



Section 3: Group Performance

Community Services

Goal: Deliver world-class and customer-focused weather, water, climate forecasts and ocean analyses to achieve the greatest impact for customers, contributing to zero lives lost through natural hazards and \$1 billion of added social and economic value to the Australian community.

The Community Services Group is responsible for providing high quality weather, water, climate and ocean services to the Australian community and emergency management sector. These services are aimed at preventing loss of life and reducing the social and economic impacts of natural hazards. The group's focus is to do this in a resilient, efficient and sustainable way that enables the Bureau to deploy its capabilities when and where they are needed most.

The group's services span the breadth of Australia, its territories and oceans. These services are delivered in a tiered approach with national context typically derived centrally and tailored locally to meet customer needs..

For 2022–23, the group consisted of 3 programs with the following responsibilities:

Program	Responsibilities
National Production Services	<ul style="list-style-type: none"> • National production and coordination of forecast and warning services • Assessment of warning potential and service escalation needs • Incident management • Consistency of quality assurance, verification, performance reporting and monitoring and continuous improvement process across the Community Services Group
Environmental Prediction Services	<ul style="list-style-type: none"> • National warning, forecasting and modelling services for flood, thunderstorms, severe weather, fire, heatwaves, cyclones, oceans, tsunamis, water, climate and drought • Lead the development and implementation of service enhancements aligned to Bureau policy and customer requirements • Service capability and capacity enhancements • Staff competency assessment and development • Quality assurance, verification, performance reporting and monitoring of warning services
Decision Support Services	<ul style="list-style-type: none"> • Understanding public and emergency management partner needs, requirements and decision-making processes • Operation of a multi-hazard decision support capability including both on-site and embedded meteorology, hydrology, climatology and communications services • Engagement with the Australian community • Local and regional delivery of media and social media content related to weather, climate, water and ocean • Local environment monitoring and escalation of issues, impacts and intelligence

Throughout 2022–23, the Community Services Group focused on delivering 4 outcomes that support the achievement of the Bureau’s Strategy and purpose. The group’s achievement in delivering each of these outcomes is outlined below.

Outcome 1: Understand and meet Government, Emergency Service and Australian Community priority needs

Achieving the outcome

Refreshing the Intergovernmental Agreement on the provision of hazard services

In 2022–23, the Bureau undertook a mid-term review of the *Intergovernmental Agreement on the provision of Bureau of Meteorology Hazard Services to the States and Territories* (the IGA).

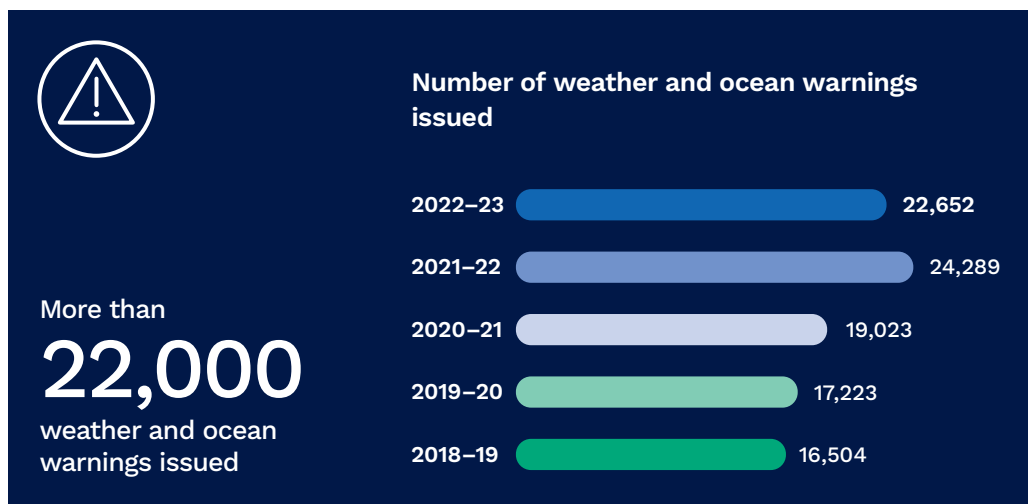
The IGA was established in 2017 and formalises and standardises the services provided by the Bureau to state and territory emergency services agencies. Consultation during the review included 13 Hazards Services Forum (HSF) member interviews and 7 hazard-specific focus group discussions held across Australia. Written feedback was also received.

Several broad themes emerged during the consultation process, including:

- the value the HSF provides within the emergency management sector
- the need for the IGA and HSF to keep pace with the changing operating environment
- the need to make further improvements around roles, responsibility and governance
- the opportunity for the Bureau to take on a national coordination and leadership function.

Feedback also raised the need for updates to the IGA Service Schedules, which is being considered by the Bureau using the HSF as a customer advisory forum to advise on sectorial priorities.

HSF endorsement of the review report will be sought in early 2023–24, with recommendations that enable further improvements to the Bureau’s hazard products and services to be implemented as practicable.



Strengthening connections with a broad spectrum of emergency management practitioners

The Bureau is represented on nearly 80 external committees and sub-committees in the emergency management sector, connecting at all levels of government.

The Bureau’s Hazard Preparedness and Response National Team also played a central role as secretariat on several key forums, bringing together experts on disaster risk policy. In 2022–23, this included the Hazards Services Forum, the Australian Tropical Cyclone Advisory Group, and the Australian Tsunami Advisory Group. Through these forums, the Bureau has been able to make improvements to tropical cyclone warning products based on user feedback and advice, undertake scenarios and drills to increase preparedness for real-world events and gain critical understanding of the emergency sector’s hazard-specific needs. The Bureau also engaged with the Australian Institute of Disaster Resilience on the 2021–22 Major Incidents Report, which provides an overview of incidents involving the fire and emergency services sector.

Supporting international marine safety standards through national partnership

Under the leadership of the Australian Maritime Safety Authority (AMSA), the Bureau and other Australian Government agencies demonstrated Australia's compliance with international marine safety obligations imposed by the International Maritime Organization (IMO).

The IMO is the United Nations (UN) specialised agency for the safety and security of international shipping. The mandatory IMO Member State Audit Scheme (IMSAS) is completed every 7 years and is used to assess the extent to which Member States comply with requirements set out in the relevant UN conventions and protocols, such as the *International Convention for the Safety of Life at Sea 1974 (SOLAS)*.

Australia's IMSAS audit process in April 2023 consisted of questionnaires and face-to-face interviews with the IMO Audit Team. The Bureau demonstrated its quality delivery of the SOLAS compliant marine weather products and services for navigational safety in Australian coastal waters and open ocean. The audit process also deepened the Bureau's collaboration and engagement with other Australian maritime related agencies.



Ship entering Newcastle Harbour.

Understanding the extent of climate change in the Pacific

The Bureau has been working with its Pacific partners under the Climate and Ocean Support Program in the Pacific (COSPPac) to understand average and extreme climate conditions including rainfall, air temperature, tropical cyclones, sea surface temperature, sea level and ocean waves. This work culminated in the release of a report on historical and recent climate variability for 15 Pacific Island countries or territories (see p.169).

Highlights and significant events

Declaring La Niña in the Pacific Ocean

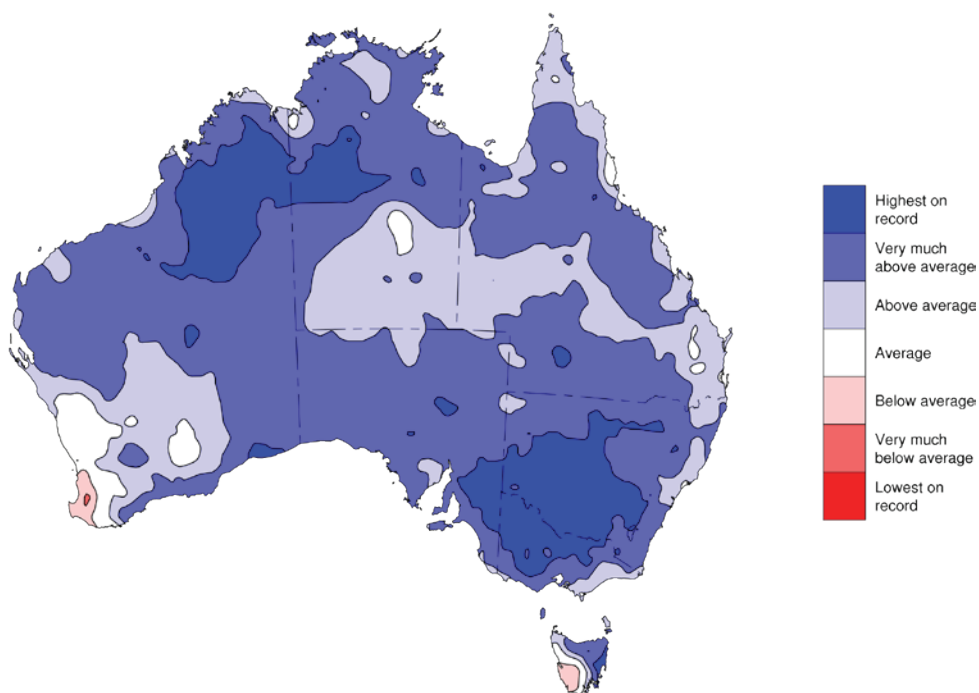
The Bureau provides long-range forecasts to support the community, partners and emergency services in planning for the likely climate conditions in the weeks and months ahead. Closely aligned with the long-range forecasts for Australia are forecasts of large-scale influences, called Climate Drivers, that impact the country's weather and climate.

A major Climate Driver for Australia is the El Niño–Southern Oscillation (ENSO) in the Pacific Ocean which has 3 different phases: El Niño, La Niña and Neutral. Tropical Pacific conditions are monitored by the Bureau's ENSO Outlook service.

Following the end of the 2021–22 La Niña, a La Niña Watch was activated in June 2022, indicating around double the usual chance of La Niña redeveloping later in the year. In August, this was raised to La Niña Alert (around 3 times the usual chance of a La Niña event). On 13 September, the Bureau announced a La Niña was underway, with conditions meeting both ocean and atmospheric indicators.

Ahead of spring 2022, the ENSO Outlook consistently forecast a likely La Niña development. Long-range forecasts indicated a wetter than average spring for most of the eastern half of Australia, with many areas having more than double the usual chance of an unusually wet spring (predicted to be in the wettest 20% of all springs on record).

Consistent with the Bureau's long-range forecasts, much of south-eastern Australia had its highest spring rainfall on record. Spring 2022 was the wettest on record for the Murray-Darling Basin, with extensive flooding affecting all eastern states. The La Niña in the tropical Pacific was a key Climate Driver, along with a negative Indian Ocean Dipole and a persistent positive Southern Annular Mode, all occurring against the background of global warming.



Spring 2022 rainfall deciles, ranked against all years since 1900.

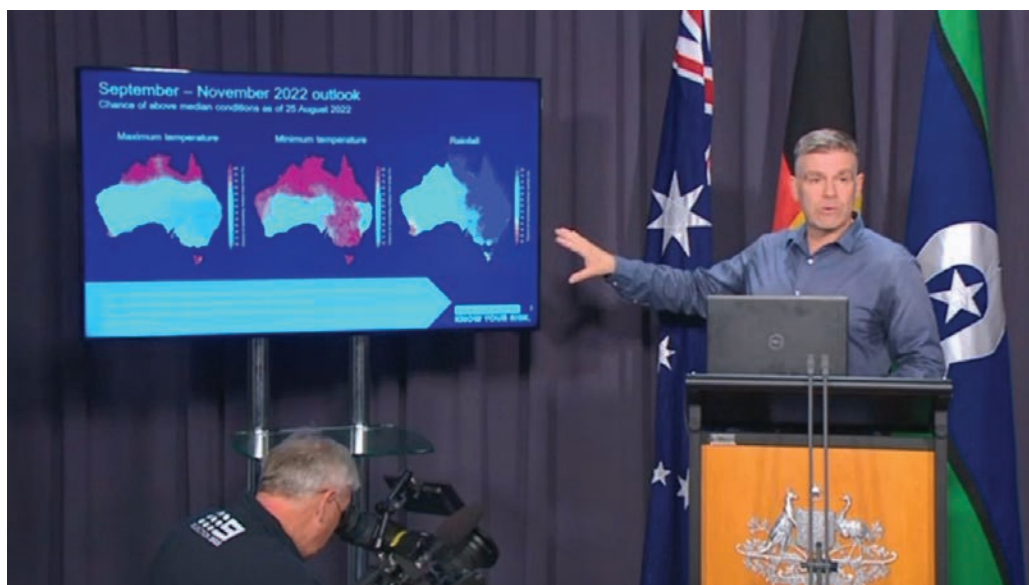
Delivering high-risk weather briefings at Parliament House

Each year, the Bureau's National Hazard Preparedness and Response – National team facilitates key seasonal outlook briefings, including inside Parliament House. These briefings ensure government officials and emergency management and defence agencies can plan and prepare for the high-risk weather season ahead.

In 2022–23 the Bureau delivered high-level briefings to Australian Government Ministers, Senators and Members of Parliament, and worked closely with the Australian Climate Service to produce scenarios for use in briefings and planning activities across government, industry and non-government organisations.

The briefings commenced in July, with the Bureau's CEO and Director of Meteorology, Dr Andrew Johnson delivering a high-risk weather outlook – in partnership with then Director General, Emergency Management Australia, Joe Buffone – to the National Emergency Management Ministers' Meeting at Parliament House. Several briefings were provided at Parliament House, including to the Minister for Emergency Management, Senator the Hon Murray Watt, and other elected officials, on the likelihood of high-risk weather events in the coming months. A media briefing was delivered with Minister Watt.

In the first week of September, the Bureau's high-risk weather season briefing was presented to Senators and Members of Parliament alongside the National Emergency Management Agency (NEMA).



Bureau Senior Climatologist Greg Browning provides an update on high-risk weather for the season ahead.

Meeting the needs of remote communities during major flooding in the Northern Territory

When floods hit the Northern Territory (NT) in March, emergency press conferences involving the Bureau included live interpreting in an indigenous language for the first time. In-language messaging for remote NT communities is important because 75% of community members speak an Aboriginal language at home.

Severe flooding forced evacuations in the communities of Kalkarindji, Daguragu and Pigeon Hole in the Upper Victoria River region of the NT. Three media events over 3 days with in-language messaging increased the accessibility and relevance of warnings for those communities.

Successful delivery of live indigenous language interpretation was many months in the making. Preparation began in late 2022, with collaboration between the Bureau’s Hazard Preparedness and Response and Community Engagement teams, the Aboriginal Interpreter Service, the NT Emergency Service and NT’s Government’s Public Information Group to prepare and deliver specialist training of interpreters and key emergency services partners.



Commander Danny Bacon, NT Police, Fire Emergency Services, Sharon MacMillan, Aboriginal Interpreter Service and Shenagh Gamble, Bureau of Meteorology at a press conference at the Peter McAulay Centre, Darwin in March.

The work earned the Bureau a Highly Commended at the Emergency Media and Public Affairs (EMPA) Awards in June. The work also contributes to the delivery of Action 5 of the Bureau’s Reconciliation Action Plan, which is to *Continuously strive to improve the Bureau’s services and products to ensure the physical and cultural safety of Aboriginal and Torres Strait Islander customers.*



‘Mock’ media event during training workshop with Lisa Sennett, Public Information Group, Mosese Raico, Bureau of Meteorology, Miriam Ngalmirimirin, Aboriginal Interpreter Service at Peter McAulay Centre, Darwin, October 2022.

The 2022–23 tropical cyclone season

There were 7 tropical cyclones in the Australian region during 2022–23, below the long-term average of between 9 and 13 tropical cyclones each season. Five tropical cyclones – Darian, Freddy, Gabrielle, Herman and Ilsa – reached at least Category 3 intensity (severe tropical cyclone) while in the Australian region. Three cyclones – Ellie, Gabrielle and Ilsa – brought significant impacts to Australian communities. Tropical cyclone 01U was not named in real time, however upon reanalysis after the event, it was determined that it did attain tropical cyclone intensity.

Severe tropical cyclone Ilsa was the first category 5 tropical cyclone to impact the Australian coastline since Marcia in 2015. Ilsa made landfall around midnight local time along the east Pilbara coastline of Western Australia, tracking directly over Pardoo Roadhouse. The roadhouse and nearby pastoral stations were devastated by the 230 km/h winds in the destructive core of the cyclone. The peak 219 km/h 10-minute mean wind observation and the 289 km/h wind gust at Bedout Island measured during the passage of Ilsa are the highest known wind observations ever recorded on a standard Bureau instrument.

Forecasts issued by the Bureau’s Tropical Cyclone Warning Centre for severe tropical cyclone Ilsa were very accurate at long lead times, aided by a high degree of confidence in the forecast track from the global model ensemble outputs. Up to 6 days before Ilsa impacted the coast, emergency services and industry were briefed on the possibility of a severe impact along the east Pilbara or west Kimberley coast. The accuracy of forecasts up to 4 days out were particularly high when compared to historical forecasts.



Track map of tropical cyclones during 2022–23.

Next steps

Key activities to be delivered in 2023–24 to help achieve Outcome 1 include:

- delivering an enhanced pre-season awareness campaign to people at greater risk in Australia, by leveraging established relationships with partner organisations to build community resilience

- standardising Service Level Agreements or Strategic Agreements with key domestic and international customers and partners
- uplifting the Hazards Services Forum as the Customer Advisory Forum for the emergency management sector and establishing hazard-based sub-committees.

Outcome 2: Our high-impact products and services enable decisions and lead to action

Achieving the outcome

Helping Australian communities respond to weather and climate-related events

In the lead up to and during Australia’s 2022–23 high-risk weather season, which ran from October to April, the Bureau provided over 3,000 technical briefings to help the emergency management sector and various government agencies plan for the season. The Bureau continued to deliver its embedded capability within state-based emergency services across the country, with meteorologists and hydrologists providing intelligence to support key decisions that keep the community safe.

An example of this occurred during a flood event in Central Queensland in January, where the Bureau meteorologist embedded in Queensland Fire and Emergency Services (QFES) was able to provide exact advice on the areas that would receive high rainfall – notably on inland areas. This resulted in more effective and timely deployment of rescue teams to support members of the community, with emergency services moving their coastally located swift water rescue capability to the inland areas that were at risk of flash flooding.



HPR Queensland Manager Laura Boekel and Brad Commens from Queensland Fire and Emergency Services.

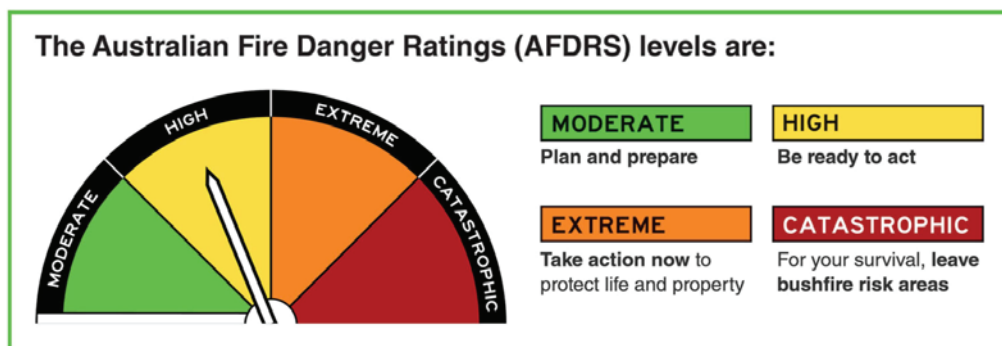
Helping Australians better understand bushfire risk

In September, the Bureau implemented the new Australian Fire Danger Rating System (AFDRS) in partnership with emergency management agencies across Australia. The AFDRS provides a new way to calculate and communicate fire danger.

The AFDRS is a new operational system based on improved fire behaviour models, improved forecasting capability and better mapping of fuel parameters. This drives improvement in the Bureau's current fire weather services which inform crucial decision-making by emergency service agencies and the wider community during bushfire events.

Previously, each state and territory had its own rating system. Now, across the country, fire and emergency services are applying nationally consistent colours, signs and terminology. The number of ratings has been reduced from 6 to 4, with concise and action-orientated messaging that can be easily understood.

These changes help to ensure that whatever the season or fuels, Australians can understand the level of threat and what actions they need to take to stay safe.

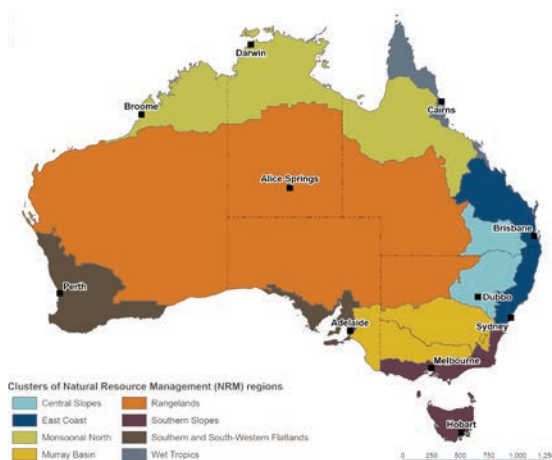


The new Australian Fire Danger Ratings.

Delivering new water data projections to our customers

The Bureau's Australian Water Outlook provides a suite of services and outputs for commercial water managers, government water agencies, researchers and other customers to support climate, weather and water-sensitive decisions. These include forecasts, hydrological projections and historical data on Australia's hydroclimate.

In September, the Bureau published 8 new National Hydrological Projections Assessment reports to provide customers with background and guidance materials on using the National Hydrological Projections.



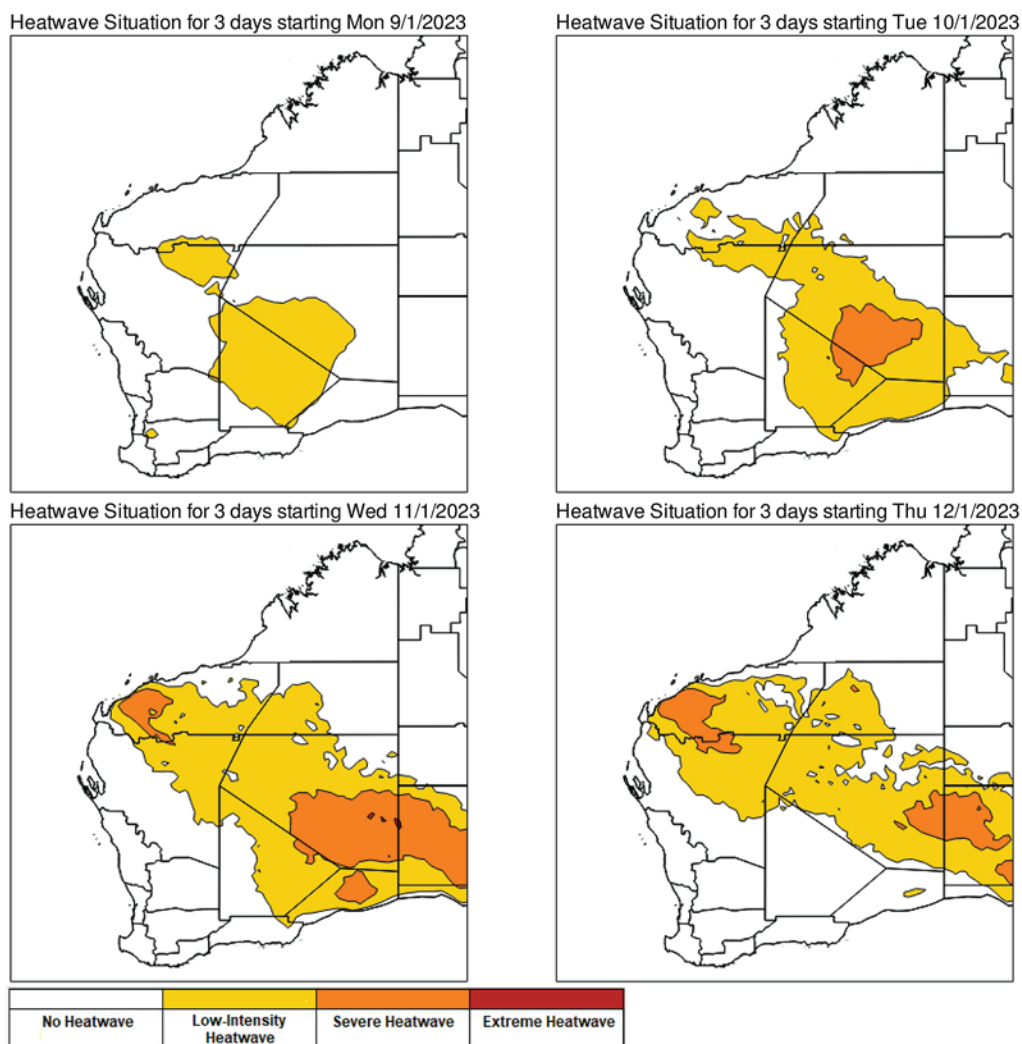
The 8 regions that are assessed in the hydrological projections assessment reports.

The reports present information in the form of ‘storylines’ of plausible future hydrological extreme events, such as floods and droughts, and long-term hydroclimatic changes in precipitation, runoff, potential evapotranspiration and soil moisture.

Keeping Australians safe in summer with a new heatwave warning

In October, the Bureau launched a new Heatwave Warning Service to support the public in taking steps to prepare and mitigate the impacts of heatwaves. This followed a successful trial with partner agencies during the 2021–22 season. Warnings are sent to emergency management agencies and through public facing channels including the Bureau’s website and the BOM Weather app.

The service assisted partner agencies to communicate the health risks of the extreme heat at the appropriate time. The timely, relevant information ensured health departments were better equipped to assist those vulnerable to heatstroke, including through implementing mitigation strategies to assist at-risk people in the impacted areas.



Graphical imagery from a heatwave warning for Western Australia in January 2023.

Highlights and significant events

Supporting the community through major floods of the Murray-Darling Basin

Throughout 2022, prolonged wet conditions and saturated soils across eastern Australia led to widespread major flooding throughout the Murray-Darling Basin. Spring 2022 was the wettest on record for New South Wales and Victoria since 1900.

Record flood levels were observed during 2022 and flood impacts were significant, including along the Murray River at Echuca, Victoria, which had its highest flood peak since 1916. In Eugowra (Mandagery Creek, New South Wales), 80% of homes were damaged. Other towns severely impacted included Shepparton and Seymour in the Goulburn catchment; Albury, Echuca and Mildura along the Murray River catchment; and Rochester in the Campaspe catchment.

Ahead of the prolonged flooding, in early spring 2022 the Bureau advised there was an increased likelihood of widespread flooding across eastern Australia. Throughout the event the Bureau issued more than 300 flood warnings for the Barwon, Darling and Murray Rivers. During this time, the NSW State Emergency Services responded to 24,500 incidents of which approximately 15,000 were from the areas that include the Murray-Darling catchments.

The Bureau held media conferences with state Premiers, the NSW State Emergency Operations Controller (SEOC), emergency management ministers and emergency services agencies. Daily severe weather and flood briefings were provided to emergency management authorities, local Members of Parliament and mayors of councils impacted by the floods. At the peak of the flooding along the Murray River, daily briefings were provided to the Victorian and New South Wales Emergency Services. Specialist Bureau meteorologists, hydrologists and community engagement practitioners were embedded with the emergency services in the State Control Centres, including 24/7 coverage during peak periods.



Steven Bernasconi, Manager Hazard Preparedness and Response NSW/ACT, responding to questions from the media during the 2022 floods in NSW.

Collaborating with international colleagues on tropical cyclone services

In December, the Bureau was well represented at the tenth International Workshop on Tropical Cyclones (IWTC-10) in Bali. The World Meteorological Organization (WMO)-sponsored event brought together 130 tropical cyclone researchers and operational experts from 45 countries, in addition to over 300 online registrants.

The theme of the workshop was 'improved science and services for better decision-making' and aimed to assess progress in tropical cyclone science and services over the past 4 years and recommend areas of focus for the next 4 years.

A total of 20 working groups across 6 topics worked for 12 months to produce reports supporting the workshop's objectives, that were presented to the wider group. Breakout sessions then discussed each of the topics and the workshop culminated with a consensus of 21 recommendations that will help guide science and service development activities until the next IWTC.

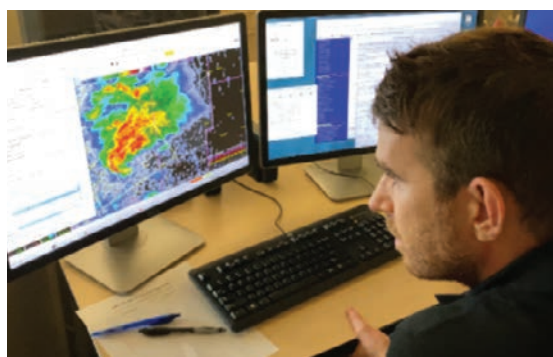
The gathering was a great success, presenting opportunities to make connections and share experiences to harness the collective wisdom of the broader tropical cyclone community. The world-leading work the Bureau is doing to better harness the power of ensemble weather models and to deliver products tailored to customer needs was commented on by many attendees. The Bureau's strong representation and acknowledgement is recognition of our operational expertise and high standing on the global stage.



BMKG Indonesia and Bureau of Meteorology forecasters strengthening connections.

Working with United States colleagues to share severe weather knowledge

An international exchange initiative in 2023 made significant strides towards establishing closer relationships and collaboration with our colleagues in the United States. The exchange of staff took place between the Bureau's Environmental Prediction Services Severe Weather team and the US National Oceanic and Atmospheric Administration, National Weather Service, Storm Prediction Center. This collaboration aims to improve the Bureau's capability to deliver severe weather meteorological activities that assist in disaster preparedness, mitigation and response.



Andrew Bufalino, Senior Meteorologist from the Bureau's Thunderstorm and Heavy Rainfall team, completing a Tornado Warning simulation at the Storm Prediction Center.

In February and March, the Bureau hosted a member of the Storm Prediction Center team during a period of enhanced operational demand to accelerate severe weather knowledge and streamline meteorological processes. In May and July, the Storm Prediction Center hosted members of the Bureau’s Thunderstorm and Heavy Rainfall team during their period of elevated operational demand.

Both organisations benefited from the initiative. The collaborative and mutual exchange of scientific and technical talent, skillsets and knowledge has resulted in a more comprehensive and effective approach to severe weather forecasting and warning capabilities. It has also fostered a deeper understanding of the challenges faced by each organisation and has facilitated the development of new approaches to addressing these challenges. Moving forward, this will continue to be an important part of the Bureau’s work in delivering operational excellence.

Next steps

Key activities to be delivered in 2023–24 to help achieve Outcome 2 include:

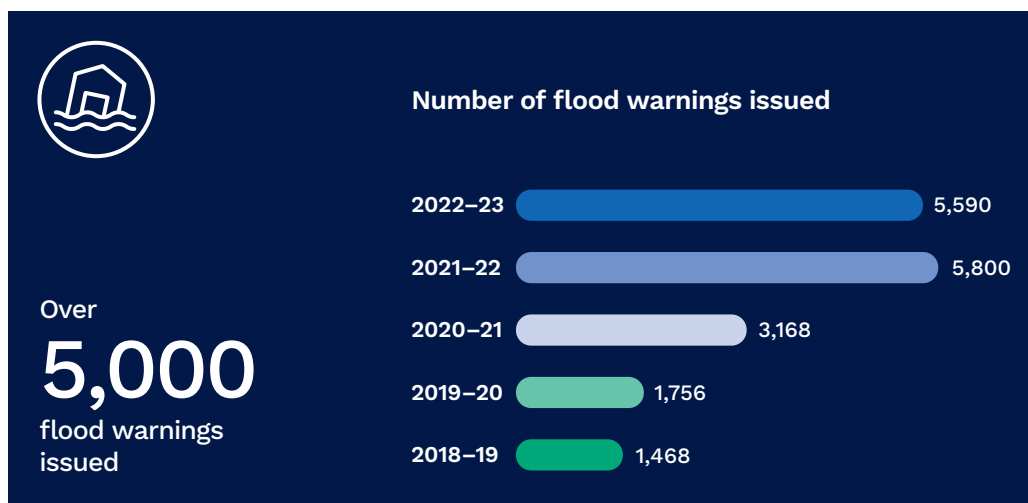
- further developing the Future Warnings Framework and delivering a nationally consistent multi-hazard, impact-based warning and alerting system for the Australian community
- delivering the Australian Smoke Dispersion System
- continuing response to recommendations from the 2022 Flood Inquiries.

Outcome 3: Resilient, sustainable, national operations delivered across Community Services Group

Achieving the outcome

Delivering improved reliability, security and performance for flood forecasting systems

In September, the Bureau’s Hydrological Forecasting System (HyFS) was upgraded to the latest software version and was moved to new infrastructure. This was the biggest update to HyFS since its launch in 2015 and the major milestone was achieved during a very challenging year of flood operations.



HyFS underpins the Bureau's national water and flood forecasting services. The new version delivers improved capability, security, resilience and reliability with new infrastructure, improved architecture, and a suite of new business features. Some of the features include new rainfall forecasts, improved map displays, improved archive integration, automated performance analysis, and new user documentation and training. These changes have made an enormous difference in achieving operational excellence and impact and value for the Australian community.

Enhancing integrated operations through Operational Tools

As part of the broader Public Services Transformation (PST) initiative, the Bureau implemented a process-centric approach to enhance integrated operations. Recognising the significance of the Microsoft 365 platform, the project aimed to leverage its capabilities to fulfill the operational tool requirements of the group.

During the delivery phase, the focus was on the development of Microsoft PowerApps build and uplift, alongside establishing support arrangements tailored to operational needs. This phase was successfully completed, culminating in the launch of Operational Tools in late May.

The new platform makes it easier to record and retrieve data and provides a single dashboard displaying the status of various operational functions at any given time. These changes improve the way the group communicates among teams, allocates staff, and works in real-time to deliver resilient and nationally consistent services. Looking ahead, the Bureau will continue to make improvements to the application that align with the evolving requirements of operational teams.

Standing up national community information capability

As part of the goal to deliver continuous local and national weather narratives to the Australian community, the Bureau provides more than 700 scheduled radio crosses across the country each week.

In October, the Bureau changed the way it does routine radio crosses by creating a new Community Information team specialising in the clear communication of high-quality weather information for local communities. The team is made up of meteorologists and science communicators trained in meteorology and local knowledge for the regions they serve.

These specialist communicators are trained to deliver content in an accessible style, tailored to local audience needs – enabling the Bureau's operational meteorologists to focus on forecasting and warnings. This allows for increased flexibility so that the team can adapt to changing media requirements, scale up to meet an increase in demand during major weather events, and manage the workforce during staff leave or movements.



Jessica Lingard, Community Information Officer at work in the Bureau's Perth office.

Internationally certifying Australia’s national tsunami operations

In May, the Joint Australian Tsunami Warning Centre (JATWC) was recertified for ISO 9001 for another 3 years after successfully passing the independent external auditing process.

The Bureau operates the JATWC in partnership with Geoscience Australia, delivering tsunami warnings nationally to Australian communities and tsunami threat advisory services internationally to 27 other Indian Ocean countries.

The tsunami warning service was first certified in July 2020 as an ISO 9001 compliant Quality Management System. With the service being further enhanced and the national tsunami operation made more resilient, recertification was necessary to assure this essential work.

Ensuring resourcing for essential flood and water services

At the start of 2023, the Bureau implemented a long-term rostering and resourcing plan for the Environmental Prediction Services, National Water Operations Team. The approach identifies planned resources with the appropriate skills to provide 24-hour coverage, 7 days a week. This allows the team to meet anticipated service demands, adjusting in accordance with climatic or seasonal variance and flexibly scaling based on risk.

The resourcing plan also incorporates fatigue management principles ensuring the health and wellbeing of the Bureau’s people with longer-term planning supporting greater work-life balance. It allows to the team to carry out continuous national flood risk assessment, provide ongoing monitoring of flood warning network data and systems, and deliver flood warning products and services to Australian communities.

Highlights and significant events

Providing new mid-morning updates for capital cities

The Australian community has a diverse range of requirements for routine forecasting services. One common requirement is responsive, accurate and up-to-date forecasts that reflect the conditions people are experiencing wherever they are.

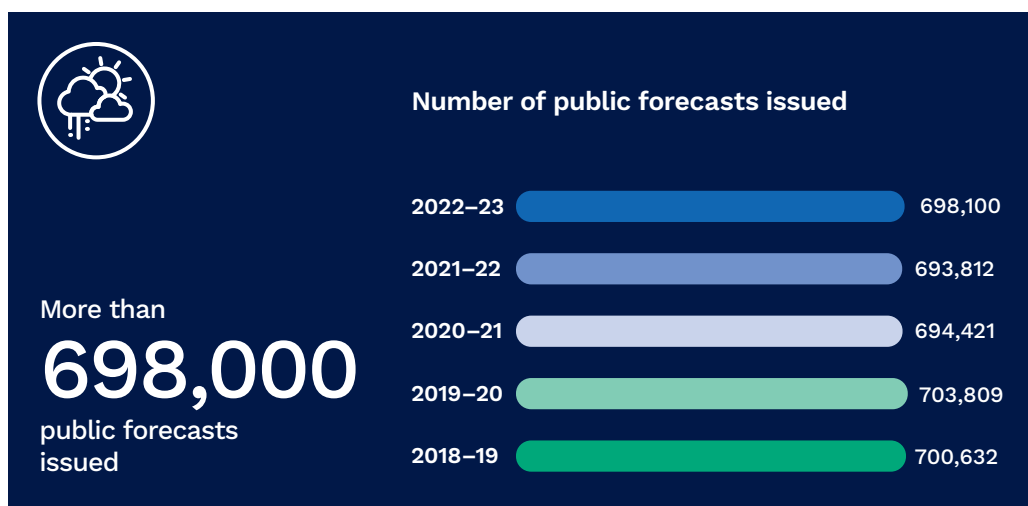


Storm over Sydney CBD.

One of many avenues the Bureau is exploring to meet this demand is increasing the frequency of its routine public weather forecasting services. A first step in this journey was completed in June when a mid-morning update was introduced for all capital cities. Rolling out this service nationally built on practices already in place in Sydney, Canberra and Brisbane.

Updating capital city forecasts every day ensures this high-profile product always describes the weather for the remainder of the day and removes any emphasis on conditions that have already occurred e.g. fog, frost, or early morning showers. It provides the community with the latest information to inform their decisions and plans as they carry out their day. The initiative also represents a 50% increase as forecast updates move from twice daily to 3-times per day.

Planning is well underway to extend the mid-morning update across all routine public weather services over the coming years.



Updating our Telephone Weather Services to better serve community needs

The Bureau commenced a phased migration of telephone services to an upgraded platform in late 2022.

Customers access information from the Bureau in different ways, with some members preferring to call our 1300 Telephone Weather Service. This is a perfect solution for people with limited or no access to online information, or for customers looking for the convenience of having current warnings and forecasts read to them over the phone. For example, some customers who are blind or have low vision find this solution an essential part of how they obtain the latest information from the Bureau.

The uplift of the Bureau’s telephone services commenced with the 1300 warnings services and then progressed to the 1300 forecasts for each state and territory. The final stage, which included the Bureau’s national services, went live on 30 March. In total, 39 different 1300 services were successfully migrated to the new platform.

The new platform takes advantage of an advanced text to speech capability, which significantly reduces the need to manually record voices for the audio output. This allows the Bureau to provide a much-improved customer experience. Going forward, the new platform creates a pathway for future enhancements, such as delivering warnings and forecasts in a language other than English.

Building a national approach to public warnings for coastal hazards

The Bureau took a significant step towards improving coastal hazards services by establishing a dedicated Coastal Hazards operational function within the Community Services Group. This operational function has transitioned the Bureau away from an historical state-based approach to a new national one.

This is an important outcome of the Public Services Transformation (PST) program and sets the foundations for improvements in the years ahead. As part of this change, an ongoing review is being conducted into coastal hazards products to ensure a nationally consistent approach to warnings which is more in line with community expectations.



Coastal inundation at The Entrance, New South Wales

Next steps

Key activities to be delivered in 2023–24 to help achieve Outcome 3 include:

- continuously improving the delivery of nationally consistent operations across the group and its programs
- increasing the frequency of routine public weather forecast services
- leading the Forecast Improvement projects and integrating their outcomes to drive production processes and service outputs.

Outcome 4: A valued, safe and inclusive workforce with a clear sense of purpose

Achieving the outcome

Enhancing wellbeing services for our front-line staff

During 2022–23, the Bureau introduced an enhanced wellbeing service for staff to access, to better support frontline staff who participate in long running and high impact events on a shiftwork basis. This type of work can result in multiple psychosocial hazards including high job demands, fatigue and exposure to traumatic events.

The service was implemented using the Bureau's Employee Assistance Program (EAP) provider, Converge International. There are 3 elements to the program – an education component, wellbeing check-ins with an EAP counsellor and on-site support. The service provides employees with regular one-on-one support to ensure that they are assessed for coping and wellbeing. It also provides strategies that are relevant to an employee's individual situation and circumstances.

Facilitating fatigue management using the new Enterprise Scheduling Tool

In June, the Bureau's Community Service Group and Aviation Operations teams went live with a new Enterprise Scheduling Tool, replacing the multiple spreadsheets and other media being used to create and communicate staff rosters. The convenient mobile-enabled solution means managers and staff can easily view schedules and manage their availability, anywhere and at any time.

The new Enterprise Scheduling Tool enhances the capability for monitoring work schedules to facilitate safe and equitable workforce design. Quantifiable fatigue limitations contained within the Bureau's Enterprise Agreements and Fatigue Management Procedure can be monitored and reported using the tool.

Managers and Roster Coordinators receive warnings when employees are close to, or have reached, specific limits such as: hours per shifts, hours per week, minimum rest periods between shifts and consecutive days worked. This information enables managers to make informed decisions when monitoring workloads, designing roster and shift patterns, approving shift swaps, and when deploying staff in response to surge events.

With over 500 users, the new tool and dedicated Roster Coordinators help drive national consistency through a common scheduling approach that promotes fairness and transparency. These enhanced rostering abilities ensure schedules are filled with suitably skilled staff to maintain continuous service delivery and foster a staff welfare focus. The changes aid the Bureau's ability to nationally govern capability and capacity levels, react to high impact events, and deploy resources to meet customer needs.

Leveraging customer feedback to deliver exceptional customer relationship management

Customer feedback and complaints – captured in the Customer Relationship Management System – provide valuable opportunities for learning, change and growth. The Bureau's national customer service team, Weather Connect, aims to use this feedback to enhance customer satisfaction, deliver exceptional service and improve customer outcomes.

To help embed the Bureau's revised customer service charter (see p.119), a customer engagement training session was conducted using a marine services customer case study. The training explored how the Weather Connect team – in collaboration with Bureau subject matter experts – could resolve the customer's concerns, acknowledging their views and ideas and gathering valuable insights for ongoing marine product enhancements.

The Weather Connect team achieved a 100% completion rate for the Intermediate Customer Engagement Training, helping to ensure the Bureau provides consistent messaging and customer experiences across multiple channels. This training has significantly enhanced the Bureau's tactical customer service and is now being rolled out to uplift other customer engagement activities in priority sectors.

Highlights and significant events

Honing our skills in delivering climate risk intelligence

In May, close to 40 of the Bureau's operational climatologists, hydrologists and support staff gathered in Melbourne for a 3-day training event focused on how the Bureau develops and provides strategic climate risk intelligence to its customers.

The training provided an opportunity for capacity building, collaboration, knowledge exchange and skill enhancement. Workshops, presentations and hands-on sessions took place. These aimed to enhance technical, media and communication skills and promote new Bureau processes and ways of working with existing and new partners (including the Australian Climate Service).

In addition to academic benefits, the training cultivated networks and collaborations among climatologists and hydrologists. Personal interactions and networking enabled the formation of professional relationships, leading to future collaborations, mentoring and knowledge sharing. By harnessing the expertise and collective efforts of the Bureau's operational climate staff, the Bureau aims to advance its understanding of climate change risks, develop effective strategies and tools for improved resilience and adaptation, and deliver the best science-based climate intelligence and information.

These collaborations are intended to extend beyond the training and result in joint initiatives, enhancing the collective impact of the climatology community across the Bureau.



The Bureau's operational climatologists and hydrologists taking part in the Environment Prediction Service's climate training event.

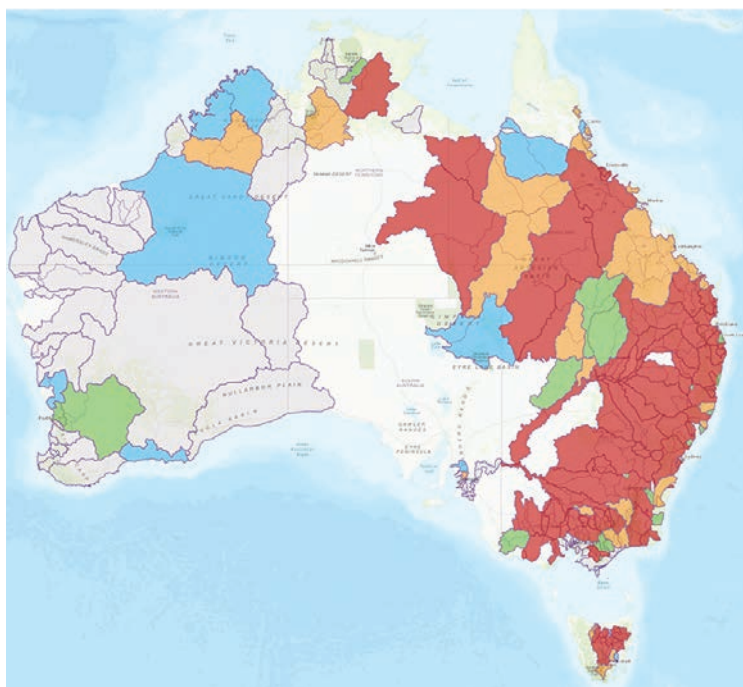
Building the strength of our national team in flood operations

Due to the extensive flooding in 2022 (both the number of simultaneous catchments in flood, and the longevity), several decision support hydrologists received additional training to expand their knowledge of catchments across the country.

This meant hands-on, on-the-job shadowing and learning between local and inter-state hydrologists. Through the training, staff learnt more about the catchments and critical thresholds for decision-making which affect the community.

By developing a national group of decision support hydrologists, the Bureau has more operational resilience, particularly when facing fatigue from widespread and high-impact flood events.

This national support was put in place during flood events in 2022–23, with decision support hydrologists supporting colleagues from other regions to allow much needed recovery while still enabling specialist briefings to be delivered to emergency services 7 days a week.



This map shows the highest flood classifications (the severity of flooding) reached in different areas across Australia in 2022. A large proportion of the country experienced major flooding (red) which meant that large areas were inundated by flood waters. Moderate (orange) and minor (green) flooding also occurred. The blue areas indicate where generalised flood warnings were provided (this is when there is insufficient data to make specific predictions, or in the developing stages of a flood).

Next steps

Key activities to be delivered in 2023–24 to help achieve Outcome 4 include:

- continuing to develop a proactive safety culture and processes that focus on all aspects of fatigue, wellbeing and staff psychological safety
- continuing to enhance the group's diversity and inclusion and use of flexible working arrangements
- investing in the strategic leadership capabilities of the group's emerging leaders.