

IMPACTS OF CLIMATE CHANGE AT CURRENT DEGREE OF WARMING (1°C)

EVENT	IMPACT	REFERENCE
1) Himalayan glacier	Melting rate doubled since 2000 (now 43 cm/year), increasing uncertainties and irregular water supplies for 1 billion people in South Asia	Maurer, J. M., Schaefer, J. M., Rupper, S., & Corley, A. (2019). Acceleration of ice loss across the Himalayas over the past 40 years. <i>Science advances</i> , 5(6), https://doi.org/DOI: 10.1126/sciadv.aav7266
2) Oceans	have absorbed 30% of the anthropogenic carbon dioxide resulting in ocean acidification	O. Hoegh-Guldberg, D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K. Ebi, F. Engelbrecht, J. Guiot, Y. Hijikata, S. Mehrotra, A. Payne, S. I. Seneviratne, A. Thomas, R. Warren, G. Zhou, 2018, Impacts of 1.5°C global warming on natural and human systems. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty[V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla,A. Pirani, W. Moufouma-Okia, C.Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield(eds.)].In Press.
3) Heavy precipitation	Increase in frequency and intensity	O. Hoegh-Guldberg, D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K. Ebi, F. Engelbrecht, J. Guiot, Y. Hijikata, S. Mehrotra, A. Payne, S. I. Seneviratne, A. Thomas, R. Warren, G. Zhou, 2018, Impacts of 1.5°C global warming on natural and human systems. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty[V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla,A. Pirani, W. Moufouma-Okia, C.Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield(eds.)].In Press.
4) Human migration due to temperature increase	Migration from 163 agriculture dependent countries	Cai, R., Feng, S., Oppenheimer, M. & Pytlikova, M., 2016. Climate variability and international migration: The importance of the agricultural linkage. <i>Journal of Environmental Economics and Management</i> , 79, pp.135–151. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0095069616300882 .
5) Atmospheric CO2	Has risen by 45% since preindustrial times	https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/climate/cop/our_changing_world-global_indicators_final_v1.0.pdf
Sea ice in the Arctic	Summer minimum arctic sea ice extent decreased by 13.3% per decade from 1979 to 2016	https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/climate/cop/our_changing_world-global_indicators_final_v1.0.pdf
Health issues (heatwaves and extreme events)	22.5 million people are displaced annually by climate or weather-related disasters.	O. Hoegh-Guldberg, D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K. Ebi, F. Engelbrecht, J. Guiot, Y. Hijikata, S. Mehrotra, A. Payne, S. I. Seneviratne, A. Thomas, R. Warren, G. Zhou, 2018, Impacts of 1.5°C global warming on natural and human systems. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty[V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla,A. Pirani, W. Moufouma-Okia, C.Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield(eds.)].In Press.

Global sea level rise	Has risen nearly 7 inches (18cm) over the past 100 years	climatekids.nasa.gov
Heatwaves	Heatwaves like the European heatwave will occur once every 6 years.	Vogel, M. M., Zscheischler, J., Wartenburger, R., Dee, D., & Seneviratne, S. I. Concurrent 2018 hot extremes across Northern Hemisphere due to human-induced climate change. Earth's Future. https://doi.org/10.1029/2019EF001189