

*ISO 19131 Extreme Weather Indices:
Precipitation - Data Product
Specification*

Revision: A

Data specification: Extreme Weather Indices

- Table of Contents -

1.	OVERVIEW	4
1.1.	Informal description.....	4
1.2.	Data product specification metadata	4
1.3.	Terms and definitions.....	5
1.4.	Abbreviations	5
2.	SPECIFICATION SCOPE.....	5
3.	DATA PRODUCT IDENTIFICATION.....	6
3.1.	Data Series Identification	6
3.1.1.	Precipitation.....	6
3.2.	Data Series Identification	7
3.2.1.	Greatest Daily Precipitation, week 1	7
3.2.2.	Greatest Daily Precipitation, week 2	7
3.2.3.	Greatest Daily Precipitation, week 3	8
3.2.4.	Greatest Daily Precipitation, week 4	8
3.2.5.	Probability of daily precipitation above 2mm, week 1	9
3.2.6.	Probability of daily precipitation above 2mm, week 2	10
3.2.7.	Probability of daily precipitation above 2mm, week 3	10
3.2.8.	Probability of daily precipitation above 2mm, week 4	11
3.2.9.	Probability of daily precipitation above 10mm, week 1	11
3.2.10.	Probability of daily precipitation above 10mm, week 2	12
3.2.11.	Probability of daily precipitation above 10mm, week 3	12
3.2.12.	Probability of daily precipitation above 10mm, week 4	13
3.2.13.	Probability of daily precipitation above 25mm, week 1	14
3.2.14.	Probability of daily precipitation above 25mm, week 2	14
3.2.15.	Probability of daily precipitation above 25mm, week 3	15
3.2.16.	Probability of daily precipitation above 25mm, week 4	16
3.2.17.	Total Precipitation, week 1	16
3.2.18.	Total Precipitation, week 2	17
3.2.19.	Total Precipitation, week 3	17
3.2.20.	Total Precipitation, week 4	18
3.2.21.	Probability of total precipitation above 25mm, week 1	18
3.2.22.	Probability of total precipitation above 25mm, week 2	19
3.2.23.	Probability of total precipitation above 25mm, week 3	19
3.2.24.	Probability of total precipitation above 25mm, week 4	20
3.2.25.	Probability of total precipitation above 50mm, week 1	21
3.2.26.	Probability of total precipitation above 50mm, week 2	21
3.2.27.	Probability of total precipitation above 50mm, week 3	22

3.2.28.	Probability of total precipitation above 50mm, week 4	22
3.2.29.	Probability of total precipitation above 100mm, week 1	23
3.2.30.	Probability of total precipitation above 100mm, week 2	23
3.2.31.	Probability of total precipitation above 100mm, week 3	24
3.2.32.	Probability of total precipitation above 100mm, week 4	25
3.2.33.	Greatest 10-day precipitation	25
3.2.34.	Probability of 10-day precipitation above 10mm	26
3.2.35.	Probability of 10-day precipitation above 100mm	26
3.2.36.	Probability of 10-day precipitation above 150mm	27
4.	CONTENT AND STRUCTURE	27
4.1.	Feature-based application schema.....	27
4.2.	Feature catalogue	28
5.	REFERENCE SYSTEM.....	29
5.1.	Spatial reference system	29
5.2.	Temporal reference system	29
6.	DATA QUALITY	29
6.1.	Completeness	29
6.2.	Logical consistency.....	29
6.3.	Positional accuracy	29
6.4.	Temporal accuracy	29
6.5.	Thematic accuracy.....	29
6.6.	Lineage statement	30
7.	DATA CAPTURE	30
8.	DATA MAINTENANCE	30
9.	PORTRAYAL	31
10.	DATA PRODUCT DELIVERY	31
11.	METADATA	31

Data product specification: Extreme Weather Indices

1. OVERVIEW

1.1. Informal description

Agriculture is an important primary production sector in Canada. Agricultural production, profitability, sustainability and food security depend on many agrometeorological factors. Extreme weather events in Canada, such as drought, floods, heat waves, frosts and high intensity storms, have the ability to significantly impact field crop production.

Agriculture and Agri-Food Canada (AAFC) and Environment and Climate Change Canada (ECCC) have together developed a suite of extreme agrometeorological indices based on four main categories of weather factors: temperature, precipitation, heat, and wind. The extreme weather indices are intended as short-term prediction tools and generated using ECCC's medium range forecasts to create a weekly index product on a daily basis.

1.2. Data product specification metadata

This section provides metadata about the creation of this data product specification.

Data product specification title:	Agroclimate Data
Data product specification reference date:	2018-07-31
Data product specification responsible party:	Agriculture and Agri-Food Canada
Data product specification language:	English, French
Data product specification topic category:	Climatology/Meteorology/Atmosphere/Farming

1.3. Terms and definitions

- Feature attribute
characteristic of a feature
- Class
description of a set of objects that share the same attributes, operations, methods, relationships, and semantics [UML Semantics]
NOTE: A class does not always have an associated geometry (e.g. the metadata class).
- Feature
abstraction of real world phenomena
- Object
entity with a well-defined boundary and identity that encapsulates state and behaviour [UML Semantics]
NOTE: An object is an instance of a class.
- Package
grouping of a set of classes, relationships, and even other packages with a view to organizing the model into more abstract structures

1.4. Abbreviations

AAFC	Agriculture and Agri-Food Canada
ECCC	Environment and Climate Change Canada

2. SPECIFICATION SCOPE

This data specification has only one scope, the general scope.

NOTE: The term 'specification scope' originates from the International Standard ISO19131. 'Specification scope' does not express the purpose for the creation of a data specification or the potential use of data, but identifies partitions of the data specification where specific requirements apply.

3. DATA PRODUCT IDENTIFICATION

3.1. Data Series Identification

3.1.1. Precipitation

Title	Precipitation
Alternate Title	
Abstract	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Purpose	
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2. Data Series Identification

3.2.1. Greatest Daily Precipitation, week 1

Title	Greatest daily precipitation, week 1
Alternate Title	p1d
Abstract	<p>The greatest daily precipitation over the forecast period.</p> <p>This week 1 forecasted index is available daily from September 1 to August 31</p> <p>Units: mm/day</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The greatest daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.2. Greatest Daily Precipitation, week 2

Title	Greatest daily precipitation, week 2
Alternate Title	p2d
Abstract	<p>The greatest daily precipitation over the forecast period.</p> <p>This week 2 forecasted index is available daily from September 1 to August 31</p> <p>Units: mm/day</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The greatest daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada

Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.3. Greatest Daily Precipitation, week 3

Title	Greatest daily precipitation, week 3
Alternate Title	p3d
Abstract	The greatest daily precipitation over the forecast period. This week 3 forecasted index is available weekly (Thursdays) from September 1 to August 31 Units: mm/day
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The greatest daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.4. Greatest Daily Precipitation, week 4

Title	Greatest daily precipitation, week 4
Alternate Title	p4d
Abstract	The greatest daily precipitation over the forecast period. This week 4 forecasted index is available weekly (Thursdays) from September 1 to August 31 Units: mm/day
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have

	the ability to inhibit proper crop growth. The greatest daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.5. Probability of daily precipitation above 2mm, week 1

Title	Probability of daily precipitation above 2mm, week 1
Alternate Title	p1d2_prob1
Abstract	Probability of the daily precipitation above 2mm over the forecast period This week 1 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.6. Probability of daily precipitation above 2mm, week 2

Title	Probability of daily precipitation above 2mm, week 2
Alternate Title	p1d2_prob2
Abstract	<p>Probability of the daily precipitation above 2mm over the forecast period</p> <p>This week 2 forecasted probability is available daily from September 1 to August 31</p> <p>Units: %</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.7. Probability of daily precipitation above 2mm, week 3

Title	Probability of daily precipitation above 2mm, week 3
Alternate Title	p1d2_prob3
Abstract	<p>Probability of the daily precipitation above 2mm over the forecast period</p> <p>This week 3 forecasted probability is available weekly (Thursdays) from September 1 to August 31</p> <p>Units: %</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement:

	https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.8. Probability of daily precipitation above 2mm, week 4

Title	Probability of daily precipitation above 2mm, week 4
Alternate Title	p1d2_prob4
Abstract	Probability of the daily precipitation above 2mm over the forecast period This week 4 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.9. Probability of daily precipitation above 10mm, week 1

Title	Probability of daily precipitation above 10mm, week 1
Alternate Title	p1d10_prob1
Abstract	Probability of daily precipitation above 10mm over the forecast period This week 1 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The

	maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.10. Probability of daily precipitation above 10mm, week 2

Title	Probability of daily precipitation above 10mm, week 2
Alternate Title	p1d10_prob2
Abstract	Probability of daily precipitation above 10mm over the forecast period This week 2 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.11. Probability of daily precipitation above 10mm, week 3

Title	Probability of daily precipitation above 10mm, week 3
-------	---

Alternate Title	p1d10_prob3
Abstract	<p>Probability of daily precipitation above 10mm over the forecast period</p> <p>This week 3 forecasted probability is available weekly (Thursdays) from September 1 to August 31</p> <p>Units: %</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.12. Probability of daily precipitation above 10mm, week 4

Title	Probability of daily precipitation above 10mm, week 4
Alternate Title	p1d10_prob4
Abstract	<p>Probability of daily precipitation above 10mm over the forecast period</p> <p>This week 4 forecasted probability is available weekly (Thursdays) from September 1 to August 31</p> <p>Units: %</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement:

	https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.13. Probability of daily precipitation above 25mm, week 1

Title	Probability of daily precipitation above 25mm, week 1
Alternate Title	p1d25_prob1
Abstract	Probability of daily precipitation above 25mm over the forecast period This week 1 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.14. Probability of daily precipitation above 25mm, week 2

Title	Probability of daily precipitation above 25mm, week 2
Alternate Title	p1d25_prob2
Abstract	Probability of daily precipitation above 25mm over the forecast period This week 2 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have

	the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.15. Probability of daily precipitation above 25mm, week 3

Title	Probability of daily precipitation above 25mm, week 3
Alternate Title	p1d25_prob3
Abstract	Probability of daily precipitation above 25mm over the forecast period This week 3 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.16. Probability of daily precipitation above 25mm, week 4

Title	Probability of daily precipitation above 25mm, week 4
Alternate Title	p1d25_prob4
Abstract	Probability of daily precipitation above 25mm over the forecast period This week 4 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The maximum daily precipitation index covers the risk of excessive precipitation in the short term, while the other indices pertain to longer term moisture availability.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.17. Total Precipitation, week 1

Title	Total Precipitation, week 1
Alternate Title	p1w
Abstract	The total precipitation over the forecast period. This week 1 forecasted index is available daily from September 1 to August 31 Units: mm
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada

Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.18. Total Precipitation, week 2

Title	Total Precipitation, week 2
Alternate Title	p2w
Abstract	The total precipitation over the forecast period. This week 2 forecasted index is available daily from September 1 to August 31 Units: mm
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.19. Total Precipitation, week 3

Title	Total Precipitation, week 3
Alternate Title	p3w
Abstract	The total precipitation over the forecast period. This week 3 forecasted index is available weekly (Thursdays) from September 1 to August 31 Units: mm
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	

Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.20. Total Precipitation, week 4

Title	Total Precipitation, week 4
Alternate Title	p4w
Abstract	The total precipitation over the forecast period. This week 4 forecasted index is available daily from September 1 to August 31 Units: mm
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.21. Probability of total precipitation above 25mm, week 1

Title	Probability of total precipitation above 25mm, week 1
Alternate Title	pweek25_prob1
Abstract	Probability of total precipitation above 25mm over the forecast period This week 1 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total

	precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.22. Probability of total precipitation above 25mm, week 2

Title	Probability of total precipitation above 25mm, week 2
Alternate Title	pweek25_prob2
Abstract	Probability of total precipitation above 25mm over the forecast period This week 2 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.23. Probability of total precipitation above 25mm, week 3

Title	Probability of total precipitation above 25mm, week 3
Alternate Title	pweek25_prob3

Abstract	Probability of total precipitation above 25mm over the forecast period This week 3 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.24. Probability of total precipitation above 25mm, week 4

Title	Probability of total precipitation above 25mm, week 4
Alternate Title	pweek25_prob4
Abstract	Probability of total precipitation above 25mm over the forecast period This week 4 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast

Scope identification	series
Feature Attribute Names	

3.2.25. Probability of total precipitation above 50mm, week 1

Title	Probability of total precipitation above 50mm, week 1
Alternate Title	pweek50_prob1
Abstract	Probability of total precipitation above 50mm over the forecast period This week 1 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.26. Probability of total precipitation above 50mm, week 2

Title	Probability of total precipitation above 50mm, week 2
Alternate Title	pweek50_prob2
Abstract	Probability of total precipitation above 50mm over the forecast period This week 2 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	

Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.27. Probability of total precipitation above 50mm, week 3

Title	Probability of total precipitation above 50mm, week 3
Alternate Title	pweek50_prob3
Abstract	Probability of total precipitation above 50mm over the forecast period This week 3 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.28. Probability of total precipitation above 50mm, week 4

Title	Probability of total precipitation above 50mm, week 4
Alternate Title	pweek50_prob4
Abstract	Probability of total precipitation above 50mm over the forecast period This week 4 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have

	the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.29. Probability of total precipitation above 100mm, week 1

Title	Probability of total precipitation above 100mm, week 1
Alternate Title	pweek100_prob1
Abstract	Probability of total precipitation above 100mm over the forecast period This week 1 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.30. Probability of total precipitation above 100mm, week 2

Title	Probability of total precipitation above 100mm, week 2
Alternate Title	pweek100_prob2

Abstract	Probability of total precipitation above 100mm over the forecast period This week 2 forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.31. Probability of total precipitation above 100mm, week 3

Title	Probability of total precipitation above 100mm, week 3
Alternate Title	pweek100_prob3
Abstract	Probability of total precipitation above 100mm over the forecast period This week 3 forecasted probability is available weekly (Thursdays) from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast

Scope identification	series
Feature Attribute Names	

3.2.32. Probability of total precipitation above 100mm, week 4

Title	Probability of total precipitation above 100mm, week 4
Alternate Title	pweek100_prob4
Abstract	<p>Probability of total precipitation above 100mm over the forecast period</p> <p>This week 4 forecasted probability is available weekly (Thursdays) from September 1 to August 31</p> <p>Units: %</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The total precipitation index covers the moisture availability in a week.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	<p>Thesaurus: Government of Canada Core Subject Date: February 1, 2000</p> <p>Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast</p>
Scope identification	series
Feature Attribute Names	

3.2.33. Greatest 10-day precipitation

Title	Greatest 10-day precipitation
Alternate Title	p10d
Abstract	<p>The greatest 10-day precipitation total expected over the next 2 weeks.</p> <p>This 10 day forecasted index is available daily from September 1 to August 31</p> <p>Units: cm/10 days</p>
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The greatest 10 day precipitation index covers the risk of excessive precipitation in the long term.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	

Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.34. Probability of 10-day precipitation above 10mm

Title	Probability of 10-day precipitation above 10mm
Alternate Title	p10d_prob10
Abstract	Probability of 10-day precipitation total above 10mm. This 10 day forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The greatest 10 day precipitation index covers the risk of excessive precipitation in the long term.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.35. Probability of 10-day precipitation above 100mm

Title	Probability of 10-day precipitation above 100mm
Alternate Title	p10d_prob100
Abstract	Probability of 10-day precipitation total above 100mm. This 10 day forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The

	greatest 10 day precipitation index covers the risk of excessive precipitation in the long term.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

3.2.36. Probability of 10-day precipitation above 150mm

Title	Probability of 10-day precipitation above 150mm
Alternate Title	p10d_prob150
Abstract	Probability of 10-day precipitation total above 150mm. This 10 day forecasted probability is available daily from September 1 to August 31 Units: %
Purpose	Precipitation (moisture availability) establishes the economic yield potential and product quality of field crops. Both dry and wet precipitation extremes have the ability to inhibit proper crop growth. The greatest 10 day precipitation index covers the risk of excessive precipitation in the long term.
Topic Category	Climatology/Meteorology/Atmosphere/Farming
Spatial Reference Type	Grid
Spatial Resolution	0.6 decimal degrees
Geographic Description	Canada
Supplemental Information	
Constraints	Data are subject to the Government of Canada Open Data License Agreement: https://open.canada.ca/en/open-government-licence-canada
Keywords	Thesaurus: Government of Canada Core Subject Date: February 1, 2000 Keywords: Farmlands, Crop, Agriculture, Precipitation, Weather, Weather Forecast
Scope identification	series
Feature Attribute Names	

4. CONTENT AND STRUCTURE

4.1. Feature-based application schema

Not applicable.

4.2. Feature catalogue

Not applicable.

5. REFERENCE SYSTEM

5.1. Spatial reference system

Horizontal coordinate reference system: WGS 84

Map projection: Web Mercator Auxiliary Sphere; EPSG: 3857; Version 8.1.4

5.2. Temporal reference system

Gregorian calendar

6. DATA QUALITY

6.1. Completeness

Measure not used at this time.

6.2. Logical consistency

Measure not used at this time.

6.3. Positional accuracy

This digital geo-spatial product was interpolated from ECCC/MSC station data with unknown positional accuracy (latitude, longitude and elevation). Latitude and longitude values are given to the nearest 1/100 of a degree.

6.4. Temporal accuracy

Measure not used at this time.

6.5. Thematic accuracy

Measure not used at this time.

6.6. Lineage statement

The daily forecasts of weekly indices are generated using Environment and Climate Change Canada’s Global Ensemble Prediction System (GEPS) with 20+1 ensemble members. In all cases, the probabilities are calculated at each point by counting the number of members which forecast the event in question during the forecast period and dividing this by the total number of members. These probabilities have not been calibrated.

Environment and Climate Change Canada and Agriculture and Agri-food Canada have assessed the skill level (predictability) of each forecasted extreme weather index by calculating the Heidke Skill Score (HSS) which compares the proportion of correct forecasts to a no skill random forecast.

The energy and temperature based indices were realistically forecasted over Canada. At most locations, the skill score was in excess of 70% correct.

Water (precipitation) based indices exhibited a relatively high forecast skill in western Canada at both 7 and 16- day time frames. In central and eastern Canada, the skill score drops at the 16-day timeframe. The temporal drop in skill is caused by the growth of initial errors in the model. Spatially, the difference in skill can be partially explained by the consistency of the forcing factors during the period under study (April to September). It has been shown that western Canada is influenced by the Madden-Julian Oscillation and ENSO-like forcing factors more than eastern Canada during spring through summer.

The skill of predicting the wind-based indices has significant spatial differences: the maximum daily wind speed is best forecast in western and eastern Canada, with a relatively low skill in central Canada; the number of strong wind days is more reliable in eastern and central Canada, with a low skill in western Canada. Like the water based indices, the skill in the wind based indices drops at longer time frames in the future.

Lineage Statement	<p>Environment and Climate Change Canada generates the extreme weather indices on a global scale. Agriculture and Agri-food Canada accesses the daily datasets in netCDFformat. Each dataset is converted to a TIFF file, projected to the Web Mercator projection (EPSG 3857), and clipped to an extent encompassing Canada and the continental United States, defined by a rectangle with latitude boundaries of 24°N and 90°N and longitude boundaries of 180°W and 50°W.</p> <p>ArcGIS Server image services display these TIFF files using bilinear interpolation.</p> <p>PDF maps are generated using polygon representations of the TIFF files. Polygons boundaries follow the bilinear interpolation result displayed by the image services and are clipped to the Canadian land mass as defined by Atlas of Canada</p>
Scope	Series

7. DATA CAPTURE

Index forecast period: WK1= week1, WK2= week2, WK3= week3, WK4= week4

Forecast Date = YYMMDD

WK1 = Start Date (Forecast Date) to End Date (WK1 Start Date + 6 Days)

WK2 = Start Date (Forecast Date + 7 Days) to End Date (WK2 Start Date + 6 Days)

WK3 = Start Date (Forecast Date + 14 Days) to End Date (WK3 Start Date + 6 Days)

WK4 = Start Date (Forecast Date + 21 Days) to End Date (WK4 Start Date + 6 Days)

8. DATA MAINTENANCE

As Needed

9. PORTRAYAL

Not applicable.

10. DATA PRODUCT DELIVERY

TIF

format name:	Tag Interleaved File:
version:	6.0
specification:	GeoTIFF is format extension for storing georeference and geocoding information in a TIFF 6.0 compliant raster file by tying a raster image to a known model space or map projection.
languages: eng	
character set: utf8	

11. METADATA

The metadata requirements follow the Government of Canada's Treasury Board Standard on Geospatial Data (ISO 19115).