

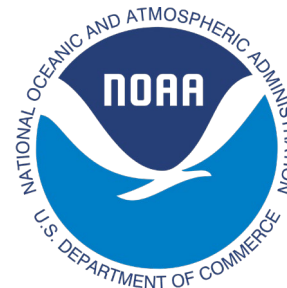
Unstable slope mapping and assessment in Barry Arm

Gabriel Wolken, Ronald Daanen, Katreen Wikstrom Jones, Jeff Coe, Lauren Schaefer, Jonathan Godt, Bretwood Higman, and Bart Buessler

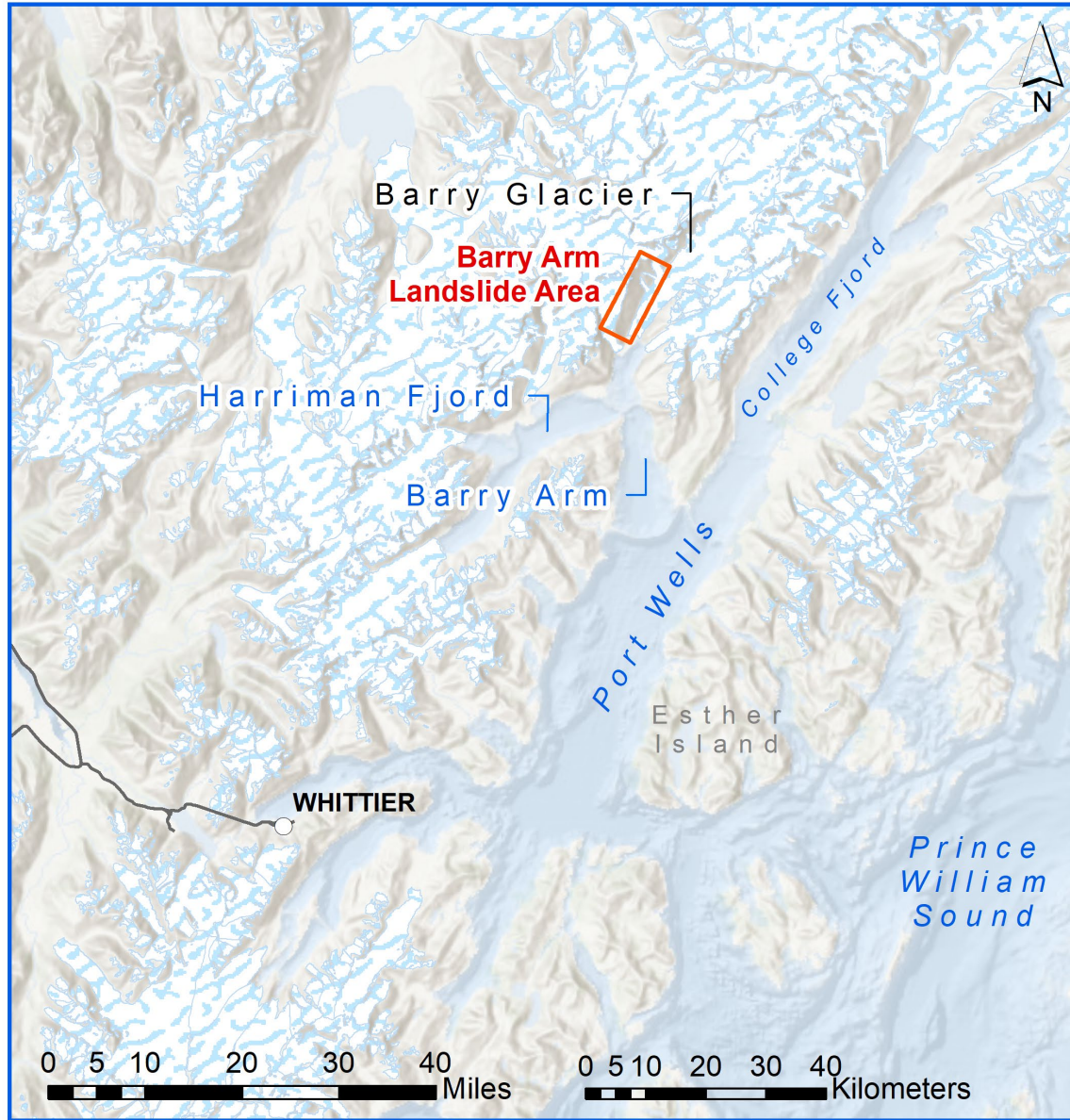
*Climate and Cryosphere Hazards Program
Alaska Division of Geological & Geophysical Surveys
email: gabriel.wolken@alaska.gov*



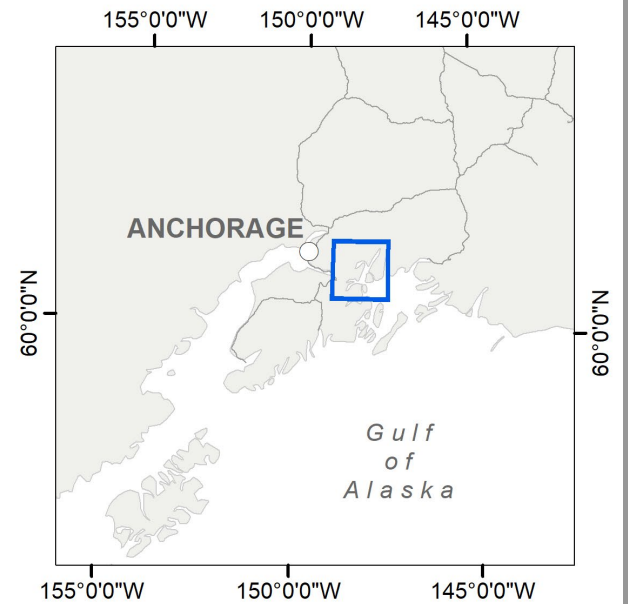
Photo by Valisa Higman



Location



- Town
- Road
- ▭ Barry Arm Landslide Area
- ▨ Glacier



Unstable Slopes

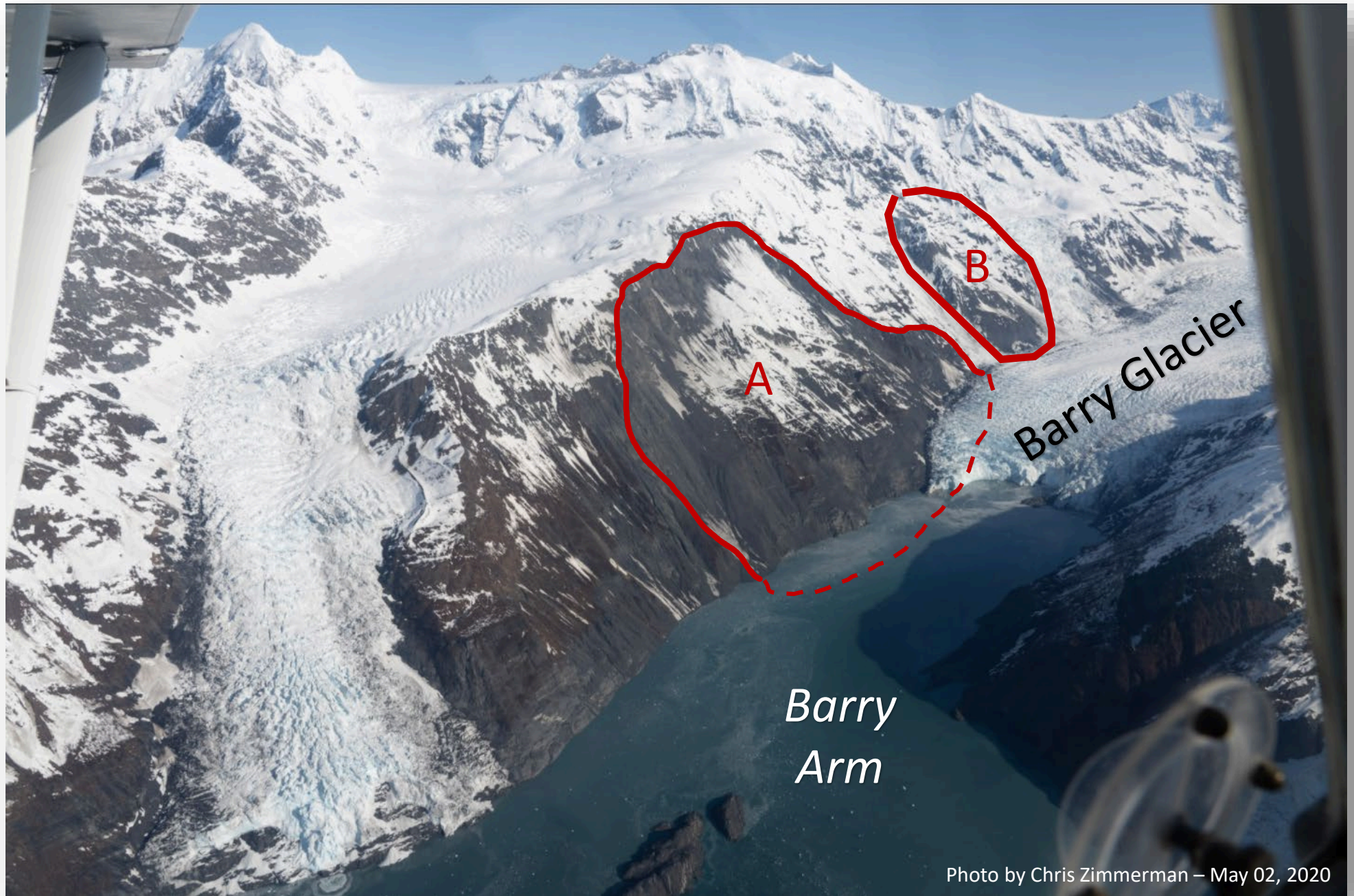
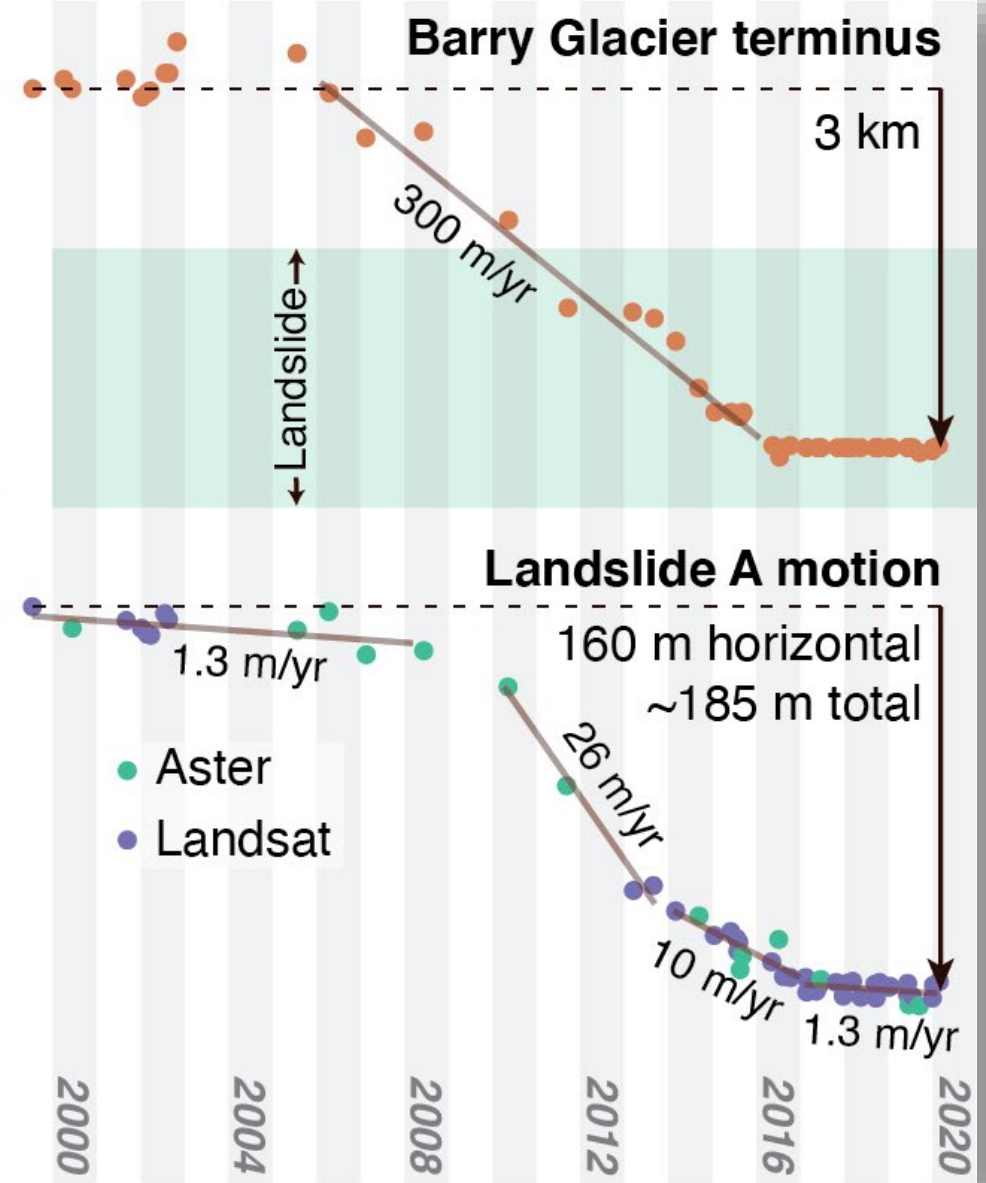
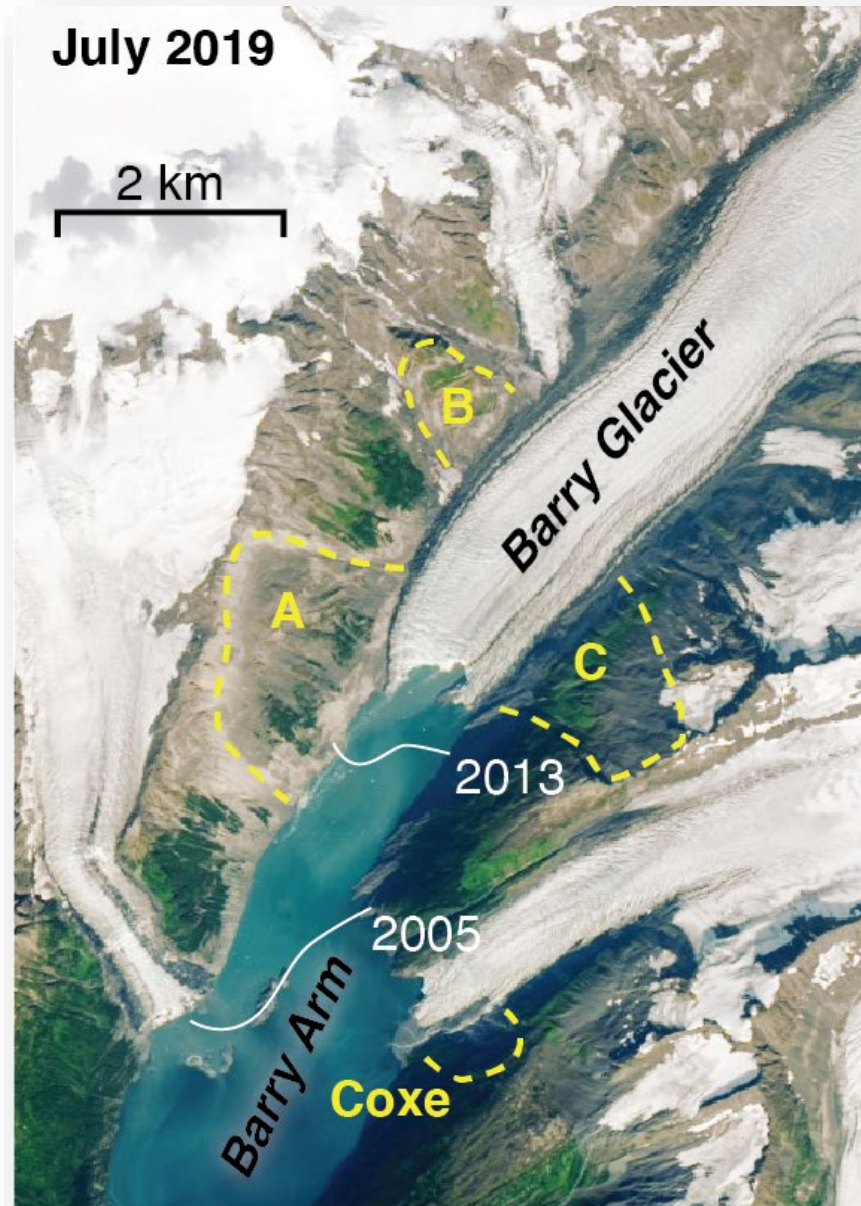


Photo by Chris Zimmerman – May 02, 2020

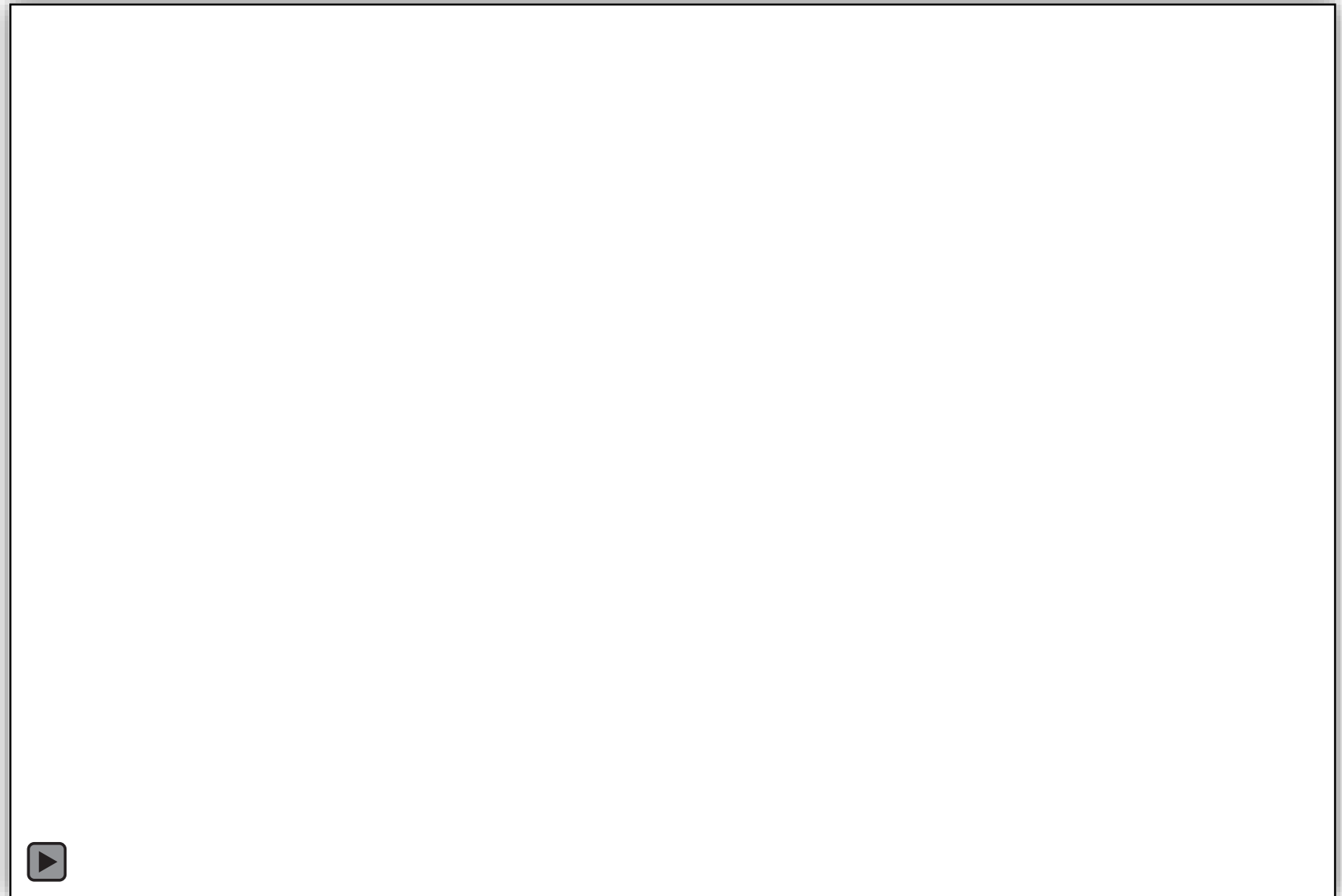
Changes in Barry Arm



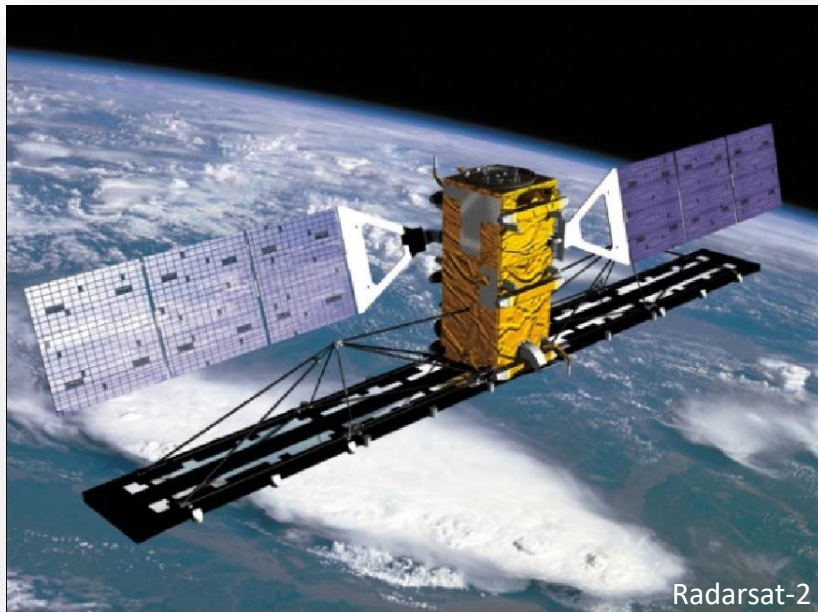
Dai, C. et al., 2020: Detection and assessment of a large and potentially-tsunamigenic periglacial landslide in Barry Arm, Alaska: Geophysical Research Letters, 47(22), e2020GL089800. <https://doi.org/10.1029/2020GL089800>.



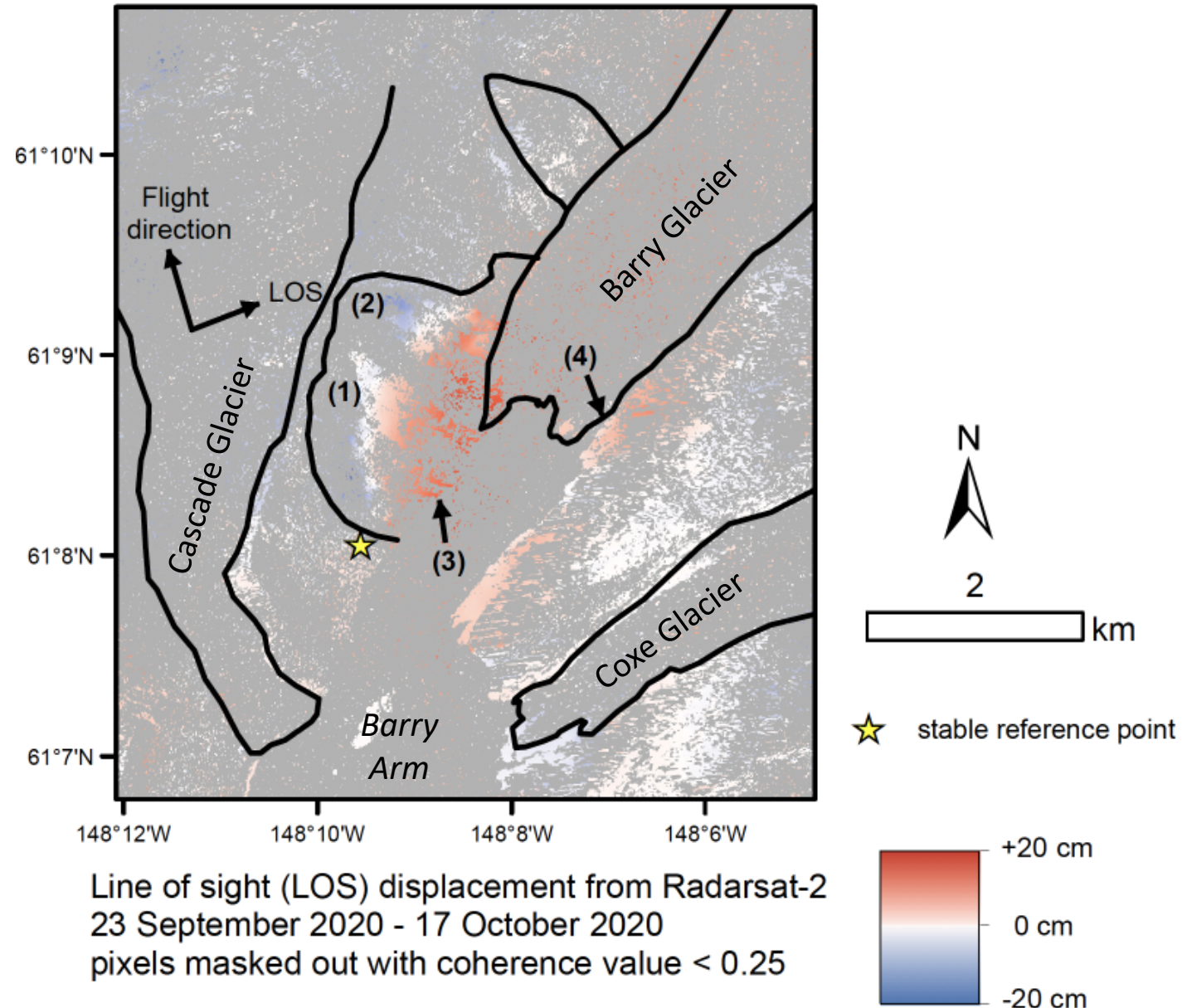
Maximum tsunami simulation



Landslide monitoring & deformation mapping in Barry Arm June – Oct 2020



Unwrapped interferogram



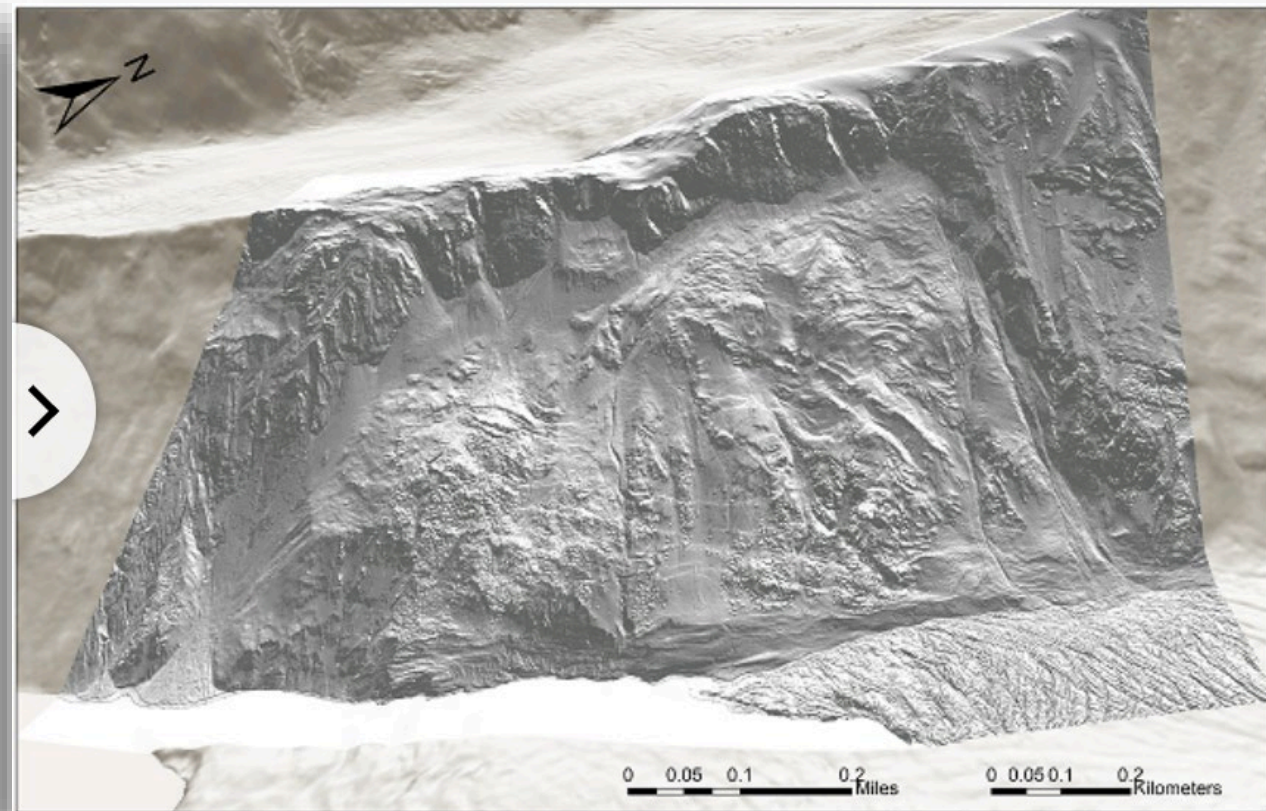
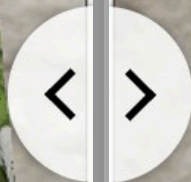
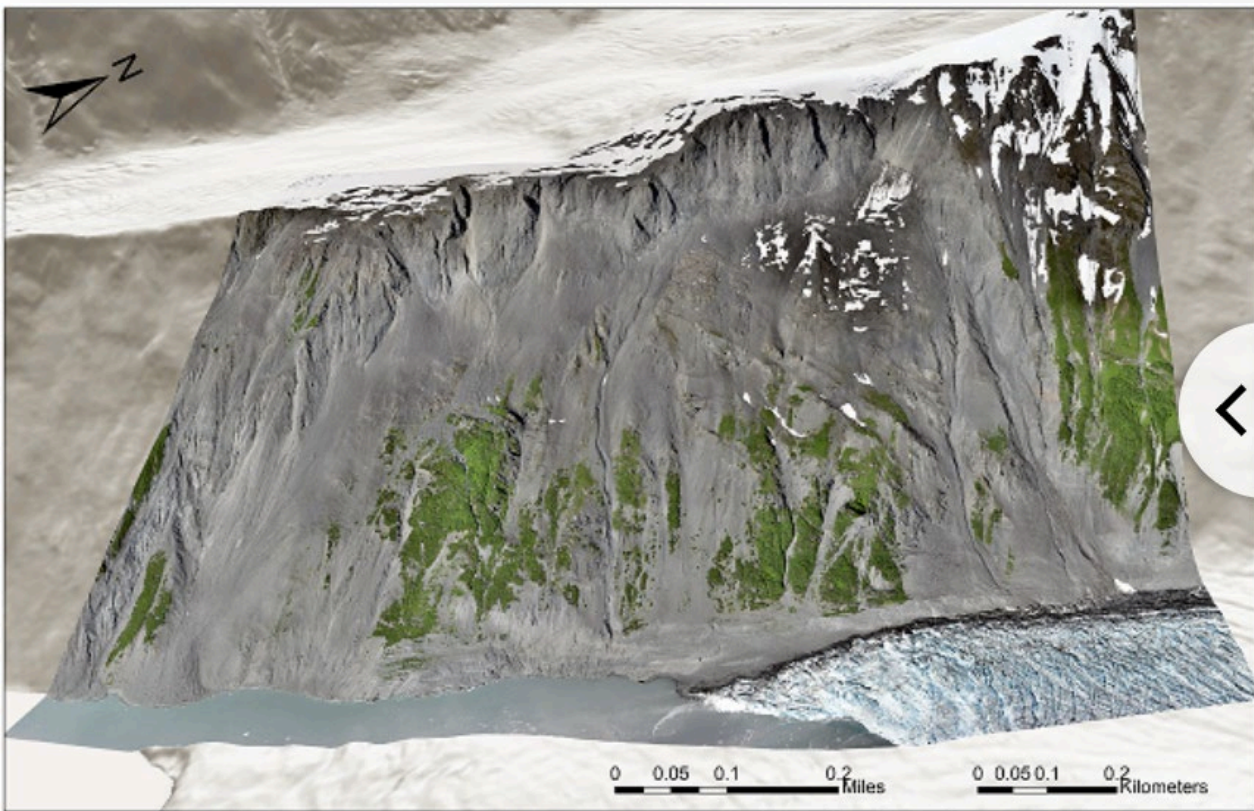
Line of sight (LOS) displacement from Radarsat-2
23 September 2020 - 17 October 2020
pixels masked out with coherence value < 0.25

Schaefer, L.N., Coe, J.A., Godt, J.W., and Wolken, G.J., 2020, Interferometric synthetic aperture radar data from 2020 for landslides at Barry Arm Fjord, Alaska (ver. 1.4, November 2020): U.S. Geological Survey data release, <https://doi.org/10.5066/P9Z04LNK>.

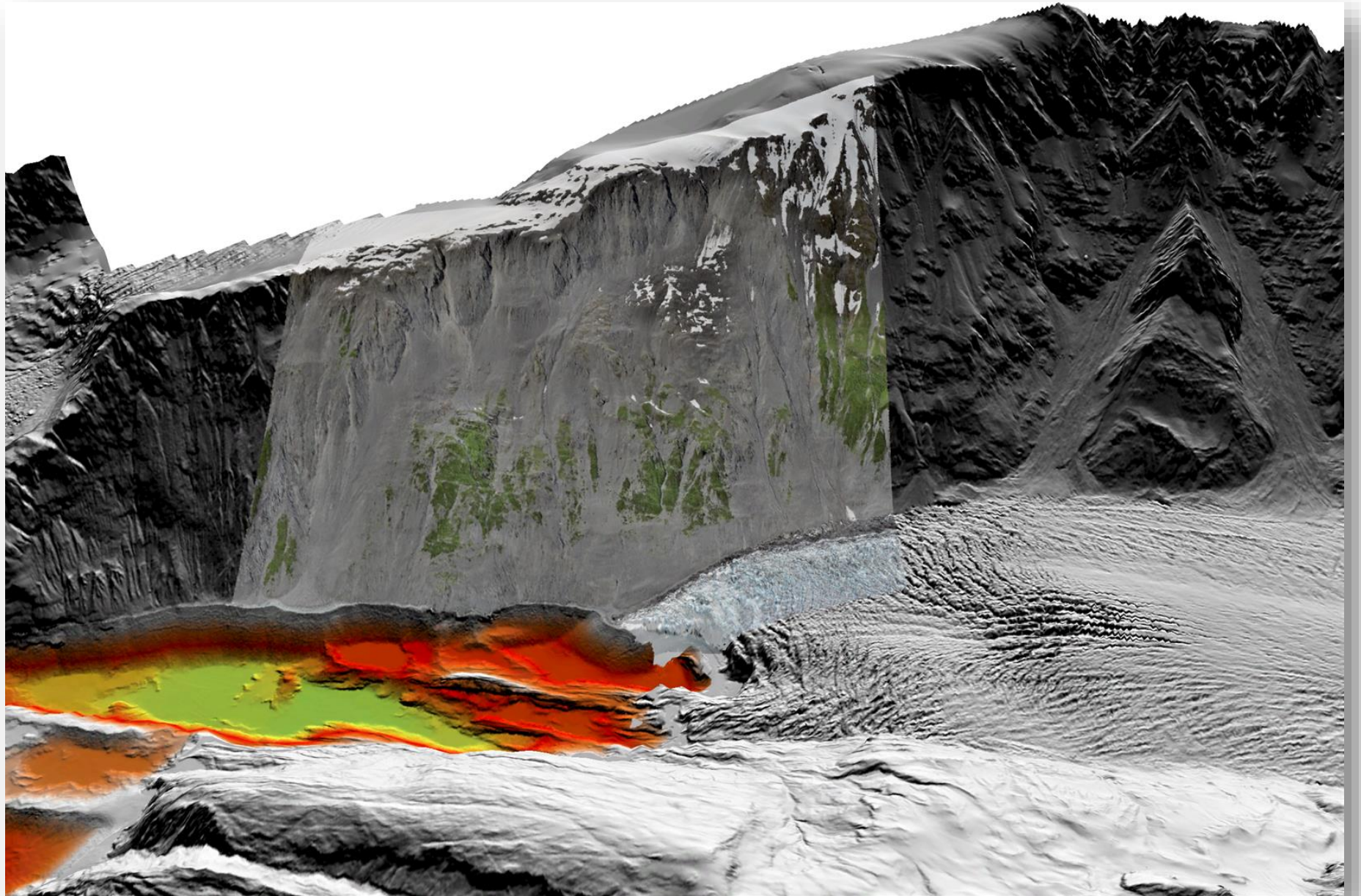
Landslide mapping
in Barry Arm
June – Oct 2020



Repeat lidar and photogrammetry
June – Oct 2020



2020 Ortho-
Topo-Bathy
Product



Landslide deformation mapping & assessment in Barry Arm June – Oct 2020

