

Friends of the Earth Australia

August 16, 2021

Re: A People's Inquiry - Exploring the case for an Independent and Peaceful Australia



**Friends of
the Earth**

*Compiled for Friends of the Earth Australia Defence of Earth Project
by Robin Taubenfeld with contributions from Phil Evans, Margaret Pestorius, Dr Kim Stewart*

Friends of the Earth is the world's largest grassroots environmental network, uniting 73 national member groups and some 5000 local activist groups on every continent. With over 2 million members and supporters around the world, we campaign on today's most urgent environmental and social issues. We challenge the current model of economic and corporate globalisation, and promote solutions that will help to create environmentally sustainable and socially just societies.

Our vision is of a world where everyone's needs are met in a way which safeguards the future of the environment. We campaign for a world where environmental protection, social justice and economic welfare for all people, go hand in hand. Through our local, national and international networks, we work with the community to communicate, raise awareness, put forward alternatives and take action.

The alternative we seek to implement is a sustainable society. This involves a reliance on the use of renewable resources which are equitably distributed. It involves the recognition that there is an inextricable link between people and the environment. FoE recognises that organised resistance and action are necessary catalysts for environmental, economic and social change. Such action is essential if we are to achieve a sustainable society based on the equitable distribution of resources and power and recognition of the rights of all people.

FoE believes in working for a sustainable and empowering future. To this end, many FoE groups are working now to create the type of world we want: one that will be based on healthy communities and healthy ecosystems.

We believe that militarism is not in Australia's national interest, and that military exercises and increasing US military presence in Australia contributes to regional insecurity and threatens our Asian neighbours. We also believe that any kind of military activity in the Great Barrier Reef Marine Park and other environmentally sensitive areas should be disallowed: it is not compatible with sustainability, social justice or environmental protection.

The regions in which we work and live are already affected by climate change to the extent that climate mitigation and migration are a daily life reality – with sea level rise forcing some people off their ancestral lands while others have already been displaced, disfigured or destroyed by nuclear testing and ongoing militarization of their homelands and seas. Sovereignty of those lands has never been ceded. Australia shares the legacy of colonisation, nuclearisation and militarisation with her neighbours in the Pacific and the USA.

Militarism and war are extensions of a patriarchal system that is both damaging to people and planet, and thus perpetuates mutually reinforcing and interlinked oppressions of colonialism,

sexism, cis-heteronormativity, ableism, capitalism, and racism. As it does this, it damages the environment through contamination with chemicals and radiation, clearing land and destroying habitat for bases, with training and for war operations, and contributes disproportionately to climate change.

In 2018, Friends of the Earth Australia instituted a national project called 'Defence of Earth' concerned with dismantling this aspect of patriarchy in order to progress system change based on gender, social, and environmental justice.

A key understanding of our approach is that war and militarism are anathema to the environment. War is inherently ecologically destructive, socially devastating and fundamentally unjustifiable.

Attempts to "green" the army belie that fact that modern militaries, the US military in particular, are heavily fossil fuel dependent and are drivers of extractivism; the US military, for example, is the world's largest consumer of petroleum. Access to fuel continues to be a driving force behind military activity today –as a necessary commodity to support military activity and as the object of conflict in its own right.

US military activity in Australian territory is simply a re-occupation of unceded First Peoples' lands and waters perpetuating their ongoing violent colonisation. Despite Indigenous Land Use Agreements (ILUAs), Native Title agreements or alongside them, Australia's First People have limited access to their militarily occupied lands/waters; access is controlled by the military. While some have argued that the military are better stewards of space than previous colonial occupiers, such as graziers, military oversight of land/waters in no way guarantees their protection or prioritisation – and does not acknowledge the sovereignty of the original occupants – Australia's first people.

Australia's commitment to supporting the US nuclear umbrella, through military collaboration, uranium exports, and refusal to participate in the nuclear weapons ban treaty process, coupled with its refusal to take decisive action on climate change, emphasise the Australian government's determination to pursue the US driven neo-liberal agenda which enables US transnationals to maintain financial dominance and keeps militarism, in lieu of negotiation or cooperation, as the modus operandi.

The US Alliance provides the framework that gives direct access for 'US interests' to elements of a particular government and enables their interests to dominate - which they do.

Direct Impacts of the US military on the environment in Australia and further afield include:

1. Direct Damage from military poisons.
2. Direct damage to urban, agricultural and wild ecosystems due to destructive warfare and warfare practice.
3. Extreme carbon output for no positive reason, including, maintenance of military bases, maintenance of military machinery, war and war games.
4. Dangerous Nuclear outputs: Uranium, dangerous radioactive bi-products from mining, munitions, enrichment. Contamination of waterways, seas, land
5. Dangerous nuclear threats, from nuclear weapons use and weapons testing and development
6. Direct damage from preparing the environment for militarised colonialism, for example deforestation
 - In Afghanistan, a third of the wooded area was cleared in the 90s.

- Current deforestation of South East Asia is a major issue for our region. It is resulting in internal refugee movements inside Indonesia and Malaysia for example.

US militarism – a toxic legacy

May 15, 2017

“Last week, mainstream media outlets [gave minimal attention](#) to the news that the U.S. Naval station in Virginia Beach had [spilled](#) an estimated 94,000 gallons of jet fuel into a nearby waterway, less than a mile from the Atlantic Ocean.

While the incident was by no means as catastrophic as [some other pipeline spills](#), it underscores an important yet little-known fact—that the U.S. Department of Defense is both the nation's and the world's, largest polluter.

Producing more hazardous waste than the five largest U.S. chemical companies combined, the U.S. Department of Defense has left its toxic legacy throughout the world in the form of depleted uranium, oil, jet fuel, [pesticides](#), defoliants like Agent Orange and lead, among others.

In 2014, the former head of the Pentagon's environmental program [told Newsweek](#) that her office has to contend with 39,000 contaminated areas spread across 19 million acres just in the U.S. alone.

U.S. military bases, both domestic and foreign, consistently rank among some of the most polluted places in the world, as perchlorate and other components of jet and rocket fuel contaminate sources of [drinking water](#), aquifers and soil. Hundreds of military bases can be found on the U.S. Environmental Protection Agency's (EPA) [list of Superfund sites](#), which qualify for clean-up grants from the government.

[Almost 900](#) of the nearly 1,200 Superfund sites in the U.S. are abandoned military facilities or sites that otherwise support military needs, not counting the military bases themselves.

"Almost every military site in this country is seriously contaminated," John D. Dingell, a retired Michigan congressman and war veteran, [told Newsweek](#) in 2014. Camp Lejeune in Jacksonville, North Carolina is one such base. Lejeune's contamination became widespread and even deadly after its groundwater was polluted with a sizable amount of carcinogens from 1953 to 1987.

However, it was [not until this February](#) that the government allowed those exposed to chemicals at Lejeune to make official compensation claims. Numerous bases abroad have also contaminated local drinking water supplies, most famously [the Kadena Air Force Base in Okinawa](#).”¹

In an era of never-ending war, war and conflict are a part of our daily life, military training areas make up approximately 6% of the planet and Australian Defence claims 300 million hectares as its

¹ Webb, Whitney, U.S. Military Is World's Biggest Polluter originally [MintPress News](#), May 15, 2017
<https://www.ecowatch.com/military-largest-polluter-2408760609.html>

“estate.”² With their localised ecological, social and political impacts, these areas set the stage for military disruption around the world - on land, in our air, seas, waterways, cities, and in even space. While normalised as, built for, or launched in the name of defence, military training and war have long-term, far-reaching impacts on all beings, most of whom have no say in the humankind’s political machinations.

In their 2019 paper “Hidden carbon costs of the “everywhere war”: Logistics, geopolitical ecology, and the carbon boot-print of the US military” Belcher, Bigger, Neimark, and Kennelly examine US military fuel purchases, providing insight to military carbon emissions as well as the link between military strategy and fuel use, and the seemingly never-ending need for fuel and thus fuel-centric social arrangements. Their work focuses on the fuel supply chain.

To give a picture of the (Defense Logistics Agency - Energy) DLA-E's daily energy operations, the agency handles 14 million gallons of fuel worth \$53 million per day (DLA, 2015). Operating from a nondescript building in Fort Belvoir, Virginia, the DLA-E has an extensive chain of sites for distribution and delivery, with 258 terminal operations worldwide (DLA, 2017). Moreover, the DLA-E has delivery capacity to 2,023 military posts, camps, and stations in 38 countries; 230 bunker contract locations in 51 countries; and 506 into-plane contract locations in 97 countries...”

Their calculations are in line with others that identify that the “US military is the 47th largest emitter of GHG in the world, if only taking into account the emission from fuel usage. This calculation excludes emissions from the electricity and food the military consumes, land use changes from military operations, or any other source of emissions.”

The authors also note that “Critically, these emissions are not counted as a part of aggregate US emissions following an exemption granted in negotiating the Kyoto Protocol (which the Bush Administration refused to sign in 2001). This gap was to be rectified by the Paris Accord, from which the USA, famously, has withdrawn.”³

Military activity is not only heavily fuel dependent and emissions producing, but has at its core a disregard for life and nature which sees it destructive both at home and in its theatres of conflict. Defoliating Vietnam, placing millions of landmines in Cambodia, chemical warfare, even everyday explosives leave toxic legacies.

The US military “produces 750,000 tons of toxic waste annually, establishing the United States military as the “largest single polluter of any agency or organization in the world (Sanders, 2009, p.50).

As mentioned above, almost 900 of the EPA’s approximate 1300 superfund sites are active or inactive military bases or weapons manufacturing facilities; and, as of 2010, the DOD’s current cleanup program includes roughly 31,000 contaminated sites on more than 4,600 active or former defense properties in the United States and other countries (Woodward, 2004, p. 13; Earth Talk, 2010). ”⁴

² Wilkie, Ben, Australian Environments in War and Peace, presented at Deakin University, Warrnambool, 2016, <https://environmentandwar.wordpress.com/2016/07/08/australian-environments-in-war-and-peace/>

³ Belcher, Oliver & Bigger, Patrick & Neimark, Benjamin & Kennelly, Cara. (2019). Hidden carbon costs of the “everywhere war”: Logistics, geopolitical ecology, and the carbon boot-print of the US military. Transactions of the Institute of British Geographers. 10.1111/tran.12319, p 8. First published <https://doi.org/10.1111/tran.12319> https://www.researchgate.net/publication/333873233_Hidden_carbon_costs_of_the_everywhere_war_Logistics_geopolitical_ecology_and_the_carbon_boot-print_of_the_US_military

⁴ Walsh, Bryan T, *Forgetting Histories of Toxic Military Violence: The Case of the Kelly Air Force Base, in A Communication Perspective on the Military, interactions, messages and discourses, ES Parcell, ES & LM Webb, (Eds), p 392*

These issues – and toxic military sites – nuclear test zones, uranium tailings, undisclosed DU weapons use sites, and PFAS contaminated regions dot Australia as well. And Australia has been, and continues to be, involved in theatres of war/conflict around the world. According to the Nautilus Institute, between 2001- 2010 Australia was active in⁵:

Location/Region	Defence facility
British Indian Ocean Territory/Chagos Archipelago	Diego Garcia
East Timor	Dili Heliport FOB Baucau FOB Chauvel FOB Ermera FOB Gleno FOB Maliana Camp Phoenix Dili Heliport FOB Baucau FOB Chauvel FOB Ermera FOB Gleno FOB Maliana Defence Cooperation Compound Metinaro Training Base
British Indian Ocean Territory/Chagos Archipelago	Diego Garcia
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⁵ <https://nautilus.org/publications/books/australian-forces-abroad/australian-bases-abroad/>

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Middle East and Central Asia Afghanistan	Bagram Airbase Camp Rhino Camp Russell Fire Base Tycz* FOB Anaconda* FOB Budwan (U.K.) (formerly FOB Armadill) FOB Coyote (Dutch) FOB Chora (ANA) FOB Cobra (aka FOB Tinsley)* FOB Davis (aka FOB Ripley) FOB Kajaki (U.K.) FOB Khyber-Lyddiard FOB Locke (ANA) FOB Lyddiard (ANA) FOB Martello* FOB Mashal FOB Mirwais FOB Phoenix FOB Poentjak* FOB Qudus FOB Ripley (aka FOB Davis) FOB Worsley ISAF Headquarters Kandahar Air Field Kamp Holland Kamp Hadrian* Multinational Base Tarin Kowt (MBTK) Patrol Base Atiq Patrol Base Buman Tarin Kowt
Bahrain	Muharraq Air Base
Iraq	Ali Base (Tallil Base), An Nasiriyah

	al-Asad Air Base, Anbar Australian embassy, Baghdad Baghdad Diplomatic Security Centre Balad Military Hospital Camp Smitty, Samawah, Al-Muthanna Camp Taji Camp Terendak, Tallil Camp Ur, Tallil Camp Victory Cobra Base Forward Operating Base Union III, International Zone Baghdad Joint Base Balad
Kuwait	Camp Doha Billabong Flats
Kyrgystan	Manas Air Base
Qatar	Al Udeid Air Base
United Arab Emirates	Al Minhad Air Base, Dubai
Solomon Islands	Camp RAMSI Henderson Field (Honiara International Airport) Rural police and military posts

The Iraq war was responsible for 141 million metric tons of carbon releases in its first four years, according to [an Oil Change International report](#). On an annual basis, this was more than the emissions from 139 countries in this period, or about the same as putting an extra 25 million cars onto U.S. roads for a year.⁶

The human cost of these emissions alone is enormous. The environmental and social cost of the warfare which accounted for these emissions is exponential. Death, disease, loss of habitat, clean water, air and infrastructure – and ironically/unfortunately, the perpetuation of systems/structures reliant on war or war-makers. Australia’s role as a key ally and a host to key US military infrastructure makes Australia complicit in this cycle of destruction.

US military training in Australia

Every two years, Australia hosts some of the world’s largest military operations, Exercise Talisman Sabre, joint US-AUS combined force training which sees thousands of personnel engaging in land, sea and air manoeuvres. While the spelling of the name alternates between Sabre and Saber, depending on which country is designated the “lead” nation, the exercises are overwhelmingly American – normally approximately 2/3 of the personnel are from the US.

With support locations in cities around the country, the majority of the action takes place in Queensland, on and around the Great Barrier Reef. Talisman Sabre 2019, involved 34,000 personnel. Significantly down-sized due to the Covid pandemic, Talisman Sabre was halved to 17,000 US, Australian and allied troops.

Key components of Talisman Sabre take place at Shoalwater Bay, north of Rockhampton, within the Great Barrier Reef Marine Park.

⁶ <https://www.theatlantic.com/science/archive/2015/12/paris-climate-deal-military-carbon-emissions-exemption/420399/>

The wetlands at Shoalwater Bay are Ramsar listed wetlands significant to migratory birds. The sea grass beds at Shoalwater and other Talisman Sabre locations are critical to dugong. Only recently identified as a unique species, the Snub-Fin Dolphin has been found in these waters. Shoalwater Bay provides habitat for:

- “Thirty-six water bird species including eleven species of migratory shorebirds, particularly in Port Clinton, southern Shoalwater Bay and Island Head Creek.
- The largest Dugong population in the southern Great Barrier Reef since 1987 with a Dugong Protection Area covering the SWBTA waters;
- Important feeding habitat for Green Turtles,
- One hundred and one listed marine species; and
- Large numbers of whales and other cetaceans, migratory waders and shorebirds.

A previous survey concluded that SWBTA provides critical habitat for migratory shorebirds and supports more than 20,000 water birds...”⁷ Shoalwater Bay is, and has been, home to many. And it is contested space. Defence determines who can access to the region and when, denying Darumbal people the liberty to engage freely in cultural practices, let alone live on their land.

On June 22, 2021, the United Nations World Heritage Committee released a draft report on the state of the Great Barrier Reef announcing that it would recommend that the Great Barrier Reef be listed as “World Heritage in Danger” at its upcoming meeting in China. The Committee identified the need for greater commitment to “countering the effects of climate change, but also towards accelerating water quality improvement and land management measures.”⁸

After Australian governmental outcry regarding the report, the Committee has now given Australia two years to make and demonstrate progress on Reef health.

Talisman Sabre involves the use of US nuclear-powered and nuclear-weapons capable vessels, the practising of urban warfare, live firing, the use of high power sonar, amphibious assaults, parachuting and land force manoeuvres.

These activities are incompatible with protection of the Reef. We have grave concerns about the military’s widely promoted commitment to protection of the Reef, and question its capacity to assess, manage and accurately report upon the environmental impacts of its actions.

In a first since Talisman Sabre’s inception as a biennial exercise in 2005, in 2021 the ADF did not engage in a Public Environment Report consultation process and did not publicly release environmental assessments for the areas in which Talisman Sabre took place.

It did, however, produce an environmental awareness information video for visiting troops which promoted the military use of the Great Barrier Reef and simplistically reminds troops to consider the Reef and not to litter. <https://www1.defence.gov.au/sites/default/files/2021-07/V20212000%20Talisman%20Sabre%203%20low%20res%20%281%29.mp4?fbclid=IwAR3X0nAjqz5QA1jBe4tMML1qxdhGR1efEw3MHMRj5Cgg7gfHHDJIsEneqVE>

This approach is a far cry from the active environmental management required to protect the vulnerable reef and incongruous with the dramatic messaging around live firing exercises in Shoalwater Bay in early June 2021, for Exercise Diamond Walk. <https://www.youtube.com/watch?v=IJfb9xRlvel>

⁷ Public Environment Report, *Talisman Sabre 2017 21-Feb AECOM PER, prepared for Defence by AECOM Appendix O O-4* <http://www.defence.gov.au/Exercises/TS17/Docs/TS17-PER-Part-1-Body.pdf>

⁸ <https://news.un.org/en/story/2021/06/1094512>

2021 was a year for many notable firsts for Talisman Sabre. Though smaller in size, the exercise targeted a greater number of defence and non-defence areas and used more lethal fire power than previous exercises. If this is the down-sized version of Talisman Sabre, we are alarmed at what for post-pandemic iterations of the exercise might bring.

Other firsts include:

- South Korea participating in Talisman Sabre for the first time, sending a destroyer. Japan, U.K., Canada, New Zealand also participated, with France, Germany, India and Indonesia present as observers.
- U.S. forward deployed Expeditionary Strike Group. America, part of the 7th Fleet, joining the exercise.
- The first use of U.S. Patriot missiles in Talisman Sabre – reportedly the first use in the Southern Hemisphere.⁹
- First involvement of U.S.F-35B fighter jets and first to integrate non-US aircraft into HIMARS system.¹⁰
- First to use regional township of Hughenden and to activate RAAF Base RAAF Base Scherger in Queensland's far north, Cape York near Weipa.

As the ADF did not produce a Public Environment Report (PER) for Talisman Sabre 2021, we have attached our full response to its PER for Talisman Sabre 2019 here as Appendix 3.

The objective of Talisman Sabre is to increase force inter-operability with the US, a military whose environmental footprint cannot be ignored. The US military is ranked among the world's worst polluters and is the world's greatest organisational consumer of oil. It has a legacy of leaving bases contaminated and radioactive.

Along with the expected damage and costs of live military, accidents do happen. In January 2006, a U.S. nuclear powered aircraft carrier, the USS Ronald Reagan, was found to have left a trail of rubbish in Moreton Bay during a short visit to the port of Brisbane. Soon after leaving the port, a pilot was forced to evacuate his plane during a routine exercise. The plane was never recovered and is still submerged off the southeast Queensland coast.

In 2013, the US jettisoned four bombs on the Great Barrier Reef when they had difficulty dropping them on their intended target, Townshend Island. From an ecological perspective, Townshend Island, is part of the Great Barrier Reef; it has merely been excised as a bombing zone for military purposes.

We have concerns about arbitrary delineation of spaces, such as Townshend Island, as expendable. We question the priorities entailed in promotion of military endeavours as economically beneficial without extensive cost benefit analysis of environmental protection, or management, promotion of sustainable industries or the valuing of "wilderness".

Talisman Sabre has spread its reach to both military and non-military sites in Queensland and impacts on both military and civilian infrastructure and non-military sites throughout Australia with little, if any, scrutiny, assessment or reporting. We have unanswered questions about the what activities have taken place, what equipment was used, what governance was applied and how impacts were or could be assessed.

⁹ <https://news.defence.gov.au/capability/patriot-missile-firing-will-be-first>

¹⁰ <https://news.defence.gov.au/capability/himars-first-australian-and-us-air-force>

We note, for example, that late in Talisman Sabre 2021, US paratroopers from Alaska dropped in on Central Queensland, near Charters Towers. With statements suggesting they came at short notice and that US troops were on board an Aussie plane, there is no evidence that those troops had undergone Covid quarantine required of overseas visitors or military personnel. Perhaps they did. If so, something in the spun media narrative is astray. It is also unclear what sort of environmental management took place – were plane emissions counted; were animals cleared away from the drop zone?

What is clear from this, and most of the manoeuvres we see in these exercises, is that measures purportedly undertaken in training, such as environmental awareness or Covid safety, are PR exercises irrelevant to real theatres of war, and that these exercises train for offensive warfare, not self-defence. The ramping up of fire power, the spreading of activity to Queensland's northernmost region and the increased number of participating nations sends a clear message of U.S. allied strength to China.

Adding fuel to fire

Talisman Sabre rotates with the RIMPAC exercises based out of Hawaii as the two major US-led combined forces training exercises in the Pacific. These piggy-back on numerous trainings and exercises supported by a huge network of bases and other support structures. In Australia, this includes access to Australian defence facilities, satellite stations, civilian ports and airports, permitted bombing fly-overs over the Northern Territory from Guahan (Guam), "Sea swap" capacity in Western Australia – allowing forward deployed US troop changeovers to take place on the Australian west coast, numerous smaller exercises such as Exercise Hamel, joint facilities, 2,500 US troops stationed in Darwin (NT) and the housing of a critical US satellite station, Pine Gap, in central Australia near Alice Springs (NT).

There are approximately 15,000 nuclear weapons on the planet today. The largest, most advanced arsenal lies in the hands of the US military. US military vessels entering Australian territory and traversing the Pacific and surrounds may be carrying nuclear weapons. It is the policy to neither confirm nor deny – but it is clear that these arms are on forward deployed vessels. By actively supporting US military action overseas, housing US military establishments in Australia and training for "interoperability" with US forces, Australia is engaging in preparations for nuclear warfare and fuelling an ongoing nuclear arms race.

In 2013, Friends of the Earth produced the report: US Bases in Australia: The Social and Environmental Risks to look at these issues in more depth. An introductory update was added in 2019. This report is attached here as Appendix 1 and available here: <https://peaceconvergence.files.wordpress.com/2021/08/2019-master-for-printing-us-bases-in-australia-word-doc-edit.pdf>

At this time of global health and climate crises, there is no justification for ongoing investment in war or increased military activity. We call for the Pacific to be honoured for its name; rather than as the stage for sabre rattling, it should be a region of peace.

On July 24, at the height of Talisman Sabre, representatives from 8 Pacific nations including Australia, New Zealand, Guahan (Guam), Hawaii (USA), Japan, Rep of Korea, West Papua and the Philippines called for an end to Talisman Sabre – and all exercises in the Pacific. Their statements of concern can be heard here: <https://youtu.be/kYxFd0ZIBZo>

Friends of the Earth supports these statements and the self-determination of the communities involved. We acknowledge the numerous others whose lives, lands, water and air have been impacted by US led militarism.

"Between 1946 and 1958, the U.S. tested 66 nuclear weapons near Bikini atoll. Populations living nearby in the Marshall Islands were exposed to measurable levels of radioactive fallout from these tests.

In addition, the U.S., which has conducted more nuclear weapons tests than all other nations combined, is also responsible for the massive amount of radiation that continues to contaminate many islands in the Pacific Ocean. [The Marshall Islands](#), where the U.S. dropped more than sixty nuclear weapons between 1946 and 1958, are a particularly notable example. Inhabitants of the Marshall Islands and nearby Guam continue to experience [an exceedingly high rate of cancer](#).

The American Southwest was also the site of numerous nuclear weapons tests that contaminated large swaths of land. Navajo Indian reservations have been polluted by [long-abandoned uranium mines](#) where nuclear material was obtained by U.S. military contractors.

One of the most recent testaments to the U.S. military's horrendous environmental record is Iraq. U.S. military action there has resulted in the [desertification of 90 percent of Iraqi territory](#), crippling the country's agricultural industry and forcing it to import more than 80 percent of its food. The U.S.' [use of depleted uranium](#) in Iraq during the Gulf War also caused a massive environmental burden for Iraqis. In addition, the U.S. military's policy of using [open-air burn pits](#) to dispose of waste from the 2003 invasion has caused a surge in cancer among U.S. servicemen and Iraqi civilians alike.”¹¹

US military installations in Australia help guide missiles targeting people in the Middle East. Australian troops participate in military exercises that reinforce US occupation of indigenous seas and lands in the Pacific, such as in Hawaii, the Marshall Islands or Guahan (Guam).

From colonial wars and occupation to ongoing support for US led pivoting to encircle China, our military legacy is destruction and heartache for people and ecosystems at home and further afield.

It's time to dismantle systems that prioritise the life of one being over another, normalise inequality and war and see a logic in the existence of nuclear weapons. It's time for Australia to address the ongoing injustice of military occupation at home and its responsibility for injustices overseas. As part of doing so, it will be necessary for Australia to re-examine and reject its close military ties to the US.



All Options Are On The Table, Michael Leunig

¹¹ ¹¹ Webb, Whitney, U.S. Military Is World's Biggest Polluter originally [MintPress News](#), May. 15, 2017 <https://www.ecowatch.com/military-largest-polluter-2408760609.html>

US Bases in Australia: The Social and Environmental Risks

<https://peaceconvergence.files.wordpress.com/2021/08/2019-master-for-printing-us-bases-in-australia-word-doc-edit.pdf>

US Bases in Australia:

the social and environmental risks

**Friends of the
Earth Australia**



**Independent and
Peaceful Australia
Network**

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Notes and updates

This report was officially launched on the first day of Talisman Sabre 2013, as part of our protest against the military exercises. Rockhampton's Morning Bulletin had just run a 2-page spread headlined ***Talisman Sabre 2013: Defending Australia While Protecting the Environment***. (July 12, 2013)

Soon after the launch, it was revealed that the US had jettisoned four bombs on the Great Barrier Reef, when unable drop them on their intended target, Townshend Island, an island excised from the Great Barrier Reef for bombing practice. There was a flurry of international media and condemnation. But the war games continued and continue today.

The demarcation of Townshend Island, and indeed Shoalwater Bay, as military zones is a human construct irrelevant to the biology of the region. The land, islands, beaches, marshes, rivers and seas earmarked for military training are connected and integral parts of their own ecosystems. In the case of Townshend Island is part of Shoalwater Bay, its value is diminished by referring to it as part of the Shoalwater Bay Military Training Area, as is the intrinsic value of Shoalwater Bay itself.

In 2016, landowners in the Shoalwater Region and in Townsville were informed by the government that their land would be needed for an expansion to their local military training zones. Residents were up in arms. The commitment to forcibly acquire the land was soon dropped. The commitment to the expansion was not. Contracts are underway and landholders are being pressured to sell.

The jettisoning of bombs on the Great Barrier Reef, the expansion of military training zones and even Talisman Sabre, which in 2019, saw over 34,000 troops engaged in land, sea and air warfare practice along the coast of Queensland and New South Wales, are the tip of the iceberg of global military impacts on our environment. They are the ongoing face of colonialism in this region and provide a local link to and reminder of the ongoing social, psychological, economic and environmental footprint of the era of never-ending war.

While this report focuses on US bases in Australia, we want to broaden its scope. We want to identify Australia's support for and involvement in US military action as another face of Australian militarism, which commenced with the Frontier Wars. We want to look deeper than the military-carbon footprint to see the inter-relationship of war, climate, refugees, colonialism, and capitalism.

The legacy of the Frontier Wars looms here in Australia. Invasion, colonisation, nuclearisation and militarisation altering the landscape with incalculable, long-lived impact on people and place, shaping the structures of violence underpinning Australian society today. You can see a map that begins to tell this story here: <https://www.theguardian.com/australia-news/ng-interactive/2019/mar/04/massacre-map-australia-the-killing-times-frontier-wars>

Australia has been a nuclear-weapons testing grounds and now faced a PFAS crisis with up to 30 Defence sites, and an increasing number of others, under investigation for contamination with toxic fire-fighting foam. As with nuclear testing, Defence acknowledges the contamination, but denies the health risks impacts. Several class actions are underway. Communities in affected areas have been told to avoid drinking or swimming in the water or eating or selling local produce. You can find a map that

begins to tell these stories here: <https://www.theguardian.com/australia-news/ng-interactive/2019/mar/04/massacre-map-australia-the-killing-times-frontier-wars>

Australian universities are engaging in military-funded research, not only with investment from obvious aviation, tech or weapons industries, but also in projects such as Gene Drives. CSIRO and University of Adelaide scientists are part of a Defence Advanced Research Projects Agency (DARPA – the US military’s research arm) funded global network researching a genetic modification (GM) technique referred to as gene drives. The group have identified six potential islands in Western Australia where they intend to use the technique to drive local mice populations to extinction. The release of gene drives could have potentially catastrophic ecological consequences.

In April this year, the Queensland government launched their 10 –year Roadmap and Action Plan to make Queensland the “Khaki capital of Australia.”

(<http://statements.qld.gov.au/Statement/2019/4/2/queensland-is-invested-in-defence>)

The dominant political parties in Australia support war.

There are now 2,500 US troops stationed in Darwin and plans to build a US port in the Darwin have been revealed. With Pine Gap at its centre, Australia is set to continue to be a launching pad for US-led military activity.

The Australian government has refused to participate in talks, overwhelmingly supported by nations around the world, to ban nuclear weapons. Its commitment to US military infrastructure in Australia and overseas, and its support for the uranium mining and exports, see Australia pushing the world towards, rather than away from, nuclear war. With the climate crisis looming, most of the world knows that this is insane.

This report is a work in progress to begin to give some voice to the dugong, sea grass, bats, birds, bragalow, coral and the snubfin dolphin - or the places they live - that don’t get say in our political processes, to air our concerns about other voices less heard and to make the links between the devaluing of environments such as Shoalwater Bay and threats of US-led war in Iran today.

Peace is a necessity for social, ecological and climate justice. Please join us both in developing this report and in action for the people and the planet.

- Updated August 2019

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1.0 Introduction

1.1 About Friends of the Earth

We are the world's largest grassroots environmental network, uniting 76 national member groups and some 5000 local activist groups on every continent. With over 2 million members and supporters around the world, we campaign on today's most urgent environmental and social issues. We challenge the current model of economic and corporate globalisation, and promote solutions that will help to create environmentally sustainable and socially just societies.

Friends of the Earth (FoE) is a federation of autonomous local groups who are working towards an environmentally sustainable and socially equitable future. Our vision is of a world where everyone's needs are met in a way which safeguards the future of the environment. We campaign for a world where environmental protection, social justice and economic welfare for all people, go hand in hand. Through our

local, national and international networks, we work with the community to communicate, raise awareness, put forward alternatives and take action.

any kind of military activities in the Great Barrier Reef Marine Park and other environmentally sensitive areas should be disallowed; it is not compatible with sustainability, social justice or environmental protection

The alternative we seek to implement is a sustainable society. This involves a reliance on the use of renewable resources which are equitably distributed. It involves the recognition that there is an inextricable link between people and the environment. FoE recognises that organised resistance and action are necessary catalysts for environmental, economic and social change. Such action is essential if we are to achieve a sustainable society based on the equitable distribution of resources and power and recognition of the rights of all people.

FoE sees that pursuing environmental protection is inseparable from broader social justice concerns, and as a result uses an environmental justice perspective in its campaigning. FoE Australia supports indigenous sovereignty and works at both the local level with specific indigenous communities as well as participating in debates and campaigns at the national level. FoE Australia works through our local groups in partnership with indigenous communities including campaigning with the Yorta Yorta people to achieve joint management of the Barmah Millewa forests in Victoria. FoE Australia acts as the secretariat for the Alliance Against Uranium, a forum for indigenous and non-indigenous communities to work together on issues relating to all aspects of the nuclear fuel cycle.

FoE believes in working for a sustainable and empowering future. To this end, many FoE groups are working now to create the type of world we want: one that will be based on healthy communities and healthy ecosystems.

We believe that militarism is not in Australia's national interest, and that military exercises and increasing US military presence in Australia contributes to regional insecurity and threatens our Asian neighbours. We also believe that any kind of military activities in the Great Barrier Reef Marine Park and other environmentally sensitive areas should be disallowed: it is not compatible with sustainability, social justice or environmental protection.

Friends of the Earth believe that social, economic and environmental justice – not militarism – is fundamental to peace. FoE is a founding member of the Independent and Peaceful Australia Network.

2.0 Australian locations used by the US military

Left: Shoalwater Bay Training Area



In 2011 Australian Defence minister Stephen Smith and US Secretary of State Hillary Clinton announced an increase of US forces on Australian soil; with the build-up of the Stirling Naval Base in Perth and the stationing of 2500 US troops on permanent rotation in Darwin. Smith denied these would be 'bases' as such. The Pentagon report from the Center for Strategic and International Studies says, 'the next phase of enhanced access arrangements with Australia' will include the stationing of a nuclear powered aircraft carrier in Perth; infrastructure development on RAAF bases to accommodate US bombers; drone deployment from the NT; and

the stationing of US marines on Australian soil. In November 2012 the AUSMIN meeting of the US and Australian ministers announced the beginning of 'joint facilities', or bases, on Australian soil. In 2013 it was announced that the number of US troops stationed in Darwin would now double.

Australia has been hosting US military interests for decades at Pine Gap, which in 2012 expanded its surveillance and satellite communications capacity by installing a new radar dome. Pine Gap was strategic in the deployment of bombing missions in the Iraq and Afghanistan wars. Pine Gap is a US base and Australian politicians must request access to it. A new communications base was built in 2008 for US purposes at Geraldton in northern WA and another is mooted for development at North West Cape, also in WA. This recently proposed base is expected to be used for tracking and destroying enemy satellites. All three of these existing bases serve to make Australia a strategic military target.

The US has been holding military exercises with Australia for over 50 years. In recent years, Australia has been involved in US led military activity that has killed flora, fauna and humans; left oil fields burning; exposed civilians to toxic chemicals; left environments radioactive; and destroyed infrastructure vital to maintaining health and welfare of communities.

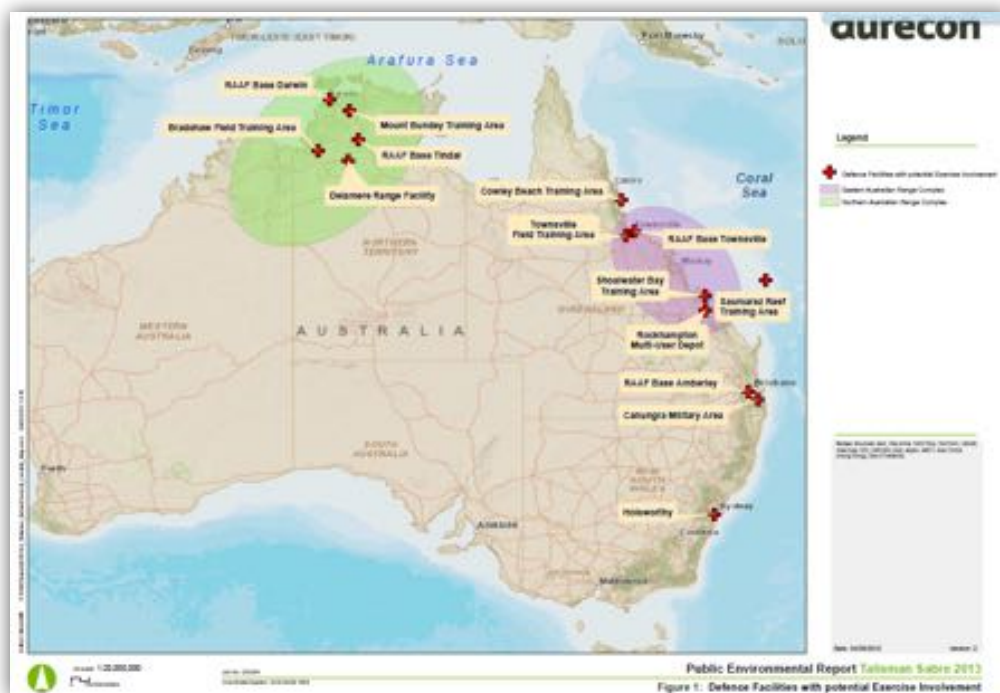
Talisman Saber is a US-led military exercise that takes place every second year: the largest joint and combined military exercises in which Australia engages and one of the world's largest military exercises. Around 30 000 Australian and American personnel are usually involved.

Talisman Saber 2013 is huge in scope. It uses military and civilian facilities in Queensland, Northern Territory and New South Wales; including Shoalwater Bay, the Great Barrier Reef Marine Park, Saumarez Reef, the Coral, Arafura and Timor Seas, within the Australian Exclusive Economic Zone and international waters. Various support sites throughout Australia include Brisbane, Darwin and Townsville. Shoalwater Bay is the centre of the on-the-ground manoeuvres.

Australian ports have been hosting US naval visits on a regular basis. It is widely acknowledged that the core of the US nuclear arsenal is at sea and probably visiting a port near you. It is also likely that that port is entirely unprepared for a nuclear incident and probably not testing for radiation leaks.

Political analyst Richard Tanter points to former Prime Ministers Malcolm Fraser and Paul Keating who have

questioned the inability of Australian governments to recognise the points at which Australia's national interests diverge from those of its major ally... Human interest and global responsibility need to be taken into account. And without the capacity to recognise and act in the national interest, a country with a parliamentary democracy operates under a severe democratic deficit. (2012).



Above: Map released by Aurecon (2012) showing Australian locations affected by Talisman Saber 2013 military exercises

2.1 Robertson Barracks and Shoal Bay, Darwin

On 12 November 2011, Australia and the US announced the permanent stationing of 2000 US marines at Robertson Barracks, at Palmerston, 20 km south of Darwin. It has a capacity to house 4500 troops.

The Robertson Barracks are adjacent to Shoal Bay, an important satellite interception station used by Australian and US military. It is part of the ECHELON surveillance system and the US X-key score program exposed by Edward Snowden and reported to be collecting millions of phone calls each month (NT News 2013).

Shoal Bay is an important bird habitat, identified by BirdLife International as an Important Bird Area with a coastal reserve between the Howard River and Gunn Point. Species include Magpie Goose, Brolgas and Rainbow Pitas. Threatened animals in the area include Northern Quoll, monitor lizards and turtles and many endemic flora species. Shoal Bay also has cultural significance to the Larrakia people.

In 2013 Minister for Defence, Stephen Smith, announced an agreement to increase the number of US troops stationed at Robertson from 2014 to 1150; to 'deepen... interoperability' of the Australian military with the US forces (Minister for Defence media release, 14 June 2013).

Australian Greens Senator Scott Ludlam asked, on the occasion of US President Barack Obama's visit to Australia in November 2011:

The November 2011 announcement of the establishment of a US Marine base at Robertson Barracks has left many questions unanswered. Will the base host intelligence services, or is it strictly a training facility? Will military deployments be launched from there? What agreements have been made about its potential expansion? Will weapons and munitions be stored there, and will these include depleted uranium munitions and cluster weapons?

Former Australian Prime Minister Malcolm Fraser has called the decision to station US marines in Darwin 'mistaken' in that it sends the wrong message to our Asian neighbours and that it does in fact constitute a US base (Flitton 2012).

2.2 Shoalwater Bay Military Training Area

Shoalwater Bay Military Training Area (SWBTA) is located north of Yeppoon on the east coast of Queensland. It is adjacent to the Byfield National Park, the Great Barrier Reef Marine Park and RAMSAR listed Shoalwater and Corio Bay wetlands.

The military of other nations including the US, Singapore and Japan use the SWBTA. It includes over 300 km of coastline, mangrove fish breeding habitats, wetlands, sea grass meadows and sub-tropical rainforest.

Over 100 species of note are listed in the military's own Public Environment Reports. The military recognise this biological diversity.

Shoalwater Bay is the biggest and one of the most environmentally significant parts of the Great Barrier Reef Marine Park, although not all of the training area is part of the national park. Shoalwater Bay's protected situation and extensive mangrove ecosystem makes it an excellent fish refugia and breeding habitat. The seagrass meadows, on which dugongs totally depend, are also the breeding place for economically important species such as rock lobsters, blue swimmer crab and and



many species of prawns. Other endangered species such as the loggerhead turtle also visit Shoalwater Bay. The reef and other relatively undisturbed marine habitats are already under pressure from global warming and comprise a place of natural heritage that should be preserved at any cost. In November 2006 the British journal Science published a report on the state of the world's fisheries that indicates if we do not protect fish habitats and restrain fishing, fish stocks will collapse by 2048. This area of biological diversity is at risk by military uses.

The 1994 Commonwealth Commission of Inquiry into Shoalwater Bay featured the first in-depth research into the biological values of the area. Melzer, Barry and Kershaw (1993) carried out the first comprehensive flora survey of the training area and identified over 5000 plant species. Arthington (1993) conducted a survey of the freshwater communities of the SWBTA.

Melzer et al noted that the distributions of flora in the SWBTA ha only been partially explored and are not well understood (p.10). There have been no subsequent flora surveys. Contrary to military claims that they have recovered the land from the damage of grazing Melzer et al note that 'limited information exists as to the environmental condition of the training area prior to acquisition' (1993 p.104). Melzer et al cited the work of Stanton and Morgan (1977) who before them had noted that the area 'had the potential to be a national park of international stature because of its size, scenic qualities and immense biological diversity' (Melzer et al 1994, p.113).

The 1994 report concluded that the SWBTA was

- *a highly significant nature reference site (p.107)*
- *a wide range of habitats...has given rise to a very diverse flora (p.112)*

- *the conservation of such an intact mosaic of vegetation types over a large area is a significant and increasingly rare feature in Australia (p.112)*
- *That the Shoalwater Bay training area had higher biodiversity than some World Heritage Areas in terms of the number and type of species (p.112)*
- *That such areas are essential for the long term preservation of the regional diversity (p.113)*
- *Unique in that it is the place where northern and southern species are found together, the only key area in which the major features of Region 12 (South Eastern Qld) and Subregion 11d (coastal extensions of the brigalow belt) can be included...(and it) unique (Stanton and Morgan 1977, in Melzer et al 1994 p.113)*
- *Its importance as a reference area will continue to increase over time with further coastal developments (p. 114)*
- *there remains considerable doubt as to the ability to rehabilitate the plant communities to a structure, composition and complexity resembling that which is currently present...(it is of) high conservation value (p. 114)*
- *Six vulnerable species, two rare species, two poorly known and one new species were identified during the current (1994) survey (p.108)*
- *63 species are at/near their northern limits of distribution in the SWBTA and a further 55 are at/near*



63 species are at / near their northern limits of distribution in Shoalwater Bay and a further 55 are at /near their southern limits of ... This is an unusually high proportion of the total flora to be at individual species limits of distribution and is a reflection of the biogeographic significance of the Shoalwater Bay Training Area

their southern limits of distribution in the SWBTA. This is an unusually high proportion of the total flora to be at individual species limits of distribution and is a reflection of the biogeographic significance of the SWBTA. (p.108)

–Vegetation communities

The 1994 Melzer report identified numerous vegetation communities. Of note are those that occur in the Dismal Sector where live firing and bombing occurs and both physical damage and contamination from unexploded ordinances (UXOs may be occurring:

- *Dune systems* - foredune vegetation, spinifex grassland, casuarina woodland, low woodland and low heath, eucalyptus woodland (in which were found two new species during this survey), Melaleuca woodlands, notophyll vine forest with palms.

- *Wetlands systems* including closed sedge scrubs (the dominant feature of the sector). This sedge community forms peat over many generations and is considered 'unsurpassed elsewhere in Queensland, possibly Australia' (p.166).
- *Closed forest* that resembles rainforest is found along creek areas in the sector where the tallest species reach 12m. The eucalyptus woodland is the most at risk from fires caused by exercises. This area of biological diversity is at risk by military uses.



Arthington (1993) analysed the effect of military activities on the ecological values of freshwater ecosystems in the SWBTA. Some of the issues found included:

- Soil erosion and sand movement – by road works, vehicle movements and tank manoeuvres – could impact dune (perched) lakes by increasing turbidity, reducing light penetration and reducing algae growth which is a source of food to macrophytes. Arthington noted that in 1993 Trnski et al described some of the freshwater streams flowing into Waterpark Creek (water source for the city of Yeppoon) as 'deeply stained' rather than the 'white water' expected (Arthington 1993 p.300)
- Trnski (in Arthington 1993) 'suggests that any threat to the water supply from the Manifold dunes to the south west or to water quality within this lake will threaten its fish community' (p.301)
- Because of the low nutrient levels of dune lakes, they can be easily impacted by human activities including 'urination in or near the water, septic tank seepage, decay of fruit skins and other rubbish, use of soaps and detergents and any behaviour or process that adds nutrients to groundwater' (p302-303). Very low levels of nutrient increase will affect fish species

there remains considerable doubt as to the ability to rehabilitate the plant communities to a structure, composition and complexity resembling that which is currently present...(it is of) high conservation value

- Arthington cites Townley and Fleming (1993) who note that accidental spills of fuels, oils or other chemicals could affect water quality. The Public Environment Reports for military exercises note the risk of such accidents as high
 - 'The unusual mode of origin of perched dune lakes and their geomorphological features have been stressed in several environmental inquiries, including the 1975 Fraser Island Inquiry (Hicks and Hooney 1975), the Moreton Island Inquiries (Coaldrake 1976, QCC 1977) and the studies leading to the declaration of Cooloola as a National Park. The Great Sandy Region has been declared a World Heritage Area, partly on the basis of its unique geomorphology and well-developed lakes and wetlands' (p.307).

- 'dune water bodies at Shoalwater Bay should be considered as very significant both regionally and nationally' (p.310)
- At-risk fish species in these unique dune lakes, include Oxleyan Pygmy Perch and the Ornate Rainbowfish
- Arthington found that the earth science values and water body for the SWB dune systems and lake regarding their link to the evolution of Australian flora; importance to understanding Australian natural history; aesthetic values; 'the presence of rare, endangered or uncommon flora, fauna, communities, ecosystems, natural landscapes' all rated a 'Very High' for conservation
- Arthington predicts, from past ecological surveys, that the SWBTA would yield many as yet unrecognised species if a thorough survey were conducted of its freshwater systems (p.328)



Many high profile endangered species live in or visit Shoalwater Bay:

Dugong

Shoalwater seagrass meadows form one of the remaining food habitats for the endangered dugong – the use of sonar, turbulence and potential toxic spills put dugong at risk. The dugong is suffering from population decline in many parts of its range.

Dugong are found in greater numbers in Australian waters than anywhere else in the world, with about 4000 dugong currently in Australian waters. Dugong numbers halved in the decade between 1990 and 2000., Shoalwater Bay is important dugong habitat in Queensland due to its large north-facing aspect, making it an ideal site for seagrass to grow.

The Great Barrier Reef Marine Park Authority note seagrass decline and subsequent dugong decline after flood events. However, in the Shoalwater Bay area where dugong numbers have declined in recent years, studies since 1995 have shown that there has not been a major loss of seagrass since the 1980s. Could military activity be the differing factor in Shoalwater dugong decline?



The UN 2002 Report on Dugong recommends that remaining dugong habitats in Australia be protected. Dugong are already under pressure, hence their endangered status, from habitat loss and accidental death by boating collisions and in fishing nets.

In 2003, the US Department of Defence (DoD) was taken to court by environmentalists in Okinawa, Japan, for the expansion plans for the US base there onto a nearby reef which would have threatened the Okinawa dugong population. The US DoD wanted to landfill coral reef and build a military base with 2600m runway, aircraft hangers, large fuel storage tanks and many other facilities. Only court action and the adverse publicity it occasioned forced them to withdraw. Is this the action of a responsible, environmentally sensitive, organisation?

Green Sea Turtle

Shoalwater Bay is an absolutely vital breeding habitat for the endangered Green Sea Turtle (right): it has the highest concentration in the world of this declining species and this is their premier breeding habitat.

Turtles are sensitive to sonar emissions undersea and could be susceptible to naval use of sonar in the same way as are cetaceans and dugong.

Former US DoD military dump sites in the Pacific are listed as a threat to green sea turtles in the Recovery Plan for US Pacific Populations of the Green Turtle.

Whales

Whales and other cetaceans, (such as humpbacks pictured below), frequent the Coral Sea and Shoalwater Bay where training exercises take place. In 2007 the well-publicised presence of the rare white humpback whale Migaloo during the TS07 war games indicates that whale presence is likely to occur. Both the US and Australian vessels use Low Frequency Active Sonar, which are known to cause beachings, brain haemorrhages and ear injuries in cetaceans and whales in particular.

The military commissioned Public Environment Reports use their own assessment tool, which is not based on conventional environmental planning tools. The lack of objectivity in using a military purpose-built assessment tool calls into question its scientific validity.

Nonetheless, the military rate as 'medium to high' the risk of activities they undertake at Shoalwater Bay including aircraft and vessel movements, underwater explosions which could lead to accidents, oil spills and clearing.

Given the danger of global warming to the diverse biota of Queensland, it is important to



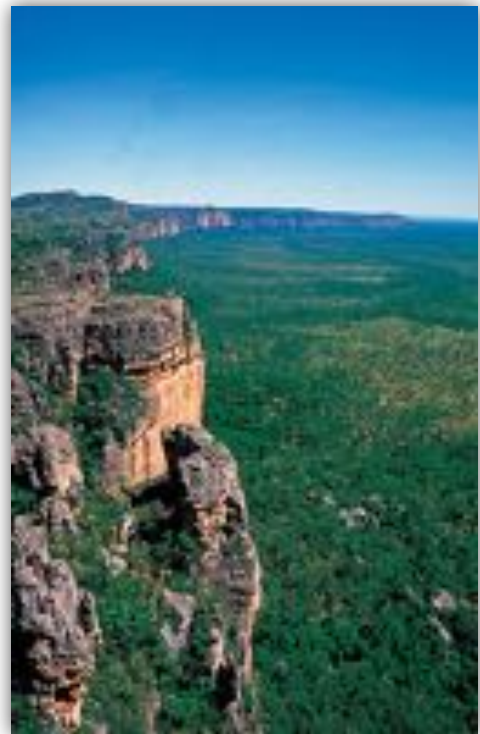
protect places of significance from further risk. Habitat loss is the most significant threat to biodiversity in Queensland, making the protection of the SWB region imperative. We contend that military activities, for the many reasons listed in this document, are not compatible with biodiversity protection. They are particularly not compatible with the SWBTA region due to the number of significant, endangered and vulnerable species living there.

The prevailing opinion of scientists examining Shoalwater Bay indicates that its biodiversity and ecological values make an excellent candidate for World Heritage protection and national park status. The only barrier to this seems to be the presence of the military.

2.3 Mt Bunday Training Area

Mt Bunday Training Area (pictured below) is a 100 000ha site located 115km south east of Darwin between the Mary River and Kakadu National Park. It was acquired by the military in 1988 and used for training since 1992.

Tunstall, Orr and Marks (1998) conducted a survey of the vegetation and soil of the MBTA. In 1998 it was used by the ADF about 36 weeks of the year, but this use will increase substantially now that it has been made available to the US military troops stationed in Darwin (numbering 1150 in 2013, but expected to increase). Of environmental note is the location of the Wildman River catchment (registered on the National Estate for its importance to nearby wetlands), the proximity of Kakadu National Park and the Mary River floodplain (Tunstall, Orr and Marks 1998). High temperatures and humidity for most of the year make it a tropical climate. Monsoonal rain in summer results in flooding, bushfires in winter dry season. Mixed dry woodlands and grasslands characterise the flora, with some small regions of 'semi-deciduous monsoon forest' are found in sheltered areas (Tunstall, Orr & Marks 1998).



Aurecon (2012) notes: 'Eight EPBC listed threatened species have been recorded on Mount Bunday Training Area, including the Gouldian Finch, Red Goshawk, (eastern) Partridge Pigeon, Masked Owl, Northern Quoll, Goldenbacked Tree-rat, Bare-rumped Sheath-tail Bat; and Freshwater Sawfish... There is one registered and one recorded Indigenous sacred site at Mount Bunday Training Area, with 117 archaeological sites recorded' 'Live firing of weapons (gunnery, bombing, missiles and rockets)... Emergency dumping of fuels and jettisoning of stores' are two of the risky possibilities at Mt Bunday.

Since the stationing of US marines in Darwin in 2012 on a permanent basis, it is expected that US-Australian exercises (Named Gold Eagle) at Mt Bunday will be a regular occurrence.

2.4 Delamere Range Facility & Bradshaw Field Training Area

Delamere

Located 80 nautical miles southwest of RAAF Base Tindal (which itself is 330 kilometres south of Darwin), is the RAAF's principal air weapons range. Delamere is an area of high rainfall during summer, but also on the edge of the dry arid inland region, thus it has a mixture of these vegetation types. It is the catchment area for a number of ephemeral streams and wetlands that are habitat to a number of endangered and threatened including the Gouldian Finch (pictured below), Purple Crowned Fairy Wren (pictured right), Northern Quoll, Sheathtail Bat and Gulf Snapping Turtle which the Department of Defence's Public Environmental Report (2013) lists as a matter of national environmental significance. Credit must be given to the thoroughness with which the Department of Defence has noted these environmental values.



There are no environmental limitations placed on military activities there, except for an Indigenous Land Use Agreement (2011) which gives title to the land to the indigenous people (including the impact area which will be contaminated). However, the land is still occupied by the defence forces, so title is relatively meaningless.

In 2005 the Australian government made an agreement to allow the US to practise long range bombing raids at Delamere, particularly using the B-52 Stratofortress bomber. The US have been bombing Delamere since 1992. The 2010 agreement to station US marines in the Northern Territory has escalated the use of Delamere and other Australian bases by US forces despite claims by the government that such developments do not constitute a 'base' and 'the United States has not proposed establishing a permanent base in Australia' (Nautilus Institute 2008).

Bradshaw

Bradshaw Field Training Area is located near Timber Creek within the Victoria River region of the Northern Territory, north of the Delamere facility. It is used for live firing and live bombing by Australian and US troops and houses 500 troops at the base. Fuel and maintenance operations add to the potential for environmental damage. Bradshaw is used by the now 1150 US troops stationed in Darwin (Minister for Defence media release, 14 June 2013).

Aurecon notes: 'Three habitats within Bradshaw Field Training Area are considered core fauna habitats: rocky slopes and gullies with monsoon forest, streams and riparian habitats associated with rocky hills, and grasslands and swamps. Bradshaw is considered part of a regional environmental corridor linking with Gregory National Park and is part of a broader link to the Kimberley region'. (2012 p.102). The Aurecon 2012 report notes that a population of endangered Gouldian Finch (below) is located in the live firing zone at Bradshaw, as well as other endangered species common with Delamere.

A population of the Gouldian Finch is known to be present on the Mt Thymanan and Ikymbon areas in Bradshaw Field Training Area. Known habitat is located within a High Explosive Impact Area

In addition Bradshaw has 10 sites of Australian historic heritage listed on the Register of National Estate relating to early European activities and occupation in the area as well as Aboriginal sacred sites listed on the National Heritage List. An Indigenous Land Use Agreement also exists.



2.5 Townsville Field Training Area

The Townsville Field Training Area (TFTA) (230000ha of land 50km west of Townsville), has been used for military actions since 1967 (Crowe in Barton 1994). The TFTA includes a live firing and impact zone for bombing and firing of missiles, including areas with UXO. It is adjacent to many small farms. The 'Dotswood' homestead in the TFTA is on the National Heritage list.

Lieutenant Colonel Peter Crowe says of the early manifestation of the TFTA, the High Range Training Area, that 'by the mid 1980s, excessive use of the relatively small...training area was leading to the creation of an environmental embarrassment...exacerbated by the inability to rest the worn areas' and increased rural settlement adjacent (in Barton 1994 pp.16). Grazing and mining have also impacted the TFTA.

In 1991 the Australian Centre for Tropical Freshwater Research analysed the high biological diversity of TFTA including 51 mammal and 188 bird species (Pearson in Barton 1994 pp.28). The climate and elevation of the TFTA lends itself to high rainfall with savannah woodlands and some rainforest areas on the Paluma

range. Biologically important riparian areas characterised by paperbark species, blue gum and casuarina at the Star River and Keelbottom Creek which are permanent rainforest streams.

2.6 Kojarena and North West Cape

Kojarena

Located 30km from Geraldton, Kojarena Defence Satellite ground Station is used by the Australian Defence Force to intercept (spy) on other nations as part of the ECHELON system. In 2007 it was expanded with a second site for the use of the US military (MOU 2007). This expanded function coordinates US military operations in the Middle East and Asia, making this the most significant military encroachment into Australia since signing of the Pine Gap Treaty of 1966. Its capabilities include intercepting all phones on the 3G network.

In 2002 the Daily Telegraph alleged that intercepted conversations between the International Transport Federation, the Maritime Union and the crew of the Tampa helped former PM John Howard formulate his 'children overboard' campaign.

Academic Richard Tanter from the Nautilus Institute summarises the Kojarena ground station:

Under an agreement initiated in 2007, Geraldton figures in the US-Australia partnership in the Wideband Global SATCOM system, which provides Australian access to the principally US-funded constellation of at least seven (and possibly nine) high-capacity global war-fighting communications satellites. Under the agreement, Australia funded the sixth satellite, due to be launched in 2012-13. The first three satellites were launched between 2007 and 2010, and Australia gained operational access by June 2010.

North West Cape Located near Exmouth in WA, the Naval Communication Station Harold E. Holt transmits communications to the US Navy and the Royal Australian Navy with 13 radio towers using Very Low Frequency (image below). Tower Zero is the biggest and most powerful radio tower in the Southern



Hemisphere. The land was leased to the US in 1963. It is operated by Raytheon Australia, a branch of the arms manufacturing corporation.

The electromagnetic radiation emitted by this and other bases like it has been noted in locations where the military operate such facilities, including Sicily, Virginia and Hawaii. Senator Scott Ludlam notes in a 2013 dissenting report that, 'North West Cape continues to be of concern to environmentalists due to disquiet over the possible ecological impact of very low frequency communications given it is located directly adjacent to Ningaloo Reef, Western Australia's

precious marine sanctuary.’ The base is also adjacent to the Cape Range National Park.

In 2008 the surveillance towers were thought responsible for causing interference with autopilot in commercial jet operations that saw a Qantas plane plunge 650ft in seconds (Shears 2008). Diesel and asbestos pollute the site, with the US and Australia yet to agree on who is responsible for the clean-up.

2.7 Pine Gap

Pine Gap, 18kms from Alice Springs in the Northern Territory, was established in 1970 and has been used by the US for intercepting satellite communications and coordinating military activities in both gulf wars. It is one of three important Australian locations used in US warfare. It houses and employs over 800 people and is the biggest facility in the ECHELON ground station network. Like the WA bases, Pine Gap intercepts telephone calls in addition to its role in directing ballistic missiles and weapons development. Its existence is pivotal to US war making.

Attention has been drawn to the part Pine Gap plays in US wars by several protests. In 2005 six people entered the base, triggering the first ever use of the 1952 *Defence Special Undertakings Act*. They were freed with a fine, however the Commonwealth prosecutor appealed that decision, hoping to make an example to them of Australia’s willingness to prosecute its own citizens to protect US interests.

3.0 Risk factors of military activity

3.1 Pollutants

Practically every activity carried out by the military has the potential to cause pollution. The military acknowledged for the first time in 2010 that live firing can result in contamination, but this is only given slight coverage in the 2012 AURECON Public Environment Report.

The ADF answered a question on notice from Green Senator Scott Ludlam that, ‘the quantity of ordnance used during the (Talisman Saber) exercise is not disclosed’, so it is not possible to estimate the real risk that

munitions damage and contamination might pose. However, Pearson and Barton’s 1994 environmental assessments of Australian training areas noted the need to monitor groundwater for metal contamination and the importance of ‘event sampling’ – as events such as floods or exercises can stir up and redistribute contamination. With some Australian military bases and training areas in use for a century, contamination by heavy metals (such as lead, widely used in shell casings in the past) is likely. A true assessment of the pollution risk needs to consider past as well as current activities.



Right: Abrams tanks starting fires at Mount Bundey in 2009. 'Each round costs a whopping \$33,000' (Source: NT News).

The M1A2 version of the Abrams tanks is made with depleted uranium (DU) armour, a radioactive source that when struck gives off a fine powder of radioactive material that is inhaled by troops and contaminates the environment. DU has been identified as a source of ongoing ill health in US veterans of the Gulf wars and Bosnia where DU was used extensively in tanks and missiles, causing increased levels of skin diseases, lung conditions and cancers. More than seven years after exposure, veterans exposed to DU were still excreting elevated levels of uranium in their urine (McDiarmid et al 2000).



The ADF have assured us that depleted uranium munitions are not used by Australian forces or in joint exercises. However, because of the claims to 'interoperability' with US forces made by the ADF, it is highly likely that both US and ADF troops are using the same kinds of munitions, within the limits of Australia's obligations to international treaties that ban cluster munitions and the use of depleted uranium munitions. The US, of course, are not signatories to these two treaties.

The 2011 Public Environment Report prepared for the TS11 games states that 'US Forces operating in Australia are subject to Australian military and civil environmental regulations, as well as US Military environmental rules and regulations' (AECOM 2010 p8). This claim is disingenuous, as not only is the US military exempt from a raft of US environmental rules, Australia's foremost environmental law, the *Environmental Protection and Biodiversity Conservation Act (1999)* exempts military activities from the rigorous Environmental Impact Assessments (EIA) expected of other activities in protected areas and elsewhere. The US and ADF commission a Public Environment Report prior to each exercise, however these reports hold no legal or regulatory power.

Potential for munitions contamination is tacitly recognised by the Defence departments remediation programs in Mulwala (Victoria), Marrangaroo (New South Wales) and Coolumboola (Queensland)

Past by joint military activities have seen the intentional introduction of toxic materials such as red phosphorus marine markers, the release of seawater ballast containing introduced species and the intentional disposal of ship-board waste at sea. Training exercises in Shoalwater Bay have included the accidental loss of grenades, bombs lost at sea, bogged vehicles, the shooting of wildlife and the discovery of skinned animals, oil and chemical spills as reported incidents.

Do munitions pollute?

The military dispute the pollution effects of their exercises. The 2010 Public Environment Report (AECOM 2010) claims that, 'Studies of the residues from high explosives have found that less than 1% of the explosives used remains, with the majority of explosive compounds consumed in the explosion (Hewitt, et al., 2003).' Contradicting this, a study by the same lead author quoted by AECOM (2010) found, 'the dispersion of particles of unconsumed high explosives material is heterogeneous, which makes it difficult to ensure an accurate estimate of the total residue' and that it, 'cannot be considered highly accurate' (Hewitt et al 2005, p891). The Hewitt study also says that blow-in-place detonation, partial detonation and unexploded ordnance (UXO) are greater risks. The study cited only examined Royal Demolition Explosive or 1,3,5-hexahydro-1,3,5-trinitrotriazine (RDX) and trinitrotoluene (TNT) and does not assess the other chemicals and metals used in the production of munitions. Nor does it assess the potential accumulation of years of live firing residues, from year round exercises by the multiple armies that use Australian training areas, even at a minimal '1%' residue.

The Hewitt study cited by AECOM is but one study that by its own admission is not definitive or accurate. It is not representative of the extent of the risk of contamination from the production, use, storage and disposal of munitions. A few of the many studies that have found military contamination from live firing,

long term ranges of soil contamination of TNT could be as high as 14.3%, which "are potentially significant distributed point sources of contamination to groundwater"

blow-in-place detonation, military dumping and UXO include: Latham (2000), Pennington & Brannon (2002), Hewitt, Jenkins, Walsh, Walsh & Taylor (2005), Amato, Alcaro, Corsi, Della Torre, Farchi & Focardi (2006), Rosen & Lotufo (2007), Pennington, Hayes, Yost, Crutcher, Berry, Clarke & Bishop (2008a), Pennington, Silverblatt, Poe, Hayes, & Yost (2008b), Pascoe, Kroeger, Leisle & Feldspausch (2010) and Sanderson, Fauser, Thomsen, Vanninen, Soderstrom, Savin, Khalikov, Hirvonen, Niiranen, Missiaen, Gress, Borodin, Medvedeva, Polyak, Paka, Zhurbas & Feller (2010)

A study by Clausen, Robb, Curry, and Korte (2003) found that the activities typically carried out on a military range (training area) resulted in the contamination of Camp Edwards (Massachusetts) and that the same problems should be expected at other military ranges. Pennington et al (2008b) cite research that indicates in long term ranges the soil contamination of TNT could be as high as 14.3%, which 'are potentially significant distributed point sources of contamination to groundwater' (2008 p.534).

Of particular interest to this critique is a study by Baver (2006) of the contamination legacy of 60 years of US military exercises at Vieques, an island 13 km east of Puerto Rico in the Caribbean. Despite the end of live firing exercises at the Vieques base and the withdrawal of the US military from the island, ill health and environmental contamination continue. Depleted Uranium, perchlorate, RDX, TNT and many heavy metals contaminate the site, that encompasses two thirds of the island affecting food production, human health and environmental health. Not only did the 60 years of exercises physically destroy mangroves and

waterways, and leave physical scars on the countryside, it also left behind TNT, NO₃, NO₂, RDX, Tetryl, napalm, perchlorate, mercury, lead, Polychlorinated Hydrocarbons (PCBs), and DU, much of which can never be cleaned up and continue to contaminate and poison. In addition, the traditional fishing grounds have been rendered dead by 'ghost nets' ripped by naval ships. Residents on the island have disproportionately high rates of illnesses like cancer, hypertension and liver disease.

The potential for munitions contamination is tacitly recognised by the Defence department's remediation programs in Mulwala (Victoria), Marrangaroo (New South Wales) and Coolumboola (Queensland). At Mulwala soil contamination includes lead, sulphate, nitrate, mercury, and asbestos. A toxic water plume of nitrate, sulphate and ammonia at unsafe levels continues to stream at Mulwala, having taken 40 years to reach its current location. Pollution happening today may take a long time to be detected. At Marrangaroo the clean-up of WW2 mustard gas, phosphorus markers, practice bombs and asbestos located 20 burial sites and was overseen by the UN Chemical Weapons Convention. At Coolumboola the clean-up of mustard gas, phosphorus and high explosives continues and the site was assessed as having a 'very high probability' of UXOs. Chromium, copper, nickel and PCBs were detected in groundwater at Coolumboola. It is thought that burial sites of munitions and UXOs are still to be detected there. There are 1223 sites with UXO in Australia, affecting nearly 600 000 properties.

Ballast Water

Ballast is a known mechanism for the transfer of exotic species into Australian waters. This risk is not peculiar to military vessels, but it compounds the number of risks being introduced by the presence of US vessels in environmentally sensitive areas.

Sea dumping of shipboard waste

After TS05 games, shipboard generated domestic waste was found washed ashore at Mudjimba and other areas on the Sunshine Coast. Apparently it is the policy of the US navy to dispose of their waste in this manner, and the bag was accompanied by a letter that verified this policy. The waste included plastic debris

and paper. In January 2006, a US nuclear powered aircraft carrier, the USS Ronald Reagan which visited Australia on its maiden voyage, was found to have left a trail of rubbish in Moreton Bay during a short visit to the port of Brisbane.



Dolphin alleged to have been poisoned by dumped munitions. Source: marine mammal Stranding Center New Jersey

Entanglement in marine debris can restrict an animal's movement, causing starvation, bodily infections, the amputation of limbs and drowning. The Australian Department of Environment and Heritage lists the Green Turtle as one species particularly vulnerable to

the dangers of marine debris. Harmful marine debris has been listed as a key threatening process under the Environmental Protection and Biodiversity Conservation Act 1999. Disposing of plastics at sea is totally prohibited by the International Convention. Despite this, the EPBCA excludes 'marine debris resulting from the legal disposal of garbage at sea', which we presume includes the U.S Navy.

Sea dumping of munitions

The US Army now admits that it secretly dumped millions of kilos of nerve and mustard agents into the sea, along with 400 000 chemical-filled bombs, land mines and rockets and more than 500 tons of radioactive waste – either tossed overboard or packed into the holds of scuttled ships. Records of the locations of the alleged 26 sea dump sites are scanty.

Both the ADF and the US DoD have dumped chemical weapons and radioactive ships at sea up until the 1970s. The Clean Ocean Action group (2006) claim that 'When mustard gas is exposed to seawater, it forms a concentrated gel that lasts for at least five years, killing or contaminating sea life. When released in the ocean, nerve agent lasts up to six weeks, killing every organism it touches before breaking down into its non-lethal chemical components.'

3.1.1 Perchlorate

Perchlorate, the primary ingredient in rocket fuel, is the chemical causing the most concern worldwide with regards to the US DoD's operations. It has been found contaminating groundwater in 42 US states as a result of its use at rocket test sites, military bases, and perchlorate-production plants. It has been linked to thyroid problems, birth defects and newborn development. A recent study has found perchlorate is even contaminating the US food supply and that 'safe' level standards are inadequate.



The source of perchlorate anion in drinking water supplies is primarily associated with releases by defence contractors, military operations, and aerospace programs. Ammonium perchlorate is used as a solid oxidant in missile and rocket propulsion systems. It is readily dissolved in water and 'very persistent in the environment due to the high activation energy associated with its reduction' (Urbansky 2002 p. 188). It is an endocrine disruptor that can affect thyroid gland functions, where it inhibits the uptake of iodide and lowers thyroid hormone production (Muhki et al 2004). The resulting hypothyroidism can lead to goitre, but is associated with a decrease in metabolism, inflammation and cancer.

Perchlorate is readily spread in rain and concentrations may accumulate in the food chain (Martinalango et al 2006, Theodorakis et al 2005). Theodorakis et al (2005) found that bioaccumulation in fish led to levels 4 times that in the water. It is also passed on to infants via breast milk where it can developmental effects dependant on thyroid hormones including: increased toxicant sensitivity, hearing, reading and language deficits, gross motor skill deficits, memory and learning impairment, and increased hyperactivity and impulsiveness, especially if the fetus is exposed in the first 12 weeks (Kirk 2006). Because of the many possible sources of perchlorate exposure (water, food, dairy and breast milk), Kirk found the current US drinking water standard of 24.5 ppb to be inadequate.

In seaside areas (such as SWBTA) perchlorate can contaminate sea grass and sea weed. Martinelango et al (2006) found contamination in 11 species of seaweed in waters also contaminated by military release of perchlorate off the coast of North Eastern Maine. The contamination was highest in *Laminaria digitata*, a species commonly used in kelp tablet iodine supplements.



The environmental fate of munitions chemicals

In Martinelango's study the highest seawater concentrations of perchlorate, at Seadrift and Corpus Christi in Texas, San Diego in California and Nantucket in Maine are located in places with extensive military installations. Groundwater contamination was also an issue in those areas.

- 100 years of US military use of sites at Camp Edwards, Cape Cod, Mass. Has resulted between 140-300µg/L perchlorate groundwater contamination (as well as significant levels of TNT, RDX, Octahydro-1,3,5,7-Tetranitro-1,3,5,7 Tetrazocine (HMX), Tetryl benzene and toluene compounds) (LeBlanc and Vrobesky 2008 p.9).
- Some of the very worst perchlorate pollution in the US has been on the sites of munitions manufacturers. For example, Aerojet rocket manufacturing tested at a maximum level of 640 000 ppb, with 260 ppb in the local water supply for Rancho Cordova. This should be of concern for Australian sites where these activities are currently carried out.

3.1.2 Other Contaminants

Explosive and munitions chemicals can affect the health of plants, animals and the ecosystem. Many are carcinogenic, mutagenic or acutely toxic. Many are resistant to degradation and bioaccumulate. They can be ingested via air, food, water or skin contact. Incomplete detonation of munitions and - (UXO) are a source of pollution in military lands worldwide. About 16 million hectares of US military land is estimated to be so contaminated.

- **White Phosphorus** is a particularly cruel form of weapon that not only burns the skin of people it touches (like napalm), but also poisons them. However, it is not proscribed by the international community. Human Rights Watch says, 'White phosphorus munitions cause particularly severe injuries, including chemical burns down to the bone. Wounds contaminated by white phosphorus can reignite days later when bandages are removed, can produce poisoning that leads to organ failure and death, or lead to lifetime health problems' (Goose & Docherty 2012). The military claim it is used to illuminate targets; but it also creates indiscriminate human casualties while it does so. In 2011 a coalition of human rights groups failed to get the Fourth Review conference on conventional weapons to agree to ban incendiary weapons including white phosphorus. Red and White Phosphorus are used for marine markers and incendiary bombs, and white phosphorus has been used in the making of napalm.



Left: White phosphorus falls on a town in Afghanistan 2009

White Phosphorus was found responsible for the contamination of the estuarine environment at Eagle River Flats near Fort Richardson base, Alaska, USA. The fishing grounds of local Alaskans were destroyed and thousands of water birds killed, 'every year for almost two decades' according to the Military Toxic Project. They also say UXO 'may exist in, on, and/or under up to two million acres of land and water outside the current boundaries of the base.'

As mentioned previously, an eyewitness account by a local fisherman indicates that white phosphorus has been used at SWBTA. Phosphorus marine markers are reputed to have washed ashore in Yeppoon near the SWBTA on two occasions in the months after the TS05 games. The marine markers were reported in the media to be red phosphorus, MK58 type. Eyewitnesses say the ADF was slow to respond to the presence of the unexploded marker in a populated area. However, there was a fast response from the PR department, which led to misinformation being told the media, who reported the marker disposed of prematurely. The presence of potentially explosive and dangerous military equipment on a populated beach is intolerable to the local population and presents a clear risk, especially to vehicles that drive on that beach. The marker incidents also increase the mental stress to people living in the area.

- **TNT** (trinitrotoluene) is another commonly used toxic explosive used in bombs and gunpowder. In one US base in Cheatam, Virginia, TNT contamination is largely responsible for the pollution of the entire food chain of the York River, and has rendered local crabs, fish and oysters inedible. The US Navy, who owned that site since 1942, denied the problem for some years, although they banned military personnel from swimming there. It is not yet remediated. TNT can persist in the environment for decades. It breaks down into a nitroammonium compound that is highly toxic to animals, plants and microorganisms. Humans exposed to TNT in groundwater may experience anaemia, liver problems and possibly cancer. Penetration of nitroaromatic compounds through the skin is a major concern for the military because of their ability to rapidly penetrate the skin. Exposures at or below 0.5 mg/m³ have been reported to cause destruction of red blood cells. Deaths from anaemia and hepatitis were reported in TNT workers prior to the 1950s.
- **RDX** (Royal Demolition Explosive or 1,3,5-hexahydro-1,3,5-trinitrotriazine) is another explosive compound, used in almost all military explosive compounds. Areas polluted with TNT are also polluted with RDX in US military sites. RDX is carcinogenic, toxic to all life, degrades slowly, and leaches into groundwater. Human poisoning is similar to that of TNT: anaemia, hepatitis and central nervous system effects.
- **Mercury** used in lubricating oils for military equipment. Mercury is toxic to plants, animals and humans. It bioaccumulates in the muscles of animals and can lead to poisoning of higher order predators and humans.
- **Lead** was widely used in bullet casings worldwide and still used in the US and Australia. Inorganic lead is found in storage batteries, bullets, munitions primers, soft metal alloys (solder), lubricants, structural paints (especially marine and bridge applications, but also older residential paints); cable and wire insulation covering, and plumbing.. Historical pollution by lead casings will persist in live-firing areas.
- **Depleted Uranium** DU is used in the construction of Abrams tanks as well as tank-penetrating missiles and 'bunker busters'. DU is responsible for an epidemic of birth defects in the theatres of war in Iraq and Afghanistan due to extensive use by the US in Gulf Wars I and II. While

the Australian military deny possessing any DU and say that the US will not use it in training here, Australia has purchased DU rounds in the past, according to Hansard.

- **Plutonium, Beryllium, Tritium and other nuclear products** While not expected to be a problem on Australian soils, plutonium contamination from US military activities is an ongoing problem in the US where 5000 gallons (xxxx litres) of plutonium among other contaminants leached into the soil at the Rocky Flats site where nuclear weapon parts were manufactured by the US government between 1952-1992. It continues to pose a risk to environment and health via groundwater and surface water. Careless storage and disposal has led to hundreds of leaking drums, pipelines, underground storage tanks, landfills and contaminated buildings. Plutonium is not excreted from the body and leads to cancers. While the surface was cleaned up (soil removed to Idaho and New Mexico), the contamination remains below one metre and in groundwater.
- **Practice ammunition**, sometimes called 'green' munitions. Practice munitions are by no means environmentally benign as they use the same kinds of metal casings as real ammunition and still require toxic propellants to be fired. Practice munitions can contain antimony, barium, lead, magnesium, red and white phosphorus and a number of other incendiary compounds that can contaminate. Practice bombs are still capable of causing considerable physical damage on impact.
- **Synergistic effects** Exposure to one or more pollutants can lead to Multiple Chemical Sensitivity. The Weston report (1997) found many other pollutants that exceeded safe levels at Clark Air Base in the Philippines including: Aldrin, Dieldrin, Petroleum hydrocarbons, Lead, Polychlorinated Hydrocarbons (PCBs), Lindane, and Hexachlorobenzene.

3.2 Noise

Noise is a risk factor to troops, private citizens and fauna alike. The noise generated at take-off of military aircraft from Rockhampton has been measured at 97 decibels inside houses two kilometres from the airport. Noise levels of 30 decibels interfere with sleep, 50 decibels will interrupt conversations, and prolonged exposure to 85 decibels can cause hearing damage.



The military recognise the risk of 'psychological harm to marine fauna' (AECOM 2010 p.61) is of concern to the military. This recognition is ignored in the practice of undersea detonation and the use of sonar during military exercises. The military admit that marine animals

will have to be moved away, however the report does not detail how this will be achieved. Shoalwater Bay is particularly affected by these practices due to the presence of endangered sea life including dugongs and green sea turtles.

On 19 October 2010 Senator Scott Ludlam asked in parliament that military personnel and The Great Barrier Reef Marine Park Authority explain how dugong and other species would be protected from this activity. GBRMPA representative Dr Reichelt told him that 'The military are required to do an extensive clearing operation of wildlife', literally ushering or scaring them out of the area. The GBRMA representative had no idea whether or how smaller species could be protected from underwater detonations, but he considered the two hectare area in question 'a small area'.

3.3 Physical damage

Physical damage to the earth always accompanies military activities. War is perhaps the most catastrophic physical damage the environment can undergo, but bases and training areas are also sources of environmental degradation.

Many conflicts have been characterised by military strategies that included the destruction of resources in a 'scorched earth' policy. During the Vietnam War over 40% of the land was sprayed with defoliants, combined with bombing and tank incursions on steep terrain which took decades to recover (Demarais et al, 1999). A 227kg bomb can create a hole 14m in diameter, and 9m deep. Vietnam is still pock-marked with such craters. Two gulf wars have damaged and contaminated the natural resources of Afghanistan and Iraq, where oil wells were deliberately targeted by both sides.

Training areas seek to imitate the natural conditions of war. Tracked vehicles cause devastating erosion. Demarais et al (1999) describe the effect of two years of tank manoeuvres at Fort Carson (Colorado), where 40% of the land surface had been impacted after just six training rotations. Impacts on soil and flora impact burrowing and ground dwelling animals and may change community composition. Soil structure can be disturbed to the extent that erosion potential by other means (wind and rain) is exacerbated. Wind erosion



was a problem in Afghanistan after the Gulf War as a result of vehicles and bombing distributing other contaminants, such as depleted uranium and heavy metals, over a wide area increasing their potential to 'enter the food web' (Demarais et al 1999 p.388). Soil compaction is an effect of tank manoeuvres, especially on damp soil (Demarais et al 1999).

Left: Ground Zero of target area on Townshend Island, SWBTA (Tunstall & Marks 1997)

Demarais et al lists the training related physical damage to the environment at SWBTA:

...engineering activities, movements of tracked vehicles and fire...construction of tank traps and other earthworks, sandbag and timber constructions, vegetation clearing, felling trees for obstacles, barbed wire emplacements and road demolition. Vehicle traffic results in soil compaction and denudation. Lands adjacent to major camps and defensive positions are typically cleared of woody vegetation using bulldozers and hand tools. Manoeuvres by tanks...result in crushing vegetation, soil compaction, and soil displacement...Additional damage results from camp sites, tracked vehicles, bombing, naval demolition and timber harvest. (Demarais et al 1999 p. 390).

Demarais et al (1999) also note that the frequency of fires has increased as a result of training activities, and could have 'detrimental effects' on the vegetation succession stage (favouring more common species over those rarer late-succession species).

In a 1997 Department of Defence funded study, Tunstall and Marks assessed the "off-road" impacts of the US-Australian Joint Exercises Tandem Thrust '97 exercises at Shoalwater Bay. The need for development of an adequate way to measure impacts was highlighted by this study, because of the increased impacts expected from "an exercise under foreign control in a World Heritage listed waters and on Australian Heritage Listed land" (Tunstall & Marks 1997 p.2).

The areas impacted will change across exercise scenarios and thus can not be predicted. Tunstall & Marks found, 'Measurement of every impact impracticable' due to the size of the area. However, some common damage patterns detected included 'a corridor 500m either side' of roads (1997 p4), Tunstall & Marks admit that the accuracy of their measures was decreased by the actual implementation of their study being delayed by military approval and lacking time to purchase necessary hardware and distribute the proforma they developed.

Tunstall & Marks noted that 'few of the bombs landed on the cleared parts of the targets, thereby unnecessarily extending the area of impact, and making difficult the location of Unexploded Ordnance (UXO)' (1997 p.6). The problem of UXO as a source of risk and contamination is noted elsewhere in this report. Bombs were a significant source of physical damage to the SWBTA during TT97:

Ground detonation of 500lb bombs produced a crater 1m deep and 4m wide...with shell fragments damaging surrounding trees (and) soil disturbance...in a circle of around 15m diameter (Tunstall & Marks 1997 p.6).

Right: Impact of multiple 2000lb bombs on Townshend Island SWBTA (Tunstall & Marks 1997)



While they recorded off road impacts as 'insignificant' in this study, it should be noted that only physically obvious damage that was accessible to them was included in the study. TT97 included the participation of 21 000 troops, while Talisman Saber exercises since 2005 have included up to 30 000 troops, the construction of more infrastructure in 2008 (to mimic a gulf-war village theatre of war) and has included ship to shore bombing runs. During TT97 an 8000 tonne warship was sunk offshore for use as target practice, and at least one emu was shot on purpose by troops.

An eyewitness account by local fisherman Ronny Toon, who has worked in the Shoalwater Bay area for over 20 years, indicates that he has seen extensive damage to mangroves which he attributes to the use of white phosphorus, used for signalling, screening, and incendiary purposes. He was told, upon inquiry, by then Senator Robert Hill that the damage was due to drought; an assessment seemingly not based on an understanding of mangrove ecology (Toon 2007, personal communication).

The military consider the risk of aircraft crashes as very low. However, accidents do happen. In January 2006 the USS Ronald Reagan visited the port of Brisbane. On their return journey from participation in manoeuvres in Australian waters a US FA-18 Hornet strike fighter plane crashed in the ocean 200km SE of Brisbane. No attempt was made to retrieve the \$37m aircraft and the public was not made aware of the potential environmental contaminants contained within that aircraft.

Barton's 1994 assessment of TFTA claims that, 'defence force training personnel also believe that, in some cases, good training practices and good environmental practices coincide' (p.3). However Cannon (in Barton 1994) says that 'the land may take a long time to recover from the impact of military use' (p.3)

While the military often claim that military use has saved some areas from the damage caused by grazing, expert participants at a 1994 workshop examining the TFTA agreed that "grazing combined with military activities was likely to result in considerable degradation" (Barton 1994 p.7).

3.4 Use of sonar

Active and passive sonar are used by submarines. Mid to low frequency sonar is associated with whale beaching, brain haemorrhaging in cetaceans and disruption to the breeding cycle of many species.

Prior to the 2001 Tandem Thrust exercises, Pat O'Brien, spokesperson for the Wildlife Protection Association of Australia asked: 'Will the US Navy or the ADF be using or testing in Australian waters experimental low frequency sonar technology... We understand that this program involves the use of technology similar to a type

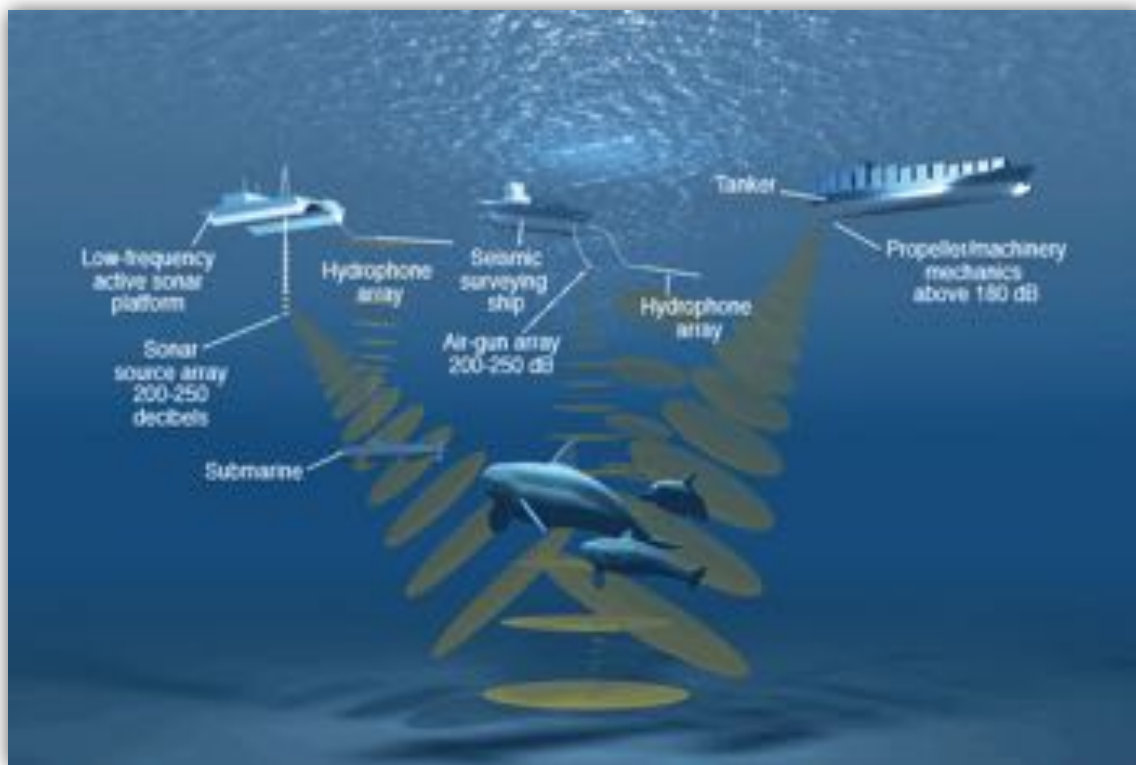


that has previously been linked to the stranding of sperm whales, sea turtles, and other endangered marine species.' In response the military at first said that low-frequency sonar would not be used but in a later reply admitted it will be 'limiting the use of low-frequency sonar to water depths greater than 40m'.

The military claims that, 'Australia and the US are committed to environmental stewardship and take the need to protect marine mammals from the effects of underwater sound sources very seriously' (AECOM p10). This is simply untrue: the US Navy has exemptions from acts that protect endangered species, including whales, to allow their use of sonar.

Dr Marsh Green, at the Ocean Mammal Institute says that, "low-frequency (LFAS) and mid frequency sonar can have a source level of 240 dB, one trillion times louder than sounds whales have been shown to avoid"

In 2008, US environment groups took the US Navy to the Supreme Court to stop them using sonar during the TS07 games in Hawaii, saying, 'intense sound waves can harm or even kill 37 species of marine mammals, including sea lions and endangered blue whales, by interfering with their ability to navigate and communicate' (New Scientist, Nov 12, 2008). The Navy won, although two high court judges made statements of opposition to the decision: 'In her written dissent, Justice Ginsburg cited the substantial and irreparable harm to marine mammals, saying sonar has been linked to mass strandings and haemorrhaging around the brain and ears' (New Scientist Nov 12, 2008).



Above: Sound bombardments affecting whales (Source: Spectrum.ieee.org)

The impact of even a small risk would be great if it affected even one member of an endangered species totalling in the hundreds, such as Right Whales and Grey Whales (IWC 2010). In reality, unless an affected animal washes up on shore somewhere, it is unlikely that the military can guarantee that they have not killed cetaceans, or that their use of sonar has not non-lethally injured the many creatures that live in the Coral Sea and the Great Barrier Reef Marine Park.

Public Environment Report assessments of risk reduction measures regarding sonar are inadequate given the nature of active sonar and its ability to travel great distances undersea. In recent years the US Navy has developed LFS that operates at lower frequencies and travels further (SURTASS-LFS). The proposal

Military claims that they are, “committed to environmental stewardship and take the need to protect marine mammals from the effects of underwater sound sources very seriously” is simply untrue: the U.S. Navy has exemptions from acts that protect endangered species, including whales, to allow their use of sonar

regarding active sonar to suspend sonar transmissions if a whale is sighted is inadequate given the extensive distances that sonar can travel undersea.

Importantly for the SWBTA is the use of active sonar in the oceans near the bay. Sonar is known to affect cetaceans, and dugongs also respond to sonar. Sonar is believed to be responsible for the deaths of whales and dolphins worldwide, the loud noises frightening the animals, causing brain haemorrhages and 'the bends'.

The American Cetacean Society (ACS) says, 'The US Navy, in developing and testing its SURTASS-LFA (Surveillance Towed-Array Sensor System - Low-Frequency Active, called 'LFA' for short) sonar system, was caught bypassing domestic

environmental laws and taken to court by environmental groups". ACS says the US Navy has the capacity to ensonify 80% of the world's oceans. Dr Marsha Green, for the Ocean Mammal Institute says that, "low-frequency (LFAS) and mid-frequency can have a source level of 240 dB, which is one trillion times louder than the sounds whales have been shown to avoid" (Green 2001).

The Great Barrier Reef Marine Park Authority cite, 'detonations of explosives, the use of live munitions and the use of active sonar and other acoustic devices' as threats to marine life in the area.

Sonar and ocean noise has also been found to affect fish, injuring or killing them by vibrating their swim bladders, reducing catches and affecting the viability of eggs.

The risk sonar poses is acknowledged. Once again, the precautionary principle should apply and the use of sonar should be ceased. The proposal to suspend sonar use if a whale is sited within 1000-4000 yards from a ship is, therefore, inadequate for the protection of the animals and these environments.

3.5 Nuclear risks

It is common knowledge that the US has a significant nuclear arsenal at sea; Australia can refuse to allow entry to nuclear-capable vessels and to train with them.

Training with a nuclear-capable military, using its nuclear-capable systems, is training for nuclear war, whether or not the existence of the warheads is confirmed. There have been numerous accidents and sinkings of nuclear submarines worldwide, including incidents with US nuclear submarines.

Understanding that 'for security reasons, it has been the long-standing policy of the United States Government to never confirm or deny the presence of nuclear weapons on board their ships.' (p58), we are alarmed at the potential firepower and political implications of training with the military equipment listed in the PER.

The list of weapons and equipment that 'may be utilised during TS13' (AURECON 2012 p.13) leaves no doubt that Talisman Saber 2013 places Australia at risk of being perceived as 'saber rattling' in the Pacific. The long list includes:

- **Ohio Class submarines** nuclear-powered submarines used by the United States Navy. They are armed with nuclear warheads and Tomahawk cruise missiles.
http://en.wikipedia.org/wiki/Ohio-class_submarine
- **Los Angeles Class Submarine** nuclear-powered fast attack submarines that form the backbone of the US Navy's submarine force...carry 25 torpedo-tube-launched weapons and all boats of the class are capable of launching Tomahawk cruise missiles.
http://en.wikipedia.org/wiki/Los_Angeles_class_submarine Los Angeles class submarine
- **Nimitz-class aircraft carrier** there are ten of these supercarriers in service with the United States Navy. At 333 m long they are the largest ships in the world. Carry 90 aircraft primarily F/A-18E/F Super Hornets and F/A-18C Hornets. In addition to their aircraft, the vessels carry short-range defensive weaponry for anti-aircraft warfare and missile defense.
http://en.wikipedia.org/wiki/Nimitz-class_aircraft_carrier

M1A1 Abrams tanks Both the Australian and US forces possess M1A1 Abrams tanks and these are listed under both countries' potential inventory. American Abrams tanks are DU armoured, meaning they are enforced with a mesh made of Depleted Uranium (DU), or Uranium 238, a toxic and radioactive heavy metal which can put human health and the environmental at risk. The Public Environment Report states that no DU munitions are to be used in Talisman Saber, but it would be misleading to suggest that DU itself will not be present if US Abrams tanks are used, and Defence must clarify if American DU armoured Abrams tanks will be used.

- **Ticonderoga class cruiser** These guided missile cruisers are multi-role warships. They launch Tomahawk cruise. Its LAMPS III helicopter support and sonar allow it to perform anti-submarine missions. Ticonderoga class ships are designed to be elements of carrier battle groups, amphibious assault groups, as well as performing missions such as interdiction or escort.
http://en.wikipedia.org/wiki/Ticonderoga_class_cruiser

Boeing F/A-18E/F Super Hornet and F/A-18F Twin-engine carrier-based fighter aircraft. The Super Hornet has an internal 20 mm gun and can carry air-to-air missiles and air-to-surface weapons. The Royal Australian Air Force (RAAF), which has operated the F/A-18A as its main fighter since 1984, ordered the F/A-18F in 2007 to replace its aging F-111 fleet. RAAF Super Hornets entered service in December 2010. http://en.wikipedia.org/wiki/Boeing_F/A-18E/F_Super_Hornet

A larger nuclear-based accident could be catastrophic for humans and wildlife alike – it is our understanding that no nuclear preparedness has been considered specifically for Talisman Saber, nor is Talisman Saber deemed a ‘nuclear action’ by the Environmental Protection and Biodiversity Conservation Act (1999). While agreements and regulations for nuclear ship visits are in place, the fact that these visits and activities do not trigger required assessment under the EPBC means that the EPBC is fundamentally flawed.

In Tokyo, Japan 2006 radiation was detected in the waters around a nuclear powered submarine, the US Honolulu. The US navy continues to deny this and maintains they have a good record. Some Japanese ports see the risk of nuclear accident from visiting US warships so great that they hold nuclear leak drills to test their preparedness.

In 1989, the Senate Standing committee on Foreign Affairs Defence and Trade inquiry into nuclear powered ships visiting Australia found that risk assessment based on past record of accidents could not be used as a predictor of future accidents. This calls for the precautionary principle to be applied: the risk is real - the lack of past accidents does not rule out a future accident.

Right: Visits from US nuclear warships banned by New Zealand in 1987.

There are at least 10 serious peacetime accidents involving US nuclear submarines on the public record. As recently as March 2005 a US nuclear submarine was involved in an undersea crash that killed crew members. A witness to the 1989 Senate inquiry found that the paucity of reported accidents involving nuclear submarines was probably due to, ‘tight secrecy surrounding sensitive military information’ and ‘it would take blind faith to believe that disasters and near disasters, as yet undisclosed, had not occurred in NPW reactors’. In fact, media outlets cite incidents in the many hundreds.



3.6 Human health and safety

3.6.1 Noise

Exposure to high frequency sounds came from weapons, vehicles and jet engines. A single exposure of ‘impulse noise with peak levels exceeding approximately 140 dB SPL’ can cause deafness or progressive hearing loss (Humes et al 2006, p4). Some sources of high levels of noise that exceed 140 dB include: pistols, machine guns, grenades, anti-tank missiles, howitzers, rocket launchers(Humes et al 2006, p81). Lower levels of noise from vehicles and aircraft (helicopters, tanks, personal carriers etc.) can cause damage from prolonged exposure, sometimes over years. Other military-related factors that can contribute to hearing loss include head injuries, whole body vibrations and chemical exposures.

This level of exposure is also a risk to citizens living adjacent to military facilities. Noise and vibrations have been a risk and ongoing nuisance in many places where US bases are sited.

The local communities can draw some comfort from the claim that ‘Shoalwater Bay Training Area Standing Orders specify that flying directly over the Byfield, Stockyard Point and

Marlborough communities be avoided and restrictions from flying over sensitive fauna areas noted as Pelicans Rock, Kenss Island and Bay Island’ However, during past TS games this edict has not been followed and military representatives have been less than understanding of the needs of the local community regarding noise, telling them that, ‘they should live near a base’ and that there is ‘no sympathy’ for them (Bishopric 2007, personal communication).

A single exposure of, “impulse noise with peak levels exceeding approximately 140 dB SPL” can cause deafness or progressive hearing loss

3.6.2 Sexual assault

Incidents of sexual and interpersonal violence are a problem within the troops and in the civilian community where troops are stationed. The US Department of Defence estimates about 19 000 sexual assaults within the military per year. A 2005 inquiry found that ‘harassment recorded by cadets and midshipmen include using derogatory terms for female cadets and midshipmen; making offensive gestures;



continuing to ask for dates or sex after repeatedly being told no; offering to trade a professional favour, such as a good evaluation, for sexual acts; and retaliating against women for refusing sex or dates’ (DoD 2005 p.21). Research indicates that rapes and sexual assaults are more often than not, unreported. The US Department of Veteran Affairs says only 20% of women report; other studies have found even less report. Thus these figures could easily be ten times larger.

Anecdotal reports indicate that there is a significant increase in sexual assaults, drink spiking, crime and public drunkenness in the area where troops participating in the Talisman Saber war games recreate. Despite the anecdotal reports, a 2012 report commissioned by the Department of defence found that there was a 'moderate' risk of sexual assault of civilians as a result of US military presence in their community and devote just two paragraphs to the issue (Noetic Solutions p.20).

Substantially more effort should be made to protect women and to reign in the behaviour of troops. We should not be exposing women to this kind of threat.

The data suggests that one US service member is sexually assaulted every 20 minutes and that one American citizen is sexually assaulted every two minutes (Zengerle 2013)

In 2011 the ADF claimed that there is no evidence that sexual assault is a problem in the presence of US and Australian troops participating in military exercises in the Shoalwater Bay and Robertson barracks regions (Rockhampton, Yeppoon, Darwin). However, the statistics of sexual assaults within the ADF and the US military suggest otherwise. They do not acknowledge this risk and there is no mechanism to have this risk publicly acknowledged or acted upon.

BaseWatch, a community group opposing US forces in Darwin note that:

Foremost among our concerns is any social impact on our city. Recently, a report labelled as a 'social impact assessment' of the first tranche of 250 Marines identified sexual assault as one of only two associated hazards with a significant risk rating. BaseWatch are aware of a small but significant number of incidents of sexual assault, and other crimes, committed by US service people on R&R here in Darwin. We're aware of similar experiences elsewhere around the country, and at US bases around the world, particularly the litany of sexual assaults in Okinawa, including a very recent case of rape... including one incident where it has been suggested that deficiencies of the SOFA (Status of Forces Agreement) contributed to a total failure of perpetrators of gang rape facing any legal consequence. (BaseWatch 2013).

3.6.3 Other public risks

The military, even in peace time, pose a significant risk to civilians living near them.

At Shoalwater Bay local residents are concerned about potential groundwater pollution from explosives in the catchment area for Waterpark Creek, part of the water source for the town of Yeppoon. The drinking water of Yeppoon may be endangered by weapons use in the Dismal sector, as it forms part of the water catchment for the town and runs into Waterpark Creek. There are grounds for concern. Perchlorate, for example, commonly used in rocket fuel, has been detected in many groundwater sites where the US forces have practice bombing in both the US and worldwide.

The increasing human population in the Capricorn region will lead inevitably to increased conflict with the military over land and sea use. Many local inhabitants want to see the Shoalwater region better protected and do not want increased military activities in their region: their opinions should be of great importance in decision making.

Reported instances of conflict in recent years around the SWBTA include:

- the washing ashore of phosphorus marine markers (Bangalee Beach, 2006)
- the washing ashore of US naval garbage
- an incident where helicopter gun-ships menaced a family yachting in Shoalwater Bay (July 2006). Children were reported to have been made hysterical by the menacing nature of the helicopter gunship in question and the family forced to leave safe waters in bad weather. The army, although apologising to the family, has refused to provide safe harbour for boats caught in bad weather.
- incidents of stress caused by increased military activity in the adjacent towns of Byfield and Yeppoon: Byfield residents have long been forced to tolerate the seismic events associated with bombing runs in the nearby Dismal sector of the SWBTA. In one of the latter instances, when a local residents complain of noise from low flying helicopters was told by a ADF spokesperson that he had 'no sympathy' for people who live near military facilities. This does not represent good PR or bode well for future residents of the region, and demonstrates the increasing tension between military uses and civilian uses of the area.



In 2005 Access Economics estimated the total economic contribution of tourism, commercial fishing, and cultural and recreational activity of the Great Barrier Reef at over \$3.5 billion per annum. They did not even attempt to estimate the ecosystem service that the Great Barrier Reef provides (mitigating pollution, providing spawning habitat for fisheries, absorbing carbon, etc.) because these costs are incalculable.

The Capricorn region is of much greater economic value as a tourist destination than as a military one. Considering the other pressures on the natural environment, non-destructive uses such as scuba diving and photography should be encouraged in preference to war games.

Unlike the military, genuine tourists are not generally associated with an increase in crime and sexual assault, nor do they blow things up.

3.7 Indigenous issues

All military exercises take place on the lands and seas of Aboriginal and Islander First Peoples. It has long been Australian and US government practice to impose nuclear and military sites on indigenous people's land, limiting their access to sites and their right to practise their culture and heritage.

denial of access to and the destruction of traditional lands and seas is the destruction of culture and heritage and an infringement of the human rights of indigenous peoples

The land and seas at Shoalwater contain sites important to Darumbal culture and heritage. It is our understanding that the Darumbal people, traditional owners of the land at Shoalwater, although acknowledged to be the traditional custodians, have not been given native title to their land, which is designated a military exclusion zone, and are only allowed limited access to it.

We are concerned that the threat of losing access completely forces Traditional Owners of all sites used in Talisman Saber to submit to military use of their land or waters, without equitable debate.

We have experienced inadequacy or lack of priority placed on consultation with Traditional Owners. In fact, during the 2007 inquiry in the SWBTA expansion the ADF claimed Traditional Owners of the Shoalwater region were not consulted because they were not 'contactable.' With several easily approachable and relevant organisations to facilitate contact, the ADF's failure to make contact at that time can only serve to highlight a lack of effort or a lack of appropriate protocol.

The people of Guahan/Guam, the Marshall Islands and Hawaii are all experiencing the devastation of their ancestral lands through the US colonisation and militarisation of the Pacific. Strategically important Guahan/Guam, alone, is now 1/3 occupied by the US military.

Denial of access to and the destruction of traditional lands and seas is the destruction of culture and heritage is an infringement of the human rights of indigenous peoples dispossessed by military training areas and bases.

3.8 Risks to troops

Deafness

The risk to troops of ear damage, deafness and tinnitus is well recognised. A report by the US Institute of Medicine of the National Academies (Humes et al 2006) analysed the data from the medical records of 3500 veterans and found that hearing complaints were the third most common health problems (75 000 of 2.5m veterans nationally). Sounds over 140 dB can cause hearing damage with only one exposure.

PTSD and Suicide

Around 50% more US troops have committed suicide than have died in Afghanistan. In the first 155 days of 2012 there were 154 suicides, the highest level in ten years (Associated Press 2012). It is thought the increase in suicides is linked to deployment in the Middle East, exposure to other troops who have been deployed and the high incidence of Post-Traumatic Stress Disorder.

While politicians are determining what is 'best' for the country with a strategic eye to keeping on the good side of the US, Australian and US soldiers are suffering, being killed or killing themselves. To date, a total of

4429 US soldiers and 20 Australian soldiers have died, and thousands more have been injured in these unpopular wars. Iraq Body Count estimates over 100 000 civilians have been killed, while the Iraq War logs show that the US military lied about not keeping logs of civilian deaths, and as a result of these Wikileaks documents, the civilian toll is now about 150 000. Both citizens and soldiers alike are opposed to Australia's continued intervention in wars that the US has admitted are unwinnable.

The US Army's 2007 report on the mental health of soldiers says that half of soldiers report feeling stressed and having alcohol, family and/or emotional problems.

More US troops have committed suicide since the beginning of the Iraq war than have died in the war. In the 2007 study it was found that with declining mental health, soldiers were more likely to endorse ill treatment of non-combatants, including torture (44% strongly agreed) (2007, p25). Almost half of troops in the same survey were likely to report colleagues killing, mistreating or stealing from non-combatants, despite ethics training.

As many as 6000 US soldiers killed themselves in 2010, while an estimated 10 000 more attempted or were talked out of it by counsellors. Many are suffering Post Traumatic Stress Disorder and Traumatic Brain Injury, which often leads to reckless behaviours including drugs and drinking, the breakdown of their families and more interpersonal violence in society in general. It is estimated by the Veterans Administration that fully 35 per cent of US military personnel deployed to Afghanistan and Iraq since 2001 are suffering from PTSD.

4.0 US military activities

4.1 The environmental and social track record of US forces worldwide

The US has more than 900 bases worldwide. Those bases, notes former Friends of the Earth International coordinator and Nigeria national, Nnimmo Bassey, always exist in a location of strategic economic interest to the US. We discuss just a few of them here.

The US DoD has been described as the world's biggest industrial polluter, given the toxic legacy that their bases and facilities have created worldwide. Project Censored estimates that 'the US military generates 750 000 tons of toxic waste material annually, more than the five largest chemical companies in the US combined. This pollution occurs globally as the US maintains bases in dozens of countries.' The US DoD has sought exemptions from many important environmental laws in the US including the Migratory Bird Treaties Act, the Wildlife Act, the Endangered Species Act, the Clean Air Act and the National Environmental Policy Act. Hundreds of Superfund contaminated sites in the US are military.

Perhaps the worst cases of US military pollution offshore would be the cases of Vieques, Puerto Rico and Clark Air Base in Philippines. Both Vieques and Clark Air Base are now closed down and the full effects of their contamination can only be assessed after the military has vacated the premises. No compensation has

been offered to these communities devastated by US DoD toxins. Moreover, the US DoD is reluctant to compensate even US citizens for environmental pollution. One study has found that the US DoD is even polluting the national food supply. There are about 140 superfund listed US military sites. The Military Toxics Project estimates contaminated sites number in the several thousands in the US. The US Navy has estimated it would cost them US \$33b just to clean up the contaminated navy sites.

Contaminants on those sites include buried or sunken munitions (pictured), unexploded ordnances, spilled



oil, fuel and solvents, toxic explosives compounds including TNT and perchlorate, heavy metals including lead and tungsten and corroding vessels and vehicles . Much of the pollution left globally by the US military is the result of day to day maintenance and training such as that which will occur in Australian training areas used by US forces.

The US Navy maintains a program of disposing of unwanted military vessels by sinking them. Once on the ocean floor, PCBs, iron, lead paint and anti-fouling paint all can leach into the ocean, fish, and food-chain.

4.1.1 Korea

The US once had 35 military installations in South Korea. Many are now closed, while others are still in decommissioning; only half are expected to return to South Korean sovereign control.

In 2012 28,000 US troops remain stationed in South Korea. The cities hosting these bases have plans to develop the land for residential and corporate use. The 23rd Chemical Battalion is expected to move back to Camp Stanley to undertake 'nuclear, biological and chemical reconnaissance, equipment decontamination and consequence management assistance', which will likely be necessary given the US record of base contamination.

However, the US is proposing new bases in South Korea, particularly on Jeju Island, where it intends to house 20-30 US and South Korea war ships in a posture towards China. Civil society opponents of the base are trying to challenge its legitimacy in the courts, citing the likelihood of increased conflict with China if it goes ahead. Protests successfully halted construction of the base in June 2011, however the threats to local livelihoods, the environment and democracy are still at stake according to locals. It is alleged that bribery and corruption have played a great part in the council permissions to build the base (Chomsky 2011).

4.1.2 Philippines

Clark Air Base was a US base in the Philippines for almost 100 years. In 1991, it became the site of an



airport, local military base and Clark Freeport Zone, a special economic and residential area.

Left: Greenpeace protests PCB contamination at Clark Air Base in 2010 (Source: GP Southeast Asia).

In the 1990s, after its closure, the Filipino government used the contaminated land to house victims of the Pinatubo eruptions because they did not know the extent of the contamination, resulting in illness and birth defects affecting hundreds of people. The site is now a suburb and

continues to cause illness from pollution left there by the US DoD over 30 years ago.

Residents living near the Clark Freeport Zone show signs of chemical toxicity including mercury poisoning, leukaemia and other health problems. The United States denies responsibility for the remaining pollution or the health problems of locals.

US and Philippine government denial of the problem has been the catalyst for grass roots community groups such as Filipina/American Coalition for environmental Solutions (FACES) and People's Task Force for Base Clean-up (PTFBC) to form to deal with the problem. FACES claims that Clark and Subic are, 'contaminated with toxic solvents, pesticides, asbestos, heavy metals, unexploded ordnance and other hazardous substances' in 43 sites. While the US General Accounting Office, World Health Organization, Independent US and Philippine experts and the Department of Defense's internal reports recognise the pollution, US officials refuse to accept responsibility. Since 2000 two law suits brought by locals against the US military have been thrown out of US and Filipino courts.

PTFBC has worked to raise public awareness of the US military environmental crimes with the publication of the book 'Inheritors of the earth' which tells the stories of Clark Base pollution victims:

The continuing tragedy of poisoning and contamination in the former U.S. military bases at Clark and Subic is an active statement of the irresponsible and reckless way in which the United States conducted itself at the height of its military presence and dominance in the Philippines. The heartbreaking stories of babies dying and people suffering from leukaemia, mental disorders, weakened immune systems and various learning disabilities within and around the former bases represent an enduring legacy of toxic transgressions whose foremost and vulnerable victims are children...

Clark had a 25-million-gallon storage facility for petroleum, oil, and lubricants and 200,000 square feet of ammunition. Clark was also used for bombing exercises, with the Crow Valley Bombing and Gunnery Range, a 42-mile Facility in the neighbouring province, located 14 miles from the base proper.

The US Navy also pumped 3.75 million gallons of untreated sewage into Subic Bay during its occupation of the site. They used fuel and chemicals to fight fires created by training exercises, which they poured directly into water sources. Underground chemical holding tanks leaked without monitoring. Garbage landfills and dumping grounds for unwanted ordnance were left contaminated with asbestos, heavy metals, oils, pesticides and PCBs.

In 1996, in the absence of government action, PTFBC conducted its own health survey of the Clark and Subic base areas. Testimony of locals revealed well water that smelled and tasted bad and caused stomach aches. Mothers had spontaneous abortions. People experienced unusually high rates of hair loss and skin diseases, tumours and lung conditions. High rates of kidney and urinary tract infections and nervous system disorders mirrored those seen in people living near landfill sites (PTFCB 2000). An unpublished report in 1991 estimated that contaminants left by the military could take between 1 and 25 years to migrate into groundwater (Mandocdoc & David 2008, p.871).

The Weston report (1997) found many other pollutants that exceeded safe levels at Clark including: Aldrin, Dieldrin, Petroleum hydrocarbons, Lead, Polychlorinated Hydrocarbons(PCBs), Lindane, Hexachlorobenzene. PCBs (Polychlorinated biphenyls) were left behind by departing US troops. PCBs are known to cause fatigue, headaches, muscle weakness, joint aches, memory loss and impaired cognitive function (Ashford & Miller 1991, p.119).

In 2008, 16 years after the chemical was last used, Dieldrin was measured in groundwater at Clark at excessive levels. (Mandocdoc & David 2008). Aldrin was also detected. Dieldrin is a Persistent Organic Pollutant (POP) and a known carcinogen that has been banned in numerous countries including the US. The study recognised that each rain event increased the level of Dieldrin in groundwater and that this will be an ongoing problem for decades to come. Since 2003, the local area residents have stopped using well water due to contamination.

A 2010 study of about 500 family records of people who had sheltered at Clark during the Pinatubo eruptions in 1991 linked the pollution with 76 deaths and 68 cases of illness.

4.1.3 Vieques

Of particular interest to this critique is a study by Baver (2006) of legacy of contamination from 60 years of US military exercises at Vieques, an island 13 km east of Puerto Rico in the Caribbean. The Vieques Naval Installation occupied two thirds of the island, dispossessing local indigenous Viequans. The US Navy estimates that between the 1940s - 2003, 'more than 300,000 munitions items were fired from military training operations, including naval gunfire, air-to-ground bombing, and marine artillery fire. It was initially estimated that up to 9,000 acres of the property may be contaminated by munitions and explosives of concern (MEC) from these operations' (US Navy, 2010).

Despite the end of live firing exercises at the Vieques base and the withdrawal of the US military from the island, ill health and environmental contamination continue. Depleted Uranium, perchlorate, RDX, TNT and many heavy metals contaminate the site, which encompasses two thirds of the island. These affect food production, human health and environmental health. Not only did the 60 years of exercises physically destroy mangroves and waterways, and leave physical scars on the countryside, it also left behind TNT, NO₃, NO₂, RDX, Tetryl, napalm, perchlorate, mercury, lead, PCBs and Depleted Uranium (DU), much of which can never be cleaned up and continue to contaminate and poison. In addition, the traditional fishing grounds have been devastated by 'ghost nets' ripped and set adrift by naval ships. Residents of the island have disproportionately high rates of illnesses such as cancer, hypertension and liver disease.

In Vieques, Depleted Uranium was used extensively, leading to birth defects and high rates of leukaemia. Perchlorate contaminated the water table and ghost nets set adrift by the massive naval vessels continue to devastate the fisheries. The Military Toxics Project says of Vieques:

Since 1940, the US Navy has used three-quarters of the island of Vieques, Puerto Rico for bombardment, munitions disposal, and other activities. There is strong evidence that heavy metals and other munitions toxins move in the air from the bombing range to the civilian areas. The toxic explosive compound RDX was found in drinking water supplies in civilian areas in the late 1970s. In 2000, excessive levels of mercury were found in the hair and fingernails of 45% of Vieques residents tested. Vegetables and plants growing in civilian areas are highly contaminated with lead, cadmium, and other heavy metals. From 1985-1989, Vieques children aged 0-9 were 117% more likely to contract cancer than children of the same age on the main island of Puerto Rico. Children aged 10-19 were 256% more likely to contract cancer. A 2001 study found that Vieques residents are 73% more likely to suffer from heart disease than residents of the main island, 64% more likely to develop hypertension, 58% more likely to have diabetes, and 18% more likely to be diagnosed with asthma.



Left: UXO await disposal, Vieques (Source: public.lantops-ir.org/sites/public/vieques).

The clean-up of contaminated land and water and disposal of UXO continues in Vieques to this day. The remediation of toxins from soil and water could take generations. Continuing public education in the dangers of UXOs is a vital part of what will be a long process of recovery.

4.1.4 Guam

Guam or Guahan – the southernmost island of the North Mariana islands, a Non-Self Governing territory of the US, is the traditional home of the Chamorro people. With the land 1/3 occupied by US military, the Chamorro people struggle to reclaim their land and keep their culture. Australian military agreements with the US support this occupation of Guahan; for example, US is permitted to conduct bombing practice over the NT that flies out of Guahan.



Chamorro rights advocates argue that as an 'unincorporated territory' since 1898, the native inhabitants of Guam have no rights. They are occupied, a colony of the US. With a high poverty rate and little or any other work opportunities, Guam youth have a high rate of military recruitment. About 80,000 troops and their families are expected to be permanently stationed there, with President Barack Obama indicating this number will increase as US soldiers are moved out of

Okinawa (Japan) where local opposition has driven out some US uses. Anti-social and criminal behaviour by off-duty soldiers — including serious crimes such as armed robbery, rape and murder — is a significant social problem in Okinawa where US troops are not bound by local laws.

Environmentally, Guam is polluted with toxic and radioactive military waste from various wars, training exercises and ongoing US posturing in the northern Pacific.

4.2 Regional Insecurity

Saber rattling in the Pacific will not bring regional security and is not in Australia's interests. As the U.S.'s key allies in the Pacific, Australia and Japan serve as local faces for US military might in its attempts to contain continental Asia and, in particular, posture towards nuclear weapons states China and Russia. It is our opinion that acting as a launch pad for, and supporting, US military operations has a destabilising effect on our region and beyond. U.S. military installations in Australia, such as Pine Gap, and US Sea Swaps (troop change-overs in WA) are used to target the Middle East, as are troops that have trained in past Talisman Saber and other exercises.

Australia could take a step towards a peaceful Pacific by removing itself from its role as the southern Pacific representative of the US nuclear umbrella: closing US access to Australian facilities, closing US bases in Australia and stopping joint training.

'Interoperability' has been the catch-cry of those in the ADF and government who seek to justify more U.S.-Australian joint preparations for war. This begs the question: 'Do we expect to be involved in more US wars?' and 'Is it in our strategic interest?' Do we want to align ourselves with environmental pariahs and equip our defence forces with offensive and polluting weapons so that we might be better equipped to do their bidding?

The US is involved in unpopular and unjust wars. It behoves the Australian government and military to recognise that they are meant to represent and serve the Australian people, 88% of whom are opposed to further involvement in US military actions. The US is in a unique position to change global dialogue to peace-making rather than increasing militarisation. As a key ally, Australia should be pushing for this, rather than deepening its support for US military activity.

Australia continues to be involved in war and military occupation in Iraq and Afghanistan. There is little support in either the US or Australia for these occupations. Hundreds of thousands of citizens have rallied over recent years in opposition to these occupations. A 2009 poll found that 88% of Australians were opposed to our involvement in Iraq, and in November 2010, 50% of Americans were opposed.



Friends of the Earth opposes joint military training and operations with the US. We oppose the use of violence as a solution to global problems. We reject the continuing US lead 'war on terror' believing, war itself to be terror. We believe that practising warfare, with the world's largest nuclear-armed superpower, sends an aggressive signal to our neighbours and potential allies throughout the world. We question the benefits of 'improving interoperability' with the US

With Pine Gap, Australia is already home to one of the US's most strategic military satellite bases. Australia's agreement to allow US bombing fly-overs over NT, US Sea Swaps and bombing practice in WA, and three new US joint training facilities further entrenches Australia's involvement in the US military machine, whether Australia is an open participant or not. For example, with only several hundred Australians troops deployed in Iraq and Afghanistan, it is clear that Australia's greatest contribution to US military efforts is to act as a base for US military activity. Joint military exercises, such as Talisman Saber, further entrench Australia as an ally and a lily-pad for U.S. military aggression. This is not the direction we would like to see Australia take.

It would be tragic enough if the only – or even a majority of – casualties in modern warfare were military personnel, but, of course, the vast majority (upward of 90%) of casualties in the wars fought in recent times have been, and continue to be, civilians – mainly women and children...

War is something that can and should be avoided, primarily because it does not work... You would think by now we would have worked out that killing people and destroying their lives, homes, towns, and cities does not create peace. (Bickerton, 2012).

We believe that Australia should be seeking peaceful solutions to conflict at home and overseas. Investing time, energy and resources into infrastructure that perpetuate war, rather than promoting peace, is a detriment to our community and world.

Despite attempts to disassociate these military exercises from their purpose and to portray them as eco-friendly training, the purpose of such joint exercises is to prepare the US and Australia for war.

The devastating environmental and social impacts of wars anywhere should not be overlooked. The environmental legacy of two Gulf Wars has included air, water and land contamination by Depleted Uranium, contamination from the oil well fires and oil spills, vehicle emissions, heavy metal contamination from missiles, dispersal of chemicals and other toxins

from bombing of buildings and disturbance of the desert areas by military activities. The human population bears the tragedy of acts of violence and other traumatic events brought about by invasion and occupation.

The effects have included increased cancers in humans, decline in fish and shrimp stocks in the Gulf and water contamination so severe that it hampered recovery efforts. Human beings in the region still suffer post-traumatic stress syndrome from both the environmental contamination and the interpersonal violence they were exposed to. The first Gulf War is estimated to have affected the health of over 20,000 residents of nearby Saudi Arabia. While in Iran 'black rain' was said to have resulted from oil fires. Iraq is reputed to have experienced a tenfold increase in birth deformities as a result of the use of Depleted Uranium. US troops claim similar effects from exposures.



Project Censored cites a report on Iraq of the United Nations Environmental Program [UNEP]'s Post-Conflict Assessment Unit "noted that the heavy Pentagon bombing and the movement of large numbers of Pentagon military vehicles and troops in Iraq "further degraded natural and agricultural ecosystems.'

The UNEP Post-Conflict Assessment Unit report also observed that the Pentagon's intensive use of Depleted Uranium [DU] weapons. Significant levels of radioactive contamination were found at four sites in Baghdad in May 2003, by Christian Science Monitor reporter Scott Peterson (CSM, 5/15/03). Much of this

radioactive contamination was likely produced by the DU bullets fired into the centre of Baghdad at the Iraqi Ministry of Planning by the Pentagon's A-10 Warthog aircraft, Abrams tanks or Bradley fighting vehicles. According to the Monitor, Pentagon figures indicate that about 250,000 DU bullets were fired by A-10 Warthog aircraft in March and April 2003, leaving an estimated additional 75 tons of DU in Iraq, as a result of the Pentagon's attack. Local air pollution and soil contamination in Iraq also increased, as a result of the recent war. The Pentagon's bombing of Baghdad, for instance, ignited fires which toxic, black smoke that contained dangerous chemicals, which caused harm to Iraqi children and to Iraqi adults with respiratory problems, and further polluted Iraqi ecosystems. (Project Censored 2004).

The World conservation union (IUCN) says that in the first Gulf War alone an estimated 6-8 million barrels of oil were split, 600 oil wells set on fire.

Arguably any involvement in preparation for war is preparation for environmental degradation. Pretence to environmental sustainability of war and practice for war is spurious in this light. In addition, DU, white phosphorus and cluster munitions have been declared illegal by the United Nations and their continued use should not be tolerated in any of Australia's allied countries. These facts and the revelations of the Wikileaks documents indicate that the US military and politics alike are prone to illegal, underhanded actions that contribute to conflict, turn nations against each other and promulgate deaths.

4.3 Secrecy and cover-ups

In 2003, the Bush administration placed a gag order on the EPA discussing perchlorate pollution, which was present in the groundwater of 42 US states and showing up in lettuce on the US market (Biocycle 2003). This is just one in a long line of military cover-ups of environmental and social injustices committed in peace-time.

The Australian Department of Defence does not conduct adequate consultation. Numerous organizations are working on the protection of areas such as the Coral Sea and Great Barrier Reef. The lands and seas of many Traditional Owner groups are impacted by the presence of troops and military exercises in Australia, and many individuals and organizations have in-putted in to previous public consultations around Talisman Saber and military developments. The Talisman Saber ‘consultation’ for instance, was limited to a non-contentious group of defence and government bodies: ‘Defence stakeholders’ in the ‘risk assessment workshop’ to prepare the PER are ‘Senior Environment Managers (SEMs), Regional Environment Officers (REOs), Defence Project Officers (DPOs) and key Australian Government Stakeholders, the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) and the Great Barrier Reef Marine Park Authority (GBRMPA).’ (AURECON 2012 p. 10)

It appears that no local community, First People’s, arts, non-governmental political, social justice, women’s health (rape and crisis), student, academic, scientific or non-aligned environmental organizations were involved in the “risk assessment” or PER process. This is inadequate, cannot be called ‘community

despite numerous references to the Environmental Protection and Biodiversity Conservation Act, detailed description of flora and fauna in impacted environments and proposed risk management plans, Talisman Saber is not actually subject to an Environmental Impact Assessment

consultation’ or even ‘stakeholder consultation’, and cannot possibly lead to non-biased assessment. A wider sphere of representation and a diversity of voices are necessary to ensure that the ‘risk assessment’ activities and other aspects of ‘consultation’ are not merely rubber-stamping exercises.

Furthermore, despite numerous references to the Environmental Protection and Biodiversity Conservation (EPBC) Act, detailed description of flora and fauna in impacted environments and proposed risk management plans, Talisman Saber is not actually subject to an Environmental Impact Assessment.

We submit that military activities are incompatible with environmental protection and the military scrutiny of military activity will be necessarily biased. The tendency of the military to less than full disclosure of activities for security reasons, such as refusal to confirm the existence of nuclear weapons or the type of weapons used, means that we cannot make an informed assessment of

military activities on Australian soil, either by the ADF or visiting forces.

Defence say they are required to comply with various state and Commonwealth laws including:

- Environmental Protection and Biodiversity Conservation Act 1999

- Aboriginal and Torres Strait Islander Heritage Protection Act 1984
- Australian Heritage Council Act 2003
- Australian Maritime Transport Safety Authority Act 1990
- Defence Act 1903 and Defence Regulations 1952
- Environment Protection (Sea Dumping) Act 1981
- Great Barrier Reef Marine Park Act 1975
- Hazardous (Regulation of Exports and Imports) Waste Act 1989
- Native Title Act 1993
- Protection of the Sea (Civil Liability) Act 1981
- Protection of the Sea (Powers of Intervention) Act 1981
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983
- Quarantine Act 1908
- Wet Tropics of Queensland World Heritage Area Conservation Act 1994

By narrowly limiting the review to certain aspects of environmental management, Defence has separated their activities in Australia from their purpose - war, in this case nuclear-capable war. However, environmentally managed war rehearsals do not lead to environmentally friendly war. War and war games are not sustainable; war is an anathema to the environment

This is a misleading claim. While the military can claim that they are adhering legal requirements, they fail to mention that due to inter-governmental and interdepartmental agreements, even in joint exercises such as Talisman Saber, the US military is primarily subject to US laws, not Australian ones. In addition, significant exercises like Talisman Saber do not require the preparation of ongoing bona fide Environmental Impact Statements or Assessments one would expect from actions that are covered under the EPBC. Indeed, they do not even require the preparation of a Public Environment Report. Without outside scrutiny, it is questionable how rigorously any local legislation could be applied on military exercises, in particular those with the US, and how prosecution or remediation would take place if a breach occurred.

The US military have exemptions from a raft of US environmental laws. They have a policy of disposing their waste at sea, of not disclosing the presence of nuclear weapons on board their vessels visiting our shores, of denying the damage of their chemicals on their own troops. Can we expect this military to treat Australian lands and waters with the same disrespect they show their own?

With regards to the applicability of Australian laws to US troops participating in exercises here, it seems that the discretion to apply those laws lies with the US. A March 2012 Parliamentary Library Briefing on the Australia/US Status of Forces Agreement 1963 states,

'Sub-article 8(1) provides that:

(1) Subject to the provisions of this Article:

(a) the military authorities of the United States shall have the right to exercise within Australia all criminal and disciplinary jurisdiction conferred on them by the law of the United States over all persons subject to the military law of the United States;

(b) the authorities of Australia shall have jurisdiction over members of the United States Forces and of the civilian component and dependants with respect to offences committed within Australia and punishable by the law of Australia.'

Australian law only applies to civilians and dependents that accompany US troops, not the US military themselves. They reemphasise this fact in Subarticle 8(2) "The military authorities of the United States shall have the right to exercise exclusive jurisdiction over persons subject to the military law of the United States with respect to offences"

In other words, Australian law only applies to civilians and dependents that accompany US troops, not the US military personnel themselves. They reemphasise this fact in Sub article 8(2) 'The military authorities of the United States shall have the right to exercise exclusive jurisdiction over persons subject to the military law of the United States with respect to offences, including offences relating to its security, punishable by the law of the United States, but not by the law of Australia' provided those crimes are punishable by US law (not Australian law).

The US reserves the right to exercise primary jurisdiction over and above that of Australian law, of note where offences are committed 'in the performance of duty'. This legal loop hole calls into question every environmental and social claim to justice made by the visiting US military. The US military are exempt from a raft of their own countries environmental laws including clean air and water acts, and those that protect cetaceans from sonar. One cannot sue the US military for pollution in their own country, or anywhere. Given the privileged status of the US alliance amongst the two major parties, it is unlikely that prosecution for environmental crimes would gain any traction in the parliament.



5.0 Recommendations

To Friends of the Earth and the authors of this report the idea that the military can ever be 'sustainable' is an anathema.

We submit that war and war games are incompatible with environmental protection and that these activities are not only unconscionable, but should never be carried out in protected areas or near any human habitation. We submit that the Australian government has an obligation to do better on these issues.

We submit that war, and preparation for war are also incompatible with social justice, while military spending and environmental and social destruction detract from a nation's capacity to support health, education and social welfare for their own people.

We believe that increased reliance on US military interoperability aligns us irreversibly with US political interests – not the interests of the Australian nation - and that the stepped up US-Australian military alliance can only be seen as a threat by our closest Asian neighbours and contribute to more friction, not peace.

We recognise peace as a pre-requisite for global sustainability – and a necessity for global survival.

Recommendations summary:

We recommend that joint military exercises and the citing of US military on Australian soil be discontinued. In particular we would like to see the cessation of war games in the Shoalwater Bay region, Great Barrier Reef Marine Park and the Coral Sea as a priority.

- The area comprising the Shoalwater Bay Defence Training Area be designated a completely protected environment of international significance, such as a National Park and preserved for future generations of Australians. Its management should be handed back to the Darambal people. All lands and seas used for Talisman Saber (and other) military activity be returned unconditionally to their Traditional Owners. This action would show the good faith of the ADF with regards to their environmental and social credentials.
- The ADF release the types of weapons and vehicles used as well as all tests and environmental monitoring carried out on Australian military sites as a public interest
- As all military activities pose significant risk to the environment; , they must be assessed with the scrutiny of other environmentally risky actions: all military activities must be rigorously assessed under the EPBC Act.
- Assessment of military activities include social and economic impacts. Military activity impacts on communities. By attempting to ignore the human costs of military activities, Public Environment Reports or any other green washing attempts by Defence isolates training and bases from their actual purpose - the practising of war - which is designed to impact on human life. Humans are part of the environment, are impacted by it and impact upon it. An honest assessment of military activities must include social impacts.
- All military training and areas impact First Peoples in Australia and in the Pacific. It has long been Australian government practice to impose nuclear and military sites on indigenous people's land,

limiting their access to sites and their right to practice their culture and heritage. It is of grave concern that the threat of completely losing access to their land may put some Traditional Owners in to a position of acquiescing to military use of their land without equitable options or debate.

- It is inappropriate to expose some of our last coastal wilderness areas, threatened and endangered species and heritage sites, to bombing, on-shore landing practise, the use of sonar, and potential radiological contamination from the use of nuclear powered ships for these military operations. Many of the training areas are environmentally significant areas and all have some environmental value.



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7.0 Acknowledgements

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Friends of the Earth Defence of Earth project is committed to exploring, reporting on and helping reduce the carbon footprint of Australian military activity.

Our goals related to climate change:

1. Funding allocated for disaster relief preparedness goes into civilian, community-controlled emergency services branches.

The ADF recognise that climate change is real, happening now, and has framed it as a threat to national security in multiple White Papers. It is now demanding more budget to help it play its role in disaster relief - like the recent climate driven fires, and devastating cyclones - and it was revealed by former director of preparedness and mobilisation, Cheryl Durrant, that by 2035 it will most likely no longer have capacity to assist in domestic disaster relief.

Friends of the Earth believes that the best disaster preparedness comes from empowered, resilient communities who are best equipped to lead in their local areas due to specialised knowledge and held relationships with key stakeholders.

2. The military is held accountable for its role in driving the climate crisis and commits to reducing impact.

As above, much work is needed to be done around transparency and accountability of military and defence emissions.

Any technological transitions must be heavily scrutinized by public, academics and ethical experts lest a move to renewable powered, autonomous military assets take place under the guise of climate action.

3. The Federal Government commits to setting up regional peace talks - because the climate cannot afford another war.

Friends of the Earth notes that estimates of the 2003 Iraq war put emissions at 250-600 million tonnes of Co2, and Oil For Change estimating that between 2003 and 2008 at least 141 million metric tons of carbon dioxide were emitted - the equivalent of 25 million extra cars on the road.

Recommendation: Friends of the Earth believe that any future military conflict must be avoided at any cost, due to the humanitarian disaster it would cause, alongside the devastating ecological impact

The focus of Friends of the Earth's work thus far has focussed on goal 2: The military is held accountable for its role in driving the climate crisis and commits to reducing impact.

Report:

Australia's unknown 'carbon footprint'

Australia is a party to the United Nations Framework Convention on Climate Change (UNFCCC), established in 1994. The parties of the UNFCCC meet annually at the 'Conference of Parties' (COP). The negotiations of COP 21 resulted in the creation of the Paris Agreement to which Australia is a signatory and which came into effect on the 4th, November 2018. Article 13 of the Paris Agreement speaks to the importance of transparency in building mutual trust and confidence among the signatories.

Specifically, article 13.7(a) of the Paris Agreement mandates that;

Each Party shall regularly provide the following information:

(a) A national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases, prepared using good practice methodologies accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties...

The Kyoto Protocol, established earlier in 1997 during COP 3, to which Australia is also a signatory, explicitly exempted military operations from any obligations arising from the protocol - including all obligations to report military-related emissions. This exemption was pushed through by the US, who did not end up ratifying Kyoto Protocols. In contrast, the newer Paris Agreement makes no mention of military compliance at all, leaving it up to individual nations as to whether military operations are to be included in the national inventory report of anthropogenic emissions required by article 13.7(a).

The Australian Government Department of the Environment and Energy is responsible for publishing the National Greenhouse Accounts which aim to 'meet Australia's reporting commitments under the...UNFCCC'. The National Greenhouse Accounts comprise a number of reports and databases which present the available emissions data in various ways and for various purposes. Among these are the Quarterly Update of Australia's National Greenhouse Gas Inventory ('Quarterly Update'), the Australian Greenhouse Emissions Information System ('AGEIS'), and the National Inventory Report.

The National Inventory Report is compiled under the UNFCCC's rules for reporting and for the purpose of submission to the UNFCCC. This report explicitly accounts for military-related emissions in a subcategory of the energy category, as fuel used in military transport (by land vehicles, aircraft and ships). However, there is no mention of military-related emissions in all other subcategories of the energy category, including electricity, manufacturing and fugitive emissions. Furthermore, military-related emissions are not explicitly featured in any other category, namely, industrial processes and product use, agriculture, land use, land use change and forestry, and waste. Therefore, in our view, it is ambiguous as to whether military emissions are accounted for in the other categories. It would seem more likely that, due to their conspicuous absence, military-related emissions are excluded.

Similarly, the Quarterly Update only explicitly mentions emissions from military-related activity in the 'stationary energy excluding emissions' category as 'fuel combustion emissions associated with military fuel use'. Again, it is unclear if military-related emissions are included in the other categories without explicit mention, or if other military-related emissions are not accounted for. Unlike the National Inventory Report and the Quarterly Update, the AGEIS measures energy use, rather than emissions. Similar to the Quarterly Update however, military-related energy use is only mentioned explicitly in the stationary energy category. Here, however, military-related energy use is divided into; Military Transport-Land, Military Transport-Water and Military Transport-Aviation, with subcategories comprising fuel types. Inaccurate reporting of military emissions may simultaneously undermine Australia's standing in the international community and the global effort to reduce emissions and to realistically plan for a warmer world

The intensity and rapid onset of climate change demands global cooperation at an unprecedented level. Effective cooperation hinges on accountability achieved via honest and transparent reporting of greenhouse gas emissions. For this reason, the Paris Agreement, to which Australia is a signatory, demands that parties produce national reports detailing all sources of greenhouse gases.

The ADF [pledges](#) to 'defend Australia and its national interests'. However, the Government's refusal to clearly report military greenhouse gas emissions may result in the ADF unnecessarily contributing to the greatest threat currently facing Australia and the rest of the world - anthropogenic climate change.

Friends of the Earth wrote a letter to Secretary of Defence, Greg Moriarty, seeking clarification regarding the following issues:

-
- For the National Inventory Report, are military-related emissions only accounted for in ‘fuel used in military transport’ and excluded from all other relevant categories? Or are military related emissions already accounted for in all other all relevant categories without explicit mention?
 - For the Quarterly Update, are military-related emissions accounted for only in the ‘stationary energy excluding electricity’ category and excluded from all other relevant categories? Or are military-related emissions already accounted for in all other all relevant categories without explicit mention?
 - For the AGEIS, is military-related energy use accounted for only in ‘stationary energy’ categories and excluded from all other relevant categories? Or is military-related energy use already accounted for in all other all relevant categories without explicit mention?
 - For each of the above, is the same data used for military-related emissions and energy use, expressed in different ways?
 - Why are military-related emissions and energy use so low in comparison to emissions and energy use from other sources and from military-related emissions from other countries?

The official response was underwhelming and raised more questions we are yet to resolve. The Department of Defence Deputy Secretary Estate and Infrastructure (at April 2019), Steven Grzeskowiak, noted that the “Department of Defence (Defence) reports on scope 1 and scope 2 greenhouse gas emissions through the Energy Efficiency in Government Operations (EEGO) Policy which is administered by the Department of the Environment and Energy”.

Responding to our query regarding stationary energy categories, Grzeskowiak claimed that “as Defence bases and offices are integrated work environments, Defence reports stationary energy and passenger vehicles as a total figure for the Department. These are then accounted for in relevant categories. The emissions figure for "ADF" is for operational fuel only.”

As the 2019 Brown University paper, *Pentagon Fuel Use, Climate Change, and the Costs of War*, shows, estimations can be made on US military emissions and military fuel usage - and likely the same could be done with the Australian DoD and ADF.

Possible US Pressure

Friends of the Earth believe that more information is required to properly analyse and establish a clear scope of emissions for the ADF and DoD. Friends of the Earth is concerned that this work is hindered by the US-Australia alliance as above, the US has been a strong advocate for the exclusion of military emission reporting from any international reporting regime.

Friends of the Earth also believe that given the number of close military exercises that are conducted by the US and Australia such as Talisman Sabre, that there may be pressure to resist transparent emission reporting of military operations. Some of that pressure may be from the US.

Limit of responsibility - whose emissions are whose?

The US military is known to have the carbon footprint of equal size as the entire nation state of Portugal. Given the extent of cooperation between US and Australian forces, and the shared facilities that exist via bases, ambiguity may arise about the responsibility for emissions created.

For instance, would emissions from the jointly run Pine Gap installation be accounted for in US emissions, in ADF/DoD? Would so-called ‘live -fire exercises’ be counted towards the host country or by nation by which the munitions or fuels were spent? When conducting military operations internationally, how does the breakdown occur?

An Alliance that hinders climate justice

For many years, our climate justice campaign has forged the agenda on the human rights dimensions of climate change, from supporting the rights of those at risk of climate-induced displacement to exposing the social impacts of carbon offsets in Southern countries.

Friends of the Earth believe it is essential to address the social issues, such as disproportionate use of resources, inequality, and colonisation, while responding to climate change.

Given the threat to sovereignty of many of our neighbours that sea level rise as a result from anthropogenic climate change, this alliance facilitates a new insidious form of neo-colonisation- one that arises from the eradication of land, forced migration, and resulting cultural erasure, we believe that such close ties to the world's biggest polluter and consumer of fossil fuels is incompatible with the most fundamental responsibilities that Australia holds under Article 2(1) of the UN Charter and the principle of the sovereign equality of all its members.

The so-called defence of one nation cannot come at the expense of another, and cannot be the price of an alliance.

TS19 Environmental Report Response

Friends of the Earth Brisbane

PO Box 5829

West End, Qld 4101

**Submission to Talisman Sabre 2019 Environmental Report
prepared for Friends of the Earth Brisbane by Robin Taubenfeld**

May 17, 2019

To whom it may concern,

We are writing in response to the Talisman Sabre 2019 Environment Report (ER) prepared by the Department of Defence to express both our concern about the Report and our opposition to Talisman Sabre 2019 on environmental, social and political grounds.

Below is our submission regarding Talisman Sabre 2019 in its social and political context and our comments regarding the ER Process.

Appendix A is an overview of our general concerns specifically regarding the environmental risks posed by these military exercises as per our submission to the PER process in 2013/2011.

CONTENTS:

- 1. Introduction**
- 2. Sustainability and war**
- 3. The political context**
- 4. Practicing for nuclear war**
- 5. Social and Economic Aspects ignored**
- 6. Human rights**
- 7. Ongoing social impact and political repercussions**
- 8. Unnecessary risk to the environment**
- 9. No case for war rehearsals**

APPENDIX A: Environmental risks of military exercises and war as per our submission in 2013

1. Introduction

Talisman Sabre is a joint AUS –US military exercise US proposed to take place in Australia July 2019, with major components in Queensland July 11-24. While the spelling of the name alternates between Sabre and Saber, depending on which country is designated the “lead” nation, the exercises are overwhelmingly American – with normal approximately 2/3 of the personnel being from the US. The Talisman Sabre exercises are some of the world’s largest military operations regularly seeing combined force, land, sea and air training in Queensland, the Northern Territory

and the Timor, Arafura and Coral Seas. It is stated that up to 25,000 Australian and American personnel will be involved, with some participation from Japan, New Zealand and the U.K.

Talisman Sabre 2019 is huge in scope, using military and civilian facilities in Queensland and the New South Wales as well as support facilities and infrastructure around Australia.

Much of Talisman Sabre takes place in environmentally vulnerable areas. Shoalwater Bay itself is under stress, not only from ongoing military use, but also from recent weather events which have seen cyclones and unprecedented rainfall rip through the area after years of drought. Ongoing stress to the wider Great Barrier Reef are known and well documented. Unlike past Talisman Sabre iterations, TS19 will be explicitly using new and previously used "Non-Defence Training Areas" as well, Defence locations not previously explicitly used in Talisman Sabre and a location in New South Wales, Evans Head.

While this spreading of the exercise will in minimally diminish its impact on Shoalwater Bay, all of the official coastal locations other than Evans head, still sit within the Great Barrier Reef Marine Park World Heritage Area. The diversifying of location increases the number of ecosystems impacted, engages more Australian communities in provocative war preparations and sets a precedent for ongoing military expansion into non-defence areas.

It is significant that unlike previous Talisman Sabre's, Talisman Sabre 2019 is stated to be absent "*of any live fire activities. This will result in the use only of dummy or blank ammunition and certain pyrotechnics in order to generate the necessary effects. Consequently, there will be no underwater demolitions/detonations, naval gunnery, aerial bombardment or live fire from indirect and direct fire weapons systems.*" The absence of live firing during the official exercises should greatly diminish some aspects of Talisman Sabre's environmental footprint and is a move in the right direction.

However, it is also clear that live firing will take place at Shoalwater Bay and possibly other locations in the lead up to and after Talisman Sabre, which are not assessed as part of Talisman Sabre because they fall outside of the official exercise dates. "A number of activities will occur in advance of and following execution of the FTX...Unilateral training activities on SWBTA occurring prior to TS19 will involve live fire exercises (LFX)... After the conclusion of TS19, it is probable that further unilateral training on SWBTA will be undertaken. (ER p24-25) It is also notable that Defence includes possible inclusion of other country's forces in what it refers to as unilateral training. (ER, p. 24)

Further to the training locations identified in the Defence Environmental Report, a number of Defence bases and other locations will be used to support the exercise. We can also expect training activities not mentioned in the Environmental Report to take place.

In 2017, new locations: Upstart Bay and Kings Beach, were added to the exercises or their preparations, in June, a month before Talisman Sabre 2017 commenced, well after the Public Environment Report process has concluded. Also in 2017, a US Osprey crashed off the Rockhampton coast, killing three service people, during "regularly scheduled operations" (<https://www.abc.net.au/news/2017-08-06/what-we-know-about-the-us-marine-corps-osprey-crash/8779200>) after the official end of Talisman Sabre 2017.

We are aware that the Shoalwater Bay Training Area is used for much of the year by Australian, Singaporean and possibly other forces. The impact of the huge Talisman Sabre exercise, addressed

in isolation in the Environmental Report, is part of the ongoing degradation of the environment of its key region, Shoalwater Bay. We are aware of the ongoing push to expand both the size and use of Shoalwater Bay. We believe that Defence is going being its original mandate of dual-purpose Defence and Conservation stewardship, prioritising military use rather than protection of Shoalwater Bay, which is in its own right, one of Queensland's greatest natural assets, as well as the broader World Heritage listed Great Barrier Reef and the Coral Sea within which most of Talisman Sabre 2019 takes place.

We also are aware that in the lead up, during and beyond Talisman Sabre, we can expect military vessels from the US fleet, including a nuclear-powered aircraft carrier and its battle contingent, to traverse the Great Barrier Reef and visit Australian ports. We will see civilian infrastructure, such as Brisbane port and airport used to support military activity. Large convoys of Australian, US and New Zealand military vehicles will be on the roads travelling from across Australia and converging at Rockhampton and Shoalwater Bay area. Military vehicles will also operate in and around Evans Head, Bundaberg, Mackay, Midge Point, Sarina, Bowen, Proserpine, Gladstone using main and country roads. Amphibious landing practice may take place at other locations and aircraft will be over head in locations in Queensland and New South Wales.

Most of these military actions will undergo minimal environmental and social impact assessment, if any.

We have concerns about both the impact of the military exercises as well as the process undertaken to produce the Environmental report. Our concerns include the following:

- The Environmental Report presented is anonymously authored by Defence, for Defence.
- Baseline environment reports presented for 2 areas are simply baseline environmental reports stating clearly that they are not impact assessments
- Defence conducts new activities at locations with no environmental assessment – or at least no visible documentation of that the environmental impact process – provided,
- Defence has not provided baseline environment reports for other locations previously not used in Talisman Sabre such as: Sarina, Bundaberg, Evans Head NDTA, Duke Island, Bowen

The Department of Defence's anonymously-authored, self-published Environmental Report estimates that "significant impact to the environment is not likely as a result of TS19."
(Environmental Report Exercise Talisman Sabre 2019 Pg li

Though Defence has prepared the Environmental Report itself, we expect Defence to adhere to the basic guidelines as identified in the *Guidance on the Preparation of an Environmental Report*. This callas for the ER:

- to be peer-reviewed and
- to explain the methodology for its findings.

(Guidance on the Preparation of an Environmental Report v 2. Technical authority: ASEE Nov. 2017, p 4)

We find no evidence that the assessment presented has been peer-reviewed. While the ER refers and defers to the previous AECOM-prepared PER for Talisman Saber 2017, the question of scientific rigour can be raised here as well.

Plant and animal species lists of areas that will be used or traversed– such as seagrass habitats, benthic regions and coral environments - are non-existent or incomplete, there is no evidence or surveying for certain species, such as prawns, which have been both ecologically and economically valuable.

The Snub-Fin Dolphin, listed as Vulnerable in Queensland, is recognised as a migratory cetacean and therefore protected under the EPBC. Due to the recentness of its identification, however, its status nationally has yet to be determined. Research shows that a small but significant population of these rare dolphins live in Keppel Bay and have been found in Shoalwater Bay. (*Cagnazzi D, Parra GJ, Westley S, Harrison PL (2013) At the Heart of the Industrial Boom: Australian Snubfin Dolphins in the Capricorn Coast, Queensland, Need Urgent Conservation Action. PLoS ONE 8(2): e56729. <https://doi.org/10.1371/journal.pone.0056729>*) With little research to date, and little mention of this species in the ERIt is premature to suggest that military activity in inshore areas would have insignificant impact.

Baseline studies prepared for two non-Defence areas planned for use in Talisman Sabre 2019, describe the habitats and the surrounds. They do not purport to assess the environmental impacts of Defence activities there. Surveys of other areas new to use in Talisman Sabre - have not been presented; we can assume they have not been carried out.

While Defence claims that the impact of Talisman Sabre will be insignificant, there is no methodology presented to substantiate this claim. With no baseline understanding of the inhabitants of regions identified as potentially "scoured" in an amphibious landing, for example, how can a level of impact be assessed? And more to the point, how can its impact be claimed to be negligible?

2. Sustainability and war

The ER explains environmental management issues related to the military exercises. We appreciate the extent to which the Department of Defence expresses concern to address environmental issues in its local practices, however, this does not negate the incompatibility of military activity and the environment or any notion of sustainability. At best, the environmental management plans proposed may mitigate some of the damage to or repair of our local eco-systems, however, it is unlikely that these translate in to positive practices in real-life war scenarios.

In recent years, Australia has been involved in US led military activity that has killed flora, fauna and humans, left oil fields burning, exposed civilians to toxic chemicals, left environments radioactive, and had destroyed infrastructure vital to maintaining health and welfare of communities.

3. The political context

In the pre-Trump era, it was clear that China had concerns about this show of military might in the region. With the Pacific Pivot in full swing, and a president calling for an expansion of the US nuclear weapons arsenal, the social, psychological and political ramifications of Australia's continued military partnership with the US cannot be ignored.

The Talisman Sabre exercises are one facet of an expanding US military presence in our region, and Australia's support for it. US troops are set to be increasingly and permanently present in Darwin, Australia already houses Pine Gap, a strategic US satellite base, hosts troop change overs, allows US bombing flyovers, welcomes nuclear powered and nuclear-weapons capable war ships and opens both its civilian and military infrastructure to the US. With changing economic and political priorities, the US is restructuring its global force positioning and Australia is playing a vital role in both acting as launching pad for US military activity, as an ally in the field, and as the face of the US nuclear umbrella in the Asia-Pacific region. To our neighbours, Talisman Sabre is an expression of US/Australia joint posturing - a show of potential and formidable force.

The ER attempts to assuage our concerns over social and health impacts of Talisman Sabre, by noting certain localised potential risks while avoiding the bigger-picture social and political implications. For example, impacts on the built environment, indigenous and non-indigenous heritage, and some workplace health and safety matters are addressed. Social impacts, such as a claimed benefit to the economies of regions in which the exercises take place, and public safety issues such as from bush fires, unexploded ordnance, and noise from low-flying aircraft are mentioned. These are flagged as triggers for public concern about the war games. However, the social, psychological and political ramifications of training with the world's foremost nuclear armed military are ignored.

4. Practicing for nuclear war

Understanding that “for security reasons, it has been the long-standing policy of the United States Government to never confirm or deny the presence of nuclear weapons on board their ships.”, we are alarmed at the potential firepower and political implications of training with the military equipment listed in the ER.

The list of weapons and equipment that may be utilised during TS19 leaves no doubt that Talisman Sabre will leave Australia at risk of being perceived as “sabre rattling” in the Pacific.

By narrowly limiting the review to certain aspects of environmental management, Defence has separated the activity, war games, from their purpose – war, in this case nuclear-capable war. However, environmentally managed war rehearsals do not lead to environmentally friendly war. War and war games are not sustainable; war is an anathema to the environment.

We are, therefore, deeply troubled by the limited and biased framework of the ER which is intended to justify, rather than examine the impact of, Exercise Talisman Sabre 2019.

While the ER attempts to disassociate Talisman Sabre from its political context, political agreements - not environmental impacts - are the basis upon which decisions about these exercises are made.

5. Social and Economic Aspects ignored

The Environmental Report also fails to assess the human and political impacts of conducting Talisman Sabre. Military activity impacts on communities. By attempting to ignore the human costs of Talisman Sabre, the ER framework isolates Talisman Sabre from its actual purpose - the practising of war - which is designed to impact on human life. Humans are part of the environment, are impacted by it and impact upon it. An honest assessment of Talisman Sabre must include social impacts.

While military bases and exercises may bring capital in to a suffering local economy, such as Rockhampton's, they are also fraught with serious health and social impacts. Military exercises and bases are linked to increased violence, drug-related crime, rape and crisis in hosting communities and are part of an ongoing legacy of colonisation.

6. Human rights

Talisman Sabre violates the human rights of First Peoples in Australia and in the Pacific. Talisman Sabre takes place on the lands and seas of Aboriginal and Islander First Peoples. It has long been Australian government practice to impose nuclear and military sites on indigenous people's land, limiting their access to sites and their right to practice their culture and heritage. It is of grave concern that the threat of completely losing access to their land may put some Traditional Owners in to a position of acquiescing to military use of their land without equitable options or debate.

The same is true of the US. The island of Guahan/Guam, used to support US military activity in the Pacific, including previous Talisman Sabre exercises, is now 1/3 occupied by the US military. Denial of access to and the destruction of traditional lands and seas is the destruction of culture and heritage and is an infringement of the human rights of these people. The lands and seas proposed for use in Talisman Sabre should be rehabilitated, returned to Traditional Owners, and maintained for future generations.

7. Ongoing social impact and political repercussions

We are greatly concerned that practising warfare, with the world's largest nuclear-armed superpower, sends an aggressive signal to our neighbours and potential allies throughout the world. We question the benefits of improving interoperability for warfare with the U.S. as we oppose the use of violence as a solution to global problems. We believe Australia should be seeking peaceful solutions to conflict at home and overseas. Investing time, energy and resources into infrastructures that perpetuate war, rather than promote peace, is a detriment to our community and world.

8. Unnecessary risk to the environment

While Shoalwater Bay Military Training Facility encompasses some of Queensland's (and Australia's) most pristine coastal regions, it is valued as the ADF's most important area for the conduct of amphibious and combined arms exercises due to its accessible coastline. "The Shoalwater Bay Training Area (SWBTA) is a critical asset for Defence training due to the capacity to integrate training of naval, air and sea units, as well as the capacity to conduct large scale live fire training exercises. The majority of the TS19 exercise activities will be undertaken in this training area. The continuous and relatively undisturbed nature of SWBTA is the key to both a high value for conservation and Defence training capability." (Aurecon TS13 PER p. 6) We understand that TS19 is reported to not include live firing within the key noted exercise dates, but that live firing may be part of pre- and post official Talisman Sabre 2019 dates.

Waters included in its military exclusion zone, used for and traversed during military operations include areas of the Great Barrier Reef Marine Park, and RAMSAR listed wetlands.

Talisman Sabre also uses other locations of environmental significance such the Coral Sea, and habitats for endangered species vulnerable and/or endangered species such as turtles, dugongs and migrating whales.

Talisman Sabre 2019 will include Stanage Bay sites not part of the SWBMTA, but still within the Great Barrier Reef Marine Park. It is clear from the both the 2017 PER that the heritage values had not been assessed:

“Both the Indigenous and Historical heritage values at Stanage Bay are poorly understood generally due to a lack of systematic assessment of the area. It currently has three registered Aboriginal heritage sites in the proposed activity area but there are likely to be more due to lack of detailed archaeological assessment. Camp sites, middens and stone artefact processing sites are likely to be found within the beach foredune areas and anywhere with freshwater. Burial sites can also be found in soft sand in foredunes. In addition to archaeological sites, there are a number of landforms (rocky outcrops, fossilised coral, waterholes and headlands) that are likely to have intangible cultural heritage importance to local Aboriginal people (i.e. sacred sites). These are typically associated with landform and ecological features that are unique in an area.” (21-Feb-2016 AECOM Prepared for – Department of Defence Talisman Saber 2017 Public Environment Report, p.38)

There is no indication that surveying or any action to identify and protect Indigenous heritage at the site has taken place since.

The lack of data surrounding heritage sites in the Stanage Bay region, coupled with the understanding that heritage sites are “likely” (see above), combined with the knowledge that damage to beach and benthic regions and makes any use of Stanage Bay for amphibious landing unacceptable.

Furthermore, it is clear that amphibious landing machinery is expected to be impact on sea floor and beach environments:

“There may be localised scouring of seagrass habitat during beach landing events, however this will be localised in nature and avoided or minimised through operational controls.” (21-Feb-2016 AECOM for – Department of Defence Talisman Saber 2017 Public Environment Report, p 99)

It is alarming that the ER listing of species inhabiting Shoalwater and Stanage Bays are limited primarily to the more well-known or terrestrial. The significant heritage and conservation value of the region come from its mangrove and wetland ecosystems, its seagrass beds, its importance to significant populations of birds, marine and estuarine species as well as the diversity of these which may be endemic or migratory.

Identified impacts include Benthic scouring and possible disruption of seagrass beds – but Benthos are not listed in the species lists presented in the ER.

There are at least 10 species of seagrass present, with seagrass beds extending to depths of 20m due to water clarity. The site is of special value as habitat for endemic fish species. The mangrove, tidal mudflats and salt flats are important habitats for local and migratory shorebirds, including 26 species protected under international migratory bird conservation agreements. Numerous prawns live in the region, including: Hunchback prawn, Coral prawn, Southern velvet prawn, Rosy prawn, Greasyback prawn, School prawn, True endeavour prawn, Red endeavour prawn, Haswell Brown tiger, Red legged banana prawn, Western king prawn, Red Spot king prawn, Banana prawn, Leader prawn, Grooved tiger prawn, Southern rough prawn, Brown rough prawn, Hardback prawn.

Who else lives, breeds, visits or traverses areas planned for use?

Loggerhead Turtles (Endangered), Marlborough Blues (Endangered Plant), Lesser Sand Plovers, Mongolian Plovers (Endangered Bird), *Cycas megacarpa* (No common name) Endangered (Plant),

Marlborough Blues (Endangered Plant), Northern Quolls (Endangered Mammal), Capricorn Yellow Chats, Yellow Chats (Critically Endangered Bird), Godwits (Critically Endangered bird), *Capparis thozetiana* (No common name) (Vulnerable Plant), Greater Sand Plovers (Vulnerable Migratory Bird), Green Turtles (Vulnerable), Byfield Matchsticks (Vulnerable Plant), Glen Geddes Bloodwoods (Vulnerable Plant), Hawksbill Turtles (Vulnerable), Squatter Pigeons (Vulnerable Bird), *Marsdenia brevifolia* (No common name) (Vulnerable Plant), Humpback Whales (Vulnerable), Flatback Turtles (Vulnerable), *Neoroepera buxifolia* (No common name) (Vulnerable Plant), Mt Larcom Silk Pods (Vulnerable Plant), Greater Gliders (Vulnerable), Koalas (Vulnerable), Honey Blue-eye (Vulnerable Fish), numerous Sharks, at least 10 species of seagrass, eighteen species of mangroves, a high diversity of freshwater, marine and estuarine fish species, with 445 species recorded...plus more. Furthermore, being a combined exercise, Talisman Sabre includes army, navy and air force practice. The military, in particular the U.S. military, are known to be some of the world's greatest polluters and producers of toxic chemicals - and accidents do happen:

In 2013, the US jettisoned four bombs on the Great Barrier Reef, when they had difficulty dropping them on their intended target, Townshend Island. While this drew media attention and international condemnation, these four bombs are just the tip of the iceberg as far as bomb drops and live firing involved in Talisman Saber and other US military training in Australia. Ecologically speaking, Townshend Island, Saumarez Reef, the waters between Townsville and the Palm Islands, the Halifax Training Area, are no less part of the Great Barrier Reef marine environment than areas within the region that have not been designated for military use.

In January 2006, a U.S. nuclear powered aircraft carrier, the USS Ronald Reagan, was found to have left a trail of rubbish in Moreton Bay during a short visit to the port of Brisbane. Soon after leaving the port, a pilot was forced to evacuate his plane during a routine exercise. The plane was never recovered and is still submerged off the southeast Queensland coast.

It is inappropriate to expose some of our last coastal wilderness areas, threatened and endangered species and heritage sites, to bombing, on-shore landing practise, the use of sonar, and potential radiological contamination from the use of nuclear powered ships for these military operations. The lists of flora and fauna developed for the PER are testament to a diversity of life that is worth preserving; the way to do so is to stop military activity in these regions.

8. No case for war rehearsals

Though dismissed as an option in the ER, a comprehensive assessment of environmental impacts that prioritised environmental protection, would recommend the option of Talisman Sabre not going ahead. The most expedient way to protect the environment of the proposed sites is to cease military activities, to rehabilitate used or degraded sites, and to protect them for the future.

The social impacts of hosting some of the world's largest military exercises go beyond short-term gain from potential military tourism dollars, however. Along with the obvious facet of ongoing invasion- the military controls First Nation peoples' access to their land inhibiting their right to be on and practice culture on their land, there is the grief associated with destruction of our habitat, the environment and its unique spaces, such as the Great Barrier Reef. And priming our population to depend on the war economy is a dangerous trajectory.

The Bulletin of the Atomic Scientists, originally a collaboration of scientists who worked on developing nuclear weapons, uses the Doomsday Clock to represent their expert's calculation of our proximity to global catastrophe. With 12 being the apocalypse, the hands of the clock are set forward or back depending on their assessment of geopolitics and environmental factors. Set in 2016, at a perilous 3 minutes to midnight because of the combined threat of climate change and nuclear weapons, the Trump presidency has seen the Doomsday Clock moved forward to 2.5 minutes to midnight.

There are over 15,000 nuclear weapons on the planet today. It is 2.5 minutes to midnight. The threat of large or small scale nuclear war is as high as it has ever been...

Is waving the nuclear sword at China, Australia's best political option? Is engaging in huge nuclear-powered and nuclear-weapons capable military exercises, with one of the world's largest polluters and the world's number one consumer of fossil fuels, the US military, in the midst of World Heritage listed environments the best we can do?

In the 90's the Australian public was sold the idea that removing pastoralists and turning the Shoalwater Bay region into a military training area that would have the dual purpose of defence and conservation – would be better for the environment than farming. And so it possibly was. But it was not best for the environment.

What's best for the environment is protection of Shoalwater Bay from both militarism and pastoralism. What's best for the Great Barrier Reef is complete demilitarisation and denuclearisation of the entire ecosystem. What's best for our community is to redress aspects of military colonialism by returning militarised spaces to their Traditional Owners. What's best for our environment is respecting it for its intrinsic value.

We believe that Talisman Sabre poses a threat to the environment, to safety, to security and to peace in our region. We would like to see Talisman Sabre 2019 cancelled and all of the lands and seas proposed for use in Talisman Sabre, and currently used as military sites, returned to their Traditional Owners with their cultural and environmental dignity and beauty protected for future generations.

We call on the Australian government to use this opportunity to cease being environmental managers of war and become a world leader through peace and environmental protection.

We look forward to hearing your response to our submission and would like to register our contacts to be kept up to date on the progress of the ER and Talisman Sabre.

Thank you,

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