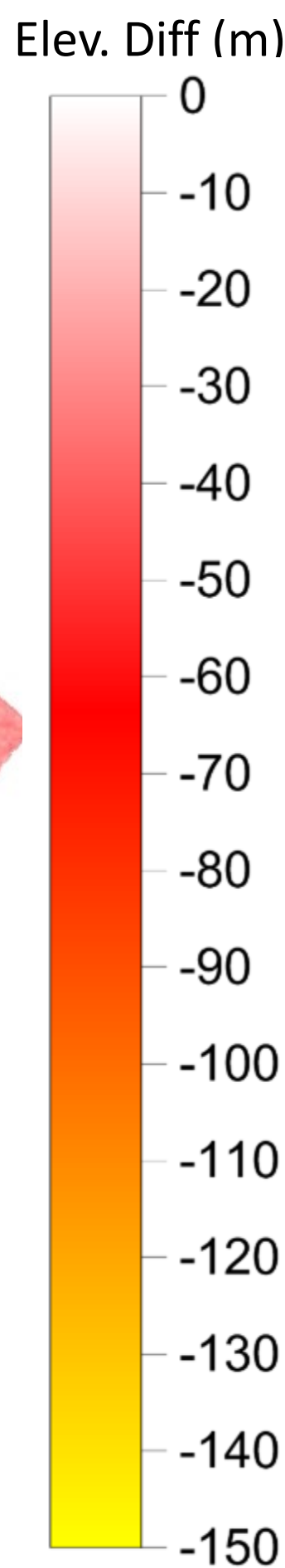


Changes in Öræfajökull 1945-2011

Joaquín M. C. Belart, Institute of Earth Sciences, University of Iceland. Contact: jmm11@hi.is

Maps of elevation difference

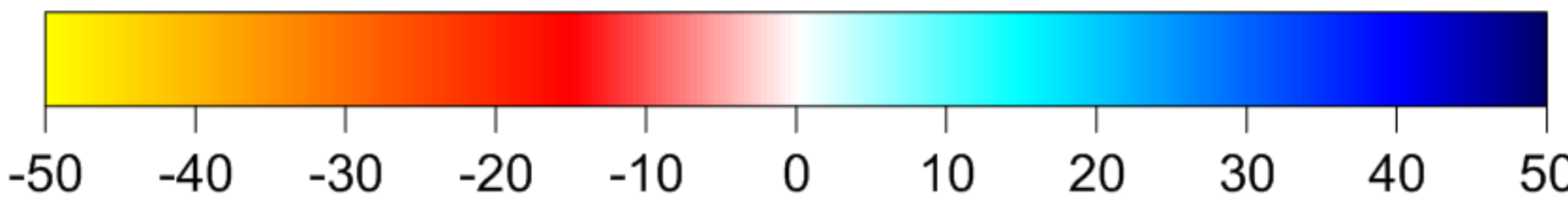
1945-2011



1945-1960

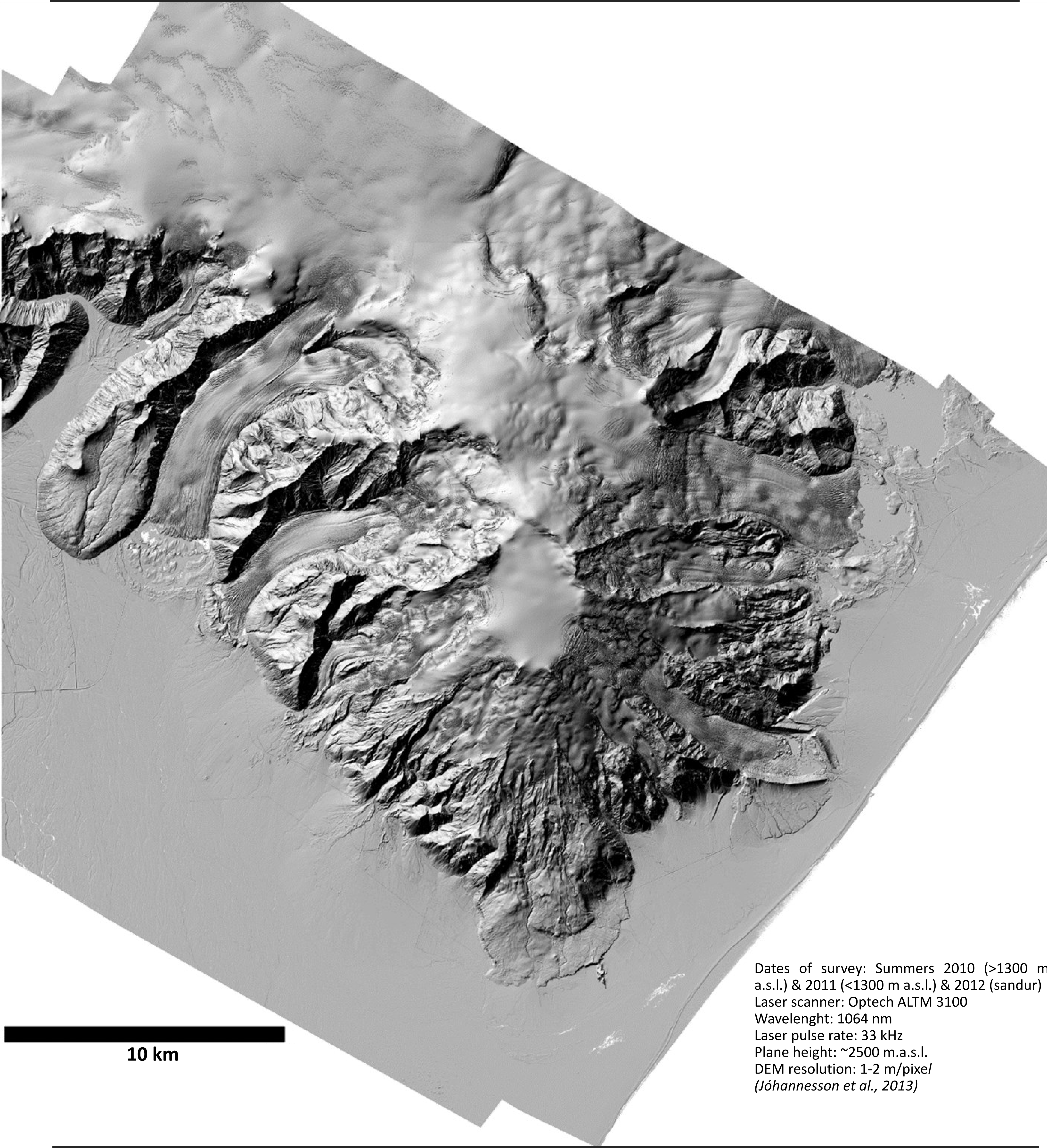
1960-1988

Elev. Diff (m)



Elevation difference revealing glacier changes, based on the difference between two digital elevation models (DEMs). Red to yellow indicates surface lowering, and blue indicates thickening. (up) Changes from 1945 (DEM based on aerial photographs) to 2011 (DEM based on lidar). (down-left) Changes from 1945 to 1960 (DEMs based on aerial photographs). (down-right) Changes from 1960 to 1988 (DEMs based on aerial photographs).

Lidar



Dates of survey: Summers 2010 (>1300 m a.s.l.) & 2011 (<1300 m a.s.l.) & 2012 (sandur)
Laser scanner: Optech ALTM 3100
Wavelength: 1064 nm
Laser pulse rate: 33 kHz
Plane height: ~2500 m.a.s.l.
DEM resolution: 1-2 m/pixel
(Jóhannesson et al., 2013)

References

Jóhannesson, T., Björnsson, H., Magnússon, E., Guðmundsson, S., Pálsson, F., Sigurðsson, O., Thorsteinsson, T., and Berthier, E.: Ice-volume changes, bias estimation of mass-balance measurements and changes in subglacial lakes derived by lidar mapping of the surface Icelandic glaciers, *Ann. Glaciol.*, 54, 63–74, doi:10.3189/2013AoG63A422, 2013.

Acknowledgements

The National Land Survey of Iceland acquired and scanned the aerial photographs. This study used the recent lidar mapping of the glaciers in Iceland that was funded by the Icelandic Research Fund, the Landsvirkjun Research Fund, the Icelandic Road Administration, the Reykjavik Energy Environmental and Energy Research Fund, the Klima- og Luftgrúppun (KoL) research fund of the Nordic Council of Ministers, the Vatnajökull National Park, the organization Friends of Vatnajökull, the National Land Survey of Iceland and the Icelandic Meteorological Office