

Kootenay & Boundary Regional Snapshot

Supplement to the Farm Flood Readiness Toolkit

This snapshot provides an overview of flood risk and resources specific to **Kootenay & Boundary** producers. Visit the [Climate & Agriculture Initiative BC](#) website to download the complete **Farm Flood Readiness Toolkit**.

Agricultural operations in the Kootenay & Boundary region are exposed to varying levels of flood risk, largely depending on their location.

Factors that will influence the flood hazard at a farm include:

- Its proximity to water bodies. Larger rivers across the region present a significant flood risk, but even smaller creeks or streams can flood surrounding areas under certain conditions.
- Its proximity to dikes. Properties located near dikes have a relatively high flood hazard. Although dikes are protective infrastructure, all dikes have the potential to fail or overtop.
- Whether its location is prone to flooding from upland areas, overland flow and stormwater ponding. (This depends on its soil, land cover, surrounding topography, etc.)
- The depth of its underlying groundwater table if prone to rising water tables and groundwater flooding.

The [Kootenay & Boundary region](#) has the largest number of individual floodplains in B.C. Much of the agricultural land in the region follows valley floors and rivers and is therefore vulnerable to flooding.

Much of the Regional District of Kootenay Boundary (RDKB) has a high water table due to its only slight elevation above nearby rivers and lakes.

Flood risk in the Regional District of Central Kootenay (RDCK) is largely related to proximity to lakes and rivers, steep creeks, debris flows and historical development on alluvial fans.

Flooding, landslides and debris flows are also a risk in the Regional District of East Kootenay (RDEK). The [Kettle River watershed](#) is especially susceptible to flooding as the majority of the yearly flow is released during the spring freshet when the bulk of the snowpack melts.

This was experienced on the Kettle and Granby rivers in 2018 when flooding required evacuation orders — affecting over 2,700 people — from Christina Lake through the West Boundary, including areas of Grand Forks. Since this time, the City of Grand Forks has been working on upgrading their dikes.

The west and central Kootenays have experienced flooding from both freshet-related events and severe weather events involving significant rainfall. Flooding on Kootenay Lake and along the Kootenay and Columbia Rivers has occurred in recent years.





Grand Forks, BC, 2018

Photo by Government of British Columbia

Major events like the Johnsons Landing debris flow and landslide have impacted farms and properties. Freshet flooding on alluvial fans, where significant development has historically taken place, often presents a risk in springtime.

East Kootenay is exposed to a variety of flood risks: from river flooding and high water tables in the Elk Valley to debris flooding, sedimentation/channel aggradation and ice jam flooding in the Columbia Valley. Flooding typically occurs during spring freshet but can happen at any time of year due to extreme rainfall and rapid snowmelt.

A range of flood protection measures are in place, including dikes and berms in the Elk Valley and debris retention structures on Fairmont Creek in the Columbia Valley. A major debris retention project is planned for Cold Spring Creek in 2023.

Climate Change Projections and Region Flood Hazard

Changing precipitation patterns in the region are resulting in increasing river flows in winter and spring and earlier peak stream flows/freshet.

Climate projections point to increasing average spring precipitation as well as increasing frequency and magnitude of extreme rainfall events. This increases the potential for more rain-driven flood events and an increase in site-specific flooding.

Flood risk is the most pronounced in spring. Flooding is usually caused by rapid melting of a thick snow pack, heavy rainfall or ice and debris

jams, or a combination of these events. Summer rainstorms can also bring heavy rainfall that causes flash flooding.

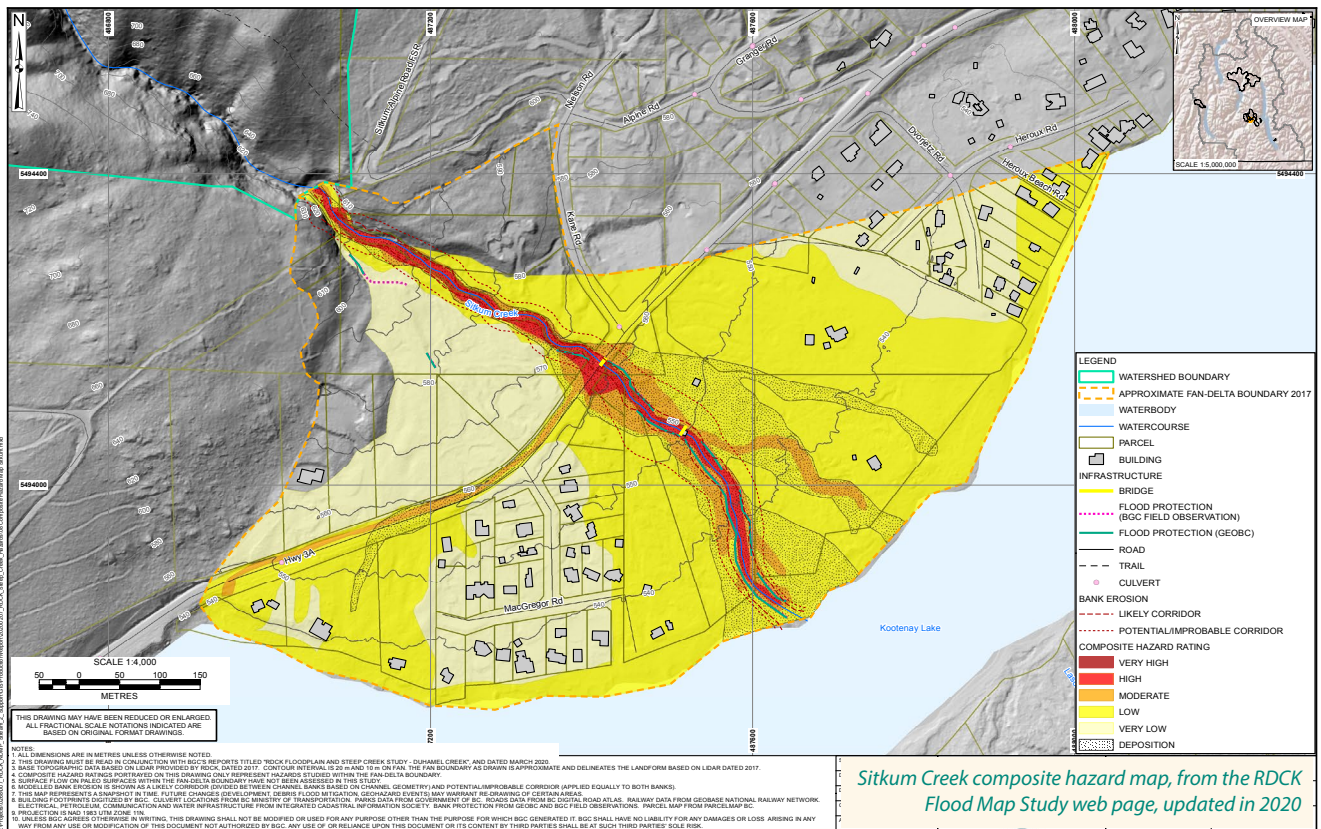
Flood Maps

Reviewing flood maps can be helpful for better understanding risk — particularly in a changing climate. Both simple floodplain maps and maps focused specifically on geohazards or steep creeks are available. These can be used to assess how a flood event might affect your property and the surrounding area.

For more information about floodplains, please see the Province of BC [floodplain maps](#) (available from the Region 3 - Southern Interior and Region 4 - Kootenay dropdown menus).

The RDEK [flood hazard web map](#) includes the floodplain area and flood torrent hazard area. A flood and steep creek risk assessment is currently underway for East Kootenay and will be completed in May of 2022. The process involves collating and updating existing information and assessing new areas not previously included.

A risk prioritization study in the RDCK identified 16 high priority areas across the regional district, and the flood risk for each has been studied in great detail. These assessments can help producers understand what flood risk their properties might face and how best to mitigate these dangers. Of particular use are [the maps](#) showing the hazard for each study area (see image next page).



The RDCK [web map](#) has a layer for the 200-year floodplain within the hazards map layer. By mid-2022, the regional district will have updated flood maps for Beavertell/Carmi, Rock Creek to Midway, Christina Lake and Christina Creek, and Grand Forks to Cascade Falls.

The [Boundary Region Flood & Geohazard Risk Assessment](#) is another source of information, and the City of Grand Forks provides flood plain mapping on its [Flood Mitigation Program web page](#).

Flood Monitoring

Real-time river monitoring data for major rivers in the region is available through the provincial [River Forecast Centre](#). The centre also provides generalized forecasts to [warn of localized flooding](#) based on weather patterns and forecasts.

[Environment Canada Public Weather Alerts](#) issues watches and warnings for severe weather events, including extended heavy rain events.

Flow and water-level forecasts are used to determine when to issue flood advisories, evacuation alerts and evacuation orders.

(See [Fact Sheet 5: Flood Evacuation Alerts and Evacuation Orders](#) in the [Farm Flood Readiness Toolkit](#).)

Communication During an Emergency

In the event of an emergency, a local government may activate an Emergency Operations Centre (EOC). An EOC is the communications and coordination hub for all emergency-related planning activities within a local government's jurisdiction.

For information or advice during periods of flood threat or flood emergency, contact your local government's general inquiries phone number or contacts they've identified on their website and social media feeds.

For key contacts and resources pertaining to agricultural flood preparedness in Kootenay & Boundary, see the table on the following page.

In the event of an emergency where health, safety or property is in jeopardy and immediate action is required, call 911.

Key flood resources and contacts for Kootenay & Boundary

Organization	Contacts	Online Resources
Regional District of East Kootenay	Emergency Program Duty Officer (24/7): 250-489-9677 To report flooding: 1-800-663-3456	RDEK flood preparedness web page (includes sandbag locations) Sign up for evacuation notifications Subscribe to email updates , based on area of residence RDEK Protective Services works with the BC Cattlemen's Association to determine locations for evacuated livestock in the regional district. The Wycliffe Exhibition Grounds is often available and can be accessed during an emergency by contacting the Emergency Program Duty Officer.
Regional District of Central Kootenay	Emergency program: 250-352-7701 Emergency Operations Centre (when active): 1-866-522-7701	RDCK Flood Map Study information RDCK emergency management web page RDCK emergency notification system
Regional District of Kootenay Boundary	Emergency Program Duty Officer (24/7): 250-364-5444 Emergency Operations Centre (when active): 1-888-747-9119	Emergency operations website
BC Ministry of Agriculture, Food and Fisheries	AgriService BC: 1-888-221-7141	Flood resources for agriculture Livestock relocation
Government of BC		Flood warnings and advisories
City of Grand Forks	Non-emergency number: 250-442-3612	Flood mitigation program web page
Village of Midway		Sign up for notifications and emergency alerts
District of Invermere	After hours emergency: 1-866-918-3580	
City of Kimberly		Kimberly emergency preparedness web page
City of Cranbrook	To report an emergency, contact Public Works: 311 To report flooding after hours: 1-800-663-3456	Cranbrook flooding information
City of Fernie		Fernie emergency preparedness web page Evacuation notification system
District of Sparwood		Sparwood emergency services web page
City of Nelson	Emergency preparedness: 250-352-3103	Nelson emergency preparedness web page Sign up for emergency notifications

*This regional snapshot is a supplement to the [Farm Flood Readiness Toolkit](#). It is current as of February 2022.
For funding acknowledgements and disclaimers, please download the toolkit from the CAI website at www.ClimateAgricultureBC.ca.*

