

ORC Update for Glenorchy Community Association

October 2019

Photo: James Brasington

ORC Natural Hazards Team

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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



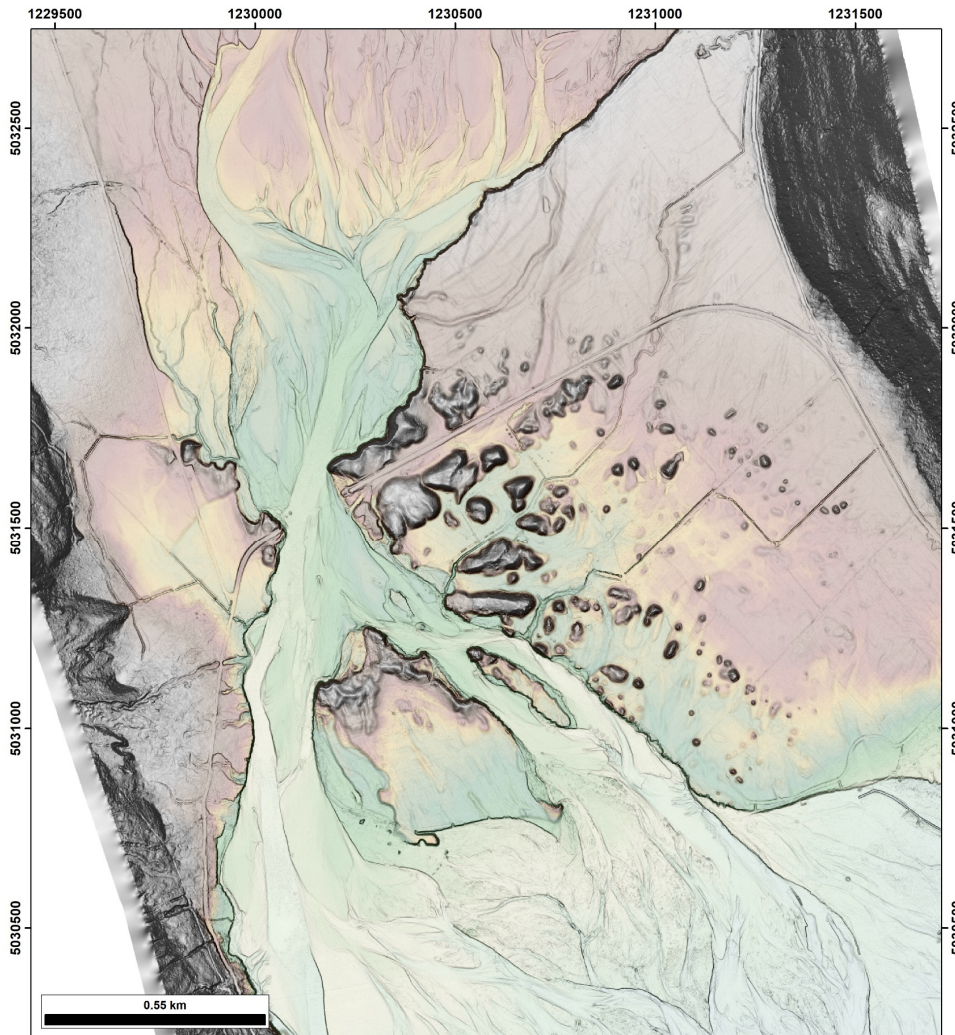
Recent work completed

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

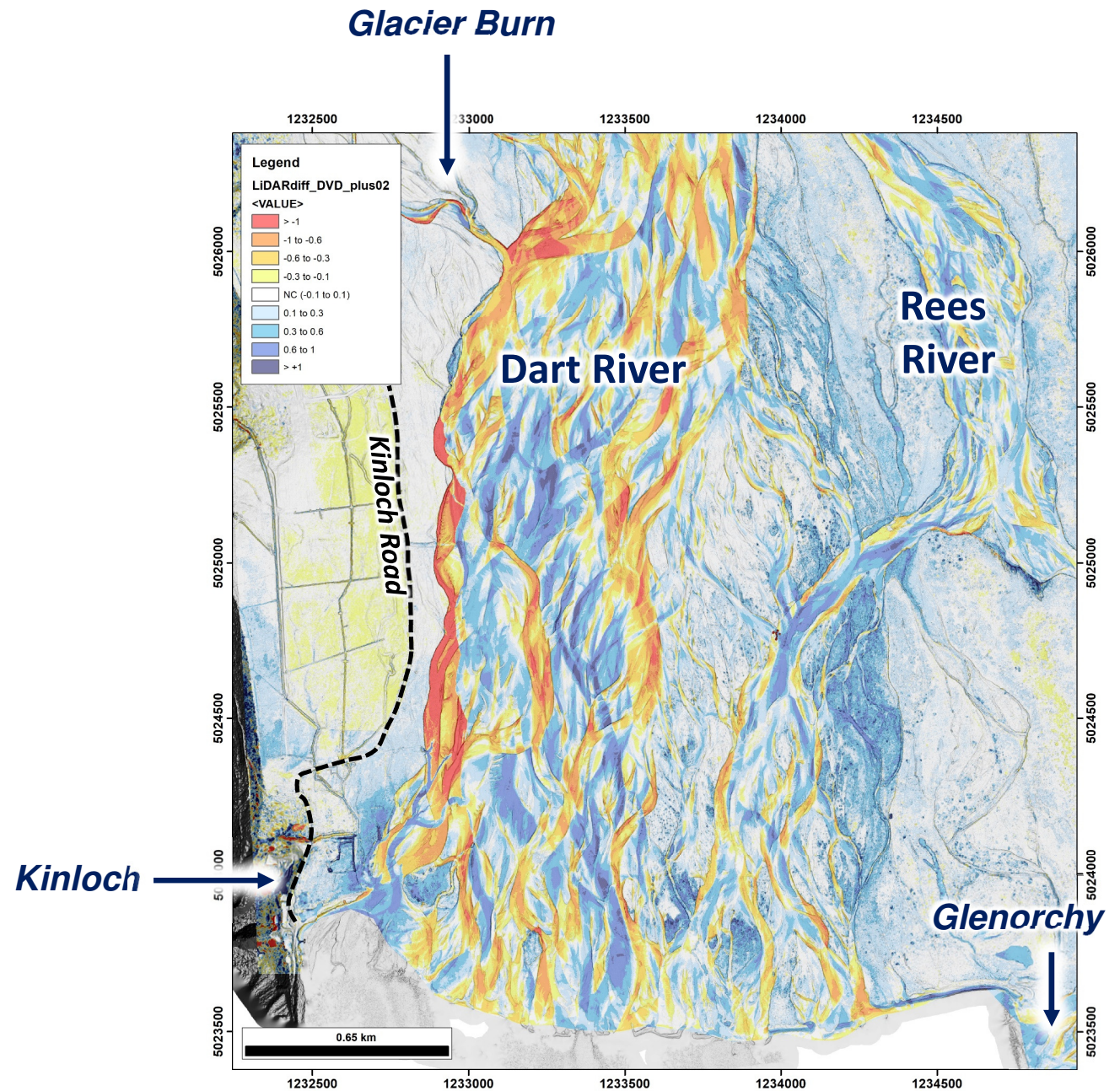
Elevation decreases (erosion)

Darker blue

Elevation increase (sediment deposition)

Yellow and pale blue

Minor differences due to vegetation changes

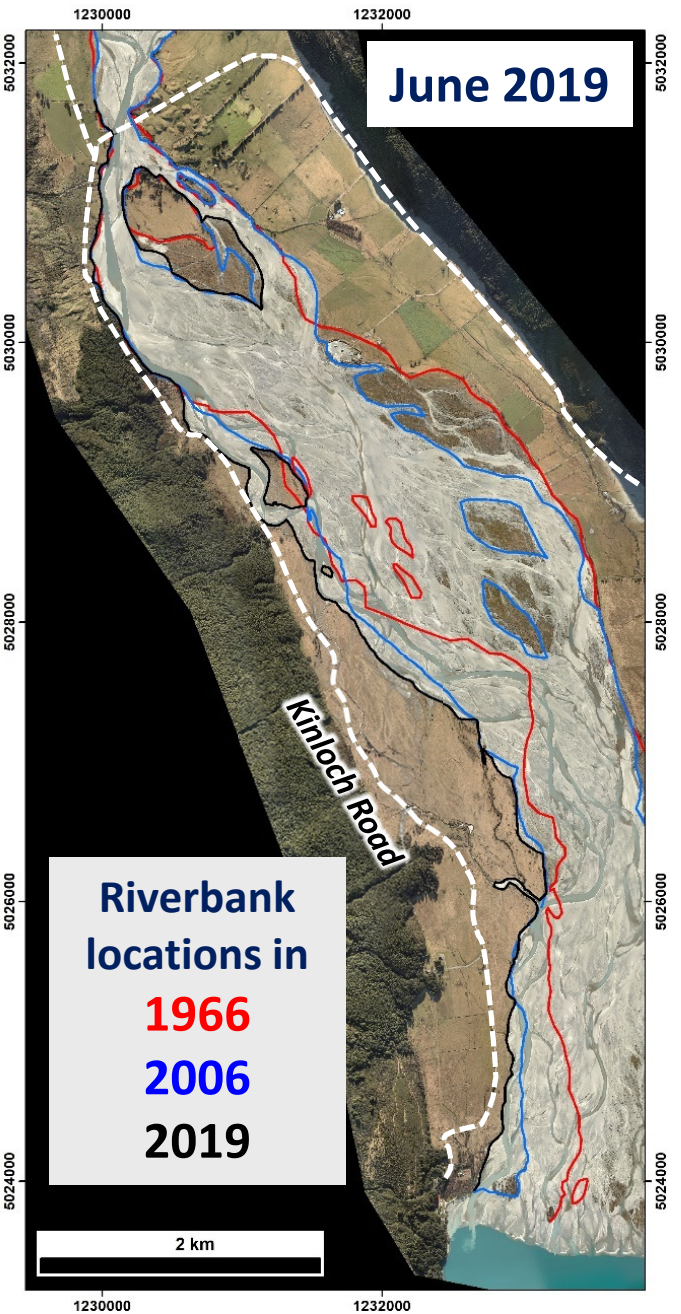
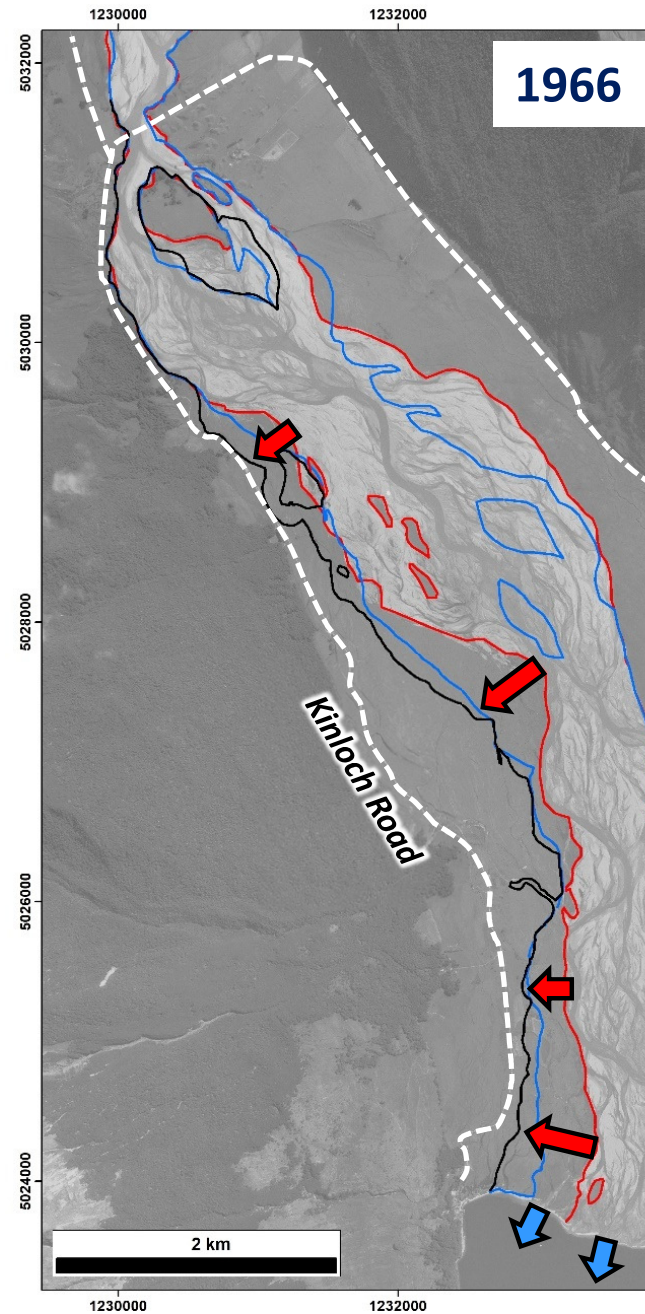


Aerial photography



Significant change over last 50 years:

- Westward erosion
- Delta growth

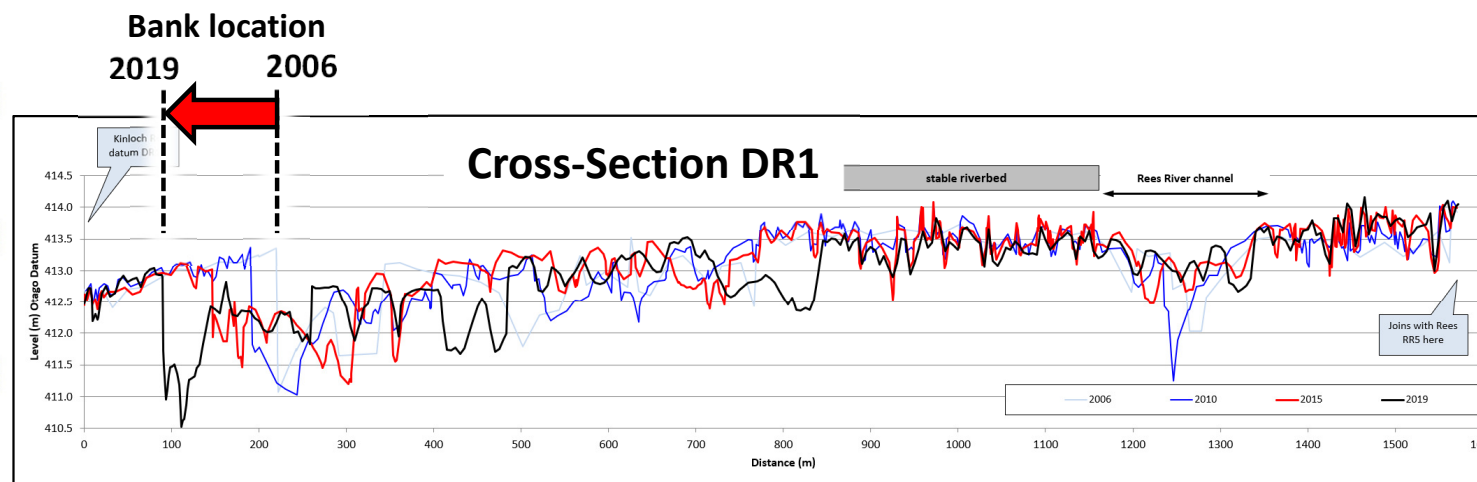
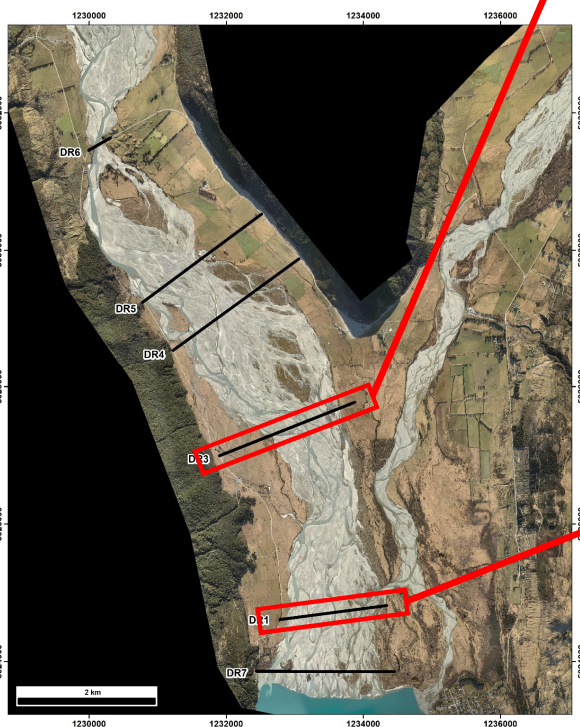
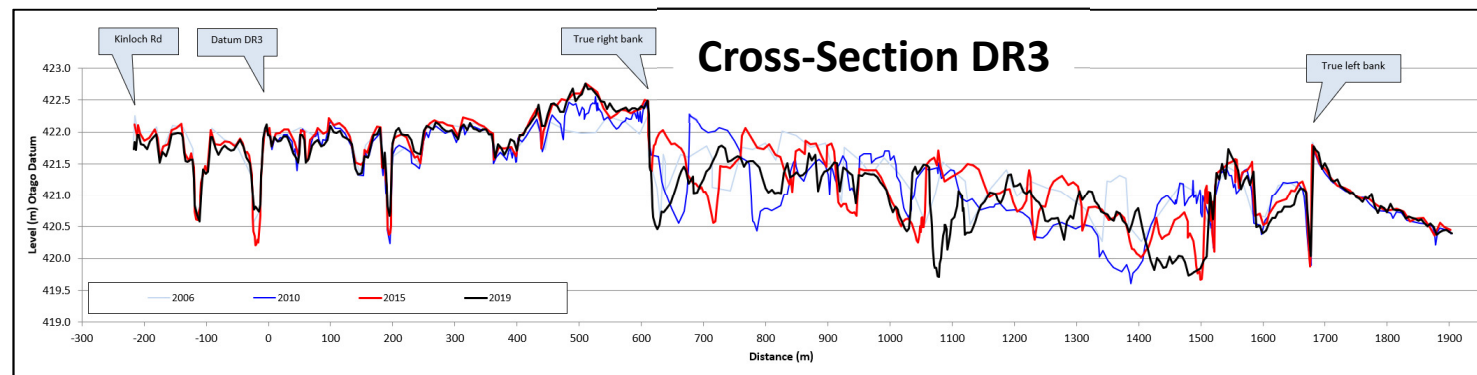




Recent Work Completed

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

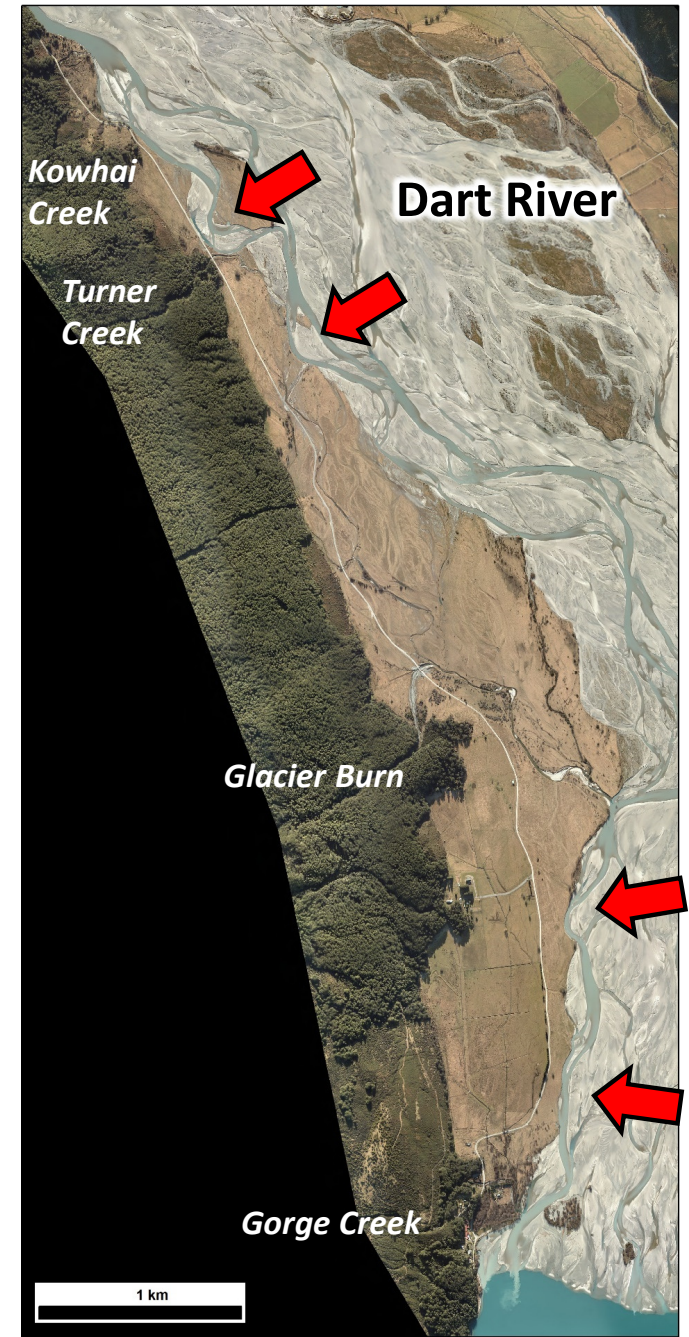


By end of October: Geotechnical assessment and recommendations for bank protection in the Turner Creek area.

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?

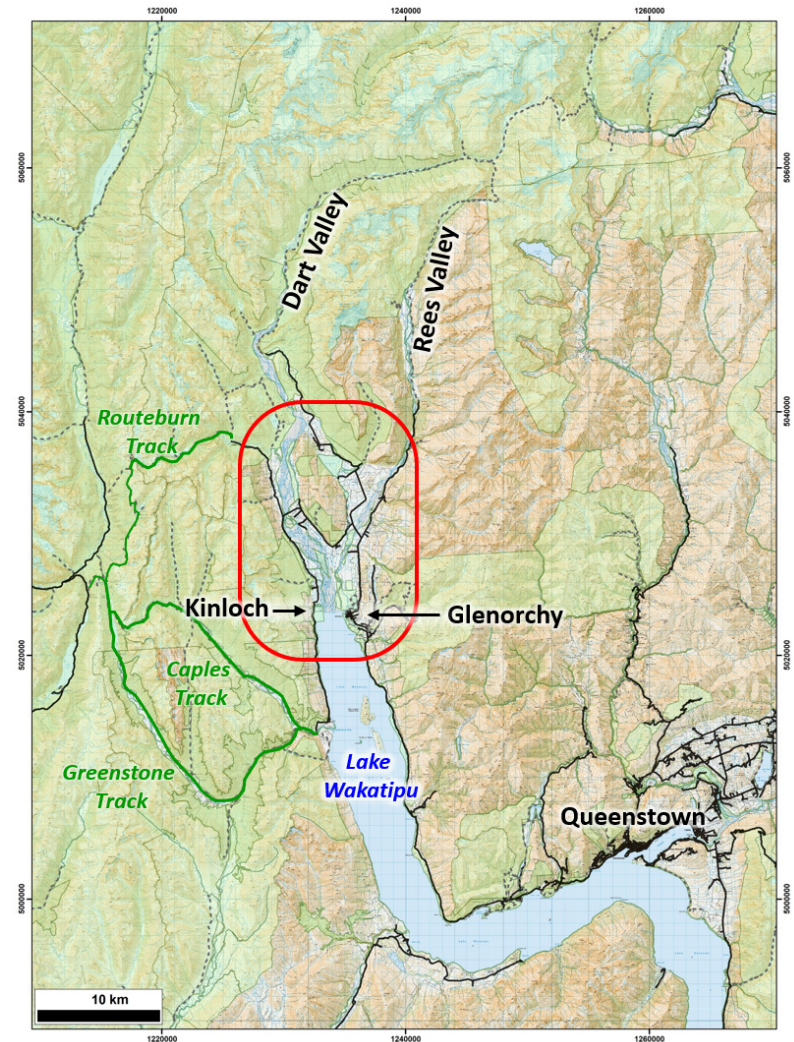
1. Identify and analyse possible natural hazard threats
2. Assess what's at risk of possible losses
3. Evaluate options for hazard mitigation and risk reduction

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?

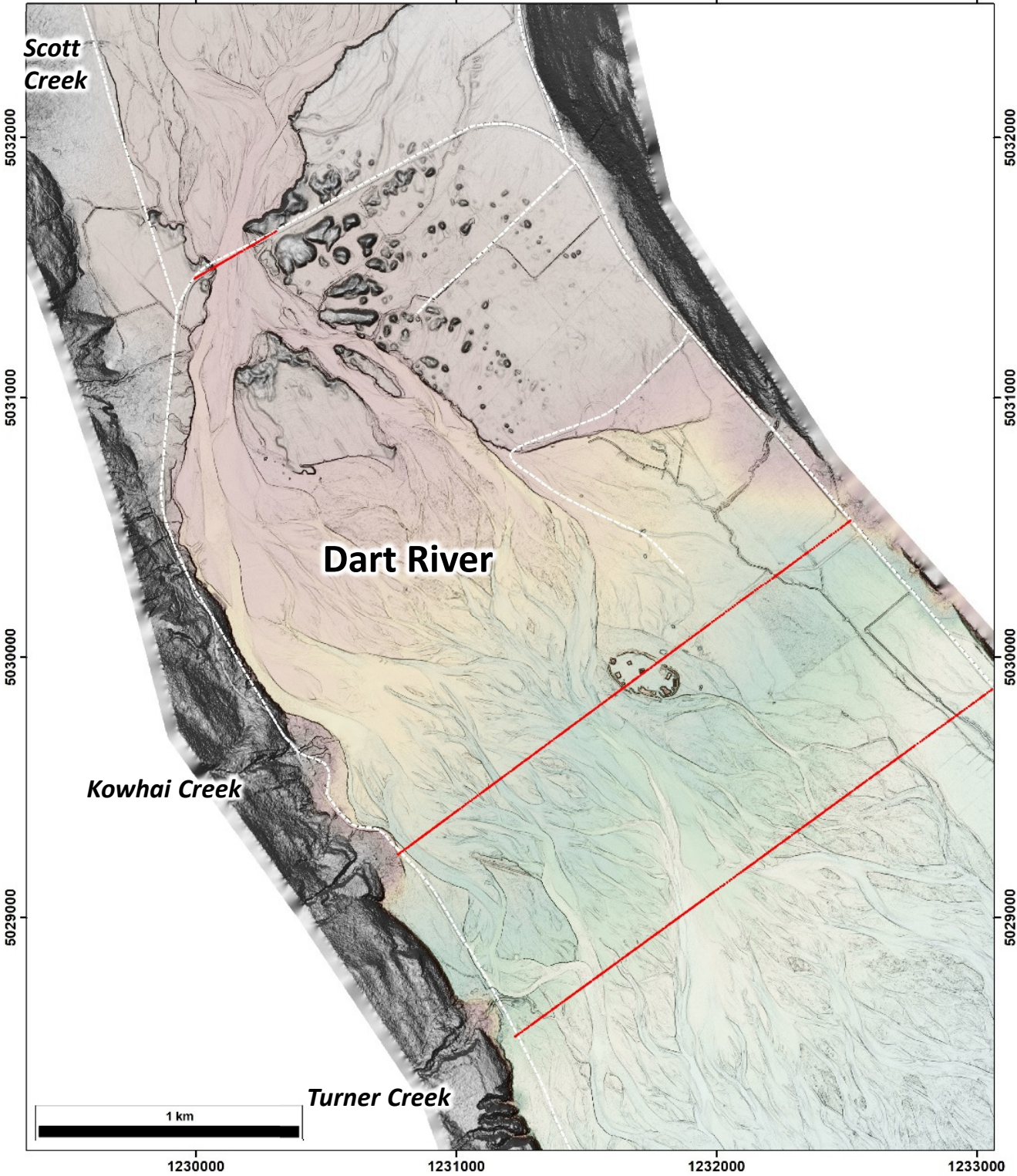
Photo: Geoffrey Thompson



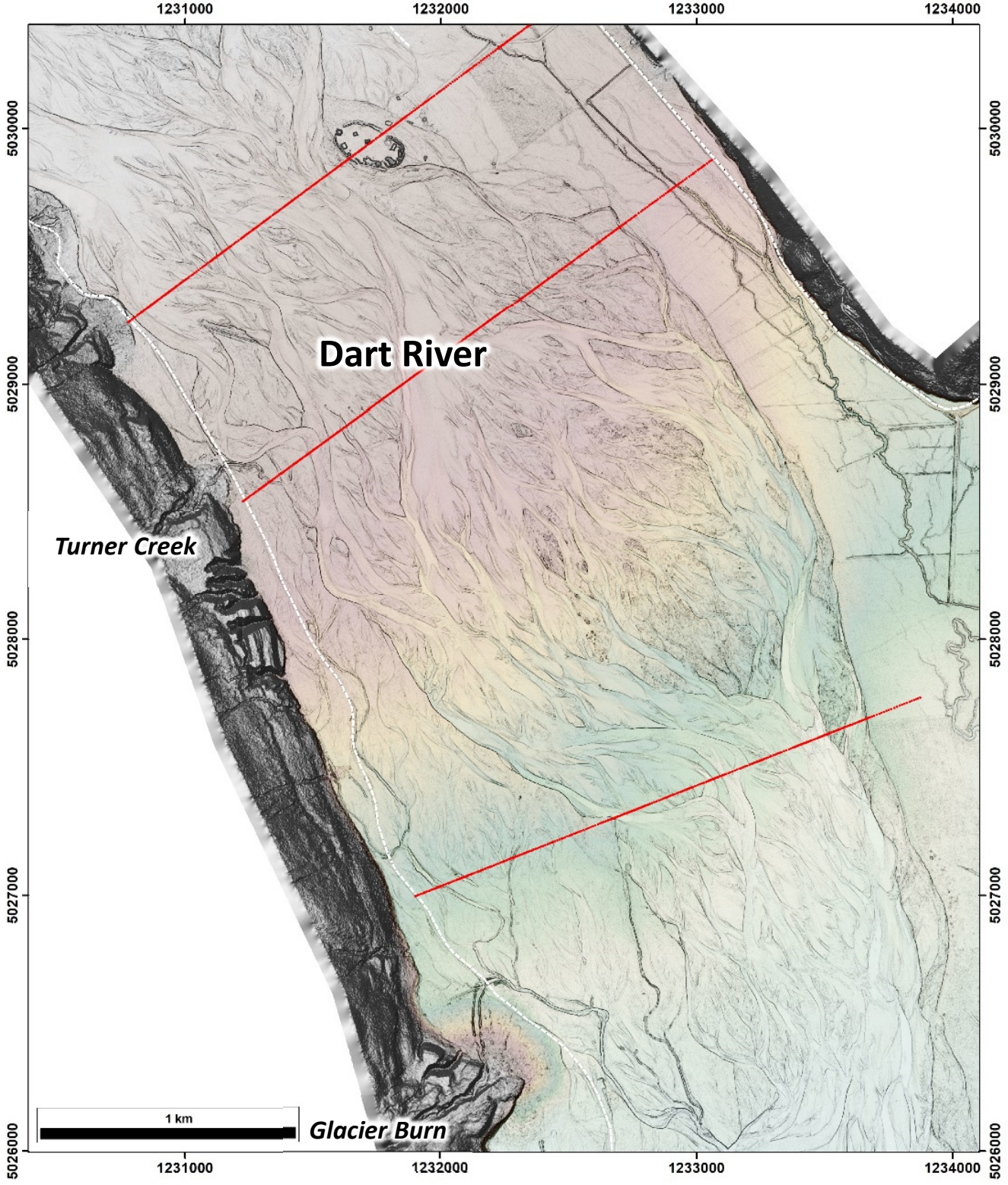
Additional Slides

Kinloch and western delta, September 2018

2019 LiDAR Results (1/3)



2019 LiDAR Results (2/3)



2019 LiDAR Results (3/3)

