



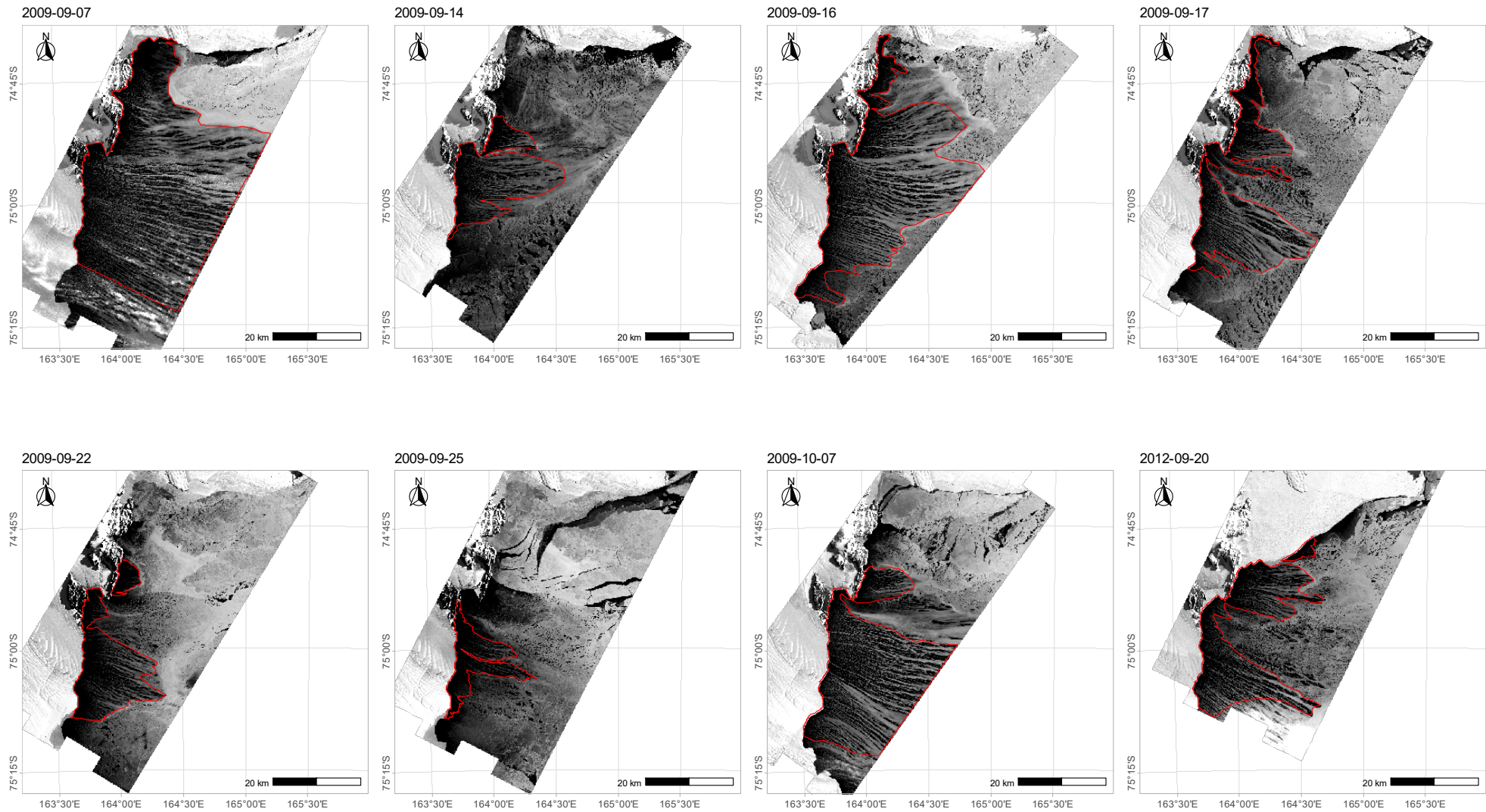
Supplement of

Spatial characteristics of frazil streaks in the Terra Nova Bay Polynya from high-resolution visible satellite imagery

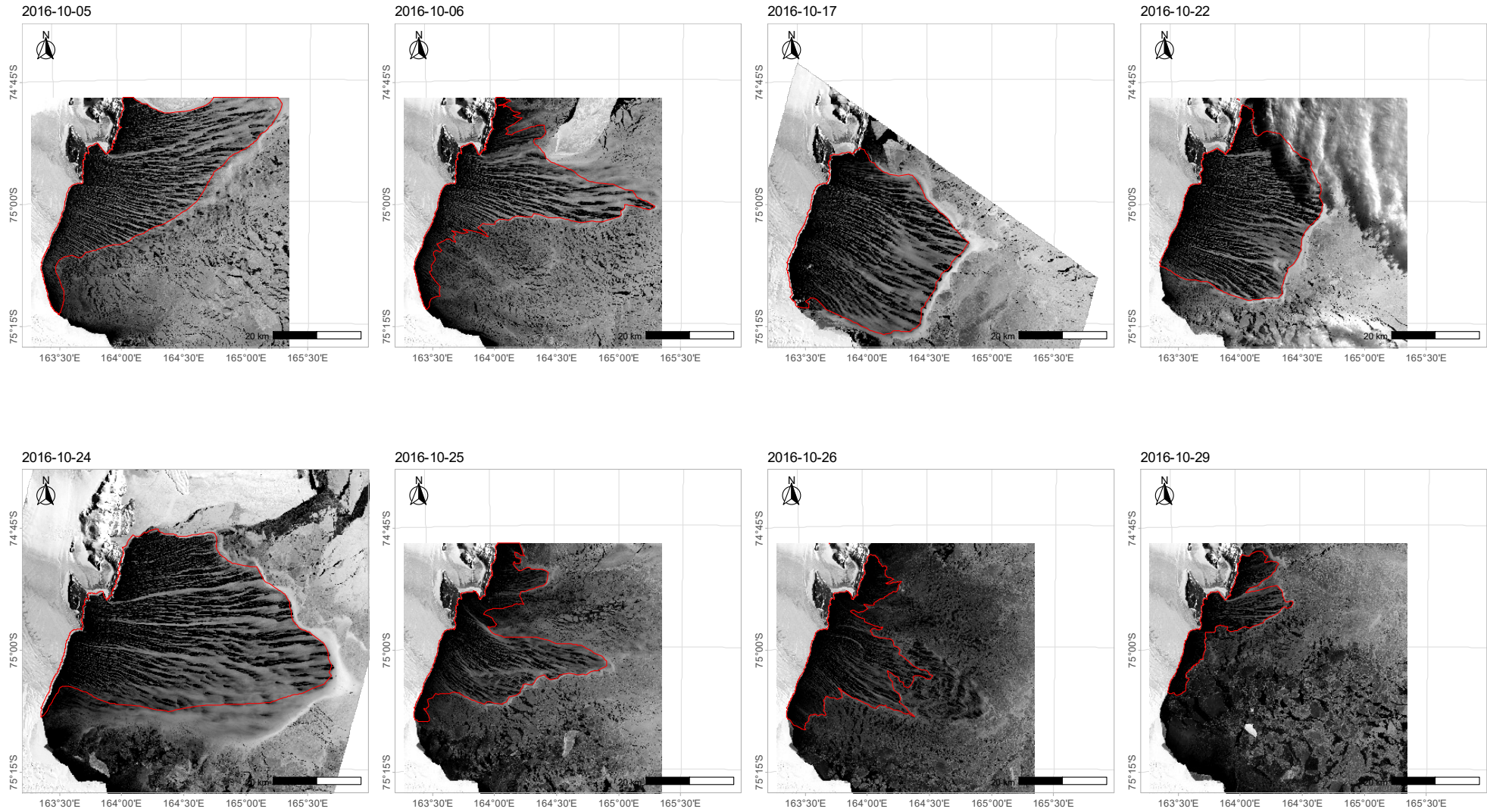
Katarzyna Bradtke and Agnieszka Herman

Correspondence to: Katarzyna Bradtke (katarzyna.bradtke@ug.edu.pl)

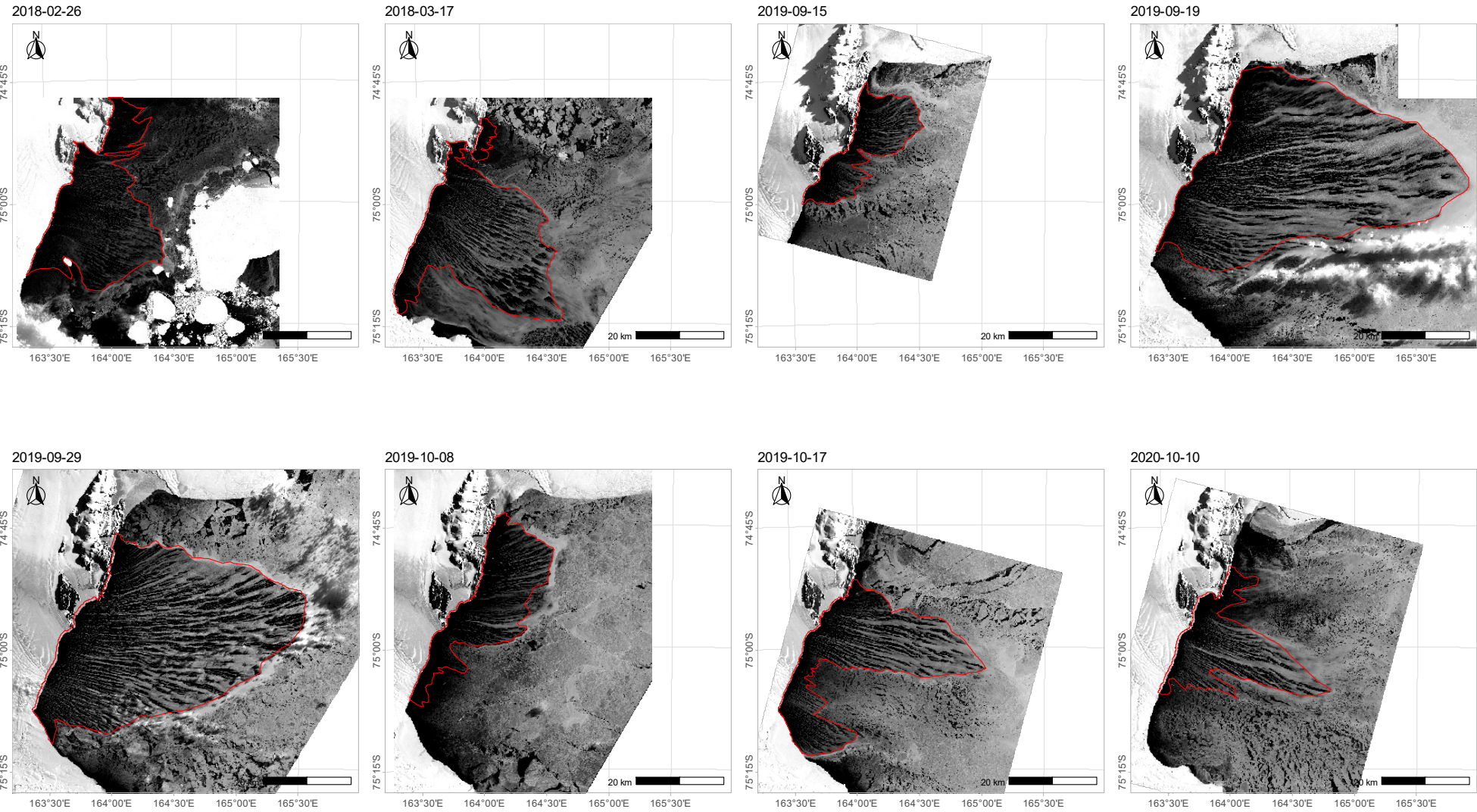
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Supplementary **Figure S1** (continued on the following three pages): Satellite images analyzed in the study (panchromatic band reflectance). Red lines mark the boundaries of regions classified as polynyas.

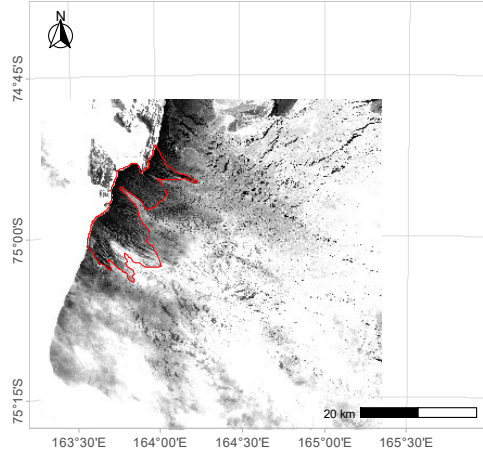


Supplementary **Figure S1** (continued)

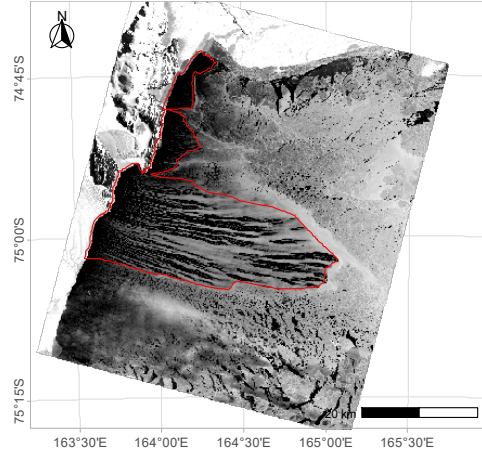


Supplementary **Figure S1** (continued)

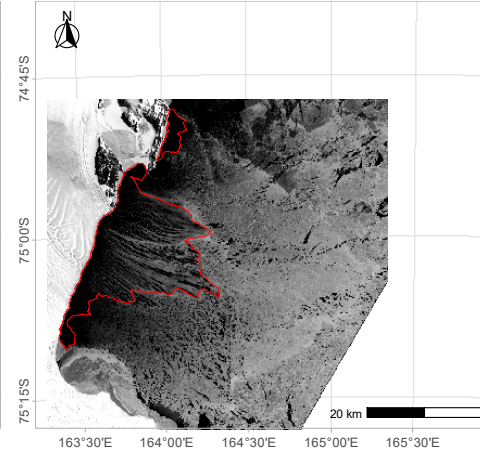
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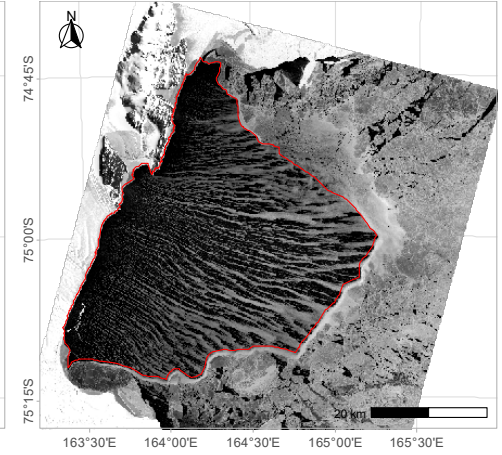
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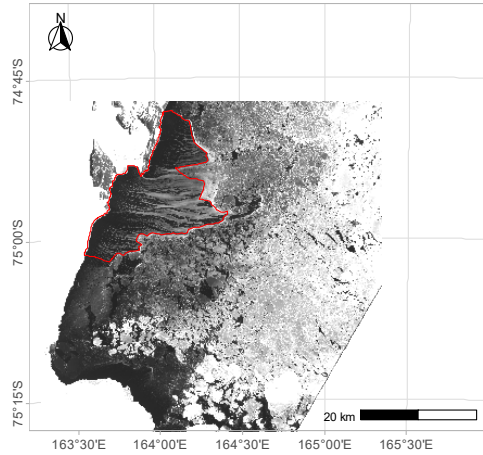
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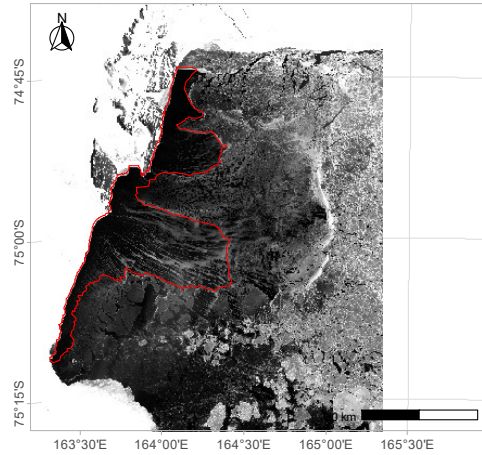
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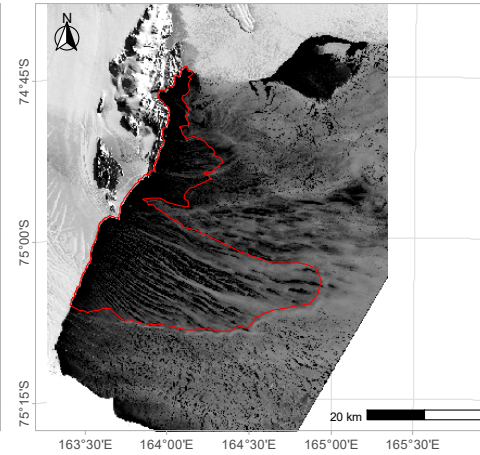
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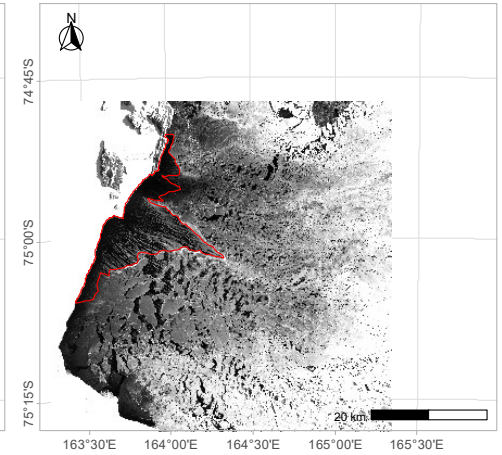
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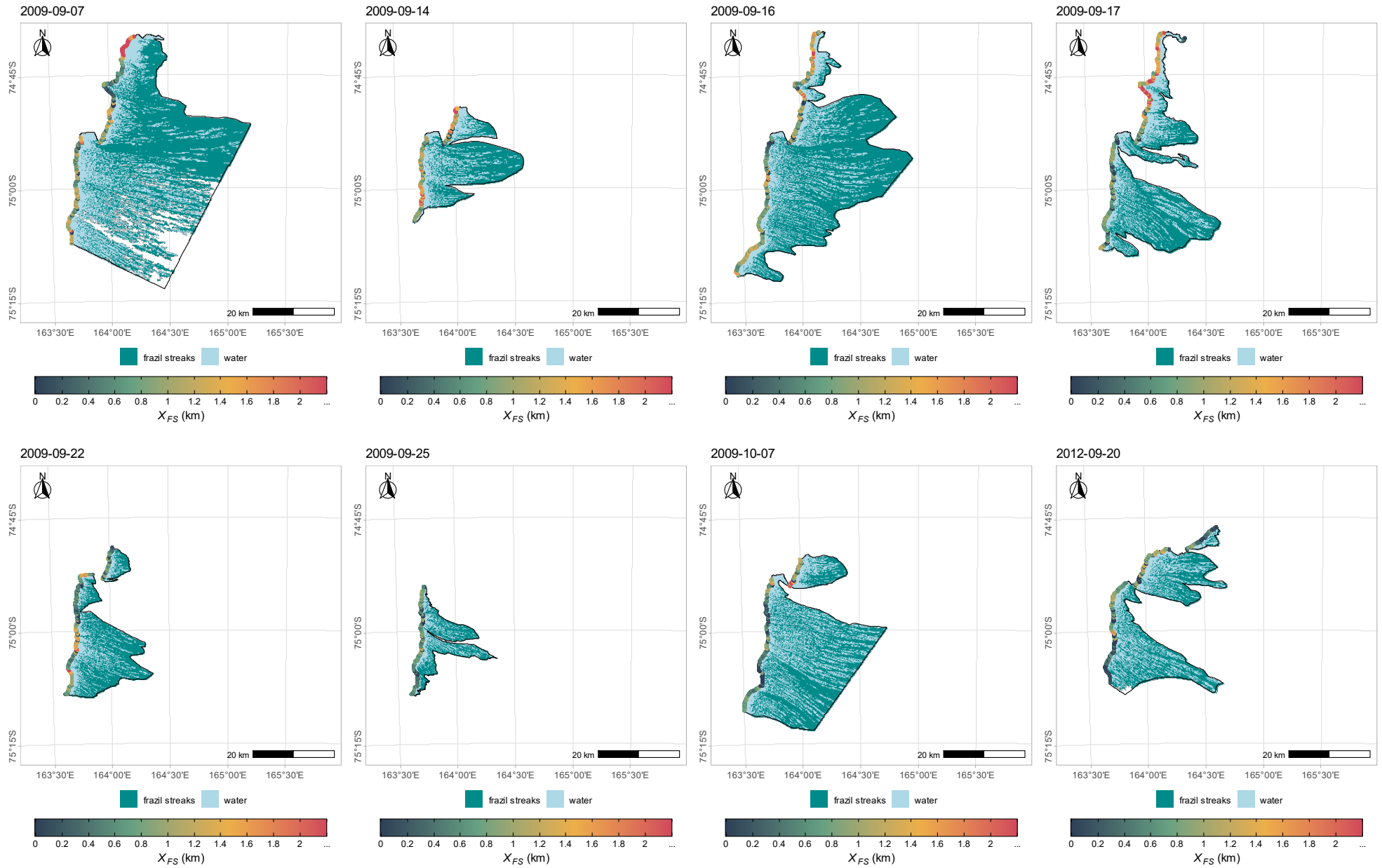
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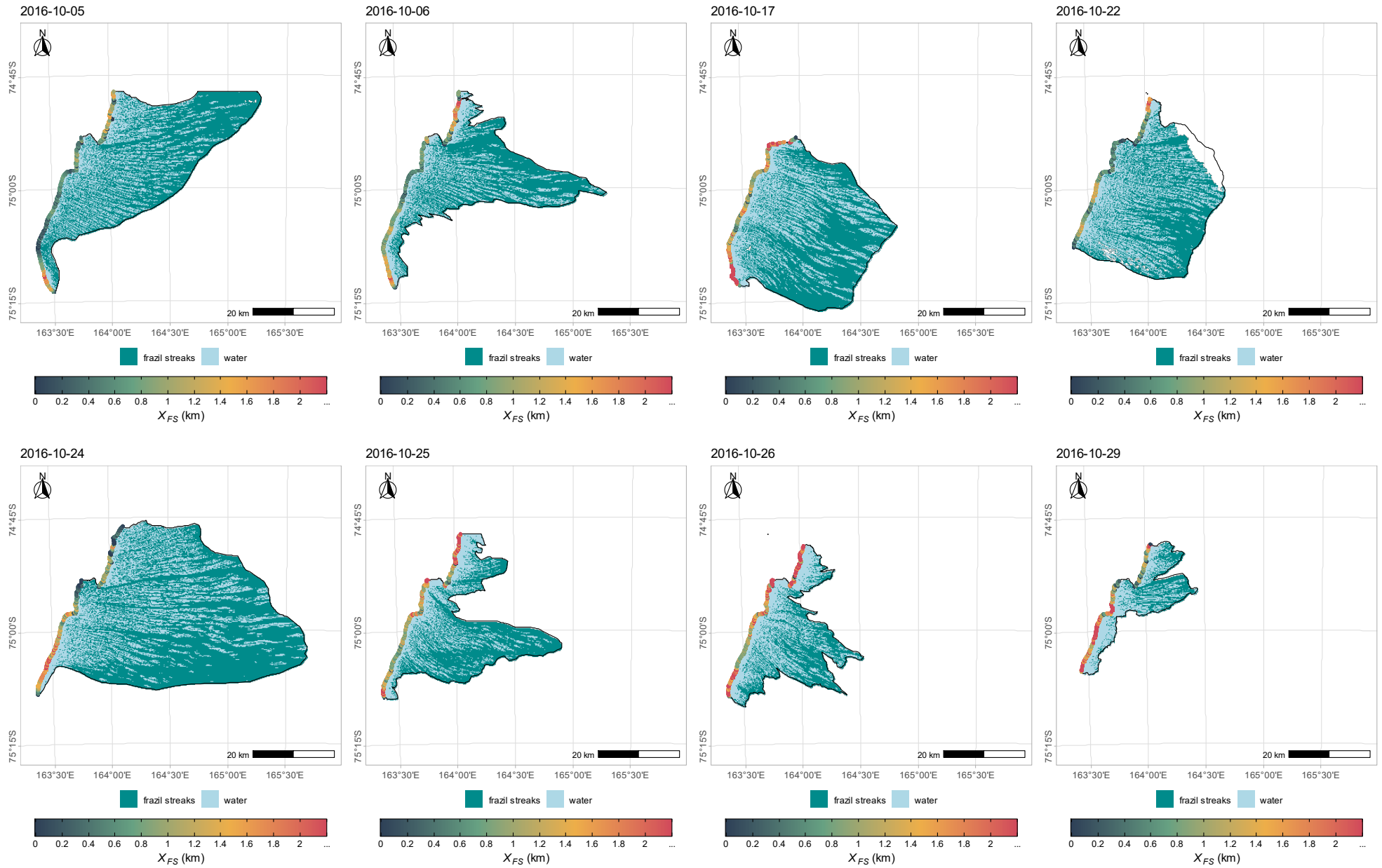
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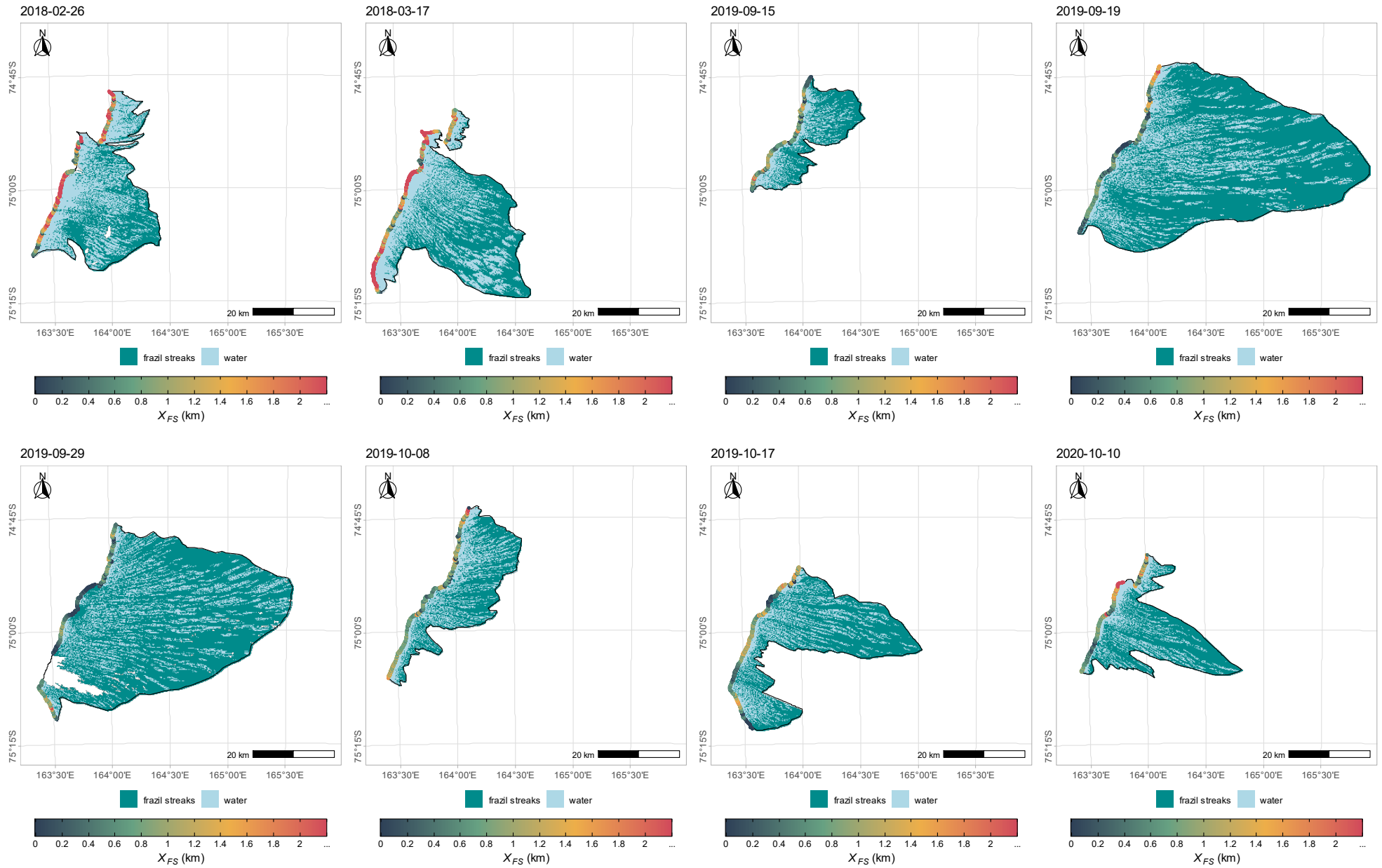
Supplementary Figure S1 (continued)



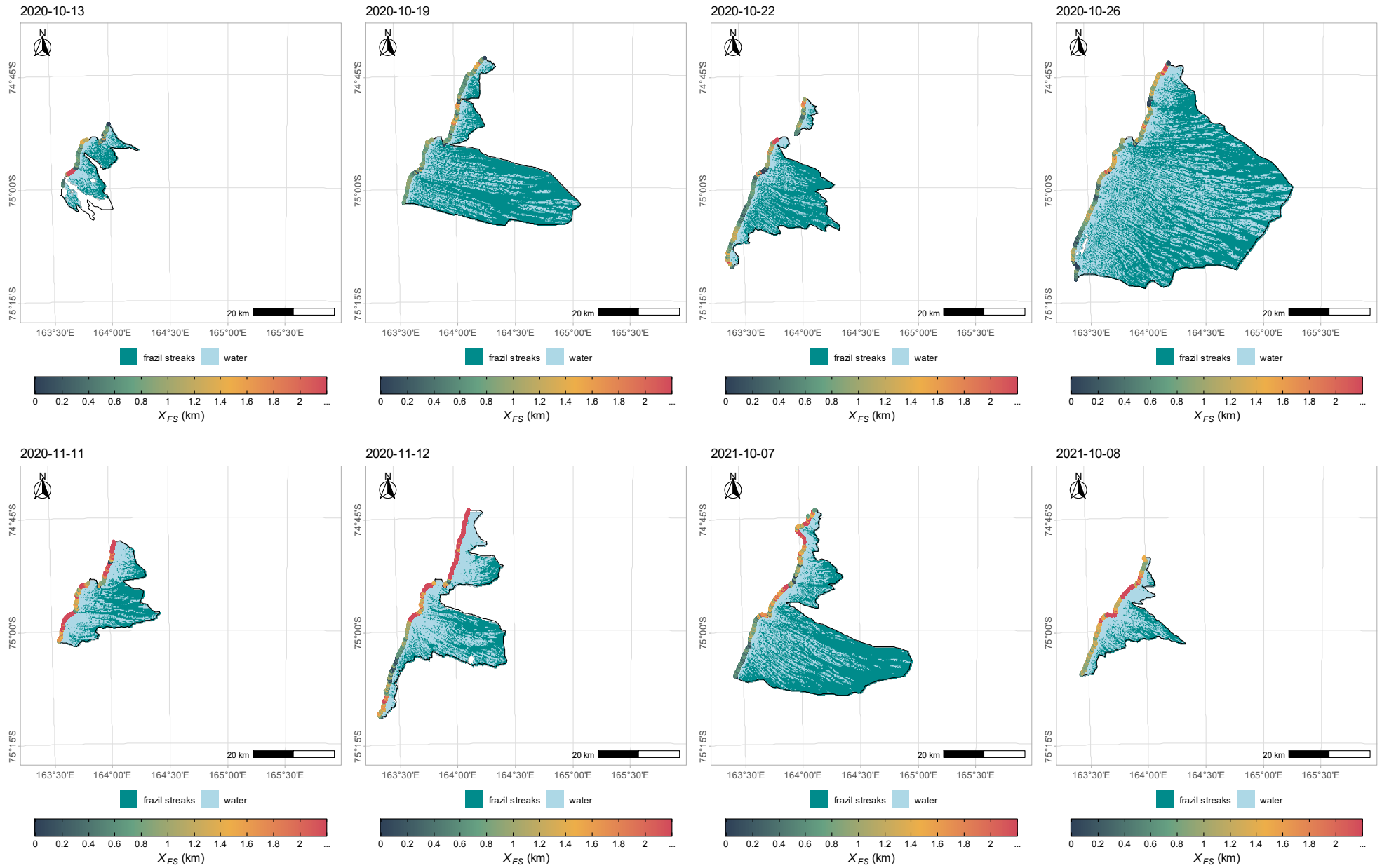
Supplementary Figure S2 (continued on the following three pages): Frazil streaks detected from the satellite data and distance X_{FS} (km) from the ice sheet/coast to the frazil streaks



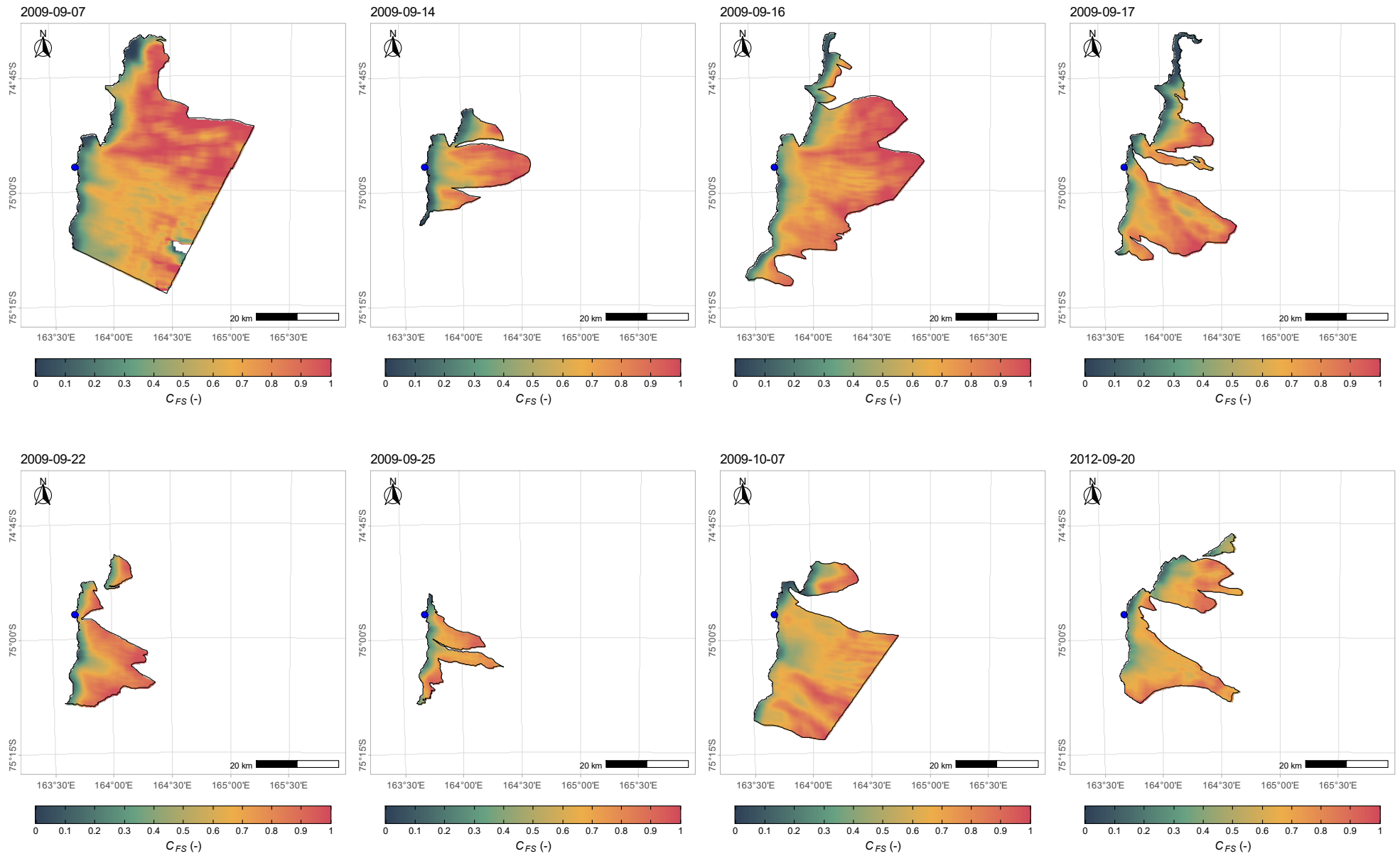
Supplementary Figure S2 (continued)



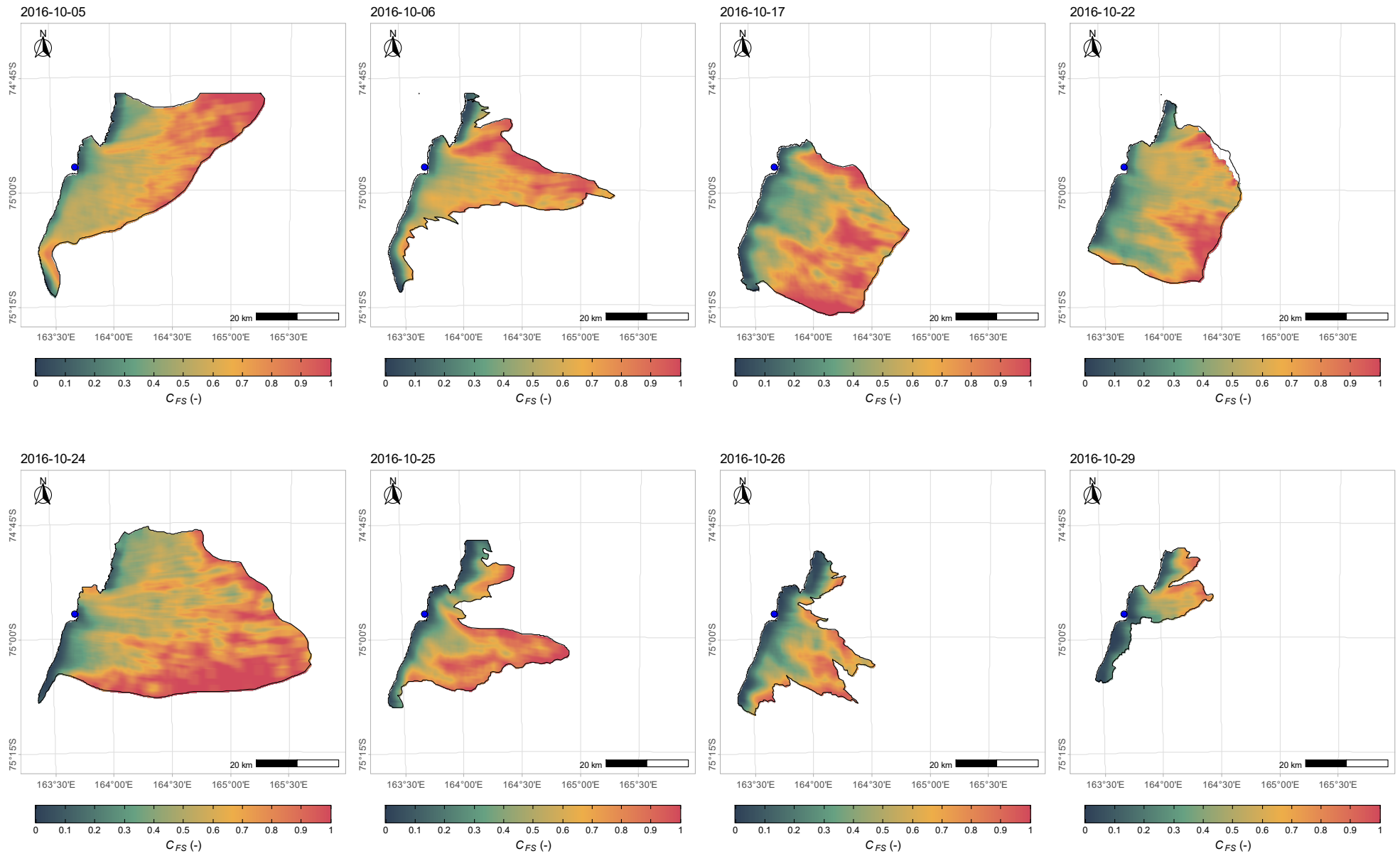
Supplementary Figure S2 (continued)



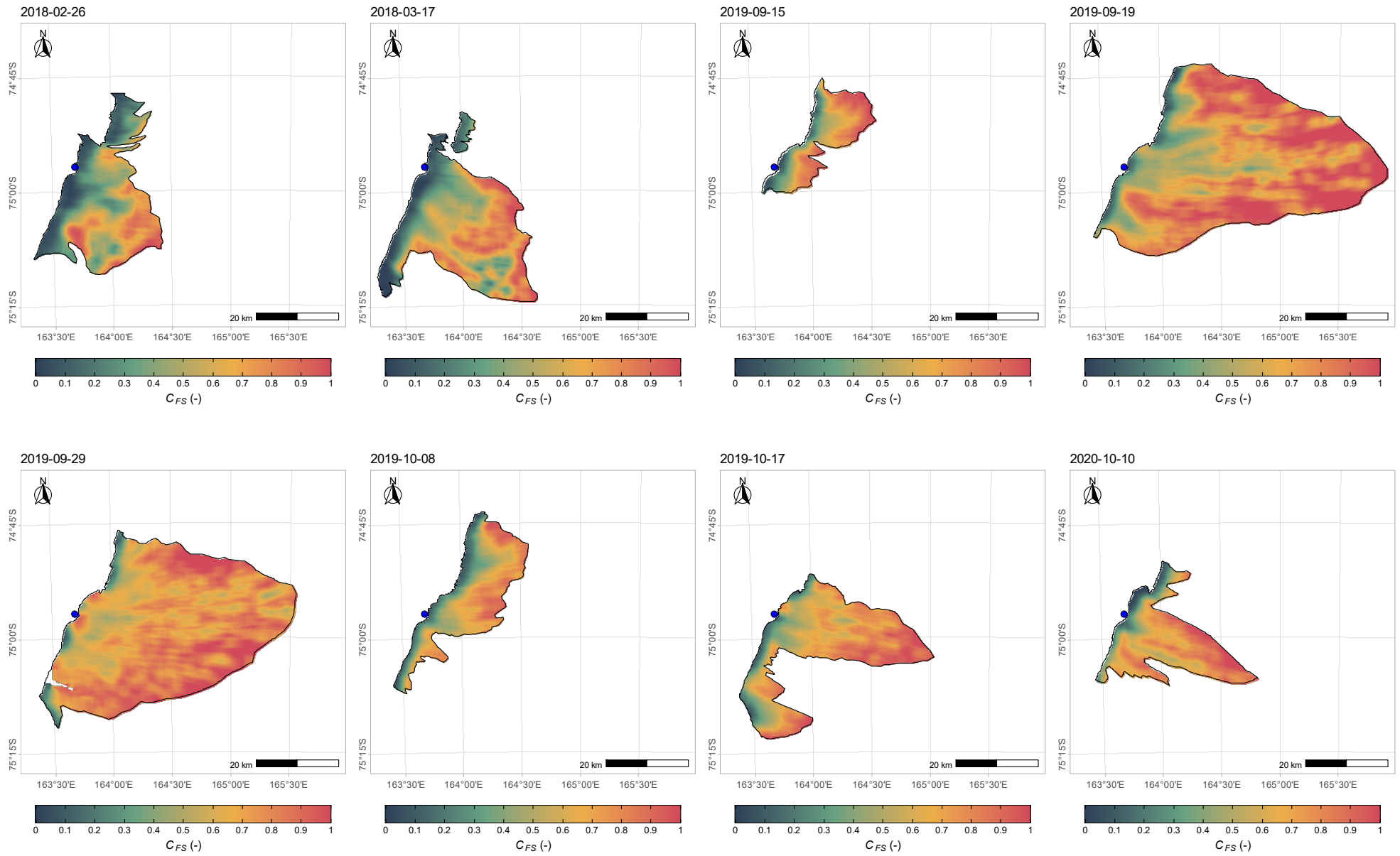
Supplementary Figure S2 (continued)



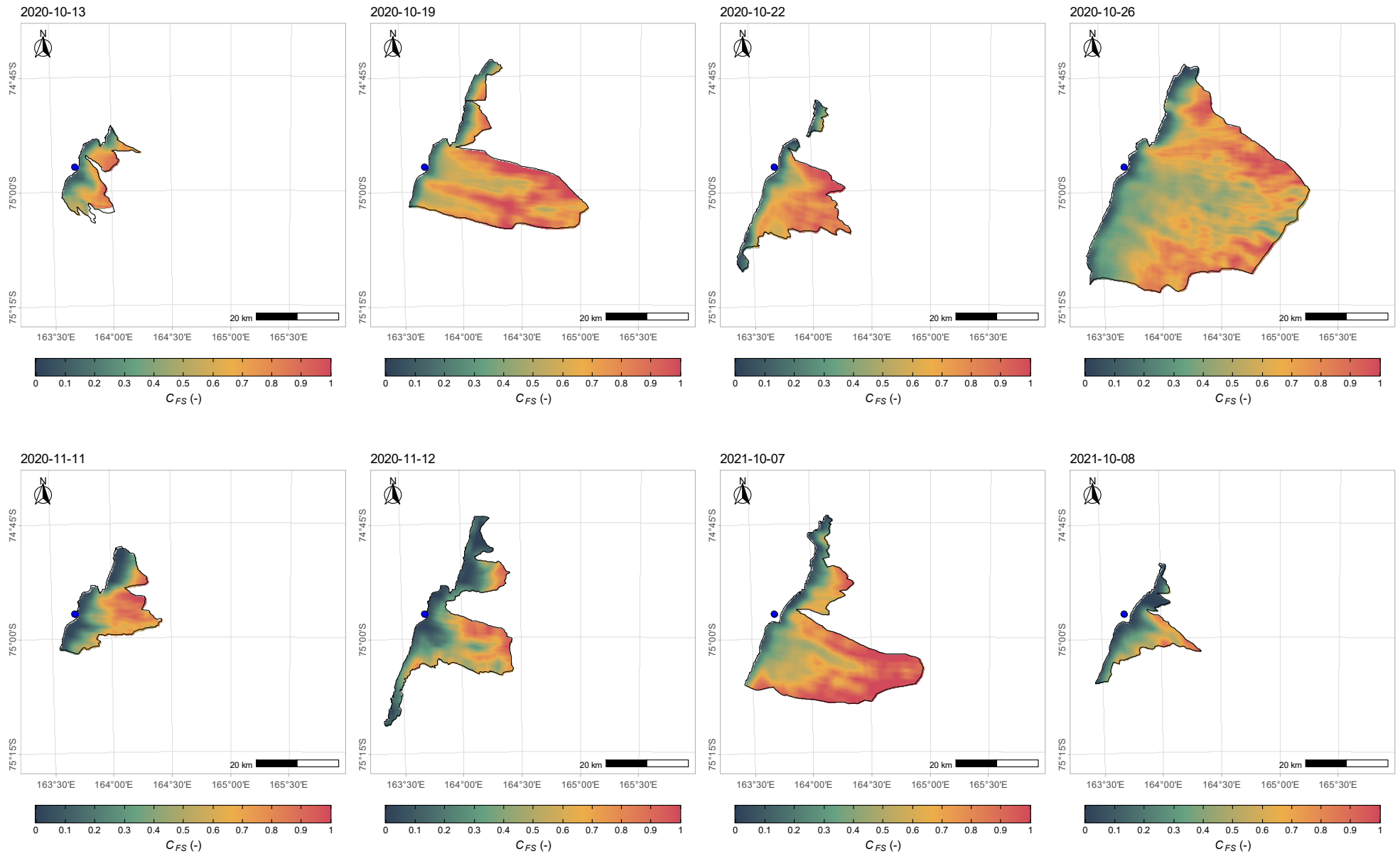
Supplementary Figure S3 (continued on the following three pages): Frazil concentration C_{FS} computed in 2.5×2.5 km (256×256 pixels) moving windows; the blue dot marks the location of the Manuela weather station.



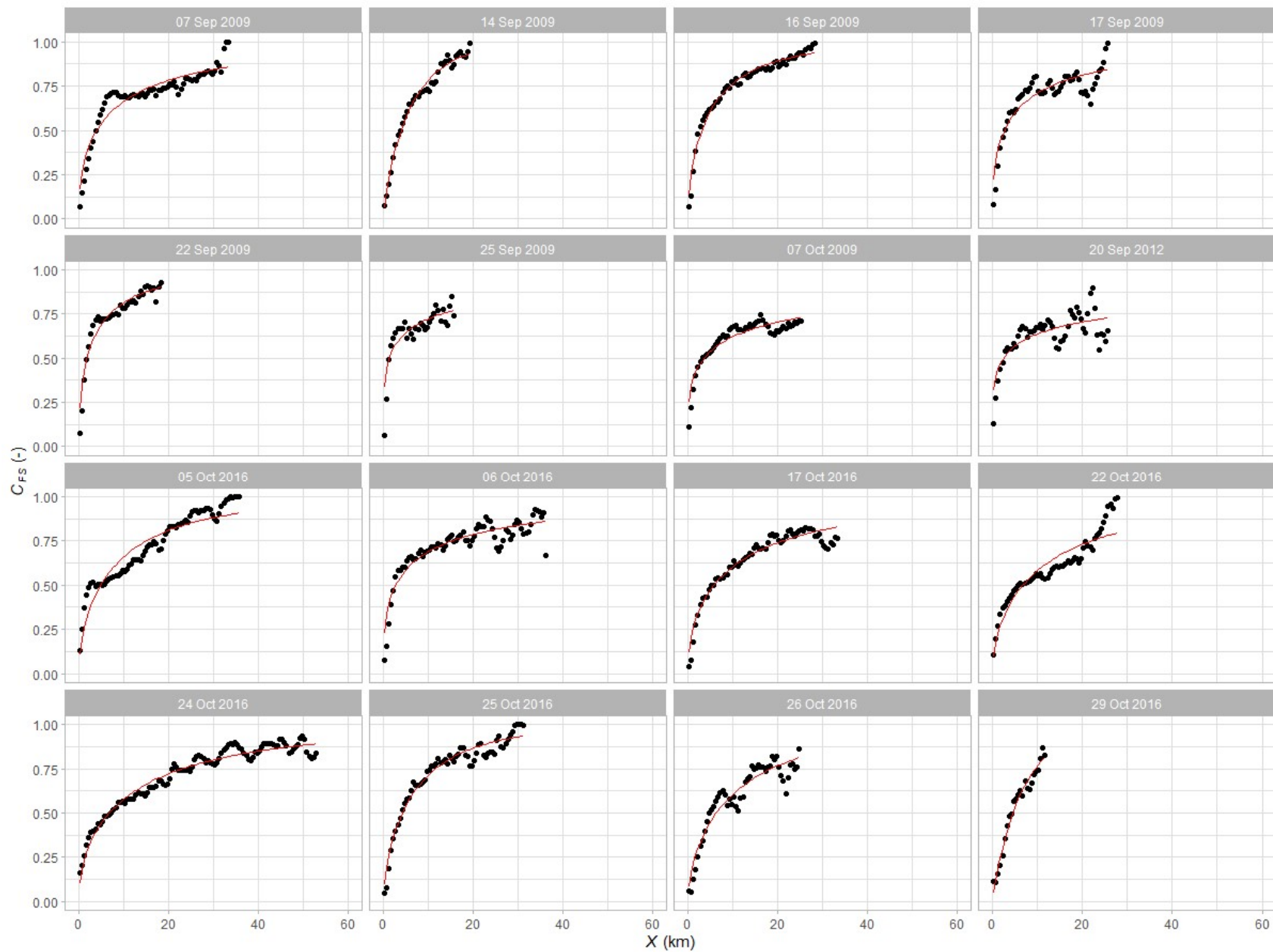
Supplementary Figure S3 (continued)



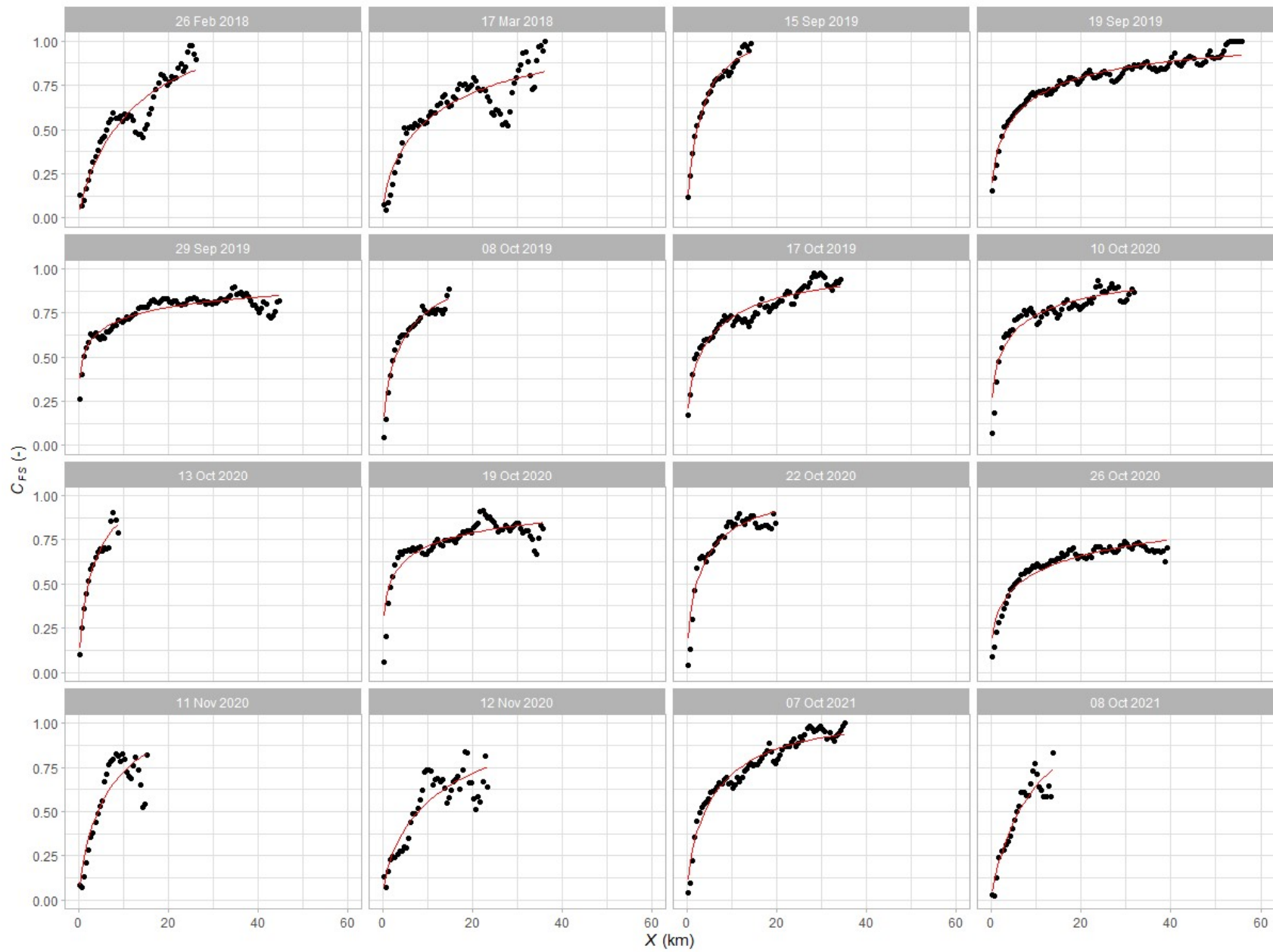
Supplementary Figure S3 (continued)



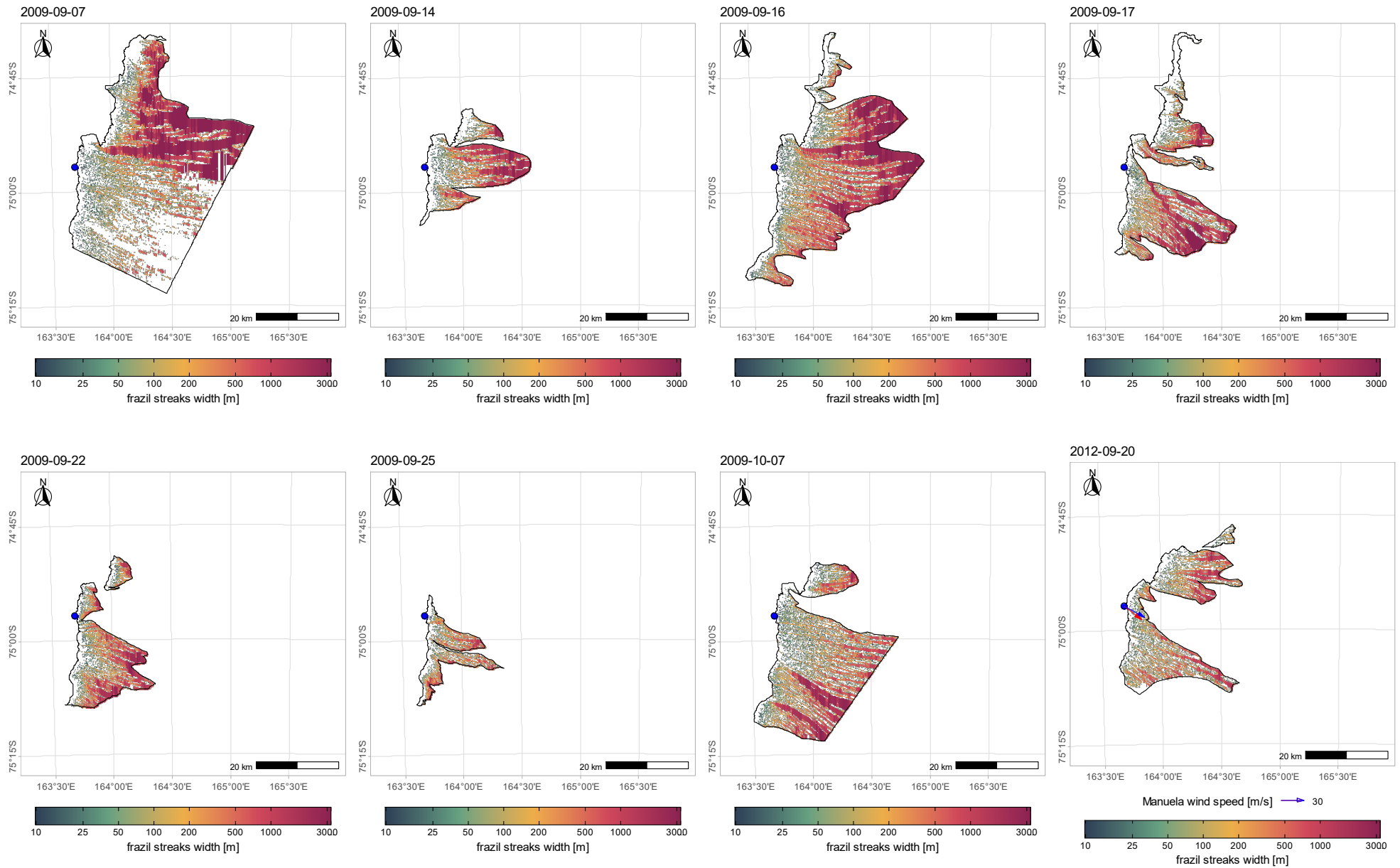
Supplementary Figure S3 (continued)



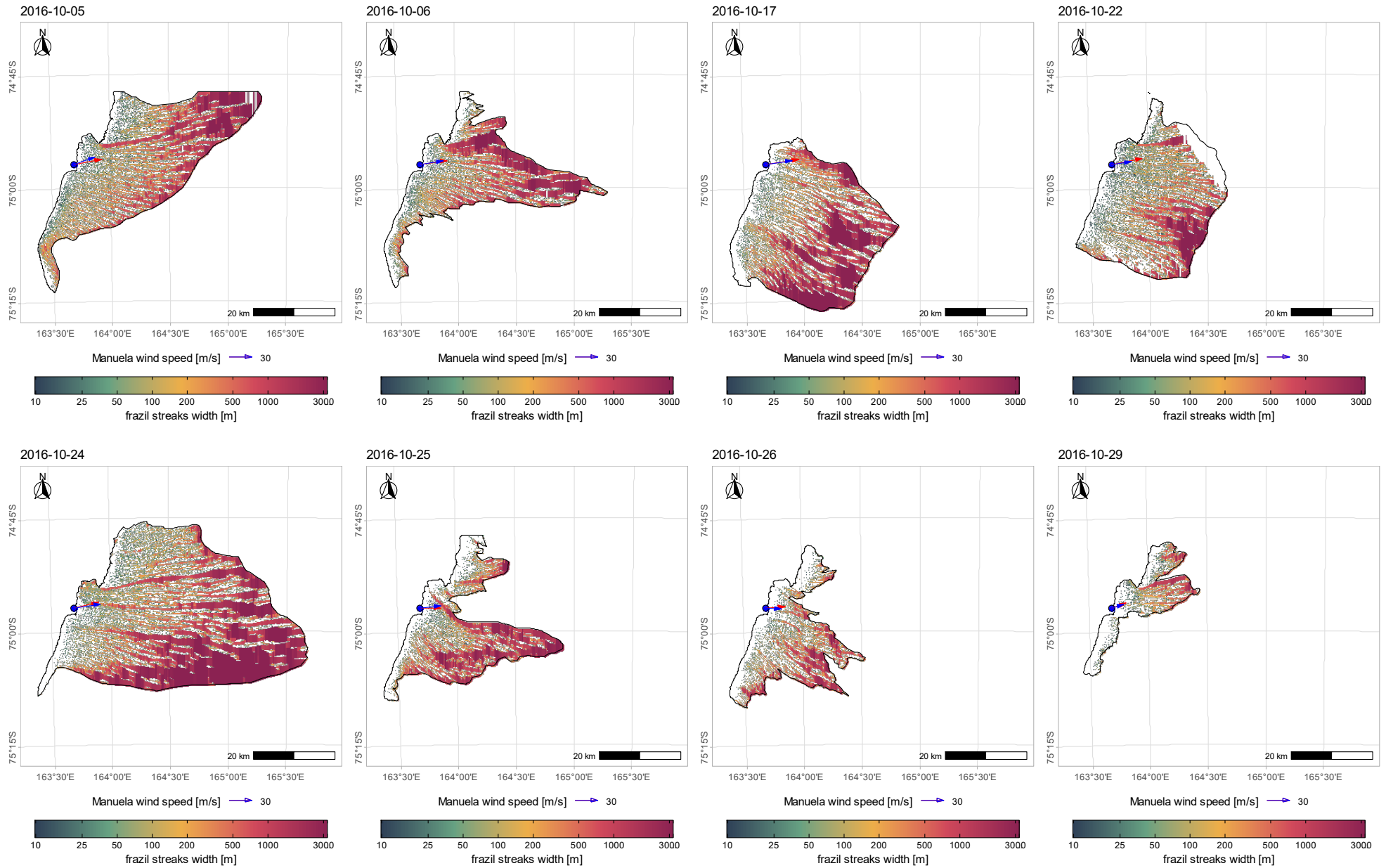
Supplementary Figure S4 (continued on the following page): Frazil ice concentration C_{FS} in function of the distance from the ice sheet/coast X . The dots show values of C_{FS} averaged within 500-m wide stripes perpendicular to X . Red lines show the least-square fit to the functions (9),(10) in the main text.



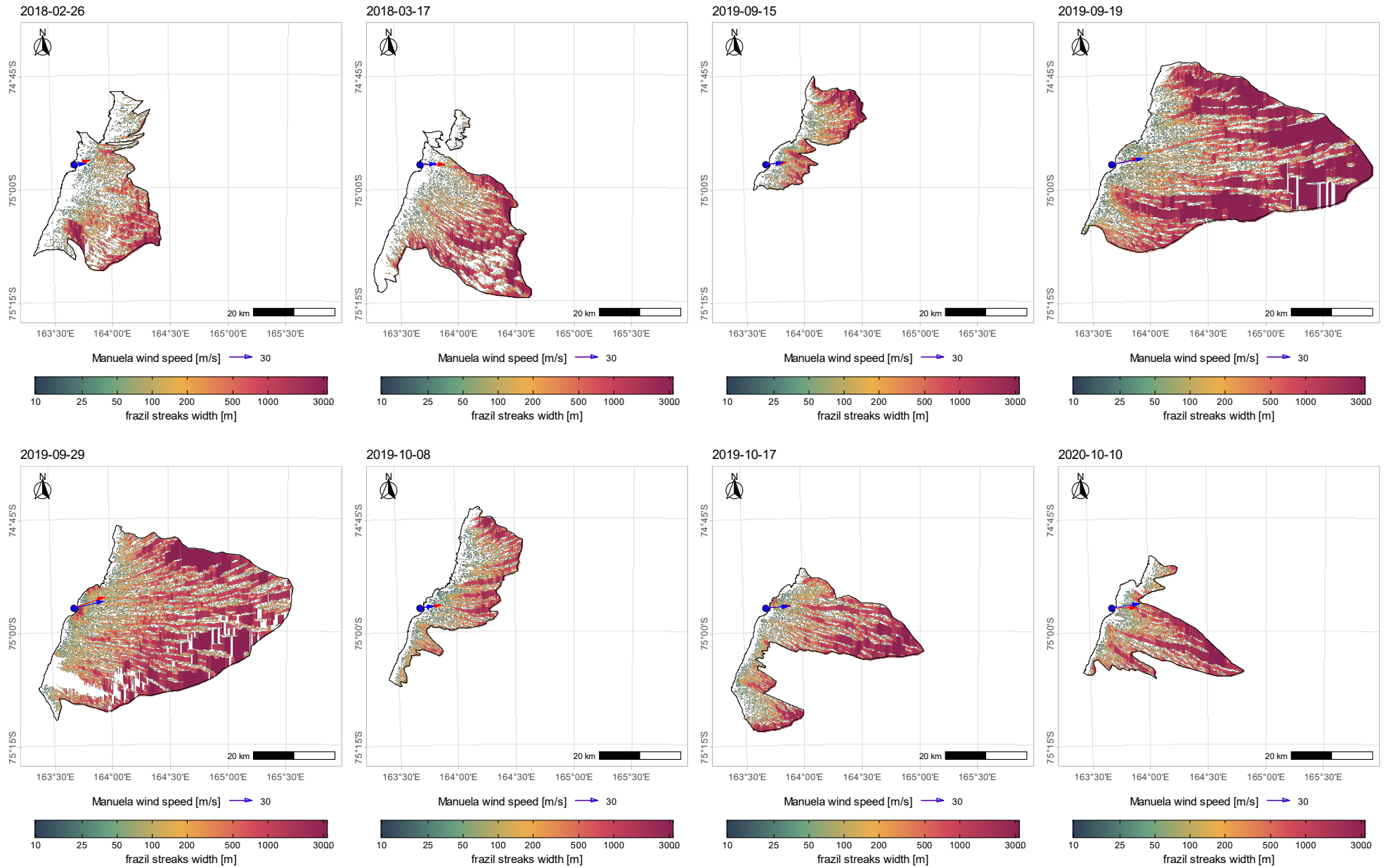
Supplementary Figure S4 (continued)



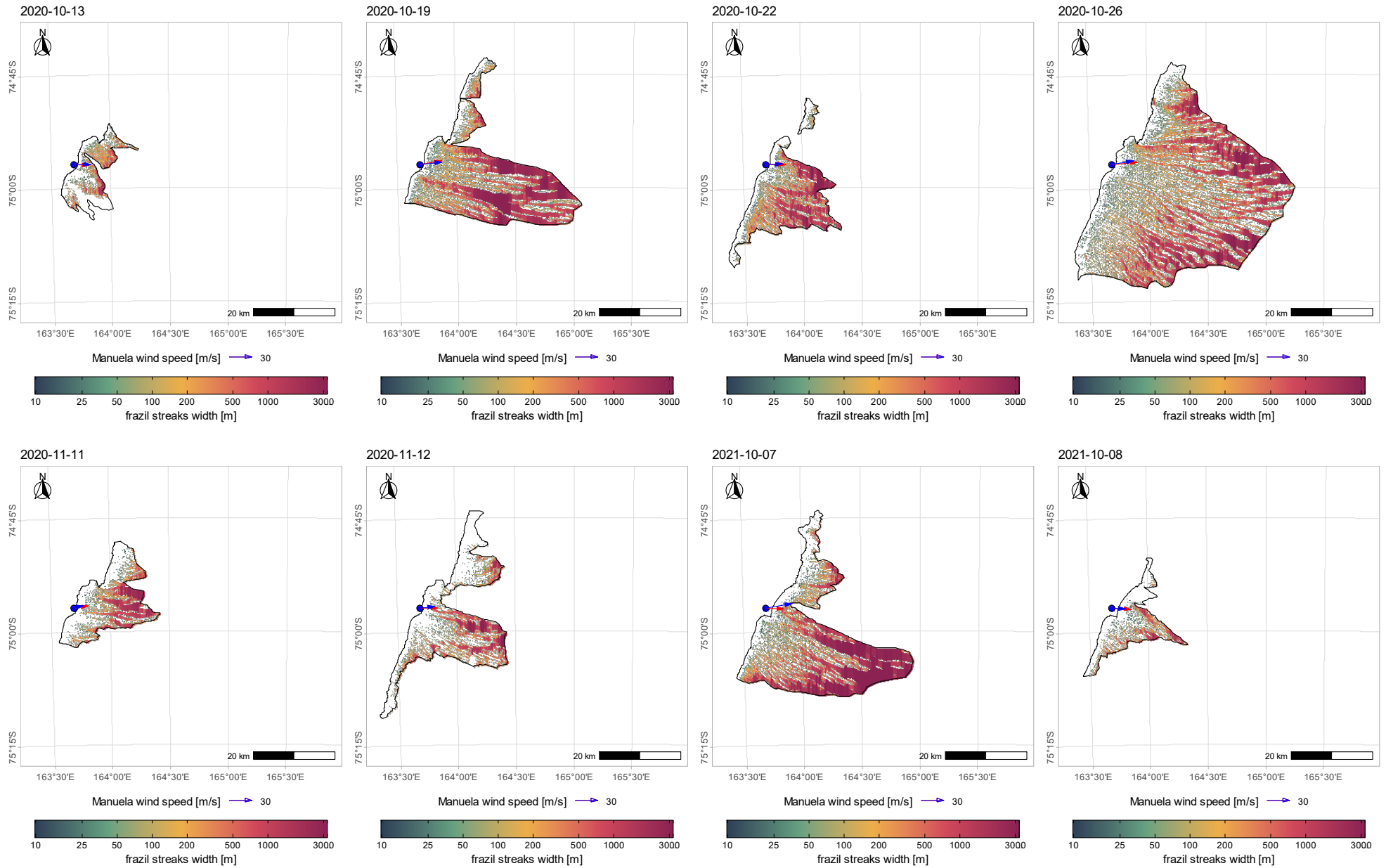
Supplementary Figure S5 (continued on the following three pages): Frazil streaks width measured in the direction of raster columns (i.e., along the UTM58S Y axis; profiles in 10m steps). Arrows indicate the wind direction measured at the Manuela station (red – instantaneous, blue – averaged over 24 h; note that they are available only from 2012 onwards)



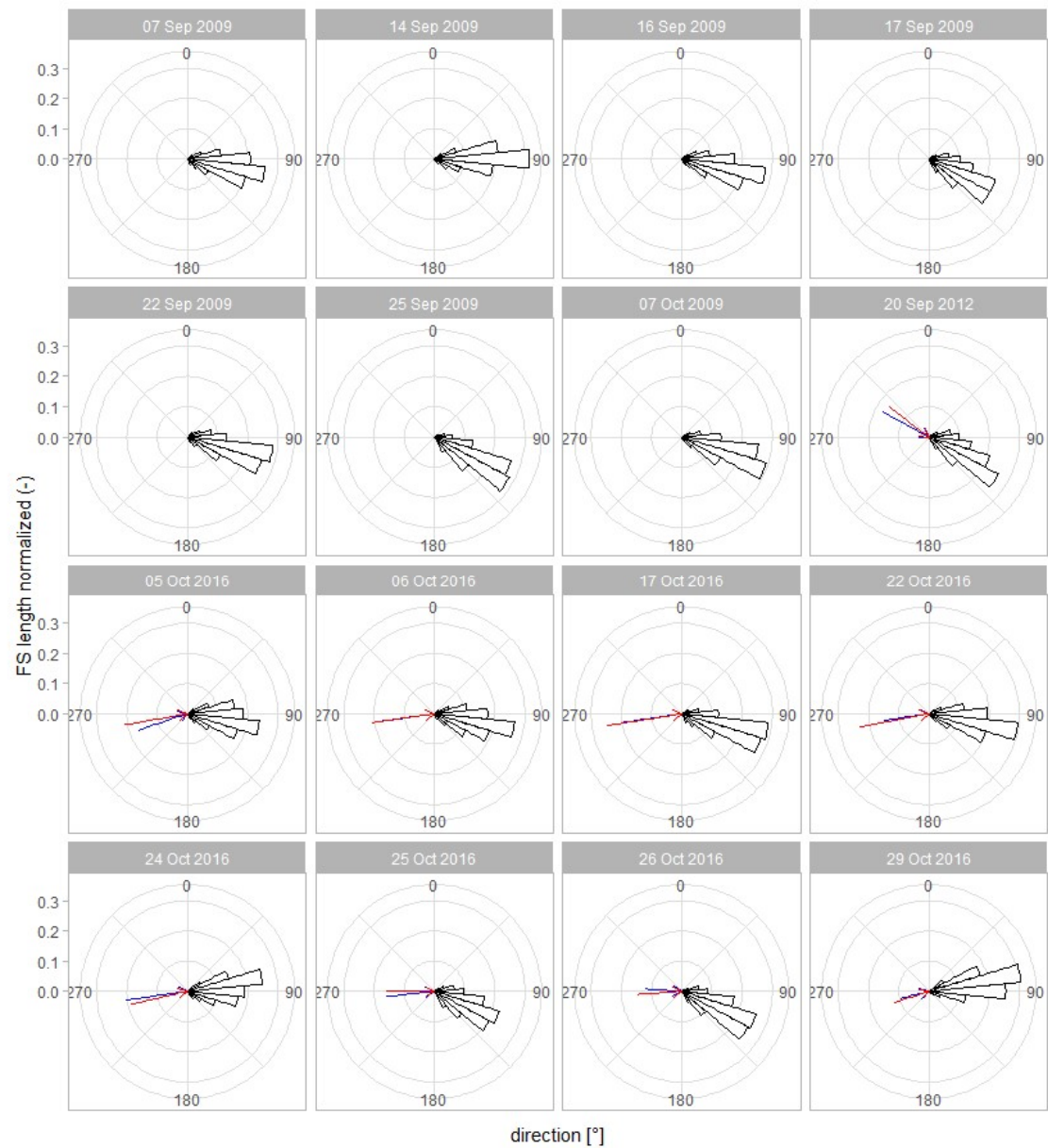
Supplementary Figure S5 (continued)



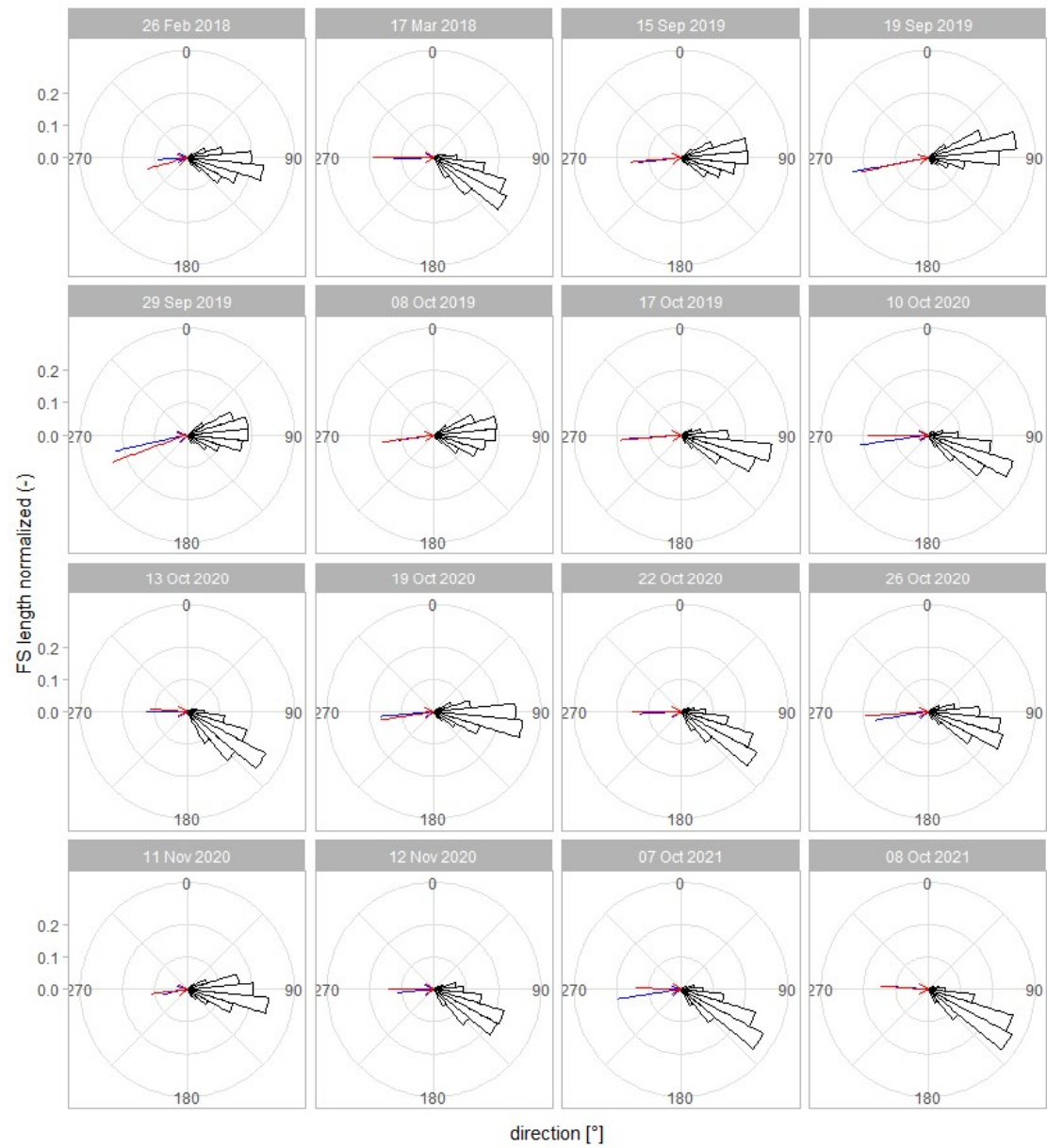
Supplementary Figure S5 (continued)



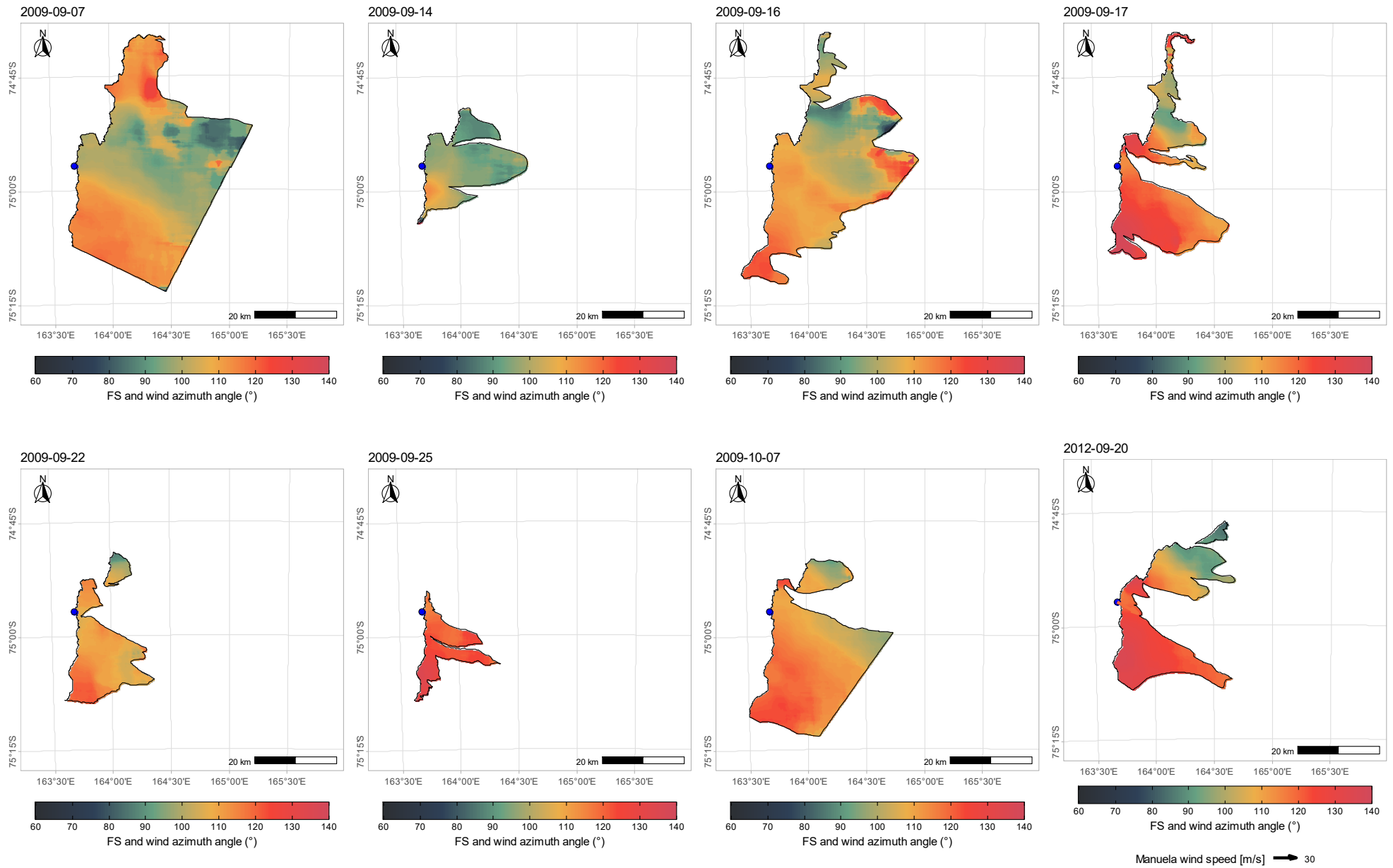
Supplementary Figure S5 (continued)



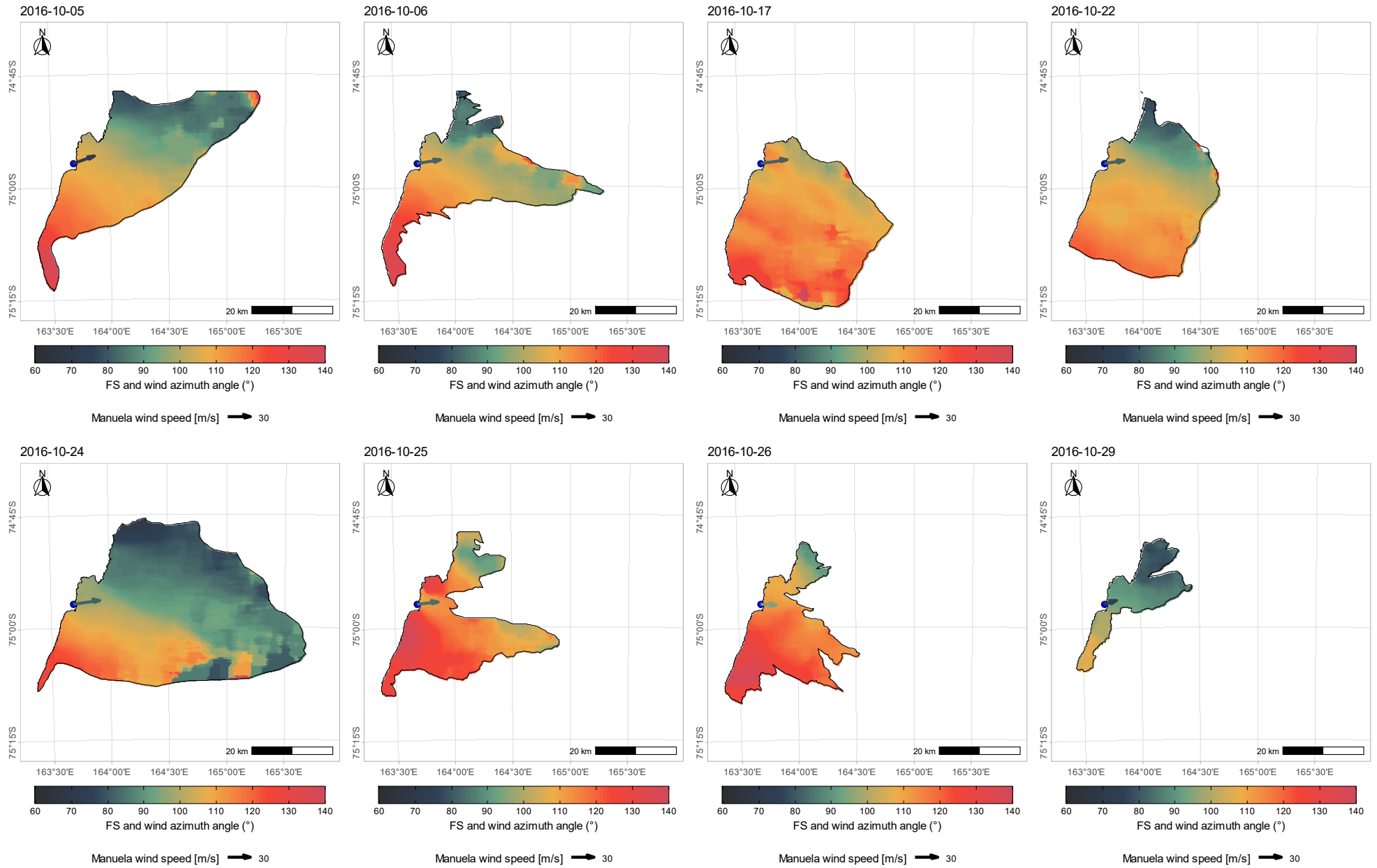
Supplementary Figure S6 (continued on the following page): Histograms of frazil streak orientation. Arrows indicate the wind direction measured at the Manuela station (red – just before satellite overpass, blue – averaged over 24 h; length of arrow relative to the wind speed; note that they are available only from 2012 onwards)



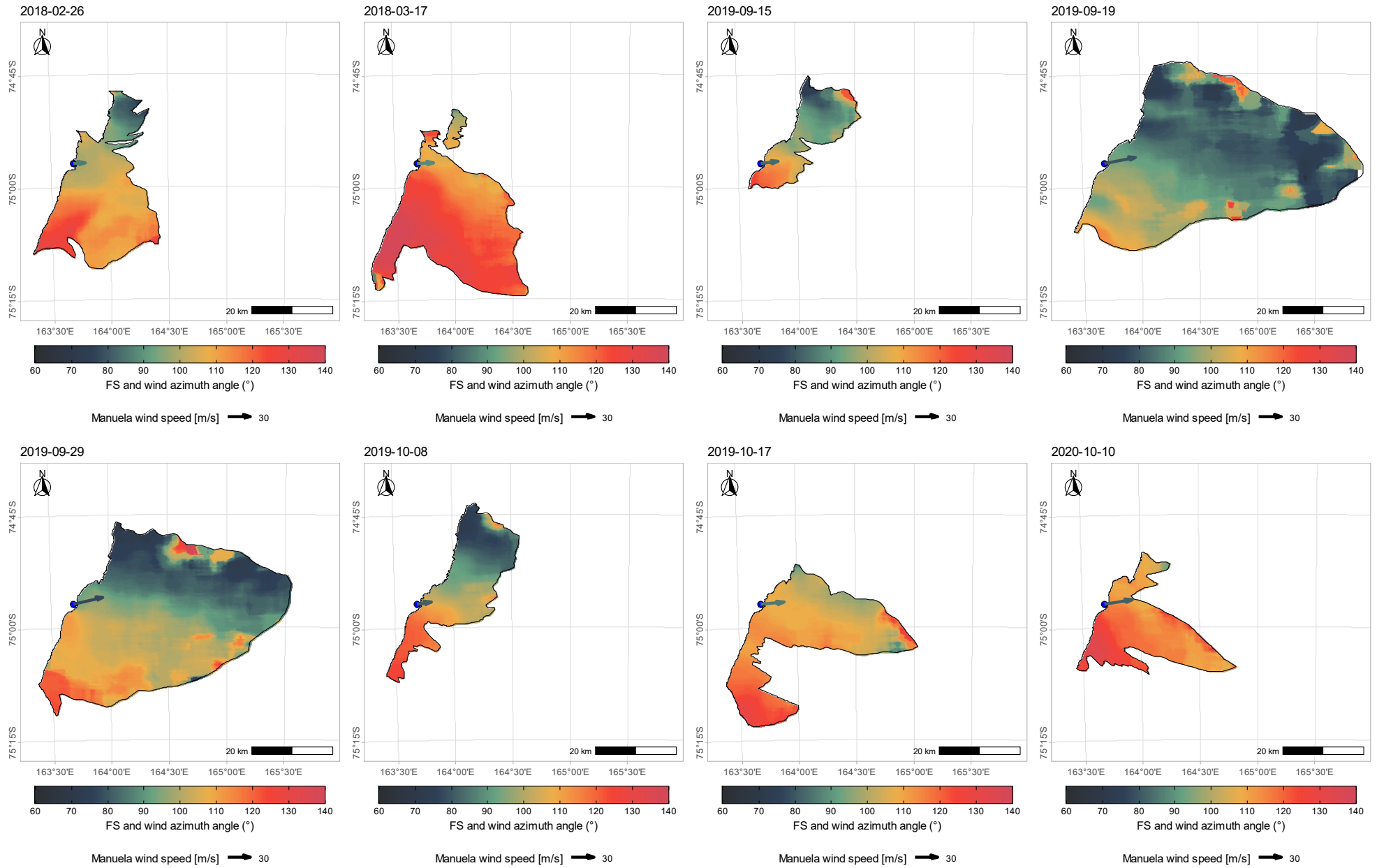
Supplementary Figure S6 (continued)



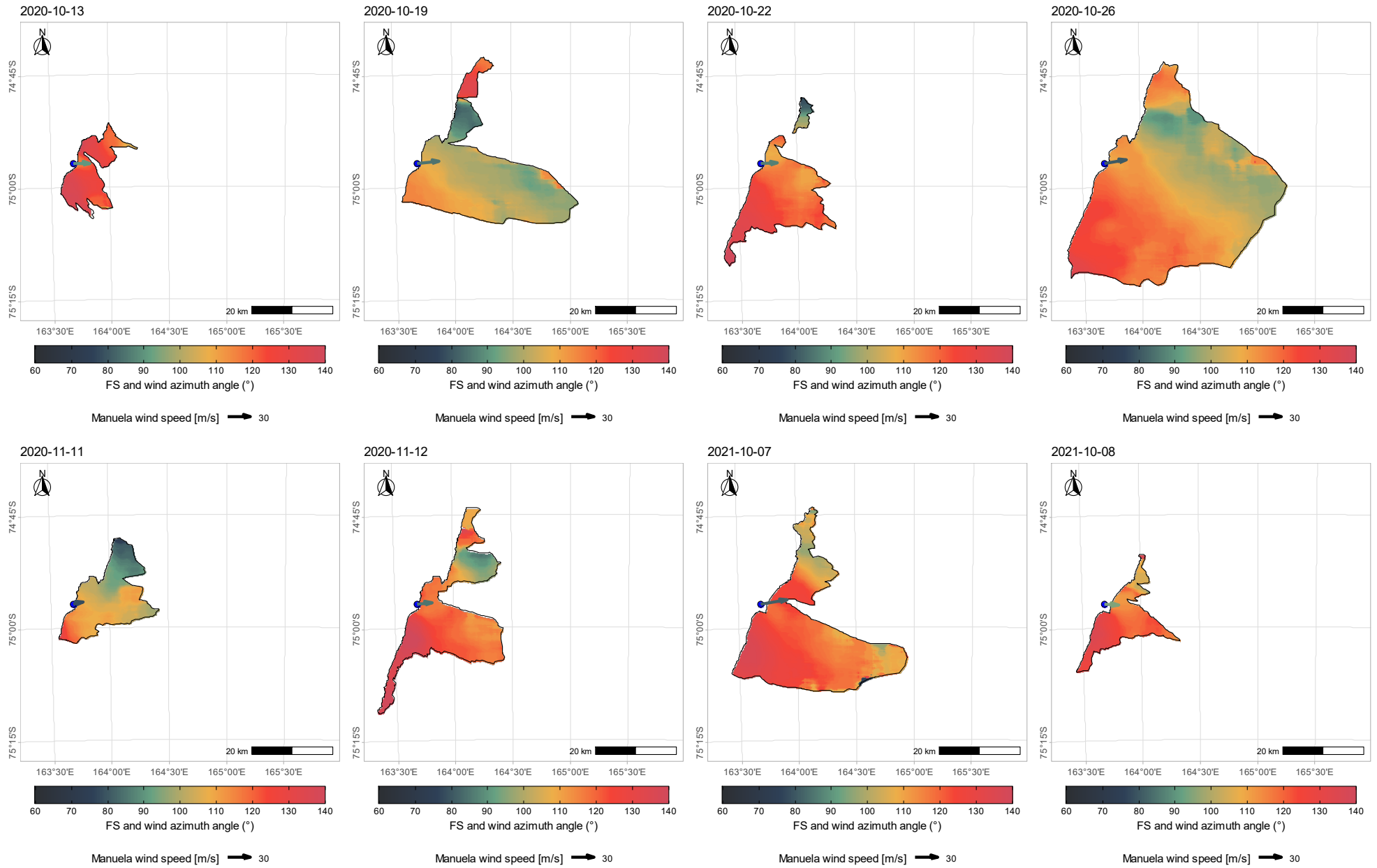
Supplementary Figure S7 (continued on the following three pages): Frazil streaks orientation (in degrees) averaged within 5.1×5.1 km (512×512 pixels) moving windows. Arrows indicate the wind direction measured at the Manuela station (averaged over 24 h; note that they are available only from 2012 onwards)



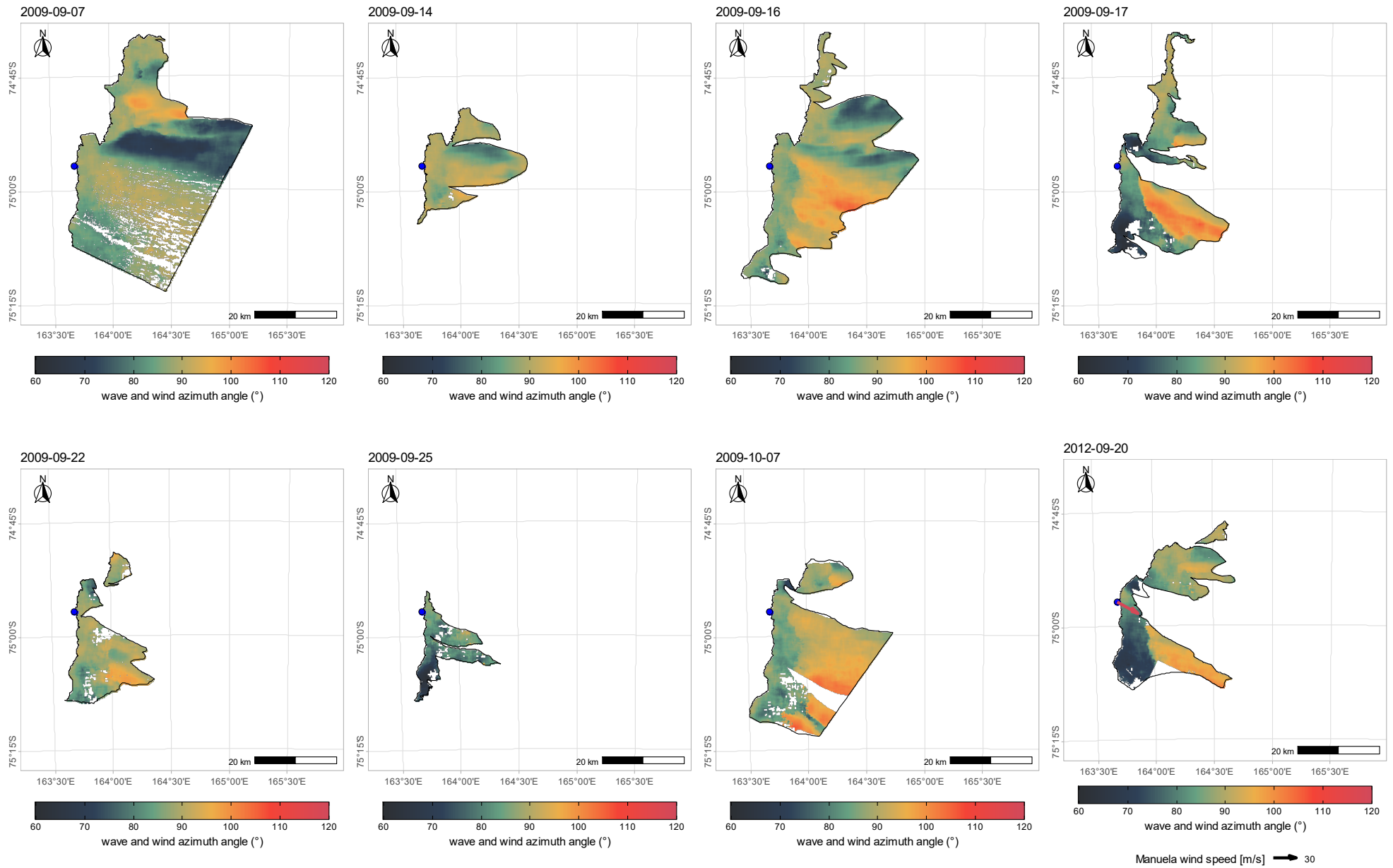
Supplementary Figure S7 (continued)



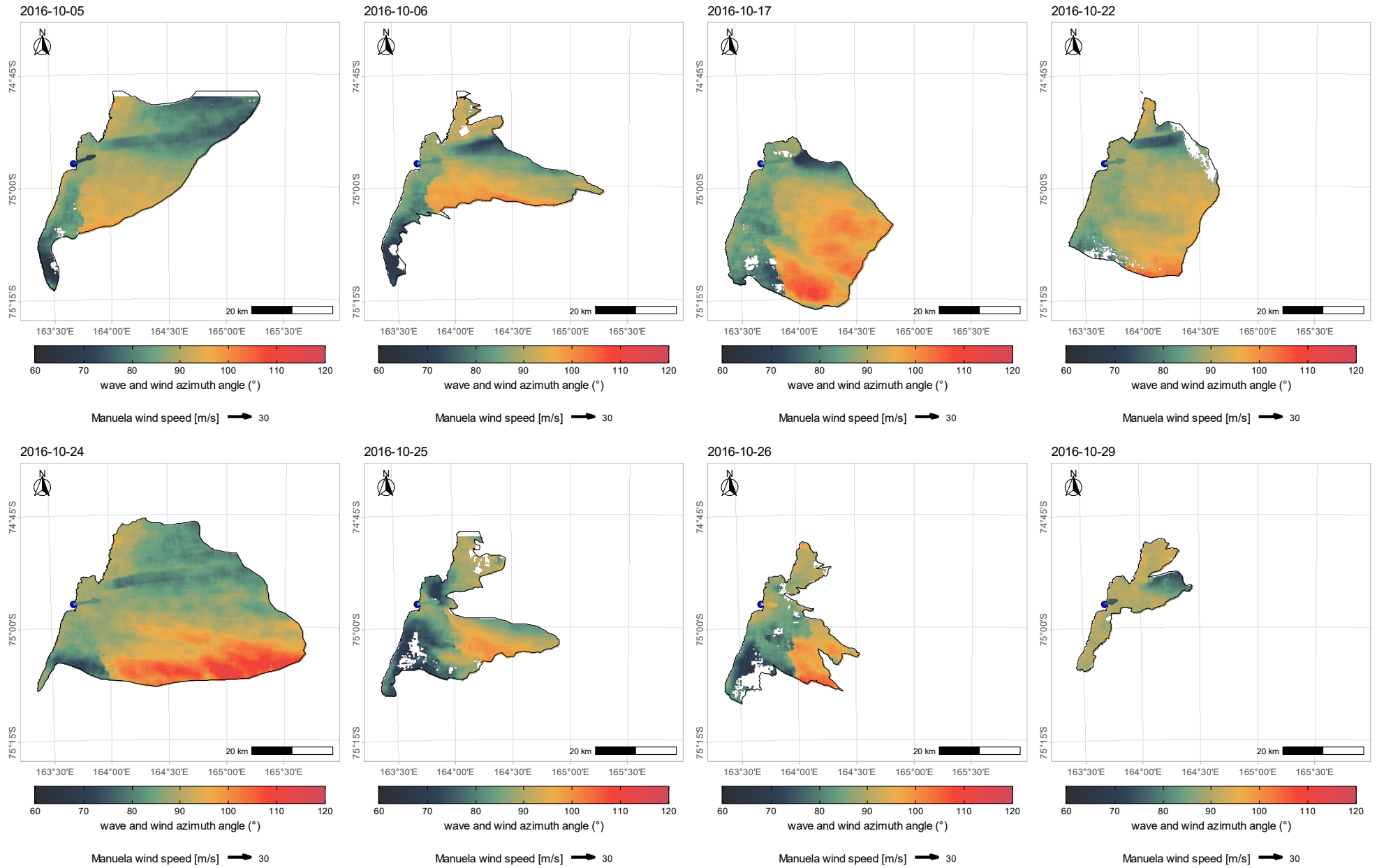
Supplementary Figure S7 (continued)



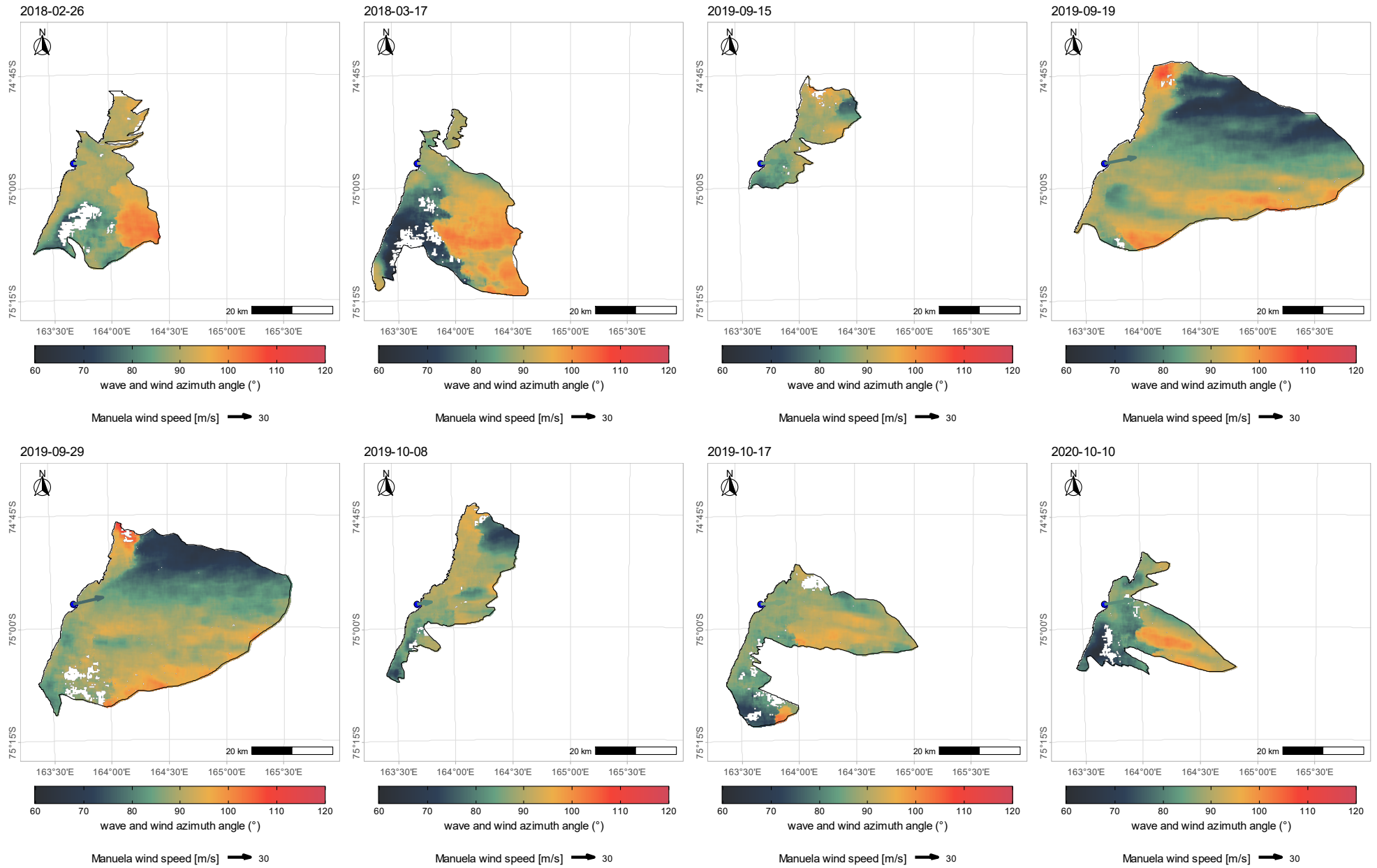
Supplementary Figure S7 (continued)



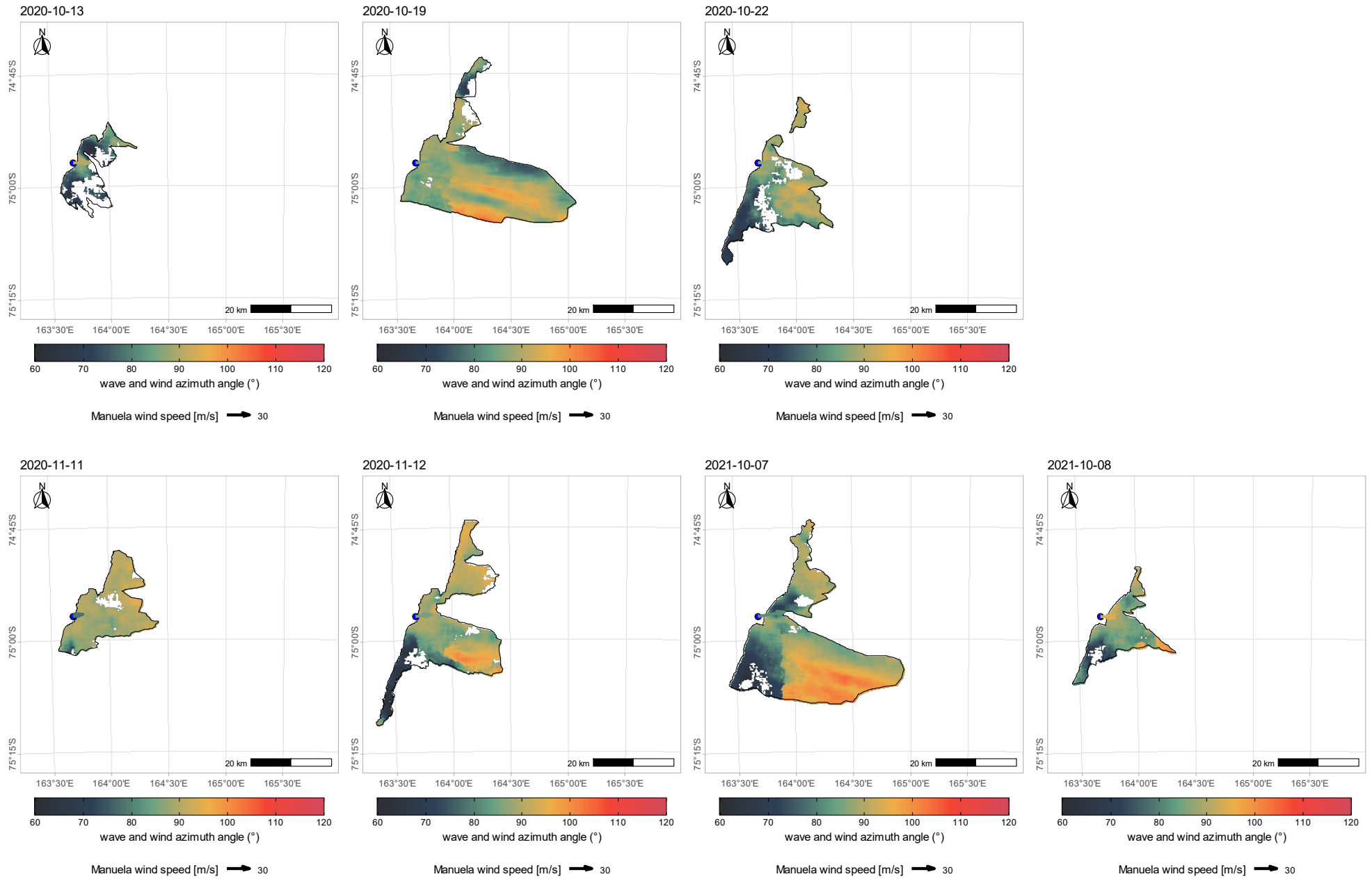
Supplementary Figure S8 (continued on the following three pages): Peak wave direction (in degrees) obtained from the Fourier analysis. Arrows indicate the wind direction measured at the Manuela station (averaged over 24 h)



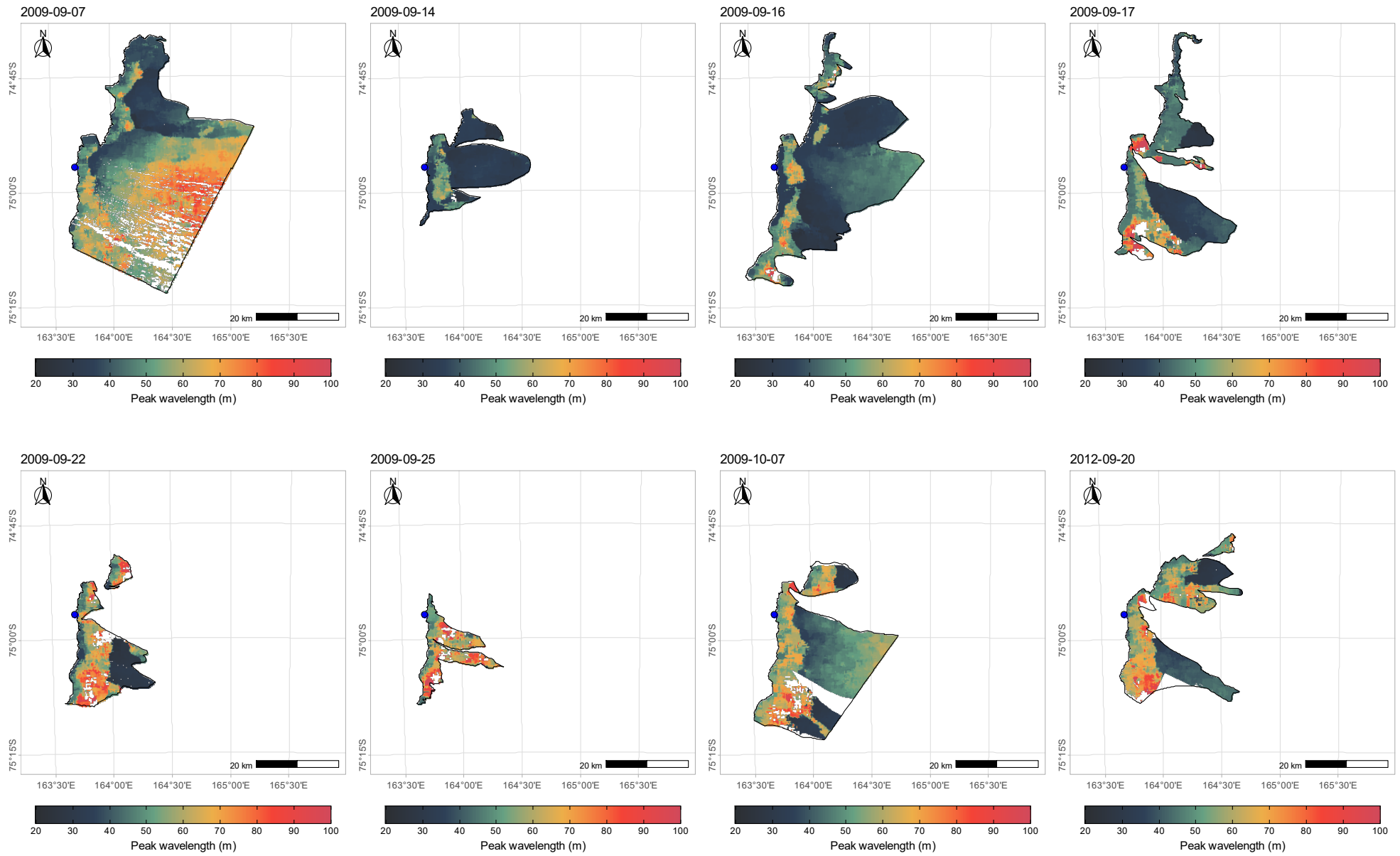
Supplementary Figure S8 (continued)



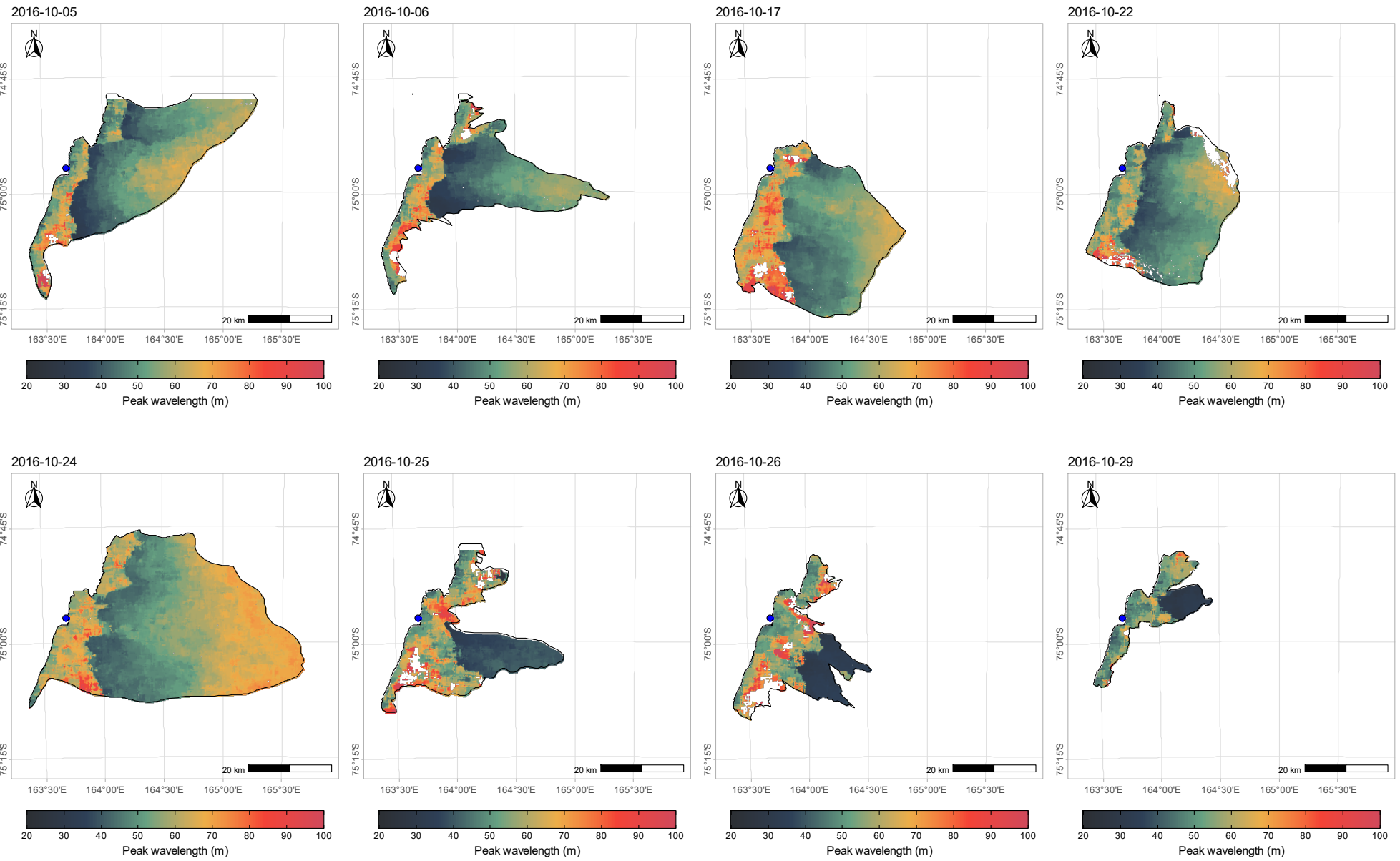
Supplementary Figure S8 (continued)



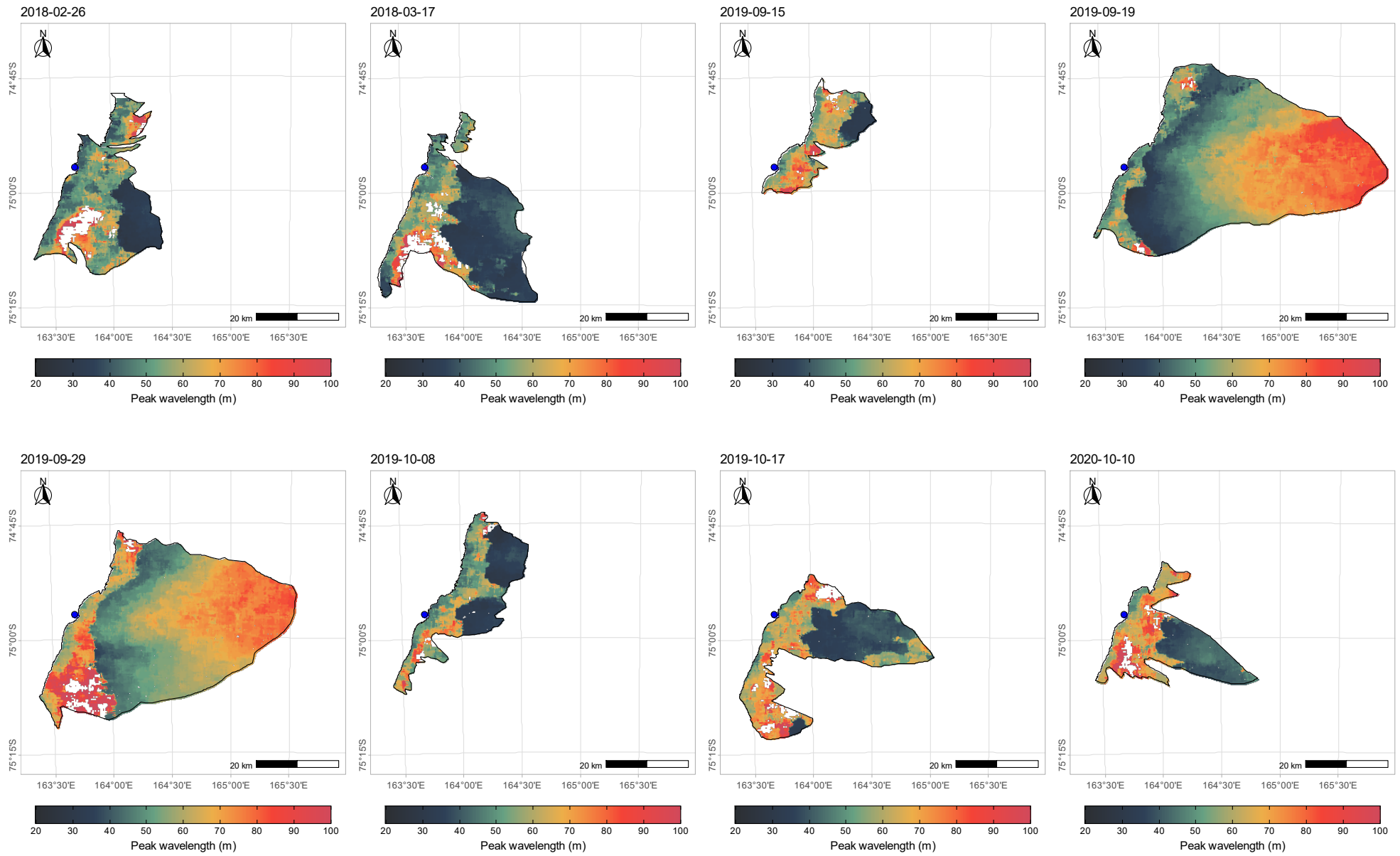
Supplementary Figure S8 (continued)



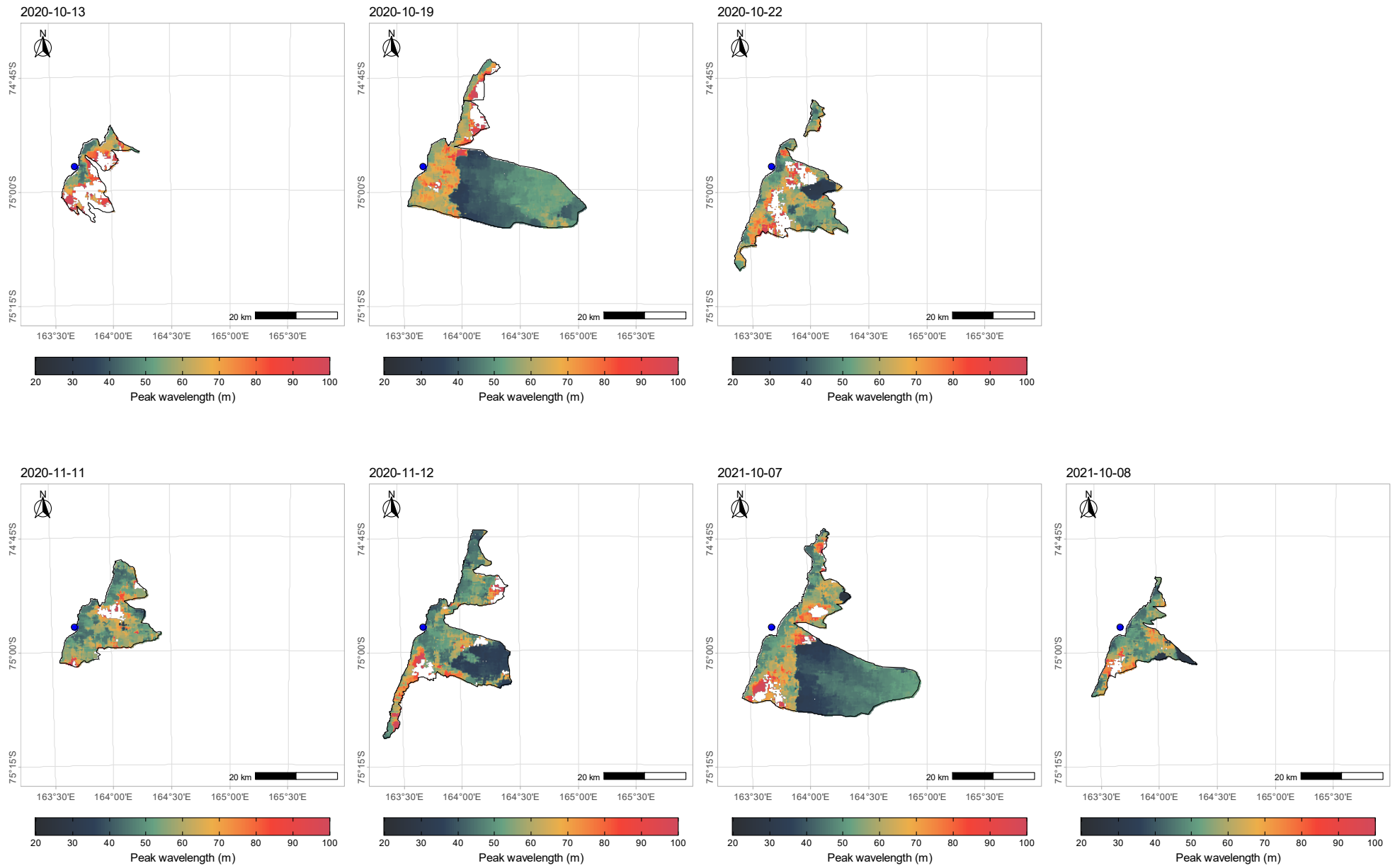
Supplementary Figure S9 (continued on the following three pages): Peak wave length (m) obtained from the Fourier analysis.



Supplementary Figure S9 (continued)



Supplementary Figure S9 (continued)



Supplementary Figure S9 (continued)