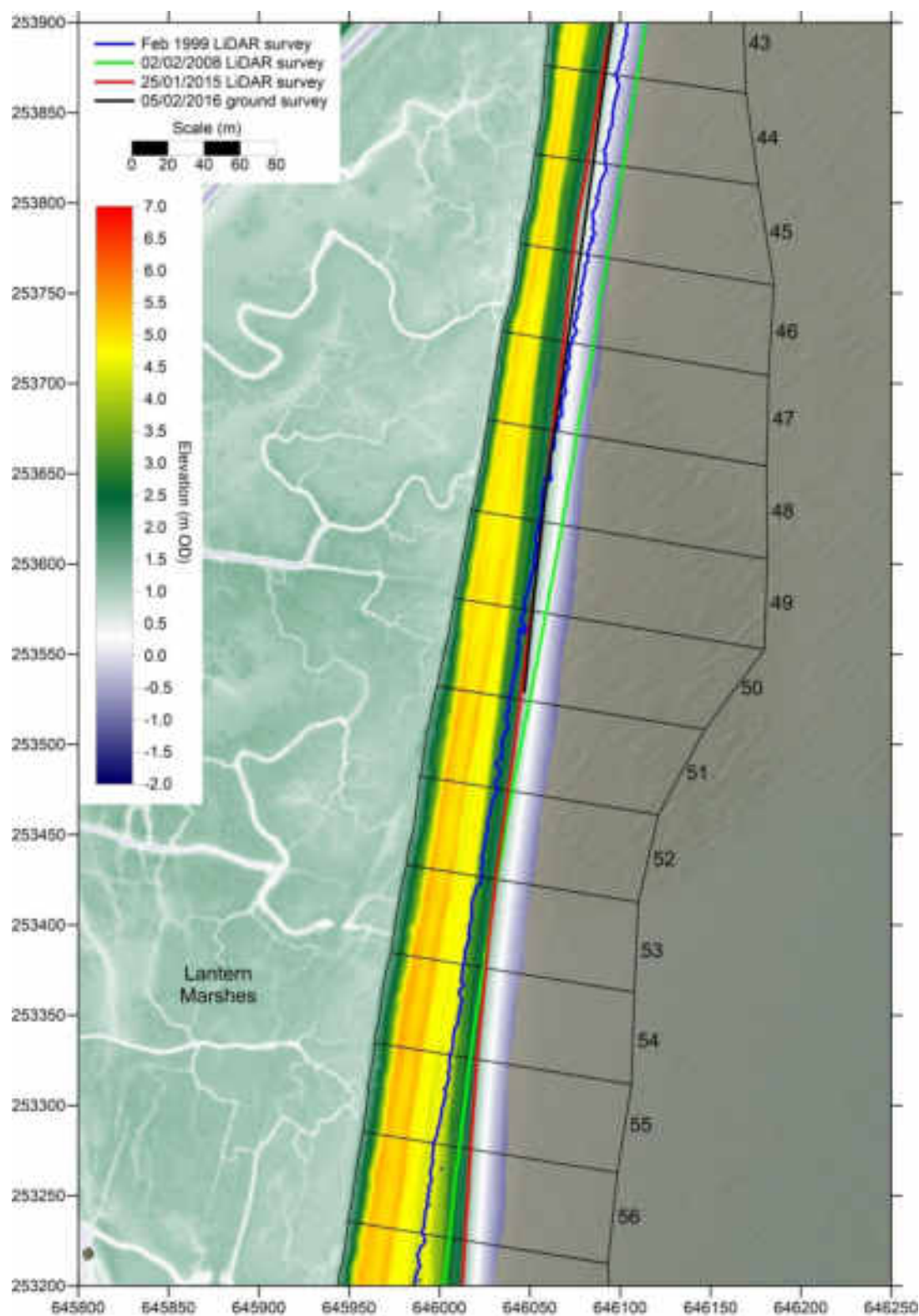


Figure A1.20. Cells 43-56 (Lantern Marshes): LiDAR DEM flown 25/01/2015

Appendix 2

Environment Agency topographic and bathymetric profiles

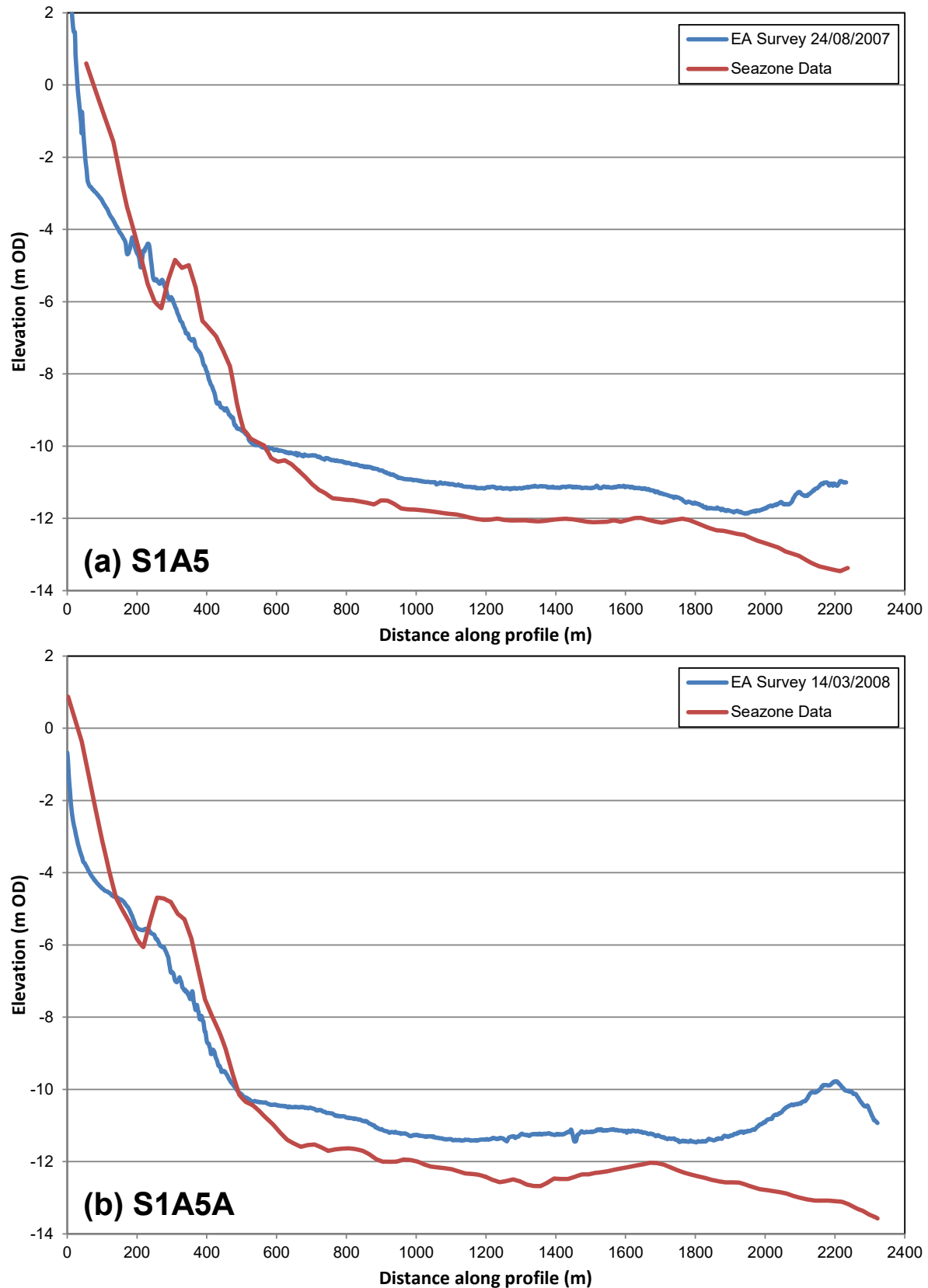
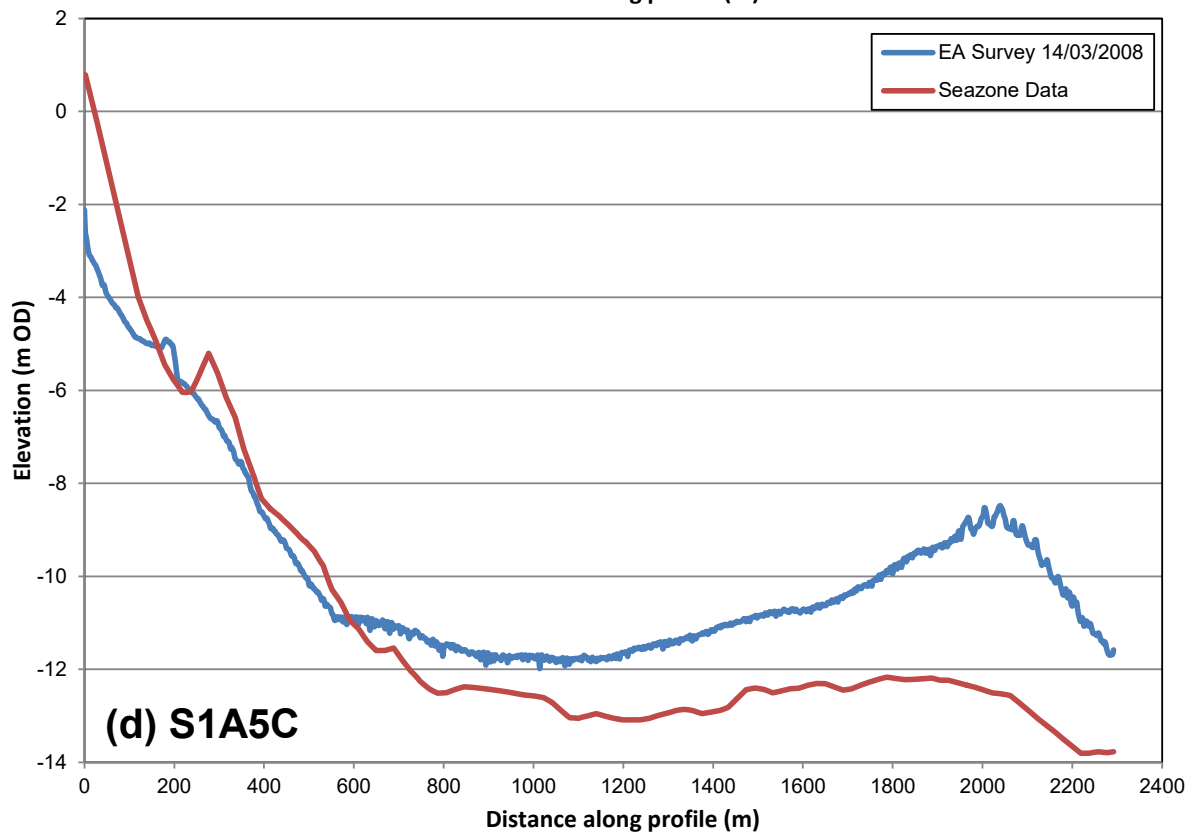
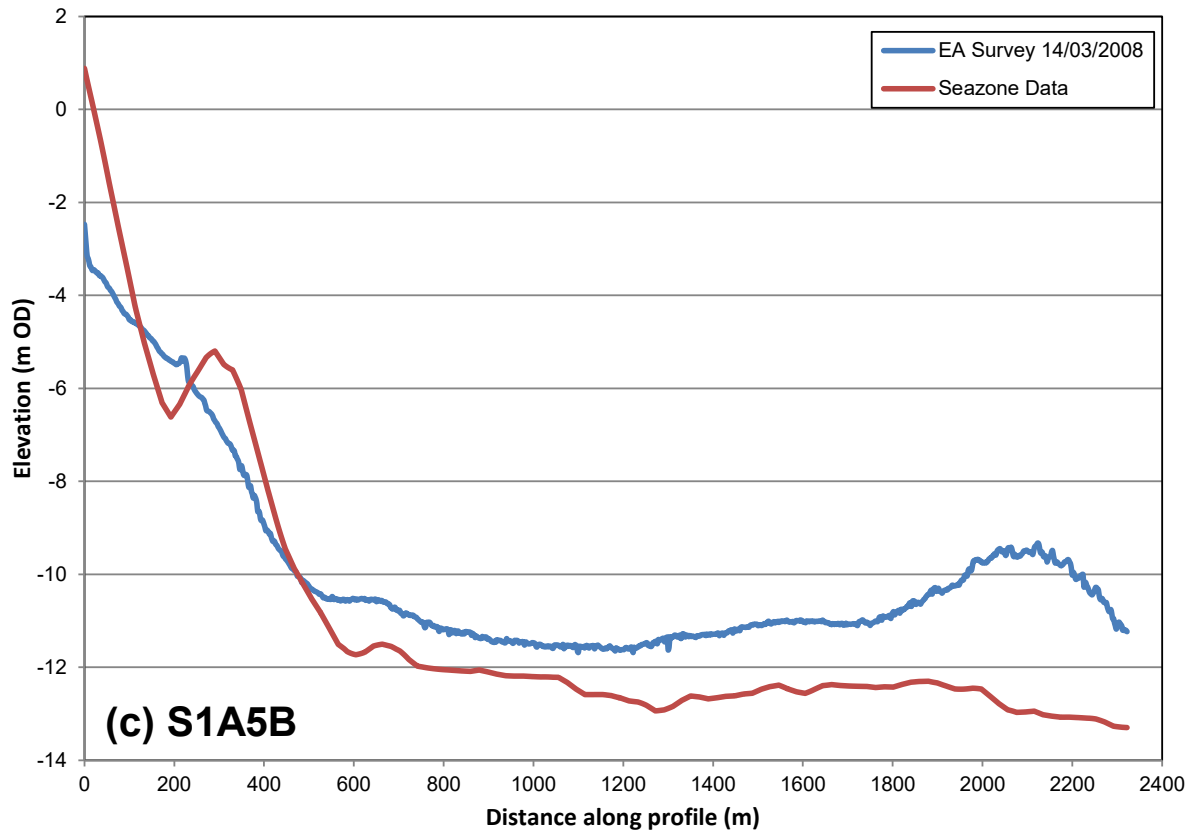
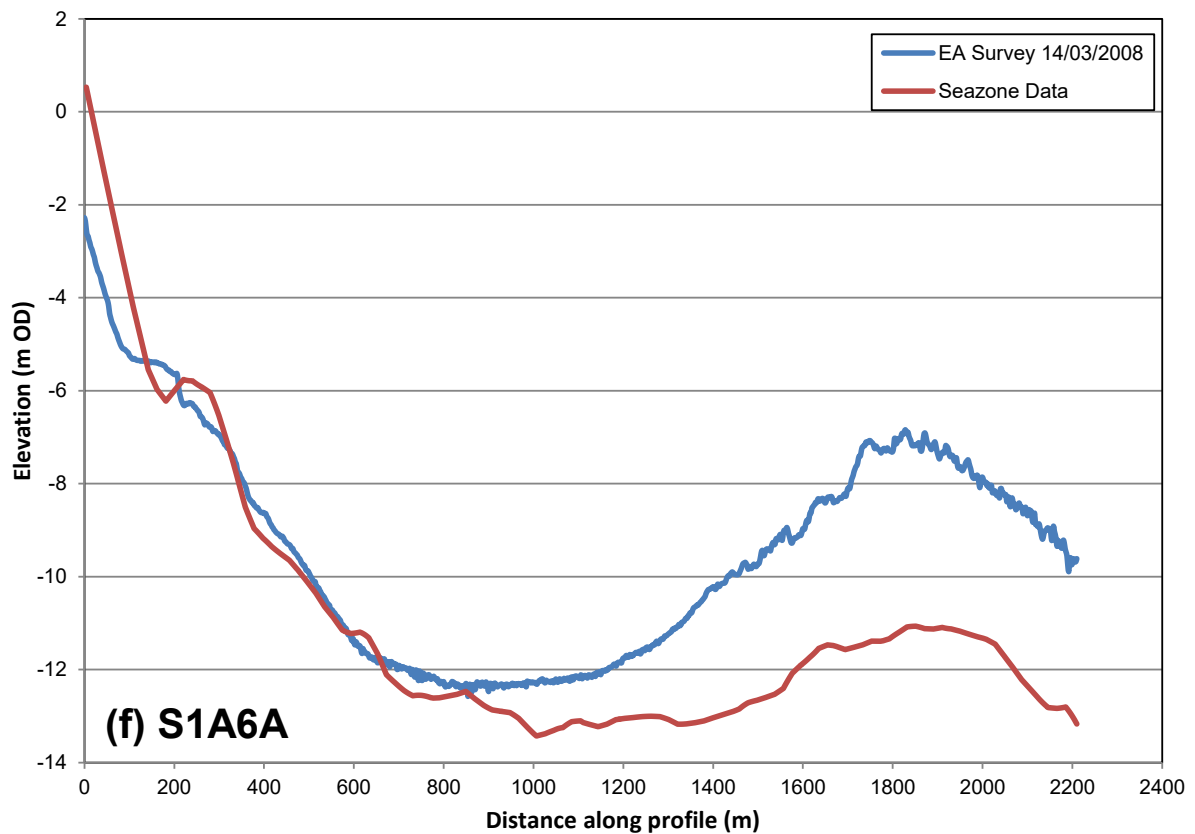
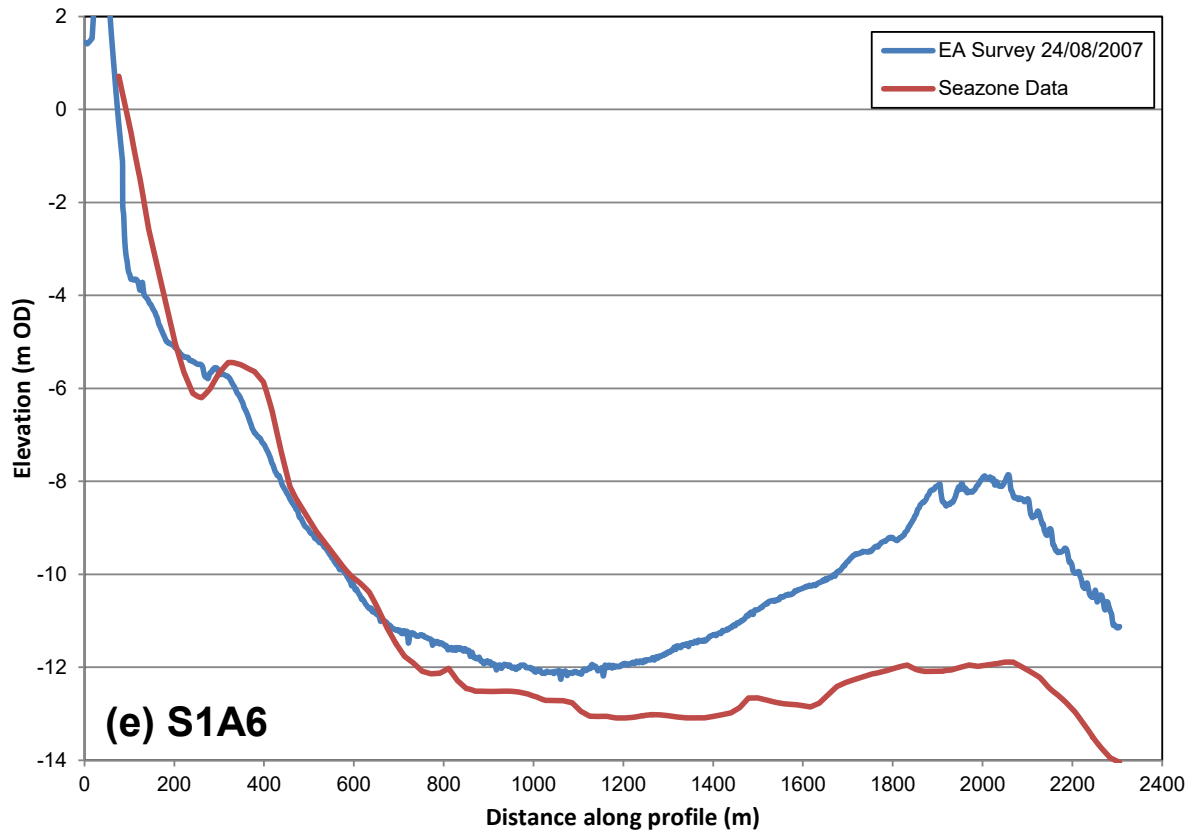
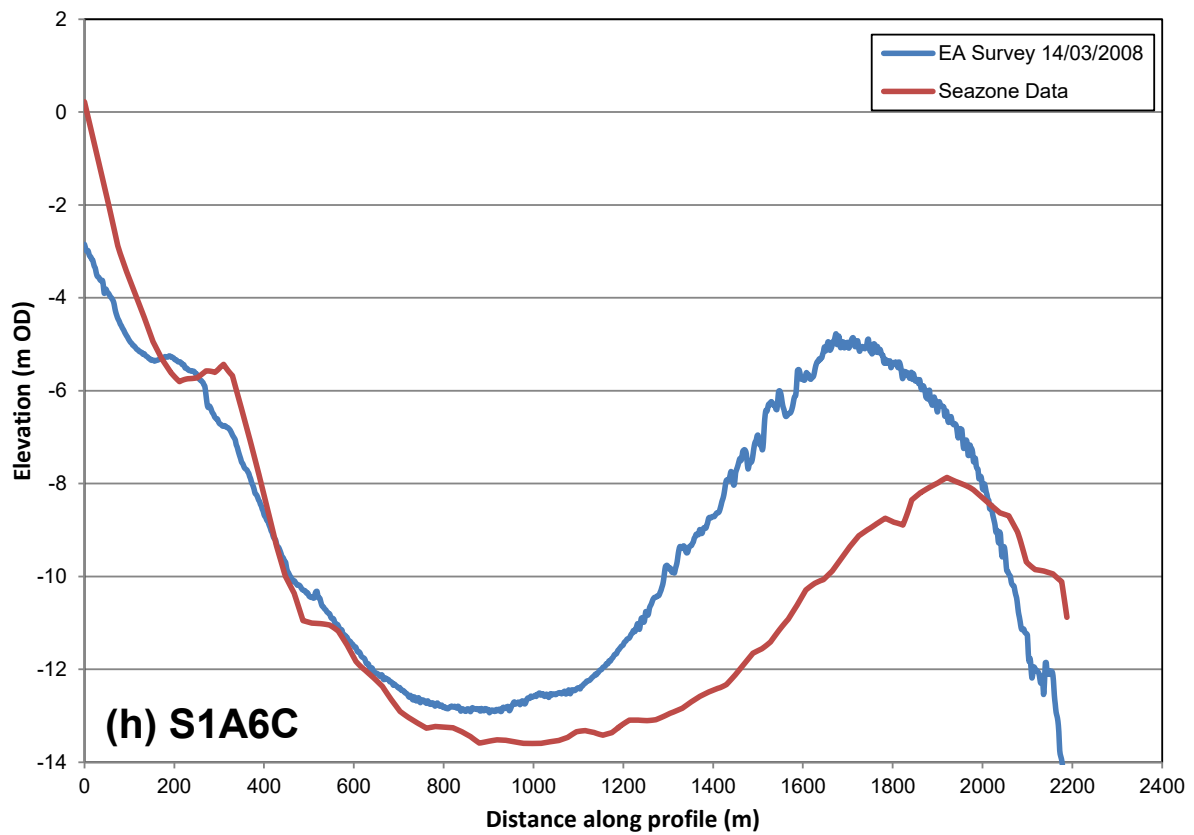
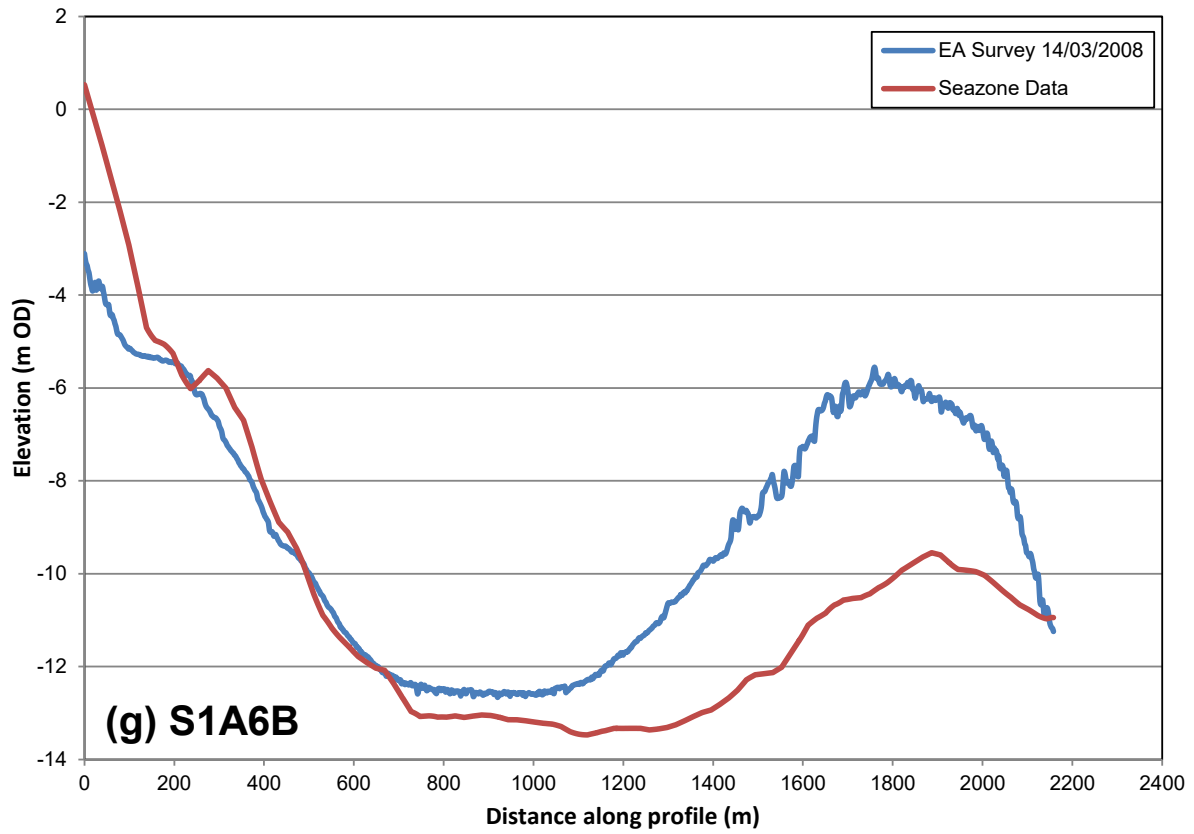
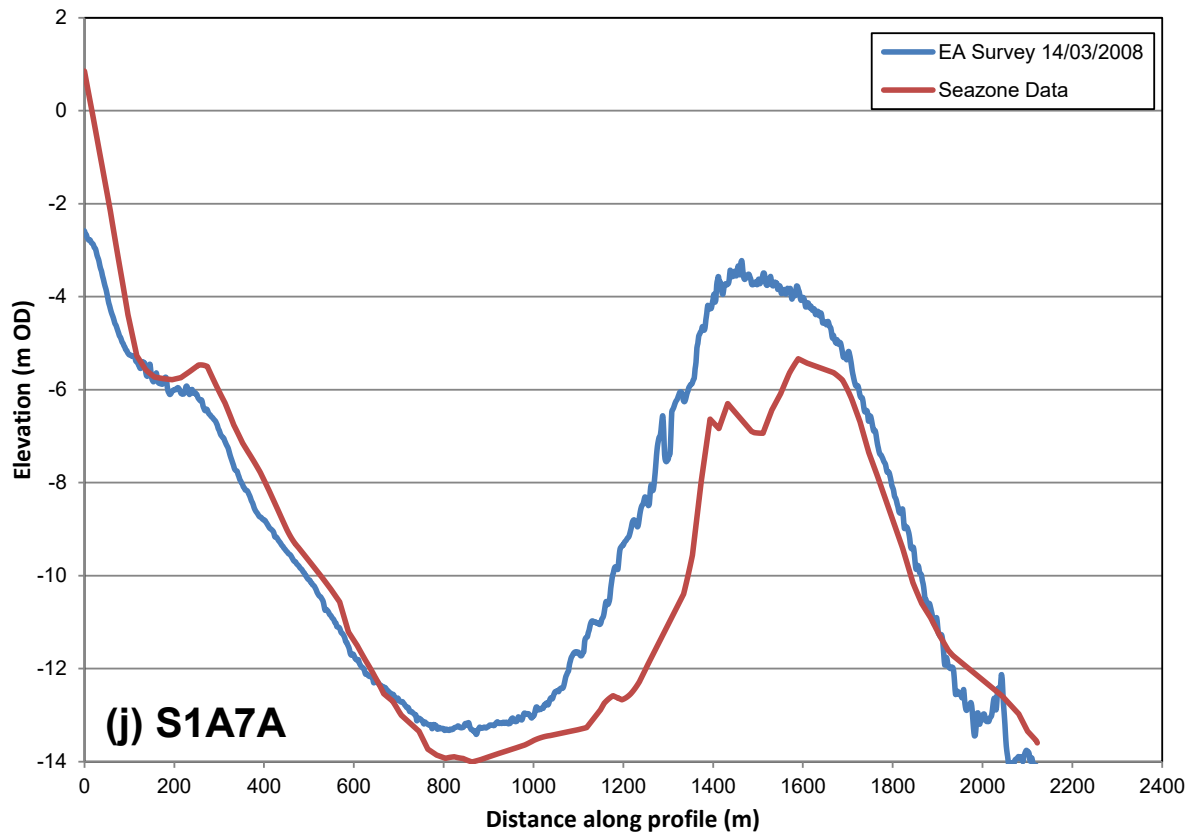
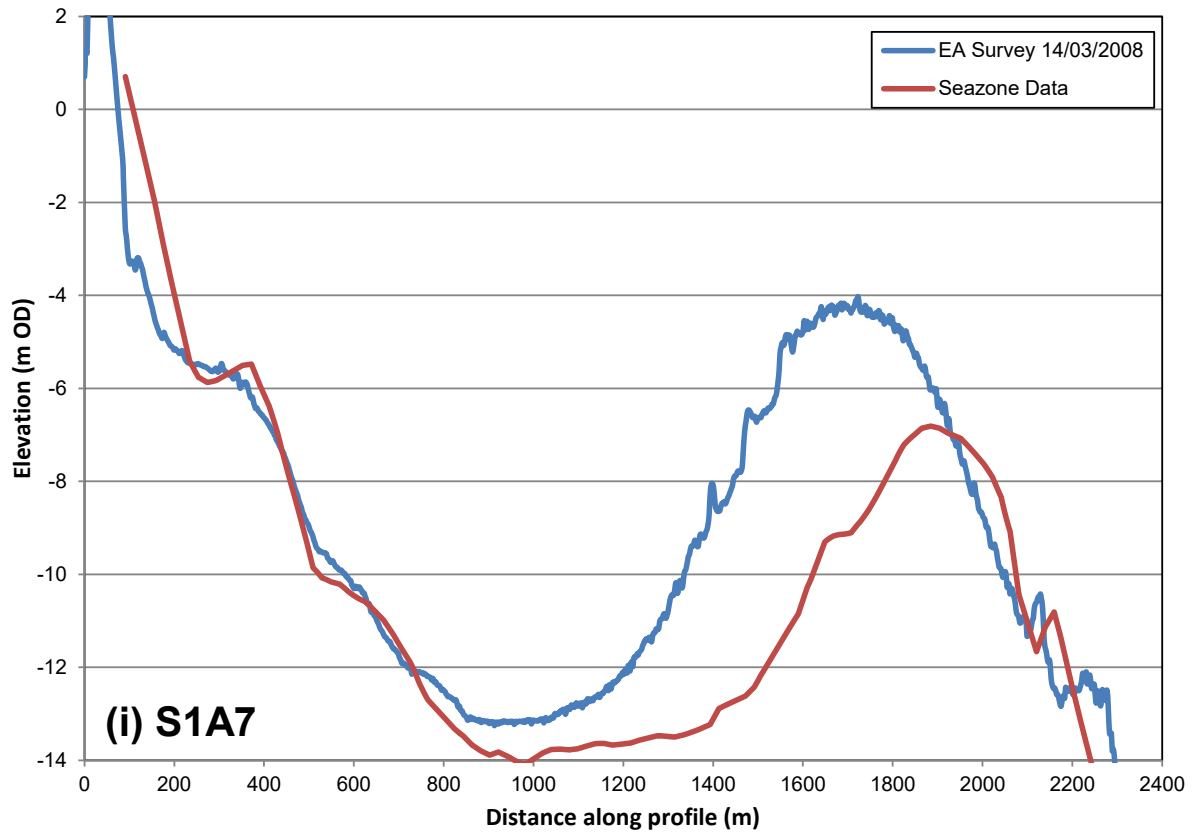


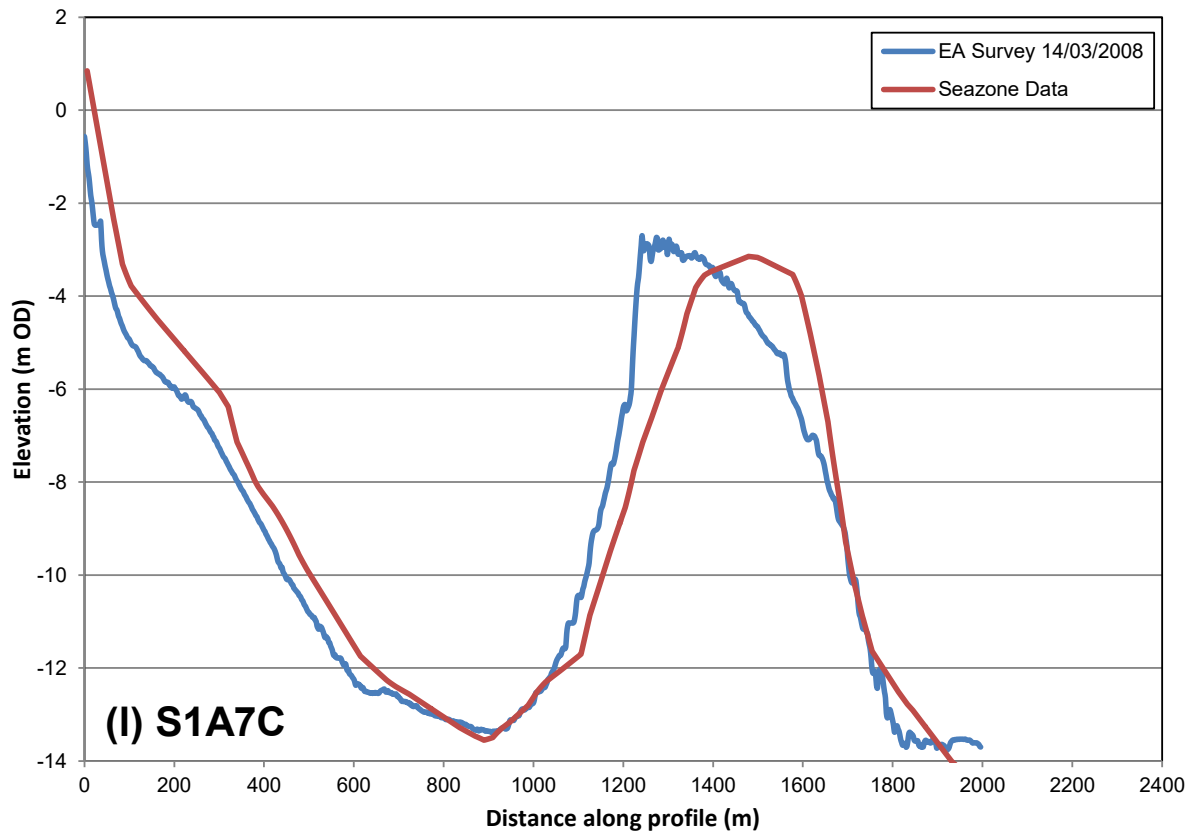
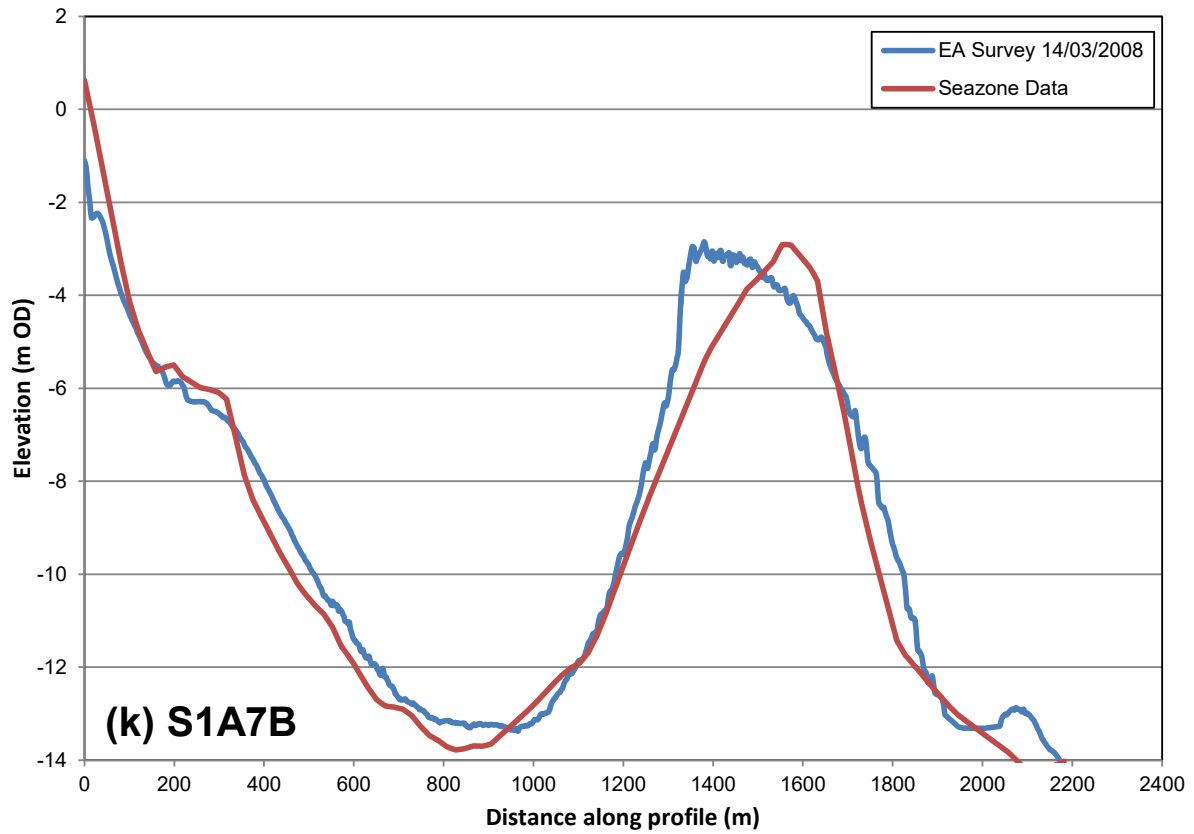
Figure A3.1. Combined beach and bathymetric cross-sections based on EA topographic and single beam bathymetry surveys on 24/08/2007 and 14/03/2008 (blue lines), compared with profiles extracted from the Seazone Truedepth bathymetry dataset which is based on older composite data, mainly Admiralty surveys in the 1980s (red lines)

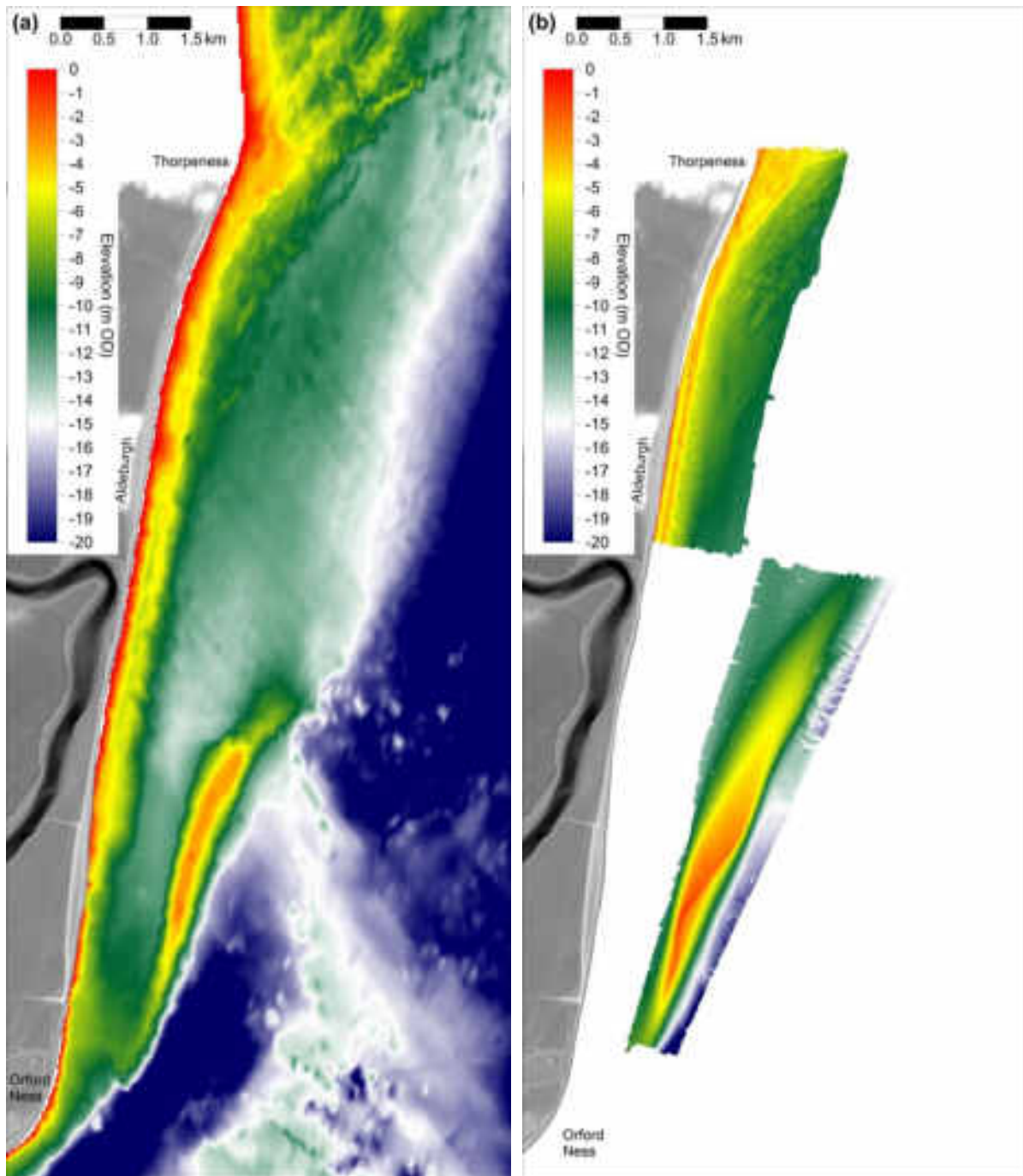








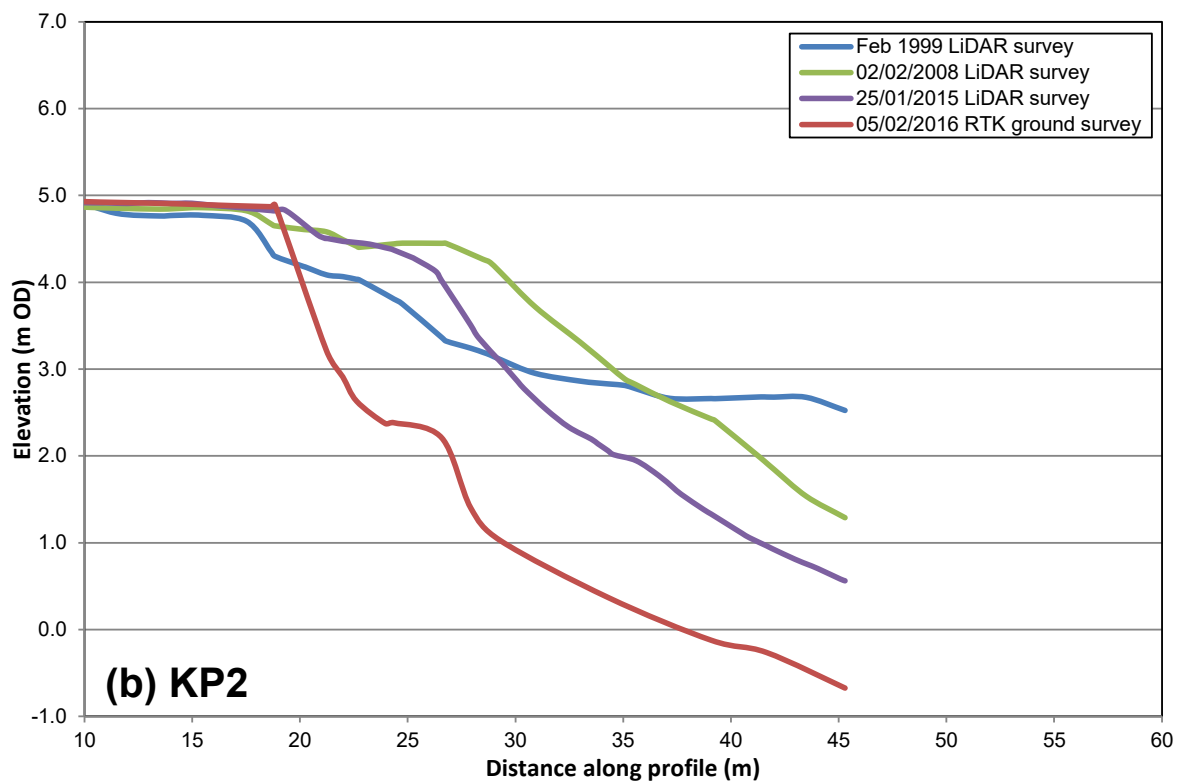
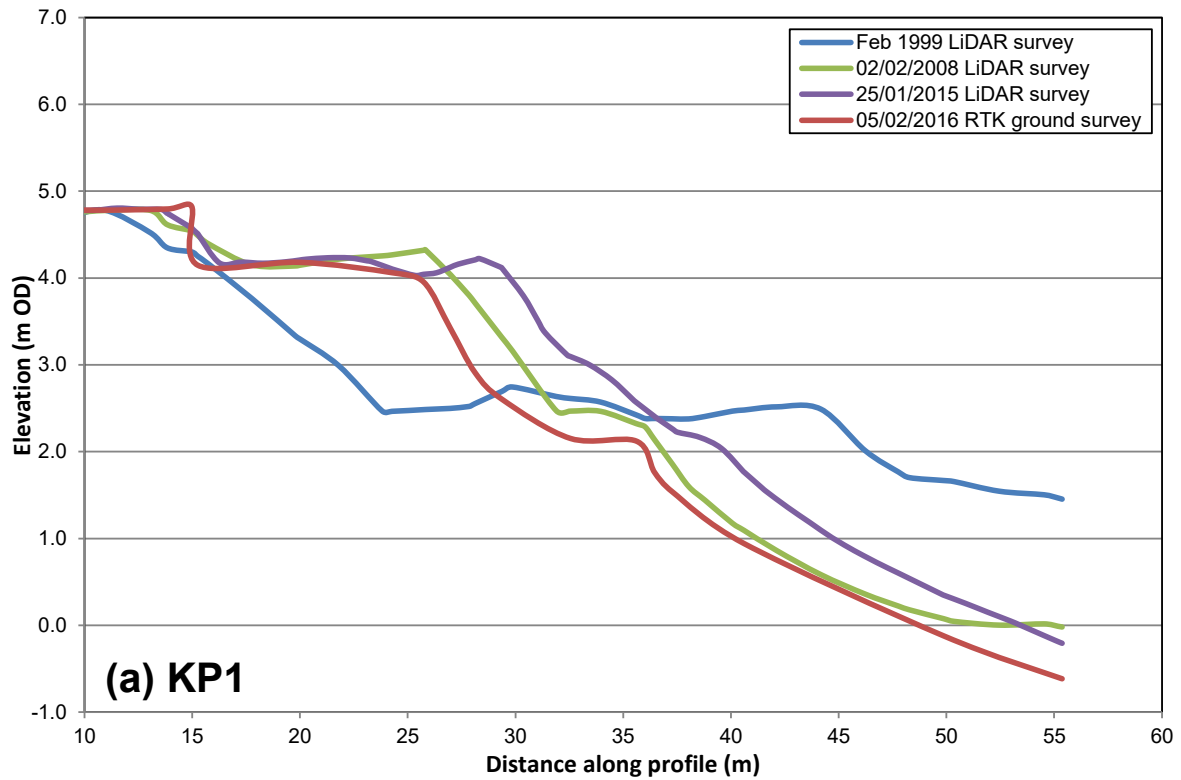


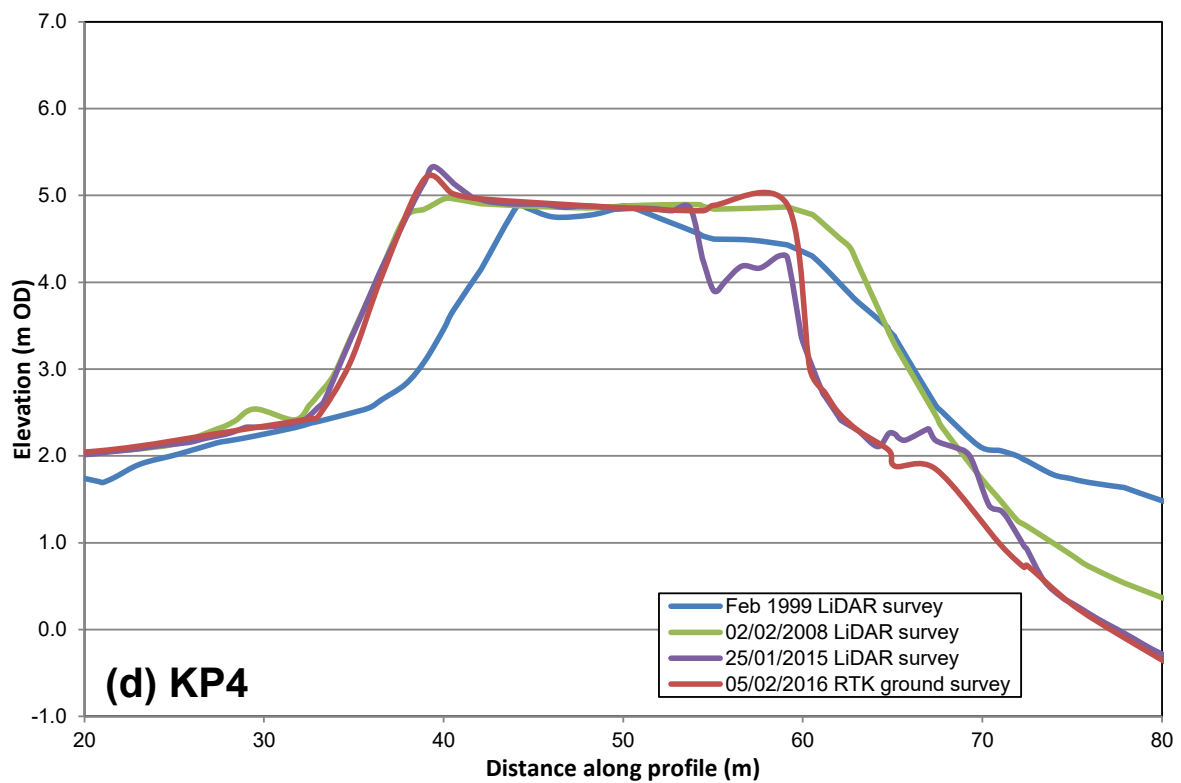
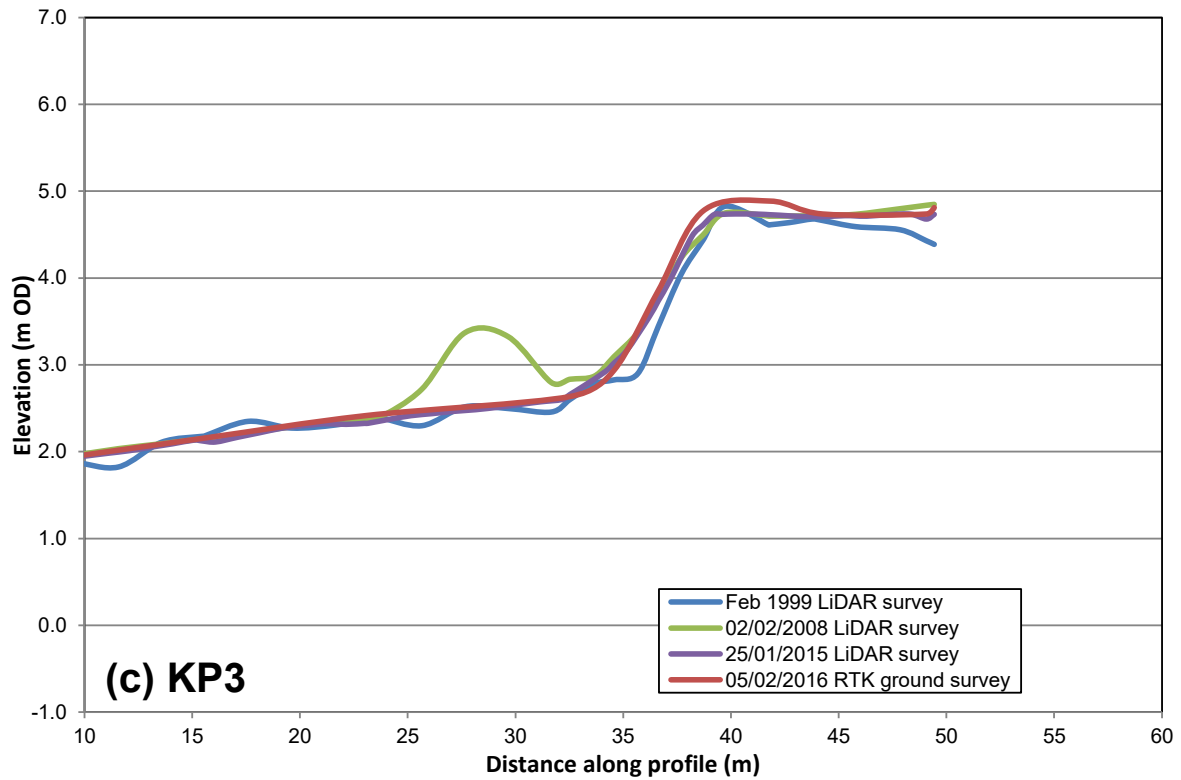


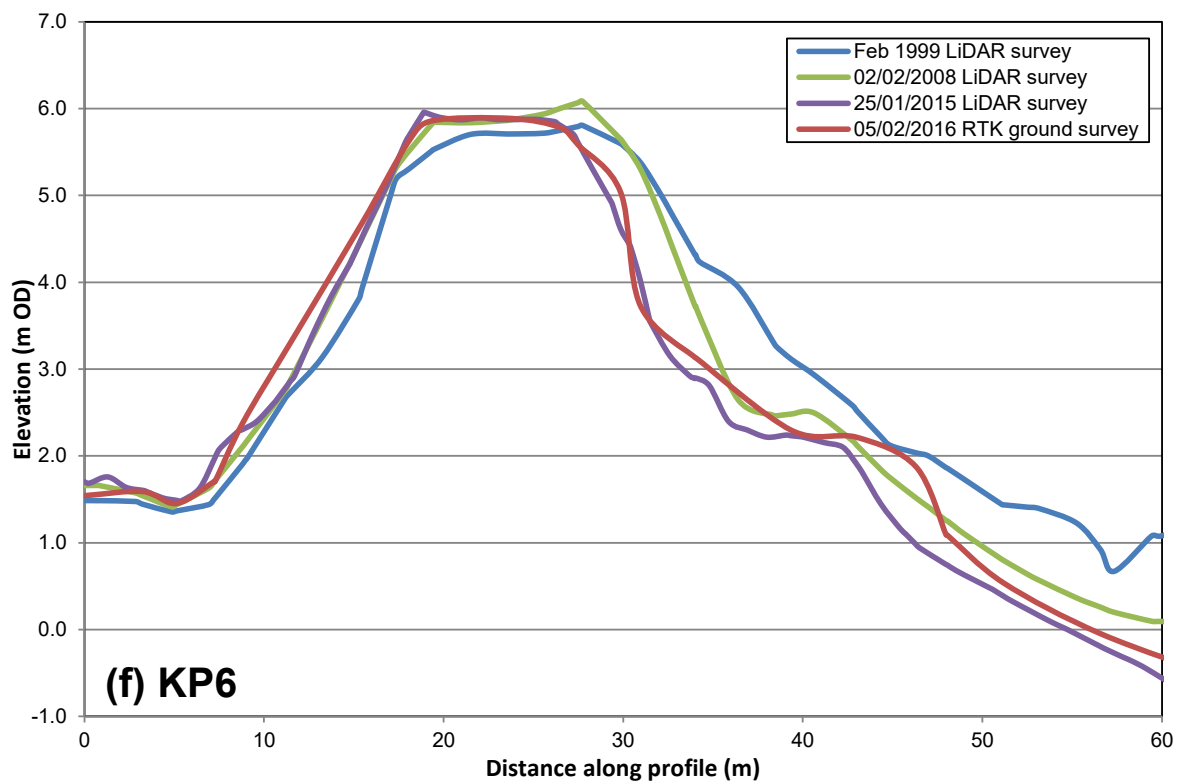
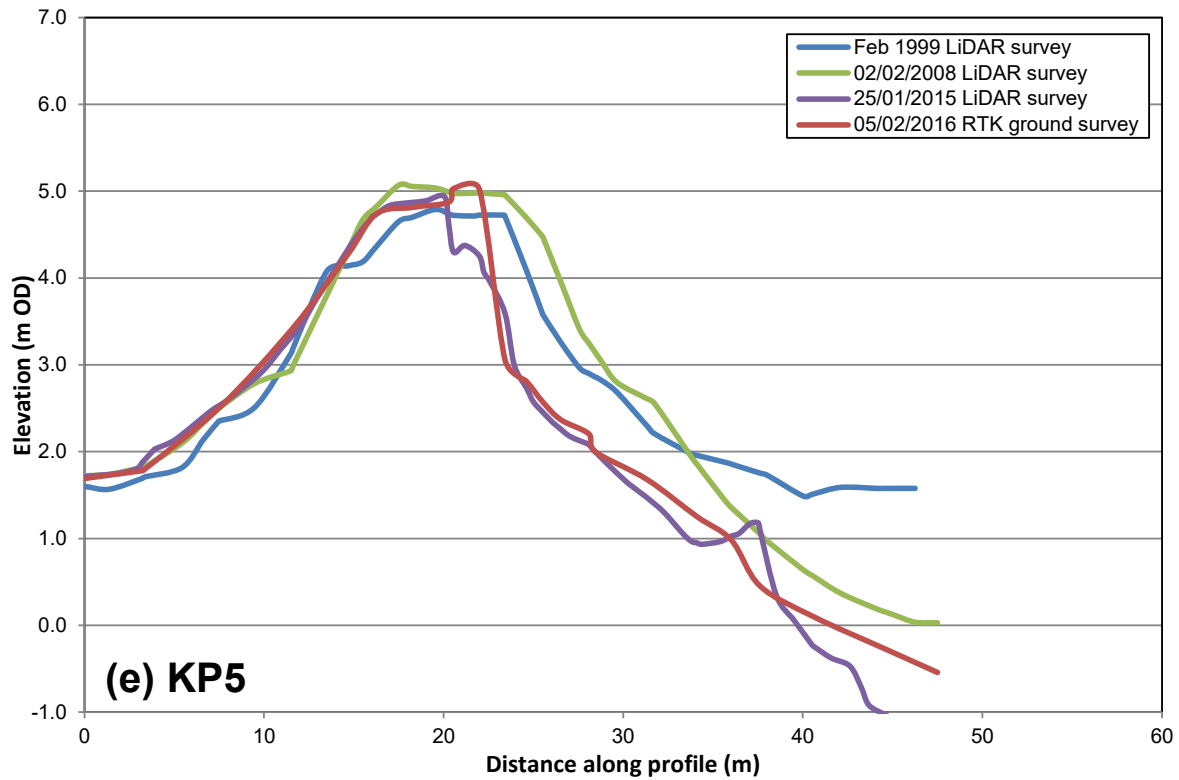
Change in the sea bed morphology of the Aldeburgh Ridge and adjoining area indicated by comparison of (a) Seazone data, based largely on Admiralty surveys from the 1980s, and (b) Environment Agency multibeam swath surveys in 2013 and 2014.

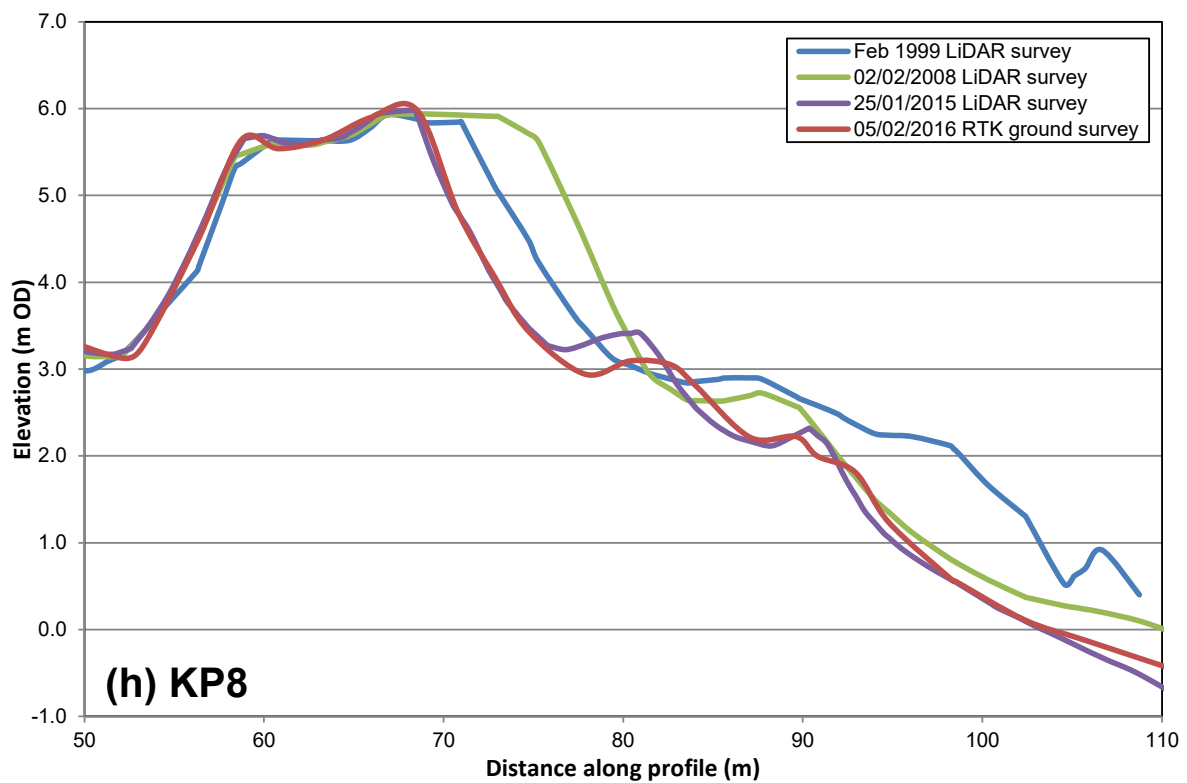
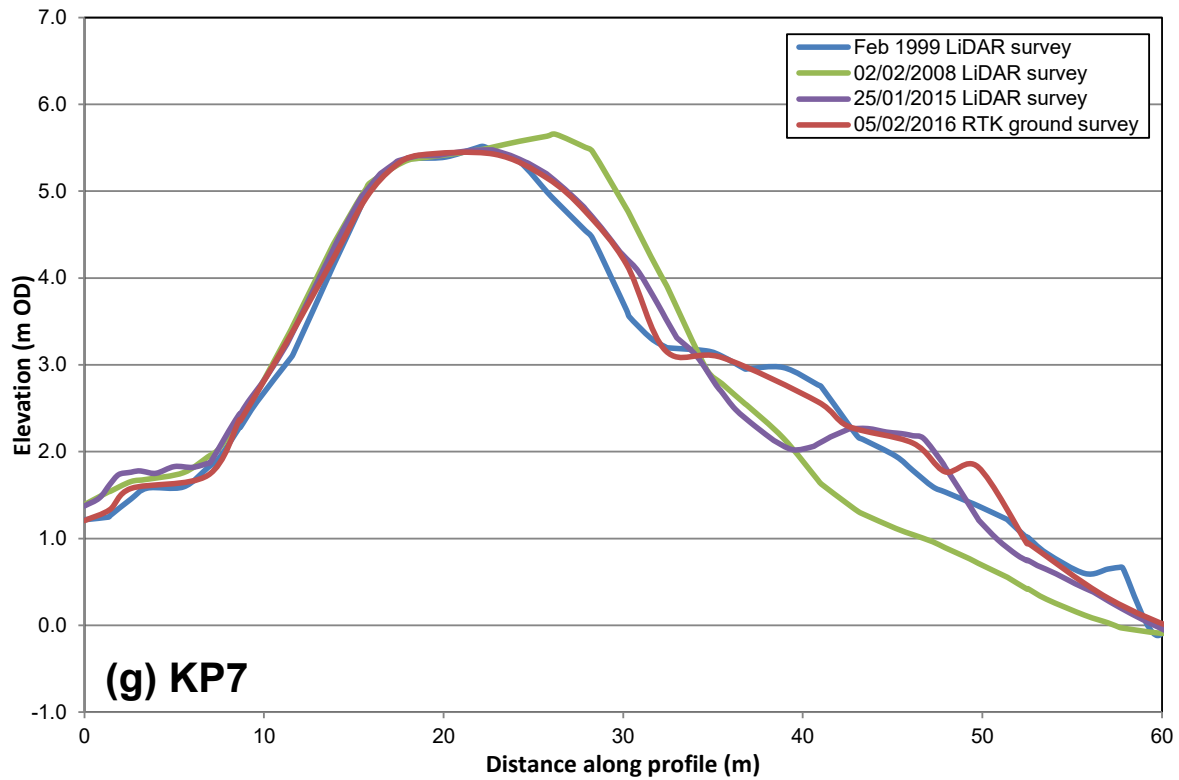
Appendix 3

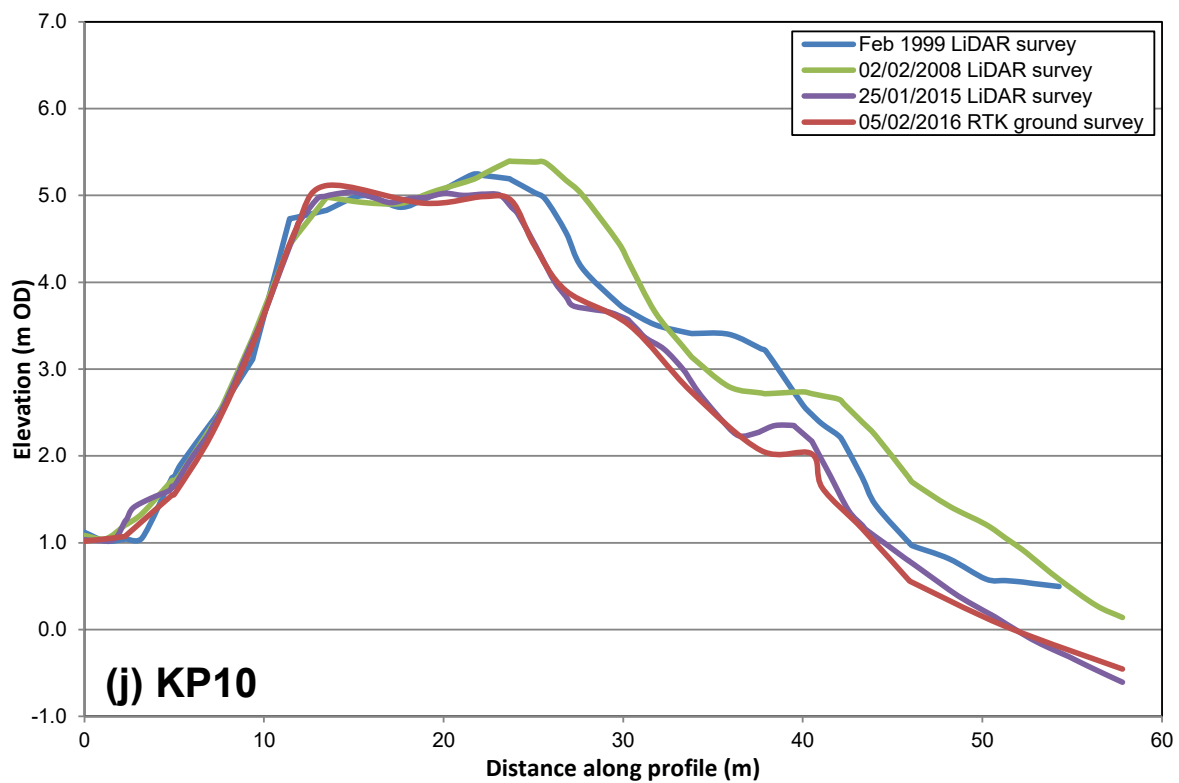
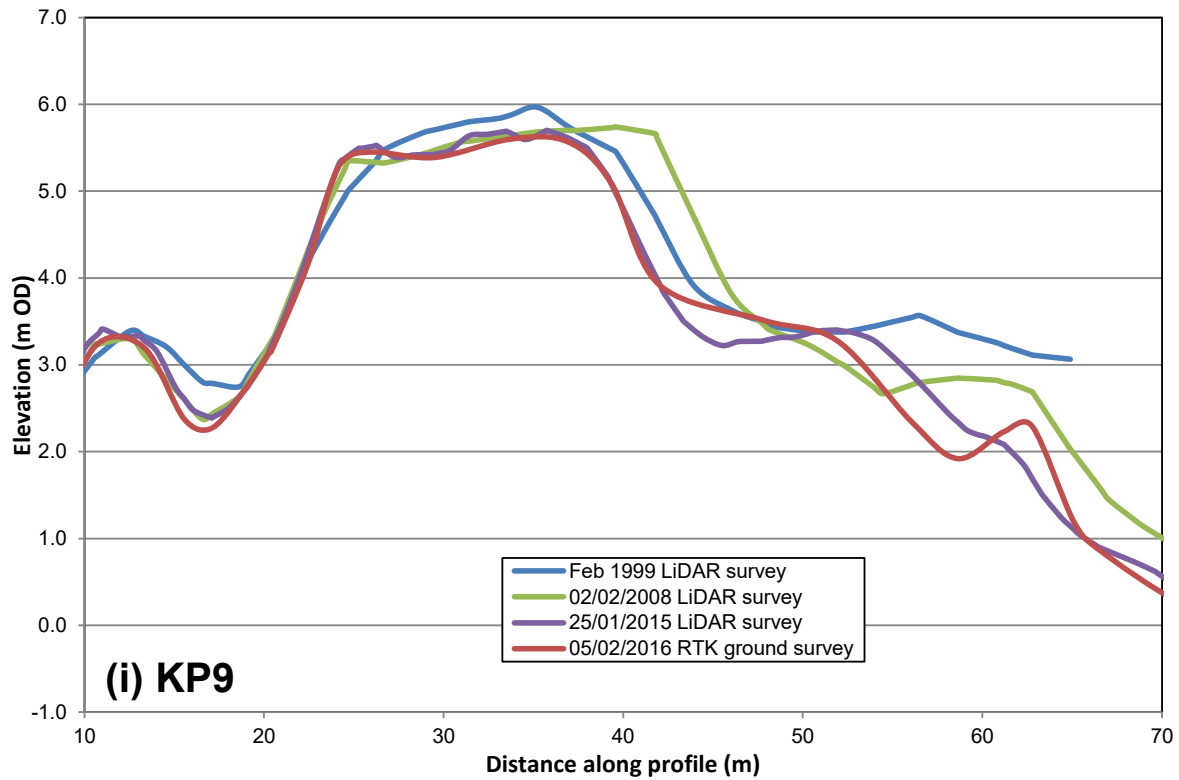
Barrier cross-sections from LiDAR and ground survey

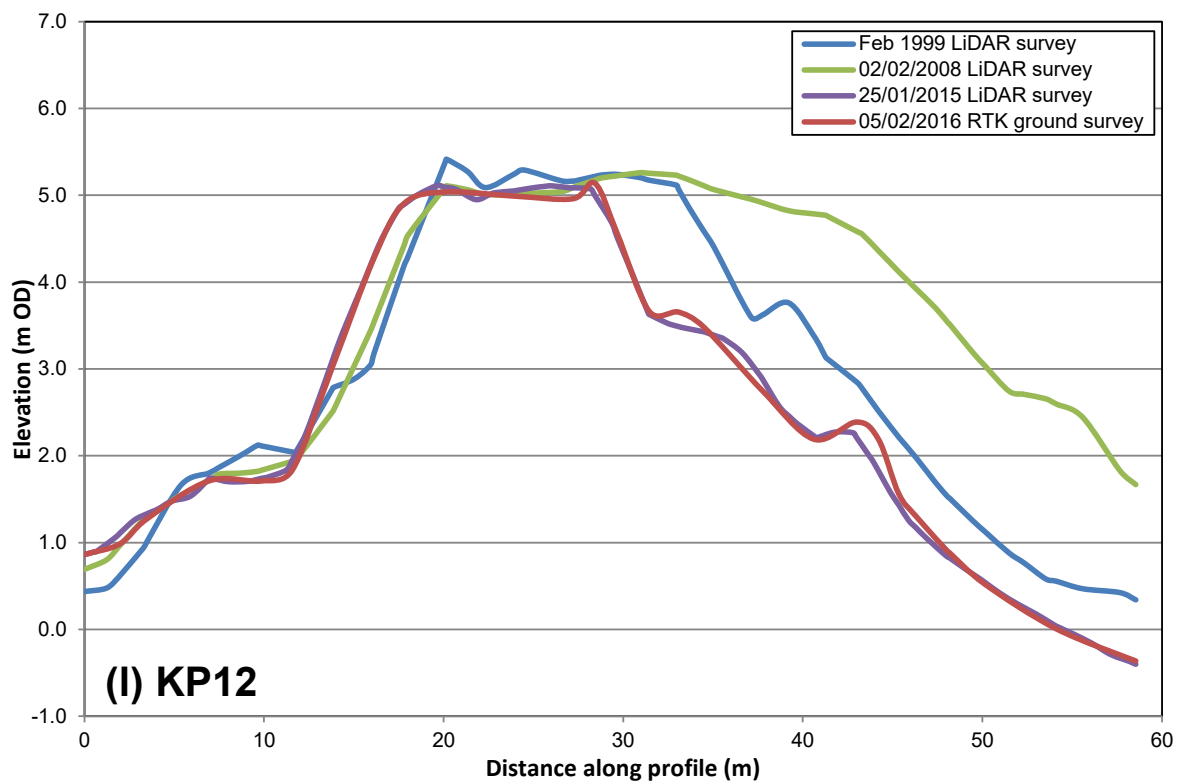
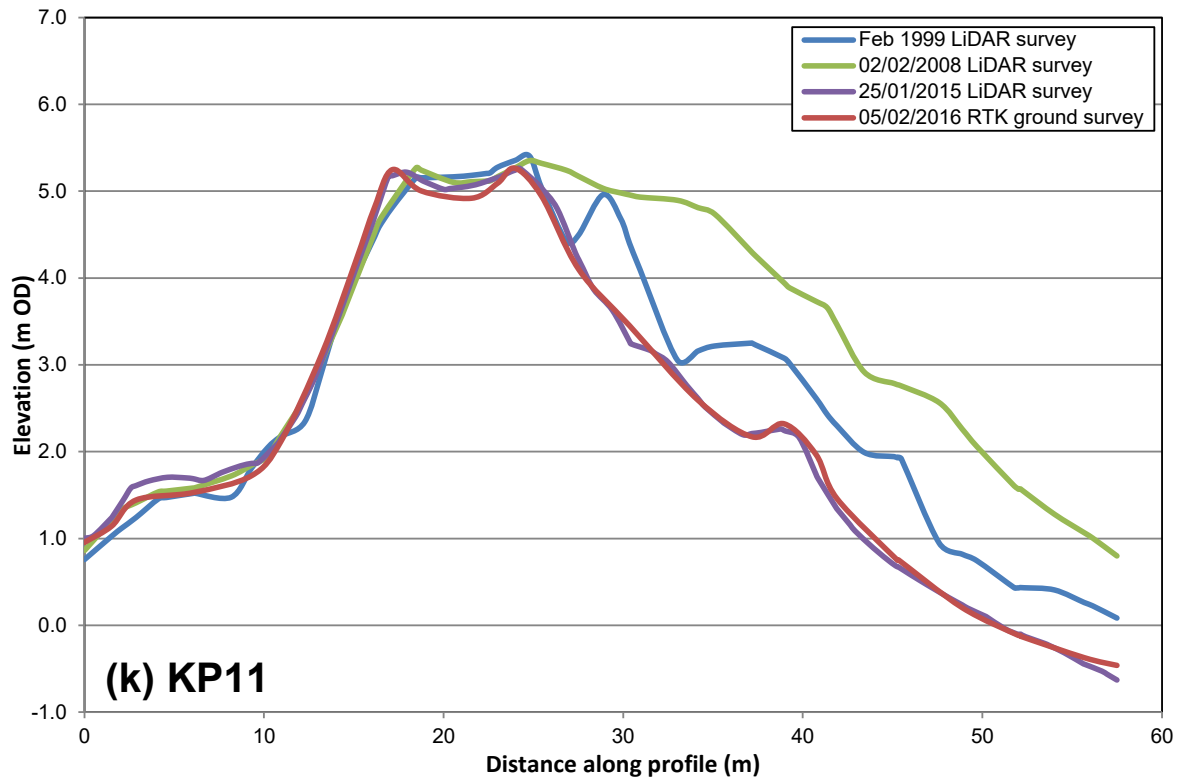


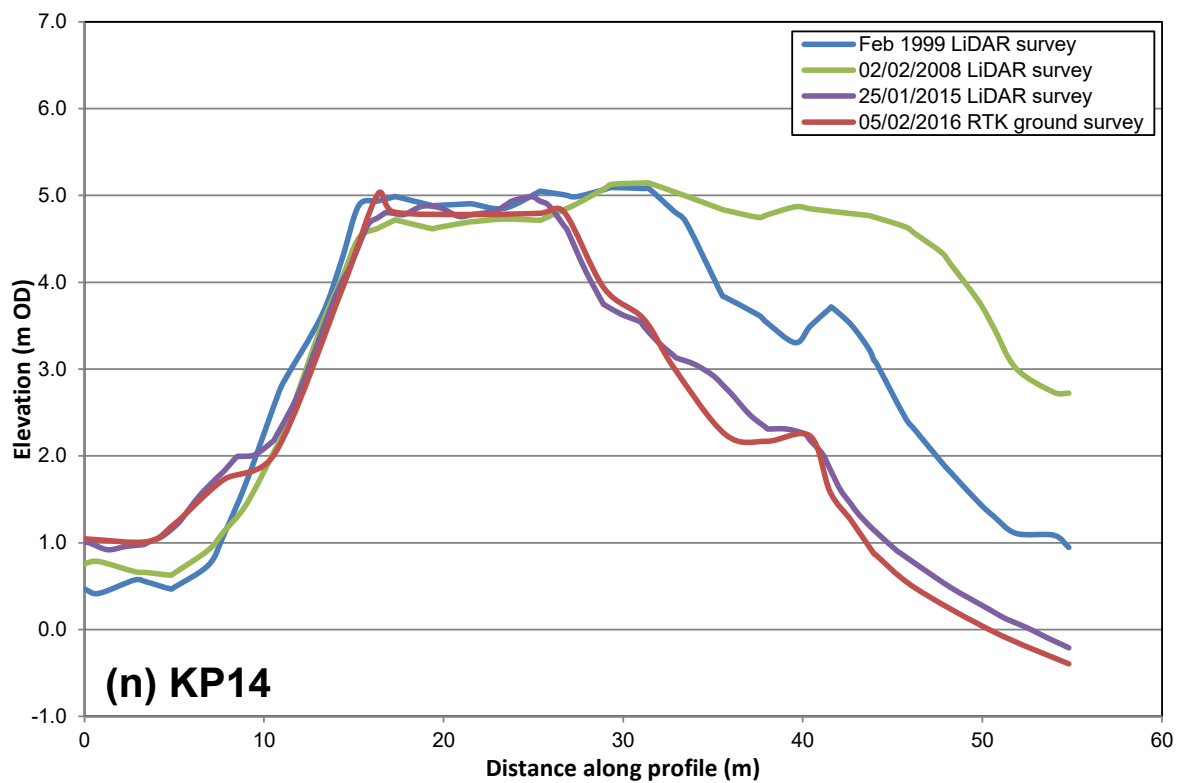
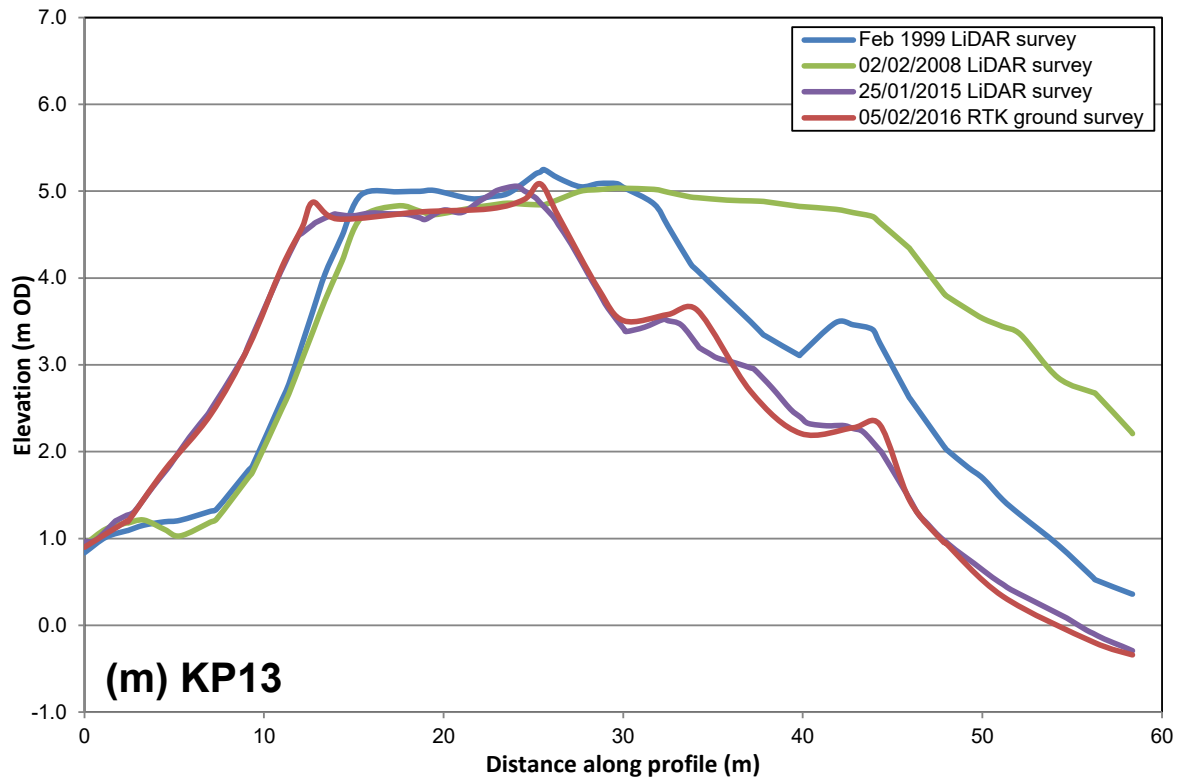


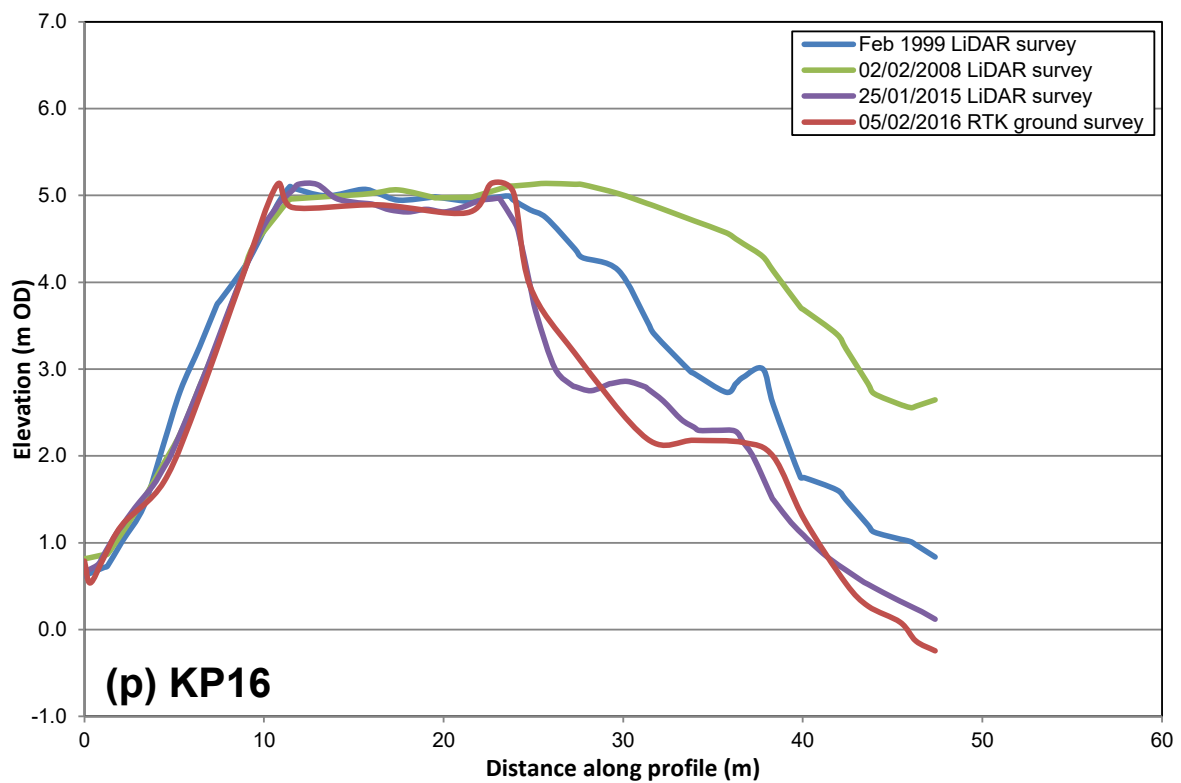
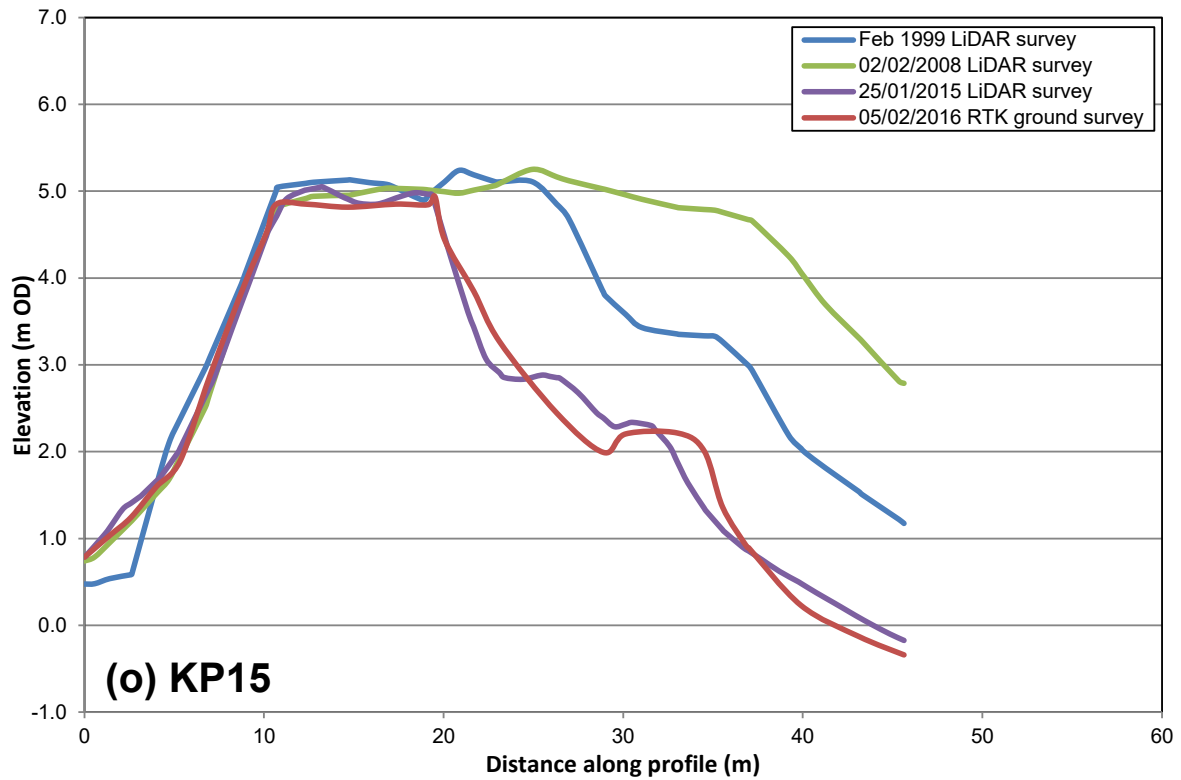


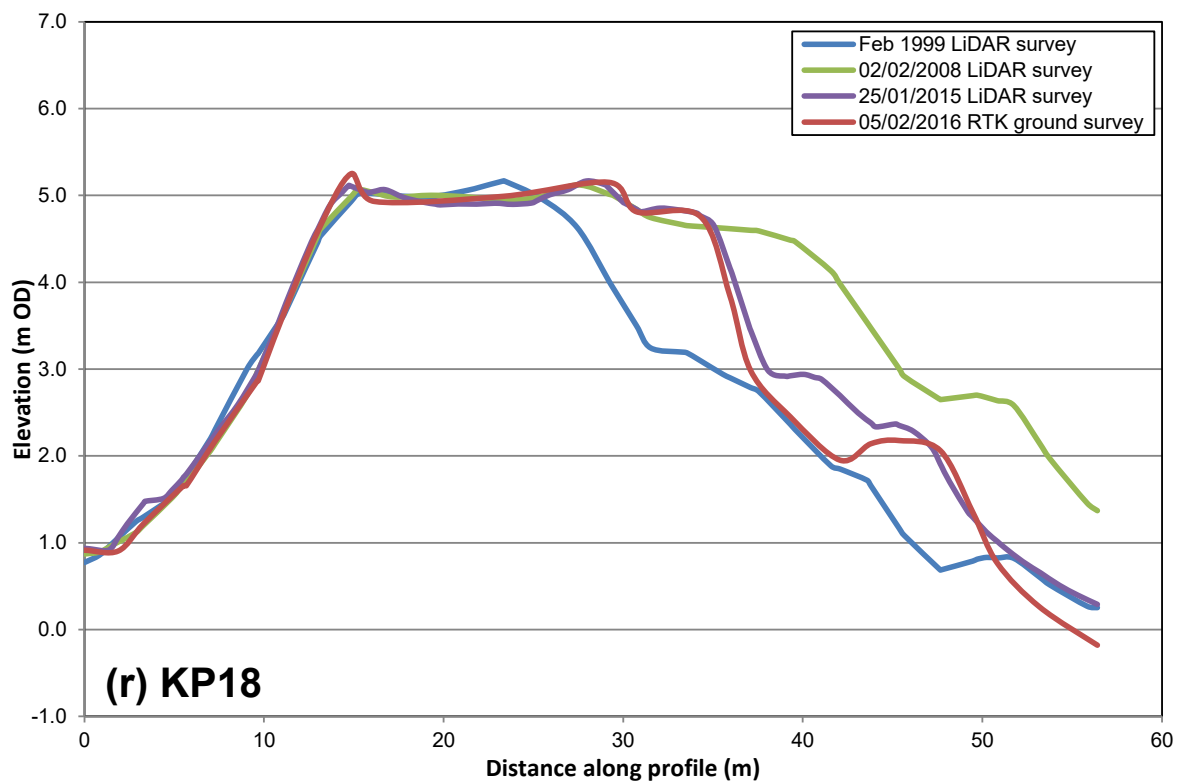
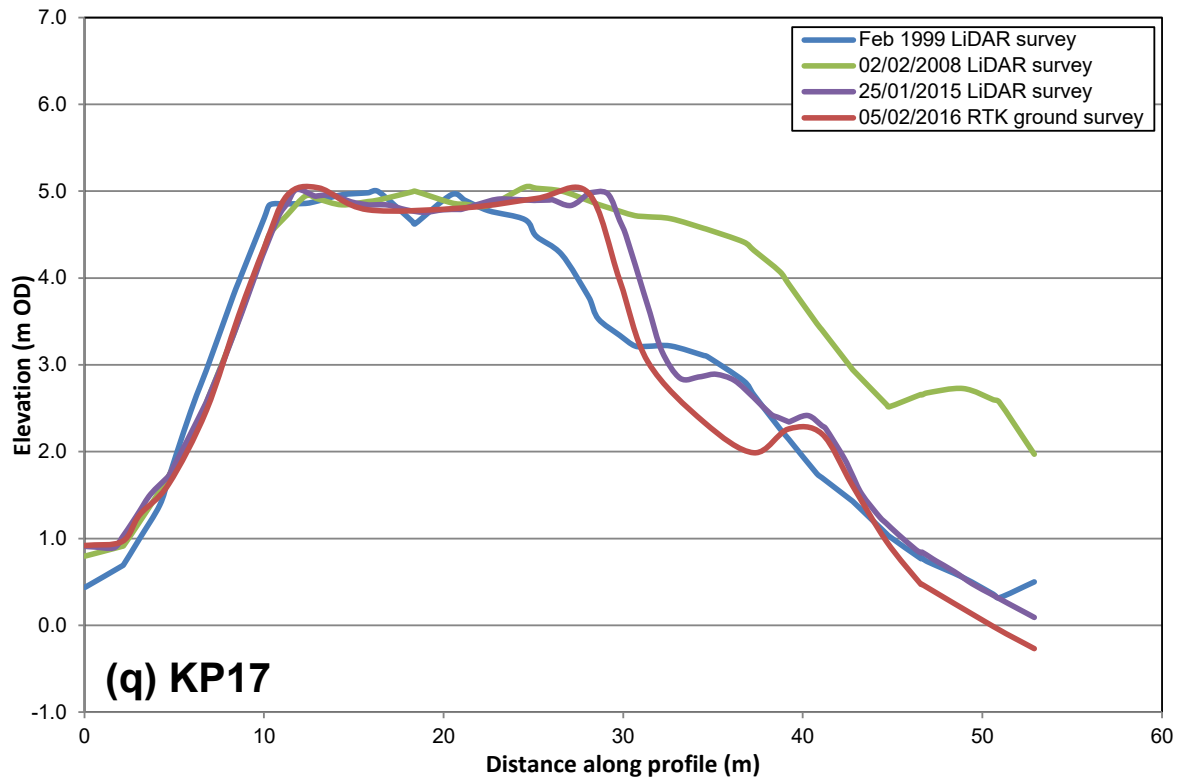












Appendix 4

Wave data and potential sediment transport

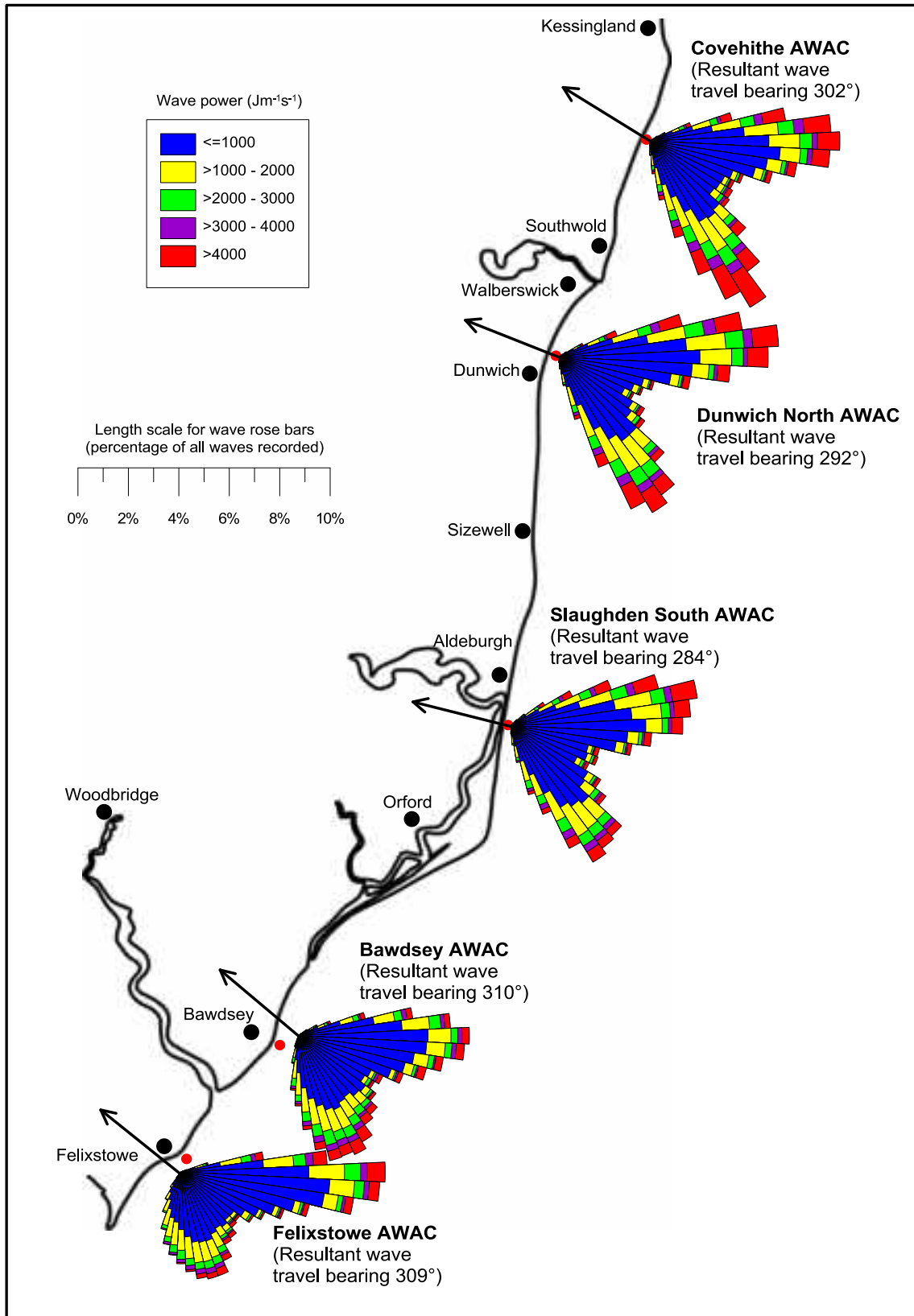


Figure A4.1 Rose diagrams showing wave power recorded by AWAC recorders on the Suffolk coast during the period October 2006 to September 2009. Positions are marked by a red dot. Original data source: Environment Agency, operated by Gardline, disseminated via CEFAS Wavenet

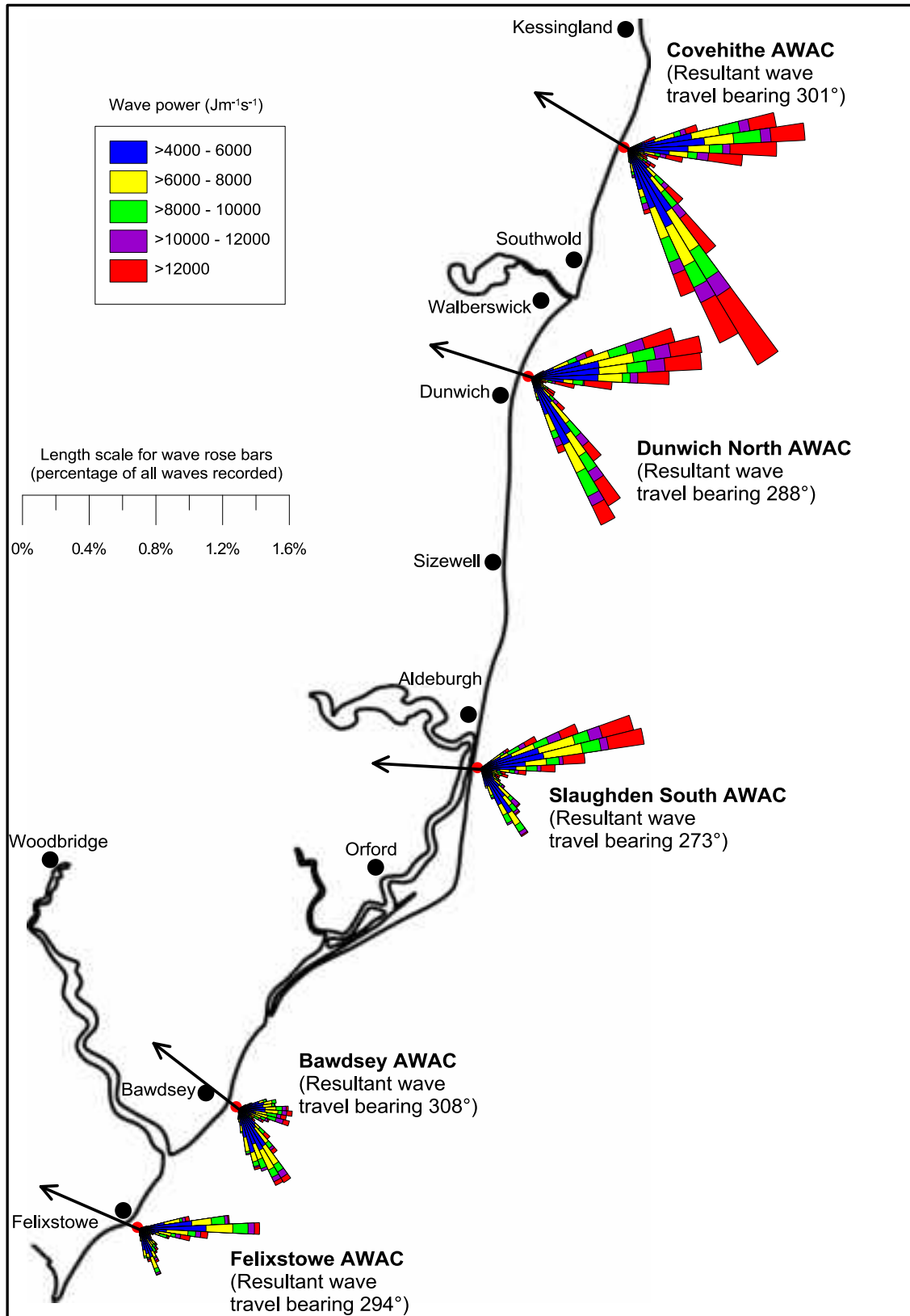


Figure A4.2. Rose diagrams showing wave power $> 4000 \text{ Jm}^{-1}\text{s}^{-1}$ recorded by AWAC recorders on the Suffolk coast during the period October 2006 to September 2009. Positions are marked by a red dot. Original data source: Environment Agency, operated by Gardline, disseminated via CEFAS Wavenet.

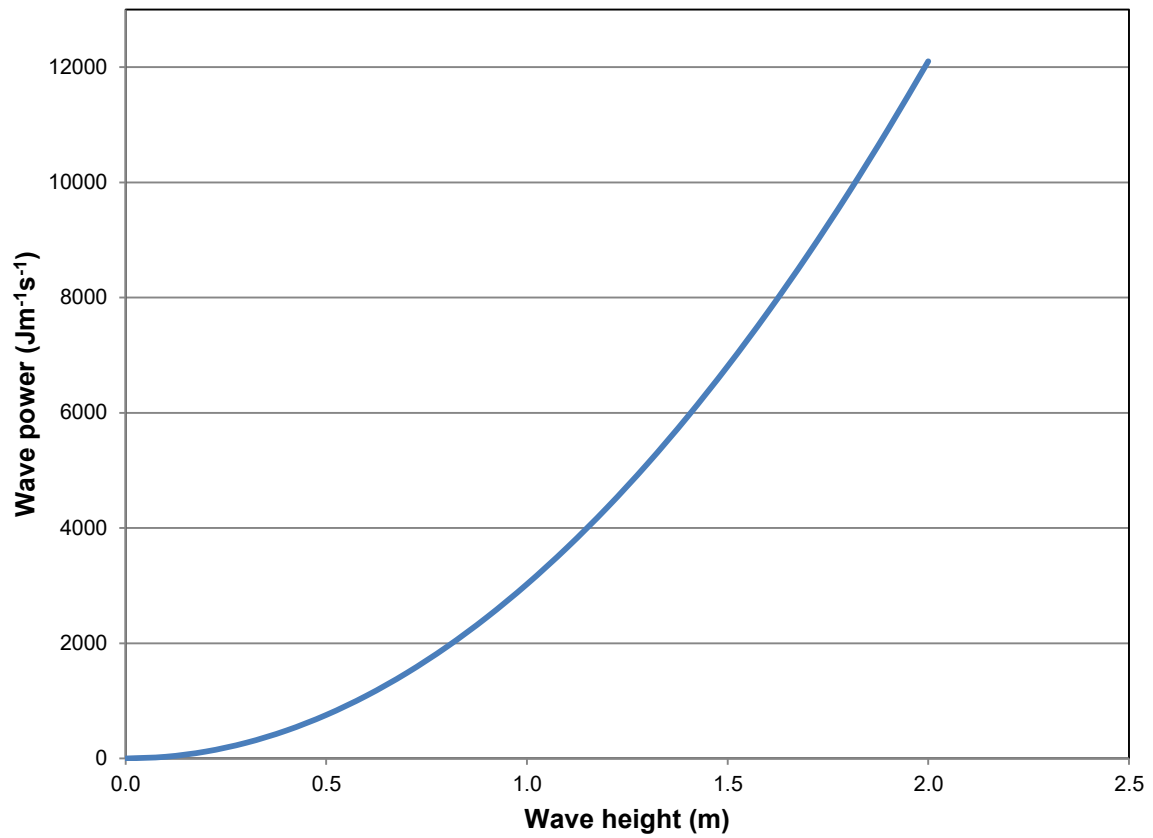


Figure 4.3. Graph showing the relationship between significant wave height and wave power, assuming a wave period of 3.15 seconds (the average period recorded by five AWACs deployed along the Suffolk coast between 2006 and 2009).

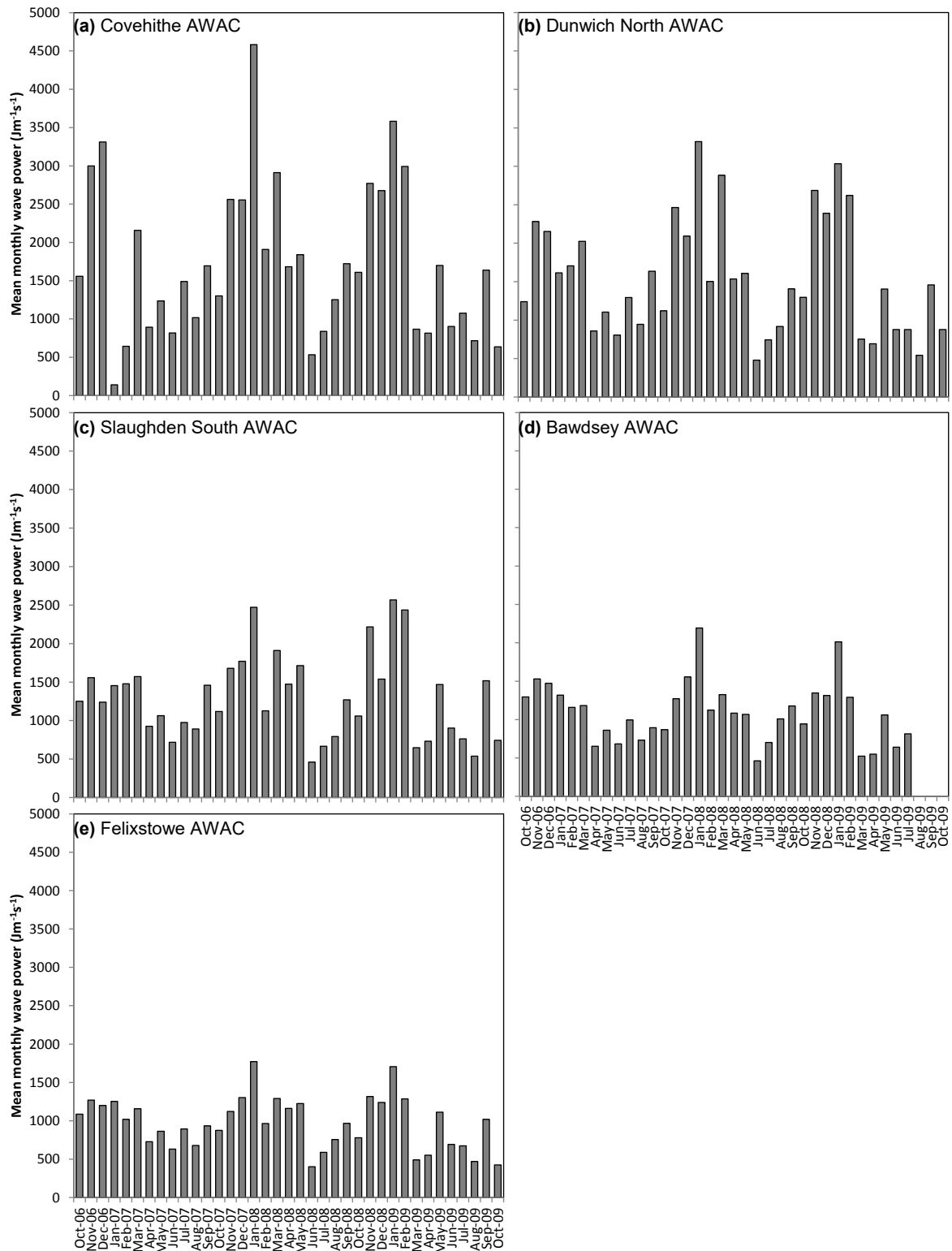


Figure 4.4 Bar charts showing the mean monthly wave power calculated at five inshore locations measured by AWAC recorders deployed between October 2006 and October 2009.

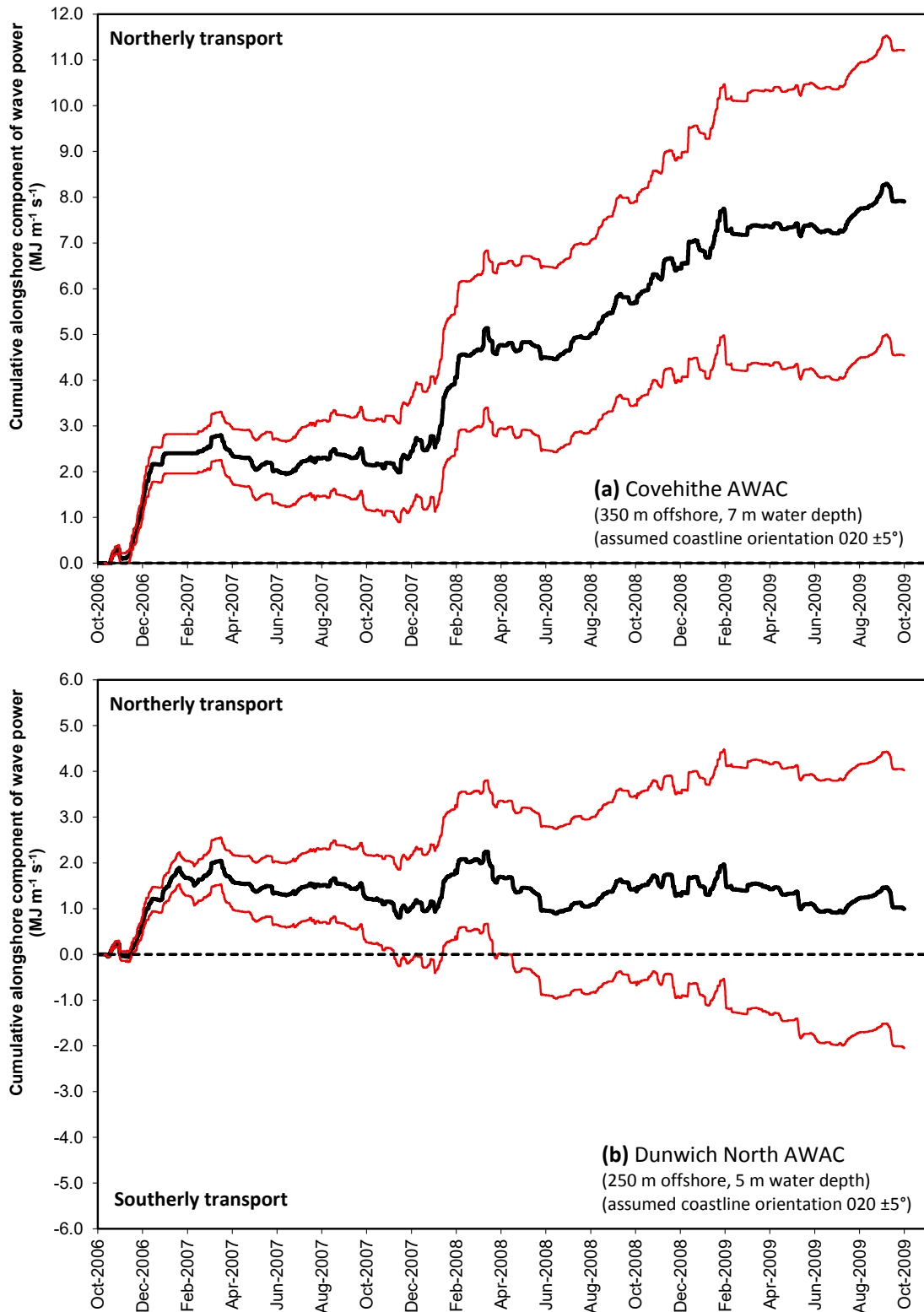


Figure 4.5. Potential alongshore transport rates between October 2006 and October 2009, inferred from the cumulative alongshore component of wave power measured at AWAC recorders along the Suffolk coast. Positive and negative values indicate northerly and southerly components of wave power respectively. The black line shows the potential drift along the adjacent coastline, the red lines indicate an error in either wave direction or coastline orientation of $\pm 5^\circ$.

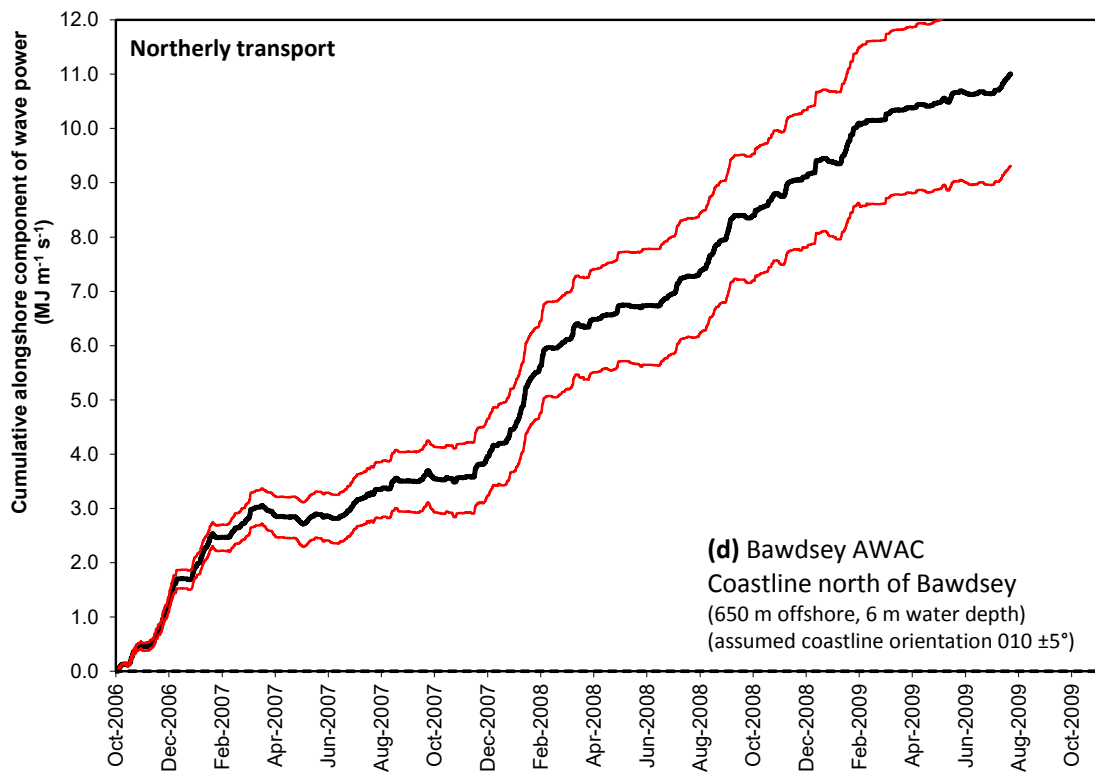
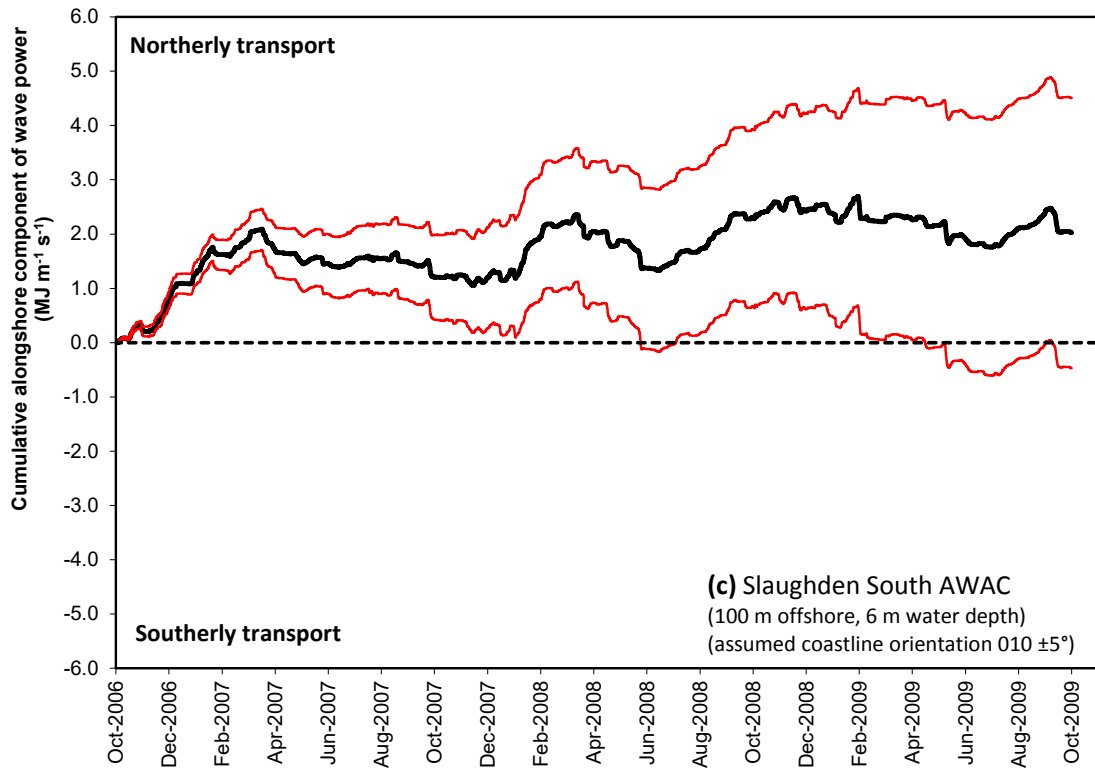


Figure 4.6 . continued.

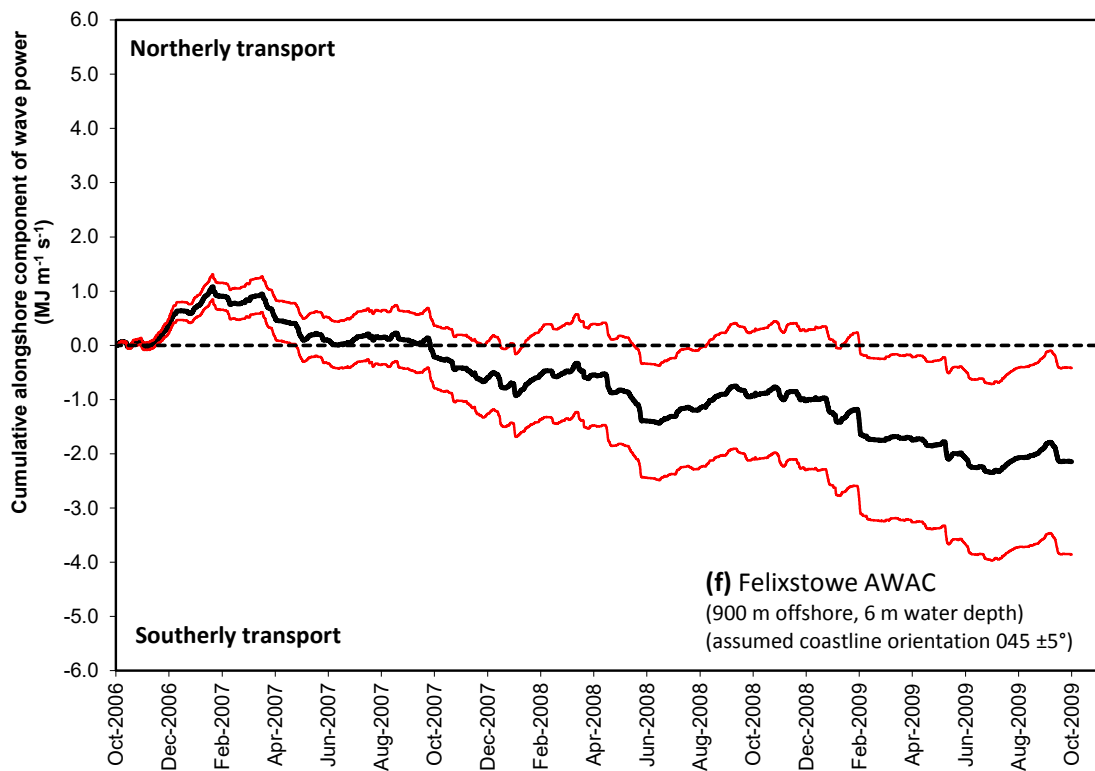
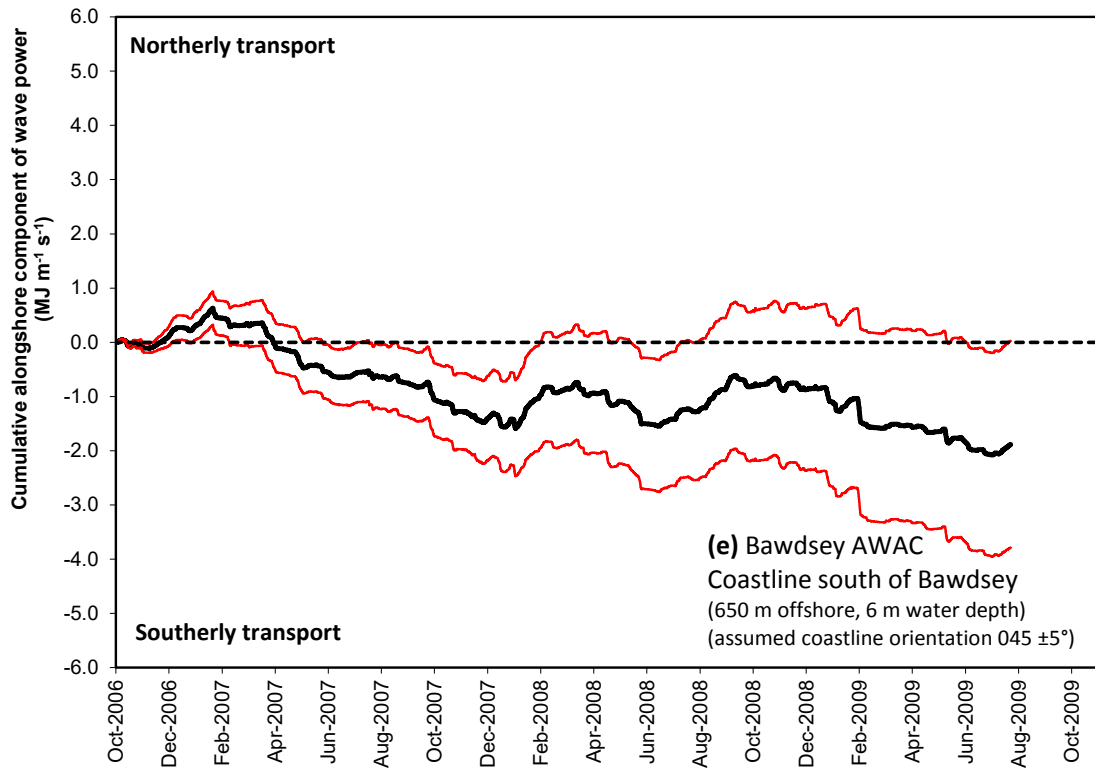


Figure 4.6. continued.

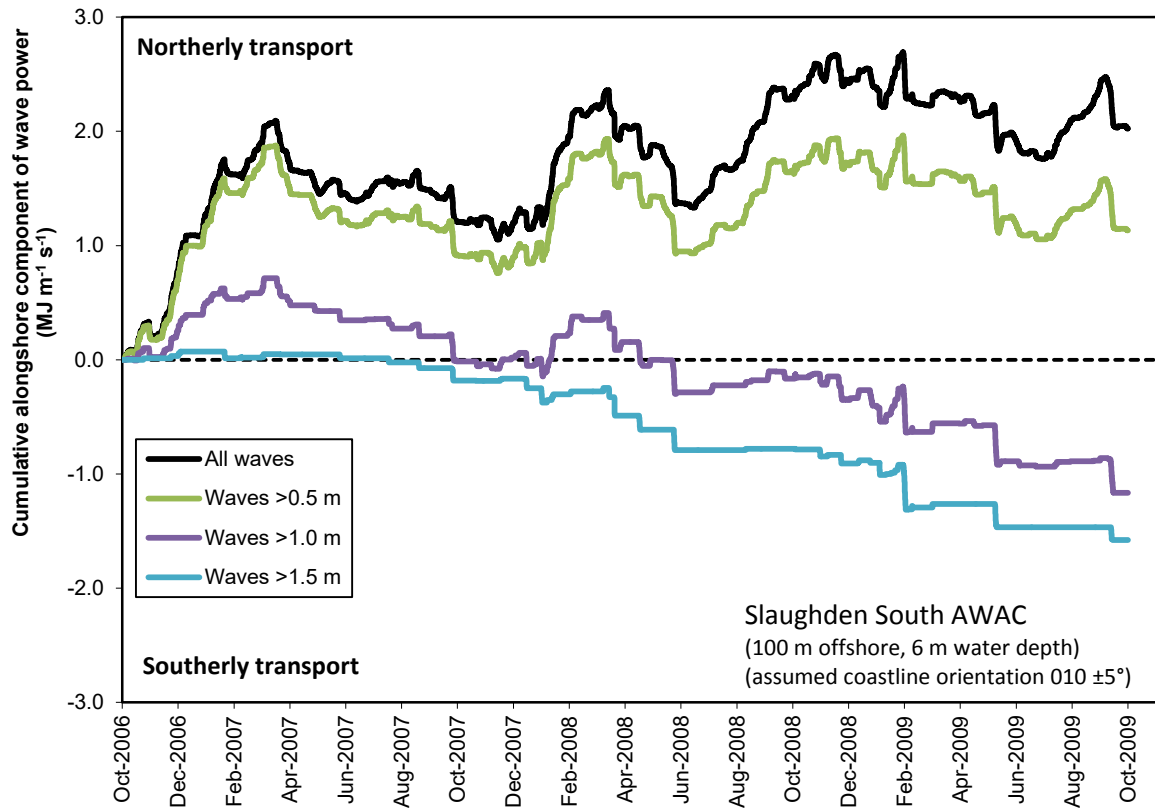


Figure 4.6. Potential alongshore transport rates between October 2006 and October 2009, inferred from the cumulative alongshore component of wave power measured at the Slaughden AWAC recorder, for all waves and for waves greater than thresholds of 0.5 m, 1.0 m and 1.5 m. Positive and negative values indicate northerly and southerly components of wave power respectively.

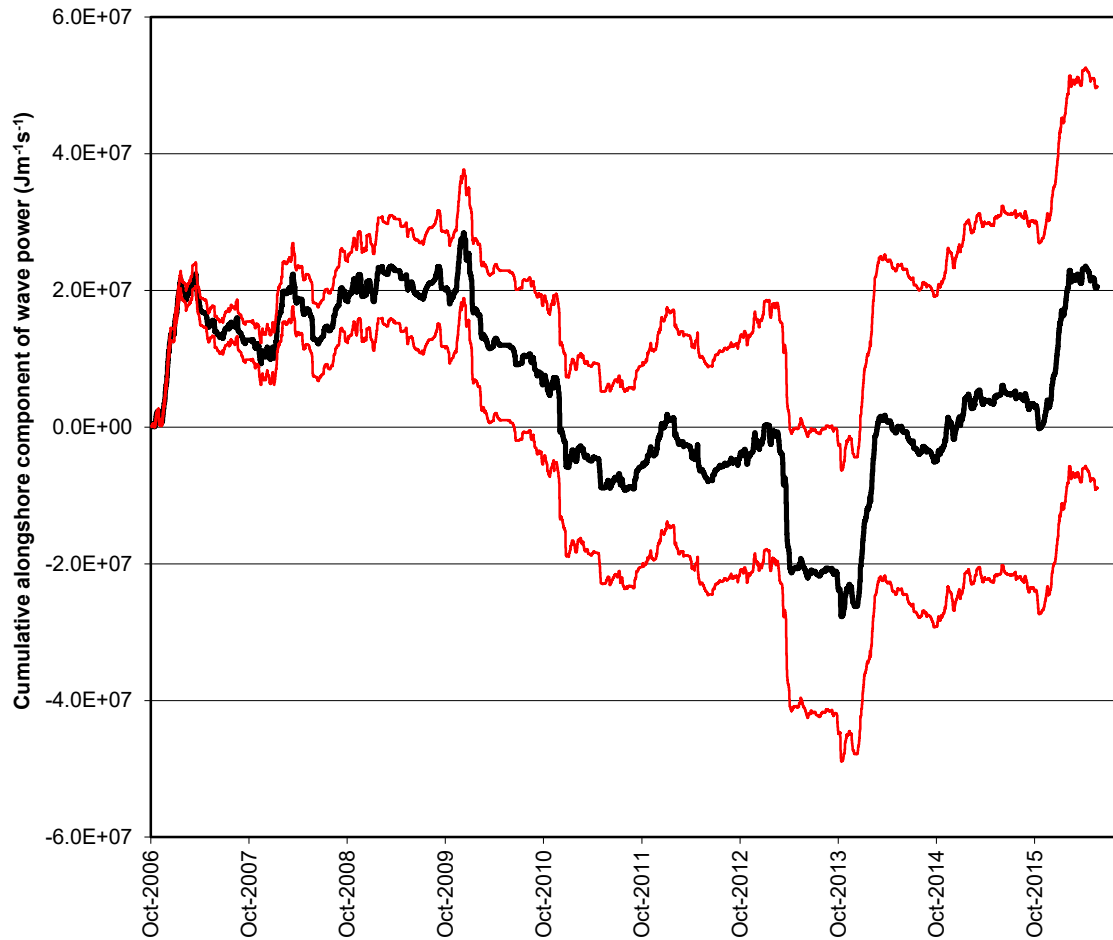


Figure 4.7. Potential alongshore transport rates between October 2006 and May 2016, inferred from the cumulative alongshore component of wave power measured at the Southwold Approach waverider buoy. Positive and negative values indicate northward and southward components of wave power respectively. The black line shows the potential drift along the adjacent coastline assuming an average orientation of 020 to 200°; the red lines indicate an error in either wave direction or coastline orientation of $\pm 5^\circ$.

Appendix 5

Photographs taken during a site visit on 6 February 2016



Photograph A5.1. The northern end of the barrier south of the Martello tower



Photograph A5.2. The northern end of the barrier south of the Martello tower



Photograph A5.3. View towards the estuary from the northern boundary of the National Trust property



Photograph A5.4. View south from the northern end of the National Trust property



Photograph A5.5. View north along the northern National Trust frontage opposite end of groyne field



Photograph A5.6. View south along the narrowest part of the barrier (partially protected by rock armour)



Photograph A5.7. View north along the southern end of the defended frontage



Photograph A5.8. Narrow artificial shingle bank opposite the northern end of Lantern Marshes



Photograph A5.9. Back-barrier sediments exposed on the foreshore, opposite the upper Lantern Marshes



Photograph A5.10. View south towards Orfordness, opposite Lantern Marshes



Photograph A5.11. View landward from the barrier towards the breach in the Lantern Marshes river wall



Photograph A5.12. View seaward across the prograding shingle ridges opposite the American Wall

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Telephone: 0121 506 9067
E-mail: info@kpal.co.uk
website: www.kpal.co.uk