The Anthropocene: Politik–Economics–Society–Science

Michael Durant Thomas

The Securitization of Climate Change: Australian and United States' Military Responses (2003–2013)

UNSW THE UNIVERSITY OF NEW SOUTH WALES

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Cover photo: Sunset in the Australian Outback close to Alice Springs, July 2010. © Hans Güner Brauch, who granted permission.
The photo on page iii shows an Australian surf rowing boat, south of Cape Helles, Turkey on 23 April 2015. Behind the rowers in the distance is a large storm coming across the Mediterranean. The author kayaked from Istanbul to Anzac Cove with Jason Wilson and Turkish paddlers in memory of those soldiers, from both sides, who fought in the Gallipoli Peninsula campaign of 1915. © The author.

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This book is dedicated to those people who have worked tirelessly throughout their lives to bring us greater clarity and understanding of the dangers posed by climate change. In an era of 'fake news' and 'alternative facts', may they continue to have the courage to speak truth to power.

Foreword

Nowadays I am often asked: "What could the military possibly have to do with climate change?" So, it is with great pleasure that I introduce this book by Michael Thomas because it addresses this question precisely.

With an analyst's eye for the detail, but tempered with a military practitioner's outlook, Michael has written a narrative account of U.S. and Australian military responses to the challenges of climate change, highlighting the various climate initiatives and programmes undertaken by these organisations since 2003. In reading his account I am particularly drawn to the conclusion that Australia has trailed well behind its major alliance partner in taking up the challenge (although, future US military leadership on climate action is not guaranteed under President Trump).

Around the globe military forces are significantly exposed to climate risks. They use vast natural land holdings, possess large and dispersed infrastructure assets and consume significant amounts of energy of all natures, but particularly fossil fuels, as well as being major national employers. The world's military forces have a huge carbon footprint!

Yet, the same military forces also play a unique role in contributing to global peace and security through upholding and defending our nation states and, in the west, promoting the importance of the rule of law. For these reasons governments have a responsibility to ensure that military forces are adequately prepared for the range of regional and international climate security risks—including a substantial increase in the demand for humanitarian assistance and disaster relief operations. Given the challenges from climate change consequences that lie ahead there is a fair question to ask about whether we are doing enough, or not.

At the end of this book Michael poses a serious question for consideration. How will our militaries in the future look back on their efforts to head off a potential climate crisis in this critical decade? For many senior officers in our military forces this is a highly-charged question because the demands of acknowledging the primacy of the civil authority sometimes creates a political straight jacket which is blind to the reality of the demands flowing from climate change consequences.

Further, if we assess that insufficient has been done so far in this critical decade, is there time to recover the situation?

The answer lies, in part, through our militaries showing leadership. To paraphrase Georges Clemenceau, "climate change is too important to be left to the politicians". Solving the climate change challenge will need everyone—military included—to bring their efforts to bear on the problem using unique skill-sets and other contributions for building sustainable, climate friendly assets and having the willpower to tackle the key issues head on. Few people are better placed to understand this demand than our military personnel, who live in a world of uncertainties all the time.

As the former commander of the Australian Defence Force and current Australian representative on the Global Military Advisory Council on Climate Change I view climate change as a major, and urgent, threat to global peace and security because of the instabilities it has the potential to create. The military has an important role to play in taking the agenda for change forward. But, military forces alone cannot be a substitute for governments, businesses, and communities taking assertive, positive action now as time is running out in the critical decade.

March 2017
Canberra, Australia

Admiral Chris Barrie
(Former Chief of the Australian Defence Force)
Current Australian representative on the Global Military Advisory Council on Climate Change

Preface

It is my great pleasure to contribute a preface to this book—an important contribution to the emerging climate security discourse. Like Michael, as a military practitioner I have witnessed the ravages of conflict up-close and personal. In 1992 I served in Somalia as a junior US Marine and have conducted missions all over the world since.

Frequently though, I return to thinking about Somalia.

Walking through the streets of Mogadishu was like entering the pages of Robert D. Kaplan's *Coming Anarchy*. For me at least, it seemed clear that the convergence of environmental degradation and political dysfunction had rendered an entire population of people to the fate of a famine which claimed over 220,000 lives. The juxtaposition of modern militarised hovercraft laden with relief supplies gliding smoothly but noisily onto the coastline of a community that in many aspects was stuck in the eighteenth century is one that is hard to forget—a different kind of clash of civilisations that was a harbinger of what lay ahead.

As I progressed in my military career I became acutely aware that a common underlying thread amongst many such combat missions was the element of environmental degradation leading to turmoil and conflict. Increasingly though the military also became first-responders in the event of natural disaster, providing humanitarian aid, reconstruction and leadership as the security situation beckoned. In recent times this appears to have accelerated—climate change emerging as a twenty-first century mega-trend that is re-writing the rule book: 'Mega Typhoons', 'super storms', 'once-in-500-year' droughts, floods, wildfires and 'extreme weather' are now commonplace in the Anthropocene. The military is at the forefront in responding to these events. As the US Navy asks: 'If not us, then who?'

Dr. Thomas carefully researched book not only does a fine job zeroing in and explaining the geo-security and political impacts of the world-wide changes in the environment but he also expertly frames and elucidates how the phenomenon has already begun to impact armed forces' missions sets, facilities and operational readiness. His findings such as the "potential for increased tension over changes to resource availability, access and use may flare into low-level and wide-scale conflict involving national, regional and international military intervention" meshes

squarely with my own conclusions as well as those of other climate security researchers and is a warning that should be heeded. The science driven findings found in his work connects dots that create an outline of the challenge that lie ahead for military organisations, most specifically, the new forces that will continue to not only degrade operational readiness, but that will also create entirely new mission sets. Beyond this, Dr. Thomas also poses a deeper question: what role does the military have in hastening societal and political action on climate change?

Lastly, Michael's message is a clarion call for action directed at Armed Forces across the world; alerting them to prepare for a time where the non-traditional joins the traditional at the centre of national security concern and action. We would all be wise to heed the call in the face of the slow moving emergency—*climate change.*

Oliver Leighton Barrett
U.S. Navy (Retired)
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This book owes itself entirely to those that have supported me along the way.

Dr. Gavin Mount and Associate Professor Stuart Pearson, from the University of New South Wales, have provided continuous support and encouragement. Gavin, thank you for your unbounded enthusiasm and shaping my understanding of securitisation theory. To Stuart, thank you for being a great mentor. Without your experience, steady-hand and precise interventions in moments of crisis, this research would simply not have been possible. You nudged it in the right direction at crucial junctures.

The Australian Defence Force has also been instrumental. On the one hand, while this book adopts a somewhat critical perspective of ADF climate policy, it remains an institution open to strong debate and passionate ideas. The team from the ADF Global Change and Energy Sustainability Initiative are firmly in this tradition and have been important in injecting policy relevant discourse on the subject within the ADF. Likewise, I've been fortunate to have had timely encouragement, informal discussions and inspiration on the subject with Bruce Thom and David Karoly from the Wentworth Group of Concerned Scientists, Anthony Bergin of the Australian Strategic Policy Institute, Admiral Chris Barrie (retired), Associate Professor Matt McDonald from The University of Queensland and Alix Pearce of the Climate Council.

Many thanks also to the series editor, Hans Günter Brauch. Your early writing on the subject, in conjunction with your colleagues, has influenced my thinking and shaped my outlook in untold ways. Thank you for your guidance, support and advice in putting this book together. I would also like to thank Vanessa Greatorex for her dedicated language editing and the Springer team in Heidelberg (Germany) and Chennai (India) who made this book happen.

And lastly to my family, Jodie, Patrick and Elsie-Mae, my parents and to my essential 'support crew', Denis and Judy. Thank you for your tireless support and encouragement throughout the development of this book.

Canberra, Australia
January 2017

Michael Durant Thomas

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Abbreviations

ADF	Australian Defence Force
ADM	Admiral
ALP	Australian Labor Party
ARRA	American Recovery and Reinvestment Act
AU	Australia
BAU	Business-As-Usual
BMU	German Ministry for Environment, Nature Conservation and Nuclear Safety
CDF	Chief of Defence Force (Australia)
CJCS	Chairman of the Joint Chiefs of Staff
CNO	Chief of Naval Operations (United States)
COCOM	Combatant Command
COIN	Counter Insurgency
COP	Conference of the Parties
CPRS	Carbon Pollution Reduction Scheme
CSP	A Cooperative Strategy for the twenty-first Century Seapower
DoD	Department of Defense (US) or Department of Defence (Australia)
DoDI	Department of Defense Instruction
DoE	Department of Environment
DSG	Defence Support Group
DSTO	Defence Science Technology Organisation
DWP	Defence White Paper
EEZ	Exclusive Economic Zone
EIT	Economies-In-Transition
ELF	Enhanced Land Force
ENSO	El Niño Southern Oscillation
EO	Executive Order
EPA	Environmental Protection Agency
ESSP	Earth System Science Partnership

EU	European Union
FMOC	Future Maritime Operating Concept
FOI	Freedom of Information
FPR	Force Posture Review
FY	Financial Year
GDP	Gross Domestic Product
GEHSHA	Global Environmental and Human Security Handbook for the Anthropocene
GFC	Global Financial Crisis
GHG	Greenhouse Gas(es)
GCESI	Global Change and Energy Sustainability Initiative
GMACCC	Global Military Advisory Council on Climate Change
HADR	Humanitarian Aid and Disaster Relief
HDI	Human Development Index
HMAS	Her Majesty's Australian Ship
HNA	Hardened and Networked Army
ICAO	International Civil Aviation Organization
ICSU	International Council for Science
IGBP	International Geosphere-Biosphere Programme
IHDP	Human Dimensions Programme on Global Environmental Change
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IPCC AR4	Intergovernmental Panel on Climate Change Fourth Assessment Report
IPCC AR5	Intergovernmental Panel on Climate Change Fifth Assessment Report
IT	Information Technology
MDG	Millennium Development Goals
MAB	Military Advisory Board
MINDEF	Minister of Defence
MoD	Ministry of Defence (UK)
NCCO	Naval Climate Change Coordination Office
NDAA	National Defense Authorization Act
NDS	National Defense Strategy
NGO	Non-Government Organisation
NMS	National Military Strategy
NSS	National Security Strategy
OPEC	Organisation of Petroleum Exporting Countries
PPBE	Planning-Programming-Budgeting-Execution
POM	Programme Objective Memorandum
QDR	Quadrennial Defense Review
RAAF	Royal Australian Air Force
RADM	Rear Admiral
RAN	Royal Australian Navy

RAND	(US) Research and Development Corporation
SECDEF	Secretary of Defence
SSPP	Strategic Sustainability Performance Plan
TFCC	Task Force Climate Change
UFC	United Facilities Criteria
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSC	United Nations Secretary General
US	United States of America
USAF	United States Air Force
USCENTCOM	United States Central Command
USEUCOM	United States European Command
USNORTHCOM	United States Northern Command
USPACOM	United States Pacific Command
USMC	United States Marine Corp
USN	United States Navy
WCRP	World Climate Research Programme
WBGU	German Advisory Council on Global Change
WMD	Weapons of Mass Destruction
WWF	World Wildlife Fund

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Part I
Introduction

Chapter 1
The Strategic Dissonance of Australia's Climate Security Response

Abstract This chapter outlines how the Australian Department of Defence, and the Australian Defence Force (ADF) in particular, developed a strategic apathy in its early response to addressing the challenges posed by climate change. It sketches the wider sectoral, political and allied-military responses to climate change and highlights existing risks and knowledge gaps in ADF climate response. Four main reasons are identified for ADF climate apathy: incompatible timeframes, institutional reluctance, more appropriate use of resources, and the challenge of an avowedly non-partisan institution grappling with an ostensibly political issue. The chapter concludes by describing the purpose and structure of this book.

Keywords Climate change · Climate politics · Climate security · Climate military · ADF

1.1 Climate Change in Australian Military and National Security Discourse

Climate change is an issue that hardly requires an introduction. In Australia, it has been prominent in federal politics since at least 2006, when it was the number one foreign policy concern and (in 2007) the most important domestic policy priority (Wesley 2012: 632). In 2004, Australian Prime Minister John Howard (2004) declared that climate change was 'one of the major challenges confronting the world this century', and in 2008 his successor, Kevin Rudd, (in)famously labelled it the 'greatest moral, economic and social challenge of our time' (Rudd 2008d). Although Tony Abbott (Australian Prime Minister 2013–2015) had once labelled climate change as 'absolute crap' (quoted in Rintoul 2009) and was widely seen as a 'sceptic', his successor and current Prime Minister, Malcolm Turnbull stated to the 2016 Pacific Island Forum that '[f]or Australia there is no more pressing need for regional action than on climate change' (Turnbull 2016). Scholars and the political commentariat alike have variously identified climate change (and its

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derivative issues) as a major factor at the 2007, 2010 and 2013 Australian federal elections (Macintosh et al. 2010; Hartcher 2014).

Today, climate change remains a 'serious and pressing problem' for most Australians (Oliver 2015: 1). There are good reasons for this. Since the late 1970s the global scientific community has warned with increasing confidence that Business-As-Usual (BAU) anthropogenic greenhouse gas (GHG) emissions will increase planetary warming 2°C above pre-industrial levels by 2050. The United Nations (UN) Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report stated, '[h]uman influence on the climate system is clear … Warming of the climate system is unequivocal' (IPCC 2015: 2) and its consequences have been covered by globally prominent sectors *beyond* the scientific community (Stern 2007; Garnaut 2008; Asian Development Bank 2010; World Bank 2013; ICAO 2015; World Vision 2015; International Federation of Red Cross 2015; Pope Francis 2015). Various global leaders have repeatedly identified climate change as *the* strategic issue set to define this century (UN 2008; UNSC 2011; UNSG 2015). Indeed, for all the time, attention and resources directed towards issues such as the South China Sea and the global fight against terrorism, former US president Barack Obama often placed climate change at the centre of global strategic concerns:

> For all the immediate challenges that we gather to address this week – terrorism, instability, inequality, disease – there's one issue that will define the contours of this century more dramatically than any other, and that is the urgent and growing threat of a changing climate (Obama 2014).

Given the ubiquity of climate change, Australia's political, social, economic and even military sectors cannot be considered exceptional to the effects of climate change. As a major agricultural exporter reliant on stable climatic conditions, with 85% of its population and infrastructure clustered along coastal margins, and as one of the world's highest per capita GHG emitters situated in a region of under-developed small island states exposed to climatic extremes magnified by El Niño Southern Oscillation (ENSO) events, Australia has been repeatedly cited as being vulnerable to climate change (Pittock 2009). Although many of these risks had previously been documented in a piecemeal fashion, the 2008 *Garnaut Climate Change Review* consolidated and raised them to national prominence for the first time (Garnaut 2008).

The release of the *Garnaut Review* triggered a litany of national, sub-national and sectoral reports that have detailed the impacts of climate change across Australian society and its political economy. A 2011 report by the then Department of Climate Change titled *Climate Change Risks to Coastal Buildings and Infrastructure*, for instance, identified $226 billion in replacement costs for commercial, industrial, road, rail and residential assets in the event of a 1.1 m sea level rise (Commonwealth of Australia 2011: 3). A follow-on report in 2014 by the Australian Climate Council, *Counting the Costs: Climate Change and Coastal Flooding*, noted the Australian coastline was 'highly vulnerable' to climate change and emphasised major risks to habitats, tourism, infrastructure, health, wetlands and

other ecosystems (Steffen et al. 2014: iv). Despite some unevenness, planning for climate change has been undertaken by a wide range of federal, state and local government agencies, including the police forces and civil emergency services (Commonwealth of Australia 2007b, 2010; Gibbs/Hill 2011; Baker/McKenzie 2011; NCCARF 2013; Victorian Government 2011). Climate change has also increasingly featured across Australia's private sector, including the domestic insurance industry (Insurance Council of Australia 2008), the banking sector (Commonwealth Bank 2008; NAB 2015), health professionals (CAHA 2010), biodiversity (Steffen et al. 2009; Williams et al. 2009), the tourism sector (Tremblay et al. 2008) and a myriad of others, even including a climate change vulnerability assessment of the East Coast Tasmanian Rock Lobster Fishery (Pecl et al. 2009).[1] Fundamentally, few sectors in the Australian economy either have been, or are anticipated to be, untouched by the physical or regulatory impacts of climate change.

Notwithstanding all this attention, there is at least one area that—until very recently—has escaped scrutiny. Namely, Australia's national security sector and, more specifically, the Australian Defence Force (ADF). Although works exist in the Australian scholarly community on broader climate security matters (Edwards 1999; Barnett 2003, 2009; Barnett et al. 2010; Chaturvedi/Doyle 2010; McDonald 2012; Christoff/Eckersley 2014), Australian military journals (Lawson 2007; Thomas 2011, 2013) and think-tank reports (Dupont/Pearman 2006; Bergin/Townsend 2007; Press et al. 2013; Sturrock/Ferguson 2015; Barrie et al. 2015), analysis by the ADF on how it has responded, and plans to respond, to climate change has been limited. Indeed, while Defence White Papers (Defence 2009b, 2013b, 2016c) raised some aspects, the ADF itself has not published a *single* publicly available document that focuses exclusively on how it is strategically responding to climate change (Thomas 2015: 98). Missing from this discussion are explanations about how climate change may impact critical homeland security-infrastructure, deployable military capabilities, international and regional security, workforce health and well-being or how climate change regulation will affect Defence industry and capability acquisition costs.[2] This lack of published output has not just been limited to formal policy documents. Looking more broadly, Australian military leaders have not outlined a climate change strategy or policy approach for the ADF in any major speeches, articles or media interviews. As a self-proclaimed 'strategy-led organisation'—responsible for vast manpower,

[1]For a comprehensive list of Australian initiatives relating to climate change, see Department of Environment at: http://www.environment.gov.au/climate-change/adaptation/publications (12 June 2016).

[2]While the ADF has not progressed any significant climate policy, public analysis of its response has increased in the lead-up to the release of the next Defence White Paper. Two important reports were the Centre for Policy Development, *The Longest Conflict: Australia's Climate Security Challenge* and the Climate Council's *Be Prepared: Climate Change, Security and Australia's Defence Force*.

infrastructure and GHG emissions—the lack of ADF climate policy stands in contrast to that progressed by the civil sector (Defence 2010c: i).[3,4]

To trace the roots of this emerging dissonance and set the context for this book, it is necessary to overview Australia's climate security policy settings. The first observation is that climate change remained absent from Australia's strategic policy agenda at precisely the time it was identified elsewhere as becoming important. This was first described in 2006 by Alan Dupont and Graeme Pearman in *Heating Up The Planet*, when they argued 'that the wider security implications of climate change have been largely ignored [in Australia] and seriously underestimated in public, policy, academia and the media' (Dupont/Pearman 2006: viii). In late 2006 the then Secretary of the Department of Defence, Mr. Ric Smith, conceded that Defence had done no internal analysis of the security implications of climate change (Commonwealth of Australia 2006: 70).

The second observation is that even once climate change was identified as a public policy priority around 2007, it remained at the margins of Australia's national security agenda. In 2008, then Prime Minister Kevin Rudd stated that 'less attention has been given to the security implications' and that he would initiate its 'formal incorporation … [into] Australia's national security policy and analysis process' (Rudd 2008g). But the outcome was decidedly mixed. In *Heavy Weather: Climate and the Australian Defence Force*, the think-tank Australian Strategic Policy Institute (ASPI) stated that the 2009 Defence White Paper (*Force 2030*) had dismissed climate change as an issue for future generations (Press et al. 2013). Likewise, the 2013 *National Security Strategy* stated Australia should [only] 'monitor' the issue and cast it as a 'broader global challenge' that '*may* contribute to instability and tension' at some point in the future (Commonwealth of Australia 2013d: 31; emphasis added). Despite subtle changes to this message in the 2016 Defence White Paper, various think-tank reports and commentators decried a lack of substance and action on the issue (Sturrock/Ferguson 2015; Barrie et al. 2015).

The absence of climate change in national security circles, particularly the military, was also evident. In one of his first major speeches as Chief of [Australian] Defence Force (CDF), General David Hurley (CDF in tenure 2011–2014) identified four fundamental strategic shifts occurring in the world: climate change or any form of global environmental change was not listed amongst them. On his appointment as CDF, General Hurley also issued an 'All Points Bulletin' where he listed his

[3]The ADF has a 'strategy' for literally dozens of issues. Examples include: *ADF Indigenous Employment Strategy*; *Defence Air Quality Strategy*; *Energy Management Strategy*; *Waste Minimisation Strategy*; *Defence Pollution Management Strategy; Defence Environmental Education Strategy; Defence Noise, Vibration and Electromagnetic Radiation Generation Strategy,* to name a few.

[4]The Australian Department of Defence ('Defence') has an annual budget of $AUD31.9 billion (13th largest) in 2015 according to SIPRI (Perlo-Freeman et al. 2016) and a full-time uniformed and public service workforce of around 75,000 people (Defence 2016b). Defence also manages an estate and infrastructure portfolio of more than 3 million hectares, 300 managed properties and 25,000 buildings (Defence 2016e).

priorities as CDF. Again, climate change was not mentioned (Hurley 2011). In 2015 Hurley's replacement, Air Chief Marshal Mark Binskin, stated that, while the ADF plans for the consequences of a changing climate, it does 'not specifically plan for climate change' per se (Binskin cited in Commonwealth of Australia 2015b: 42). Climate change has also been missed by major ADF reports and reviews. The 2012 *Force Posture Review* commissioned by the then Minister of Defence to assess whether the ADF was positioned to meet Australia's future strategic and security challenges did not mention, discuss or analyse any matters relating to climate change (Hawke/Smith 2012). The *2012–2017 Defence Corporate Plan* that outlined future directions and key priorities including sustainment and development of the organisation as well as the key risks confronting it, did not mention climate change. Similar accounts are to be found in service-level strategy documents, including the Australian Army's annual assessment of the land operating environment out to 2035, the *Future Land Warfare Report* (Australian Army 2014).

This thinking has also been manifest in lower-level ADF policy documents that might have been expected to address climate change. The ADF's lead environmental policy statement, the *Defence Environmental Strategic Plan 2010–2014* used the term 'climate change' only twice in thirty-four pages and otherwise used the description 'climate variability' (Defence 2010b). Although this document focused on ADF compliance with legislative obligations, no discussion existed on how climate change might impact the vast Defence estate, including the most obvious of risks such as predicted sea-level rise to its sizable maritime infrastructure or other low-lying Defence bases. At two pages in length, the 2007 *Defence Energy Policy* also suggested the issue had been taken lightly. While describing Defence as one of the highest consumers of energy within the Australian Government, the policy targeted small, low impact energy reductions in areas such as lighting, heating, hot water services, cooking appliances and swimming pools (Defence 2007a). The ADF's 2008 *Combat Climate Change* 'initiative' was striking if only in conflating the exact same policies from the 2007 *Energy Policy*, *Defence Environmental Strategic Plan (2010–2014)* and the 2006 *Energy in Government Operations.* Its adoption of limited energy efficiency targets for individuals and its somewhat underwhelming presence (unpublished in hard-copy, available only online at the Defence Support Group webpage and removed from the public ADF website completely in 2017) made this less a departmental-wide strategy than a narrowly focused sub-set of its environmental policy.[5]

Similar accounts can be found in the 2006–07 *Energy Use in Australian Government Operations*, where the government championed the ADF as demonstrating 'leadership' on energy efficiency through low-level approaches. This pamphlet described how a regional Defence office had developed an energy strategy that, after meeting with a 'great deal of concern' from information technology

[5]Since this author first visited the Defence Support Group *Combat Climate Change* web-page in 2011 not one single change to the website was recorded. The website, and presumably the policy, was removed by the ADF at the start of 2017.

(IT) staff, was eventually successful in decreasing Brindabella Park ('Office 3') electricity consumption by '23.4%' (Commonwealth of Australia 2008b: 43). The punch-line to this anecdote—and the idea that Defence failed to adopt a strategic outlook—was delivered when it was recognised that the strategy would not have succeeded if not for the implementation of a rewards based system of 'minties and chocolates … double movie passes [and] Boris, the Energy Hog' who was particularly 'embraced by most personnel and contributed to the overall success of the project' (Commonwealth of Australia 2008b: 43).

Even in places where serious discussion would be expected, for example in Defence journals, papers and seminars, there appeared little interest or conviction. A content search performed in 2015 of the ADF's leading journal, the *Journal of the Australian Profession of Arms,* under the search category 'environmental issues' yielded five articles: one on ADF cultural heritage issues, two on 'environmental security', another on environmental law and the fifth, a dubiously titled 1983 piece regarding 'The Military Potential of the Feral Horse and Camel in North West Australia'. In thirty-five years of publishing history the *Journal of the Australian Profession of Arms* has published just *two* articles exclusively relating to the impact of climate change on Defence (both written by this author in 2011 and 2013).

In sum, none of these documents detailed how the physical or regulatory effects of climate change would impact national security, the wider Department of Defence or the Australian Defence industry more broadly. As a case in point, the so-called carbon tax as part of the *Clean Energy Act 2011* was forecast by Treasury to cost the ADF $81.9 million for FY 2012–13, yet it was missed as a strategic issue (Press et al. 2013: 25).

Although more recent Australian Department of Defence publications have begun to address climate change (Defence 2013a, 2016d) and its leaders are beginning to address the subject (Campbell 2016), there still exists a number of knowledge gaps. A special report in 2013 by the Australian Strategic Policy Institute (ASPI), *Heavy Weather: Climate and the Australian Defence Force*, identified six such knowledge gaps. These included a need to develop better understanding on the impact of climate change on: (1) its missions; (2) capability development and acquisition; (3) adaptation and mitigation of the Defence estate; (4) supply chain (energy) security and fuel interoperability; (5) preparedness; and (6) personnel and training (Press et al. 2013). Follow-up reports by the Centre for Policy Development, *The Longest Conflict: Australia's Climate Security Challenge* (2015), and the Climate Council's *Be Prepared: Climate Change, Security and Australia's Defence Force* (2015) made similar findings and suggest they continued to be left unaddressed as recently as 2015.

Placed in a broader context, two key points became evident. The first was the emergence of a civil-military divide on the scale and urgency required to address climate change. Fundamentally, the civil sector appeared to be well ahead of the Australian military, even though the risks to the ADF were becoming increasingly established. The second point was an emerging concern in some quarters that the apathetic ADF response might give rise to potentially avoidable operational, capability and institutional risks. On consideration of these aspects, the question

may be asked: Why did the ADF fail to develop a clear strategic response to climate change?

Four initial reasons are presented here, but are further developed in the ADF case study in Chap. 6 and comparative analysis in Chap. 8. First, climate change has been framed in some quarters as a long-term threat and in timescales incompatible with Defence budgeting cycles and ADF threat-horizons. The Australian Defence White Paper (DWP) 2009 stated as much when it declared the 'strategic consequences of climate change are … not likely to be felt before 2030' (Defence 2009b: 31). With more pressing security concerns to deal with, that assessment (from 2009) effectively registered climate change as a low policy priority that left the ADF 'without a guiding compass' (Sturrock/Ferguson 2015: 34).

Secondly, even though climate change increasingly featured as part of the ADF's Humanitarian Aid and Disaster Relief (HADR) considerations, there remained a perception that it had little to do with the core business of war-fighting. Rob Sturrock and Peter Ferguson (Centre for Policy Development) in *The Longest Conflict: Australia's Climate Security Challenge* labelled this 'institutional reluctance' (Sturrock/Ferguson 2015: 34). Likewise was the perception in Defence that other government departments (such as Departments of Agriculture, Health, Industry, Infrastructure, Environment, and Foreign Affairs), other government agencies (including CSIRO, Australian Energy Regulator or Renewable Energy Agency) or the national intelligence community (Office of National Assessments) remained far better placed to respond on matters of climate change. Furthermore, the period 1999–2013 was one of the most operationally demanding for the ADF, with simultaneous and multiple peace-keeping deployments in the Asia-Pacific and wars in Iraq and Afghanistan. With soldiers on the front line, the ADF was more motivated to focus on defeating contemporary enemies than worry about incremental rises in global sea-level.

The third reason concerned best use of limited resources. In a 2013 speech, the then Chief of the Australian Army, Lieutenant-General David Morrison, forcibly argued this point when he stated that building Defence capability meant ensuring 'real value is extracted from limited resources' (Morrison 2013: 9). To do this, Morrison warned of succumbing to the 'latest [strategic] fad', which can leave 'confused policy makers and force planners in their wake' (2013: 7). According to Morrison, 'we inhabit the world of Hobbes not Fukuyama—less solitary, but vastly more brutal' in which the ADF must focus on core issues, urging 'we exist to defeat the nation's enemies' rather than 'semantic and philosophical discourse' which tended to regard the ADF as 'experimental organisations for each transient intellectual speculation' (Morrison 2013: 6–8). Thus, for Morrison and the other service chiefs, climate change might simply have represented an unwanted philosophical distraction that did little to enhance the immediate war-fighting skills required to defeat peer-enemies and uphold Australia's national security. In this view, the allocation of resources to adapt or mitigate for future climate threats may not have been a mere distraction, but might have been perceived by the military as a risk to national security on the grounds it could have diverted scarce budget otherwise

meant for war-fighting. The seeming re-emergence of geo-strategic issues—in the form of a more muscular Russian military; the on-going crisis in Syria (since 2011); of the rise of the political 'right' across Europe in response to border security; terrorism; and of the sustained growth of the Chinese military and its encroachment in the South China Sea—would all support such a focus on 'hard' security.

In line with General Morrison's thinking, Lieutenant-General Peter Leahy (a former Chief of the Australian Army) proffered that militaries are also conservative institutions that can be slow to adapt (Leahy 2010: 9). Perhaps this was true of climate change, and that the ADF remained cautious until the risks became clearer, more urgent and the science more granular? Another possibility pointed towards the idea that the ADF might not be the strategic organisation it purports to be. In this context, climate change may simply be too complex and overwhelming even for vast resources of the military-bureaucracy to adapt and mitigate. As the Professor of Strategic Studies at the Australian National University and former Departmental Deputy Secretary for Strategy, Hugh White, has suggested, 'The ADF is not a strategic organisation. It is very much focused at the tactical level' (quoted in Morris 2015). This position has been reflected elsewhere, notably by the strategist Peter Layton, who has argued 'the next DWP [Defence White Paper] is likely to be a non-strategy of risk management' (Layton 2014).

A final consideration related to sensitivities surrounding the *politics* of climate change—in particular, the divergent climate policies of Australia's two major political parties, the Liberal-National Party and Australian Labor Party (ALP), and how climate change had become a stark political differentiator or 'wedge issue' in domestic politics. Viewed this way, the ADF's reluctance to engage on climate change may be seen as an effort to retain its non-partisan persona, thereby actively avoiding political debate. Moreover, the political dimension of climate change discourse and its influence on the Australian military cannot be dismissed (this aspect forms a crucial finding of this book).

Suffice to say, the limited offerings by the Department of Defence on the subject of climate change has made it difficult to discern why it has been neglected. Furthermore, few contributions have been provided by the (Australian) scholarly academy, where research on the subject of the military and climate change has been sparse. To gain further insight into the ADF's climate dissonance, it is worthwhile to briefly compare how the international security community—including Australia's major allies the United States (US) and United Kingdom (UK)—have responded to climate change.

The Securitisation of Climate Change. Climate change first emerged as an important global governance issue in the 1980s when the UN established the IPCC in 1988 and then the Framework Convention on Climate Change (UNFCCC) in 1992. Widespread international interest was piqued in 2007 by the release of the IPCC Fourth Assessment Report (AR4) that declared 'warming of the climate system is unequivocal' (IPCC 2007: 30). The heightened sense that 'something must be done' witnessed unprecedented interest and was described by one leading securitisation scholar as a 'turning point' (Brauch 2009: 62). From 2007, climate change appeared as a mainstream issue and was prioritised on the global agenda at