

TephraSeismites



Dr Max Kluger

kluger\_max  
max.kluger@waikato.ac.nz

# New insight into Hamilton's seismic hazard using liquefied pumiceous volcanic-ash layers in lakes



# Meet the team



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**David**  
Tephra specialist



**Vicki**  
Eng-geologist



**Max**  
Eng-geologist



**Tehnuka**  
Volcanologist



**Jordanka**  
PhD student, Civ-eng



**Rolly**  
Civil engineer



**Pilar**  
Paleoseismologist



**Jose**  
Risk engineer



**Rich**  
Engineer (Materials)

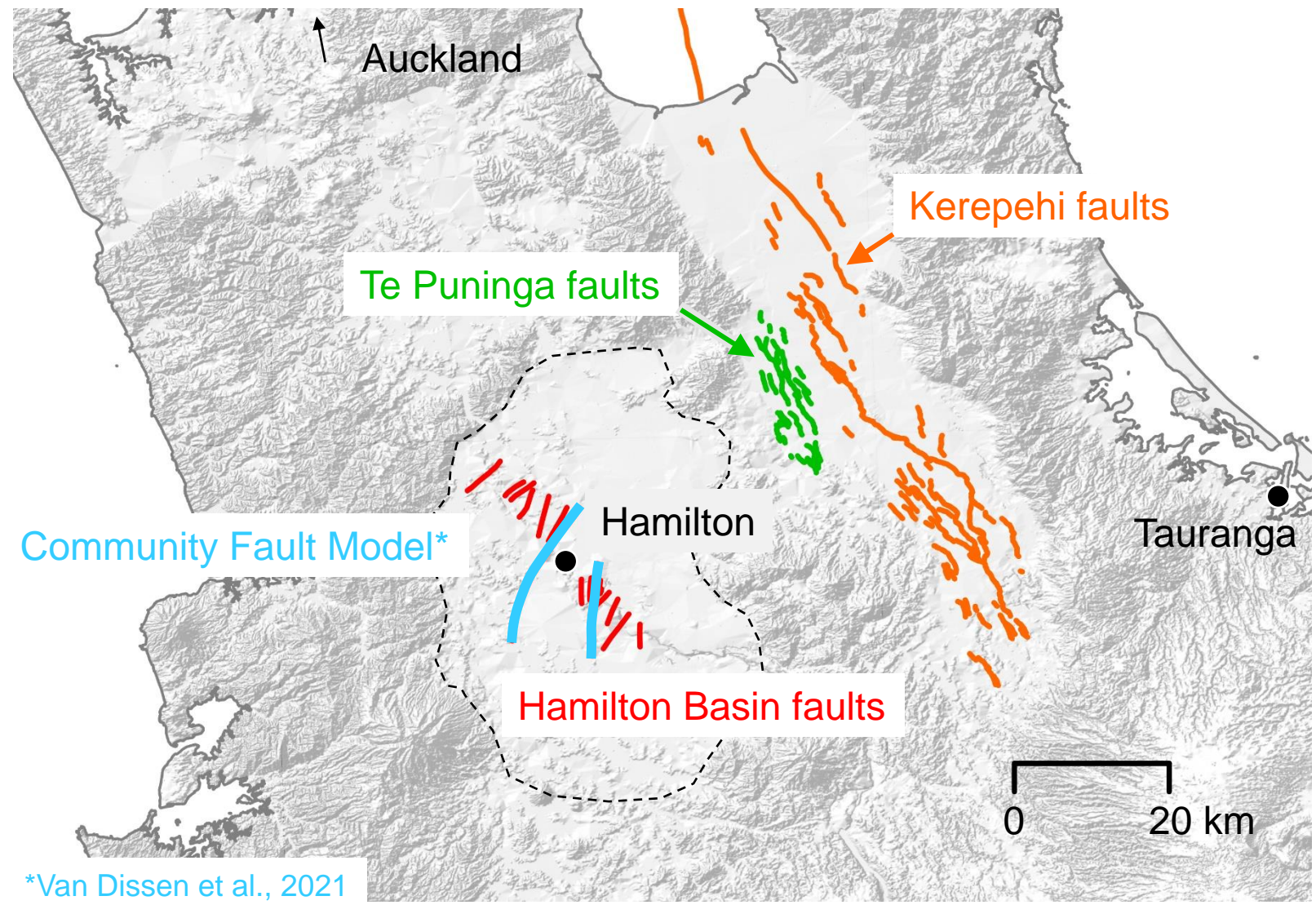
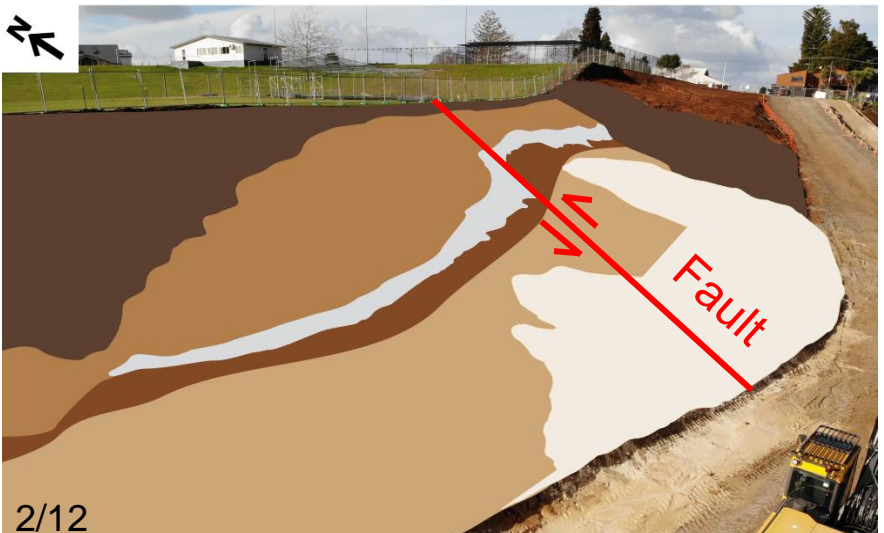
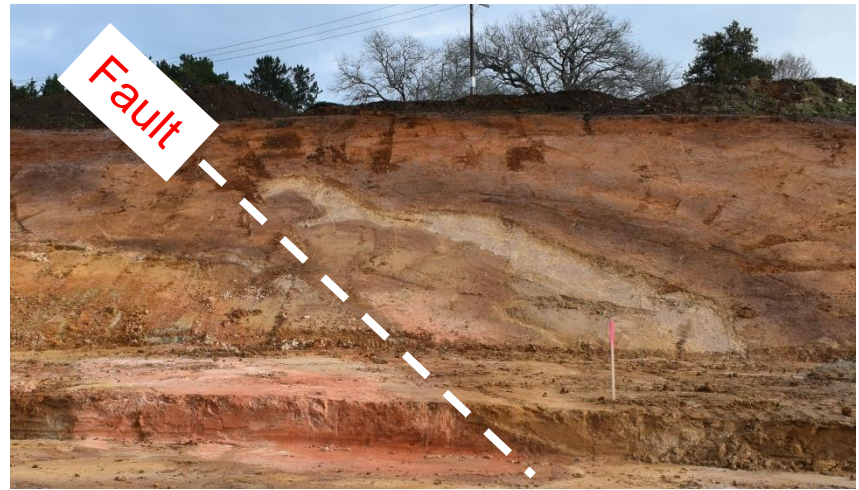


**Josh**  
M.Sc. student

# Hamilton – an area of low to moderate seismic risk?



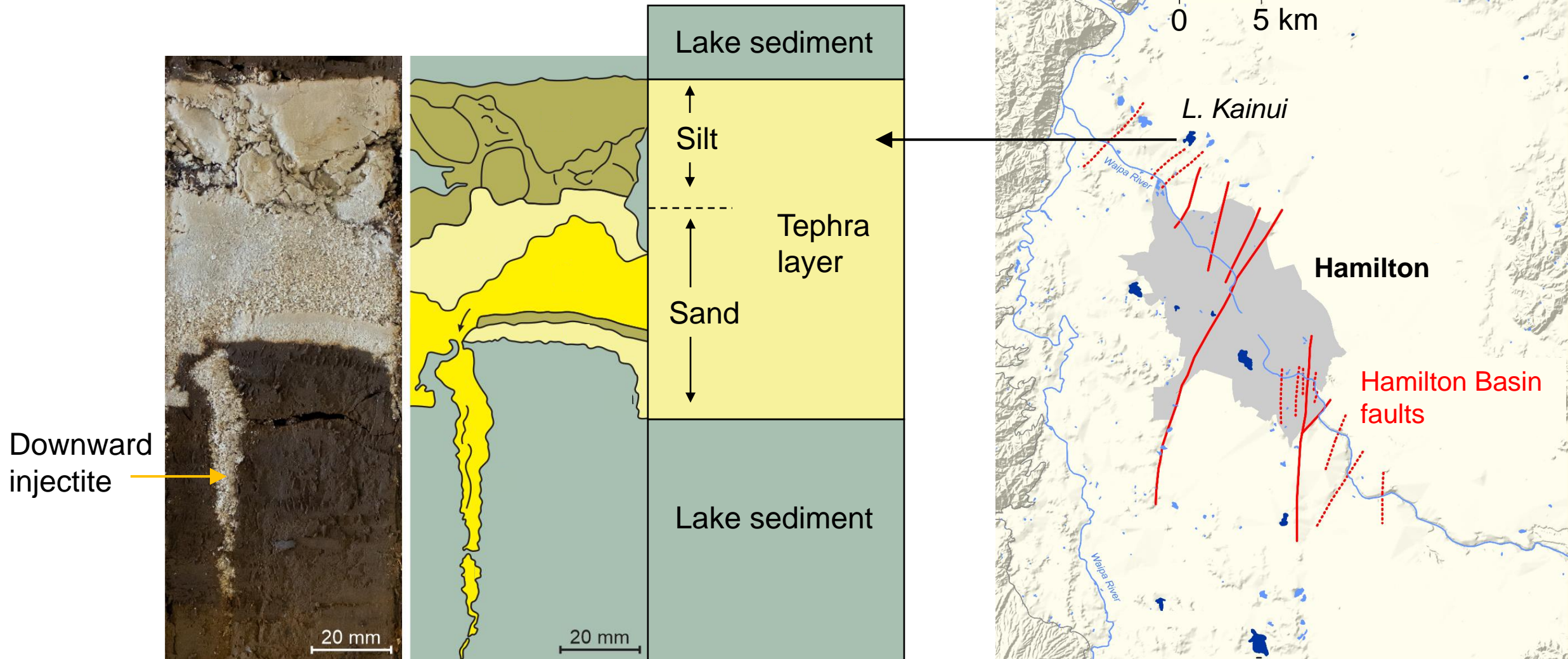
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# Paleoliquefaction structures in lakes



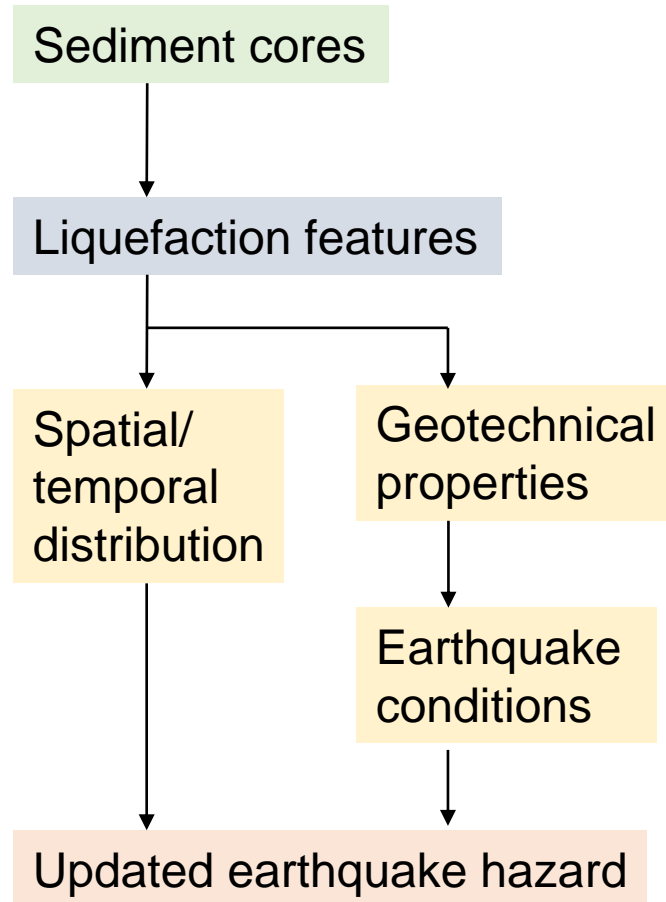
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# Study outline



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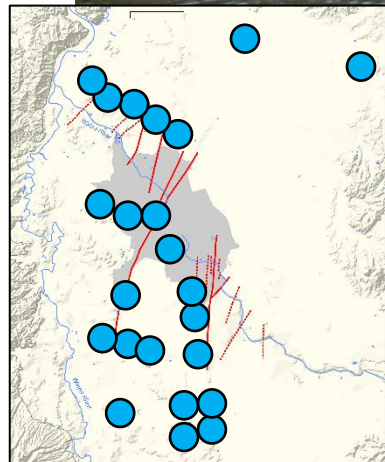
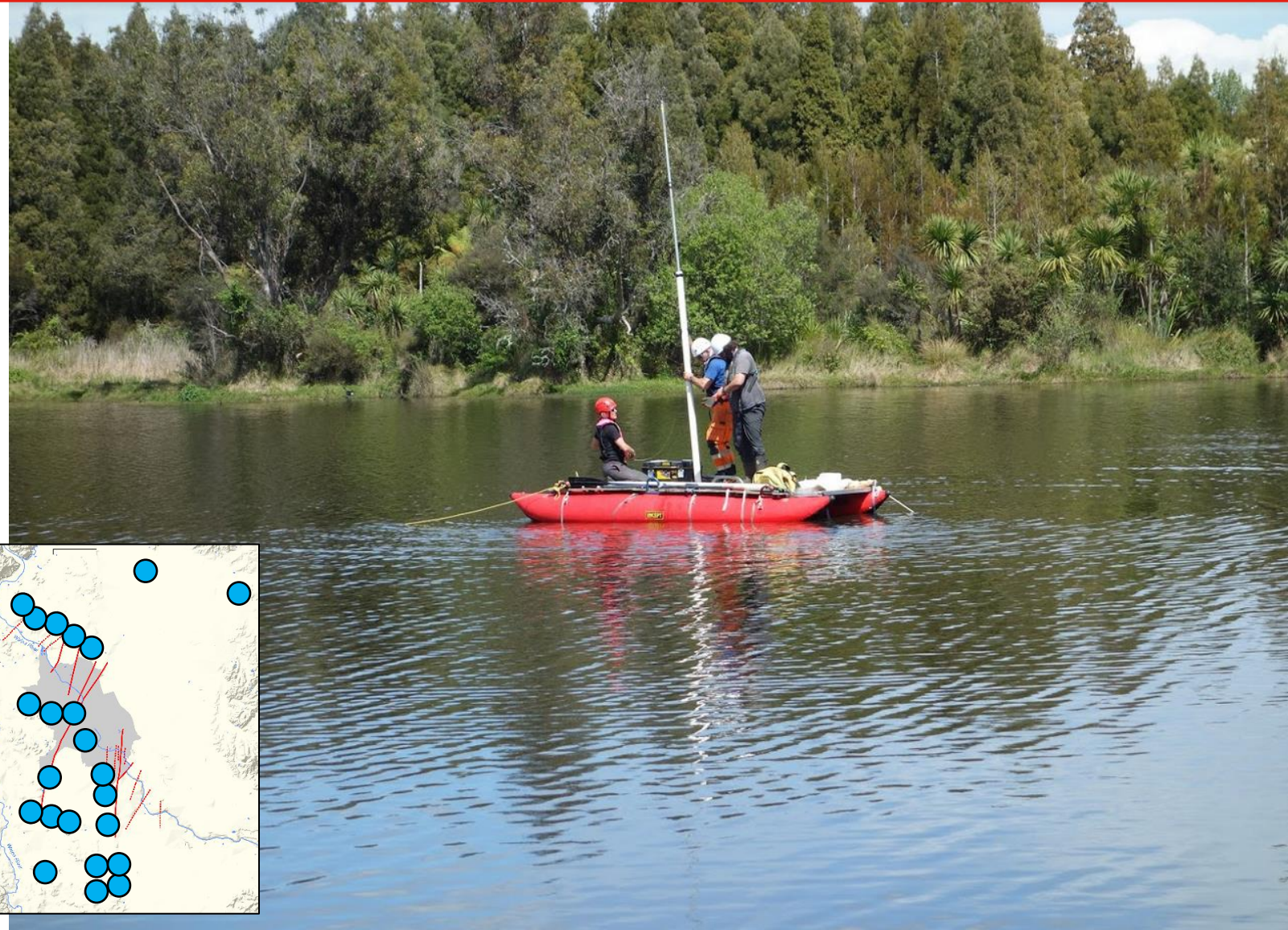
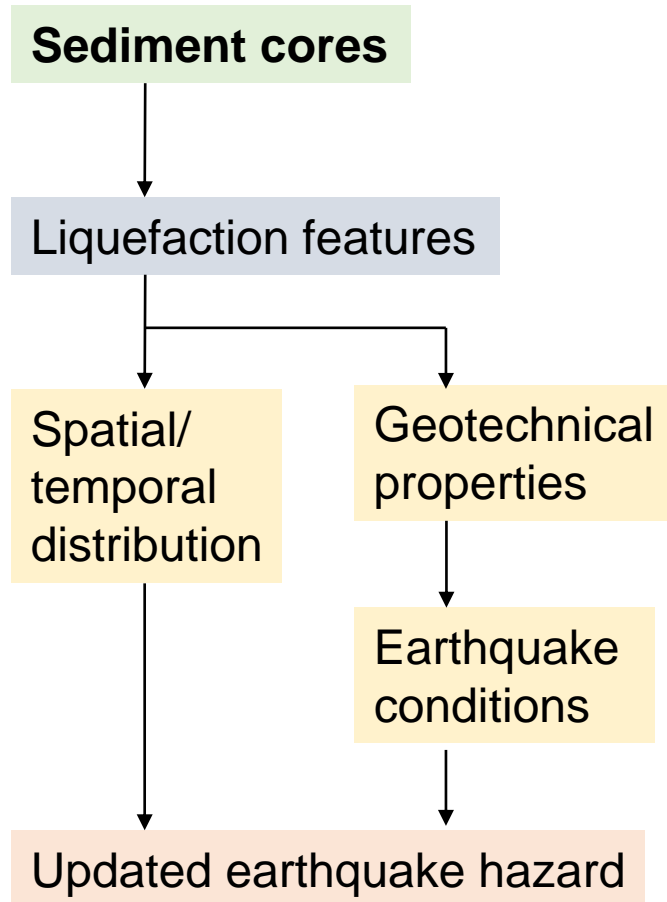
## Objectives:

1. Explain downward-directed liquefaction
2. Create maps of spatial/temporal distribution of liquefaction observations
3. Estimate earthquake conditions for causing liquefaction
4. Contribute to an updated earthquake hazard map

# Coring of lake sediments



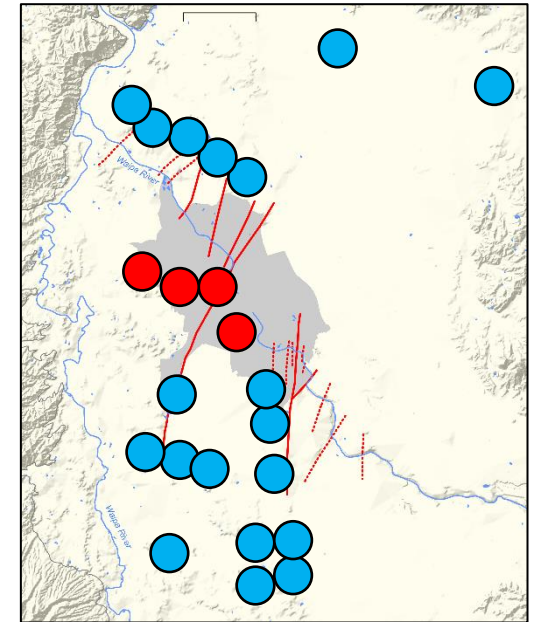
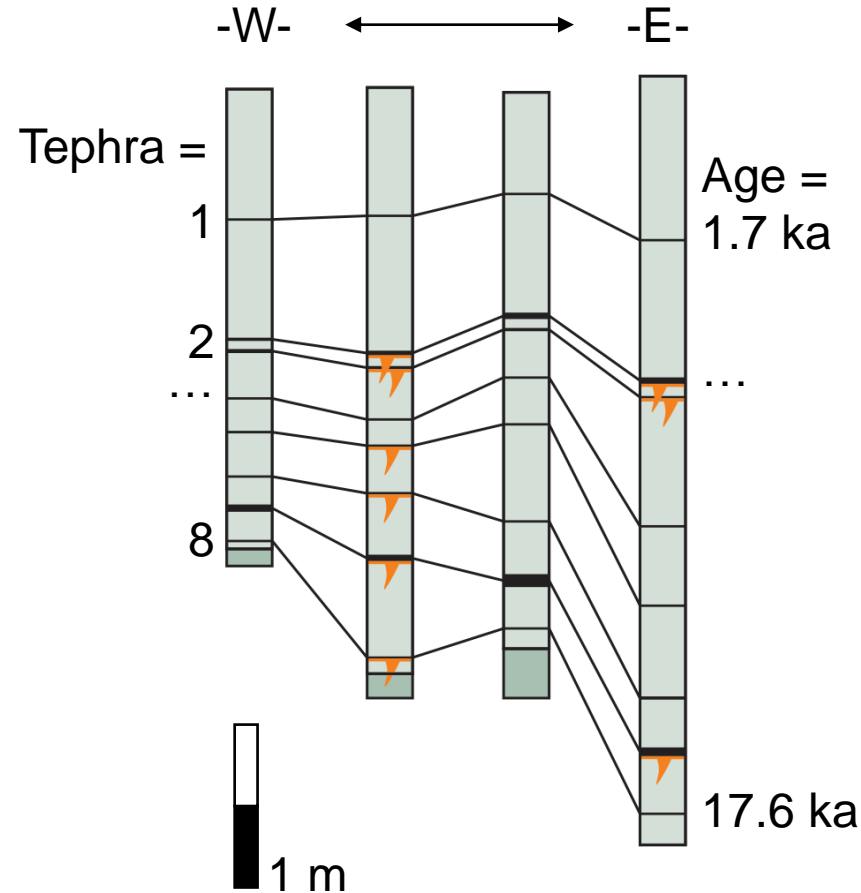
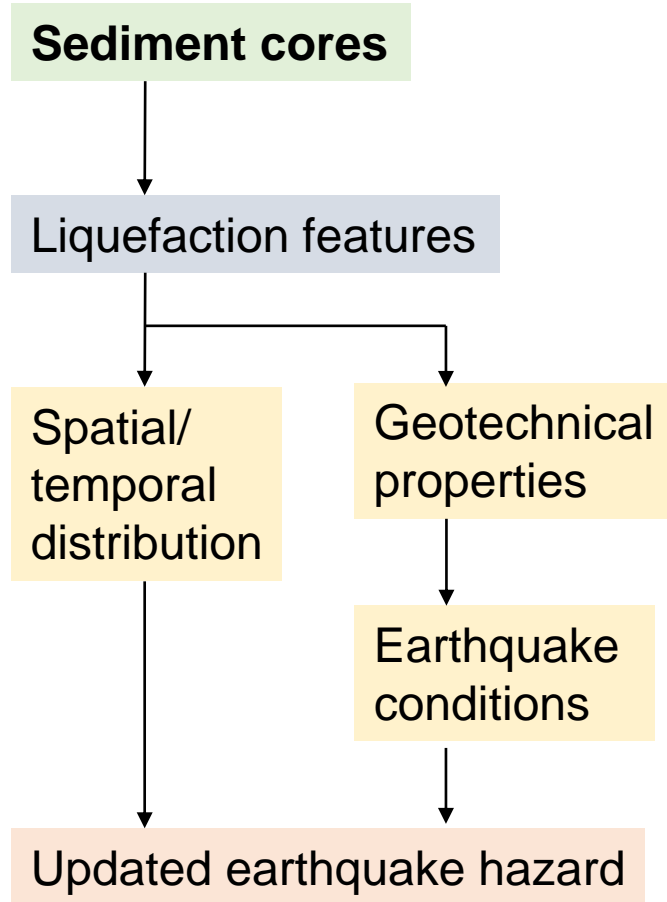
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# Coring of lake sediments



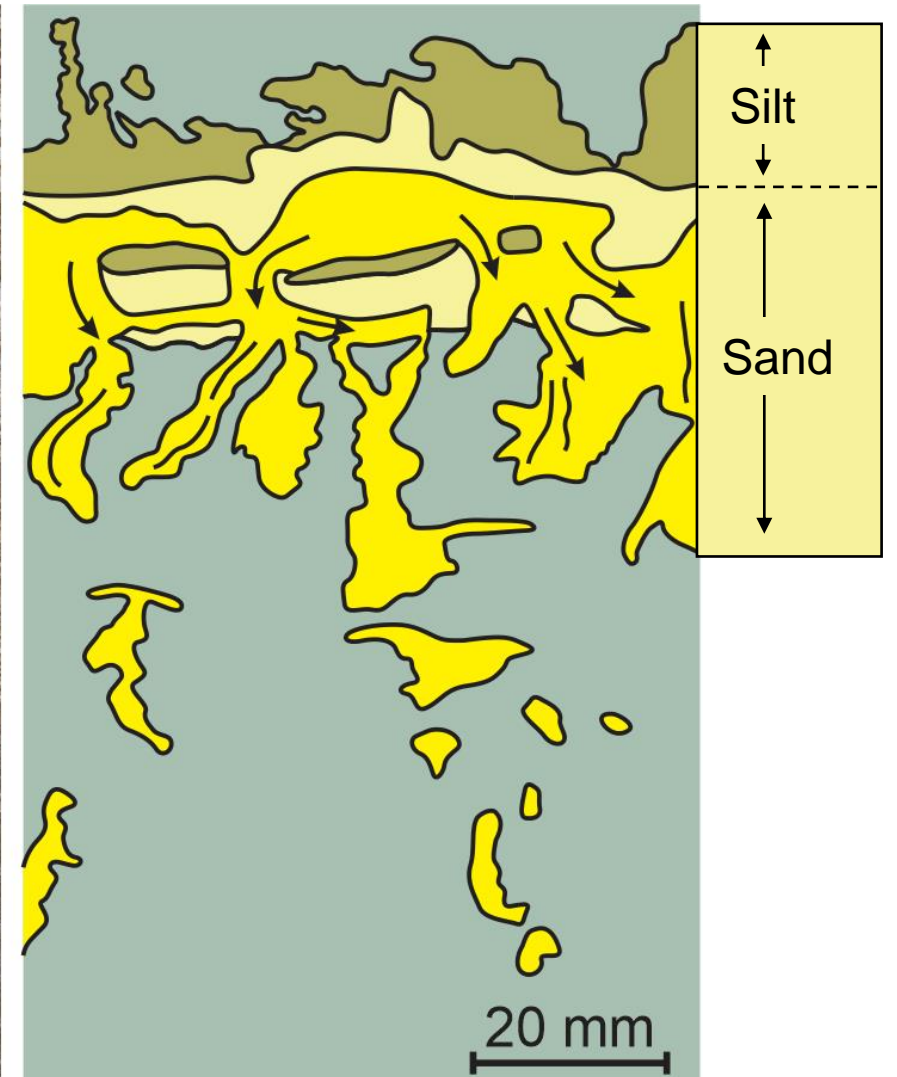
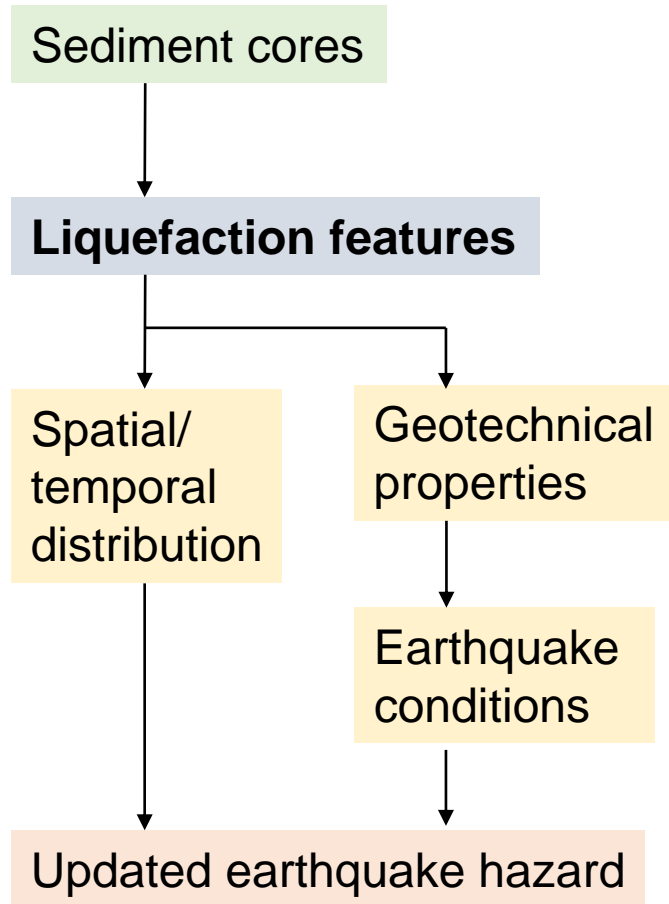
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# Paleoliquefaction structures in lakes

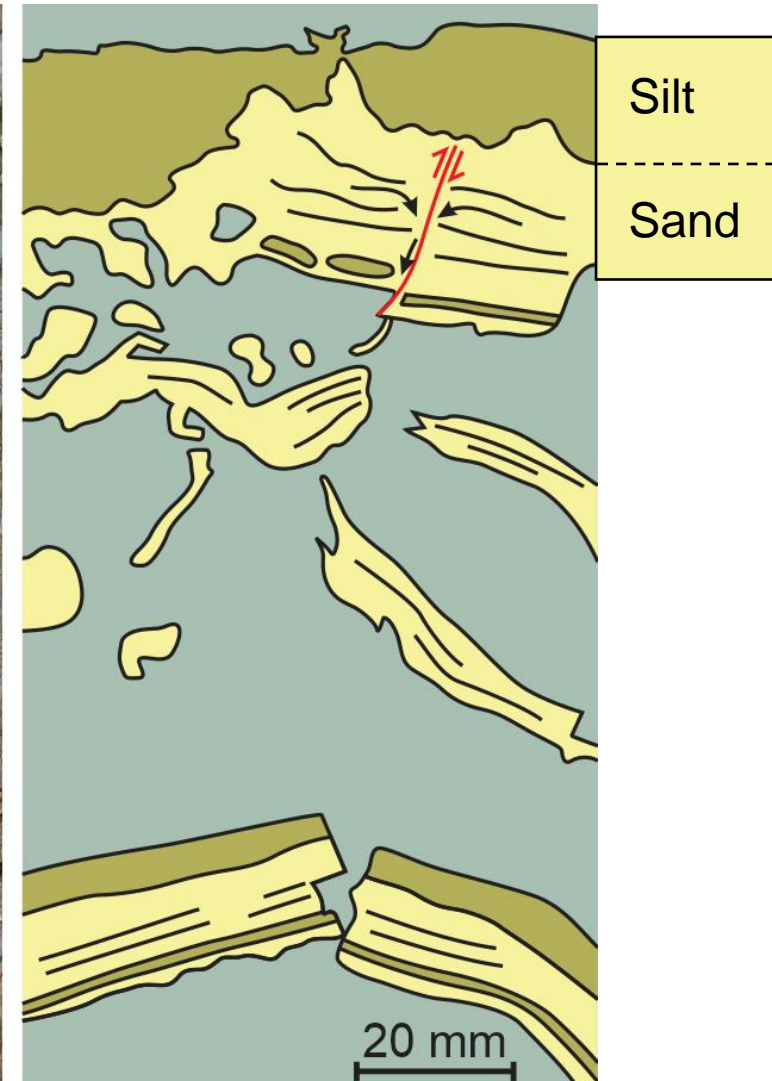
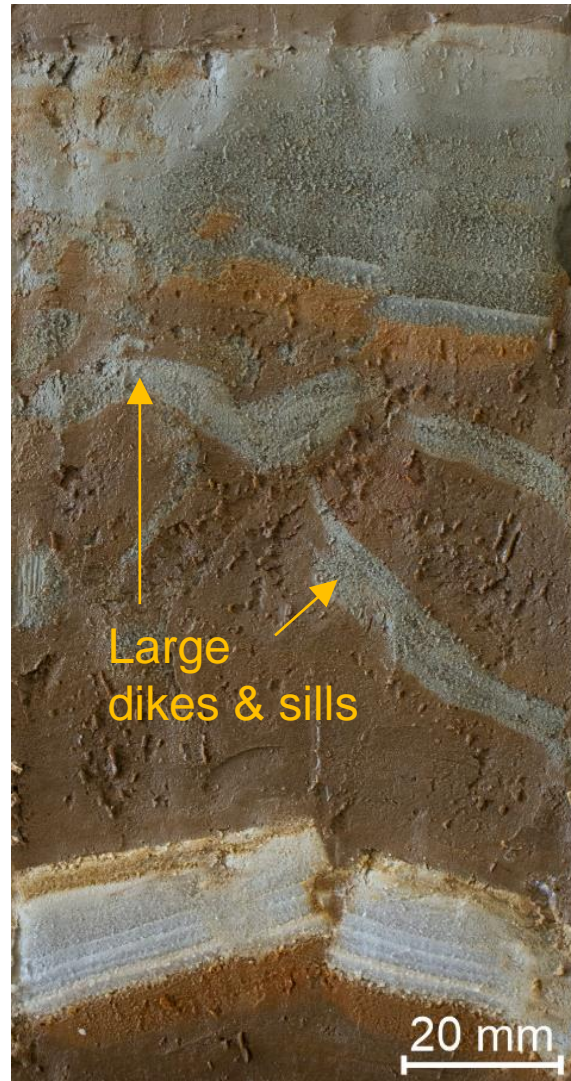
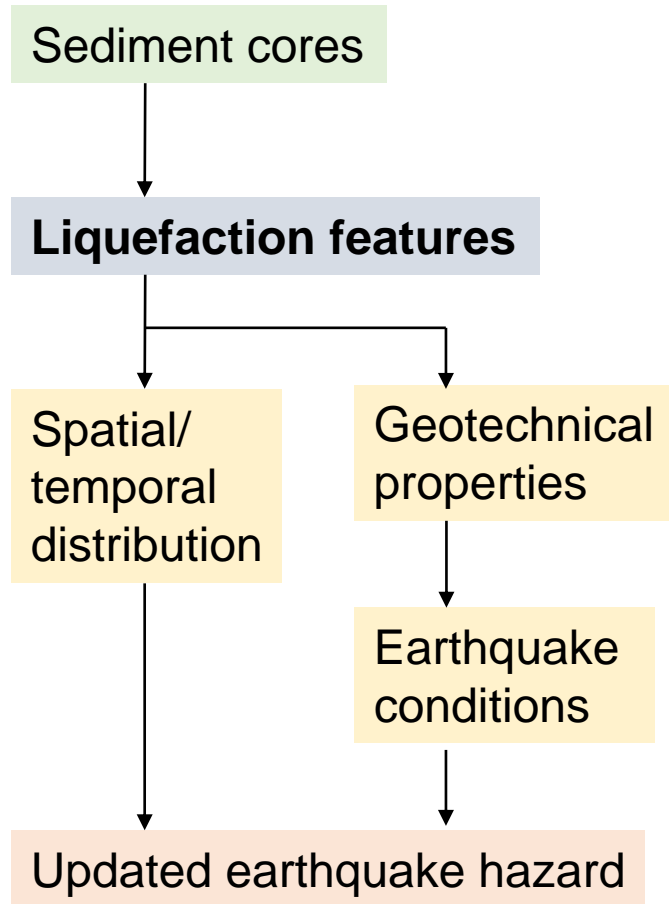


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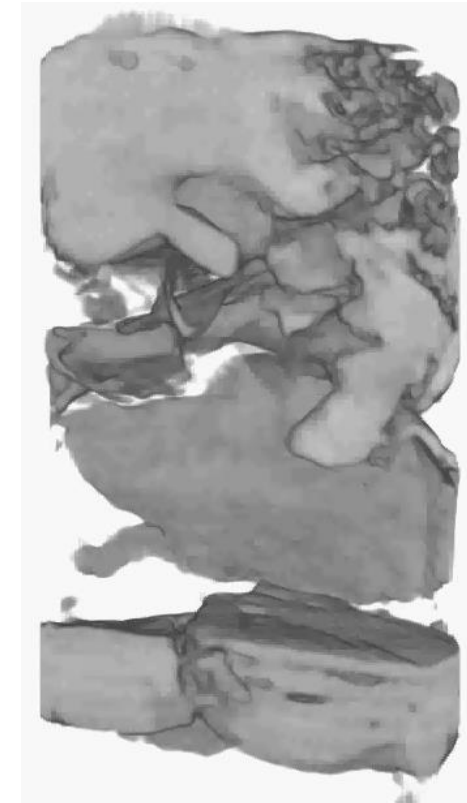
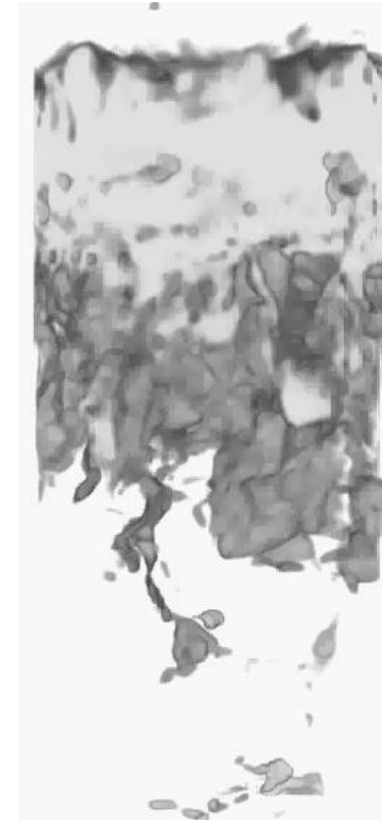
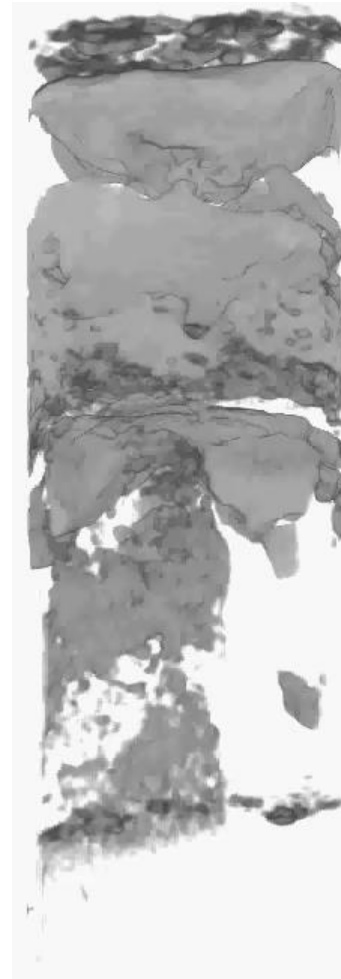
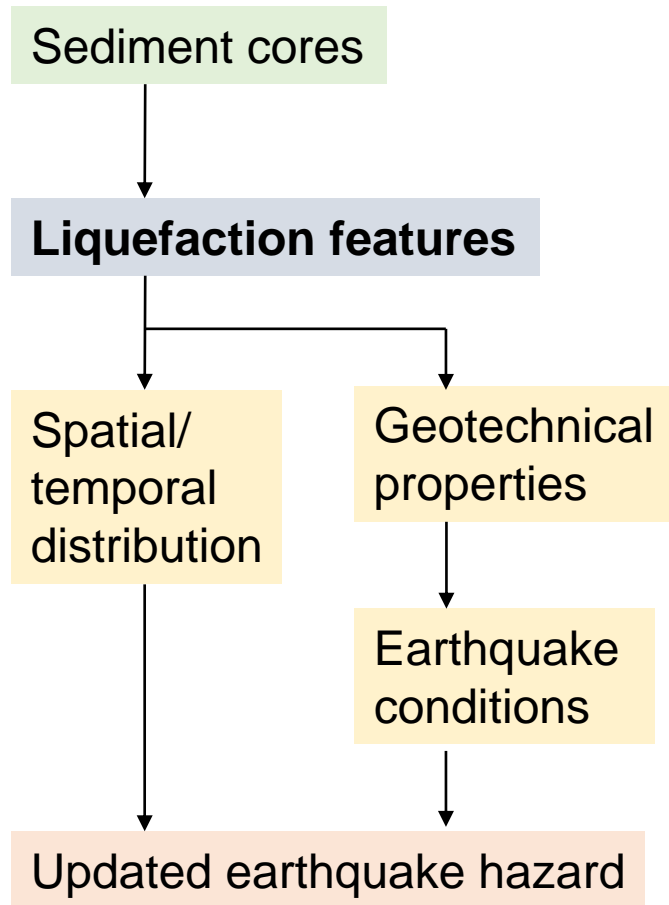
# Paleoliquefaction structures in lakes



# Downward injectites



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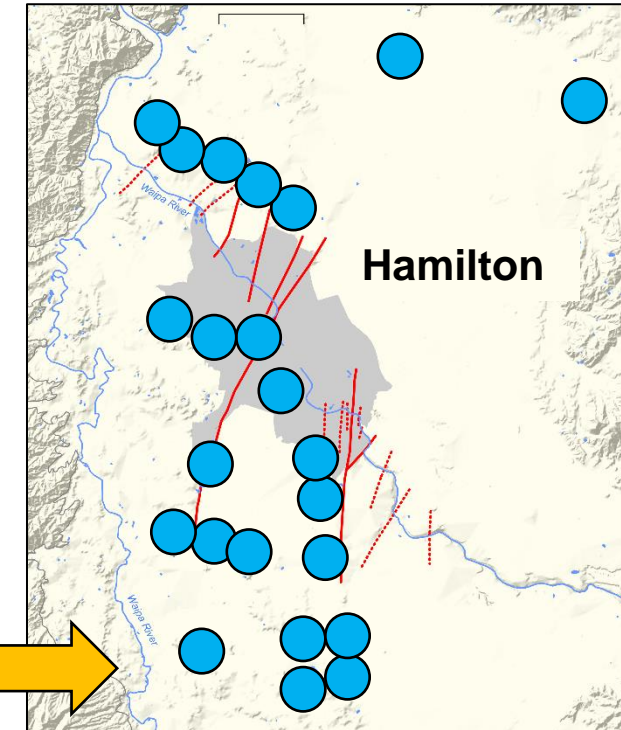
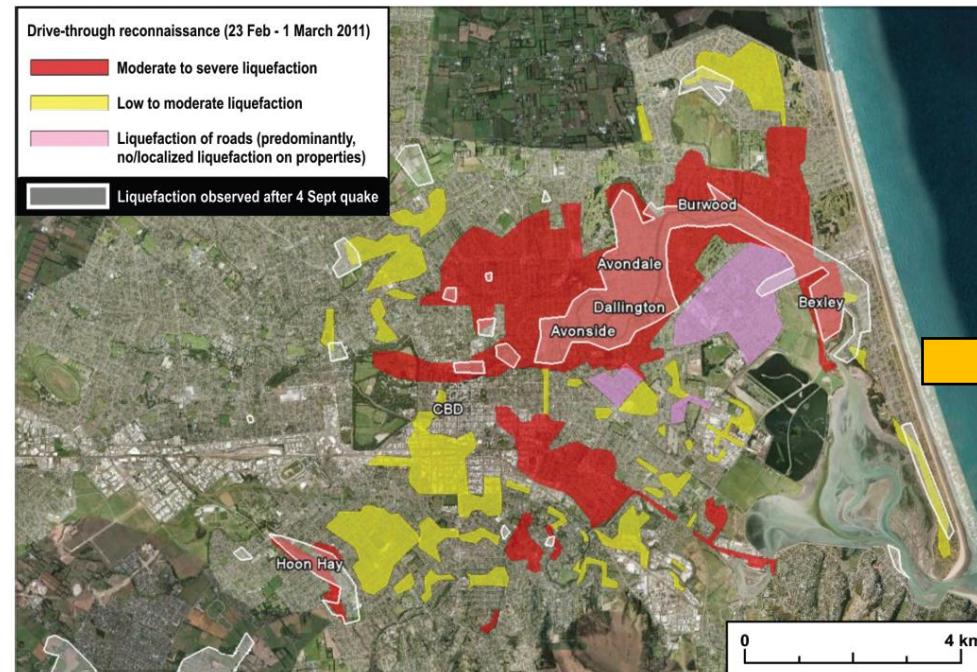
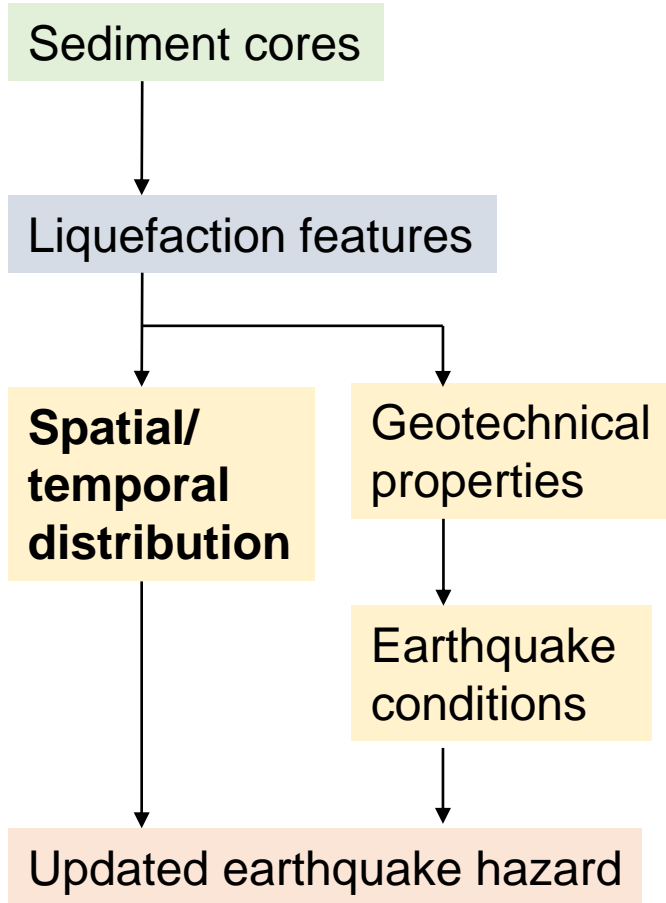


**CT imaging**

# Liquefaction map of Hamilton Basin



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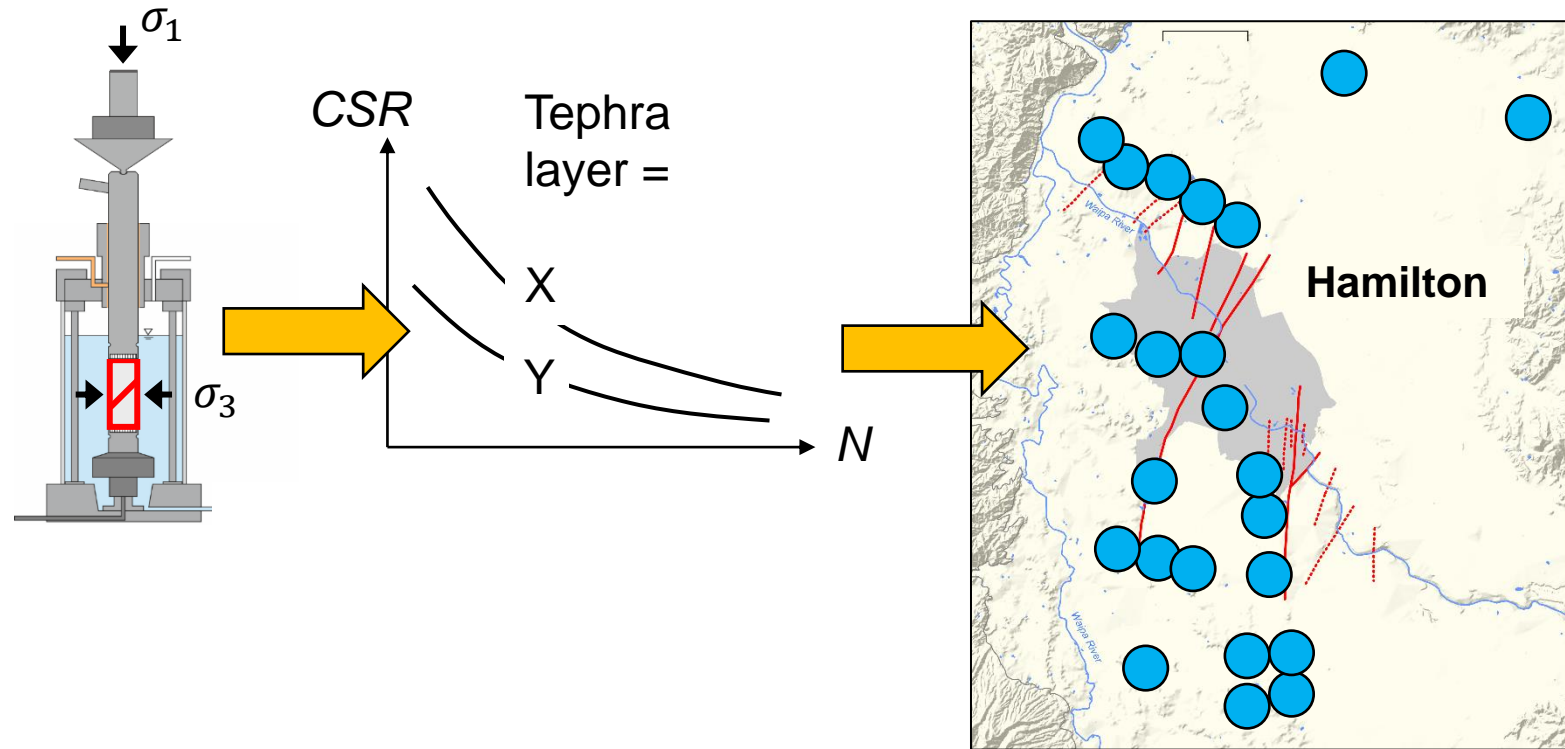
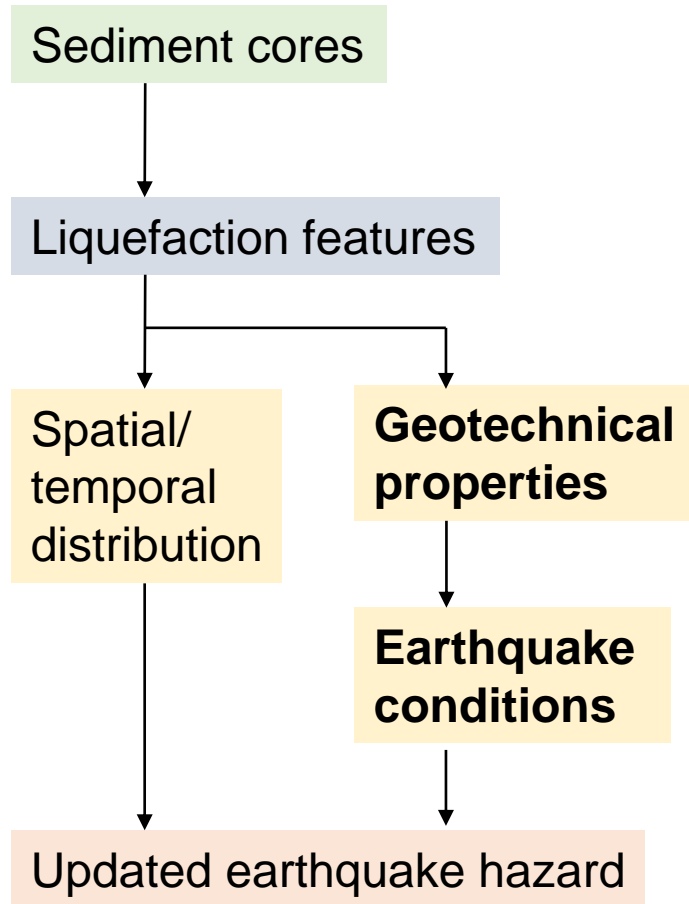


Kaiser et al., 2011

# Liquefaction map of Hamilton Basin



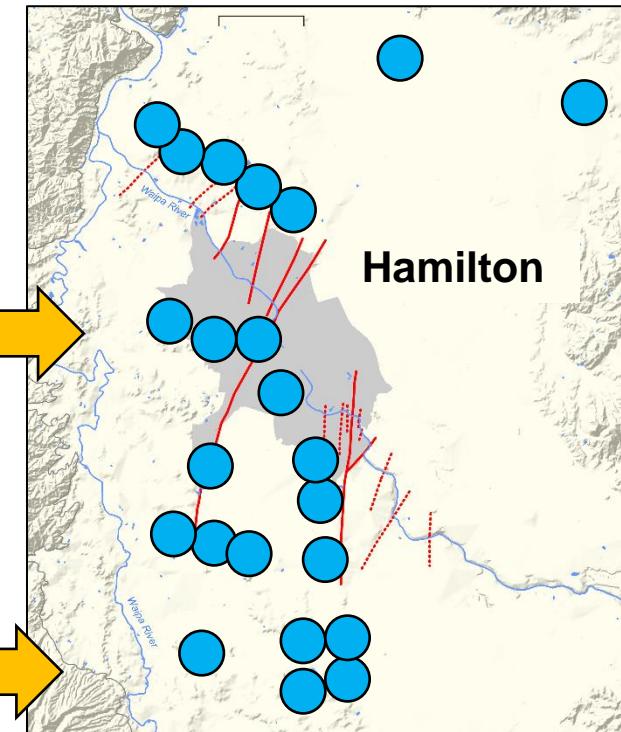
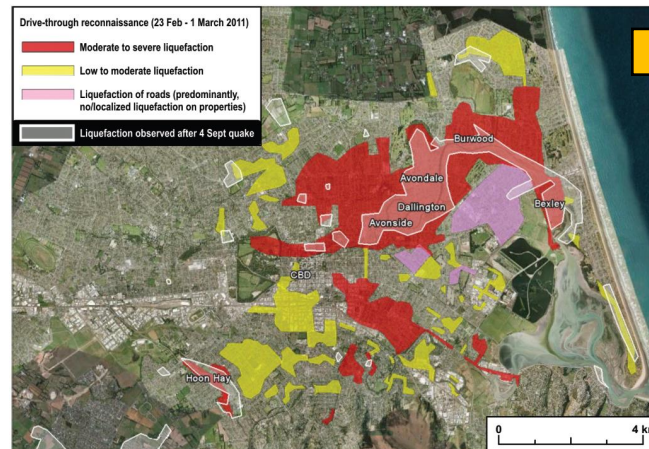
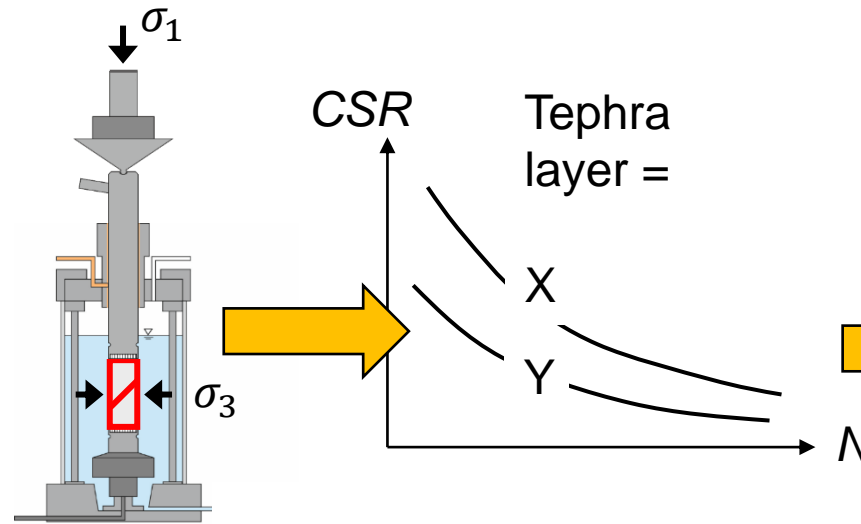
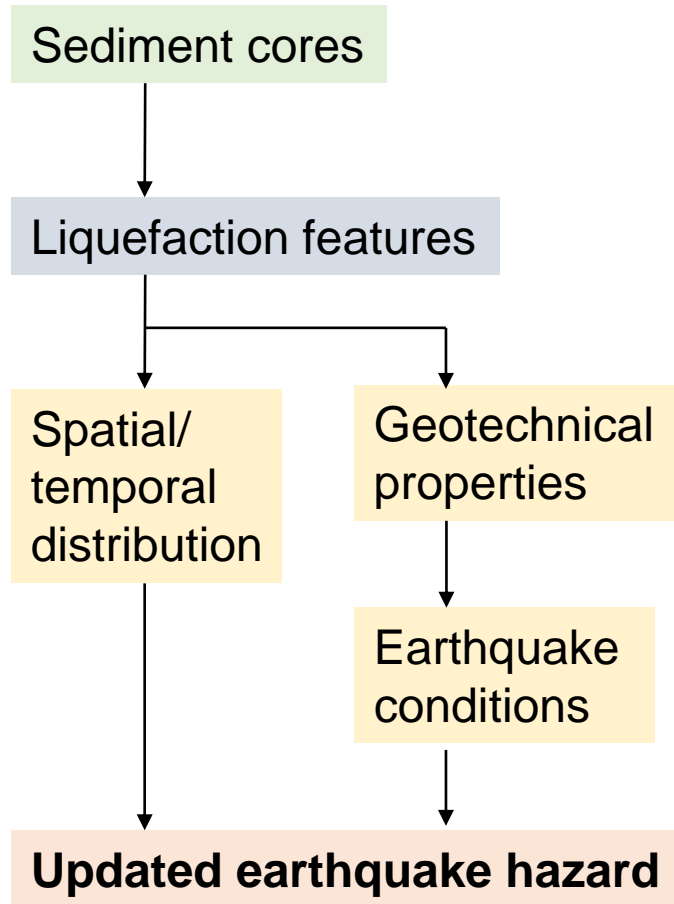
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# Liquefaction map of Hamilton Basin



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Updated earthquake hazard map

# Thank you!



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## Funding:



## Partners:



## Councils:



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