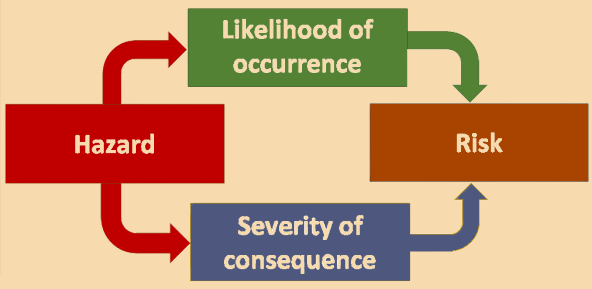
CLIMATE CHANGE HAZARDS AND RISKS

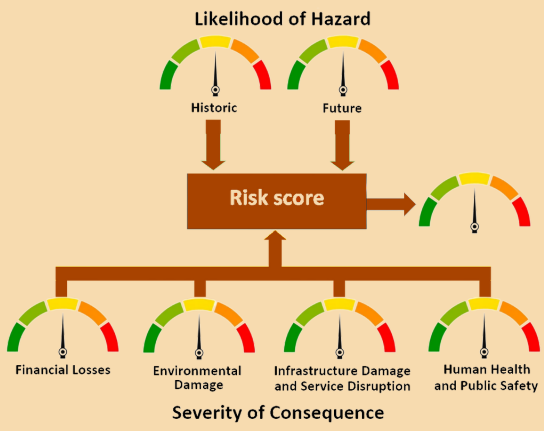
FOR AGRICULTURE

IN GREY, BRUCE AND HURON COUNTIES

Risk assessment basics

- Risk is the product of the system's exposure to a hazard.
- The magnitude of risk is linked to the likelihood of a hazard occurring and the severity of its consequence.

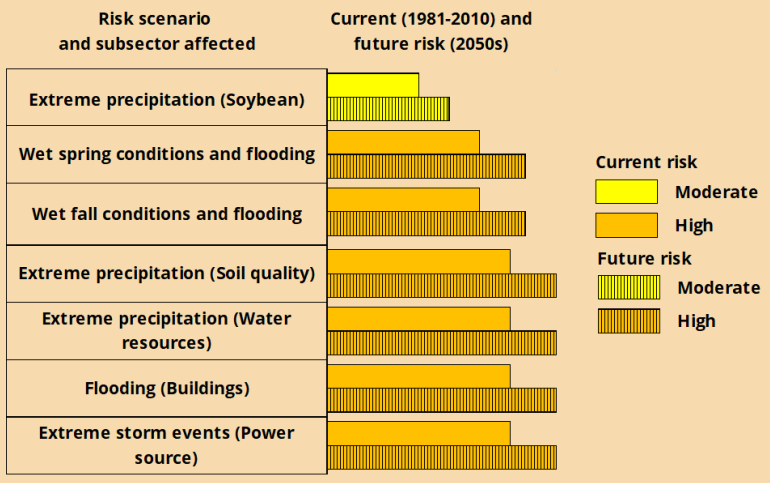




Risk scenarios for agriculture in Grey, Bruce and Huron counties were developed using information on existing and future impacts of major climate hazards on different components of the sector. Scenario likelihoods and consequences were assessed and risk scores (negligible to extreme) were assigned.

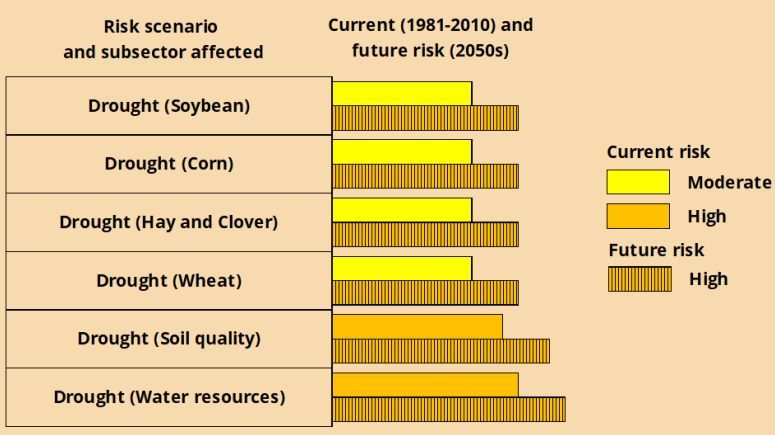
Climate hazards resulting in the largest impacts to agriculture in the region are heavy precipitation, flooding, drought and extreme heat.

Significant increases in **heavy precipitation and flooding events** affect field crops, farm operations, infrastructure, soil and water resources. Risk scenarios related to heavy precipitation and flooding events in Grey, Bruce and Huron counties fall into moderate and high risk categories, with risks expected to increase in the future.



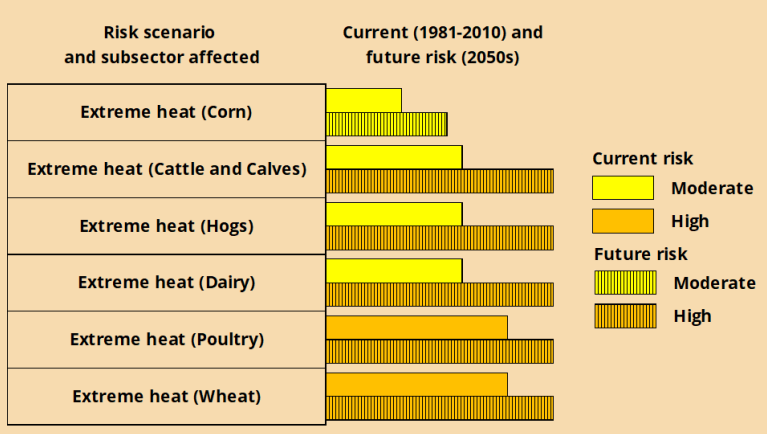
Precipitation events with daily amounts from 10 to 30 mm are experienced during the growing season, causing increased runoff, leaching of nutrients and chemicals, water contamination, degraded soil quality, waterlogging and erosion, damage to crops and infrastructure and delays to planting and harvesting operations.

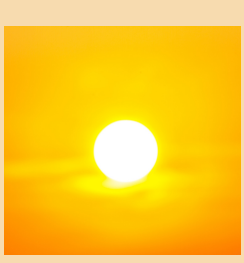
Dry conditions during summer months adversely affect water resources and soil quality with implications for field crops and livestock. Financial losses due to crop damage, environmental degradation and public health concerns are the main consequences contributing to overall risk scores, which fall into moderate and high categories.



A growing number of dry days and monthly precipitation totals below 20 mm during the growing season lead to more frequent dry spells and drought conditions. Low water levels, reductions in groundwater recharge coupled with the decline in soil suitability to support crop growth result in delays in plant development, reduced productivity, yield and nutritional value as well as increased production costs.

Rising air temperatures and a greater number of **heat waves** have been occurring in Grey, Bruce and Huron counties in the past decades and are almost certain to persist and intensify in the future. This is consistent with moderate and high risks scores for heat-related scenarios affecting agricultural crops and livestock in the region.





Exposure to temperatures over 30°C is detrimental to most crops and livestock. Heat stress results in shortened phenological stages, greater susceptibility to diseases and reduced yields in crops. Suppressed appetite, decreased weight gain, lower fertility rates and increased mortality are common impacts in livestock.

This document is part of a series of infographics focused on climate change risks, impacts and opportunities for the agricultural sector in Grey, Bruce and Huron counties.

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