AUSTRALIA'S ANTI-SUBMARINE WARFARE CAPABILITY IN THE 2030S

Jennifer Parker

Australia knows the risk of submarine warfare all too well. On 31 May 1942, Sydney Harbour was attacked by Japanese midget submarines, resulting in the sinking of the accommodation barge HMAS *Kuttabul* and the loss of life of 19 Australian and two British sailors.[1] Despite this, anti-submarine warfare (ASW) has not always been a focus of the Australian Defence Force (ADF),[2] although its priority has waxed and waned, it is clear that in 2026 Australia sees undersea warfare (USW), and its subset ASW as an increasing focus. Much is made of Australia's intended acquisition of nuclear-powered submarines under the AUKUS trilateral arrangement between Australia, the United Kingdom (UK) and the United States,[3] but Australia's increasing focus on platforms and partnerships to enhance ASW is much broader than AUKUS, supported by recent and future acquisitions on ASW-capable ships, maritime patrol aircraft (MPA), ASW helicopters, and an increasing move into a range of uncrewed underwater vehicles (UUV).

Supporting this strategy is of course Australia's alliance with the United States and the broader Five Eyes intelligence-sharing network.[4] While ASW is often perceived as a tactical problem, it is in fact a theatre problem where information sharing and partnerships are just as critical as capabilities.

This paper will consider how Australia's ASW capabilities are developing into the 2030s and its major challenges. Given the change in Australia's strategic circumstances and subsequent developments in ASW capability, this paper will first consider what Australia's strategic guidance says about its approach to ASW, before assessing Australia's current capability. It will then consider planned developments in Australia's ASW capability beyond the acquisition of nuclear-powered submarines and the associated challenges and its response to China's growing submarine capabilities. It concludes that Australia's planned investment in ASW through to the 2030s represents one of the most significant pivots towards ASW in its history.

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[1] Royal Australian Navy, "Japanese Midget Submarine Attack on Sydney Harbour," accessed September 8, 2026, https://www.navy.gov.au/about-navy/history/history-milestones/japanese-midget-submarine-attack-sydney-harbour.

[2] Jack McCaffrie et al., *Sea Power in the New Century: Maritime Operations in Asia-Pacific beyond 2000* (Australian Defence Studies Centre, 1998), 104.

[3] Australian Submarine Agency, "AUKUS Agreement," accessed September 8, 2026, https://www.asa.gov.au/aukus-agreement.

[4] Nick Tabor, "Five Eyes International Alliance," Britannica, June 24, 2026, https://www.britannica.com/topic/Five-Eyes.

Strategic Guidance for Australia's ASW Capability

Recently Australia has shied away from the use of the narrow term of ASW, preferring to use the term USW. Australia's somewhat dated 2010 version of its Australian Maritime Doctrine defines USW as falling into two main categories, ASW and mine warfare.[5] Despite no publicly available doctrine on this issue, it is clear Australia is now taking a much broader view of USW, sparked by concerns around attacks of subsea cables and pipelines and broader issues of seabed warfare.

Australia's Defence Minister at the recent 2026 Shangri-La dialogue in Singapore delivered a speech highlighting that the seabed is increasingly a battlefield.[6] Australia's ASW focused acquisitions should therefore be read in this light, that Australia sees this challenge within the greater domain of USW which requires significant situational awareness in the undersea domain and the ability to respond to a range of threats, including submarines.

Australia's 2026 National Defence Strategy (NDS) lists USW as its number one capability priority, directing the ADF to acquire the capability to "undertake a broad range of missions to project force, hold a potential adversary force at risk and maintain persistent situational awareness."[7] USW is also one of Australia's innovation science and technology priorities,[8] and mentioned as a focal area for both its AUKUS Pillar II initiatives and its Australian Strategic Capabilities Accelerator (ASCA).[9] The 2026 NDS also emphasises the criticality of partnerships to Australia's approach to theatre ASW, highlighting its desire to "enhance high-end interoperability" with Japan bilaterally, but also trilaterally with Japan and the United States.[10]

Australia's Current Non-SSN ASW Capability

Understanding a nation's ASW capability in the public domain is always challenging. Countries' capabilities and operations in the undersea domain are often the most secretive elements of their naval power. A classic example of this secrecy is the US Sound Surveillance System (SOSUS), a network of seabed arrays which were pivotal to US ASW operations through the Cold War, but the extent of their capabilities was not publicly known until 1991.[11] This paper considers what is publicly available about Australia's current and planned ASW capability, but it is always worth bearing in mind that publicly available information on ASW capability never tells the full story.

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[5] Sea Power Centre, Royal Australian Navy, *Australian Maritime Doctrine: RAN Doctrine 1-2010, 2nd ed* (Sea Power Centre, Royal Australian Navy, 2010), 149.

[6] Richard Marles, "Address to the 2026 Shangri-La Dialogue: Plenary Session Three," Department of Defence, Singapore, May 30, 2026, https://www.minister.defence.gov.au/speeches/2026-05-30/address-2026-shangri-la-dialogue-plenary-session-three.

[7] Australian Department of Defence, *2026 National Defence Strategy* (Australian Department of Defence, 2026), 48.

[8] Australian Department of Defence, *Australian 2026 National Defence Strategy,* 80.

[9] Australian Department of Defence, 81 and 83.

[10] Australian Department of Defence, 63.

[11] Brian Taddiken and Kristen Krock, "66 Years of Undersea Surveillance," *Naval History* 35, no. 1 (2021), https://www.usni.org/magazines/naval-history-magazine/2021/february/66-years-undersea-surveillance.

Australia operates a modern operational ASW capability that predominantly consists of air and sub-surface assets, with tactical capabilities resident in both classes of its surface combatants.

Submarines

Australia operates six *Collins*-class guided-missile-armed conventional submarines that were built in Australia based on the Swedish *Västergötland*-class submarine. It is, however, a significantly scaled-up version that is approximately 60 per cent larger than the original design.[12] The significantly enlarged version was required to meet Australia's requirements for operations and employment. Unlike the Swedish *Västergötland*, Australia's submarines are required to operate across vast distances, and in the difficult waters of the Pacific requiring greater endurance than most conventional submarines. The *Collins*-class is among the world's largest conventionally powered submarines. Its size and long-range design reflect Australia's requirement for extended endurance and operations across considerable distances.[13]

Commissioned between 1996 and 2003,[14] the *Collins*-class are often referred to as the most capable conventional submarines in the world.[15] The size and design of the *Collins*-class allow them to carry a greater degree of munitions but also operate for extended periods. The *Collins*-class have a range of roles, with ASW a primary role. To support ASW, the *Collins*-class are equipped with the Mk 48 heavyweight torpedoes, a highly capable torpedo jointly designed and maintained with the United States.[16]

Due to delays in decisions around replacements, the *Collins*-class submarines are each planned to be extended an additional 10 years through a life of type upgrade and will be replaced with Australia's plan to acquire nuclear-powered submarines under the AUKUS programme.[17]

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[12] Brendan Nicholson, "A "Son of Collins" Submarine May One Day Prowl the Oceans—Just Not under Australian Colours," ASPI Strategist, November 14, 2018, https://www.aspistrategist.org.au/a-son-of-collins-submarine-may-one-day-prowl-the-oceans-just-not-under-australian-colours/.

[13] Derek Woolner, *Getting in Early: Lessons of the Collins Submarine Program for Improved Oversight of Defence Procurement*, Research Paper No. 3, 2001–02 (Department of the Parliamentary Library, 2001), https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id:%22library/prspub/5VY46%22, 19.

[14] Submarine Institute of Australia, "The Collins-class," accessed September 8, 2026, https://www.submarineinstitute.com/submarines-in-australia/The-Collins-Class.html.

[15] Pat Conroy, "Australian Government Working with Industry to Assure Collins-class Submarine," Media Release, Defence Ministers, Australian Government, October 25, 2023, https://www.minister.defence.gov.au/media-releases/2023-10-25/australian-government-working-industry-assure-collins-class-submarine.

[16] Pat Conroy, "Australia Bolsters Submarine Lethality under $200 Million Deal," Defence Ministers, Australian Government, March 21, 2025, https://www.minister.defence.gov.au/media-releases/2025-03-21/australia-bolsters-submarine-lethality-under-200-million-deal.

[17] Alex Luck, "Australia Begins Life Extension Effort for Collins Submarines, Announces A$11 Billion Cost over Ten Years," *Naval News*, May 22, 2026, https://www.navalnews.com/naval-news/2026/05/australia-spends-big-on-lote-life-extension-for-collins-submarines/. See also, Australian Department of Defence, "Collins Class Submarine Program," accessed August 17, 2026, https://www.defence.gov.au/defence-activities/projects/collins-class-submarine-program.

Surface Combatants and Helicopters

Australia operates 10 surface combatants, three *Hobart*-class destroyers and seven *ANZAC*-class frigates equipped with tactical ASW capabilities. Both the *ANZAC*-class frigate and *Hobart*-class destroyers have effective hull mounted sonars and torpedo defence systems, but neither operate towed array systems. The lack of towed array systems in the RAN's surface fleet represents a major ASW capability gap.

Australia's surface combatants deploy with the MH-60R, one of the world's most effective ASW helicopters. Australia is in the process of increasing its fleet of MH-60R and is expected to operate 36 by the end of 2026.[18] Australia has been operating the MH-60R Helicopter since 2013.[19] Australia is expected to operate its fleet of 36 MH-60R until 2048 and will team well with the enhanced ASW capabilities of Australia's future frigates.[20] The MH-60R is a US designed ASW helicopter that has been in service with the United States since 2006.[21] While its roles are broader than ASW, its dipping SONAR and SONAR Buoy suite, alongside its ability to carry the Mark 54 lightweight torpedo make it particularly effective for this role.[22]

Maritime Patrol Aircraft

Australia operates an advanced fleet of 13 P-8A Poseidon MPA, which will increase to 14 by the end of 2026.[23] Australia has operated the P8-A since 2016.[24] Derived from the Boeing 737-800, the P-8A it is a multi-mission maritime patrol aircraft ASW, anti-surface warfare, and intelligence surveillance and reconnaissance (ISR) roles. It can carry more than 100 sonobuoys and Mark 54 lightweight torpedoes.[25] According to the Royal Australian Air Force "the internal fuel capacity of almost 34 tonnes allows the P-8A to conduct low-level anti-submarine warfare operations more than 2,000 kilometres from base."[26] The P8 is also capable of air-to-air refuelling to extend its range.[27]

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[18] Pat Conroy, "Albanese Government Secures Future of Seahawk Helicopter Fleet and Hundreds of Local Jobs," Defence Ministers, Australian Government, February 28, 2025, https://www.minister.defence.gov.au/media-releases/2025-02-28/albanese-government-secures-future-seahawk-helicopter-fleet-hundreds-local-jobs.
[19] Australian Department of Defence, "MH-60R Seahawk Romeo Weapon System," accessed September 8, 2026, https://www.defence.gov.au/defence-activities/projects/mh-60r-seahawk-romeo-weapon-system.
[20] Conroy, "Albanese Government Secures Future of Seahawk Helicopter Fleet and Hundreds of Local Jobs."
[21] Royal Australian Navy, "MH-60R-Seahawk," accessed September 8, 2026, https://www.navy.gov.au/capabilities/aircraft/mh-60r-seahawk.
[22] Royal Australian Navy, "MH-60R-Seahawk."
[23] Richard Marles, "Sustaining Australia's P-8A Poseidon Fleet for Long-Term Capability," Defence Ministers, Australian Government, May 16, 2025, https://www.minister.defence.gov.au/media-releases/2025-05-16/sustaining-australias-p-8a-poseidon-fleet-long-term-capability.
[24] Royal Australian Air Force, "P-8A Poseidon," accessed September 8, 2026, https://www.airforce.gov.au/aircraft/p-8a-poseidon.
[25] Royal Australian Air Force, "P-8A Poseidon."
[26] Royal Australian Air Force.
[27] Royal Australian Air Force.

Uncrewed Underwater Vehicles (UUV)

Australia appears to be leaning into UUV capabilities both unilaterally, and trilaterally as part of the Pillar II component of the AUKUS capability agreement. Australia entered this space early, working with Anduril Australia on the co-development of the Ghost Shark Extra Large Uncrewed Underwater Vehicle (XLUUV), with the first prototype delivered in 2024.[28] Since the initial prototype, the Australian Government has announced a $1.7 billion (AUD) package over five years to acquire a fleet of "dozens" of Ghost Shark XLUUVs to be built in Australia,[29] although the exact number to be produced is unknown.

The exact capabilities of the Ghost Shark XLUUV are not clear in the public domain, however, the Australian government has stated that it will have a range of roles, including ASW, presumably both surveillance and strike capabilities against submarines and UUVs.[30] The size of the Ghost Shark is undisclosed, but commentators estimate it is less than 12 metres long with an estimated range of over 3,200 km.[31]

The Ghost Shark is not the only UUV Australia has publicly announced, with the Australian-designed and built Speartooth Large UUV (LUUV) also entering the RAN's order of battle.[32] The 2026 Australian Integrated Investment Program describes the Speartooth's utility as follows:

> [C]apable of conducting shorter range intelligence, surveillance, reconnaissance, strike and logistics operations at sea. Due to its smaller size and lower unit cost, Speartooth is optimised for seabed warfare and agile undersea operations, reaching areas Ghost Shark cannot.[33]

Underwater capabilities are also a focus of Australia under the trilateral AUKUS pact.[34] The three countries recently announced that the second pillar of AUKUS is working on a signature project focused on developing a trilateral payload for UUVs.[35] The exact nature of the payload is unclear,

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[28] Australian Strategic Capabilities Accelerator, "Ghost Shark – Mission Zero," Australian Strategic Capabilities Accelerator," Australian Department of Defence, accessed September 8, 2026, https://www.asca.gov.au/activities/missions/ghost-shark-mission-zero.

[29] Richard Marles, "Equipping the Royal Australian Navy with next Generation Autonomous Undersea Vehicles," Defence Ministers, Australian Government, September 10, 2025, https://www.minister.defence.gov.au/media-releases/2025-09-10/equipping-royal-australian-navy-next-generation-autonomous-undersea-vehicles.

[30] Department of Defence, "Undersea Robots Set to Patrol and Protect," April 26, 2024, https://www.defence.gov.au/news-events/news/2024-04-26/undersea-robots-set-patrol-protect.

[31] Sam Goldsmith and ASPI Staff, "Sharks for Filling the Moat: What Anduril's Autonomous Submarines Can Do for Australia," ASPI Strategist, September 11, 2025, https://www.aspistrategist.org.au/sharks-for-filling-the-moat-what-andurils-autonomous-submarines-can-do-for-australia/.

[32] Australian Department of Defence, *2026 Integrated Investment Program* (Australian Department of Defence, 2026), https://www.defence.gov.au/about/strategic-planning/2026-national-defence-strategy-2026-integrated-investment-program, 29.

[33] Australian Department of Defence, *2026 Integrated Investment Program*.

[34] Australian Department of Defence, "AUKUS Advanced Capabilities," accessed September 8, 2026, https://www.defence.gov.au/defence-activities/programs-initiatives/aukus-advanced-capabilities.

[35] AUKUS Countries, "AUKUS Pillar II Signature Project Fact Sheet," Fact Sheet, May 30, 2026, https://www.defence.gov.au/defence-activities/programs-initiatives/aukus-advanced-capabilities.

however AUKUS Pillar II appears to be focusing on a range of roles for UUVs, including extending the reach of submarines. Under the AUKUS Pillar II banner, Australia recently announced a trial between a Royal Navy Astute submarine launching an Australian Speartooth UUV.[36]

The integration of UUVs into the Australia fleet appears to be a focus with Australia recently announced the winners of a maritime innovation challenge, awarding contracts to three companies to undertake work on UUV communications, command and control and navigation data.[37] Australia has recently established a new Maritime Autonomous Systems Unit (MASU).[38] Initially commanded by an Australian submariner, the aim of the unit is stated as acting "as the focal point for doctrine development, experimentation, employment, training, and test and evaluation of maritime uncrewed systems,"[39] which will support the integration of UUVs and uncrewed surface vessels (USVs).

Other Capabilities

It can be difficult to understand exactly what capabilities countries are investing in the underwater domain. Some information can be gleaned from announcements or strategic documents. In addition to the named capabilities above, it is clear Australia is also developing capabilities in the ASW ISR space, while seeking to improve its signature management of its existing capabilities. The recent Australian 2026 Integrated Investment Program (IIP) indicates investment in "acoustic underwater range systems and expanded undersea warfare facilities and infrastructure".[40]

Australia is increasingly exploring capabilities for undersea domain awareness. It has trialled passive thin line towed array systems from Australian built bluebottle USV.[41] And is operating ADV Guidance, a commercial vessel purchased in 2023 which Australia refers to as an undersea support vessel,[42] though the capabilities embarked in it are unclear.

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[36] Richard Marles, "AUKUS Enters New Era with the Arrival of UK Submarine into Western Australia," Defence Ministers, Australian Government, February 22, 2026, https://www.minister.defence.gov.au/media-releases/2026-02-22/aukus-enters-new-era-arrival-uk-submarine-into-western-australia.

[37] Defence Media, "$6.2 Million to Australian Companies in AUKUS Pillar II Innovation Challenge," Australian Department of Defence, July 10, 2026, https://www.defence.gov.au/news-events/releases/2026-07-10/62-million-australian-companies-aukus-pillar-ii-innovation-challenge.

[38] Dylan Thinee, "Navy Names Autonomous Systems Unit," Australian Department of Defence, April 14, 2026, https://www.defence.gov.au/news-events/news/2026-04-14/navy-names-autonomous-systems-unit.

[39] Thinee, "Navy Names Autonomous Systems Unit."

[40] Australian Department of Defence, *2026 Integrated Investment Program*, 31.

[41] Pat Conroy, "Bluebottle Uncrewed Surface Vessels; Conflict in the Middle East; Australia Providing Defensive Military Assistance; Board of Peace," Press Conference, March 11, 2026, https://www.minister.defence.gov.au/transcripts/2026-03-11/press-conference-canberra.

[42] Australian Department of Defence, "Undersea Support Vessel to Deliver Enhanced Capability," April 8, 2023, https://www.defence.gov.au/news-events/releases/2023-04-08/undersea-support-vessel-deliver-enhanced-capability.

Assessment

Australia views ASW as part of a wider subset of undersea warfare, of which it appears to be undertaking the most significant pivot towards in perhaps its history. Australia operates one of the most advanced fleets of ASW MPA and ASW helicopters in the region from the P-8A Poseidon to the MH-60R. It is difficult to assess in the public domain, but Australia is also potentially at the cutting edge of UUVs and is investing into the ability to develop and build these capabilities in Australia, working with AUKUS partners to enable them with a range of advanced payloads.

Australia's greatest ASW challenge is the age of its *Collins*-class submarines, and the plan to extend their life through an upgrade so they can continue operating until Australia's SSNs are delivered.[43] An extension of life may well have an impact on submarine operational availability, but it is clear Australia is seeking to mitigate some of this impact through investment in XLUUVs and LUUVs, supported by its network of partnerships and the establishment of Submarine Rotation Force West (SRF-W) a plan for US submarines and perhaps a UK submarine to rotate out of HMAS Stirling on Australia's west coast from 2027.[44] Australia's aging surface fleet and their limited ASW capability when it comes to a lack of towed array systems also poses a challenge, but this will be addressed in the next decade.

Australia's plan to acquire nuclear-powered submarines often dominates the ASW discussion for Australia, however, Australia's comparative advantage lies in its increasing depth in capabilities and its ability to integrate these, within the ADF and with its strong network of allies and partners.

ASW Capability Development in the 2030s

Australia's ASW capability has evolved substantially in the past decade and will continue to evolve into the 2030s. The most significant uplift in capabilities will be its acquisition of nuclear-powered submarines and the expansion and upgrade of its surface combatant fleet with greater ASW capability. Efforts in the use of artificial intelligence to enhance detection in the ASW space under AUKUS Pillar II will also likely pay dividends.

Future Surface Combatants

Australia's surface combatant ASW capability will grow substantially in the 2030s, primarily with the introduction of six *Hunter*-class frigates commencing from the early 2030s.[45] The *Hunter*-class is a multirole frigate based on the design of the Royal Navy Type 26 frigate.[46] The Royal Navy has long been recognised as a leader in ASW frigates from their noise quietening design, to their early

[43] Australian Department of Defence, "Collins Class Submarine Program". See also, Luck, "Australia Begins Life Extension Effort for Collins Submarines, Announces A$11 Billion Cost over Ten Years."
[44] Richard Marles, "AUKUS Partners Take next Steps towards Submarine Rotational Force-West," Defence Ministers, June 12, 2026, https://www.minister.defence.gov.au/media-releases/2026-06-12/aukus-partners-take-next-steps-towards-submarine-rotational-force-west.
[45] Royal Australian Navy, "Hunter Class Frigate," accessed September 8, 2026, https://www.navy.gov.au/capabilities/ships-boats-and-submarines/hunter-class-frigate.
[46] Royal Australian Navy, "Hunter Class Frigate."

integration of Low Frequency Active SONAR (LFAS) System in the Thales-built Type 2087 SONAR.[47] While Australia's *Hunter*-class frigates differ in design from the Type 26, they will incorporate a hull-mounted SONAR, the LFAS Type 2087, lightweight torpedo capability and the MH-60R.[48] This will be the first Australian frigate intentionally built from the outset to be noise-quietened. The introduction of the *Hunter*-class frigate will be the most capable ASW Frigate Australia has operated and will address the current capability gap the Royal Australian Navy has with the lack of an operational level towed array system.

Australia's ASW surface combatant capability will also get a boost with the introduction of 11 upgraded Japanese *Mogami*-class multirole frigate into the Royal Australian Navy commencing from the early 2030s.[49] The combination of the introduction of the *Hunter*-class frigate and the upgraded-*Mogami* will boost Australia's surface combatant fleet from its current size of 10 to a planned fleet of 20 surface combatants in the 2040s.[50]

The exact ASW capabilities of the upgraded-*Mogami*-class frigate Australia will acquire are unclear, however, Australia has noted that it will "operate a towed array sonar and lightweight torpedoes for Undersea Warfare (USW)."[51]

Both the *Hunter*-class frigate and the upgraded *Mogami* frigate will be built with a mission bay from which to operate uncrewed capabilities,[52] though the *Hunter*-class frigate's mission bay will be substantially bigger than that of the upgraded-*Mogami*.

The Australian 2026 IIP also states that Australia is investing in the large optionally crewed surface vessels.[53] Though the IIP states that these will primarily be based on enhancing Australia's long-range strike capability and structured around the inclusion of a Vertical Launching System (VLS),[54] the design is unclear and they may also have an ASW role.

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[47] Thales, "Royal Navy's Latest Warships to Be Equipped with Thales Anti-Submarine Warfare Capability," July 12, 2017, https://www.thalesgroup.com/en/news-centre/press-releases/royal-navys-latest-warships-be-equipped-thales-anti-submarine-warfare.

[48] Royal Australian Navy, "Hunter Class Frigate."

[49] Royal Australian Navy, "General Purpose Frigate," accessed September 8, 2026, https://www.navy.gov.au/capabilities/ships-boats-and-submarines/general-purpose-frigate.

[50] Richard Marles, "Navy's Enhanced Lethality Surface Combatant Fleet," Defence Ministers, Australian Government, February 20, 2024, https://www.minister.defence.gov.au/media-releases/2024-02-20/navys-enhanced-lethality-surface-combatant-fleet.

[51] Royal Australian Navy, "General Purpose Frigate."

[52] Royal Australian Navy, "Hunter Class Frigate". See also, Paul Pelczar, "Mogami and the Road to the Deep North," Australian Naval Institute, September 13, 2025, https://navalinstitute.com.au/mogami-and-the-road-to-the-deep-north/.

[53] Australian Department of Defence, *2026 Integrated Investment Program*, 34.

[54] Australian Department of Defence, 34.

AUKUS Pillar II Capabilities – Artificial Intelligence (AI)

The biggest challenge in the theatre ASW problem set is detection of a submarine once it has sailed. Even if a submarine is detected, depending on the sensor and the capability of the operator it can be difficult to realise that a submarine has been detected, whether it is a faint echo from an active sonar or the detection of a periscope on a RADAR screen. AI will enhance the ability of these detections to be confirmed.

AI has been listed as one of the AUKUS Pillar II priority areas by the three participant countries.[55] While AUKUS Pillar II has been openly criticised by some for its lack of visible progress in the public domain,[56] one area of publicised progress has been in the use of AI for ASW. In 2023 it was announced that the AUKUS partners had undertaken a trial using "advanced AI algorithms on multiple systems" including the P-8A Poseidon maritime patrol aircraft all three nations operate to process data from each nation's sonobuoys.[57]

Other AUKUS Pillar II Capabilities

Continued collaboration on other aspects of AUKUS Pillar II, including UUV launch and recovery from submarines,[58] and quantum positioning, navigation, and timing will also enhance Australia's ASW capability into the 2030s.[59]

Future Capability Assessment

Australia's ASW capability in the 2030s will be directly enhanced by the introduction of nuclear-powered submarines, towed-array capable surface combatants and the technological advances made under AUKUS Pillar-II. This will build on the significant ADF advances over the last decade and provide Australia at least on paper with a well-rounded theatre ASW Capability. One remaining gap will be limited strategic towed array systems. Australia planned to purchase a SURTASS-E capability in 2023 from the United States,[60] however, on publicly available information this appears to have been cancelled due to budgetary constraints.[61] The lack of a

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[55] Australian Department of Defence, "AUKUS Advanced Capabilities."
[56] Peter Dean and Alice Nason, "AUKUS Pillar II Is Failing in Its Mission," *War on the Rocks*, June 2, 2025, https://warontherocks.com/aukus-pillar-ii-is-failing-in-its-mission-it-needs-its-own-optimal-pathway/.
[57] US Department of Defense, "AUKUS Defense Ministers Meeting Joint Statement," December 1, 2023, https://www.defense.gov/News/Releases/Release/Article/3604511/aukus-defense-ministers-meeting-joint-statement/.
[58] Marles, "AUKUS Enters New Era with the Arrival of UK Submarine into Western Australia." See also, US Department of Defense, "AUKUS Defense Ministers Meeting Joint Statement."
[59] US Department of Defense.
[60] Ben Felton, "Australia Cleared for $207 Million Modular SURTASS Buy," *Naval News*, May 10, 2023, https://www.navalnews.com/naval-news/2023/05/australia-cleared-for-207-million-modular-surtass-buy/.
[61] Robert Dougherty, "Not so Certain, SURTASS: Defence Reviews Naval Sonar Purchase among Undersea Options," Defence Connect, April 29, 2024, https://www.defenceconnect.com.au/naval/13990-not-so-certain-defence-reviewing-surtass-e-purchase-among-undersea-options.

strategic towed array capability is a significant gap for a country with the maritime domain and dependencies the size of Australia's. Australia would benefit from several strategic towed arrays that can be deployed on commercial vessels. Though, Australia may have access to the benefit that comes from the US SURTASS system under the five eyes arrangement.

Perhaps the most significant ASW challenge for Australia in the 2030s will be the generation of the workforce with specific ASW skillsets to operate the range of capabilities and fuse the ASW picture. The RAN has not historically focused on this beyond its submariner force and moved away from developing deep specialist ASW officers in its surface fleet. This is a capability the RAN will need to reinvigorate to make the most of its future capabilities.

The second element to an effective ASW workforce is culture, ASW is as much mindset based as it is capability based. Australia will also need to ensure it develops this mindset in its future workforce.

Responding to China's growing ASW Capability

Australia's distance from mainland China has historically made it more challenging for China's conventional submarines to operate near Australia, though they likely have. Australia's dependence on trade, as the world's fifth largest user of shipping also makes its lengthy sea lines of communication vulnerable to submarine operations.[62]

During the Second World War, Australian coastal trade was threatened by both German and Japanese submarines, in the event of a crisis or conflict Australia should expect to experience the same. China's growing capability of nuclear-powered submarines in both size and strength give China an enhanced capability to operate their submarines in the vicinity of Australia, or in a crisis or conflict hold at risk Australia's sea lines of communication.

Australia's geography helps narrow its ASW problem set. People's Liberation Army Navy (PLAN) submarines deploying from bases in China and the South China Sea must pass through a limited number of exits from the enclosed seas of East and Southeast Asia before operating near Australia. Several of these routes pass through or alongside the Indonesian and Philippine archipelagos, where depth, navigational constraints and maritime traffic restrict the passages most suitable for covert submerged transit. These geographical chokepoints provide opportunities to focus Australia's ASW intelligence, surveillance and reconnaissance effort, although Chinese submarines could also approach eastern Australia through the wider Pacific.

China has increasingly indicated that it intends to operate in the vicinity of Australia, including sending a task group consisting of Type 055 cruiser (*Zunyi*), a Type 054A frigate (*Hengyang*), and a Type 903 replenishment ship to circumnavigate Australia for the first time in February–March

[62] Australian Government, *Guide to Australian Maritime Security* (Australian Government, 2020).

2025.[63] A second Chinese naval task group operated within five nautical miles of Australia's exclusive economic zone later that year.[64] This demonstrates a clear change in operating pattern for the PLAN, consistent with their blue water navy strategy.

While the task group that circumnavigated Australia in February–March 2025 was rumoured to be accompanied by a PLAN submarine, there is no indication publicly of small Chinese naval task groups deploying in company with submarines, a difficult coordination task for the most advanced navies. However, China's increased interest in the waters around Australia will almost certainly translate into increased submarine deployments into the region, if it has not already. Moreover, China's preparation for these submarine operations is clear with increased hydrographic surveying operations across the Indian Ocean and the Pacific, particularly to the north of Papua New Guinea.[65]

Conclusion

While submarines often dominate Australian and overseas headlines, Australia's current and future ASW capability is much broader than its nuclear-powered submarine ambition. Over the last decade Australia has been gradually enhancing its ASW capability through upgrading its maritime patrol aircraft and maritime helicopters and increasing investment in ISR and uncrewed capabilities. Though its ageing submarine fleet is a vulnerability, Australia is seeking to mitigate this potential gap through both UUVs and alliance relationships, such as SRF-W.

Australia's ASW capabilities into the 2030s will continue to grow with the enhancement of its surface combatant ASW capability and the introduction of nuclear-powered submarines. Prompted by China's growing naval capability and demonstrated intent to project power into the Pacific and Indian Oceans, Australia has increasingly adopted a theatre approach to ASW. Combined with strong alliances, partnerships and enhanced capability, this positions Australia well to meet the challenge. Australia's biggest challenge will be its ability to integrate a range of new capabilities, sensors and partnerships while preparing its workforce to think differently about ASW.

[63] Jennifer Parker, "China's Expedition Shows Australia Must Become a Naval Power," *Australian Financial Review*, February 23, 2025, https://www.afr.com/policy/foreign-affairs/china-s-expedition-shows-australia-must-become-a-naval-power-20250222-p5le9k.
[64] Stephen Dziedzic and Olivia Caisley, "Chinese Flotilla Sailed to Edge of Australia's Waters, ADF Chief Reveals at Senate Estimates," *ABC News*, February 11, 2026, https://www.abc.net.au/news/2026-02-11/chinese-flotilla-edge-australian-exclusive-economic-zone/106333020.
[65] Pete McKenzie, "China Is Mapping the Ocean Floor as It Prepares for Submarine Warfare with the US," *Reuters*, March 24, 2026, https://www.reuters.com/investigations/china-is-mapping-ocean-floor-it-prepares-submarine-warfare-with-us-2026-03-24/.