

**Table S1.** Soil temperature at 5 cm depth for 71 locations across Canada. Some locations have two weather stations for a total of 85 weather stations. Locations with multiple stations have more than one station ID. “Loc” refers to the location of the station; “Station ID” and “Stn name” are the station identifications used by Environment Canada; “Prov” refers to the province the station is located; “min soil temp at 5 cm deep” is the minimal soil temperature recorded during the years indicated; “Min air temp” is the minimal air temperature on the day the minimal soil temperature was registered (“Min soil temp reg date”); “3-day mean temp” and “snow cover” are the mean temperature and mean snow cover (respectively) on the three days before the minimal soil temperature was registered. Data compiled by Environment Canada (<http://weather.gc.ca/>) and supplied by Ontario Climate Centre (<http://climate.weather.gc.ca/>). See Fig. 2 for the location of the weather stations.

| Loc | Station ID        | Stn Name              | Prov | Latitude (degrees) | Longitude (degrees) | Min soil temp at 5cm (°C) | Min air temp (°C) | 3-day mean temp (°C) | Snow cover (cm) | Min soil temp reg date | Record range | # of years |
|-----|-------------------|-----------------------|------|--------------------|---------------------|---------------------------|-------------------|----------------------|-----------------|------------------------|--------------|------------|
| 1   | 1016940           | SAANICHTON CDA        | BC   | 48.62              | -123.42             | 0                         | -3                | 0.833                | 0               | 1/6/1995               | 1984-1996    | 13         |
| 2   | 1100119           | AGASSIZ RCS           | BC   | 49.24              | -121.76             | -3.3                      | -10.1             | -6.2                 | NA              | 1/7/1993               | 1991-1996    | 6          |
| 3   | 1108487           | VANCOUVER UBC         | BC   | 49.25              | -123.25             | 0                         | -8.3              | -5.2                 | 10              | 1/1/1985               | 1984-1990    | 7          |
| 4   | 1127800 / 112G8L1 | SUMMERLAND CS         | BC   | 49.56              | -119.65             | -9                        | -15.3             | -11.33               | NA              | 1/10/1993              | 1984-1996    | 13         |
| 5   | 3033890           | LETHBRIDGE CDA        | ALTA | 49.7               | -112.77             | -14                       | -31               | -25.2                | 3               | 2/3/1985               | 1984-1990    | 7          |
| 6   | 3036681           | VAUXHALL CDA          | ALTA | 50.05              | -112.13             | -11.5                     | -33.5             | -27.6                | 3               | 2/3/1985               | 1984-1992    | 9          |
| 7   | 3036652           | UNIVERSITY OF CALGARY | ALTA | 51.08              | -114.13             | -12.5                     | -26.5             | -20.7                | 3               | 2/3/1985               | 1984-1990    | 7          |
| 8   | 3023720           | LACOMBE CDA           | ALTA | 52.47              | -113.75             | -15                       | -33               | -23.43               | 2               | 2/5/1988               | 1984-1995    | 12         |
| 9   | 3012295           | ELLERSLIE             | ALTA | 53.42              | -113.55             | -8.9                      | -35.5             | -14                  | 21              | 2/3/1985               | 1984-1986    | 3          |
| 10  | 3016761           | VEGREVILLE CDA        | ALTA | 53.48              | -112.03             | -13.9                     | -40.5             | -31.43               | NA              | 1/8/1991               | 1984-1994    | 11         |
| 11  | 3062244           | EDSON A               | ALTA | 53.58              | -116.47             | -7                        | -23.6             | -25.1                | 8               | 2/20/1986              | 1984-1993    | 10         |
| 12  | 3070560           | BEAVERLODGE CDA       | ALTA | 55.2               | -119.4              | -12.8                     | -31.5             | -25                  | 6               | 3/2/1991               | 1984-1996    | 13         |
| 13  | 3066001           | SLAVE LAKE A          | ALTA | 55.3               | -114.78             | -13.5                     | -34.2             | -28.35               | 20              | 12/24/1984             | 1984-1993    | 10         |

|    |                      |                  |      |       |         |       |       |        |      |            |           |    |
|----|----------------------|------------------|------|-------|---------|-------|-------|--------|------|------------|-----------|----|
| 14 | 3075040              | PEACE RIVER A    | ALTA | 56.23 | -117.45 | -8.5  | -22.5 | -17.5  | 4    | 1/9/1984   | 1984-1988 | 5  |
| 15 | 4012400              | ESTEVAN A        | SASK | 49.22 | -102.97 | -16   | -30.8 | -20.85 | 4    | 1/18/1992  | 1984-2008 | 25 |
| 16 | 4028040 /<br>4028060 | SWIFT CURRENT    | SASK | 50.27 | -107.73 | -24   | -34.5 | -29.43 | 8    | 2/3/1985   | 1984-2008 | 25 |
| 17 | 4010879              | BROADVIEW        | SASK | 50.37 | -102.57 | -20   | -39.6 | -30.23 | 6    | 1/9/1991   | 1985-1994 | 10 |
| 18 | 4016640              | REGINA CDA       | SASK | 50.4  | -104.57 | -21   | -38.5 | -30.6  | 7.33 | 2/4/1985   | 1984-1993 | 10 |
| 19 | 4013490              | INDIAN HEAD PFRA | SASK | 50.5  | -103.68 | -15.5 | -22   | -16.86 | 2    | 12/10/1988 | 1984-1995 | 12 |
| 20 | 4019080              | YORKTON A        | SASK | 51.27 | -102.47 | -19   | -39.2 | -34.43 | 22   | 2/3/1989   | 1984-1991 | 8  |
| 21 | 404037Q              | BAD LAKE IHD 102 | SASK | 51.32 | -108.42 | -14.5 | -35   | -26.5  | 3    | 12/2/1985  | 1984-1986 | 3  |
| 22 | 4055736              | OUTLOOK PFRA     | SASK | 51.48 | -107.05 | -16.5 | -33   | -28.1  | 1    | 11/27/1985 | 1984-1986 | 3  |
| 23 | 4043900              | KINDERSLEY A     | SASK | 51.52 | -109.18 | -25   | -35.2 | -30.03 | 7    | 2/5/1988   | 1987-2006 | 20 |
| 24 | 4019035              | WYNYARD          | SASK | 51.77 | -104.2  | -22   | -33   | -27.53 | 1    | 1/5/2004   | 1984-2005 | 22 |
| 25 | 4057180              | SASKATOON SRC    | SASK | 52.15 | -106.6  | -18.5 | -37   | -32.03 | 10   | 1/9/1991   | 1984-1997 | 14 |
| 26 | 4083321              | HUDSON BAY A     | SASK | 52.82 | -102.32 | -9    | -37.8 | -35.33 | 15   | 12/21/1989 | 1984-1993 | 10 |
| 27 | 4075518              | NIPAWIN A        | SASK | 53.33 | -104    | -21   | -33.6 | -31.43 | 10   | 2/3/1989   | 1984-1997 | 14 |
| 28 | 4064150              | LA RONGE A       | SASK | 55.15 | -105.27 | -11   | -37.6 | -30.4  | 0.5  | 11/28/1985 | 1984-1995 | 12 |
| 29 | 4061861              | CREE LAKE        | SASK | 57.35 | -107.13 | -15   | -41   | -29.4  | 12   | 1/19/1984  | 1984-1993 | 10 |
| 30 | 5021848              | MORDEN CDA       | MAN  | 49.18 | -98.08  | -21   | -30   | -24.4  | 0.5  | 1/20/1984  | 1984-1998 | 15 |
| 31 | 5021054              | GLENLEA          | MAN  | 49.65 | -97.12  | -19   | -33.5 | -27.65 | 23   | 1/7/1991   | 1984-2002 | 19 |
| 32 | 5023222 /<br>5023224 | WINNIPEG         | MAN  | 49.92 | -97.23  | -13   | -35.7 | -29.46 | 42   | 1/10/1989  | 1984-1997 | 14 |
| 33 | 5031038              | GIMLI            | MAN  | 50.63 | -97.02  | -12   | -32.4 | -26.6  | 6    | 12/26/1984 | 1984-1991 | 8  |

|    |                      |                                    |     |       |         |       |       |        |       |            |           |    |
|----|----------------------|------------------------------------|-----|-------|---------|-------|-------|--------|-------|------------|-----------|----|
| 34 | 5043158              | MCCREARY                           | MAN | 50.71 | -99.53  | -12   | -24   | -18.83 | NA    | 2/17/1993  | 1991-1997 | 7  |
| 35 | 5052060              | PASQUIA PROJECT                    | MAN | 53.72 | -101.53 | -17   | -40.5 | -32.5  | 13    | 1/9/1991   | 1984-2005 | 22 |
| 36 | 5062922 /<br>5062926 | THOMPSON                           | MAN | 55.8  | -97.86  | -13.5 | -34   | -30.27 | 29    | 1/3/1986   | 1984-2007 | 24 |
| 37 | 6133360              | HARROW CDA                         | ONT | 42.03 | -82.9   | -4.8  | -17.5 | -12.86 | 2     | 1/10/1988  | 1984-1989 | 6  |
| 38 | 6137730              | SIMCOE                             | ONT | 42.85 | -80.27  | -3    | -22   | -16.75 | 14.5  | 1/21/1985  | 1984-1986 | 3  |
| 39 | 6139145              | VINELAND STATION                   | ONT | 43.18 | -79.4   | -4    | -14.6 | -9     | 0.33  | 3/7/1989   | 1984-1989 | 6  |
| 40 | 6142285 /<br>614B2H4 | ELORA AUTOMATIC<br>CLIMATE STATION | ONT | 43.65 | -80.42  | -7.8  | -24   | -14.75 | NA    | 1/14/1988  | 1984-1995 | 12 |
| 41 | 6158740              | TORONTO MET RES<br>STN             | ONT | 43.8  | -79.55  | -4    | -16.5 | -11.6  | 4.33  | 2/27/1986  | 1984-1988 | 5  |
| 42 | 611KBE0              | EGBERT CARE                        | ONT | 44.23 | -79.78  | -8    | -23.5 | -16.75 | 7     | 2/7/1993   | 1988-1995 | 8  |
| 43 | 6104025              | KEMPTVILLE                         | ONT | 45    | -75.63  | -11   | -24   | -17.53 | 0     | 3/8/1989   | 1988-1989 | 2  |
| 44 | 6105976              | OTTAWA CDA                         | ONT | 45.38 | -75.72  | -9    | -21.7 | -15.56 | 3     | 2/18/1989  | 1984-1998 | 15 |
| 45 | 6020379              | ATIKOKAN                           | ONT | 48.75 | -91.62  | -2    | -37.6 | -26.43 | 27.33 | 2/13/1988  | 1984-1988 | 5  |
| 46 | 6073960              | KAPUSKASING CDA                    | ONT | 49.4  | -82.43  | -4.9  | -30   | -18.36 | 7.33  | 12/21/1984 | 1984-2000 | 17 |
| 47 | 6016525              | PICKLE LAKE (AUT)                  | ONT | 51.45 | -90.22  | -3    | -28.1 | -24.3  | 67    | 3/5/1989   | 1984-1990 | 7  |
| 48 | 7024280              | LENNOXVILLE                        | QUE | 45.37 | -71.82  | -4    | -22   | -14.87 | 5.66  | 3/7/1990   | 1984-1995 | 12 |
| 49 | 7026839              | STE ANNE DE<br>BELLEVUE            | QUE | 45.43 | -73.93  | -11.5 | -25   | -17.13 | 18    | 3/8/1989   | 1984-1992 | 9  |
| 50 | 7025250 /<br>7035290 | MONTREAL/                          | QUE | 45.67 | -74.03  | -18.5 | -30.4 | -26.05 | 11    | 1/17/1992  | 1984-1999 | 16 |
| 51 | 7014160              | L'ASSOMPTION                       | QUE | 45.81 | -73.43  | -12.5 | -26   | -19.96 | 8     | 1/27/1992  | 1984-1995 | 12 |
| 52 | 7016900              | ST AUGUSTIN                        | QUE | 46.73 | -71.5   | -5.4  | -21   | -17.4  | 38.33 | 1/18/1987  | 1984-1987 | 4  |
| 53 | 7042388              | FORET<br>MONTMORENCY               | QUE | 47.32 | -71.15  | -1.5  | -30.5 | -15    | 39    | 2/1/1995   | 1984-1997 | 14 |

|    |                        |                          |      |       |         |       |       |        |       |            |           |    |
|----|------------------------|--------------------------|------|-------|---------|-------|-------|--------|-------|------------|-----------|----|
| 54 | 7054095                | LA POCATIERE CDA         | QUE  | 47.35 | -70.03  | -17.5 | -30   | -23.9  | 16    | 2/7/1993   | 1984-1996 | 13 |
| 55 | 7098600                | VAL-D'OR A               | QUE  | 48.06 | -77.79  | -9    | -31.1 | -24.07 | 43.67 | 2/8/1995   | 1984-1995 | 12 |
| 56 | 7065640                | NORMANDIN CDA            | QUE  | 48.85 | -72.53  | -12   | -35.5 | -26.26 | 18    | 2/6/1985   | 1984-1992 | 9  |
| 57 | 7040440                | BAIE-COMEAU A            | QUE  | 49.13 | -68.2   | -19.5 | -30.2 | -28    | 18.33 | 12/29/1993 | 1984-1999 | 16 |
| 58 | 7113534 /<br>7.113E+37 | KUUJJUAQ UA              | QUE  | 58.12 | -68.42  | -31.5 | -42.4 | -38.95 | 33    | 1/25/1994  | 1984-1995 | 12 |
| 59 | 8102234                | HOYT BLISSVILLE          | NB   | 45.6  | -66.57  | -16   | -21.5 | -15    | 0     | 1/27/1992  | 1984-1999 | 16 |
| 60 | 8101600                | FREDERICTON CDA          | NB   | 45.92 | -66.62  | -17   | -25.5 | -17.26 | 0     | 2/2/1994   | 1984-1999 | 16 |
| 61 | 8100592 /<br>8100593   | BUCTOUCHE CDA            | NB   | 46.43 | -64.77  | -8.5  | -20.5 | -16.83 | 13.33 | 2/21/1990  | 1984-1998 | 15 |
| 62 | 8202800 /<br>8202810   | KENTVILLE CDA            | NS   | 45.07 | -64.48  | -8    | -19   | -8.9   | 4.5   | 3/4/1995   | 1984-1998 | 15 |
| 63 | 8205990                | TRURO                    | NS   | 45.37 | -63.27  | -8    | -18   | 11.25  | 0     | 2/9/1997   | 1984-1999 | 16 |
| 64 | 8300400 /<br>8300401   | CHARLOTTETOWN<br>CDA CS  | PEI  | 46.25 | -63.13  | -7.5  | -19.2 | -14.9  | NA    | 1/28/1992  | 1984-1998 | 15 |
| 65 | 8403600 /<br>8403605   | ST JOHN'S WEST CDA<br>CS | NFLD | 47.52 | -52.78  | -8.4  | -13.7 | -10.3  | 0.5   | 2/9/1998   | 1984-1998 | 15 |
| 66 | 8504217                | WEST ST MODESTE          | NFLD | 51.58 | -56.72  | -3    | -16   | -12.67 | NA    | 1/8/1985   | 1984-1987 | 4  |
| 67 | 8503018                | PORT HOPE SIMPSON        | NFLD | 52.53 | -56.3   | -2.5  | -20   | -13.5  | 12    | 12/8/1985  | 1984-1988 | 5  |
| 68 | 8501900                | GOOSE A                  | NFLD | 53.32 | -60.42  | -21   | -28.7 | -22.76 | 1     | 2/5/1996   | 1984-1999 | 16 |
| 69 | 8502800                | NAIN A                   | NFLD | 56.55 | -61.68  | -22.5 | -29.5 | -25.86 | 172   | 2/10/1988  | 1984-1991 | 8  |
| 70 | 2101200                | WATSON LAKE A            | YT   | 60.12 | -128.82 | -11   | -24.7 | -24    | 19    | 1/1/1984   | 1984-1988 | 5  |
| 71 | 2202208                | FORT SMITH UA            | NWT  | 60.03 | -111.93 | -11.4 | -42.2 | -34.13 | 18    | 1/11/1999  | 1984-2001 | 18 |
| 72 | 2400800                | CLYDE A                  | NU   | 70.49 | -68.52  | -39.5 | -46.2 | 42.43  | 35    | 2/12/1987  | 1984-2000 | 17 |
| 73 | 2403500                | RESOLUTE CARS            | NU   | 74.72 | -94.97  | -25.5 | -42.2 | -41.86 | 25    | 3/4/1984   | 1984-1999 | 16 |

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