

UPDATE 2022

Australian Antarctic Strategy & 20 Year Action Plan



Australian Government

UPDATE 2022





Foreword

More than a century ago, Australia was introduced to the wonder of Antarctica by the great scientist and explorer Sir Douglas Mawson. Understanding the continent is key to a deeper understanding of climate, weather and sea level changes. As a nation, Australia has an enduring commitment to protect and preserve Antarctica for future generations.

This update to the *2016 Australian Antarctic Strategy and 20 Year Action Plan* asserts our permanent presence in the Australian Antarctic Territory, our leadership as a key architect of the Antarctic Treaty system, and the world-class reputation of our scientific research.

The Australian Government's new investment will fund a significant expansion of Australia's Antarctic capability and leadership. Enhanced support for new scientific research and environmental protection will work to preserve the splendour of the Antarctic wilderness.

The Strategy is shaped by the Government's vision to protect Australia's national interests in Antarctica. This ambitious set of actions is now supported by major projects such as the new icebreaker RSV *Nuyina*, the Million Year Ice Core project and inland traverse capability.

The Strategy recognises Australia as a gateway to Antarctica and provides an opportunity to grow jobs in the Antarctic sector, particularly in Hobart. It improves safety by modernising assets and infrastructure and prioritises environmental management, including through a Cleaner Antarctic Strategy.

The 2022 update to the Strategy clearly sets out our priorities for the next five years and an enduring path to upholding our national interest in Antarctica. We are investing in and further modernising our Antarctic program so that it can continue to deliver world-class science and support the Antarctic Treaty system.

This Strategy will deliver critical science to support our knowledge of Antarctica, Australia and the global climate system. In fulfilling our unique responsibility to this pristine region, we stand by a robust Antarctic Treaty system and effective cooperation with other Antarctic states.

We commend this Strategy as a statement of our national determination to protect Australia's Antarctic interests for the benefit of all Australians.

Three handwritten signatures in blue ink are displayed. From left to right: Scott Morrison, Marise Payne, and Sussan Ley. The signatures are fluid and cursive.

The Hon Scott Morrison MP
Prime Minister of Australia

Senator the Hon Marise Payne
Minister for Foreign Affairs

The Hon Sussan Ley MP
Minister for the Environment

Introduction

The 2016 *Australian Antarctic Strategy and 20 Year Action Plan* (Strategy and Action Plan) publicly articulates Australia's national interests and our vision for Australia's future engagement in Antarctica.

The Australian Government has reviewed progress towards achieving our national interests in Antarctica and delivering on the Action Plan over its first five years.

The review found that the Strategy and Action Plan sets a clear path to upholding our national interests in Antarctica to 2036.

This update provides additional detail on our high ambition for the Australian Antarctic Program (AAP) over the next five years.

It reflects our commitment to ensuring that Antarctica remains valued, protected and understood.





Australia's national interests in Antarctica

Australia has enduring national interests in Antarctica, as set out in the 2016 Strategy and Action Plan. These are to:

- Maintain Antarctica's freedom from strategic and/or political confrontation
- Preserve our sovereignty over the Australian Antarctic Territory (AAT), including our sovereign rights over adjacent offshore areas
- Support a strong and effective Antarctic Treaty system (ATS)
- Conduct world-class scientific research consistent with national priorities
- Protect the Antarctic environment, having regard to its special qualities and effects on our region
- Be informed about and able to influence developments in a region geographically proximate to Australia
- Foster economic opportunities arising from Antarctica and the Southern Ocean, consistent with our ATS obligations including the ban on mining and oil drilling.

Australia will advance its interests in the following ways:

- Leadership and influence in Antarctica
- Leadership and excellence in Antarctic science
- Leadership in environmental stewardship in Antarctica
- Development of economic, educational and collaborative opportunities.

Progress achieved 2016 – 2021

Major progress was achieved under the Strategy and Action Plan during its first five years. Since 2016, the Australian Government has continued its investment in the AAP to ensure it is sustainable into the future and secures Australia's place as a leader in Antarctic science, policy and operations. We have:

- **Progressed major infrastructure upgrades to transform our Antarctic capabilities including:**
 - Designed and commenced commissioning Australia's world leading new icebreaker, RSV *Nuyina*
 - Developed Australia's inland traverse capability to undertake major science expeditions and ensure Australia has a leading role in the international quest for a million-year ice core
 - Commenced investment to upgrade the sub-Antarctic Macquarie Island research station.
- **Revitalised Antarctic science including revising the Australian Antarctic Science Strategic Plan and developing a coordinated science funding model with leading Australian institutions and international and industry partners.**
- **Established Operation SOUTHERN DISCOVERY to provide sustained Australian Defence Force support to the AAP consistent with our international legal obligations, including a heavy lift cargo capability with C-17A flights.**
- **Enhanced collaboration with a range of nations active in Antarctica, including through agreement of new and updated Memoranda of Understanding.**
- **Demonstrated excellence in Antarctic science and environmental management, including to reinforce Australia's position as a leader and influencer of governance and decision-making in the ATS and other international forums such as the Intergovernmental Panel on Climate Change.**
- **Commenced new funding under the Antarctic Science Collaboration Initiative to support Australia's Antarctic science collaboration.**
- **Supported Hobart as the premier East Antarctic Gateway, including:**
 - Extended Hobart Airport runway and completed business case activities for a Precinct in Hobart to support Antarctic and Southern Ocean institutions.
 - Established collaborative partnerships to build Tasmania as a centre for science, remote medicine and operations – the Centre for Antarctic, Remote and Maritime Medicine and the Centre for Antarctic and Southern Ocean Technology.
 - Collaborated with museums and cultural institutions, and philanthropic organisation the Antarctic Science Foundation, to raise the profile of Australia in Antarctica.

Overall, the intent of the Strategy and Action Plan over the first five years was met. Delivering major projects in Antarctica is complex and timelines can be easily impacted. In addition, some delays have occurred in the delivery of key actions due to the COVID-19 pandemic, which has meant that most activities planned for the 2020-21 Antarctic season were reduced to sustainment only. Commitments from the first five years, where implementation is not yet concluded, will be prioritised for delivery in the next five years.



Image: CPL David Said AFIS/Department of Defence

Action Plan 2022 – 2036

The AAP is continuing through a program of unprecedented transformation with the investigation, development and delivery of major new modernised assets and capabilities. This includes the new world class icebreaker RSV *Nuyina*, an inland traverse capability (a tractor convoy capable of navigating Antarctica's harsh conditions with transportable living and laboratory containers) and the modernisation of infrastructure at Australia's four existing year-round Antarctic and sub-Antarctic stations.

The Strategy and Action Plan has served as an ambitious road map to investigate and deliver the major changes required by the AAP to continue to meet Australia's national interests in Antarctica. It is now timely to focus on priorities for the next five years (to 2026), including completion of existing actions. This update to the Strategy and Action Plan sets out major projects which, together with the business as usual operations of the AAP, will continue to deliver Australia's national interests in Antarctica.

In addition to the planned actions, the Australian Government undertakes significant ongoing activities that contribute to Australia's national Antarctic interests and objectives, including:

- **Science:** effectively administering a comprehensive, multidisciplinary and collaborative Antarctic science program to deliver key government policy and international obligations, science and management outcomes, including through long-term monitoring, data collection and analysis, development of digital infrastructure for data accessibility, scientific research and program evaluation and prioritisation
- **Environmental management:** administering two of Australia's external territories – the Australian Antarctic Territory and the Territory of Heard Island and McDonald Islands – to conserve and protect their unique environments and manage environmental impacts; and meet our international obligations

- **Stations and logistics:** year-round management, maintenance and operation of four research stations, and conducting field programs; and operation of supporting logistics including an aviation, shipping, ground transport, warehouse, cargo and supply function
- **International engagement:** working within the ATS to promote the rules and norms of environmental protection, non-militarisation and scientific cooperation, and building strategic, scientific and operational partnerships
- **International peace and security:** reinforce the broader international rules-based order, including by supporting multilateral facilities monitoring a global ban on nuclear explosions required by the Comprehensive Nuclear-Test-Ban Treaty
- **Workplace, health and safety:** delivering a safe AAP through emergency management, search and rescue, remote medicine and continuous review and implementation of safe working practices in a remote environment
- **Community:** delivering remote communications, field training, expeditioner wellbeing, family support, outdoor recreation; and delivering a strong public media, engagement and communications program including school resources, the Australian Arts Fellowship program and the Media Program
- **Collaboration and compliance:** strategy, planning, policy; governance, project management, environmental regulation, biosecurity, heritage protection, environmental management, and collaboration and engagement – including building strong partnerships across government and with the Tasmanian State Government, university sector, and industry, science and environmental organisations.

In the next five years of the Strategy and Action Plan the Government will:

Leadership in Antarctica

- **Enhance Australia's Antarctic leadership through increased diplomatic engagement in support of the rules and norms governing Antarctica, both bilaterally and in the ATS**
 - Including championing proposals to protect and conserve the Antarctic environment, such as marine protected areas.
- **Strengthen our collaborative relationships with Antarctic nations, including to:**
 - Capitalise on the capabilities of RSV *Nuyina* and the new traverse infrastructure to cooperate with Antarctic partners on areas of joint scientific interest — for example collaborative large-scale Southern Ocean marine science research programs with key partners
 - Identify new opportunities with Australia's expanding space sector for Antarctic science, medicine, safety, environmental monitoring, and communications.
- **Implement an enhanced program of mapping and charting of areas in East Antarctica, including:**
 - Establish a regular hydrography program of charting activities for improved safety and navigation
 - New drones for low cost collection of high-resolution mapping information including potential long-range drones to extend our knowledge and reach across the continent
 - Conduct major mapping activities throughout East Antarctica including seabed mapping.
- **Lease of new ice-strengthened ships to provide greater flexibility for infrastructure delivery and to release the RSV *Nuyina* to focus on important science programs.**
- **Investigate opportunities for an expanded presence in Antarctica, with minimal environmental impact, including consideration of the following capabilities to support science:**
 - Renovate existing field huts, including in the Vestfold Hills, to use them as summer-only stations, featuring substantial remote monitoring equipment
 - Establish new air-deployable field bases to facilitate research in remote and inland areas of the Australian Antarctic Territory
 - Conduct annual inland traverses for sustainment of inland ice drilling operations for world-leading climate science
 - Establish a suite of autonomous monitoring stations for science and environmental monitoring, including opportunities to deploy remote controlled and autonomous drones (terrestrial, aerial and marine).

- Undertake further Antarctic Treaty inspections in line with our ATS obligations.
- Undertake a formal management visit to our Heard Island and McDonald Islands external territory to conduct importance science and environmental management:
 - To undertake critical invasive species, contaminant, and heritage assessments and management tasks, population assessments of threatened species, and terrestrial and marine science activities.
- Develop future capabilities to continue to deliver a safe, world-leading Antarctic program:
 - Transition to four new medium-lift multi-engine helicopters by 2023-24 to increase program safety, with flow-on benefits for increased logistical capability and range into the field for ship launch and land based science expeditions
 - Explore future intracontinental aviation options to maintain efficient connections between our stations and access across East Antarctica.
- Develop a leading edge maritime capability for unprecedented delivery of Australia's Antarctic activities providing:
 - Greater maritime support for significant science and logistics activities in the Southern Ocean
 - The ability to support and collaborate with other nations to be an international logistics and science partner of choice
 - Maritime contingency to better respond to unforeseen developments, such as incidents requiring search and rescue or maritime assistance.
- Implement Digital Earth, a world leading management of satellite imagery, aerial photography, radar and hyperspectral data for near real-time detection of changes in the landscape including monitoring ice bergs and ice calving, marine biology, nutrient observations and other Antarctic activity.
- Deliver a comprehensive Masterplan for Antarctic stations to tackle ageing infrastructure, with an initial masterplan completed for Davis research station.



Image: Brett Wilks

Leadership and excellence in Antarctic science

- Develop a ten-year Antarctic Science Plan (decadal plan) to implement Australia's Antarctic strategic science priorities.
- Conduct major science under the following priority themes:
 - **Climate Science:** study the vital role of Antarctica and the Southern Ocean in our climate and weather to improve our understanding and inform management responses (including to support Pacific Islands Forum partners)
 - > Enhance climate and weather prediction using observations in Antarctica and the Southern Ocean, including by using RSV *Nuyina's* capabilities as an observatory
 - > Quantify vulnerability and change in sea ice, ice sheet, ocean and atmosphere, and improve projections of sea level rise (including to support Pacific Islands Forum partners) from ice sheet loss, using models and field-based studies including airborne surveys and a Marginal Ice Zone voyage
 - > Use past climate records to understand present and future change, including undertaking the Million Year Ice Core (MYIC) project and use ice core reconstructions to identify Australia's climate variability and risk.
 - **Marine Science:** ensuring conservation of Antarctic wildlife and sustainable fisheries management
 - > Provide scientific leadership in the Commission for the Conservation of Antarctic Marine Living Resources, International Whaling Commission and Agreement on the Conservation of Albatrosses and Petrels
 - > Sustainably manage the krill-based marine ecosystem with a focus on East Antarctica, including:
 - conduct integrated multi-year research into krill and krill predators; and
 - conduct more targeted and robust Southern Ocean ecosystem surveys
 - > Build new krill aquaria to study ecological resilience of krill (a keystone species) and related species in the Southern Ocean by establishing a new marine research facility co-located with the University of Tasmania and conducting experiments to clarify climate change responses
 - > Deliver science to support Australia's Southern Ocean fisheries including conducting research in the Southern Ocean to support ecosystem conservation, sustainable management of fisheries and to secure a healthy ocean system.
 - **Enhance Australia's on-water presence in the Southern Ocean, including to prevent, deter and eliminate illegal, unreported and unregulated fishing.**

Leadership in environmental stewardship

- **Environmental Protection: conservation, management and remediation of the Antarctic environment to be a best practice leader in environmental stewardship**
 - Establish the Cleaner Antarctica science program, including:
 - > Conduct comprehensive contaminated site assessments
 - > Develop an actionable Cleaner Antarctica Strategy for Australian stations and sites, including in the sub-Antarctic
 - > Innovate cost-effective science and technology to assist clean up, risk assessment, and to derive environmental targets for polar regions
 - > Remediate major contemporary fuel spill sites at Casey research station.
 - Deliver evidence-based science to assess resilience of terrestrial and nearshore Antarctic environments and their associated biodiversity to ensure their conservation, including establishing long-term monitoring sites in areas of significance (e.g. the Vestfold Hills).
 - Implement improved management actions to protect the unique Antarctic environment, including:
 - > Operationalise an Environmental Management System, including a GIS Spatial Environmental Management Information System, to ensure world best practice environmental standards in the planning of new capabilities and conducting ongoing operations
 - > Develop a whole-of-program environmental monitoring, audit and response plan for the AAP
 - > Develop an environmental impact minimisation strategy for the AAP to deliver improved environmental outcomes in areas such as fuel management, waste storage and emissions reduction strategies.





HOBART

image: Richard Jupé

Develop economic, educational and collaborative opportunities

- **Develop Hobart as a leading Antarctic gateway city to support Tasmanian economic growth and job creation, including through the Hobart City Deal:**
 - Work with partners towards the development of the proposed Antarctic and Science Precinct at Macquarie Point in Hobart
 - Promote Antarctica through strategic communications and engagement, such as the Hobart Antarctic waterfront display trail, to provide an interactive environment for visitor education
 - Work with the Tasmanian Government to establish port infrastructure for RSV *Nuyina*
 - Grow and promote Tasmania as a region of Antarctic expertise, including:
 - > Ongoing support for more collaborative partnerships, such as the Centre for Antarctic and Southern Ocean Technology.
- **Explore opportunities, including in collaboration with the Tasmanian Government, to attract and retain international organisations and events to Hobart, such as the Southern Ocean Observation System.**
- **Continue to modernise Australia's Antarctic and sub-Antarctic stations, including investigating renewable energy options.**
- **Build Antarctic educational opportunities and tools in partnership with key stakeholders, including the Royal Institution of Australia, to promote public awareness and understanding of Antarctica.**

BEYOND 2026

Image: Tony Fleming

In the second decade of the Strategy and Action Plan the Australian Government will:

- Finalise station modernisation works across all Antarctic and sub-Antarctic research stations to create a station network that is efficient, flexible and suited to our future needs.
- Conduct major new science activities:
 - Expeditions to coastal areas to understand potentially vulnerable areas of ice sheet/shelves (Cook, Ninnis, Totten, Denman-Shackleton, West) for investigation of ice sheet stability and sea level rise and to establish autonomous science monitoring stations
 - Integrated land-based and off-shore expeditions with traverse, RSV *Nuyina*, and aviation deployed remote camp, and drone capabilities to explore multiple science priorities in remote coastal areas.
- Conduct the Cleaner Antarctica program in line with a prioritised strategy and implementation plan, including remediation of legacy waste and contaminated sites.
- Establish a regular management visit program for Australia's Antarctic and sub-Antarctic protected areas and heritage places, including:
 - Undertake the next formal management visit to our external territory of Heard Island and McDonald Islands.
- Deliver and analyse major science results from the completed project to retrieve a MYIC.
- Establish regular programs of mapping including seabed mapping across the full ocean depth range of Australian Antarctic Territory including use of Unmanned Aerial Vehicles, Remotely Operated Vehicles, Autonomous Underwater Vehicles and other autonomous drone technologies.
- Implement a modern, safe and comprehensive intracontinental aviation network across Antarctica.
- Complete a ten-year review of progress against achieving our national Antarctic interests and delivering on the Action Plan, identifying next steps to 2035 and options on whether the Plan requires revision and extension.

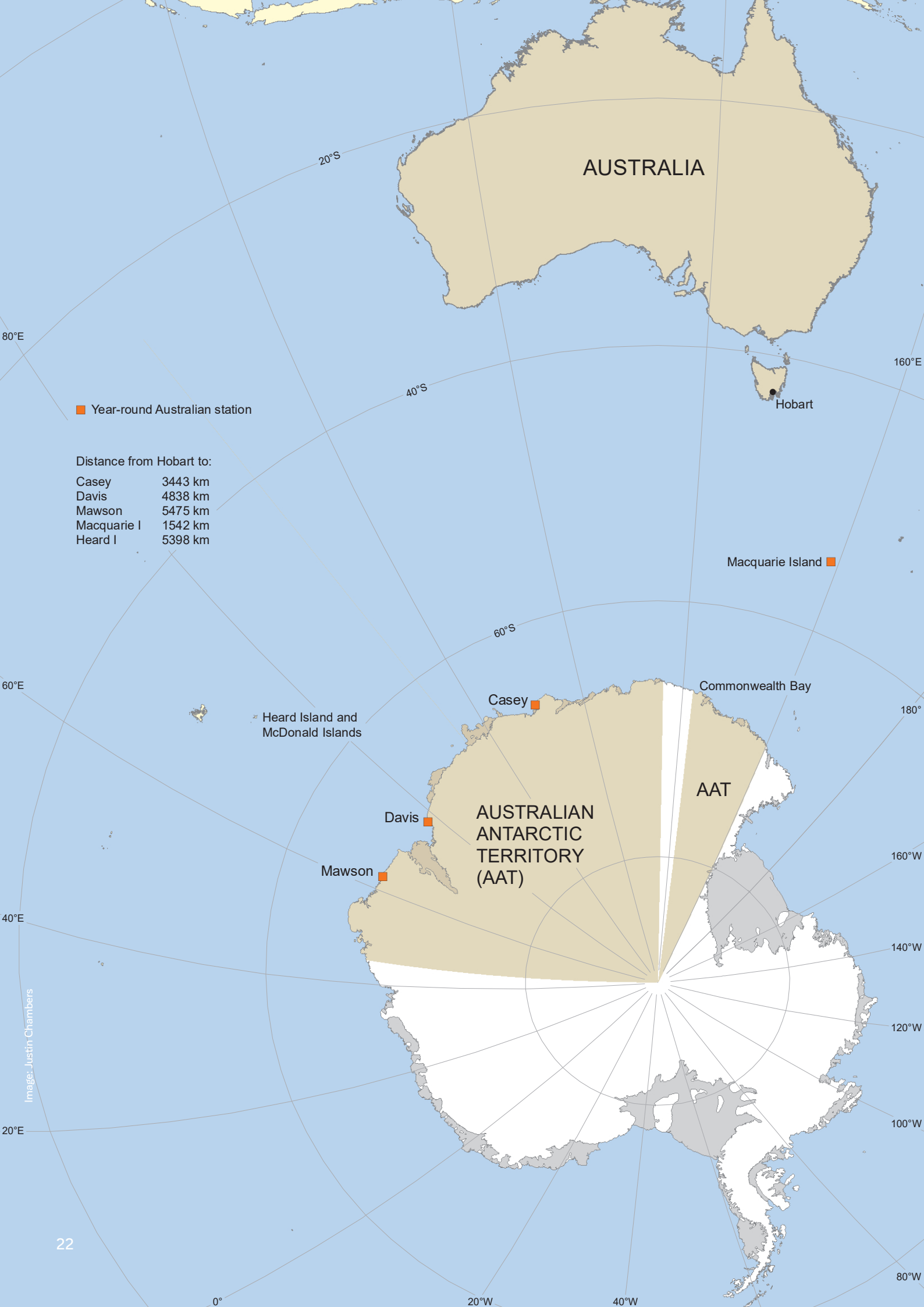


Image: Justin Chambers



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