Australian Government
Australian Maritime Safety Authority

CHIEF EXECUTIVE OFFICER

Foreign Affairs, Defence and Trade Committee
Department of the Senate
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Committee

Thank you for the opportunity to submit a response to the Foreign Affairs, Defence and Trade References Committee on the inquiry into Australia's future activities and responsibilities in the Southern Ocean and Antarctic waters. The Australian Maritime Safety Authority (AMSA) is a statutory authority established under the *Australian Maritime Safety Authority Act 1990* with the primary role to minimise the risk of shipping incidents and pollution in Australian waters, through ship safety and environment protection regulation and services, and maximise people saved from maritime and aviation incidents through search and rescue coordination.

AMSA's submission is structured around the following terms of reference for the inquiry:

b. cooperation with international partners on management and research under international treaties and agreements;
c. appropriate resourcing in the Southern Ocean and Antarctic territory for research and governance; and
d. any other related matters.

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The submission is focussed on three principal areas of interest to AMSA – the International Maritime Organization Polar Code, pollution response initiatives and Search and Rescue.

Yours sincerely

MICK KINLEY
27 June 2014

Encls. (1)

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Submission to the Senate Inquiry into Australia's future activities and responsibilities in the Southern Ocean and Antarctic waters

Standing Committee on Foreign Affairs, Defence and Trade

The Australian Maritime Safety Authority is a statutory authority established under the *Australian Maritime Safety Authority Act 1990* with the primary role to minimise the risk of shipping incidents and pollution in Australian waters, through ship safety and environment protection regulation and services, and maximise people saved from maritime and aviation incidents through search and rescue coordination.

AMSA's submission is structured around the terms of reference for the inquiry, namely:

(b) cooperation with international partners on management and research under international treaties and agreements;

(c) appropriate resourcing in the Southern Ocean and Antarctic territory for research and governance; and

(d) any other related matters.

AMSA's submission is in relation to three principal areas of interest - the International Maritime Organization Polar Code; Pollution Response Initiatives and Search and Rescue arrangements.

1. International Maritime Organization – Polar Code

The International Maritime Organization (IMO) is developing a mandatory Polar Code (the Code) for the safety of ships operating in the isolated waters of the Arctic and Antarctic region. The Code will cover the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in polar waters.

Australia has been actively engaged in the development of the Code since commencement of this work at IMO in 2010. Australia has responsibilities in approximately 20 per cent of the total Antarctic area, including for search and rescue, port State control, environmental protection, hydrography and nautical charting, and safety of vessels operating in the area. Australia has a particular interest in the development and implementation of the Code to improve safety and pollution prevention outcomes in Antarctic waters.

The Code is divided into three parts - general provisions, safety measures and pollution prevention measures and includes both mandatory and recommended measures.

Mandatory safety measures include requirements relating to: ship structure; stability and subdivision; watertight and weather-tight integrity; machinery installations; operational safety; fire safety/protection; life-saving appliances and arrangements; safety of navigation; communications; voyage planning; manning and training. Mandatory pollution prevention measures include prescriptive requirements for the prevention of pollution by oil, noxious liquid substances, sewage and garbage from ships.

Ships operating in polar waters will need to be certified and carry a Polar Water Operational Manual, which will provide information regarding the ship's capabilities and limitations to support operational decision-making.

The Code will apply to both new and existing ships regulated by International Convention for the Safety of Life at Sea (SOLAS). Warships, naval auxiliaries and ships owned or operated by a State and used on government non-commercial service will be exempted. Existing ships will be exempted from specific requirements that would involve structural modifications. There are to be no exemptions from operational requirements and provisions relating to environment protection.

There are a number of Australian vessels which operate in Antarctic waters and which will be affected by application of the Code. Accordingly, extensive consultation with government and industry stakeholders has been undertaken to develop an Australian position on the Code.

The *Aurora Australis* is currently chartered by the Australian Antarctic Division (AAD) of the Department of the Environment and is expected to be operated until the conclusion of the 2016/17 season. If the vessel is required to operate beyond this time the Code provides for exemptions as an existing vessel.

The CSIRO operates the RV *Investigator*, a new purpose built vessel which is expected to commence operations in the South Polar Ocean in November-December 2014. It is expected that the vessel will conduct two southern ocean voyages each summer on the "shelf edge" of Antarctica as defined in the Code, avoiding operations in ice. As a government-owned vessel on non- commercial service and an existing ship, the Code will have no impact on its operation.

There are a number of foreign and Australian companies which charter foreign flagged vessels for cruise operations in the Antarctic. Those vessels are subject to their flag State requirements and will need to comply with the Code or have appropriate exemptions.

The Code will not apply to domestic commercial vessels and fishing vessels as they are not regulated under SOLAS. A similar code for non-SOLAS vessels is under consideration and expected to be developed at the IMO following finalisation of the Polar Code.

The requirements of the Polar Code will be implemented internationally by amendments to the SOLAS and the International Convention on the Prevention of Pollution from Ships (MARPOL). These amendments will be considered for adoption by the IMO Maritime Safety Committee (covering the amendments to SOLAS) in November 2014 and the IMO Marine Environment Protection Committee (covering the amendments to MARPOL) in May 2015.

The Code is anticipated to enter into force internationally from 2017. If adopted by IMO, the Code could be implemented in Australia by a new or amended marine order(s) under the *Navigation Act 2012* and the *Protection of the Sea Act (1983)*.

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2. Pollution Response Initiatives

The National Plan for Maritime Environmental Emergencies (the National Plan) provides a single comprehensive and integrated response arrangement to minimise the impacts of marine pollution from vessels and oil spills from offshore petroleum facilities, as well as other environmental impacts arising from a maritime environmental emergency, upon the Australian community, environment, cultural and heritage resources, economy and infrastructure. The National Plan arrangements apply to all incidents occurring within the Commonwealth marine area, the high seas or state and territory jurisdictions, which have the potential to impact upon Australian Government interests.

Under the National Plan, AMSA works closely with Department of the Environment, in particular AAD, to protect and manage the environment from pollution incidents south of 60 degrees.

In addition, AMSA is responsible for the delivery of a national emergency towage capability (ETC) within Australia's eleven designated ETC regions. AMSA manages the ETC with the support of jurisdictional arrangements which manage the risks within each jurisdiction. Response arrangements can be activated outside of Australia's Exclusive Economic Zone if required.

As a party to MARPOL, Australia has a number of measures in place to prevent the discharge of pollution from ships into the sea. In particular, the Antarctic area is recognised as a Special Area in Annexes I and V of MARPOL prescribing additional requirements related to the discharge of oil and garbage into the sea in this area. These prevention measures are a key element in minimising the need for pollution response.

3. Search and Rescue

In accordance with applicable international search and rescue conventions, Australia's coordination of both aviation and maritime search and rescue responsibilities for the Australian Search and Rescue Region (Australian SRR), are delivered by AMSA, through Australia's Joint Rescue Coordination Centre (JRCC Australia). The Australian SRR includes a significant area of the Antarctic and Southern Ocean (Attachment A**)**.

International Conventions

Three international conventions deal with search and rescue and the obligations to render assistance to persons in distress in maritime and aviation incidents. These conventions are applicable to the Southern Ocean and the Antarctic and include:

- The International Convention for the Safety of Life at Sea 1974 (as amended) (the SOLAS Convention);
- The International Convention on Maritime Search and Rescue, 1979 (the SAR Convention); and
- The Convention on International Civil Aviation 1944 (as amended) (the Chicago Convention).

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National and International Arrangements

AMSA has, as a legislative function, the provision of a national search and rescue service in a manner consistent with Australia's obligations. Australia's Inter-governmental Agreement on National Search and Rescue Arrangements, and National Search and Manual, describe Australia's national SAR service responsibilities and national plan framework and standard reference procedures.

In addition, a memorandum of understanding (MOU) between AMSA and AAD defines the division of responsibilities in relation to SAR coordination in the Antarctic region, and puts in place operational procedures to effectively coordinate a response to a SAR incident.

In recognition that both agencies may have a role in Antarctic SAR coordination, the MOU defines responsibilities for both coordination and response roles and includes details on:

- the division of responsibilities between each organisation;
- coordination and operational procedures;
- sharing of asset and communications information; and
- information about other resources including support for ice navigation (imagery and analysis), mapping support and Antarctic weather forecasting.

AMSA also maintains numerous SAR agreements with neighbouring countries with responsibility for SAR response. This includes both South Africa and New Zealand which have adjoining SRR's in the Southern Ocean and the Antarctic. The SAR agreement is an arrangement between countries implemented in accordance with both the SAR and Chicago Conventions and used to outline procedures to effectively conduct SAR response across SRR boundaries and sets out coordination arrangements.

Search and Rescue Regions

Both the IMO and the International Civil Aviation Organization (ICAO) sponsor global SAR plans, allocate SRRs so that a national SAR authority is identified as having responsibility for the coordination of search and rescue of any person within every region on earth. SRRs were developed by the IMO and ICAO in consultation of member parties and often reflected existing flight regions and proximity to countries as a basis for establishment.

In relation to the Southern Ocean and Antarctic, Australia's SRR is vast, and includes a large proportion of Antarctic mainland with an area covering 4,796,7000 square kilometres, with an additional smaller 3,719,300 square kilometres of sea area from the Antarctic coast to 60 degrees south latitude.

SAR Coordination and Collaboration

Australia, like all countries with SAR responsibilities in the Southern Ocean and Antarctic, face particular challenges in coordinating and responding to SAR in this region, including:

- a demanding environment with freezing temperatures, permanent and shifting ice, extreme wind conditions, and heavy seas associated with limited visibility and icebergs, all affect survival time and can seriously delay rescue operations;

- long distances from SAR assets (search vessels or aircraft) mean that the time for search resources to reach the search area is extended and reduces the number of resources available for the incident;
- remoteness of the region from passing maritime and aviation traffic, means that there are often no SAR assets of opportunity that can be used in a SAR incident; and
- SAR incidents in the Southern Ocean and Antarctica often attract wide media interest.

In order to effectively coordinate SAR, close coordination between Australian Government agencies including AAD and AMSA is necessary. In addition, as resources to respond are limited, the capacity to coordinate through AAD with other National Antarctic Programs (NAP) that are active in the Australian SAR region and the Southern Ocean, is essential. A majority of ships and aircraft operating in the area are operated by NAPs. As such, it is acknowledged in tasking these assets that there is often a direct impact on programmed activities, which may itself bring political sensitivity and media attention.

There has also been recent collaborative work with the Council of Managers of National Antarctic Programs (COMNAP) to discuss the importance of search and rescue in the Antarctic and the need for continued cooperation of SAR authorities and NAPs. This includes further development of the COMNAP web-based tools to share information and a best practice and lessons learned facility for the five SAR authorities[1] with responsibility in the Antarctic. This ability gives an overall view of asset location, communication and equipment on a near time basis and is fundamental to ensuring a more effective SAR response.

AMSA utilises both the Australian Defence Force and commercial providers for the provision of long range aviation assets and, although used for Antarctic SAR in the recent past, neither have much experience in conducting operations in this region. It is important that when asset requirements are developed for operating in the Southern Ocean or Antarctic, possible SAR usage be considered.

Maritime Communications

The importance of effective communications to facilitate coordination is also essential and AMSA is responsible for the provision of shore facilities for the Global Maritime Distress and Safety System (GMDSS) and all distress and safety traffic in the Australian SRR are handled by JRCC Australia. The basic premise of the GMDSS is that SAR authorities ashore, as well as shipping in the immediate vicinity of a ship in distress, will be rapidly alerted to a distress incident at sea so they can assist in a coordinated SAR operation with the minimum of delay. Australia has declared itself Sea Area A3 and meets its obligation through the provision of satellite and HF radio communications services to an area that encompasses the entire SRR to approximately latitude 70 degrees south.

Recent Search and Rescue Activity

There have been incidents of varying duration and severity in recent history. Three recent SAR incidents are outlined to provide examples of the challenges presented in the Southern Ocean and Antarctica.

[1] The SAR authorities are from Chile, Argentina, South Africa, Australia and New Zealand

Vessel *Tiantai*

On 30 March 2014, JRCC Australia received an alert from a distress beacon in the Antarctic region of the Southern Ocean. Enquiries revealed that the vessel previously associated with the beacon had been re-registered in Tanzania. The JRCC was unable to obtain any information about the vessel, owner or emergency contact from authorities in Tanzania. Information was then received confirming that the vessel had recently been in the vicinity of the beacon position and was suspected to have been engaged in illegal fishing in the company of another vessel, FV *Chang Bai*.

The JRCC issued a broadcast to shipping and made high frequency voice and digital calls to the vessel without reply. A long range commercial aircraft was chartered and tasked to fly to the distress beacon position to investigate; it was estimated this would take seven hours. In addition, a P3-C Orion long range maritime patrol aircraft capable of dropping lifesaving supplies was released for tasking by the Royal Australian Air Force (RAAF). The commercial aircraft arrived at the distress beacon position and confirmed the beacon was still active but they were unable to make any sighting of the vessel. The RAAF P3-C sighted debris in the beacon position but could not locate the vessel visually or by radar.

During response to the beacon alert, JRCC attempted to source ships from the Australian Defence Force, Australian Antarctic Division and its international associates, South African and New Zealand Search and Rescue authorities, and from merchant shipping. No suitable ships were identified within 1000 nautical miles of the distress position. The fishing vessel is believed to have foundered with its crew having either abandoned to FV *Chang Bai* or being lost at sea. Expert medical advice indicated that the timeframe for survival for any crew in the water or a life raft would expire prior to arrival of any ships in the area. Search operations were suspended based on this information.

Russian Vessel *Akademik Shokalskiy*

The *Akademik Shokalskiy*, a Russian flagged vessel carrying a non-government expedition organised in Australia and proceeding from New Zealand, was entrapped in ice near Commonwealth Bay, East Antarctica from 24 December 2013 to 8 January 2014.

The SAR response was coordinated by Australia as the responsible authority for the SRR in which the incident occurred. Vessels and personnel from France, China, United States and Australian NAPs were involved in the response.

The Chinese vessel *Xuě Lóng* and the Australian vessel *Aurora Australis* attempted to free the *Akademik Shokalskiy* but were unable to do so due to ice conditions. The 52 passengers were transferred from *Akademik Shokalskiy* to *Aurora Australis* in an operation conducted by helicopter from the *Xuě Lóng* on 2 January 2014. The *Akademik Shokalskiy* was eventually able to move out of the area of heaviest ice after a change in the ice formation developed in the ice pack.

French AS350 Helicopter F-GJFJ

On 28 October 2010, a French AS350 helicopter crashed while on a flight in support of the French NAP from the vessel *L'Astrolabe* to Dumont D'Urville station in Terre Adelie. Coordination of the incident was transferred from RCC France to the JRCC Australia when it was determined that the incident was within the Australian SRR.

The vessels *L'Astrolabe* and *Aurora Australis* were requested to divert to the area on 28 October 2010. *L'Astrolabe* was initially unable to proceed as the ship had suffered a shaft failure but commenced transit early the next morning. *Aurora Australis* diverted from her voyage to Davis Station and reported an estimated time to the search area of three to four days. Very poor weather conditions on the evening of 28 October precluded any aviation response including any by a second helicopter at Dumont D'Urville. On Friday 29 October, a US Air Force (USAF) C17 aircraft was tasked to overfly the crash site on a flight from Christchurch to the US Antarctic base McMurdo. The crew were asked to listen for the distress beacon, attempt to visually locate the crashed helicopter, attempt to make contact with crew and to make any survivors aware that search action had commenced. The USAF C17 heard the distress beacon signal but due to the weather conditions was unable to make any visual contact.

The USAF C17 was then tasked to again track via the site on its northbound trip from McMurdo to Christchurch. A RAAF AP3 Orion aircraft was tasked from Hobart to rendezvous over the crash site with the northbound USAF C17 to conduct a coordinated search.

The RAAF AP3 Orion located the wreckage and reported no sign of life. The RAAF AP3 Orion dropped supplies, in case there were any survivors, but observed no response.

On Saturday 30 October an operation was planned using helicopter F-GJHN from Dumont D'Urville with a doctor on board. The helicopter flight was planned to take place once a USAF LC130 aircraft from the United States Antarctic Program (USAP) at McMurdo was overhead the crash site to provide a communications relay and SAR support. A second aircraft, a Skytraders Airbus A319 operating from McMurdo, was tasked to relieve the USAF LC130 overhead the crash site if required. The helicopter arrived on scene, confirmed there were no survivors and recovered all four deceased persons to Dumont D'Urville.

Summary

In Australia's experience, the SAR system and the present coordination arrangements have proven effective for incidents in Antarctica. While Australia continues to look for opportunities to improve SAR coordination and supporting arrangements, the system is fundamentally sound. It does rely on extensive preparations for communications and survival by those that may need rescue. It is anticipated that with the increased activity the need to ensure continued and strengthened collaboration, exchange of information and cooperation between both national and international organisations will be essential.

Australia recognises that SAR response capabilities for Antarctic areas (in particular land/ice areas) are limited and places a high priority on proper planning and avoidance of incidents. There will be a continued reliance on NAPs providing their own SAR cover and other expeditions having adequate contingency plans and SAR cover, to reduce the need for outside assistance to be mobilised.

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Attachment A

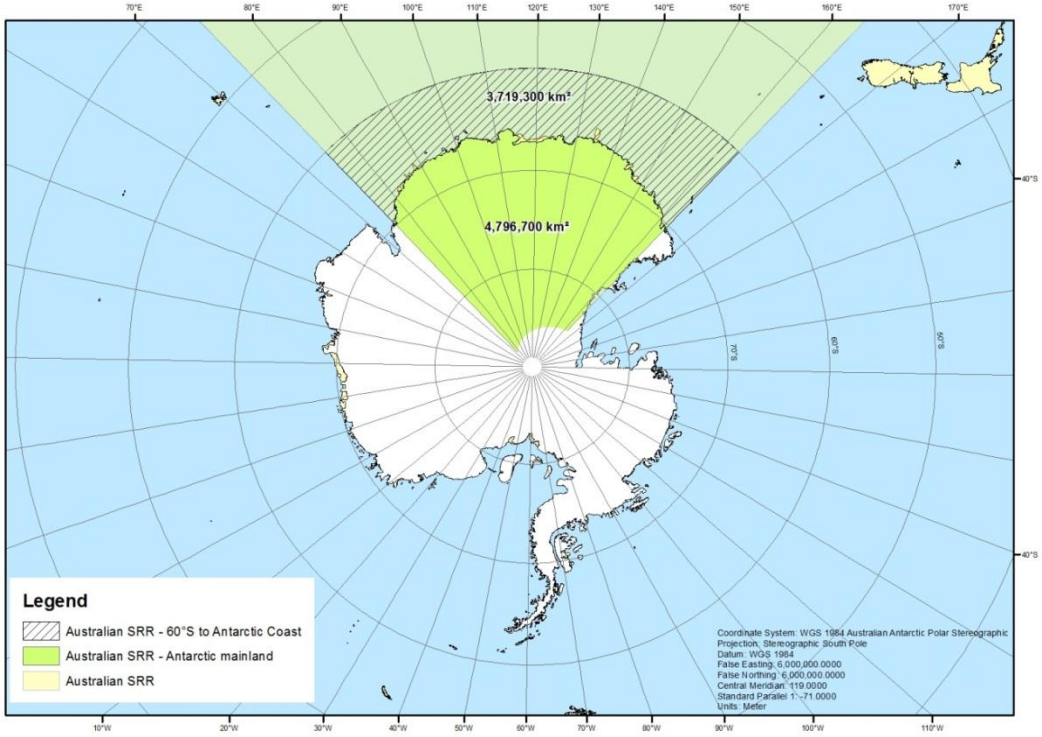

Figure 1: The Australian Search and Rescue Region - Southern Ocean & Antarctic

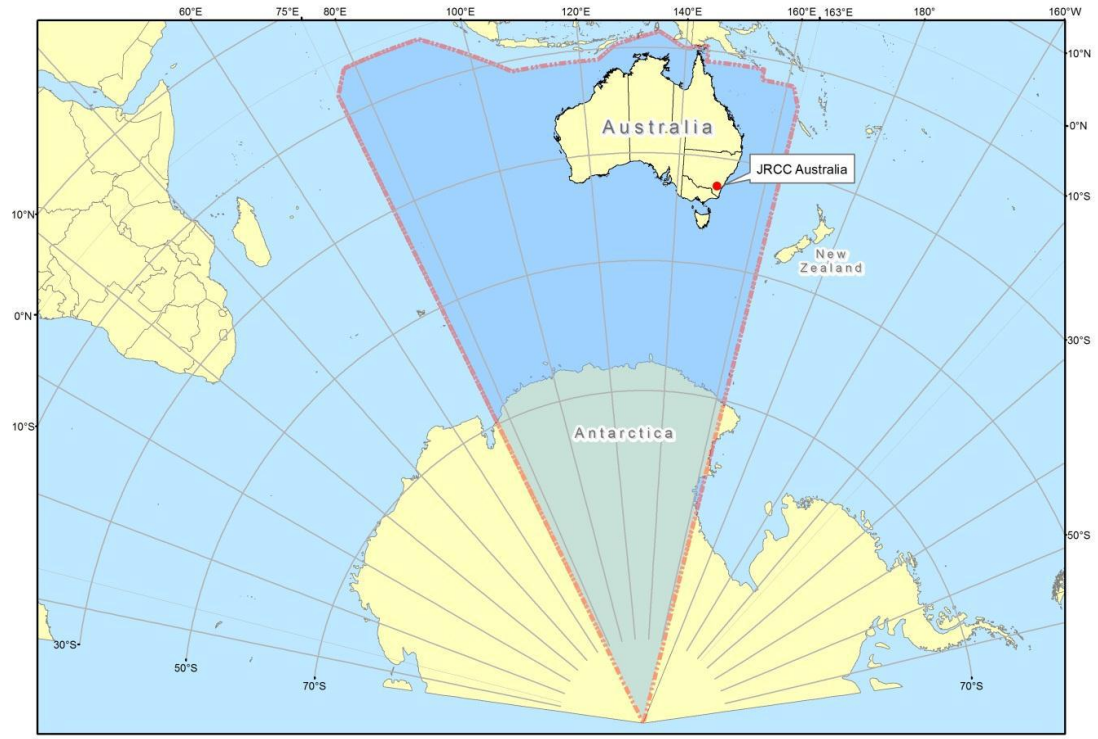

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Figure 2: The Australian Search and Rescue Region (from the National SAR Manual)

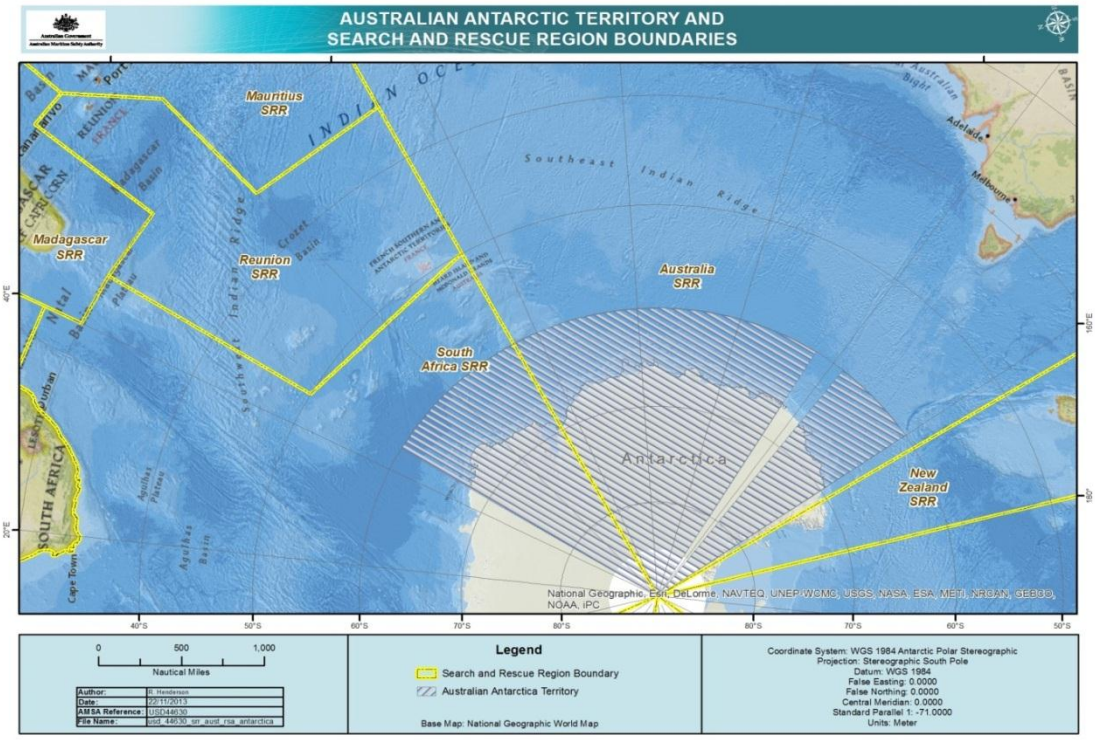

Figure 3: Australian SRR Antarctic Region and Australian Antarctic Territory

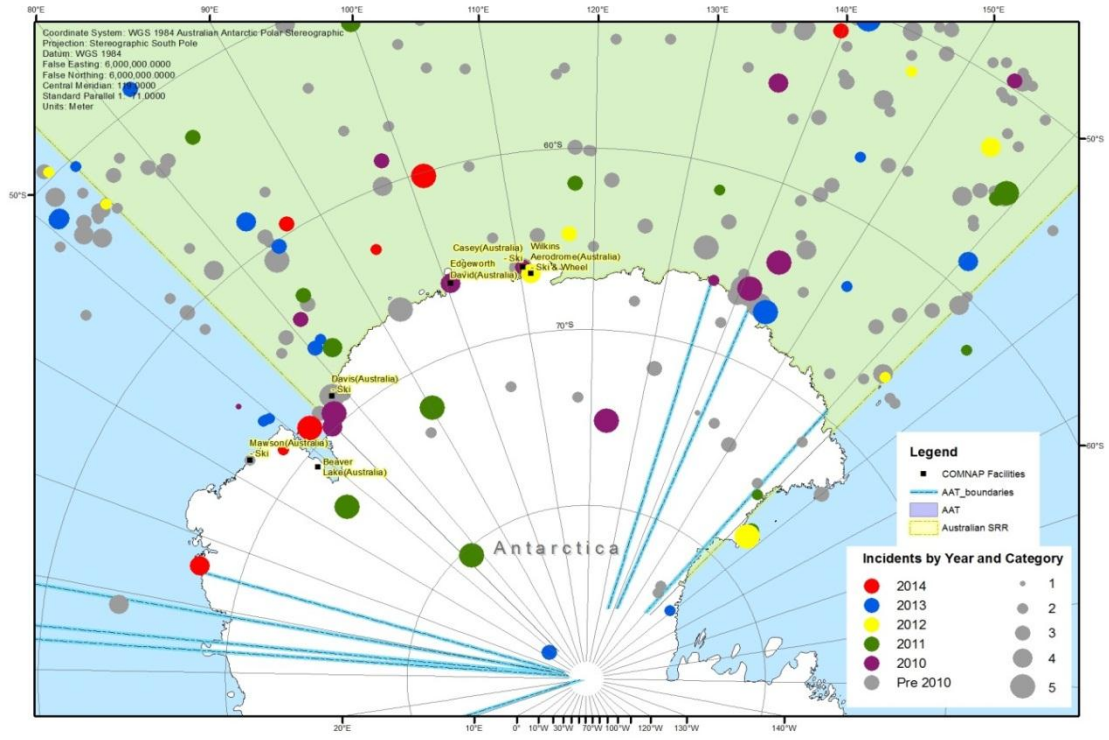

Figure 4: Search and Rescue incidents in Antarctic and Southern Ocean