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Authors

Authors 1

Author Name	Crawford, Alex
Type of Name	Personal
Email	alex.crawford@umanitoba.ca
Affiliation	Centre for Earth Observation Science - University of Manitoba
ORCID ID	0000-0003-1561-290X
	ORCID
	http://orcid.org/

Authors 2

Author Name	Stroeve, Julienne
Type of Name	Personal
Email	juliene.stroeve@umanitoba.ca
Affiliation	Centre for Earth Observation Science - University of Manitoba
ORCID ID	0000-0001-7316-8320
	ORCID

	http://orcid.org/

Authors 3

Author Name	Smith, Abigail
Type of Name	Personal
Email	
Affiliation	
ORCID ID	

Authors 4

Author Name	Jahn, Alexandra
Type of Name	Personal
Email	
Affiliation	
ORCID ID	

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Awards

Awards 1

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Related Resources

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Data and Resources

URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/5ebc7aff-4761-4a39-a922-7dd2bc309c31/resource/2df697ab-2611-49de-a071-e3d66a7d0455/download/crawford-arctic-open-water-periods-are-projected-to-lengthen-dramatically-by-2100-2021-communica.pdf
Name	Arctic open-water periods are projected to lengthen dramatically by 2100
Description	The shrinking of Arctic-wide September sea ice extent is often cited as an indicator of modern climate change; however, the timing of seasonal sea ice retreat/advance and the length of the open-water period are often more relevant to stakeholders working at regional and local scales. Here we highlight changes in regional open-water periods at multiple warming thresholds. We show that, in the latest generation of models from the Coupled Model Intercomparison Project (CMIP6), the open-water period lengthens by 63 days on average with 2 °C of global warming above the 1850-1900 average, and by over 90 days in several Arctic seas. Nearly the entire Arctic, including the Transpolar Sea Route, has at least 3 months of open water per year with 3.5 °C warming, and at least 6 months with 5 °C warming. Model bias compared to satellite data suggests that even such dramatic projections may be conservative. In several of the Arctic ocean basins, the period of open water without sea-ice cover will lengthen by more than 90 days under 2 oC of global warming, suggest analyses of the latest (CMIP6) climate model simulations.
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Resource Category	documents

Related Datasets

Title	Arctic Sea Ice Phenology in CMIP6
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/sea-ice-cmip6