COLLABORATIVE
CONSULTING CO
Connecting Research, Policy and Practice

T2-A6 NHRA
Severe Weather Impact
Prediction
Sector Partner Engagement
Project

Overview

Focused on impact from two hazards:

1. **Wind for large-scale systems**
2. **Severe thunderstorms** involving wind, hail and/or rain

Research Questions

1. How can **impact- and exposure-based forecasts** be designed to **inform decision making** for planning, preparedness and response? What decisions and outcomes will be improved?

2. What **different types of information** (and in what format) are required by **different user groups** (e.g. a planning officer or a first-responder)?

The Impact Triangle

- Location-based asset information

Geoscience Australia
Australian Exposure Information Platform (AEIP)

- Asset vulnerability – Location and characteristics including structural, economic and demographic.

Geoscience Australia databases
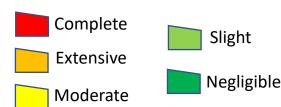
National Hazard Impact and Risk Service (NHIRS)

Map-based depiction of potential impacts from forecast weather events (automatic assessment service)

This project – how do response agencies want **potential impact to be communicated**?

- Large-scale winds
- Severe thunderstorm

Hazard forecasts from
Bureau of Meteorology

Damage State

🟥 Complete	🟩 Slight
🟧 Extensive	🟩 Negligible
🟨 Moderate	

Geoscience Australia Capability

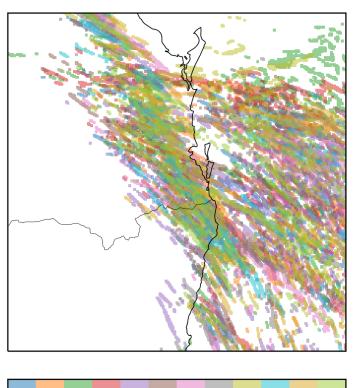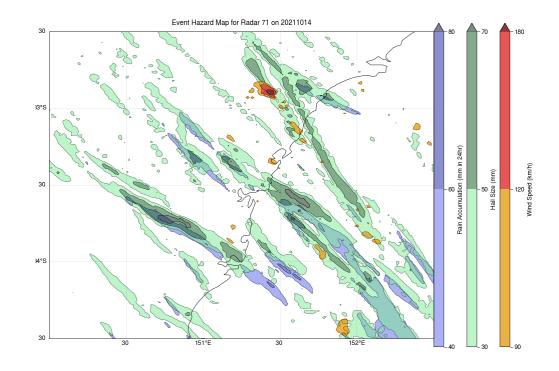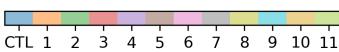National Hazard Impact and Risk Service

Bureau of Meteorology – Thunderstorm Footprint Exposure

Forecast of potential thunderstorm footprint (out to 1.5 days) can alert users to potential impact (exposure estimates)

Radar-diagnosed storm hazard footprint for rain, hail and wind
(Diagnosis)

Research Objectives

1. Engage **sector partners** to better understand their **information requirements** for **large scale wind (LSW) impact-based forecasting and Severe Thunderstorm (STS) exposure**.

2. Better understand how **modelling outputs can be used to improve decision making**, as well as the **communication and information needs** required by different end-user groups.

3. Provide **guidance and direction** for improving severe weather impact-based forecasting, so that impact information is useful, usable and used by the emergency services sector.

4. Provide clarity on the **scientific and technical developments** required to deliver **fit-for-purpose products, services and capabilities**, identify new research opportunities as well as identify opportunities to align or connect with other relevant research activities currently underway.

Project Team

Project Management Committee

Dr Kat Haynes, NHRA

Craig Arthur, Geoscience Australia

Harald Richter, Bureau of Meteorology

Liza Gelt, Collaborative Consulting Co

Project Delivery Team Collaborative Consulting Co

Liza Gelt

Dr Michael Rumsewicz

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Internal Quality Assurance

Dr Matt Haynes

Andrew Stark

When are we on?

Day 3
Stream 3 Risk mitigation: flood & extreme weather
May 3
After morning tea (11.30am)