

# Declining Arctic Sea Ice Extent

By Don Sutherland

Earlier this month, Arctic sea ice extent fell to 3.964 million square kilometers (JAXA data set) and 4.153 million square kilometers (NSIDC data set). That was the second lowest figure on record.

With Climate Action Week ending, it is timely to note that the decline in summer Arctic sea ice extent has been ongoing on account of anthropogenic climate change that has been warming the Arctic region at approximately twice the global rate.

The warming has resulted in a general thinning of the Arctic sea ice. The end result is a modest decline in the annual maximum extent and more extensive melting leading to a sharp decline in the annual minimum extent.

## 10-Year Averages (JAXA data set):

Category	1980-89	1990-99	2000-09	2010-19	Change from 1980-89
Maximum (millions km <sup>2</sup> )	15.725	15.203	14.687	14.244	-9.4%
Minimum (millions km <sup>2</sup> )	7.188	6.492	5.273	4.293	-40.3%
Average Percentage Melted	54.3%	57.3%	64.1%	69.8%	+28.6%

NASA's Goddard Space Flight Center produced a short video on this year's low summer Arctic sea ice extent. That video can be found at:

<https://www.youtube.com/watch?v=2XKYdSqf2ss>

Finally, under all climate change scenarios, including the scenario under which warming is limited to 1.5°C over pre-industrial temperature averages, the summer minimum extent is project to decline further. Under the most aggressive warming scenario, ice-free summers could occur about once every three years by the end of this century.