

PLAN2ADAPT PROJECT SUMMARY

CLIMATE CHANGE IN BC

Climate change is a global phenomenon, but its effects are felt most strongly at the regional scale. Owing to diverse topography, proximity to the ocean and other features, BC's climate can vary dramatically over short distances. Each region will be affected in different ways by a changing global climate.

The provincial government, business sectors and individual communities in BC have begun to take measures to adapt to the changing climate. Climate change impacts information is typically an important starting point starting point for adaptation planning.

To support long-term planning that considers the effects of climate change, the Pacific Climate Impacts Consortium has developed Plan2Adapt. This is a web-based tool (www.Plan2Adapt.ca) with an easy to use interface (Figure 1). Plan2Adapt allows users—including community planners, engineers, consultants and anyone else interested in BC's future climate—to access climate data and visualize the potential changes to the climate of their region of interest.

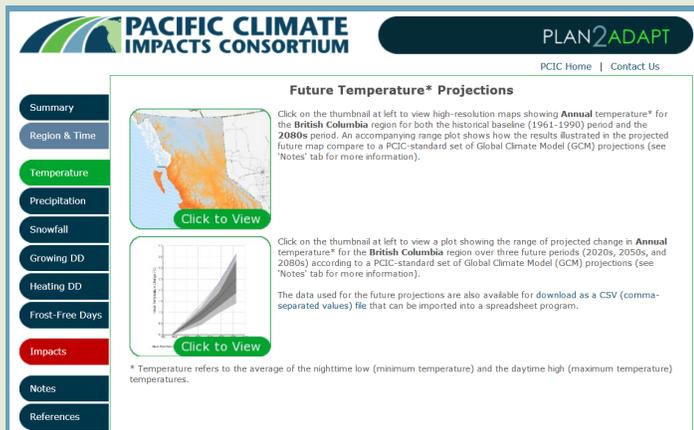


Figure 1: The user interface of Plan2Adapt.

PLAN2ADAPT OVERVIEW

Plan2Adapt provides a summary and overview of projected changes to various climate variables for regional districts, health authority boundaries, ecoprovinces and resource regions in BC. Using projections of future cli-

Region & Time	Climate Variable	Season	Projected Change from 1961-1990 Baseline	
			Ensemble Median	Range (10th to 90th percentile)
Temperature	Mean Temperature (°C)	Annual	+2.7 °C	+1.7 °C to +4.6 °C
		Summer	+9%	+3% to +18%
Precipitation	Precipitation (%)	Winter	+0%	-13% to +7%
		Spring	+13%	+5% to +23%
Snowfall	Snowfall* (%)	Winter	-12%	-26% to -0%
		Spring	-70%	-88% to -16%
Growing DD	Growing Degree Days* (degree days)	Annual	+468 degree days	+261 to +778 degree days
Heating DD	Heating Degree Days* (degree days)	Annual	-973 degree days	-1592 to -606 degree days
Frost-Free Days	Frost-Free Days* (days)	Annual	+30 days	+16 to +49 days

* These values are derived from temperature and precipitation. Please select the appropriate variable tab for more information.

Figure 2: Plan2Adapt's summary tab.

mate, Plan2Adapt also helps users to understand possible regional climate impacts.

TARGET AUDIENCE

The target audience of Plan2Adapt includes anyone who is involved in community planning or risk management. Plan2Adapt was designed for the non-specialist, with an intuitive point-and-click interface that allows users to access plots and maps to easily and clearly visualize projected changes to climate, as well as concise summaries of potential impacts.

WHAT PLAN2ADAPT PROVIDES

Plan2Adapt provides projections of a variety of variables based on global climate model output. These include: temperature, precipitation, snowfall, growing-degree days (which indicates the amount of heat energy available for plant growth), heating degree-days (useful for indicating energy demand for heating in winter) and frost-free days (the number of days per year when the nighttime low temperature stays above freezing). Plan2Adapt provides these variables in data files (in "Comma-Separated Values" format, usable in Microsoft Excel), summaries (Figure 2), maps (Figure 3) and time series plots (Figure 4). The summary tab provides a quick overview of the projected changes to all variables. The maps and plots allow users to visualize the projections over

PCIC Gratefully Acknowledges the following:

BC Ministry of Environment, Natural Resources Canada, CitySpaces Consulting and Adaptive Resources Management

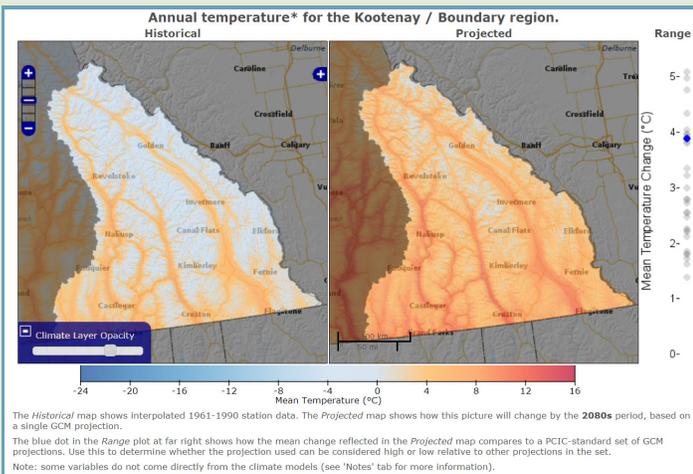


Figure 3: A map plot from Plan2Adapt¹.

time in the area of interest.

Plan2Adapt also has an impacts tab that presents a summary of potential impacts, detailed by sector (Figure 5). This impacts tab has two views: impact and sector. The impacts view displays potential, individual climate impacts (such as possible flooding and increased hot and dry conditions) along with sectors (such as forestry and infrastructure) affected by each impact. The sector view

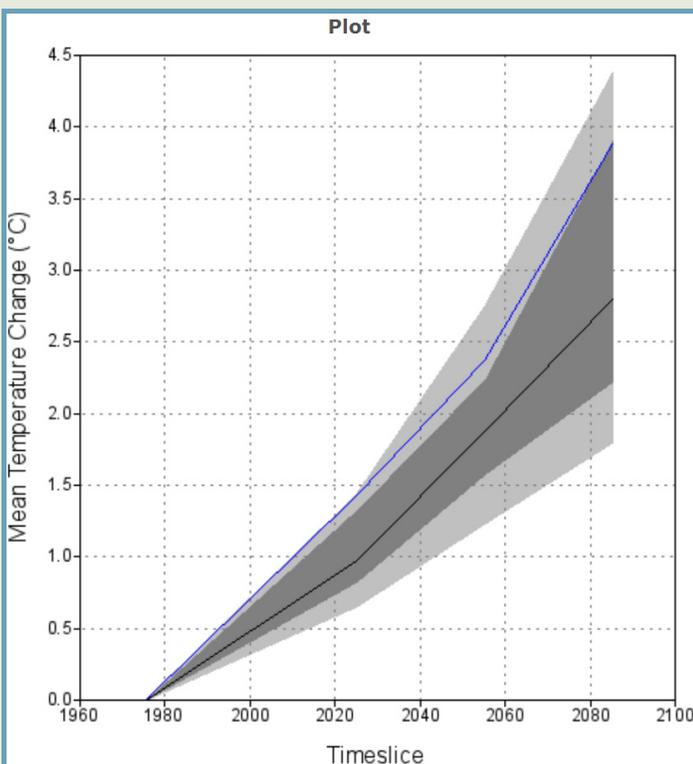


Figure 4: Plot of projected annual temperature for the Kootenay/Boundary region (same as Figure 3) from Plan2Adapt¹.

(Figure 5) displays each sector along with a list of the climate impacts that could be relevant. By clicking in these views, users can easily bring up a short discussion outlining how the impacts could affect each sector.

For example, a user interested in forestry in BC's Kootenay-Boundary ecoprovince could access Plan2Adapt through the PCIC website. The user could then select projections for that region, over the time period of the 2080s, and see maps of projected changes to all of the variables above, such as temperature and growing degree days. Following this, the user could examine the potential impacts to the forestry sector over this period and then click on the impacts to get a short written summary of impacts. This could include such things as the effect of a shorter access season where winter access requires frozen roads and what the opportunities for facilitated migration of trees species might be.

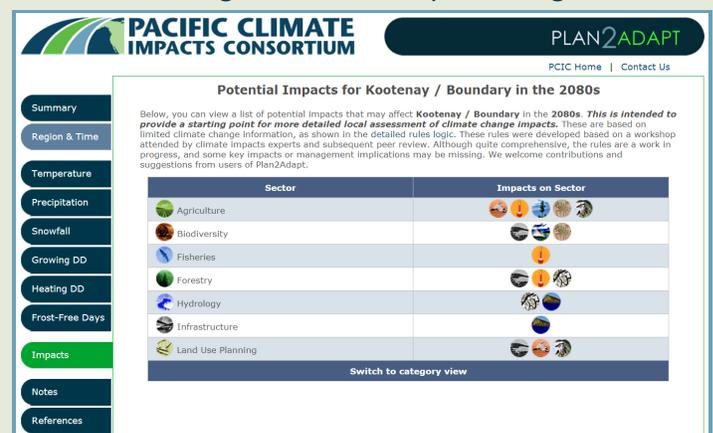


Figure 5: Plan2Adapt's impacts tab, by sector.

THE FUTURE OF PLAN2ADAPT

PCIC will continue to invest in improving Plan2Adapt. Global climate model projections will be updated with projections from the newest phase of the Climate Model Intercomparison Project (CMIP5). PCIC is also planning to subject the impacts tab to additional peer review. User input on Plan2Adapt is always encouraged.

FOR MORE DETAILED DATA

Plan2Adapt is an important part of the range of climate data and services that PCIC provides. For those seeking detailed data and explanations of climate change scenarios, these are available through PCIC's Regional Analysis Tool². Detailed historical data is available from PCIC's Data Portal³ and regional hydrological assessments are available through PCIC's Publications Library⁴. A longer report on Plan2Adapt is forthcoming and will be available through PCIC's Publications Library⁴.

¹Details for all of the plots and maps in this report can be found at: <http://plan2adapt.ca>

²<http://pacificclimate.org/tools-and-data/regional-analysis-tool>

³<http://pacificclimate.org/tools-and-data/data-portal>

⁴<http://pacificclimate.org/resources/publications>