

Understanding Quad Bike ROP on New Zealand Farms



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Presentation: Farmsafe Australia National Conference, Tasmania, Australia.
October 2014

What we did

Analysis of accident and near miss reports
(71 incidents)



In-depth rider interviews
(27 riders)



Instrumented quad bikes
(6 farms)

What we found: Injury factors

Key injury factors

Sloped terrain

Rollover

Heavy weight on quad

Low rider experience

Female riders

Large under-reporting - only 1 in 3 near misses reported on quad bikes

Rider beliefs – Rollover Protection

Riders do not appear to use less caution with ROP

- ROP did not affect whether quad rolled

“Rollbars are something to look at, not something to need”

Rider belief that ROP would have reduced severity of accident

- Post-rollover intervention opportunity
- Only a minority of riders (5.6%) believe that ROP are a problem:

“I don’t really know if rollover protection would have done anything, as a hard bar might have done more damage to me...”

Rider beliefs - Training

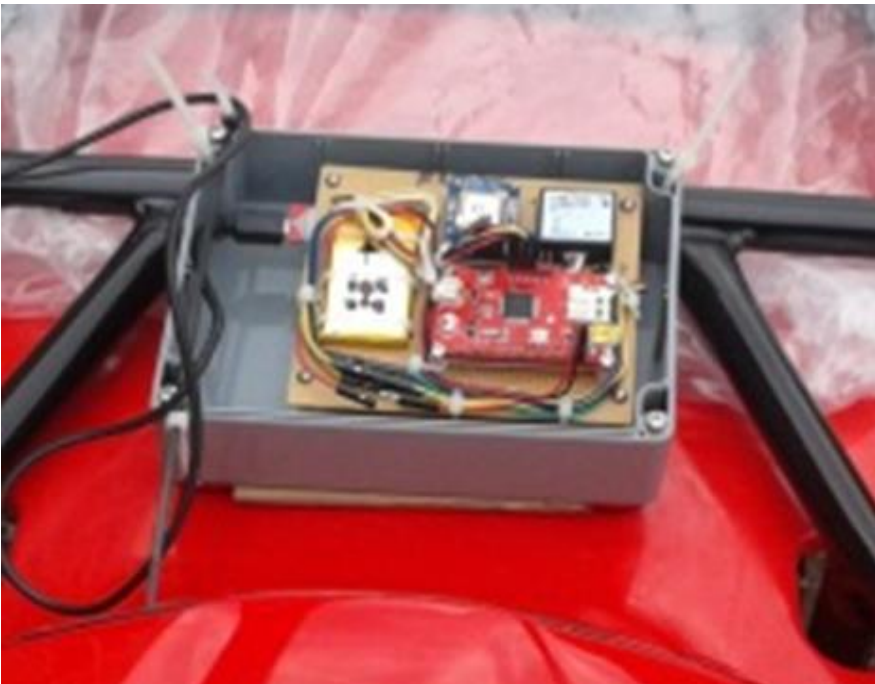
- *Training is perceived as a waste of time*
- *Focus on traditional training that only ran on flat land*
- *Also, indications of a broader culture of risk acceptance:*

"Minimise the risk as much as you want but you won't eliminate it. Riding quads is no more risky than other farm work."

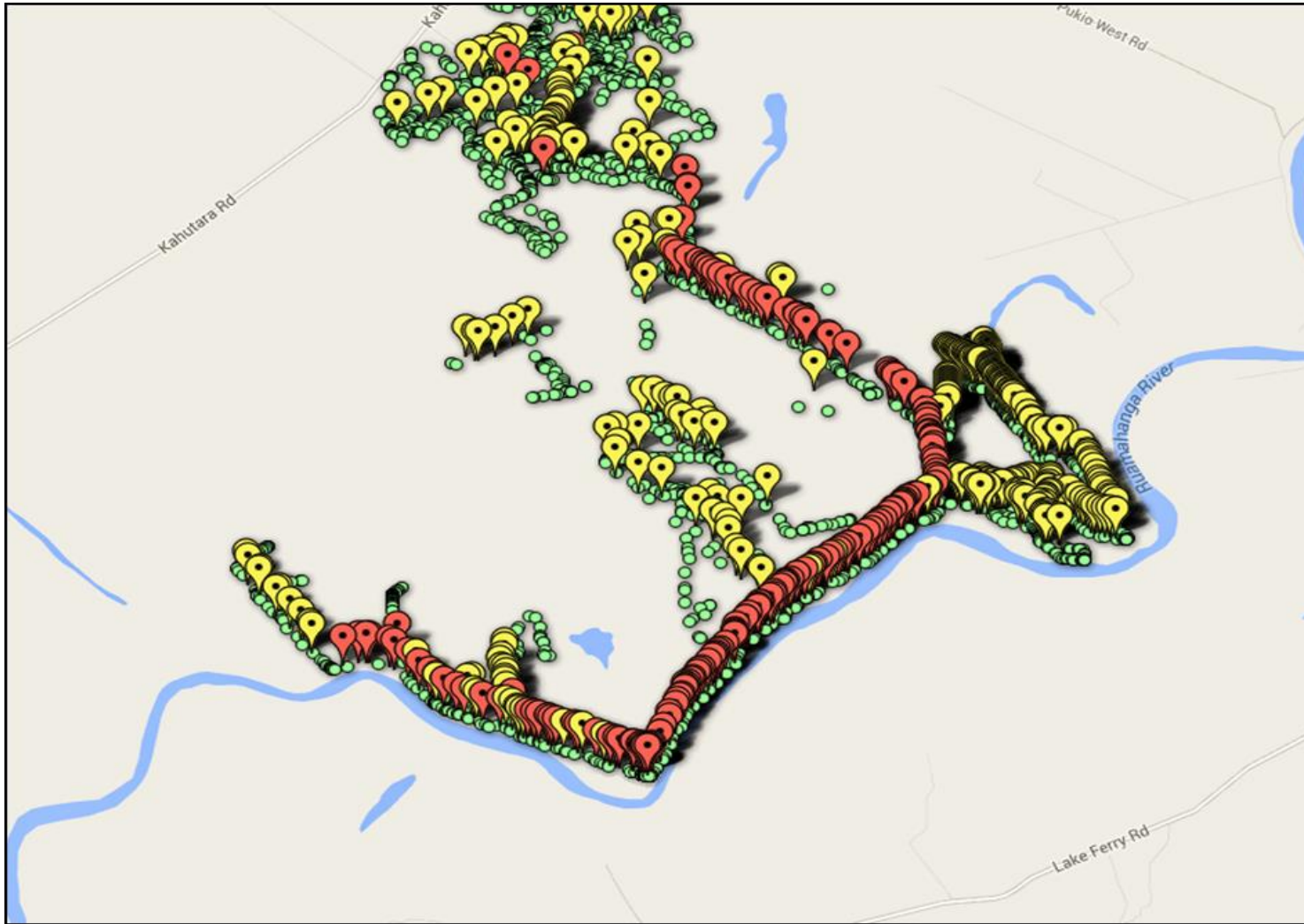
- Need to match training to actual terrain and work
- Options for experienced vs inexperienced riders

Field Instrumentation

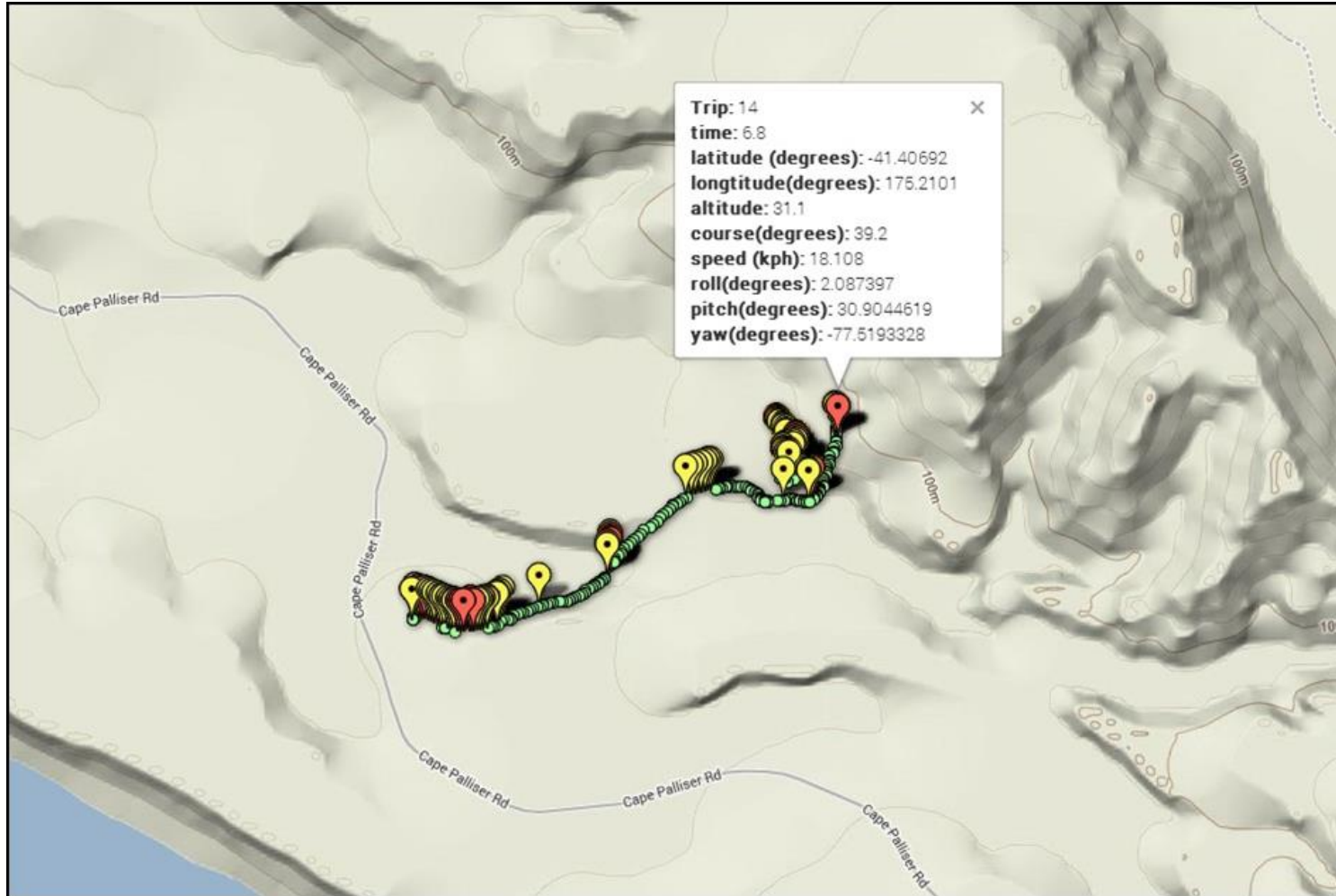
Speed, GPS location, Roll, Pitch, Yaw, Video footage



Speed threshold mapping

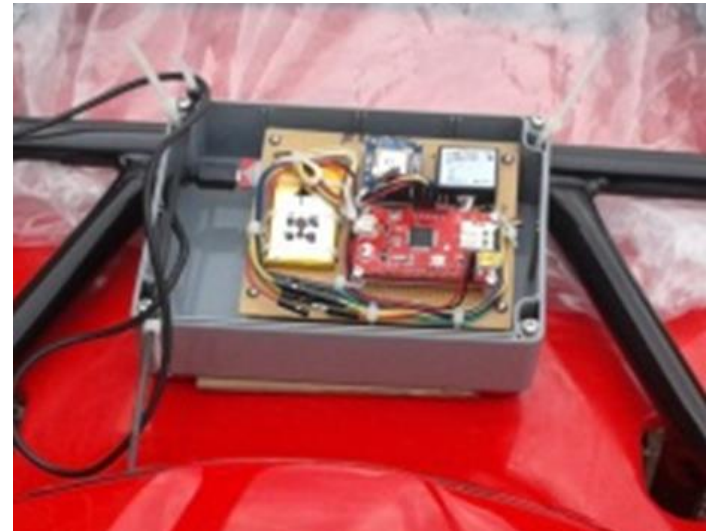


Pitch threshold mapping



Recommendations included

- Using instrumentation as a **safety management tool**
 - First alert
 - Rider feedback
 - Location control
- Monitoring quad bike repairs
- Examination in centre of gravity changes to quad fleet



Final thought...

"They are dangerous piece of equipment in the wrong hands, and they need to be treated with respect."

Acknowledgements

Landcorp Farming Limited

&

Greater Wellington Regional Council

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 OPUS

Quad bike GPS

An instrument quad bike study

Pilot study

 OPU

Quad Bike Rollover Protection

Quad Bike Rollover Protection Pilot Study