

Preface

The Japan Meteorological Agency (JMA) has published annual assessments under the title of *Climate Change Monitoring Report* since 1996 to highlight the outcomes of its activities (including monitoring and analysis of atmospheric, oceanic and global environmental conditions) and provide up-to-date information on climate change in Japan and around the world.

Extreme meteorological phenomena on a scale large enough to affect socio-economic activity have recently occurred worldwide. In 2017, the annual global average surface temperature was the third-highest since 1891 and extremely high temperatures were observed on a global scale. Heavy rains and tropical cyclones also caused widespread damage in southern China, the southeastern USA, Latin America and elsewhere. Japan's northern Kyushu region sustained major damage as a result of heavy rainfall in July, and monthly mean temperatures in August and September at Okinawa/Amani were the highest on record. Significant meandering of the Kuroshio current was also observed for the first time in 12 years, and Japan's Tokai region was severely damaged by high waves and storm surges associated with the intense Typhoon Lan, which made landfall on Shizuoka Prefecture in October. This report provides details of such events in Japan.

The increasing frequency and scale of extreme weather events are considered to stem from global warming, and the trend of exacerbation is expected to continue. To address such issues, the Paris Agreement was implemented in November 2016 as a new international framework for related consideration. In line with Japan's Climate Change Adaptation Act, which was introduced in June 2018, national and local governments are currently strengthening efforts to address climate change-related issues.

This report is intended to provide a scientific basis for better implementation of measures relating to climate change and to raise awareness of global environmental issues.



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