

## APPENDICES

# State of Disaster Resilience Report 2025

Australian Disaster Resilience Index Version 2

**Melissa Parsons<sup>1,3</sup>, Sienna Birch<sup>1</sup>, Nicola Forster<sup>1</sup> and Johan Boshoff<sup>2,3</sup>**

1. Department of Geography and Planning, University of New England, Armidale

2. Computation, Analytics, Software and Informatics (UNE-CASI), University of New England, Armidale

3. Natural Hazards Research Australia



Natural Hazards Research Australia receives grant funding from the Australian Government. While this project received funding from the Australian Government, the findings, interpretations and conclusions expressed in this report are solely those of the authors and do not represent the views of the Australian Government.

#### © Natural Hazards Research Australia 2025

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

#### Disclaimer:

The University of New England and Natural Hazards Research Australia advise that the information contained in this publication/material comprises general statements based on scientific research. The reader is advised and needs to be aware that such information may be incomplete or unable to be used in all circumstances. No reliance or actions must therefore be made on the information contained in this publication/material without seeking prior expert professional, scientific and/or technical advice. To the extent permitted by law, The University of New England and Natural Hazards Research Australia (including its employees and consultants) exclude all liability and responsibility for any consequences, including but not limited to all losses, damages, costs, expenses and any other compensation, arising directly or indirectly from using this publication/material (in part or in whole) and any information, material, omission, error or inaccuracy contained in it. The University of New England and Natural Hazards Research Australia (including its employees and consultants) make no representation or warranty as to the accuracy, completeness, or reliability of information contained in the publication/material. The information contained in the publication/material is only current at the date of publication. The University of New England and Natural Hazards Research Australia (including its employees and consultants) accept no responsibility to update any person regarding any inaccuracy, omission or change in information in the publication/material or other information made available to a person in connection with the publication/material. By accessing the publication/material you are confirming you have understood and accept the disclaimer as outlined above.

All material in this document, except as identified below, is licensed under the Creative Commons Attribution-Non-Commercial 4.0 International Licence.

Material not licensed under the Creative Commons licence:

- Natural Hazards Research Australia logo
- Australian Government logo
- Any other logo
- All photographs
- All figures and graphics

All rights are reserved in content not licenced under the Creative Commons licence. Permission must be sought from the copyright owner to use this material.

Publisher:  
Natural Hazards Research Australia  
ISBN: 978-1-923057-25-8  
Report number: 46.2025

May 2025



# State of Disaster Resilience Report 2025

## Appendices

Appendix 1: Foundational design of ADRI

2

Appendix 2: Variables used in ADRI-2

4

Appendix 3: ADRI Resources

12



# Appendix 1: Foundational design of ADRI

The Australian Disaster Resilience Index (ADRI) applies a hierarchical design (Figure A1). The first level is the overall assessment of disaster resilience. The second level is made up of coping capacity and adaptive capacity. The third level is made up of themes that reflect the dimensions of disaster resilience within coping capacity and adaptive capacity. An index is computed for the first, second and third levels, based on a set of variables that are intended to represent the latent system of interest. The data about the raw variables are not released as part of ADRI because they are used to form the composite index for the theme and do not retain meaning on their own.

Themes are the dimensions that build the model of systemic resilience to natural hazards (Table A1). Themes were chosen for their basis in the literature (Parsons et al. 2016). Coping capacity is comprised of six themes that encapsulate the factors influencing the resources and abilities that communities have to prepare for, absorb and recover from natural hazard events. Adaptive capacity is comprised of two themes that encapsulate the factors that enable institutional and social learning, flexibility and problem solving.

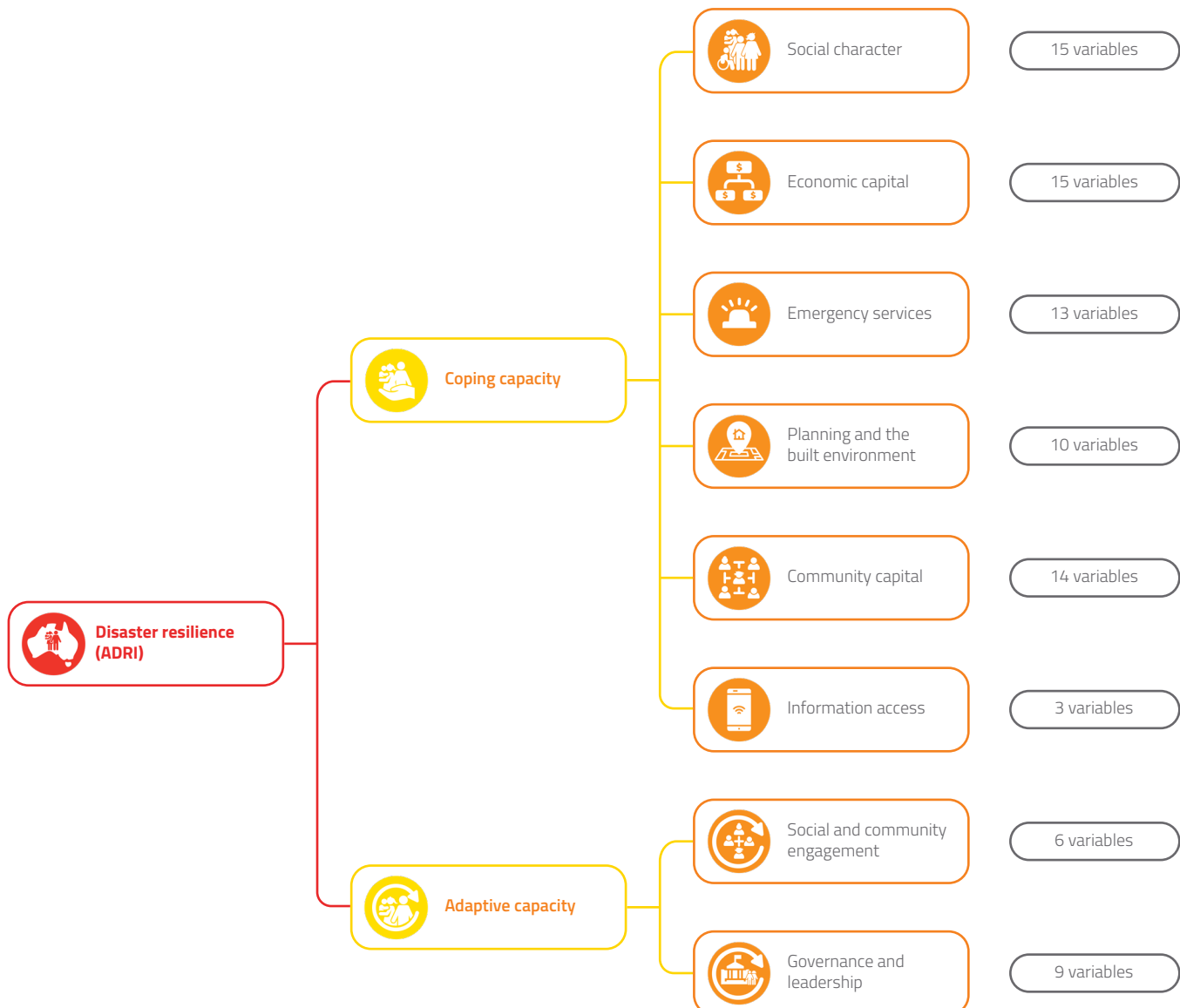


Figure A1: Structure of the Australian Disaster Resilience Index



**Table A1:** Explanation of themes within the Australian Disaster Resilience Index (ADRI)

Theme	Description	Relationship to disaster resilience
<b>Coping capacity</b>		
<b>Social character</b> 	<p>The social characteristics of the community.</p> <p>Represents the social and demographic factors that influence the ability to prepare for and recover from a natural hazard event.</p>	<p>Social and demographic factors have well known influences on capacity to prepare for, respond to and recover from a natural hazard events. These include household and family composition, age, sex, education, employment, disability, language and length of residence.</p>
<b>Economic capital</b> 	<p>The economic characteristics of the community.</p> <p>Represents the economic factors that influence the ability to prepare for and recover from a natural hazard event.</p>	<p>Economic capital can facilitate disaster resilience by reducing the losses from natural hazard events. Economic resilience can contribute to the reduction of losses from natural hazard events through improved mitigation and risk management, individual flexibility and adaptation, enhanced recovery, market continuity and business continuity.</p> <p>Losses from natural hazards may increase with greater wealth, but increased potential for loss can also be a motivation for mitigation.</p> <p>High level of economic capital often goes hand in hand with high levels of social capital.</p>
<b>Emergency services</b> 	<p>The presence, capability and resourcing of emergency services.</p> <p>Represents the potential to respond to a natural hazard event.</p>	<p>Emergency management is a core function of government.</p> <p>The capacity for emergency response is integral to community disaster resilience. Emergency management is also a key inclusion in policy guiding disaster resilience and disaster risk reduction.</p> <p>Increasing remoteness implies barriers to the provision of and access to, services.</p>
<b>Planning and the built environment</b> 	<p>The presence of legislation, plans, structures or codes to protect communities and their built environment.</p> <p>Represents preparation for natural hazard events using strategies of mitigation, planning or risk management.</p>	<p>Considered land use planning is a core hazard mitigation strategy in built environments. Good planning policy is essential to reduce risk and enhance resilience. Good planning policy can also reduce future risk.</p> <p>Building codes set construction standards to reduce damage from natural hazards.</p>
<b>Community capital</b> 	<p>The cohesion and connectedness of the community.</p> <p>Represents the features of a community that facilitate coordination and cooperation for mutual benefit.</p>	<p>Participation in social networks can enhance solutions to collective action problems.</p> <p>Disaster resilience is enhanced by the ways the sense of community fosters participation, community competency, pro-social behaviour and preparedness through working with others to solve shared local problems.</p> <p>Social capital facilitates disaster resilience before, during and after disasters. Social capital is often highlighted in times of disaster because it is a resource that facilitates collective action for mutual benefit.</p>
<b>Information access</b> 	<p>The potential for communities to engage with natural hazard information.</p> <p>Represents the relationship between communities and natural hazard information and the uptake of knowledge required for preparation and self-reliance.</p>	<p>Telecommunication and internet access is vital to information sharing through all phases of a disaster. As digital communication has become the default medium for everyday exchanges, information sharing and access to essential services, the disadvantages of being offline increase.</p> <p>Community engagement activities enable disaster resilience through public participation in decision making about natural hazards. Community engagement has been shown to have direct benefit for community resilience through capacity building, social connectedness and empowerment, self-reliance, education and training, awareness of risk and psycho-social preparation.</p>
<b>Adaptive capacity</b>		
<b>Social and community engagement</b> 	<p>The capacity within communities to adaptively learn and transform in the face of complex change.</p> <p>Represents the resources and support available within communities for engagement and renewal for mutual benefit.</p>	<p>Adaptive communities are able to manage complex change. Characteristics of adaptive communities include social engagement, trust, cooperation, learning and well-being.</p>
<b>Governance and leadership</b> 	<p>The capacity within organisations to adaptively learn, review and adjust policies and procedures, or to transform organisational practices.</p> <p>Represents the flexibility within organisations to learn from experience and adjust accordingly.</p>	<p>Adaptive institutions have conditions suited to the development of the skills, knowledge and culture for managing complex change. Enabling conditions include social learning, research, innovation, collaboration and leadership.</p> <p>Effective response to natural hazard events can be facilitated by long term design efforts in public leadership.</p>

## Appendix 2: Variables used in ADRI-2

ADRI-2 used 85 foundational variables to compute the 11 indexes. These variables, distributed across the eight themes, represent the peer-reviewed model of systemic disaster resilience at a national scale (Parsons et al. 2016).

Table A2 lists the variables collected in ADRI-2, outlining any changes and adjustments from ADRI-1. The data about the raw variables are not released as part of ADRI because they are used to form the composite index for the theme and do not retain meaning on their own.

In general, it was observed that data accessibility has improved since ADRI-1 in many areas, including the online availability of emergency plans and planning schemes and instruments, production of spatially referenced data and the collection and release of new data on digital inclusion, mental health and business innovation.

However, there is an ongoing issue of a fragmented Australian data on social capital, social and community engagement and government agency innovation, learning and adaptability. This is unfortunate as these are key elements of disaster resilience. Some excellent data are collected but in line with the requirements of ADRI-2 are either a) missing the metropolitan areas (e.g. Regional Wellbeing Survey) or b) use a small sample size with limits to resolution (e.g. ABS 2020 General Social Survey, other ABS surveys).

Elements of the ABS General Social Survey that used to be regularly modelled to a place-based SA2 or LGA level by the National Centre for Social and Economic Modelling (NATSEM, University of Canberra) and housed on AURIN have been discontinued with the closure of NATSEM, or rendered computationally impossible by the reduced sample size of the General Social Survey.

Related to the depauperate social capital and social and community engagement data, in a few instances in the Community Capital and Social and Community Engagement theme data from 2016 to 2020 were used where a) this was the only available source suited to the SA2 resolution and b) it was crucial to retain the construct conveyed by the variable. Many of the social capital type variables are derived from the ABS General Social Survey. In 2020, the sample used to undertake this survey was reduced markedly and only reported at State (sometimes Remoteness) level, making modelled estimation to resolutions such as LGA or SA2 impossible. Thus, it was necessary in ADRI-2 to revert to modelled estimates published from the more extensive 2016 ABS General Social Survey.

Table A2: Variables collected for computation of ADRI-2 composite indexes

Disaster resilience dimension	Variable name	Final resolution	Disaggregated from	Data source	Change in computation from ADRI-1
<b>Social character theme (15 variables)</b>					
Immigration	% population arrived in Australia 2011 onwards	SA2	No disaggregation	ABS 2021 Census of Population and Housing	Adjusted year since arrival from 2001 to 2011
Internal migration	% of total households with all or some residents not present a year ago	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Language proficiency	% speaks English not well or not at all	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Need for assistance	% population with a core activity need for assistance	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Family composition	% one parent families	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Household composition	% households with children	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% lone person households	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% group households	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Sex	Sex ratio	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Age	% population aged over 75	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% population aged below 15	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Education	Ratio of certification/postgrad attainment to year 8-12	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
Employment and occupation	% labour force unemployed	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% not in labour force	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% managers and professionals	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change

Disaster resilience dimension	Variable name	Final resolution	Disaggregated from	Data source	Change in computation from ADRI-1
<b>Economic capital theme (15 variables)</b>					
<b>Home ownership</b>	% residents owning their home outright	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% residents owning their home with a mortgage	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% residents renting their home	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	Median weekly rent (\$)	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	Median mortgage repayment (\$/monthly)	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
<b>Income</b>	Median personal income (\$/weekly)	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	Median total family income (\$/weekly)	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% families with less than \$800 p.w. income	SA2	No disaggregation	ABS 2021 Census of Population and Housing	Threshold adjusted from \$600 to \$800
	% families with less than \$3500 p.w. income	SA2	No disaggregation	ABS 2021 Census of Population and Housing	Threshold adjusted from \$3000 to \$3500
<b>Economy</b>	% employment in largest single sector	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	Economic diversity index	SA2	No disaggregation	ABS unpublished Beta version of the Hachman Index of Economic Diversity, 2021 Census data	Same index, slightly different computation input data in ADRI-2
	% businesses employing 20 or more people	SA2	No disaggregation	ABS Counts of Australian Businesses 2023	No change
	Retail and or commercial establishments (per 1000 people)	SA2	No disaggregation	ABS Counts of Australian Businesses 2023	No change
	% population change 2011 – 2021	SA2	No disaggregation	ABS 2021 Census of Population and Housing	Range adjusted from 2001–2011 to 2011–2021
	Local government grant per capita	SA2	LGA	Department of Infrastructure, Transport, Regional Development, Communication and the Arts. Financial Assistance Grant to Local Government, 2022–2023.	No change

Disaster resilience dimension	Variable name	Final resolution	Disaggregated from	Data source	Change in computation from ADRI-1
<b>Emergency services theme (13 variables)</b>					
<b>Health response workforce</b>	Medical practitioners (per 1000 people)	SA2	SA3	Department of Health National Health, Workforce Dataset, 2022	No change
	Registered nurses (per 1000 people)	SA2	SA3	Department of Health National Health, Workforce Dataset, 2022	No change
	Psychologists (per 1000 people)	SA2	SA3	Department of Health National Health, Workforce Dataset, 2022	No change
	Welfare support workers (per 1000 people)	SA2	SA4	ABS 2021 Census of Population and Housing	No change
	Available hospital beds (per 1000 people)	SA2	States by ABS remoteness categories	Australian Institute of Health and Welfare, Hospital Resources 2021-2022	No change
<b>Emergency response workforce</b>	Ambulance officers and paramedics (per 1000 people)	SA2	SA4	ABS 2021 Census of Population and Housing	No change
	Fire and emergency workers (per 1000 people)	SA2	SA4	ABS 2021 Census of Population and Housing	No change
	Police (per 1000 people)	SA2	SA4	ABS 2021 Census of Population and Housing	No change
<b>Emergency response funding</b>	Fire and emergency services and SES organisations (cost per 1000 people)	SA2	State	Productivity Commission Report on Government Services, 2022-2023	No change
	Ambulance organisations (cost per 1000 people)	SA2	State	Productivity Commission Report on Government Services, 2022-2023	No change
<b>Volunteer workforce</b>	Fire service volunteers (per 1000 people)	SA2	State	Volunteer numbers as reported in agency Annual Reports 2022-2023.	No change
	SES volunteers (per 1000 people)	SA2	State	Volunteer numbers as reported in agency Annual Reports 2022-2023.	No change
<b>Remoteness</b>	Driving time to nearest hospital (min)	SA2	2016 SA2s to 2021 SA2s	University of NSW, Centre for Big Data in Health Barbieri, S. and Jorm, L. (2019) Travel times to hospitals in Australia. Scientific Data, 6:248.	ADRI-1 used distance to medical facility (km). Updated in ADRI-2 to published and verified data set.

Disaster resilience dimension	Variable name	Final resolution	Disaggregated from	Data source	Change in computation from ADRI-1
Planning and the built environment theme (10 variables)					
Buildings	% caravan and improvised dwellings	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% residential dwellings built post-1981	SA2	SA1	Geoscience Australia, National Exposure Information System (NEXIS), Version 13, 2022	No change
	% commercial and industrial dwellings built post-1981	SA2	SA1	Geoscience Australia, National Exposure Information System (NEXIS), Version 13, 2022	No change
Emergency planning	Emergency planning assessment score	SA2	LGA	Derived in 2024 from systematic evaluation of emergency plans, using a method and protocol published in: Parsons et al. (2019)	The protocol was updated for ADRI-2 to include three new items about State/Territory emergency management plan legislation
Planning for natural hazards	Full time equivalent (FTE) council staff 2021-22	SA2	LGA	Various local government data and reporting sources, 2021-2022	No change
	Council area per FTE council staff	SA2	LGA	ABS Population estimates and components by LGA, 2022 to 2023 (area) and various local government data and reporting sources 2021-2022 (FTE)	No change
	Number of dwellings per FTE council staff	SA2	LGA	ABS 2021 Census of Population and Housing (dwellings) and various local government data and reporting sources 2021-2022 (FTE)	No change
	New dwellings (2016-2021) as a proportion of 2016 dwellings	SA2	2016 SA2s to 2021 SA2s	ABS Building Approvals, Australia	Range adjusted to 2016-2021 as a proportion of 2016 (ADRI-2) from 2012-2016 as a proportion of 2011 (ADRI-1)
	New dwellings per week (2020-2021)	SA2	No disaggregation	ABS Building Approvals, Australia	Range adjusted to 2020-2021 (ADRI-2) from 2015-2016 (ADRI-1)
	Planning assessment score	SA2	LGA	Derived in 2024 from systematic evaluation of planning legislation and instruments, using a method and protocol published in: Parsons et al. 2019	The protocol was updated for ADRI-2 to include six new items about State/Territory planning legislation and local development code, to assess advancements in land use planning for hazards, including climate change and contemporary risk approach considerations.

Disaster resilience dimension	Variable name	Final resolution	Disaggregated from	Data source	Change in computation from ADRI-1
<b>Community capital theme (14 variables)</b>					
<b>Crime and safety</b>	Offences against person (per 100,000 people)	SA2	Police district, postcode or LGA	State and Territory crime statistics, 2023	No change
	Offences against property (per 100,000 people)	SA2	Police district, postcode or LGA	State and Territory crime statistics, 2023	No change
	Safe walking in neighbourhood (ASR per 100 people)	SA2	LGA	PHIDU Social Health Atlas of Australia, 2017	No change
<b>Household support</b>	Support in crisis (ASR per 100 people)	SA2	LGA	PHIDU Social Health Atlas of Australia, 2017	No change
	Raise \$2000 in a week (ASR per 100 people)	SA2	LGA	PHIDU Social Health Atlas of Australia, 2017	No change
<b>Access to services</b>	% population aged over 15 years with difficulty accessing services	SA2	Modelled to SA2 using state & remoteness data	ABS General Social Survey, 2020	ADRI-1 used data modelled by the Social Health Atlas from the ABS General Social Survey 2010 (Difficulty accessing services (ASR per 100)). The same variable was not available.  ADRI-2 applied a modelling technique to derive an estimate of % population aged over 15 years with difficulty accessing services from the 2020 ABS General Social Survey.
	% households with no motor vehicle	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
<b>Wellbeing</b>	Population with fair to poor self-assessed health (ASR per 100 people)	SA2	LGA	PHIDU Social Health Atlas of Australia, 2017-2018	No change
	% population with mental health condition	SA2	No disaggregation	ABS 2021 Census of Population and Housing	New variable for ADRI-2
<b>Place attachment</b>	% residents in same residence >5 years	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
<b>Volunteering</b>	% population undertaking voluntary work	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
<b>Unemployment</b>	% jobless families	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
<b>Social connectedness</b>	Incidence of very good or excellent confidence to have a say about important issues (per 100 people aged over 16)	SA2	Public Health Unit (PHU)	ABS 2020-22 National Study of Health and Wellbeing	New variable for ADRI-2
	Incidence of very good or excellent sense of being part of a group or community (per 100 people aged over 16)	SA2	Public Health Unit (PHU)	ABS 2020-22 National Study of Health and Wellbeing	New variable for ADRI-2

Disaster resilience dimension	Variable name	Final resolution	Disaggregated from	Data source	Change in computation from ADRI-1
<b>Information access theme (3 variables)</b>					
Internet proficiency	Digital Inclusion Index	SA2	LGA	Australian Digital Inclusion Index, 2022	New variable. Replaces % area with excellent or good ADSL cover from ADRI-1
Mobile phone coverage	% area with mobile coverage	SA2	No disaggregation	Australian Competition and Consumer Commission, 2023	Slight change to computation from ADRI-1. ADRI-2 includes 4G and 5G mobile phone cover reported by three major operators: Optus, Telstra and TPG.
Community engagement and hazard education	Community engagement score	SA2	State	Derived in 2024 from systematic evaluation of agency websites, reports and strategies, using a method and protocol published in: Parsons et al. (2019)	No change
<b>Social and community engagement theme (6 variables)</b>					
Social engagement	% population with life satisfaction scale 70 and above	SA2	2016 SA2s – 2021 SA2s	AURIN housing of NATSEM Life Satisfaction Indicators, Synthetic Estimates SA2, 2016	No change
	% population with high generalised trust	SA2	2016 SA2s – 2021 SA2s	AURIN housing of NATSEM Trust Indicators, Synthetic Estimates SA2, 2016	No change
	Migration effectiveness 2006-2011	SA2	No disaggregation	ABS 2021 Census of Population and Housing	Minor change to the data used for gross in- and out-migration in ADRI-2
Skills for learning	% population with post school qualification	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	% population in further education (15 years and over)	SA2	No disaggregation	ABS 2021 Census of Population and Housing	No change
	Participation in personal interest learning	SA2	SA4	ABS 2020-21 Work-Related Training and Adult Learning Survey	ADRI-1 used State level data. SA4 level were available for 2020-2021.
<b>Governance and leadership (9 variables)</b>					
Research and development	Presence of research service providers	SA2	SA3 and LGA	Computed from two sources: 1) business.gov.au listed RSPs (registered research providers), 2023 2) AURIN held DIIS – Region Innovation Data (SA3), 2009 – 2015	Recomputed for ADRI-2 from component datasets. Previously supplied by Regional Australia Institute in ADRI-1.
	Business expenditure on R&D (per 1000 people aged over 15)	SA2	Modelled to SA3 using survey results and SA2 business data	Computed from two sources: 1) ABS Research and Experimental Development, Businesses, 2021-2022 2) ABS Counts of Australian Businesses, including Entries and Exits, 2019-23. Businesses by industry division by Statistical Area Level 2 by employment size ranges.	New variable in ADRI-2

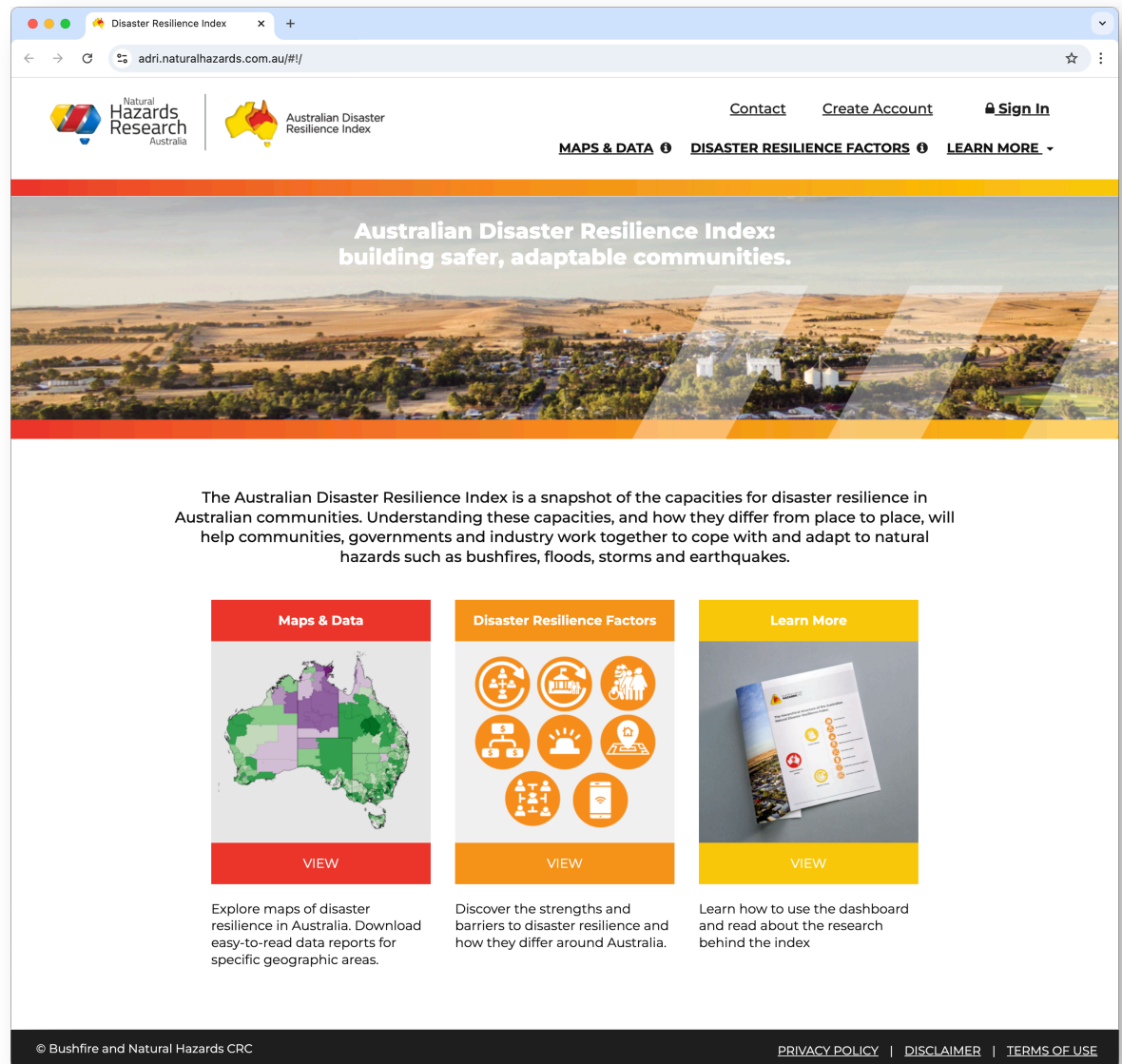


Disaster resilience dimension	Variable name	Final resolution	Disaggregated from	Data source	Change in computation from ADRI-1
Capacity for innovation and development	Number of businesses with an innovation strategy (per 1000 people aged over 15)	SA2	Modelled to SA2 using survey results and SA2 business data	Computed from two sources: 1) ABS 2020-21 Business Characteristics Survey. Data Explorer dataset – Business information and performance, year ended 30 June 2023. Business entrepreneurship characteristics 2) ABS Counts of Australian Businesses, including Entries and Exits, 2019-23. Businesses by industry division by Statistical Area Level 2 by employment size ranges.	New variable in ADRI-2
	Business entries as a proportion of total businesses	SA2	No disaggregation	Digital Atlas of Australia holding of ABS Economy and Industry themed data, 2022.	New variable in ADRI-2 Previously encompassed within the Regional Australia Institute Business Dynamo sub-index in ADRI-1
	Number of trademark applications (per 1000 people aged over 15)	SA2	Postcode and SA3	IP Australia, Trade Mark Party Activity, 2011-2021	New variable in ADRI-2 Previously encompassed within the Regional Australia Institute Business Dynamo sub-index in ADRI-1
	% people aged over 15 employed in knowledge-intensive service industries	SA2	SA4	Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA), Progress in Australian Regions and Cities Dashboard, 2022	New variable in ADRI-2 Previously encompassed within the Regional Australia Institute Business Dynamo sub-index in ADRI-1
	Owner managers as % of working population	SA2	No disaggregation	ABS 2021 Census of Population and Housing	New variable in ADRI-2 Previously encompassed within the Regional Australia Institute Business Dynamo sub-index in ADRI-1
	Gross regional product (per 100 people aged over 15 years)	SA2	LGA	National Institute of Economic and Industry Research, State of the Regions Data, 2023	New variable in ADRI-2 Replaces the Local economic development support variable from ADRI-1
Emergency service governance environment	Governance, policy and leadership score	SA2	State	Derived in 2024 from systematic evaluation of aspects of agency leadership and innovation using a method and protocol published in: Parsons et al. (2019)	No change

# Appendix 3: ADRI Resources

## Website

ADRI-1 and ADRI-2 data are available within a map-based website at: <https://adri.naturalhazards.com.au/>



## Peer-reviewed journal publications

The conceptual background and results of ADRI have been published in the peer-reviewed literature. All are available open access.

Parsons, M., Glavac, S., Hastings, P., Marshall, G., McGregor, J., McNeill, J., Morley, P., Reeve, I. and Stayner, R. (2016) Top-down assessment of disaster resilience: a conceptual framework using coping and adaptive capacities. *International Journal of Disaster Risk Reduction*, 19: 1–11.



### Top-down assessment of disaster resilience: A conceptual framework using coping and adaptive capacities

Melissa Parsons<sup>a,c,\*</sup>, Sonya Glavac<sup>a,c</sup>, Peter Hastings<sup>a,c</sup>, Graham Marshall<sup>b,c</sup>, James McGregor<sup>a,c</sup>, Judith McNeill<sup>b,c</sup>, Phil Morley<sup>b,c</sup>, Ian Reeve<sup>b,c</sup>, Richard Stayner<sup>b,c</sup>

<sup>a</sup> Geography and Planning, University of New England, Armidale, NSW, 2351, Australia  
<sup>b</sup> Institute for Rural Futures, University of New England, Armidale, NSW, 2351, Australia  
<sup>c</sup> Bushfire and Natural Hazards Cooperative Research Centre, Melbourne, Australia

McGregor, J., Parsons, M. and Glavac, S. (2022) Local government capacity and land use planning for natural hazards: A comparative evaluation of Australian local government areas. *Planning Practice and Research*, 37: 248–268.



### Local Government Capacity and Land Use Planning for Natural Hazards: A Comparative Evaluation of Australian Local Government Areas

James McGregor<sup>a,b</sup>, Melissa Parsons<sup>a,b</sup> and Sonya Glavac<sup>a,b</sup>

<sup>a</sup>Geography and Planning, University of New England, Armidale, Australia; <sup>b</sup>Bushfire and Natural Hazards Cooperative Research Centre, East Melbourne, Australia

Parsons, M., Reeve, I., McGregor, J., Hastings, P., Marshall, G., McNeill, J., Stayner, R. and Glavac, S. (2021) Disaster resilience in Australia: A geographic assessment using an index of coping and adaptive capacity. *International Journal of Disaster Risk Reduction*, 62, Article 102422.



### Disaster resilience in Australia: A geographic assessment using an index of coping and adaptive capacity

Melissa Parsons<sup>a,c,\*</sup>, Ian Reeve<sup>b,c</sup>, James McGregor<sup>b,c</sup>, Peter Hastings<sup>a,c</sup>, Graham R. Marshall<sup>b,c</sup>, Judith McNeill<sup>b,c</sup>, Richard Stayner<sup>b,c</sup>, Sonya Glavac<sup>b,c</sup>

<sup>a</sup> Institute for Rural Futures, University of New England, Armidale, NSW, 2351, Australia  
<sup>b</sup> Department of Geography and Planning, University of New England, Armidale, NSW, 2351, Australia  
<sup>c</sup> Bushfire and Natural Hazards Cooperative Research Centre, 340 Albert Street, East Melbourne, 3002, Australia

### Technical documentation of ADRI

The technical details of the conceptualisation, design and computation of ADRI-1 have been published in detailed research reports.

This report describes the computation of the Australian Disaster Resilience Index. It is comprised of six chapters:

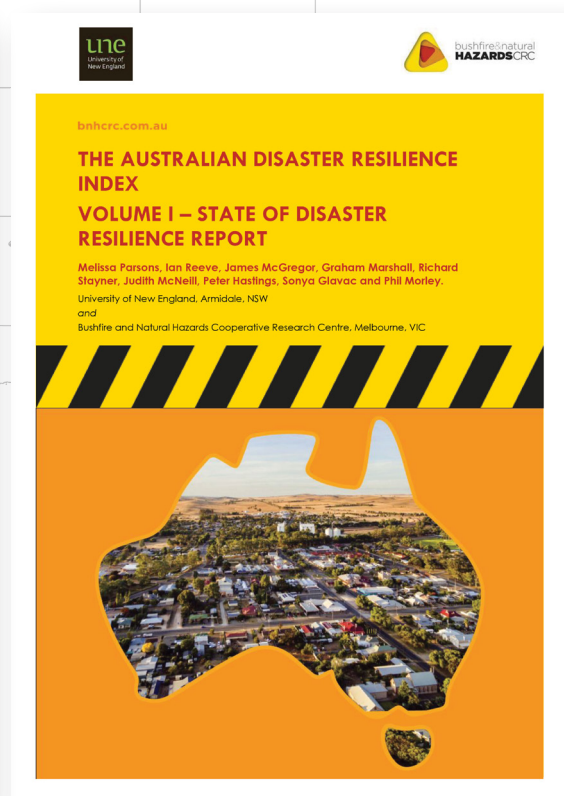
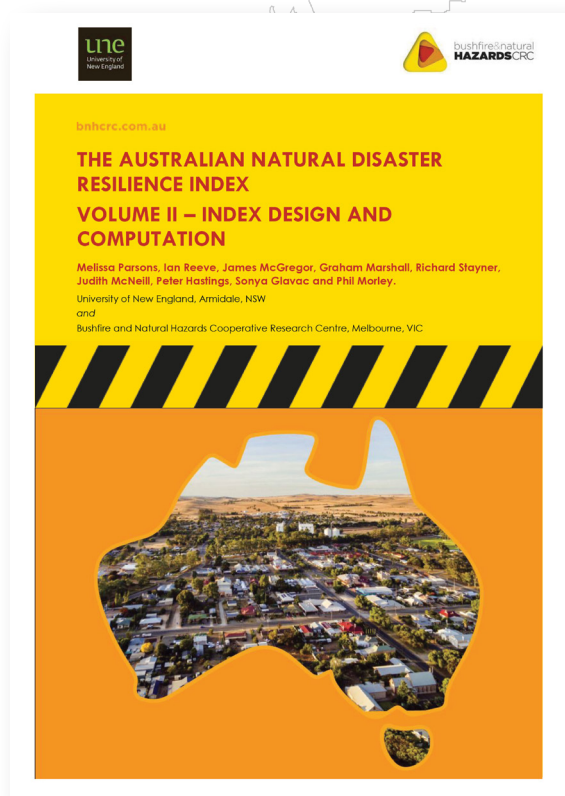
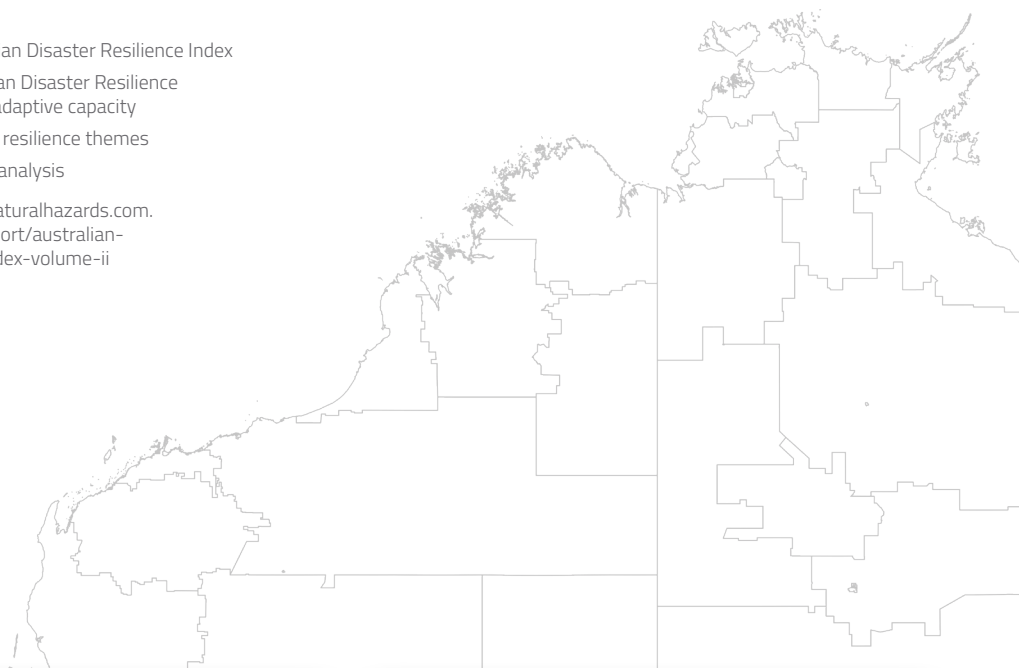
1. Design of the Australian Disaster Resilience Index
2. Indicators
3. Computation of the Australian Disaster Resilience Index
4. Statistical outputs: Australian Disaster Resilience Index, coping capacity and adaptive capacity
5. Statistical outputs: disaster resilience themes
6. Uncertainty and sensitivity analysis

Available from: <https://www.naturalhazards.com.au/resources/publications/report/australian-natural-disaster-resilience-index-volume-ii>

### ADRI-1 State of Disaster Resilience Report

This report assesses the state of disaster resilience in Australia, using ADRI-1.

Available from: <https://www.naturalhazards.com.au/resources/publications/report/australian-disaster-resilience-index-volume-i>







## CONTACT US

**Natural Hazards Research Australia**

Phone: +61 3 7032 6309

[office@naturalhazards.com.au](mailto:office@naturalhazards.com.au)

[www.naturalhazards.com.au/contact-us](http://www.naturalhazards.com.au/contact-us)