

Metadata

| | |
|---|---|
| Dataset Name | Projections and Physical Drivers of Extreme Precipitation in Greenland & Baffin Bay |
| Dataset General Type | Climate model |
| Dataset Type | Dataset |
| Dataset Level | 2 |
| Program Website | |
| Keyword Vocabulary | |
| Keyword Vocabulary URL | |
| Theme | |
| Dataset Status | In Progress |
| Maintenance and Update Frequency | Not planned |
| Dataset Last Revision Date | 2024-04-30 |
| Dataset DOI | |
| Metadata Creation Date | 2024 |
| Publisher | CanWIN |
| Dataset Authors | |
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Project Data Curator Affiliation

Dataset Collection Start Date 1979-01-01

Dataset Collection End Date 2100-01-01

Sample Collection

Sample Collection 1

Sampling Instrument Name

**Standardized
Sampling
Instrument
Name**

**Sample
Collection
Method Name**

Comment

Method Link

**Method
Summary**

**Method
Description
Type** Methods

**Activity
Collection
Type**

**Preferred
citation**

**Analytical
Instrument**

**Analytical
Instrument 1**

**Analytical
Instrument
Name**

**Standardized
Analytical
Instrument
Name**

**Analytical
Instrument
Identifier Id**

**Analytical
Instrument
Title Type** Alternative Title

**Analytical
Instrument
Identifier Type**

**Analytical
Method**

**Analytical
Method 1**

**Analytical
Method Name**

Method Link

**Method
Summary**

Laboratory

Comments

**Variables
Measured**

**License
Name** Creative Commons Attribution 4.0 International

**Licence
Type** Open

**Embargo
Date**

Licence URL <https://spdx.org/licenses>

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Awards

Awards 1

Award Title

Website

Funder Name

**Funder
Identifier Code**

**Funder
Identifier Type**

**Funder
Identifier
Scheme**

Grant Number

Related Resources

Related Resources 1

Related Resource Name

Resource Code

Identifier Type

Relationship To This Dataset

Resource Type Online Resource

Type

Series Name

Publications

Publications 1

Publication Name

Identifier Code

Identifier Type

Relationship to this dataset

Resource Type Online Resource

Publication Type

Spatial regions

greenland

Spatial extent West Bound Longitude

Spatial extent East Bound Longitude

**Spatial
extent South
Bound
Latitude**

**Spatial
extent North
Bound
Latitude**

Data and Resources

URL <https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/d05ffeb0-3f3f-4753-bc79-c7ac0a01b130/download/readme.docx>

Name README

Description Additional metadata for files in this dataset (e.g., variable and unit explanations).

Format DOCX

**Resource
Category** data

URL https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/043937f6-4fa4-4c47-981a-249e81d7a306/download/regional_monthly_total_ex_precip.csv

Name Regional Monthly Total Extreme Precipitation

Description Average monthly accumulations from extreme precipitation days in each subregion. Columns: subregion – name of subregion month – month (1-12) hist – subregion mean monthly accumulation from extreme days in VR-CESM HIST [mm] fut – subregion mean monthly accumulation from extreme days in VR-CESM FUT [mm] era – subregion mean monthly accumulation from extreme days in ERA5 [mm]

Format CSV

**Resource
Category** data

URL https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/1e939c7e-5b09-4c1e-a125-fee3b00e4a5e/download/subregion_mean_ex_thres.csv

Name Subregion Mean Extreme Threshold

Description Average extreme daily precipitation thresholds for each dataset for each subregion. Columns: subregion – name of subregion hist – extreme daily precipitation threshold for VR-CESM HIST [mm] fut – extreme daily precipitation threshold for VR-CESM FUT [mm] era – extreme daily precipitation threshold for ERA5 [mm]

Format CSV

**Resource
Category** data

| | |
|--------------------------|---|
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/3e584b5b-5b04-4656-8c7b-d9189912e0e5/download/baffin_distribution_5mm.csv |
| Name | Baffin Distribution - 5 mm |
| Description | Daily precipitation distribution for Baffin Island in the domain in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/407ac825-5706-4ae3-8fa7-2f5854782dd6/download/devon_distribution_5mm.csv |
| Name | Devon Distribution - 5 mm |
| Description | Daily precipitation distribution for Devon Island in the domain in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/04efa958-9723-4885-a29c-7af019b1807b/download/ellesmere_distribution_5mm.csv |
| Name | Ellesmere Distribution - 5 mm |
| Description | Daily precipitation distribution for Ellesmere Island in the domain in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/128b5d90-06cd-4ba8-8e64-61a4d8b27352/download/ne_distribution_5mm.csv |
| Name | Northeast Greenland Distribution - 5 mm |

| | |
|--------------------------|---|
| Description | Daily precipitation distribution for Northeast Greenland in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/a253793e-976c-4bd7-a20e-6c5996efc9b6/download/no_distribution_5mm.csv |
| Name | North Greenland Distribution - 5 mm |
| Description | Daily precipitation distribution for North Greenland in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/8bedafa3-c610-4d9f-8785-4e59518b96de/download/nw_distribution_5mm.csv |
| Name | Northwest Greenland Distribution - 5 mm |
| Description | Daily precipitation distribution for Northwest Greenland in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/392340a8-3b13-405e-8224-92f47b132bf4/download/cw_distribution_5mm.csv |
| Name | Central West Greenland Distribution - 5 mm |
| Description | Daily precipitation distribution for Central West Greenland in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |

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|--------------------------|--|
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/75349ab4-ee15-4579-89d7-3738096adb05/download/se_distribution_5mm.csv |
| Name | Southeast Greenland Distribution - 5 mm |
| Description | Daily precipitation distribution for Southeast Greenland in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/708a699a-c228-4b41-a7b0-0b0ffb58eef8/download/sw_distribution_5mm.csv |
| Name | Southwest Greenland Distribution - 5 mm |
| Description | Daily precipitation distribution for Southwest Greenland in 5 mm accumulation bins. Columns: bin – upper value of accumulation bin [mm] hist – number of occurrences of that accumulation in VR-CESM HIST (1980-1999) fut – number of occurrences of that accumulation in VR-CESM FUT (2080-2099) era – number of occurrences of that accumulation in ERA5 (1980-1999) Note: 1 occurrence = 1 day in 1 grid cell |
| Format | CSV |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/bd634cf1-2d24-4f60-a947-ba3d5a73148c/download/historical_era5_annual_values.nc |
| Name | Historical Annual Precipitation Values - ERA5 |
| Description | Historical precipitation summary from ERA5. Variables: ann_precip: mean annual precipitation [mm] ex_thres: extreme daily precipitation threshold [mm] ex_precip: mean annual accumulation from extreme precipitation days [mm] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/f91f5e50-8513-4a15-b7ad-4a653080c752/download/historical_cesm2.2_annual_values.nc |
| Name | Historical Annual Precipitation Values - CESM2.2 |
| Description | Historical precipitation summary from CESM2.2. Variables: ann_precip: mean annual precipitation [mm] ex_thres: extreme daily precipitation threshold [mm] |

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|--------------------------|---|
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/aa657756-48a6-47df-93c8-f6f42ecf340b/download/historical_vrcesm_annual_values.nc |
| Name | Historical Annual Precipitation Values - VR-CESM HIST |
| Description | Historical precipitation summary from VR-CESM HIST. Variables: ann_precip: mean annual precipitation [mm] ex_thres: extreme daily precipitation threshold [mm] ex_precip: mean annual accumulation from extreme precipitation days [mm] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/5898698b-51ea-463f-b4e6-e442dd8c151c/download/annual_cyclone_track_density.nc |
| Name | Annual Cyclone Track Density |
| Description | Average annual cyclone track densities for ERA5 and VR-CESM simulations. Variables: hist_trkdens: average annual track density in VR-CESM HIST [Tracks per 40,000 km2] fut_trkdens: average annual track density in VR-CESM FUT [Tracks per 40,000 km2] era_trkdens: average annual track density in ERA5 [Tracks per 40,000 km2] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/ac39363c-22b1-4671-9166-52c0cab80b52/download/annual_ar_days.nc |
| Name | Annual Atmospheric River Days |
| Description | Average annual number of days each grid cell is impacted by an AR for ERA5 and VR-CESM simulations. Variables: hist_ar_days: average annual number of AR days in VR-CESM HIST [days/year] fut_ar_days: average annual number of AR days in VR-CESM FUT [days/year] era_ar_days: average annual number of AR days in ERA5 [days/year] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/7598c824-c749-4140-a9b8-e1990887c7b5/download/annual_ex_day_associations.nc |
| Name | Annual Extreme Precipitation Association with Cyclones and Atmospheric Rivers |

| | |
|--------------------------|---|
| Description | Percent of all annual extreme precipitation days in each grid cell occurring with a cyclone and/or an AR present in the same grid cell for ERA5 and VR-CESM simulations. Variables: hist_ex_cap: percent of all extreme precipitation days in VR-CESM HIST occurring with a cyclone present (i.e., cyclone-associated precipitation (CAP)) [%] hist_ex_ar_cap: percent of all extreme precipitation days in VR-CESM HIST occurring with both a cyclone and an AR present [%] hist_ex_ar: percent of all extreme precipitation days in VR-CESM HIST occurring with an AR present [%] fut_ex_cap: percent of all extreme precipitation days in VR-CESM FUT occurring with a cyclone present (i.e., cyclone-associated precipitation (CAP)) [%] fut_ex_ar_cap: percent of all extreme precipitation days in VR-CESM FUT occurring with both a cyclone and an AR present [%] fut_ex_ar: percent of all extreme precipitation days in VR-CESM FUT occurring with an AR present [%] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/222e5af4-93c6-46a1-a938-5575a0b3d425/download/seasonal_cyclone_track_density_jfm.nc |
| Name | Winter (JFM) Cyclone Track Density |
| Description | Average seasonal cyclone track densities for JFM (winter) for ERA5 and VR-CESM simulations. Variables: hist_trkdens: average seasonal track density in VR-CESM HIST [Tracks per 40,000 km2] fut_trkdens: average seasonal track density in VR-CESM FUT [Tracks per 40,000 km2] era_trkdens: average seasonal track density in ERA5 [Tracks per 40,000 km2] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/e2fcd9a2-04ab-4ebb-9861-d6246e2ea132/download/seasonal_cyclone_track_density_jas.nc |
| Name | Summer (JAS) Cyclone Track Density |
| Description | Average seasonal cyclone track densities for JAS (summer) for ERA5 and VR-CESM simulations. Variables: hist_trkdens: average seasonal track density in VR-CESM HIST [Tracks per 40,000 km2] fut_trkdens: average seasonal track density in VR-CESM FUT [Tracks per 40,000 km2] era_trkdens: average seasonal track density in ERA5 [Tracks per 40,000 km2] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/9431a6d8-785c-4c33-a70e-00f76e9c477c/download/seasonal_ar_days_jfm.nc |
| Name | Winter (JFM) Atmospheric River Days |

| | |
|--------------------------|--|
| Description | Average seasonal number of days each grid cell is impacted by an AR for JFM (winter) for ERA5 and VR-CESM simulations. Variables: hist_ar_days: average seasonal number of AR days in VR-CESM HIST [days/year] fut_ar_days: average seasonal number of AR days in VR-CESM FUT [days/year] era_ar_days: average seasonal number of AR days in ERA5 [days/year] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/bbd39a4a-5697-4092-82b8-28497670c294/download/seasonal_ar_days_jas.nc |
| Name | Summer (JAS) Atmospheric River Days |
| Description | Average seasonal number of days each grid cell is impacted by an AR for JAS (summer) for ERA5 and VR-CESM simulations. Variables: hist_ar_days: average seasonal number of AR days in VR-CESM HIST [days/year] fut_ar_days: average seasonal number of AR days in VR-CESM FUT [days/year] era_ar_days: average seasonal number of AR days in ERA5 [days/year] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/ac927af2-7387-4265-8ef1-6cf10c9860b3/download/seasonal_ex_day_associations_jfm.nc |
| Name | Winter (JFM) Extreme Precipitation Association with Cyclones and Atmospheric Rivers |
| Description | Percent of all extreme precipitation days in winter (JFM) in each grid cell occurring with a cyclone and/or an AR present in the same grid cell for ERA5 and VR-CESM simulations. Variables: hist_ex_cap: percent of all seasonal extreme precipitation days in VR-CESM HIST occurring with a cyclone present (i.e., cyclone-associated precipitation (CAP)) [%] hist_ex_ar_cap: percent of all seasonal extreme precipitation days in VR-CESM HIST occurring with both a cyclone and an AR present [%] hist_ex_ar: percent of all seasonal extreme precipitation days in VR-CESM HIST occurring with an AR present [%] fut_ex_cap: percent of all seasonal extreme precipitation days in VR-CESM FUT occurring with a cyclone present (i.e., cyclone-associated precipitation (CAP)) [%] fut_ex_ar_cap: percent of all seasonal extreme precipitation days in VR-CESM FUT occurring with both a cyclone and an AR present [%] fut_ex_ar: percent of all seasonal extreme precipitation days in VR-CESM FUT occurring with an AR present [%] |
| Format | NetCDF |
| Resource Category | data |
| URL | https://canwin-datahub.ad.umanitoba.ca/data/dataset/e31ea507-a9b1-4d22-a685-a55e696fd249/resource/5ca63370-e37a-4f88-b441-098fd327d7ac/download/seasonal_ex_day_associations_jas.nc |
| Name | Summer (JAS) Extreme Precipitation Association with Cyclones and Atmospheric Rivers |

Description

Percent of all extreme precipitation days in summer (JAS) in each grid cell occurring with a cyclone and/or an AR present in the same grid cell for ERA5 and VR-CESM simulations. Variables: hist_ex_cap: percent of all seasonal extreme precipitation days in VR-CESM HIST occurring with a cyclone present (i.e., cyclone-associated precipitation (CAP)) [%] hist_ex_ar_cap: percent of all seasonal extreme precipitation days in VR-CESM HIST occurring with both a cyclone and an AR present [%] hist_ex_ar: percent of all seasonal extreme precipitation days in VR-CESM HIST occurring with an AR present [%] fut_ex_cap: percent of all seasonal extreme precipitation days in VR-CESM FUT occurring with a cyclone present (i.e., cyclone-associated precipitation (CAP)) [%] fut_ex_ar_cap: percent of all seasonal extreme precipitation days in VR-CESM FUT occurring with both a cyclone and an AR present [%] fut_ex_ar: percent of all seasonal extreme precipitation days in VR-CESM FUT occurring with an AR present [%]

Format

NetCDF

Resource Category

data