

## ATTACHMENT 2

Antarctic Glaciers.org. An introduction to Glacier Mass Balance.

<https://www.antarcticglaciers.org/glacier-processes/mass-balance/introduction-glacier-mass-balance/>, last updated Dec. 30, 2020.

Bosson, J.B., Huss, M. and Osipova, E. 2019. Disappearing world heritage glaciers as a keystone of nature conservation in a changing climate. *Earth's Future*, 7(4), 469-479.

Brown, J., Harper, J. and Humphrey, N., 2010. Cirque glacier sensitivity to 21st century warming: Sperry Glacier, Rocky Mountains, USA. *Global and Planetary Change*, 74(2), 91-98.

Clark, A.M., Fagre, D.B., Peitzsch, E.H., Reardon, B.A. and Harper, J.T. 2017. Glaciological measurements and mass balances from Sperry Glacier, Montana, USA, years 2005–2015. *Earth System Science Data*, 9(1), 47-61.

Clark, A.M., Harper, J.T. and Fagre, D.B. 2015. Glacier-derived August runoff in northwest Montana. *Arctic, Antarctic, and Alpine Research*, 47(1), 1-16.

Cross, W.F., LaFave, J., Leone, A., Lonsdale, W., Royem, A., Patton, T. and McGinnis, S. 2017. 03. Water and Climate Change in Montana. In 2017 Montana Climate Assessment. Montana State University and University of Montana, Montana Institute on Ecosystems.

Dalton, A.S., Margold, M., Stokes, C.R., Tarasov, L., Dyke, A.S., Adams, R.S., Allard, S., Arends, H.E., Atkinson, N., Attig, J.W. and Barnett, P.J. 2020. An updated radiocarbon-based ice margin chronology for the last deglaciation of the North American Ice Sheet Complex. *Quaternary Science Reviews*, 234, 106223.

Fagre, D.B., McKeon, L.A., Dick, K.A. and Fountain, A.G. 2017. Glacier margin time series (1966, 1998, 2005, 2015) of the named glaciers of Glacier National Park, MT, USA. US Geol. Surv. data release.

Florentine, C. 2019. Glacier Retreat in Glacier National Park, Montana. U.S. Geological Survey Fact Sheet 2019-3068.

Florentine, C., Harper, J. and Fagre, D. 2020. Parsing complex terrain controls on mountain glacier response to climate forcing. *Global and Planetary Change*, 191, 103209.

Florentine, C., Harper, J., Fagre, D., Moore, J. and Peitzsch, E. 2018. Local topography increasingly influences the mass balance of a retreating cirque glacier. *The Cryosphere*, 12(6), 2109-2122.

Giersch, J.J., Hotaling, S., Kovach, R.P., Jones, L.A. and Muhlfeld, C.C. 2017. Climate-induced glacier and snow loss imperils alpine stream insects. *Global change biology*, 23(7), 2577-2589.

Hall, M.H. and Fagre, D.B. 2003. Modeled climate-induced glacier change in Glacier National Park, 1850–2100. *BioScience*, 53(2), 131-140.

Hansen, J., Sato, M., Kharecha, P., Von Schuckmann, K., Beerling, D.J., Cao, J., Marcott, S., Masson-Delmotte, V., Prather, M.J., Rohling, E.J. and Shakun, J. 2017. Young people's burden: requirement of negative CO<sub>2</sub> emissions. *Earth System Dynamics*, 8(3), 577-616.

Hock, R., G. Rasul, C. Adler, B. Cáceres, S. Gruber, Y. Hirabayashi, M. Jackson, A. Kääb, S. Kang, S. Kutuzov, Al. Milner, U. Molau, S. Morin, B. Orlove, and H. Steltzer. 2019. High Mountain Areas, in IPCC Special Report on the Ocean and Cryosphere in a Change Climate.

Huss, M. and Hock, R. 2018. Global-scale hydrological response to future glacier mass loss. *Nature Climate Change*, 8(2), 135-140.

Huss, M., Bookhagen, B., Huggel, C., Jacobsen, D., Bradley, R.S., Clague, J.J., Vuille, M., Buytaert, W., Cayan, D.R., Greenwood, G. and Mark, B.G. 2017. Toward mountains without permanent snow and ice. *Earth's Future*, 5(5), 418-435.

Immerzeel, W.W., Lutz, A.F., Andrade, M., Bahl, A., Biemans, H., Bolch, T., Hyde, S., Brumby, S., Davies, B.J., Elmore, A.C. and Emmer, A. 2020. Importance and vulnerability of the world's water towers. *Nature*, 577(7790), 364-369.

Isaak, D.J., Muhlfeld, C.C., Todd, A.S., Al-Chokhachy, R., Roberts, J., Kershner, J.L., Fausch, K.D. and Hostetler, S.W. 2012. The past as prelude to the future for understanding 21st-century climate effects on Rocky Mountain trout. *Fisheries*, 37(12), 542-556.

Key, C. H., D. B. Fagre, and R. K. Menicke. 2002. Glacier retreat in Glacier National Park, Montana. Pages J365-J381 In R. S. Jr. Williams and J. G. Ferrigno, editors. *Satellite Image Atlas of Glaciers of the World, Glaciers of North America - Glaciers of the Western United States*. U.S. Geological Survey Professional Paper 1386-J. United States Government Printing Office, Washington D. C., USA.

MacGregor, K.R., Riihimaki, C.A., Myrbo, A., Shapley, M.D. and Jankowski, K. 2011. Geomorphic and climatic change over the past 12,900 yr at Swiftcurrent Lake, Glacier National Park, Montana, USA. *Quaternary Research*, 75(1), 80-90.

MacLeod, D.M., Osborn, G. and Spooner, I. 2006. A record of post-glacial moraine deposition and tephra stratigraphy from Otokomi Lake, Rose Basin, Glacier National Park, Montana. *Canadian Journal of Earth Sciences*, 43(4), 447-460.

Martin-Mikle, C.J. and Fagre, D.B. 2019. Glacier recession since the Little ice Age: Implications for water storage in a Rocky Mountain landscape. *Arctic, Antarctic, and Alpine Research*, 51(1), 280-289.

Marzeion, B., Cogley, J.G., Richter, K. and Parkes, D. 2014. Attribution of global glacier mass loss to anthropogenic and natural causes. *Science*, 345(6199), 919-921.

McCabe, G.J. and Fountain, A.G. 2013. Glacier variability in the conterminous United States during the twentieth century. *Climatic change*, 116(3), 565-577.

Miller, J.B., Frisbee, M.D., Hamilton, T.L. and Murugapiran, S.K. 2021. Recharge from glacial meltwater is critical for alpine springs and their microbiomes. *Environmental Research Letters*, 16(6), 064012.

Munroe, J.S., Crocker, T.A., Giesche, A.M., Rahlson, L.E., Duran, L.T., Bigl, M.F. and Laabs, B.J. 2012. A lacustrine-based Neoglacial record for Glacier National Park, Montana, USA. *Quaternary Science Reviews*, 53, 39-54.

NOAA National Centers for Environmental information. 2022a. Climate at a Glance: County Time Series, Flathead County, 1895-2021. <https://www.ncdc.noaa.gov/cag/county/time-series/MT-029/tavg/3/8/1895-2021>

NOAA National Centers for Environmental information. 2022b. Climate at a Glance: County Time Series, Glacier County, 1895-2021. <https://www.ncdc.noaa.gov/cag/county/time-series/MT-035/tavg/3/8/1895-2021>

O’Neil, S., McNeil, C., Sass, L.C., Florentine, C., Baker, E.H., Peitzsch, E., McGrath, D., Fountain, A.G. and Fagre, D. 2019. Reanalysis of the US Geological Survey Benchmark Glaciers: long-term insight into climate forcing of glacier mass balance. *Journal of Glaciology*, 65(253), 850-866.

Oerlemans, J. 1994. Quantifying global warming from the retreat of glaciers. *Science*, 264(5156), 243-245.

Oerlemans, J. 2000. Holocene glacier fluctuations: is the current rate of retreat exceptional?. *Annals of Glaciology*, 31, 39-44.

Oerlemans, J. 2005. Extracting a climate signal from 169 glacier records. *science*, 308(5722), 675-677.

Pederson, G.T., Fagre, D.B., Gray, S.T. and Graumlich, L.J. 2004. Decadal-scale climate drivers for glacial dynamics in Glacier National Park, Montana, USA. *Geophysical Research Letters*, 31(12).

Mountain Research Initiative EDW Working Group. 2015. Elevation-dependent warming in mountain regions of the world. *Nature climate change*, 5(5), 424-430.

Pepin, N.C., Arnone, E., Gobiet, A., Haslinger, K., Kotlarski, S., Notarnicola, C., Palazzi, E., Seibert, P., Serafin, S., Schöner, W. and Terzaghi, S. 2022. Climate changes and their elevational patterns in the mountains of the world. *Reviews of geophysics*, 60(1), e2020RG000730.

Roe, G.H., Baker, M.B. and Herla, F. 2017. Centennial glacier retreat as categorical evidence of regional climate change. *Nature Geoscience*, 10(2), 95-99.

Roe, G.H., Christian, J.E. and Marzeion, B. 2021. On the attribution of industrial-era glacier mass loss to anthropogenic climate change. *The Cryosphere*, 15(4), 1889-1905.

USGS. 2022. Glacier-Wide Mass Balance and Compiled Data Inputs: USGS Benchmark Glaciers, U.S. Geological Survey data release. <https://www.usgs.gov/data/glacier-wide-mass-balance-and-compiled-data-inputs-usgs-benchmark-glaciers>

USGS, Agassiz Glacier. Glacier National Park, Montana. Repeat photography 1913 – 2007. <https://www.sciencebase.gov/catalog/item/5b6a004be4b006a11f7772d4>.

USGS, Grinnell Glacier. Glacier National Park, Montana. Repeat photography 1910 - 2013. <https://www.sciencebase.gov/catalog/item/5f2c764782ceae4cb3c2d0b1>.

USGS. Jackson Glacier. Glacier National Park, Montana. Repeat photography 1912 - 2009. <https://www.sciencebase.gov/catalog/item/5f3acf4382ce8df5b6c40fe2>

USGS. Sperry Glacier. Glacier National Park, Montana. Repeat photography 1908 - 2015. <https://www.sciencebase.gov/catalog/item/5f495dc982ce4c3d122bb116>