Prairie Climate Centre
Prairie Climate Atlas

Visualizing Climate Change Projections for the Canadian Prairie Provinces
Acknowledgements
Dr. Danny Blair  
- **Scientific Director**, Prairie Climate Centre  
- Climatologist  
- Associate Dean, Faculty of Science  
- Principal, Richardson College for the Environment  
- Professor, Department of Geography  
- University of Winnipeg

Dr. Ian Mauro  
- **Communications Director**, Prairie Climate Centre  
- Film maker, environmental scientist  
- Associate Professor, Department of Geography  
- University of Winnipeg

Ryan Smith, MSc  
- **Research Associate**, Prairie Climate Centre  
- Climate researcher, computer programmer and map designer  
- University of Winnipeg

Dr. Hank Venema  
- **Planning Director**, Prairie Climate Centre  
- Policy analyst, International Institute for Sustainable Development  
- Professional engineer  
- Climate, water, energy, ecosystem management, environmental economics, agriculture policy expert
We use data from 12 downscalced global climate models to produce ensemble (average) projected conditions for the region.

Downscalced data was produced by the Pacific Climate Impacts Consortium (PCIC) in Victoria, BC.

For any location/area in the Prairie Provinces (e.g., town, RM, crop district) we can provide a detailed summary of the projected climate changes.

Projections using two Carbon Emissions Scenarios are used to represent the uncertainty associated with future concentrations of greenhouse gases.

Projections are shown for two future time periods: near future (2021-2050) and far future (2051-2080). Changes often shown relative to 1981-2010 baseline period (modeled).
Projections Summary

- Climate projections were extracted from:
  - 12 Global Climate Models, each using
  - 2 Carbon Emissions Scenarios (RCP4.5 and RCP8.5)

![Graph showing temperature ranges for recent past, near future, and far future with current climate and projections for high and low carbon scenarios.](image-url)
## Tailor-made Reports

### Winnipeg

**High Carbon Emissions (RCP8.5)**

<table>
<thead>
<tr>
<th>Climate Variable</th>
<th>Season</th>
<th>1981-2010 (Baseline)</th>
<th>2021-2050</th>
<th>2051-2080</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>L</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td><strong>Mean Temperature</strong></td>
<td></td>
<td></td>
<td>Projections</td>
<td></td>
</tr>
<tr>
<td>Annual</td>
<td></td>
<td>2.9 °C</td>
<td>4.3 °C</td>
<td>5.1 °C</td>
</tr>
<tr>
<td>Winter</td>
<td></td>
<td>-15.0 °C</td>
<td>-13.2 °C</td>
<td>-12.0 °C</td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td>3.0 °C</td>
<td>3.9 °C</td>
<td>4.7 °C</td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td>18.6 °C</td>
<td>20.0 °C</td>
<td>20.5 °C</td>
</tr>
<tr>
<td>Fall</td>
<td></td>
<td>4.9 °C</td>
<td>6.1 °C</td>
<td>7.0 °C</td>
</tr>
<tr>
<td>January</td>
<td></td>
<td>-17.7 °C</td>
<td>-16.2 °C</td>
<td>-14.7 °C</td>
</tr>
<tr>
<td>February</td>
<td></td>
<td>-13.9 °C</td>
<td>-13.6 °C</td>
<td>-11.6 °C</td>
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<tr>
<td>March</td>
<td></td>
<td>-6.7 °C</td>
<td>-6.4 °C</td>
<td>-4.5 °C</td>
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<tr>
<td>April</td>
<td></td>
<td>3.9 °C</td>
<td>4.6 °C</td>
<td>5.5 °C</td>
</tr>
<tr>
<td>May</td>
<td></td>
<td>11.6 °C</td>
<td>12.3 °C</td>
<td>13.1 °C</td>
</tr>
<tr>
<td>June</td>
<td></td>
<td>17.2 °C</td>
<td>18.0 °C</td>
<td>18.8 °C</td>
</tr>
<tr>
<td>July</td>
<td></td>
<td>19.8 °C</td>
<td>21.2 °C</td>
<td>21.8 °C</td>
</tr>
<tr>
<td>August</td>
<td></td>
<td>18.8 °C</td>
<td>20.2 °C</td>
<td>20.9 °C</td>
</tr>
<tr>
<td>September</td>
<td></td>
<td>12.8 °C</td>
<td>14.2 °C</td>
<td>14.9 °C</td>
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<tr>
<td>October</td>
<td></td>
<td>6.1 °C</td>
<td>7.0 °C</td>
<td>8.0 °C</td>
</tr>
<tr>
<td>November</td>
<td></td>
<td>-4.4 °C</td>
<td>-3.5 °C</td>
<td>-2.0 °C</td>
</tr>
<tr>
<td>December</td>
<td></td>
<td>-13.4 °C</td>
<td>-11.0 °C</td>
<td>-9.7 °C</td>
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</table>
## Winnipeg
### High Carbon Emissions (RCP8.5)

<table>
<thead>
<tr>
<th>Climate Variable</th>
<th>Season</th>
<th>1981-2010 (Baseline)</th>
<th>L</th>
<th>M</th>
<th>H</th>
<th>2021-2050 +/-</th>
<th>2051-2080 +/-</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Precipitation</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>2021-2050 +/-</td>
<td>2051-2080 +/-</td>
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<tr>
<td></td>
<td>Annual</td>
<td>524.7 mm</td>
<td>511.1 mm</td>
<td>552.6 mm</td>
<td>590.0 mm</td>
<td>+5.3 %</td>
<td>528.2 mm</td>
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<tr>
<td></td>
<td>Winter</td>
<td>66.2 mm</td>
<td>64.8 mm</td>
<td>72.3 mm</td>
<td>84.7 mm</td>
<td>+9.2 %</td>
<td>69.8 mm</td>
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<tr>
<td></td>
<td>Spring</td>
<td>116.8 mm</td>
<td>109.4 mm</td>
<td>128.0 mm</td>
<td>145.3 mm</td>
<td>+9.6 %</td>
<td>132.4 mm</td>
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<td></td>
<td>Summer</td>
<td>227.9 mm</td>
<td>212.2 mm</td>
<td>226.1 mm</td>
<td>247.3 mm</td>
<td>-0.8 %</td>
<td>189.4 mm</td>
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<td>Fall</td>
<td>112.9 mm</td>
<td>109.7 mm</td>
<td>125.2 mm</td>
<td>135.8 mm</td>
<td>+10.8 %</td>
<td>110.0 mm</td>
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<tr>
<td></td>
<td>January</td>
<td>24.5 mm</td>
<td>22.6 mm</td>
<td>26.7 mm</td>
<td>31.1 mm</td>
<td>+9.1 %</td>
<td>24.3 mm</td>
</tr>
<tr>
<td></td>
<td>February</td>
<td>18.9 mm</td>
<td>15.7 mm</td>
<td>19.5 mm</td>
<td>25.0 mm</td>
<td>+3.3 %</td>
<td>15.4 mm</td>
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<tr>
<td></td>
<td>March</td>
<td>23.7 mm</td>
<td>20.1 mm</td>
<td>26.0 mm</td>
<td>30.6 mm</td>
<td>+9.8 %</td>
<td>23.0 mm</td>
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<tr>
<td></td>
<td>April</td>
<td>31.3 mm</td>
<td>31.8 mm</td>
<td>37.5 mm</td>
<td>44.0 mm</td>
<td>+19.8 %</td>
<td>32.0 mm</td>
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<tr>
<td></td>
<td>May</td>
<td>61.8 mm</td>
<td>53.9 mm</td>
<td>64.5 mm</td>
<td>75.1 mm</td>
<td>+4.4 %</td>
<td>60.8 mm</td>
</tr>
<tr>
<td></td>
<td>June</td>
<td>80.2 mm</td>
<td>73.3 mm</td>
<td>86.6 mm</td>
<td>102.7 mm</td>
<td>+8.0 %</td>
<td>68.8 mm</td>
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<tr>
<td></td>
<td>July</td>
<td>75.5 mm</td>
<td>59.8 mm</td>
<td>70.6 mm</td>
<td>82.1 mm</td>
<td>-6.6 %</td>
<td>55.1 mm</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td>72.2 mm</td>
<td>55.0 mm</td>
<td>69.0 mm</td>
<td>84.5 mm</td>
<td>-4.5 %</td>
<td>48.2 mm</td>
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<tr>
<td></td>
<td>September</td>
<td>50.7 mm</td>
<td>41.9 mm</td>
<td>51.8 mm</td>
<td>63.4 mm</td>
<td>+2.0 %</td>
<td>39.3 mm</td>
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<tr>
<td></td>
<td>October</td>
<td>34.3 mm</td>
<td>32.0 mm</td>
<td>41.6 mm</td>
<td>51.6 mm</td>
<td>+21.1 %</td>
<td>28.7 mm</td>
</tr>
<tr>
<td></td>
<td>November</td>
<td>27.9 mm</td>
<td>24.3 mm</td>
<td>31.8 mm</td>
<td>43.8 mm</td>
<td>+14.2 %</td>
<td>25.5 mm</td>
</tr>
<tr>
<td></td>
<td>December</td>
<td>23.8 mm</td>
<td>23.3 mm</td>
<td>27.1 mm</td>
<td>30.3 mm</td>
<td>+14.0 %</td>
<td>25.0 mm</td>
</tr>
</tbody>
</table>
# Tailor-made Reports

## Winnipeg

### High Carbon Emissions (RCP8.5)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Days ≥ 30 °C</td>
<td>Annual</td>
<td>11.0 days</td>
<td>19.0 days</td>
<td>25.6 days</td>
<td>36.0 days</td>
<td>+14.6 days</td>
<td>34.0 days</td>
<td>46.4 days</td>
<td>60.0 days</td>
<td>+35.4 days</td>
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<tr>
<td>Nights ≥ 20 °C</td>
<td>Annual</td>
<td>1.0 days</td>
<td>2.0 days</td>
<td>5.1 days</td>
<td>9.0 days</td>
<td>+4.1 days</td>
<td>10.0 days</td>
<td>15.8 days</td>
<td>22.0 days</td>
<td>+14.8 days</td>
</tr>
<tr>
<td>Days ≤ -30 °C</td>
<td>Annual</td>
<td>8.2 days</td>
<td>1.0 days</td>
<td>2.9 days</td>
<td>5.0 days</td>
<td>-5.3 days</td>
<td>0.0 days</td>
<td>0.7 days</td>
<td>2.0 days</td>
<td>-7.5 days</td>
</tr>
<tr>
<td>Last Spring Frost</td>
<td>-</td>
<td>May-19</td>
<td>May-02</td>
<td>May-11</td>
<td>May-20</td>
<td>-8 days</td>
<td>Apr-24</td>
<td>May-02</td>
<td>May-11</td>
<td>-17 days</td>
</tr>
<tr>
<td>Frost-Free Period</td>
<td>Annual</td>
<td>128.4 days</td>
<td>128.0 days</td>
<td>145.8 days</td>
<td>162.0 days</td>
<td>+17.4 days</td>
<td>147.0 days</td>
<td>161.4 days</td>
<td>177.0 days</td>
<td>+33.1 days</td>
</tr>
<tr>
<td>First Fall Frost</td>
<td>-</td>
<td>Sep-24</td>
<td>Sep-23</td>
<td>Oct-04</td>
<td>Oct-19</td>
<td>+9 days</td>
<td>Oct-02</td>
<td>Oct-10</td>
<td>Oct-22</td>
<td>+16 days</td>
</tr>
<tr>
<td>Frost Period</td>
<td>Annual</td>
<td>211.2 days</td>
<td>150.0 days</td>
<td>165.2 days</td>
<td>178.0 days</td>
<td>-45.9 days</td>
<td>145.0 days</td>
<td>157.7 days</td>
<td>174.0 days</td>
<td>-53.5 days</td>
</tr>
<tr>
<td>Frost Days</td>
<td>Annual</td>
<td>186.2 days</td>
<td>157.0 days</td>
<td>167.0 days</td>
<td>179.0 days</td>
<td>-19.2 days</td>
<td>134.0 days</td>
<td>148.2 days</td>
<td>159.0 days</td>
<td>-38.0 days</td>
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<tr>
<td>Icing Days</td>
<td>Annual</td>
<td>117.8 days</td>
<td>92.0 days</td>
<td>104.2 days</td>
<td>115.0 days</td>
<td>-13.6 days</td>
<td>71.0 days</td>
<td>86.7 days</td>
<td>98.0 days</td>
<td>-31.1 days</td>
</tr>
<tr>
<td>Freeze-Thaw Cycles</td>
<td>Annual</td>
<td>58.7 cycles</td>
<td>45.0 cycles</td>
<td>54.1 cycles</td>
<td>61.0 cycles</td>
<td>-4.6 cycles</td>
<td>46.0 cycles</td>
<td>53.1 cycles</td>
<td>58.0 cycles</td>
<td>-5.6 cycles</td>
</tr>
<tr>
<td>5 °C Degree Days</td>
<td>Annual</td>
<td>1826.1 days</td>
<td>2086.9 days</td>
<td>2188.9 days</td>
<td>2314.7 days</td>
<td>+362.9</td>
<td>2402.5 days</td>
<td>2601.5 days</td>
<td>2807.6 days</td>
<td>+775.4</td>
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<td>10 °C Degree Days</td>
<td>Annual</td>
<td>1015.7 days</td>
<td>1225.9 days</td>
<td>1301.6 days</td>
<td>1401.8 days</td>
<td>+285.9</td>
<td>1490.1 days</td>
<td>1640.7 days</td>
<td>1823.2 days</td>
<td>+624.9</td>
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<td>16 °C Degree Days</td>
<td>Annual</td>
<td>325.6 days</td>
<td>453.3 days</td>
<td>506.1 days</td>
<td>563.1 days</td>
<td>+180.5</td>
<td>641.9 days</td>
<td>748.8 days</td>
<td>881.4 days</td>
<td>+423.2</td>
</tr>
<tr>
<td>Max 1-day Precip</td>
<td>Annual</td>
<td>67.0 mm</td>
<td>54.7 mm</td>
<td>75.3 mm</td>
<td>99.2 mm</td>
<td>+12.5 %</td>
<td>50.9 mm</td>
<td>77.4 mm</td>
<td>108.6 mm</td>
<td>+15.6 %</td>
</tr>
<tr>
<td>Max 3-day Precip</td>
<td>Annual</td>
<td>139.9 mm</td>
<td>118.2 mm</td>
<td>160.4 mm</td>
<td>198.4 mm</td>
<td>+14.6 %</td>
<td>102.8 mm</td>
<td>168.3 mm</td>
<td>226.8 mm</td>
<td>+20.3 %</td>
</tr>
<tr>
<td>PET</td>
<td>Annual</td>
<td>632.2 mm</td>
<td>658.7 mm</td>
<td>672.3 mm</td>
<td>684.1 mm</td>
<td>+6.3 %</td>
<td>689.1 mm</td>
<td>714.1 mm</td>
<td>737.1 mm</td>
<td>+12.9 %</td>
</tr>
<tr>
<td>P-PET Ratio</td>
<td>Annual</td>
<td>0.83</td>
<td>0.76</td>
<td>0.82</td>
<td>0.88</td>
<td>-0.01</td>
<td>0.74</td>
<td>0.79</td>
<td>0.83</td>
<td>-0.04</td>
</tr>
</tbody>
</table>

L = Low Projection (10th Percentile)  M = Mean Projection  H = High Projection (90th Percentile)
Tailor-made Reports

We can generate reports for any shape-file area.
Days -30°
or Colder
Shifting Extremes
Change in the Number of Very Cold Days

This is the type of image that will be on our website.
Draped over scalable Google Earth images.
Major centres will be clickable, to obtain data details.

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Shifting Extremes
Change in the Number of Very Cold Days

Five different versions of maps for each variable will be presented:

1981-2010
2021-2050 (RCP4.5)
2021-2050 (RCP8.5)
2051-2080 (RCP4.5)
2051-2080 (RCP8.5)

2021-2050 Annual number of days ≤ -30 °C

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Shifting Extremes
Change in the Number of Very Cold Days

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Shifting Extremes
Change in the Number of Very Cold Days

2051-2080 Annual number of days ≤ -30 °C

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
2051-2080 Annual number of days ≤ -30 °C

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Days +30°
or Warmer
Shifting Extremes
Change in the Number of Very Hot Days

Recent Past	Near Future	Far Future

High Carbon	Low Carbon

1981-2010 Annual number of days ≥ 30 °C

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Shifting Extremes
Change in the Number of Very Hot Days

Recent Past  Near Future  Far Future

High Carbon  Low Carbon

2021-2050 Annual number of days ≥ 30 °C

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Shifting Extremes
Change in the Number of Very Hot Days

Recent Past  Near Future  Far Future

High Carbon

Low Carbon

2021-2050 Annual number of days ≥ 30 °C

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Shifting Extremes
Change in the Number of Very Hot Days

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Shifting Extremes

Change in the Number of Very Hot Days

2051-2080 Annual number of days ≥ 30 °C

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Frost-Free Period
Frost-Free Period
A Much Longer Growing Season

Recent Past  Near Future  Far Future

High Carbon  Low Carbon

1981-2010 Length of the Frost-Free Period (days)

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Frost-Free Period
A Much Longer Growing Season

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Frost-Free Period
A Much Longer Growing Season

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Frost-Free Period
A Much Longer Growing Season

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Frost-Free Period
A Much Longer Growing Season

2051-2080 Length of the Frost-Free Period (days)

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
2051-2080 $\Delta T$: RCP8.5

Temperature Change (°C) from 1981-2010

- Edmonton
- Regina
- Winnipeg
Spring Precipitation
**Prairie Precipitation**

Projectsed Changes in Total Spring Precipitation

Recent Past  Near Future  Far Future

High Carbon  Low Carbon

1981-2010 Total Spring Precipitation (mm)

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Recent Past  Near Future  Far Future
High Carbon  Low Carbon

Prairie Precipitation
Projected Changes in Total Spring Precipitation

2021-2050 Total Spring Precipitation (mm)

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Prairie Precipitation
Projected Changes in Total Spring Precipitation

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Prairie Precipitation
Projected Changes in Total Spring Precipitation

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Prairie Precipitation
Projected Changes in Total Spring Precipitation

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Summer Precipitation
Prairie Precipitation
Projected Changes in Total Summer Precipitation

1981-2010 Total Summer Precipitation (mm)

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Prairie Precipitation
Projected Changes in Total Summer Precipitation

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Prairie Precipitation
Projected Changes in Total Summer Precipitation

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014).
Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
Prairie Precipitation
Projected Changes in Total Summer Precipitation

Data Source: Pacific Climate Impacts Consortium (PCIC), University of Victoria, (2014). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org.
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2051-2080 Δ PPT: RCP8.5

% Change from 1981-2010

- Edmonton
- Regina
- Winnipeg

Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec
An Example of Climate Analogues
AdaptWest data was used to identify whose climates we will have in the future, using seasonal temperature and precipitation projections.
Similarity index:

- Mean temperature within 1 °C
- Total snowfall within 15%
Winnipeg

Winter Climate Analogues

High Carbon
Low Carbon

Summer
Winter

2020s 2050s 2080s
Similarity index:

- Mean temperature within 1 °C
- Total precipitation within 20%

Map showing climate analogues for Winnipeg, with indicators for summer and winter, high and low carbon emission scenarios, and decades 2020s, 2050s, 2080s.
Winnipeg
Summer Climate Analogues

High Carbon
Low Carbon

Summer
Winter

2020s 2050s 2080s
Winnipeg
Summer Climate Analogues

Prairie Climate Centre

Map showing climate analogues for Winnipeg.

Legend:
- Summer
- Winter
- High Carbon
- Low Carbon

Time periods:
- 2020s
- 2050s
- 2080s
BCSD-downscaled climate data supplied by:

Pacific Climate Impacts Consortium, University of Victoria, (Jan. 2015). Statistically Downscaled Climate Scenarios. Downloaded from pacificclimate.org

THANK YOU PCIC!

AdaptWest Project. 2015. Gridded current and projected climate data for North America at 1km resolution, interpolated using the ClimateNA v5.10 software (T. Wang et al., 2015). Available at adaptwest.databasin.org
Role of the Prairie Climate Centre

- Inform policy and develop solutions
- Inspire adaptation and mitigation
- Make climate change data accessible to all
- Build decision making tools
- Produce peer-reviewed research results
- Foster Prairie-wide collaborations and partnerships
- Conduct workshops and training sessions
- Educate the public
Implications

- Shifting seasons
- Shorter, warmer winters
- Longer, hotter summers
- More precipitation in winter, spring, fall
- Less precipitation in summer
- More intense precipitation events
- More severe weather
- More heat waves
- A less stable climate
Risks

- Floods and droughts
- Water resource management
- Human health
- Crop failure
- Invasive species
- Forest fires
- Winter roads
- Infrastructure and building codes
- Disaster management and response
- Summer energy demand
Benefits

• Longer *growing* season
• New *crop* varieties
• Lower winter *heating* costs
• Fewer extreme *cold* events
Thank You

We look forward to working with you

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