NATURAL HAZARDS
RESEARCH FORUM

STREAM 1 WORKSHOP 2

What makes a good fire simulator?

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What makes a good fire simulator?

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Context

- Fire simulators: widely used, in many ways, not just by fire managers
  - Tactical prediction
  - Evaluate risk
  - Evaluate risk mitigation strategies
- Complex job: represent a fire as it moves through the landscape over time under the influence of weather, fuel, asset location, terrain etc
- Model development
- Model use
- Spark being developed as national simulator

What really matters?

And to whom?

Accuracy?
Speed?
Scale?
Bells and whistles?
Simplicity?

Tradeoffs?
Different needs for different users?
How good is good enough?

The crux

How are simulators currently being used?

What about the future - where (might) things be headed?

Can we develop a standard that makes simulators fit for purpose?

What is the full picture of user priorities for simulator development?

The approach

Identify user groups
Engage, engage, engage
Natural + social sciences

The approach

- Project not yet officially launched – still scope to change
- Lit review – use of fire simulators
  - lessons from environmental model development & use
- Phase 1 – interviews with key stakeholders to understand use, priorities, needs and gaps
  - Also to identify additional contacts, literature
- Phase 2 – workshops to elicit & organize across diverse voices
- Phase 2 – survey to reach more users and test workshop understanding

The outcomes

Understanding of current use & gaps
Clear standards
           Ready reckoner
Improved development

The project team

University of Melbourne
- Hamish Clarke
- Alex Filkov
- Erica Marshall
- Kate Parkins
- Trent Penman

Deakin University
- Tim Neale

The end users

AFAC
BoM
DEECA

Project Mgmt Cte
- Tom Duff (CFA)
- David Fields (RFS)
- John Bally (AFAC)

End user perspectives

Questions

https://tinyurl.com/nhra2023

What are the core fire management purposes that simulators are used for? (top 3-4?)

On what basis do you think
practitioners choose one simulator
over the others that are available?

What are the key factors in ensuring a new fire simulator or submodel are utilised by practitioners like yourself?

Thinking of the fire simulators you are most familiar with, generally speaking, it is more important that they become:

More accurate or faster? (and, why?)

Thinking of the fire simulators you are most familiar with, generally speaking, it is more important that they become:

More useable to a wide range of users or more programmable by expert users? (and, why?)

Thinking of the fire simulators you are most familiar with, generally speaking, it is more important that they become:

More accurate at a fine spatiotemporal scale or more accurate at a coarse spatiotemporal scale? (and, why?)

Thinking of the fire simulators you are most familiar with, generally speaking, it is more important that they become:

More compatible with other simulators and models or more capable to model all aspects of fire behaviour itself? (and, why?)