

Gavin Merriman

Can we influence behaviour or is it hard controls only?

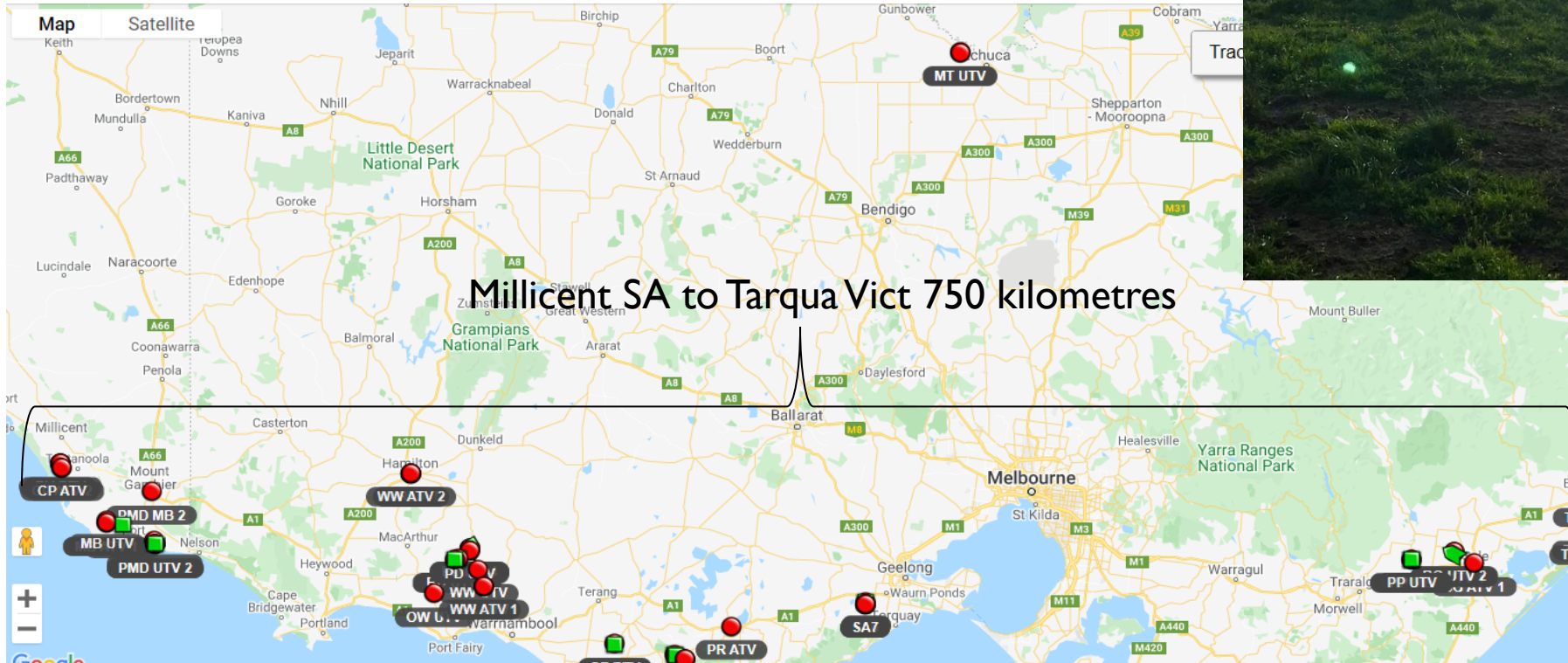
Questions

1. Can we alter behaviour through conversations?
2. Does the quality of the data impact?
3. If we modify behaviour is it sustainable?
4. Does the new behaviour reduce our risk?



Who, What and Where

- South Eastern Australia
- Established 1996
- 18 farms, 12,500 cows, > 8,000 hectares
- > 100 hundred million litres of milk per annum
- 36 Quad bikes, 20 side by sides
- 145 team members



The Problem

Quad bikes

Side by Side

Research indicates of 3,351 emergency presentations.

Terrain = 65%
Speed = 33% > 40KPH

NSW Public Health Real Time Emergency Surveillance 2006 to 2012

Furthermore, the Heads of Worksafe Authorities in Australia in 2011 stated;

“In Australia, more than 64 per cent of quad bikes deaths occur on farms and in the last 10 years there have been 130 quad bikes fatalities across the country.”
(Rechnitzer, Grzebieta, Simmons, & McIntosh, 2015)

Our experience:
2 x roll overs of quad (lost time injuries)
1x roll over of a side by side (medical treatment)
All within 4 months / first incident in 10 years

The Australian Competition and Consumer Commission (ACCC) in its Regulation Impact Statement states:

“the frequency and causes of quad bike related deaths and injuries suggests that the current design of quad bikes sold in Australia does not ensure an appropriate level of safety for their marketed use in Australia”.
(Australian Competition and Consumer Commission, 2018)

Ag Health, University of NSW
Combined 5 years 2014 to 2018 fatality, non-fatality data

Transport	Fatality	Non-Fatality
Quad	50	198
2 Wheel bikes	13	55
Side by side	5	8
Utility Tractor	17	18
	54	62



What our team told us?

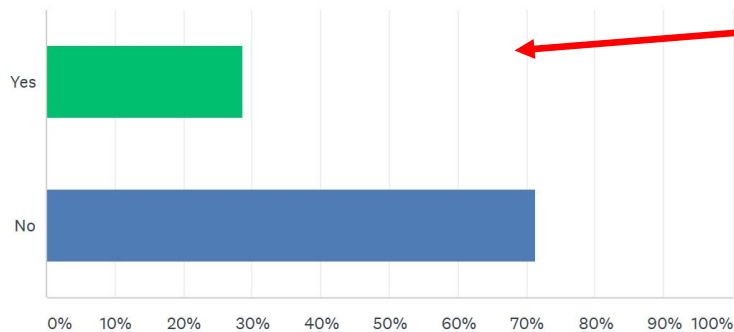
If the ATV had a speed tracker and location tracker installed would it reduce your travel speed and reduce taking the ATV into NO GO ZONES when operating the ATV (speed and location tracker provides the management instant speed readings of each ATV and its exact location)

60% stated (33 / 55) it would reduce speed

March 19

Do you operate the ATV on steep terrain

Answered: 56 Skipped: 0



March 19

ANSWER CHOICES	RESPONSES
Yes	28.57% 16
No	71.43% 40
Total Respondents: 56	

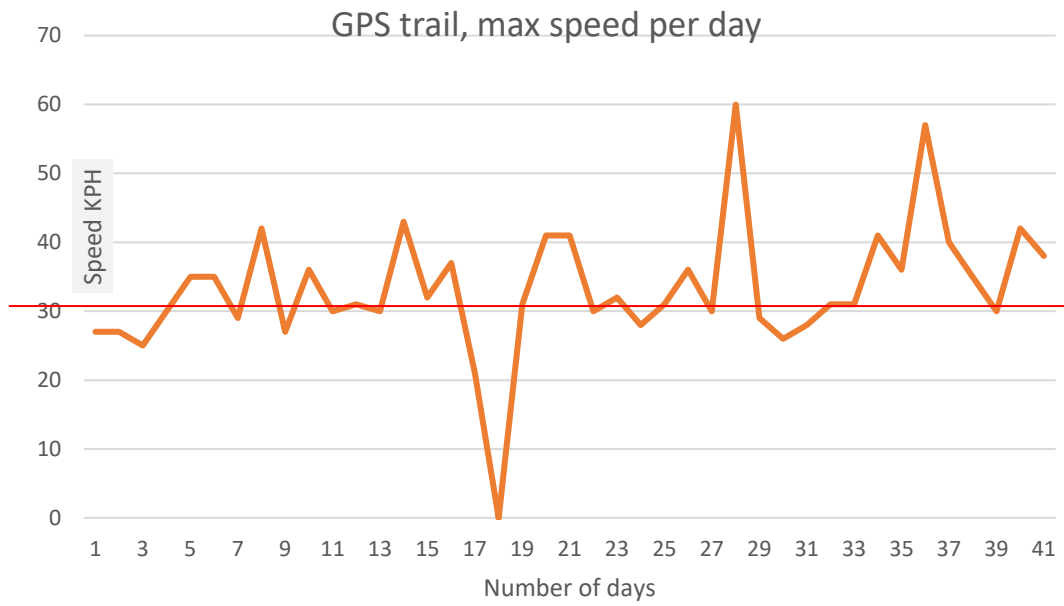
What is the greatest risk when operating an ATV (speed, terrain, urgency, perceived time constraints, animals, potholes, dawn, dusk etc)

**Terrain 43% (24 / 55),
Speed 36% (20 / 55)**

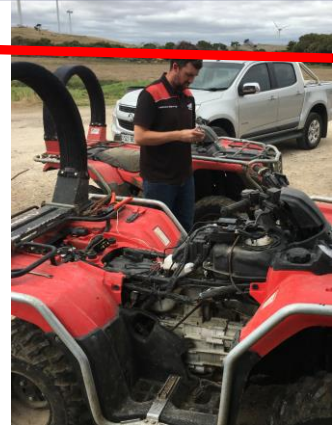
March 19

The Solution

Already in play	Consideration
Roll over protection (ROPS)	Alternate devices (Argo)
Crash Helmet	Axle spacers-Wider tyres
External recognised training	Speed restrictors
500 cc machine	GPS tracking
No loads on quads	<ul style="list-style-type: none"> • Speed • Terrain



Strobe light and emergency button



Targeted speed 30 KPH

GEO Fencing all properties



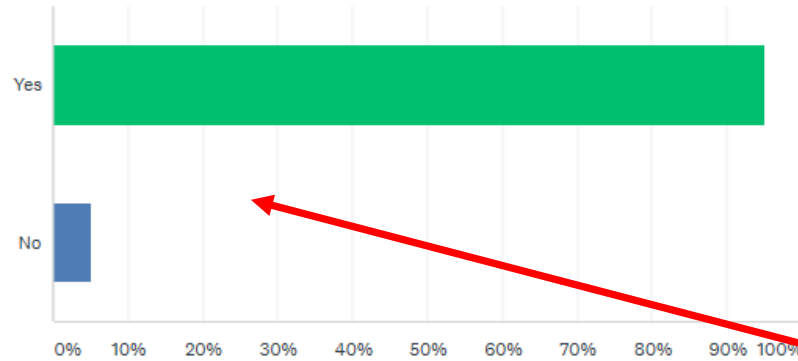
Colour	Geo Fence	Notification if exceeded
Red	NO GO ZONE	Message via APP FM and AFM
Yellow	20 KPH (12 mph) – Mgr discretion	Message via APP to FM and AFM
Blue Paddock	20 KPH (12 mph)	Message via APP to Ops MGR, HSE Mgr, FM and AFM
Blue Laneways	30 KPH (18.5 mph)	
	Roll over (accelerometer)	Text Message to Ops MGR, HSE Mgr, FM and AFM
	Emergency Button	App message to Ops Mgr, FM and AFM

Question 1. Can we alter behaviour through conversations

Has your manager spoken to you about speed on the all terrain transport and used the GPS data in this conversation

Answered: 61 Skipped: 0

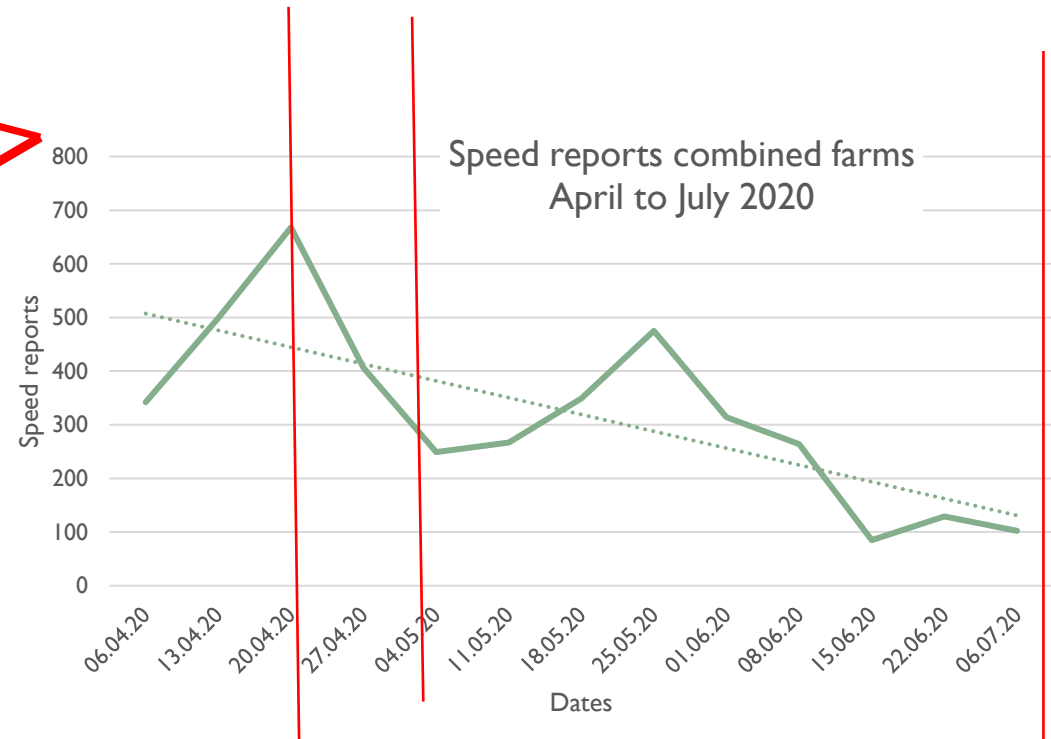
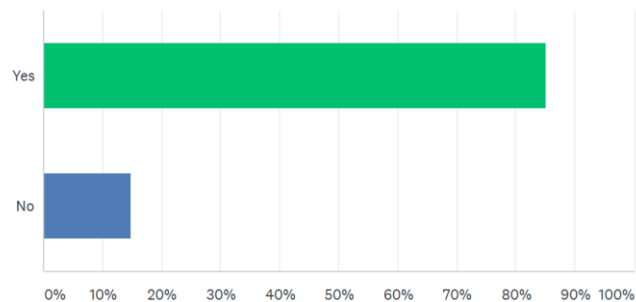
Sept 20



Has the instalation of the GPS system reduced your speed on the quad bike, 2 wheel motor bike and side by side (now refered to as All Terrain transport)

Answered: 61 Skipped: 0

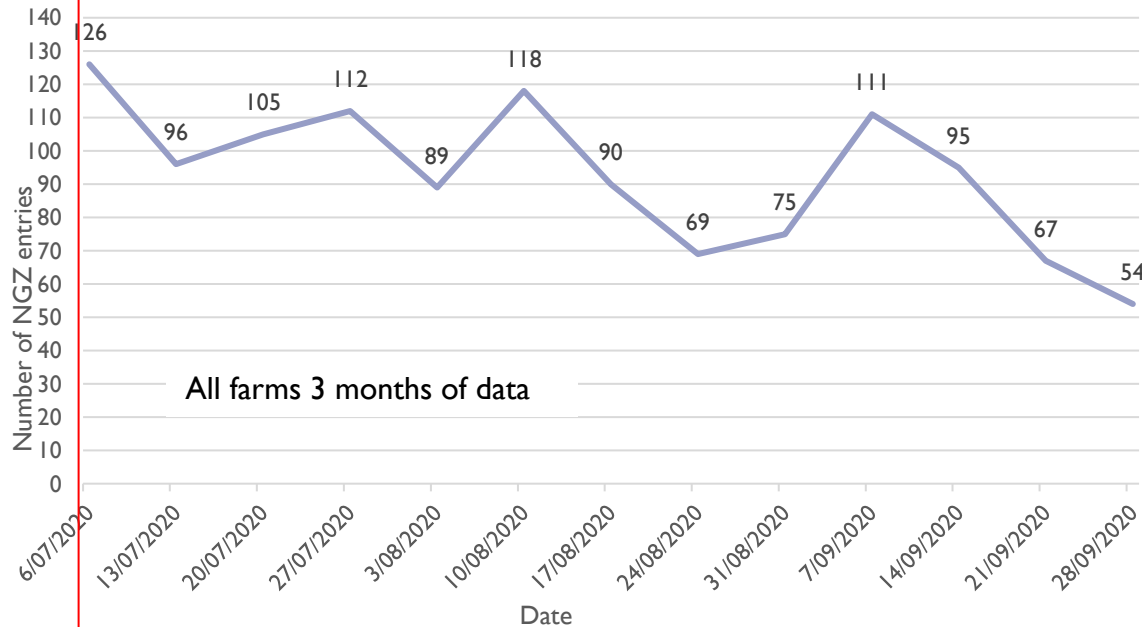
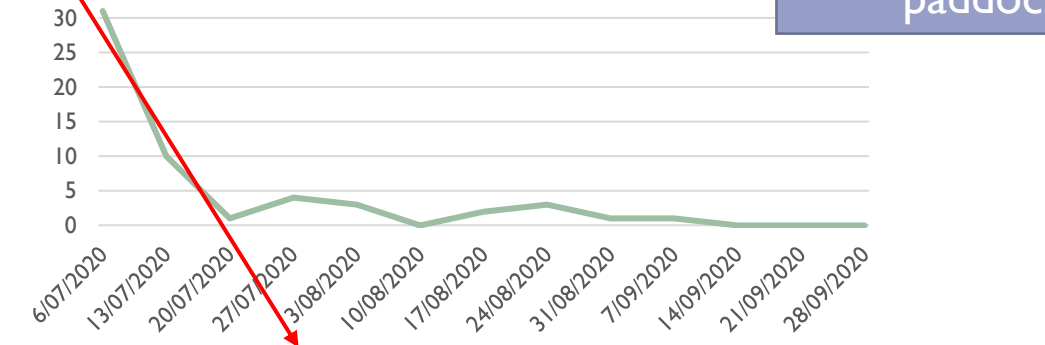
Sept 20



Question 1. Can we alter behaviour through conversations

13 NGZ incl 3 drains across paddocks

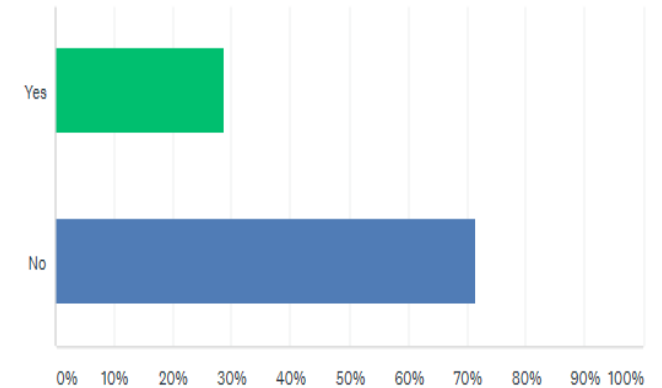
Farm with water course down the middle



All farms 3 months of data

Do you operate the ATV on steep terrain

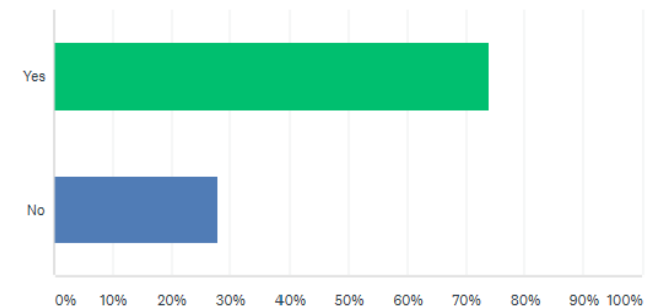
Answered: 56 Skipped: 0



March 19

Have you reduced riding the all terrain transport on hills since the introduction and monitoring of the NO GO ZONES with the GPS system

Answered: 61 Skipped: 0



Sept 20

Question 3. Does the quality of the data impact on behaviour

iTRAKassets

Map Satellite

Jess Rd Tillers Rd

Tillers Rd

Galpins Rd Galpins Rd Galpins Rd Galpins Rd Galpins Rd

Lower Nelson Rd W

Google assets.telematics.guru

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Assets

Project: Port Mac Dairies

Stop Duration: 1 min, 21 secs

PMD Whole Farm to PMD Dairy and Sheds

10:45 to 11:57 (1 hr, 11 mins / 12.24 km)
Max Speed: 41 KmH
Project: Port Mac Dairies

Stop Duration: 1 hr, 42 mins

PMD Dairy and Sheds to -

13:39 to Still in Trip (16 mins, 10 secs / 1.72 km)
Max Speed: 25 KmH
Project: Port Mac Dairies

1/6 trips 1 hr, 11 mins 12.24 km

Telstra Wi-Fi Call 4:13 pm

← Assets

CJ ATV 1PC3CH

Telstra Wi-Fi Call 4:19 pm

← Assets

KG SXS - S50SIR

Last Connected	< 1 sec ago
Speed	0 km/h
Odometer	1 082 km
Run Hours	247 h
Battery Voltage	4.2 V
Cellular Signal Strength	Excellent
External Voltage	13.0 V
Temperature	21.8 C
Duress	Off

Question 3. Does the quality of the data impact on behaviour

The data cant be disputed.

All staff are aware that speed and location if not followed is reported to management

- GEO fence maps in induction,
- GEO fence maps on lunch room wall

Over 8,600 reports of speeding have been recorded

No staff member has been disciplined

No financial incentive was offered



The data is	
Robust	GPS obtained, within 5 meters of true location
Current	Farm management and staff are aware of the results instantly
Presentable	Relatable to farm, maps, locations all available

If we modify
behaviour is it
sustainable ?



4. Does the new behaviour reduce our risk?



We also assessed
Our program against

ACCC – New Standard
Worksafe Australia
Worksafe Victoria

Met or exceeded (except for
signage)

Risk assessment applied
Conducted with 10 staff
Reviewed by external peers

Quad = Extreme risk 18 to High risk 10
SXS = High risk 17 to Medium risk 9

No incidents

Is this acceptable to the organisation



4. Does the new behaviour reduce our risk?



Industrial Manslaughter laws

Victoria 1/7/2020 - > corporate and individual fines

- Officers duties
- Negligent conduct (known risk)
- Causation (common law)
- Provide safe workplace

Risk assessments indicate the

- Side by Side is safer
- The Argo is safer

Hard controls win

Conclusion

Questions

Can we alter behaviour through conversations?

Does the quality of the data impact?

If we modify behaviour is it sustainable?

Does the new behaviour reduce our risk?

We can change behaviour but it is not enough

Thank you
Gavin Merriman

Bibliography

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