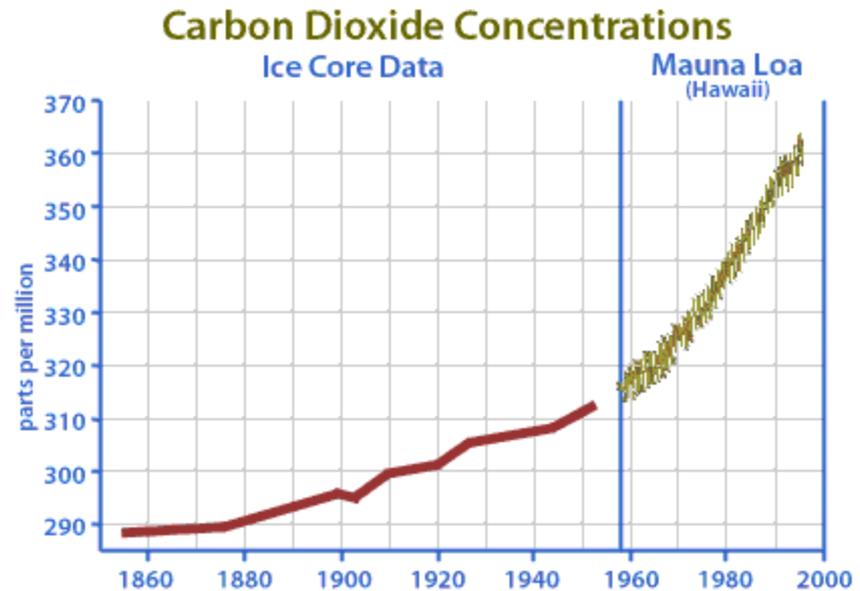


# Hazard reduction burn windows



Defining normal now and in the future

# HR burns context: fuel management

- Create the right amount of fuel, in the right condition, in the right place
- Make it easier to suppress fires
- aka:

Prescribed / planned / controlled  
burn / fire

# **But first, a word on management**

- Easy to say, hard to do
- *“The process of dealing with or controlling things or people”*
  - “Deal with” a lot more rubbery than “control”!
- nb archaic: *“trickery, deceit”*

In the end, what choice do we have?



## 2009 Victorian Bushfires Royal Commission

NSW Government commits to treating 135,000  
ha p.a. of parks estate (mostly HR burns)

‘a narrow window of opportunity exists in NSW for burning  
safely and effectively’

‘achieving burn targets depends on the presence of these  
windows of suitable weather conditions’

# About those windows...

- What are they?
- When are they?
- Where are they?
- When can we burn? When do we burn?
- How will climate change affect them?

# Not the first, won't be the last

- Esplin report Vic 2002/03 fires
  - “Weather envelope” (Gill)
  - Considers other factors – legal, resourcing, social
  - Records of agency (DSE) burns – frequency, timing
    - mostly autumn, mostly weekdays
  - Calculation of envelope frequency, seasonality using prescription definition (Tollhurst)
    - 7-10 d/yr, range of 1-20

# Not the first, won't be the last

- Tasmania (Marsden-Smedley)
  - 9-66 d/yr depending on region
- WA (Burrows)
  - less burning -> “window has narrowed”
  - climate, complexity, constraints, resourcing
- NSW (natural hazard profile)
  - more days projected in simple window (FFDI 5-25)

# Not the first, won't be the last

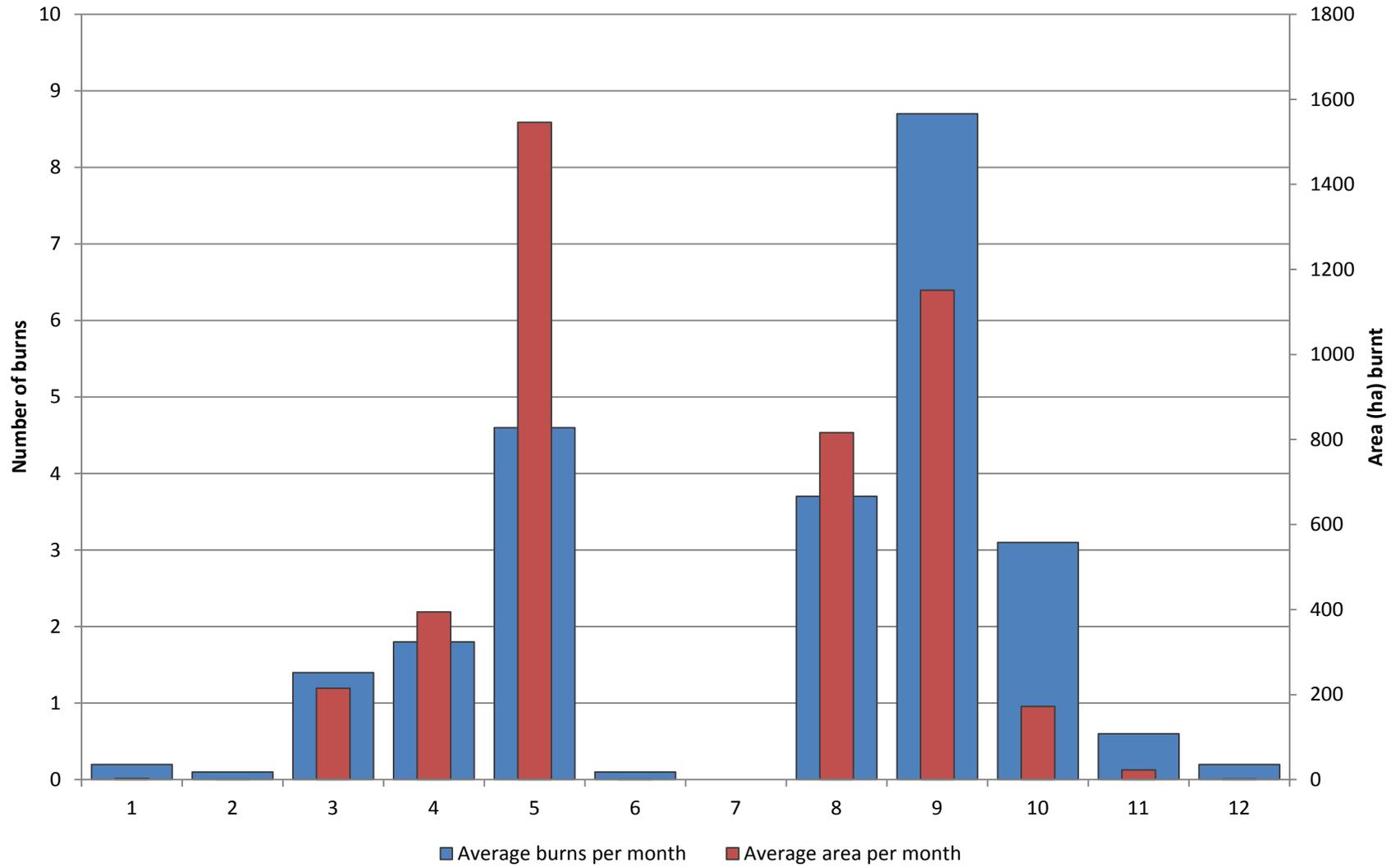
- Prescribed Burn Forecast Tool | PBFT
  - subdaily, forecast tool (RFS / NPWS)
  - leans on fuel moisture modelling (Matthews)
  - red / green / amber system
  - **Thu 2:40pm, Stream 4 – Simon Heemstra**

# An HR burn window climatology for NSW

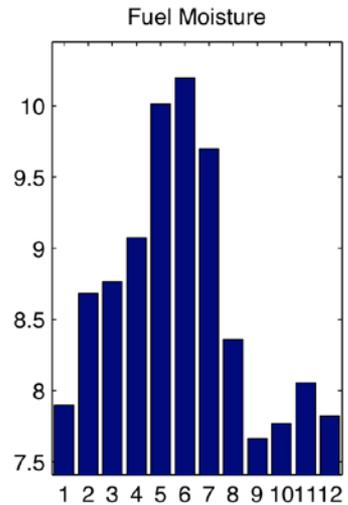
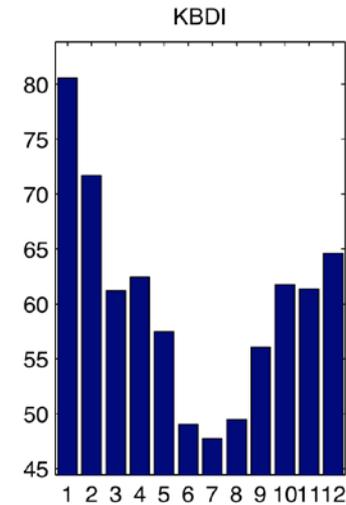
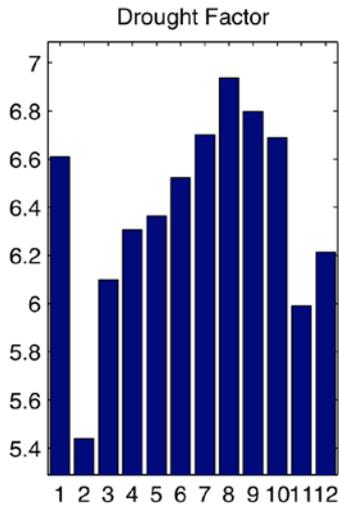
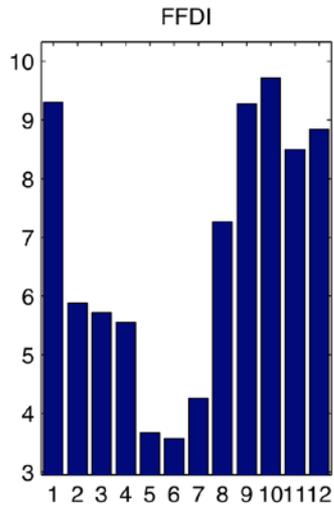
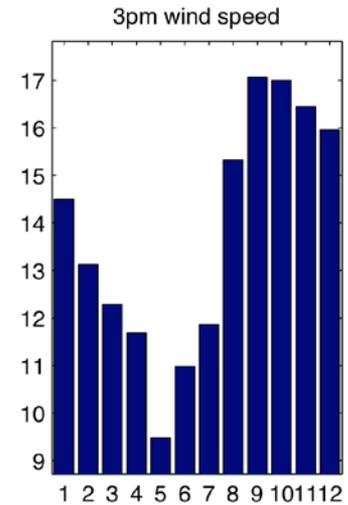
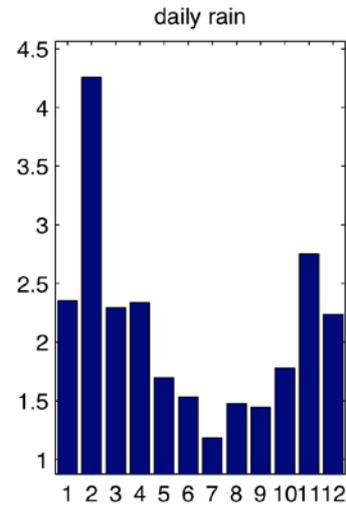
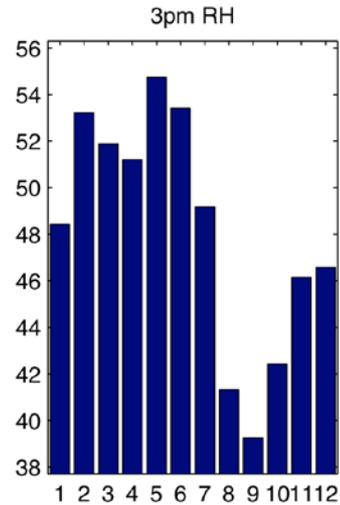
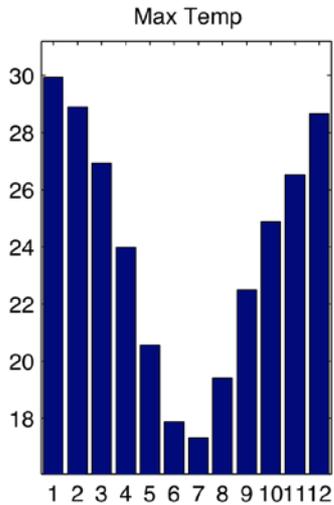
## Now and under climate change

- HR burn records (NPWS, RFS)
  - **when burns happened**
- Frequency, timing of metrics from obs (BoM)
  - **frequency of ideal\* conditions**
- Changes in actual, ideal conditions from regional climate projections (NARClIM)
  - **how windows could change**

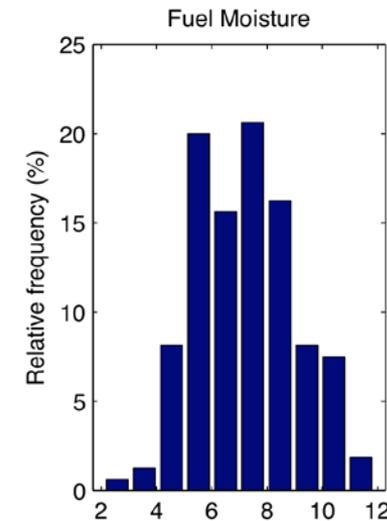
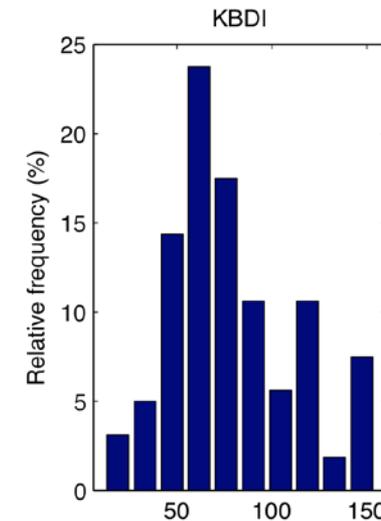
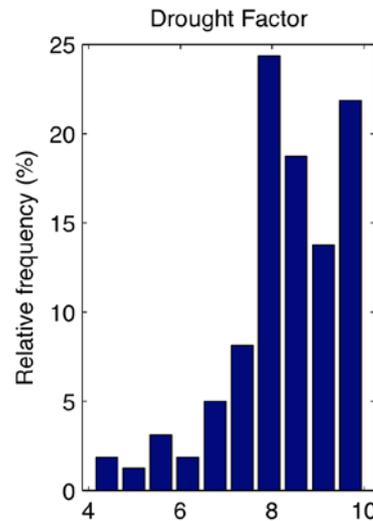
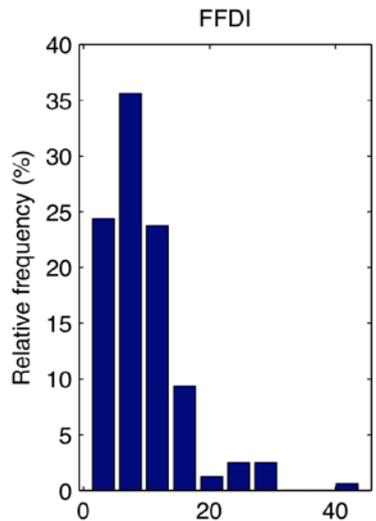
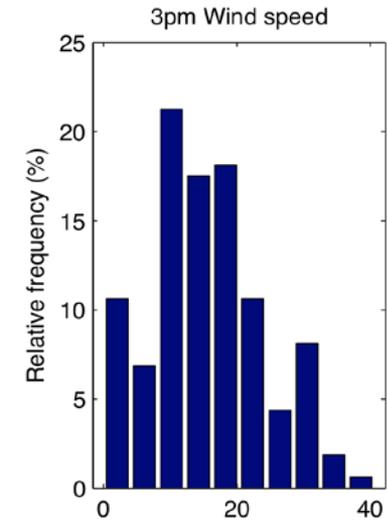
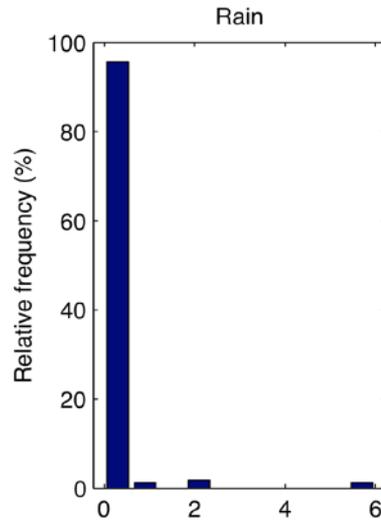
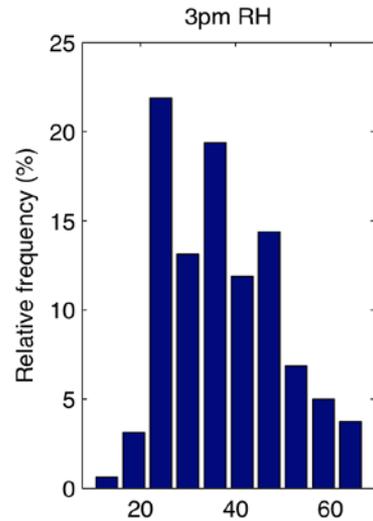
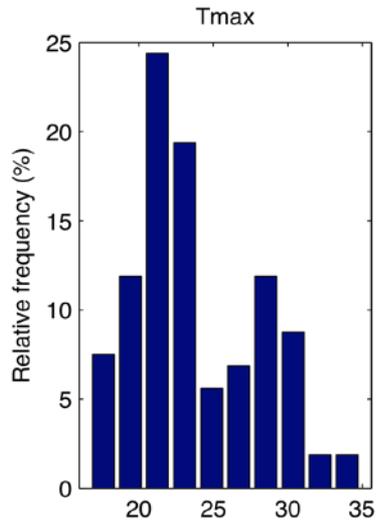
Hawkesbury LGA 2003/04 - 2013/14 HR Burns per Month



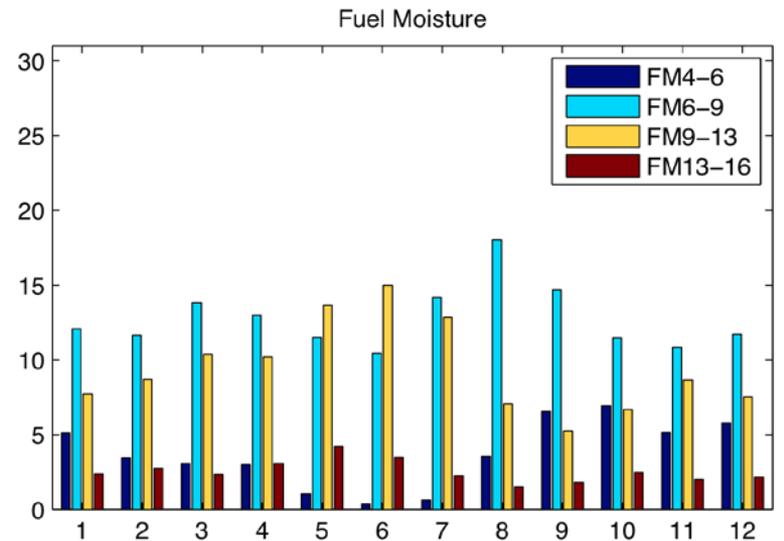
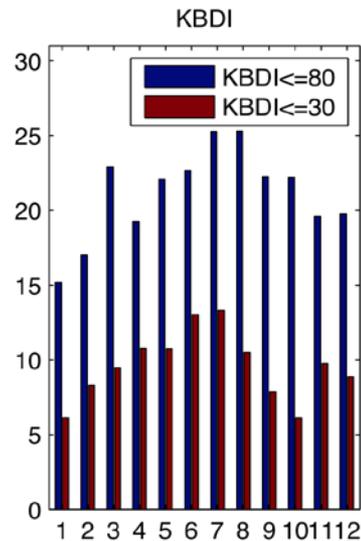
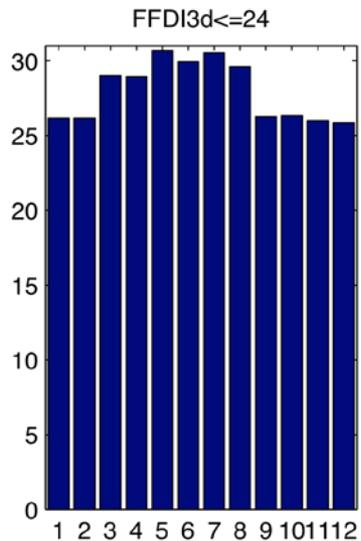
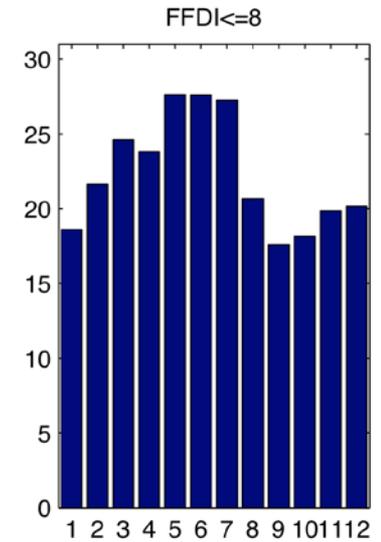
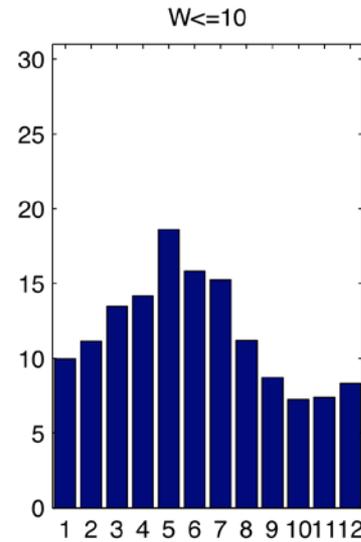
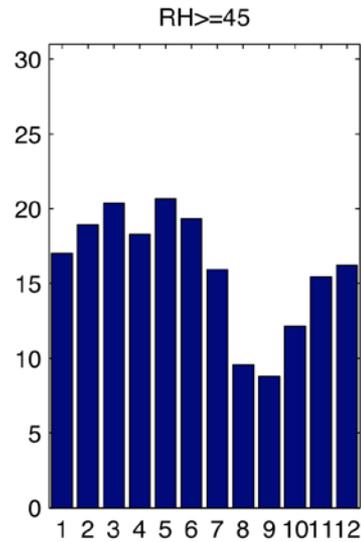
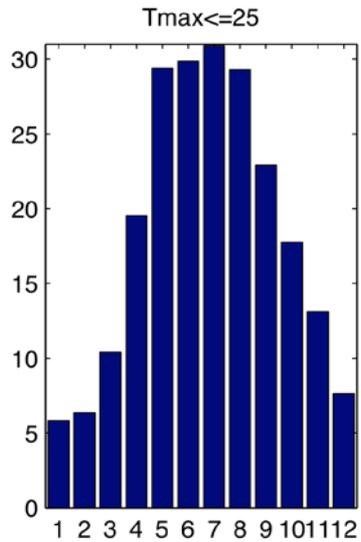
# General weather conditions



# Actual weather on burn day

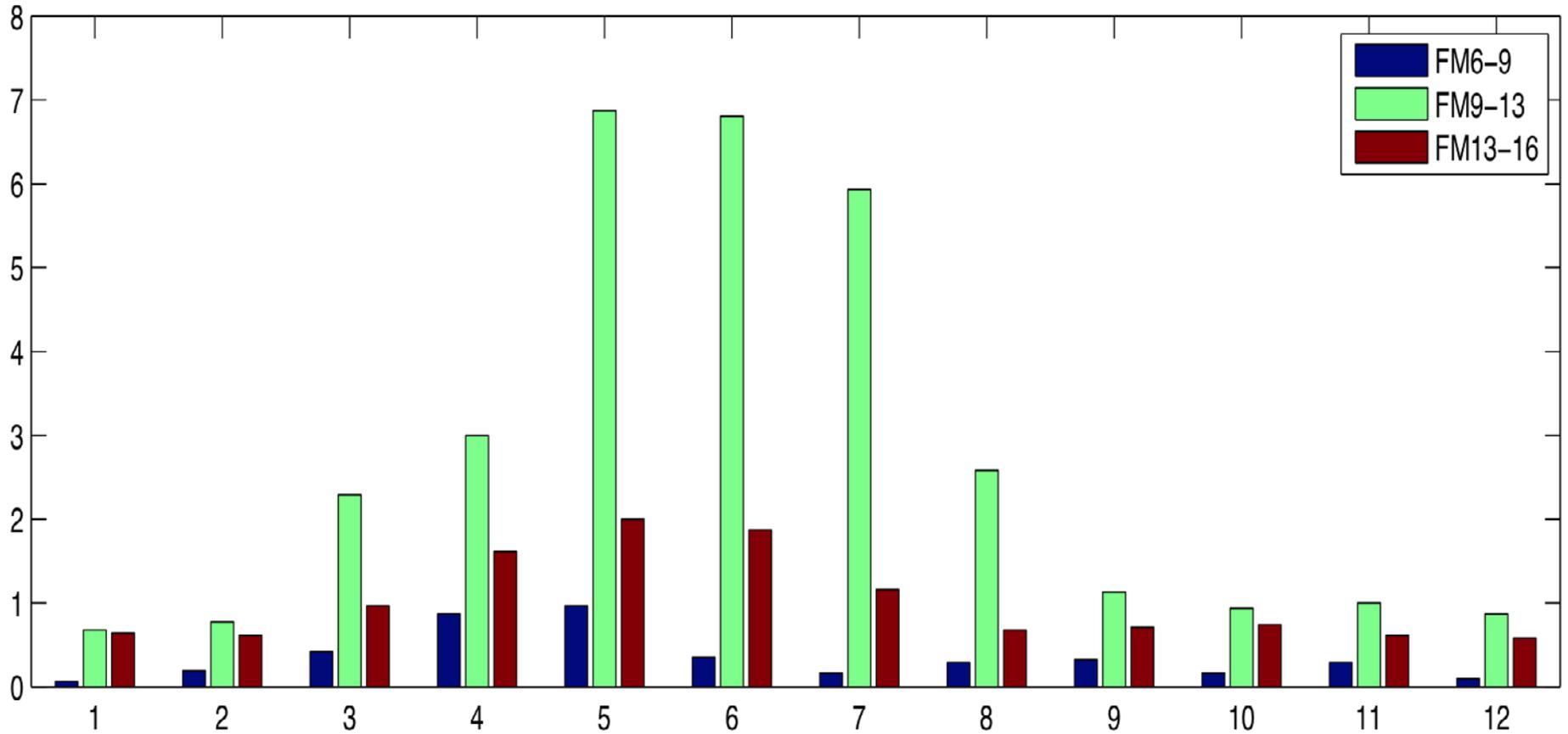


# Threshold frequency - Hawkesbury

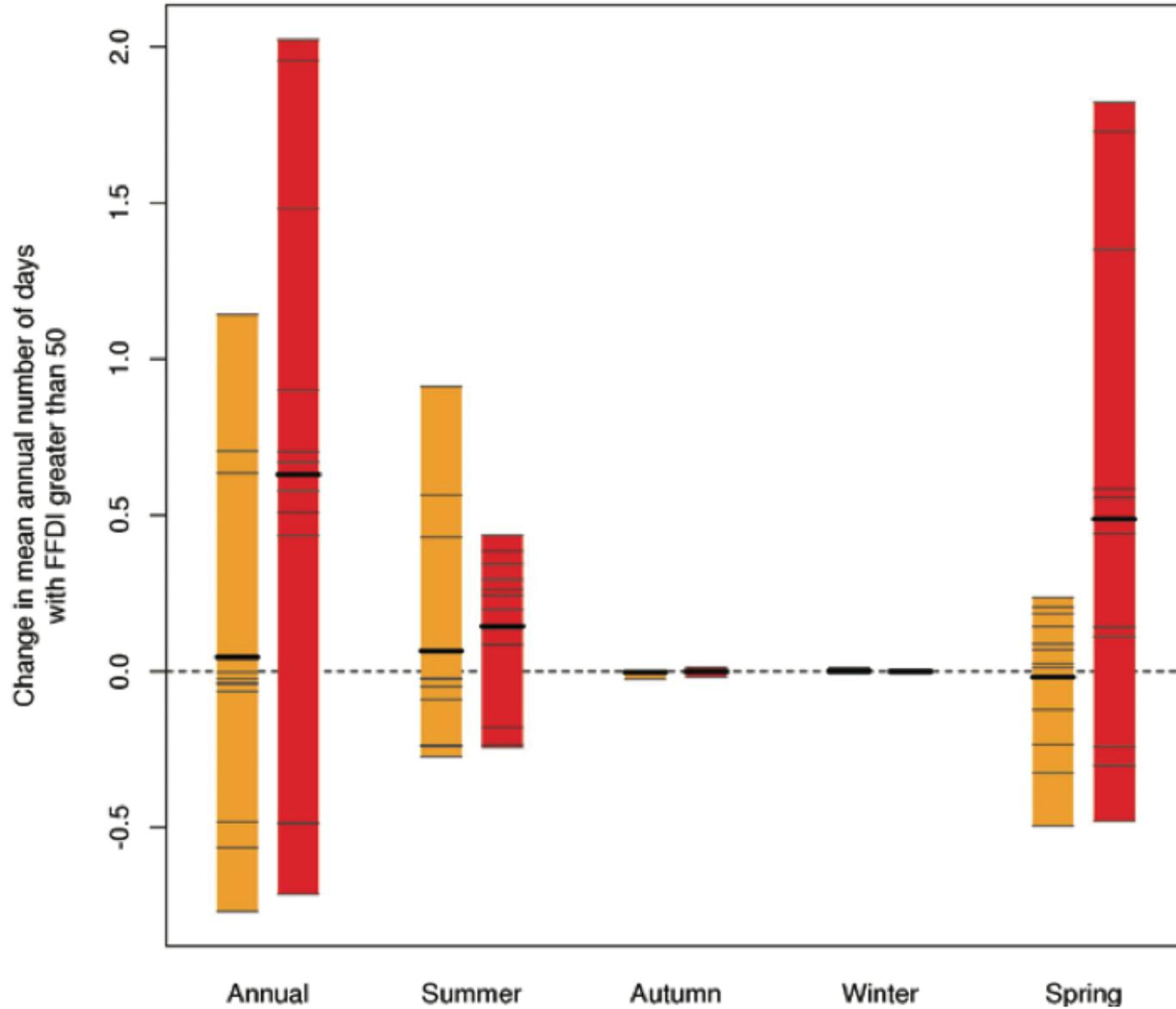


# Window frequency - Hawkesbury

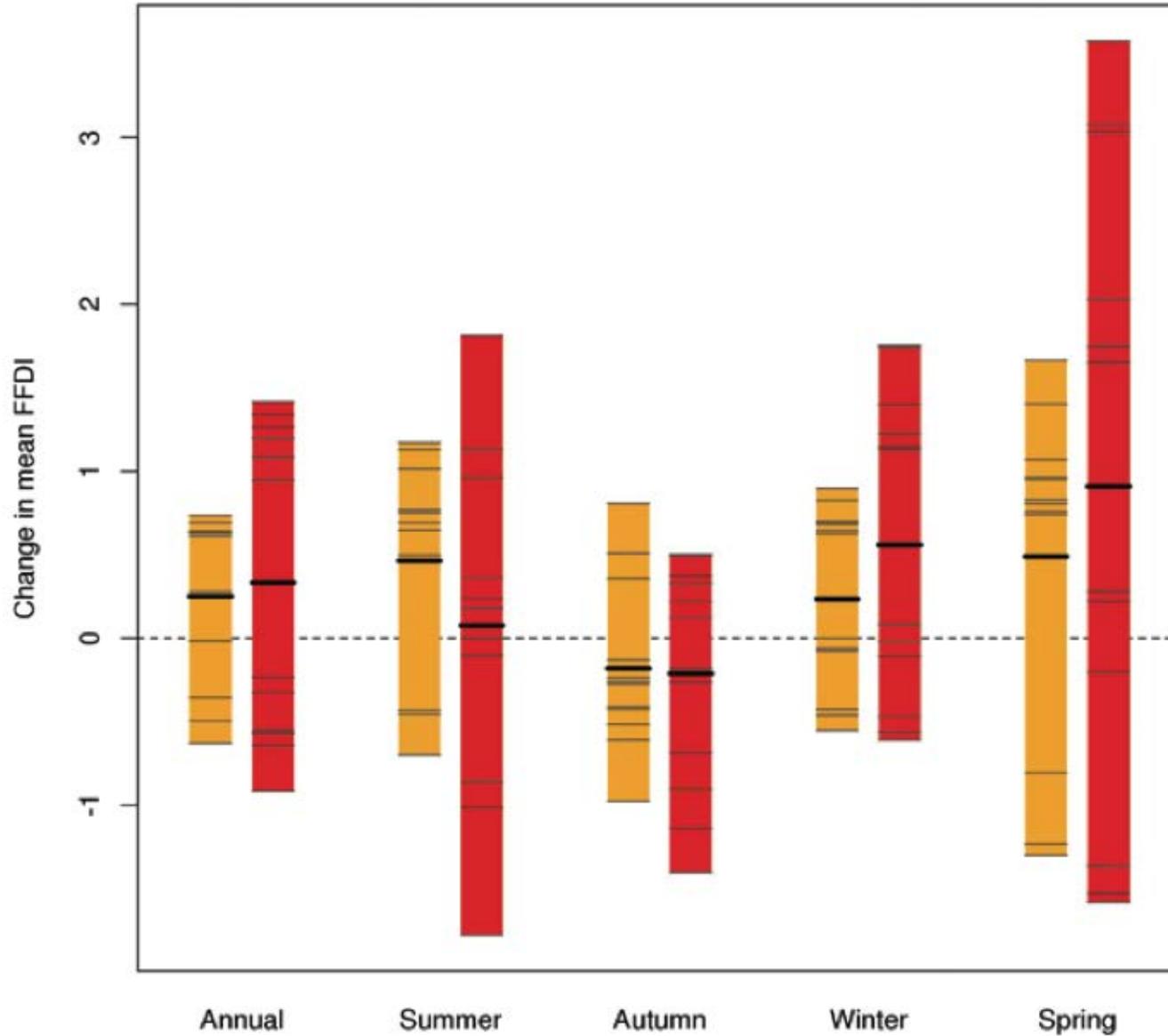
Days with  $T \leq 25$ ,  $F \leq 8$ ,  $H > 45$ ,  $W \leq 10$ ,  $FFDI3d \leq 24$ ,  $KBDI \leq 80$



# Climate change



# Climate change



# Conclusions

- Only scratched the surface
- Uncertain definitions, projections, ...
- Uncertainty does not mean no policy response. **Uncertainty hastens need for policy response**
- Raising awareness, rather than informing precise targets, still a useful outcome

# Thank you

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- 02 9895 6512

# Window frequency - Hawkesbury

