

CWEEDS 2023 Release Notes

Temporal and spatial coverage

The large collection of CWEEDS and corresponding CWEC TMY, TDY, and their associated EPW files were updated to reflect recent satellite-derived hourly gridded solar values for additional years. For northern locations (North of 58°N), there is now gridded solar data for 1998-2000 to extend the coverage to 1998-2020. For southern locations (South of 58°N) there is now gridded solar data for 2018-2020 to extend coverage to the same period. For both regions, the resolution of the gridded solar data is 0.1° x 0.1° (11 km x 11 km grid).

Additional years and new stations were compiled, to reflect the additional availability of solar data congruent with the availability of surface weather observations. To determine which additional years in the 1998 to 2020 range that could be compiled into CWEEDS files, a manual inspection of climate data annual inventories of mainly dry bulb temperature observations but also included dew point and wind speed was required and carried out.

Completeness

The most complete observational data sets are from 24/7 staffed airport weather stations. However, many of these stations closed and were replaced in the early 2010s by a collocated station with a NAVCAN reporting system that does not include all the elements previously reported (such as cloud ceiling height). Some other elements such as total cloud amount are only reported every 3rd hour. Relevant summary data (.csv format) in this regard is available from the annual completeness files for each location.

These completeness files provide an annual count of the number of missing observations that are filled by either interpolation (for gaps 3 hours or shorter) or by time series data from the nearest NARR grid point. This data is provided for the elements: dry bulb and dew point temperature, wind speed and direction, station pressure, and snow depth. The annual number of other missing elements such as the visibility, cloud layer information, present weather codes, and total cloud amount are also available in these files for each location.

If you are interested in completeness files for select CWEEDS locations, please contact:

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Many of the CWEEDS locations are automatic weather stations with limited observations. They are included if they have reasonable numbers of basic observations such as dry bulb and dew point temperatures, and wind speed, but many, especially in remote locations, may have long periods of some of these observations missing, that were subsequently replaced by time series data from the nearest NARR grid point. Therefore, not all locations have complete data for 1998-2020.

Due to incompleteness of the available data, a total of nine (9) CWEEDS locations were made obsolete and not included in this 2023 release. These obsolete locations are listed in Table 1.

Table 1 CWEEDS stations not included in 2023 release.

Name	Province/ Territory	Climate ID	Latitude	Longitude	UTC Offset	Elevation (m)	First Year	Last Year
EDMONTON CITY CENTRE AWOS	AB	3012202	53.57	-113.52	-7	671.4	1998	2013
CLINTON (AUT)	BC	1161661	51.12	-121.5	-8	1056.7	1998	2013
CHEPICAMP CS	NS	8200827	46.65	-60.95	-4	43.9	2000	2017
LAC LA MARTRE	NT	2202678	63.13	-117.25	-7	271.3	2005	2017
LUTSELK'E CS	NT	220L002	62.42	-110.69	-7	178.9	2005	2017
ISACHSEN (AUT)	NU	2402604	78.79	-103.55	-6	58	2005	2017
KUGAARUK CLIMATE	NU	2303094	68.54	-89.8	-7	15.8	2005	2017
REA POINT	NU	2403450	75.38	-105.71	-7	15	2005	2017
STONY RAPIDS	SK	4067799	59.25	-105.84	-6	244.2	2005	2017

Time Zones

The date-time field in the CWEEDS file does not provide for partial hours. This is generally not an issue except that the locations in the island of Newfoundland and the southeastern tip of Labrador are on Newfoundland time (UTC offset = -3.5 hours). CWEEDS files for these locations are indicated as on the hour, as per the WY3 data format. The surface observations actually occur 30 minutes later than the indicated local time in the CWEEDS file. This has been a “feature” of CWEEDS files for this region for all versions.

Recently (November 2020), the Yukon Territory changed from the Pacific time zone (standard and daylight savings) to permanent Pacific daylight savings time or mountain standard time (since it is the numerical equivalent). The CWEEDS files are based on the legacy Pacific time zone with the appropriate UTC offset. The ECCC observational data sets used for CWEEDS files still publishes the data for the Yukon Territory as Pacific standard time for the period currently spanning CWEEDS years. Users may need to adjust building simulation profiles using Yukon Territory CWEEDS locations’ data to reflect its continued use of the Pacific standard time zone. Future updates will need to account for any time zone changes in ECCC published data.

New CWEEDS Stations

Due to the expansion of temporal coverage of the dataset, stations were merged and created (where ten years of continuous data was available). A total of 89 stations were added to the 2023 release (see Table 2).

Table 2 New CWEEDS stations in 2023 release.

Name	Province/ Territory	Climate ID	Latitude	Longitude	UTC Offset	Elevation (m)	First Year	Last Year
ACADIA VALLEY	AB	3020035	51.06	-110.31	-7	735	2010	2020
ALLIANCE AGCM	AB	3010162	52.31	-111.77	-7	737	2008	2020
ATLEE AGCM	AB	3020405	50.81	-111	-7	795	2010	2020
AZURE	AB	3030450	50.51	-114.01	-7	1143	2009	2020
BASSANO AGCM	AB	3030540	50.89	-112.46	-7	807	2008	2020

Name	Province/ Territory	Climate ID	Latitude	Longitude	UTC Offset	Elevation (m)	First Year	Last Year
BEISEKER AGCM	AB	3020610	51.37	-113.35	-7	896	2008	2020
BELLSHILL AGCM	AB	3010650	52.58	-111.46	-7	721	2008	2020
BLACK DIAMOND	AB	3030680	50.7	-114.15	-7	1156	2009	2020
BROWNSVALE AGCM	AB	3070800	56.11	-117.88	-7	748	2009	2020
CADOGAN AGCM	AB	3010992	52.33	-110.51	-7	690	2010	2020
CRESTOMERE AGCM	AB	3011892	52.73	-113.9	-7	855	2011	2020
DELBURNE AGCM	AB	3012050	52.18	-113.17	-7	889	2011	2020
DEWBERRY AGCM	AB	3012073	53.65	-110.58	-7	616	2011	2020
EAGLESHAM AGCM	AB	3072151	55.8	-117.88	-7	563	2009	2020
EDMONTON BLATCHFORD	AB	3012209	53.57	-113.46	-7	671	1998	2020
GILT EDGE NORTH AGCM	AB	3012790	53.07	-110.62	-7	647	2008	2020
GLEICHEN AGCM	AB	3032801	50.93	-112.94	-7	907	2009	2020
GLENEVIS AGCM	AB	3012818	53.83	-114.53	-7	670	2009	2020
GRASSY LAKE	AB	3032927	49.87	-111.73	-7	783	2007	2020
HAWK HILLS AGCM	AB	3073071	57.26	-117.29	-7	455	2009	2020
HESPERO AGCM	AB	3023200	52.31	-114.49	-7	965	2009	2020
JEAN COTE AGCM	AB	3073535	55.91	-117.11	-7	638	2009	2020

Name	Province/ Territory	Climate ID	Latitude	Longitude	UTC Offset	Elevation (m)	First Year	Last Year
KINSELLA RESEARC STATION	AB	3013647	53.04	-111.54	-7	701	2011	2020
LA CRETE AGCM	AB	3073730	58.17	-116.34	-7	323	2009	2020
LEEDALE AGDM	AB	3023740	52.55	-114.47	-7	947	2010	2020
LINDBERGH AGCM	AB	3013921	53.94	-110.57	-7	630	2006	2020
NIER AGDM	AB	3034795	51.36	-114.09	-7	1145	2010	2020
PEKISKO	AB	3055119	50.36	-114.41	-7	1415	2010	2020
ROSEMARY AGDM	AB	3035650	50.83	-112.05	-7	714	2005	2020
RYCROFT AGCM	AB	3075601	55.77	-118.66	-7	575	2010	2020
SAVANNA AGCM	AB	3075770	56.07	-119.34	-7	703	2009	2020
ST. ALBERT RESEARCH STATION	AB	3025750	53.69	-113.61	-7	687	2011	2020
ASHCROFT	BC	1160515	50.7	-121.28	-8	327	2011	2020
CLINTON A	BC	1161662	51.26	-121.68	-8	1126.2	1998	2020
DELTA BURNS BOG	BC	1102415	49.12	-123	-8	3.1	2011	2020
NORTH COWICHAN	BC	1015630	48.82	-123.71	-8	44.8	2008	2020
OOTSA LAKESKINS LAKE CLIMATE	BC	1085836	53.77	-125.99	-8	861	2006	2020
PORT ALBERNI (AUT)	BC	1036B06	49.31	-124.92	-8	76.2	1998	2020

Name	Province/ Territory	Climate ID	Latitude	Longitude	UTC Offset	Elevation (m)	First Year	Last Year
PORT MELLON	BC	1046332	49.52	-123.49	-8	125.1	2007	2020
QUALICUM BEACH AIRPORT	BC	1026562	49.33	-124.39	-8	58.2	2007	2020
SECHELT AUT	BC	1047172	49.45	-123.71	-8	86.2	2008	2020
CYPRESS RIVER RCS	MB	5010641	49.56	-99.07	-6	374	2010	2020
GREAT FALLS CLIMATE	MB	5031201	50.52	-95.97	-6	253	2006	2020
BOUCTOUCHE CDA CS	NB	8100593	46.43	-64.76	-4	35.9	2006	2020
CHETICAMP HIGHLANDS NATL PAR	NB	8200828	46.65	-60.95	-4	8	2000	2020
MECHANIC SETTLEMENT	NB	8102848	45.69	-65.17	-4	403	2007	2020
RED PINES	NB	8104295	47.43	-65.59	-4	124	2011	2020
NAIN	NL	8502799	56.55	-61.68	-4	7.6	2005	2017
ST JOHNS WEST CLIMATE	NL	8403603	47.51	-52.78	-4	110	2011	2020
ST. ANTHONY A	NL	8403389	51.39	-56.07	-4	32.9	2010	2020
BACCARO PT	NS	8200255	43.45	-65.47	-4	4.6	2008	2020
PORT HAWKESBURY	NS	8204495	45.65	-61.36	-4	114.9	2011	2020
UPPER STEWIACKE RCS	NS	8204193	45.23	-63.05	-4	23.5	2006	2020
CAPE PARRY A	NT	2200675	70.17	-124.72	-7	86.6	1998	2015
LUTSELK'E A	NT	2202690	62.42	-110.68	-7	178.6	2000	2020

Name	Province/ Territory	Climate ID	Latitude	Longitude	UTC Offset	Elevation (m)	First Year	Last Year
NANGMAGVIK LAKE	NT	2500440	74.14	-119.99	-7	32	1998	2012
SAMBAA K'E	NT	220CQHR	60.44	-121.24	-7	498	1998	2010
WHATI	NT	2202678	63.13	-117.25	-7	271.3	2004	2020
CROKER RIVER	NU	230J01Q	69.28	-119.22	-7	69.4	1998	2017
KUGAARUK A	NU	2303095	68.54	-89.81	-7	15.5	2005	2020
STEFANSSON ISLAND	NU	2403756	73.77	-105.3	-7	11	2011	2020
BEATRICE CLIMATE	ON	6110607	45.14	-79.4	-5	297.2	2006	2020
BROCKVILLE CLIMATE	ON	6100970	44.63	-75.74	-5	120.4	2009	2020
FORT FRANCES RCS	ON	6022474	48.68	-93.43	-6	342	2008	2020
GUELPH TURFGRASS	ON	6143089	43.55	-80.21	-5	325	2011	2020
KINGSTON CLIMATE	ON	6104142	44.22	-76.59	-5	93	2009	2020
KITCHENER- WATERLOO	ON	6144239	43.46	-80.37	-5	321.6	2011	2020
OSHAWA	ON	6155875	43.92	-78.88	-5	139.9	2011	2020
PEMBROKE CLIMATE	ON	6106367	45.86	-77.25	-5	161	2011	2020
PETERBOROUGH TRENT U	ON	6166456	44.35	-78.3	-5	216	2006	2020
RIDGETOWN RCS	ON	6137154	42.45	-81.88	-5	205.7	2004	2020
SARNIA CLIMATE	ON	6127519	43	-82.3	-5	181	2006	2020

Name	Province/ Territory	Climate ID	Latitude	Longitude	UTC Offset	Elevation (m)	First Year	Last Year
SARNIA	ON	6127510	42.99	-82.3	-5	181.4	2010	2020
TOBERMORY RCS	ON	6128330	45.23	-81.63	-5	213.5	2008	2020
WELLAND- PELHAM	ON	6139449	42.96	-79.33	-5	178	2006	2020
CAP-CHAT	QC	705S002	49.1	-66.65	-5	5	1998	2020
ONATCHIWAY	QC	7065738	48.89	-71.03	-5	304	1998	2020
PARC NATIONAL DES PINGUALUIT	QC	7115800	61.31	-73.67	-5	503.4	2011	2020
PUVIRNITUQ A	QC	7106223	60.05	-77.29	-5	25.3	2011	2020
RIVIERE AUX FEUILLES	QC	7116505	57.9	-72.97	-5	171.4	2009	2020
SAINT-GERMAIN- DE-GRANTHAM	QC	7027470	45.82	-72.53	-5	85	2009	2020
SAINT-MICHEL- DES-SAINTS	QC	7077571	46.81	-74.09	-5	429.9	2011	2020
SHERBROOKE	QC	7028123	45.43	-71.69	-5	241.4	2010	2020
THETFORD MINES RCS	QC	7028442	46.04	-71.26	-5	430	2007	2020
TROIS-RIVIERES	QC	7018562	46.35	-72.51	-5	6	1998	2020
VALCARTIER A	QC	7018573	46.9	-71.5	-5	167.6	2007	2020
BRATT'S LAKE CLIMATE	SK	4010811	50.2	-104.71	-6	580	2011	2020
LOON LAKE RCS	SK	4064620	54.01	-109.1	-6	545.6	2010	2020
SHINGLE POINT A	YT	2100950	68.95	-137.22	-8	49.4	2000	2015