

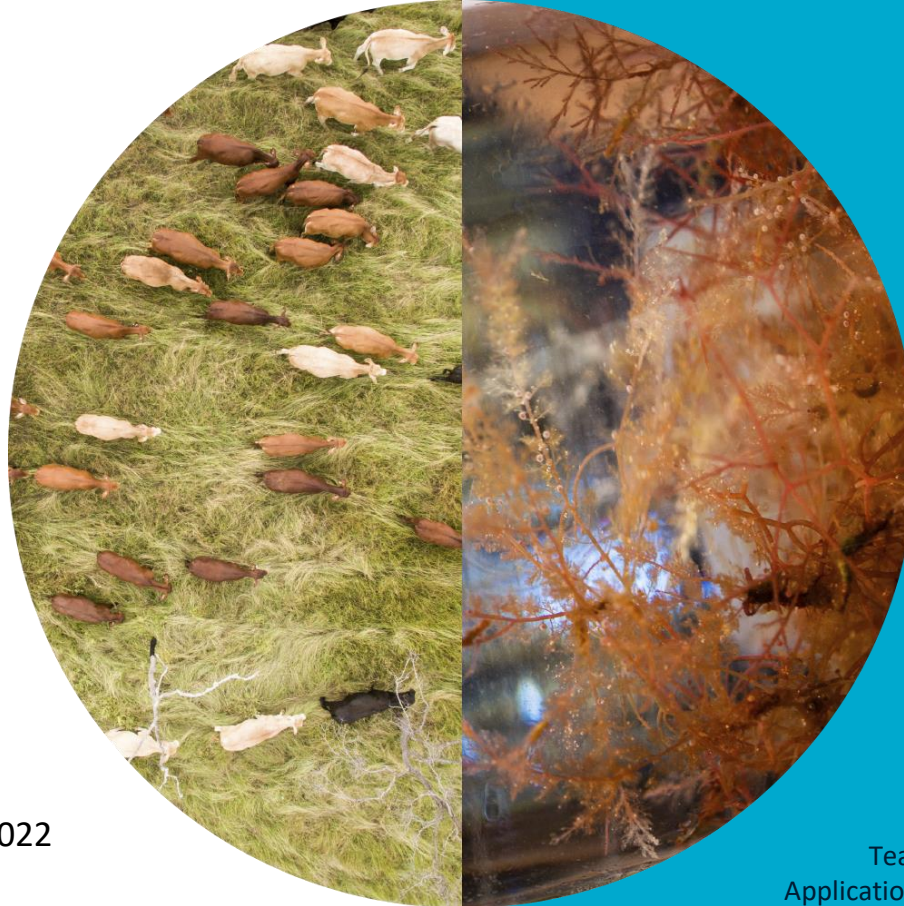


# Biosecurity and Behaviour

A psychological  
science perspective

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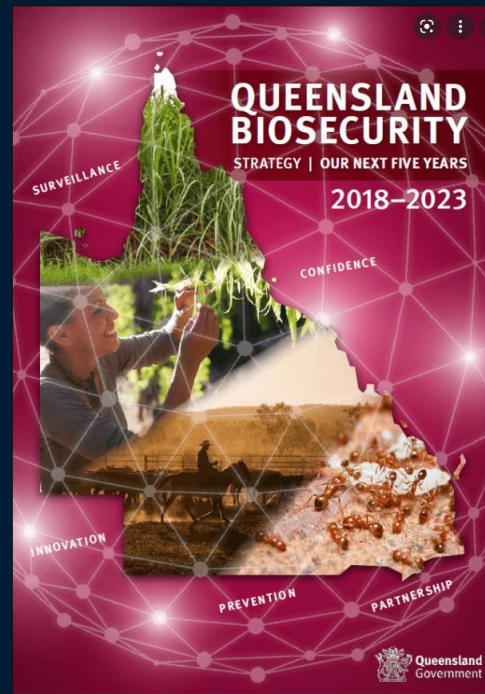
I acknowledge the **Turrbal** people as the Traditional Owners of the land that I am meeting on today, and pay my respect to their Elders past and present.





# What do we know?

- Biosecurity is a shared responsibility
- On-ground biosecurity tends to be reactive and opportunistic, rather than regulated and consistent
  - Farmers have significant daily attentional demands
  - Some serious biosecurity threats are a low priority

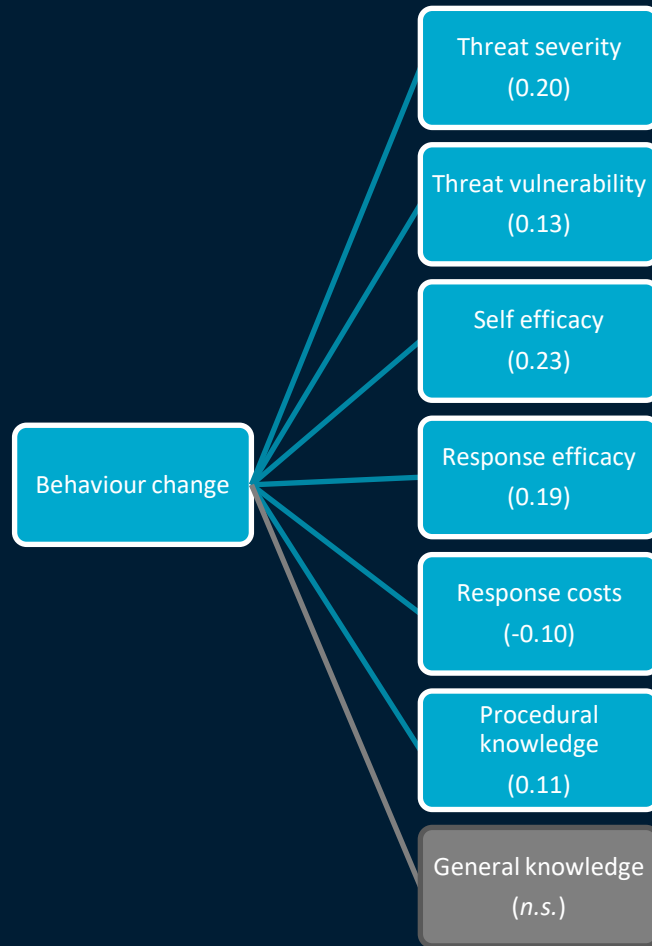




Risk... it may never happen!

- Biosecurity planning can influence:
  - Finances
  - Health & safety
  - Social environment
  - Ethics
  - Recreation
- May benefit society, but little personal benefit

# Factors predicting behaviour change



# Two case studies:



Incursion of  
Panama Tropical  
Race 4 (TR4) in  
North Queensland



Area Wide  
Management  
(AWM) of  
Queensland Fruit  
Fly in SA/NSW/VIC

# Panama TR4 – Nth Queensland

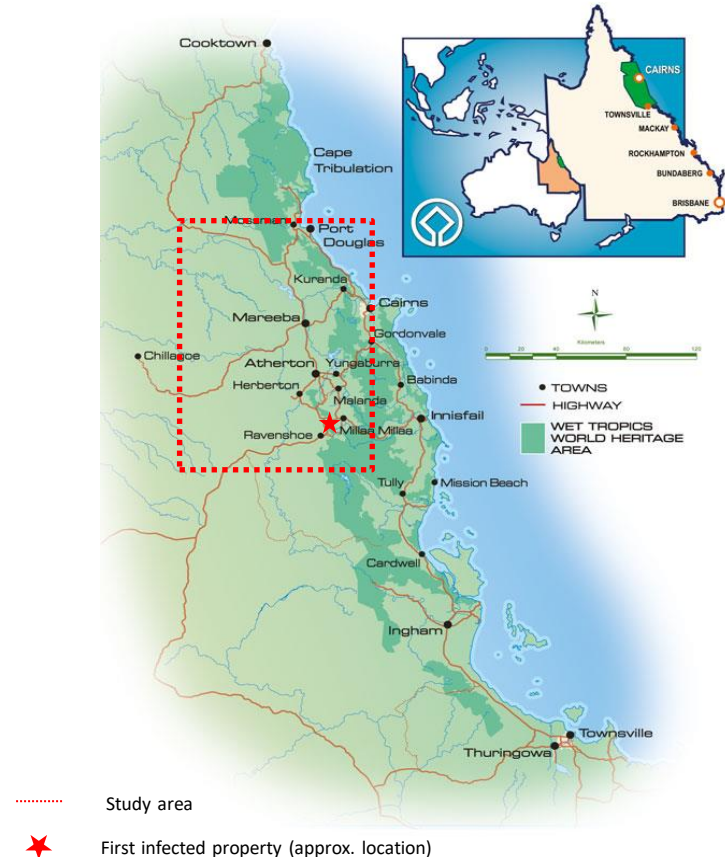


- Non-eradicable fungal disease
- Affects all banana varieties
- Prevents water uptake in plant, killing the host
- Highly transmissible via animals, shoes or vehicles, wind, water
- Once in the soil, remains for decades



# Panama TR4 – Nth Queensland

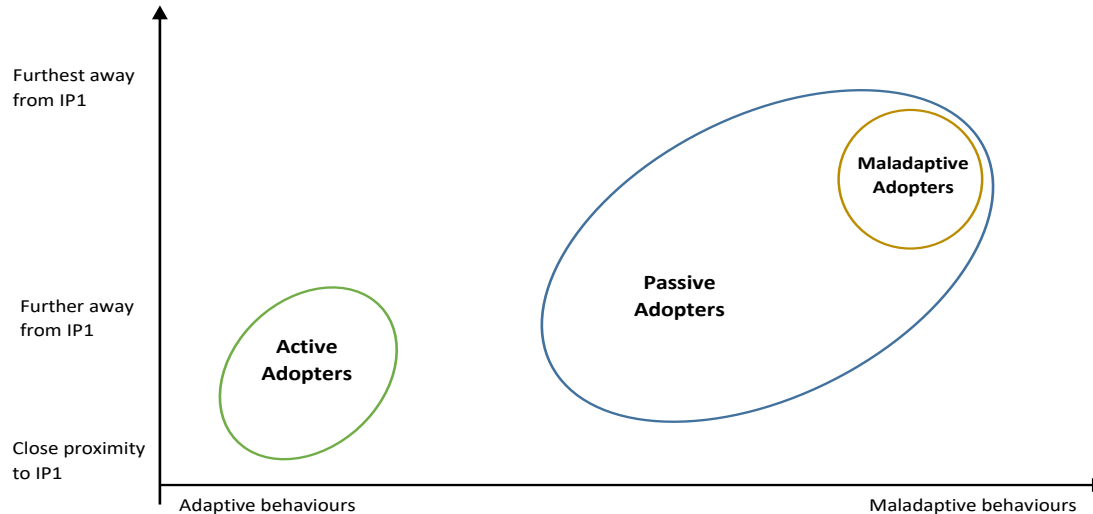
- Relaxed biosecurity culture, despite neighbouring NT experience
- Risky practices embedded into ‘business as usual’
- Biggest threat perceived was natural disaster, not plant disease
- Panama TR4 likened to natural disaster





# Panama TR4 – Nth Queensland

Source: Mankad, A., & Curnock, M. (2018). Emergence of social groups after a biosecurity incursion. *Agronomy for Sustainable Development*, 38(4), 40.



**Figure 3.** A simple visual representation of how social categories were typically distributed along a simple coping continuum from adaptive to maladaptive (x-axis) in relation to perceived proximity to the first Panama TR4-infected property (IP1). Note that the axes are not intended to reflect a quantitatively accurate representation of distance or behaviour.

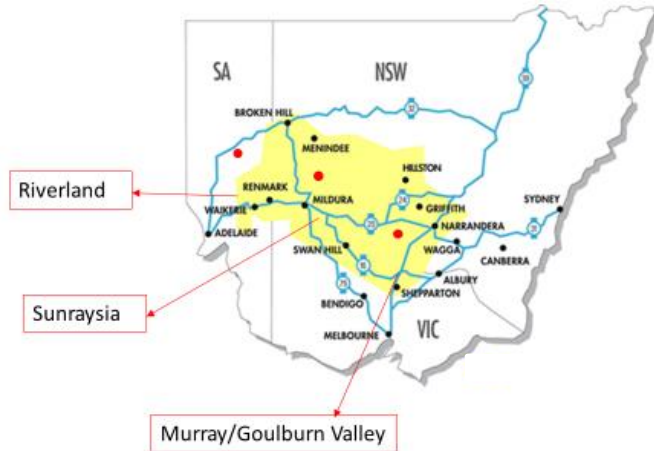
# Area Wide Management of Qfly



- Defined boundary, can cover multiple host areas
- Coordinated strategy amongst stakeholders
- Can achieve more effective and longer-lasting suppression

# Area Wide Management of Qfly

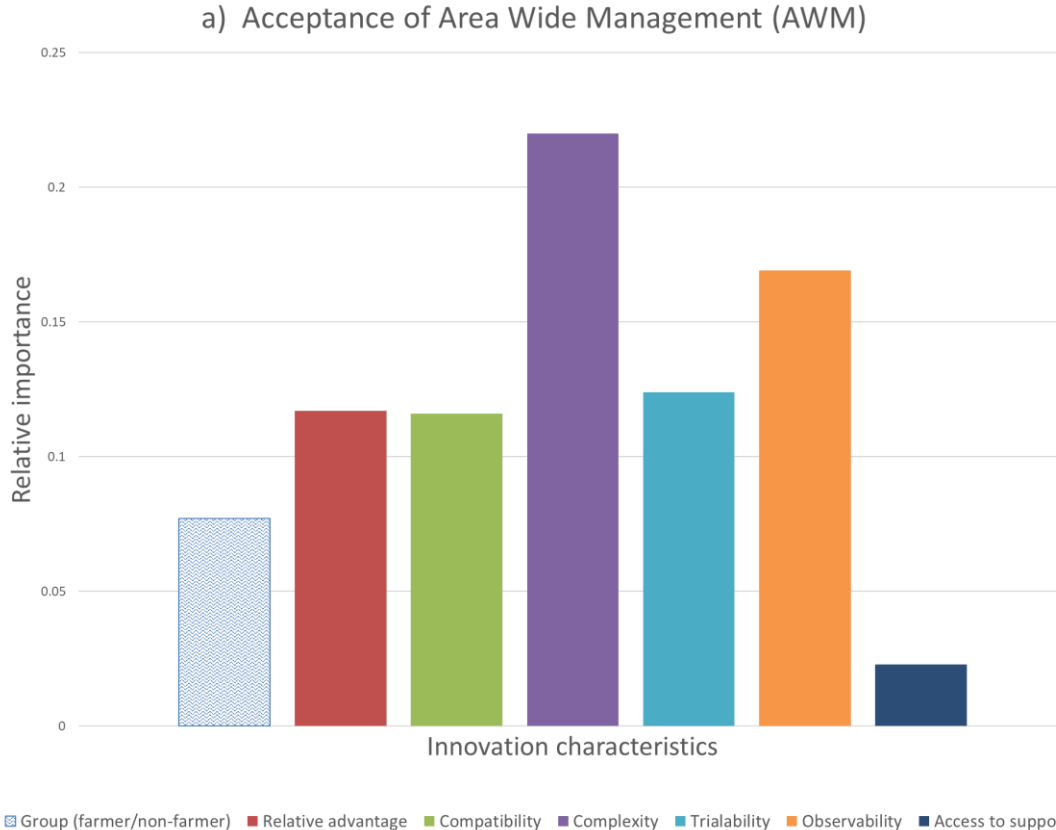
## Focal Regions



## Survey

- Participants were growers and general public across target regions (N = 1027)
- Survey comprised psychological and social items
- 20-min survey duration, administered via computer assisted telephone interview (CATI)

# Area Wide Management of Qfly



Predictors of acceptance for area wide management of fruit fly, based on key innovation characteristics ( $R^2 = .40$ )

Other factors influencing uptake of AWM

Barriers	Cost	<i>"The biggest [barrier] is the cost and their own situation...growers are struggling with their backs to the wall and would do as little as they can and try not spend any money... they're reluctant to do anything at all. And it hurts everyone else but that's the reality of it"</i>
	Lack of knowledge	
	Apathy	<i>"You know what growers are like, they don't want to admit that there is anything wrong, and to have a shared approach you have to admit there is a problem."</i>
	Incompatibility	<i>"Changing custom of practice can be a very difficult process."</i>
	Lack of cooperation	
Facilitators	Market access	<i>"I think if you look at the benefits associated with market access, that is a key motivator in itself"</i>
	Increased awareness	
	Leadership	<i>"I think if you got the big growers on-board, a lot of the small recalcitrant ones will look at the big fellows and say, 'they're doing it so I probably should be'..."</i> <i>"There are always innovators, leaders, then followers and anchors in every community"</i>
	Supply chain actors	<i>"They [packers] are just a really effective conduit to growers"</i> <i>"...maybe those packing sheds, particularly the buyers of the fruit, maybe they can influence the growers"</i>
	Credibility	<i>"If they see damage then they really get on board pretty quick. Then it just comes down to the cost of [change]. As long as it's not outrageous then they will get on board"</i>

# Social levers are important...



Distinct farming cultures mean that different communities of practice will have differing rationales for using certain control practices



Change will rely on the cooperation of a wide range of actors across the supply chain



Evidence-based options, farmer-to-farmer learning, and opportunities for gaining procedural knowledge are critical elements





# Thank you

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