

Metadata

Dataset Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA-5
Dataset General Type	cyclone tracks
Dataset Type	Dataset
Dataset Level	1.1
Program Website	
Keyword Vocabulary	Polar Data Catalogue
Keyword Vocabulary URL	https://www.polardata.ca/pdcinput/public/keywordlibrary
Theme	
Title	Atmosphere
URL	https://canwin-datahub.ad.umanitoba.ca/data/en/group/modelling
Title	Cryosphere
URL	https://canwin-datahub.ad.umanitoba.ca/data/en/group/cryosphere
Dataset Status	Complete
Maintenance and Update Frequency	As needed
Dataset Last Revision Date	2020-10-13
Dataset DOI	10.34992/ebnw-s681
Metadata Creation Date	2024
Publisher	CanWIN
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Dataset Collection Start Date	1979-01-01
Dataset Collection End Date	2020-10-13
Sample Collection	
Activity Collection Type	
Preferred citation	Copernicus Climate Change Service (C3S). (2017). ERA5: Fifth generation of ECMWF atmospheric reanalyses of the global climate. Copernicus Climate Change Service Climate Data Store (CDS). https://cds.climate.copernicus.eu/cdsapp#!/home
Analytical Instrument	
Analytical Method	
License Name	Creative Commons Attribution 4.0 International
Licence Type	Open
Embargo	

Date	
Licence URL	https://spdx.org/licenses
Terms of Access	CanWIN datasets are licensed individually, however most are licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0) Public License. Details for the licence applied can be found using the Licence URL link provided with each dataset. By using data and information provided on this site you accept the terms and conditions of the License. Unless otherwise specified, the license grants the rights to the public to use and share the data and results derived therefrom as long as the proper acknowledgment is given to the data licensor (citation), that any alteration to the data is clearly indicated, and that a link to the original data and the license is made available.
Terms of Use	By accessing this data you agree to [CanWIN's Terms of Use](https://dev.uni-manitoba.links.com.au/data/publication/canwin-data-statement/resource/5b942a87-ef4e-466e-8319-f588844e89c0).
Awards	
Related Resources	
Related Resources 1	
Related Resource Name	Mean Pressure at Sea-level from ERA-5
Resource Code	https://cds.climate.copernicus.eu/cdsapp#!/home
Identifier Type	URL
Relationship To This Dataset	IsRequiredBy
Resource Type	Online Resource
Type	Model
Series Name	
Related Resources 2	
Related Resource Name	ETOP01 Ice Surface
Resource Code	10.7289/V5C8276M
Identifier Type	DOI
Relationship To This Dataset	IsReferencedBy
Resource Type	Online Resource
Type	Dataset
Series Name	
Related Resources 3	
Related Resource Name	CEOS/NSIDC Cyclone Detection and Tracking Algorithm

Resource Code	10.5281/zenodo.4356161
Identifier Type	DOI
Relationship To This Dataset	IsRequiredBy
Resource Type	Online Resource
Type	Software
Series Name	

Publications

Publications 1

Publication Name	Does the summer Arctic Frontal Zone influence Arctic Ocean cyclone activity?
Identifier Code	https://doi.org/10.1175/JCLI-D-15-0755.1
Identifier Type	DOI
Relationship to this dataset	IsSupplementedBy
Resource Type	Online Resource
Publication Type	JournalArticle

Publications 2

Publication Name	Projected Changes in the Arctic Frontal Zone and Summer Arctic Cyclone Activity in the CESM Large Ensemble
Identifier Code	https://doi.org/10.1175/JCLI-D-17-0296.1
Identifier Type	DOI
Relationship to this dataset	IsSupplementedBy
Resource Type	Online Resource
Publication Type	JournalArticle

Publications 3

Publication Name	Synoptic Climatology of Rain-on-Snow Events in Alaska
Identifier Code	https://doi.org/10.1175/MWR-D-19-0311.1
Identifier Type	DOI
Relationship to this dataset	IsSupplementedBy
Resource Type	Online Resource
Publication Type	JournalArticle

Publications 4

Publication Name	Estimating Southern Ocean Storm Positions With Seismic Observations
Identifier Code	https://doi.org/10.1029/2019JC015898

Identifier Type

DOI

Relationship to this dataset

IsSupplementedBy

Resource Type

Online Resource

Publication Type

JournalArticle

Publications 5

Publication Name

Sea ice loss and Arctic cyclone activity from 1979 to 2014

Identifier Code

<https://doi.org/10.1175/JCLI-D-16-0542.1>

Identifier Type

DOI

Relationship to this dataset

IsSupplementedBy

Resource Type

Online Resource

Publication Type

JournalArticle

Publications 6

Publication Name

Impacts of synoptic-scale cyclones on Arctic sea-ice concentration: a systematic analysis

Identifier Code

<https://doi.org/10.1017/aog.2020.23>

Identifier Type

DOI

Relationship to this dataset

IsSupplementedBy

Resource Type

Online Resource

Publication Type

JournalArticle

Publications 7

Publication Name

Sensitivity of Northern Hemisphere Cyclone Detection and Tracking Results to Fine Spatial and Temporal Resolution Using ERA5

Identifier Code

<https://journals.ametsoc.org/view/journals/mwre/149/8/MWR-D-20-0417.1.xml>

Identifier Type

URL

Relationship to this dataset

IsCitedBy

Resource Type

Online Resource

Publication Type

JournalArticle

Publications 8

Publication Name

The Influence of the Arctic Frontal Zone on Summer Cyclone Activity Today and in the Future (Doctoral Dissertation)

Identifier Code

https://scholar.colorado.edu/concern/graduate_thesis_or_dissertations/6395w720f

Identifier Type

URL

Relationship to this dataset

IsContinuedBy

Resource Type

Online Resource

Publication Type	Dissertation
Spatial regions	northern-hemisphere
Spatial extent West Bound Longitude	-180.0
Spatial extent East Bound Longitude	180.0
Spatial extent South Bound Latitude	0.0
Spatial extent North Bound Latitude	90.0

Data and Resources

URL	https://zenodo.org/record/5553339#.YZ1WWL3MJhG
Name	CEOS/NSIDC Extratropical Cyclone Tracking (CNECT) Algorithm
Description	This algorithm has two steps: 1) detection of cyclone centers and areas and 2) tracking of those features. Center detection is based on local minima in sea-level pressure (within a 200 km radius) that have a pressure gradient of at least 7.5 hPa/1000 km. The area of storms and presence of single- and multi-center cyclones are determined using last-closed isobars. Tracking is based on the nearest neighbor to a predicted cyclone propagation location. Cyclone size, intensity, propagation, and interactions (e.g., splitting and merging with other storms) are tabulated at each observation time.
Format	
Resource Category	scripts

URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/69811381-b58c-4621-b73d-baf1758706f0/download/supplemental-metadata.pdf
Name	Supplemental Metadata
Description	Additional metadata, which includes variable headers, units, and descriptions, as well as an overview of the script applied.
Format	PDF
Resource Category	documents

URL	https://canwinerddap.ad.umanitoba.ca/erddap/files/Alex_Crawford_NH_cyclone_data_3e70_09c6_75db/
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA-5
Description	Individual cyclone tracks for the Northern Hemisphere. Detection and tracking are conducted using version 13.2 of the Lagrangian cyclone detection and tracking algorithm described by Crawford et al. (2021). Click on any file to download.
Format	ZIP
Resource Category	data

Related Publications

Title	The Response of extratropical cyclone propagation in the Northern Hemisphere to global warming
URL	https://canwin-datahub.ad.umanitoba.ca/data/en/publication/the-response-of-extratropical-cyclone-propagation-in-the-northern-hemisphere-to-global-warming