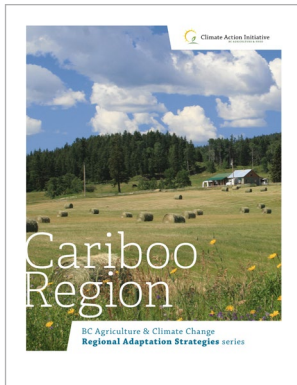


Cariboo

AGRICULTURAL IMPACTS as assessed in 2014



THE CHANGES IN CLIMATE projected for the Cariboo region will have a range of impacts on agricultural production. Potential agricultural impacts are summarized the table below.

This table is extracted from the *Cariboo Adaptation Strategies* full report, published in 2014 by the BC Agriculture & Food Climate Action Initiative. To read the full report, visit: www.ClimateAgricultureBC.ca

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
<ul style="list-style-type: none"> ↗ Increasing summer temperatures ↘ Decreasing summer precipitation 	<p>Increasing wildfire risk</p>	<ul style="list-style-type: none"> – Increase in severity and frequency of damages to agricultural infrastructure and productivity – Costs of preparing for, managing, and responding to wildfire – Psychological impacts – Increase in agriculture/wildlife encounters due to wildlife displacement – Smoke and ash negatively affecting livestock/crop health and productivity – Long-term impacts to soil and hydrology after moderate-high severity burns
<ul style="list-style-type: none"> ↘ Decreasing summer precipitation ↘ Decreasing snowpack (especially in spring) 	<p>Changing hydrological regime:</p> <ul style="list-style-type: none"> ▪ Decreasing summer & fall water supply ▪ Decreasing runoff (especially in summer) ▪ More frequent drought conditions 	<ul style="list-style-type: none"> – Decrease in quality and amount of water supply for livestock and irrigation – Water stress and decreased productivity for crops and rangeland – Increase in need for water storage and irrigation (and associated costs) – Increase in potential for overgrazing – Increase in feed costs in dry years (when lack of forage)

continued on next page →

→ continued from previous page

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
<ul style="list-style-type: none"> ↗ Increasing winter temperatures ↗ Increasing extreme rainfall events ~ Shifting precipitation patterns 	<p>Changing hydrological regime:</p> <ul style="list-style-type: none"> ▪ More frequent rain on snow events ▪ Increasing flooding and runoff 	<ul style="list-style-type: none"> – Increase in damage to infrastructure and productivity – Increase in soil erosion – Risks to dam integrity – Increase in challenges with input and nutrient management – Challenges with timing for planting and harvesting
<ul style="list-style-type: none"> ↗ Increasing variability of conditions and extremes 	<p>Increasing variability of conditions</p>	<ul style="list-style-type: none"> – Interruption or damage during planting, germination and harvesting – Overall increase in management complexity and costs – Acceleration of cumulative impacts – Negative affects to livestock health/immune systems – Increase in hazardous winter conditions for livestock (freeze/thaw cycles etc.) – Uncertainty in length of grazing and/or feeding periods
<ul style="list-style-type: none"> ↗ Increasing temperatures 	<p>Increasing growing degree days/heat units</p>	<ul style="list-style-type: none"> – Impacts to agricultural viability in some areas – Decreased suitability of some crops <p>Potential opportunities:</p> <ul style="list-style-type: none"> + Increase in suitability for new varieties + Increase in suitability of new crops + Opportunity for season extension and additional cropping
<ul style="list-style-type: none"> ↗ Increasing winter temperature and seasonal temperatures ↗ Increasing spring precipitation and extreme rain events ↗ Drier summer conditions 	<p>Changing pests, diseases, invasive species & pollinators:</p> <ul style="list-style-type: none"> ▪ Increasing winter survival rates ▪ Increasing number of cycles in a year ▪ Introduction of new pests and diseases 	<ul style="list-style-type: none"> – Increase in crop damage and losses – Increase in management costs, complexity, uncertainty – Negative effects on livestock health – Reduction in pollinator populations or shifts in pollination timing
<ul style="list-style-type: none"> ~ Climate change in other growing regions 	<p>Variability of global agricultural production</p>	<ul style="list-style-type: none"> – Increase in feed or other input costs – Fluctuation in input prices will cause more challenges to planning <p>Potential opportunities:</p> <ul style="list-style-type: none"> + Increase in demand and prices for food production/local food + Potential competitive advantage in changing global markets + Increase in farming diversity in the region (filling gaps in market)
<ul style="list-style-type: none"> ↗ Increasing temperatures ~ Shifting precipitation patterns ↗ Increasing wildfire frequency and severity 	<p>Changes to wildlife & ecological systems</p>	<ul style="list-style-type: none"> – Changing patterns of plant succession and species composition due to extremes, fire events etc. – Loss of crops, livestock, forage and stored feed (and associated costs) – Establishment of new invasive plants