

\$36M+ FUNDING ALLOCATED

112 TOTAL PROJECTS

37 COMPLETED RESEARCH PROJECTS

98 POSTGRAD STUDENTS SUPPORTED

78 RESEARCH PROVIDERS

33 PARTICIPANTS INVOLVED

Natural Hazards Research Australia's mission is clear: to build the knowledge base that helps create safer, more resilient and sustainable communities in the face of natural hazards.

What sets us apart is our end-user approach – research driven by those who will ultimately use it, ensuring outputs are practical, relevant and ready to inform policy and practice.

Together with the Australian Government and a broad network of end-users, we deliver a strategic research agenda that supports informed decision-making at every level.

As Australia's natural hazards research capability, we are committed to producing outcomes that benefit our partners and the communities they serve.

Our work supports emergency service agencies, governments, not-for-profits and local communities as they prepare for, respond to and recover from the impacts of natural hazards.

Through strong, ongoing collaboration with key stakeholders our network continues to expand – strengthening our collective ability to face an increasingly complex risk landscape.

To explore our research and the people behind it, visit www.naturalhazards.com.au to discover how we are helping shape a more resilient future.

We acknowledge the Traditional Custodians across all the lands on which we live and work, and we pay our respects to Elders past, present and emerging. We recognise that these lands and waters have always been places of teaching, research and learning.

<p>COMMUNITY ENGAGEMENT AND BEHAVIOUR CHANGE</p> 	<p>AUSTRALIAN WARNING SYSTEM</p> 	<p>NATURAL HAZARDS RISK MODELLING</p> 	<p>RESILIENCE IN INDIGENOUS COMMUNITIES</p> 	<p>AUSTRALIAN FIRE DANGER RATING SYSTEM</p> 	<p>SCHOOL EDUCATION</p> 
<p>TOOLS FOR DISASTER RECOVERY</p> 	<p>PUBLIC UNDERSTANDING OF NATURAL HAZARDS</p> 	<p>27 MILLION AUSTRALIANS BENEFIT FROM OUR RESEARCH</p>		<p>ENHANCING EMERGENCY MANAGEMENT DECISION MAKING</p> 	<p>HOUSEHOLD TROPICAL CYCLONE RISK MITIGATION</p> 
<p>BUILDING WORKFORCE CAPABILITY</p> 	<p>SAFETY OF FIRST RESPONDERS</p> 	<p>DISASTER MITIGATION PRIORITISATION</p> 	<p>BETTER UNDERSTANDING THE TRUE COSTS OF NATURAL HAZARDS</p> 	<p>LAND USE PLANNING POLICY</p> 	<p>SAFETY OF PETS AND ANIMALS</p> 

Our projects

A selection of core research projects is listed below, organised under eight topic themes. While each project sits under a primary theme, most address multiple.

THEME 1 COMMUNITIES AND WORKFORCES OF THE FUTURE

A national framework and toolkit for multicultural inclusion in emergency management	Community messaging – timing and frequency	Managing first responders' heat stress risk
Best practice for tracking and responding to potentially traumatic event exposure	Connecting Indigenous people and the emergency management sector – effective partnerships	Managing smoke impacts on firefighter eye surface health
Colonial load and cultural conflict	Culturally safe emergency sheltering for First Nations communities NEW	Schools in Fire Country
Community risk assessment	Emergency management volunteering: more than just words	SES Fit for task
Community-led recovery: evidence, dimensions and supports for Community Recovery Committees	Foundations in Indigenous disaster resilience	Strengthening and supporting disaster recovery workers: Evidence-based tools for recovery workforce sustainability
		Utilisation of transformative scenarios in a climate-challenged world

THEME 2 RESILIENT BUILT ENVIRONMENT

Communicating flood risk	Integrated solutions for bushfire-adaptive homes	Roads, bushfire and landslides: how to mitigate potential compounding natural hazards
Evaluating the Resilient Homes Fund	Modelling impacts of natural hazards on interconnected infrastructure networks	Safety of alternative and renewable energy technologies
Fire coalescence and mass spotfire dynamics	Multi-hazard resilient buildings	Strengthening energy networks to withstand severe wind and storms
Heatwave resilience and impacts	Natural hazards and resilience in complex urban systems	Understanding the resilience of lifelines for regional and remote communities
Insights into temporary and emergency accommodation		

THEME 3 SUSTAINABLE, SAFE AND HEALTHY NATURAL LANDSCAPES

Conserving and reconnecting floodplains to mitigate flood risk	First Nations women, cultural fire knowledge, wellbeing and memory	Quantifying the risk of First Nations' planned burning NEW
Cultural land management research and governance in south-east Australia	Healing Country through Wolgalu and Wiradjuri-led land management	Quantifying and predicting bushfire risk following large-scale drought-induced vegetation die-off
Fire mosaics in landscape fire planning	Operationalising Aboriginal land and sea management	

THEME 4 OPERATIONAL RESPONSE AND INNOVATION

Developing an integrated predictive capability for extreme rainfall and inundation	Hazard workshops for evacuation modelling	National SES Fitness for Role assessment review – phase 1
Evaluating and monitoring for impact: developing a framework for risk prevention programs	Long-range flood outlook for strategic preparedness	Predicting prescribed burn and low intensity forest fire behaviour
Fit for Fire NEW	Maintenance of the Australian Flammability Monitoring System Extension	Why fly? How do we know that aerial firefighting operations are effective and efficient?
Fire plumes in the atmospheric boundary layer	Measuring success for fire and rescue services	

THEME 5 RESILIENT COMMUNITIES

Awareness, education and communication for compound natural hazards	Predictions in public: understanding the design, communication and dissemination of predictive maps to the public	The role of AI in translating emergency warnings for culturally and linguistically diverse communities
Bushfire risk at the rural–urban interface	Support integration of Recovery Capitals in service plans for communities with different levels of social disruption	Understanding intangible flood costs and impacts
Effectiveness of land-use planning flood controls on buildings	Testing AS3959 construction and exposure assumptions	Understanding the effectiveness of current communication mediums and messaging used to communicate information on planning, preparing/responding and recovering from an emergency event to remote First Nations communities
Evolution of community fire units		
Increasing disaster resilience – creating the next version of the Australian Disaster Resilience Index		

THEME 6 SITUATIONAL AWARENESS

Capturing uncertainty in bushfire spread prediction	Flash flooding case studies to improve predictions and the communication of uncertainty	Sector partner engagement to enhance severe weather impact predictions
Detecting fire plumes with mobile radar	Identifying and defining landscape dryness thresholds for fires	Streamlining SWIRLnet data acquisition, analysis, storage and dissemination procedures
Developing flood preparedness archetypes NEW	Identifying water sources for aerial firefighting	Translation of observed and modelled extreme bushfire behaviours to improve fire prediction and fireground safety
Enhancing decision making in emergency management	Managing earthquake risk: unreinforced masonry building database	Understanding tsunami risk to Australia from volcanic sources
Fire case studies	Multi-hazard public information and warning platforms for the future	What makes a good fire simulator?
Fire ember transport	Remote sensing of grass condition	

THEME 7 EVIDENCE-INFORMED POLICY, STRATEGY AND FORESIGHT

Analysis of inquiry recommendations on natural hazards and disaster risk reduction	Bushfire information database – scoping study	State of natural hazards research in Australia
Assisted relocations after flood	Improving the accuracy of the fire behaviour metric ‘fireline intensity’ for Australian fuels	Storing and sharing qualitative social data
Australian emergency law blog	Nature positive disaster ready solutions	Systemic risk and systems thinking
Be Ahead of Ready	Research data management	Understanding conflagration fires
Building resilient leadership: A study of leadership development within emergency services NEW		Unlocking risk: Enhancing hazard risk assessment through historical archival reanalysis

THEME 8 LEARNING FROM DISASTERS

Community experiences of the 2022 Australian floods – Queensland and New South Wales	Floodwater contaminants and effective mitigation techniques	Understanding community risk perception and evacuation behaviours
Community experiences of the 2022 Australian floods – South Australia, Victoria and southwestern New South Wales	Flood contamination sampling and analysis – regional Victoria	Social media in community experiences of Tropical Cyclone Alfred
Community experiences of the 2022 Australian floods – Tasmania	Gender insights into post-incident reviews NEW	Structural and inundation impacts of tropical cyclones

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330+ EXPERT
RESEARCHERS

3880 RESEARCH
OUTPUTS

78 RESEARCH
PROVIDERS



SCAN ME

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explore more detailed case studies at
naturalhazards.com.au/our-impact

Natural Hazards Research Australia is the national centre for natural hazard resilience and disaster risk reduction. The Centre is funded by the Australian Government and its Participants.

www.naturalhazards.com.au

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Australian Government