



Fire Masterclass

***Fire futures for a flammable continent:
Imagining types of change in fire regimes***

Dick Williams

Commonwealth Employment Service

What and Why I model...

Types of change and implications for climate adaptation pathways

- *Motivation*
 - Climate adaptation.
- *Why, what model? What are you trying to better understand?*
 - Trajectories of change. Novel fire regimes and ecosystems.
- *Include geographic scale and time resolution.*
 - Plant community; 10s to 100s km². Years-decades
- *Balancing climatology and ecology*
 - Explicitly interested in the warming-biological interactions. Direct AND indirect effects.

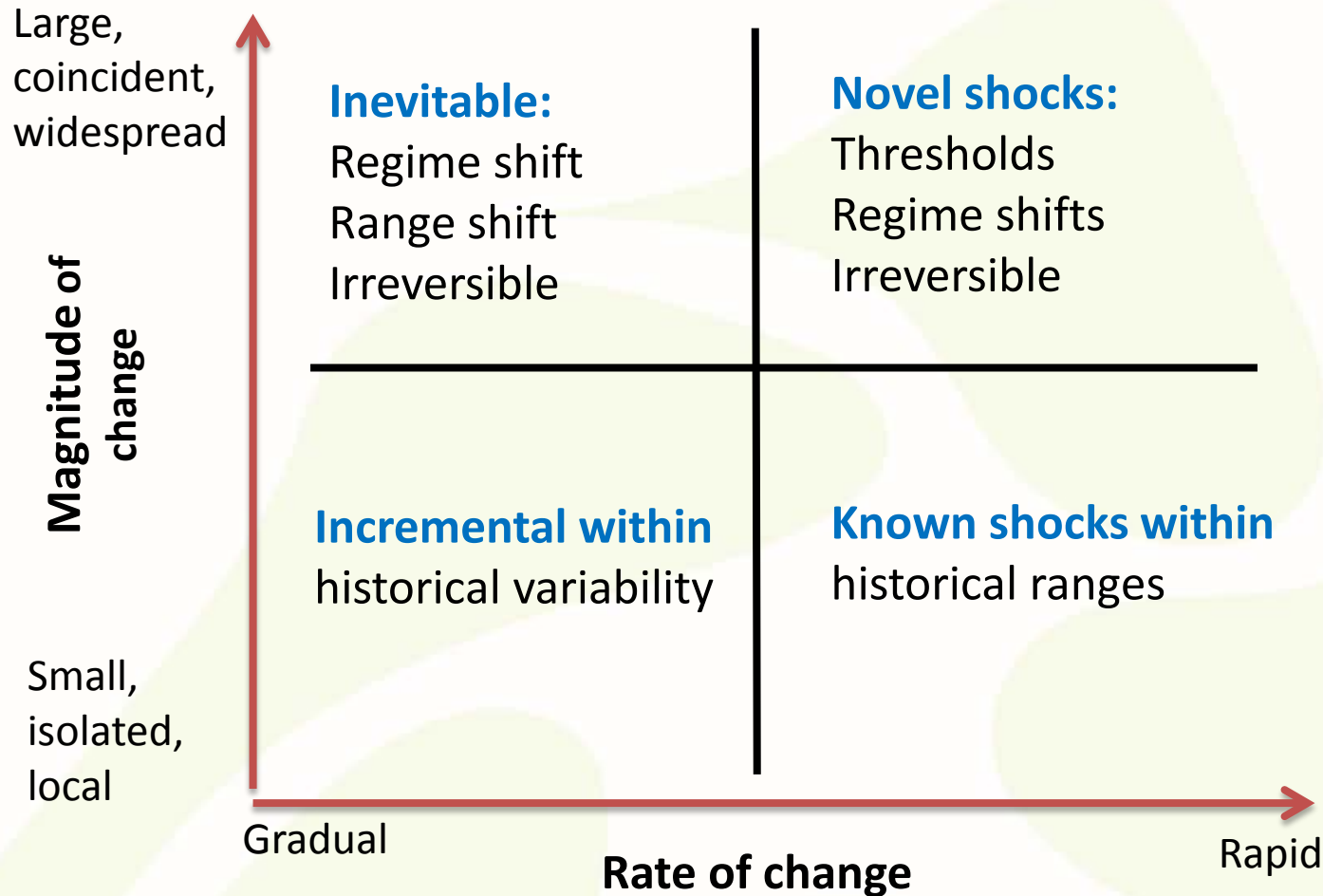
Case study of your modelling

2003 Alpine Fires, SE Australian mainland

- Foothill open forests
- Montane tall open forests
- Subalpine snowgum woodlands
- Alpine grasslands, herbfields, heathlands and wetlands

Typology of change template

(Thanks to Russ Wise, CSIRO)



Typology of change template

Large,
coincident,
widespread

Magnitude of
change

Small,
isolated,
local

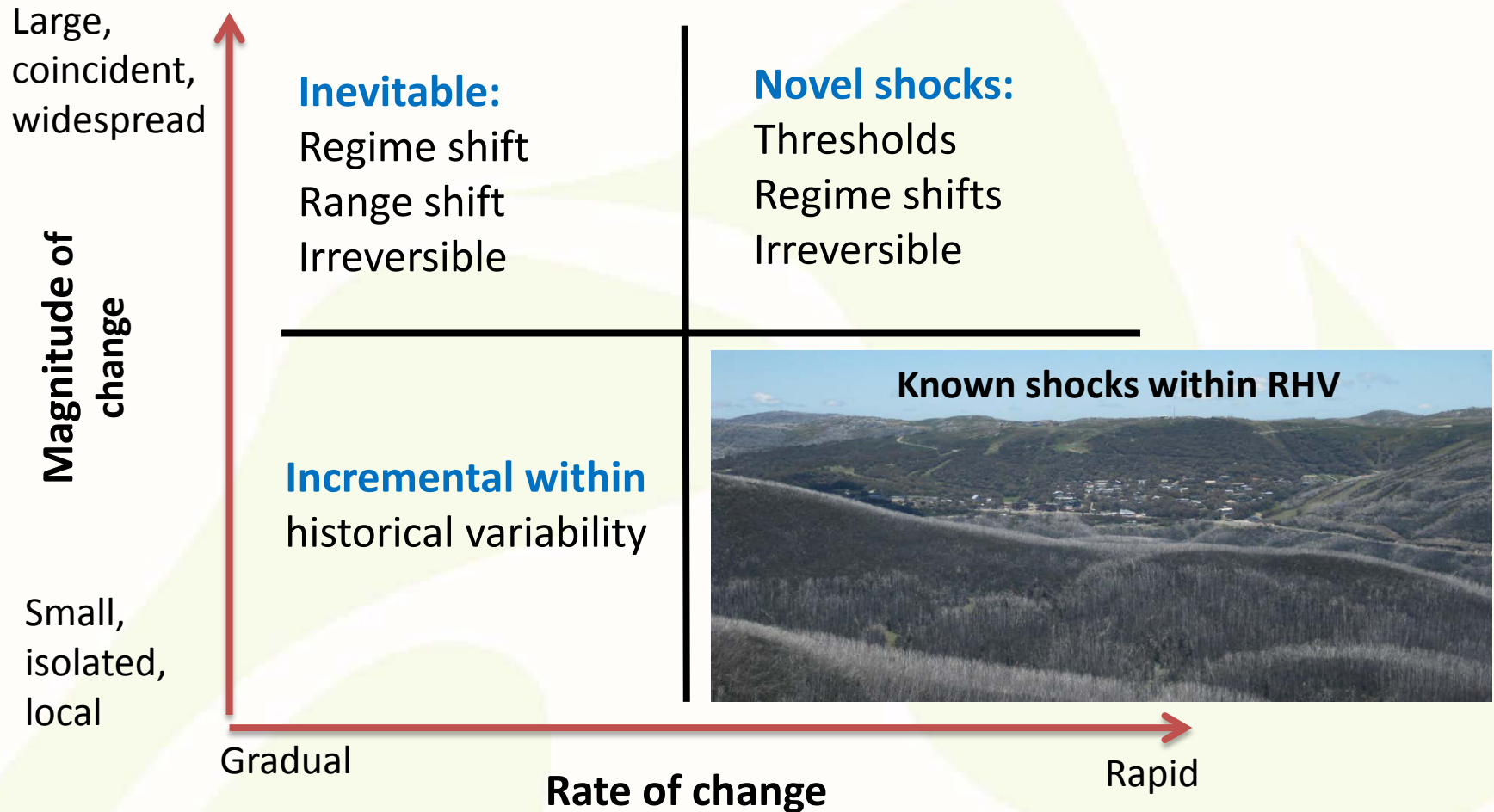


Gradual

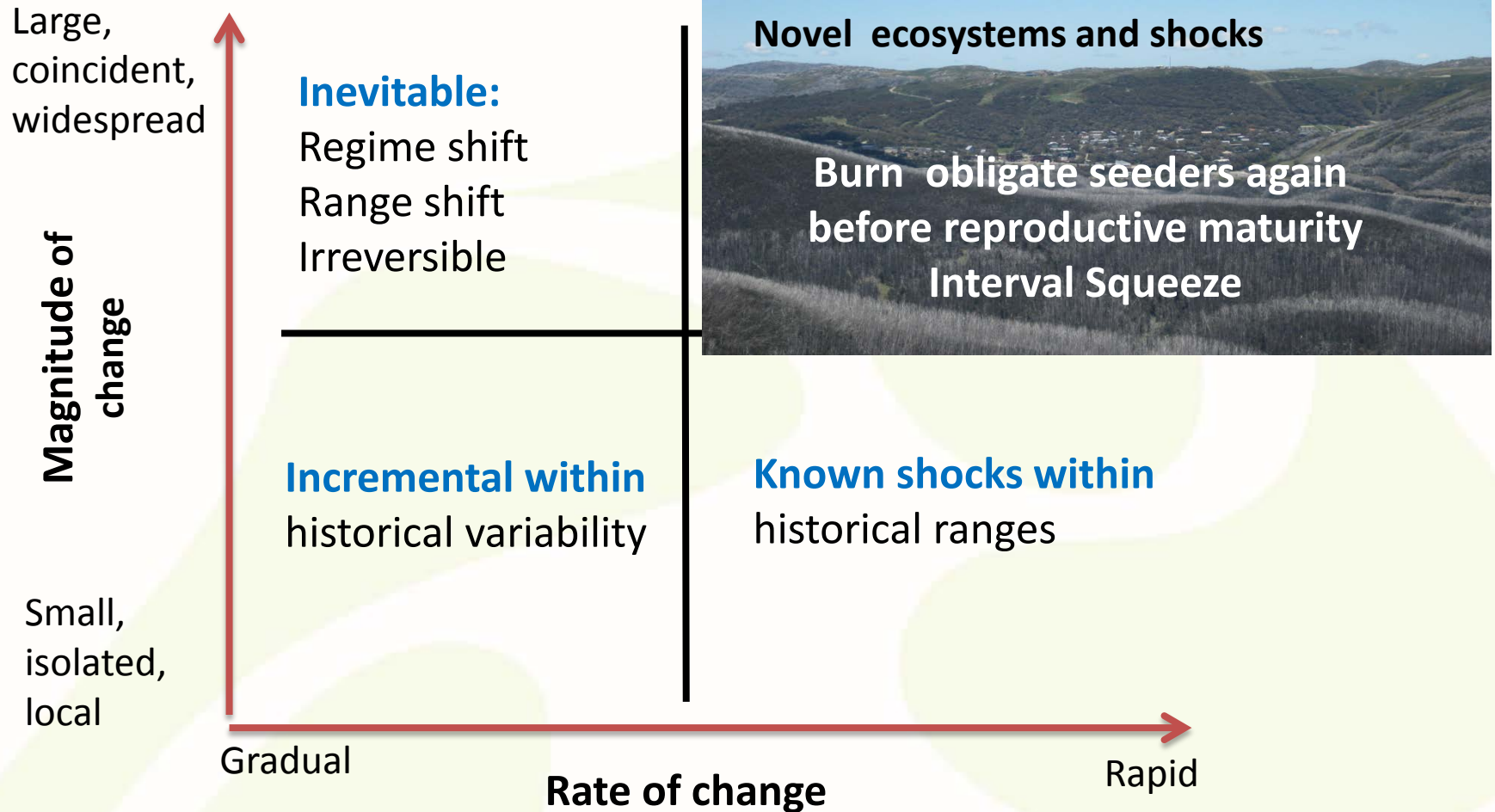
Rate of change

Rapid

Typology of change template



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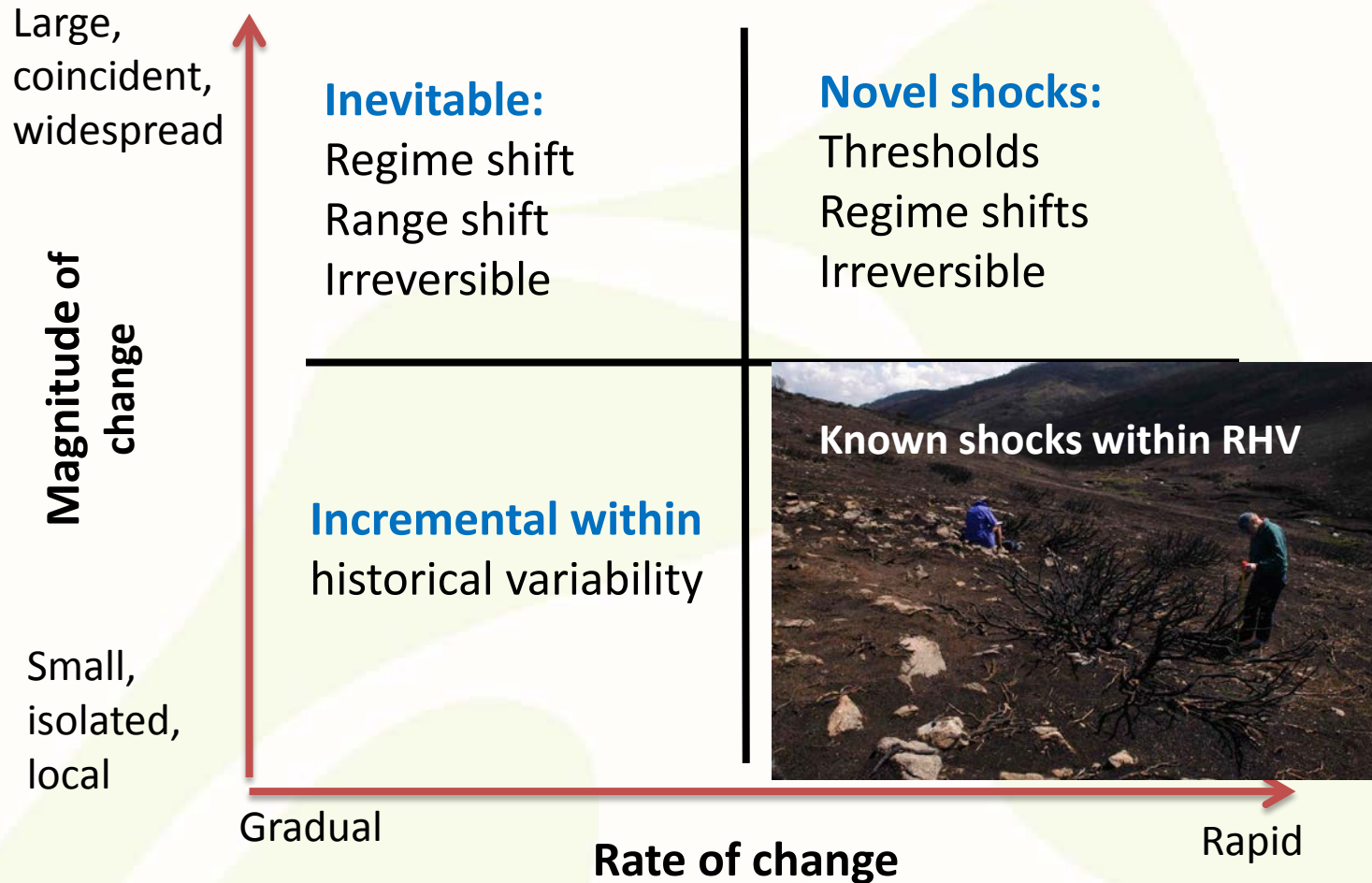


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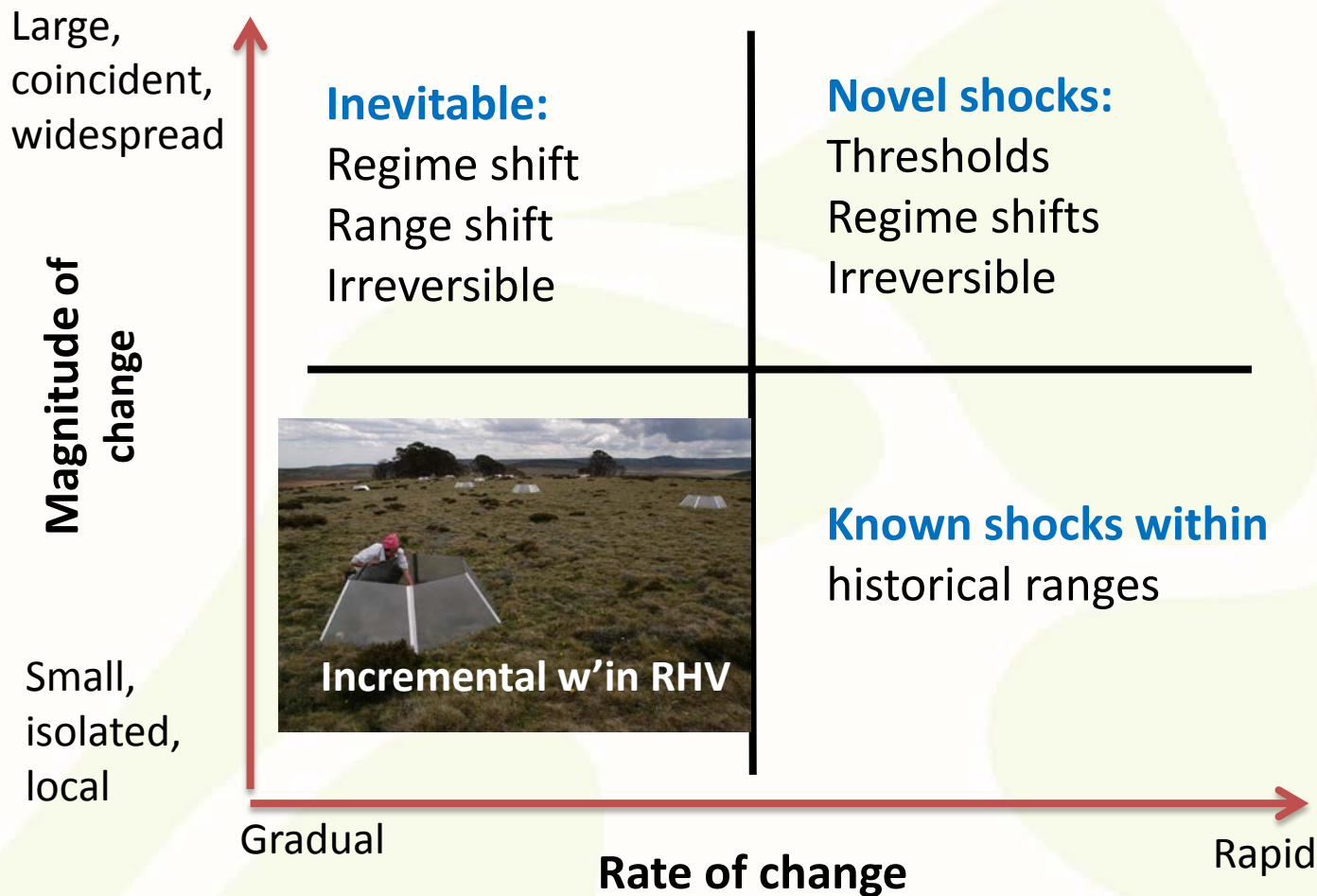
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What does my modelling mean?

Anticipating change and decision making

- *Meaning, practical and scientific utility of approach?*
 - Adaptation options for biodiversity conservation
 - Putting adaptation pathways in ecological context - ecology matters!
 - Feral fires vs Range of Historical variability
 - 5% solution for prescribed burning
 - Reseeding Ash forests burnt a second or third time since 2003
 - Grazing to reduce fire risk

Typology of change



able:
e shift

Novel shocks:
Thresholds



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change

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isolated,
local



Gradual

Rate of change



Modelling caveats and challenges

Values, preferences, rules

My 3 biggest modelling challenges are?

1. Trajectories in general
2. The next 5-10 years in particular
3. Projection signposts