Metadata

Field	Value
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/group/modelling
Dataset Status	Complete
Maintenance and Update Frequency	As needed
Dataset Last Revision Date	2026-01-14
Dataset DOI	10.34992/ebnw-s681

Field	Value
Metadata Creation Date	2026
Publisher	CanWIN
Dataset Authors	
Dataset Authors 1	
Name	Crawford, Alex
Type of Name	Personal
Email	alex.crawford@umanitoba.ca
Affiliation	Agriculture and Agri Food Canada
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	ORCID
	http://orcid.org/
Contributors	
Contributors 1	
Name	Serreze, Mark C
Role	ProjectMember

Field	Value
Email	
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ORCID ID	0000-0002-3699-302X
	ORCID
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Contributors 2	
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Role	ProjectMember
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ORCID ID	ORCID
	ORCID
	http://orcid.org/
Project Data Curator	Alex D Crawford

Field	Value
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	2024-12-31
Sample Collection	
Activity Collection Type	
Preferred citation	
Analytical Instrument	
Analytical Method	
Licence Name or Copyright Statement	Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International
Copyright Statement	
Licence Type	Open
Embargo Date	
Licence URL	https://spdx.org/licenses

Field	Value
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	
Resource Code	10.24381/cds.adbb2d47
Identifier Type	
Relationship To This Dataset	
Resource Type	Online Resource
Type	Model
Series Name	
Related Resources 2	

Field	Value
Related Resource Name	
Resource Code	
Identifier Type	
Relationship To This Dataset	
Resource Type	Online Resource
Type	
Series Name	

Related Resources 3

Related Resource Name	Mean Pressure at Sea-level from ERA-5
Resource Code	
Identifier Type	DOI
Relationship To This Dataset	IsRequiredBy
Resource Type	Online Resource
Type	
Series Name	

Related Resources 4

Related Resource Name	ETOPO1 Ice Surface
Resource Code	10.7289/V5C8276M

Field	Value
Identifier Type	DOI
Relationship To This Dataset	IsReferencedBy
Resource Type	Online Resource
Type	Dataset
Series Name	

Related Resources 5

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

Field	Value
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 2

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 3

Field	Value
Publication Name	Does the summer Arctic Frontal Zone influence Arctic Ocean cyclone activity?
Identifier Code	
Identifier Type	DOI
Relationship to this dataset	IsSupplementedBy
Resource Type	Online Resource
Publication Type	

Publications 4

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 5

Publication Name	Synoptic Climatology of Rain-on-Snow Events in Alaska

Field	Value
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 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

Field	Value
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

Field	Value
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

Field	Value
URL	https://zenodo.org/records/7562953
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	Python
Resource Category	scripts

Field	Value
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/69811381-b58c-4621-b73d-baf1758706f0/download/supplemental-metadata-column-headers-and-units.pdf
Name	Supplemental Metadata- Column Headers and Units
Description	Additional metadata, which includes variable headers, units, and descriptions, as well as an overview of the script applied. (Last updated in Version 13.3)
Format	PDF
Resource Category	documents
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/a7ed8d55-63d1-4d7f-aa6f-63fc106e2176/download/cycloneparams.pkl
Name	Cyclone Parameters File
Description	This cyclone parameters file records the input parameters used for the cyclone detection and tracking code to produce the files in this database. It can be opened using pandas in Python via pandas.read_pickle($FILEPATH$), where $FILEPATH$ is the path to where this file is stored on your computer.
Format	pkl
Resource Category	supplemental
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/c31c6ec8-2fa8-4d62-8c4f-0ee2d18beedd/download/cnect-nh-era5-1940-1949.zip

Field	Value
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 1940-1949
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 1940-1949. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/d9f63012-7041-48ba-bed2-1bf6e77fa75d/download/cnect-nh-era5-1950-1959.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 1950-1959

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 1950-1959. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/d0abcf90-1a9e-4aa4-b533-19e1b5f54c51/download/cnect-nh-era5-1960-1969.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 1960-1969

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 1960-1969. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/a1928b10-3cc9-41d2-8f59-9bc213373468/download/cnect-nh-era5-1970-1979.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 1970-1979

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 1970-1979. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/6240a835-2ea4-470a-9cc7-7d2ff8276bcb/download/cnect-nh-era5-1980-1989.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 1980-1989

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 1980-1989. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/83f7269e-c4f5-4690-bd50-71e4d0476890/download/cnect-nh-era5-1990-1999.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 1990-1999

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 1990-1999. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/8d5d2c9e-196b-4dbe-ac87-6a6cebcf0ae2/download/cnect-nh-era5-2000-2009.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2000-2009

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 2000-2009. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/70bf8f2c-83da-4c88-bfbc-fe0a17a73796/download/cnect-nh-era5-2010-2019.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2010-2019

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the period 2010-2019. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/ced01a53-f2ca-48fd-809c-cd99b83b7431/download/cnect-nh-era5-2020.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2020

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the year 2020. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/9b63b1ad-f5f1-4b4a-9c4b-8ca0a913a6b1/download/cnect-nh-era5-2021.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2021

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the year 2021. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/e9ef2608-e3f1-4edf-b987-281bd13b1e62/download/cnect-nh-era5-2022.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2022

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the year 2022. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/8bc6e96f-b50c-4fef-906c-16fc1ca98522/download/cnect-nh-era5-2023.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2023

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the year 2023. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/a5befcfe-1b51-48a4-ae05-159b8db5ef2c/download/cnect-nh-era5-2024.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2024

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the year 2024. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data
URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/4be4d01a-a14b-483f-a1a6-6ead0974fa57/resource/fdfbc60e-ea0b-4d2c-81f2-f21b8a5a5660/download/cnect-nh-era5-2025.zip
Name	Northern Hemisphere Extratropical Cyclone Tracks from ERA5: 2025

Field	Value
Description	Folder containing CSV files that describe extratropical cyclone tracks detected from the ERA5 atmospheric analysis using version 13.2 of the CEOS/NSIDC extratropical cyclone tracking algorithm (as described in Crawford et al., 2021; https://doi.org/10.1175/MWR-D-20-0417.1). Storms are detected with a 3-h temporal resolution and 25-km spatial resolution for the year 2024. All storms whose ending time (cyclolysis) occurs in the same month are grouped into a single CSV file and can be identified by their unique system number (sid). The monthly files are organized within folders for each year. See accompanying metadata file for more details (e.g., descriptions and units for each column). This algorithm explicitly tracks each center of a multi-center cyclones, but in this database, each multi-center cyclone is represented only by its primary center -- i.e., the entire storm system is being represented by the location and area. Only storm systems that meet the following four criteria are included: lifespan of at least 24 hours, track length of at least 1000 km, observed at least once over an elevation less than 500 m, and observed at least once at at a distance of at least 500 km from its origin point are included.
Format	ZIP
Resource Category	data

Related Publications

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