

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	
Keyword Vocabulary URL	
Theme	
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	2023
Publisher	CanWIN
Dataset Authors	
Dataset Authors 1	
Name	Crawford, Alex D
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/>

Contributors

Contributors 1

Name Barber, David
Role Supervisor
Email Barber.David@umanitoba.ca
Affiliation Centre for Earth Observation Science - University of Manitoba
ORCID ID 0000-0001-9466-3291
ORCID
<http://orcid.org/>

Contributors 2

Name Dahl-Jensen, Dorthe
Role Supervisor
Email
Affiliation Centre for Earth Observation Science - University of Manitoba
ORCID ID 0000-0002-1474-1948
ORCID
<http://orcid.org/>

Contributors 3

Name Stroeve, Julienne C
Role Supervisor
Email
Affiliation Centre for Earth Observation Science - University of Manitoba
ORCID ID 0000-0001-7316-8320
ORCID
<http://orcid.org/>

Contributors 4

Name Serreze, Mark C
Role ProjectMember
Email
Affiliation National Snow and Ice Data Center, Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder
ORCID ID 0000-0002-3699-302X
ORCID
<http://orcid.org/>

Contributors 5

Name Sommer, Nathan

Role	ProjectMember
Email	nsommer@wooster.edu
Affiliation	College of Wooster
ORCID ID	ORCID
	ORCID
	http://orcid.org/
Project Data Curator	Alex D Crawford
Project Data Curator email	alex.crawford@umanitoba.ca
Project Data Curator Affiliation	Centre for Earth Observation Science - University of Manitoba
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 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

License Name Creative Commons Attribution 4.0 International

Licence Type Open

Embargo Date

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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	
Resource Category	data