

# ORC Update for Glenorchy Community Association

October 2019

Photo: James Brasington

## ORC Natural Hazards Team

Tim van Woerden  
Jean-Luc Payan



## Summary

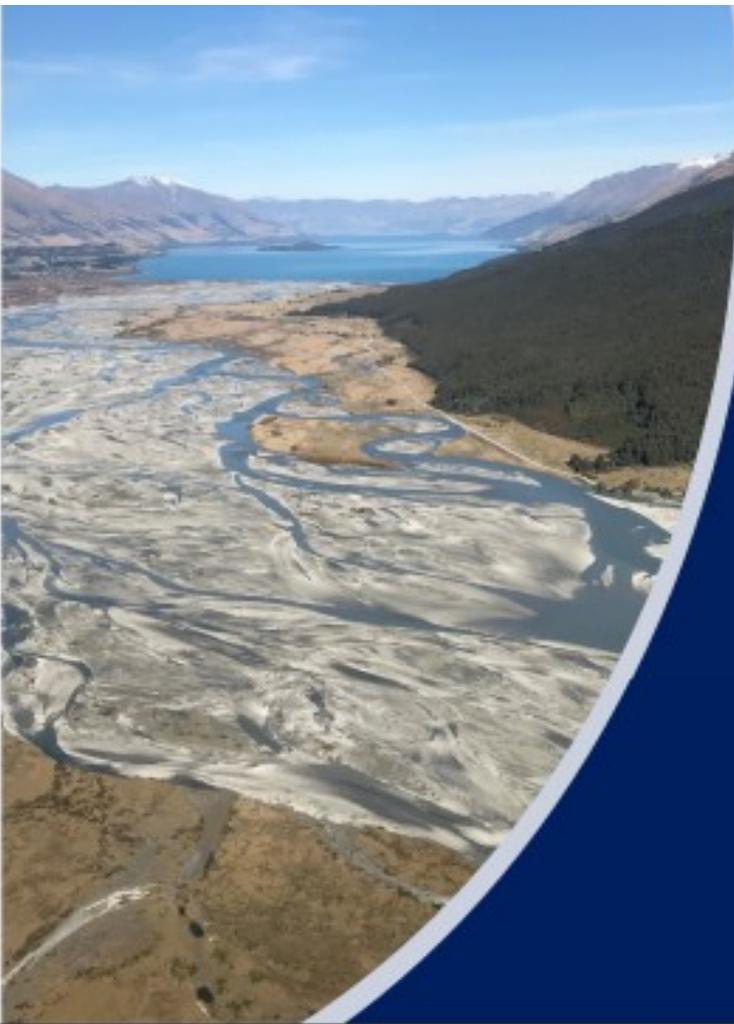


### **1. Recent work completed (August-September 2019)**

- LiDAR topographic survey
- Aerial photography
- Riverbed cross section surveys

### **2. Upcoming projects**

- Dart River and Kinloch Road investigations
- Head of the Lake natural hazards adaptation strategy



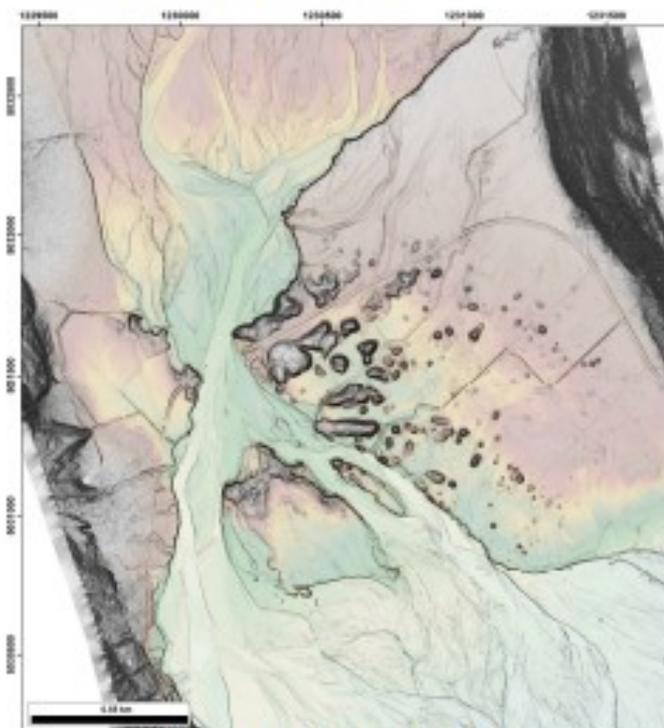
# Recent work completed

*Photo: Geoffrey Thompson*

## LiDAR survey (Light Detection And Ranging)



- Detailed topographic survey



**Dart Bridge & the Hillocks**



**Glenorchy & Buckler Burn**

# LiDAR survey changes (2011-2019)

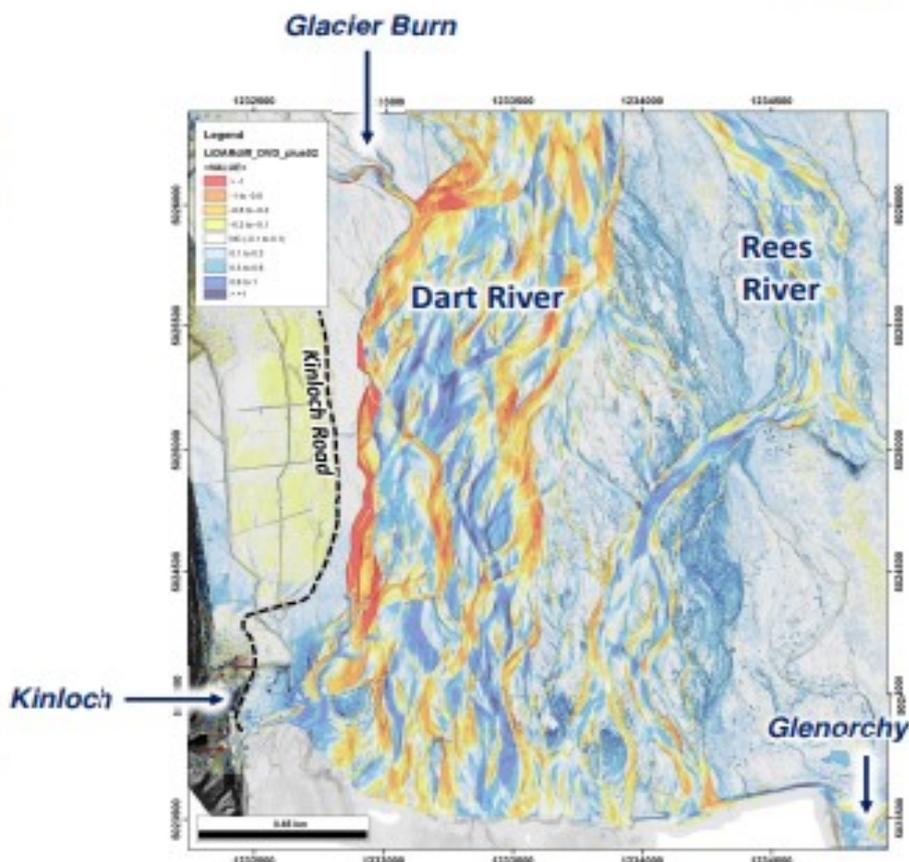


- Riverbed changes in detail since previous 2011 survey
- Shows westward erosion between Glacier Burn and Kinloch

**Orange and Red**  
Elevation decreases (erosion)

**Darker blue**  
Elevation increase (sediment deposition)

**Yellow and pale blue**  
Minor differences due to vegetation changes

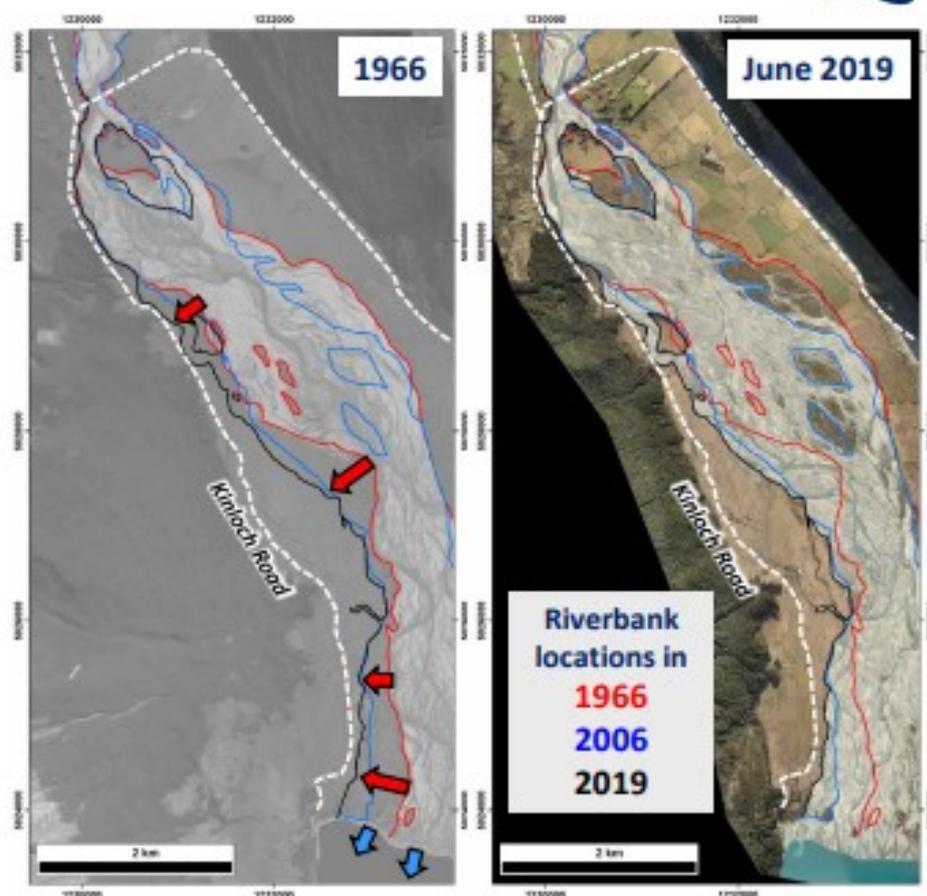


## Aerial photography



Significant change over last 50 years:

- Westward erosion
- Delta growth

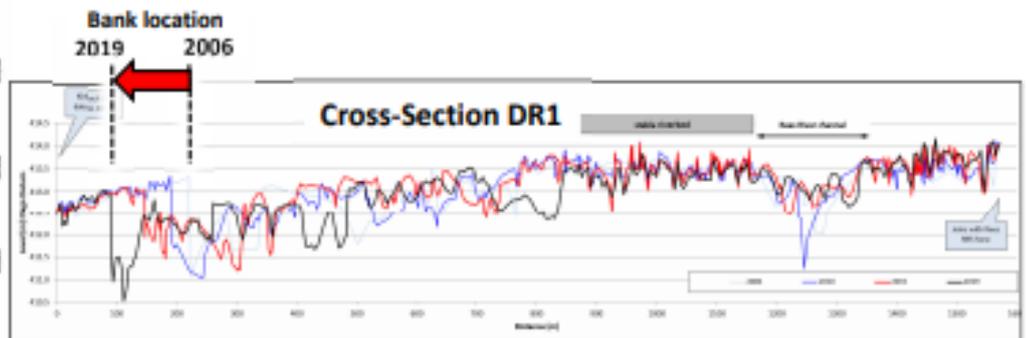


# Recent Work Completed

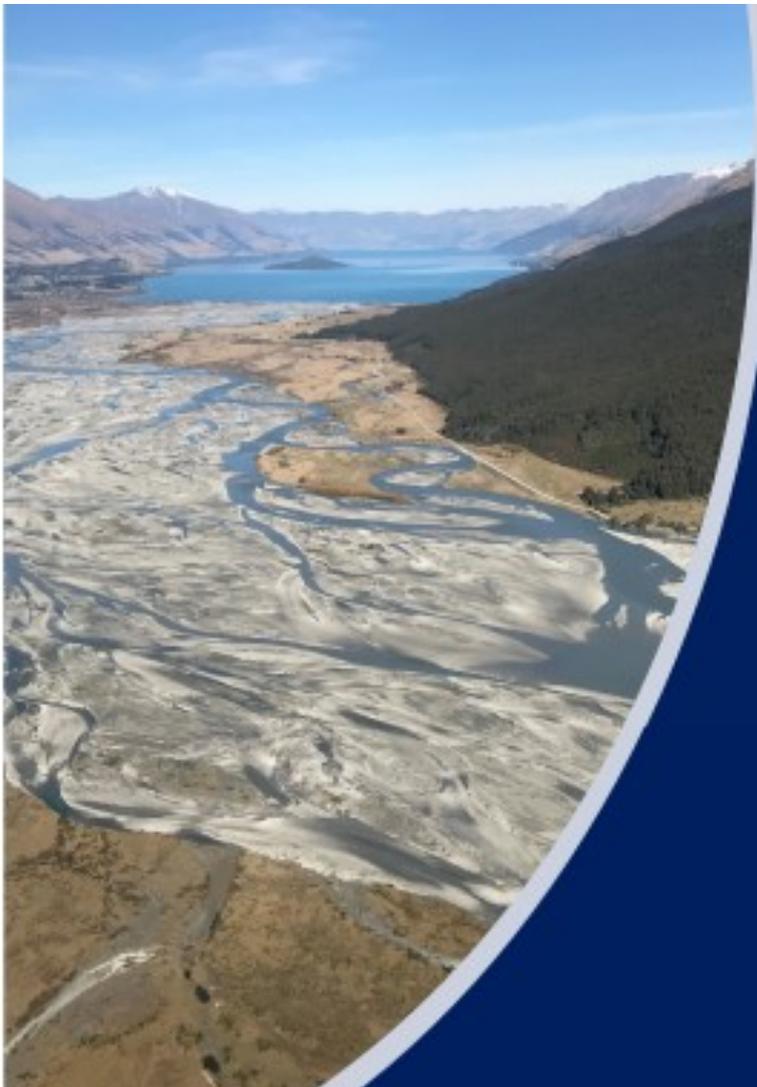
## River Channel Cross-Section surveys



- Show changes to river form
- Bank positions, location and depth of main channels



River channel in  
2006 2010 2015 2019



# Upcoming projects

Photo: Geoffrey Thompson

# Dart River erosion and Kinloch Road flooding

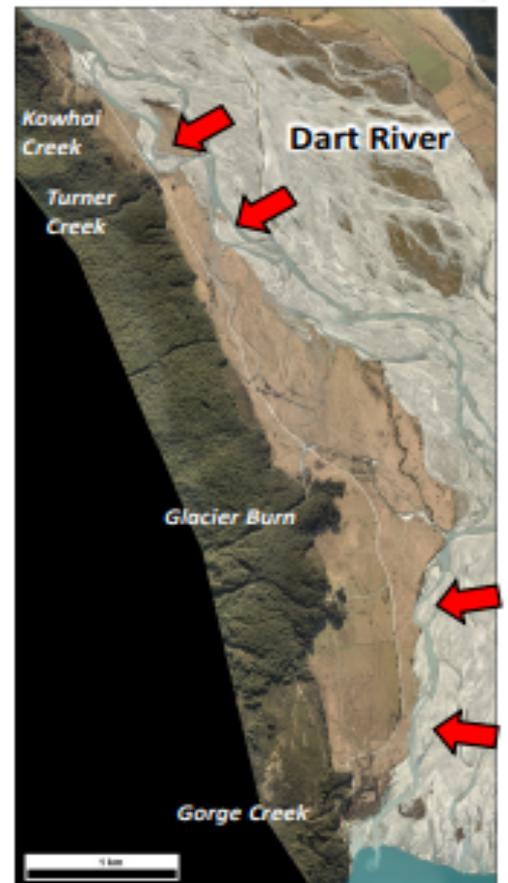


**By end of October:** Geotechnical assessment and recommendations for bank protection in the Turner Creek area.

**From mid-October:** Expert technical review of the characteristics, processes and future behaviour of the Dart and Rees River and floodplains.

**From early-2019:** Engineering assessment of options for mitigation of Dart River erosion and Kinloch Road flooding.

**By end of 2019:** Investigation of a flood warning system for high Dart River flows.



# Dart River erosion and Kinloch Road flooding



- Erosion immediately north of Turner Creek
- Highest priority – focus for short-term bank protection works



# Dart River erosion and Kinloch Road flooding



- Continuing erosion of Dart River western banks to south of Turner Creek
- High flows into old river channel next to road
- Will assess effectiveness of QLDC's road raising over coming months



## 'Head of the Lake' Natural Hazards Adaptation Strategy



- A collaborative project led by ORC, QLDC & DoC
- Two year duration (mid 2019 - mid 2021)

Draft project objective:

***To provide a framework to actively manage risks associated with natural hazards for the long-term development of the area located at the Head of Lake Wakatipu, including Glenorchy and Kinloch***

### Why?

- Natural hazards work has been fragmented
- Long-term holistic approach



# 'Head of the Lake' Natural Hazards Adaptation Strategy



## What are we doing?

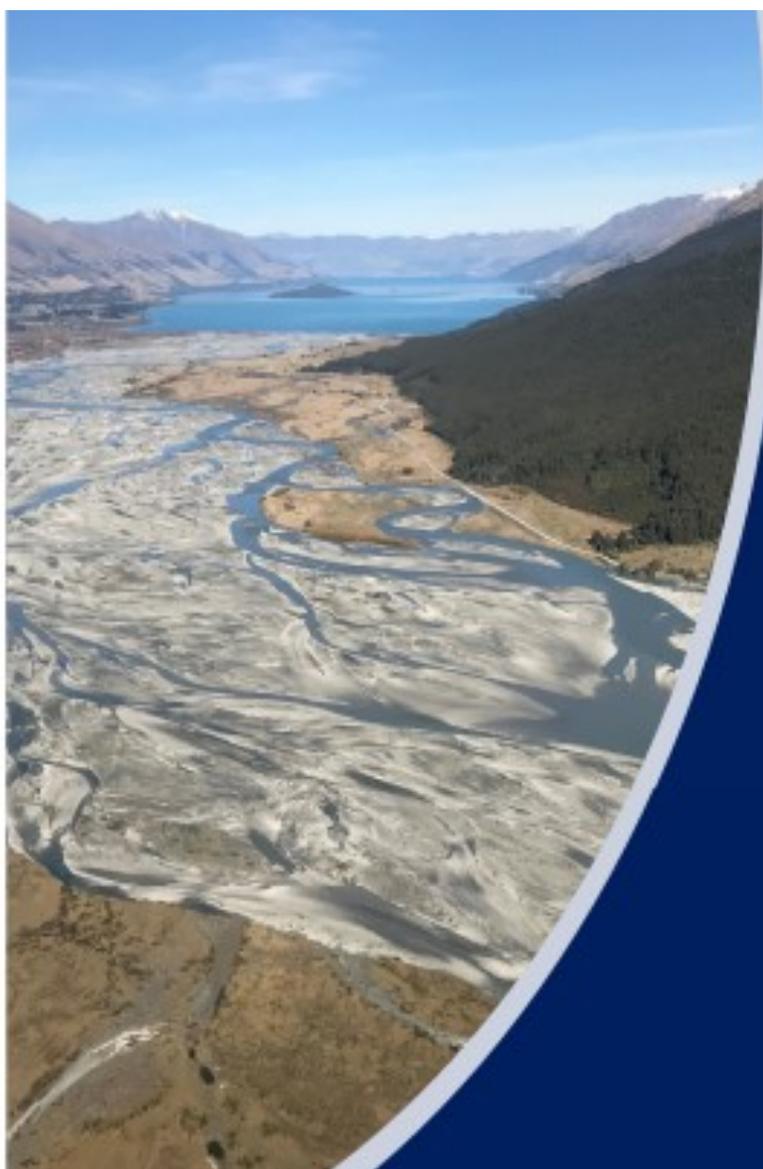
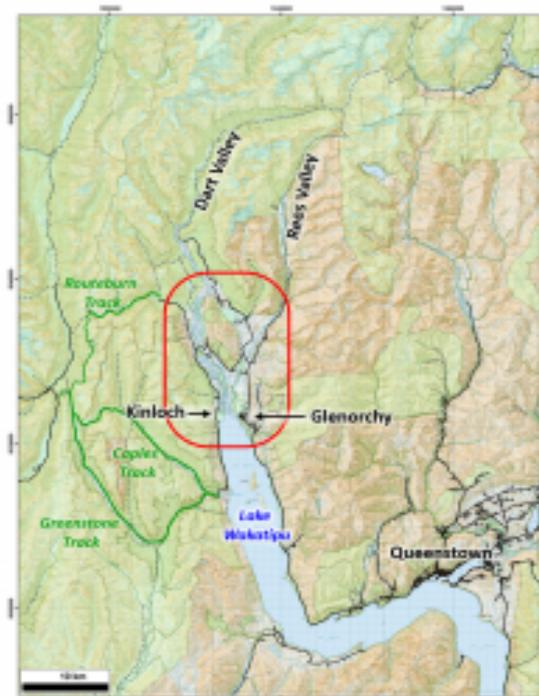
1. Identify and analyse possible natural hazard threats
2. Assess what's at risk of possible losses
3. Evaluate options for hazard mitigation and risk reduction

## Timeline

**End of October:** finalise project plan and approval by ORC & QLDC

**Nov-December:** discuss assessment approach with subject matter experts and engage expert assistance

**2020-21:** assessments, engagement and analysis undertaken



# Questions?

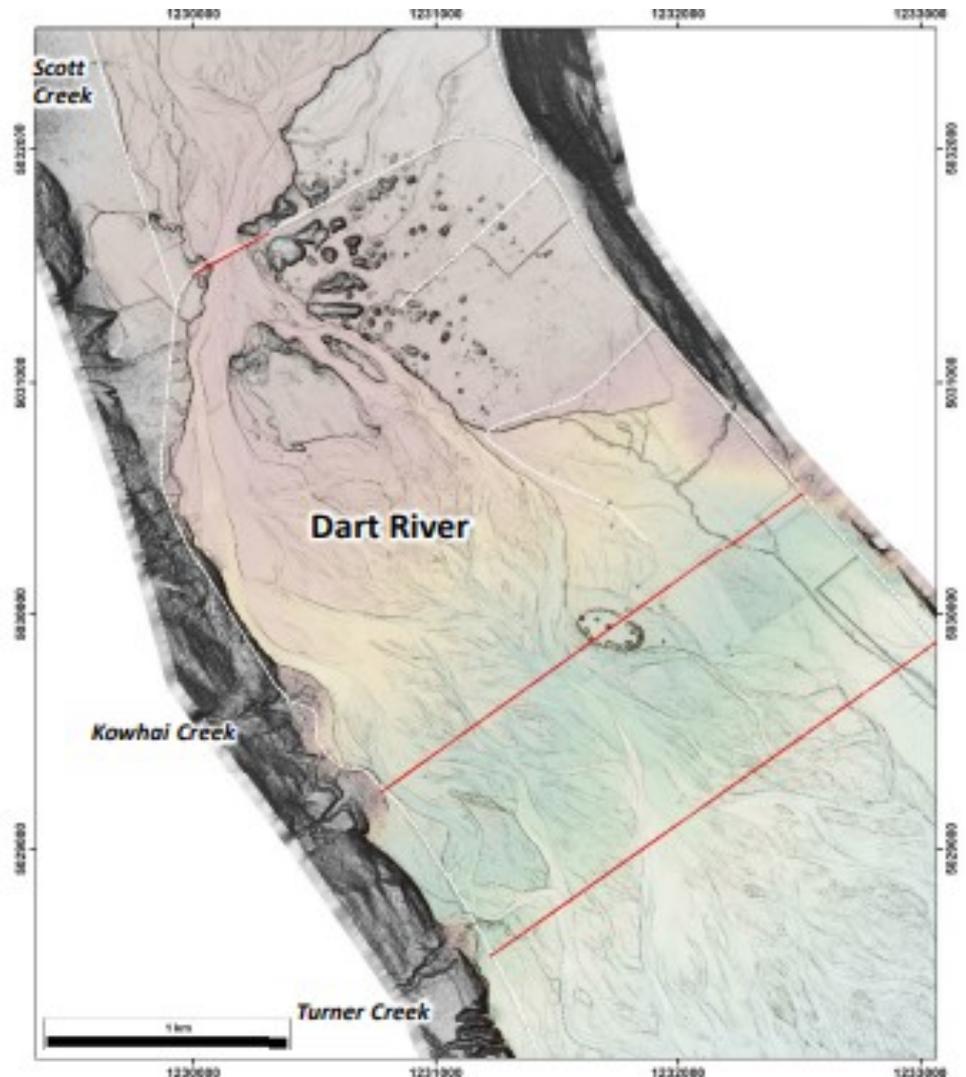
Photo: Geoffrey Thompson



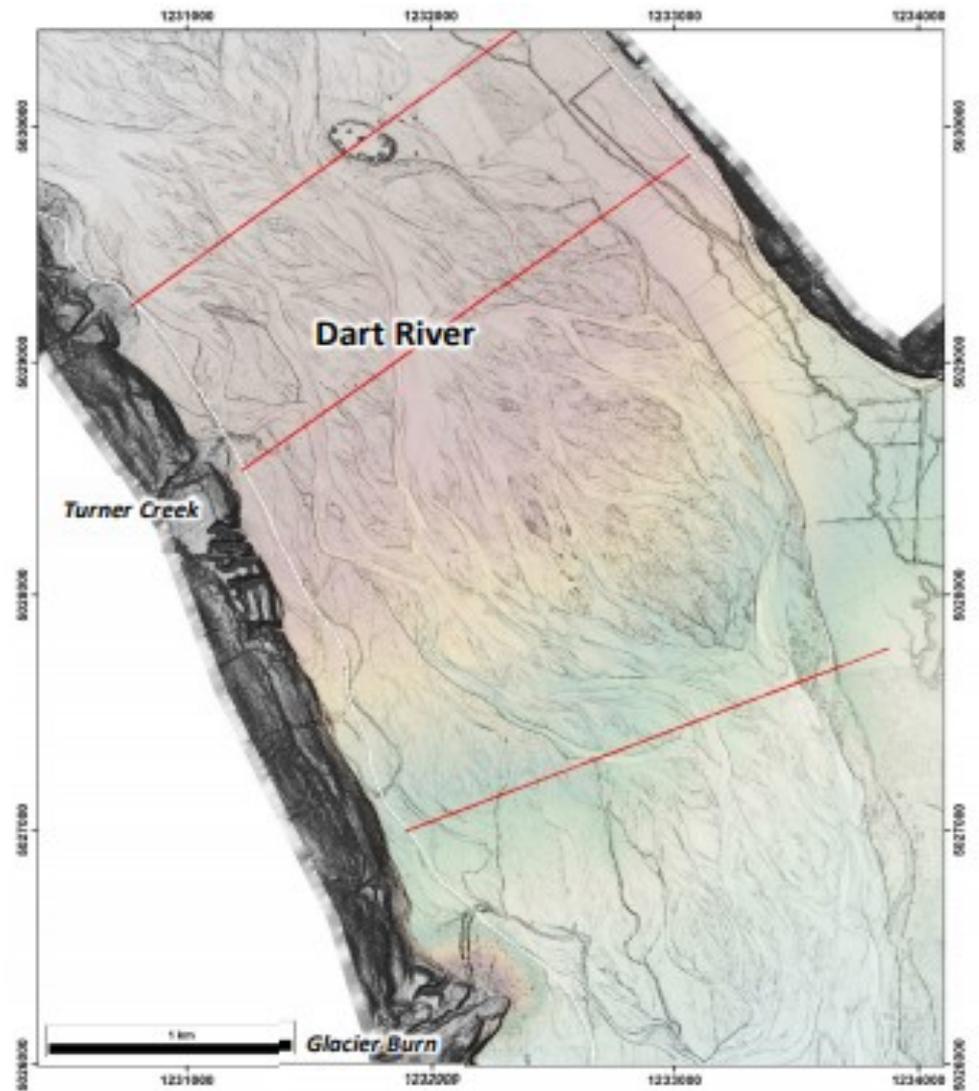
# Additional Slides

*Kinloch and western delta, September 2018*

## 2019 LiDAR Results (1/3)



# 2019 LiDAR Results (2/3)



# 2019 LiDAR Results (3/3)

