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CANADA – DEPARTMENT OF TRANSPORT – METEOROLOGICAL BRANCH

GROWING DEGREE-DAY NORMALS ABOVE 42°F – BASED ON THE PERIOD 1953 – 1967

BY D. ASTON

In Canada growing degree-days are most commonly calculated from a base temperature of 42°F, which is near the threshold of growth for a number of common crops. One growing degree-day results for each degree that the mean temperature for the day is above 42°F. No degree days are counted when the mean temperature is below 42°F.

Earlier Meteorological Branch publications giving normal growing degree-day values were based on normal values of mean temperature. Values in this report, however, are based on actual daily observations at 150 principal observing stations in the country over the 15 years of record from 1953 to 1967. For statistical purposes the February values are based on an assumed month of 28¼ days.

Two previous publications which may be of value to users of these growing degree-day normals are:

1) "The Distribution of Growing Degree-Days in Canada", by C.C. Boughner, Canadian Meteorological Memoirs No. 17. This book presents accumulated degree days above 42°F data, calculated over a 10-year period for more than 200 Canadian stations. The data are presented in tabular and geographical form on annual, effective growing season and frost-free season bases. The book was published in 1965, and is available from the Meteorological Branch Headquarters, 315 Bloor Street West, Toronto 181, Ontario. Price $1.50 a copy.

2) "Heat Units and Crop Growth", by R.M. Holmes and George W. Robertson, Canada Department of Agriculture, Publication 1042, 35 pages, 1959. This booklet contains a practical treatment of the "growing degree-day" concept and its usage in agriculture. A number of tabular and graphical illustrations are presented for stations across Canada. The booklet is available from the Agrometeorology Section, Plant Research Institute, Central Experimental Farm, Ottawa 3, Ontario.

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GROWING DEGREE-DAY NORMALS (ABOVE 42°) 1953–67.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	May Sept.	Year
BRITISH COLUMBIA														
Abbotsford A	19	32	58	169	358	496	636	632	476	265	79	33	2598	3253
Alert Bay	15	30	35	119	271	381	483	508	392	224	62	26	2035	2546
Bull Harbour	24	36	33	97	219	337	433	466	372	239	80	39	1827	2375
Cape St James	27	25	24	68	179	277	396	462	394	227	96	46	1708	2221
Comox A	14	25	34	147	360	514	663	642	448	216	63	31	2627	3157
Dease Lake	0	0	0	5	95	280	407	354	126	13	0	0	1262	1280
Estevan Point	47	53	41	116	255	373	476	497	420	273	121	75	2021	2747
Fort Nelson A	0	0	1	18	246	483	634	535	194	21	0	0	2092	2132
Fort St John A	1	0	2	27	256	428	580	522	244	77	3	0	2030	2140
Hope	5	17	57	161	316	436	548	539	402	216	38	12	2241	2747
Kamloops A	2	7	41	197	480	672	852	787	513	201	25	4	3304	3781
Kimberley A	0	1	4	58	288	472	684	623	342	88	3	0	2409	2563
Kleena Kleene	0	0	1	11	119	282	428	401	203	35	1	0	1433	1481
Langara	11	13	14	50	157	259	380	441	366	195	60	23	1603	1969
Lytton	6	22	58	236	525	695	908	865	593	268	45	14	3586	4235
Nanaimo A	11	21	33	136	346	493	655	639	455	219	54	21	2588	3083
Old Glory Mtn	0	0	0	1	26	72	254	229	104	14	0	0	685	700
Penticton A	3	7	32	176	436	629	808	775	498	198	34	3	3146	3599
Port Hardy A	13	22	21	75	215	340	448	468	345	190	50	26	1816	2213
Prince George A	0	1	2	31	235	405	541	474	239	67	4	0	1894	1999
Princeton A	0	0	6	49	214	364	498	466	283	78	1	0	1825	1959
Quesnel A	0	2	6	49	281	458	612	556	303	97	7	1	2210	2372
Revelstoke	0	0	8	98	388	581	772	715	435	119	5	0	2891	3121
Sandspit A	14	15	15	55	185	326	473	514	401	193	56	27	1899	2274
Smithers A	0	0	0	27	204	377	516	474	232	51	2	0	1803	1883
Smith River A	0	0	0	4	121	354	499	402	117	9	0	0	1493	1506
Spring Island	43	49	38	107	241	357	473	492	421	263	117	71	1984	2672
Vancouver Int. A	23	35	56	182	382	517	660	654	476	262	87	42	2689	3376
Victoria Gonzales Hts.	35	49	77	186	341	440	543	547	462	290	114	54	2333	3138
Victoria Int. A	26	38	55	163	351	481	602	597	456	253	84	45	2487	3151
YUKON TERRITORY														
Dawson	0	0	0	8	148	436	546	413	98	1	0	0	1641	1650
Mayo	0	0	0	9	145	421	527	395	103	4	0	0	1591	1604
Teslin A	0	0	0	3	80	322	449	355	117	8	0	0	1323	1334
Watson Lake A	0	0	0	6	127	408	541	439	143	8	0	0	1658	1672
Whitehorse A	0	0	0	7	127	366	491	398	147	11	0	0	1529	1547
NORTH WEST TERRITORIES														
Alert	0	0	0	0	0	7	45	16	0	0	0	0	68	68
Baker Lake	0	0	0	0	1	44	314	249	28	0	0	0	636	636
Cambridge Bay A	0	0	0	0	0	17	152	100	5	0	0	0	274	274
Chesterfield	0	0	0	0	3	28	199	178	14	0	0	0	422	422
Clyde	0	0	0	0	0	2	37	25	1	0	0	0	65	65
Coppermine	0	0	0	0	2	49	232	210	26	0	0	0	519	519
Coral Harbour A	0	0	0	0	0	13	201	125	5	0	0	0	344	344
Ennadai Lake	0	0	0	0	4	152	431	351	63	2	0	0	1001	1003
Eureka	0	0	0	0	0	15	45	31	0	0	0	0	91	91
Fort Reliance	0	0	0	0	37	222	465	424	108	6	0	0	1256	1262

GROWING DEGREE-DAY NORMALS (ABOVE 42°) 1953-67.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	May Sept.	Year
NORTH WEST TERRITORIES (Cont'd)														
Fort Resolution A	0	0	0	2	101	380	594	513	156	13	0	0	1744	1759
Fort Simpson A	0	0	0	5	175	471	631	520	147	9	0	0	1944	1958
Fort Smith A	0	0	0	3	170	443	613	510	159	20	0	0	1895	1918
Frobisher Bay A	0	0	0	0	0	18	152	104	13	0	0	0	287	287
Hay River A	0	0	0	5	113	326	575	517	177	24	0	0	1708	1737
Holman	0	0	0	0	0	53	165	124	6	0	0	0	348	348
Isachsen	0	0	0	0	0	3	32	6	0	0	0	0	41	41
Mould Bay	0	0	0	0	0	3	24	7	0	0	0	0	34	34
Norman Wells A	0	0	0	2	97	438	594	453	93	2	0	0	1675	1679
Nottingham Island	0	0	0	0	0	6	76	62	6	0	0	0	150	150
Resolute A	0	0	0	0	0	2	37	11	0	0	0	0	50	50
Spence Bay	0	0	0	0	0	8	119	84	3	0	0	0	214	214
Yellowknife A	0	0	0	0	84	397	610	501	124	4	0	0	1716	1720
ALBERTA														
Banff	0	2	4	17	157	332	524	466	232	75	3	0	1711	1812
Calgary A	2	5	6	44	247	430	623	557	297	138	12	4	2154	2365
Cold Lake A	0	0	1	33	283	482	646	576	264	84	2	0	2251	2371
Coronation	0	0	3	39	282	479	681	609	300	103	3	0	2351	2499
Edmonton Industrial A	0	1	3	49	323	502	679	604	314	117	4	0	2422	2596
Fairview	0	0	1	27	274	458	608	547	266	81	1	0	2153	2263
Fort McMurray A	0	0	1	22	239	451	621	537	217	65	1	0	2065	2154
Grande Prairie A	0	0	1	22	265	442	598	546	260	68	3	0	2111	2205
Jasper	0	1	4	23	192	374	544	492	258	84	3	0	1860	1975
Lac La Biche A	0	0	1	29	268	453	628	560	254	86	1	0	2163	2280
Lethbridge A	4	10	16	80	321	534	750	688	400	212	31	11	2693	3057
Medicine Hat A	0	2	17	98	387	601	825	765	432	208	26	4	3010	3365
Penhold A	0	0	2	38	261	446	613	543	278	99	3	0	2141	2283
Rocky Mountain House	0	5	4	34	228	391	562	497	255	111	7	3	1933	2097
Suffield A	0	1	15	89	349	571	798	745	417	202	17	2	2880	3206
Vermilion A	0	0	1	34	277	455	649	561	260	82	1	0	2202	2320
Wagner	1	1	1	15	199	387	572	510	236	71	3	1	1904	1997
Whitecourt	0	1	2	19	219	384	548	473	208	55	1	0	1832	1910
SASKATCHEWAN														
Broadview	0	0	2	40	259	519	706	640	289	115	4	0	2413	2574
Estevan A	0	0	5	65	330	595	815	752	371	166	7	0	2863	3106
Hudson Bay	0	0	0	24	231	491	676	589	248	81	0	0	2235	2340
Moose Jaw A	0	0	5	66	345	595	808	748	389	166	10	0	2885	3132
North Battleford A	0	0	0	39	318	535	726	651	312	108	2	0	2542	2691
Prince Albert A	0	0	0	27	265	498	689	602	262	72	1	0	2316	2416
Regina A	0	0	2	49	316	568	770	709	340	121	4	0	2703	2879
Saskatoon A	0	0	1	46	321	556	757	680	324	109	3	0	2638	2797
Swift Current A	0	0	4	51	298	521	740	688	350	151	9	0	2597	2812
Yorkton A	0	0	0	36	277	548	736	664	302	110	2	0	2527	2675
MANITOBA														
Brochet	0	0	0	1	50	326	577	491	125	22	0	0	1569	1592
Churchill A	0	0	0	0	11	127	378	335	84	7	0	0	935	942
Dauphin A	0	0	2	44	277	569	761	675	329	137	4	0	2611	2798

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	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	May Sept.	Year
MANITOBA (Cont'd)														
Gimli A	0	0	1	38	257	577	775	699	336	140	2	0	2644	2825
Portage La Praire A	0	0	2	60	319	621	808	739	371	167	5	0	2858	3092
Rivers A	0	0	2	49	301	588	779	712	333	130	3	0	2713	2897
The Pas A	0	0	0	13	182	495	703	612	253	75	0	0	2245	2333
Wabowden	0	0	0	11	140	446	653	547	203	58	0	0	1989	2058
Winnipeg International A	0	0	3	63	318	627	811	744	372	160	4	0	2872	3102
ONTARIO														
Armstrong A	0	0	0	13	132	423	603	494	209	65	4	0	1861	1943
Earlton A	0	0	0	38	254	536	677	579	313	121	11	0	2359	2529
Fort William Lakehead A	0	0	0	24	195	468	678	611	311	122	7	0	2263	2416
Gore Bay A	0	0	1	45	260	558	751	712	450	214	32	2	2731	3025
Kapuskasing A	0	0	1	30	203	477	628	525	263	109	9	0	2096	2245
Kenora A	0	0	2	42	269	580	767	694	328	143	5	0	2638	2830
Killaloe A	0	0	4	73	336	608	725	656	400	173	29	2	2725	3006
London A	1	1	12	140	391	685	830	779	551	266	58	7	3236	3721
Muskoka A	0	0	5	79	307	575	714	664	417	184	33	2	2677	2980
North Bay A	0	0	2	54	291	564	711	631	369	153	18	1	2566	2794
Ottawa Int A	0	0	3	91	403	692	831	757	478	209	33	1	3161	3498
Sioux Lookout A	0	0	1	33	224	545	723	631	291	118	5	0	2414	2571
Stirling	0	0	7	111	375	652	809	749	492	227	45	4	3077	3471
Toronto	1	1	13	148	433	738	904	850	604	325	79	8	3529	4104
Toronto Int. A Malton	1	0	8	118	385	689	846	799	545	264	54	6	3264	3715
Trenton A	1	0	8	115	391	682	848	798	540	260	56	4	3259	3703
Trout Lake	0	0	0	6	70	364	600	499	202	55	0	0	1735	1796
White River	0	0	0	18	178	441	575	471	230	88	8	0	1895	2009
Wiarton A	0	0	6	83	285	561	729	704	475	240	49	5	2754	3137
Windsor A	2	2	26	188	473	763	922	864	635	347	81	10	3657	4313
QUEBEC														
Bagotville A	0	0	1	20	226	536	675	594	315	104	11	0	2346	2482
Cape Hopes Advance	0	0	0	0	0	12	91	72	17	1	0	0	192	193
Fort Chimo A	0	0	0	0	10	128	339	284	73	4	0	0	834	838
Grindstone Island	0	0	0	1	73	315	603	624	401	149	27	1	2016	2194
Inoucdjouac	0	0	0	0	1	61	248	189	45	2	0	0	544	546
Mont Joli A	0	0	1	14	164	469	631	574	323	106	18	2	2161	2302
Montreal Int. A Dorval	0	0	4	95	426	715	863	792	515	239	43	3	3311	3695
Natashquan	0	0	0	1	48	255	475	423	220	44	3	0	1421	1469
Nitchequon	0	0	0	0	20	252	456	342	115	10	0	0	1185	1195
Quebec A	0	0	0	34	294	587	742	658	387	137	15	0	2668	2854
St Hubert A	0	0	4	94	417	704	845	771	495	224	43	3	3232	3600
Schefferville A	0	0	0	0	20	202	406	293	85	7	0	0	1006	1013
Sept-Iles A	0	0	0	1	72	338	536	485	226	45	3	0	1657	1706
Val D'or A	0	0	1	30	229	513	640	552	290	105	8	0	2224	2368
NEW BRUNSWICK														
Campbellton	0	0	0	11	195	515	722	649	367	115	14	0	2448	2588
Chatham A	0	0	1	22	228	541	744	679	408	151	33	3	2600	2810
Fredericton A	0	0	2	36	296	572	751	691	417	167	38	3	2727	2973
Moncton A	0	0	1	25	231	502	703	660	411	174	48	6	2507	2761

GROWING DEGREE-DAY NORMALS (ABOVE 42°) 1953-67.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	May Sept.	Year
NEW BRUNSWICK (Con't)														
St. John A	0	0	2	20	197	439	616	593	383	165	44	5	2228	2464
PRINCE EDWARD ISLAND														
Charlottetown A	0	0	1	15	183	467	699	672	442	189	51	5	2463	2724
Summerside A	0	0	0	17	205	495	732	707	472	208	52	5	2611	2893
NOVA SCOTIA														
Greenwood A	3	1	6	49	281	562	743	698	447	211	78	17	2731	3096
Sable Island	4	1	1	8	78	273	533	652	550	338	134	26	2086	2598
Shearwater A	1	0	1	25	191	437	643	665	483	245	78	10	2419	2779
Sydney A	1	0	0	14	138	400	668	670	440	199	61	8	2316	2599
Yarmouth A	2	1	4	29	190	412	577	584	432	236	83	14	2195	2564
NEWFOUNDLAND														
Belle Isle	0	0	0	0	2	43	221	273	111	9	1	0	650	660
Cartwright	0	0	0	1	35	189	402	385	192	31	5	0	1203	1240
Daniels Harbour	2	1	2	6	60	237	487	516	295	92	29	5	1595	1732
Gander Int. A	0	0	0	7	108	333	611	567	332	105	32	4	1951	2099
Goose A	0	0	0	4	73	323	558	510	235	39	4	0	1699	1746
Hopedale	0	0	0	0	10	119	273	308	141	16	0	0	851	867
St. Anthony A	0	0	0	0	25	151	391	415	222	39	6	0	1204	1249
St. John's (Torbay) A	0	1	1	7	79	275	549	543	334	129	52	8	1780	1978
Stephenville A	4	1	4	13	119	340	584	593	362	134	45	5	1998	2204