



## Compilation Details

**Layer Name:** Community Hazard Mapping

**Layer Type:** Surficial Geology

**Feature Type:** Dataset

## General Information

**Release Date:** 2023-09-15

**Released By:** Yukon University

**Contact Info:** ygs-surficial@yukon.ca

### Summary

This project mapped hazard risks for Yukon communities. Hazard maps serve as an adaptation planning tool that can support responsible, forward-looking decisions related to climate change impacts on communities.

### Description

**Last Updated:** Sep 15, 2023

The maps integrated the landscape hazards related to permafrost, surficial geology and hydrology in Yukon communities. They also considered potential future risk in response to changes in climate.

The work was accomplished by gathering and mapping geoscience data in Yukon study communities, including information about local climate, geology, permafrost, and hydrology. Projections of future climate variability for each study community were used to identify potential future trajectories of change. The project team used the geoscience data to rank hazard risks in a study community, and created a map showing hazard risks using stoplight colours. By incorporating projections of future climate variability, hazard maps reflected both current and potential-future conditions.

Hazard maps can be used by communities and First Nations as part of the adaptation planning process, and are also useful for engineers, planners, consultants, and all levels of governmental and non-governmental decision-makers.

Hazard maps have been completed for:

Burwash Landing and Destruction Bay

Mayo

Pelly Crossing

Ross River

Faro

Dawson City

Old Crow

Project Team

Project Lead:

[Dr. Bronwyn Hancock](#), Associate Vice-President, Research Development, Yukon Research Centre

Surficial geology team:

Kristen Kennedy, Panya Lipovsky and Jeff Bond, Yukon Geological Survey, Energy Mines and Resources, Yukon Government

Permafrost team:

[Louis-Philippe Roy](#) and [Dr. Fabrice Calmels](#), [Northern Climate ExChange](#), [Yukon Research Centre](#), [Yukon College](#)

Dr. Daniel Fortier, Isabelle de Grandpre and Kate Grandmont, Department of Geography, Université de Montreal

Dr. Antoni Lewkowicz, Department of Geography, University of Ottawa

Dr. Sarah Laxton, Yukon Geological Survey, Energy, Mines and Resources, Yukon Government

Hydrology team:

Dr. Ian Clark, Department of Earth Sciences, University of Ottawa

### Collaboration

Yukon Government (Site Assessment and Remediation Unit, Emergency Measures Organization)

[Yukon College community campuses](#)

CH2M HILL

Canadian Forest Service

### Partners

First Nations:

First Nation of Na-Cho Nyak Dun

Kluane First Nation

Ross River Dena Council

Selkirk First Nation  
 Tr'ondëk Hwëch'in First Nation  
 Vuntut Gwitchin First Nation  
 Municipal governments:  
 City of Dawson  
 Town of Faro  
 Town of Mayo  
 Research Partners:  
 Yukon Geological Survey, Energy, Mines and Resources, Yukon Government  
 University of Montreal  
 University of Ottawa  
 University of Alberta

## Downloads

Name	Location	Public	Comment
Communities hazard reports and maps	<a href="https://ygsftp.gov.yk.ca/ApexUploads/Compilations/38/">https://ygsftp.gov.yk.ca/ApexUploads/Compilations/38/</a>	Yes	List of the Communities hazard reports and maps.
Compiled GIS Communities Hazard Data	<a href="https://ygsftp.gov.yk.ca/ApexUploads/Compilations/38/Community Hazard Data Compiled.zip">https://ygsftp.gov.yk.ca/ApexUploads/Compilations/38/Community Hazard Data Compiled.zip</a>	Yes	This contains a file geodatabase of all the data used to make the community hazard maps.
Community Hazard - GeoYukon	<a href="https://mapservices.gov.yk.ca/geoyukon/?scale=2500000&amp;center=394674.60960340215%2C935128.2507004354&amp;layers=1UQ3ku09XDKg">https://mapservices.gov.yk.ca/geoyukon/?scale=2500000&amp;center=394674.60960340215%2C935128.2507004354&amp;layers=1UQ3ku09XDKg</a>	Yes	GeoYukon web map for viewing Community Hazard layers.
Community Hazard Metadata	<a href="https://ygsftp.gov.yk.ca/YGSIDS/metadata/Community_Hazard_Metadata.zip">https://ygsftp.gov.yk.ca/YGSIDS/metadata/Community_Hazard_Metadata.zip</a>	Yes	

## Related References

Number	Reference Type	Document Type	Title	Year	Page(s)
2011-3	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial Geology of the Village of Mayo (parts of NTS 105M/12) Yukon (1:20 000-scale)	2011	
2011-4	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial Geology of Pelly Crossing (part of NTS 115I/15) Yukon (1:20 000-scale)	2011	
2013-14	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial geology of Burwash Landing and Destruction Bay (parts of NTS 115G/2, 6 and 7), Yukon	2013	
2014-12	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial geology, Dawson Region, Yukon, parts of NTS 115O/14 & 15 and 116B/1, 2, 3, & 4	2014	

2014-13	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial geology, Ross River Region, Yukon, parts of NTS 105K/1 & 2 and 105F/15 & 16	2014	
2014-14	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial geology, Faro Region, Yukon, parts of NTS 105K/3, 4, 5 & 6	2014	
2016-16	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial geology, Old Crow, Yukon, parts of NTS 116O/12	2016	
MR-22	Yukon Geological Survey	Miscellaneous Report	Greater Whitehorse area permafrost characterization	2021	
2023-1	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial geology and geohazards of the greater Whitehorse area.	2023	
2024-1	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial Geology of the Beaver Creek Area, Yukon	2024	
2024-2	Yukon Geological Survey	Open File (Geological - Surficial)	Surficial geology of greater Haines Junction area, Yukon; parts of NTS 115A/11, 12, 13 & 14, 1:15 000 scale.	2024	