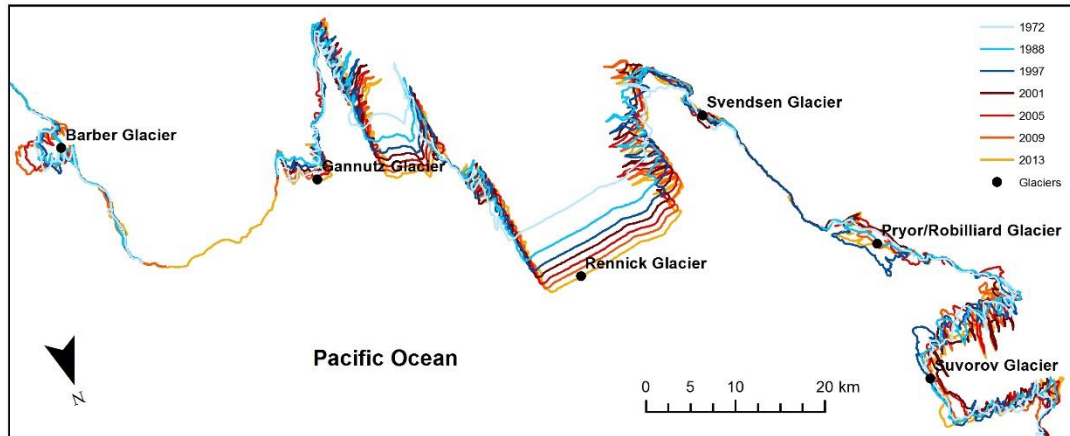
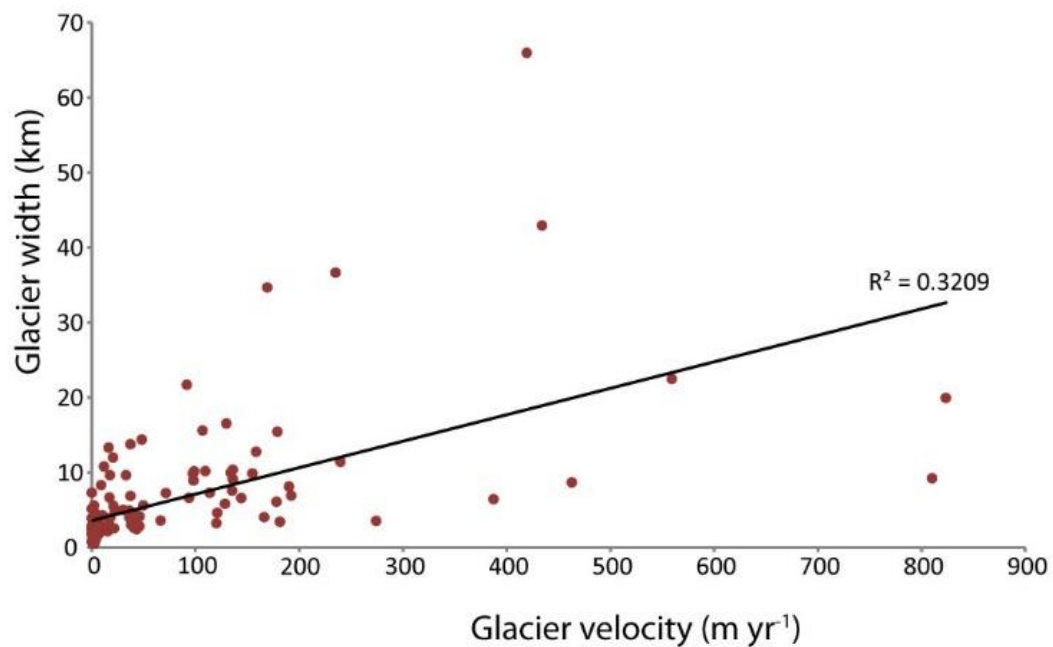


## Supplemental Information

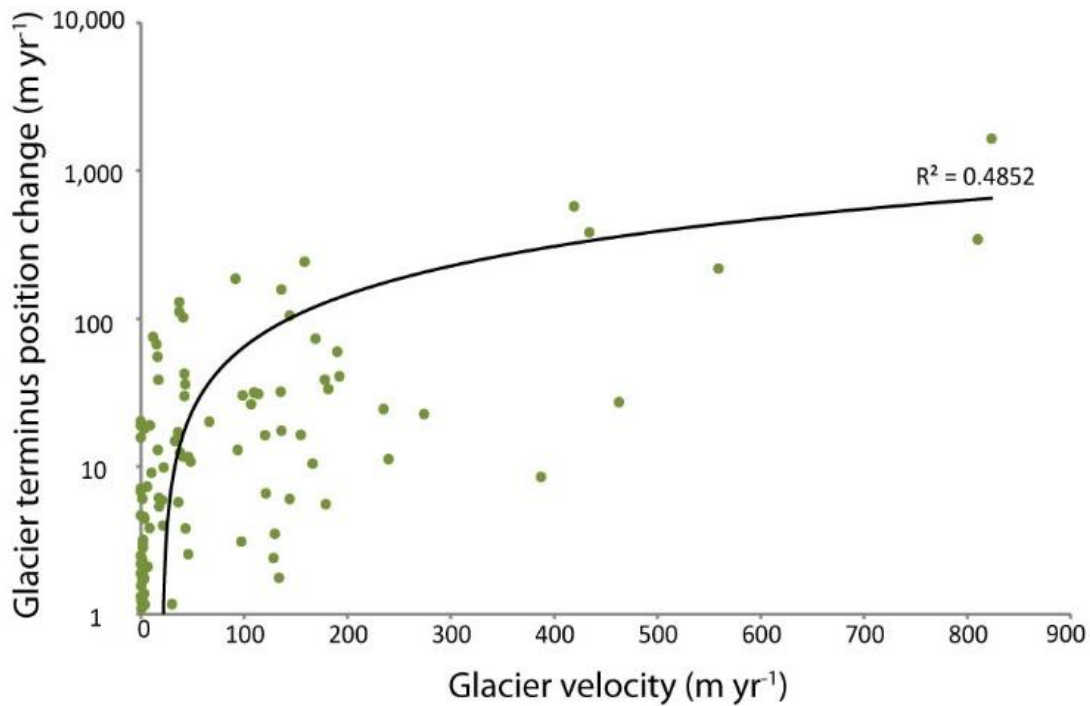
Supplementary Figure 1: A sample of neighbouring glaciers in Oates Land with the digitised positions from each year revealing asynchronous terminus position change behaviour of adjacent glaciers.



Supplementary Figure 2: Linear regression showing relationship between glacier width and glacier velocity (extracted from Rignot *et al.* (2011a)) for glaciers in the study area and the R-squared value of the relationship.



Supplementary Figure 3: Linear regression showing relationship between the long-term (1972 to 2013) glacier terminus position change (on a logarithmic scale) and glacier velocity (extracted from Rignot *et al.* (2011a)) for glaciers in the study area and the R-squared value of the relationship. The y-axis represents glacier position change rate in advance or retreat.



Supplementary Table I: Error per year ( $\text{m yr}^{-1}$ ) for each epoch, including the 1972-2013 long-term epoch and the 2001-2006, 2006-2009 epochs for Victoria Land glaciers.

Epoch	Epoch duration (years)	Satellite imagery	Coregistration error (m)	Error per year ( $\text{m yr}^{-1}$ )
<b>1972-1988</b>	16	Landsat MSS	65	4.1
<b>1988-1997</b>	9	ERS SAR	139	15.4
<b>1997-2001</b>	4	ERS SAR	139	34.8
<b>2001-2005</b>	4	Envisat ASAR	215	53.8
<b>2005-2009</b>	4	Envisat ASAR	215	53.8
<b>2009-2013</b>	4	Landsat ETM	37	9.3
<b>1972-2013</b>	41	Landsat MSS	65	1.6
<b>2001-2006</b>	5	Landsat ETM	37	7.4
<b>2006-2009</b>	3	Landsat ETM	37	12.3