

# [Corrigendum: high resolution mapping of ice mass loss in the gulf of alaska from ...](https://assignbuster.com/corrigendum-high-resolution-mapping-of-ice-mass-loss-in-the-gulf-of-alaska-from-constrained-forward-modeling-of-grace-data/)

[](https://assignbuster.com/)[Health & Medicine](https://assignbuster.com/essay-subjects/health-n-medicine/)

A Corrigendum on   
[High Resolution Mapping of Ice Mass Loss in the Gulf of Alaska From Constrained Forward Modeling of GRACE Data](https://doi.org/10.3389/feart.2019.00360)

*by Doumbia, C., Castellazzi, P., Rousseau, A. N, and Amaya, M. (2019). Front. Earth Sci. 7: 360. doi:* [*10. 3389/feart. 2019. 00360*](https://doi.org/10.3389/feart.2019.00360)

In the original article there was an error in [the glacier mass loss rate from [Larsen et al. (2007)](#B5) and [Berthier et al. (2010)](#B1) and also in the method used by [Gardner et al. (2013)](#B3) ]. The values in the article of [Larsen et al. (2007)](#B5) and [Berthier et al. (2010)](#B1) are in km 3 /year water equivalent (w. e.). We converted them into Gt/year but that was not necessary because km 3 /year (w. e.) is equivalent to Gt/yr. Also, [Gardner et al. (2013)](#B3) did not use spaceborne altimetry data (e. g., ICESat) over the entire Gulf Of Alaska (GOA) area to estimate glacier mass loss but they used several published GRACE estimates.

A correction has been made to the Introduction, paragraph 2:

“ Numerous studies focused on estimating the ice mass loss over specific continents, regions, or Mountain ranges. For example, [Larsen et al. (2007)](#B5) investigated glacier changes in southeast Alaska and northwest British Columbia over the period 1948–2000 and 1982/1987–2000, respectively. By combining the results from these periods, they estimated an average ice mass loss rate of 16. 7 ± 4. 4 Gt/year. In the Canadian Rocky Mountains, [Castellazzi et al. (2019)](#B2) estimated a total of 43 Gt of glacial mass loss over the period 2002–2015. Over the entire Gulf Of Alaska (GOA) area, [Gardner et al. (2013)](#B3) found 50 ± 17 Gt/year of glacier mass loss based on several published GRACE estimates over the period 2003–2009. [Berthier et al. (2010)](#B1) obtained 41. 63 ± 8. 6 Gt/year of glacier ice loss from Digital Elevation Models (DEM) for the period 1962–2006. [Larsen et al. (2015)](#B4) used airborne altimetry to estimate glacier mass loss rate over the period 1994–2013 and found 75 ± 11 Gt/year.”

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

## References

Berthier, E., Schiefer, E., Clarke, G. K. C., Menounos, B., and Rémy, F. (2010). Contribution of Alaskan glaciers to sea-level rise derived from satellite imagery. *Nat. Geosci.* 3, 92–95. doi: 10. 1038/ngeo737

[CrossRef Full Text](https://doi.org/10.1038/ngeo737) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=E.+Berthier&author=E.+Schiefer&author=G.+K.+C.+Clarke&author=B.+Menounos&author=F.+Rémy+&publication_year=2010&title=Contribution+of+Alaskan+glaciers+to+sea-level+rise+derived+from+satellite+imagery&journal=Nat.+Geosci.&volume=3&pages=92-95)

Castellazzi, P., Burgess, D., Rivera, A., Huang, J., Longuevergne, L., and Demuth, M. N. (2019). Glacial melt and potential impacts on water resources in the Canadian Rocky Mountains. *Water Resour. Res.* 55. doi: 10. 1029/2018WR024295

[CrossRef Full Text](https://doi.org/10.1029/2018WR024295) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=P.+Castellazzi&author=D.+Burgess&author=A.+Rivera&author=J.+Huang&author=L.+Longuevergne&author=M.+N.+Demuth+&publication_year=2019&title=Glacial+melt+and+potential+impacts+on+water+resources+in+the+Canadian+Rocky+Mountains&journal=Water+Resour.+Res)

Gardner, A. S., Moholdt, G., Cogley, J. G., Wouters, B., Arendt, A. A., Wahr, J., et al. (2013). A reconciled estimate of glacier contributions to sea level rise: 2003 to 2009. *Science* 340, 6134–6152. doi: 10. 1126/science. 1234532

[PubMed Abstract](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=23687045) | [CrossRef Full Text](https://doi.org/10.1126/science.1234532)

Larsen, C. F., Burgess, A., Arendt, A., O'Neel, S., Johnson, A. J., and Kienholz, C. (2015). Surface melt dominates Alaskaglacier mass balance. *Geophys. Res. Lett.* 42, 5902–5908. doi: 10. 1002/2015GL064349

[CrossRef Full Text](https://doi.org/10.1002/2015GL064349) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=C.+F.+Larsen&author=A.+Burgess&author=A.+Arendt&author=S.+O'Neel&author=A.+J.+Johnson&author=C.+Kienholz+&publication_year=2015&title=Surface+melt+dominates+Alaskaglacier+mass+balance&journal=Geophys.+Res.+Lett.&volume=42&pages=5902-5908)

Larsen, C. F., Motyka, R. J., Arendt, A. A., Echelmeyer, K. A., and Geissler, P. E. (2007). Glacier changes in southeast Alaska and northwest British Columbia and contribution to sea level rise. *J. Geophys. Res.* 112: F01007. doi: 10. 1029/2006JF000586

[CrossRef Full Text](https://doi.org/10.1029/2006JF000586) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=C.+F.+Larsen&author=R.+J.+Motyka&author=A.+A.+Arendt&author=K.+A.+Echelmeyer&author=P.+E.+Geissler+&publication_year=2007&title=Glacier+changes+in+southeast+Alaska+and+northwest+British+Columbia+and+contribution+to+sea+level+rise&journal=J.+Geophys.+Res.&volume=112&pages=F01007)