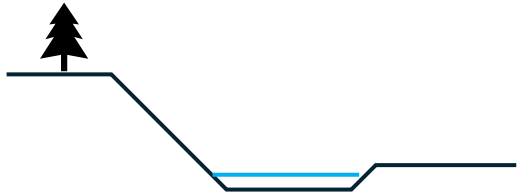
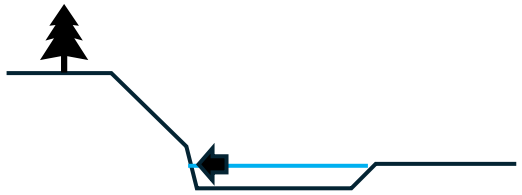
Maps and Models: Tools for Your Journey

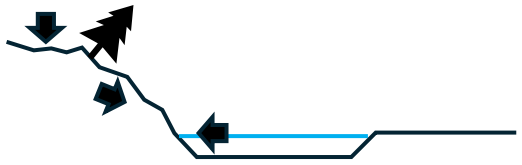
Riverbanks, Erosion and Instability



- **Riverbank** – a well-defined slope at the edge of a river
  - Low – regularly (each year?) floods to top
  - High – never floods to top

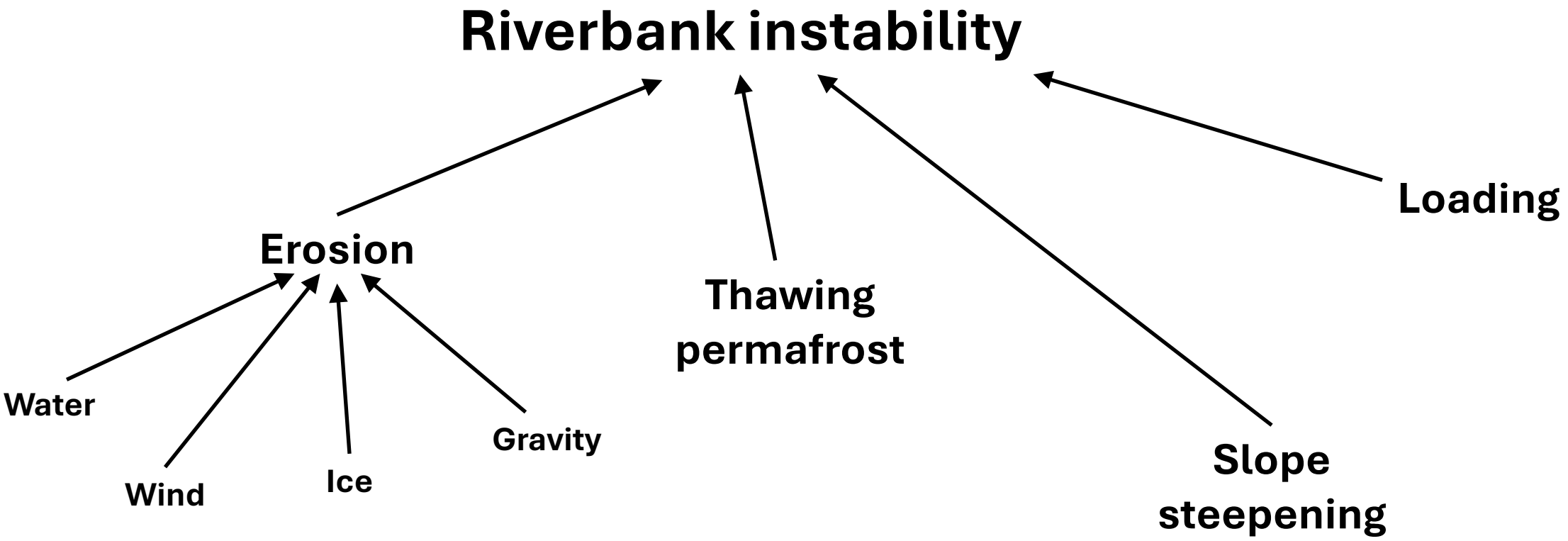


- **Erosion** – the natural process of wearing away and moving soil from one location to another by wind, water, ice or gravity
  - One possible *cause* of riverbank instability



- **Instability** – the condition of being unstable, where the forces driving failure are greater than the forces resisting failure
  - Slopes (landslides) or flat ground (settlement)
  - Causes?...

Riverbanks, Erosion and Instability

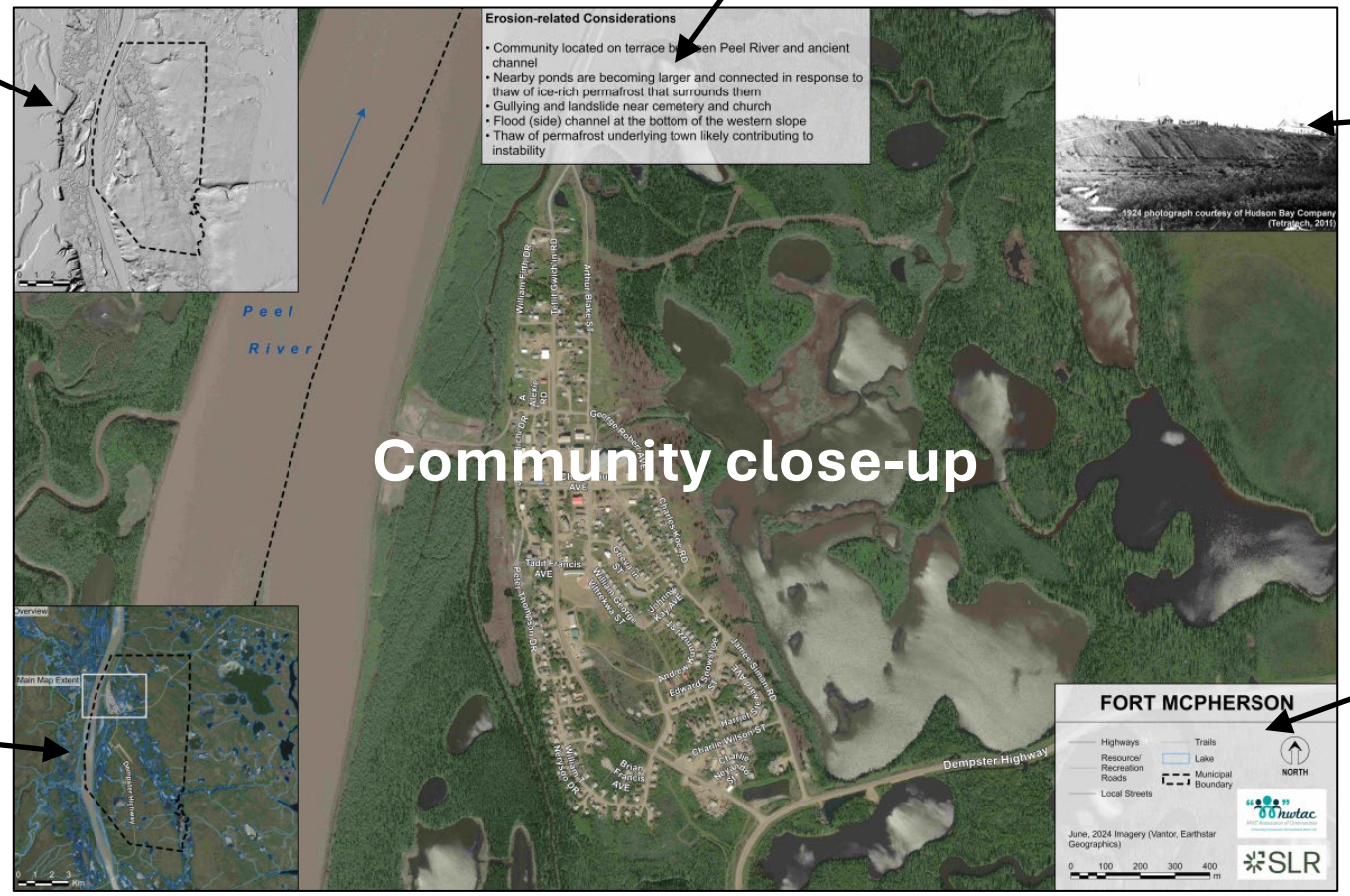


Maps vs. Models

- **Maps** show an area of land or water (usually 2D)
  - Actual physical features or symbols
  - Generally a snapshot in time
  - Used to make observations, measurements and comparisons

- **Models** show simplified representations of complex processes
  - Used to understand, test or predict behaviour of a system
  - Can be 1D, 2D or 3D
  - Results can be shown on a map

Community Poster Maps



Let’s look at **your** community’s map!

What free! mapping tools are at our fingertips?

- **Google Earth**
  - Time series
- **Google Maps**
  - Bird's Eye and Street View?
- **HRDEM**
  - https://datacube.services.geo.ca/en/viewer/elevation/index.html
- **Sentinel Hub**
  - https://browser.dataspace.copernicus.eu/?zoom=5&lat=50.16282&lng=20.78613&themeId=DEFAULT-THEME&visualizationUrl=U2FsdGVkX19GN%2Ft9n11xDrIodDB%2FlA1zQx3YfXxUn4E%2FlKek7hSzMZpeDl1GVW6l0SAhyVr8zwirvXmbnv0EgCzFtmruee919BHJESlWbIEGVAG65VosjYVlOzm1OnQw&datasetId=S2_L2A_CDAS&demSource3D=%22MAPZEN%22&cloudCoverage=30&dateMode=SINGLE

How do we use models?

Canada

NRC·CNRC

C-CORE