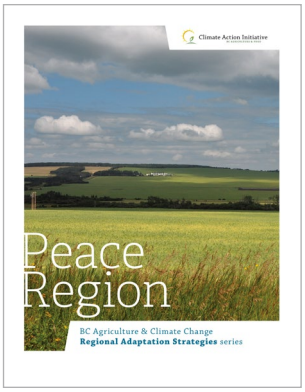
Climate & Agriculture Initiative BC

Peace Region

Regional Adaptation Program | **AGRICULTURAL IMPACTS** | as assessed in 2013



The changes in climate projected for the Peace region will have a range of impacts on agricultural production. Potential agricultural impacts are summarized the table below.

This table is extracted from the *Peace Adaptation Strategies* full report, published in 2013 by the Climate & Agriculture Initiative BC. To read the full report, visit: *www.ClimateAgricultureBC.ca*

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
↗ Increasing winter temperatures	***More frequent rain-on-snow events, freeze-thaw cycles***	– Increase in hazardous conditions for livestock – Increase in winterkill of grasses and legumes – Increase in management costs – Increase in loss of soil inputs applied in fall
↗ Increasing temperatures ↗ Increasing growing degree-days/heat units ↗ Increasing frost-free period	***Increasing growing season length*** ***Increase in wildfire risk***	– Increased uncertainty (shoulder season variability/extremes) – Increased risk of plant stress, pests – May decrease hay yields ***Potential opportunities:*** + Increase in suitability for new varieties (forage, grain, seed) + May increase length of fall grazing season + Increase in suitability of new types of crops + Increased yields and quality

continued on next page →

→ continued from previous page

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
↗ Increasing seasonal temperatures ↘ Decrease in precipitation falling as snow	***Changing hydrology:*** ▪ Earlier river peak flow ▪ Lower water supply in summer/fall ▪ Increasing frequency and severity of drought ▪ Decreased quality of water supply	– Increased plant stress – Decreased productivity – Crop losses – Increased need for water storage and irrigation – Lower pasture carrying capacity ***Potential opportunities:*** + Decreased drying costs + Improved grain quality + Slower weed growth + Increased feasibility of storage/irrigation infrastructure
↗ Increasing precipitation	***Increasing moisture in the spring***	– Waterlogged soils – Increased risk of disease – Delayed planting – Increased costs ***Potential opportunities:*** + Improved germination and emergence + May improve hay yields
↗ Increasing extreme precipitation events	***Flash flooding*** ***Soil erosion***	– Crop damage – Input (fertilizer, seed, pesticides) losses – Impeded pollination – Delayed planting – Impeded combining
↗ Increasing variability of conditions		– Increase in management complexity – Acceleration of cumulative impacts – Challenge to current production system – More rapid adaptations required
↗ Increasing winter temperatures ↗ Increasing annual temperature ↗ Increasing growing degree days ↗ Increasing frost-free period	***Changes to pests and diseases:*** ▪ Increased winter survival rates ▪ Increased number of cycles in a year ▪ Introduction of new pests and diseases ***Increasing wildlife & bird activity, success rates, population sizes***	– Increased management costs, complexity, uncertainty – Crop damage, losses – Negative effects on livestock health – Increased conflicts with other stakeholders over wildlife and habitat management