

Preface

The Japan Meteorological Agency (JMA) has published annual reports under the title of *Climate Change Monitoring Report* since 1996 to provide up-to-date information on climate change in Japan and around the world based on the outcomes of its observations and its monitoring of the atmosphere and oceans.

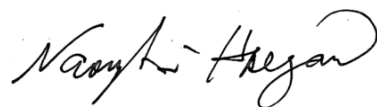
Extreme meteorological phenomena around the world in 2020 included abnormally high temperatures in Siberia and Australia as well as heavy rain in the middle and lower reaches of the Yangtze River in China. Japan experienced particularly significant rainfall and a lack of sunshine, especially in eastern and western parts during the Heavy Rain Event of July 2020. Snowfall in winter (December 2019 – February 2020) was quite low nationwide, and was the lowest since records began on the Sea of Japan side of northern and eastern Japan.

Long-term changes in the incidence of such extreme weather events are associated with global warming. The Meteorological Research Institute conducts research on the effects of climate change on individual phenomena, such as the Heavy Rain Event of July 2017 in Kyushu's Hokubu area, the Heavy Rain Event of July 2018, and Typhoon Hagibis (Typhoon No. 19 of 2019).

As global warming continues, the frequency and scale of extreme events are expected to increase. Urgent response to global warming-related climate change requires national and global efforts as promoted under initiatives including the Paris Agreement (a new international framework implemented in 2020) and the 2018 Climate Change Adaptation Act.

Against this background, JMA released *Climate Change in Japan 2020 – Assessment Report on Observed and Projected Climate Change in the Atmosphere, on Land and in Oceans* – in December 2020 in conjunction with Japan's Ministry of Education, Culture, Sports, Science and Technology. The report presents scientific expertise on climate change in Japan, including differences observed and future projections for the global average temperature changes detailed in the RCP 2.6 and 8.5 scenarios (called the “2°C and 4°C warming scenarios” in the report). The findings of previous *Climate Change Monitoring Reports* are also used here to help highlight observed changes.

This report is intended to raise awareness of climate change, and is expected to be particularly useful to related organizations and stakeholders worldwide in their responses to climate change.



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